



## **SOIL INVESTIGATION FOR PFAS**

For

**1 SHORE ROAD, GLENWOOD LANDING, NEW YORK 11547  
SHORE REALTY SITE  
NPL SITE NO. 13006**

### **PREPARED FOR:**

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**July 18, 2023  
LAUREL PROJECT # 21-215**

**LAUREL ENVIRONMENTAL GEOSCIENCES, DPC.  
ENVIRONMENTAL CERTIFICATION**

**LAUREL Project No.:** 19-410

**Report:** Soil Investigation for PFAS Report

**Field Work Dates:** April 26 and 27, 2023

**Report Date:** July 18, 2023

**Site:** 1 Shore Road, Glenwood Landing, New York 11547

**Client:** Law Offices of Theodore W. Firetog

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***ENVIRONMENTAL PROFESSIONAL CERTIFICATION***

I, Scott A. Yanuck, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Investigation Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.



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Scott A. Yanuck, P.G. (NYS License #000330)  
Hydrogeologist  
Principal

July 18, 2023

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Date

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## REPORT SPECIFICATIONS

This report contains (27) pages of text.

Copies and circulation of this report are as follows:

- One electronic copy to NYSDEC, Division of Environmental Remediation, Remedial Bureau B, Section A, Jared Donaldson, Case Manager
- One electronic copy to USEPA, Ashley Similo, Remedial Project Manager
- One electronic copy to Theodore W. Firetog, Esq.
- One copy in the confidential client file at *Laurel Environmental Geosciences, DPC.*

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## 1.0 INTRODUCTION

*Laurel Environmental Geosciences, D.P.C.* (“*Laurel*”) was retained by Woodstock Construction Group, Ltd. to conduct a soil investigation for per- and polyfluoroalkyl substances (“PFAS”) on the property located at 1 Shore Road, Glenwood Landing, New York (the “Site”). The Site is located in Nassau County, Town of North Hempstead. The Site location is shown on **Figure 1.0 “Site Location”**.

## 1.1 SITE HISTORY

The Site was formerly occupied as an oil terminal from circa 1939 until circa 1974, when the Site was then occupied as a distributor of chemical solvents. All commercial activity at the Site had ceased by circa 1984. Past on-site storage of chemicals and fire suppressant systems may have had the potential to cause PFAS impacts to soil and groundwater.

## 1.2 REGIONAL GEOLOGY/HYDROGEOLOGY

The geologic setting of Long Island consists of crystalline bedrock composed of schist and gneiss overlain by layers of unconsolidated deposits. Immediately overlying the bedrock is the Raritan Formation, consisting of the Lloyd sand unit which is confined by the Raritan Clay Member. The Lloyd aquifer consists of discontinuous layers of gravel, sand, sandy and silty clay, and solid clay. The Raritan Clay is a solid and silty clay confining unit with few lenses of sand and gravel, abundant lignite and pyrite, and is grey, red or white in color.

Above the Raritan Clay lies the Magothy Formation. The Magothy Aquifer consists of layers of fine to coarse sand of moderate to high permeability, with inter-bedded lenses of silt and clay of low permeability resulting in areas of preferential horizontal flow. The Magothy Aquifer is overlain by the Jameco and Upper Glacial Aquifer systems. The Upper Glacial Aquifer is the water table aquifer at the Site location and is comprised of medium to coarse sand and gravel with occasional thin lenses of fine sand and clay. This aquifer extends from the land surface to the top of the Magothy and, therefore, is hydraulically connected to the Magothy Aquifer.

## 1.3 SITE GEOLOGY/HYDROGEOLOGY

The Site is located over the Long Island aquifer system, which underlies Nassau, Suffolk, Kings (Brooklyn), and Queens Counties. The Site overlies an interconnected aquifer system consisting of the Upper Glacial aquifer and the underlying Magothy Formation as described in the previous section of this report. The Upper Glacial aquifer is found at the surface in most Nassau County.

Depth to groundwater at the Site ranges from roughly 5 to 25 feet below ground surface (“bgs”), and generally flows towards the southwest. Potable water at the Site and in the vicinity of the Site is provided by the Glenwood Water District. Groundwater is not utilized for any purposes at the Site. A 2017 TRC

Companies, Inc. (“TRC”) report for the Site states that “the inferred predominant groundwater flow direction in shallow overburden was towards the west-southwest in the northern part of the Investigation Area” and that the Site exhibited a “component of radial groundwater flow.”

The Site elevation ranges from approximately 5 to 30 feet above mean sea level and includes a prominent hill in the north-central portion. The Site has a slight slope towards the south and west and is generally level except along the edges of the hill. Asphalt and concrete surfaces, where present, are underlain by native silts and sands.

#### 1.4 SURROUNDING PROPERTIES

- The Site is adjoined to the south by Mott’s Cove, and to the west by Hempstead Harbor. The adjoining property to the east is a commercial-use property currently occupied by an autobody shop, and formerly used for boat storage and maintenance. The neighboring property to the north is currently developed as a residential apartment complex, which was formerly used as a major oil storage terminal. The upgradient former major oil storage terminal and autobody repair shop are potential sources for PFAS contamination in groundwater.

#### 1.5 SUMMARY OF PREVIOUS INVESTIGATIONS

The Site is currently undergoing remediation for petroleum contamination as directed by the New York State Department of Environmental Conservation (“NYSDEC”) with oversight provided by the United States Environmental Protection Agency (“USEPA”). *Laurel* previously issued a New York Waste Characterization Sampling Report, dated October 18, 2021, that documented the presence of perfluorooctanesulfonic acid (“PFOS”) in subsurface soils at a concentration of 1.33 micrograms per kilogram (“µg/kg”), which exceeds the NYSDEC Part 375 Remedial Guidance Value for Unrestricted Use Soils (November 2022) of 0.88 µg/kg. Perfluorooctanoic acid (“PFOA”) was also detected at 0.39 µg/kg, which is below the NYSDEC Part 375 Remedial Guidance Value for Unrestricted Use Soils (November 2022) of 0.66 µg/kg.

NYSDEC subsequently conducted site-wide groundwater sampling events for PFAS in June and October 2022. The groundwater sampling event documented PFOS and PFOA in groundwater above the NYSDEC proposed guidance value for Class GA Groundwater at 10 nanograms per liter (“ng/L”) in fourteen (14) of eighteen (18) sampled monitoring wells. Concentrations of PFOS and PFOA were generally highest in the western area of the Site, near the recently conducted remedial excavations. The NYSDEC has not made a conclusion to date regarding the potential sources areas for PFAS contamination.

Based on findings available to date, *Laurel* developed this scope of work to investigate the potential for PFAS contamination to exist in subsurface soils within the areas of concern at the Site.

## 1.6 SOIL INVESTIGATION FOR PFAS WORK PLAN

The Soil Investigation for PFAS Work Plan was developed by *Laurel* in March 2023, and approved by the NYSDEC April 2023, to investigate the potential for PFAS contamination to exist in subsurface soils within the areas of concern at the Site. The Soil Investigation for PFAS Work Plan and associated NYSDEC approval letter is attached as **Appendix A**.

The approved scope of work included the following activities:

- Conduct a geophysical survey throughout the specified work areas to pre-clear each of the boring locations.
- To investigate the potential for PFAS contamination at the Site, *Laurel* proposed twenty-two (22) soil borings at locations spaced throughout the Site. For the purposes of this investigation, the Site has been split into nine (9) grids, each measuring approximately 100 feet by 100 feet, covering an area of the Site totaling approximately 90,000 square feet. The grids are biased towards areas where PFAS may have been stored or utilized in the past, such as around the former major oil storage tanks, and in the areas where subsurface contamination has historically been identified. A Site Sketch with designated grids is shown on **Figure 2.0 “Site Sketch with Designated Grids”**. *Laurel* proposed to collect a total of forty-four (44) soil samples for PFAS analysis at twenty-two (22) locations. At each sampling location, one (1) sample was proposed to be collected from the shallow soils (i.e., 1 to 3 feet bgs), and one (1) sample from the deep soils (i.e., the 2-foot interval immediately above the groundwater interface). A Site sketch depicting the sampling locations is shown on **Figure 3.0 “Site Sketch with Sampling Locations”**. Some sampling locations were modified from the proposed locations as required based on access limitations presented by topography and vegetation.

## **2.0 APPLICABLE STANDARDS, CRITERIA, AND GUIDANCE**

The applicable Standards, Criteria, and Guidance for soil sample analytical results and air monitoring for this Site include:

- NYSDEC Part 375 Remedial Guidance Values for Unrestricted Use (Proposed);
- NYSDEC Part 375 Remedial Guidance Values for Protection of Groundwater (Proposed);
- NYSDEC Part 375 Remedial Guidance Values for Restricted Commercial Use (Proposed);
- NYSDEC Part 375 Remedial Guidance Values for Residential Use (Proposed);
- USEPA Regional Screening Levels for Residential and Industrial Properties; and
- NYSDOH Generic Community Air Monitoring Plan

### 3.0 POTENTIAL AREAS OF CONCERN

The Soil Investigation for PFAS scope of work was developed to investigate potential areas of concern (“AOCs”) at the Site. The location of each AOC is shown on **Figure 4.0, “Site Sketch with Areas of Concern”**. Coordinates for sampling locations were collected in the field by *Laurel* using a commercial-grade GPS device capable of centimeter resolution and are provided in **Table I**. A Photo Log documenting soil sampling events is attached as **Appendix B**. The AOCs were determined based on a review of historical information, and were assigned as follows:

#### **AOC 1 – Historic Investigation Area 1 and 2**

TRC conducted a supplemental soil investigation in two (2) Investigation Areas located in the northwestern area of the Site and identified as “Residual Volatile Organic Compound (“VOC”) Hotspots” by the NYSDEC. The supplemental investigation included sixty-five (65) VOC samples from 20 boring areas in Investigation Area 1 and twelve (12) soil borings in Investigation Area 2. Analysis of these samples found petroleum compounds including ethyl benzene, toluene, and xylenes that exceed the NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives (“SCOs”), Commercial Use SCOs, and Protection of Groundwater SCOs in the Investigation Areas. The petroleum contamination in subsurface soils has subsequently been addressed via remedial excavation. Two (2) soil borings (SB-111 and SB-109) were conducted as part of this Soil Investigation for PFAS within the vicinity of this AOC. Three (3) soil samples were collected from this AOC for PFAS analysis. This AOC falls within the area designated Grid 2.

#### **AOC 2 – Vicinity of LE-7**

The historic emerging contaminant composite sample from LE-7 was identified as a potential AOC based on the waste characterization sampling results for LE-7 in the 0 to 5-foot interval. Concentrations of PFOS were documented in exceedance of the NYSDEC Part 375 Remedial Guidance Value for Unrestricted Use Soils (November 2022). The presence of PFAS in the subsurface soils in the vicinity of LE-7 may be the result of historic spills, on-site usage of fire suppressants, or may be attributed to the nearby groundwater reinjection trench associated with the inactive groundwater treatment system; groundwater at the Site is known to be impacted by PFOS and is not being treated by the remediation system. Three (3) soil borings (SB-110, SB-112, and SB-113) were conducted as part of this Soil Investigation for PFAS within the vicinity of this AOC. Six (6) soil samples were collected from this AOC for PFAS analysis. This AOC falls within the areas designated Grid 5 and Grid 6.

#### **AOC 3 – Historic Site Use**

The past usage of the Site was identified as a potential AOC. The Site was formerly occupied by a major oil storage terminal and by a chemical solvent distributor. Past documented spills at the Site include: 3,000-gallons of toluene from a tank trailer in 1978, leaking barrels, and leaking tanks of solvents, seven (7) historic underground storage tanks (“USTs”) and eleven (11) aboveground storage tanks (“ASTs”) identified on the Site in October of 1984, all of which have since been removed. Seventeen (17) soil borings (SB-101 through SB-108, and SB-114 through SB-112) were conducted as part of this Soil Investigation for PFAS in areas of the Site possibly impacted by historic use. Thirty-four (34) soil samples were collected from this AOC for PFAS analysis. This AOC includes the remaining areas not covered by the previous AOCs, and includes Grids 1, 3, 4 and 6 through 9.

#### 4.0 GEOPHYSICAL INVESTIGATION

On April 26, 2023, *Laurel* performed a geophysical survey as part of the approved work plan for the Site. A dual frequency 300 and 800 MHz ground penetrating radar (“GPR”) unit, magnetometer, and line locating unit were used as part of the geophysical survey. The immediate vicinity of the proposed work areas were investigated for subsurface utilities or other obstructions. Each proposed soil boring location was pre-cleared to ensure the safety of the operators and field staff, and to prevent damage to the on-site remediation system.

## 5.0 SUBSURFACE SOIL INVESTIGATION

### 5.1 COMMUNITY AIR MONITORING PLAN

Prior to the start of any ground-intrusive activities, two (2) Community Air Monitoring Plan (“CAMP”) stations were set up, with one (1) monitor located upwind of the work zone, and one (1) monitor located at the downwind perimeter of the work zone to monitor for the presence of VOCs and dust particulates in the ambient air. Thresholds of 0.150 milligrams per cubic meter (“mg/m<sup>3</sup>”) of dust particulates above background and 5.0 parts per million (“ppm”) of VOCs above background were established for this project. The full CAMP document is included in Appendix B of the approved Work Plan. During the field work, daily monitoring reports were prepared and submitted to the NYSDEC for review and comment. The daily monitoring reports and associated data are attached as **Appendix C**.

On April 26, 2023, the highest reading recorded by the downwind CAMP station was approximately 0.70 mg/m<sup>3</sup> of dust particulates, which occurred when the unit was accidentally knocked over. No other dust exceedances occurred on this day. The CAMP monitoring station located in the work zone recorded readings in the 0.020 mg/m<sup>3</sup> range for dust particulates. The highest VOC reading recorded for either station during the day was 0.025 ppm.

On April 27, 2023, there were no exceedances of the CAMP dust particulate threshold at either the work zone or upwind CAMP monitoring stations; most of the readings recorded were in the 0.020 mg/m<sup>3</sup> range for dust particulates. The highest VOC reading recorded at either station during the day was 0.207ppm.

### 5.2 SOIL STRATIGRAPHY

All soil borings advanced at the Site were logged and characterized by *Laurel* geologists in accordance with the Unified Soil Classification System. The overall stratigraphy is consistent with the soil boring logs included as part of the previous Waste Characterization Sampling Report. The continuous shallow soil borings indicated the presence of well graded to poorly graded and fine to coarse sand between 0 to 5 feet below ground surface. Surface elevation for these boring locations were between 8 and 13 feet above sea level, with groundwater encountered between 5 to 10 feet bgs. The deeper soil borings documented the presence of well graded to poorly graded and fine to coarse sand between 0 to 30 feet bgs. The deepest soil boring (SB-102) was located 33 feet above sea level and extended to 30 feet bgs, in this boring location, a fat clay was found between 22 and 25 feet bgs; clay was not encountered in any other soil borings conducted at the Site. Surface elevation for the deeper boring locations was between 20 and 30 feet above sea level, with groundwater encountered between 20 to 30 feet bgs. Petroleum odors were observed in saturated soils located at or beneath the local groundwater table in SB-103, SB-104, SB-105, SB-109, SB-112, SB-113, SB-114, and SB-115. Soil boring logs are attached as **Appendix D**.

### 5.3 SOIL SAMPLING

As part of this Soil Investigation for PFAS, *Laurel* staff advanced a total of twenty-two (22) soil borings to delineate the extent of PFAS impacted soil at the Site in accordance with the approved work plan. All

soil borings conducted as part of this sampling event are shown on **Figure 3.0** and are summarized in **Table II**. All samples collected as part of the soil delineation sampling were submitted for laboratory analysis for PFAS by utilizing USEPA Method 1633. All soil samples collected as part of the Soil Investigation for PFAS were placed in laboratory-supplied containers prior to being stored on wet ice. The samples were delivered via laboratory courier to York Analytical Laboratories Inc (“York”), a New York State Department of Health (“NYSDOH”)-approved Environmental Laboratory, under chain of custody protocols.

### **5.3.1 AOC 1 - Historic Investigation Area 1 and 2**

Two (2) soil borings (SB-109 and SB-111) were advanced in AOC 1. Borings were advanced until groundwater was encountered, which was determined to be approximately 5 feet bgs at this AOC. A total of three (3) soil samples were collected; at SB-109 one (1) sample was collected from the shallow soils, 1 to 3 feet bgs, and one (1) sample from the deep soils, 3 to 5 feet bgs. At SB-111, only one (1) sample was collected from the shallow soils due to concrete being present in the 0 to 3 feet bgs interval, and groundwater being encountered at 5 feet bgs.

#### **5.3.1.1 Laboratory Analysis – AOC 1 - Historic Investigation Area 1 and 2**

Three (3) soil samples from AOC 1 were submitted for laboratory analysis of PFAS. Soil analytical results were compared against the NYSDEC Part 375 Remedial Guidance Values for Unrestricted Use Soils, NYSDEC Part 375 Remedial Guidance Values for Protection of Groundwater, NYSDEC Part 375 Remedial Guidance Values for Commercial Use, NYSDEC Part 375 Remedial Guidance Values for Residential Use, and USEPA Regional Screening Levels for Residential and Industrial Properties. The laboratory data packages are included in **Appendix E**. The analytical results are summarized in the attached **Table III** and below:

- Soil collected from SB-109, in the 1 to 3-foot interval, contained PFOS at a concentration of 1.37 micrograms per kilogram (“µg/kg”) which exceeds the NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted SCO of 0.88 µg/kg and the NYSDEC Part 375 Remedial Soil Guidance PFAS Protection of Groundwater SCO of 1.00 µg/kg. The detected value of 1.37 µg/kg for PFOS is below the NYSDEC Part 375 Remedial Guidance Values for Residential Use, Commercial Use, and is also below the USEPA Regional Screening Levels for Residential and Industrial Properties.
- No concentrations of PFOA were found to exceed the NYSDEC or USEPA guidance values for PFAS in the soil samples collected from AOC 1.

Detections of PFOS and PFOA are summarized on **Figure 5.0 “Site Sketch with Sampling Results - PFOS”** and **Figure 5.1 “Site Sketch with Sampling Results - PFOA”**, respectively.

### **5.3.2 AOC 2 – Vicinity of LE-7**

Three (3) soil borings (SB-110, SB-112, and SB-113) were advanced in AOC 2. Borings were advanced until groundwater was encountered, which was determined to be approximately 14 feet bgs at this AOC. A total of six (6) soil samples were collected as proposed in the approved work plan; soil samples were collected from the shallow soils (i.e., 1 to 3 feet bgs), and one (1) sample from the deep soils (i.e., the 2-foot interval immediately above the groundwater interface) at each soil boring location.

#### **5.3.2.1 Laboratory Analysis – AOC 2 – Vicinity of LE-7**

Six (6) soil samples from AOC 2 were submitted for laboratory analysis of PFAs. Soil analytical results were compared against the NYSDEC Part 375 Remedial Guidance Values for Unrestricted Use Soils, NYSDEC Part 375 Remedial Guidance Values for Protection of Groundwater, NYSDEC Part 375 Remedial Guidance Values for Commercial Use, NYSDEC Part 375 Remedial Guidance Values for Residential Use, and USEPA Regional Screening Levels for Residential and Industrial Properties. The laboratory data packages are included in **Appendix E**. The analytical results are summarized in the attached **Table III** and below:

- No concentrations of PFOA or PFOS were found to exceed the NYSDEC or USEPA guidance values for PFAS in the soil samples collected from AOC 2.

Detections of PFOS and PFOA are summarized on **Figure 5.0 “Site Sketch with Sampling Results - PFOS”** and **Figure 5.1 “Site Sketch with Sampling Results - PFOA”**, respectively.

### **5.3.3 AOC 3 – Historic Site Usage**

Seventeen (17) soil borings (SB-101 through SB-108, and SB-114 through SB-112) were advanced in AOC 3. Borings were advanced until groundwater was encountered, which was determined to range from approximately 5 to 30 feet bgs at this AOC. A total of thirty-four (34) soil samples were collected as proposed in the approved work plan; soil samples were collected from the shallow soils (i.e., 1 to 3 feet bgs), and one (1) sample from the deep soils (i.e., the 2-foot interval immediately above the groundwater interface) at each soil boring location.

#### **5.3.3.1 Laboratory Analysis – AOC 3 – Historic Site Usage**

Thirty-four (34) soils samples from AOC 3 were submitted for laboratory analysis of PFAS. Soil analytical results were compared against the NYSDEC Part 375 Remedial Guidance Values for Unrestricted Use Soils, NYSDEC Part 375 Remedial Guidance Values for Protection of Groundwater, NYSDEC Part 375 Remedial Guidance Values for Commercial Use, NYSDEC Part 375 Remedial Guidance Values for Residential Use, and USEPA Regional Screening Levels for Residential and Industrial Properties. The

laboratory data packages are included in **Appendix E**. The analytical results are summarized in the attached **Table III** and below:

- Soil collected from SB-103, in the 1 to 3-foot interval, contained PFOS at a concentration of 2.26 µg/kg which exceeds the NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted SCO of 0.88 µg/kg and NYSDEC 375 Remedial Soil Guidance PFAS Protection of Groundwater SCO of 1.00 µg/kg. The detected value of 2.26 µg/kg for PFOS is below the NYSDEC Part 375 Remedial Guidance Values for Residential Use, Commercial Use, and is also below the USEPA Regional Screening Levels for Residential and Industrial Properties.
- No concentrations of PFOA were found to exceed the NYSDEC or USEPA guidance values for PFAS in the soil samples collected from AOC 3.

Detections of PFOS and PFOA are summarized on **Figure 5.0 “Site Sketch with Sampling Results - PFOS”** and **Figure 5.1 “Site Sketch with Sampling Results - PFOA”**, respectively.

## 6.0 WASTE MANAGEMENT

Soil cuttings that were observed to be grossly contaminated by petroleum were segregated and stored in a steel 55-gallon drum. The drum was labeled and staged at the Site pending characterization and proper disposal. The wastes were characterized, and the drum was removed from the Site on May 17, 2023, by Innovative Recycling Technologies (“IRT”). Waste disposal documentation is included in **Appendix F**.

## 7.0 SUMMARY OF SOIL INVESTIGATION FOR PFAS

As part of the Soil Investigation for PFAS, a total of forty-three (43) soil samples were collected and analyzed throughout the Site, including:

- Three (3) samples at AOC 1
- Six (6) samples at AOC 2
- Thirty-four (34) samples at AOC 3

These samples are biased towards areas of highest potential contamination consistent with DER-10 guidance.

The following presents a summary of the Soil Investigation for PFAS findings for each AOC:

### AOC 1 – Historic Investigation Area 1 and 2

A total of three (3) soil samples collected from two (2) boring locations in AOC 1 were submitted for laboratory analysis of PFAS. Soil collected from SB-109, in the 1 to 3-foot interval, contained PFOS at a concentration exceeding the NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted SCOs and the NYSDEC Part 375 Remedial Soil Guidance PFAS Protection of Groundwater SCOs. No exceedances of PFOA were documented.

### AOC-2 Vicinity of LE-7

A total of six (6) soil samples collected from three (3) boring locations in AOC 2 were submitted for laboratory analysis of PFAS. No compounds were detected at concentrations exceeding any NYSDEC Part 375 Remedial Soil Guidance Values or USEPA Regional Screening Limits.

### AOC 3 – Historic Site Usage

A total of thirty-four (34) samples collected from seventeen (17) boring locations in AOC 3 were submitted for laboratory analysis of PFAS. Soil collected from SB-103, in the 1 to 3-foot interval, contained PFOS at a concentration exceeding the NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted SCOs and the NYSDEC Part 375 Remedial Soil Guidance PFAS Protection of Groundwater SCOs. No exceedances of PFOA were documented.

## 8.0 CONCEPTUAL SITE MODEL

- Pursuant to DER-10, a conceptual site model (“CSM”) has been prepared to develop a general understanding of the Site and evaluate potential human exposure pathways and impacts to the environment. This CSM considers Site history and context, including the factors that influence distribution, and fate and transport of remedy-relevant constituents, as well as potential receptors and pathways for exposure. These factors include potential sources and release mechanisms, the physical-chemical mechanisms that control constituent fate and transport, and the likely exposure pathways that govern the potential for adverse effects to human and ecological receptors. The CSM will be used to identify remedy-relevant data gaps that will be addressed as part of the remedial action.

## 8.1 POTENTIAL SOURCES

PFAS have been detected in soil and groundwater at the Site. The presence of PFAS in soils at the Site may be attributed to accidental releases or spills associated with historical chemical storage and distribution operations at the Site. In addition, emergency fire suppression systems utilized during the Site’s historic use as a major oil storage terminal likely would have included chemicals known to contain PFAS.

- The adjoining property to the east is a commercial-use property currently occupied by an autobody shop, and formerly used for boat storage and maintenance. The neighboring property to the north is currently developed as a residential apartment complex, which was formerly used as a major oil storage terminal. The upgradient former major oil storage terminal and autobody repair shop are potential sources for PFAS contamination in groundwater. On-site shallow soils may potentially be impacted by airborne diffusion of PFAS via either wet or dry deposition from nearby industrial properties. However, it remains unlikely that an active source of PFAS contamination is present at the Site.

## 8.2 ENVIRONMENTAL FATE AND TRANSPORT

- Chemicals are transported or transformed in the environment through physical and kinetic processes. Physical processes including dissolution, vaporization, and adsorption result in the transfer the substances across media and phases. Kinetic processes, which include biotic and abiotic chemical transformations, decrease the concentration of a chemical by degrading it into other products. The current understanding of the fate and transport of PFAS-related constituents is summarized below for each of the environmental media of interest at the Site.

### 8.2.1 Groundwater, Soil and Air

- PFAS are a fluorinated substance that contains at least one fully fluorinated methyl or methylene carbon atom, with a few exceptions. Some PFAS compounds, such as PFOS or PFOA, are

synthetic fluorosurfactants which are very effective at reducing the surface tension of water. The hydrophobic and lipophobic nature of PFAS makes them useful in repelling both water and oil and affects their transport in the environment. Known as “forever chemicals” PFAS are very durable compounds that resist grease, oil, water and heat. They can be released into the environment via industrial facilities that produce, process or use PFAS chemicals or products, areas where firefighting foam containing fluorine was used, stored or released, facilities that manage waste such as landfills and areas affected by industrial wastewater discharges.

- The characteristics of specific PFAS chains affect their transport through groundwater, soil and air. The type and extent of PFAS partitioning and transformation on a site are strongly influenced by chain length, ionic state, type of functional group and extent of fluorination. Site characteristics also affect the nature of the source as well as PFAS environmental interactions such as soil type, depth to groundwater, saturation rates of soil and velocity of groundwater. There are four processes that affect the fate and transport of PFAS on a site: (1) partitioning, (2) media specific migration processes, (3) transformations, and (4) bioaccumulation.
- (1) PFAS tends to partition to interfaces between air and water, air and soil and water and soil. Migration of PFAS into the environment can be affected by hydrophobic partitioning to organic carbon, electrostatic interactions between charged surfaces and PFAS’s tendency to aggregate to air-water interfaces. These processes can affect the retention of PFAS within soils as well as affecting retardation rate within groundwater. The length of chain may also affect the speed of transportation through solids of varying degrees of retention. The greatest impact of partitioning on PFAS transport is its preference to remain at an air-water interface such as the unsaturated conditions within the vadose zone and the capillary fringe. While PFAS will migrate to the groundwater table, the air-water partition will greatly impact the transport of these chemical compounds into the groundwater of a site. While specific PFAS compounds can migrate from an air-water partition to an air partition, it is uncommon for PFOS or PFOA to volatilize from water to air due to low vapor pressure and high-water solubility.
- (2) PFAS has three important media specific migration processes: diffusion into and out of materials of lower permeability, transport via air, and leaching. PFAS can diffuse and back-diffuse into soils and bedrock of lower permeability. This contributes to PFAS remaining in soils long term even after remediation and removal of impacted soils. PFAS becomes airborne as a gaseous state or is conveyed by water droplets or solid particles via stack emissions and once airborne, can occur in a gaseous state or become attached to particulate matter or other suspended aerosols within the air. PFOS and PFOA are the dominant type of PFAS compounds found in airborne particulates. PFOS and PFOA can be spread around the world and are diffused via precipitation or dry deposition. PFAS leaching potential is consistent with other non PFAS contaminants in shallow soil when influenced by common leaching enhancing and reducing factors such as precipitation or human-made sources. Previously discussed PFAS specific characteristics also affect the leaching potential.

- (3) Transformation can occur in some polyfluorinated substances via different types of biological and abiotic degradation mechanisms. The degradation of PFAS into shorter chain perfluoroalkyl acids (“PFAAs”) can drastically change the timing and location of PFAS transport on a site. PFAAs are persistent and will not degrade or transform under normal environmental conditions. Atmospheric transformation affects the transport of airborne PFAS worldwide, for example, fluorotelomer alcohols (“FTOHs”) degrade into PFOA as a reaction to certain compounds in the air. The same process affects the bioaccumulation of PFAS in wildlife.
- (4) PFAS, like other compounds released into the environment, will biomagnify as it accumulates in wildlife species. Relatively low amounts of PFAS accumulated in plants and smaller animals like fish will accumulate into toxically high amounts in animals at the top of the food chain.
- This investigation has indicated the presence of low levels of PFOA and PFAS in shallow subsurface soil samples in locations at the Site at concentrations that exceed Residential and Groundwater SCOs, with no significant detections in the deeper soils at the Site. The porous sandy nature of the Site could allow for the transportation of PFAS readily via leaching, diffusion into groundwater, and bioaccumulation into wildlife onsite and in the nearby bay, however no evidence of this occurring has been documented to date. The shallowness of groundwater could allow for the PFAS to leach into Site groundwater. The presence of PFAS in shallow subsurface soils 1 to 3 feet above ground water is likely due to the water-air partition in the capillary zone retaining a large percentage of PFAS from diffusing or leaching and does not necessarily represent a source area for contamination in groundwater at the Site.

#### **8.2.4 Potential Sensitive Receptors and Exposure Pathways**

- A complete exposure pathway is needed for a potential human or ecological health risk to be present. Potential receptors at the Site include those coming into direct contact with contaminated soil and groundwater. Based on the peer-reviewed principles of environmental risk assessment, there is no risk to a receptor when either (1) no receptor is present or (2) there is no complete exposure pathway for that receptor.
- The Site is presently occupied and used for storage of heavy machinery and building supplies. The Site is under the supervision of the NYSDEC and has an approved site management plan (“SMP”) that prohibits excavation without prior notice. Workers potentially encountering contaminated soils would be required to have OSHA 40-hour HAZWOPER training and made aware of potential risks and mitigation methods to limit exposure. A complete exposure pathway would only exist in a future scenario where construction workers may encounter contaminated soil or groundwater during subsurface work at the Site. No sensitive receptors are anticipated to be present at the Site under current conditions.

Groundwater use at the Site is prohibited without adequate treatment as required by the existing environmental easement. Potable water at the Site and in the vicinity of the Site is provided by the Glenwood Water District. No complete exposure pathway currently exists for contaminated groundwater.

- Additional complete exposure pathways may include consumption of local fish or plants that have bioaccumulated PFAS. Agricultural and residential use of the Site is currently prohibited by the existing environmental easement. No complete exposure pathway currently exists for bioaccumulation.

## **9.0 QUALITATIVE HUMAN EXPOSURE ASSESSMENT**

- The overall purpose of the Qualitative Human Exposure Assessment is to evaluate and document how people might be exposed to site-related contaminants and to identify and characterize the potentially exposed population(s) now and under reasonably anticipated future use of the Site. To evaluate if an exposure pathway exists, the exposure assessment should assess the quality, representativeness, and adequacy of the available data. In addition, the qualitative exposure assessment should consider the nature of populations currently exposed or that has the potential to be exposed to Site related contaminants both on-Site and off-Site and describe the reasonably anticipated future land use of the Site and affected off-Site areas.

### **9.1 CONTAMINANT SOURCE**

The Site was formerly occupied as an oil terminal from circa 1939 until circa 1974, when the Site was then occupied as a distributor of chemical solvents. All commercial activity at the Site had ceased by circa 1984. Past on-site storage of chemicals and fire suppressant systems may have had the potential to cause PFAS impacts to soil and groundwater.

- The Site is adjoined to the south by Mott's Cove, and to the west by Hempstead Harbor. The adjoining property to the east is a commercial-use property currently occupied by an autobody shop, and formerly used for boat storage and maintenance. The neighboring property to the north is currently developed as a residential apartment complex, which was formerly used as a major oil storage terminal. The upgradient former major oil storage terminal and autobody repair shop are potential sources for PFAS contamination in groundwater.
- No significant source areas were documented during this subsurface soil investigation and no remedial actions are recommended.

### **9.2 CONTAMINANT RELEASE AND TRANSPORT**

- Low levels of PFAS were documented in two (2) locations on the Site in the shallow subsurface

soils (1 to 3-foot interval). No exceedances were documented in deeper soils at the Site. Historic petroleum remediation activities, as directed by NYSDEC and USEPA, involved re-injection of PFAS contaminated groundwater into the subsurface soils at the Site, which represents a possible pathway for transport and dispersion of PFAS throughout the Site.

- The leaching and diffusion of PFAS from contaminated groundwater into the water-air partition in the capillary zone represents another possible pathway for PFAs to migrate on-site. Contaminated groundwater may migrate into the surrounding Motts Cove and Hempstead Harbor.

### **9.3 POINTS AND ROUTES OF EXPOSURE**

- The PFAS detected at the Site above applicable regulatory standards may have adverse effects on human health and could be ingested through direct contact with contaminated soil or groundwater; some PFAS compounds are currently designated as possible human carcinogens.
- Ingestion of Soils – Public access to the Site is currently restricted. During any future redevelopment and occupation, workers may come into direct contact with surface and subsurface soils. Excavations at the Site are required to be conducted in accordance with the approved SMP. Workers potentially encountering contaminated soils would be required to have OSHA 40-hour HAZWOPER training and made aware of potential risks and mitigation methods to limit exposure.
- Direct Contact with Groundwater – PFAS compounds are not readily absorbed through dermal exposure, and as such, direct contact with contaminated groundwater should not be considered a possible point of exposure.
- Ingestion of Groundwater – Use of groundwater at the Site is currently prohibited without adequate treatment by the existing environmental easement. Potable water at the Site and in the vicinity of the Site is provided by the Glenwood Water District.
- Ingestion of Flora and Fauna – Agricultural and residential use of the Site is currently prohibited by the existing environmental easement.

### **9.4 RECEPTOR POPULATIONS**

The current on-site receptor population consists of construction industry workers that spend minimal time on-site, primarily in the mornings and in the early evenings. The Site operates under an approved SMP, and all on-site excavations must be conducted in accordance with the SMP requirements. No complete exposure pathway exists for current on-site receptors.

## **10.0 QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES (QA/QC)**

### **10.1 SAMPLING PERSONNEL**

The activities associated with the survey, sampling and analysis plan were performed by or under the auspices of a USEPA Office of Emergency and Remedial Response, Certified Sampler for Hazardous Materials. The staff (samplers) possessed a minimum of a B.A. Degree in the Earth, Environmental, or Biological Sciences or a B.S. Degree in Engineering. Samplers have a minimum of one-year experience in environmental/geological field work. Additionally, all samplers had received mandatory forty-hour Occupational Safety and Health Administration (OSHA) training on working with potentially hazardous materials and appropriate Hazard Communication Program and "Right-To-Know" training. Project Personnel Qualifications are included in **Appendix G**.

### **10.2 SAMPLING EQUIPMENT**

Separate QA/QC measures were implemented for each of the instruments used in the performance of the Soil Investigation for PFAS.

#### **10.2.1 Photoionization Detector**

Calibration of the Photoionization Detector (PID) was conducted prior to sampling using a span gas of known concentration. The PID was a *RAE Systems MiniRae 3000*, photo ionization detection meter equipped with a 10.6 eV bulb.

#### **10.2.2 Sample Vessels**

All sample vessels were "Level A" certified decontaminated containers supplied by a New York State Certified Commercial Laboratory. Samples analyzed for hydrocarbons were placed in containers with Teflon lined caps. All samples were preserved by cooling them to a temperature of approximately four degrees Celsius.

### **10.3 SAMPLE DOCUMENTATION**

A sample represents physical evidence. An essential part of liability reduction is the proper control of gathered evidence. To establish proper control, the following sample identification and chain-of-custody procedures were followed.

#### **10.3.1 Sample Identification**

Sample identification was executed by use of a sample tag, logbook, and chain-of-custody form. Said documentation provided the following information: 1) the project code; 2) the sample laboratory number;

3) the sample preservation; 4) instrument used for source sample grabs; 5) the composite medium used for source sample grabs; 6) the date the sample was secured from the source media; 7) the time the sample was secured from the source media; and 8) the person who secured the sample from the source media.

### **10.3.2 Chain-of-Custody Procedures**

Due to the evidential nature of samples, possession was traceable from the time the samples were collected until they were received by the testing laboratory. A sample was considered under custody if it: was in a person's possession; was in a person's view, after being in possession; was in a person's possession and they locked it up; or, was in a designated secure area. When transferring custody, the individuals relinquishing and receiving the samples signed, dated, and noted the time on the Chain-of-Custody Form.

### **10.3.3 Laboratory-Custody Procedures**

A designated sample custodian accepted custody of the shipped samples and verified that the information on the sample tags matched that on the Chain-of-Custody Records. Pertinent information as to shipment, pick-up, courier, etc., were entered in the "remarks" section. The custodian entered the sample tag data into a bound logbook. The laboratory custodian used the sample tag number, or assigned a unique laboratory number to each sample tag, and assured that all samples were transferred to the proper analyst or stored in the appropriate source area. The laboratory custodian distributed samples to the appropriate analysts. Laboratory personnel were responsible for the care and custody of samples, from the time they were received, until the sample was exhausted or returned to the sample custodian. All identifying data sheets and laboratory records were retained as part of the permanent documentation. Samples received by the laboratory were retained until after analysis and quality assurance checks were completed.

## **10.4 QUALITY ASSURANCE/QUALITY CONTROL SAMPLES**

The Soil Investigation for PFAS performed by *Laurel* included the collection of soil samples. In accordance with ASP and NYSDEC requirements, QA/QC samples included blind duplicate samples, matrix spike/matrix spike duplicate ("MS/MSD") sets, and equipment blanks (the equipment blank water was provided by the laboratory and was certified as "PFAS-free").

### **10.4.1 Soil QA/QC Sampling**

Soil sampling was performed between April 26 and 27, 2023. A total of fifty-one (51) samples were submitted to the laboratory as part of soil sampling program. Of the fifty-one (51) samples, forty-three (43) samples were investigative soil samples, two (2) samples were soil blind duplicate samples, two (2) samples were soil MS samples, two (2) samples were soil MSD samples, two (2) samples were liquid equipment blank samples. All of the QA/QC samples were submitted for the same analysis as their respective parent samples. The liquid equipment blank samples were analyzed for the same parameters as the collected soil samples. A list of the QA/QC samples and their parent samples are provided below:

QA/QC Soil Samples	Parent Sample
Dup-20230426	SB-119 1'-3'
Dup-20230427	SB-110 1'-3'
MS-SB-20230426	SB-119 3'-5'
MSD-SB-20230426	SB-119 3'-5'
MS-SB-20230427	SB-107 1'-3'
MSD-SB-20230427	SB-107 1'-3'
EB-Soil-20200713	Laboratory supplied PFAS free water
EB-Soil-20200714	Laboratory supplied PFAS free water

## 10.5 DATA VALIDATION

- The ASP Category B data packages were reviewed by Christine Camardella, an independent data validator, with a Data Usability Summary Report (“DUSR”) prepared for each data package. The data validator did not identify any additional qualifiers to be added to the laboratory data packages. No discrepancies or other issues that significantly alter the conclusions of this report were identified by the independent data validator. The DUSRs are included in **Appendix H**.

## 11.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are based on the findings of this investigation:

- A total of twenty-two (22) soil borings were conducted throughout the Site, with a total of forty-three (43) soil samples retained for laboratory analysis of PFAS.

### AOC 1 – Historic Investigation Area 1 and 2

- Two (2) soil borings (SB-109 and SB-111) were advanced in AOC 1. Borings were advanced until groundwater was encountered, which was determined to be approximately 5 feet bgs at this AOC. A total of three (3) soil samples were collected; at SB-109 one (1) sample was collected from the shallow soils, 1 to 3 feet bgs, and one (1) sample from the deep soils, 3 to 5 feet bgs. At SB-111, only one (1) sample was collected from the shallow soils due to concrete being present in the 0 to 3 feet bgs interval, and groundwater being encountered at 5 feet bgs.
- Soil collected from SB-109, in the 1 to 3-foot interval, contained PFOS at a concentration of 1.37 micrograms per kilogram (“µg/kg”) which exceeds the NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted SCO of 0.88 µg/kg and the NYSDEC Part 375 Remedial Soil Guidance PFAS Protection of Groundwater SCO of 1.00 µg/kg. The detected value of 1.37 µg/kg for PFOS is below the NYSDEC Part 375 Remedial Guidance Values for Residential Use, Commercial Use, and is also below the USEPA Regional Screening Levels for Residential and Industrial Properties.
- No concentrations of PFOA were found to exceed the NYSDEC or USEPA guidance values for PFAS in the soil samples collected from AOC 1.

### AOC 2 – Vicinity of LE 7

- Three (3) soil borings (SB-110, SB-112, and SB-113) were advanced in AOC 2. Borings were advanced until groundwater was encountered, which was determined to be approximately 14 feet bgs at this AOC. A total of six (6) soil samples were collected as proposed in the approved work plan; soil samples were collected from the shallow soils (i.e., 1 to 3 feet bgs), and one (1) sample from the deep soils (i.e., the 2-foot interval immediately above the groundwater interface) at each soil boring location.
- No concentrations of PFOA or PFOS were found to exceed the NYSDEC or USEPA guidance values for PFAS in the soil samples collected from AOC 2.

### AOC 3 – Historic Site Usage

- Seventeen (17) soil borings (SB-101 through SB-108, and SB-114 through SB-112) were advanced in AOC 3. Borings were advanced until groundwater was encountered, which was determined to range from approximately 5 to 30 feet bgs at this AOC. A total of thirty-four (34) soil samples were collected as proposed in the approved work plan; soil samples were collected from the shallow soils (i.e., 1 to 3 feet bgs), and one (1) sample from the deep soils (i.e., the 2-foot interval immediately above the groundwater interface) at each soil boring location.

- Soil collected from SB-103, in the 1 to 3-foot interval, contained PFOS at a concentration of 2.26 µg/kg which exceeds the NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted SCO of 0.88 µg/kg and NYSDEC 375 Remedial Soil Guidance PFAS Protection of Groundwater SCO of 1.00 µg/kg. The detected value of 2.26 µg/kg for PFOS is below the NYSDEC Part 375 Remedial Guidance Values for Residential Use, Commercial Use, and is also below the USEPA Regional Screening Levels for Residential and Industrial Properties.
- No concentrations of PFOA were found to exceed the NYSDEC or USEPA guidance values for PFAS in the soil samples collected from AOC 3.

The following recommendations are based on the conclusions of this investigation:

- No significant source areas for PFAS contamination were encountered during this subsurface soil investigation and no remedial actions are recommended.
- The minimal PFAS contamination in subsurface soil should not prevent closure of the Site since no remediation is necessary.

## **FIGURES**

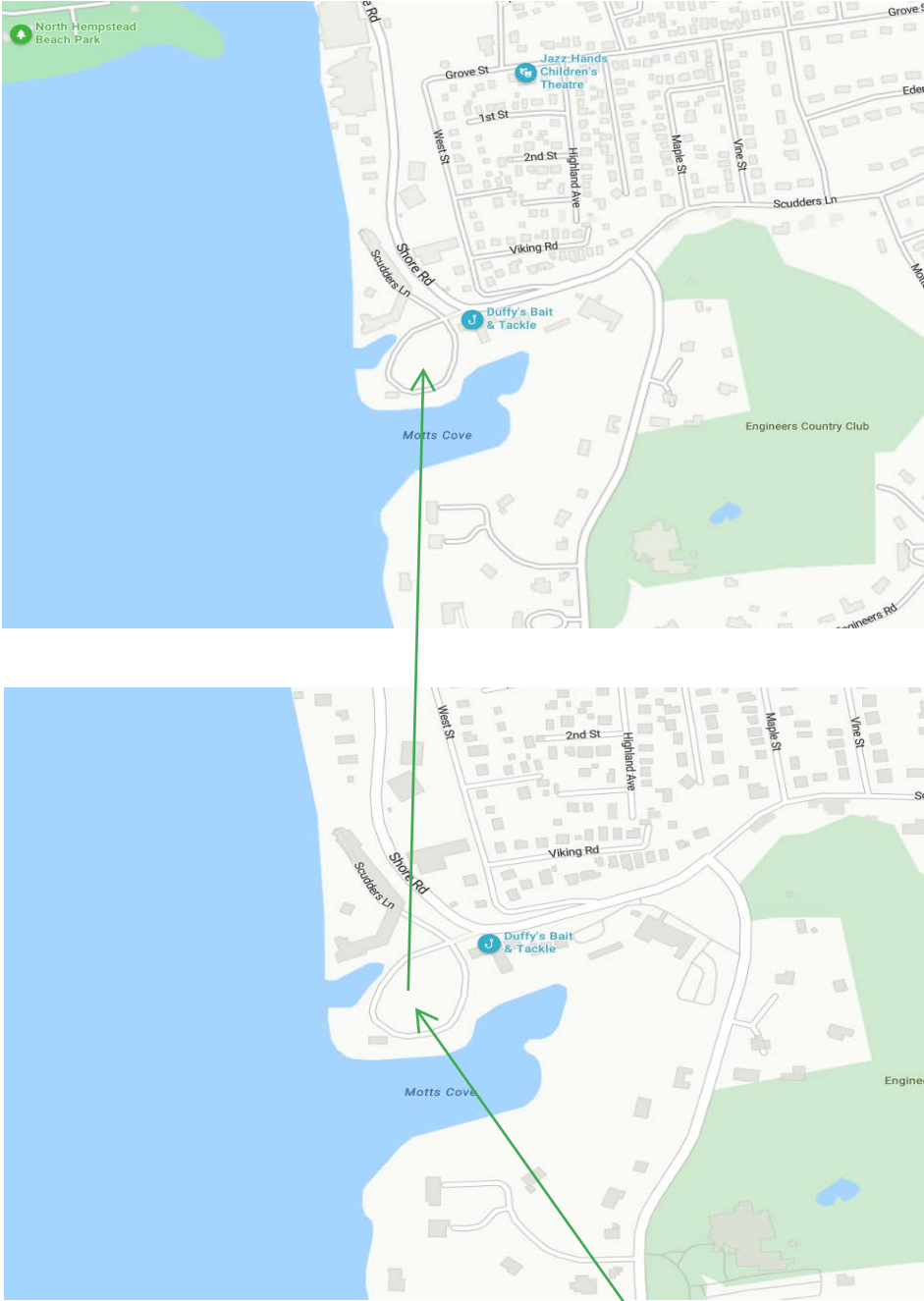


Figure 1.0 Site Location  
1 Shore Rd, Glenwood Landing, NY 11547





53 West Hills Road  
Huntington Station, NY 11746

PHONE: 631-673-0612  
FAX: 631-427-5323

WWW.LAURELENV.COM

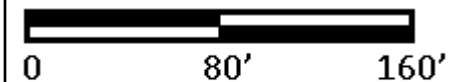
**FIGURE 2.0**  
SITE SKETCH WITH DESIGNATED  
GRIDS

1 Shore Road  
Glenwood Landing, NY 11547

PROJECT: 21-215  
DRAWING DATE: 1/16/23  
DRAWN BY: JB  
CHECKED BY: SY  
REVISIONS: N/A

**KEY**

- Grid Boundary
- - - Site Boundary





53 West Hills Road  
Huntington Station, NY 11746

PHONE: 631-673-0612  
FAX: 631-427-5323

WWW.LAURELENV.COM

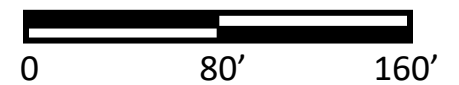
**FIGURE 3.0**  
SITE SKETCH WITH SAMPLING  
LOCATIONS

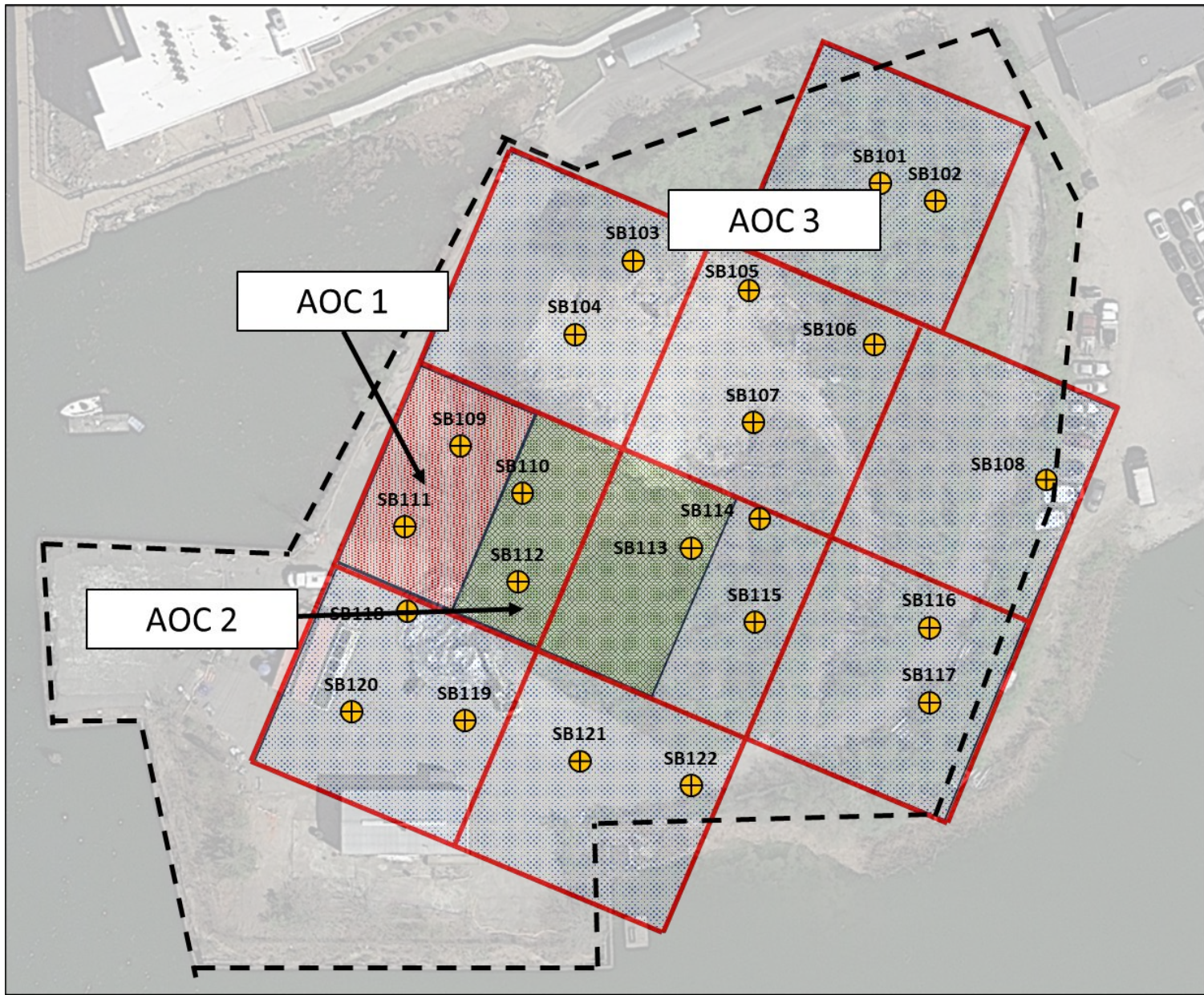
1 Shore Road  
Glenwood Landing, NY 11547

PROJECT: 21-215  
DRAWING DATE: 5/2/23  
DRAWN BY: EB  
CHECKED BY: JB  
REVISIONS: N/A

**KEY**

-  Soil Boring Location
-  Grid Boundary
-  Site Boundary



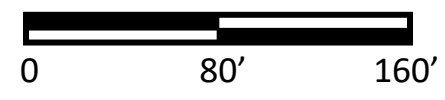


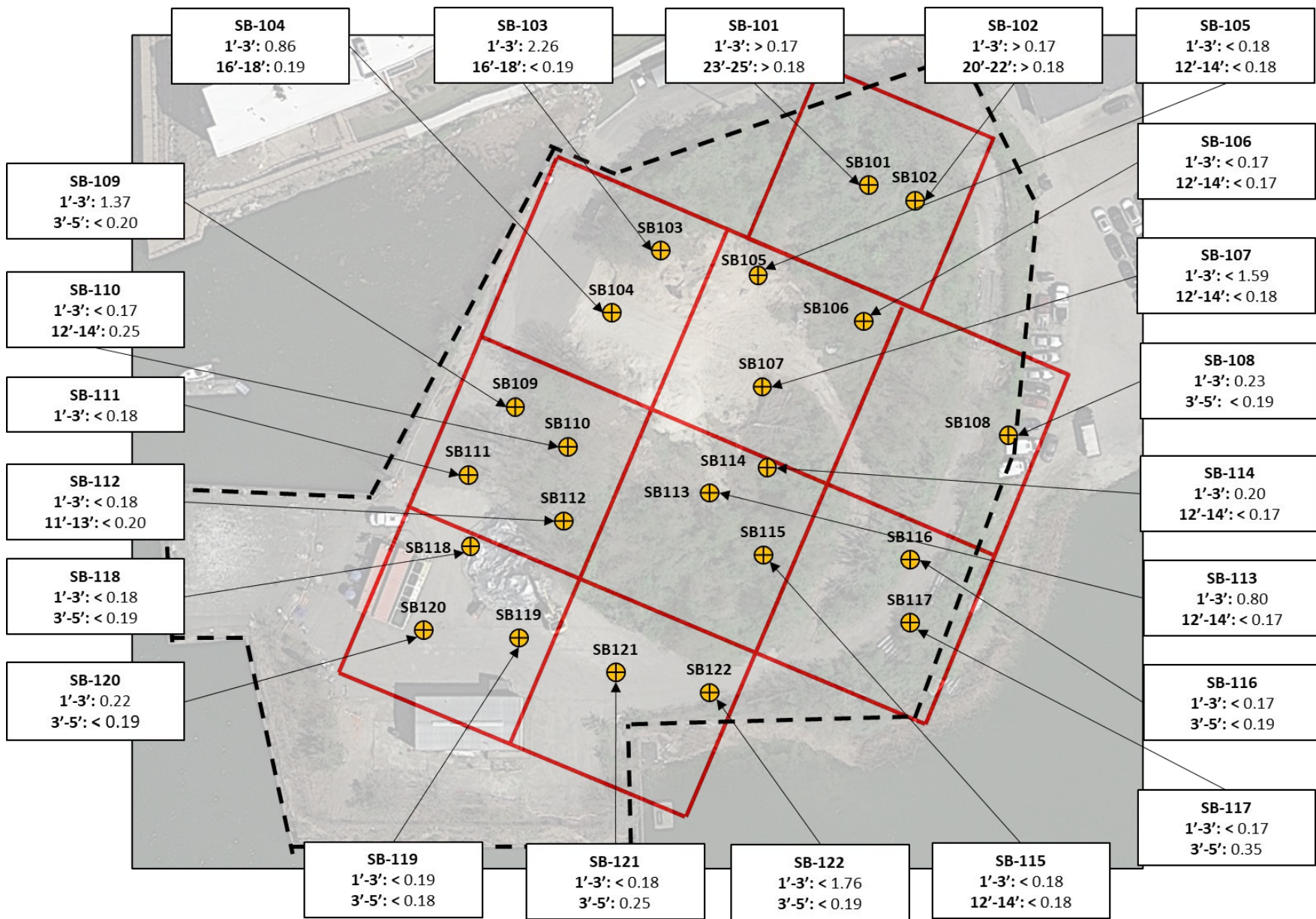
53 West Hills Road  
 Huntington Station, NY 11746  
 PHONE: 631-673-0612  
 FAX: 631-427-5323  
 WWW.LAURELENV.COM

**FIGURE 4.0**  
 SITE SKETCH WITH AREAS OF CONCERN  
 1 Shore Road  
 Glenwood Landing, NY 11547

PROJECT: 21-215  
 DRAWING DATE: 6/26/23  
 DRAWN BY: JY  
 CHECKED BY: JB  
 REVISIONS: N/A

KEY	
	Soil Boring Location
	Grid Boundary
	Site Boundary
	Area of Concern 1
	Area of Concern 2
	Area of Concern 3





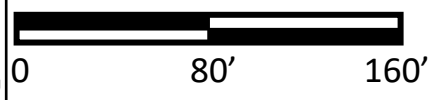
53 West Hills Road  
 Huntington Station, NY 11746  
 PHONE: 631-673-0612  
 FAX: 631-427-5323  
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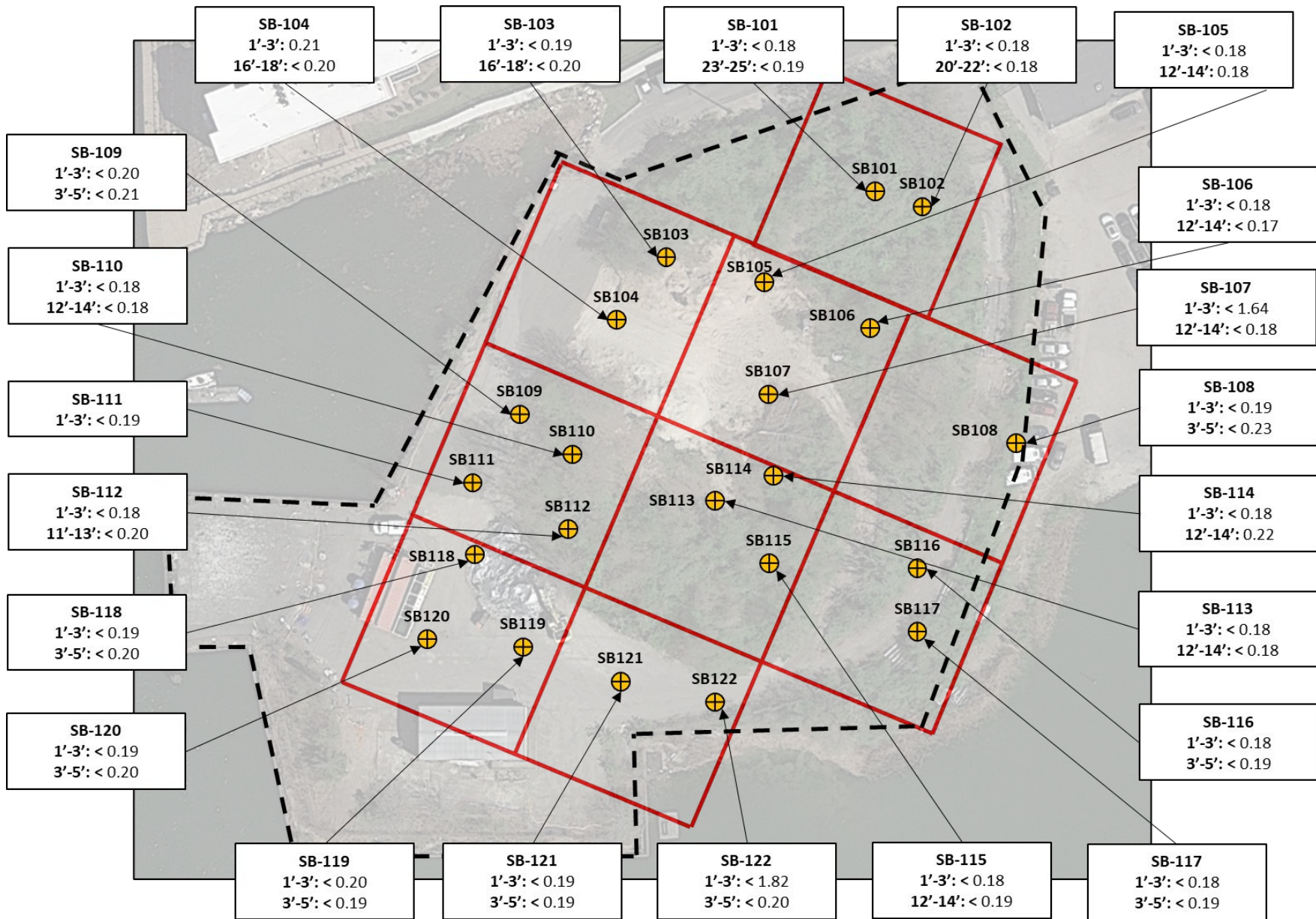
**FIGURE 5.0**  
 SITE SKETCH WITH PFOS  
 RESULTS  
 1 Shore Road  
 Glenwood Landing, NY 11547

PROJECT: 21-215  
 DRAWING DATE: 6/26/23  
 DRAWN BY: JY  
 CHECKED BY: JB  
 REVISIONS: N/A

**KEY**

- Soil Boring Location
- Grid Boundary
- Site Boundary
- Compound = PFOS
- Values Shown are in ug/kg
- Unrestricted SCO for PFOS is 88 ug/kg
- Groundwater SCO for PFOS is 1.00 ug/kg



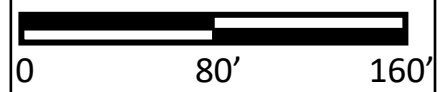


53 West Hills Road  
 Huntington Station, NY 11746  
 PHONE: 631-673-0612  
 FAX: 631-427-5323  
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**FIGURE 5.1**  
 SITE SKETCH WITH PFOA  
 RESULTS  
 1 Shore Road  
 Glenwood Landing, NY 11547

PROJECT: 21-215  
 DRAWING DATE: 6/26/23  
 DRAWN BY: JY  
 CHECKED BY: JB  
 REVISIONS: N/A

KEY	
	Soil Boring Location
	Grid Boundary
	Site Boundary
•	Compound = PFOA
•	Values Shown are in ug/kg
•	Unrestricted SCO for PFOA is .88 ug/kg
•	Groundwater SCO for PFOA is 1.00 ug/kg



# **TABLES**

Table I: Soil Boring Details				
Soil Boring	SB-101	SB-102	SB-103	SB-104
Boring Depth	25'	30'	20'	20'
Boring Diameter	2"	2"	2"	2"
Grade Elevation (NAVD88)	33'	33'	24'	24'
Soil Description (USCS)	Asphalt 0' - .5' SW and SP .5' - 25'	Asphalt 0' - 1' SW and SP 1' - 22' CH 22' - 25' SW 25' - 30'	SW 0' - 20'	SW 0' - 20'
Soil Material Origin	Asphalt (0-0.5') Native (0.5-25')	Asphalt (0-1'), Native (1-30')	Native (0-20')	Native (0-20')
GPS Coordinates	40°49'24.28"N 73°38'46.48"W	40°49'24.19"N 73°38'45.94"W	40°49'23.93"N 73°38'47.76"W	40°49'23.64"N 73°38'47.95"W

Table I: Soil Boring Details (Continued)				
Soil Boring	SB-105	SB-106	SB-107	SB-108
Boring Depth	15'	15'	15'	5'
Boring Diameter	2"	2"	2"	2"
Grade Elevation (NAVD88)	20	21'	21'	12'
Soil Description (USCS)	Topsoil 0' - 0.5' SW 0.5' - 15'	Topsoil 0' - 1' SP 1' - 5' SW 5' - 15'	Topsoil 0' - 0.5' SW 0.5' - 5' SP 5' - 10' SW 10' - 15'	Topsoil 0' - 0.5' SW 0.5' - 5'
Soil Material Origin	Native (0-15')	Native (0-15')	Native (0-15')	Native (0-5')
GPS Coordinates	40°49'23.83"N 73°38'46.92"W	40°49'23.58"N 73°38'46.34"W	40°49'23.19"N 73°38'46.88"W	40°49'22.93"N 73°38'45.36"W

Table I: Soil Boring Details (Continued)				
Soil Boring	SB-109	SB-110	SB-111	SB-112
Boring Depth	5'	15'	5'	15'
Boring Diameter	2"	2"	2"	2"
Grade Elevation (NAVD88)	7'	20'	8'	20'
Soil Description (USCS)	Asphalt 0' - 1' Topsoil 1' - 3' SP 3' - 5'	SW 0' - 15'	Asphalt 0' - 0.5' Concrete 1' - 3' SP 3' - 5'	Topsoil 0' - .5' Urban Fill 0.5' - 6' SP 6' - 10' SW 10' - 15'
Soil Material Origin	Asphalt (0-1'), Native (1-5')	Native (0-15')	Asphalt and Imported Fill (0-3'), Native (3-5')	Native (0-15')
GPS Coordinates	40°49'23.12"N 73°38'48.96"	40°49'22.91"N 73°38'48.43"W	40°49'22.75"N 73°38'49.05"W	40°49'22.50"N 73°38'48.32"W

Table I: Soil Boring Details (Continued)				
Soil Boring	SB-113	SB-114	SB-115	SB-116
Boring Depth	15'	15'	15'	5'
Boring Diameter	2"	2"	2"	2"
Grade Elevation (NAVD88)	20'	20'	20'	10'
Soil Description (USCS)	Urban Fill 0' - .5' SW 0.5' - 5' SP 5' - 14' SW 14' - 15'	Topsoil 0' - 0.5' SP 0.5' - 4' SW 4' - 5' SP 5' - 7' SW 7' - 15'	Topsoil 0' - 1' SP 1' - 5' SW 5' - 10' SP 10' - 14' SW 14' - 15'	Asphalt 0' - 1' SP 1' - 3' SW 3' - 5'
Soil Material Origin	Imported Fill (0-8'), Native (8-15')	Native (0-15')	Imported Fill (0-9'), Native (9-15')	Asphalt (0-1'), Native (1-5')
GPS Coordinates	40°49'22.61"N 73°38'47.52"W	40°49'22.77"N 73°38'46.98"W	40°49'22.21"N 73°38'47.12"W	40°49'22.25"N 73°38'45.87"W

Table I: Soil Boring Details (Continued)				
Soil Boring	SB-117	SB-118	SB-119	SB-120
Boring Depth	55'	5'	5'	5'
Boring Diameter	2"	2"	2"	2"
Grade Elevation (NAVD88)	10	8'	8'	8'
Soil Description (USCS)	Asphalt 0' - 1' SW 1' - 5'	Concrete 0' - 1' SP 1' - 5'	Asphalt 0' - 1' SW 1' - 2' SP 2' - 5'	Asphalt 0' - 1' Topsoil 1' - 2' SW 2' - 5'
Soil Material Origin	Asphalt (0-1'), Native (1-5')	Concrete (0-1'), Native (1-5')	Asphalt (0-1'), Native (1-5')	Asphalt (0-1'), Native (2-5')
GPS Coordinates	40°49'21.85"N 73°38'45.88"W	40°49'22.34"N 73°38'49.37"W	40°49'21.84"N 73°38'48.68"W	40°49'21.81"N 73°38'49.50"W

Table I: Soil Boring Details (Continued)		
Soil Boring	SB-121	SB-122
Boring Depth	5'	5'
Boring Diameter	2"	2"
Grade Elevation (NAVD88)	8'	9'
Soil Description (USCS)	Asphalt 0' - 1' SP 1' - 5'	Asphalt 0' - 1' SP 1' - 2' SW 2' - 5'
Soil Material Origin	Asphalt (0-1'), Native (1-5')	Asphalt (0-1'), Native (1-5')
GPS Coordinates	40°49'21.60"N 73°38'48.20"W	40°49'21.50"N 73°38'47.37"W

Table II: Soil Sample Collection Data								
Sample ID	SB-101 1'-3'	SB-101 23'-25'	SB-102 1'-3'	SB-102 20'-22'	SB-103 1'-3'	SB-103 16'-18'	SB-104 1'-3'	SB-104 16'-18'
Collection Date	April 26, 2023	April 26, 2023	April 26, 2023	April 26, 2023	April 27, 2023	April 27, 2023	April 26, 2023	April 26, 2023
Sampled Depth (bgs)	1' - 3'	23' - 25'	1' - 3'	20' - 22'	1' - 3'	16' - 18'	1' - 3'	16' - 18'
Analyses Performed	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633

Table II: Soil Sample Collection Data (Continued)								
Sample ID	SB-105 1'-3'	SB-105 12'-14'	SB-106 1'-3'	SB-106 12'-14'	SB-107 1'-3'	SB-107 12'-14'	SB-108 1'-3'	SB-108 3'-5'
Collection Date	April 26, 2023	April 26, 2023	April 26, 2023	April 26, 2023	April 27, 2023	April 27, 2023	April 26, 2023	April 26, 2023
Sampled Depth (bgs)	1' - 3'	12' - 14'	1' - 3'	12' - 14'	1' - 3'	12' - 14'	1' - 3'	3' - 5'
Analyses Performed	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633

Table II: Soil Sample Collection Data (Continued)								
Sample ID	SB-109 1'-3'	SB-109 3'-5'	SB-110 1'-3'	SB-110 12'-14'	SB-111 1'-3'	SB-112 1'-3'	SB-112 11' - 13'	SB-113 1'-3'
Collection Date	April 26, 2023	April 26, 2023	April 27, 2023	April 27, 2023	April 26, 2023	April 27, 2023	April 27, 2023	April 27, 2023
Sampled Depth (bgs)	1' - 3'	3' - 5'	1' - 3'	12' - 14'	1' - 3'	1' - 3'	11' - 13'	1' - 3'
Analyses Performed	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633

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Table II: Soil Sample Collection Data (Continued)								
Sample ID	SB-113 12'-14'	SB-114 1'-3'	SB-114 12'-14'	SB-115 1'-3'	SB-115 12'-14'	SB-116 1'-3'	SB-116 3'-5'	SB-117 1'-3'
Collection Date	April 27, 2023	April 27, 2023	April 27, 2023	April 27, 2023	April 27, 2023	April 26, 2023	April 26, 2023	April 26, 2023
Sampled Depth (bgs)	12' - 14'	1' - 3'	12' - 14'	1' - 3'	12' - 14'	1' - 3'	3' - 5'	1' - 3'
Analyses Performed	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633

Table II: Soil Sample Collection Data (Continued)								
Sample ID	SB-117 3' - 5'	SB-118 1' - 3'	SB-118 3' - 5'	SB-119 1' - 3'	SB-119 3' - 5'	SB-120 1' - 3'	SB-120 3' - 5'	SB-121 1' - 3'
Collection Date	April 26, 2023	April 26, 2023	April 26, 2023	April 26, 2023	April 26, 2023	April 26, 2023	April 26, 2023	April 26, 2023
Sampled Depth (bgs)	3' - 5'	1' - 3'	3' - 5'	1' - 3'	3' - 5'	1' - 3'	3' - 5'	1' - 3'
Analyses Performed	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633

Table II: Soil Sample Collection Data (Continued)			
Sample ID	SB-121 3' - 5'	SB-122 1' - 3'	SB-122 3' - 5'
Collection Date	April 26, 2023	April 26, 2023	April 26, 2023
Sampled Depth (bgs)	3' - 5'	1' - 3'	3' - 5'
Analyses Performed	USEPA Method 1633	USEPA Method 1633	USEPA Method 1633

Table III: Soil Analytical data																		
Sample ID	USEPA Residential Regional Screening Levels for Soil	USEPA Industrial Regional Screening Levels for Soil	NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Protection Of GW-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Commercial-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Residential-Oct2020	SB-101 1-3		SB-101 23-25		SB-102 1-3		SB-102 20-22		SB-103 1-3		SB-103 16-18	
Sampling Date							4/26/2023		4/26/2023		4/26/2023		4/26/2023		4/26/2023		4/26/2023	
Client Matrix							Soil		Soil		Soil		Soil		Soil		Soil	
Compound							Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
<b>PFAS, EPA 1633 Target List</b>	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
<b>Dilution Factor</b>							1		1		1		1		1		1	
11CL-PF3OUdS	~	~	~	~	~	~	0.32	U	0.34	U	0.32	U	0.33	U	0.34	U	0.35	U
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	~	~	~	~	~	~	0.78	U	0.81	U	0.79	U	0.80	U	0.81	U	0.86	U
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	~	~	~	~	~	~	0.61	U	0.64	U	0.62	U	0.63	U	0.64	U	0.68	U
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	~	~	~	~	~	~	0.61	U	0.64	U	0.62	U	0.63	U	0.64	U	0.68	U
3-Perfluoroheptyl propanoic acid (FHpPA)	~	~	~	~	~	~	1.54	U	1.62	U	1.56	U	1.58	U	1.62	U	1.71	U
3-Perfluoropentyl propanoic acid (FPePA)	~	~	~	~	~	~	2.16	U	2.26	U	2.19	U	2.21	U	2.26	U	2.39	U
3-Perfluoropropyl propanoic acid (FPrPA)	~	~	~	~	~	~	0.65	U	0.68	U	0.66	U	0.67	U	0.68	U	0.72	U
9CL-PF3ONS	~	~	~	~	~	~	0.25	U	0.27	U	0.26	U	0.26	U	0.27	U	0.28	U
ADONA	~	~	~	~	~	~	0.18	U	0.19	U	0.18	U	0.18	U	0.19	U	0.20	U
HFPO-DA (Gen-X)	~	~	~	~	~	~	0.63	U	0.66	U	0.63	U	0.64	U	0.66	U	0.69	U
N-EtFOSA	~	~	~	~	~	~	0.20	U	0.21	U	0.21	U	0.21	U	0.21	U	0.23	U
N-EtFOSAA	~	~	~	~	~	~	0.20	U	0.21	U	0.20	U	0.21	U	0.21	U	0.22	U
N-EtFOSE	~	~	~	~	~	~	0.72	U	0.75	U	0.73	U	0.74	U	0.75	U	0.79	U
N-MeFOSA	~	~	~	~	~	~	0.19	U	0.19	U	0.19	U	0.19	U	0.19	U	0.21	U
N-MeFOSAA	~	~	~	~	~	~	0.15	U	0.16	U	0.15	U	0.16	U	0.16	U	0.17	U
N-MeFOSE	~	~	~	~	~	~	0.63	U	0.66	U	0.64	U	0.64	U	0.66	U	0.70	U
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	~	~	~	~	0.14	U	0.15	U	0.15	U	0.15	U	0.15	U	0.16	U
Perfluoro-1-decanesulfonic acid (PFDS)	~	~	~	~	~	~	0.20	U	0.21	U	0.20	U	0.20	U	0.21	U	0.22	U
Perfluoro-1-heptanesulfonic acid (PFHpS)	~	~	~	~	~	~	0.16	U	0.17	U	0.16	U	0.16	U	0.17	U	0.18	U
Perfluoro-1-nonanesulfonic acid (PFNS)	~	~	~	~	~	~	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U	0.14	U
Perfluoro-1-octanesulfonamide (FOSA)	~	~	~	~	~	~	0.15	U	0.16	U	0.15	U	0.15	U	0.16	U	0.17	U
Perfluoro-1-pentanesulfonate (PFPeS)	~	~	~	~	~	~	0.16	U	0.17	U	0.16	U	0.17	U	0.17	U	0.18	U
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	~	~	~	~	~	~	0.20	U	0.21	U	0.20	U	0.20	U	0.21	U	0.22	U
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	~	~	~	~	0.06	U	0.07	U	0.06	U	0.07	U	0.07	U	0.07	U
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	~	~	~	~	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.11	U
Perfluorobutanesulfonic acid (PFBS)	~	~	~	~	~	~	0.11	U	0.12	U	0.12	U	0.12	U	0.12	U	0.13	U
Perfluorodecanoic acid (PFDA)	~	~	~	~	~	~	0.20	U	0.21	U	0.20	U	0.20	U	0.21	U	0.22	U
Perfluorododecanesulfonic acid (PFDoS)	~	~	~	~	~	~	0.17	U	0.18	U	0.18	U	0.18	U	0.18	U	0.19	U
Perfluorododecanoic acid (PFDoA)	~	~	~	~	~	~	0.17	U	0.18	U	0.17	U	0.17	U	0.18	U	0.19	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	~	~	~	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	0.12	U
Perfluorohexanesulfonic acid (PFHxS)	~	~	~	~	~	~	0.18	U	0.19	U	0.19	U	0.19	U	0.21		0.20	U
Perfluorohexanoic acid (PFHxA)	~	~	~	~	~	~	0.05	U	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U
Perfluoro-n-butanoic acid (PFBA)	~	~	~	~	~	~	0.11	U	0.12	U	0.11	U	0.12	U	0.12	U	0.12	U
Perfluorononanoic acid (PFNA)	~	~	~	~	~	~	0.19	U	0.20	U	0.20	U	0.20	U	0.39		0.22	U
Perfluorooctanesulfonic acid (PFOS)	126	1640	0.88	1.00	440	8.80	0.17	U	0.18	U	0.17	U	0.18	U	2.26		0.19	U
Perfluorooctanoic acid (PFOA)	190	2460	0.66	0.80	500	6.60	0.18	U	0.19	U	0.18	U	0.18	U	0.19	U	0.20	U
Perfluoropentanoic acid (PFPeA)	~	~	~	~	~	~	0.11	U	0.12	U	0.11	U	0.12	U	0.12	U	0.12	U
Perfluorotetradecanoic acid (PFTA)	~	~	~	~	~	~	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	0.12	U
Perfluorotridecanoic acid (PFTTrDA)	~	~	~	~	~	~	0.13	U	0.14	U	0.13	U	0.13	U	0.14	U	0.14	U
Perfluoroundecanoic acid (PFUnA)	~	~	~	~	~	~	0.20	U	0.21	U	0.21	U	0.21	U	0.22	J	0.23	U

Table III: Soil Analytical data (continued)

Sample ID	USEPA Residential Regional Screening Levels for Soil		USEPA Industrial Regional Screening Levels for Soil	NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Protection Of GW-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Commercial-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Residential-Oct2020	SB-104 1-3 4/26/2023 Soil		SB-104 16-18 4/26/2023 Soil		SB-105 1-3 4/26/2023 Soil		SB-105 12-14 4/26/2023 Soil		SB-106 1-3 4/26/2023 Soil		SB-106 12-14 4/26/2023 Soil		
Sampling Date																				
Client Matrix																				
Compound	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	
<b>PFAS, EPA 1633 Target List</b>	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg													
<b>Dilution Factor</b>								1		1		1		1		1		1		1
11CL-PF3OUdS	~	~	~	~	~	~	~	0.32	U	0.35	U	0.33	U	0.33	U	0.32	U	0.31	U	0.31
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	~	~	~	~	~	~	~	0.78	U	0.86	U	0.81	U	0.79	U	0.78	U	0.76	U	0.76
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	~	~	~	~	~	~	~	0.62	U	0.68	U	0.64	U	0.63	U	0.61	U	0.60	U	0.60
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	~	~	~	~	~	~	~	0.62	U	0.68	U	0.64	U	0.63	U	0.61	U	0.60	U	0.60
3-Perfluoroheptyl propanoic acid	~	~	~	~	~	~	~	1.55	U	1.71	U	1.60	U	1.58	U	1.54	U	1.51	U	1.51
3-Perfluoropentyl propanoic acid (FPePA)	~	~	~	~	~	~	~	2.17	U	2.39	U	2.24	U	2.21	U	2.16	U	2.12	U	2.12
3-Perfluoropropyl propanoic acid (FPrPA)	~	~	~	~	~	~	~	0.66	U	0.72	U	0.68	U	0.67	U	0.65	U	0.64	U	0.64
9CL-PF3ONS	~	~	~	~	~	~	~	0.25	U	0.28	U	0.26	U	0.26	U	0.25	U	0.25	U	0.25
ADONA	~	~	~	~	~	~	~	0.18	U	0.20	U	0.19	U	0.18	U	0.18	U	0.18	U	0.18
HFPO-DA (Gen-X)	~	~	~	~	~	~	~	0.63	U	0.69	U	0.65	U	0.64	U	0.63	U	0.61	U	0.61
N-EtFOSA	~	~	~	~	~	~	~	0.21	U	0.23	U	0.21	U	0.21	U	0.20	U	0.20	U	0.20
N-EtFOSAA	~	~	~	~	~	~	~	0.20	U	0.22	U	0.21	U	0.20	U	0.20	U	0.20	U	0.20
N-EtFOSE	~	~	~	~	~	~	~	0.72	U	0.79	U	0.74	U	0.73	U	0.72	U	0.70	U	0.70
N-MeFOSA	~	~	~	~	~	~	~	0.19	U	0.21	U	0.19	U	0.19	U	0.19	U	0.18	U	0.18
N-MeFOSAA	~	~	~	~	~	~	~	0.15	U	0.17	U	0.16	U	0.16	U	0.15	U	0.15	U	0.15
N-MeFOSE	~	~	~	~	~	~	~	0.63	U	0.70	U	0.65	U	0.64	U	0.63	U	0.62	U	0.62
Perfluoro(2-ethoxyethane)sulfonic acid	~	~	~	~	~	~	~	0.14	U	0.16	U	0.15	U	0.15	U	0.14	U	0.14	U	0.14
Perfluoro-1-decanesulfonic acid (PFDS)	~	~	~	~	~	~	~	0.20	U	0.22	U	0.20	U	0.20	U	0.20	U	0.19	U	0.19
Perfluoro-1-heptanesulfonic acid (PFHpS)	~	~	~	~	~	~	~	0.16	U	0.18	U	0.17	U	0.16	U	0.16	U	0.16	U	0.16
Perfluoro-1-nonanesulfonic acid (PFNS)	~	~	~	~	~	~	~	0.13	U	0.14	U	0.13	U	0.13	U	0.13	U	0.13	U	0.13
Perfluoro-1-octanesulfonamide (FOSA)	~	~	~	~	~	~	~	0.15	U	0.17	U	0.16	U	0.15	U	0.15	U	0.15	U	0.15
Perfluoro-1-pentanesulfonate (PFPeS)	~	~	~	~	~	~	~	0.16	U	0.18	U	0.17	U	0.17	U	0.16	U	0.16	U	0.16
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	~	~	~	~	~	~	~	0.20	U	0.22	U	0.21	U	0.20	U	0.20	U	0.20	U	0.20
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	~	~	~	~	~	0.06	U	0.07	U	0.07	U	0.07	U	0.06	U	0.06	U	0.06
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	~	~	~	~	~	0.10	U	0.11	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10
Perfluorobutanesulfonic acid (PFBS)	~	~	~	~	~	~	~	0.12	U	0.13	U	0.12	U	0.12	U	0.11	U	0.11	U	0.11
Perfluorodecanoic acid (PFDA)	~	~	~	~	~	~	~	0.20	U	0.22	U	0.20	U	0.20	U	0.20	U	0.19	U	0.19
Perfluorododecanesulfonic acid (PFDoS)	~	~	~	~	~	~	~	0.18	U	0.19	U	0.18	U	0.18	U	0.17	U	0.17	U	0.17
Perfluorododecanoic acid (PFDoA)	~	~	~	~	~	~	~	0.17	U	0.19	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17
Perfluoroheptanoic acid (PFHpA)	~	~	~	~	~	~	~	0.11	U	0.12	U	0.11	U	0.11	U	0.11	U	0.11	U	0.11
Perfluorohexanesulfonic acid (PFHxS)	~	~	~	~	~	~	~	0.19	U	0.20	U	0.19	U	0.19	U	0.18	U	0.18	U	0.18
Perfluorohexanoic acid (PFHxA)	~	~	~	~	~	~	~	0.05	U	0.06	U	0.06	U	0.06	U	0.05	U	0.05	U	0.05
Perfluoro-n-butanoic acid (PFBA)	~	~	~	~	~	~	~	0.11	U	0.12	U	0.12	U	0.12	U	0.11	U	0.11	U	0.11
Perfluorononanoic acid (PFNA)	~	~	~	~	~	~	~	0.20	U	0.22	U	0.20	U	0.20	U	0.19	U	0.19	U	0.19
Perfluorooctanesulfonic acid (PFOS)	126	1640	0.88	1.00	440	8.80	~	0.86		0.19	J	0.18	U	0.18	U	0.17	U	0.17	U	0.17
Perfluorooctanoic acid (PFOA)	190	2460	0.66	0.80	500	6.60	~	0.21		0.20	U	0.18	U	0.18	U	0.18	U	0.17	U	0.17
Perfluoropentanoic acid (PFPeA)	~	~	~	~	~	~	~	0.11	U	0.12	U	0.12	U	0.12	U	0.11	U	0.11	U	0.11
Perfluorotetradecanoic acid (PFTA)	~	~	~	~	~	~	~	0.11	U	0.12	U	0.11	U	0.11	U	0.11	U	0.10	U	0.10
Perfluorotridecanoic acid (PFTrDA)	~	~	~	~	~	~	~	0.13	U	0.14	U	0.13	U	0.13	U	0.13	U	0.13	U	0.13
Perfluoroundecanoic acid (PFUnA)	~	~	~	~	~	~	~	0.21	U	0.23	U	0.21	U	0.21	U	0.20	U	0.20	U	0.20

Table III: Soil Analytical data (continued)

Sample ID	USEPA Residential Regional Screening Levels for Soil		USEPA Industrial Regional Screening Levels for Soil	NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Protection Of GW-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Commercial-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Residential-Oct2020	SB 107 1-3 4/27/2023 Soil		SB 107 12-14 4/27/2023 Soil		SB-108 1-3 4/26/2023 Soil		SB-108 3-5 4/26/2023 Soil		SB-109 1-3 4/26/2023 Soil		SB-109 3-5 4/26/2023 Soil			
Sampling Date								Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q		
Client Matrix																					
Compound	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
<b>PFAS, EPA 1633 Target List</b>																					
<b>Dilution Factor</b>								1		1		1		1		1		1		1	
11CL-PF3OUdS	~	~	~	~	~	~	~	2.96	U	0.33	U	0.33	U	0.35	U	0.35	U	0.37	U	0.37	U
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	~	~	~	~	~	~	~	7.19	U	0.80	U	0.79	U	0.84	U	0.85	U	0.90	U	0.90	U
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	~	~	~	~	~	~	~	5.67	U	0.63	U	0.62	U	0.66	U	0.67	U	0.71	U	0.71	U
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	~	~	~	~	~	~	~	5.67	U	0.63	U	0.62	U	0.66	U	0.67	U	0.71	U	0.71	U
3-Perfluoroheptyl propanoic acid (FHpPA)	~	~	~	~	~	~	~	14.30	U	1.59	U	1.57	U	1.67	U	1.70	U	1.79	U	1.79	U
3-Perfluoropentyl propanoic acid (FPePA)	~	~	~	~	~	~	~	20.00	U	2.23	U	2.20	U	2.33	U	2.37	U	2.50	U	2.50	U
3-Perfluoropropyl propanoic acid (FPrPA)	~	~	~	~	~	~	~	6.04	U	0.67	U	0.66	U	0.70	U	0.72	U	0.76	U	0.76	U
9CL-PF3ONS	~	~	~	~	~	~	~	2.34	U	0.26	U	0.26	U	0.27	U	0.28	U	0.29	U	0.29	U
ADONA	~	~	~	~	~	~	~	1.66	U	0.19	U	0.18	U	0.19	U	0.20	U	0.21	U	0.21	U
HFPO-DA (Gen-X)	~	~	~	~	~	~	~	5.79	U	0.65	U	0.64	U	0.68	U	0.69	U	0.73	U	0.73	U
N-EtFOSA	~	~	~	~	~	~	~	1.89	U	0.21	U	0.21	U	0.22	U	0.22	U	0.24	U	0.24	U
N-EtFOSAA	~	~	~	~	~	~	~	1.85	U	0.21	U	0.20	U	0.22	U	0.22	U	0.23	U	0.23	U
N-EtFOSE	~	~	~	~	~	~	~	6.64	U	0.74	U	0.73	U	0.77	U	0.79	U	0.83	U	0.83	U
N-MeFOSA	~	~	~	~	~	~	~	1.71	U	0.19	U	0.19	U	0.20	U	0.20	U	0.22	U	0.22	U
N-MeFOSAA	~	~	~	~	~	~	~	1.41	U	0.16	U	0.16	U	0.16	U	0.17	U	0.18	U	0.18	U
N-MeFOSE	~	~	~	~	~	~	~	5.82	U	0.65	U	0.64	U	0.68	U	0.69	U	0.73	U	0.73	U
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	~	~	~	~	~	1.32	U	0.15	U	0.15	U	0.15	U	0.16	U	0.17	U	0.17	U
Perfluoro-1-decanesulfonic acid (PFDS)	~	~	~	~	~	~	~	1.82	U	0.20	U	0.20	U	0.21	U	0.22	U	0.23	U	0.23	U
Perfluoro-1-heptanesulfonic acid (PFHpS)	~	~	~	~	~	~	~	1.48	U	0.16	U	0.16	U	0.17	U	0.18	U	0.19	U	0.19	U
Perfluoro-1-nonanesulfonic acid (PFNS)	~	~	~	~	~	~	~	1.18	U	0.13	U	0.13	U	0.14	U	0.14	U	0.15	U	0.15	U
Perfluoro-1-octanesulfonamide (FOSA)	~	~	~	~	~	~	~	1.39	U	0.16	U	0.15	U	0.16	U	0.17	U	0.17	U	0.17	U
Perfluoro-1-pentanesulfonate (PFPeS)	~	~	~	~	~	~	~	1.50	U	0.17	U	0.16	U	0.17	U	0.18	U	0.19	U	0.19	U
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	~	~	~	~	~	~	~	1.84	U	0.21	U	0.20	U	0.21	U	0.22	U	0.23	U	0.23	U
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	~	~	~	~	~	0.59	U	0.07	U	0.06	U	0.07	U	0.07	U	0.07	U	0.07	U
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	~	~	~	~	~	0.91	U	0.10	U	0.10	U	0.11	U	0.11	U	0.11	U	0.11	U
Perfluorobutanesulfonic acid (PFBS)	~	~	~	~	~	~	~	1.06	U	0.12	U	0.12	U	0.12	U	0.13	U	0.13	U	0.13	U
Perfluorodecanoic acid (PFDA)	~	~	~	~	~	~	~	1.82	U	0.20	U	0.20	U	0.21	U	0.22	U	0.23	U	0.23	U
Perfluorododecanesulfonic acid (PFDoS)	~	~	~	~	~	~	~	1.61	U	0.18	U	0.18	U	0.19	U	0.19	U	0.20	U	0.20	U
Perfluorododecanoic acid (PFDoA)	~	~	~	~	~	~	~	1.55	U	0.17	U	0.17	U	0.18	U	0.18	U	0.19	U	0.19	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	~	~	~	~	1.00	U	0.11	U	0.11	U	0.12	U	0.12	U	0.13	U	0.13	U
Perfluorohexanesulfonic acid (PFHxS)	~	~	~	~	~	~	~	1.71	U	0.19	U	0.19	U	0.20	U	0.20	U	0.21	U	0.21	U
Perfluorohexanoic acid (PFHxA)	~	~	~	~	~	~	~	0.51	U	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U
Perfluoro-n-butanoic acid (PFBA)	~	~	~	~	~	~	~	1.04	U	0.12	U	0.11	U	0.12	U	0.12	U	0.13	U	0.13	U
Perfluorononanoic acid (PFNA)	~	~	~	~	~	~	~	1.80	U	0.20	U	0.20	U	0.21	U	0.21	U	0.23	U	0.23	U
Perfluorooctanesulfonic acid (PFOS)	126	1640	0.88	1.00	440	8.80	8.80	1.59	U	0.18	U	0.23		0.19	U	<b>1.37</b>		0.20	U	0.20	U
Perfluorooctanoic acid (PFOA)	190	2460	0.66	0.80	500	6.60	6.60	1.64	U	0.18	U	0.19	J	0.26		0.20	U	0.21	U	0.21	U
Perfluoropentanoic acid (PFPeA)	~	~	~	~	~	~	~	1.04	U	0.12	U	0.11	U	0.12	U	0.12	U	0.13	U	0.13	U
Perfluorotetradecanoic acid (PFTA)	~	~	~	~	~	~	~	0.98	U	0.11	U	0.11	U	0.11	U	0.12	U	0.12	U	0.12	U
Perfluorotridecanoic acid (PFTrDA)	~	~	~	~	~	~	~	1.19	U	0.13	U	0.13	U	0.14	U	0.14	U	0.15	U	0.15	U
Perfluoroundecanoic acid (PFUnA)	~	~	~	~	~	~	~	1.89	U	0.21	U	0.21	U	0.22	U	0.22	U	0.24	U	0.24	U

Table III: Soil Analytical data (continued)

Sample ID	USEPA Residential Regional Screening Levels for Soil	USEPA Industrial Regional Screening Levels for Soil	NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Protection Of GW-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Commercial-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Residential-Oct2020	SB 110 1-3		SB 110 12-14		SB-111 1-3		SB 112 1-3		SB 112 11-13	
Sampling Date							4/27/2023		4/27/2023		4/26/2023		4/27/2023		4/27/2023	
Client Matrix							Soil		Soil		Soil		Soil		Soil	
Compound							Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
<b>PFAS, EPA 1633 Target List</b>	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
<b>Dilution Factor</b>							1		1		1		1		1	
11CL-PF3OUdS	~	~	~	~	~	~	0.32	U	0.32	U	0.34	U	0.33	U	0.36	U
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	~	~	~	~	~	~	0.79	U	0.78	U	0.82	U	0.81	U	0.88	U
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	~	~	~	~	~	~	0.62	U	0.61	U	0.65	U	0.64	U	0.69	U
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	~	~	~	~	~	~	0.62	U	0.61	U	0.65	U	0.64	U	0.69	U
3-Perfluoroheptyl propanoic acid (FHpPA)	~	~	~	~	~	~	1.56	U	1.54	U	1.63	U	1.60	U	1.75	U
3-Perfluoropentyl propanoic acid (FPePA)	~	~	~	~	~	~	2.18	U	2.16	U	2.28	U	2.24	U	2.45	U
3-Perfluoropropyl propanoic acid (FPpPA)	~	~	~	~	~	~	0.66	U	0.65	U	0.69	U	0.68	U	0.74	U
9CL-PF3ONS	~	~	~	~	~	~	0.26	U	0.25	U	0.27	U	0.26	U	0.29	U
ADONA	~	~	~	~	~	~	0.18	U	0.18	U	0.19	U	0.19	U	0.20	U
HFPO-DA (Gen-X)	~	~	~	~	~	~	0.63	U	0.63	U	0.66	U	0.65	U	0.71	U
N-EtFOSA	~	~	~	~	~	~	0.21	U	0.20	U	0.22	U	0.21	U	0.23	U
N-EtFOSAA	~	~	~	~	~	~	0.20	U	0.20	U	0.21	U	0.21	U	0.23	U
N-EtFOSE	~	~	~	~	~	~	0.72	U	0.72	U	0.76	U	0.74	U	0.81	U
N-MeFOSA	~	~	~	~	~	~	0.19	U	0.19	U	0.20	U	0.19	U	0.21	U
N-MeFOSAA	~	~	~	~	~	~	0.15	U	0.15	U	0.16	U	0.16	U	0.17	U
N-MeFOSE	~	~	~	~	~	~	0.64	U	0.63	U	0.66	U	0.65	U	0.71	U
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	~	~	~	~	0.14	U	0.14	U	0.15	U	0.15	U	0.16	U
Perfluoro-1-decanesulfonic acid (PFDS)	~	~	~	~	~	~	0.20	U	0.20	U	0.21	U	0.20	U	0.22	U
Perfluoro-1-heptanesulfonic acid (PFHpS)	~	~	~	~	~	~	0.16	U	0.16	U	0.17	U	0.17	U	0.18	U
Perfluoro-1-nonanesulfonic acid (PFNS)	~	~	~	~	~	~	0.13	U	0.13	U	0.14	U	0.13	U	0.15	U
Perfluoro-1-octanesulfonamide (FOSA)	~	~	~	~	~	~	0.15	U	0.15	U	0.16	U	0.16	U	0.17	U
Perfluoro-1-pentanesulfonate (PFPeS)	~	~	~	~	~	~	0.16	U	0.16	U	0.17	U	0.17	U	0.18	U
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	~	~	~	~	~	~	0.20	U	0.20	U	0.21	U	0.21	U	0.23	U
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	~	~	~	~	0.06	U	0.06	U	0.07	U	0.07	U	0.07	U
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	~	~	~	~	0.10	U	0.10	U	0.10	U	0.10	U	0.11	U
Perfluorobutanesulfonic acid (PFBS)	~	~	~	~	~	~	0.12	U	0.11	U	0.12	U	0.12	U	0.13	U
Perfluorodecanoic acid (PFDA)	~	~	~	~	~	~	0.20	U	0.20	U	0.21	U	0.20	U	0.22	U
Perfluorododecanesulfonic acid (PFDoS)	~	~	~	~	~	~	0.18	U	0.17	U	0.18	U	0.18	U	0.20	U
Perfluorododecanoic acid (PFDoA)	~	~	~	~	~	~	0.17	U	0.17	U	0.18	U	0.17	U	0.19	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	~	~	~	0.11	U	0.11	U	0.11	U	0.11	U	0.12	U
Perfluorohexanesulfonic acid (PFHxS)	~	~	~	~	~	~	0.19	U	0.18	U	0.20	U	0.19	U	0.21	U
Perfluorohexanoic acid (PFHxA)	~	~	~	~	~	~	0.06	U	0.05	U	0.06	U	0.06	U	0.06	U
Perfluoro-n-butanoic acid (PFBA)	~	~	~	~	~	~	0.11	U	0.36	J	0.12	U	0.45	J	0.67	J
Perfluorononanoic acid (PFNA)	~	~	~	~	~	~	0.20	U	0.19	U	0.21	U	0.20	U	0.22	U
Perfluorooctanesulfonic acid (PFOS)	126	1640	0.88	1.00	440	8.80	0.17	U	0.25		0.18	U	0.18	U	0.20	U
Perfluorooctanoic acid (PFOA)	190	2460	0.66	0.80	500	6.60	0.18	U	0.18	U	0.19	U	0.18	U	0.20	U
Perfluoropentanoic acid (PFPeA)	~	~	~	~	~	~	0.11	U	0.11	U	0.12	U	0.12	U	0.13	U
Perfluorotetradecanoic acid (PFTA)	~	~	~	~	~	~	0.11	U	0.11	U	0.11	U	0.11	U	0.12	U
Perfluorotridecanoic acid (PFTrDA)	~	~	~	~	~	~	0.13	U	0.13	U	0.14	U	0.13	U	0.15	U
Perfluoroundecanoic acid (PFUnA)	~	~	~	~	~	~	0.21	U	0.20	U	0.22	U	0.21	U	0.23	U

Table III: Soil Analytical data (continued)																		
Sample ID	USEPA Residential Regional Screening Levels for Soil	USEPA Industrial Regional Screening Levels for Soil	NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Protection Of GW-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Commercial-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Residential-Oct2020	SB 113 1-3		SB 113 12-14		SB 114 1-3		SB 114 12-14		SB 115 1-3		SB 115 12-14	
Sampling Date							4/27/2023		4/27/2023		4/27/2023		4/27/2023		4/27/2023		4/27/2023	
Client Matrix							Soil		Soil		Soil		Soil		Soil		Soil	
Compound	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
<b>PFAS, EPA 1633 Target List</b>	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
<b>Dilution Factor</b>							1		1		1		1		1		1	
11CL-PF3OUdS	~	~	~	~	~	~	0.33	U	0.32	U	0.33	U	0.31	U	0.33	U	0.34	U
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	~	~	~	~	~	~	0.79	U	0.77	U	0.80	U	0.76	U	0.80	U	0.82	U
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	~	~	~	~	~	~	0.62	U	0.61	U	0.63	U	0.60	U	0.63	U	0.65	U
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	~	~	~	~	~	~	0.62	U	0.61	U	0.63	U	0.60	U	0.63	U	0.65	U
3-Perfluoroheptyl propanoic acid (FHpPA)	~	~	~	~	~	~	1.57	U	1.53	U	1.58	U	1.51	U	1.59	U	1.63	U
3-Perfluoropentyl propanoic acid (FPePA)	~	~	~	~	~	~	2.20	U	2.15	U	2.22	U	2.11	U	2.22	U	2.28	U
3-Perfluoropropyl propanoic acid (FPpPA)	~	~	~	~	~	~	0.66	U	0.65	U	0.67	U	0.64	U	0.67	U	0.69	U
9CL-PF3ONS	~	~	~	~	~	~	0.26	U	0.25	U	0.26	U	0.25	U	0.26	U	0.27	U
ADONA	~	~	~	~	~	~	0.18	U	0.18	U	0.18	U	0.18	U	0.19	U	0.19	U
HFPO-DA (Gen-X)	~	~	~	~	~	~	0.64	U	0.62	U	0.64	U	0.61	U	0.65	U	0.66	U
N-EtFOSA	~	~	~	~	~	~	0.21	U	0.20	U	0.21	U	0.20	U	0.21	U	0.22	U
N-EtFOSAA	~	~	~	~	~	~	0.20	U	0.20	U	0.21	U	0.20	U	0.21	U	0.21	U
N-EtFOSE	~	~	~	~	~	~	0.73	U	0.71	U	0.74	U	0.70	U	0.74	U	0.76	U
N-MeFOSA	~	~	~	~	~	~	0.19	U	0.18	U	0.19	U	0.18	U	0.19	U	0.20	U
N-MeFOSAA	~	~	~	~	~	~	0.16	U	0.15	U	0.16	U	0.15	U	0.16	U	0.16	U
N-MeFOSE	~	~	~	~	~	~	0.64	U	0.63	U	0.65	U	0.61	U	0.65	U	0.66	U
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	~	~	~	~	0.15	U	0.14	U	0.15	U	0.14	U	0.15	U	0.15	U
Perfluoro-1-decanesulfonic acid (PFDS)	~	~	~	~	~	~	0.20	U	0.20	U	0.20	U	0.19	U	0.20	U	0.21	U
Perfluoro-1-heptanesulfonic acid (PFHpS)	~	~	~	~	~	~	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.17	U
Perfluoro-1-nonanesulfonic acid (PFNS)	~	~	~	~	~	~	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U	0.14	U
Perfluoro-1-octanesulfonamide (FOSA)	~	~	~	~	~	~	0.15	U	0.15	U	0.15	U	0.15	U	0.16	U	0.16	U
Perfluoro-1-pentanesulfonate (PFPeS)	~	~	~	~	~	~	0.16	U	0.16	U	0.17	U	0.16	U	0.17	U	0.17	U
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	~	~	~	~	0.20	U	0.20	U	0.20	U	0.19	U	0.21	U	0.21	U
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	~	~	~	~	0.06	U	0.06	U	0.07	U	0.06	U	0.07	U	0.07	U
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	~	~	~	~	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
Perfluorobutanesulfonic acid (PFBS)	~	~	~	~	~	~	0.12	U	0.11	U	0.12	U	0.11	U	0.12	U	0.12	U
Perfluorodecanoic acid (PFDA)	~	~	~	~	~	~	0.20	U	0.20	U	0.20	U	0.19	U	0.20	U	0.21	U
Perfluorododecanesulfonic acid (PFDoS)	~	~	~	~	~	~	0.18	U	0.17	U	0.18	U	0.17	U	0.18	U	0.18	U
Perfluorododecanoic acid (PFDoA)	~	~	~	~	~	~	0.17	U	0.17	U	0.17	U	0.16	U	0.17	U	0.18	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	~	~	~	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U
Perfluorohexanesulfonic acid (PFHxS)	~	~	~	~	~	~	0.19	U	0.18	U	0.19	U	0.18	U	0.19	U	0.20	U
Perfluorohexanoic acid (PFHxA)	~	~	~	~	~	~	0.06	U	0.05	U	0.06	U	0.05	U	0.06	U	0.06	U
Perfluoro-n-butanoic acid (PFBA)	~	~	~	~	~	~	0.11	U	0.11	U	0.12	U	0.11	U	0.12	U	0.12	U
Perfluorononanoic acid (PFNA)	~	~	~	~	~	~	0.20	U	0.19	U	0.20	U	0.19	U	0.20	U	0.21	U
Perfluorooctanesulfonic acid (PFOS)	126	1640	0.88	1.00	440	8.80	0.80		0.17	U	0.20		0.17	U	0.18	U	0.18	U
Perfluorooctanoic acid (PFOA)	190	2460	0.66	0.80	500	6.60	0.18	U	0.18	U	0.18	U	0.22		0.18	U	0.19	U
Perfluoropentanoic acid (PFPeA)	~	~	~	~	~	~	0.11	U	0.11	U	0.12	U	0.11	U	0.12	U	0.12	U
Perfluorotetradecanoic acid (PFTA)	~	~	~	~	~	~	0.11	U	0.11	U	0.11	U	0.10	U	0.11	U	0.11	U
Perfluorotridecanoic acid (PFTrDA)	~	~	~	~	~	~	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U	0.14	U
Perfluoroundecanoic acid (PFUnA)	~	~	~	~	~	~	0.21	U	0.20	U	0.21	U	0.20	U	0.21	U	0.22	U

Table III: Soil Analytical data (continued)																		
Sample ID	USEPA Residential Regional Screening Levels for Soil	USEPA Industrial Regional Screening Levels for Soil	NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Protection Of GW-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Commercial-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Residential-Oct2020	SB-116 1-3		SB-116 3-5		SB-117 1-3		SB-117 3-5		SB-118 1-3		SB-118 3-5	
Sampling Date							4/26/2023		4/26/2023		4/26/2023		4/26/2023		4/26/2023		4/26/2023	
Client Matrix							Soil		Soil		Soil		Soil		Soil		Soil	
Compound							Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
<b>PFAS, EPA 1633 Target List</b>	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
<b>Dilution Factor</b>							1		1		1		1		1		1	
11CL-PF3OUdS	~	~	~	~	~	~	0.32	U	0.35	U	0.32	U	0.35	U	0.33	U	0.35	U
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	~	~	~	~	~	~	0.78	U	0.85	U	0.78	U	0.85	U	0.81	U	0.86	U
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	~	~	~	~	~	~	0.62	U	0.67	U	0.62	U	0.67	U	0.64	U	0.68	U
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	~	~	~	~	~	~	0.62	U	0.67	U	0.62	U	0.67	U	0.64	U	0.68	U
3-Perfluoroheptyl propanoic acid (FHpPA)	~	~	~	~	~	~	1.56	U	1.69	U	1.55	U	1.69	U	1.61	U	1.70	U
3-Perfluoropentyl propanoic acid (FPePA)	~	~	~	~	~	~	2.18	U	2.36	U	2.17	U	2.36	U	2.25	U	2.38	U
3-Perfluoropropyl propanoic acid (FPrPA)	~	~	~	~	~	~	0.66	U	0.71	U	0.66	U	0.71	U	0.68	U	0.72	U
9CL-PF3ONS	~	~	~	~	~	~	0.26	U	0.28	U	0.26	U	0.28	U	0.26	U	0.28	U
ADONA	~	~	~	~	~	~	0.18	U	0.20	U	0.18	U	0.20	U	0.19	U	0.20	U
HFPO-DA (Gen-X)	~	~	~	~	~	~	0.63	U	0.69	U	0.63	U	0.68	U	0.65	U	0.69	U
N-EtFOSA	~	~	~	~	~	~	0.21	U	0.22	U	0.21	U	0.22	U	0.21	U	0.23	U
N-EtFOSAA	~	~	~	~	~	~	0.20	U	0.22	U	0.20	U	0.22	U	0.21	U	0.22	U
N-EtFOSE	~	~	~	~	~	~	0.72	U	0.79	U	0.72	U	0.78	U	0.75	U	0.79	U
N-MeFOSA	~	~	~	~	~	~	0.19	U	0.20	U	0.19	U	0.20	U	0.19	U	0.20	U
N-MeFOSAA	~	~	~	~	~	~	0.15	U	0.17	U	0.15	U	0.17	U	0.16	U	0.17	U
N-MeFOSE	~	~	~	~	~	~	0.63	U	0.69	U	0.63	U	0.69	U	0.66	U	0.69	U
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	~	~	~	~	0.14	U	0.16	U	0.14	U	0.16	U	0.15	U	0.16	U
Perfluoro-1-decanesulfonic acid (PFDS)	~	~	~	~	~	~	0.20	U	0.22	U	0.20	U	0.22	U	0.21	U	0.22	U
Perfluoro-1-heptanesulfonic acid (PFHpS)	~	~	~	~	~	~	0.16	U	0.18	U	0.16	U	0.17	U	0.17	U	0.18	U
Perfluoro-1-nonanesulfonic acid (PFNS)	~	~	~	~	~	~	0.13	U	0.14	U	0.13	U	0.14	U	0.13	U	0.14	U
Perfluoro-1-octanesulfonamide (FOSA)	~	~	~	~	~	~	0.15	U	0.17	U	0.15	U	0.16	U	0.16	U	0.17	U
Perfluoro-1-pentanesulfonate (PFPeS)	~	~	~	~	~	~	0.16	U	0.18	U	0.16	U	0.18	U	0.17	U	0.18	U
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	~	~	~	~	0.20	U	0.22	U	0.20	U	0.22	U	0.21	U	0.22	U
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	~	~	~	~	0.06	U	0.07	U	0.06	U	0.07	U	0.07	U	0.07	U
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	~	~	~	~	0.10	U	0.11	U	0.10	U	0.11	U	0.10	U	0.11	U
Perfluorobutanesulfonic acid (PFBS)	~	~	~	~	~	~	0.12	U	0.13	U	0.12	U	0.13	U	0.12	U	0.13	U
Perfluorodecanoic acid (PFDA)	~	~	~	~	~	~	0.20	U	0.22	U	0.20	U	0.22	U	0.21	U	0.22	U
Perfluorododecanesulfonic acid (PFDoS)	~	~	~	~	~	~	0.18	U	0.19	U	0.18	U	0.19	U	0.18	U	0.19	U
Perfluorododecanoic acid (PFDoA)	~	~	~	~	~	~	0.17	U	0.18	U	0.17	U	0.18	U	0.18	U	0.19	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	~	~	~	0.11	U	0.12	U	0.11	U	0.12	U	0.11	U	0.12	U
Perfluorohexanesulfonic acid (PFHxS)	~	~	~	~	~	~	0.19	U	0.20	U	0.19	U	0.20	U	0.19	U	0.20	U
Perfluorohexanoic acid (PFHxA)	~	~	~	~	~	~	0.06	U	0.06	U	0.05	U	0.08	J	0.06	U	0.06	U
Perfluoro-n-butanoic acid (PFBA)	~	~	~	~	~	~	0.11	U	0.12	U	0.11	U	0.12	U	0.12	U	0.12	U
Perfluorononanoic acid (PFNA)	~	~	~	~	~	~	0.20	U	0.21	U	0.20	U	0.21	U	0.20	U	0.22	U
Perfluorooctanesulfonic acid (PFOS)	126	1640	0.88	1.00	440	8.80	0.17	U	0.19	U	0.17	U	0.35		0.18	U	0.19	U
Perfluorooctanoic acid (PFOA)	190	2460	0.66	0.80	500	6.60	0.18	U	0.19	U	0.18	U	0.19	U	0.19	U	0.20	U
Perfluoropentanoic acid (PFPeA)	~	~	~	~	~	~	0.11	U	0.12	U	0.11	U	0.14	J	0.12	U	0.12	U
Perfluorotetradecanoic acid (PFTA)	~	~	~	~	~	~	0.11	U	0.12	U	0.11	U	0.12	U	0.11	U	0.12	U
Perfluorotridecanoic acid (PFTrDA)	~	~	~	~	~	~	0.13	U	0.14	U	0.13	U	0.14	U	0.13	U	0.14	U
Perfluoroundecanoic acid (PFUnA)	~	~	~	~	~	~	0.21	U	0.22	U	0.21	U	0.22	U	0.21	U	0.23	U

Table III: Soil Analytical data (continued)																		
Sample ID	USEPA Residential Regional Screening Levels for Soil	USEPA Industrial Regional Screening Levels for Soil	NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Protection Of GW-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Commercial-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Residential-Oct2020	SB-119 1-3		SB-119 3-5		SB-120 1-3		SB-120 3-5		SB-121 1-3		SB-121 3-5	
Sampling Date							4/26/2023		4/26/2023		4/26/2023		4/26/2023		4/26/2023		4/26/2023	
Client Matrix							Soil		Soil		Soil		Soil		Soil		Soil	
Compound							Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
<b>PFAS, EPA 1633 Target List</b>	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
<b>Dilution Factor</b>							1		1		1		1		1		1	
11CL-PF3OUdS	~	~	~	~	~	~	0.35	U	0.34	U	0.34	U	0.36	U	0.34	U	0.35	U
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	~	~	~	~	~	~	0.86	U	0.83	U	0.82	U	0.87	U	0.83	U	0.85	U
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	~	~	~	~	~	~	0.68	U	0.65	U	0.65	U	0.68	U	0.65	U	0.67	U
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	~	~	~	~	~	~	0.68	U	0.65	U	0.65	U	0.68	U	0.65	U	0.67	U
3-Perfluoroheptyl propanoic acid (FHpPA)	~	~	~	~	~	~	1.71	U	1.64	U	1.63	U	1.72	U	1.64	U	1.69	U
3-Perfluoropentyl propanoic acid (FPePA)	~	~	~	~	~	~	2.39	U	2.30	U	2.28	U	2.41	U	2.29	U	2.36	U
3-Perfluoropropyl propanoic acid (FPrPA)	~	~	~	~	~	~	0.72	U	0.70	U	0.69	U	0.73	U	0.69	U	0.71	U
9CL-PF3ONS	~	~	~	~	~	~	0.28	U	0.27	U	0.27	U	0.28	U	0.27	U	0.28	U
ADONA	~	~	~	~	~	~	0.20	U	0.19	U	0.19	U	0.20	U	0.19	U	0.20	U
HFPO-DA (Gen-X)	~	~	~	~	~	~	0.69	U	0.67	U	0.66	U	0.70	U	0.66	U	0.68	U
N-EtFOSA	~	~	~	~	~	~	0.23	U	0.22	U	0.215	U	0.23	U	0.22	U	0.22	U
N-EtFOSAA	~	~	~	~	~	~	0.22	U	0.21	U	0.21	U	0.22	U	0.21	U	0.22	U
N-EtFOSE	~	~	~	~	~	~	0.79	U	0.76	U	0.8	U	0.80	U	0.76	U	0.78	U
N-MeFOSA	~	~	~	~	~	~	0.21	U	0.20	U	0.20	U	0.21	U	0.20	U	0.20	U
N-MeFOSAA	~	~	~	~	~	~	0.17	U	0.16	U	0.16	U	0.17	U	0.16	U	0.17	U
N-MeFOSE	~	~	~	~	~	~	0.70	U	0.7	U	0.66	U	0.70	U	0.67	U	0.69	U
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	~	~	~	~	0.16	U	0.152	U	0.15	U	0.16	U	0.15	U	0.16	U
Perfluoro-1-decanesulfonic acid (PFDS)	~	~	~	~	~	~	0.22	U	0.21	U	0.21	U	0.22	U	0.21	U	0.22	U
Perfluoro-1-heptanesulfonic acid (PFHpS)	~	~	~	~	~	~	0.18	U	0.17	U	0.17	U	0.18	U	0.17	U	0.17	U
Perfluoro-1-nonanesulfonic acid (PFNS)	~	~	~	~	~	~	0.14	U	0.14	U	0.13	U	0.14	U	0.14	U	0.14	U
Perfluoro-1-octanesulfonamide (FOSA)	~	~	~	~	~	~	0.17	U	0.16	U	0.16	U	0.17	U	0.16	U	0.16	U
Perfluoro-1-pentanesulfonate (PFPeS)	~	~	~	~	~	~	0.18	U	0.17	U	0.17	U	0.18	U	0.17	U	0.18	U
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	~	~	~	~	~	~	0.22	U	0.21	U	0.21	U	0.22	U	0.21	U	0.22	U
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	~	~	~	~	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	~	~	~	~	0.11	U	0.11	U	0.10	U	0.11	U	0.11	U	0.11	U
Perfluorobutanesulfonic acid (PFBS)	~	~	~	~	~	~	0.13	U	0.12	U	0.12	U	0.13	U	0.12	U	0.13	U
Perfluorodecanoic acid (PFDA)	~	~	~	~	~	~	0.22	U	0.21	U	0.21	U	0.22	U	0.21	U	0.22	U
Perfluorododecanesulfonic acid (PFDoS)	~	~	~	~	~	~	0.19	U	0.19	U	0.18	U	0.19	U	0.19	U	0.19	U
Perfluorododecanoic acid (PFDoA)	~	~	~	~	~	~	0.19	U	0.18	U	0.18	U	0.19	U	0.18	U	0.18	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	~	~	~	0.12	U	0.12	U	0.11	U	0.12	U	0.12	U	0.12	U
Perfluorohexanesulfonic acid (PFHxS)	~	~	~	~	~	~	0.20	U	0.20	U	0.19	U	0.21	U	0.20	U	0.20	U
Perfluorohexanoic acid (PFHxA)	~	~	~	~	~	~	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U
Perfluoro-n-butanoic acid (PFBA)	~	~	~	~	~	~	0.12	U	0.12	U	0.12	U	0.13	U	0.12	U	0.12	U
Perfluorononanoic acid (PFNA)	~	~	~	~	~	~	0.22	U	0.21	U	0.21	U	0.22	U	0.21	U	0.21	U
Perfluorooctanesulfonic acid (PFOS)	126	1640	0.88	1.00	440	8.80	0.19	U	0.18	U	0.22		0.19	U	0.18	U	0.25	
Perfluorooctanoic acid (PFOA)	190	2460	0.66	0.80	500	6.60	0.20	U	0.19	U	0.19	U	0.20	U	0.19	U	0.19	U
Perfluoropentanoic acid (PFPeA)	~	~	~	~	~	~	0.12	U	0.12	U	0.12	U	0.13	U	0.12	U	0.12	U
Perfluorotetradecanoic acid (PFTA)	~	~	~	~	~	~	0.12	U	0.11	U	0.11	U	0.12	U	0.11	U	0.12	U
Perfluorotridecanoic acid (PFTrDA)	~	~	~	~	~	~	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U
Perfluoroundecanoic acid (PFUnA)	~	~	~	~	~	~	0.23	U	0.22	U	0.22	U	0.23	U	0.22	U	0.22	U

Table III: Soil Analytical data (continued)

Sample ID Sampling Date Client Matrix	USEPA Residential Regional Screening Levels for Soil	USEPA Industrial Regional Screening Levels for Soil	NYSDEC Part 375 Remedial Soil Guidance PFAS Unrestricted-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Protection Of GW-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Commercial-Oct2020	NYSDEC Part 375 Remedial Soil Guidance PFAS Residential-Oct2020	SB-122 1-3 4/26/2023		SB-122 3-5 4/26/2023	
							Soil		Soil	
Compound							Result	Q	Result	Q
<b>PFAS, EPA 1633 Target List</b>	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg	
<b>Dilution Factor</b>							1		1	
11CL-PF3OUdS	~	~	~	~	~	~	3.28	U	0.36	U
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	~	~	~	~	~	~	7.97	U	0.87	U
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	~	~	~	~	~	~	6.28	U	0.69	U
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	~	~	~	~	~	~	6.28	U	0.69	U
3-Perfluoroheptyl propanoic acid (FHpPA)	~	~	~	~	~	~	15.80	U	1.73	U
3-Perfluoropentyl propanoic acid (FPePA)	~	~	~	~	~	~	22.10	U	2.43	U
3-Perfluoropropyl propanoic acid (FPrPA)	~	~	~	~	~	~	6.69	U	0.73	U
9CL-PF3ONS	~	~	~	~	~	~	2.60	U	0.28	U
ADONA	~	~	~	~	~	~	1.84	U	0.20	U
HFPO-DA (Gen-X)	~	~	~	~	~	~	6.42	U	0.70	U
N-EtFOSA	~	~	~	~	~	~	2.09	U	0.23	U
N-EtFOSAA	~	~	~	~	~	~	2.05	U	0.22	U
N-EtFOSE	~	~	~	~	~	~	7.36	U	0.81	U
N-MeFOSA	~	~	~	~	~	~	1.90	U	0.21	U
N-MeFOSAA	~	~	~	~	~	~	1.56	U	0.17	U
N-MeFOSE	~	~	~	~	~	~	6.45	U	0.71	U
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	~	~	~	~	~	~	1.47	U	0.16	U
Perfluoro-1-decanesulfonic acid (PFDS)	~	~	~	~	~	~	2.02	U	0.22	U
Perfluoro-1-heptanesulfonic acid (PFHpS)	~	~	~	~	~	~	1.64	U	0.18	U
Perfluoro-1-nonanesulfonic acid (PFNS)	~	~	~	~	~	~	1.31	U	0.14	U
Perfluoro-1-octanesulfonamide (FOSA)	~	~	~	~	~	~	1.54	U	0.17	U
Perfluoro-1-pentanesulfonate (PFPeS)	~	~	~	~	~	~	1.66	U	0.18	U
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	~	~	~	~	~	~	2.04	U	0.22	U
Perfluoro-4-oxapentanoic acid (PFMPA)	~	~	~	~	~	~	0.65	U	0.07	U
Perfluoro-5-oxahexanoic acid (PFMBA)	~	~	~	~	~	~	1.01	U	0.11	U
Perfluorobutanesulfonic acid (PFBS)	~	~	~	~	~	~	1.17	U	0.13	U
Perfluorodecanoic acid (PFDA)	~	~	~	~	~	~	2.02	U	0.22	U
Perfluorododecanesulfonic acid (PFDoS)	~	~	~	~	~	~	1.78	U	0.20	U
Perfluorododecanoic acid (PFDoA)	~	~	~	~	~	~	1.72	U	0.19	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	~	~	~	1.11	U	0.12	U
Perfluorohexanesulfonic acid (PFHxS)	~	~	~	~	~	~	1.89	U	0.21	U
Perfluorohexanoic acid (PFHxA)	~	~	~	~	~	~	0.56	U	0.06	U
Perfluoro-n-butanoic acid (PFBA)	~	~	~	~	~	~	1.15	U	0.13	U
Perfluorononanoic acid (PFNA)	~	~	~	~	~	~	1.99	U	0.22	U
Perfluorooctanesulfonic acid (PFOS)	126	1640	0.88	1.00	440	8.80	1.76	U	0.19	U
Perfluorooctanoic acid (PFOA)	190	2460	0.66	0.80	500	6.60	1.82	U	0.20	U
Perfluoropentanoic acid (PFPeA)	~	~	~	~	~	~	1.15	U	0.13	U
Perfluorotetradecanoic acid (PFTA)	~	~	~	~	~	~	1.09	U	0.12	U
Perfluorotridecanoic acid (PFTrDA)	~	~	~	~	~	~	1.32	U	0.15	U
Perfluoroundecanoic acid (PFUnA)	~	~	~	~	~	~	2.09	U	0.23	U

## **APPENDIX A**

### **PFAS Investigation Work Plan with Approval Letter**

**Soil Investigation for Polyfluoroalkyl Substances  
Work Plan**

**For**

**1 Shore Road, Glenwood Landing, New York 11547**

**SHORE REALTY SITE**

**NPL SITE NO. 13006**

**Prepared for:**

Law Offices of Theodore W. Firetog

111 Thomas Powell Boulevard

Farmingdale, New York 11735-2251

On behalf of its client: Woodstock Construction Group

**Prepared by:**

Laurel Environmental Geosciences, D.P.C.

53 West Hills Road, Suite #1, Huntington Station, New York 11746

Project Number 21-215



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Jamie Burgher  
Project Manager, Geologist III

March 2023

Date

## **Introduction**

***Laurel Environmental Geosciences, D.P.C. (“Laurel”)*** was retained by Woodstock Construction Group, Ltd. to conduct a soil investigation for polyfluoroalkyl substances (“PFAS”) on the industrial property located at 1 Shore Road, Glenwood Landing, New York (“Site”).

The Site is currently undergoing remediation by the New York State Department of Environmental Conservation (“NYSDEC”) with oversight provided by the United States Environmental Protection Agency (“USEPA”). ***Laurel*** previously issued a Waste Characterization Sampling Investigation report dated October 18, 2021, that documented the presence of perfluorooctanesulfonic acid (“PFOS”) in subsurface soils at a concentration of 1.33 micrograms per kilogram (“µg/kg”), which is above the NYSDEC Part 375 Remedial Guidance Value for Unrestricted Use Soils (November 2022) at 0.88 µg/kg. Perfluorooctanoic acid (“PFOA”) was also detected at 0.39 µg/kg, which is below the NYSDEC Part 375 Remedial Guidance Value for Unrestricted Use Soils (November 2022) at 0.66 µg/kg.

NYSDEC subsequently conducted a site-wide groundwater sampling event for PFAS, including two (2) rounds of sampling in June 2022 and October 2022. The groundwater sampling event documented PFOS and PFOA in groundwater above the NYSDEC proposed guidance value for Class GA Groundwater at 10 nanograms per liter (“ng/L”) in fourteen (14) of eighteen (18) sampled monitoring wells. Concentrations of PFOS and PFOA were generally highest in the western area of the Site, near the recently conducted remedial excavations. The NYSDEC has not made a conclusion to date regarding the potential for on-site source areas for PFAS contamination.

Based on the PFAS findings available to date, ***Laurel*** has developed this work plan to investigate the potential for PFAS contamination to exist in subsurface soils within the areas of concern at the Site.

## **Subsurface Soil Investigation**

A geophysical survey will be conducted to pre-clear soil sampling locations. An 800/300 MHz dual frequency Ground Penetrating Radar (“GPR”) unit along with line locating equipment will be utilized for the geophysical survey. The geophysical survey is being conducted to ensure the safety of the operators, field staff, and prevent damaging the on-site remediation system.

A Community Air Monitoring Program (“CAMP”) is required during ground intrusive activities at the Site. CAMP monitoring will include, at minimum, the use of an upwind and a downwind monitoring station capable of measuring dust particulate matter and volatile organic compounds (“VOCs”) in accordance with New York State Department of Health (“NYSDOH”) requirements. Daily reports will be produced at the end of each day and submitted to the NYSDEC and USEPA project managers. Daily reports will include, at minimum, a summary of ground intrusive work conducted on that day, a site sketch showing sample locations, any CAMP exceedances, and representative site photographs. The full CAMP document is included as Appendix A of this work plan.

For the purposes of this investigation, the Site has been split into nine (9) grids, each measuring approximately 100 feet by 100 feet, covering an area of the Site totaling approximately 90,000 square feet. The grids are biased towards areas where PFAS may have been stored or utilized in the past, such as around the former major oil storage tanks, and in the areas where subsurface contamination has historically been identified. The grids are shown on Figure 1.0.

*Laurel* proposes to collect a total of forty-four (44) soil samples for PFAS analysis at twenty-two (22) locations. At each sampling location, one (1) sample will be collected from the shallow soils (i.e., 1 to 3 feet bgs), and one (1) sample from the deep soils (i.e., the 2-foot interval immediately above the groundwater interface); groundwater at the Site is expected to range from 15 feet bgs to 5 bgs in the area of this investigation based on historic sampling conducted at the Site. To construct a representative sample of the subsurface soils, the soils in the targeted sampling interval will be composited in a stainless steel bowl prior to being transferred into a laboratory-supplied sampling container. The stainless steel bowl will be decontaminated with a laboratory-grade detergent (i.e., Alconox®) and deionized water before each use. The proposed sampling locations are shown on Figure 2.0. Samples are summarized in Table I below.

Samples will be collected via track mounted GeoProbe® unit advancing continuous soil borings to the stated depths. Damage and/or removal of existing in-land trees will be required to access the proposed sampling areas. Full access to the Site is required to ensure that the subsurface soils are fully characterized with no data gaps. The continuous soil cores will be field screened with a photoionization device (“PID”) and logged in accordance with the United Soil Classification System (“USCS”). Soil boring logs will be constructed for inclusion in the final report. Any grossly impacted soils will be temporarily stored on-Site in a 55-gallon drum, sampled for waste characterization purposes, and subsequently disposed of in accordance with all applicable local, state, and federal regulations.

#### **Laboratory Analysis**

The soil samples will be submitted to York Analytical Laboratories Inc., a New York State Department of Health (“NYSDOH”) certified Environmental Laboratory. The samples will be analyzed utilizing USEPA Method 1633 for PFAS.

#### **Quality Assurance/Quality Control Procedures**

QA/QC procedures will be used to provide performance information regarding accuracy, precision, sensitivity, representation, completeness, and comparability associated with the sampling and analysis for this investigation. Field QA/QC procedures will be used (1) to document that samples are representative of actual conditions at the Site and (2) identify possible cross-contamination from field activities. Any field equipment utilized during sampling and not considered to be disposable will be decontaminated with a laboratory-grade detergent between sampling events. The full Quality Assurance Project Plan (“QAPP”) is included as Appendix B of this work plan.

Blind duplicate and matrix spike/matrix spike duplicate (“MS/MSD”) samples will be collected at a rate of one (1) per twenty (20) samples collected. Equipment blank samples will be collected at a rate of one (1) per twenty (20) samples collected, with a minimum of one (1) blank collected per field day.

#### **Reporting**

A “Soil Investigation for Polyfluoroalkyl Substances Report” will be prepared following completion of the field activities and receipt of the laboratory data. The report will provide detailed summaries of the investigative findings. Soil analytical results will be compared to the following proposed standards or guidance values: NYSDEC Part 375 Remedial Guidance Values for Unrestricted Use Soils, NYSDEC Part 375 Remedial Guidance Values for Protection of Groundwater, NYSDEC Part 375 Remedial Guidance Values for Restricted Commercial Use, USEPA Regional Screening Levels for Residential and Industrial Properties. The report will include analytical data tables for all reported constituent compounds (including non-detectable concentrations) and will note any deviations to this work plan.

**Table I  
Sampling Matrix**

Sample Type	Sample Designation	Matrix	# of Samples	Analysis	Data Reporting	Sample Bottles/Preservation	Holding Time
Composite	SB101 through SB122 (1-3') and (TBD)	Soil	Forty-four (44)	1633 for PFAS	Summary	1x – 250mL HDPE	48 hours to freeze
Composite QA/QC	Duplicate	Soil	Two (2)	1633 for PFAS	Summary	1x – 250ml HDPE	48 hours to freeze
Composite QA/QC	MS/MSD	Soil	Three (3)	1633 for PFAS	Summary	3x – 250ml HDPE	48 hours to freeze
QA/QC	Equipment Blank	DI Water	Two (2)	1633 for PFAS	Summary	3x – 250ml HDPE	48 hours to freeze

## **FIGURES**



53 West Hills Road  
Huntington Station, NY 11746

PHONE: 631-673-0612  
FAX: 631-427-5323

WWW.LAURELENV.COM

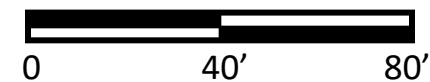
**FIGURE 1.0**  
SITE SKETCH WITH DESIGNATED  
GRIDS

1 Shore Road  
Glenwood Landing, NY 11547

PROJECT: 21-215  
DRAWING DATE: 1/16/23  
DRAWN BY: JB  
CHECKED BY: SY  
REVISIONS: N/A

**KEY**

- Grid Boundary
- - - Site Boundary





53 West Hills Road  
Huntington Station, NY 11746

PHONE: 631-673-0612  
FAX: 631-427-5323




WWW.LAURELENV.COM

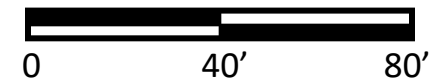
**FIGURE 2.0**  
SITE SKETCH WITH PROPOSED  
SAMPLING LOCATIONS

1 Shore Road  
Glenwood Landing, NY 11547

PROJECT: 21-215  
DRAWING DATE: 1/16/23  
DRAWN BY: JB  
CHECKED BY: SY  
REVISIONS: N/A

**KEY**

-  Proposed Test Pit Location
-  Grid Boundary
-  Site Boundary



# **APPENDIX A**

## **Community Air Monitoring Plan**



# **COMMUNITY AIR MONITORING PLAN**

**SHORE REALTY SITE  
1 SHORE ROAD, GLENWOOD LANDING, NEW YORK  
NPL SITE #13006**

**MARCH 20, 2023  
LAUREL PROJECT # 21-215**

## **PREPARED FOR:**

**LAW OFFICES OF THEODORE W. FIRETOG  
111 THOMAS POWELL BOULEVARD  
FARMINGDALE, NEW YORK, 11735-2251  
On behalf its client: Woodstock Construction Group**

## **PREPARED BY:**

**LAUREL ENVIRONMENTAL GEOSCIENCES, DPC.  
53 WEST HILLS ROAD, SUITE 1 HUNTINGTON  
STATION, NEW YORK**

## **COMMUNITY AIR MONITORING PLAN FOR USE DURING INVESTIGATIVE AND REMEDIAL ACTIONS**

Due to the nature of the potential contaminants at the property referred to as 1 Shore Road, Glenwood Landing, New York (“Site”), real-time air monitoring for volatile organic compounds (“VOCs”) and/or particulate levels at the perimeter of the work area is necessary. The scope of work for the Site will require VOC and particulate monitoring. Due to the proximity of the Site to residential properties, continuous air monitoring will be completed during all ground intrusive activities. For this program, ground intrusive activities include, but are not limited to, drilling.

Periodic monitoring for VOCs will be completed during all non-ground intrusive activities, such as purging and sample collection from groundwater monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while conducting ground intrusive activities, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. All CAMP readings will be submitted for New York State Department of Environmental Conservation (“NYSDEC”) personnel to review on a weekly basis or as soon as possible if/when an exceedance occurs. Work is anticipated to be completed in less than one (1) week. All data from the CAMP will be included in the Soil Investigation for Polyfluoroalkyl Substances Report to be prepared upon receipt of final laboratory data.

### **VOC Monitoring, Response Levels, and Actions**

VOCs will be monitored at the at the downwind and upwind perimeter of the work zone on a continuous basis during ground intrusive activities. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present (e.g., photoionization devices (“PIDs”) and particulate monitoring stations). As applicable, the equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below. Prior to work beginning for the day, the equipment will be setup and allow to run for a 15-minute period to allow for background readings to be recorded.

- If the ambient air concentration of total organic vapors at the downwind perimeter exceeds 5 parts per million (“ppm”) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic

vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will cease, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After which, work activities will resume provided that the total organic vapor level 200 feet downwind of the work zone or half the distance to the nearest potential receptor or residential structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings will be recorded and be available for NYSDEC personnel to review. Instantaneous readings used for decision purposes, if any, will also be recorded.

### **Particulate Monitoring, Response Levels, and Actions**

Particulate concentrations will be monitored continuously at the downwind and upwind perimeters of the work zone. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size ("PM-10") and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be fitted with an audible alarm or modem with notification to email/text to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities.

- If the PM-10 particulate level at the downwind perimeter is 150 micrograms per cubic meter ("mcg/m<sup>3</sup>") greater than background for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that the downwind perimeter PM-10 particulate levels do not exceed 150 mcg/m<sup>3</sup> above the background level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, PM-10 particulate levels at the downwind perimeter of the work zone are greater than 150 mcg/m<sup>3</sup> above the background level, work will be stopped and a re-evaluation of activities initiated. Work

will resume provided that dust suppression measures and other controls are successful in reducing the PM-10 particulate concentration to within 150 mcg/m<sup>3</sup> of the background level and in preventing visible dust migration.

All 15-minute readings will be recorded and be available for NYSDEC personnel to review. Instantaneous readings used for decision purposes, if any, will also be recorded.

### **VOC and Particulate Monitoring Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures**

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices will be considered to prevent exposures related to the work activities and to control dust and odors.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDEC prior to commencement of the work.
- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m<sup>3</sup>, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m<sup>3</sup> or less at the monitoring point.

## **APPENDIX B**

### **Quality Assurance Project Plan**



## **QUALITY ASSURANCE PROJECT PLAN**

**SHORE REALTY SITE  
1 SHORE ROAD, GLENWOOD LANDING, NEW YORK  
NPL SITE #13006**

**MARCH 20, 2023  
*LAUREL* PROJECT # 21-215**

### **PREPARED FOR:**

**LAW OFFICES OF THEODORE W. FIRETOG  
111 THOMAS POWELL BOULEVARD  
FARMINGDALE, NEW YORK, 11735-2251  
On behalf its client: Woodstock Construction Group**

### **PREPARED BY:**

**LAUREL ENVIRONMENTAL GEOSCIENCES, DPC.  
53 WEST HILLS ROAD, SUITE 1 HUNTINGTON  
STATION, NEW YORK**

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## **1.0 INTRODUCTION**

This document presents the Quality Assurance Project Plan (“QAPP”) for the investigation of polyfluoroalkyl substances (“PFAS”) at the Shore Realty Site, located at 1 Shore Road, Glenwood Landing, New York (the “Site”). This QAPP has been prepared to be incorporated into the proposed Soil Investigation for PFAS Work Plan for the Site.

### **1.1 Site Background and Previous Investigation Summary**

As described in the Soil Investigation for PFAS Work Plan, a previous investigation conducted at the Site by *Laurel Environmental Geosciences, DPC*. (“*Laurel*”) documented the presence of perfluorooctanesulfonic acid (“PFOS”) in subsurface soils at a concentration of 1.33 micrograms per kilogram (“ $\mu\text{g}/\text{kg}$ ”), which is above the NYSDEC Part 375 Remedial Guidance Value for Unrestricted Use Soils (November 2022) at 0.88  $\mu\text{g}/\text{kg}$ . Perfluorooctanoic acid (“PFOA”) was also detected at 0.39  $\mu\text{g}/\text{kg}$ , which is below the NYSDEC Part 375 Remedial Guidance Value for Unrestricted Use Soils (November 2022) at 0.66  $\mu\text{g}/\text{kg}$ .

### **1.2 Project Scope and Objective**

The proposed Soil Investigation for PFAS intends to characterize subsurface soils and determine the horizontal and lateral extent of any PFAS contamination at the Site. The proposed scope of work for the is described in detail in the work plan and will include collection and laboratory analysis of a forty-four (44) additional subsurface soil samples. Proposed sample locations are shown on Figure 2 of the work plan.

## **2.0 PROJECT ORGANIZATION**

*Laurel* will be responsible for implementation of the work plan once it has been approved by the NYSDEC. Mr. Jamie Burgher, the Project Manager, will ensure that there are suitable and verifiable data results from sampling and analysis. To achieve this objective, the quality assurance procedures detailed in this section will be followed for all sampling and laboratory analysis activities.

Mr. Brian McCabe, the Project QAO, will review sampling procedures and certify that the data was collected and analyzed using the appropriate procedures. The QAO may not have any responsibilities specific to the collection and analysis of samples from the site for which they are the QAO. The QAO will review the Data Validation and Data Acceptance associated with this project in accordance with the DER-10 DUSR Technical Guidance for Site Investigation and Remediation, Guidance for Data Deliverables and the Development of Data Usability Summary Reports (“DUSR”) that will be completed by an independent data validation service. The Data Validation and Data Usability process will encompass Completeness, Compliance and Report Submittal.

Mr. Marc Califano, the Project Health and Safety Officer, will be responsible for reviewing the work plan and assuring that project staff are sufficiently briefed on hazards reasonably expected to be encountered during the investigation.

Resumes for relevant project staff are included in Appendix A of the QAPP.

*Laurel* will utilize subcontractors for laboratory work, and independent data validation services, as described below.

### 3.0 SAMPLING, ANALYTICAL, AND QUALITY ASSURANCE PROCEDURES

Samples will be collected using disposable, dedicated sampling equipment where possible. Any non-disposable sampling equipment will be rinsed with a water and Alconox, a laboratory grade detergent, solution to eliminate any cross-contamination between sampling locations.

#### 3.1 Sampling Scope and Analytical Methods

This program includes collection and laboratory analysis of forty-four (44) soil samples. All samples will be analyzed by York Analytical Laboratories, Inc., which is approved under the New York State Department of Health (“NYSDOH”) Environmental Laboratory Approval Program (“ELAP”) for the required analyses. The reporting limit for perfluorooctanoic acid (“PFOA”) and perfluorooctanesulfonic acid (“PFOS”) will be 0.200 µg/kg and 0.186 µg/kg in soil, respectively. The remaining PFAS compound reporting limits, along with method detection limits, and standard laboratory procedures, are included in Appendix B of the QAPP. The sampling nomenclature is included in Appendix C of the QAPP. The samples and analyses are detailed in Table 1 below.

**Table 1. Sample Summary and Rationale**

Medium	Number of Samples	Analysis	Analytical Method	Container	Holding Time	Rationale
Soil	44*	PFASs	1633	250ml HDPE	48 hours to freeze 14 days to extract	Delineation of PFAS in soils

\* Excluding QA/QC samples, which will include a blind duplicate sample, MS/MSD set, and equipment blank (at a rate of one per day).

All samples will be analyzed using standard laboratory turnaround time of ten business days, and all data will be provided with an Analytical Services Protocol (“ASP”) Category B data package.

#### 3.2 Sampling Procedures

All soil samples will be collected using the direct push method and will be collected using a new, dedicated disposable acetate sleeve. Upon retrieval, the sleeve will be opened and the soil within scanned for total VOCs using a photoionization detector (“PID”) and geologically described, including observations regarding potential contamination such as odors, staining, etc. All sample descriptions and field observations will be documented. Soil samples will to be submitted for laboratory analysis will be directly transferred into pre-labeled, laboratory-supplied containers, using new, dedicated, disposable, non-PFAS equipment (e.g., plastic scoops, plastic spoons, wooden tongue depressor, etc.). The sample container for PFAS will be filled first, prior to any additional samples being collected.

Immediately after collection, each PFAS soil sample will be placed into a dedicated PFAS-only cooler and stored on wet ice for sample preservation. All samples will be delivered via laboratory courier under chain of custody procedures and will arrive at the laboratory within 48 hours after collection.

No equipment, supplies, or field clothing containing low-density polyethylene, Teflo<sup>®</sup>, Gore-Tex<sup>®</sup>, or Tyvek<sup>®</sup> will be used during the sampling program, due to the presence of PFAS compounds in these materials. Field personnel will not wear clothes having been laundered using fabric softener, nor will they use cosmetics, moisturizers, hand cream, or other personal care products (sunscreen, insect repellent, etc.) that may contain PFAS compounds. No eating or drinking will be allowed at the Site, except that bottled water and hydration drinks can be consumed, but only in the support area (i.e., away from areas where sample collection is occurring). In addition, notes taken in the field will not be recorded in a notebook with a water-resistant coating, no plastic clipboards or notebooks will be utilized, no aluminum foil or adhesives (e.g., sticky notes) will be used during sample collection, and sample labels and the Chain of Custody form will be completed using ballpoint pens (i.e., not permanent markers).

### 3.3 Quality Assurance/Quality Control Samples

In accordance with ASP and NYSDEC requirements, QA/QC samples will include blind duplicate samples, matrix spike/matrix spike duplicate (“MS/MSD”) sets, and equipment blanks (the equipment blank water will be provided by the laboratory, and will be certified as “PFAS-free”) for each sampled medium (i.e., soil). See Table 2 for a summary of QA/QC samples.

**Table 2. QA/QC Sample Summary**

Matrix Type	Field Parameters	Lab. Parameters	Analytical Methods	Sample Preservation	Sample Containers	Holding Time	Field Duplicates	Equipment Blanks	MS/MSD Samples
Soil	Total VOCs via PID	PFAS	EPA 1633	Cool to 4° C	One (1) 250mL HDPE	48 hours to freeze, 14 days to extract	1 per 20 samples (minimum 1)	1 per 20 samples, minimum once per day	1 per 20 samples (minimum 1)

### 3.4 Data Validation and Data Usability Summary Report

In accordance with NYSDEC requirements, the ASP Category B data packages generated for this project will be submitted for independent data validation, by a NYSDEC-approved, third-party data validator. The data validation process will include, at a minimum, review of sample custody documentation, instrument calibration results, surrogate and spike recovery data, chromatograms, raw data files, duplicate results, blank results, and internal standards. The results and findings of the data validation process will be documented in a Data Usability Summary Report (“DUSR”).

**QAPP  
APPENDIX A**

**Project Personnel Resumes**

## **JAMIE BURGHER**

### **EDUCATION: STONY BROOK UNIVERSITY**

B.S., Geology, May 2016

Departmental Honors, Magna Cum Laude

### **RELATED COURSES:**

Field Geology, Geophysical Survey Methods, Introduction to Geochronology and Thermochronology, Introduction to Geophysics, Igneous and Metamorphic Petrology, Sedimentation and Stratigraphy, Structural Geology, Mineralogy, GIS Design and Application, GIS Database Design, GIS Project Management, Linear Algebra, Differential Equations.

### **EXPERIENCE:**

**Geologist II**, Laurel Environmental Geosciences, DPC. Huntington, NY.

June 2016 - Present

- Perform Phase I & Phase II Environmental Site Assessments (ESAs)
- Calibrate and maintain instruments used in Phase II ESAs
- Conduct asbestos surveys
- Provide construction and remedial oversight to ensure compliance with environmental regulations
- Draft reports documenting fieldwork and clearly outlining any necessary corrective actions
- Interface with public agencies to achieve regulatory closure of oil spills, tank removals, and underground structure abandonments
- Construct Electronic Database Deliverables for submission to the NYSDEC
- Collaborate with project managers to develop proposals meeting site-specific needs
- Mentor junior staff in proper field investigative techniques while providing professional development assessments for review by senior management

**Research Assistant**, Stony Brook University. Stony Brook, NY.

September 2015 – December 2016

- Carry out geophysical investigations of suspected glaciotectionic structures
- Maintain and repair equipment used in fieldwork
- Give presentations to classes prior to undertaking fieldwork which established project goals
- Lead small groups in successfully completing fieldwork
- Use java-based GIS systems to map extent of objects and establish relationships

### **FIELD AND TECHNICAL SKILLS:**

- Extensive experience using ground penetrating radar (GPR) units (50 – 800 MHz)
- Processing of GPR data for use in presentations and publications
- Practical experience in the use of magnetometers and gravimeters
- Knowledge of surveying techniques to make accurate topographic measurements
- Use of EQuIS Data Processor to create geodatabases meeting NYSDEC standards
- Use of ArcGIS and jMARS software to create information products
- Proficient in the use of Microsoft Office suite of software

### **CERTIFICATIONS:**

OSHA 40 Hr. HAZWOPER Course, NIOSH 582  
OSHA 30 Hr. Construction Safety  
NYS DOL Asbestos Inspector  
XRF Safety Training

## **BRIAN C. MCCABE**

### **EDUCATION: STONY BROOK UNIVERSITY**

B.S., Geology, September 1991, Minor in Marine Science

M.S., Hydrogeology, Pending.

### **RELATED COURSES:**

Geophysics, Geochemistry,  
Hydrogeology, Organic contaminant Hydrology, and Bioremediation.

### **EXPERIENCE:**

**Senior Geologist/Senior Project Manager**, Laurel Environmental Geosciences, DPC.  
January 2012 - present

- Project Health and Safety Officer
- Project QA/QC Officer
- Phase I Environmental Site Assessments.
- Phase II Environmental Assessments.
- Remedial Investigations/Feasibility Studies
- NYC Office of Environmental Restoration (OER) Investigations
- Underground Storage Tanks (UST's): testing, removal, closure.
- Underground Injection Well Closure (UIC)
- Hazardous Waste Site Remediation.
- Design and Management of *In-situ* Bioremediation Systems
- Installation of Sub-Slab Depressurization Systems
- Operation and Maintenance of Groundwater Extraction and Treatment Systems
- Installation of Vapor Barrier Systems
- Installation of Air Sparging/Soil Vapor Extraction Systems

**Department Manager: Professional Services**, Fenley & Nicol  
September 1997 - January 2012

- Phase I Environmental Assessments.
- Phase II Environmental Assessments.
- Groundwater Contamination Studies.
- Underground Storage Tanks (UST'S): testing, removal, closure.
- Underground Injection Well Closure (UIC)
- Hazardous Site Remediation.
- Construction and operation of remediation system.

### **CERTIFICATIONS:**

OSHA 40-Hr. HAZWOPER Course  
Preston Groundwater Remediation Course  
ASTM 1527-13 Environmental Site Assessment training course  
Waterloo University, Groundwater Modeling Training Course  
ExxonMobil, LPS training  
LIRR Track Safety training

### **AFFILIATIONS:**

Long Island Geologists  
United States Coast Guard Auxiliary

## **MARC T. CALIFANO, P.G.**

**Project Director/Senior Geologist, Laurel Environmental Geosciences, D.P.C.**  
*New York State Licensed Professional Geologist: #000669*

### **EDUCATION:**

*B.S., ENVIRONMENTAL SCIENCE, 1999 - STATE UNIVERSITY OF NEW YORK AT ONEONTA*

### **RELATED COURSES:**

Environmental Geology, Earth Materials, Mineralogy, Environmental Geophysics, Field Geology, Structural Geology, Glacial Geology, Hydrogeology, Mapping Techniques in Geosciences, Geomorphology, Paleontology, Oceanography, Biology, Chemistry, Physics, and Calculus.

### **WORK EXPERIENCE:**

Mr. Marc Califano, P.G. has over 25 years of experience in the environmental consulting field and has performed Phase I Environmental Site Assessments (ESA's), Phase II Soil, Groundwater and Vapor Intrusion Sampling Investigations, and Phase III Site Remediation projects for both municipal and private clients. Mr. Califano has extensive field experience, technical report writing skills and comprehensive knowledge of New York State, New York City and County (Nassau and Suffolk) regulatory compliance standards/requirements. Through this experience, Mr. Califano has closed many New York State Department of Environmental Conservation (NYSDEC) spill cases, remediated and closed several Suffolk County Department of Health Services (SCDHS) Underground Injection Control (UIC) cases and prepared several permit applications, technical reports, health and safety plans, remedial work plans and closure reports. Mr. Califano has been involved in many commercial redevelopment projects through the preparation of remedial work plans, sampling plans, engineering reports, site management plans and has extensive experience interrupting analytical data for the disposal of contaminated and hazardous materials.

### **LICENSES/CERTIFICATIONS**

Licensed Professional Geologist, New York State, No. 000669  
OSHA 40 Hour HAZWOPER Course  
OSHA 8 Hour HAZWOPER Refresher Courses  
Amtrak On-Track Safety Certification  
MTA New York City Transit – Tack Safety Training  
EPA Radon Training and Certification  
Environmental Data Resources – ASTM E1527-21 Due Diligence update

### **AFFILIATIONS**

Long Island Association of Professional Geologists

**QAPP  
APPENDIX B**

**Laboratory MDLs, RLs, and SOPs for PFAS Analysis**

# Analytical Method Information

Printed: 03/20/2023 5:36 pm

## PFAS, EPA 1633 Target List in Soil (EPA 1633 Draft 2)

Preservation: Cool 4°C

Container: 10\_250mL Plastic Cool to 4° C

Amount Required: 250 mL

Hold Time: 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	---Matrix Spike---		--Blank Spike / LCS--	
					%Rec	RPD	%Rec	RPD
Perfluorobutanesulfonic acid (PFBS)	0.111	0.177 ug/kg		30	25-150	35	50-150	30
Perfluorohexanoic acid (PFHxA)	0.0530	0.200 ug/kg		30	25-150	35	50-150	30
Perfluoroheptanoic acid (PFHpA)	0.105	0.200 ug/kg		30	25-150	35	50-150	30
Perfluorohexanesulfonic acid (PFHxS)	0.179	0.183 ug/kg		30	25-150	35	50-150	30
Perfluorooctanoic acid (PFOA)	0.172	0.200 ug/kg		30	25-150	35	50-150	30
Perfluorooctanesulfonic acid (PFOS)	0.167	0.186 ug/kg		30	25-150	35	50-150	30
Perfluorononanoic acid (PFNA)	0.189	0.200 ug/kg		30	25-150	35	50-150	30
Perfluorodecanoic acid (PFDA)	0.191	0.200 ug/kg		30	25-150	35	50-150	30
Perfluoroundecanoic acid (PFUnA)	0.198	0.200 ug/kg		30	25-150	35	50-150	30
Perfluorododecanoic acid (PFDoA)	0.163	0.200 ug/kg		30	25-150	35	50-150	30
Perfluorotridecanoic acid (PFTrDA)	0.125	0.200 ug/kg		30	25-150	35	50-150	30
Perfluorotetradecanoic acid (PFTA)	0.103	0.200 ug/kg		30	25-150	35	50-150	30
N-MeFOSAA	0.148	0.200 ug/kg		30	25-150	35	50-150	30
N-EtFOSAA	0.194	0.200 ug/kg		30	25-150	35	50-150	30
Perfluoropentanoic acid (PFPeA)	0.109	0.400 ug/kg		30	25-150	35	50-150	30
Perfluoro-1-octanesulfonamide (FOSA)	0.146	0.200 ug/kg		30	25-150	35	50-150	30
Perfluoro-1-heptanesulfonic acid (PFHpS)	0.155	0.200 ug/kg		30	25-150	35	50-150	30
Perfluoro-1-decanesulfonic acid (PFDS)	0.191	0.193 ug/kg		30	25-150	35	50-150	30
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	0.595	0.760 ug/kg		30	25-150	35	50-150	30
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	0.755	0.768 ug/kg		30	25-150	35	50-150	30
Perfluoro-n-butanoic acid (PFBA)	0.109	0.800 ug/kg		30	25-150	35	50-150	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	0.139	0.356 ug/kg		30	25-150	30	50-150	30
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	0.193	0.400 ug/kg		30	25-150	30	50-150	30
Perfluoro-4-oxapentanoic acid (PFMPA)	0.0620	0.400 ug/kg		30	25-150	30	50-150	30
Perfluoro-5-oxahexanoic acid (PFMBA)	0.0960	0.400 ug/kg		30	25-150	30	50-150	30
Perfluoro-1-pentanesulfonate (PFPeS)	0.157	0.188 ug/kg		30	25-150	30	50-150	30
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	0.595	0.750 ug/kg		30	25-150	30	50-150	30
HFPO-DA (Gen-X)	0.608	0.800 ug/kg		30	25-150	30	50-150	30
11CL-PF3OUdS	0.311	0.756 ug/kg		30	25-150	30	50-150	30
9CL-PF3ONS	0.246	0.748 ug/kg		30	25-150	30	50-150	30
ADONA	0.174	0.756 ug/kg		30	25-150	30	50-150	30
Perfluorododecanesulfonic acid (PFDoS)	0.169	0.194 ug/kg		30	25-150	30	50-150	30
Perfluoro-1-nonanesulfonic acid (PFNS)	0.124	0.192 ug/kg		30	25-150	30	50-150	30
3-Perfluoropropyl propanoic acid (FPrPA)	0.634	1.00 ug/kg		30	25-150	30	50-150	30
3-Perfluoropentyl propanoic acid (FPePA)	2.10	5.00 ug/kg		30	25-150	30	50-150	30
3-Perfluoroheptyl propanoic acid (FHpPA)	1.50	5.00 ug/kg		30	25-150	30	50-150	30
N-MeFOSE	0.611	2.00 ug/kg		30	25-150	30	50-150	30
N-MeFOSA	0.180	0.200 ug/kg		30	25-150	30	50-150	30
N-EtFOSE	0.697	2.00 ug/kg		30	25-150	30	50-150	30
N-EtFOSA	0.198	0.200 ug/kg		30	25-150	30	50-150	30
Surr: M3PFBS				25-150				





# Analytical Method Information

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(Continued)

## PFAS, EPA 1633 Target List in Water (EPA 1633 Draft 2)

Preservation: Cool 4°C

Container: 10\_250mL Plastic Cool to 4° C

Amount Required: 250 mL

Hold Time: 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	---Matrix Spike---		--Blank Spike / LCS--	
					%Rec	RPD	%Rec	RPD
Perfluorobutanesulfonic acid (PFBS)	0.470	1.77 ng/L		30	25-150	35	50-150	30
Perfluorohexanoic acid (PFHxA)	0.350	2.00 ng/L		30	25-150	35	50-150	30
Perfluoroheptanoic acid (PFHpA)	0.710	2.00 ng/L		30	25-150	35	50-150	30
Perfluorohexanesulfonic acid (PFHxS)	0.680	1.83 ng/L		30	25-150	35	50-150	30
Perfluorooctanoic acid (PFOA)	0.420	2.00 ng/L		30	25-150	35	50-150	30
Perfluorooctanesulfonic acid (PFOS)	0.820	1.86 ng/L		30	25-150	35	50-150	30
Perfluorononanoic acid (PFNA)	0.520	2.00 ng/L		30	25-150	35	50-150	30
Perfluorodecanoic acid (PFDA)	0.750	2.00 ng/L		30	25-150	35	50-150	30
Perfluoroundecanoic acid (PFUnA)	1.13	2.00 ng/L		30	25-150	35	50-150	30
Perfluorododecanoic acid (PFDoA)	0.880	2.00 ng/L		30	25-150	35	50-150	30
Perfluorotridecanoic acid (PFTrDA)	0.740	2.00 ng/L		30	25-150	35	50-150	30
Perfluorotetradecanoic acid (PFTA)	0.690	2.00 ng/L		30	25-150	35	50-150	30
N-MeFOSAA	0.790	2.00 ng/L		30	25-150	35	50-150	30
N-EtFOSAA	1.03	2.00 ng/L		30	25-150	35	50-150	30
Perfluoropentanoic acid (PFPeA)	0.230	4.00 ng/L		30	25-150	35	50-150	30
Perfluoro-1-octanesulfonamide (FOSA)	0.880	2.00 ng/L		30	25-150	35	50-150	30
Perfluoro-1-heptanesulfonic acid (PFHpS)	0.910	1.91 ng/L		30	25-150	35	50-150	30
Perfluoro-1-decanesulfonic acid (PFDS)	1.32	1.93 ng/L		30	25-150	35	50-150	30
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	1.06	7.60 ng/L		30	25-150	35	50-150	30
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	2.05	7.68 ng/L		30	25-150	35	50-150	30
Perfluoro-n-butanoic acid (PFBA)	0.330	8.00 ng/L		30	25-150	35	50-150	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	0.500	3.56 ng/L		30	25-150	30	50-150	30
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	2.14	4.00 ng/L		30	25-150	30	50-150	30
Perfluoro-4-oxapentanoic acid (PFMPA)	0.250	4.00 ng/L		30	25-150	30	50-150	30
Perfluoro-5-oxahexanoic acid (PFMBA)	0.370	4.00 ng/L		30	25-150	30	50-150	30
Perfluoro-1-pentanesulfonate (PFPeS)	0.760	1.88 ng/L		30	25-150	30	50-150	30
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	1.79	7.50 ng/L		30	25-150	30	50-150	30
HFPO-DA (Gen-X)	3.23	8.00 ng/L		30	25-150	30	50-150	30
11CL-PF3OUdS	1.38	7.56 ng/L		30	25-150	30	50-150	30
9CL-PF3ONS	0.700	7.48 ng/L		30	25-150	30	50-150	30
ADONA	0.530	7.56 ng/L		30	25-150	30	50-150	30
Perfluorododecanesulfonic acid (PFDoS)	0.930	1.94 ng/L		30	25-150	30	50-150	30
Perfluoro-1-nonanesulfonic acid (PFNS)	0.860	1.92 ng/L		30	25-150	30	50-150	30
3-Perfluoropropyl propanoic acid (FPrPA)	2.03	5.00 ng/L		30	25-150	30	50-150	30
3-Perfluoropentyl propanoic acid (FPePA)	7.33	25.0 ng/L		30	25-150	30	50-150	30
3-Perfluoroheptyl propanoic acid (FHpPA)	9.47	25.0 ng/L		30	25-150	30	50-150	30
N-MeFOSE	3.99	20.0 ng/L		30	25-150	30	50-150	30
N-MeFOSA	1.58	2.00 ng/L		30	25-150	30	50-150	30
N-EtFOSE	3.99	20.0 ng/L		30	25-150	30	50-150	30
N-EtFOSA	1.80	2.00 ng/L		30	25-150	30	50-150	30

Surr: M3PFBS

25-150






# Standard Operating Procedure

## Determination of Target Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous and Solid matrices by Isotope Dilution Analysis by HPLC/MS-MS According to EPA Method 1633 Draft 2

### Approvals

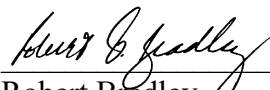
Laboratory Director/QA Officer



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Krys Trafalski

Vice President/Chief Scientific Officer



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Robert Bradley

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## 1. SCOPE AND APPLICATION

This method is used to identify and quantitate specific PFAS compounds in extracts of non-potable water and solid (soil/sediment) samples using HPLC/MS-MS (high pressure liquid chromatography/tandem mass spectrometry). Currently the compounds (40) that are measured by this methodology are listed in the Table 1.0 below.

**Table 1.0-Target PFAS**

<b>Perfluoroalkyl carboxylic acids</b>		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
<b>Perfluoroalkyl sulfonic acids Acid Form</b>		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorododecanesulfonic acid	PFDoS	79780-39-5
<b>Fluorotelomer sulfonic acids</b>		
1 <i>H</i> ,1 <i>H</i> , 2 <i>H</i> , 2 <i>H</i> -Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1 <i>H</i> ,1 <i>H</i> , 2 <i>H</i> , 2 <i>H</i> -Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1 <i>H</i> ,1 <i>H</i> , 2 <i>H</i> , 2 <i>H</i> -Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
<b>Perfluorooctane sulfonamides</b>		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
<b>Perfluorooctane sulfonamidoacetic acids</b>		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
<b>Perfluorooctane sulfonamide ethanols</b>		
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
<b>Per- and Polyfluoroether carboxylic acids</b>		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3 <i>H</i> -perfluorononanoic acid	ADONA	919005-14-4
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
<b>Ether sulfonic acids</b>		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
<b>Fluorotelomer carboxylic acids</b>		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2 <i>H</i> ,2 <i>H</i> ,3 <i>H</i> ,3 <i>H</i> -Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

The estimated reporting limits (MRL) based upon the preparation/analysis parameters herein at the time of this revision are approximately 2.0-20.0 ng/L (ppt) for aqueous samples and 0.5-5.0 ug/kG for solids . The linear range for these PFAS can be extended by dilution. These MRLs are based upon a volume of 0.250L-0.500L extracted for aqueous samples and 2-5 g. for solids.

This method is “performance-based,” which means that modifications may be made without additional EPA review to improve performance (e.g., overcome interferences, or improve the sensitivity, accuracy, or precision of the results) *provided that* all performance criteria in this method are met. Requirements for establishing equivalency are in Section 9.1.2 and include 9.1.2.2c. For CWA uses, additional flexibility is described at 40 CFR 136.6. Changes in performance, sensitivity, selectivity, precision, recovery, etc., that result from modifications within the scope of 40 CFR Part 136.6, and Section 9.0 of this method must be documented, as well as how these modifications compare to the specifications in this method. Changes outside the scope of 40 CFR Part 136.6 and Section 9.0 of this method may require prior review or approval.

## 2. SUMMARY

Environmental samples are prepared and extracted using method-specific procedures. Sample extracts are subjected to cleanup procedures designed to remove interferences. Analyses of the sample extracts are conducted by LC-MS/MS in the multiple reaction monitoring (MRM) mode. Sample concentrations are determined by isotope dilution or extracted internal standard quantification (see Section 10.3) using isotopically labeled compounds added to the samples before extraction

### 2.1 Extraction

**2.1.1** Aqueous samples are spiked with isotopically labeled standards, extracted using solid-phase extraction (SPE) cartridges and undergo cleanup using carbon before analysis.

**2.1.2** Solid samples are spiked with isotopically labeled standards, extracted into basic methanol, and cleaned up by carbon and SPE cartridges before analysis.

### 2.2 Analysis

**2.2.1** Extracts are then analyzed by HPLC-MS/MS in the MRM mode. Extracts contain Non-extracted Internal Standards (NIS) to monitor instrument performance and used for quantitative analysis.

**2.2.2** Individual PFAS analytes are identified through peak analysis of the quantification and confirmation ions (Precursor and product ions) where applicable.

**2.2.3** The concentration of each analyte is calculated using the isotope dilution technique. This approach corrects the target analytes for surrogate analog recoveries and these surrogates are essentially extracted internal standards (EIS). For QC purposes, the percent recoveries of the isotope dilution analogues are calculated using the integrated peak areas of isotope performance standards, which are added to the final extract and function as traditional internal standards (non-extracted internal standards), exclusively applied to the isotope dilution analogues.

### **3. DEFINITIONS**

**3.1 ANALYSIS BATCH** – A set of samples that is analyzed on the same instrument during a 24-hour period, including no more than 20 Field Samples, that begins and ends with the analysis of the appropriate Continuing Calibration Check (CCC) standards. Additional CCCs may be required depending on the length of the analysis batch and/or the number of Field Samples.

**3.2 CALIBRATION STANDARD (CAL)** – A solution of the method analytes, isotope dilution analogues, and isotope performance standards (Internal standards) prepared from the Primary Dilution Standards and stock standards. The calibration standards are used to calibrate the instrument response with respect to analyte concentration.

**3.3 CONTINUING CALIBRATION VERIFICATION (CCV)** – A calibration standard containing the method analytes, internal standard(s) and surrogate(s). The CCV is analyzed periodically to verify the accuracy of the existing calibration for those analytes.

**3.4 EXTRACTION BATCH** – A set of up to 20 Field Samples (not including QC Samples) extracted together by the same person(s) during a work day using the same lot of SPE devices, solvents, surrogate, internal standard and fortifying solutions. Required QC samples include Method blank, and Matrix spike/duplicate pair.

**3.5 FIELD DUPLICATES** – Separate samples collected at the same time and sampling location, shipped and stored under identical conditions. Method precision, including the contribution from sample collection procedures, is estimated from the analysis of Field Duplicates. Field Duplicates are used to prepare matrix spike/matrix spike duplicate QC samples.

**3.6 FIELD BLANK (FBLK)** – An aliquot of reagent water that is placed in a sample container in the laboratory and treated as a sample in all respects, including shipment to the sampling site, exposure to sampling site conditions, storage, preservation, and all analytical procedures. The purpose of the FBLK is to determine if method analytes or other interferences are introduced into the sample from shipping, storage, and the field environment.

3.7 ISOTOPE DILUTION ANALOGUES - Isotopically labeled analogues of the method analytes that are added to the sample prior to extraction in a known amount. Note: Not all target PFAS currently have an isotopically labeled analogue. In these cases, an alternate isotopically labeled analogue is used as detailed in our SOP and in the reference method.

3.8 ISOTOPE DILUTION TECHNIQUE - An analytical technique for measuring analyte concentration using the ratio of the peak area of the native analyte to that of an isotopically labeled analogue, added to the original sample in a known amount and carried through the entire analytical procedure.

3.9 ISOTOPE PERFORMANCE STANDARDS (Internal Standards) - Quality control compounds that are added to all standard solutions and extracts in a known amount and used to measure the relative response of the isotopically labelled analogues that are components of the same solution. For this method, the isotope performance standards are three isotopically labeled analogues of the method analytes. The isotope performance standards are indicators of instrument performance and are used to calculate the recovery of the isotope dilution analogues through the extraction procedure. In this method, the isotope performance standards are not used in the calculation of the recovery of the native analytes.

3.10 METHOD BLANK – An aliquot of reagent water to which known quantities of the method analytes and isotope dilution analogues are added. The results of the MBLK verify method performance in the absence of sample matrix.

3.11 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) – Aliquots of field samples that have been fortified with a known concentration of target compounds, prior to sample preparation and extraction, and analyzed to measure the effect of matrix interferences. The use of MS/MSD samples is generally not required in isotope dilution methods because the labeled compounds added to every sample provide more performance data than spiking a single sample in each preparation batch.

3.12 LIMIT OF QUANTITATION (LOQ) – The smallest concentration that produces a quantitative result with known and recorded precision and bias. The LOQ shall be set at or above the concentration of the lowest initial calibration standard (the lowest calibration standard must fall within the linear range). Determined by matrix through the entire preparation and analysis process.

3.13 METHOD DETECTION LIMIT (MDL) – The minimum measured concentration of a substance that can be reported with 99% confidence that the measured analyte concentration is distinguishable from method blank results (40 CFR 136, Appendix B).

3.14 MINIMUM LEVEL OF QUANTITATION (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. It may be equivalent to the concentration of

the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed. Alternatively, the ML may be established by multiplying the MDL (pooled or unpooled, as appropriate) by 3.18 and rounding the result to the number nearest to 1, 2, or 5 x 10<sup>n</sup>, where n is zero or an integer (see 68 FR 11770).

3.15 PRECURSOR ION – For the purpose of this method, the precursor ion is the deprotonated molecule ([M-H]<sup>-</sup>) of the method analyte (with the exception of HFPO-DA, in which the precursor ion is formed by decarboxylation). In MS/MS, the precursor ion is mass selected and fragmented by collisionally activated dissociation to produce distinctive product ions of smaller *m/z*.

3.16 PRIMARY DILUTION STANDARD (PDS) SOLUTION – A solution containing the analytes prepared in the laboratory from stock standard solutions and diluted as needed to prepare calibration solutions and other needed analyte solutions.

3.17 PRODUCT ION – For the purpose of this method, a product ion is one of the fragment ions produced in MS/MS by collisionally activated dissociation of the precursor ion.

3.18 INITIAL CALIBRATION VERIFICATION (ICV) – A calibration standard prepared independently from the primary calibration solutions. For this method, the ICV is a repeat of the entire dilution scheme starting with the same stock materials (neat compounds or purchased stock solutions) used to prepare the primary calibration solutions. Independent sources and separate lots of the starting materials are not required, provided the laboratory has obtained the purest form of the starting materials commercially available. The purpose of the ICV is to verify the integrity of the primary calibration standards.

3.19 QUANTITATIVE STANDARD - A quantitative standard of assayed concentration and purity traceable to a Certificate of Analysis.

3.20 STOCK STANDARD SOLUTION - A concentrated solution containing one or more method analytes prepared in the laboratory using assayed reference materials or purchased from a reputable commercial source with a Certificate of Analysis.

3.21 TECHNICAL GRADE STANDARD – As defined for this method, a technical-grade standard includes a mixture of the branched and linear isomers of a method analyte. For the purposes of this method, technical-grade standards are used to identify retention times of branched and linear isomers of method analytes.

3.22 ANALYTE – A PFAS compound included in this method. The analytes are listed in Table 1.

- 3.23 CALIBRATION STANDARD (CS) – A solution prepared from a secondary standard and/or stock solutions and used to calibrate the response of the LC-MS/MS instrument.
- 3.24 CONTINUING CALIBRATION VERIFICATION (CCV) STANDARD – The mid-point calibration standard that is used to verify calibration.
- 3.25 CFR – Code of Federal Regulations
- 3.26 EXTRACTED INTERNAL STANDARD (EIS) QUANTIFICATION – The response of the target compound is compared to the response of the labeled analog of another compound in the same LOC.
- 3.27 INSTRUMENT SENSITIVITY CHECK – solution used to check the sensitivity of the instrument. The solution contains the native compounds at the concentration of the LOQ.
- 3.28 IPR – INITIAL PRECISION AND RECOVERY; four aliquots of a reference matrix spiked with the analytes of interest and labeled compounds and analyzed to establish the ability of the laboratory to generate acceptable precision and recovery. An IPR is performed prior to the first time this method is used and any time the method or instrumentation is modified
- 3.29 OPR - ONGOING PRECISION AND RECOVERY- – Ongoing precision and recovery standard (OPR); a method blank spiked with known quantities of analytes. The OPR is analyzed exactly like a sample. Its purpose is to assure that the results produced by the laboratory remain within the limits specified in this method for precision and recovery. Applies to OPR and LLOPR (low level OPR at 2x the LOQ level).
- 3.30 SPE – SOLID PHASE EXTRACTION; a technique in which an analyte is extracted from an aqueous solution or a solid extract by passage over or through a material capable of reversibly adsorbing the analyte. Also termed liquid-solid extraction.

#### 4. INTERFERENCES

LC-MS/MS data from blanks, samples, and spikes must be evaluated for interferences. If any interferences are present, take corrective action if necessary. Do not use aluminum foil because PFAAs can be potentially transferred from the aluminum foil to the glassware. Only aluminum foil rinsed with LC/MS grade methanol can be used where necessary.

- 4.1 PFAS have been used in a wide variety of manufacturing processes, and laboratory supplies should be considered potentially contaminated until they have been tested and shown to be otherwise. The materials and supplies used during the method validation process have been tested and shown to be clean. These items are listed in the Reagents section.

- 4.2 Method interferences may be caused by contaminants in solvents, reagents (including DI water), sample bottles and caps, and other sample processing hardware that lead to discrete artifacts and/or elevated baselines in the chromatograms. All items such as these must be routinely demonstrated to be free from interferences (less than 1/2 the Reporting Limit), under the conditions of the analysis by analyzing Method Blanks. Subtracting blank values from sample results is not permitted.
- 4.3 PTFE products can be a source of PFAS (PFOA) contamination. The use of PTFE in the procedure should be avoided. Polypropylene (PP) or polyethylene (PE, HDPE) products may be used in place of PTFE products to minimize PFOA contamination.
- 4.3.1 Standards and samples are injected from polypropylene autosampler vials with polypropylene or polyolefin snap caps, once. Multiple injections may be performed on Primers when conditioning the instrument for analysis.
- 4.3.2 Random evaporation losses have been observed with the polypropylene caps causing high Internal Std. recovery after the vial was punctured and sample re-injected. For this reason, it is best to inject standards and samples once in the analytical sequence, then recap with polyolefin caps for storage.
- 4.3.2 Teflon-lined screw caps have detected PFAS at low concentrations. Repeated injection from the same teflon-lined screw cap have detected PFNA at increasing concentration as each repeated injection was performed, therefore, it is best to use polypropylene snap caps.
- 4.3.3 Aqueous samples should not come in contact with any glass containers or pipettes as PFAS analytes can potentially adsorb to glass surfaces. Standards dissolved in organic solvent may be purchased in glass ampoules. These standards in organic solvent are acceptable and subsequent transfers may be performed using glass syringes and pipets. Following extraction, the eluate must be collected in a polypropylene tube prior to concentration to dryness. Concentration to dryness in glass tubes may cause poor recovery.
- 4.4 LC/MS grade methanol must be used for all steps where methanol is used in this method. HPLC grade methanol has been demonstrated to be acceptable if tested prior to use.
- 4.5 Matrix interferences may be caused by contaminants that are co-extracted from the sample. The extent of matrix interferences will vary considerably from source to source, depending upon the nature of the sample.

- 4.5.1 Co-extracted Organic Material - Under normal LC conditions matrix effects due to co-extracted organic material enhanced the ionization of 4:2 FTS appreciably. Total organic carbon (TOC) is a good indicator of humic content of the sample.
- 4.5.2 Solid phase extraction cartridges may be a source of interferences. The analysis of field and laboratory reagent blanks can provide important information regarding the presence or absence of such interferences. SPE cartridges should be sealed while in storage to prevent ambient contamination of the SPE sorbent.

4.6 Contamination by carryover can occur whenever a high-concentration and low concentration samples are sequentially analyzed. To reduce carryover, the sample syringe is automatically rinsed with solvent between injections. These operations are programmed into the LC multi-sampler system.

4.7 Volumetric glassware and syringes are difficult to clean after being used for solutions containing high levels of PFOA. These items should be labeled for use only with similarly concentrated solutions or verified clean prior to re-use. To the extent possible, disposable labware is used.

4.8 Both branched and linear PFAS isomers can potentially be found in the environment. Linear and branched isomers are known to exist for PFOS, PFOA, PFHxS, and PFBS, based upon the scientific literature. We have also seen branched isomers for PFHpA, NMeFOSAA, NEtFOSAA and PFNA. If multiple isomers are present for one of these PFAS they likely are adjacent peaks that completely resolve or not, but usually with a deflection point resolved during peak integration. The later of these peaks matches the retention time of its labeled linear analog. In general, earlier peaks are the branched isomers and are not the result of peak splitting.

Currently, all these species are available as linear isomers. Some available branched and linear reference standards of the technical mixtures for these specific PFAS are used to ensure that all appropriate peaks are included during peak integration. These species currently include PFOA, PFHxS, NMeFOSAA, and NEtFOSAA. These branched isomers elute before the linear isomer and are integrated and reported as total for those species. Others are also included at this time such as those listed in section 7.3.4.

4.9 In an attempt to reduce PFOS bias, it is required that  $m/z$  499>80 transition be used as the quantitation transition.

## 5. SAMPLE HANDLING

- 5.1 **Aqueous Samples** - samples are collected by our clients in 250 or 500mL HDPE bottles with unlined HDPE or polypropylene caps and filled to the neck. Each sample submitted should be submitted in triplicate-with one used for determination of Suspended solids and possible pre-screening. Sub-sampling should be avoided whenever possible. When historical data are available indicating high levels of PFAS, sub-sampling may be an advisable option.
- 5.2 **Soil Samples** – samples are collected in wide mouth 125 or 250 mL HDPE bottles with PP unlined caps.
- 5.3 **SAMPLE SHIPMENT AND STORAGE/HOLDING TIMES** – Maintain all aqueous samples protected from light at 0 - 6 °C from the time of collection until shipped to the laboratory. Samples must be shipped as soon as practical with sufficient ice to maintain the sample temperature below 6 °C during transport. Sample are to be received by the laboratory within 48 hours of collection. The laboratory must confirm that the sample temperature is 0 - 6 °C upon receipt. Once received by the laboratory, the samples may be stored at  $\leq -20$  °C, or at 0 - 6 °C, until sample preparation. However, the allowable holding time for samples depends on the storage temperature, as described below:
- 5.3.1 Aqueous samples** may be held in the laboratory for up to 90 days from collection, when stored at  $\leq -20$  °C and protected from the light. When stored at 0 - 6 °C and protected from the light, aqueous samples may be held for up to **28 days**, with the caveat that issues were observed with certain perfluorooctane sulfonamide ethanols and perfluorooctane sulfonamidoacetic acids after **7 days**. These issues are more likely to elevate the observed concentrations of other PFAS compounds via the transformation of these precursors if they are present in the sample.
- 5.3.2 Solid samples (soils and sediments)** may be held for up to 90 days, if stored in the dark at either 0 - 6 °C or  $\leq -20$  °C, with the caveat that samples may need to be extracted as soon as possible if NFDHA is an important analyte.
- 5.4 **SAMPLE EXTRACT HOLDING TIMES** – Store sample extracts in the dark at less than 0 - 4 °C until analyzed. If stored in the dark at less than 0 - 4 °C, sample extracts may be stored for up to 90 days, with the caveat that issues were observed for some ether sulfonates after 28 days. These issues may elevate the observed concentrations of the ether sulfonates in the extract over time. Samples may need to be extracted as soon as possible if NFDHA is an important analyte.

- 6. APPARATUS AND MATERIALS** (as listed or demonstrated equivalents)
- 6.1 250-500 mL polypropylene bottles with polypropylene caps. VWR Scientific or equivalent: Part no. 414004-125, 12 pk. Alternate: White PP unlined lid L238WH and 16oz. clarified PP single wall jar 70-400 neck, item J066-Containers and Packaging.com or equivalent.
  - 6.2 Transport Tube: Virgin Polypropylene, White, Plastic, 10 mL Capacity, 16 mm OD, 93 mm Overall Lg, Self-Standing, 250 PK, Item 710Z420, Gamut.com (Grainger), with PP cap or equivalent.
  - 6.3 Graduated cylinders, 50, 100, 250, 500 and 1000mL, Polypropylene, VWR Scientific or equivalent
  - 6.4 Analytical Balance, 0.0001g., checked for accuracy each day of use with Class S weights, certified annually by an outside service
  - 6.5 Extract concentrators: Organomation Model N-EVAP 112, 24 position concentrator with water batch control and nitrogen supply controls or equivalent
  - 6.6 3.1 Micron in-line filters, Promochrom only
  - 6.7 1.0-2.0 mL polypropylene snap cap vials, Agilent part no. 5182-0567 or equivalent
  - 6.8 Snap caps, polypropylene or olefin, 11 mm, 11/9k, Agilent Part no. 5182-0542
  - 6.9 Solid Phase Extraction Tubes: for EPA 1633: WAX (weak anion exchange mixed mode polymeric sorbent – Phenomenex No. 8B-S038-HCH 200 mg or Waters Oasis 150 mg Cat. # 186002493. Must have a pKa > 8 to remain positively charged during the extraction. Alternate is Agilent Bond Elute WAX 200 mg-cat. No. 5610-2151
  - 6.10 Syringes, Hamilton or equivalent 5.0 uL, 10 uL 25 uL, 100 uL, 250 uL, 500 uL, teflon free
  - 6.11 Solid Phase Extraction System-automated-Promochrom 8 position autosampler system for 6 mL capacity SPE tubes. System retrofit to remove all PTFE components and replaced with PEEK tubing or PFAS free tubing. Automated bottle rinsing feature required with 3.1 um in line PP filters
  - 6.12 Nitrogen Evaporation System- TurboVap nitrogen evaporation system operated at less than 55C.

6.13 LC/MS-MS system- Agilent 1260 or 1290 HPLC system interfaced to an Agilent 6470A or 6460C Triple Quadrupole system. The instrument control and qualitative/quantitative software is Mass Hunter versions B.8.0 and B.9.0 or later.

6.13.1 HPLC System-Agilent 1260 or 1290 Infinity II

6.13.1.1 The Agilent 1260 or 1290 Infinity II HPLC system is configured with temperature controlled column oven compartment. 4 column configuration, temperature controlled (refrigerated) auto sampler compartments, injection valve, proportioning valves, variable flow controls and variable injection capabilities.

6.13.1.2 The delay column (PFAS and other interference removal) is an Agilent Eclipse Plus C18, 4.6mm x 50 mm, 3.5 um-Part no. 959943-902 or equivalent.

6.13.1.3 The analytical column is a Restek Raptor C18 part no. 9304252 50mm x 2.1 mm ID, 1.8 u particle size or equivalent

6.13.2 Agilent LC/MS-MS- Agilent 6470AAR/6460C

6.14.2.1 Agilent model 6470AAR/6460C triple Quadrupole system with Agilent Jet Stream ESI source. UHP nitrogen is used as cell gas and High purity nitrogen is delivered for the sheath gas from a Peak Scientific nitrogen generator system.

6.14 Vortex Mixer- Benchmark Industries or equivalent

6.15 Variable Speed shaker table, 18" x 12"- Orbital Shaker- Jiangau Tenlin Instr. Co., Ltd., Model no. TLSK-III 20-230 RPM, 0-999 min, or equivalent

6.16 Centrifuge, 50 mL, Premiere Model XC-2450 Series Centrifuge 6 x 50 mL, 3500 RPM max., or equivalent

6.17 Mechanical Pipettors- 10-100 uL; 100-1000 uL; 1000-5000 uL-4 E'S Scientific or equivalent, calibrated quarterly .

6.18 Vortex Mixer- Benchmark Industries or equivalent

6.19 pH paper, short range 6-8 and full range with 0.5 pH readability- VWR Scientific or equivalent

6.20 15 mL PP or HDPE Centrifuge tubes, Corning Part no. 430791

6.21 3 mL Disposable Transfer pipets, PE, VWR part no. 16001-176

6.22 1.0 mL polypropylene snap cap vials, Agilent part no. 5182-0567

6.23 Snap caps, polypropylene, 11 mm, 11/9k, Agilent Part no. 5182-0542

6.24 2mL self standing PP microcentrifuge snap cap tubes, SKS Scientific part no. 0747-17

- 6.25 Collection tubes, 15 mL graduated PP or HDPE Centrifuge tubes, Corning Part no. 430791
- 6.26 Disposable 10 mg scoops, PP
- 6.27 Ultrasonic mixer
- 6.28 10 mL disposable syringes, PP or HDPE, luer fitting
- 6.29 13mm or 25 mm 0.2 um Nylon membrane filters, PALL Acrodisc or equivalent

## 7. REAGENTS AND STANDARDS-as listed or equivalents

7.1 ALL REAGENTS and STANDARDS MUST BE LOGGED INTO THE ELEMENT LIMS SYSTEM. This includes lot numbers, expiration, open and prepared dates, receipt date, Certification/traceability documents from supplier(s) if provided and preparer.

7.2 SOLVENTS and REAGENTS-all as listed or equivalents

- 7.2.1 Methanol, hypergrade for LC/MS. (Merck) from Sigma Aldrich Part no. 1060354000 or equivalent (HPLC Plus grade is an acceptable alternate)
- 7.2.2 Water, hypergrade for LC/MS. (Merck) from Sigma Aldrich Part no. 1153334000 or equivalent (HPLC plus grade is an acceptable alternate). Alternatively, York PFAS free water demonstrated ion and PFAS free can be used.
- 7.2.3 Acetic Acid, glacial. ACS grade or equivalent.
- 7.2.4 Ammonium Hydroxide, conc. Cert. ACS grade, 28-30% in water, Sigma Aldrich part no.1054231000, or equivalent
- 7.2.5 Methanolic Potassium Hydroxide (0.05 M) – add 3.3 g of KOH to 1L MeOH
- 7.2.6 Sodium Hydroxide, pellets, ACS grade- Sigma Aldrich part no. 221465-500G, or equivalent
- 7.2.7 Potassium Hydroxide, pellets, ACS grade
- 7.2.8 Ammonium Acetate – ACS grade or better, Ammonium Acetate, HPLC or cert. ACS grade. Sigma Aldrich Part no. 73594-100-G-F or equivalent.
- 7.2.9 Ammonium Acetate 5 mM for HPLC in aqueous solution: HPLC gradient A-- Weigh 0.3854 g (+ 0.0005) Ammonium Acetate and add to 1 liter hypergrade Water. Mix until dissolved then sonicate for 5 mins. To remove air bubbles. Stability - 2 weeks.

- 7.2.10 **Methanolic Ammonium Hydroxide 0.3 %** - take 2.5 mL of conc. ammonium hydroxide into 247 mL MeOH (measure the 247 mL in a PP graduated cylinder-they are under QQ1 somewhere). Use a mechanical pipet to add the 2.5 mL (not strictly quantitative FYI)-**Make 4 bottles of this.** *Used for soil extractions.*- 1 month life
- 7.2.11 **Methanolic Ammonium Hydroxide 1.0 %** - take 8.25 mL of conc. ammonium hydroxide into 242 mL MeOH (measure the 242 mL in a PP graduated cylinder-they are under QQ1 somewhere). Use a mechanical pipet to add the 8.25 mL (not strictly quantitative FYI)- **Make 4 bottles of this** -*used in Promochrom*-1 month life.
- 7.2.12 **Aqueous Ammonium Hydroxide 3%**- take 24.8 mL of ammonium hydroxide and add to 242 mL PFAS free water. 3 month life- *used for pH adjustment*
- 7.2.13 **Methanol with 4% water, 1% ammonium hydroxide and 0.625% acetic acid** – add ammonium hydroxide (3.3 mL, 30%), reagent water (1.7 mL) and acetic acid (0.625 mL) to methanol (92 mL), store at room temperature, replace after 1 month. **This solution is used to prepare the instrument blank, calibration stds and is used to dilute the extracts of samples that exceed the calibration range.**
- 7.2.14 **Formic Acid 0.1M-aqueous** – add 873 uL formic acid into 250 mL PFAS free water- **Make 2 bottles of this-used to prepare 7 below.** 2 year life
- 7.2.15 **Formic Acid, 0.3M-aqueous-** add 2.62 mL (2619 uL) into 250 mL PFAS free water- **Make 4 bottles of this** -*used in Promochrom*-2 year life
- 7.2.16 **Formic Acid methanolic 1:1, 0.1M formic acid-** mix equal volumes of Methanol and 0.1 M formic acid- **Make 4 bottles of this** -*used in Promochrom*-2 year life
- 7.2.17 **Formic Acid 5% aqueous-** add 12.5 mL Formic acid into 250 mL PFAS free water. *Used for pH adjustment.* 2 year life

### 7.3 Stock Standards

Stock Standards are purchased in mid to high concentration levels from Wellington Laboratories, Inc. Guelph, ONT, CA. Currently, Wellington is the preferred supplier of these materials. As a second source verification, prepare a mid-level from the stock independently from the preparation used for initial calibration. Document this preparation in Element. See Attachments 1,2, and 3 for detailed information.

- 7.3.1 Internal Standards (7-Non-Extracted –NIS)) used for the method are MPFOA, MPFOS, M3PFBA, MPFDA, MPFHxA, MPFHxS and MPFNA.

These are purchased at 250 - 1000 ng/mL depending upon the ISTD in a mixture. This mixture is purchased from Wellington Labs in 1.2 mL volumes with the following **part no.: MPFAC-HIF-IS**. Stored at 4C or less unopened this solution has a 5 year life. Once opened, the life is one year from open date.

- 7.3.2 Isotopic Surrogate Analogs (24 isotopes) are purchased for the method described from Wellington Labs at 250-5000 ng/mL levels, depending upon the isotope. The part no. is **MPFAC-HIF-ES**.
- 7.3.3 Stock Standard mixtures of both linear and branched isomers of the EPA 1633 - 40 list are purchased from Wellington Labs at varying concentrations in 5 different mixtures under part nos. PFAC-MXJ, PFAS-MXI, PFAC-MXH, PFAC-MXG, PFAC-MXF.
- 7.3.4 Qualitative branched isomers mix- individual available branched and linear mixes for the following PFAS are used daily to allow for qualitative knowledge of the PFAS branched isomers so they are integrated/included in quantitative analysis: T-PFOA, lp-PFNA, br-FOSA, br-NEtFOSA, br-NMeFOSA, br-NEtFOSE and br-NMeFOSE. These are purchased at 50,000 ng/mL levels from Wellington Labs-the names above are the Catalogue nos. These have a five year life at stock concentrations.

Make a 100 ng/mL Intermediate mix by adding 2.0 uL of the individual stocks up to 1.0 mL with MeOH.

Make a working solution by taking 200 uL of the 100 ng/mL intermediate into 750 uL of cal matrix solution (7.2.13) and add 50 uL of 1:10 EIS mix.

Transfer 300 uL to an autosampler vials, add 3 uL of ISTD working mix, cap, vortex and store until needed. Life is 1 year.

The summary below details the procurement requirements for this method - All from Wellington Laboratories, Inc.:

<u>Description</u>	<u>Part nos.</u>	<u>Comes in</u>
40 Compound Target 1633 list targets	PFAC-MXJ PFAS-MXI PFAC-MXH PFAC-MXG PFAC-MXF	4 Days – 1.2 mL
Isotopic Surrogates-24	MPFAC-HIF-ES	4 Days – 1.2 mL
EPA 1633 - 7 Internal Stds	MPFAC-HIF-IS	4 Days – 1.2 mL

## 7.4 Preparation of Standards

### 7.4.1 Preparation of Working Standards and Intermediates from STOCK Materials

All stock standards are prepared by the vendor in methanol containing a bit of sodium hydroxide to prevent losses of target PFAS compounds due to potential esterification in methanolic solution. The stocks come prepared with 4 molar equivalents (a 3x excess) of sodium hydroxide for stocks at the 50 ug/mL levels. This insures their stability with respect to potential loss due to esterification. The basic solution insures that any acidic sites on the glass ampules or acidic impurities in the methanol are neutralized to prevent ester formation and forms the sodium salt of the PFAS to stabilize it.

When preparing any intermediate level standards, the dilution must be prepared in alkaline methanol to prevent the above from occurring.

In order to do this, prepare a 5.0 mM NaOH in Hypergrade Methanol (or LC/MSMS grade) by dissolving 0.02 g. of sodium hydroxide into 100 mL of MeOH. This has a 2 week life.

For intermediate standards that are made to 10 mL final volume, add 100 uL of 5.0 mM NaOH/MeOH as part of the preparation. This results in a final concentration of NaOH at 0.05 mM.

For intermediate standards prepared to a final volume of 1.0 mL. add 10 uL of the 5.0 mM NaOH/MeOH.

For working calibration standards/CCV/SCV made to 500 uL final volume, using the mixture detailed in section 7.1.13 (MeOH/Water/acetic acid/ammonium hydroxide). This approximates the matrix of the final extracts for analysis.

### 7.4.2 Storage and Handling of Standards

All working standards should be stored at either room temperature or 4C provided the containers are sealed properly.

Stock Standards may be stored at 4-10 deg. C but before using must sit to allow equilibration to room temperature followed by either vigorous vortex mixing or sonication for 3-5 mins.

### 7.4.3 Detailed Standards Preparation Procedure-EPA 1633

### 7.4.4 Internal Standards-*See Attachment 1*

Internal Standards are purchased as a **stock mixture** at 250-1000 ng/mL

These as transferred to a snap cap vial that has been pre-rinsed with 5 mM NaOH/MeOH then allowed to dry.

7.4.4.1 Working level of Non-Extracted Internal Standard (NIS) –make a 1:1 dilution of the stock by taking 500 uL of the Stock and adding 500 uL MeOH.

Use as is by adding 3 uL to 300 uL volumes for QC, samples or calibration.

#### 7.4.5 Isotopic Surrogates (Extracted Internal Standards)- *See Attachment 2*

7.4.5.1 Stock Surrogates are purchased as a mixture at 250-5000 ng/mL. These are transferred to a snap cap vial that has been pre-rinsed with 5 mM NaOH/MeOH then allowed to dry.

Option 1- Use Stock as received and add 25 uL to all samples/QC to be extracted

Option 2- Prepare 2 mL of Working EIS by preparing a 1:2 dilution to yield 125-2500 ng/mL for use as follows:

Take 1000 uL of the Surrogate Stock, plus 25 uL of 5 mM NaOH/MeOH and 975 uL MeOH to give 2.0 mL final volume. **50 uL are added to ALL preparation blanks, samples and QC.** This is sufficient for approx. 40 x 50 uL additions to all blanks, QC and samples.

This corresponds to adding 5 to 100 ng of EIS compounds to the initial samples and QC. The final volume of extractions will typically be 5.0 ml so this yields 1-20 ng/mL of the isotope EISs in the final extract for analysis.

For calibration, the Stock mix at 250-5000 ng/mL is used by adding 100 uL up to 1.0 mL final volume to yield 25/500 ng/mL in each calibration level as directed in the calibration section 7.4.7.1.

#### 7.4.6 Target Analytes- EPA 1633- *See Attachment 3*

The target analytes for this method are purchased commercially from Wellington Labs under the 5 part nos. described in Section 7.3.3 which contains the method target analytes only at varying concentrations. These mixtures are transferred from their glass ampules to snap cap vials that have been pre-rinsed with 5 mM NaOH/MeOH then allowed to dry. Again these are the nominal concentrations and the actual anion concentrations for those present as salts are listed in the documentation and are reflected in both Mass Hunter and Element.

Preparation of a 1.0 mL volume of a 10 x intermediate of each of the 5 mixes for Calibration. Some of the higher levels on the curve use aliquots of the stock as shown in Figure 2.

Scale the volume accordingly if less is desired. Note that the EPA 1633 mixes come 1.2 mL per vial so this recipe may consume one vial quickly.

**7.4.6.1 OPR and LLOPR** - these are a mid-level blank spike and low level blank spike (at 2x the LOQ). These are prepared as follows from the EPA 1633 Target mixtures (5 components) by taking 200 uL of each STOCK into a snap cap vial giving 1.0 mL final volume.

1. Element ID Y22B199- PFAC-MXF mix 200 uL
2. Element ID Y22B200- PFAC-MXG mix 200 uL
3. Element ID Y22B201- PFAC-MXH mix 200 uL
4. Element ID Y22B204- PFAC-MXI mix 200 uL
5. Element ID Y22B205- PFAC-MXJ mix 200 uL

For OPR (BS) at mid-level add 100 uL to each matrix for the batch OPR and for the **LLOPR add 20 uL** of the spike mix and process through all steps of the specific matrix preparation.

#### **7.4.7 Calibration**

Calibration of the LC-MSMS systems is done by an eight level calibration covering the range 0.2 to 1650 ng/mL, nominal. Various PFAS species are present as salts and at differing concentrations and these are reflected in Mass Hunter and Element as their actual concentrations. Six to eight levels are prepared depending upon the analyte. These levels are prepared as directed below using the internal standards, surrogates and target analytes from above.

**This is made to a final volume of 1000 uL** in the matrix described in section 7.1.13 (MeOH/Water/acetic acid/ammonium hydroxide)

**This preparation excludes the ISTD in the initial preparation.** After preparation as directed, withdraw 300 uL of each level into a 500 uL PP vial and add 3 uL of ISTD before analysis, cap and vortex to mix.

These are stored at <10C and are stable for 6 months when prepared as directed.

7.4.7.1 Calibration Curve Preparation - Based upon a final volume of 1.0 mL in CAL Matrix Solution\*

See Attachment 4 for details.

**EPA 1633 Calibration Standard Preparation**  
 Rev 1.,0 10/03/22

**For Final volume of 1.0 mL**

Recipe uses both a 1:10 intermediate for some levels AND the Stock for other points as indicated

All standards in Stds refrig. Adjacent to QQQ1 N2 generator in box labeled EPA 1633 standards- all are opened, labeled and good to use.

	Stock: Y22B201 1633 MXH Targets Intermediate @10x *	Stock: Y22B200 1633 MXG Targets Intermediate at 10x*	Stock: Y22B199 1633 MXF Targets Intermediate at 10x*	Stock: Y22B204 1633 MXI Targets Intermediate at 10x*	Stock: Y22B205 1633 MXJ Targets Intermediate at 10x*	Stock: Y22B198 1633 EIS isotope Mix Intermediate at 10x
Level	uL of MXH 10x Interm.	uL of MXG interm.	uL of MXF interm.	uL of MXI interm.	uL of MXJ interm.	uL of EIS Interm.
1	2	2	4	2	2.5	50
2	5	5	10	5	6.25	50
3	12.5	12.5	25	12.5	15.6	50
4	25	25	50	25	31.3	50
5	50	50	100	50	62.5	50
6	125	125	250	125	15.6 of Stock	50
7	25 of Stock	25 of Stock	50 of Stock	25 of Stock	31.2 of Stock	50
8	62.5 of STOCK	62.5 of STOCK	125 of STOCK	62.5 of STOCK	78.0 of Stock	50

\* 100 uL up to 1 mL in MeOH

\*CAL MATRIX: Methanol with 4% water, 1% ammonium hydroxide and 0.625% acetic acid – Prepared by adding ammonium hydroxide (3.3 mL, 30%), reagent water (1.7 mL) and acetic acid (0.625 mL) to methanol (92 mL), store at room temperature, replace after 1 month. This solution is used to prepare the instrument blank and is used to dilute the extracts of samples that exceed the calibration range.

Amount of CAL Matrix to make up to 1.0 mL Final volumes:

CAL LEVEL	uL of CAL Matrix
1	937.5
2	918.8
3	871.9
4 *	793.7
5	637.5
6	309.0
7	843.8
8	609.5

INTERNAL STANDARD MIX (non-extracted IS-NIS). Mix 500 uL of STOCK ISTD at 250-1000 ng/mL with 500 uL of Methanol. This results in 125-500 ng/mL Intermediate ISTD. See 7.4.4.1.

Add 3.0 uL to 300 uL of each level 1-8 in a 500 uL PP autosampler vials and cap with polyolefin cap, vortex to mix and run. Add 3 uL to 300 uL of all sample/QC extracts before analysis.

\*Level 4 is also used as the CCV for each analysis sequence run initially, then after every 10 samples and at the end of the sequence. Multiple vials should be prepared for this level.

**7.4.8 Checking the Efficacy of the Surrogate/Spike Mixes**

On a monthly basis the surrogate (EIS) and spike mixes from the vials used for spiking are assayed to ensure stability. These are prepared for the analysis by taking 3.0 uL of the surrogate (EIS) mix and 3 uL of the Spike mix into 294 uL MeOH/Water/Acetic Acid/Ammonium hydroxide from 7.1.13, then add 3 uL of NIS (ISTD). This yields a 1:100 dilution of the EIS and Spike mixes. Use 100 as the dilution factor in the Mass Hunter worklist.

**7.4.9 Second Source - Initial Calibration Verification (ICV)**

Currently, the EPA method 1633 does not require a second source ICV. Rather, the initial calibration is verified by preparing a Level 5 -5.0 ng/mL (nominal) calibration standard independently from calibration standard preparation. This serves as the ICV.

**8. PROCEDURE**

**8.1 Preventative and Routine Maintenance**

<b>HPLC/MS/MS Preventative Maintenance</b>	
<p><b><u>As Needed:</u></b>            Change pump seals.            Change in-line filters in autosampler (HPLC).            Check/replace in-line frit if excessive pressure or poor performance.            Replace column if no change following in-line frit change.            Clean needle.            Replace or clean Capillary            Replace fused silica tube in ESI interface.            Clean lenses.            Clean skimmer.            Ballast rough pump 30 minutes.            Check Nozzle flow pattern</p>	<p><b><u>Daily (When in use)</u></b>            Check solvent reservoirs for sufficient level of solvent.            Verify that pump is primed, operating pulse free. (ripple &lt; 1%)            Check needle wash reservoir for sufficient solvent.            Verify capillary heater temperature functioning.            Verify vaporizer heater temperature.            Verify rough pump oil levels.            Verify turbo-pump functioning.            Verify nitrogen pressure for auxiliary and sheath gasses.            Possible Checktune</p>
<p><b><u>Semi-Annually</u></b>            Replace oil mist and odor elements.            Replace activated alumina filter if applicable</p>	<p><b><u>Annually</u></b>            Vacuum system components including fans and fan covers.            Clean/replace fan filters, if applicable.</p>

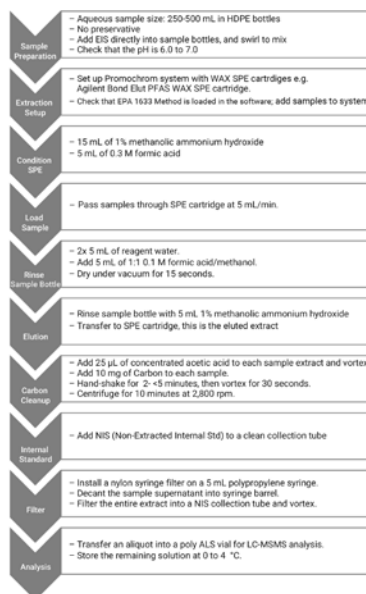
**8.2 Sample Preparation (Extraction, Clean-up and Concentration)-Aqueous Matrices**

A summary of the steps for the steps related to aqueous samples are shown in Figure 1.0 and in the summary below.

1. Determine % Suspended Solids – 10.0 mLs ± 0.02 mL through a tared 0.2 um PP filter. Dry filter ≥ 12 hours @ 105C, cool in dessicator. Calc % TSS
2. Check pH with short range pH paper to insure pH = 6.5 ± 0.5. Adjust if necessary with either 5% aqueous formic acid to lower pH or with 3% aqueous ammonium hydroxide to raise pH.
3. Weigh sample bottle as is to ± 0.1 g.-remove cap first since that will not be weighed later since autosampler caps are used
4. Homogenize sample by inversion 3-4 x-place full volume on Promochrom System using WAX SPE cartridges.

5. Set up MBLK, OPR at 2x LOQ (low LCS) and mid-level OPR (mid-level LCS)- spike with 10 uL of Spike mix for LLOPR and 100 uL of spike mix for mid-OPR.
6. Spike all with 25 uL EIS solution (isotopic surrogates)
7. Follow Promochrom method for EPA 1633
8. Initiate SPE program EPA1633AQ on the Promochrom system
9. Once the program is finished there will be 5 ml in the collection tube. If less, make up to exactly 5.0 mL with MeOH.
10. Remove the sample bottle from the Promochrom system and weigh the empty bottle. That will determine the weight (volume for water) assume 1g. = 1.0 mL. Enter this value into the element bench sheet and the initial volume.
11. Add 25 uL of concentrated acetic acid to each collection tube and vortex to mix.
12. Add 10 mg of activated carbon to all samples and QC. Hand mix and vortex mix for no more than 2 minutes
13. Centrifuge at 2800 rpm for approx. 10 minutes.
14. Filter the final volume through 0.2 um nylon filter using a syringe.
15. If the client provides only 250 mL of sample, in order to meet reporting limits, it may be required to concentrate the unfiltered extract by a factor of at least 2 on a TurboVap at 1.2 Liters/min with nitrogen at <55°C.. For example if final volume is 5.0 mL, concentrate to 2.0 mL final volume (2.5 x concentration). If 500 ml provided, skip this step.
16. Enter the final volume achieved into the bench sheet in Element.
17. Transfer a portion of the final extract to a 2 mL snap cap, labeled.
18. Take a 300 uL portion of the extract into a 500 uL PP autosampler vial, add 3 uL of NIS (non-extracted internal std.). Cap, vortex, store at <6°C.
19. Sample is ready for analysis.

**Figure 1.0 Aqueous Sample Preparation Steps**



- 8.2.1 To measure sample initial volume for aqueous samples, remove the cap and weight the bottle and record the weight in the sample weight. For MBLK, LLOPR and OPR use 250-500 mL volumes). After SPE processing, be sure the empty bottle is dry and weight to determine the amount of sample in grams (essentially equal to volume in mL). Use that number for the initial volume in Element LIMS.
- 8.2.2 For every 20 field samples (Field blanks are considered field samples in as they are treated as such), a blank (MBLK), blank spikes, (2 levels-LLOPR and OPR as BS1 and BS2 respectively). A matrix spike is not necessary since isotope dilution is used. If an MS/MSD is required by a specific project, spike 100 µL of the mid-level BS mix (OPR).
- 8.2.3 All polypropylene equipment including graduated cylinders and sample transfer lines/reservoirs should be washed prior to using with extraction solvent (Methanol).
- 8.2.4 Add 25 µL of EIS (isotopic surrogates) (250/5000 ng/mL) to each sample and QC sample, recap and invert to mix well.
- 8.2.5 Add, 5ul (low level spike), 50 µL (mid-level spike)
- 8.2.6 Using the Promochrom automated system, run a cleaning run. Be sure the reservoirs of LC/MS grade methanol and HPLC plus grade water or equivalent are full. Prime all lines and align all components.
- 8.2.7. Load in the EPA1633 method and adjust the sample volume to 10 ml more than the highest volume container measured by visual comparison to a calibrated bottle of the same size.
- 8.2.8 The SPE method solvents for extractions are as follows:

- Solvent 1 = MeOH
  - Solvent 2 = H<sub>2</sub>O
  - Solvent 3 = 0.3 M Formic acid,
  - Solvent 4 = 1:1 0.1M Formic Acid/MeOH,
  - Solvent 5 = MeOH with 1% ammonium hydroxide (“Basic MeOH”)
- W1 = Aqueous waste, W2 = Organic waste

8.2.9 Place labeled 15 mL graduated collection vessels in the sample collection tray and use Element labels to identify the vials at this point. Print 2 sets of labels for each since they will be used after the concentration step as well. These are graduated.

8.2.10 Connect the bottles to the automated system.

8.2.12 Initiate the EPA1633Aq SPE Extraction Program. Each run is approximately 1 hour 45 minutes.

8.2.13 **Evaporation Options**-Aqueous Samples

#### **N-EVAP systems**

8.2.13.1 The resulting 5 mL extracts are not further concentrated unless Work Plan reporting limits need to be lower than standard RLs. When this is required by the Work Plan, the extracts and QC are transferred to the N-EVAP concentrator systems operated at 50-55 degrees C (never more than 55C) in their original collection vials. The nitrogen flow is initiated at 1.2 ml/min and adjusted on each individual sample to provide a gentle stream causing a slight disturbance at the surface of the methanol extracts.

8.2.13.2 As this evaporation proceeds the walls of each vessel are rinsed with methanol when the volume is approximately 2.5 mls and then again when the volume is reduced to just below 2.0 mL. Then Bring up the final volume to 2.5 mL. This is a 2x concentration when needed.

8.2.14 Swirl final extract, make up to 2.0 mL with methanol. Using a disposable polypropylene pipet, carefully transfer to a 2 mL PP snap cap vial.

8.2.15 Withdraw an aliquot of 300 uL into a 500 uL autosampler vial (PP) and add 3.0 uL of ISTD (NIS) mix. .

8.2.16 Cap with polyolefin flexible caps and vortex to mix.

8.2.17 Store Extracts at <6°C until analysis.

### 8.3 Sample Preparation (Extraction, Clean-up and Concentration)- Soil Matrices

1. Determine % solids: use 5 grams; dry at 110C  $\geq$  12 hours.
2. Mix sample with a stainless steel spatula to homogenize-exclude Sticks, vegetation, rocks and the like.
3. Remove 5.0 g. from the homogenized sample container. Add to a tared 50 mL centrifuge tube. Determine the weight  $\pm$  0.01 g.
4. Prepare QC using clean matrix (Ottawa Sand) wetted with 1 mL PFAS free water in 50 mL centrifuge tubes
5. For all samples, QC blanks and LCSs (LLOPR and ML OPR) and a 25 uL aliquot of EIS onto the soil. The current Element standard ID is Y22J305. For the OPRs add appropriate amount of spike solution (10 uL for LLOPR and 100 uL for OPR. The current Element Std ID is Y22J304.
6. Swirl the samples to mix then let sit for 30 minutes.
7. Add 10 mL of 0.3% methanolic ammonium hydroxide to each centrifuge tube.
8. Vortex to mix then shake on the shaker table for 30 minutes.
9. Next, centrifuge at 3500 rpm for 5 minutes or 2800 rpm for 10 minutes.
10. Transfer the supernatant liquid to a clean 50 mL centrifuge tube
11. Add 15 mL of 0.3% methanolic ammonium hydroxide to each of the original centrifuge tubes.
12. Vortex to mix then shake on the shaker table for 30 minutes
13. Next, centrifuge at 3500 rpm for 5 minutes or 2800 rpm for 10 minutes.
14. Transfer the supernatant liquid to the centrifuge tubes from 10.0 above
15. Add another 5 mL of 0.3% methanolic ammonium hydroxide to each of the original centrifuge tubes.
16. Vortex to mix then shake on shaker table for 30 minutes
17. Next, centrifuge at 3500 rpm for 5 minutes or 2800 rpm for 10 minutes.
18. Transfer the supernatant liquid to the centrifuge tubes from 10.0 above
19. Add 10 mg of activated carbon to the combined extract using a 10 mg scoop and hand swirl for 2 minutes (never more than 5 minutes of losses of Target PFAS will occur)
20. Centrifuge at 3500 rpm for 5 minutes or 2800 rpm for 10 minutes
21. Immediately Decant into a 50 mL centrifuge tube.
22. Place in Turbovap or on the N-EVAP system and concentrate at 55 deg. C to a final volume of approx..7 mL at a nitrogen flow of 1.2 ml/min.
23. Add 35-40 mL of PFAS free water to the tube and vortex to mix.
24. Check the pH= 6.5  $\pm$  0.5 if not adjust accordingly using 5% formic acid to lower pH or 3% aqueous ammonium hydroxide to raise pH rto within this range.

25. Set up the soil EPA 1633 method on the Promochrom be sure volume is set to 50 ml for sample size.
26. Place samples and QC centrifuge tubes on the autosampler
27. Once the program is finished, note the final volume and use that in the Element benchsheet as final volume. Should be 5.0 mL. If less make up to 5.0 mL with MeOH.
28. Add 25 uL of concentrated acetic acid to each collection tube and vortex to mix.
29. Add 10 mg of carbon to all samples and QC and mix for 2 minutes (no more than 5 minutes).
30. Immediately centrifuge at 2800 rpm for 10 minutes.
31. Filter the extract through a 0.2 um nylon membrane using a syringe and filter into a 2 mL snap cap vial.
32. When ready for analysis, remove 300 uL of extract and transfer to a 500 uL autosampler vial. Add 3 uL of NIS (internal standard), vortex to mix. Cap with polyolefin flexible caps and vortex to mix.
33. Store Extracts at <6°C until analysis
34. Samples/QC are now ready for analysis.

#### **8.4 Sample Analysis--Running Samples/QC - Acquisition Method**

The acquisition method is detailed in Attachment 4 (HPLC) and Attachment 5 (MS/MS) of this SOP. The method is a HPLC with dynamic MRM method with precursor and product ions with specific acquisition parameters to maximize sensitivity and specificity. This list may be modified to add other PFAS target analytes as necessary.

8.3.1 The triple Quadrupole (QQQ) system must be optimized for each target analyte (including surrogates and internal standards) using the Mass Hunter Optimizer program. This program determines the most abundant precursor and product ions for each compound and their abundances. These data are then used to build an MRM (multiple reaction monitor) method for acquisition. This is done initially or after any major maintenance procedures are performed to the triple quadrupole system. A high level standard is used for this in the [M-H]<sup>-</sup> mode or M-COOH for HFPO-DA.

8.3.2 The QQQ is checked for tuning on a weekly basis (if necessary) before analysis using the Tune context by selecting the CHECKTUNE radio button. This is done only in negative ion mode since that what we are operating under. If the Checktune fails, run the Autotune program-note: this takes approx. 45 mins. in negative mode. After autotune or any tuning adjustment, a re-calibration of the instrument is required.

8.3.3 Before any QC or samples can be run, the HPLC must be allowed to purge for at least thirty minutes. This purge must be done using the initial mobile phase conditions used in the method must be allowed to run for 15 minutes or until pressure has stabilized (ripple must be < 1%)

8.3.4 An instrument sequence (Worklist) is then made. It should begin with a blank, a primer (5 ng/mL) followed by a blank with ISTD to establish system cleanliness.

8.3.5 After a successful initial calibration has been completed, the analytical sequence for a batch of samples analyzed during the same time period is as follows. Standards and sample extracts must be brought to room temperature and vortexed prior to aliquoting into an instrument vial in order to ensure homogeneity of the extract.

### 8.3.6 Analysis Sequence

1. Instrument Blank \*
2. Instrument Sensitivity Check –LOQ Standard Level (SEQ-CAL 1) S/N > 3:1
3. Calibration Verification Standard (CCV)
4. Qualitative Identification Standards –Branched PFAS  
PFOA, PFNA, PFOSA, NMeFOSA, NEtFOSA, NEtFOSE, and NMeFOSE.
5. Instrument Blank (SEQ-CCB)\*
6. Method Blank (Batchxxxx-BLK1)
7. Low-level OPR (LLOPR) (Batchxxxx-BS1)
8. OPR (Batchxxxx-BS2)
9. Field Samples (10 or fewer)
10. Calibration Verification Standard (SEQ-CCVn)
11. Instrument Blank (SEQ-CCBn)\*
12. Field Samples (10 or fewer)
13. Calibration Verification Standard (SEQ-CCVn)
14. Instrument Blank (SEQ-CCBn)\*

\* Contains solvent system for calibration, NIS and EIS

8.3.7 The run can end with a script to put the instrument into standby mode.

## 8.4 Daily Sample Preparation/Analysis Sequence

- Prepare extracts for analysis by placing a 300 ul aliquot of sample extract containing 3 uL of internal standards into a PP auto-sampler vial. Apply Polyolefin cap.
- Confirm that the samples loaded on the auto-sampler were entered correctly in the injection log. Make any necessary corrections.
- Run instrument CCV checks at the RL (0.25-0.5 ng/mL), then at a mid level and high level rotating every ten samples (5, 25 ng/mL) and ending with a mid level CCV.
- Enter the Worklist (injection sequence) into the instrument software and load samples onto the auto-sampler in the order shown above in Section 8.3.6

## 8.5 Data Review

The Agilent Mass Hunter Quantitation program is used to review all data. All identifications are based upon acceptable ion ratios for the abundance of both precursor and product ions along with retention time information. All positive detections of target PFAS must be less than the high point conc. of the Cal. Curve.

- 8.5.1 Since certain PFAS species are manufactured by different processes the presence of branched as well as linear isomers may be found. In order to properly quantitate these species, the analyst must sum the related branched and linear isomers. This affects the following species: PFOS, PFHxS, PFOA, PFNA, PFOSA, NMeFOSA, NEtFOSA, NEtFOSE, and NMeFOSE.
- 8.5.2 Any detection greater than the upper limit of the calibration curve requires dilution into the upper half of the curve, where possible.

## 9. CALIBRATION

### 9.1 Initial Calibration

The initial calibration covers the range 0.20 ng/mL to 1560 ng/mL nominal conc. or higher depending upon the linearity of the PFAS species. After acquisition, the data are quantitated in Mass Hunter and the default calibration model for target compounds is generated using Quadratic regression, FORCED through the origin where applicable. All same level species (EIS) used average response factor model. Depending upon the response and accuracy at each level as shown in the Mass Hunter program, use Linear, Forced, weighted (1/x) or quadratic, Forced, with or without weighting to achieve the best fit which is based upon the best accuracy on a compound by compound basis. In any case, the correlation coefficient must be greater than 0.990. Average response factor RSD should be  $\leq 20\%$  where used.

- 9.1.1 The calibration levels as shown in Section 7.6.3 use 8 levels. All points are included in the calibration with exception of some species that saturate at levels 7 and 8.

### 9.2 ICV/SCV

An independently prepared Initial Calibration Verification must be run immediately following initial calibration. The concentration of this standard should be in the middle of the calibration range (e.g. 5.0 ng/mL) and prepared from a separate preparation as that of the calibration. Unless project-specific data quality objectives are required, the values from the second-source check should be  $\pm 30\%$  of the expected concentration.

**Corrective Action:** Quantitative sample analyses should not proceed for a failing ICV. Recalibrate and re-run the ICV if necessary.

### 9.3 Continuing Calibration Verification

The first CCV is at a mid-level and run every 10 client samples including a closing CCV.

The mid-Level CCV must be  $\pm 30\%$  of the true value.

**Corrective Action:** If any of the required calibration check criteria fail, the system must be evaluated and any appropriate instrument repair or maintenance must be performed. Sample data are unacceptable and must be rerun. Reinject the standard may be done. If the calibration check standard still fails, the system must be recalibrated.

## 10. Quality Control

### 10.1 Initial Demonstration of Capability (IDOC)

10.1.1 The initial demonstration requirement of EPA 1633 must be acceptable before analysis of samples may begin. To establish the ability to generate acceptable precision and recovery, the laboratory must perform the following operations for each sample matrix type to which the method will be applied by that laboratory.

The IDOC includes the following key elements:

- Initial Demonstration of Precision and Recovery (IPR)
- MDL determination

### 10.1.2 Initial Demonstration of Precision and Recovery-IPR

- Extract, concentrate, and analyze four aliquots of aqueous and soil matrices spiked with 100 uL of the native spike solution OPR Mix Y22J304, 50 µL of the EIS solution no. Y22J305. At least one method blank, matching the matrix being analyzed, must be prepared with the IPR batches by matrix. All sample processing steps that are used for processing samples, including preparation and extractions, cleanup and concentration, must be included in this test.

- Using results of the set of four analyses, compute the average percent recovery (R) of the extracts and the relative standard deviation (RSD) of the concentration for each target and EIS compound.
- For each native and isotopically labeled compound, compare RSD and % recovery with the corresponding limits for initial precision and recovery in Table 5. If RSD and R for all compounds meet the acceptance criteria, system performance is acceptable, and analysis of blanks and samples may begin. *Note these acceptance criteria are not finalized and are based upon a single lab validation. Data for this table are derived from the single-laboratory validation study, and are only provided as examples for this draft method. The data will be updated to reflect the inter-laboratory study results in a subsequent revision. Therefore, these criteria will change after inter-laboratory validation. Several sections of this method state that Table 5 criteria are required, this is standard language that will be applicable when the method is finalized.*

### 10.1.3 MDL Determination

MDL Determination –In order to perform the MDL study, 7 total extractions are performed on 3 different days (Extraction day 1= 3 LRBs and 3 LFBs); Extraction day 2 is 2 of each, and Extraction day 3 is also 2 of each).

The levels extracted represent approx. 3-5 x the expected LOQ.

Once extracted, the analyses are conducted on 3 separate days (we use only QQQ2 for EPA 1633 so all runs are on that system). The MDL is determined according to the EPA MDL protocol defined in Definition and Procedure of the Determination of the Method Detection Limit, Revision 2 Dec. 2016 as detailed below:

Make all computations as specified in the analytical method and express the final results in the method-specified reporting units.

Calculate the sample standard deviation (SD) of the replicate spiked sample measurements and the sample standard deviation of the replicate method blank measurements from all instruments to which the MDL will be applied.

Compute the MDLs (the MDL based on spiked samples) as follows:

**MDL<sub>s</sub> = 3.143 x SD (for seven replicates; SD = Standard Deviation)**

Compute the MDLb (MDL based on method blanks-LRBs) as follows:

- If none of the blanks give numerical results then the MDLb does not apply
- If only some of the blanks (but not all) give a result, set the MDLb to the highest result found

- If ALL method blanks show a detections then use the following calculation to determine MDLb:

$$\text{MDLb} = \text{Average of Blank Detections} + (3.143 \times \text{Std. Dev.})$$

Calculate the final MDL by selecting the greater of MDLs or MDLb.

## 10.2 On-going QC Requirements

Preparation Batches are defined at the sample preparation step. Batches should be kept together through the whole analytical process as far as possible, but it is not mandatory to analyze prepared extracts on the same instrument or in the same sequence.

The quality control batch is a set of up to 20 samples of the same matrix processed using the same procedure and reagents within the same time period. The quality control batch may contain a matrix spike/matrix spike duplicate (MS/MSD), two laboratory control sample (LCS-LLOPR and OPR) and a method blank. Laboratory generated QC samples (Blank, LLOPR, OPR, MS/MSD) do not count toward the maximum 20 samples in a batch. Field QC samples are included in the batch count. In some cases, at client request, the MS/MSD may be replaced with a matrix spike and sample duplicate.

10.2.1 METHOD BLANK - One method blank must be extracted with every prep batch of similar matrix, not to exceed twenty (20) samples. For aqueous samples the matrix is Lab reagent water. For Soils the method blank matrix is Ottawa sand. Criteria:

- The method blank must not contain any analyte at or above 1/2 the LOQ (Reporting Limit).
- Re-extraction and reanalysis of samples associated with an unacceptable method blank is required when reportable concentrations are determined in the samples.

10.2.2 LABORATORY CONTROL SAMPLES (LCS- also called OPR and LLOPR) must be extracted with every process batch of similar matrix, not to exceed twenty (20) samples. The LCS is an aliquot of laboratory matrix (e.g. water for aqueous spiked with analytes of known identity and concentration and isotopic surrogate analogs. The OPRs must be processed in the same manner and at the same time as the associated samples. Recovery for Aqueous low level OPR target analytes is 40-150% until more data are derived. For all other Aqueous OPR levels recovery targets are 50-150%. These data are based upon EPA 1633 draft ranges that will change and are not used for acceptance/rejection but are reported until such time that fully validated acceptance ranges are provided in the final version of the method.

10.2.3 Matrix spike/Matrix spike duplicate (MS/MSD or MS/MSD). These are not typically required since each sample contains isotopic PFAS analogues that correct for any matrix effects. If the client requests them, then they are processed accordingly but are not a requirement of this method. If done they are by matrix, not to exceed twenty (20) samples. An MS/MSD pair is aliquots of a selected field sample spiked with analytes of known identity and concentration. The MS/MSD pair must be processed in the same manner and at the same time as the associated samples. Spiked analytes with recoveries or precision outside of the Laboratory control limits are flagged accordingly. Until enough statistical data per matrix is available, no criteria are offered. If a specific QA Project Plan has required limits, this is preempted. Any outliers must be qualified accordingly.

10.2.4 Initial calibration verification (ICV) –A second source standard is not required for this method. A second independently prepared mid-level standard is prepared and used for this purpose and analyzed after the ICAL. The concentration should be at the mid range of the curve and must recover within 70-130 % of expected value.

Corrective actions for the ICV include:

- Rerun the ICV
- Remake or acquire a new ICV.
- Evaluate the instrument conditions.
- Evaluate the initial calibration standards.
- Rerun the initial calibration.

10.2.5 Internal Standard- The Non-extracted Internal Standard (NIS) is added to each field and QC sample prior to analysis. The IS response (peak area) must not deviate by more than 50-200% from the mean response (peak area) of the initial calibration. If the areas are low for all the field samples and QC samples in the batch, it suggests a loss of instrument sensitivity, while low areas in only some field or QC samples suggests a possible bad injection.

Corrective action includes:

- Reinject the questionable samples
- Verifying the CCV NIS areas are compliant with the range, if so, this suggests either matrix effects and may require a small dilution to mitigate interference if only some of the NIS compounds are affected
- Qualify affected data

### 10.3 **Initial Demonstration of Capability (IDC)**

Initial Demonstration of Capability involves the following processes listed ion Table 1.0 as follows.

**Table 1.0 - Initial Demonstration of Capability (IDC)**

Requirement	Specification and Frequency	Acceptance Criteria
Initial Demonstration of Precision and Recovery (IPR)	Extract, concentrate, and analyze four aliquots of the matrix (aqueous and soil) spiked with target native standard solution, EIS solution and finally the NIS (ISTD). Extract a method blank of each matrix with each matrix IPR batch. All steps that are used for processing samples, including preparation and extraction must be included.	Using results of the set of four analyses, compute the average percent recovery (R) of the extracts and the relative standard deviation (RSD) of the concentration for each target and EIS compound.
		For each native and isotopically labeled compound, compare RSD and % recovery with the corresponding limits for initial precision and recovery in Table 5. If RSD and R for all compounds meet the acceptance criteria, system performance is acceptable, and analysis of blanks and samples may begin.
Method Detection Limit (MDL)	Method detection limit (MDL) - Each laboratory must also establish MDLs for all the analytes using the MDL procedure at 40 CFR Part 136, Appendix B. An MDL determination must be performed for all target compounds.	The minimum level of quantification (ML) <b>can be</b> calculated by multiplying the MDL by 3.18 and rounding to the nearest integer
Calibration Verification (ICV or SCV) <i>Section 9.1.5</i>	Analyze a mid-level ICV, each time a new calibration is performed or at a minimum, quarterly. The ICV must be an independent dilution beginning with the common starting materials used for ICAL. No 2 <sup>nd</sup> source is required due to availability.	Results must be 70-130% of true value.

#### 10.4 QC Requirements

Ongoing QC requirements are detailed in Table 3.0 as follows.

**Table 3.0 QC Requirements**

Summary of Quality Control Method Reference	Requirement	Specification and Frequency
Section 10.1	Mass Calibration	Annually and on as-needed basis
Section 10.1.7	Mass Calibration Verification	After mass calibration
Section 10.3	Initial Calibration (ICAL)	Minimum 6 calibration standards for linear model and 7 calibration standards for non-linear models.
Sections 10.2.2, 14.4	Retention Time (RT) window	After ICAL and at the beginning of analytical sequence
Sections 7.3.1, 9.4	Extracted Internal Standard (EIS) Analytes	All CAL standards, batch QC and field samples

Sections 7.3.2	Non-extracted Internal Standards (NIS)	All CAL standards, batch QC and field samples
Sections 7.3.4, 10.3.1, 13.3	Instrument Sensitivity Check (ISC)	Daily, prior to analysis
Section 14.2	Calibration Verification (CV) (CCV)	At the beginning and every 10 samples and at the end
Section 14.6	Instrument Blank	Daily prior to analysis and after high standards
Sections 9.1.3, 9.5, 14.7	Method Blank (MB)	One per preparation batch
Section 14.5	Ongoing Precision Recovery (OPR)	One per preparation batch
Section 11.0	Limit of Quantitation Verification (LLOPR)	Prior to analyzing samples
Section 11.0	Matrix Spike (MS/MSD)	One per preparation batch (if required) Normally not needed, since Isotope dilution is employed

## 11.0 DATA REVIEW, CALCULATIONS AND REPORTING

Samples concentrations are determined using either or linear regression or quadratic regression FORCED through the origin. Weighted ( $1/x$  or  $1/x^2$ ) may assist with low level accuracy and is recommended where necessary. All calibration curves have greater than 6 points. Any target analyte exceeding the calibration range will require dilution.

### 11.1 Data interpretation

All sample data calculations are performed by the Agilent Mass Hunter software in ng/mL and then final data are calculated taking into account final extract volumes and the initial sample volumes extracted which are entered into the Element bench sheet.

11.2 Linear and Branched Isomers are addressed in Section 8.5 and are reported for the noted species as Total which is a sum of the linear and branched isomers for affected species.

11.3 All Data are uploaded into Element LIMS and all final concentration calculations and associated recoveries are detailed. All pdfs of Mass Hunter Quant reports are uploaded to the Element Raw\_Data drive for association with ICALs and all batch and analysis sequence runs. Data are set to Analyzed status once uploaded and initially reviewed, then locked.

11.4 The Data are then evaluated using the York Qualinator™ data review tool which evaluates all data CCVs, QC, ISTDS, Recoveries, etc. and automatically assigns outlier qualifiers for review and acceptance by the reviewer. The accepted data are then uploaded to Element and final reviewed in Laboratory Data Entry/Review module. Once reviewed, the status is set to Reviewed indicating the data are ready to be Reported by the Reporting Group.

## 12. HEALTH AND SAFETY

12.1 General safety considerations and requirements are detailed in the York Laboratory Safety and Health Standard Operating Procedure No. Safety011600.

Specific safety rules applying to the conduct of this analysis requiring the following:

- When handling standards and samples, latex gloves are required.
- Also, when handling neat materials, a fume hood and safety glasses are required.
- When handling samples, gloves and glasses are required.
- Highly odorous samples must be handled in a fume hood.
- Refer to SDSs for specific safety/health information.

12.2 The analysts must exercise normal care and be supervised and trained to work in an analytical chemistry laboratory. The analysts will be handling fragile glassware, needles, syringes, volatile and flammable chemicals, toxic chemicals and corrosive chemicals.

- No smoking or open flames are allowed.
- No food or food products may be brought into the laboratory.

Solvents should not be left uncovered on the laboratory benches.

All solvent transfers should be done in the hoods.

Hood doors must be kept in the position which yields approx. 100 fpm face velocity. Solvent evaporation must be done in the hood with exhaust elevated and in the rear.

Waste containers that had solvents must be vented to a hood until all solvents have evaporated.

Safety glasses are provided and must be worn at all times in the laboratory.

Gloves are provided and must be worn when working with chemicals.

Laboratory coats are provided and should be worn to protect the analysts' clothes.

Syringes and needles must be kept in their original cases when not in use.

Care must be exercised in using and handling syringes to avoid injury.

Report any sticking with a needle immediately to your supervisor.

### 12.3 Specific Safety Concerns

12.3.1 Preliminary toxicity studies indicate that PFAS could have significant toxic effects. In the interest of keeping exposure levels as low as reasonably achievable, PFAS must be handled in the laboratory as hazardous and toxic chemicals.

12.3.2 Exercise caution when using syringes with attached filter

disc assemblies. Application of excessive force has, upon occasion, caused a filter disc to burst during the process.

12.3.3 Laboratory procedures such as repetitive use of pipets, repetitive transferring of extracts and manipulation of filled separatory funnels and other glassware represent a significant potential for repetitive motion or other ergonomic injuries. Laboratory associates performing these procedures are in the best position to realize when they are at risk for these types of injuries.

12.3.4 Eye protection, laboratory coat, and nitrile gloves must be worn while handling samples, standards, solvents, and reagents. Disposable gloves that have been contaminated will be removed and discarded; other gloves will be cleaned immediately.

12.3.5 Perfluorocarboxylic acids are acids and are not compatible with strong bases.

12.3.6 Primary Materials Used- The following is a list of the materials used in this method, which have a serious or significant hazard rating. NOTE: This list does not include all materials used in the method. The table contains a summary of the primary hazards listed in the SDS for each of the materials listed in the table. A complete list of materials used in the method can be found in the reagents and materials section. Employees must review the information in the SDS for each material before using it for the first time or when there are major changes to the SDS.

Methanol	-Flammable Poison -Irritant	200 ppm (TWA)	A slight irritant to the mucous membranes. Toxic effects exerted upon nervous system, particularly the optic nerve. Symptoms of overexposure may include headache, drowsiness and dizziness. Methyl alcohol is a defatting agent and may cause skin to become dry and cracked. Skin absorption can occur; symptoms may parallel inhalation exposure. Irritant to the eyes.
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Acetic Acid, Glacial	-Flammable liquid and vapor. -Irritation	10 ppm TWA; 25 mg/m <sup>3</sup> TWA	<b>Eye:</b> Causes severe eye irritation. Contact with liquid or vapor causes severe burns and possible irreversible eye damage. <b>Skin:</b> Causes skin burns. May be harmful if absorbed through the skin. Contact with the skin may cause blackening and hyperkeratosis of the skin of the hands. <b>Ingestion:</b> May cause severe and permanent damage to the digestive tract. Causes severe pain, nausea, vomiting, diarrhea, and shock. May cause polyuria, oliguria (excretion of a diminished amount of urine in relation to the fluid intake) and anuria (complete suppression of urination). Rapidly absorbed from the gastrointestinal tract. <b>Inhalation:</b> Effects may be delayed. Causes chemical burns to the respiratory tract. Exposure may lead to bronchitis, pharyngitis, and dental erosion. May be absorbed through the lungs. <b>Chronic:</b> Chronic exposure to acetic acid may cause erosion of dental enamel, bronchitis, eye irritation, darkening of the skin, and chronic inflammation of the respiratory tract. Acetic acid can cause occupational asthma. One case of a delayed asthmatic response to glacial acetic acid has been reported in a person with bronchial asthma. Skin sensitization to acetic acid is rare, but has occurred.
Ammonium Hydroxide, conc. 28-30%	- Inhalation hazard - Skin Corrosion -Eye Damage and Irritation	OSHA PEL: 35 mg/m <sup>3</sup> ; 50 ppm OSHA TWA: 18 mg/m <sup>3</sup> ; 25 ppm	Ammonia is an irritant and corrosive to the skin, eyes, respiratory tract and mucous membranes. May cause severe chemical burns to the eyes, lungs and skin. Skin and respiratory related diseases could be aggravated by exposure. The extent of injury produced by exposure to ammonia depends on the duration of the exposure, the concentration of the liquid or vapor and the depth of inhalation. Exposure Routes: Inhalation (vapors), skin and/or eye contact (vapors, liquid), ingestion (liquid).
Formic Acid, conc.	-Flammable liquid and vapor -Harmful if swallowed -Causes severe skin burns and eye damage -Toxic if inhaled -May cause respiratory irritation	OSHA TWA: 5 ppm or 9 mg/m <sup>3</sup>  OSHA PEL: 10 ppm	Formic acid is an irritant and corrosive to the skin, eyes, respiratory tract and mucous membranes. May cause severe chemical burns to the eyes, lungs and skin. Skin and respiratory related diseases could be aggravated by exposure. The extent of injury produced by exposure to ammonia depends on the duration of the exposure, the concentration of the liquid or vapor and the depth of inhalation. Exposure Routes: Inhalation (vapors), skin and/or eye contact (vapors, liquid), ingestion (liquid).

### 13. WASTE MANAGEMENT/POLLUTION PREVENTION

#### Neat Materials

Waste management procedures require the prudent use of neat materials. The ordering of neat standards and materials must be done to minimize unused material which would result in storage or handling of excess material. Quantities ordered should be sufficient to provide for necessary standards with consideration to shelf life. When ordering a unique material for a standard, be sure to order the smallest practical quantity.

### Solvents

The solvents used at York for this procedure include isopropanol and Methanol. These solvents are used for sample extraction or LC cleanup, all amounts are either consumed during concentration or placed in one liter amber jars in the hood areas for evaporation. Any remaining solvent/water is transferred to a drum designated for solvent waste.

### Acids and Bases

The acids and bases used for this procedure include: Acetic Acid and Formic Acid. The bases used are Ammonium hydroxide, sodium hydroxide and potassium hydroxide. Store concentrated base and acids separately whether waste or neat material.

### Samples

Unused or remaining water samples are returned to the sample control room for continued storage for proper disposal by the sample control group.

## **14. REFERENCES**

1. EPA METHOD 1633 Draft 2 June, 2022- Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS; EPA 821-D-22-001

## **15. REVISION HISTORY**

- |              |            |   |
|--------------|------------|---|
| Revision 1.0 | 10/24/2022 | First issue.  |
| Revision 1.1 | 02/10/2023 | Modified LLOPR in Section 7.4.6.1 to reflect 2x the MRL |

**Attachment 1 – Non-Extracted Internal Standards (NIS)**



**Analytical Standard Record**

Standard ID: **Y22B197**

Description:	MPPAC-HIF-IS-EPA 1633 ISTD STOCK	Prepared:	02/16/2022
Standard Type:	Other	Expires:	<b>09/07/2026</b>
Solvent:	Methanol/Water (<1%)	Prepared By:	Robert Q. Bradley
Final Volume (ml):	1	Department:	PFAS
Vials:	1	Lot No.:	MPPACHIFIS0921
Vendor:	Wellington Laboratories		

Comments: Stock ISTD for EPA method 1633

Analyte	CAS Number	Concentration	Units
M3PFBA		1	ug/mL
MPPFDA		0.25	ug/mL
MPPFHxA		0.5	ug/mL
MPPFHxS		0.474	ug/mL
MPFNA		0.25	ug/mL
MPFOA		0.5	ug/mL
MPFOS		0.479	ug/mL



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**MPFAC-HIF-IS**

**Mass-Labelled Perfluoroalkyl Substance  
Injection Standard Solution/Mixture**

**PRODUCT CODE:** MPFAC-HIF-IS  
**LOT NUMBER:** MPFACHIFIS0921  
**SOLVENT(S):** Methanol/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 09/07/2021  
**LAST TESTED:** (mm/dd/yyyy) 09/07/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 09/07/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DESCRIPTION:**

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (<sup>13</sup>C) perfluoroalkylcarboxylic acids (C<sub>4</sub>, C<sub>6</sub>, C<sub>8</sub>-C<sub>10</sub>) and two mass-labelled (<sup>18</sup>O and <sup>13</sup>C) perfluoroalkanesulfonates (C<sub>6</sub> and C<sub>8</sub>). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and mass-labelled perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of ≥99% per <sup>13</sup>C or >94% per <sup>18</sup>O.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:13, Issued 2004-11-10  
Revision#:9, Revised 2020-12-23

MPFACHIFIS0921 (1 of 5)  
rev1

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: MPFAC-HIF-IS; Components and Concentrations (ng/mL, ± 5% in methanol/water (<1%))**

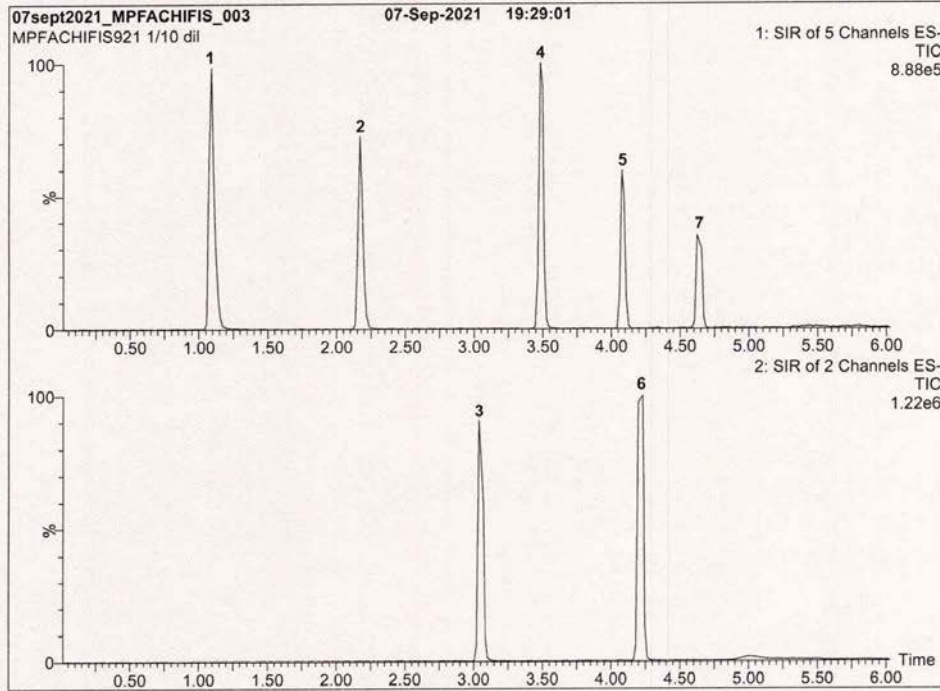
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(2,3,4- <sup>13</sup> C <sub>3</sub> )butanoic acid	M3PFBA	1000		1
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )hexanoic acid	MPFHxA	500		2
Perfluoro-n-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )octanoic acid	MPFOA	500		4
Perfluoro-n-(1,2,3,4,5- <sup>13</sup> C <sub>5</sub> )nonanoic acid	MPFNA	250		5
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )decanoic acid	MPFDA	250		7
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-hexane( <sup>18</sup> O) <sub>2</sub> sulfonate	MPFHxS	500	474	3
Sodium perfluoro-1-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )octanesulfonate	MPFOS	500	479	6

\* Concentrations have been rounded to three significant figures.

Certified By:   
B.G. Chittim, General Manager

Date: 10/13/2021  
(mm/dd/yyyy)

**Figure 1:** MPFAC-HIF-IS; LC/MS Data (SIR)



**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 9 min and hold for  
2 min before returning to initial conditions in 1 min.  
Time: 15 min

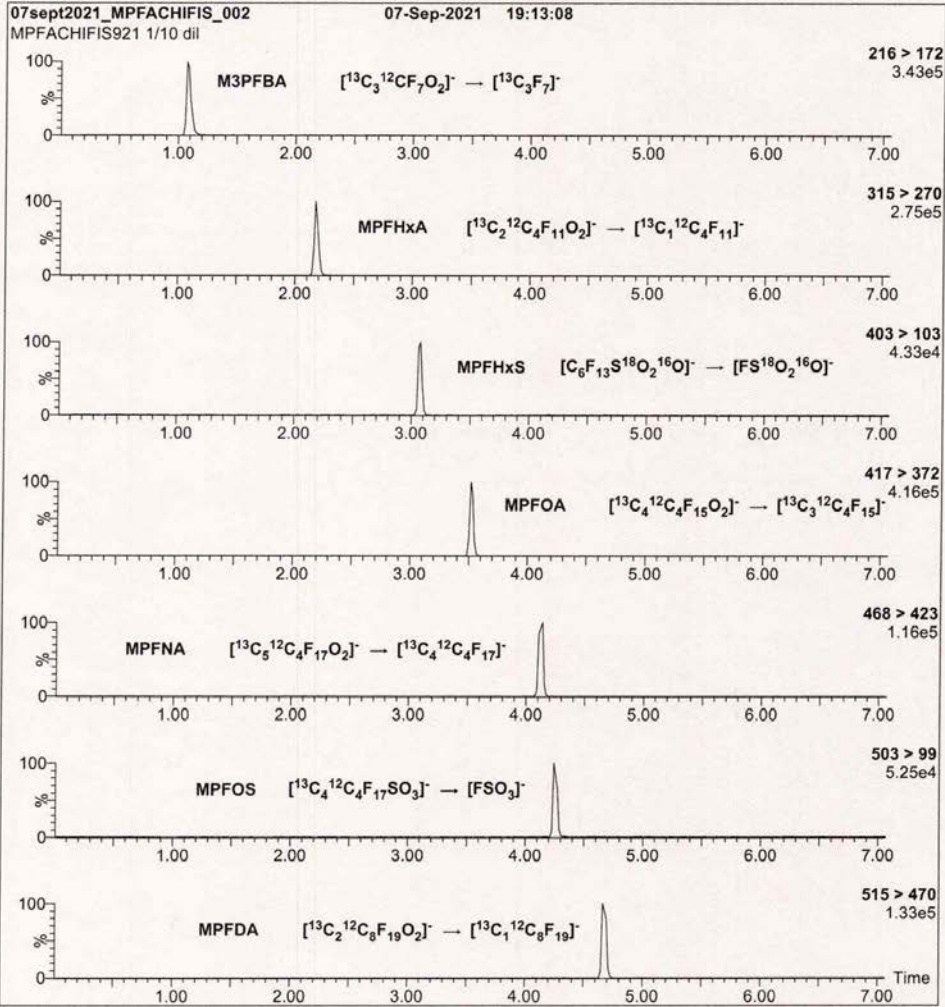
Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: SIR

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = variable (2-6)  
Desolvation Temperature (°C) = 350  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: MPFAC-HIF-IS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: On-column (MPFAC-HIF-IS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

**MS Parameters:**

Collision Gas (mbar) = 3.18e-3

Collision Energy (eV) = 4-64 (variable)

## Attachment 2 – Extracted Internal Standards (EIS)



### Analytical Standard Record

Standard ID: **Y22B198**

Description:	MPFAC-HIF-ES-EPA 1633 STOCK EIS mix	Prepared:	02/17/2022
Standard Type:	Other	Expires:	08/06/2024
Solvent:	MeOH/TPA/1% H2O	Prepared By:	Robert Q. Bradley
Final Volume (mL):	1	Department:	PFAS
Vials:	1	Lot No.:	MPFACHIFES0821
Vendor:	Wellington Laboratories		

Comments:

Analyte	CAS Number	Concentration	Units
d3-N-MeFOSAA		1	ug/mL
d5-N-EtFOSAA		1	ug/mL
d7-N-MeFOSE		5	ug/mL
d9-N-EtFOSE		5	ug/mL
d-N-EtFOSA		0.5	ug/mL
d-N-MeFOSA		0.5	ug/mL
M2-4:2FTS		0.938	ug/mL
M2-6:2FTS		0.951	ug/mL
M2-8:2FTS		0.96	ug/mL
M2PFTeDA		0.25	ug/mL
M3HFPO-DA		2	ug/mL
M3PFBS		0.466	ug/mL
M3PFHxS		0.474	ug/mL
M4PFHpA		0.5	ug/mL
M5PFHxA		0.5	ug/mL
M5PFPeA		1	ug/mL
M6PFDA		0.25	ug/mL
M7PFUdA		0.25	ug/mL
M8FOSA		0.5	ug/mL
M8PFOA		0.5	ug/mL
M8PFOS		0.479	ug/mL
M9PFNA		0.25	ug/mL
MPFBA		2	ug/mL
MPFDoA		0.25	ug/mL



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**MPFAC-HIF-ES**

Mass-Labelled Per- and Poly-fluoroalkyl Substance  
Extraction Standard Solution/Mixture

<b>PRODUCT CODE:</b>	MPFAC-HIF-ES
<b>LOT NUMBER:</b>	MPFACHIFES0821
<b>SOLVENT(S):</b>	Methanol/Isopropanol (1%)/Water (<1%)
<b>DATE PREPARED:</b> (mm/dd/yyyy)	08/05/2021
<b>LAST TESTED:</b> (mm/dd/yyyy)	08/16/2021
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	08/16/2024
<b>RECOMMENDED STORAGE:</b>	Refrigerate ampoule

**DESCRIPTION:**

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (<sup>13</sup>C) perfluoroalkylcarboxylic acids (C<sub>4</sub>-C<sub>12</sub>, C<sub>14</sub>), three mass-labelled (<sup>13</sup>C) perfluoroalkanesulfonates (C<sub>4</sub>, C<sub>6</sub>, and C<sub>8</sub>), three mass-labelled (one <sup>13</sup>C and two <sup>2</sup>H) perfluoro-1-octanesulfonamides, three mass-labelled (<sup>13</sup>C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (<sup>2</sup>H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (<sup>2</sup>H) perfluorooctanesulfonamidoethanols, and mass-labelled (<sup>13</sup>C) hexafluoropropylene oxide dimer acid. The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids, mass-labelled perfluoroalkanesulfonates, mass-labelled fluorotelomer sulfonates, perfluoro-1-(<sup>13</sup>C)<sub>8</sub>octanesulfonamide, and mass-labelled hexafluoropropylene oxide dimer acid all have chemical purities of >98% and isotopic purities of ≥99%.

The individual mass-labelled perfluorooctanesulfonamidoacetic acids, mass-labelled perfluorooctanesulfonamidoethanols, and two mass-labelled (<sup>2</sup>H) perfluoro-1-octanesulfonamides all have chemical purities of >98% and isotopic purities of ≥98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$$x_1, x_2, \dots, x_n \text{ on which it depends is: } u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

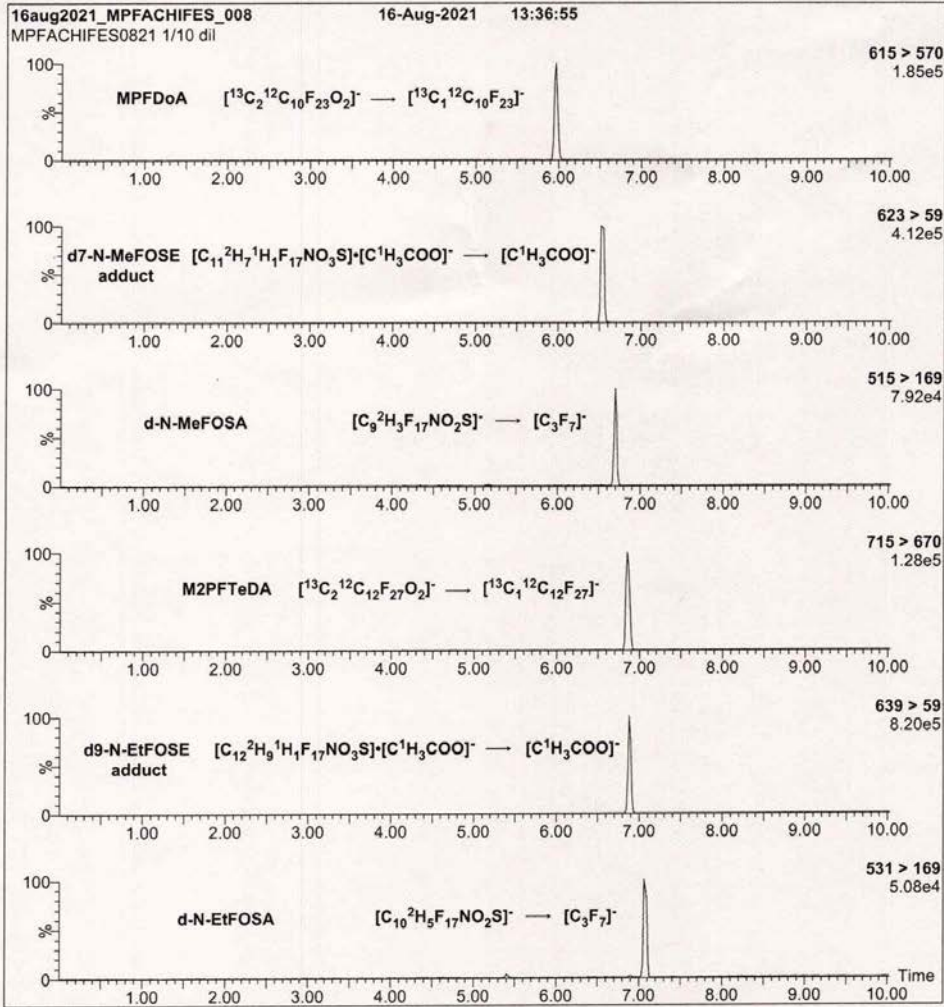
**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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**Figure 2: MPFAC-HIF-ES; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: On-column (MPFAC-HIF-ES)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min

**MS Parameters:**

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 4-64 (variable)

**Table A: MPFAC-HIF-ES; Components and Concentrations (ng/mL, ± 5% in Methanol/Isopropanol (1%)/Water (<1%))**

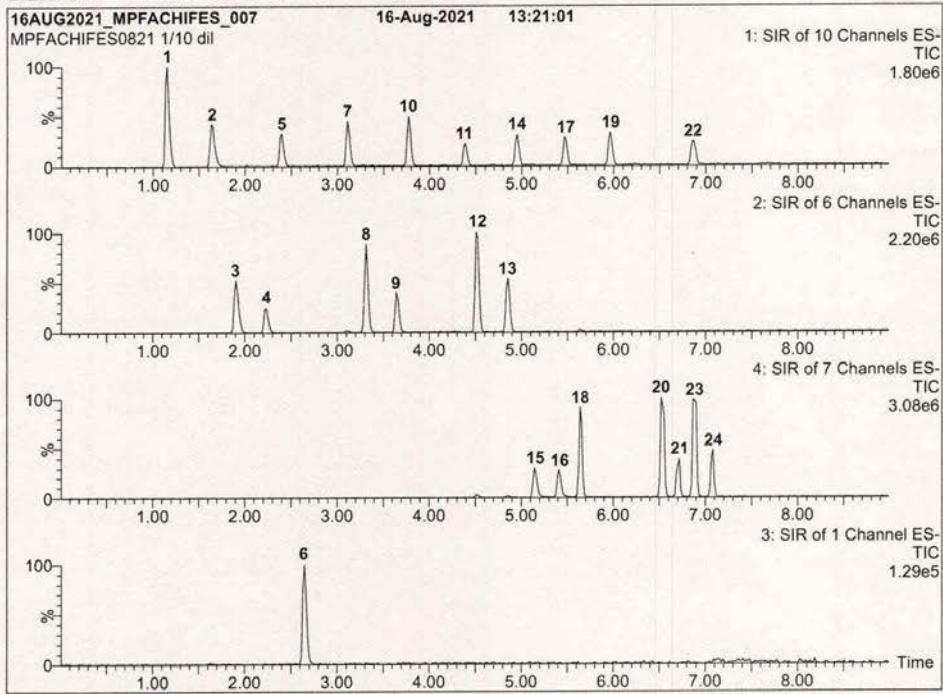
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-( <sup>13</sup> C) <sub>4</sub> butanoic acid	MPFBA	2000		1
Perfluoro-n-( <sup>13</sup> C) <sub>5</sub> pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- <sup>13</sup> C) <sub>6</sub> hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- <sup>13</sup> C) <sub>7</sub> heptanoic acid	M4PFHpA	500		7
Perfluoro-n-( <sup>13</sup> C) <sub>8</sub> octanoic acid	M8PFOA	500		10
Perfluoro-n-( <sup>13</sup> C) <sub>9</sub> nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- <sup>13</sup> C) <sub>10</sub> decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- <sup>13</sup> C) <sub>11</sub> undecanoic acid	M7PFUDA	250		17
Perfluoro-n-(1,2- <sup>13</sup> C) <sub>12</sub> dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- <sup>13</sup> C) <sub>14</sub> tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-( <sup>13</sup> C) <sub>8</sub> octanesulfonamide	M8FOSA	500		18
N-methyl-d <sub>2</sub> -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d <sub>2</sub> -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d <sub>2</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>2</sub> -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>5</sub> -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)( <sup>13</sup> C) <sub>3</sub> propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- <sup>13</sup> C) <sub>4</sub> butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- <sup>13</sup> C) <sub>6</sub> hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-( <sup>13</sup> C) <sub>8</sub> octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C) <sub>6</sub> hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C) <sub>8</sub> octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C) <sub>10</sub> decanesulfonate	M2-8:2FTS	1000	960	13

\* Concentrations have been rounded to three significant figures.

Certified By:   
 B.G. Chittim, General Manager

Date: 10/13/2021  
(mm/dd/yyyy)

**Figure 1: MPFAC-HIF-ES; LC/MS Data (SIR)**



**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
 Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7 μm, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 9 min and hold for  
 2 min before returning to initial conditions in 1 min.  
 Time: 15 min

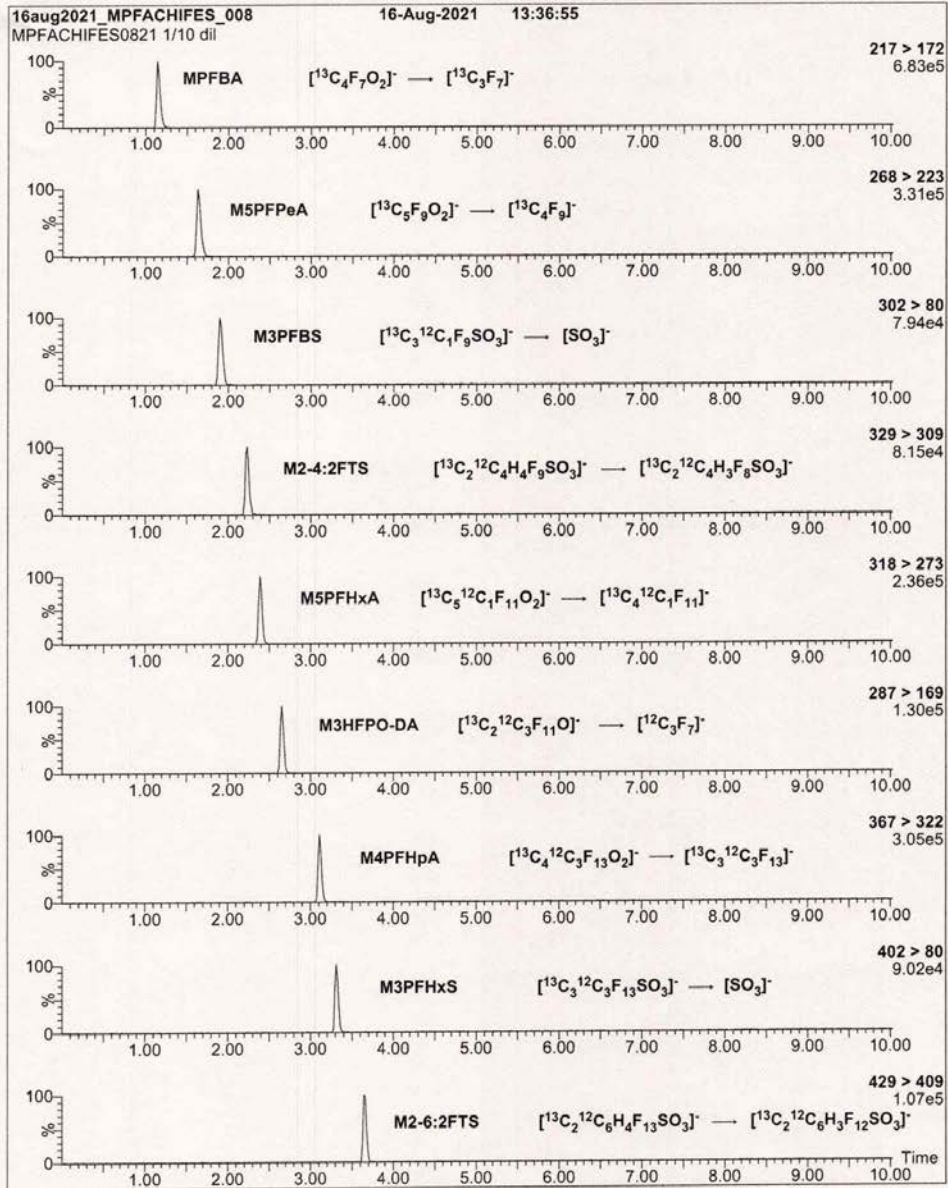
Flow: 300 μL/min

**MS Parameters:**

Experiment: SIR

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = variable (2-44)  
 Desolvation Temperature (°C) = 350  
 Desolvation Gas Flow (L/hr) = 1000

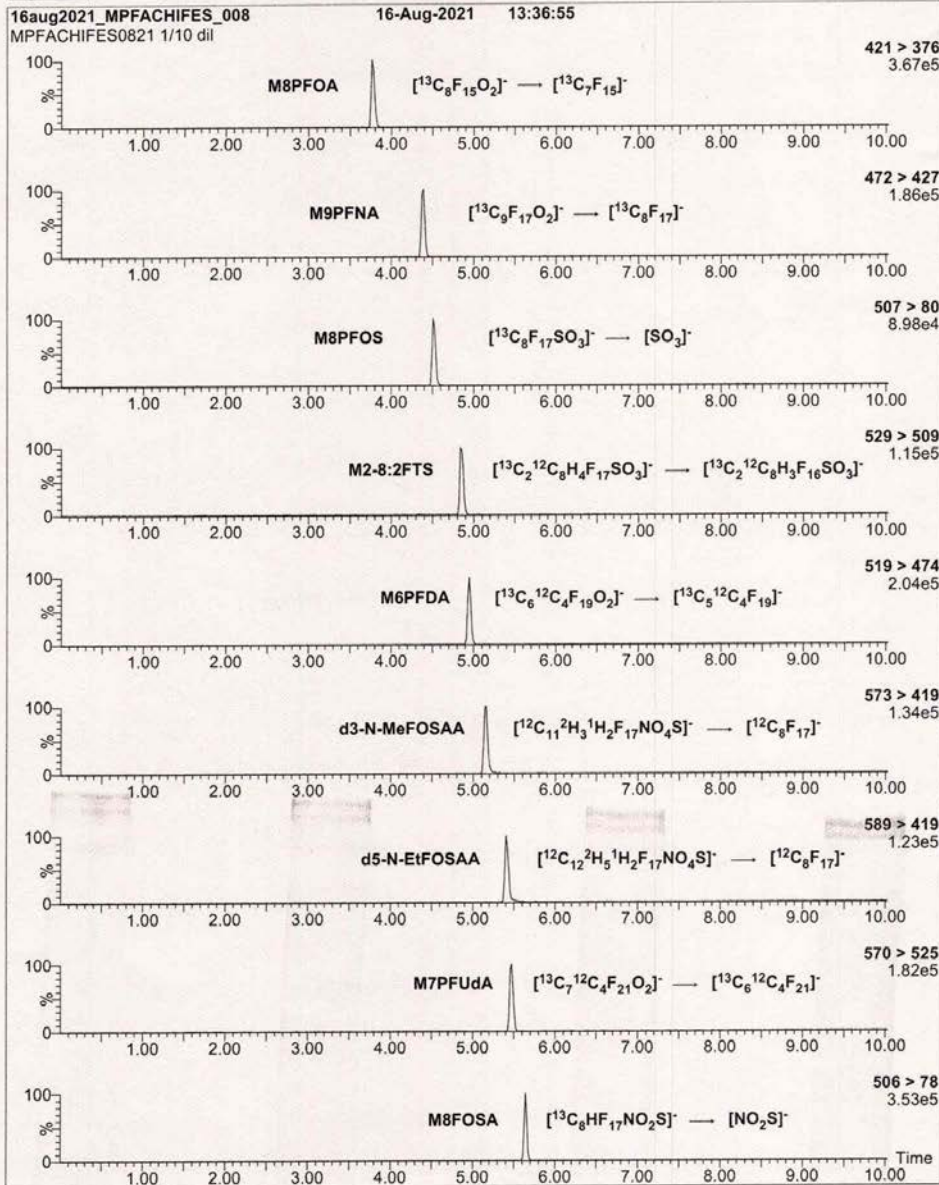
**Figure 2: MPFAC-HIF-ES; LC/MS/MS Data (Selected MRM Transitions)**



Form#: 13, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23

MPFACHIFES0821 (5 of 7)  
rev1

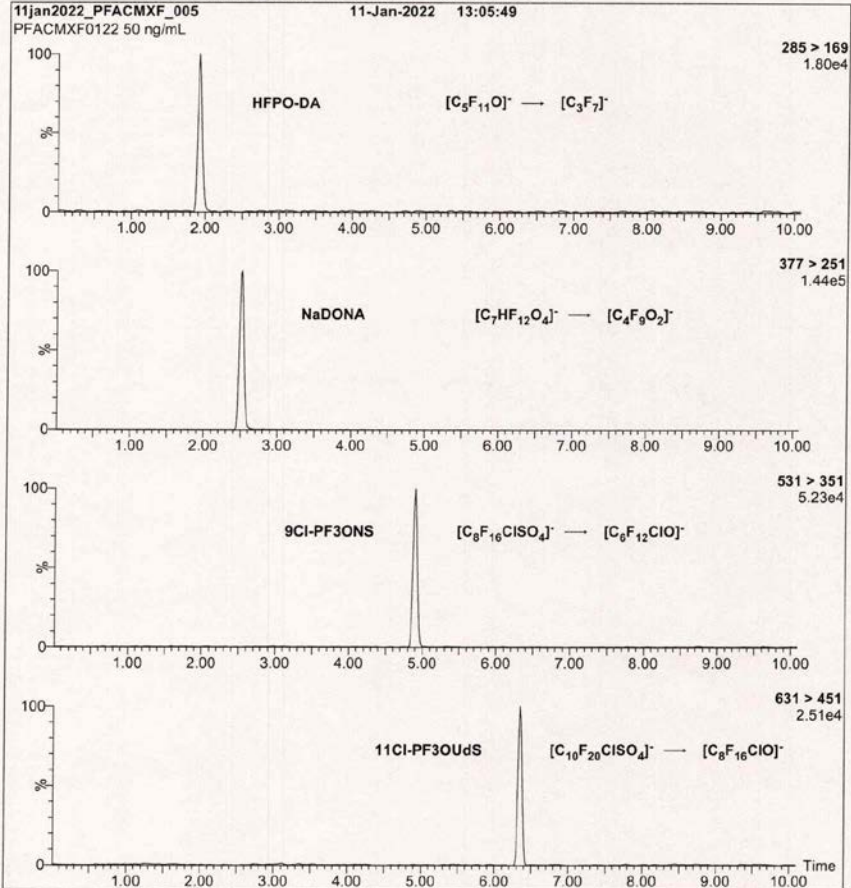
**Figure 2: MPFAC-HIF-ES; LC/MS/MS Data (Selected MRM Transitions)**



Form: 13, Issued 2004-11-10  
Revision: 9, Revised 2020-12-23

### Attachment 3 – Target Analyte Mixtures

**Figure 2:** PFAC-MXF; LC/MS/MS Data (Selected MRM Transitions)



**Conditions for Figure 2:**

Injection: On-column (PFAC-MXF)  
 Mobile phase: Same as Figure 1  
 Flow: 300  $\mu$ L/min

**MS Parameters:**

Collision Gas (mbar) = 3.43e-3  
 Collision Energy (eV) = 6-60 (variable)

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA: A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A:** PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))

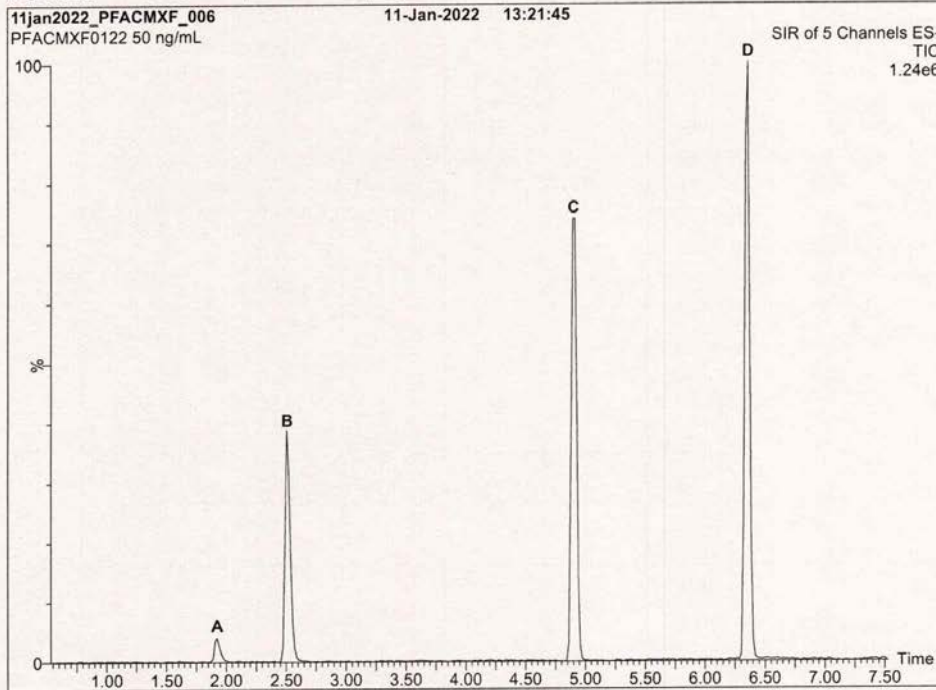
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxananoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroicosadecafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

\* Concentrations have been rounded to three significant figures.

Certified By:   
B.G. Chittim, General Manager

Date: 01/12/2022  
(mm/dd/yyyy)

**Figure 1:** PFAC-MXF; LC/MS Data (SIR)



**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
 Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 8 min and hold for 2 min  
 before returning to initial conditions in 0.75 min.  
 Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: SIR

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = variable (15-74)  
 Desolvation Temperature ( $^{\circ}$ C) = 325  
 Desolvation Gas Flow (L/hr) = 1000



**Analytical Standard Record**

Standard ID: **Y22B199**

Description:	PFAC-MXF-Native Repl.STOCK EPA 1633 PFAS	Prepared:	02/17/2022
Standard Type:	Other	<b>Expires:</b>	<b>01/11/2025</b>
Solvent:	MeOH/H2O	Prepared By:	Robert Q. Bradley
Final Volume (mL):	1	Department:	PFAS
Vials:	1	Lot No.:	PFACMXF0122
Vendor:	Wellington Laboratories		

Comments:

Analyte	CAS Number	Concentration	Units
11CL-PF3OUdS	763051-92-9	1.89	ug/mL
9CL-PF3ONS	756426-58-1	1.87	ug/mL
ADONA	919005-14-4	1.89	ug/mL
HFPO-DA (Gen-X)	13252-13-6	2	ug/mL

Reviewed By

Date



**WELLINGTON  
LABORATORIES**

**CERTIFICATE OF ANALYSIS  
DOCUMENTATION**

**PFAC-MXF**

**Native Replacement PFAS  
Solution/Mixture**

<b><u>PRODUCT CODE:</u></b>	PFAC-MXF
<b><u>LOT NUMBER:</u></b>	PFACMXF0122
<b><u>SOLVENT(S):</u></b>	Methanol / Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	01/10/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	01/11/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	01/11/2025
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

**DESCRIPTION:**

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUDS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

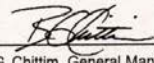
**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

**Table A:** PFAC-MXI; Components and Concentrations (µg/mL; ± 5% in methanol)

Compound	Acronym	Concentration (µg/mL)	Peak Assignment in Figure 1
N-methylperfluoro-1-octanesulfonamide	N-MeFOSA	1.00	B
N-ethylperfluoro-1-octanesulfonamide	N-EtFOSA	1.00	D
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	N-MeFOSE	10.0	A
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol	N-EtFOSE	10.0	C

Certified By:

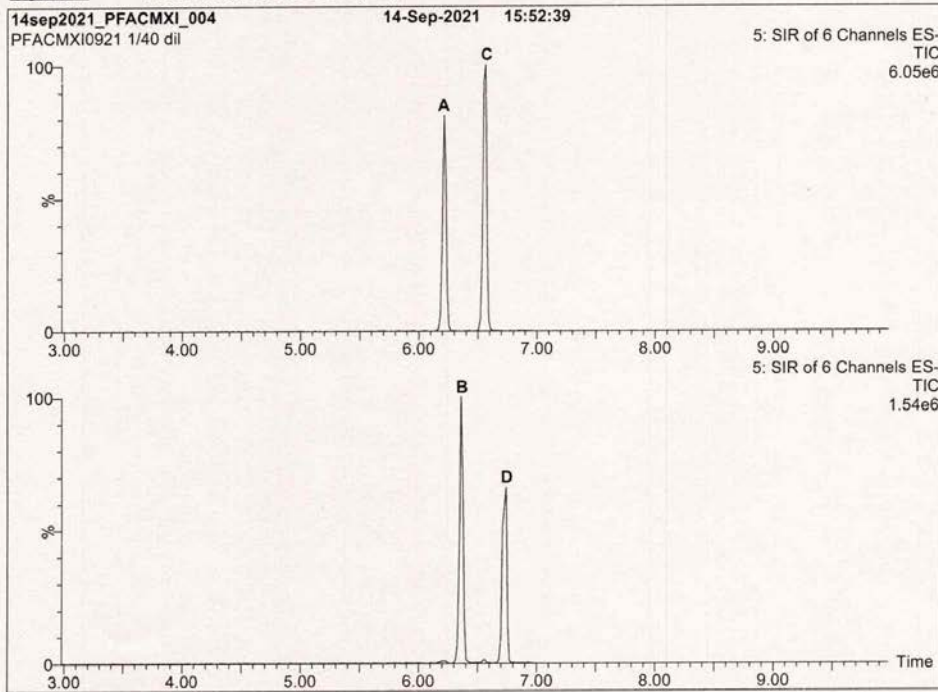


B.G. Chittim, General Manager

Date: 09/23/2021

(mm/dd/yyyy)

**Figure 1: PFAC-MXI; LC/MS Data (SIR)**



**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 9 min and hold for  
2 min before returning to initial conditions in 1 min.  
Time: 15 min

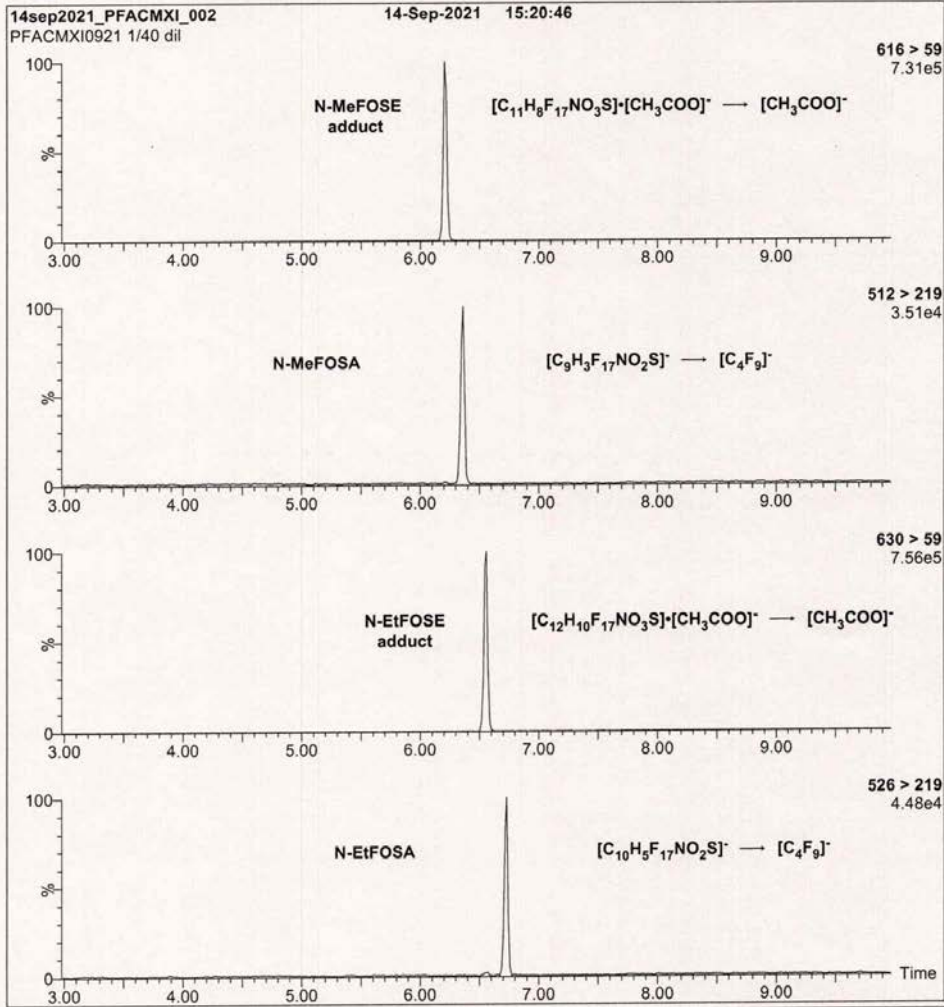
Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: SIR

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.50  
Cone Voltage (V) = variable (2-74)  
Desolvation Temperature ( $^{\circ}$ C) = 350  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: PFAC-MXI; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: On-column (PFAC-MXI)  
 Mobile phase: Same as Figure 1  
 Flow: 300  $\mu$ L/min

**MS Parameters:**

Collision Gas (mbar) = 3.31e-3  
 Collision Energy (eV) = 6-60 (variable)



**Analytical Standard Record**

Standard ID: **Y22B204**

Description:	PFAC-MXI-EPA 1633 Stock	Prepared:	02/17/2022
Standard Type:	Other	<b>Expires:</b>	<b>02/17/2023</b>
Solvent:	Methanol	Prepared By:	Robert Q. Bradley
Final Volume (mL):	1	Department:	PFAS
Vials:	1	Lot No.:	PFACMXI0921
Vendor:	Wellington Laboratories		

Comments:

Analyte	CAS Number	Concentration	Units
N-EtFOSA	4151-50-2	1	ug/mL
N-EtFOSE	1691-99-2	10	ug/mL
N-MeFOSA	31506-32-8	1	ug/mL
N-MeFOSE	24448-09-7	10	ug/mL

Reviewed By

Date



**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PFAC-MXI**

**Native Perfluorooctanesulfonamide  
and Perfluorooctanesulfonamidoethanol  
Solution/Mixture**

<b><u>PRODUCT CODE:</u></b>	PFAC-MXI
<b><u>LOT NUMBER:</u></b>	PFACMXI0921
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	09/08/2021
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	09/14/2021
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	09/14/2026
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

PFAC-MXI is a solution/mixture of two native perfluorooctanesulfonamides (FOSAs) and two native perfluorooctanesulfonamidoethanols (FOSEs). The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

Form#: 13, Issued 2004-11-10  
Revision#: 9, Revised 2020-12-23

PFACMXI0921 (1 of 5)  
rev0

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

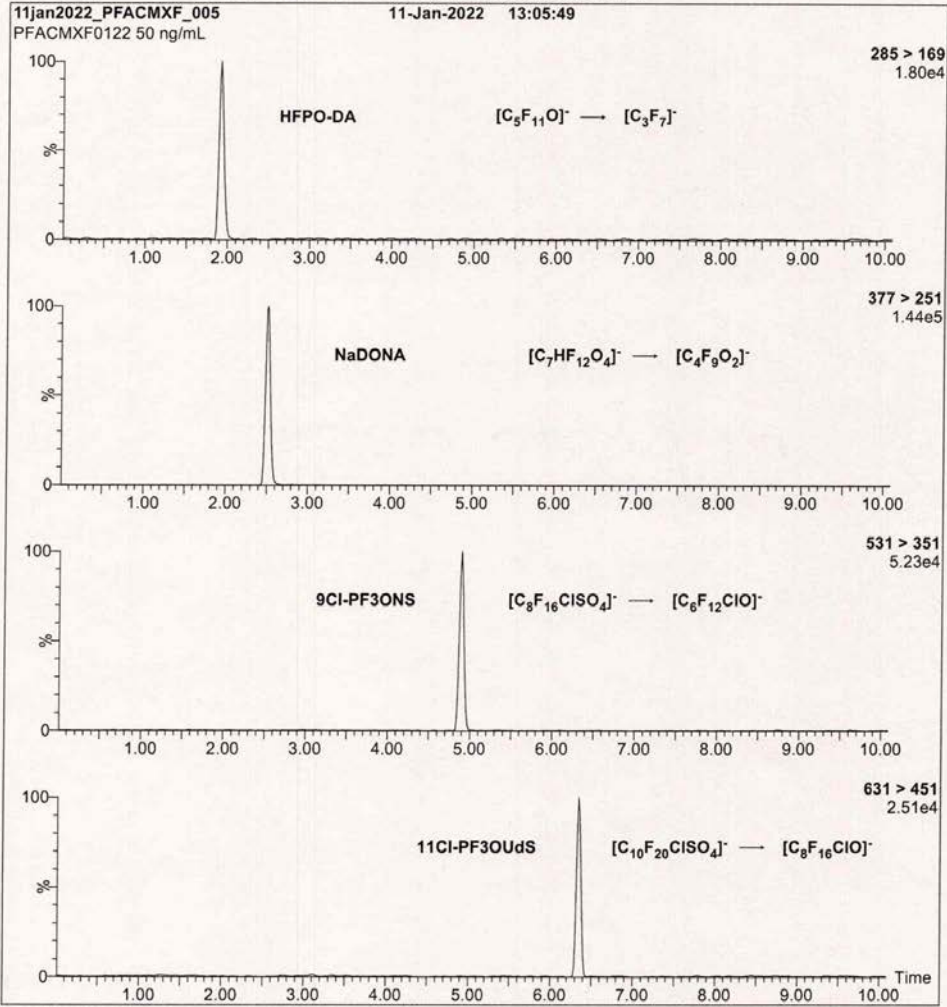
**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA: A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



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**Figure 2: PFAC-MXF; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: On-column (PFAC-MXF)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min

**MS Parameters:**

Collision Gas (mbar) = 3.43e-3

Collision Energy (eV) = 6-60 (variable)

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA: A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A:** PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))

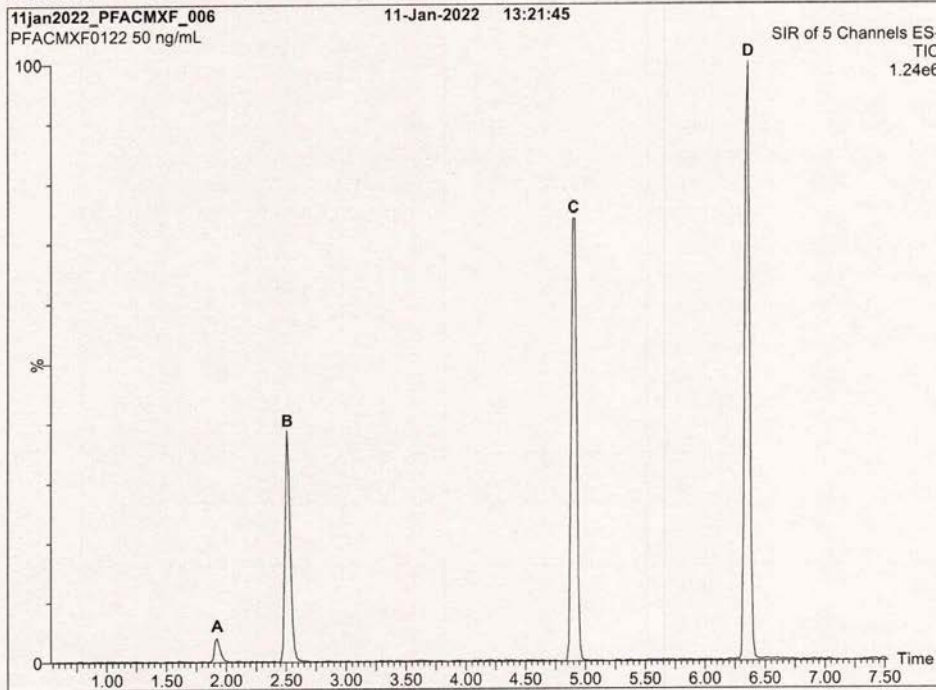
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxananoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroicosafafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

\* Concentrations have been rounded to three significant figures.

Certified By:   
B.G. Chittim, General Manager

Date: 01/12/2022  
(mm/dd/yyyy)

**Figure 1:** PFAC-MXF; LC/MS Data (SIR)



**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
 Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 8 min and hold for 2 min  
 before returning to initial conditions in 0.75 min.  
 Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: SIR

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = variable (15-74)  
 Desolvation Temperature ( $^{\circ}$ C) = 325  
 Desolvation Gas Flow (L/hr) = 1000



**Analytical Standard Record**

Standard ID: **Y22B199**

Description:	PFAC-MXF-Native Repl.STOCK EPA 1633 PFAS	Prepared:	02/17/2022
Standard Type:	Other	<b>Expires:</b>	<b>01/11/2025</b>
Solvent:	MeOH/H2O	Prepared By:	Robert Q. Bradley
Final Volume (mL):	1	Department:	PFAS
Vials:	1	Lot No.:	PFACMXF0122
Vendor:	Wellington Laboratories		

Comments:

Analyte	CAS Number	Concentration	Units
11CL-PF3OUdS	763051-92-9	1.89	ug/mL
9CL-PF3ONS	756426-58-1	1.87	ug/mL
ADONA	919005-14-4	1.89	ug/mL
HFPO-DA (Gen-X)	13252-13-6	2	ug/mL

Reviewed By

Date



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**PFAC-MXF**

**Native Replacement PFAS  
Solution/Mixture**

<b><u>PRODUCT CODE:</u></b>	PFAC-MXF
<b><u>LOT NUMBER:</u></b>	PFACMXF0122
<b><u>SOLVENT(S):</u></b>	Methanol / Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	01/10/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	01/11/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	01/11/2025
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

**DESCRIPTION:**

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUs), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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**Table A:** PFAC-MXJ; Components and Concentrations (µg/mL; ± 5% in methanol)

Compound	Acronym	Concentration (µg/mL)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

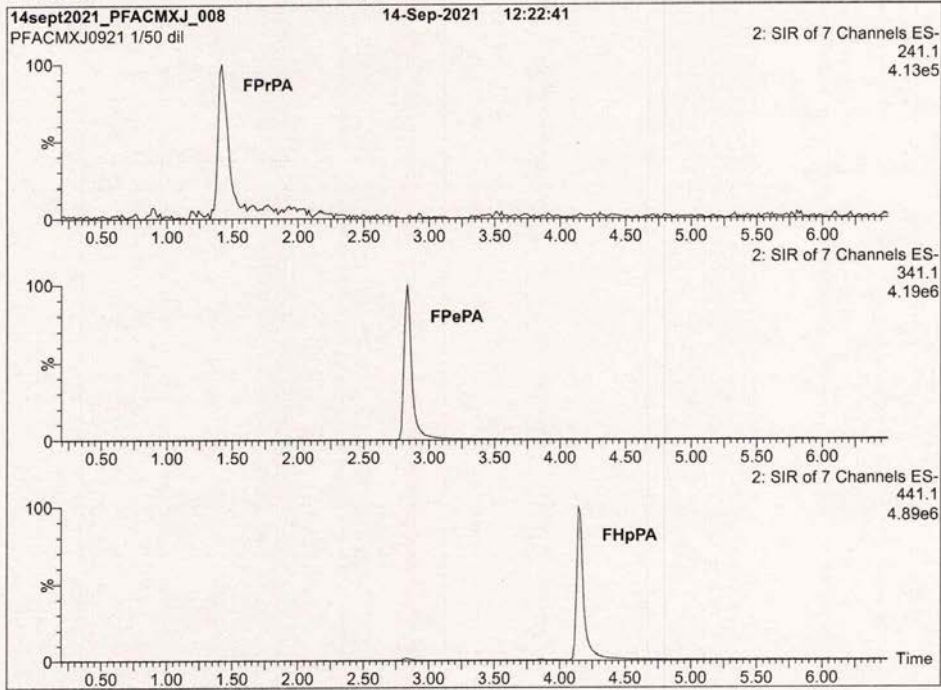
Certified By:



B.G. Chittim, General Manager

Date: 10/02/2021  
(mm/dd/yyyy)

**Figure 1: PFAC-MXJ; LC/MS Data (SIR)**



**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 9 min and hold for  
2 min before returning to initial conditions in 1 min.  
Time: 15 min

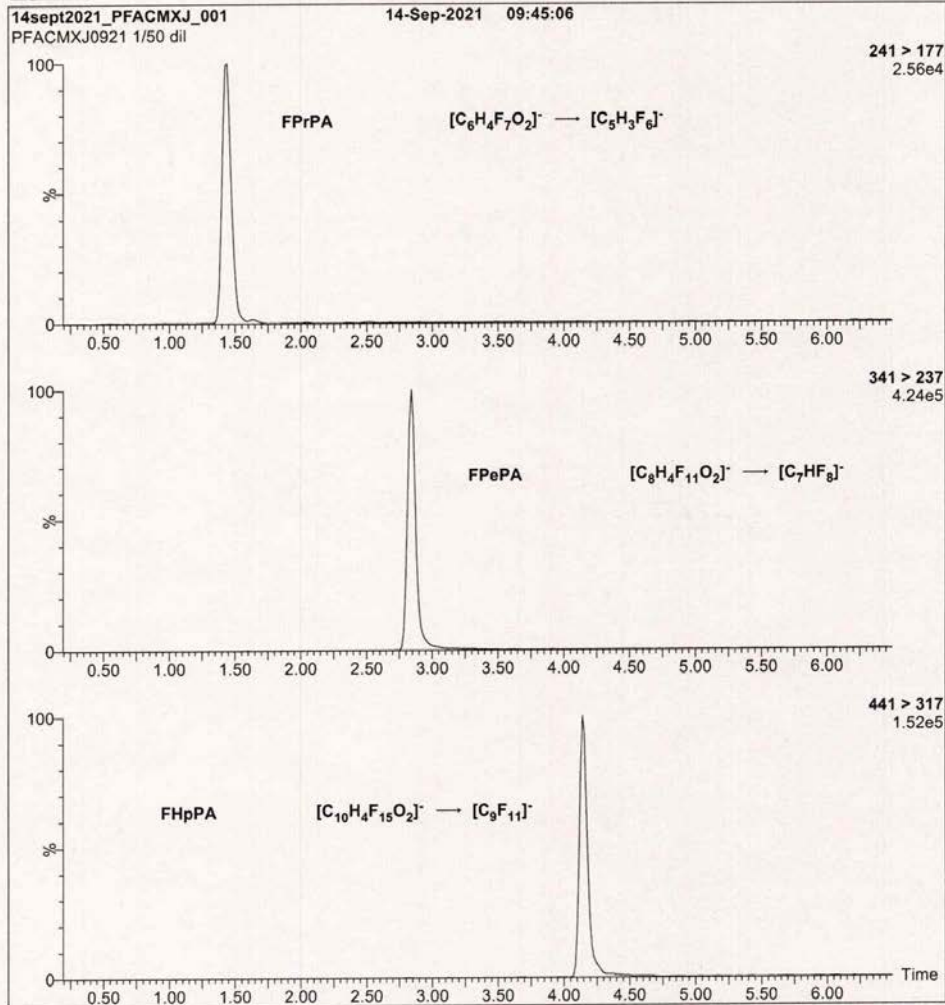
Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: SIR

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.50  
Cone Voltage (V) = variable (2-74)  
Desolvation Temperature ( $^{\circ}$ C) = 350  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: PFAC-MXJ; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: On-column (PFAC-MXJ)

Mobile phase: Same as Figure 1.

Flow: 300  $\mu$ L/min

**MS Parameters:**

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 6-60 (variable)



**Analytical Standard Record**

Standard ID: **Y22B205**

Description:	PFAC-MXJ-EPA 1633 Stock mix	Prepared:	02/17/2022
Standard Type:	Other	<b>Expires:</b>	<b>09/14/2026</b>
Solvent:	Methanol	Prepared By:	Robert Q. Bradley
Final Volume (mL):	1	Department:	PFAS
Vials:	1	Lot No.:	PFACMXJ0921
Vendor:	Wellington Laboratories		

Comments:

Analyte	CAS Number	Concentration	Units
3-Perfluoroheptyl propanoic acid (FHpPA)	812-70-4	20	ug/mL
3-Perfluoropentyl propanoic acid (FPePA)	914637-49-3	20	ug/mL
3-Perfluoropropyl propanoic acid (FPPrPA)	356-02-2	4	ug/mL

Reviewed By

Date



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**PFAC-MXJ**

**Native X:3 Fluorotelomer Carboxylic  
Acid Solution/Mixture**

<b>PRODUCT CODE:</b>	PFAC-MXJ
<b>LOT NUMBER:</b>	PFACMXJ0921
<b>SOLVENT(S):</b>	Methanol
<b>DATE PREPARED:</b> (mm/dd/yyyy)	09/08/2021
<b>LAST TESTED:</b> (mm/dd/yyyy)	09/14/2021
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	09/14/2026
<b>RECOMMENDED STORAGE:</b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

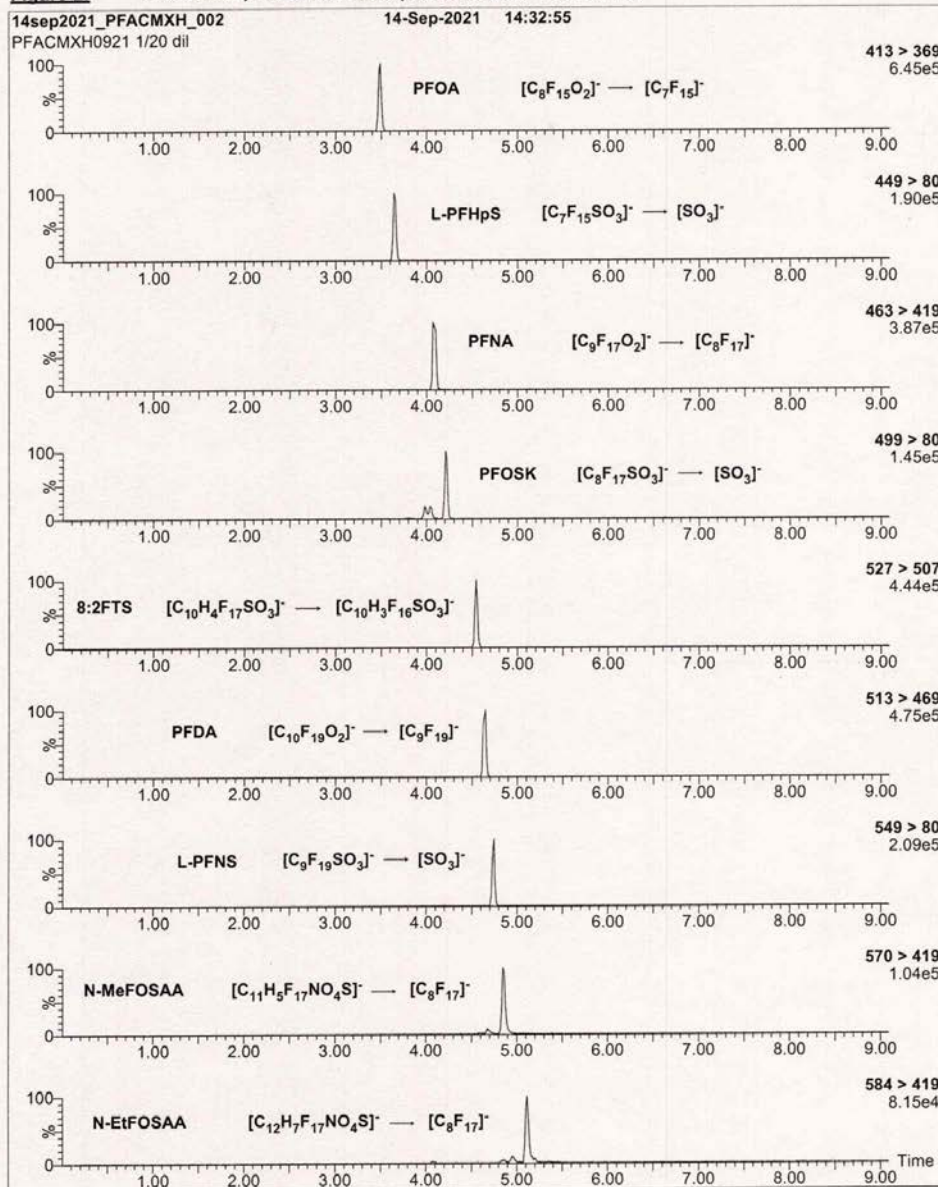
**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

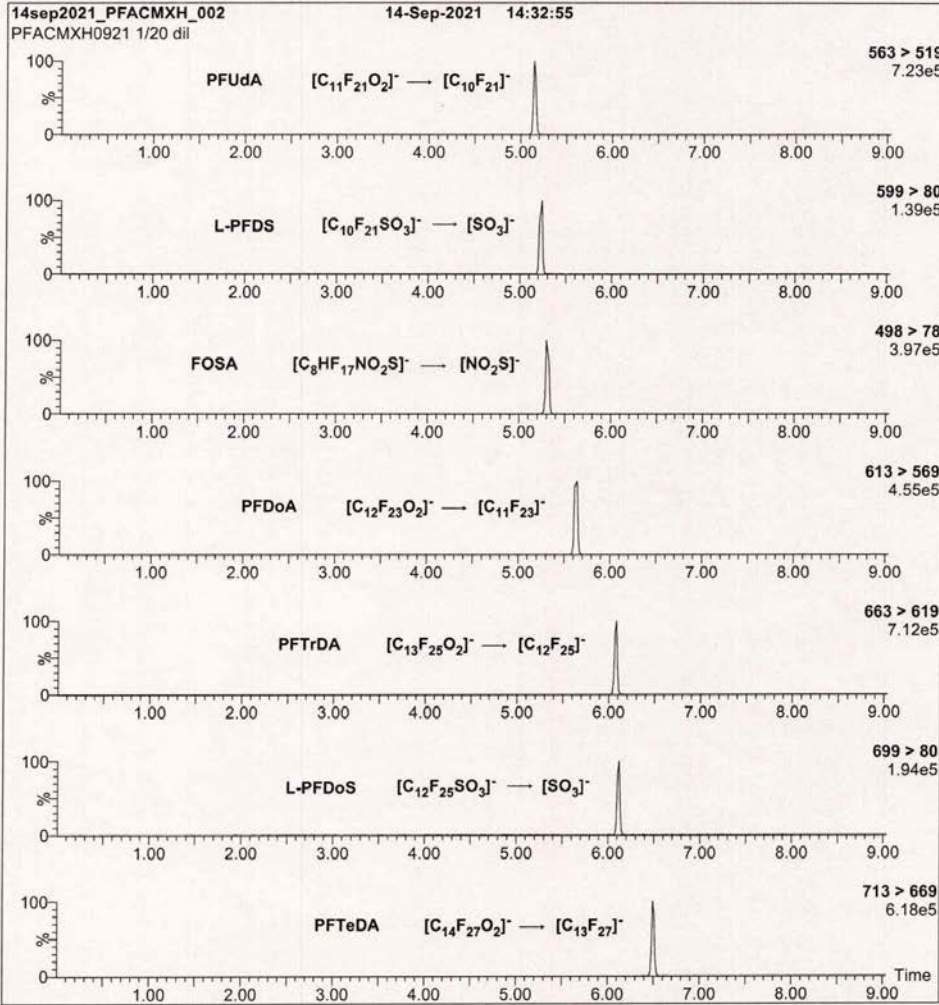
Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)



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**Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: On-column (PFAC-MXH)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min

**MS Parameters:**

Collision Gas (mbar) = 3.31e-3

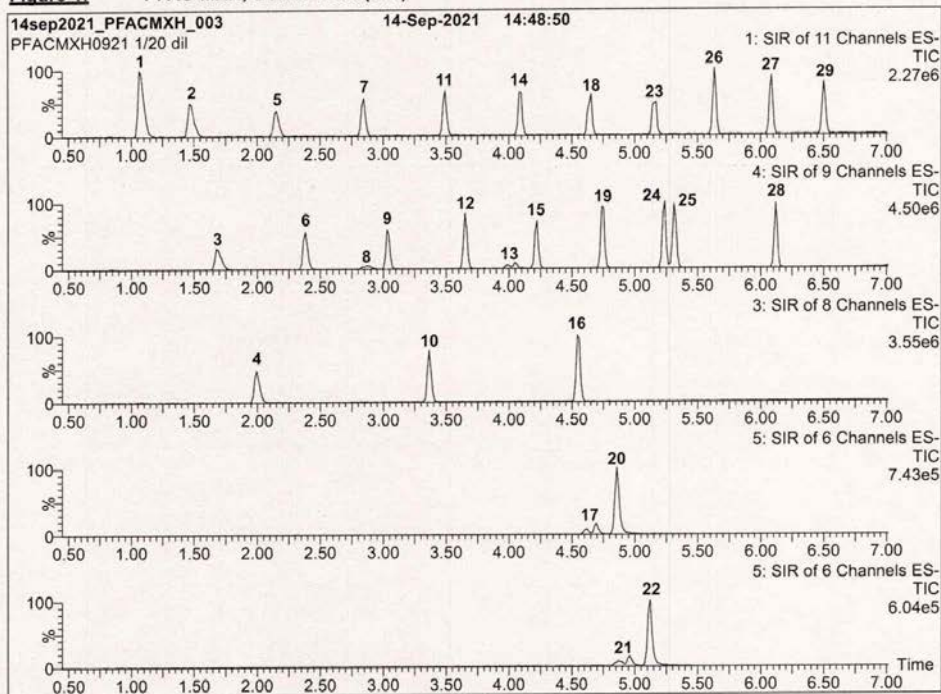
Collision Energy (eV) = 6-60 (variable)

**Table E: PFOSK; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	Potassium perfluoro-1-octanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(SO <sub>3</sub> <sup>-</sup> )K <sup>+</sup>   CF <sub>3</sub>	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CCF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CF <sub>2</sub> CCF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.07	

\* Percent of total perfluorooctanesulfonate isomers only.  
 \*\* Systematic Name: Potassium perfluorooctane-2-sulfonate.

**Figure 1: PFAC-MXH; LC/MS Data (SIR)**



**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
 Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

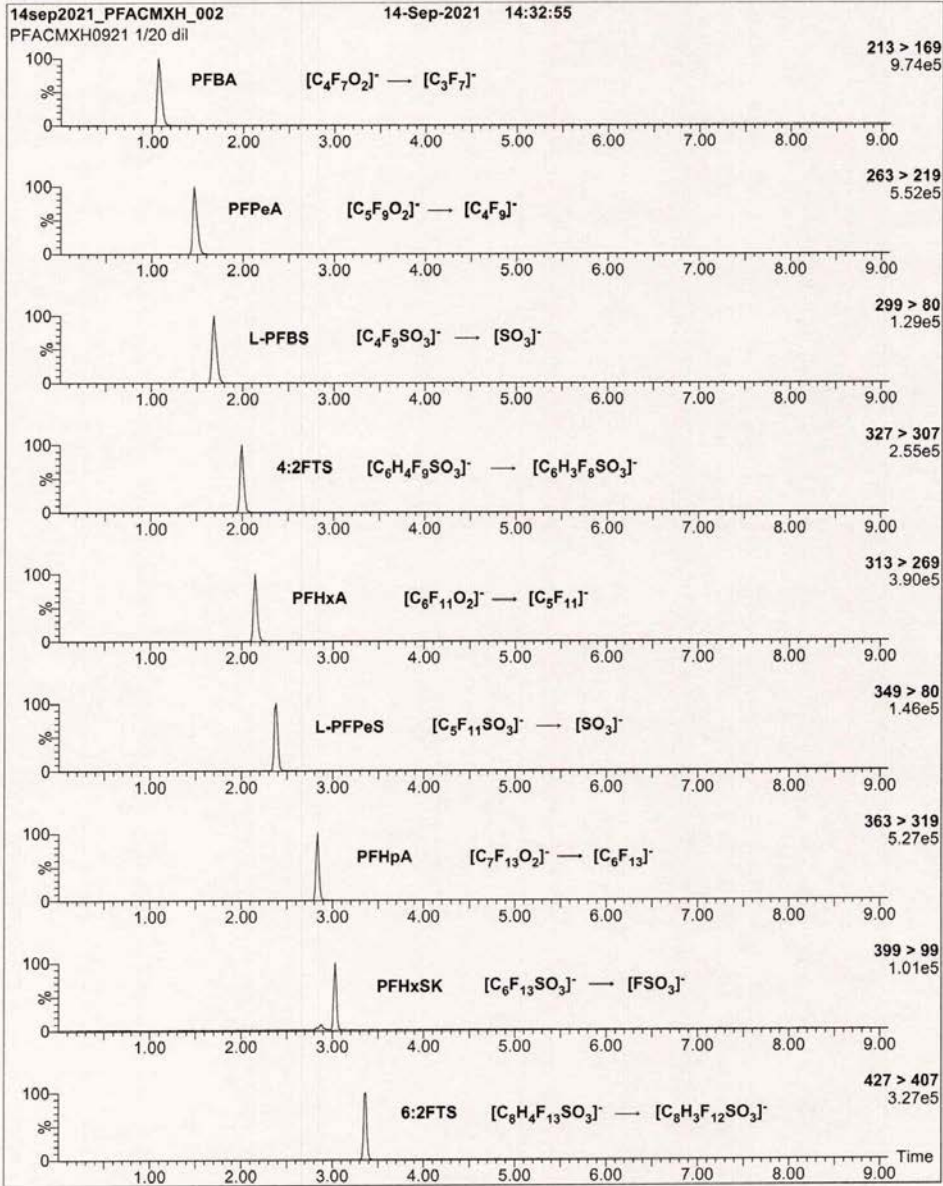
Mobile phase: Gradient  
 Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 9 min and hold for 2 min  
 before returning to initial conditions in 1 min.  
 Time: 15 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: SIR  
 Source: Electrospray (negative)  
 Capillary Voltage (KV) = 2.50  
 Cone Voltage (V) = variable (2-74)  
 Desolvation Temperature (°C) = 350  
 Desolvation Gas Flow (L/hr) = 1000

**Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**



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 Revision#9, Revised 2020-12-23

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 rev0

**Table B:** br-NMeFOSAA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\*

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \\ \text{CH}_3 \end{array}$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{CH}_3 \end{array}$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{CH}_3 \end{array}$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{CH}_3 \end{array}$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{CH}_3 \end{array}$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3 \\   \\ \text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{CH}_3 \end{array}$	0.2	
7	Other Unidentified Isomers		1.1	

\* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

**Table C:** br-NEtFOSAA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\*

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \\ \text{C}_2\text{H}_5 \end{array}$	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{C}_2\text{H}_5 \end{array}$	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{C}_2\text{H}_5 \end{array}$	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{C}_2\text{H}_5 \end{array}$	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{C}_2\text{H}_5 \end{array}$	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3 \\   \\ \text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \\ \text{CF}_3 \qquad \qquad   \\ \qquad \qquad \qquad \text{C}_2\text{H}_5 \end{array}$	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3 \\   \\ \text{CF}_3\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{C}_2\text{H}_5 \end{array}$	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3 \\   \\ \text{CF}_3\text{CF}(\text{CF}_2)_2\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{C}_2\text{H}_5 \end{array}$	0.3	
9	Other Unidentified Isomers		1.3	

\* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

**Table D: PFHxSK; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	Potassium perfluoro-1-hexanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CCF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.2	
7	Other Unidentified Isomers		0.5	

\* Percent of total perfluorohexanesulfonate isomers only.

\*\* Systematic Name: Potassium perfluorohexane-2-sulfonate.



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**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PFAC-MXH**

**Native Per- and Poly-fluoroalkyl Substance  
Solution/Mixture**

**PRODUCT CODE:** PFAC-MXH  
**LOT NUMBER:** PFACMXH0921  
**SOLVENT(S):** Methanol / Isopropanol (2%) / Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 09/09/2021  
**LAST TESTED:** (mm/dd/yyyy) 09/14/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 09/14/2026  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DESCRIPTION:**

PFAC-MXH is a solution/mixture of eleven native linear perfluoroalkylcarboxylic acids (C<sub>2</sub>-C<sub>14</sub>), eight native perfluoroalkanesulfonates (C<sub>4</sub>, C<sub>6</sub>, C<sub>7</sub>, C<sub>8</sub>, C<sub>10</sub> and C<sub>12</sub> linear; C<sub>6</sub> and C<sub>8</sub> linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide (FOSA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Table B: Isomeric Components and Percent Composition of br-NMeFOSAA  
Table C: Isomeric Components and Percent Composition of br-NEtFOSAA  
Table D: Isomeric Components and Percent Composition of PFHxSK  
Table E: Isomeric Components and Percent Composition of PFOSK  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$$x_1, x_2, \dots, x_n \text{ on which it depends is: } u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: PFAC-MXH; Components and Concentrations**  
 (µg/mL, ± 5% in methanol / isopropanol (2%) / water (<1%))

Compound	Acronym	Concentration* (µg/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4.00		1
Perfluoro-n-pentanoic acid	PFPeA	2.00		2
Perfluoro-n-hexanoic acid	PFHxA	1.00		5
Perfluoro-n-heptanoic acid	PFHpA	1.00		7
Perfluoro-n-octanoic acid	PFOA	1.00		11
Perfluoro-n-nonanoic acid	PFNA	1.00		14
Perfluoro-n-decanoic acid	PFDA	1.00		18
Perfluoro-n-undecanoic acid	PFUdA	1.00		23
Perfluoro-n-dodecanoic acid	PFDoA	1.00		26
Perfluoro-n-tridecanoic acid	PFTrDA	1.00		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1.00		29
Perfluoro-1-octanesulfonamide	FOSA	1.00		25
N-methylperfluorooctanesulfonamidoacetic acid *	N-MeFOSAA: linear isomer	0.760		20
	N-MeFOSAA: ∑ branched isomers	0.240		17
N-ethylperfluorooctanesulfonamidoacetic acid *	N-EtFOSAA: linear isomer	0.775		22
	N-EtFOSAA: ∑ branched isomers	0.225		21
Compound	Acronym	Concentration* (µg/mL)		Peak Assignment in Figure 1
Potassium perfluoro-1-butanedisulfonate	L-PFBS	1.00	0.887	
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1.00	0.941	6
Potassium perfluorohexanesulfonate *	PFHxSK: linear isomer	0.811	0.741	9
	PFHxSK: ∑ branched isomers	0.189	0.173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1.00	0.953	12
Potassium perfluorooctanesulfonate *	PFOSK: linear isomer	0.788	0.732	15
	PFOSK: ∑ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1.00	0.962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1.00	0.965	24
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1.00	0.970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4.00	3.75	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4.00	3.80	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4.00	3.84	16

\* See Table B for percent composition of linear and branched N-MeFOSAA isomers.  
 \* See Table C for percent composition of linear and branched N-EtFOSAA isomers.  
 \* See Table D for percent composition of linear and branched PFHxSK isomers.  
 \* See Table E for percent composition of linear and branched PFOSK isomers.

\* Concentrations have been rounded to three significant figures.

Certified By:   
 B.G. Chittim, General Manager

Date: 09/23/2021  
 (mm/dd/yyyy)



**Analytical Standard Record**

Standard ID: **Y22B201**

Description:	PFAC-MXH STOCK PFAS EPA 1633	Prepared:	02/17/2022
Standard Type:	Other	<b>Expires:</b>	<b>09/14/2026</b>
Solvent:	MeOH/IPA/H2O	Prepared By:	Robert Q. Bradley
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Lot No.:	PFACMXH0921
Vendor:	Wellington Laboratories		

Comments:

Analyte	CAS Number	Concentration	Units
1H,1H,2H,2H-Perfluorodecanesulfonic acid	39108-34-4	3.84	ug/mL
1H,1H,2H,2H-Perfluorohexanesulfonic acid	757124-72-4	3.75	ug/mL
1H,1H,2H,2H-Perfluorooctanesulfonic acid	27619-97-2	3.8	ug/mL
N-EtFOSAA	2991-50-6	1	ug/mL
N-MeFOSAA	2355-31-9	1	ug/mL
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	0.965	ug/mL
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	0.953	ug/mL
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	0.962	ug/mL
Perfluoro-1-octanesulfonamide (FOSA)	754-91-6	1	ug/mL
Perfluoro-1-pentanesulfonate (PFPeS)	2706-91-4	0.941	ug/mL
Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.887	ug/mL
Perfluorodecanesulfonic acid(PFDS)	335-77-3	0.965	ug/mL
Perfluorodecanoic acid (PFDA)	335-76-2	1	ug/mL
Perfluorododecanoic acid (PFDoA)	307-55-1	1	ug/mL
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	ug/mL
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	0.914	ug/mL
Perfluorohexanoic acid (PFHxA)	307-24-4	1	ug/mL
Perfluoro-n-butanoic acid (PFBA)	375-22-4	4	ug/mL
Perfluorononanoic acid (PFNA)	375-95-1	1	ug/mL
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.928	ug/mL
Perfluorooctanoic acid (PFOA)	335-67-1	1	ug/mL
Perfluoropentanoic acid (PFPeA)	2706-90-3	1	ug/mL
Perfluorotetradecanoic acid (PFTA)	376-06-7	1	ug/mL
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1	ug/mL
Perfluoroundecanoic acid (PFUnA)	2058-94-8	1	ug/mL

Reviewed By

Date

**Attachment 4 – Calibration Concentrations, nominal**

Calibration Solutions (ng/mL) Compound								
CSI (LOQ)	CS2	Perfluoropalkyl carboxylic	CS3	CS4 (CV <sup>1</sup> )	CS5	CS6	CS7 <sup>2</sup>	
<b>acids</b>								
PFBA	0.8	2	5	10	20	50	250	
PFPeA	0.4	1	2.5	5	10	25	125	
PFHxA	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFHpA	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFOA	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFNA	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFDA	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFUnA	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFDoA	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFTrDA	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFTeDA	0.2	0.5	1.25	2.5	5	12.5	62.5	
<b>Perfluoroalkyl sulfonic acids</b>								
PFBS	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFPeS	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFHxS	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFHpS	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFOS	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFNS	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFDS	0.2	0.5	1.25	2.5	5	12.5	62.5	
PFDoS	0.2	0.5	1.25	2.5	5	12.5	62.5	
<b>Fluorotelomer sulfonic acids</b>								
4:2FTS	0.8	2	5	10	20	50	NA	
6:2FTS	0.8	2	5	10	20	50	NA	
8:2FTS	0.8	2	5	10	20	50	NA	
<b>Perfluorooctane sulfonamides</b>								
PFOSA	0.2	0.5	1.25	2.5	5	12.5	62.5	
NMeFOSA	0.2	0.5	1.25	2.5	5	12.5	62.5	
NEFOSA	0.2	0.5	1.25	2.5	5	12.5	62.5	
<b>Perfluorooctane sulfonamidoacetic acids</b>								
NMeFOSAA	0.2	0.5	1.25	2.5	5	12.5	62.5	
NEFOSAA	0.2	0.5	1.25	2.5	5	12.5	62.5	
<b>Perfluorooctane sulfonamide ethanols</b>								
NMeFOSE	2	5	12.5	25	50	125	625	
NEFOSE	2	5	12.5	25	50	125	625	
<b>Per- and polyfluoroether carboxylic acids</b>								
HFPO-DA	0.8	2	5	10	20	50	250	
ADONA	0.8	2	5	10	20	50	250	
PFMPA	0.4	1	2.5	5	10	25	125	
PFMBA	0.4	1	2.5	5	10	25	125	
NFDHA	0.4	1	2.5	5	10	25	125	
<b>Ether sulfonic acids</b>								
9Cl-PF3ONS	0.8	2	5	10	20	50	250	
11Cl-PF3OUdS	0.8	2	5	10	20	50	250	
PFEEA	0.4	1	2.5	5	10	25	125	

Calibration Solutions (ng/mL) Compound							
CS1 (LOQ)	CS2 Fluorotelomer carboxylic		CS3	CS4 (CV <sup>1</sup> )	CS5	CS6	CS7 <sup>2</sup>
<b>acids</b>							
3:3FTCA	1.0	2.5	6.26	12.5	25	62.4	312
5:3FTCA	5.0	12.5	31.3	62.5	125	312	1560
7:3FTCA	5.0	12.5	31.3	62.5	125	312	1560
<b>Extracted Internal Standard (EIS) Analytes</b>							
<sup>13</sup> C <sub>4</sub> -PFBA	10	10	10	10	10	10	10
<sup>13</sup> C <sub>5</sub> -PFPeA	5	5	5	5	5	5	5
<sup>13</sup> C <sub>2</sub> -PFHxA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
<sup>13</sup> C <sub>4</sub> -PFHpA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
<sup>13</sup> C <sub>8</sub> -PFOA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
<sup>13</sup> C <sub>9</sub> -PFNA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
<sup>13</sup> C <sub>6</sub> -PFDA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
<sup>13</sup> C <sub>7</sub> -PFUnA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
<sup>13</sup> C <sub>2</sub> -PFDoA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
<sup>13</sup> C <sub>2</sub> -PFTeDA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
<sup>13</sup> C <sub>3</sub> -PFBS	2.5	2.5	2.5	2.5	2.5	2.5	2.5
<sup>13</sup> C <sub>3</sub> -PFHxS	2.5	2.5	2.5	2.5	2.5	2.5	2.5
<sup>13</sup> C <sub>8</sub> -PFOS	2.5	2.5	2.5	2.5	2.5	2.5	2.5
<sup>13</sup> C <sub>2</sub> -4:2FTS	5	5	5	5	5	5	5
<sup>13</sup> C <sub>2</sub> -6:2FTS	5	5	5	5	5	5	5
<sup>13</sup> C <sub>2</sub> -8:2FTS	5	5	5	5	5	5	5
<sup>13</sup> C <sub>8</sub> -PFOSA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
D <sub>3</sub> -NMeFOSA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
D <sub>3</sub> -NEtFOSA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
D <sub>3</sub> -NMeFOSAA	5	5	5	5	5	5	5
D <sub>5</sub> -NEtFOSAA	5	5	5	5	5	5	5
D <sub>7</sub> -NMeFOSE	25	25	25	25	25	25	25
D <sub>9</sub> -NEtFOSE	25	25	25	25	25	25	25
<sup>13</sup> C <sub>3</sub> -HFPO-DA	10	10	10	10	10	10	10
<b>Non-extracted Internal Standard (NIS) Analytes</b>							
<sup>13</sup> C <sub>3</sub> -PFBA	5	5	5	5	5	5	5
<sup>13</sup> C <sub>2</sub> -PFHxA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
<sup>13</sup> C <sub>4</sub> -PFOA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
<sup>13</sup> C <sub>3</sub> -PFNA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
<sup>13</sup> C <sub>2</sub> -PFDA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
<sup>18</sup> O <sub>2</sub> -PFHxS	2.5	2.5	2.5	2.5	2.5	2.5	2.5
<sup>13</sup> C <sub>4</sub> -PFOS	2.5	2.5	2.5	2.5	2.5	2.5	2.5

<sup>1</sup> This calibration point is used as the calibration verification (CV)

<sup>2</sup> A minimum of six contiguous calibrations standards are required for linear models and a minimum of seven calibration standards are required for second-order models.

## Attachment 5 -HPLC Method Parameters

### HPLC Acquisition Method Report



Stroke A  
**Automatic Stroke Calculation A** Yes Injection  
**Compress A** Compressibility Value Set Injection with needle wash  
**Compressibility Mode A** 70 10e-6/bar 3.00 µL  
**Compressibility A**  
**Compress B** Compressibility Value Set  
**Compressibility Mode B** 90 10e-6/bar  
**Compressibility B**  
**Stop Time**  
**Stoptime Mode** Time set  
**Stoptime** 10.00 min  
**Post Time**  
**Posttime Mode** Time set  
**Posttime** 1.50 min

Solvent Composition

	Channel	Name 1	Name 2	Selected	Used	Percent
1	A	Water 5mM ammonium acetate		Ch. 1	Yes	90.00 %
2	B	Methanol		Ch. 1	Yes	10.00 %

Timetable

	Time	A	B	Flow
1	3.50 min	50.00 %	50.00 %	0.400 mL/min
2	8.00 min	10.00 %	90.00 %	0.400 mL/min
3	8.50 min	90.00 %	10.00 %	0.400 mL/min

Name: Column Comp.

Module: G1316C

Left Temperature Control

**Temperature Control Mode** Temperature Set  
**Temperature** 50.0 °C  
**Enable Analysis Left Temperature**  
**Enable Analysis Left Temperature On** Yes  
**Enable Analysis Left Temperature Value** 0.8 °C

Right Temperature Control

**Right temperature Control Mode** Temperature Set  
**Right temperature** 50.0 °C  
**Enable Analysis Right Temperature**  
**Enable Analysis Right Temperature On** Yes  
**Enable Analysis Right Temperature Value** 0.8 °C

Stop Time

**Stoptime Mode** As pump/injector

Post Time

**Posttime Mode** Off

Timetable

Valve Position

Position 1 (Port 1 -> 2)

Ready when front door open

Yes

## Attachment 6 - Triple Quadrupole Acquisition Method

### Acquisition Method Report



#### Acquisition Method Info

**Method Name** PFAS1633\_ACQ\_092922.m  
**Method Path** D:\MassHunter\methods\PFAS1633\_ACQ\_092922.m  
**Method Description** EPA 1633\_Target PFAS Isotope Dilution\_Acquisition  
**Device List**  
 HiP Sampler  
 Binary Pump  
 Column Comp.  
 QQQ

#### MS QQQ Mass Spectrometer

**Ion Source** AJS ESI **Tune File** D:\MassHunter\Tune\QQQ\G6460C  
 \atunes.TUNE.XML  
**Stop Mode** No Limit/As Pump **Stop Time (min)** 1  
**Time Filter** On **Time Filter Width (min)** 0.07  
**LC->Waste Pre Row** N/A **LC->Waste Post Row** N/A

#### Time Segments

Index	Start Time (min)	Scan Type	Ion Mode	Div Valve	Delta EMV	Store	Cycle Time (ms)	Triggered?	MRM Repeats
1	0	DynamicMRM	ESI+Agilent Jet Stream	To MS	350	Yes	550	Yes	3

#### Time Segment 1

#### Scan Segments

Cpd Name	ISTD?	Prec Ion	MS1 Res	Prod Ion	MS2 Res	Primary	Trigger	Frag (V)	CE (V)	Cell Acc (V)	Ret Time (min)	Ret Window	Polarity
11-CF <sub>3</sub> PF <sub>3</sub> OdS	No	631	Unit/Enh (6490)	451	Unit/Enh (6490)	Yes	No	170	33	4	7.62	3	Negative
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2F TS)	No	527	Unit/Enh (6490)	507	Unit/Enh (6490)	Yes	No	170	28	4	7.14	3	Negative
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2F TS)	No	527	Unit/Enh (6490)	80.9	Unit/Enh (6490)	Yes	No	170	40	4	7.14	3	Negative
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2F TS)	No	327	Unit/Enh (6490)	307	Unit/Enh (6490)	Yes	No	162	20	4	4.788	3	Negative
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2F TS)	No	327	Unit/Enh (6490)	80.9	Unit/Enh (6490)	Yes	No	162	36	4	4.788	3	Negative
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2F TS)	No	427	Unit/Enh (6490)	407	Unit/Enh (6490)	Yes	No	162	24	4	6.188	3	Negative
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2F TS)	No	427	Unit/Enh (6490)	79.7	Unit/Enh (6490)	Yes	No	162	48	4	6.188	3	Negative
3:3FTCA	No	241	Unit/Enh (6490)	177	Unit/Enh (6490)	Yes	No	74	4	4	3.4	3	Negative
3:3FTCA	No	241	Unit/Enh (6490)	117	Unit/Enh (6490)	Yes	No	74	44	4	3.4	3	Negative

Report generation date: 18-Oct-2022 09:01:43 AM

Page 1 of 8

Acquisition Method Report



Cpd Name	ISTD?	Prec Ion	MS1 Res	Prod Ion	MS2 Res	Primary	Trigger	Frag (V)	CE (V)	Cell Acc (V)	Ret Time (min)	Ret Window	Polarity
5-3FTCA	No	341	Unit/Enh (6490)	237	Unit/Enh (6490)	Yes	No	84	12	4	5.73	3	Negative
5-3FTCA	No	341	Unit/Enh (6490)	217	Unit/Enh (6490)	Yes	No	84	24	4	5.73	3	Negative
7-3FTCA	No	441	Unit/Enh (6490)	337	Unit/Enh (6490)	Yes	No	76	12	4	6.7	3	Negative
7-3FTCA	No	441	Unit/Enh (6490)	317	Unit/Enh (6490)	Yes	No	76	24	4	6.7	3	Negative
9-CI-PF3ONS ADONA	No	531	Unit/Enh (6490)	351	Unit/Enh (6490)	Yes	No	175	29	4	6.89	3	Negative
ADONA	No	377	Unit/Enh (6490)	251	Unit/Enh (6490)	Yes	No	103	9	4	5.62	3	Negative
ADONA	No	377	Unit/Enh (6490)	85	Unit/Enh (6490)	Yes	No	103	37	4	5.62	3	Negative
d3-NMeFOSA	No	515	Unit/Enh (6490)	219	Unit/Enh (6490)	Yes	No	134	20	4	7.17	3	Negative
d3-N-MeFOSA	No	572.99	Unit/Enh (6490)	418.8	Unit/Enh (6490)	Yes	No	130	20	4	7.17	3	Negative
d5-NEFOSA	No	531	Unit/Enh (6490)	219	Unit/Enh (6490)	Yes	No	150	20	4	8.52	3	Negative
d5-NEFOSA	No	531	Unit/Enh (6490)	169	Unit/Enh (6490)	Yes	No	150	20	4	8.52	3	Negative
d5-N-EFOSA	No	589.02	Unit/Enh (6490)	530.9	Unit/Enh (6490)	Yes	No	130	20	4	7.36	3	Negative
d5-N-EFOSA	No	589.02	Unit/Enh (6490)	418.8	Unit/Enh (6490)	Yes	No	130	20	4	7.36	3	Negative
d7-NMeFOSE	No	623	Unit/Enh (6490)	310	Unit/Enh (6490)	Yes	No	150	15	4	8.28	3	Negative
d7-NMeFOSE	No	623	Unit/Enh (6490)	59	Unit/Enh (6490)	Yes	No	88	15	4	8.28	3	Negative
d9-NEFOSE	No	639	Unit/Enh (6490)	59	Unit/Enh (6490)	Yes	No	150	15	4	8.6	3	Negative
HFPO-DA	No	285	Unit/Enh (6490)	169.1	Unit/Enh (6490)	Yes	No	100	20	4	4.95	3	Negative
M2-4-2FTS	No	329	Unit/Enh (6490)	309	Unit/Enh (6490)	Yes	No	156	20	4	4.787	3	Negative
M2-4-2FTS	No	329	Unit/Enh (6490)	81	Unit/Enh (6490)	Yes	No	156	28	4	4.787	3	Negative
M2-6-2FTS	No	429	Unit/Enh (6490)	409	Unit/Enh (6490)	Yes	No	162	24	4	6.01	3	Negative
M2-6-2FTS	No	429	Unit/Enh (6490)	81	Unit/Enh (6490)	Yes	No	162	40	4	6.01	3	Negative
M2-8-2FTS	No	529	Unit/Enh (6490)	509	Unit/Enh (6490)	Yes	No	165	28	4	6.98	3	Negative
M2-8-2FTS	No	529	Unit/Enh (6490)	81	Unit/Enh (6490)	Yes	No	165	40	4	6.98	3	Negative
M2PF TeD A	No	715	Unit/Enh (6490)	670	Unit/Enh (6490)	Yes	No	62	12	4	8.25	3	Negative
M3-HFPO-DA	No	287	Unit/Enh (6490)	169	Unit/Enh (6490)	Yes	No	90	5	4	4.99	3	Negative
M3PFBA	Yes	216	Unit/Enh (6490)	172	Unit/Enh (6490)	Yes	No	90	5	4	1.2	2	Negative
M3PFBS	No	302	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	114	32	4	3.94	3	Negative
M3PFBS	No	302	Unit/Enh (6490)	79.9	Unit/Enh (6490)	Yes	No	114	40	4	3.94	3	Negative
M3PFHxS	No	402	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	165	40	4	5.55	3	Negative
M3PFHxS	No	402	Unit/Enh (6490)	80	Unit/Enh (6490)	Yes	No	165	48	4	5.55	3	Negative
M4PFHpA	No	367	Unit/Enh (6490)	322	Unit/Enh (6490)	Yes	No	124	8	4	5.601	3	Negative
M5PFHxA	No	318	Unit/Enh (6490)	273	Unit/Enh (6490)	Yes	No	70	4	4	5.47	3	Negative
M5PFHxA	No	318	Unit/Enh (6490)	120	Unit/Enh (6490)	Yes	No	70	4	4	5.47	3	Negative
M6PFDA	No	519	Unit/Enh (6490)	473.9	Unit/Enh (6490)	Yes	No	59	8	4	6.99	3	Negative
M7PFUdA	No	570	Unit/Enh (6490)	525	Unit/Enh (6490)	Yes	No	64	8	4	7.38	3	Negative
MPFDA	Yes	514.98	Unit/Enh (6490)	469.8	Unit/Enh (6490)	Yes	No	94	5	4	6.972	2	Negative
MPFHxA	Yes	314.99	Unit/Enh (6490)	269.8	Unit/Enh (6490)	Yes	No	86	4	4	4.705	2	Negative
MPFHxA	Yes	314.99	Unit/Enh (6490)	120	Unit/Enh (6490)	Yes	No	86	4	4	4.705	2	Negative
MPFHxS	Yes	403	Unit/Enh (6490)	103	Unit/Enh (6490)	Yes	No	110	37	4	5.63	2	Negative
MPFHxS	Yes	403	Unit/Enh (6490)	84	Unit/Enh (6490)	Yes	No	110	40	4	5.63	2	Negative
MPFNA	Yes	468	Unit/Enh (6490)	423	Unit/Enh (6490)	Yes	No	66	4	4	6.541	2	Negative
MPFOA	Yes	417	Unit/Enh (6490)	372	Unit/Enh (6490)	Yes	No	84	4	4	6.03	2	Negative
MPFOS	Yes	502.96	Unit/Enh (6490)	99	Unit/Enh (6490)	Yes	No	148	48	4	6.57	3	Negative

### Acquisition Method Report



Cpd Name	ISTD?	Prec Ion	MS1 Res	Prod Ion	MS2 Res	Primary	Trigger	Frag (V)	CE (V)	Cell Acc (V)	Ret Time (min)	Ret Window	Polarity
MPFOS	Yes	502.96	Unit/Enh (6490)	80	Unit/Enh (6490)	Yes	No	148	54	4	6.57	3	Negative
NEFOSA	No	526	Unit/Enh (6490)	219	Unit/Enh (6490)	Yes	No	120	20	4	8.528	3	Negative
NEFOSA	No	526	Unit/Enh (6490)	169	Unit/Enh (6490)	Yes	No	120	20	4	8.528	3	Negative
N-ETFOSAA	No	584	Unit/Enh (6490)	525.9	Unit/Enh (6490)	Yes	No	130	20	4	7.521	3	Negative
N-ETFOSAA	No	584	Unit/Enh (6490)	418.8	Unit/Enh (6490)	Yes	No	130	20	4	7.521	3	Negative
NEFOSE	No	630	Unit/Enh (6490)	59	Unit/Enh (6490)	Yes	No	120	20	4	8.301	3	Negative
NFDHA	No	295	Unit/Enh (6490)	201.1	Unit/Enh (6490)	Yes	No	92	2	4	4.641	3	Negative
NFDHA	No	295	Unit/Enh (6490)	84.9	Unit/Enh (6490)	Yes	No	92	34	4	4.641	3	Negative
NMeFOSA	No	512	Unit/Enh (6490)	219	Unit/Enh (6490)	Yes	No	120	20	4	8.298	3	Negative
NMeFOSA	No	512	Unit/Enh (6490)	169	Unit/Enh (6490)	Yes	No	120	20	4	8.298	3	Negative
N-MeFOSAA	No	570	Unit/Enh (6490)	511.9	Unit/Enh (6490)	Yes	No	150	20	4	7.335	3	Negative
N-MeFOSAA	No	570	Unit/Enh (6490)	418.9	Unit/Enh (6490)	Yes	No	150	20	4	7.335	3	Negative
NMeFOSE	No	616	Unit/Enh (6490)	59	Unit/Enh (6490)	Yes	No	120	20	4	8.301	3	Negative
Perfluoro-1 - [13C8]octanesulfonamide (MBFOSA)	No	506	Unit/Enh (6490)	78	Unit/Enh (6490)	Yes	No	162	48	4	7.59	3	Negative
Perfluoro-1 - [13C8]octanesulfonic acid (MBPFOS)	No	507	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	174	48	4	6.59	3	Negative
Perfluoro-1 - [13C8]octanesulfonic acid (MBPFOS)	No	507	Unit/Enh (6490)	80	Unit/Enh (6490)	Yes	No	174	54	4	6.59	3	Negative
Perfluoro-1 - decanesulfonate (L-PFDS)	No	598.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	156	50	4	7.546	3	Negative
Perfluoro-1 - decanesulfonate (L-PFDS)	No	598.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	100	60	4	7.546	3	Negative
Perfluoro-1 - heptanesulfonate (L-PFHpS)	No	448.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	162	48	4	6.252	3	Negative
Perfluoro-1 - heptanesulfonate (L-PFHpS)	No	448.9	Unit/Enh (6490)	80	Unit/Enh (6490)	Yes	No	162	48	4	6.252	3	Negative
Perfluoro-1 - octanesulfonamide (FOSA)	No	497.9	Unit/Enh (6490)	478	Unit/Enh (6490)	Yes	No	156	100	4	7.651	3	Negative
Perfluoro-1 - octanesulfonamide (FOSA)	No	497.9	Unit/Enh (6490)	78	Unit/Enh (6490)	Yes	No	156	40	4	7.651	3	Negative
Perfluoro-1 - pentanesulfonate (L-PFPeS)	No	348.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	150	36	4	5.042	3	Negative
Perfluoro-1 - pentanesulfonate (L-PFPeS)	No	348.9	Unit/Enh (6490)	79.9	Unit/Enh (6490)	Yes	No	150	40	4	5.042	3	Negative

### Acquisition Method Report



Cpd Name	ISTD?	Prec Ion	MS1 Res	Prod Ion	MS2 Res	Primary	Trigger	Frag (V)	CE (V)	Cell Acc (V)	Ret Time (min)	Ret Window	Polarity
Perfluorobutanesulfonic acid (PFBS)	No	298.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	150	32	4	4.042	3	Negative
Perfluorobutanesulfonic acid (PFBS)	No	298.9	Unit/Enh (6490)	79.9	Unit/Enh (6490)	Yes	No	150	36	4	4.042	3	Negative
Perfluorodecanoic acid (PFDA)	No	513	Unit/Enh (6490)	468.8	Unit/Enh (6490)	Yes	No	90	8	4	7.158	3	Negative
Perfluorodecanoic acid (PFDA)	No	513	Unit/Enh (6490)	268.8	Unit/Enh (6490)	Yes	No	90	16	4	7.158	3	Negative
Perfluorododecanesulfonic acid (PFDoS)	No	699	Unit/Enh (6490)	99	Unit/Enh (6490)	Yes	No	100	60	4	7.984	3	Negative
Perfluorododecanesulfonic acid (PFDoS)	No	699	Unit/Enh (6490)	80	Unit/Enh (6490)	Yes	No	156	50	4	7.984	3	Negative
Perfluorodecanoic acid (PFDoA)	No	613	Unit/Enh (6490)	568.8	Unit/Enh (6490)	Yes	No	90	12	4	7.876	3	Negative
Perfluorodecanoic acid (PFDoA)	No	613	Unit/Enh (6490)	168.7	Unit/Enh (6490)	Yes	No	90	28	4	7.876	3	Negative
Perfluorooheptanoic acid (PFHpA)	No	363	Unit/Enh (6490)	318.8	Unit/Enh (6490)	Yes	No	90	8	4	5.601	3	Negative
Perfluorooheptanoic acid (PFHpA)	No	363	Unit/Enh (6490)	168.9	Unit/Enh (6490)	Yes	No	90	16	4	5.601	3	Negative
Perfluorooxanesulfonic acid (PFHxS)	No	398.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	150	40	4	5.685	3	Negative
Perfluorooxanesulfonic acid (PFHxS)	No	398.9	Unit/Enh (6490)	79.9	Unit/Enh (6490)	Yes	No	150	44	4	5.685	3	Negative
Perfluorooxanoic acid (PFHxA)	No	313	Unit/Enh (6490)	268.9	Unit/Enh (6490)	Yes	No	70	4	4	4.856	3	Negative
Perfluorooxanoic acid (PFHxA)	No	313	Unit/Enh (6490)	119	Unit/Enh (6490)	Yes	No	70	20	4	4.856	3	Negative
Perfluoron-1,2-13C2dodecanoic acid (MPF DoA)	No	615	Unit/Enh (6490)	570	Unit/Enh (6490)	Yes	No	53	8	4	7.71	3	Negative
Perfluoron-13C4butanoic acid (MPFBA)	No	217	Unit/Enh (6490)	172	Unit/Enh (6490)	Yes	No	59	4	4	1.22	3	Negative
Perfluoron-13C54pentanoic acid (M5PF PeA)	No	268	Unit/Enh (6490)	223	Unit/Enh (6490)	Yes	No	62	4	4	3.44	3	Negative
Perfluoron-13C8]octanoic acid (M8PF OA)	No	421	Unit/Enh (6490)	376	Unit/Enh (6490)	Yes	No	59	4	4	6.05	3	Negative
Perfluoron-13C8]octanoic acid (M8PF OA)	No	421	Unit/Enh (6490)	172	Unit/Enh (6490)	Yes	No	59	16	4	6.05	3	Negative

### Acquisition Method Report



Cpd Name	ISTD?	Prec Ion	MS1 Res	Prod Ion	MS2 Res	Primary	Trigger	Frag (V)	CE (V)	Cell Acc (V)	Ret Time (min)	Ret Window	Polarity
Perfluoro- n- [13C9]non anoic acid (M9PFNA)	No	472	Unit/Enh (6490)	427	Unit/Enh (6490)	Yes	No	59	8	4	6.56	3	Negative
Perfluoro- n- [13C9]non anoic acid (M9PFNA)	No	472	Unit/Enh (6490)	223	Unit/Enh (6490)	Yes	No	59	16	4	6.56	3	Negative
Perfluoro- n-butanoic acid (PFBA)	No	213	Unit/Enh (6490)	168.9	Unit/Enh (6490)	Yes	No	70	4	4	1.246	3	Negative
Perfluoron onanesulfo nate (L- PFNS)	No	548.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	159	48	4	7.174	3	Negative
Perfluoron onanesulfo nate (L- PFNS)	No	548.9	Unit/Enh (6490)	79.9	Unit/Enh (6490)	Yes	No	159	48	4	7.174	3	Negative
Perfluoron onanoic acid (PFNA)	No	463	Unit/Enh (6490)	418.8	Unit/Enh (6490)	Yes	No	90	8	4	6.718	3	Negative
Perfluoron onanoic acid (PFNA)	No	463	Unit/Enh (6490)	218.8	Unit/Enh (6490)	Yes	No	90	16	4	6.718	3	Negative
Perfluoro- n- pentanoic acid (PFPeA)	No	263	Unit/Enh (6490)	219	Unit/Enh (6490)	Yes	No	62	4	4	3.526	3	Negative
Perfluoro ctanesulfo nic acid (PFOS)	No	498.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	150	44	4	6.743	3	Negative
Perfluoro ctanesulfo nic acid (PFOS)	No	498.9	Unit/Enh (6490)	79.9	Unit/Enh (6490)	Yes	No	150	84	4	6.743	3	Negative
Perfluoro ctanoic acid (PFOA)	No	413	Unit/Enh (6490)	368.8	Unit/Enh (6490)	Yes	No	90	8	4	6.202	3	Negative
Perfluoro ctanoic acid (PFOA)	No	413	Unit/Enh (6490)	168.9	Unit/Enh (6490)	Yes	No	90	16	4	6.202	3	Negative
Perfluoro tridecanoic acid (PFTA)	No	713	Unit/Enh (6490)	669	Unit/Enh (6490)	Yes	No	110	12	4	8.414	3	Negative
Perfluoro tridecanoic acid (PFTA)	No	713	Unit/Enh (6490)	168.8	Unit/Enh (6490)	Yes	No	110	28	4	8.414	3	Negative
Perfluoro tridecanoic acid (PFTA)	No	663	Unit/Enh (6490)	618.8	Unit/Enh (6490)	Yes	No	90	12	4	8.164	3	Negative
Perfluoro undecanoic acid (PFUDA)	No	563	Unit/Enh (6490)	519	Unit/Enh (6490)	Yes	No	90	8	4	7.538	3	Negative
Perfluoro undecanoic acid (PFUDA)	No	563	Unit/Enh (6490)	169	Unit/Enh (6490)	Yes	No	90	24	4	7.538	3	Negative
PF EESA	No	315	Unit/Enh (6490)	135	Unit/Enh (6490)	Yes	No	112	26	4	4.464	3	Negative
PF EESA	No	315	Unit/Enh (6490)	83	Unit/Enh (6490)	Yes	No	112	14	4	4.464	3	Negative
PF MBA	No	279	Unit/Enh (6490)	85	Unit/Enh (6490)	Yes	No	75	18	4	4.011	3	Negative
PF MPA	No	229	Unit/Enh (6490)	85	Unit/Enh (6490)	Yes	No	59	6	4	2.15	3	Negative

Scan Parameters

Data Stg	Threshold
Centroid	0

## Acquisition Method Report



### Source Parameters

Parameter	Value (+)	Value (-)
Gas Temp (°C)	230	230
Gas Flow (l/min)	5	5
Nebulizer (psi)	15	15
SheathGasHeater	350	350
SheathGasFlow	12	12
Capillary (V)	3500	2500
VCharging	500	0

### Chromatograms

Chrom Type	Label	Offset	Y-Range
TIC	TIC	0	10000000

### Instrument Curves

Actual

**Name:** HiP Sampler

**Module:** G4226A

### Auxiliary

Draw Speed	100.0 µL/min
Eject Speed	400.0 µL/min
Draw Position Offset	1.5 mm
Wait Time After Drawing	1.2 s
Sample Flush Out Factor	5.0
Vial/Well bottom sensing	Yes

### Injection

Injection Mode	Injection with needle wash
Injection Volume	3.00 µL
Needle Wash	
Needle Wash Location	Flush Port
Wash Time	10.0 s

### High throughput

Automatic Delay Volume Reduction	No
Overlapped Injection	
Enable Overlapped Injection	No

### Valve Switching

Valve Movements	0
Valve Switch Time 1	
Switch Time 1 Enabled	No
Valve Switch Time 2	
Switch Time 2 Enabled	No
Valve Switch Time 3	
Switch Time 3 Enabled	No
Valve Switch Time 4	
Switch Time 4 Enabled	No

### Stop Time

Stoptime Mode	As pump/No limit
---------------	------------------

### Post Time

Posttime Mode	Off
---------------	-----

**Name:** Binary Pump

**Module:** G4220A

Flow	0.400 mL/min
Use Solvent Types	No
Stroke Mode	Synchronized
Low Pressure Limit	0.00 bar
High Pressure Limit	600.00 bar
Max. Flow Ramp Up	100.000 mL/min <sup>2</sup>
Max. Flow Ramp Down	100.000 mL/min <sup>2</sup>
Expected Mixer	No check

**QAPP  
APPENDIX C**

**Sample Nomenclature**

# APPENDIX C

## SAMPLE NOMENCLATURE

The sample nomenclature outlined below provides consistency between sample events and projects but, most importantly, establish unique sample IDs that will avoid confusion months or years after the sample has been collected.

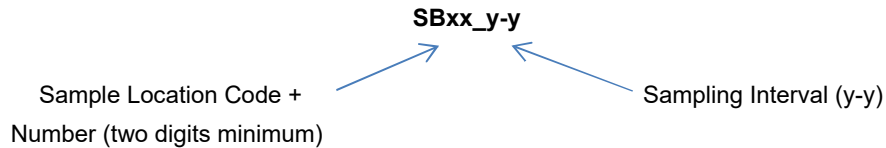
### 1.0 INVESTIGATION LOCATION CODES

SB	Soil Boring	SV	Soil Vapor Point
WC	Waste Characterization Boring	IA	Indoor Air
TP	Test Pit	AA	Ambient Air
EPSW	Endpoint Location (Sidewall)	SVE	Vapor Extraction Well
EPB	Endpoint Location (Bottom)	DS	Drum
MW	Monitoring Well	IDW	Investigation Derived Waste
TMW	Temporary Monitoring Well	SL	Sludge
SW	Surface Water	FP	Free Product

### 2.0 SAMPLE NOMENCLATURE

Each sample at a site must have a unique value.

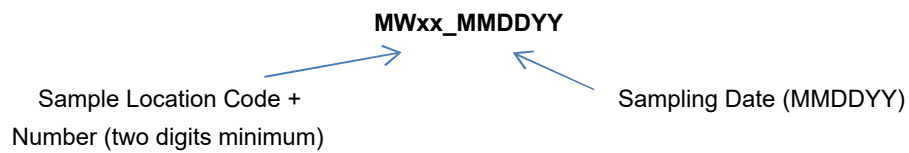
- Soil/Sediment Samples:**



Sample Type	Sample Location Code	Sampling Depth or Interval (feet bgs or approx. elevation)	Sample Name
<b>Phase II/Remedial Investigation</b>			
<b>Grab</b> Soil Sample	SB01	2 to 4	SB01_2-4
	SB02	4	SB02_4
<b>Waste Characterization</b>			
<b>Grab</b> Soil Sample	WC01	2 to 4	WC01_2-4
	WC02	4	WC02_4
<b>Composite</b> Soil Sample from one or more locations	COMP01 or COMP02 + COMP03	0 to 10 (Fill)	COMP01_0-10

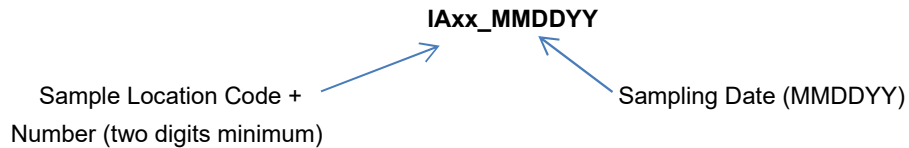
Sample Type	Sample Location Code	Sampling Depth or Interval (feet bgs or approx. elevation)	Sample Name
<b>Endpoint Sampling</b>			
<b>Grab</b> Soil Sample	EPSW01_N	5	EPSW01_N_5
	EPSW01_S	5	EPSW01_S_5
	EPSW01_E	5	EPSW01_E_5
	EPSW01_W	5	EPSW01_W_5
	EPB01	6	EPB01_6

- Groundwater/Surface Water Samples:**



Sample Type	Sample Location Code	Sampling Date	Sample Name
Groundwater Sample	MW 01	02/21/2013	MW01_022113

- Air/Soil Vapor Samples:**



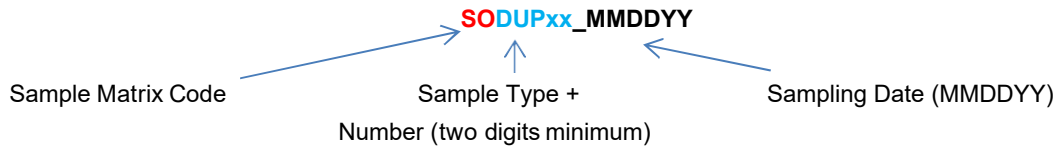
Sample Type	Sample Location Code	Date	Sample Name
Air Sample	IA01	02/21/2013	IA01_022113
Soil Vapor Sample	SV01	02/21/2013	SV01_022113
Vapor Extraction Well Sample	SVE01 (INLET/MIDPOINT/OUTLET)	02/21/2013	SVE01_IN_022113 SVE01_MID_022113 SVE01_OUT_022113

- QA/QC Samples:**

**Sample Matrix Codes**

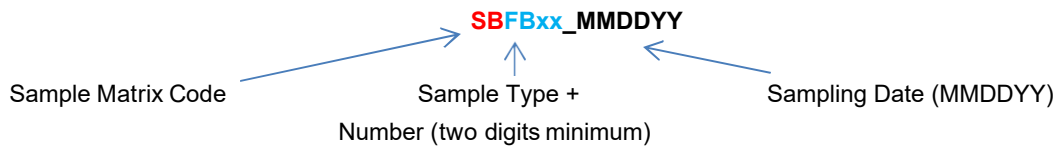
SO	Soil	AS	Air
SE	Sediment	SV	Soil Vapor
GW	Groundwater	SL	Sludge
SW	Surface Water	FP	Free Product

- Duplicates Samples



Sample Type	Parent Sample Code	Date	Sample Name
Groundwater Duplicate Sample (DUP)	MW01_022113	02/21/2013	GWDUP01_022113
Soil boring Duplicate Sample (DUP)	SBP01_022113	02/21/2013	SODUP01_022113
Grab Waste Characterization	WC01	02/21/2013	WCDUP01_022113
Composite Waste Characterization	COMP01	02/21/2013	COMPDUP01_022113

- Field Blanks and Trip Blanks



Sample Type	Date	Sample Name
Groundwater Field Blank (FB)	02/21/2013	GWFB01_022113
Groundwater Trip Blank (TB)	02/21/2013	GWTB01_022113
Soil Field Blank	02/21/2013	SOFB01_022113
Soil Trip Blank	02/21/2013	SOTB01_022113

- o Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Parent Sample Name\_MS or MSD**

Sample Type	Sample Location	Parent Sample Name	Sample Name
Matrix Spike Soil (MS)	SB01	SB01_2-4	SB01_2-4_MS
Matrix Spike Soil Duplicate (MSD)	SB01	SB01_2-4	SB01_2-4_MSD
Matrix Spike GW (MS)	MW01	MW01	MW01_MS
Matrix Spike GW Duplicate (MSD)	MW01	MW01	MW01_MSD

### 3.0 NOTES

- 1 The sample location code should not exceed 20 characters and the sample name should not exceed 40 characters.
- 2 Sample location code (**SB01, MW01, etc.**) is a sequential number (starting with 01) and should be a minimum of two digits.
- 3 Sample Interval (**SB01\_0-5**) is separated from the sample location code with an underscore, and the top and bottom interval with a dash. Soil and sediment sample intervals should always be in feet. Soil and sediment sample intervals should contain no “/” or “()” or unit.
- 4 Sample date (**MW01\_022113**) is separated from the sample location code with an underscore and should be provided in MMDDYY format [the date should contain no “/” or “-“].
- 5 If groundwater samples are collected from multiple intervals within one well, you may assign a letter designation (in lower case) to the well ID to differentiate between intervals (i.e., MW01a\_022113, MW01b\_022113, and MW01c\_022113). The letter “a” would indicate the shallowest interval and “c” the deepest. The actual depth intervals should be documented in the project field book or field sheets and the letter designations should be used consistently between sampling events.
- 6 According to USEPA’s Contract Laboratory Program (CLP) Guidance for Field Samplers (January 2011), field duplicate samples should remain “blind” to the laboratory (i.e., they should have separate CLP Sample numbers). Assign two separate (unique) CLP sample numbers (i.e., one number to the field sample and one to the duplicate). Submit blind to the laboratory.  
[http://www.epa.gov/superfund/programs/clp/download/sampler/CLPSamp\\_-01-2011.pdf](http://www.epa.gov/superfund/programs/clp/download/sampler/CLPSamp_-01-2011.pdf)

# NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau A

625 Broadway, 12th Floor, Albany, NY 12233-7015

P: (518) 402-9625 | F: (518) 402-9722

[www.dec.ny.gov](http://www.dec.ny.gov)

April 4, 2023

Lisa Monjardo and Patrick Woodstock  
Woodstock Construction Group, Ltd.  
41 Ludlam Avenue  
Bayville, NY 11709


RE: Soil Investigation for PFAS Work Plan  
Shore Realty Site  
One Shore Road  
Glenwood Landing, Nassau County  
Site ID No.: 130006

Dear Lisa and Patrick:

The New York State Departments of Environmental Conservation (Department) and Health (NYSDOH), and the United States' Environmental Protection Agency (EPA) have reviewed the Draft Soil Investigation for PFAS Work Plan dated March 2023 for the above referenced site and find it to be acceptable.

Please provide the Department with 10 days advance notice prior to the start of field activities. If you have any questions, please feel free to contact me at [jared.donaldson@dec.ny.gov](mailto:jared.donaldson@dec.ny.gov) or 518-402-9176.

Sincerely,



Jared Donaldson  
Project Manager  
Remedial Bureau A  
Division of Environmental Remediation

EC: Rick Mustico  
Bob Corcoran  
Alali Taumuno (OGC)  
Charlotte Bethoney (DOH)  
Sarita Wagh (DOH)  
Damian Duda (EPA)  
Ashley Similo (EPA)  
Scott Yanuck (Laurel Environmental)  
Jamie Burgher (Laurel Environmental)  
Andrew Woodstock



## **APPENDIX B**

### **Photo Log for PFAS Investigation**



Photo 1: View of SB-101 sampling location (circled)



Photo 2: View of SB-102 sampling location



Photo 3: View of SB-103 sampling location



Photo 4: View of SB-104 sampling location



Photo 5: View of SB-105 sampling location



Photo 6: View of SB-107 sampling location



Photo 7: View of SB-108 sampling location



Photo 8: View of SB-109 sampling location



Photo 9: View of SB-110 sampling location



Photo 10: View of SB-111 sampling location



Photo 11: View of SB-112 sampling location



Photo 12: View of SB-113 sampling location



Photo 13: View of SB-114 sampling location



Photo 14: View of SB-115 sampling location



Photo 15: View of SB-116 sampling location (circled)



Photo 16: View of SB-117 sampling location



Photo 17: View of SB-118 sampling location



Photo 18: View of SB-119 sampling location



Photo 19: View of SB-120 sampling location



Photo 20: View of SB-121 sampling location



Photo 21: View of SB-122 sampling location



Photo 22: View of SB-109 sampling core



Photo 23: View of SB-111 sampling core



Photo 24: View of SB-118 sampling core



Photo 25: View of SB-120 sampling core



Photo 26: View of SB-119 sampling core

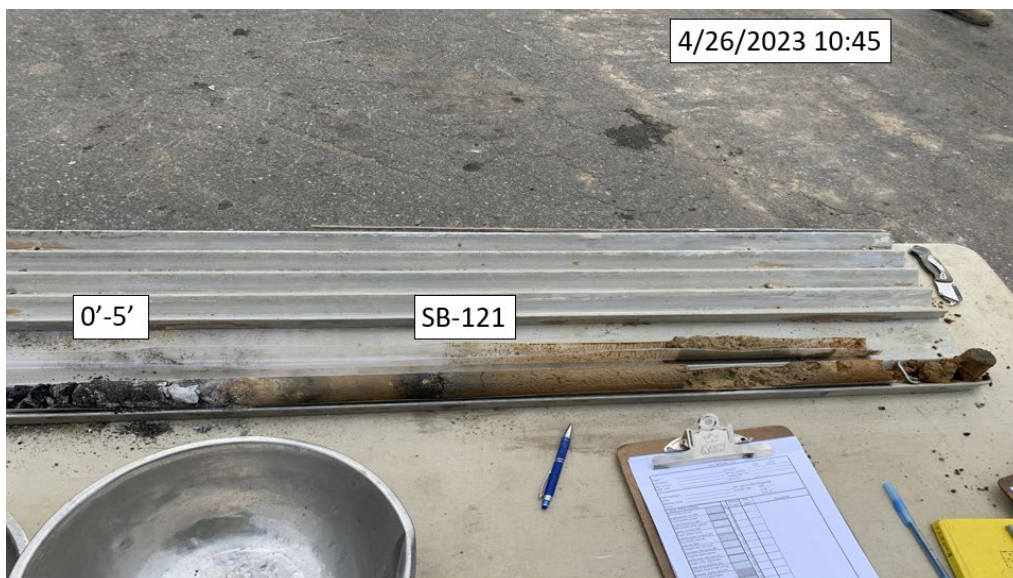


Photo 27: View of SB-121 sampling core



Photo 28: View of SB-122 sampling core



Photo 29: View of SB-117 sampling core



Photo 30: View of SB-116 sampling core



Photo 31: View of SB-108 sampling core



Photo 32: View of SB-103 sampling cores

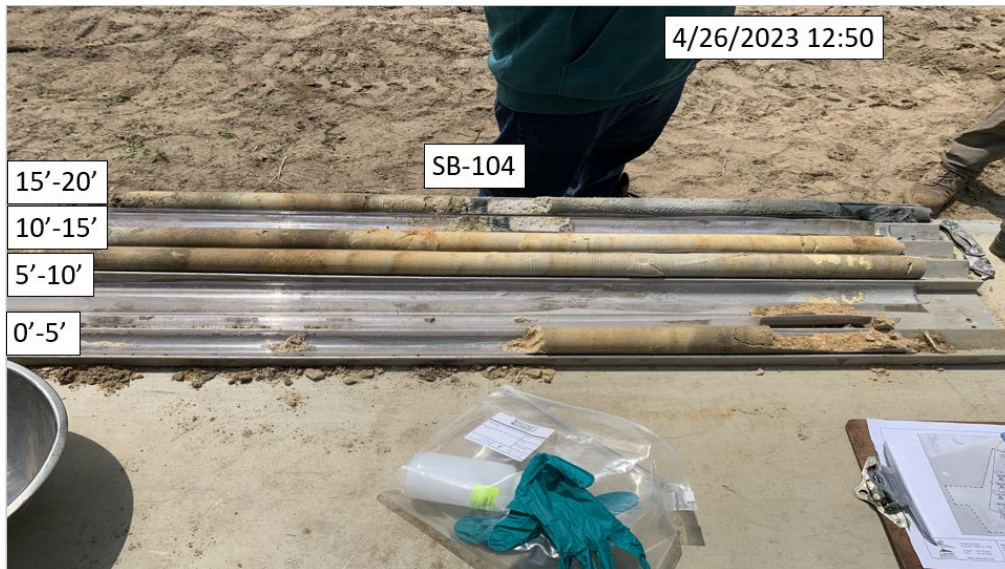


Photo 33: View of SB-104 sampling cores



Photo 34: View of SB-102 sampling cores

## **APPENDIX C**

### **Daily Reports**

# DAILY STATUS REPORT

Prepared By: Nick Kideris (NK)

WEATHER	Snow		Rain	<b>X</b>	Overcast		Partly Cloudy	<b>X</b>	Bright Sun	
TEMP.	< 32		32-50		50-70	<b>X</b>	70-85		>85	

Date: 4/26/23 rev1

Project Name: Shore Realty Site

Consultant: Scott Yanuck – Laurel Environmental  
 Safety Officer(s): Jamie Burgher

Personnel:  
 Laurel: Jamie Burgher, Nick Kideris, Brian McCabe, Josh Yanuck  
 TRC: Joe Menniti  
 EPhase 2: Luke Reiss, Sam Yanuck

Work Activities Performed:  
 On-site at 8:00am. Wind noted as approximately 5mph and predominantly from the south.  
 Laurel performed geophysical clearance including the use of ground penetrating radar (GPR) and line locating equipment was performed at each proposed soil boring location to avoid subsurface obstructions and avoid any underground utilities.  
 EPhase 2 utilized a track mounted GeoProbe 6712DT to advance sixteen (16) continuous soil borings from ground surface to groundwater. Depth to groundwater was determined by Laurel staff at each location by visually assessing the continuous soil core.  
 Laurel staff collected soil samples from the 1 to 3-foot below ground surface (bgs) interval and the 2-foot interval immediately above the groundwater interface as proposed in the approved work plan. The only deviation from the work plan occurred in boring location SB-111, where asphalt and concrete was present from ground surface to approximately 3 feet below grade, with groundwater encountered at approximately 5 feet bgs. As such, only one (1) sample was collected from the 3 to 5-foot interval at this location.  
 Grossly impacted soils exhibiting petroleum odors were encountered in the saturated zone at boring locations SB103, SB104, SB105, SB109, SB118, SB119, and SB122. The impacted soil was placed into a container pending the completion of this investigation.  
 Site work was completed by 3:00pm.

Samples Collected:  
 SB101 1'-3', SB101 23'-25', SB102 1'-3', SB102 20'-22', SB 103 1'-3', SB103 16'-18', SB104 1'-3', SB104 16'-18', SB105 1'-3' SB105 12'-14', SB106 1'-3', SB106 12'-14', SB-108 1'-3', SB108 3'-5', SB109 1'-3', SB109 3'-5', SB111 3'-5', SB116 1'-3', SB116 3'-5', SB117 1'-3', SB117 3'-5', SB 118 1'-3' SB118 3'-5', SB 119 1'-3', SB119 3'-5', SB120 1'-3', SB120 3'-5'. SB121 1'-3', SB121 3'-5', SB122 1'-3', SB 122 3'-5'.

Air Monitoring:  
 CAMP units were set up at the southern site boundary [Upwind] and in the work zone [Downwind].  
 The Upwind CAMP background readings were established at 0.015 mg/m<sup>3</sup> for dust and 0.0 ppm for VOCs.  
 The Downwind CAMP background readings were established at 0.016 mg/m<sup>3</sup> for dust and 0.0 ppm for VOCs.  
 The only dust exceedance occurred when the Downwind CAMP unit was accidentally tipped over. No VOC exceedances occurred during the day.

Problems Encountered:

None.

Planned Activities for the Next Day/Week:

Work will resume and is expected to be completed tomorrow, April 27.

# Photo Log

Photo 1 –  
View of  
SB118, a  
typical boring  
location on  
asphalt  
pavement



Photo 2 –  
View of  
SB117, a  
typical boring  
location on  
soil







Photo 3 –  
View of a  
typical soil  
boring core,  
including the  
darker,  
impacted soil  
from the  
saturated  
zone.



# Site Map

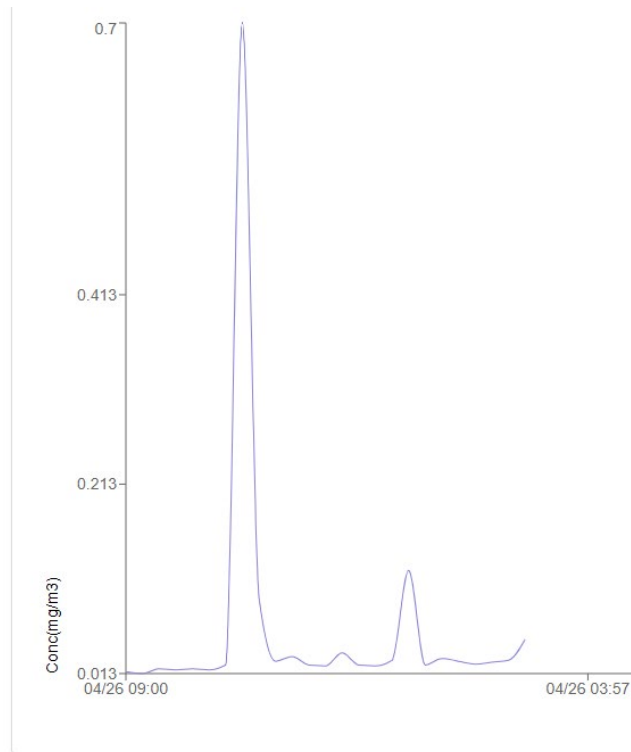


## KEY

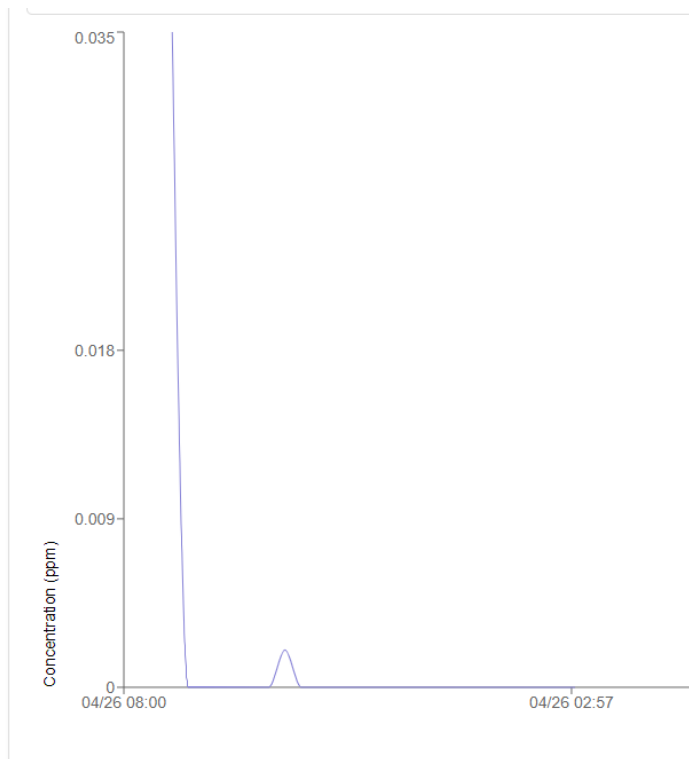
-  Work Zone CAMP Location
-  Upwind CAMP Location
-  Grid Boundary
-  Site Boundary

# CAMP Data

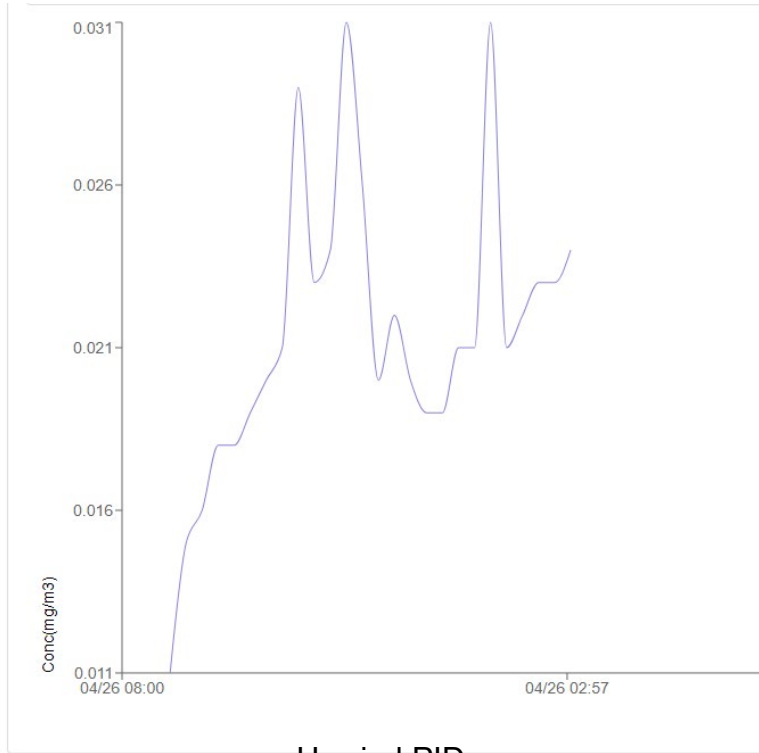
## Downwind Dust



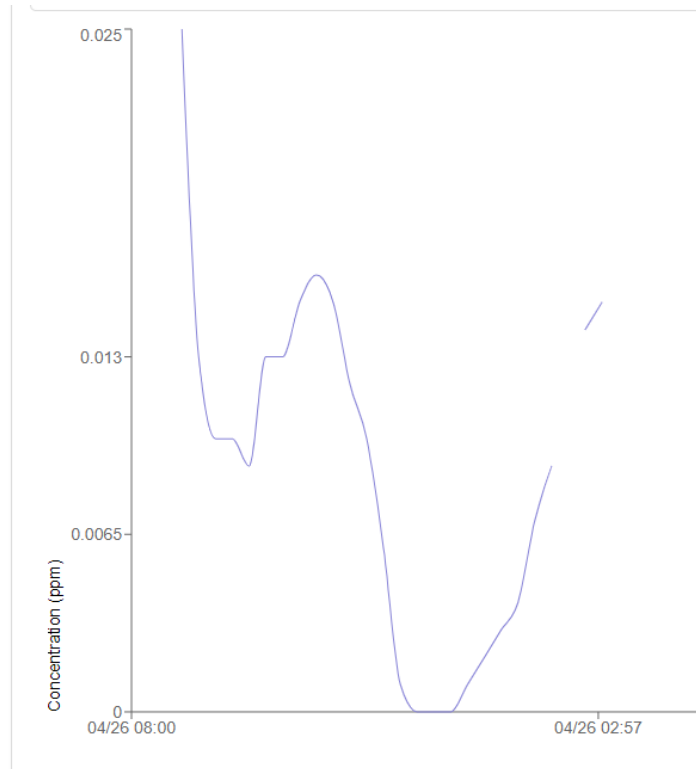
## Downwind PID



## Upwind Dust



## Upwind PID



# DAILY STATUS REPORT

Prepared By: Nick Kideris (NK)

WEATHER	Snow		Rain	X	Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70	X	70-85		>85	

Date: 4/27/23

Project Name: Shore Realty Site

Consultant: Scott Yanuck – Laurel Environmental      Safety Officer(s): Jamie Burgher

Personnel:  
Laurel: Nick Kideris, Josh Yanuck  
TRC: Christina  
EPhase 2: Luke Reiss, Sam Yanuck

Work Activities Performed:  
On-site at 7:30am. Wind noted as approximately 5mph and predominantly from the south.

EPhase 2 utilized a track mounted GeoProbe 6712DT to advance six (6) continuous soil borings from ground surface to groundwater. Depth to groundwater was determined by Laurel staff at each location by visually assessing the continuous soil core.

Laurel staff collected soil samples from the 1 to 3-foot below ground surface (bgs) interval and the 2-foot interval immediately above the groundwater interface as proposed in the approved work plan.

Grossly impacted soils exhibiting petroleum odors were encountered in the saturated zone at boring locations SB112, SB113, SB114, and SB115. The impacted soil was transferred into a 55-gallon drum and sampled for waste characterization (WC) purposes.

Site work was completed by 11:00 AM.

Samples Collected:  
SB107 1'-3', SB107 12'-14', SB110 12'-14', SB112 1'-3', SB112 11'-13', SB113 1'-3', SB113 12'-14', SB114 1'-3', SB114 12'-14', SB115 1'-3', SB115 12'-14', and WC.

Air Monitoring:  
CAMP units were set up at the southern site boundary [Upwind] and in the work zone [Downwind].  
The Upwind CAMP background readings were established at 0.035 mg/m<sup>3</sup> for dust and 0.0 ppm for VOCs.  
The Downwind CAMP background readings were established at 0.020 mg/m<sup>3</sup> for dust and 0.0 ppm for VOCs.  
The downwind CAMP unit's DustTrack did not transmit data. Laurel staff periodically checked the measured dust level, and did not observe any exceedances or note any fugitive dust emissions.

Problems Encountered:  
Downwind CAMP unit DustTrack failed to transmit data.

Planned Activities for the Next Day/Week:  
The sampling event was completed. No further ground intrusive work is planned as part of this investigation.

## Photo Log

Photo 1 – View of SB110, a typical boring location



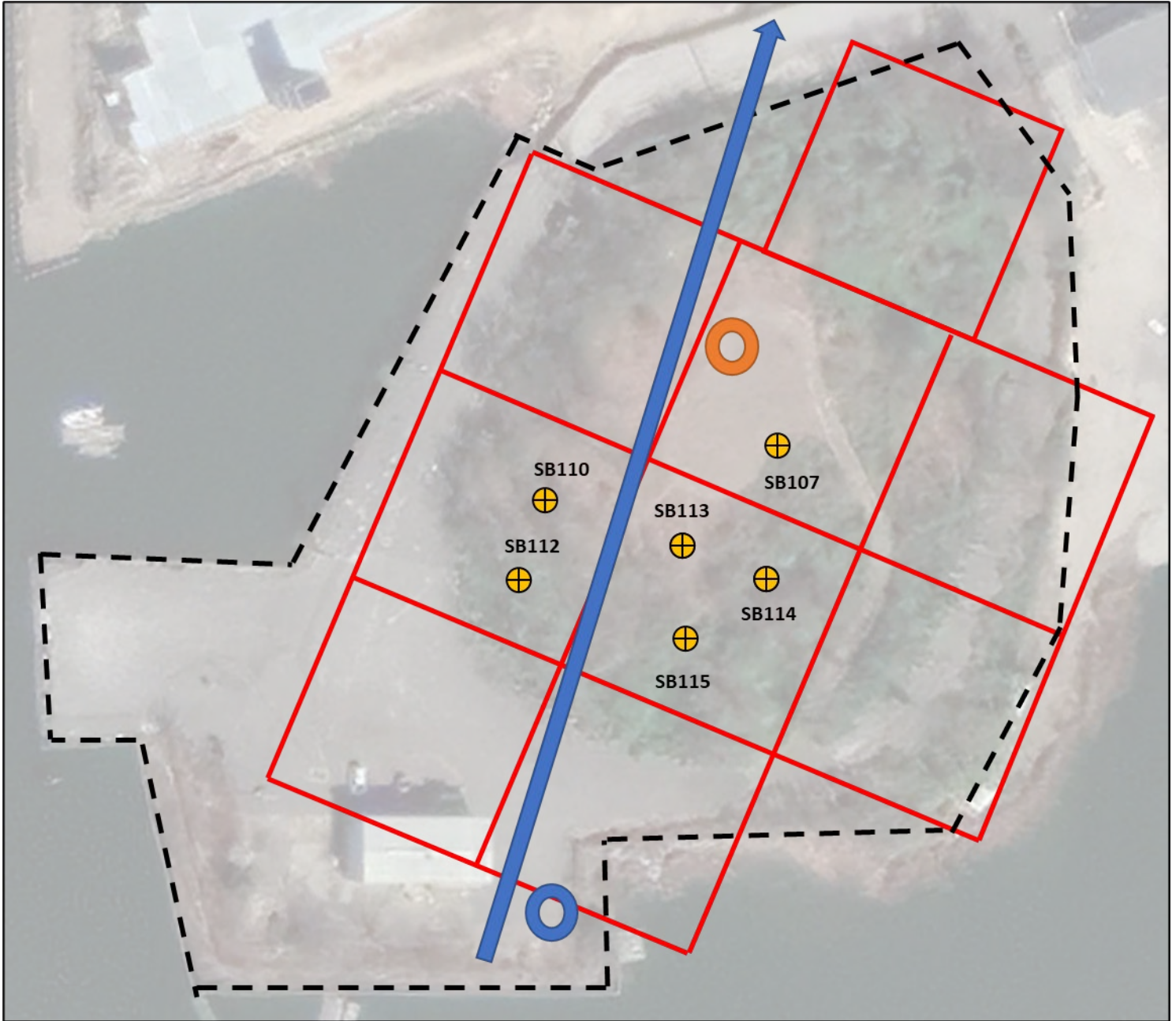
Photo 2 – View of SB117, a typical boring location on soil






Photo 3 – View of a typical soil boring core



# Site Map



**KEY**

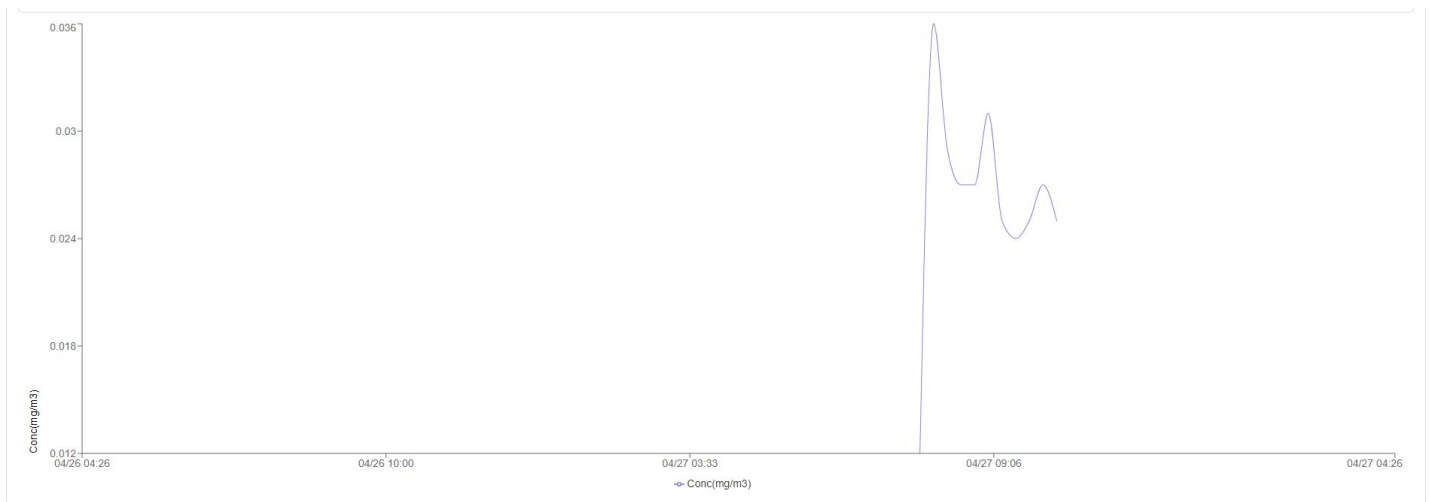
-  Work Zone CAMP Location
-  Upwind CAMP Location
-  Grid Boundary
-  Site Boundary

# CAMP Data

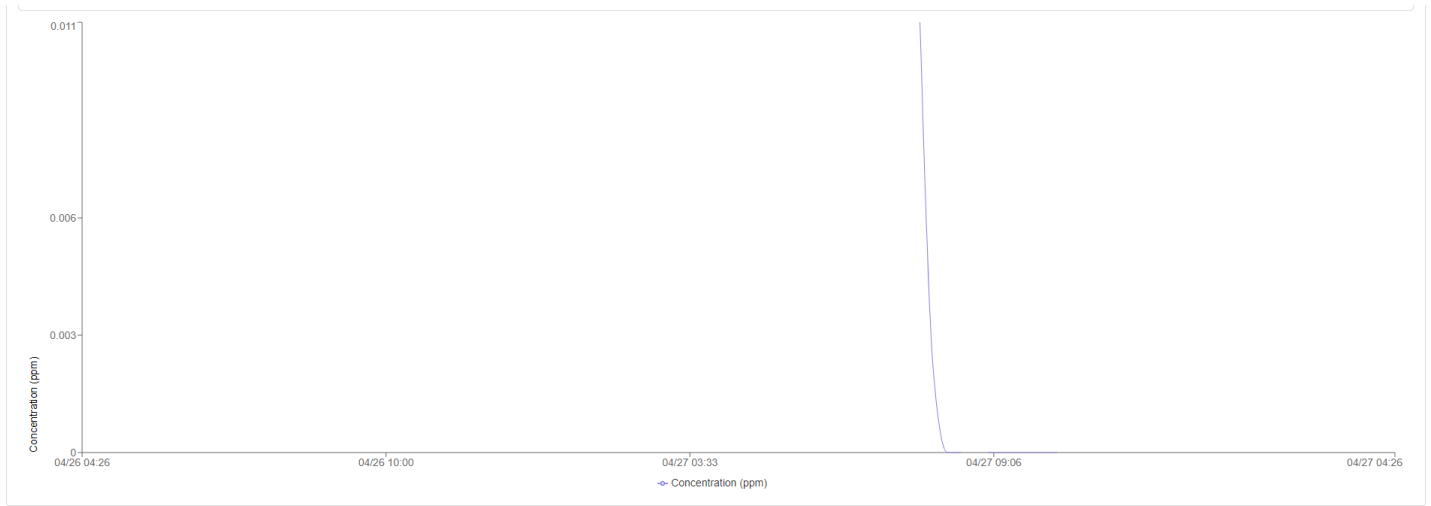
## Downwind PID



## Upwind Dust



# Upwind PID



# **APPENDIX D**

## **Soil Boring Logs**



## BORING AND WELL LOG LEGEND

	<p><b>SURFACE</b>          ASPHALT          CONCRETE          FILL          TOPSOIL          AIR          ICE</p> <p><b>USCS</b>          Well-graded GRAVEL (GW)          Poorly graded GRAVEL (GP)          Silty GRAVEL (GM)          Clayey GRAVEL (GC)          Silty, Clayey GRAVEL (GC-GM)          Well-graded GRAVEL with silt (GW-GM)          Poorly graded GRAVEL with silt (GP-GM)          Well-graded GRAVEL with clay (GW-GC)          Poorly graded GRAVEL with clay (GP-GC)          Well-graded SAND (SW)          Poorly graded SAND (SP)          Silty SAND (SM)          Clayey SAND (SC)          Silty, Clayey SAND (SC-SM)          Well-graded SAND with silt (SW-SM)          Poorly graded SAND with silt (SP-SM)          Well-graded SAND with clay (SW-SC)          Poorly graded SAND with clay (SP-SC)          SILT (ML)          Lean CLAY (CL)          Silty CLAY (CL-ML)          Organic SOIL (OL)          Elastic SILT (MH)          Fat CLAY (CH)          Organic SOIL (OH)          Organic SOIL (OL/OH)          PEAT (PT)          BEDROCK          IGNEOUS Rock          METAMORPHIC Rock          SEDIMENTARY Rock          WATER</p> <p><b>Non-USCS</b>          Gravel          Sand          Silt          Clayey Silt          Silt &amp; Clay          Clay &amp; Silt          Silty Clay          Clay          Boulders          Cobbles          Peastone          Glacial Till          Iron Ore          Wood          Peat          Saprolite          Ash          Waste</p>		<p><b>Volume Descriptors</b>          Trace = &lt;5%          Few = 5-10%          Little = 15-25%          Some = 30-45%          Mostly = &gt;=50%</p> <p><b>Water Levels</b>   Water Level During Drilling   Water Level at End of Drilling/in Completed Well</p> <p><b>Well/Boring Completion</b>   Cap   Riser   Screen   End Plug   Annular Seal   Sanitary Seal (Bentonite Slurry/Chips/Pellets/Powder, Other)   Filter Pack (Sand, Gravel, Other)   Backfill</p> <p><b>Sample Type</b>   GR Grab   EN Encore   SS Split Spoon   SH Shelby Tube   CO Core Barrel   DP Direct Push   ID Lab Sample and ID</p>
--	--	--	---



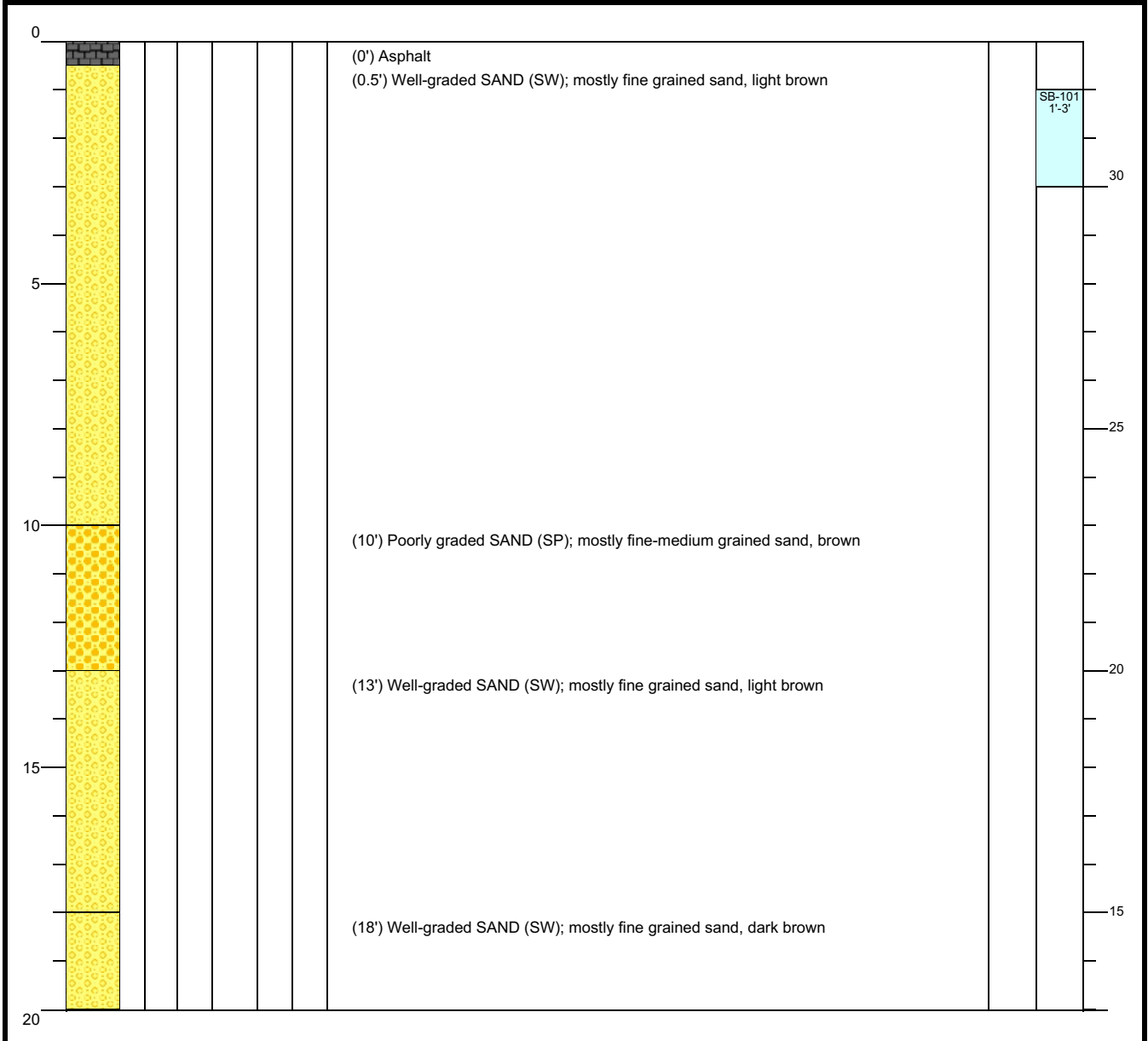
**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-101  
**Page:** 1 of 2

**Drilling Start Date:** 4/26/2023 13:50  
**Drilling End Date:** 4/26/2023 14:30  
**Drilling Company:** Ephase 2  
**Drilling Method:** Direct Push  
**Drilling Equipment:** Track mounted Geoprobe 6712DT  
**Driller:** Lukas Reiss  
**Logged By:** Joshua Yanuck

**Boring Depth (ft):** 25  
**Boring Diameter (in):** 2.00  
**Sampling Method(s):** N/A  
**DTW During Drilling (ft):** 25  
**DTW After Drilling (ft):** N/A  
**Ground Surface Elev. (ft):** 33  
**Location (Lat, Long):** N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	



NOTES:



**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-101  
**Page:** 2 of 2

Drilling Start Date: 4/26/2023 13:50	Boring Depth (ft): 25
Drilling End Date: 4/26/2023 14:30	Boring Diameter (in): 2.00
Drilling Company: Ephase 2	Sampling Method(s): N/A
Drilling Method: Direct Push	DTW During Drilling (ft): 25
Drilling Equipment: Track mounted Geoprobe 6712DT	DTW After Drilling (ft): N/A
Driller: Lukas Reiss	Ground Surface Elev. (ft): 33
Logged By: Joshua Yanuck	Location (Lat, Long): N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
20								(18') Well-graded SAND (SW); mostly fine grained sand, dark brown			10
25								(25') Boring terminated, saturated		SB-101 23'-25'	
30											5
35											0
40											-5

NOTES:



Client: **Woodstock Construction Group, Ltd.**  
 Project: **1 Shore Road**  
 Address: **1 Shore Road, Glenwood Landing, NY**

**BORING LOG**  
 Boring No. **SB-102**  
 Page: **1 of 2**

Drilling Start Date: **4/26/2023 13:25**  
 Drilling End Date: **4/26/2023 13:50**  
 Drilling Company: **Ephase 2**  
 Drilling Method: **Direct Push**  
 Drilling Equipment: **Track mounted Geoprobe 6712DT**  
 Driller: **Lukas Reiss**  
 Logged By: **Joshua Yanuck**

Boring Depth (ft): **30**  
 Boring Diameter (in): **2.00**  
 Sampling Method(s): **N/A**  
 DTW During Drilling (ft): **22**  
 DTW After Drilling (ft): **N/A**  
 Ground Surface Elev. (ft): **33**  
 Location (Lat, Long): **N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Asphalt			
1								(1') Poorly graded SAND (SP); mostly medium-coarse grained sand, light brown		SB-102 1'-3'	
6								(6') Poorly graded SAND (SP); mostly medium-coarse grained sand, light brown			30
7								(7') Poorly graded SAND (SP); mostly medium-coarse grained sand, light brownish-tan			25
11								(11') Well-graded SAND (SW); mostly medium grained sand, dark brown			
12								(12') Poorly graded SAND (SP); mostly fine-medium grained sand, light brown			20
15								(15') Poorly graded SAND (SP); mostly fine-medium grained sand, dark brown			
17								(17') Well-graded SAND (SW); mostly fine grained sand, light brown			15

NOTES:



**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-102  
**Page:** 2 of 2

**Drilling Start Date:** 4/26/2023 13:25  
**Drilling End Date:** 4/26/2023 13:50  
**Drilling Company:** Ephase 2  
**Drilling Method:** Direct Push  
**Drilling Equipment:** Track mounted Geoprobe 6712DT  
**Driller:** Lukas Reiss  
**Logged By:** Joshua Yanuck

**Boring Depth (ft):** 30  
**Boring Diameter (in):** 2.00  
**Sampling Method(s):** N/A  
**DTW During Drilling (ft):** 22  
**DTW After Drilling (ft):** N/A  
**Ground Surface Elev. (ft):** 33  
**Location (Lat, Long):** N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
20								(20') Well-graded SAND (SW); mostly fine grained sand, brown		SB-102 20'-22'	
								(22') Fat CLAY with sand (CH); little fine sand, mostly clay, saturated, grayish-white			10
25								(25') Well-graded SAND (SW); mostly fine grained sand, saturated, dark brown			5
30								(30') Boring terminated			0
35											-5
40											

NOTES:

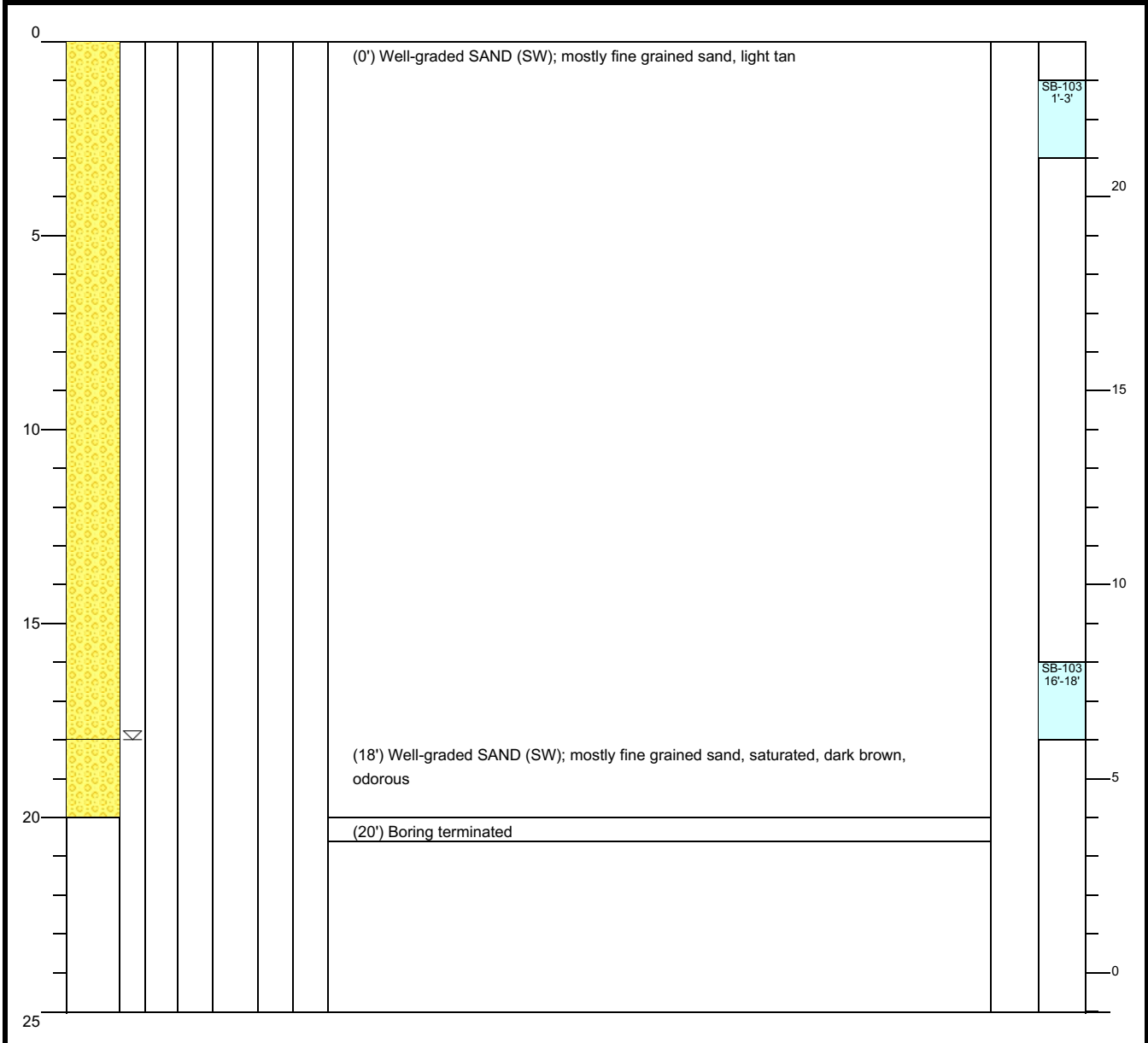


**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-103  
**Page:** 1 of 1

Drilling Start Date: <b>4/26/2023 12:25</b>	Boring Depth (ft): <b>20</b>
Drilling End Date: <b>4/26/2023 12:50</b>	Boring Diameter (in): <b>2.00</b>
Drilling Company: <b>Ephase 2</b>	Sampling Method(s): <b>N/A</b>
Drilling Method: <b>Direct Push</b>	DTW During Drilling (ft): <b>18</b>
Drilling Equipment: <b>Track mounted Geoprobe 6712DT</b>	DTW After Drilling (ft): <b>N/A</b>
Driller: <b>Lukas Reiss</b>	Ground Surface Elev. (ft): <b>24</b>
Logged By: <b>Joshua Yanuck</b>	Location (Lat, Long): <b>N/A</b>

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	



NOTES:

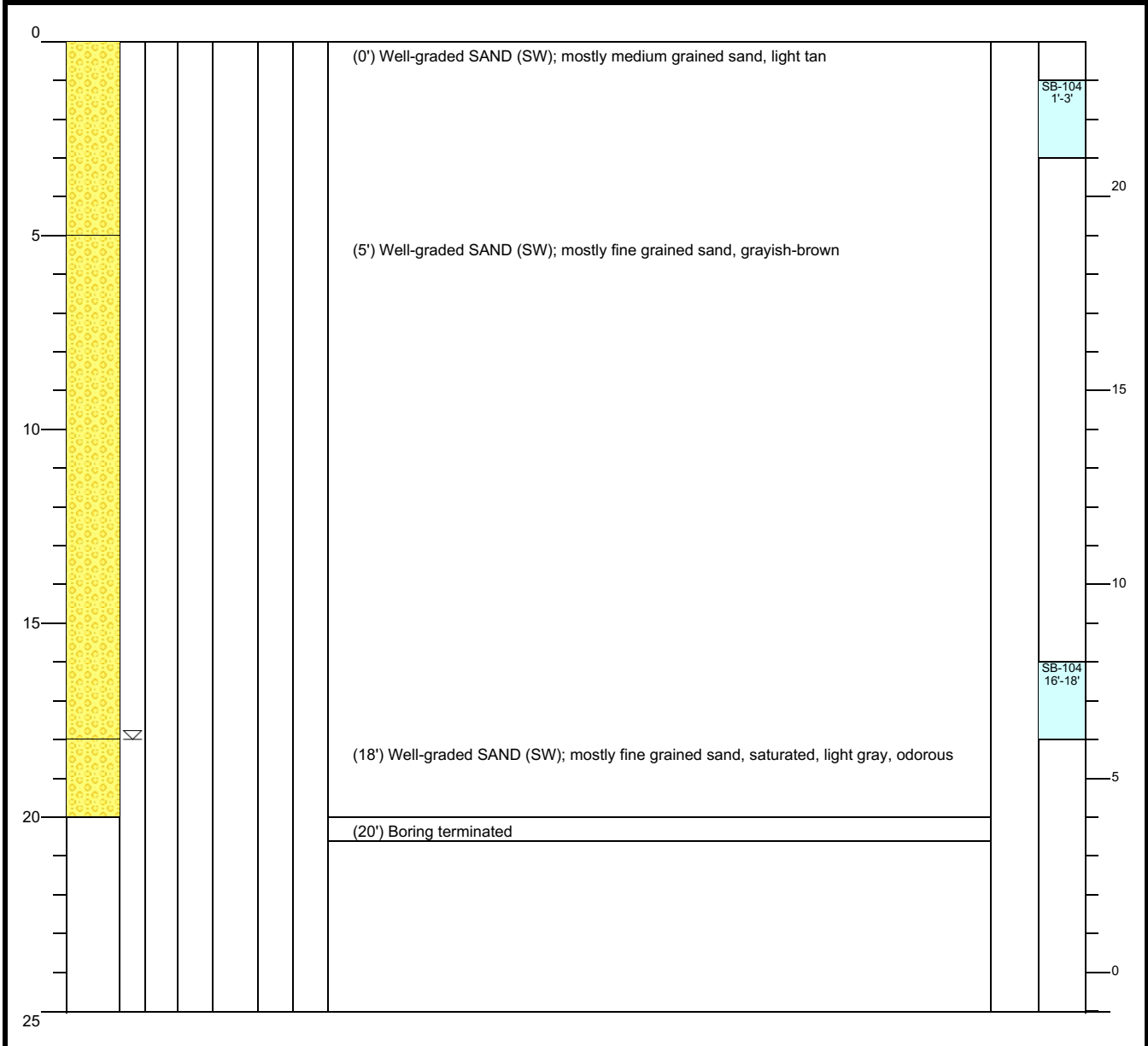


**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-104  
**Page:** 1 of 1

Drilling Start Date: 4/26/2023 12:50	Boring Depth (ft): 20
Drilling End Date: 4/26/2023 13:25	Boring Diameter (in): 2.00
Drilling Company: Ephase 2	Sampling Method(s): N/A
Drilling Method: Direct Push	DTW During Drilling (ft): 18
Drilling Equipment: Track mounted Geoprobe 6712DT	DTW After Drilling (ft): N/A
Driller: Lukas Reiss	Ground Surface Elev. (ft): 24
Logged By: Joshua Yanuck	Location (Lat, Long): N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	



NOTES:



**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-105  
**Page:** 1 of 1

Drilling Start Date: <b>4/26/2023 14:30</b>	Boring Depth (ft): <b>15</b>
Drilling End Date: <b>4/26/2023 14:50</b>	Boring Diameter (in): <b>2.00</b>
Drilling Company: <b>Ephase 2</b>	Sampling Method(s): <b>N/A</b>
Drilling Method: <b>Direct Push</b>	DTW During Drilling (ft): <b>14</b>
Drilling Equipment: <b>Track mounted Geoprobe 6712DT</b>	DTW After Drilling (ft): <b>N/A</b>
Driller: <b>Lukas Reiss</b>	Ground Surface Elev. (ft): <b>20</b>
Logged By: <b>Joshua Yanuck</b>	Location (Lat, Long): <b>N/A</b>

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Topsoil			20
0.5								(0.5') Well-graded SAND (SW); mostly fine grained sand, light brown			
1										SB-105 1'-3'	
5											15
10											10
14								(14') Well-graded SAND (SW); mostly fine grained sand, saturated, gray, oily sheen and odorous			
15								(15') Boring terminated		SB-105 12'-14'	5
20											20

NOTES:



**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-106  
**Page:** 1 of 1

Drilling Start Date: 4/26/2023 14:45	Boring Depth (ft): 15
Drilling End Date: 4/23/2023 15:10	Boring Diameter (in): 2.00
Drilling Company: Ephase 2	Sampling Method(s): N/A
Drilling Method: Direct Push	DTW During Drilling (ft): 14
Drilling Equipment: Track mounted Geoprobe 6712DT	DTW After Drilling (ft): N/A
Driller: Lukas Reiss	Ground Surface Elev. (ft): 21
Logged By: Joshua Yanuck	Location (Lat, Long): N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Topsoil			20
1								(1') Poorly graded SAND (SP); mostly fine-medium grained sand, light brown		SB-106 1'-3'	
5								(5') Well-graded SAND (SW); mostly fine grained sand, light brown			15
14								(14') Well-graded SAND (SW); mostly fine grained sand, saturated, dark brown			10
15								(15') Boring terminated		SB-106 12'-14'	5
20											

NOTES:



Client: **Woodstock Construction Group, Ltd.**  
 Project: **1 Shore Road**  
 Address: **1 Shore Road, Glenwood Landing, NY**

**BORING LOG**  
 Boring No. **SB-107**  
 Page: **1 of 1**

Drilling Start Date: **4/27/2023 8:15**  
 Drilling End Date: **4/27/2023 8:45**  
 Drilling Company: **Ephase 2**  
 Drilling Method: **Direct Push**  
 Drilling Equipment: **Track mounted Geoprobe 6712DT**  
 Driller: **Lukas Reiss**  
 Logged By: **Joshua Yanuck**

Boring Depth (ft): **15**  
 Boring Diameter (in): **2.00**  
 Sampling Method(s): **N/A**  
 DTW During Drilling (ft): **14**  
 DTW After Drilling (ft): **N/A**  
 Ground Surface Elev. (ft): **21**  
 Location (Lat, Long): **N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Topsoil			20
0.5								(0.5') Well-graded SAND (SW); mostly fine grained sand, light brown, mixed with fill		SB-107 1'-3'	
5								(5') Poorly graded SAND with silt (SP-SM); mostly fine grained sand, dark brown			
6								(6') Poorly graded SAND (SP); mostly fine-medium grained sand, trace coarse gravel, light brown			
10								(10') Well-graded SAND (SW); mostly fine grained sand, dark brown			
12								(12') Well-graded SAND (SW); mostly fine grained sand, light brown		SB-107 12'-14'	
14								(14') Well-graded SAND (SW); mostly fine grained sand, saturated, gray			
15								(15') Boring terminated			

NOTES:



**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-108  
**Page:** 1 of 1

Drilling Start Date: 4/26/2023 11:40	Boring Depth (ft): 5
Drilling End Date: 4/26/2023 12:25	Boring Diameter (in): 2.00
Drilling Company: Ephase 2	Sampling Method(s): N/A
Drilling Method: Direct Push	DTW During Drilling (ft): 5
Drilling Equipment: Track mounted Geoprobe 6712DT	DTW After Drilling (ft): N/A
Driller: Lukas Reiss	Ground Surface Elev. (ft): 12
Logged By: Joshua Yanuck	Location (Lat, Long): N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Topsoil			
1								(0.5') Well-graded SAND (SW); mostly coarse grained sand, brown			
1.5											SB-108 1'-3'
3											
4.5											
5								(5') Boring terminated, saturated			
5.5											
10											
15											
20											

NOTES:



Client: **Woodstock Construction Group, Ltd.**  
 Project: **1 Shore Road**  
 Address: **1 Shore Road, Glenwood Landing, NY**

**BORING LOG**  
 Boring No. **SB-109**  
 Page: **1 of 1**

Drilling Start Date: <b>4/26/2023 9:15</b>	Boring Depth (ft): <b>5</b>
Drilling End Date: <b>4/26/2023 9:30</b>	Boring Diameter (in): <b>2.00</b>
Drilling Company: <b>Ephase 2</b>	Sampling Method(s): <b>N/A</b>
Drilling Method: <b>Direct Push</b>	DTW During Drilling (ft): <b>5</b>
Drilling Equipment: <b>Track mounted Geoprobe 6712DT</b>	DTW After Drilling (ft): <b>N/A</b>
Driller: <b>Lukas Reiss</b>	Ground Surface Elev. (ft): <b>7</b>
Logged By: <b>Joshua Yanuck</b>	Location (Lat, Long): <b>N/A</b>

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Asphalt			
1								(1') Topsoil		SB-109 1'-3'	5
3								(3') Poorly graded SAND (SP); dark brown		SB-109 3'-5'	
5								(5') Boring terminated, gray, odorous, saturated			
10											
15											
20											

NOTES:



**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-110  
**Page:** 1 of 1

Drilling Start Date: 4/27/2023 10:00	Boring Depth (ft): 15
Drilling End Date: 4/27/2023 10:20	Boring Diameter (in): 2.00
Drilling Company: Ephase 2	Sampling Method(s): N/A
Drilling Method: Direct Push	DTW During Drilling (ft): 14
Drilling Equipment: Track mounted Geoprobe 6712DT	DTW After Drilling (ft): N/A
Driller: Lukas Reiss	Ground Surface Elev. (ft): 20
Logged By: Joshua Yanuck	Location (Lat, Long): N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Well-graded SAND (SW); mostly fine grained sand, light brown			20
										SB-110 1'-3'	
5											15
10											10
14								(14') Well-graded SAND (SW); mostly fine grained sand, saturated, light brown			5
15								(15') Boring terminated		SB-110 12'-14'	5
20											20

NOTES:

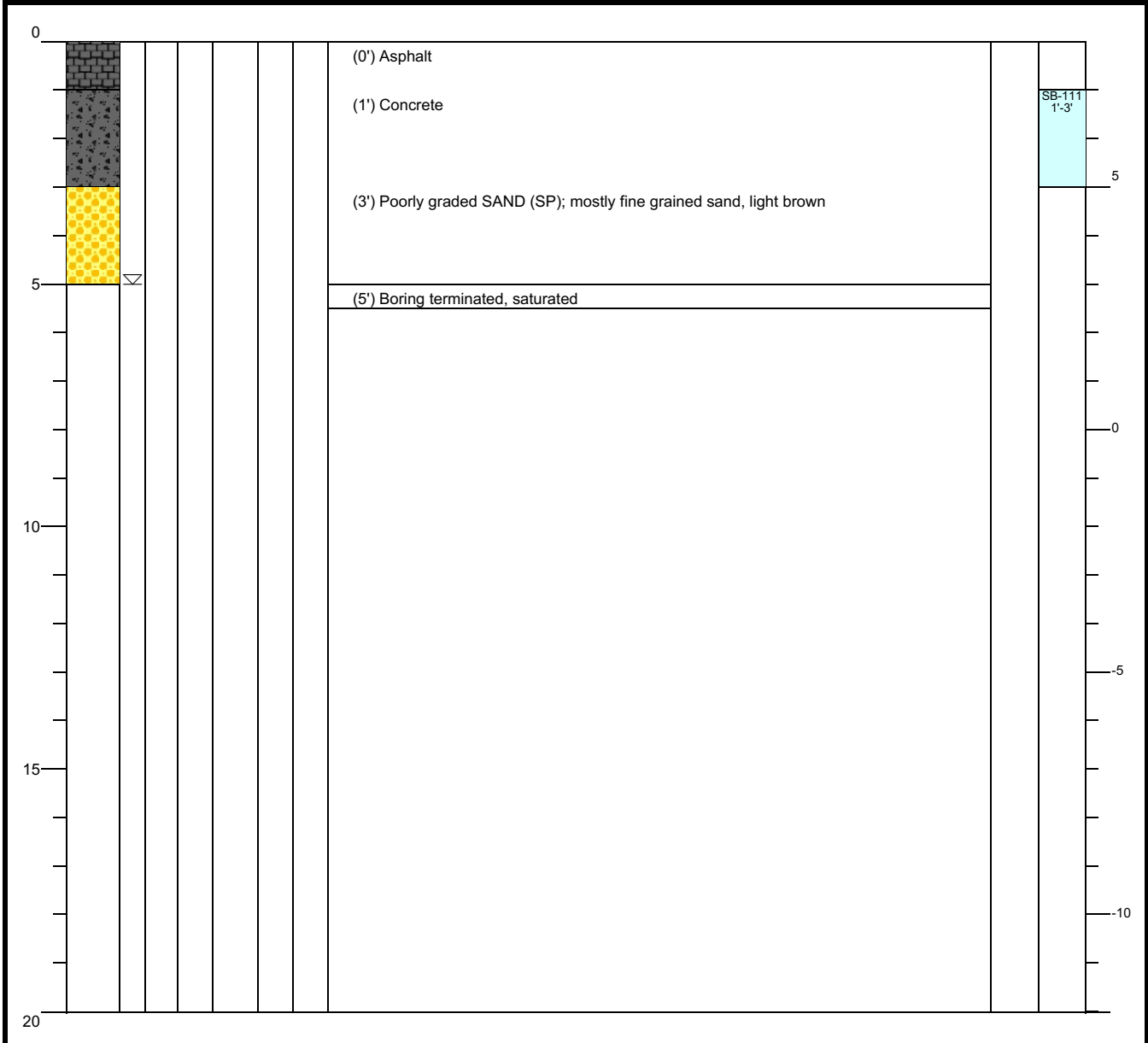


Client: **Woodstock Construction Group, Ltd.**  
 Project: **1 Shore Road**  
 Address: **1 Shore Road, Glenwood Landing, NY**

**BORING LOG**  
 Boring No. **SB-111**  
 Page: **1 of 1**

Drilling Start Date: <b>4/26/2023 9:30</b>	Boring Depth (ft): <b>5</b>
Drilling End Date: <b>4/26/2023 9:50</b>	Boring Diameter (in): <b>2.00</b>
Drilling Company: <b>Ephase 2</b>	Sampling Method(s): <b>N/A</b>
Drilling Method: <b>Direct Push</b>	DTW During Drilling (ft): <b>5</b>
Drilling Equipment: <b>Track mounted Geoprobe 6712DT</b>	DTW After Drilling (ft): <b>N/A</b>
Driller: <b>Lukas Reiss</b>	Ground Surface Elev. (ft): <b>8</b>
Logged By: <b>Joshua Yanuck</b>	Location (Lat, Long): <b>N/A</b>

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	



NOTES:



**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-112  
**Page:** 1 of 1

**Drilling Start Date:** 4/27/2023 9:45  
**Drilling End Date:** 4/27/2023 10:00  
**Drilling Company:** Ephase 2  
**Drilling Method:** Direct Push  
**Drilling Equipment:** Track mounted Geoprobe 6712DT  
**Driller:** Lukas Reiss  
**Logged By:** Joshua Yanuck

**Boring Depth (ft):** 15  
**Boring Diameter (in):** 2.00  
**Sampling Method(s):** N/A  
**DTW During Drilling (ft):** 13  
**DTW After Drilling (ft):** N/A  
**Ground Surface Elev. (ft):** 20  
**Location (Lat, Long):** N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Topsoil			20
0.5								(0.5') Well-graded SAND (SW); mostly coarse grained sand, brown		SB-112 1'-3'	
2								(2') Well-graded SAND (SW); mostly coarse grained sand, orangey-brown			
6								(6') Poorly graded SAND (SP); mostly medium grained sand, few coarse gravel, light brown			
10								(10') Well-graded SAND (SW); mostly fine grained sand, brown		SB-112 11'-13'	
13								(13') Well-graded SAND (SW); mostly fine grained sand, saturated, gray, oily sheen and odorous			
15								(15') Boring terminated			

NOTES:



Client: Woodstock Construction Group, Ltd.  
 Project: 1 Shore Road  
 Address: 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
 Boring No. SB-113  
 Page: 1 of 1

Drilling Start Date: 4/27/2023 9:30  
 Drilling End Date: 4/26/2023 9:45  
 Drilling Company: Ephase 2  
 Drilling Method: Direct Push  
 Drilling Equipment: Track mounted Geoprobe 6712DT  
 Driller: Lukas Reiss  
 Logged By: Joshua Yanuck

Boring Depth (ft): 15  
 Boring Diameter (in): 2.00  
 Sampling Method(s): N/A  
 DTW During Drilling (ft): 14  
 DTW After Drilling (ft): N/A  
 Ground Surface Elev. (ft): 20  
 Location (Lat, Long): N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Topsoil			20
0.5								(0.5') Well-graded SAND (SW); mostly medium grained sand, light brown		SB-113 1'-3'	
5								(5') Poorly graded SAND (SP); mostly fine grained sand, trace coarse gravel, light brown			15
14								(14') Well-graded SAND (SW); mostly fine grained sand, saturated, gray, oily sheen and odorous		SB-113 12'-14'	5
15								(15') Boring terminated			
20											

NOTES:



Client: Woodstock Construction Group, Ltd.  
 Project: 1 Shore Road  
 Address: 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
 Boring No. SB-114  
 Page: 1 of 1

Drilling Start Date: 4/27/2023 9:15	Boring Depth (ft): 15
Drilling End Date: 4/27/2023 9:30	Boring Diameter (in): 2.00
Drilling Company: Ephase 2	Sampling Method(s): N/A
Drilling Method: Direct Push	DTW During Drilling (ft): 14
Drilling Equipment: Track mounted Geoprobe 6712DT	DTW After Drilling (ft): N/A
Driller: Lukas Reiss	Ground Surface Elev. (ft): 20
Logged By: Joshua Yanuck	Location (Lat, Long): N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Topsoil			20
0.5								(0.5') Poorly graded SAND (SP); mostly fine-medium grained sand, light brown		SB-114 1'-3'	
4								(4') Well-graded SAND (SW); mostly coarse grained sand, brown			
5								(5') Poorly graded SAND (SP); mostly fine-medium grained sand, brown			
7								(7') Well-graded SAND (SW); mostly fine grained sand, light brown			
14								(14') Well-graded SAND (SW); mostly fine grained sand, saturated, dark brown, oily sheen and odorous			
15								(15') Boring terminated		SB-114 12'-14'	
20											

NOTES:



**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-115  
**Page:** 1 of 1

Drilling Start Date: 4/27/2023 8:45	Boring Depth (ft): 15
Drilling End Date: 4/27/2023 9:15	Boring Diameter (in): 2.00
Drilling Company: Ephase 2	Sampling Method(s): N/A
Drilling Method: Direct Push	DTW During Drilling (ft): 14
Drilling Equipment: Track mounted Geoprobe 6712DT	DTW After Drilling (ft): N/A
Driller: Lukas Reiss	Ground Surface Elev. (ft): 20
Logged By: Joshua Yanuck	Location (Lat, Long): N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Topsoil			20
1								(1') Poorly graded SAND (SP); mostly medium-coarse grained sand, dark brownish-tan	SB-115 1'-3'		
5								(5') Well-graded SAND (SW); mostly fine grained sand, light brown			15
8								(8') Well-graded SAND (SW); mostly fine grained sand, dark gray			
10								(10') Poorly graded SAND (SP); mostly fine-medium grained sand, light brown			10
14								(14') Well-graded SAND (SW); mostly fine grained sand, saturated, gray, oily sheen and odorous	SB-115 12'-14'		5
15								(15') Boring terminated			

NOTES:



**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-116  
**Page:** 1 of 1

Drilling Start Date: <b>4/26/2023 11:30</b>	Boring Depth (ft): <b>5</b>
Drilling End Date: <b>4/26/2023 11:40</b>	Boring Diameter (in): <b>2.00</b>
Drilling Company: <b>Ephase 2</b>	Sampling Method(s): <b>N/A</b>
Drilling Method: <b>Direct Push</b>	DTW During Drilling (ft): <b>5</b>
Drilling Equipment: <b>Track mounted Geoprobe 6712DT</b>	DTW After Drilling (ft): <b>N/A</b>
Driller: <b>Lukas Reiss</b>	Ground Surface Elev. (ft): <b>10</b>
Logged By: <b>Joshua Yanuck</b>	Location (Lat, Long): <b>N/A</b>

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Asphalt			10
1								(1') Poorly graded SAND (SP); mostly medium-coarse grained sand, light brown	SB-116	1'-3'	
3								(3') Well-graded SAND (SW); mostly coarse grained sand, light brown	SB-116	3'-5'	
5								(5') Boring terminated, saturated			5
10											0
15											-5
20											-10

NOTES:



**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-117  
**Page:** 1 of 1

Drilling Start Date: <b>4/26/2023 11:15</b>	Boring Depth (ft): <b>5</b>
Drilling End Date: <b>4/26/2023 11:30</b>	Boring Diameter (in): <b>2.00</b>
Drilling Company: <b>Ephase 2</b>	Sampling Method(s): <b>N/A</b>
Drilling Method: <b>Direct Push</b>	DTW During Drilling (ft): <b>5</b>
Drilling Equipment: <b>Track mounted Geoprobe 6712DT</b>	DTW After Drilling (ft): <b>N/A</b>
Driller: <b>Lukas Reiss</b>	Ground Surface Elev. (ft): <b>10</b>
Logged By: <b>Joshua Yanuck</b>	Location (Lat, Long): <b>N/A</b>

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Asphalt			10
1								(1') Well-graded SAND (SW); mostly coarse grained sand, dark brown		SB-117 1'-3'	
3								(3') Well-graded SAND (SW); mostly coarse grained sand, very dark brown		SB-117 3'-5'	
5								(5') Boring terminated, saturated			5
10											0
15											-5
20											-10

NOTES:

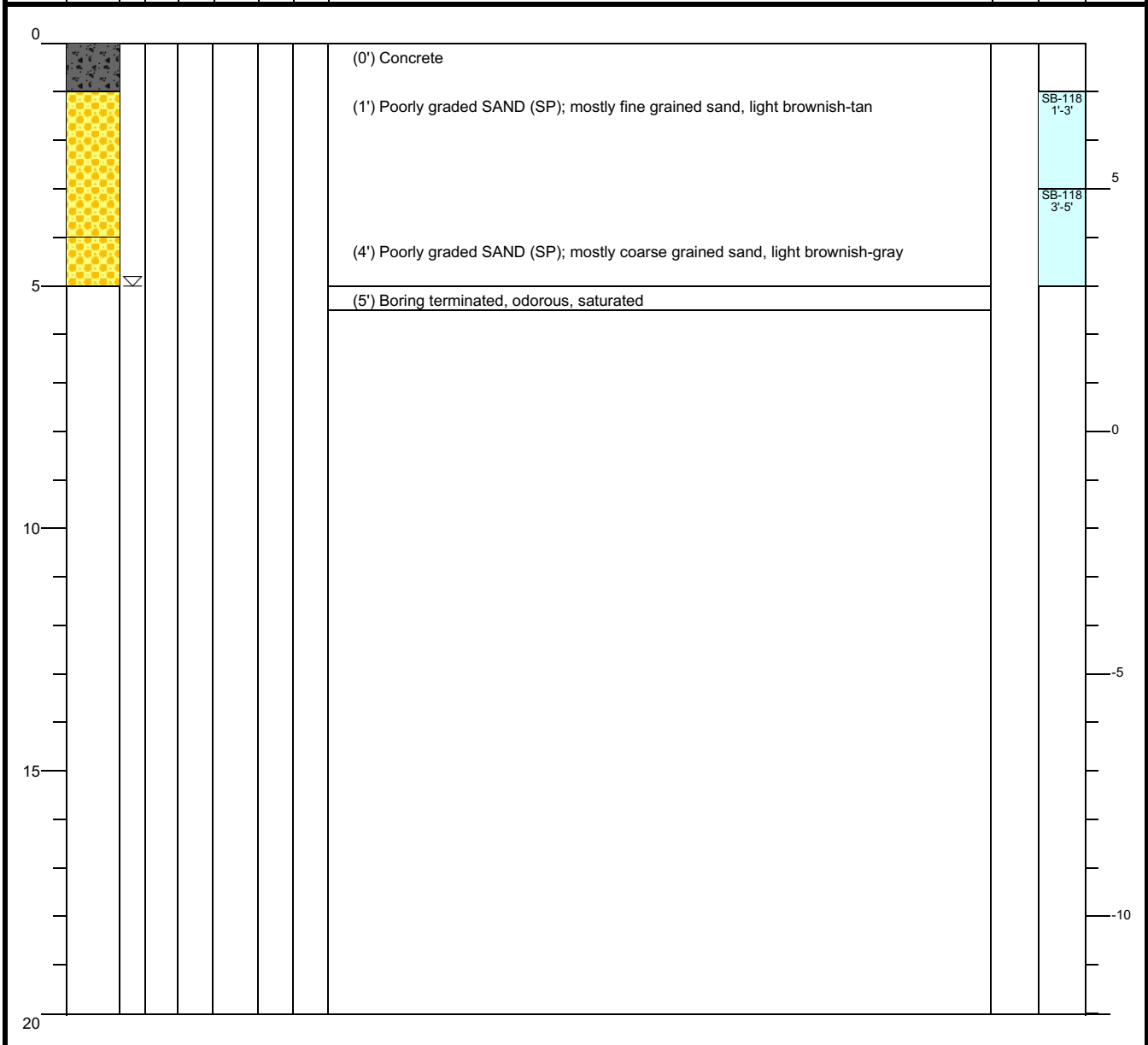


**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-118  
**Page:** 1 of 1

Drilling Start Date: <b>4/26/2023 9:50</b>	Boring Depth (ft): <b>5</b>
Drilling End Date: <b>4/26/2023 10:00</b>	Boring Diameter (in): <b>2.00</b>
Drilling Company: <b>Ephase 2</b>	Sampling Method(s): <b>N/A</b>
Drilling Method: <b>Direct Push</b>	DTW During Drilling (ft): <b>5</b>
Drilling Equipment: <b>Track mounted Geoprobe 6712DT</b>	DTW After Drilling (ft): <b>N/A</b>
Driller: <b>Lukas Reiss</b>	Ground Surface Elev. (ft): <b>8</b>
Logged By: <b>Joshua Yanuck</b>	Location (Lat, Long): <b>N/A</b>

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	



NOTES:



Client: Woodstock Construction Group, Ltd.  
 Project: 1 Shore Road  
 Address: 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
 Boring No. SB-119  
 Page: 1 of 1

Drilling Start Date: 4/26/2023 10:20  
 Drilling End Date: 4/26/2023 10:45  
 Drilling Company: Ephase 2  
 Drilling Method: Direct Push  
 Drilling Equipment: Track mounted Geoprobe 6712DT  
 Driller: Lukas Reiss  
 Logged By: Joshua Yanuck

Boring Depth (ft): 5  
 Boring Diameter (in): 2.00  
 Sampling Method(s): N/A  
 DTW During Drilling (ft): 5  
 DTW After Drilling (ft): N/A  
 Ground Surface Elev. (ft): 8  
 Location (Lat, Long): N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Asphalt			
								(1') Well-graded SAND (SW); dark brown		SB-119 1'-3'	
								(2') Poorly graded SAND (SP); mostly fine-medium grained sand, dark brown		SB-119 3'-5'	5
5								(5') Boring terminated, odorous, saturated			
10											
15											
20											

NOTES:

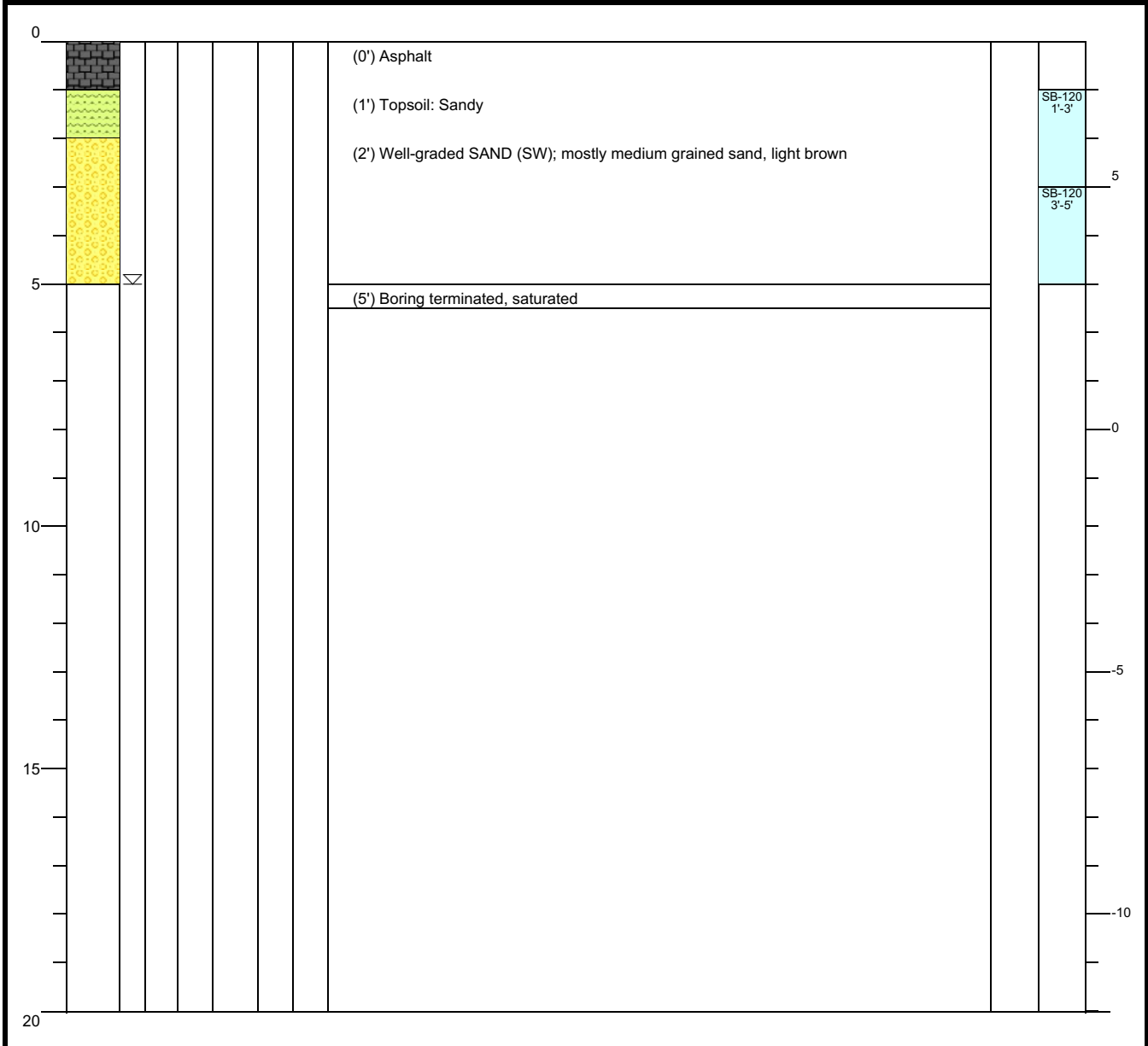


Client: Woodstock Construction Group, Ltd.  
 Project: 1 Shore Road  
 Address: 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
 Boring No. SB-120  
 Page: 1 of 1

Drilling Start Date: 4/26/2023 10:00	Boring Depth (ft): 5
Drilling End Date: 4/26/2023 10:20	Boring Diameter (in): 2.00
Drilling Company: Ephase 2	Sampling Method(s): N/A
Drilling Method: Direct Push	DTW During Drilling (ft): 5
Drilling Equipment: Track mounted Geoprobe 6712DT	DTW After Drilling (ft): N/A
Driller: Lukas Reiss	Ground Surface Elev. (ft): 8
Logged By: Joshua Yanuck	Location (Lat, Long): N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	



NOTES:



**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-121  
**Page:** 1 of 1

**Drilling Start Date:** 4/26/23 10:45  
**Drilling End Date:** 4/26/23 10:55  
**Drilling Company:** Ephase 2  
**Drilling Method:** Direct Push  
**Drilling Equipment:** Track mounted Geoprobe 6712DT  
**Driller:** Lukas Reiss  
**Logged By:** Joshua Yanuck

**Boring Depth (ft):** 5  
**Boring Diameter (in):** 2.00  
**Sampling Method(s):** N/A  
**DTW During Drilling (ft):** 5  
**DTW After Drilling (ft):** N/A  
**Ground Surface Elev. (ft):** 8  
**Location (Lat, Long):** N/A

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Asphalt			
1								(1') Poorly graded SAND (SP); mostly medium-coarse grained sand, light brown		SB-121 1'-3'	
2								(2') Poorly graded SAND (SP); mostly medium-coarse grained sand, dark brown			
3								(3') Poorly graded SAND (SP); mostly medium-coarse grained sand, light brown			
5								(5') Boring terminated, saturated		SB-121 3'-5'	
10											
15											
20											

NOTES:



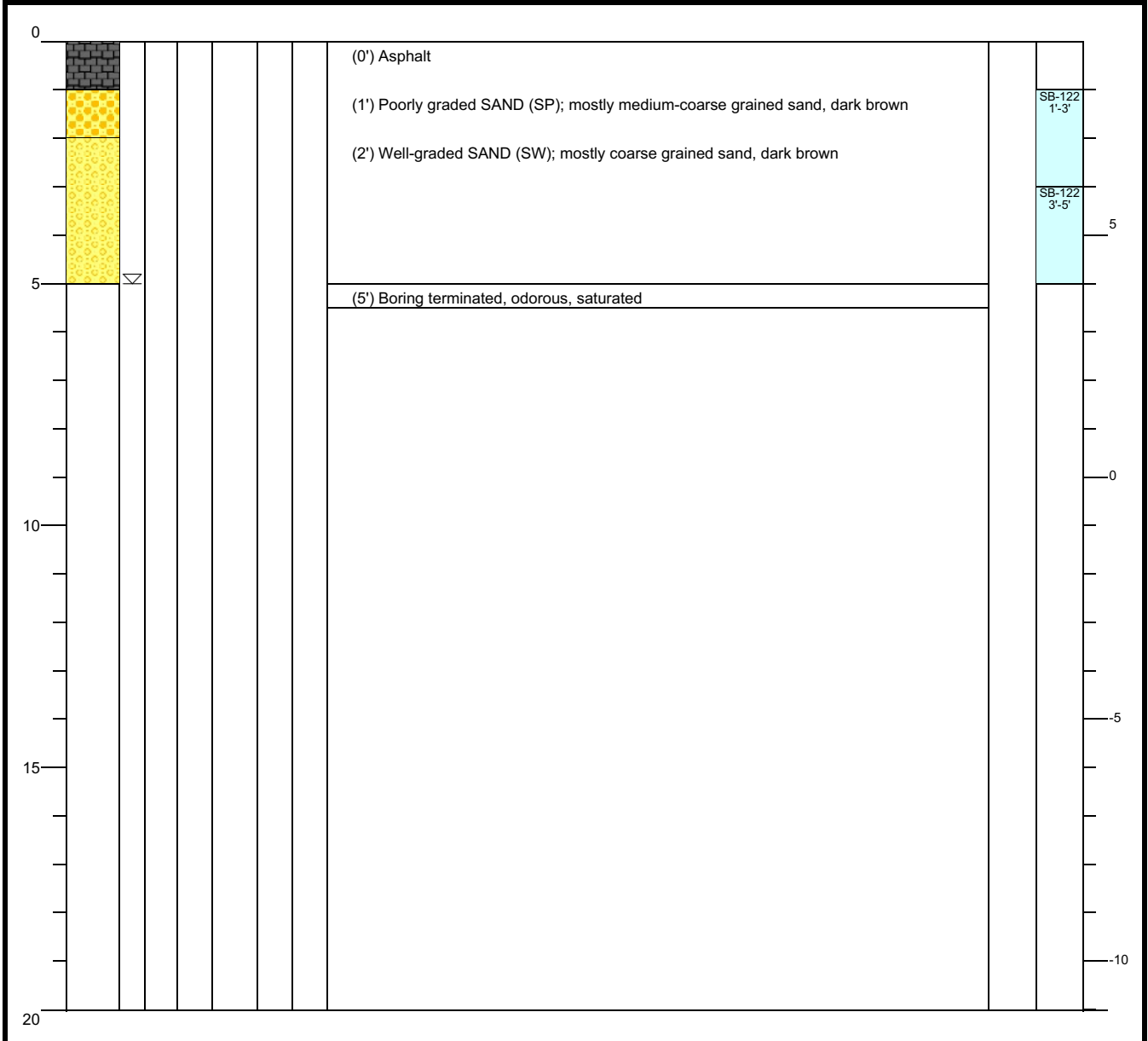
**Client:** Woodstock Construction Group, Ltd.  
**Project:** 1 Shore Road  
**Address:** 1 Shore Road, Glenwood Landing, NY

**BORING LOG**  
**Boring No.** SB-122  
**Page:** 1 of 1

**Drilling Start Date:** 4/26/2023 10:55  
**Drilling End Date:** 4/26/2023 11:15  
**Drilling Company:** Ephase 2  
**Drilling Method:** Direct Push  
**Drilling Equipment:** Track mounted Geoprobe 6712DT  
**Driller:** Lukas Reiss  
**Logged By:** Joshua Yanuck

**Boring Depth (ft):** 5  
**Boring Diameter (in):** 2.00  
**Sampling Method(s):** N/A  
**DTW During Drilling (ft):** 5  
**DTW After Drilling (ft):** N/A  
**Ground Surface Elev. (ft):** 9  
**Location (Lat, Long):** N/A

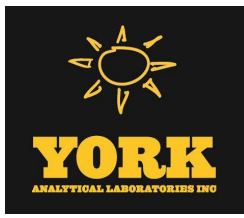
DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		ELEVATION (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	



NOTES:

## **APPENDIX E**

### **Laboratory Data Packages**



# Technical Report

prepared for:

**Laurel Environmental Geosciences, D.P.C.**

53 W Hills Road, Suite 1  
Huntington Station NY, 11746  
**Attention: Scott Yanuck**

Report Date: 05/10/2023

**Client Project ID: 1 Shore Road, Glenwood Landing, NY 21-215**

York Project (SDG) No.: 23D1619

CT Cert. No. PH-0723

New Jersey Cert. No. CT005 and NY037



New York Cert. Nos. 10854 and 12058

PA Cert. No. 68-04440

120 RESEARCH DRIVE  
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**Laurel Environmental Geosciences, D.P.C.**

53 W Hills Road, Suite 1  
Huntington Station NY, 11746  
Attention: Scott Yanuck

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**Purpose and Results**

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on April 27, 2023 and listed below. The project was identified as your project: **1 Shore Road, Glenwood Landing, NY 21-215.**

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

<u>York Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
23D1619-01	SB-109 1-3	Soil	04/26/2023	04/27/2023
23D1619-02	SB-109 3-5	Soil	04/26/2023	04/27/2023
23D1619-03	SB-111 3-5	Soil	04/26/2023	04/27/2023
23D1619-04	SB-118 1-3	Soil	04/26/2023	04/27/2023
23D1619-05	SB-118 3-5	Soil	04/26/2023	04/27/2023
23D1619-06	SB-119 1-3	Soil	04/26/2023	04/27/2023
23D1619-07	SB-119 3-5	Soil	04/26/2023	04/27/2023
23D1619-08	SB-120 1-3	Soil	04/26/2023	04/27/2023
23D1619-09	SB-120 3-5	Soil	04/26/2023	04/27/2023
23D1619-10	SB-121 1-3	Soil	04/26/2023	04/27/2023
23D1619-11	SB-121 3-5	Soil	04/26/2023	04/27/2023
23D1619-12	SB-122 1-3	Soil	04/26/2023	04/27/2023
23D1619-13	SB-122 3-5	Soil	04/26/2023	04/27/2023
23D1619-14	SB-117 1-3	Soil	04/26/2023	04/27/2023
23D1619-15	SB-117 3-5	Soil	04/26/2023	04/27/2023
23D1619-16	SB-116 1-3	Soil	04/26/2023	04/27/2023
23D1619-17	SB-116 3-5	Soil	04/26/2023	04/27/2023
23D1619-18	SB-108 1-3	Soil	04/26/2023	04/27/2023
23D1619-19	SB-108 3-5	Soil	04/26/2023	04/27/2023
23D1619-20	SB-103 1-3	Soil	04/26/2023	04/27/2023
23D1619-21	SB-103 16-18	Soil	04/26/2023	04/27/2023
23D1619-22	SB-104 1-3	Soil	04/26/2023	04/27/2023

<u>York Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
23D1619-23	SB-104 16-18	Soil	04/26/2023	04/27/2023
23D1619-24	SB-102 1-3	Soil	04/26/2023	04/27/2023
23D1619-25	SB-102 20-22	Soil	04/26/2023	04/27/2023
23D1619-26	SB-101 1-3	Soil	04/26/2023	04/27/2023
23D1619-27	SB-101 23-25	Soil	04/26/2023	04/27/2023
23D1619-28	SB-105 1-3	Soil	04/26/2023	04/27/2023
23D1619-29	SB-105 12-14	Soil	04/26/2023	04/27/2023
23D1619-30	SB-106 1-3	Soil	04/26/2023	04/27/2023
23D1619-31	SB-106 12-14	Soil	04/26/2023	04/27/2023
23D1619-32	DUP	Soil	04/26/2023	04/27/2023
23D1619-33	Equipment Blank	Water	04/26/2023	04/27/2023

### **General Notes for York Project (SDG) No.: 23D1619**

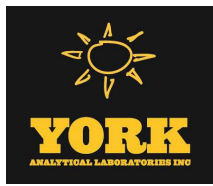
1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

**Approved By:** 

**Date:** 05/10/2023

Cassie L. Mosher  
Laboratory Manager





### Sample Information

**Client Sample ID:** SB-109 1-3

**York Sample ID:** 23D1619-01

<u>York Project (SDG) No.</u>	<u>Client Project ID</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Date Received</u>
23D1619	1 Shore Road, Glenwood Landing, NY 21-215	Soil	April 26, 2023 9:15 am	04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.126	0.200	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0600	0.226	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.119	0.226	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.203	0.207	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.195	0.226	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
1763-23-1	<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>1.37</b>		ug/kg dry	0.189	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.214	0.226	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.216	0.226	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.224	0.226	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.184	0.226	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		ug/kg dry	0.141	0.226	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.117	0.226	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.167	0.226	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.220	0.226	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.123	0.453	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.165	0.226	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.175	0.226	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.216	0.218	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.673	0.860	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.854	0.869	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.123	0.905	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:20	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.157	0.403	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ



### Sample Information

**Client Sample ID:** SB-109 1-3

**York Sample ID:** 23D1619-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 9:15 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
151772-58-6	* Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		ug/kg dry	0.218	0.453	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0702	0.453	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.109	0.453	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.178	0.213	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.673	0.849	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.688	0.905	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.352	0.856	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.278	0.847	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.197	0.856	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.191	0.220	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.140	0.217	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPrPA)	ND		ug/kg dry	0.718	1.13	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.37	5.66	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.70	5.66	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.691	2.26	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.204	0.226	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.789	2.26	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.224	0.226	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:20	ESJ

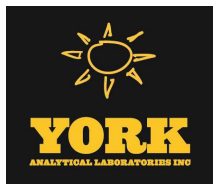
**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	117 %	25-150
Surrogate: M5PFHxA	97.3 %	25-150
Surrogate: M4PFHpA	95.6 %	25-150
Surrogate: M3PFHxS	108 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	89.3 %	25-150
Surrogate: M6PFDA	85.6 %	25-150
Surrogate: M7PFUdA	101 %	25-150





### Sample Information

<b>Client Sample ID:</b> SB-109 1-3	<b>York Sample ID:</b> 23D1619-01			
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 9:15 am	<u>Date Received</u> 04/27/2023

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	89.6 %			25-150						
	Surrogate: M2PFTeDA	88.4 %			10-150						
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	94.8 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	129 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	107 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	75.2 %			10-150						
	Surrogate: d3-N-MeFOSAA	104 %			25-150						
	Surrogate: d5-N-EtFOSAA	106 %			25-150						
	Surrogate: M2-6:2 FTS	124 %			25-200						
	Surrogate: M2-8:2 FTS	124 %			25-200						
	Surrogate: M9PFNA	86.2 %			25-150						
	Surrogate: M2-4:2 FTS	96.6 %			25-150						
	Surrogate: d-N-MeFOSA	57.0 %			25-150						
	Surrogate: d-N-EtFOSA	76.0 %			25-150						
	Surrogate: M3HFPO-DA	108 %			25-150						
	Surrogate: d9-N-EtFOSE	54.0 %			25-150						
	Surrogate: d7-N-MeFOSE	61.1 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	88.0		%	0.100	1	SM 2540G	05/01/2023 18:05	05/01/2023 18:07	AC	
							Certifications:	CTDOH-PH-0723			

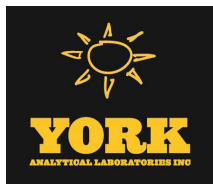
### Sample Information

<b>Client Sample ID:</b> SB-109 3-5	<b>York Sample ID:</b> 23D1619-02			
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 9:15 am	<u>Date Received</u> 04/27/2023

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:



## Sample Information

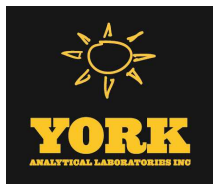
**Client Sample ID:** SB-109 3-5

**York Sample ID:** 23D1619-02

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 9:15 am	<u>Date Received</u> 04/27/2023
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Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.132	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0632	0.239	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.125	0.239	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.213	0.218	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.205	0.239	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.199	0.222	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.225	0.239	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.228	0.239	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.236	0.239	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.194	0.239	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.149	0.239	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.123	0.239	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.176	0.239	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.231	0.239	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.130	0.477	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.174	0.239	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.185	0.239	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.228	0.230	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.710	0.906	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.900	0.916	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.130	0.954	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:32	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.166	0.425	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.230	0.477	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0739	0.477	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ



### Sample Information

**Client Sample ID:** SB-109 3-5

**York Sample ID:** 23D1619-02

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 9:15 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

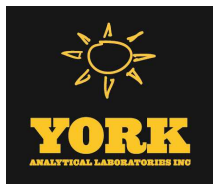
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.114	0.477	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.187	0.224	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.710	0.894	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.725	0.954	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.371	0.902	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.293	0.892	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.207	0.902	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.202	0.231	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.148	0.229	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.756	1.19	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.50	5.96	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.79	5.96	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.729	2.39	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.215	0.239	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.831	2.39	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.236	0.239	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:32	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	163 %	25-150
Surrogate: M5PFHxA	105 %	25-150
Surrogate: M4PFHpA	95.4 %	25-150
Surrogate: M3PFHxS	143 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	87.3 %	25-150
Surrogate: M6PFDA	95.8 %	25-150
Surrogate: M7PFUdA	109 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	89.4 %	25-150
Surrogate: M2PFTeDA	35.7 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-109 3-5					<b>York Sample ID:</b> 23D1619-02
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 9:15 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	107 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	117 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	106 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	104 %			10-150						
	Surrogate: d3-N-MeFOSAA	91.5 %			25-150						
	Surrogate: d5-N-EtFOSAA	98.6 %			25-150						
	Surrogate: M2-6:2 FTS	142 %			25-200						
	Surrogate: M2-8:2 FTS	132 %			25-200						
	Surrogate: M9PFNA	61.5 %			25-150						
	Surrogate: M2-4:2 FTS	116 %			25-150						
	Surrogate: d-N-MeFOSA	47.9 %			25-150						
	Surrogate: d-N-EtFOSA	53.8 %			25-150						
	Surrogate: M3HFPO-DA	110 %			25-150						
	Surrogate: d9-N-EtFOSE	24.5 %			25-150						
	Surrogate: d7-N-MeFOSE	35.2 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	83.9		%	0.100	1	SM 2540G	05/01/2023 18:05	05/01/2023 18:07	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-111 3-5					<b>York Sample ID:</b> 23D1619-03
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 9:30 am	<u>Date Received</u> 04/27/2023	

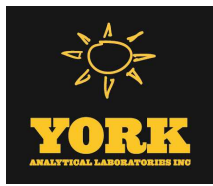
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.121	0.192	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 20:44	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-111 3-5

**York Sample ID:** 23D1619-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 9:30 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0576	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.114	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.195	0.199	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.187	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.181	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.205	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.208	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.215	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.177	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.136	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.112	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.161	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.211	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.118	0.435	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.159	0.217	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.168	0.217	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.208	0.210	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.647	0.826	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.820	0.835	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.118	0.869	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:44	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.151	0.387	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
151772-58-6	* Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		ug/kg dry	0.210	0.435	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0674	0.435	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ



### Sample Information

**Client Sample ID:** SB-111 3-5

**York Sample ID:** 23D1619-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 9:30 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

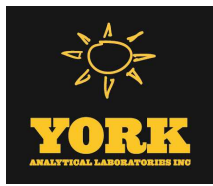
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.104	0.435	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.171	0.204	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.647	0.815	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.661	0.869	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.338	0.822	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.267	0.813	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.189	0.822	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.184	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.135	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.689	1.09	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.28	5.43	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.63	5.43	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.664	2.17	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.196	0.217	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.757	2.17	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.215	0.217	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:44	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	136 %	25-150
Surrogate: M5PFHxA	111 %	25-150
Surrogate: M4PFHpA	98.5 %	25-150
Surrogate: M3PFHxS	125 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	90.9 %	25-150
Surrogate: M6PFDA	70.5 %	25-150
Surrogate: M7PFUdA	80.0 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	66.9 %	25-150
Surrogate: M2PFTeDA	49.1 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-111 3-5					<b>York Sample ID:</b> 23D1619-03
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 9:30 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	5.06 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	112 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	94.5 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	82.0 %			10-150						
	Surrogate: d3-N-MeFOSAA	98.8 %			25-150						
	Surrogate: d5-N-EtFOSAA	87.9 %			25-150						
	Surrogate: M2-6:2 FTS	107 %			25-200						
	Surrogate: M2-8:2 FTS	79.7 %			25-200						
	Surrogate: M9PFNA	90.4 %			25-150						
	Surrogate: M2-4:2 FTS	122 %			25-150						
	Surrogate: d-N-MeFOSA	30.5 %			25-150						
	Surrogate: d-N-EtFOSA	81.5 %			25-150						
	Surrogate: M3HFPO-DA	112 %			25-150						
	Surrogate: d9-N-EtFOSE	33.3 %			25-150						
	Surrogate: d7-N-MeFOSE	37.0 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	90.9		%	0.100	1	SM 2540G	05/01/2023 18:05	05/01/2023 18:07	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-118 1-3					<b>York Sample ID:</b> 23D1619-04
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 9:50 am	<u>Date Received</u> 04/27/2023	

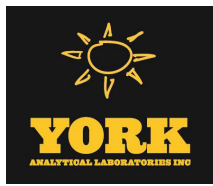
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.119	0.190	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 20:57	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-118 1-3

**York Sample ID:** 23D1619-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 9:50 am

04/27/2023

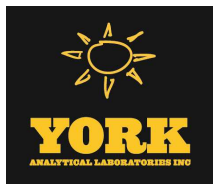
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0569	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.113	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.192	0.196	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.185	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.179	0.200	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.203	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.205	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.213	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.175	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.134	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.111	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.159	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.208	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.117	0.429	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.157	0.215	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.166	0.215	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.205	0.207	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.639	0.816	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.810	0.824	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.117	0.859	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 20:57	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.149	0.382	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.207	0.429	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0666	0.429	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ



### Sample Information

**Client Sample ID:** SB-118 1-3

**York Sample ID:** 23D1619-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 9:50 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.103	0.429	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.169	0.202	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.639	0.805	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.653	0.859	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.334	0.811	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.264	0.803	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.187	0.811	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.181	0.208	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.133	0.206	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.681	1.07	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.25	5.37	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.61	5.37	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.656	2.15	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.193	0.215	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.748	2.15	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.213	0.215	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 20:57	ESJ

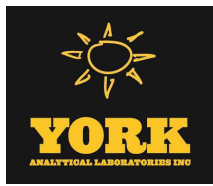
**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	122 %	25-150
Surrogate: M5PFHxA	119 %	25-150
Surrogate: M4PFHpA	98.8 %	25-150
Surrogate: M3PFHxS	98.3 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	87.5 %	25-150
Surrogate: M6PFDA	75.2 %	25-150
Surrogate: M7PFUdA	83.4 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	84.4 %	25-150
Surrogate: M2PFTeDA	61.5 %	10-150





### Sample Information

<b>Client Sample ID:</b> SB-118 1-3					<b>York Sample ID:</b> 23D1619-04
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 9:50 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	25.7 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	97.4 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	111 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	75.4 %			10-150						
	Surrogate: d3-N-MeFOSAA	76.6 %			25-150						
	Surrogate: d5-N-EtFOSAA	88.6 %			25-150						
	Surrogate: M2-6:2 FTS	97.5 %			25-200						
	Surrogate: M2-8:2 FTS	77.5 %			25-200						
	Surrogate: M9PFNA	127 %			25-150						
	Surrogate: M2-4:2 FTS	99.9 %			25-150						
	Surrogate: d-N-MeFOSA	62.2 %			25-150						
	Surrogate: d-N-EtFOSA	101 %			25-150						
	Surrogate: M3HFPO-DA	115 %			25-150						
	Surrogate: d9-N-EtFOSE	38.5 %			25-150						
	Surrogate: d7-N-MeFOSE	42.2 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	92.8		%	0.100	1	SM 2540G	05/01/2023 18:05	05/01/2023 18:07	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-118 3-5					<b>York Sample ID:</b> 23D1619-05
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 9:50 am	<u>Date Received</u> 04/27/2023	

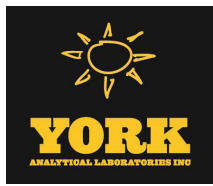
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.126	0.201	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 21:09	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-118 3-5

**York Sample ID:** 23D1619-05

York Project (SDG) No.

Client Project ID

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Collection Date/Time

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1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 9:50 am

04/27/2023

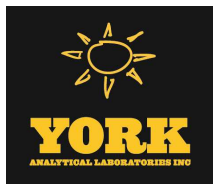
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0602	0.227	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.119	0.227	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.203	0.208	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.195	0.227	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.190	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.215	0.227	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.217	0.227	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.225	0.227	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.185	0.227	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.142	0.227	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.117	0.227	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.168	0.227	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.220	0.227	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.124	0.454	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.166	0.227	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.176	0.227	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.217	0.219	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.676	0.863	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.858	0.872	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.124	0.909	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:09	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.158	0.404	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.219	0.454	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0704	0.454	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ



### Sample Information

**Client Sample ID:** SB-118 3-5

**York Sample ID:** 23D1619-05

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

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23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 9:50 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

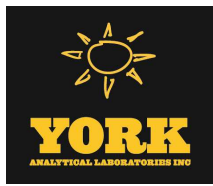
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.109	0.454	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.178	0.214	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.676	0.852	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.691	0.909	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.353	0.859	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.279	0.850	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.198	0.859	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.192	0.220	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.141	0.218	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPtPA)	ND		ug/kg dry	0.720	1.14	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.38	5.68	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.70	5.68	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.694	2.27	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
31506-32-8	* N-MeFOFA	ND		ug/kg dry	0.204	0.227	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.792	2.27	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ
4151-50-2	* N-EtFOFA	ND		ug/kg dry	0.225	0.227	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:09	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	112 %	25-150
Surrogate: M5PFHxA	104 %	25-150
Surrogate: M4PFHpA	95.4 %	25-150
Surrogate: M3PFHxS	98.8 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	83.5 %	25-150
Surrogate: M6PFDA	108 %	25-150
Surrogate: M7PFUdA	90.5 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	84.1 %	25-150
Surrogate: M2PFTeDA	99.4 %	10-150



Sample Information

Client Sample ID: SB-118 3-5

York Sample ID: 23D1619-05

Table with 5 columns: York Project (SDG) No., Client Project ID, Matrix, Collection Date/Time, Date Received. Values: 23D1619, 1 Shore Road, Glenwood Landing, NY 21-215, Soil, April 26, 2023 9:50 am, 04/27/2023

PFAS, EPA 1633 Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

Table with 12 columns: CAS No., Parameter, Result, Flag, Units, Reported to LOD/MDL, LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Lists various surrogate PFAS compounds and their results.

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

Table with 12 columns: CAS No., Parameter, Result, Flag, Units, Reported to LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Shows Total Solids result of 87.5%.

Sample Information

Client Sample ID: SB-119 1-3

York Sample ID: 23D1619-06

Table with 5 columns: York Project (SDG) No., Client Project ID, Matrix, Collection Date/Time, Date Received. Values: 23D1619, 1 Shore Road, Glenwood Landing, NY 21-215, Soil, April 26, 2023 10:20 am, 04/27/2023

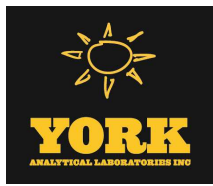
PFAS, EPA 1633 Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

Table with 12 columns: CAS No., Parameter, Result, Flag, Units, Reported to LOD/MDL, LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Shows Perfluorobutanesulfonic acid (PFBS) result of ND.



### Sample Information

**Client Sample ID:** SB-119 1-3

**York Sample ID:** 23D1619-06

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:20 am

04/27/2023

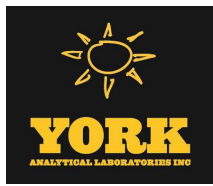
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0603	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.119	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.204	0.208	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.196	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.190	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.215	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.217	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.225	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.186	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.142	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.117	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.168	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.221	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.124	0.455	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.166	0.228	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.176	0.228	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.217	0.220	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.677	0.865	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.859	0.874	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.124	0.910	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 15:09	05/04/2023 15:49	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.158	0.405	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.220	0.455	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0706	0.455	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ



### Sample Information

**Client Sample ID:** SB-119 1-3

**York Sample ID:** 23D1619-06

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:20 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.109	0.455	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.179	0.214	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.677	0.854	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.692	0.910	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.354	0.860	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.280	0.851	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.198	0.860	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.192	0.221	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.141	0.219	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.722	1.14	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.39	5.69	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.71	5.69	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.695	2.28	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.205	0.228	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.793	2.28	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.225	0.228	1	EPA 1633 Draft 2 Certifications:	05/01/2023 15:09	05/04/2023 15:49	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	162 %	25-150
Surrogate: M5PFHxA	108 %	25-150
Surrogate: M4PFHpA	108 %	25-150
Surrogate: M3PFHxS	157 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	106 %	25-150
Surrogate: M6PFDA	77.3 %	25-150
Surrogate: M7PFUdA	95.8 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	102 %	25-150
Surrogate: M2PFTeDA	107 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-119 1-3					<b>York Sample ID:</b> 23D1619-06
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 10:20 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	102 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	147 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	117 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	118 %			10-150						
	Surrogate: d3-N-MeFOSAA	145 %			25-150						
	Surrogate: d5-N-EtFOSAA	130 %			25-150						
	Surrogate: M2-6:2 FTS	125 %			25-200						
	Surrogate: M2-8:2 FTS	134 %			25-200						
	Surrogate: M9PFNA	138 %			25-150						
	Surrogate: M2-4:2 FTS	124 %			25-150						
	Surrogate: d-N-MeFOSA	73.9 %			25-150						
	Surrogate: d-N-EtFOSA	136 %			25-150						
	Surrogate: M3HFPO-DA	121 %			25-150						
	Surrogate: d9-N-EtFOSE	90.5 %			25-150						
	Surrogate: d7-N-MeFOSE	102 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	86.5		%	0.100	1	SM 2540G	05/01/2023 18:05	05/01/2023 18:07	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-119 3-5					<b>York Sample ID:</b> 23D1619-07
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 10:20 am	<u>Date Received</u> 04/27/2023	

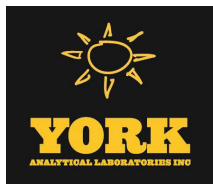
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.122	0.194	1	EPA 1633 Draft 2	05/01/2023 17:13	05/05/2023 00:38	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-119 3-5

**York Sample ID:** 23D1619-07

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:20 am

04/27/2023

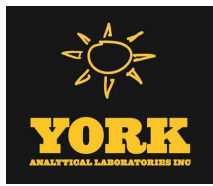
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0581	0.219	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.115	0.219	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.196	0.201	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.189	0.219	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.183	0.204	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.207	0.219	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.209	0.219	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.217	0.219	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.179	0.219	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.137	0.219	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.113	0.219	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.162	0.219	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.213	0.219	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.119	0.438	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.160	0.219	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.170	0.219	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.209	0.212	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.652	0.833	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.828	0.842	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.119	0.877	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:38	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.152	0.390	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.212	0.438	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0680	0.438	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ



### Sample Information

**Client Sample ID:** SB-119 3-5

**York Sample ID:** 23D1619-07

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:20 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

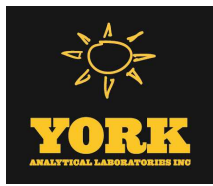
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.105	0.438	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.172	0.206	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.652	0.822	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.666	0.877	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.341	0.829	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.270	0.820	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.191	0.829	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.185	0.213	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.136	0.210	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPtPA)	ND		ug/kg dry	0.695	1.10	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.30	5.48	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.64	5.48	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.670	2.19	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.197	0.219	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.764	2.19	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.217	0.219	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:38	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	91.5 %	25-150
Surrogate: M5PFHxA	104 %	25-150
Surrogate: M4PFHpA	101 %	25-150
Surrogate: M3PFHxS	81.4 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	98.0 %	25-150
Surrogate: M6PFDA	60.8 %	25-150
Surrogate: M7PFUdA	84.7 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	82.6 %	25-150
Surrogate: M2PFTeDA	86.9 %	10-150



Sample Information

Client Sample ID: SB-119 3-5 York Sample ID: 23D1619-07
York Project (SDG) No. 23D1619 Client Project ID 1 Shore Road, Glenwood Landing, NY 21-215 Matrix Soil Collection Date/Time April 26, 2023 10:20 am Date Received 04/27/2023

PFAS, EPA 1633 Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

Table with 12 columns: CAS No., Parameter, Result, Flag, Units, Reported to LOD/MDL, LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Lists various surrogate PFAS compounds and their results.

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

Table with 12 columns: CAS No., Parameter, Result, Flag, Units, Reported to LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Shows Total Solids result of 90.0%.

Sample Information

Client Sample ID: SB-120 1-3 York Sample ID: 23D1619-08
York Project (SDG) No. 23D1619 Client Project ID 1 Shore Road, Glenwood Landing, NY 21-215 Matrix Soil Collection Date/Time April 26, 2023 10:00 am Date Received 04/27/2023

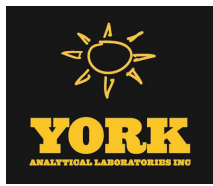
PFAS, EPA 1633 Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

Table with 12 columns: CAS No., Parameter, Result, Flag, Units, Reported to LOD/MDL, LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Shows Perfluorobutanesulfonic acid (PFBS) result of ND.



### Sample Information

**Client Sample ID:** SB-120 1-3

**York Sample ID:** 23D1619-08

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:00 am

04/27/2023

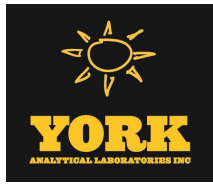
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0575	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.114	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.194	0.198	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.187	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
1763-23-1	<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.216</b>		ug/kg dry	0.181	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.205	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.207	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.215	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.177	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		ug/kg dry	0.136	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.112	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.161	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.210	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.118	0.434	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.158	0.217	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.168	0.217	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.207	0.209	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.645	0.824	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.819	0.833	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.118	0.868	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:14	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	0.151	0.386	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
151772-58-6	* Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ug/kg dry	0.209	0.434	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0672	0.434	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ



### Sample Information

**Client Sample ID:** SB-120 1-3

**York Sample ID:** 23D1619-08

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:00 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

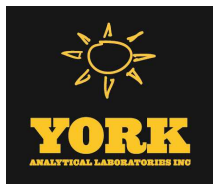
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.104	0.434	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.170	0.204	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.645	0.813	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.659	0.868	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.337	0.820	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.267	0.811	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.189	0.820	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.183	0.210	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.134	0.208	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.688	1.08	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.28	5.42	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.63	5.42	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.663	2.17	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.195	0.217	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.756	2.17	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.215	0.217	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:14	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	286 %	25-150
Surrogate: M5PFHxA	240 %	25-150
Surrogate: M4PFHpA	241 %	25-150
Surrogate: M3PFHxS	275 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	213 %	25-150
Surrogate: M6PFDA	178 %	25-150
Surrogate: M7PFUdA	201 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	127 %	25-150
Surrogate: M2PFTeDA	37.1 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-120 1-3					<b>York Sample ID:</b> 23D1619-08
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 10:00 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	205 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	250 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	253 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	202 %			10-150						
	Surrogate: d3-N-MeFOSAA	207 %			25-150						
	Surrogate: d5-N-EtFOSAA	177 %			25-150						
	Surrogate: M2-6:2 FTS	262 %			25-200						
	Surrogate: M2-8:2 FTS	263 %			25-200						
	Surrogate: M9PFNA	191 %			25-150						
	Surrogate: M2-4:2 FTS	226 %			25-150						
	Surrogate: d-N-MeFOSA	121 %			25-150						
	Surrogate: d-N-EtFOSA	134 %			25-150						
	Surrogate: M3HFPO-DA	260 %			25-150						
	Surrogate: d9-N-EtFOSE	51.2 %			25-150						
	Surrogate: d7-N-MeFOSE	70.9 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	90.7		%	0.100	1	SM 2540G	05/02/2023 17:40	05/02/2023 17:42	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-120 3-5					<b>York Sample ID:</b> 23D1619-09
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 10:00 am	<u>Date Received</u> 04/27/2023	

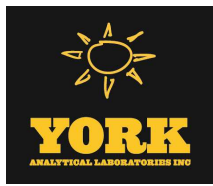
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.128	0.203	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 21:21	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-120 3-5

**York Sample ID:** 23D1619-09

**York Project (SDG) No.**

**Client Project ID**

**Matrix**

**Collection Date/Time**

**Date Received**

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:00 am

04/27/2023

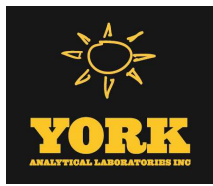
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0609	0.230	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.121	0.230	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.206	0.210	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.198	0.230	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.192	0.214	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.217	0.230	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.219	0.230	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.227	0.230	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.187	0.230	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.144	0.230	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.118	0.230	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.170	0.230	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.223	0.230	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.125	0.459	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.168	0.230	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.178	0.230	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.219	0.222	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.683	0.873	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.867	0.882	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.125	0.919	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:21	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.160	0.409	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.222	0.459	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0712	0.459	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ



### Sample Information

**Client Sample ID:** SB-120 3-5

**York Sample ID:** 23D1619-09

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:00 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.110	0.459	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.180	0.216	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.683	0.862	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.698	0.919	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.357	0.868	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.283	0.859	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.200	0.868	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.194	0.223	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.142	0.221	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.728	1.15	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.41	5.74	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.72	5.74	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.702	2.30	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
31506-32-8	* N-MeFOA	ND		ug/kg dry	0.207	0.230	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.801	2.30	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ
4151-50-2	* N-EtFOA	ND		ug/kg dry	0.227	0.230	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:21	ESJ

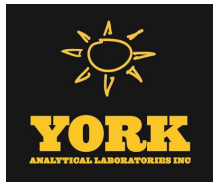
**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	119 %	25-150
Surrogate: M5PFHxA	115 %	25-150
Surrogate: M4PFHpA	112 %	25-150
Surrogate: M3PFHxS	108 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	97.3 %	25-150
Surrogate: M6PFDA	59.3 %	25-150
Surrogate: M7PFUdA	88.9 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	84.9 %	25-150
Surrogate: M2PFTeDA	66.1 %	10-150





### Sample Information

**Client Sample ID:** SB-120 3-5

**York Sample ID:** 23D1619-09

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 10:00 am	<u>Date Received</u> 04/27/2023
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**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	5.13 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	113 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	103 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	90.0 %			10-150						
	Surrogate: d3-N-MeFOSAA	87.8 %			25-150						
	Surrogate: d5-N-EtFOSAA	97.5 %			25-150						
	Surrogate: M2-6:2 FTS	129 %			25-200						
	Surrogate: M2-8:2 FTS	91.3 %			25-200						
	Surrogate: M9PFNA	129 %			25-150						
	Surrogate: M2-4:2 FTS	107 %			25-150						
	Surrogate: d-N-MeFOSA	40.1 %			25-150						
	Surrogate: d-N-EtFOSA	82.1 %			25-150						
	Surrogate: M3HFPO-DA	122 %			25-150						
	Surrogate: d9-N-EtFOSE	58.7 %			25-150						
	Surrogate: d7-N-MeFOSE	62.2 %			25-150						

**Total Solids**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	86.5		%	0.100	1	SM 2540G	05/02/2023 17:40	05/02/2023 17:42	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** SB-121 1-3

**York Sample ID:** 23D1619-10

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 10:45 am	<u>Date Received</u> 04/27/2023
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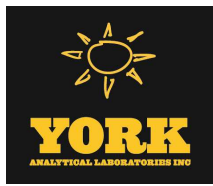
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.121	0.193	1	EPA 1633 Draft 2	04/28/2023 15:09	05/04/2023 16:26	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-121 1-3

**York Sample ID:** 23D1619-10

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:45 am

04/27/2023

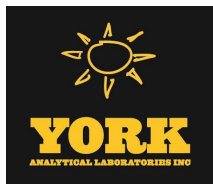
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0579	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.115	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.196	0.200	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.188	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.182	0.203	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.206	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.209	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.216	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.178	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.137	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.113	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.162	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.212	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.119	0.437	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.159	0.218	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.169	0.218	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.209	0.211	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.650	0.830	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.825	0.839	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.119	0.874	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:26	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.152	0.389	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.211	0.437	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0677	0.437	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ



### Sample Information

**Client Sample ID:** SB-121 1-3

**York Sample ID:** 23D1619-10

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:45 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

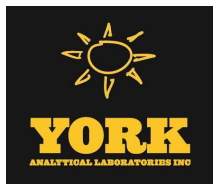
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.105	0.437	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.171	0.205	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.650	0.819	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.664	0.874	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.340	0.826	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.269	0.817	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.190	0.826	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.185	0.212	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.135	0.210	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPtPA)	ND		ug/kg dry	0.693	1.09	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.29	5.46	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.64	5.46	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.667	2.18	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.197	0.218	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.761	2.18	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.216	0.218	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:26	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	116 %	25-150
Surrogate: M5PFHxA	110 %	25-150
Surrogate: M4PFHpA	97.1 %	25-150
Surrogate: M3PFHxS	122 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	146 %	25-150
Surrogate: M6PFDA	136 %	25-150
Surrogate: M7PFUdA	132 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	112 %	25-150
Surrogate: M2PFTeDA	56.9 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-121 1-3					<b>York Sample ID:</b> 23D1619-10
<u>York Project (SDG) No.</u>	<u>Client Project ID</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Date Received</u>	
23D1619	1 Shore Road, Glenwood Landing, NY 21-215	Soil	April 26, 2023 10:45 am	04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	103 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	93.2 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	113 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	72.1 %			10-150						
	Surrogate: d3-N-MeFOSAA	79.0 %			25-150						
	Surrogate: d5-N-EtFOSAA	74.6 %			25-150						
	Surrogate: M2-6:2 FTS	104 %			25-200						
	Surrogate: M2-8:2 FTS	115 %			25-200						
	Surrogate: M9PFNA	135 %			25-150						
	Surrogate: M2-4:2 FTS	106 %			25-150						
	Surrogate: d-N-MeFOSA	36.7 %			25-150						
	Surrogate: d-N-EtFOSA	63.8 %			25-150						
	Surrogate: M3HFPO-DA	124 %			25-150						
	Surrogate: d9-N-EtFOSE	27.4 %			25-150						
	Surrogate: d7-N-MeFOSE	35.8 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	90.3		%	0.100	1	SM 2540G	05/02/2023 17:40	05/02/2023 17:42	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-121 3-5					<b>York Sample ID:</b> 23D1619-11
<u>York Project (SDG) No.</u>	<u>Client Project ID</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Date Received</u>	
23D1619	1 Shore Road, Glenwood Landing, NY 21-215	Soil	April 26, 2023 10:45 am	04/27/2023	

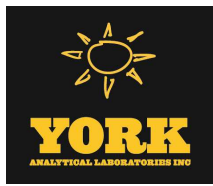
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.125	0.199	1	EPA 1633 Draft 2	04/28/2023 15:09	05/04/2023 16:38	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-121 3-5

**York Sample ID:** 23D1619-11

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:45 am

04/27/2023

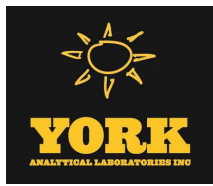
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0596	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.118	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.201	0.206	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.193	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
1763-23-1	<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.253</b>		ug/kg dry	0.188	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.213	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.215	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.223	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.183	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		ug/kg dry	0.141	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.116	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.166	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.218	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.123	0.450	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.164	0.225	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.174	0.225	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.215	0.217	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.669	0.855	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.849	0.864	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.123	0.900	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 16:38	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	0.156	0.400	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
151772-58-6	* Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ug/kg dry	0.217	0.450	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0697	0.450	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ



### Sample Information

**Client Sample ID:** SB-121 3-5

**York Sample ID:** 23D1619-11

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:45 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

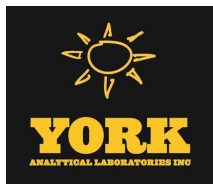
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.108	0.450	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.177	0.211	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.669	0.843	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.684	0.900	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.350	0.850	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.277	0.841	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.196	0.850	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.190	0.218	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.139	0.216	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.713	1.12	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.36	5.62	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.69	5.62	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.687	2.25	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
31506-32-8	* N-MeFOA	ND		ug/kg dry	0.202	0.225	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.784	2.25	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ
4151-50-2	* N-EtFOA	ND		ug/kg dry	0.223	0.225	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 16:38	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	155 %	25-150
Surrogate: M5PFHxA	106 %	25-150
Surrogate: M4PFHpA	107 %	25-150
Surrogate: M3PFHxS	137 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	106 %	25-150
Surrogate: M6PFDA	83.5 %	25-150
Surrogate: M7PFUdA	88.9 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	71.0 %	25-150
Surrogate: M2PFTeDA	66.0 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-121 3-5					<b>York Sample ID:</b> 23D1619-11
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 10:45 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	105 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	84.2 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	117 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	77.8 %			10-150						
	Surrogate: d3-N-MeFOSAA	97.6 %			25-150						
	Surrogate: d5-N-EtFOSAA	84.0 %			25-150						
	Surrogate: M2-6:2 FTS	131 %			25-200						
	Surrogate: M2-8:2 FTS	116 %			25-200						
	Surrogate: M9PFNA	146 %			25-150						
	Surrogate: M2-4:2 FTS	108 %			25-150						
	Surrogate: d-N-MeFOSA	67.1 %			25-150						
	Surrogate: d-N-EtFOSA	104 %			25-150						
	Surrogate: M3HFPO-DA	124 %			25-150						
	Surrogate: d9-N-EtFOSE	46.4 %			25-150						
	Surrogate: d7-N-MeFOSE	62.5 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	88.4		%	0.100	1	SM 2540G	05/02/2023 17:40	05/02/2023 17:42	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-122 1-3					<b>York Sample ID:</b> 23D1619-12
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 10:55 am	<u>Date Received</u> 04/27/2023	

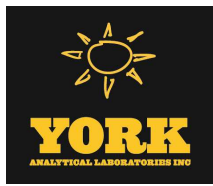
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	1.17	1.87	1	EPA 1633 Draft 2	05/08/2023 17:40	05/10/2023 13:18	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-122 1-3

**York Sample ID:** 23D1619-12

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:55 am

04/27/2023

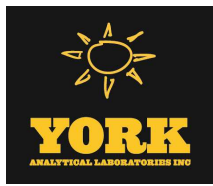
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.559	2.11	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	1.11	2.11	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	1.89	1.93	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	1.82	2.11	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	1.76	1.96	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	1.99	2.11	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	2.02	2.11	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	2.09	2.11	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	1.72	2.11	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	1.32	2.11	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	1.09	2.11	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	1.56	2.11	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	2.05	2.11	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	1.15	4.22	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	1.54	2.11	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	1.64	2.11	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	2.02	2.04	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	6.28	8.02	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	7.97	8.11	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	1.15	8.44	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:40	05/10/2023 13:18	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	1.47	3.76	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
151772-58-6	* Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		ug/kg dry	2.04	4.22	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.654	4.22	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ



### Sample Information

**Client Sample ID:** SB-122 1-3

**York Sample ID:** 23D1619-12

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:55 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	1.01	4.22	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	1.66	1.98	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	6.28	7.92	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	6.42	8.44	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	3.28	7.98	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	2.60	7.89	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	1.84	7.98	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	1.78	2.05	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	1.31	2.03	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	6.69	10.6	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	22.1	52.8	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	15.8	52.8	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	6.45	21.1	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	1.90	2.11	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	7.36	21.1	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	2.09	2.11	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:40	05/10/2023 13:18	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	97.5 %	25-150
Surrogate: M5PFHxA	96.4 %	25-150
Surrogate: M4PFHpA	107 %	25-150
Surrogate: M3PFHxS	104 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	94.8 %	25-150
Surrogate: M6PFDA	129 %	25-150
Surrogate: M7PFUdA	115 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	124 %	25-150
Surrogate: M2PFTeDA	106 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-122 1-3					<b>York Sample ID:</b> 23D1619-12
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 10:55 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	96.5 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	145 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	98.0 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	91.1 %			10-150						
	Surrogate: d3-N-MeFOSAA	161 %			25-150						
	Surrogate: d5-N-EtFOSAA	195 %			25-150						
	Surrogate: M2-6:2 FTS	162 %			25-200						
	Surrogate: M2-8:2 FTS	266 %			25-200						
	Surrogate: M9PFNA	74.6 %			25-150						
	Surrogate: M2-4:2 FTS	109 %			25-150						
	Surrogate: d-N-MeFOSA	46.0 %			25-150						
	Surrogate: d-N-EtFOSA	127 %			25-150						
	Surrogate: M3HFPO-DA	107 %			25-150						
	Surrogate: d9-N-EtFOSE	52.1 %			25-150						
	Surrogate: d7-N-MeFOSE	57.5 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	92.9		%	0.100	1	SM 2540G	05/02/2023 17:40	05/02/2023 17:42	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-122 3-5					<b>York Sample ID:</b> 23D1619-13
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 10:55 am	<u>Date Received</u> 04/27/2023	

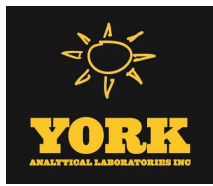
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.128	0.205	1	EPA 1633 Draft 2	04/28/2023 15:09	05/04/2023 17:52	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-122 3-5

**York Sample ID:** 23D1619-13

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:55 am

04/27/2023

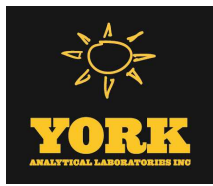
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0613	0.231	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.121	0.231	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.207	0.212	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.199	0.231	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.193	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.219	0.231	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.221	0.231	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.229	0.231	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.189	0.231	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.145	0.231	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.119	0.231	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.171	0.231	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.224	0.231	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.126	0.463	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.169	0.231	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.179	0.231	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.221	0.223	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.688	0.879	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.873	0.888	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.126	0.925	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 17:52	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.161	0.412	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.223	0.463	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0717	0.463	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ



### Sample Information

**Client Sample ID:** SB-122 3-5

**York Sample ID:** 23D1619-13

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 10:55 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

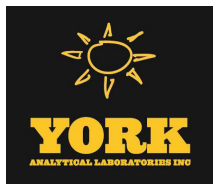
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.111	0.463	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.182	0.217	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.688	0.867	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.703	0.925	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.360	0.874	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.284	0.865	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.201	0.874	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.195	0.224	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.143	0.222	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.733	1.16	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.43	5.78	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.73	5.78	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.707	2.31	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.208	0.231	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.806	2.31	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.229	0.231	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 17:52	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	338 %	25-150
Surrogate: M5PFHxA	355 %	25-150
Surrogate: M4PFHpA	336 %	25-150
Surrogate: M3PFHxS	296 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	307 %	25-150
Surrogate: M6PFDA	321 %	25-150
Surrogate: M7PFUdA	327 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	333 %	25-150
Surrogate: M2PFTeDA	233 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-122 3-5					<b>York Sample ID:</b> 23D1619-13
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 10:55 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	265 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	403 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	353 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	286 %			10-150						
	Surrogate: d3-N-MeFOSAA	333 %			25-150						
	Surrogate: d5-N-EtFOSAA	392 %			25-150						
	Surrogate: M2-6:2 FTS	354 %			25-200						
	Surrogate: M2-8:2 FTS	291 %			25-200						
	Surrogate: M9PFNA	302 %			25-150						
	Surrogate: M2-4:2 FTS	325 %			25-150						
	Surrogate: d-N-MeFOSA	116 %			25-150						
	Surrogate: d-N-EtFOSA	137 %			25-150						
	Surrogate: M3HFPO-DA	357 %			25-150						
	Surrogate: d9-N-EtFOSE	130 %			25-150						
	Surrogate: d7-N-MeFOSE	146 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	86.5		%	0.100	1	SM 2540G	05/02/2023 17:40	05/02/2023 17:42	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-117 1-3					<b>York Sample ID:</b> 23D1619-14
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 11:15 am	<u>Date Received</u> 04/27/2023	

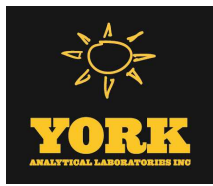
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.115	0.183	1	EPA 1633 Draft 2	04/28/2023 15:09	05/04/2023 18:05	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-117 1-3

**York Sample ID:** 23D1619-14

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 11:15 am

04/27/2023

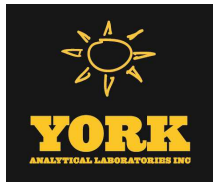
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0548	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.109	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.185	0.189	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.178	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.173	0.192	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.196	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.198	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.205	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.169	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.129	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.107	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.153	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.201	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.113	0.414	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.151	0.207	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.160	0.207	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.198	0.200	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.616	0.786	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.781	0.795	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.113	0.828	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:05	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.144	0.368	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.200	0.414	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0642	0.414	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ



### Sample Information

**Client Sample ID:** SB-117 1-3

**York Sample ID:** 23D1619-14

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 11:15 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

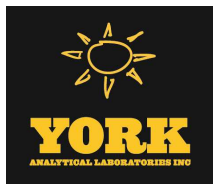
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.0993	0.414	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.162	0.195	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.616	0.776	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.629	0.828	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.322	0.782	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.255	0.774	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.180	0.782	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.175	0.201	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.128	0.199	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.656	1.03	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.17	5.17	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.55	5.17	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.632	2.07	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.186	0.207	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.721	2.07	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.205	0.207	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:05	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	109 %	25-150
Surrogate: M5PFHxA	120 %	25-150
Surrogate: M4PFHpA	79.6 %	25-150
Surrogate: M3PFHxS	105 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	102 %	25-150
Surrogate: M6PFDA	92.5 %	25-150
Surrogate: M7PFUdA	92.0 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	109 %	25-150
Surrogate: M2PFTeDA	105 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-117 1-3					<b>York Sample ID:</b> 23D1619-14
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 11:15 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	104 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	124 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	118 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	58.0 %			10-150						
	Surrogate: d3-N-MeFOSAA	95.3 %			25-150						
	Surrogate: d5-N-EtFOSAA	92.7 %			25-150						
	Surrogate: M2-6:2 FTS	461 %			25-200						
	Surrogate: M2-8:2 FTS	347 %			25-200						
	Surrogate: M9PFNA	106 %			25-150						
	Surrogate: M2-4:2 FTS	240 %			25-150						
	Surrogate: d-N-MeFOSA	39.1 %			25-150						
	Surrogate: d-N-EtFOSA	60.0 %			25-150						
	Surrogate: M3HFPO-DA	104 %			25-150						
	Surrogate: d9-N-EtFOSE	27.5 %			25-150						
	Surrogate: d7-N-MeFOSE	30.6 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	95.5		%	0.100	1	SM 2540G	05/02/2023 17:40	05/02/2023 17:42	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-117 3-5					<b>York Sample ID:</b> 23D1619-15
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 11:15 am	<u>Date Received</u> 04/27/2023	

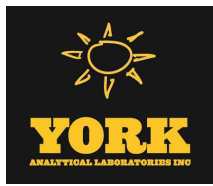
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.125	0.199	1	EPA 1633 Draft 2	04/28/2023 15:09	05/04/2023 18:17	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-117 3-5

**York Sample ID:** 23D1619-15

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 11:15 am

04/27/2023

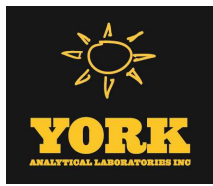
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	0.0782	J	ug/kg dry	0.0596	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.118	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.201	0.206	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.193	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.346		ug/kg dry	0.188	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.212	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.215	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.222	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.183	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTriDA)	ND		ug/kg dry	0.140	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.116	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.166	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.218	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.138	J	ug/kg dry	0.122	0.449	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.164	0.225	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.174	0.225	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.215	0.217	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.669	0.854	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.848	0.863	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.122	0.899	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:17	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.156	0.400	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
151772-58-6	* Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ug/kg dry	0.217	0.449	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0697	0.449	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ



### Sample Information

**Client Sample ID:** SB-117 3-5

**York Sample ID:** 23D1619-15

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 11:15 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

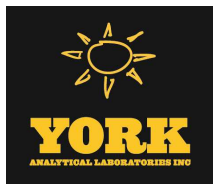
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.108	0.449	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.176	0.211	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.669	0.843	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.683	0.899	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.349	0.849	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.276	0.840	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.196	0.849	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.190	0.218	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.139	0.216	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPtPA)	ND		ug/kg dry	0.712	1.12	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.36	5.62	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.69	5.62	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.687	2.25	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.202	0.225	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.783	2.25	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.222	0.225	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:17	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	134 %	25-150
Surrogate: M5PFHxA	108 %	25-150
Surrogate: M4PFHpA	73.2 %	25-150
Surrogate: M3PFHxS	114 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	99.3 %	25-150
Surrogate: M6PFDA	110 %	25-150
Surrogate: M7PFUdA	95.6 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	126 %	25-150
Surrogate: M2PFTeDA	103 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-117 3-5					<b>York Sample ID:</b> 23D1619-15
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 11:15 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	99.8 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	101 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	113 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	48.9 %			10-150						
	Surrogate: d3-N-MeFOSAA	87.2 %			25-150						
	Surrogate: d5-N-EtFOSAA	104 %			25-150						
	Surrogate: M2-6:2 FTS	574 %			25-200						
	Surrogate: M2-8:2 FTS	371 %			25-200						
	Surrogate: M9PFNA	104 %			25-150						
	Surrogate: M2-4:2 FTS	360 %			25-150						
	Surrogate: d-N-MeFOSA	31.9 %			25-150						
	Surrogate: d-N-EtFOSA	51.9 %			25-150						
	Surrogate: M3HFPO-DA	96.8 %			25-150						
	Surrogate: d9-N-EtFOSE	24.0 %			25-150						
	Surrogate: d7-N-MeFOSE	30.5 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	89.0		%	0.100	1	SM 2540G	05/02/2023 17:40	05/02/2023 17:42	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-116 1-3					<b>York Sample ID:</b> 23D1619-16
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 11:30 am	<u>Date Received</u> 04/27/2023	

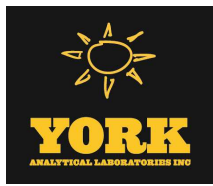
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.115	0.184	1	EPA 1633 Draft 2	04/28/2023 15:09	05/04/2023 18:29	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-116 1-3

**York Sample ID:** 23D1619-16

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 11:30 am

04/27/2023

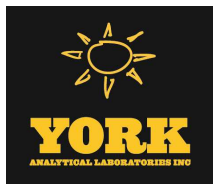
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0550	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.109	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.186	0.190	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.179	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.173	0.193	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.196	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.198	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.206	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.169	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.130	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.107	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.154	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.201	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.113	0.415	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.152	0.208	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.161	0.208	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.198	0.200	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.618	0.789	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.784	0.797	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.113	0.831	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:29	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.144	0.370	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.200	0.415	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0644	0.415	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ



### Sample Information

**Client Sample ID:** SB-116 1-3

**York Sample ID:** 23D1619-16

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 11:30 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

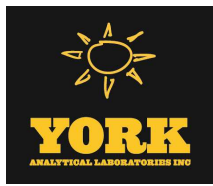
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.0997	0.415	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.163	0.195	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.618	0.779	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.631	0.831	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.323	0.785	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.255	0.777	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.181	0.785	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.175	0.201	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.129	0.199	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.658	1.04	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.18	5.19	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.56	5.19	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.634	2.08	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.187	0.208	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.724	2.08	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.206	0.208	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:29	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	275 %	25-150
Surrogate: M5PFHxA	230 %	25-150
Surrogate: M4PFHpA	225 %	25-150
Surrogate: M3PFHxS	256 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	197 %	25-150
Surrogate: M6PFDA	217 %	25-150
Surrogate: M7PFUdA	258 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	219 %	25-150
Surrogate: M2PFTeDA	130 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-116 1-3					<b>York Sample ID:</b> 23D1619-16
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 11:30 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	205 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	307 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	242 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	195 %			10-150						
	Surrogate: d3-N-MeFOSAA	232 %			25-150						
	Surrogate: d5-N-EtFOSAA	297 %			25-150						
	Surrogate: M2-6:2 FTS	278 %			25-200						
	Surrogate: M2-8:2 FTS	276 %			25-200						
	Surrogate: M9PFNA	195 %			25-150						
	Surrogate: M2-4:2 FTS	226 %			25-150						
	Surrogate: d-N-MeFOSA	105 %			25-150						
	Surrogate: d-N-EtFOSA	108 %			25-150						
	Surrogate: M3HFPO-DA	254 %			25-150						
	Surrogate: d9-N-EtFOSE	43.2 %			25-150						
	Surrogate: d7-N-MeFOSE	69.4 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	95.4		%	0.100	1	SM 2540G	05/02/2023 17:40	05/02/2023 17:42	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-116 3-5					<b>York Sample ID:</b> 23D1619-17
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 11:30 am	<u>Date Received</u> 04/27/2023	

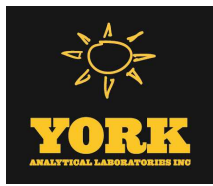
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.125	0.199	1	EPA 1633 Draft 2	04/28/2023 15:09	05/04/2023 18:41	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-116 3-5

**York Sample ID:** 23D1619-17

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 11:30 am

04/27/2023

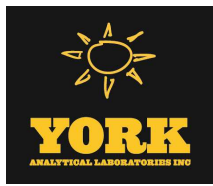
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0597	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.118	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.202	0.206	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.194	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.188	0.210	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.213	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.215	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.223	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.184	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.141	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.116	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.167	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.219	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.123	0.451	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.165	0.225	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.175	0.225	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.215	0.217	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.670	0.856	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.851	0.865	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.123	0.901	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:41	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.157	0.401	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.217	0.451	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0699	0.451	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ



### Sample Information

**Client Sample ID:** SB-116 3-5

**York Sample ID:** 23D1619-17

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 11:30 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

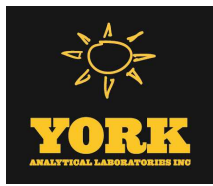
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.108	0.451	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.177	0.212	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.670	0.845	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.685	0.901	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.350	0.852	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.277	0.843	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.196	0.852	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.190	0.219	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.140	0.216	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.714	1.13	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.36	5.63	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.69	5.63	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.688	2.25	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.203	0.225	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.785	2.25	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.223	0.225	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:41	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	135 %	25-150
Surrogate: M5PFHxA	112 %	25-150
Surrogate: M4PFHpA	113 %	25-150
Surrogate: M3PFHxS	107 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	106 %	25-150
Surrogate: M6PFDA	84.1 %	25-150
Surrogate: M7PFUdA	110 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	92.6 %	25-150
Surrogate: M2PFTeDA	109 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-116 3-5					<b>York Sample ID:</b> 23D1619-17
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 11:30 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	110 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	120 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	123 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	102 %			10-150						
	Surrogate: d3-N-MeFOSAA	107 %			25-150						
	Surrogate: d5-N-EtFOSAA	99.6 %			25-150						
	Surrogate: M2-6:2 FTS	98.9 %			25-200						
	Surrogate: M2-8:2 FTS	88.6 %			25-200						
	Surrogate: M9PFNA	108 %			25-150						
	Surrogate: M2-4:2 FTS	92.6 %			25-150						
	Surrogate: d-N-MeFOSA	31.0 %			25-150						
	Surrogate: d-N-EtFOSA	93.9 %			25-150						
	Surrogate: M3HFPO-DA	124 %			25-150						
	Surrogate: d9-N-EtFOSE	38.1 %			25-150						
	Surrogate: d7-N-MeFOSE	48.2 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	88.4		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-108 1-3					<b>York Sample ID:</b> 23D1619-18
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 11:40 am	<u>Date Received</u> 04/27/2023	

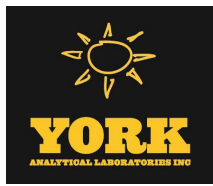
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.116	0.185	1	EPA 1633 Draft 2	04/28/2023 15:09	05/04/2023 18:54	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-108 1-3

**York Sample ID:** 23D1619-18

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 11:40 am

04/27/2023

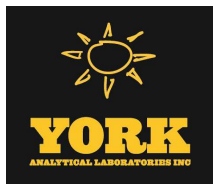
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0555	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.110	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.187	0.191	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
335-67-1	<b>Perfluorooctanoic acid (PFOA)</b>	<b>0.185</b>	J	ug/kg dry	0.180	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
1763-23-1	<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.227</b>		ug/kg dry	0.175	0.195	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.198	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.200	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.207	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.171	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		ug/kg dry	0.131	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.108	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.155	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.203	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.114	0.419	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.153	0.209	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.162	0.209	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.200	0.202	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.623	0.795	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.790	0.804	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.114	0.837	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 18:54	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.145	0.372	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
151772-58-6	* Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ug/kg dry	0.202	0.419	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0649	0.419	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ



### Sample Information

**Client Sample ID:** SB-108 1-3

**York Sample ID:** 23D1619-18

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 11:40 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

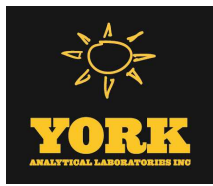
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.100	0.419	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.164	0.197	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.623	0.785	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.636	0.837	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.325	0.791	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.257	0.783	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.182	0.791	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.177	0.203	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.130	0.201	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.663	1.05	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.20	5.23	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.57	5.23	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.639	2.09	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.188	0.209	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.729	2.09	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.207	0.209	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 18:54	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	336 %	25-150
Surrogate: M5PFHxA	198 %	25-150
Surrogate: M4PFHpA	233 %	25-150
Surrogate: M3PFHxS	315 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	226 %	25-150
Surrogate: M6PFDA	290 %	25-150
Surrogate: M7PFUdA	278 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	281 %	25-150
Surrogate: M2PFTeDA	322 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-108 1-3					<b>York Sample ID:</b> 23D1619-18
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 11:40 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	222 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	181 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	261 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	184 %			10-150						
	Surrogate: d3-N-MeFOSAA	201 %			25-150						
	Surrogate: d5-N-EtFOSAA	207 %			25-150						
	Surrogate: M2-6:2 FTS	298 %			25-200						
	Surrogate: M2-8:2 FTS	257 %			25-200						
	Surrogate: M9PFNA	218 %			25-150						
	Surrogate: M2-4:2 FTS	277 %			25-150						
	Surrogate: d-N-MeFOSA	77.6 %			25-150						
	Surrogate: d-N-EtFOSA	112 %			25-150						
	Surrogate: M3HFPO-DA	267 %			25-150						
	Surrogate: d9-N-EtFOSE	76.8 %			25-150						
	Surrogate: d7-N-MeFOSE	101 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	94.4		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-108 3-5					<b>York Sample ID:</b> 23D1619-19
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 11:40 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.123	0.197	1	EPA 1633 Draft 2	04/28/2023 15:09	05/04/2023 19:06	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-108 3-5

**York Sample ID:** 23D1619-19

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 11:40 am

04/27/2023

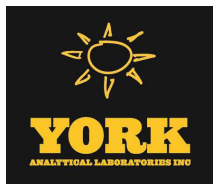
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0588	0.222	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.117	0.222	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.199	0.203	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
335-67-1	<b>Perfluorooctanoic acid (PFOA)</b>	<b>0.260</b>		ug/kg dry	0.191	0.222	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.185	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.210	0.222	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.212	0.222	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.220	0.222	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.181	0.222	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		ug/kg dry	0.139	0.222	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.114	0.222	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.164	0.222	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.215	0.222	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.121	0.444	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.162	0.222	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.172	0.222	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.212	0.214	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.661	0.844	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.838	0.853	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.121	0.888	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/28/2023 15:09	05/04/2023 19:06	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	0.154	0.395	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
151772-58-6	* Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ug/kg dry	0.214	0.444	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0688	0.444	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ



### Sample Information

**Client Sample ID:** SB-108 3-5

**York Sample ID:** 23D1619-19

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 11:40 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

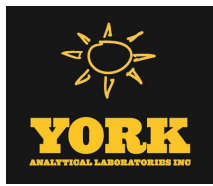
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.107	0.444	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.174	0.209	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.661	0.833	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.675	0.888	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.345	0.839	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.273	0.831	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.193	0.839	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.188	0.215	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.138	0.213	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.704	1.11	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.33	5.55	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.67	5.55	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.678	2.22	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
31506-32-8	* N-MeFOA	ND		ug/kg dry	0.200	0.222	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.774	2.22	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ
4151-50-2	* N-EtFOA	ND		ug/kg dry	0.220	0.222	1	EPA 1633 Draft 2 Certifications:	04/28/2023 15:09	05/04/2023 19:06	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	143 %	25-150
Surrogate: M5PFHxA	140 %	25-150
Surrogate: M4PFHpA	128 %	25-150
Surrogate: M3PFHxS	145 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	121 %	25-150
Surrogate: M6PFDA	96.0 %	25-150
Surrogate: M7PFUdA	119 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	125 %	25-150
Surrogate: M2PFTeDA	138 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-108 3-5			<b>York Sample ID:</b> 23D1619-19
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 11:40 am
			<u>Date Received</u> 04/27/2023

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	126 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	127 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	141 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	96.7 %			10-150						
	Surrogate: d3-N-MeFOSAA	125 %			25-150						
	Surrogate: d5-N-EtFOSAA	126 %			25-150						
	Surrogate: M2-6:2 FTS	141 %			25-200						
	Surrogate: M2-8:2 FTS	120 %			25-200						
	Surrogate: M9PFNA	150 %			25-150						
	Surrogate: M2-4:2 FTS	119 %			25-150						
	Surrogate: d-N-MeFOSA	40.2 %			25-150						
	Surrogate: d-N-EtFOSA	59.8 %			25-150						
	Surrogate: M3HFPO-DA	153 %			25-150						
	Surrogate: d9-N-EtFOSE	45.4 %			25-150						
	Surrogate: d7-N-MeFOSE	59.9 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	89.3		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC
							Certifications: CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-103 1-3			<b>York Sample ID:</b> 23D1619-20
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 12:25 pm
			<u>Date Received</u> 04/27/2023

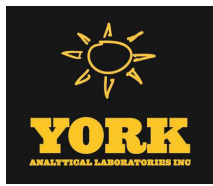
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.120	0.191	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 21:33	ESJ
								Certifications:			



### Sample Information

**Client Sample ID:** SB-103 1-3

**York Sample ID:** 23D1619-20

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 12:25 pm

04/27/2023

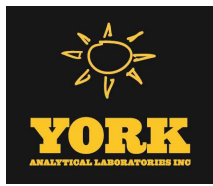
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0571	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.113	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
355-46-4	<b>* Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.210</b>		ug/kg dry	0.193	0.197	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.185	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
1763-23-1	<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.26</b>		ug/kg dry	0.180	0.200	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
375-95-1	<b>Perfluorononanoic acid (PFNA)</b>	<b>0.385</b>		ug/kg dry	0.204	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.206	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
2058-94-8	<b>Perfluoroundecanoic acid (PFUnA)</b>	<b>0.215</b>	J	ug/kg dry	0.213	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.176	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		ug/kg dry	0.135	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.111	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.159	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.209	0.215	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.117	0.431	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
754-91-6	<b>* Perfluoro-1-octanesulfonamide (FOSA)</b>	ND		ug/kg dry	0.157	0.215	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
375-92-8	<b>* Perfluoro-1-heptanesulfonic acid (PFHpS)</b>	ND		ug/kg dry	0.167	0.215	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
335-77-3	<b>* Perfluoro-1-decanesulfonic acid (PFDS)</b>	ND		ug/kg dry	0.206	0.208	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
27619-97-2	<b>* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)</b>	ND		ug/kg dry	0.641	0.819	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
39108-34-4	<b>1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)</b>	ND		ug/kg dry	0.813	0.827	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.117	0.862	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:33	ESJ
113507-82-7	<b>* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)</b>	ND		ug/kg dry	0.150	0.384	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
151772-58-6	<b>* Perfluoro-3,6-dioxahexanoic acid (NFDHA)</b>	ND		ug/kg dry	0.208	0.431	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
377-73-1	<b>* Perfluoro-4-oxapentanoic acid (PFMPA)</b>	ND		ug/kg dry	0.0668	0.431	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ



### Sample Information

**Client Sample ID:** SB-103 1-3

**York Sample ID:** 23D1619-20

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 12:25 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

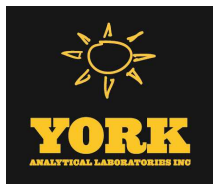
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.103	0.431	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.169	0.203	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.641	0.808	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.655	0.862	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.335	0.815	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.265	0.806	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.187	0.815	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.182	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.134	0.207	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.683	1.08	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.26	5.39	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.62	5.39	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.658	2.15	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.194	0.215	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.751	2.15	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.213	0.215	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:33	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	120 %	25-150
Surrogate: M5PFHxA	107 %	25-150
Surrogate: M4PFHpA	101 %	25-150
Surrogate: M3PFHxS	107 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	89.2 %	25-150
Surrogate: M6PFDA	83.2 %	25-150
Surrogate: M7PFUDA	91.0 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	88.5 %	25-150
Surrogate: M2PFTeDA	79.0 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-103 1-3					<b>York Sample ID:</b> 23D1619-20
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 12:25 pm	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	105 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	127 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	112 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	92.7 %			10-150						
	Surrogate: d3-N-MeFOSAA	126 %			25-150						
	Surrogate: d5-N-EtFOSAA	144 %			25-150						
	Surrogate: M2-6:2 FTS	135 %			25-200						
	Surrogate: M2-8:2 FTS	124 %			25-200						
	Surrogate: M9PFNA	104 %			25-150						
	Surrogate: M2-4:2 FTS	124 %			25-150						
	Surrogate: d-N-MeFOSA	53.1 %			25-150						
	Surrogate: d-N-EtFOSA	105 %			25-150						
	Surrogate: M3HFPO-DA	117 %			25-150						
	Surrogate: d9-N-EtFOSE	69.2 %			25-150						
	Surrogate: d7-N-MeFOSE	75.4 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	91.5		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-103 16-18					<b>York Sample ID:</b> 23D1619-21
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 12:25 pm	<u>Date Received</u> 04/27/2023	

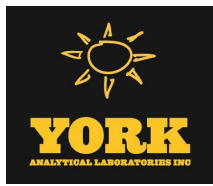
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.126	0.202	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 21:46	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-103 16-18

**York Sample ID:** 23D1619-21

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 12:25 pm

04/27/2023

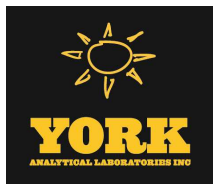
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0603	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.120	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.204	0.208	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.196	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.190	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.215	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.217	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.225	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.186	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.142	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.117	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.168	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.221	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.124	0.455	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.166	0.228	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.176	0.228	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.217	0.220	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.677	0.865	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.860	0.874	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.124	0.911	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:46	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.158	0.405	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
151772-58-6	* Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		ug/kg dry	0.220	0.455	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0706	0.455	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ



### Sample Information

**Client Sample ID:** SB-103 16-18

**York Sample ID:** 23D1619-21

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 12:25 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

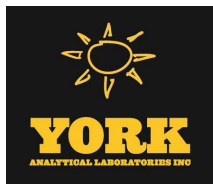
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.109	0.455	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.179	0.214	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.677	0.854	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.692	0.911	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.354	0.861	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.280	0.852	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.198	0.861	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.192	0.221	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.141	0.219	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.722	1.14	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.39	5.69	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.71	5.69	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.696	2.28	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.205	0.228	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.794	2.28	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.225	0.228	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:46	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	125 %	25-150
Surrogate: M5PFHxA	105 %	25-150
Surrogate: M4PFHpA	103 %	25-150
Surrogate: M3PFHxS	116 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	111 %	25-150
Surrogate: M6PFDA	78.9 %	25-150
Surrogate: M7PFUdA	104 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	74.6 %	25-150
Surrogate: M2PFTeDA	51.1 %	10-150



### Sample Information

**Client Sample ID:** SB-103 16-18

**York Sample ID:** 23D1619-21

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 12:25 pm	<u>Date Received</u> 04/27/2023
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**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	107 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	117 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	106 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	96.8 %			10-150						
	Surrogate: d3-N-MeFOSAA	101 %			25-150						
	Surrogate: d5-N-EtFOSAA	80.7 %			25-150						
	Surrogate: M2-6:2 FTS	131 %			25-200						
	Surrogate: M2-8:2 FTS	132 %			25-200						
	Surrogate: M9PFNA	106 %			25-150						
	Surrogate: M2-4:2 FTS	97.0 %			25-150						
	Surrogate: d-N-MeFOSA	67.2 %			25-150						
	Surrogate: d-N-EtFOSA	92.7 %			25-150						
	Surrogate: M3HFPO-DA	122 %			25-150						
	Surrogate: d9-N-EtFOSE	47.7 %			25-150						
	Surrogate: d7-N-MeFOSE	54.9 %			25-150						

**Total Solids**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	87.1		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
								Certifications: CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** SB-104 1-3

**York Sample ID:** 23D1619-22

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 12:50 pm	<u>Date Received</u> 04/27/2023
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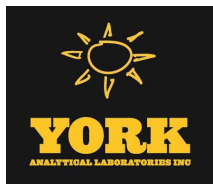
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.115	0.183	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 21:58	ESJ
								Certifications:			



### Sample Information

**Client Sample ID:** SB-104 1-3

**York Sample ID:** 23D1619-22

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 12:50 pm

04/27/2023

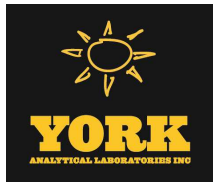
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0548	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.109	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.185	0.189	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
335-67-1	<b>Perfluorooctanoic acid (PFOA)</b>	<b>0.211</b>		ug/kg dry	0.178	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
1763-23-1	<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.864</b>		ug/kg dry	0.173	0.192	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.195	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.197	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.205	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.168	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		ug/kg dry	0.129	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.106	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.153	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.201	0.207	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.113	0.413	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.151	0.207	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.160	0.207	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.197	0.199	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.615	0.786	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.780	0.794	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.113	0.827	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 21:58	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.144	0.368	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
151772-58-6	* Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ug/kg dry	0.199	0.413	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0641	0.413	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ



### Sample Information

**Client Sample ID:** SB-104 1-3

**York Sample ID:** 23D1619-22

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 12:50 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

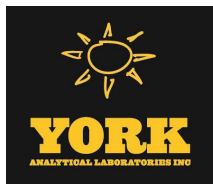
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.0992	0.413	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.162	0.194	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.615	0.775	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.628	0.827	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.321	0.781	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.254	0.773	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.180	0.781	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.175	0.201	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.128	0.198	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.655	1.03	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.17	5.17	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.55	5.17	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.632	2.07	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.186	0.207	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.720	2.07	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.205	0.207	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 21:58	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	172 %	25-150
Surrogate: M5PFHxA	107 %	25-150
Surrogate: M4PFHpA	115 %	25-150
Surrogate: M3PFHxS	148 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	100 %	25-150
Surrogate: M6PFDA	85.5 %	25-150
Surrogate: M7PFUdA	94.3 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	91.2 %	25-150
Surrogate: M2PFTeDA	84.3 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-104 1-3					<b>York Sample ID:</b> 23D1619-22
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 12:50 pm	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	107 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	130 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	118 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	93.7 %			10-150						
	Surrogate: d3-N-MeFOSAA	102 %			25-150						
	Surrogate: d5-N-EtFOSAA	104 %			25-150						
	Surrogate: M2-6:2 FTS	149 %			25-200						
	Surrogate: M2-8:2 FTS	135 %			25-200						
	Surrogate: M9PFNA	143 %			25-150						
	Surrogate: M2-4:2 FTS	138 %			25-150						
	Surrogate: d-N-MeFOSA	90.5 %			25-150						
	Surrogate: d-N-EtFOSA	91.3 %			25-150						
	Surrogate: M3HFPO-DA	127 %			25-150						
	Surrogate: d9-N-EtFOSE	59.7 %			25-150						
	Surrogate: d7-N-MeFOSE	73.4 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	96.7		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-104 16-18					<b>York Sample ID:</b> 23D1619-23
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 12:50 pm	<u>Date Received</u> 04/27/2023	

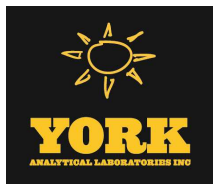
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.126	0.201	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 22:10	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-104 16-18

**York Sample ID:** 23D1619-23

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 12:50 pm

04/27/2023

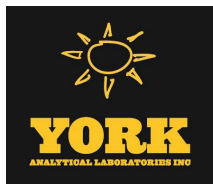
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0603	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.119	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.204	0.208	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.196	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
1763-23-1	<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.193</b>	<b>J</b>	ug/kg dry	0.190	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.215	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.217	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.225	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.185	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		ug/kg dry	0.142	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.117	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.168	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.221	0.228	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.124	0.455	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.166	0.228	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.176	0.228	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.217	0.220	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.677	0.865	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.859	0.874	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.124	0.910	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:10	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	0.158	0.405	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
151772-58-6	* Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ug/kg dry	0.220	0.455	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0705	0.455	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ



### Sample Information

**Client Sample ID:** SB-104 16-18

**York Sample ID:** 23D1619-23

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 12:50 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

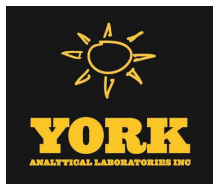
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.109	0.455	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.179	0.214	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.677	0.853	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.692	0.910	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.354	0.860	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.280	0.851	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.198	0.860	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.192	0.221	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.141	0.218	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.721	1.14	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.39	5.69	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.71	5.69	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.695	2.28	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
31506-32-8	* N-MeFOA	ND		ug/kg dry	0.205	0.228	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.793	2.28	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ
4151-50-2	* N-EtFOA	ND		ug/kg dry	0.225	0.228	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:10	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	111 %	25-150
Surrogate: M5PFHxA	105 %	25-150
Surrogate: M4PFHpA	102 %	25-150
Surrogate: M3PFHxS	105 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	91.7 %	25-150
Surrogate: M6PFDA	94.1 %	25-150
Surrogate: M7PFUdA	101 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	88.8 %	25-150
Surrogate: M2PFTeDA	99.3 %	10-150



### Sample Information

**Client Sample ID:** SB-104 16-18

**York Sample ID:** 23D1619-23

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 12:50 pm	<u>Date Received</u> 04/27/2023
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**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	105 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	91.8 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	108 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	86.0 %			10-150						
	Surrogate: d3-N-MeFOSAA	67.3 %			25-150						
	Surrogate: d5-N-EtFOSAA	88.4 %			25-150						
	Surrogate: M2-6:2 FTS	110 %			25-200						
	Surrogate: M2-8:2 FTS	108 %			25-200						
	Surrogate: M9PFNA	127 %			25-150						
	Surrogate: M2-4:2 FTS	98.8 %			25-150						
	Surrogate: d-N-MeFOSA	61.5 %			25-150						
	Surrogate: d-N-EtFOSA	90.5 %			25-150						
	Surrogate: M3HFPO-DA	115 %			25-150						
	Surrogate: d9-N-EtFOSE	75.1 %			25-150						
	Surrogate: d7-N-MeFOSE	74.8 %			25-150						

**Total Solids**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	87.4		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** SB-102 1-3

**York Sample ID:** 23D1619-24

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 1:25 pm	<u>Date Received</u> 04/27/2023
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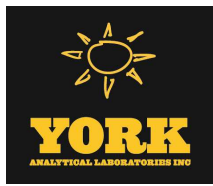
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.116	0.185	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 22:59	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-102 1-3

**York Sample ID:** 23D1619-24

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 1:25 pm

04/27/2023

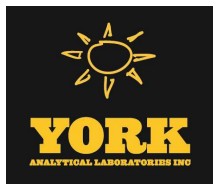
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0553	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.109	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.187	0.191	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.179	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.174	0.194	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.197	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.199	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.206	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.170	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.130	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.107	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.154	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.202	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.114	0.417	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.152	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.162	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.199	0.201	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.620	0.792	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.787	0.801	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.114	0.834	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 22:59	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.145	0.371	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.201	0.417	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0646	0.417	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ



### Sample Information

**Client Sample ID:** SB-102 1-3

**York Sample ID:** 23D1619-24

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 1:25 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

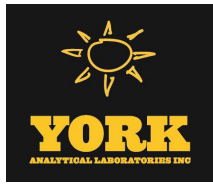
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.100	0.417	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.164	0.196	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.620	0.782	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.634	0.834	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.324	0.788	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.256	0.780	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.181	0.788	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.176	0.202	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.129	0.200	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.661	1.04	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.19	5.21	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.56	5.21	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.637	2.09	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.188	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.727	2.09	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.206	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 22:59	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	121 %	25-150
Surrogate: M5PFHxA	109 %	25-150
Surrogate: M4PFHpA	105 %	25-150
Surrogate: M3PFHxS	116 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	92.9 %	25-150
Surrogate: M6PFDA	109 %	25-150
Surrogate: M7PFUdA	92.7 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	91.7 %	25-150
Surrogate: M2PFTeDA	49.9 %	10-150



### Sample Information

**Client Sample ID:** SB-102 1-3

**York Sample ID:** 23D1619-24

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 1:25 pm	<u>Date Received</u> 04/27/2023
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**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	98.9 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	63.1 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	109 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	77.7 %			10-150						
	Surrogate: d3-N-MeFOSAA	86.8 %			25-150						
	Surrogate: d5-N-EtFOSAA	93.2 %			25-150						
	Surrogate: M2-6:2 FTS	117 %			25-200						
	Surrogate: M2-8:2 FTS	96.5 %			25-200						
	Surrogate: M9PFNA	77.7 %			25-150						
	Surrogate: M2-4:2 FTS	102 %			25-150						
	Surrogate: d-N-MeFOSA	32.2 %			25-150						
	Surrogate: d-N-EtFOSA	77.4 %			25-150						
	Surrogate: M3HFPO-DA	122 %			25-150						
	Surrogate: d9-N-EtFOSE	36.2 %			25-150						
	Surrogate: d7-N-MeFOSE	44.7 %			25-150						

**Total Solids**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	95.7		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** SB-102 20-22

**York Sample ID:** 23D1619-25

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 1:25 pm	<u>Date Received</u> 04/27/2023
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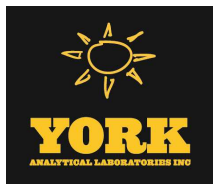
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.117	0.187	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 23:12	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-102 20-22

**York Sample ID:** 23D1619-25

**York Project (SDG) No.**

**Client Project ID**

**Matrix**

**Collection Date/Time**

**Date Received**

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 1:25 pm

04/27/2023

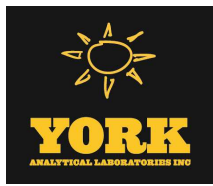
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0559	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.111	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.189	0.193	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.181	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.176	0.196	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.199	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.201	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.209	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.172	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.132	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.109	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.156	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.205	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.115	0.422	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.154	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.163	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.201	0.204	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.627	0.801	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.796	0.810	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.115	0.844	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:12	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.147	0.375	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.204	0.422	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0654	0.422	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ



### Sample Information

**Client Sample ID:** SB-102 20-22

**York Sample ID:** 23D1619-25

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 1:25 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

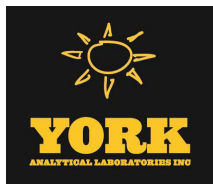
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.101	0.422	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.166	0.198	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.627	0.791	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.641	0.844	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.328	0.797	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.259	0.789	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.183	0.797	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.178	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.131	0.202	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.669	1.05	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.21	5.27	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.58	5.27	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.644	2.11	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.190	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.735	2.11	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.209	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:12	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	107 %	25-150
Surrogate: M5PFHxA	106 %	25-150
Surrogate: M4PFHpA	106 %	25-150
Surrogate: M3PFHxS	104 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	101 %	25-150
Surrogate: M6PFDA	98.3 %	25-150
Surrogate: M7PFUdA	109 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	139 %	25-150
Surrogate: M2PFTeDA	85.4 %	10-150



### Sample Information

**Client Sample ID:** SB-102 20-22

**York Sample ID:** 23D1619-25

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 1:25 pm

04/27/2023

**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	104 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	89.6 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	113 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	90.2 %			10-150						
	Surrogate: d3-N-MeFOSAA	81.5 %			25-150						
	Surrogate: d5-N-EtFOSAA	82.9 %			25-150						
	Surrogate: M2-6:2 FTS	118 %			25-200						
	Surrogate: M2-8:2 FTS	102 %			25-200						
	Surrogate: M9PFNA	81.8 %			25-150						
	Surrogate: M2-4:2 FTS	87.2 %			25-150						
	Surrogate: d-N-MeFOSA	65.3 %			25-150						
	Surrogate: d-N-EtFOSA	83.6 %			25-150						
	Surrogate: M3HFPO-DA	123 %			25-150						
	Surrogate: d9-N-EtFOSE	57.1 %			25-150						
	Surrogate: d7-N-MeFOSE	62.8 %			25-150						

**Total Solids**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	94.5		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** SB-101 1-3

**York Sample ID:** 23D1619-26

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 1:50 pm

04/27/2023

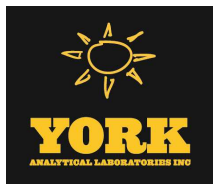
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.114	0.182	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 23:24	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-101 1-3

**York Sample ID:** 23D1619-26

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 1:50 pm

04/27/2023

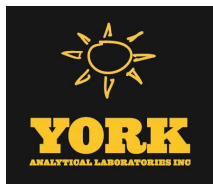
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0545	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.108	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.184	0.188	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.177	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.172	0.191	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.194	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.196	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.203	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.167	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.128	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.106	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.152	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.199	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.112	0.411	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.150	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.159	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.196	0.198	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.611	0.781	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.776	0.789	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.112	0.822	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:24	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.143	0.366	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.198	0.411	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0637	0.411	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ



### Sample Information

**Client Sample ID:** SB-101 1-3

**York Sample ID:** 23D1619-26

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 1:50 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.0986	0.411	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.161	0.193	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.611	0.771	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.625	0.822	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.320	0.777	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.253	0.769	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.179	0.777	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.174	0.199	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.127	0.197	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.651	1.03	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.16	5.14	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.54	5.14	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.628	2.05	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
31506-32-8	* N-MeFOA	ND		ug/kg dry	0.185	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.716	2.05	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ
4151-50-2	* N-EtFOA	ND		ug/kg dry	0.203	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:24	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	118 %	25-150
Surrogate: M5PFHxA	112 %	25-150
Surrogate: M4PFHpA	99.7 %	25-150
Surrogate: M3PFHxS	114 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	88.3 %	25-150
Surrogate: M6PFDA	88.8 %	25-150
Surrogate: M7PFUdA	111 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	85.0 %	25-150
Surrogate: M2PFTeDA	56.5 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-101 1-3					<b>York Sample ID:</b> 23D1619-26
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 1:50 pm	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	103 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	96.7 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	115 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	78.1 %			10-150						
	Surrogate: d3-N-MeFOSAA	77.6 %			25-150						
	Surrogate: d5-N-EtFOSAA	83.7 %			25-150						
	Surrogate: M2-6:2 FTS	121 %			25-200						
	Surrogate: M2-8:2 FTS	114 %			25-200						
	Surrogate: M9PFNA	74.5 %			25-150						
	Surrogate: M2-4:2 FTS	101 %			25-150						
	Surrogate: d-N-MeFOSA	54.2 %			25-150						
	Surrogate: d-N-EtFOSA	64.5 %			25-150						
	Surrogate: M3HFPO-DA	118 %			25-150						
	Surrogate: d9-N-EtFOSE	41.2 %			25-150						
	Surrogate: d7-N-MeFOSE	43.8 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	97.3		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-101 23-25					<b>York Sample ID:</b> 23D1619-27
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 1:50 pm	<u>Date Received</u> 04/27/2023	

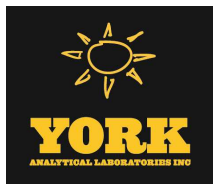
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.120	0.191	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 23:36	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-101 23-25

**York Sample ID:** 23D1619-27

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 1:50 pm

04/27/2023

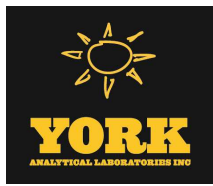
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0572	0.216	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.113	0.216	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.193	0.197	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.186	0.216	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.180	0.201	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.204	0.216	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.206	0.216	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.214	0.216	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.176	0.216	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.135	0.216	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.111	0.216	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.160	0.216	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.209	0.216	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.118	0.431	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.157	0.216	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.167	0.216	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.206	0.208	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.642	0.820	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.814	0.828	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.118	0.863	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:36	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.150	0.384	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.208	0.431	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0669	0.431	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ



### Sample Information

**Client Sample ID:** SB-101 23-25

**York Sample ID:** 23D1619-27

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 1:50 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

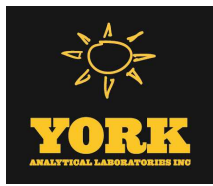
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.104	0.431	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.169	0.203	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.642	0.809	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.656	0.863	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.335	0.815	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.265	0.807	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.188	0.815	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.182	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.134	0.207	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.684	1.08	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.26	5.39	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.62	5.39	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.659	2.16	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.194	0.216	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.752	2.16	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.214	0.216	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:36	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	120 %	25-150
Surrogate: M5PFHxA	107 %	25-150
Surrogate: M4PFHpA	101 %	25-150
Surrogate: M3PFHxS	103 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	108 %	25-150
Surrogate: M6PFDA	65.1 %	25-150
Surrogate: M7PFUdA	75.5 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	54.8 %	25-150
Surrogate: M2PFTeDA	62.1 %	10-150



### Sample Information

**Client Sample ID:** SB-101 23-25

**York Sample ID:** 23D1619-27

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 1:50 pm

04/27/2023

**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	106 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	123 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	114 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	101 %			10-150						
	Surrogate: d3-N-MeFOSAA	94.2 %			25-150						
	Surrogate: d5-N-EtFOSAA	91.5 %			25-150						
	Surrogate: M2-6:2 FTS	118 %			25-200						
	Surrogate: M2-8:2 FTS	93.8 %			25-200						
	Surrogate: M9PFNA	121 %			25-150						
	Surrogate: M2-4:2 FTS	99.4 %			25-150						
	Surrogate: d-N-MeFOSA	59.5 %			25-150						
	Surrogate: d-N-EtFOSA	88.5 %			25-150						
	Surrogate: M3HFPO-DA	128 %			25-150						
	Surrogate: d9-N-EtFOSE	67.0 %			25-150						
	Surrogate: d7-N-MeFOSE	70.3 %			25-150						

**Total Solids**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	91.6		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** SB-105 1-3

**York Sample ID:** 23D1619-28

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 2:30 pm

04/27/2023

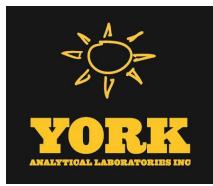
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.118	0.189	1	EPA 1633 Draft 2	05/01/2023 17:13	05/04/2023 23:49	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-105 1-3

**York Sample ID:** 23D1619-28

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 2:30 pm

04/27/2023

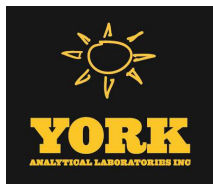
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0565	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.112	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.191	0.195	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.183	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.178	0.198	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.202	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.204	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.211	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.174	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.133	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.110	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.158	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.207	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.116	0.427	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.156	0.213	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.165	0.213	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.204	0.206	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.635	0.811	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.805	0.819	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.116	0.853	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/04/2023 23:49	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.148	0.380	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
151772-58-6	* Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		ug/kg dry	0.206	0.427	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0661	0.427	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ



### Sample Information

**Client Sample ID:** SB-105 1-3

**York Sample ID:** 23D1619-28

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 2:30 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.102	0.427	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.167	0.201	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.635	0.800	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.648	0.853	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.332	0.806	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.262	0.798	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.186	0.806	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.180	0.207	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.132	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPtPA)	ND		ug/kg dry	0.676	1.07	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.24	5.33	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.60	5.33	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.652	2.13	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.192	0.213	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.743	2.13	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.211	0.213	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/04/2023 23:49	ESJ

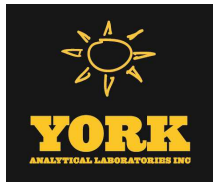
**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	121 %	25-150
Surrogate: M5PFHxA	103 %	25-150
Surrogate: M4PFHpA	99.5 %	25-150
Surrogate: M3PFHxS	116 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	85.6 %	25-150
Surrogate: M6PFDA	73.8 %	25-150
Surrogate: M7PFUDA	86.7 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	92.5 %	25-150
Surrogate: M2PFTeDA	74.2 %	10-150





### Sample Information

**Client Sample ID:** SB-105 1-3

**York Sample ID:** 23D1619-28

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 2:30 pm	<u>Date Received</u> 04/27/2023
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**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	95.4 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	103 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	108 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	103 %			10-150						
	Surrogate: d3-N-MeFOSAA	89.9 %			25-150						
	Surrogate: d5-N-EtFOSAA	116 %			25-150						
	Surrogate: M2-6:2 FTS	118 %			25-200						
	Surrogate: M2-8:2 FTS	102 %			25-200						
	Surrogate: M9PFNA	133 %			25-150						
	Surrogate: M2-4:2 FTS	91.9 %			25-150						
	Surrogate: d-N-MeFOSA	50.8 %			25-150						
	Surrogate: d-N-EtFOSA	69.4 %			25-150						
	Surrogate: M3HFPO-DA	116 %			25-150						
	Surrogate: d9-N-EtFOSE	60.0 %			25-150						
	Surrogate: d7-N-MeFOSE	62.4 %			25-150						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	92.7		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** SB-105 12-14

**York Sample ID:** 23D1619-29

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 2:30 pm	<u>Date Received</u> 04/27/2023
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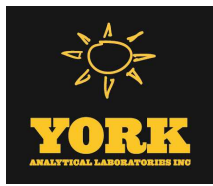
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.117	0.186	1	EPA 1633 Draft 2	05/01/2023 17:13	05/05/2023 00:01	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-105 12-14

**York Sample ID:** 23D1619-29

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 2:30 pm

04/27/2023

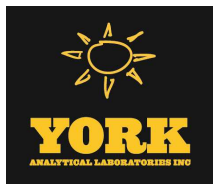
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0558	0.210	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.110	0.210	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.188	0.193	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.181	0.210	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.176	0.196	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.199	0.210	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.201	0.210	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.208	0.210	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.171	0.210	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.132	0.210	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.108	0.210	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.156	0.210	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.204	0.210	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.115	0.421	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.154	0.210	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.163	0.210	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.201	0.203	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.626	0.800	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.794	0.808	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.115	0.842	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:01	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.146	0.375	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.203	0.421	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0652	0.421	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ



### Sample Information

**Client Sample ID:** SB-105 12-14

**York Sample ID:** 23D1619-29

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 2:30 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

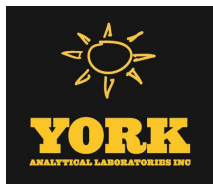
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.101	0.421	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.165	0.198	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.626	0.789	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.640	0.842	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.327	0.795	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.259	0.787	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.183	0.795	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.178	0.204	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.130	0.202	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.667	1.05	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.21	5.26	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.58	5.26	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.643	2.10	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.189	0.210	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.733	2.10	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.208	0.210	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:01	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	154 %	25-150
Surrogate: M5PFHxA	109 %	25-150
Surrogate: M4PFHpA	101 %	25-150
Surrogate: M3PFHxS	138 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	87.7 %	25-150
Surrogate: M6PFDA	59.4 %	25-150
Surrogate: M7PFUdA	75.3 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	66.5 %	25-150
Surrogate: M2PFTeDA	72.5 %	10-150



### Sample Information

**Client Sample ID:** SB-105 12-14

**York Sample ID:** 23D1619-29

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 2:30 pm	<u>Date Received</u> 04/27/2023
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**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	103 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	89.8 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	116 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	88.6 %			10-150						
	Surrogate: d3-N-MeFOSAA	73.9 %			25-150						
	Surrogate: d5-N-EtFOSAA	71.6 %			25-150						
	Surrogate: M2-6:2 FTS	125 %			25-200						
	Surrogate: M2-8:2 FTS	112 %			25-200						
	Surrogate: M9PFNA	75.4 %			25-150						
	Surrogate: M2-4:2 FTS	130 %			25-150						
	Surrogate: d-N-MeFOSA	57.9 %			25-150						
	Surrogate: d-N-EtFOSA	87.9 %			25-150						
	Surrogate: M3HFPO-DA	119 %			25-150						
	Surrogate: d9-N-EtFOSE	42.1 %			25-150						
	Surrogate: d7-N-MeFOSE	48.3 %			25-150						

**Total Solids**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	94.5		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** SB-106 1-3

**York Sample ID:** 23D1619-30

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 2:45 pm	<u>Date Received</u> 04/27/2023
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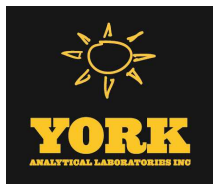
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.114	0.182	1	EPA 1633 Draft 2	05/01/2023 17:13	05/05/2023 00:13	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-106 1-3

**York Sample ID:** 23D1619-30

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 2:45 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0544	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.108	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.184	0.188	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.177	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.172	0.191	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.194	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.196	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.203	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.167	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.128	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.106	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.152	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.199	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.112	0.411	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.150	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.159	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.196	0.198	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.611	0.781	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.776	0.789	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.112	0.822	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:13	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.143	0.366	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.198	0.411	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0637	0.411	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ



### Sample Information

**Client Sample ID:** SB-106 1-3

**York Sample ID:** 23D1619-30

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 2:45 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.0986	0.411	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.161	0.193	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.611	0.770	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.625	0.822	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.319	0.777	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.253	0.768	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.179	0.777	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.174	0.199	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.127	0.197	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPtPA)	ND		ug/kg dry	0.651	1.03	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.16	5.14	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.54	5.14	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.628	2.05	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
31506-32-8	* N-MeFOA	ND		ug/kg dry	0.185	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.716	2.05	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ
4151-50-2	* N-EtFOA	ND		ug/kg dry	0.203	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:13	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	151 %	25-150
Surrogate: M5PFHxA	116 %	25-150
Surrogate: M4PFHpA	110 %	25-150
Surrogate: M3PFHxS	146 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	95.1 %	25-150
Surrogate: M6PFDA	56.2 %	25-150
Surrogate: M7PFUdA	93.1 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	68.7 %	25-150
Surrogate: M2PFTeDA	69.2 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB-106 1-3					<b>York Sample ID:</b> 23D1619-30
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 2:45 pm	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	104 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	108 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	117 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	77.3 %			10-150						
	Surrogate: d3-N-MeFOSAA	90.0 %			25-150						
	Surrogate: d5-N-EtFOSAA	89.2 %			25-150						
	Surrogate: M2-6:2 FTS	133 %			25-200						
	Surrogate: M2-8:2 FTS	117 %			25-200						
	Surrogate: M9PFNA	95.7 %			25-150						
	Surrogate: M2-4:2 FTS	131 %			25-150						
	Surrogate: d-N-MeFOSA	76.6 %			25-150						
	Surrogate: d-N-EtFOSA	92.6 %			25-150						
	Surrogate: M3HFPO-DA	118 %			25-150						
	Surrogate: d9-N-EtFOSE	47.8 %			25-150						
	Surrogate: d7-N-MeFOSE	54.4 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	95.8		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB-106 12-14					<b>York Sample ID:</b> 23D1619-31
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 2:45 pm	<u>Date Received</u> 04/27/2023	

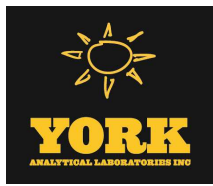
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.112	0.179	1	EPA 1633 Draft 2	05/01/2023 17:13	05/05/2023 00:25	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB-106 12-14

**York Sample ID:** 23D1619-31

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 2:45 pm

04/27/2023

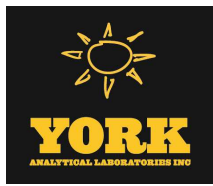
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0535	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.106	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.181	0.185	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.174	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.169	0.188	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.191	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.193	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.200	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.165	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.126	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.104	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.149	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.196	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.110	0.404	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.147	0.202	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.157	0.202	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.193	0.195	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.601	0.767	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.762	0.776	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.110	0.808	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:13	05/05/2023 00:25	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.140	0.359	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.195	0.404	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0626	0.404	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ



### Sample Information

**Client Sample ID:** SB-106 12-14

**York Sample ID:** 23D1619-31

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 2:45 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

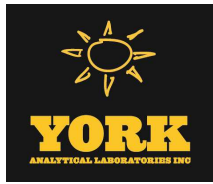
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.0969	0.404	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.159	0.190	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.601	0.757	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.614	0.808	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.314	0.763	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.248	0.755	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.176	0.763	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.171	0.196	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.125	0.194	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.640	1.01	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.12	5.05	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.51	5.05	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.617	2.02	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.182	0.202	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.704	2.02	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.200	0.202	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:13	05/05/2023 00:25	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	313 %	25-150
Surrogate: M5PFHxA	233 %	25-150
Surrogate: M4PFHpA	219 %	25-150
Surrogate: M3PFHxS	300 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	205 %	25-150
Surrogate: M6PFDA	181 %	25-150
Surrogate: M7PFUdA	194 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	173 %	25-150
Surrogate: M2PFTeDA	148 %	10-150



**Sample Information**

**Client Sample ID:** SB-106 12-14

**York Sample ID:** 23D1619-31

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 2:45 pm	<u>Date Received</u> 04/27/2023
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**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	198 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	266 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	239 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	179 %			10-150						
	Surrogate: d3-N-MeFOSAA	185 %			25-150						
	Surrogate: d5-N-EtFOSAA	195 %			25-150						
	Surrogate: M2-6:2 FTS	326 %			25-200						
	Surrogate: M2-8:2 FTS	191 %			25-200						
	Surrogate: M9PFNA	220 %			25-150						
	Surrogate: M2-4:2 FTS	251 %			25-150						
	Surrogate: d-N-MeFOSA	143 %			25-150						
	Surrogate: d-N-EtFOSA	130 %			25-150						
	Surrogate: M3HFPO-DA	251 %			25-150						
	Surrogate: d9-N-EtFOSE	109 %			25-150						
	Surrogate: d7-N-MeFOSE	117 %			25-150						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	97.7		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
Certifications:								CTDOH-PH-0723			

**Sample Information**

**Client Sample ID:** DUP

**York Sample ID:** 23D1619-32

<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 7:00 am	<u>Date Received</u> 04/27/2023
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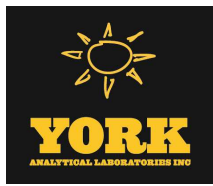
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.125	0.199	1	EPA 1633 Draft 2	05/01/2023 17:34	05/05/2023 02:28	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** DUP

**York Sample ID:** 23D1619-32

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 7:00 am

04/27/2023

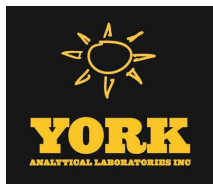
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0596	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.118	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.201	0.206	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.193	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.188	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.213	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.215	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.223	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.183	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.141	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.116	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.166	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.218	0.225	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.123	0.450	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.164	0.225	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.174	0.225	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.215	0.217	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.669	0.855	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.849	0.864	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
375-22-4	<b>Perfluoro-n-butanoic acid (PFBA)</b>	<b>0.172</b>	J	ug/kg dry	0.123	0.900	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 02:28	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	0.156	0.400	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
151772-58-6	* Perfluoro-3,6-dioxheptanoic acid (NFDHA)	ND		ug/kg dry	0.217	0.450	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0697	0.450	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ



### Sample Information

**Client Sample ID:** DUP

**York Sample ID:** 23D1619-32

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Soil

April 26, 2023 7:00 am

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

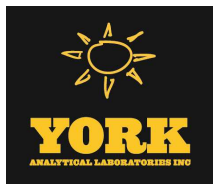
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.108	0.450	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.177	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.669	0.844	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.684	0.900	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.350	0.850	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.277	0.841	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.196	0.850	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.190	0.218	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.139	0.216	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPtPA)	ND		ug/kg dry	0.713	1.12	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.36	5.62	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.69	5.62	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.687	2.25	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
31506-32-8	* N-MeFOA	ND		ug/kg dry	0.202	0.225	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.784	2.25	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ
4151-50-2	* N-EtFOA	ND		ug/kg dry	0.223	0.225	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 02:28	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	134 %	25-150
Surrogate: M5PFHxA	102 %	25-150
Surrogate: M4PFHpA	94.4 %	25-150
Surrogate: M3PFHxS	111 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	92.8 %	25-150
Surrogate: M6PFDA	70.8 %	25-150
Surrogate: M7PFUDA	87.6 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	81.8 %	25-150
Surrogate: M2PFTeDA	82.5 %	10-150



### Sample Information

<b>Client Sample ID:</b> DUP					<b>York Sample ID:</b> 23D1619-32
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 26, 2023 7:00 am	<u>Date Received</u> 04/27/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.693 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	91.2 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	25.2 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	77.4 %			10-150						
	Surrogate: d3-N-MeFOSAA	77.4 %			25-150						
	Surrogate: d5-N-EtFOSAA	89.5 %			25-150						
	Surrogate: M2-6:2 FTS	121 %			25-200						
	Surrogate: M2-8:2 FTS	92.1 %			25-200						
	Surrogate: M9PFNA	104 %			25-150						
	Surrogate: M2-4:2 FTS	114 %			25-150						
	Surrogate: d-N-MeFOSA	57.6 %			25-150						
	Surrogate: d-N-EtFOSA	83.9 %			25-150						
	Surrogate: M3HFPO-DA	120 %			25-150						
	Surrogate: d9-N-EtFOSE	55.6 %			25-150						
	Surrogate: d7-N-MeFOSE	58.2 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	87.7		%	0.100	1	SM 2540G	05/03/2023 15:58	05/03/2023 16:00	AC	
								Certifications: CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> Equipment Blank					<b>York Sample ID:</b> 23D1619-33
<u>York Project (SDG) No.</u> 23D1619	<u>Client Project ID</u> 1 Shore Road, Glenwood Landing, NY 21-215	<u>Matrix</u> Water	<u>Collection Date/Time</u> April 26, 2023 12:00 pm	<u>Date Received</u> 04/27/2023	

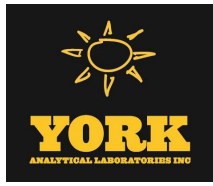
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		ng/L	0.442	1.67	1	EPA 1633 Draft 2	04/30/2023 09:34	05/02/2023 15:47	ESJ
								Certifications: NELAC-NY12058			



### Sample Information

**Client Sample ID:** Equipment Blank

**York Sample ID:** 23D1619-33

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Water

April 26, 2023 12:00 pm

04/27/2023

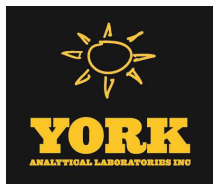
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ng/L	0.329	1.88	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ng/L	0.668	1.88	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		ng/L	0.640	1.72	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ng/L	0.395	1.88	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ng/L	0.772	1.75	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ng/L	0.490	1.88	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ng/L	0.706	1.88	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ng/L	1.06	1.88	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ng/L	0.828	1.88	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	0.697	1.88	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	0.650	1.88	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ
2355-31-9	N-MeFOSAA	ND		ng/L	0.744	1.88	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
2991-50-6	N-EtFOSAA	ND		ng/L	0.970	1.88	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ng/L	0.217	3.77	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	0.828	1.88	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ng/L	0.857	1.80	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	1.24	1.82	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ng/L	0.998	7.15	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	1.93	7.23	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ng/L	0.311	7.53	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ng/L	0.471	3.35	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
151772-58-6	Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ng/L	2.01	3.77	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
377-73-1	Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ng/L	0.235	3.77	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ



### Sample Information

**Client Sample ID:** Equipment Blank

**York Sample ID:** 23D1619-33

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Water

April 26, 2023 12:00 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

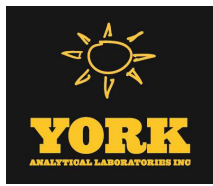
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ng/L	0.348	3.77	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
2706-91-4	Perfluoro-1-pentanesulfonate (PFPeS)	ND		ng/L	0.715	1.77	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ng/L	1.69	7.06	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
13252-13-6	HFPO-DA (Gen-X)	ND		ng/L	3.04	7.53	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
763051-92-9	11CL-PF3OUdS	ND		ng/L	1.30	7.12	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
756426-58-1	9CL-PF3ONS	ND		ng/L	0.659	7.04	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
919005-14-4	ADONA	ND		ng/L	0.499	7.12	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	04/30/2023 09:34	05/02/2023 15:47	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ng/L	0.876	1.83	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ng/L	0.810	1.81	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPPrPA)	ND		ng/L	1.91	4.71	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ng/L	6.90	23.5	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ng/L	8.92	23.5	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ
24448-09-7	* N-MeFOSE	ND		ng/L	3.76	18.8	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ
31506-32-8	* N-MeFOSA	ND		ng/L	1.49	1.88	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ
1691-99-2	* N-EtFOSE	ND		ng/L	3.76	18.8	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ
4151-50-2	* N-EtFOSA	ND		ng/L	1.69	1.88	1	EPA 1633 Draft 2 Certifications:	04/30/2023 09:34	05/02/2023 15:47	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	105 %	25-150
Surrogate: M5PFHxA	94.9 %	25-150
Surrogate: M4PFHpA	105 %	25-150
Surrogate: M3PFHxS	105 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	95.4 %	25-150
Surrogate: M6PFDA	93.3 %	25-150
Surrogate: M7PFUdA	113 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	134 %	25-150
Surrogate: M2PFTeDA	111 %	10-150



**Sample Information**

**Client Sample ID:** Equipment Blank

**York Sample ID:** 23D1619-33

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1619

1 Shore Road, Glenwood Landing, NY 21-215

Water

April 26, 2023 12:00 pm

04/27/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n- [13C4]butanoic acid (MPFBA)	0.674 %			25-150						
	Surrogate: Perfluoro-1- [13C8]octanesulfonic acid (M8PFOS)	96.4 %			25-150						
	Surrogate: Perfluoro-n- [13C5]pentanoic acid (M5PFPeA)	13.8 %			25-150						
	Surrogate: Perfluoro-1- [13C8]octanesulfonamide (M8FOSA)	93.9 %			10-150						
	Surrogate: d3-N-MeFOSAA	139 %			25-150						
	Surrogate: d5-N-EtFOSAA	150 %			25-150						
	Surrogate: M2-6:2 FTS	92.0 %			25-200						
	Surrogate: M2-8:2 FTS	88.0 %			25-200						
	Surrogate: M9PFNA	119 %			25-150						
	Surrogate: M2-4:2 FTS	103 %			25-150						
	Surrogate: d-N-MeFOSA	85.9 %			25-150						
	Surrogate: d-N-EtFOSA	219 %			25-150						
	Surrogate: M3HFPO-DA	113 %			25-150						
	Surrogate: d9-N-EtFOSE	48.0 %			25-150						
	Surrogate: d7-N-MeFOSE	59.5 %			25-150						



## Analytical Batch Summary

**Batch ID:** BD31981      **Preparation Method:** EPA 1633 Prep      **Prepared By:** WJH

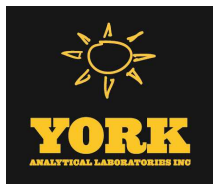
YORK Sample ID	Client Sample ID	Preparation Date
23D1619-33	Equipment Blank	04/30/23
BD31981-BLK1	Blank	04/30/23
BD31981-BS1	LCS	04/30/23
BD31981-BS2	LCS	04/30/23

**Batch ID:** BD32003      **Preparation Method:** EPA 1633 Prep      **Prepared By:** AM

YORK Sample ID	Client Sample ID	Preparation Date
23D1619-06	SB-119 1-3	05/01/23
23D1619-08	SB-120 1-3	04/28/23
23D1619-10	SB-121 1-3	04/28/23
23D1619-11	SB-121 3-5	04/28/23
23D1619-13	SB-122 3-5	04/28/23
23D1619-14	SB-117 1-3	04/28/23
23D1619-15	SB-117 3-5	04/28/23
23D1619-16	SB-116 1-3	04/28/23
23D1619-17	SB-116 3-5	04/28/23
23D1619-18	SB-108 1-3	04/28/23
23D1619-19	SB-108 3-5	04/28/23
BD32003-BLK1	Blank	04/28/23
BD32003-BS1	LCS	04/28/23
BD32003-BS2	LCS	04/28/23
BD32003-DUP1	Duplicate	04/28/23

**Batch ID:** BE30057      **Preparation Method:** EPA 1633 Prep      **Prepared By:** AM

YORK Sample ID	Client Sample ID	Preparation Date
23D1619-01	SB-109 1-3	05/01/23
23D1619-02	SB-109 3-5	05/01/23
23D1619-03	SB-111 3-5	05/01/23
23D1619-04	SB-118 1-3	05/01/23
23D1619-05	SB-118 3-5	05/01/23
23D1619-07	SB-119 3-5	05/01/23
23D1619-09	SB-120 3-5	05/01/23
23D1619-20	SB-103 1-3	05/01/23
23D1619-21	SB-103 16-18	05/01/23
23D1619-22	SB-104 1-3	05/01/23
23D1619-23	SB-104 16-18	05/01/23
23D1619-24	SB-102 1-3	05/01/23
23D1619-25	SB-102 20-22	05/01/23
23D1619-26	SB-101 1-3	05/01/23
23D1619-27	SB-101 23-25	05/01/23
23D1619-28	SB-105 1-3	05/01/23
23D1619-29	SB-105 12-14	05/01/23
23D1619-30	SB-106 1-3	05/01/23



23D1619-31	SB-106 12-14	05/01/23
BE30057-BLK1	Blank	05/01/23
BE30057-BS1	LCS	05/01/23
BE30057-BS2	LCS	05/01/23
BE30057-DUP1	Duplicate	05/01/23
BE30057-DUP2	Duplicate	05/01/23

**Batch ID:** BE30075      **Preparation Method:** EPA 1633 Prep      **Prepared By:** BAMW

YORK Sample ID	Client Sample ID	Preparation Date
23D1619-32	DUP	05/01/23
BE30075-BLK1	Blank	05/01/23
BE30075-BS1	LCS	05/01/23
BE30075-BS2	LCS	05/01/23

**Batch ID:** BE30079      **Preparation Method:** % Solids Prep      **Prepared By:** AC

YORK Sample ID	Client Sample ID	Preparation Date
23D1619-01	SB-109 1-3	05/01/23
23D1619-02	SB-109 3-5	05/01/23
23D1619-03	SB-111 3-5	05/01/23
23D1619-04	SB-118 1-3	05/01/23
23D1619-05	SB-118 3-5	05/01/23
23D1619-06	SB-119 1-3	05/01/23
BE30079-DUP1	Duplicate	05/01/23

**Batch ID:** BE30163      **Preparation Method:** % Solids Prep      **Prepared By:** AC

YORK Sample ID	Client Sample ID	Preparation Date
23D1619-07	SB-119 3-5	05/02/23
23D1619-08	SB-120 1-3	05/02/23
23D1619-09	SB-120 3-5	05/02/23
23D1619-10	SB-121 1-3	05/02/23
23D1619-11	SB-121 3-5	05/02/23
23D1619-12	SB-122 1-3	05/02/23
23D1619-13	SB-122 3-5	05/02/23
23D1619-14	SB-117 1-3	05/02/23
23D1619-15	SB-117 3-5	05/02/23
23D1619-16	SB-116 1-3	05/02/23
BE30163-DUP1	Duplicate	05/02/23

**Batch ID:** BE30249      **Preparation Method:** % Solids Prep      **Prepared By:** AC

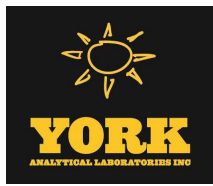
YORK Sample ID	Client Sample ID	Preparation Date
23D1619-17	SB-116 3-5	05/03/23
23D1619-18	SB-108 1-3	05/03/23
23D1619-19	SB-108 3-5	05/03/23
23D1619-20	SB-103 1-3	05/03/23
23D1619-21	SB-103 16-18	05/03/23



23D1619-22	SB-104 1-3	05/03/23
23D1619-23	SB-104 16-18	05/03/23
23D1619-24	SB-102 1-3	05/03/23
23D1619-25	SB-102 20-22	05/03/23
23D1619-26	SB-101 1-3	05/03/23
23D1619-27	SB-101 23-25	05/03/23
23D1619-28	SB-105 1-3	05/03/23
23D1619-29	SB-105 12-14	05/03/23
23D1619-30	SB-106 1-3	05/03/23
23D1619-31	SB-106 12-14	05/03/23
23D1619-32	DUP	05/03/23
BE30249-DUP1	Duplicate	05/03/23

**Batch ID:** BE30533      **Preparation Method:** EPA 1633 Prep      **Prepared By:** BAMW

YORK Sample ID	Client Sample ID	Preparation Date
23D1619-12	SB-122 1-3	05/08/23
BE30533-BLK1	Blank	05/08/23
BE30533-BS1	LCS	05/08/23
BE30533-BS2	LCS	05/08/23



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting	Units	Spike Level	Source*	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
		Limit			Result	%REC			RPD		
<b>Batch BD31981 - EPA 1633 Prep</b>											
<b>Blank (BD31981-BLK1)</b>										Prepared & Analyzed: 04/30/2023	
Perfluorobutanesulfonic acid (PFBS)	ND	3.47	ng/L								
Perfluorohexanoic acid (PFHxA)	ND	3.92	"								
Perfluoroheptanoic acid (PFHpA)	ND	3.92	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	3.58	"								
Perfluorooctanoic acid (PFOA)	1.98	3.92	"								
Perfluorooctanesulfonic acid (PFOS)	ND	3.64	"								
Perfluorononanoic acid (PFNA)	ND	3.92	"								
Perfluorodecanoic acid (PFDA)	ND	3.92	"								
Perfluoroundecanoic acid (PFUnA)	ND	3.92	"								
Perfluorododecanoic acid (PFDoA)	ND	3.92	"								
Perfluorotridecanoic acid (PFTrDA)	ND	3.92	"								
Perfluorotetradecanoic acid (PFTA)	ND	3.92	"								
N-MeFOSAA	ND	3.92	"								
N-EtFOSAA	ND	3.92	"								
Perfluoropentanoic acid (PFPeA)	ND	7.84	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	3.92	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	3.74	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	3.78	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	14.9	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	15.0	"								
Perfluoro-n-butanoic acid (PFBA)	ND	15.7	"								
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	6.97	"								
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	7.84	"								
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	7.84	"								
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	7.84	"								
Perfluoro-1-pentanesulfonate (PFPeS)	ND	3.68	"								
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	14.7	"								
HFPO-DA (Gen-X)	ND	15.7	"								
11CL-PF3OUdS	ND	14.8	"								
9CL-PF3ONS	ND	14.7	"								
ADONA	ND	14.8	"								
Perfluorododecanesulfonic acid (PFDoS)	ND	3.80	"								
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	3.76	"								
3-Perfluoropropyl propanoic acid (FPPrPA)	ND	9.79	"								
3-Perfluoropentyl propanoic acid (FPePA)	ND	49.0	"								
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	49.0	"								
N-MeFOSE	ND	39.2	"								
N-MeFOSA	ND	3.92	"								
N-EtFOSE	ND	39.2	"								
N-EtFOSA	ND	3.92	"								
Surrogate: M3PFBS	55.6		"	45.6		122		25-150			
Surrogate: M5PFHxA	52.8		"	49.0		108		25-150			
Surrogate: M4PFHpA	47.2		"	49.0		96.4		25-150			
Surrogate: M3PFHxS	51.3		"	46.4		110		25-150			
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	48.3		"	49.0		98.7		25-150			
Surrogate: M6PFDA	20.5		"	24.5		83.7		25-150			



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BD31981 - EPA 1633 Prep

Blank (BD31981-BLK1)

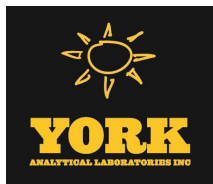
Prepared & Analyzed: 04/30/2023

Surrogate: M7PFUdA	29.6		ng/L	24.5		121	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	26.6		"	24.5		109	25-150				
Surrogate: M2PFTeDA	18.6		"	24.5		75.9	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	185		"	196		94.4	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	56.0		"	46.9		119	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	111		"	97.9		113	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	49.6		"	49.0		101	10-150				
Surrogate: d3-N-MeFOSAA	76.1		"	97.9		77.7	25-150				
Surrogate: d5-N-EtFOSAA	98.3		"	97.9		100	25-150				
Surrogate: M2-6:2 FTS	72.8		"	93.1		78.1	25-200				
Surrogate: M2-8:2 FTS	63.8		"	94.0		67.8	25-200				
Surrogate: M9PFNA	27.4		"	24.5		112	25-150				
Surrogate: M2-4:2 FTS	79.6		"	91.9		86.6	25-150				
Surrogate: d-N-MeFOSA	49.7		"	49.0		102	25-150				
Surrogate: d-N-EtFOSA	68.3		"	49.0		139	25-150				
Surrogate: M3HFPO-DA	267		"	196		136	25-150				
Surrogate: d9-N-EtFOSE	188		"	490		38.3	25-150				
Surrogate: d7-N-MeFOSE	288		"	490		58.8	25-150				

LCS (BD31981-BS1)

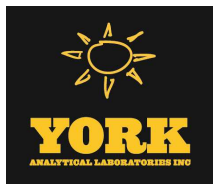
Prepared & Analyzed: 04/30/2023

Perfluorobutanesulfonic acid (PFBS)	66.3	3.52	ng/L	70.4		94.1	50-150				
Perfluorohexanoic acid (PFHxA)	91.5	3.98	"	79.6		115	50-150				
Perfluoroheptanoic acid (PFHpA)	77.5	3.98	"	79.6		97.4	50-150				
Perfluorohexanesulfonic acid (PFHxS)	71.0	3.64	"	72.8		97.5	50-150				
Perfluorooctanoic acid (PFOA)	74.2	3.98	"	79.6		93.2	50-150				
Perfluorooctanesulfonic acid (PFOS)	91.0	3.70	"	74.0		123	50-150				
Perfluorononanoic acid (PFNA)	46.9	3.98	"	79.6		59.0	50-150				
Perfluorodecanoic acid (PFDA)	80.7	3.98	"	79.6		101	50-150				
Perfluoroundecanoic acid (PFUnA)	81.9	3.98	"	79.6		103	50-150				
Perfluorododecanoic acid (PFDoA)	62.7	3.98	"	79.6		78.8	50-150				
Perfluorotridecanoic acid (PFTrDA)	99.5	3.98	"	79.6		125	50-150				
Perfluorotetradecanoic acid (PFTA)	63.4	3.98	"	79.6		79.8	50-150				
N-MeFOSAA	74.7	3.98	"	79.6		93.9	50-150				
N-EtFOSAA	85.1	3.98	"	79.6		107	50-150				
Perfluoropentanoic acid (PFPeA)	135	7.96	"	159		84.9	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	62.9	3.98	"	79.6		79.1	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	74.9	3.80	"	76.0		98.6	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	93.6	3.84	"	76.8		122	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	337	15.1	"	302		111	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	235	15.3	"	305		76.8	50-150				
Perfluoro-n-butanoic acid (PFBA)	310	15.9	"	318		97.5	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	162	7.08	"	142		114	50-150				
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	201	7.96	"	159		126	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	166	7.96	"	159		104	50-150				
Perfluoro-5-oxahexanoic acid (PFMBA)	159	7.96	"	159		100	50-150				



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BD31981 - EPA 1633 Prep</b>											
<b>LCS (BD31981-BS1)</b>											
Prepared & Analyzed: 04/30/2023											
Perfluoro-1-pentanesulfonate (PFPeS)	63.8	3.74	ng/L	74.8		85.4	50-150				
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	248	14.9	"	298		83.0	50-150				
HFPO-DA (Gen-X)	141	15.9	"	159		88.5	50-150				
11CL-PF3OUdS	94.8	15.0	"	150		63.0	50-150				
9CL-PF3ONS	115	14.9	"	149		77.4	50-150				
ADONA	118	15.0	"	150		78.2	50-150				
Perfluorododecanesulfonic acid (PFDoS)	48.2	3.86	"	77.2		62.5	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	74.7	3.82	"	76.4		97.8	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	1520	9.94	"	318		477	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	1770	49.7	"	1590		111	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	313	49.7	"	1590		19.6	50-150	Low Bias			
N-MeFOSE	577	39.8	"	796		72.6	50-150				
N-MeFOSA	51.4	3.98	"	79.6		64.6	50-150				
N-EtFOSE	638	39.8	"	796		80.2	50-150				
N-EtFOSA	51.0	3.98	"	79.6		64.2	50-150				
Surrogate: M3PFBS	60.1		"	46.3		130	25-150				
Surrogate: M5PFHxA	48.4		"	49.7		97.4	25-150				
Surrogate: M4PFHpA	46.2		"	49.7		92.9	25-150				
Surrogate: M3PFHxS	56.5		"	47.1		120	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	56.3		"	49.7		113	25-150				
Surrogate: M6PFDA	21.4		"	24.9		86.0	25-150				
Surrogate: M7PFUdA	24.9		"	24.9		100	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	27.6		"	24.9		111	25-150				
Surrogate: M2PFTeDA	14.6		"	24.9		58.9	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	207		"	199		104	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	50.7		"	47.6		106	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	109		"	99.4		109	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	50.4		"	49.7		101	10-150				
Surrogate: d3-N-MeFOSAA	78.6		"	99.4		79.1	25-150				
Surrogate: d5-N-EtFOSAA	77.1		"	99.4		77.5	25-150				
Surrogate: M2-6:2 FTS	73.1		"	94.6		77.3	25-200				
Surrogate: M2-8:2 FTS	85.0		"	95.5		89.0	25-200				
Surrogate: M9PFNA	40.4		"	24.9		163	25-150				
Surrogate: M2-4:2 FTS	97.9		"	93.3		105	25-150				
Surrogate: d-N-MeFOSA	36.4		"	49.7		73.2	25-150				
Surrogate: d-N-EtFOSA	46.5		"	49.7		93.5	25-150				
Surrogate: M3HFPO-DA	238		"	199		120	25-150				
Surrogate: d9-N-EtFOSE	176		"	497		35.4	25-150				
Surrogate: d7-N-MeFOSE	279		"	497		56.1	25-150				



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BD31981 - EPA 1633 Prep</b>											
<b>LCS (BD31981-BS2)</b>											
Prepared & Analyzed: 04/30/2023											
Perfluorobutanesulfonic acid (PFBS)	14.4	3.37	ng/L	13.5		107	50-150				
Perfluorohexanoic acid (PFHxA)	19.3	3.80	"	15.2		127	50-150				
Perfluoroheptanoic acid (PFHpA)	18.2	3.80	"	15.2		120	50-150				
Perfluorohexanesulfonic acid (PFHxS)	14.1	3.48	"	13.9		101	50-150				
Perfluorooctanoic acid (PFOA)	19.9	3.80	"	15.2		131	50-150				
Perfluorooctanesulfonic acid (PFOS)	15.3	3.54	"	14.2		108	50-150				
Perfluorononanoic acid (PFNA)	9.50	3.80	"	15.2		62.5	50-150				
Perfluorodecanoic acid (PFDA)	17.5	3.80	"	15.2		115	50-150				
Perfluoroundecanoic acid (PFUnA)	15.4	3.80	"	15.2		101	50-150				
Perfluorododecanoic acid (PFDoA)	13.4	3.80	"	15.2		87.7	50-150				
Perfluorotridecanoic acid (PFTriDA)	18.0	3.80	"	15.2		119	50-150				
Perfluorotetradecanoic acid (PFTA)	15.0	3.80	"	15.2		98.8	50-150				
N-MeFOSAA	14.2	3.80	"	15.2		93.4	50-150				
N-EtFOSAA	17.7	3.80	"	15.2		116	50-150				
Perfluoropentanoic acid (PFPeA)	28.9	7.61	"	30.4		94.9	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	11.6	3.80	"	15.2		76.2	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	13.3	3.63	"	14.5		91.4	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	14.1	3.67	"	14.7		95.8	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	78.6	14.5	"	57.8		136	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	61.9	14.6	"	58.4		106	50-150				
Perfluoro-n-butanoic acid (PFBA)	63.3	15.2	"	60.9		104	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	29.1	6.77	"	27.1		108	50-150				
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	37.2	7.61	"	30.4		122	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	36.4	7.61	"	30.4		120	50-150				
Perfluoro-5-oxahexanoic acid (PFMBA)	33.0	7.61	"	30.4		109	50-150				
Perfluoro-1-pentanesulfonate (PFPeS)	14.3	3.58	"	14.3		99.7	50-150				
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	55.4	14.3	"	57.1		97.1	50-150				
HFPO-DA (Gen-X)	34.3	15.2	"	30.4		113	50-150				
11CL-PF3OUdS	19.7	14.4	"	28.8		68.5	50-150				
9CL-PF3ONS	23.2	14.2	"	28.5		81.6	50-150				
ADONA	24.1	14.4	"	28.8		83.7	50-150				
Perfluorododecanesulfonic acid (PFDoS)	11.4	3.69	"	14.8		77.3	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	14.4	3.65	"	14.6		98.6	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	311	9.51	"	60.9		511	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	371	47.6	"	304		122	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	69.1	47.6	"	304		22.7	50-150	Low Bias			
N-MeFOSE	118	38.0	"	152		77.5	50-150				
N-MeFOSA	10.6	3.80	"	15.2		69.5	50-150				
N-EtFOSE	134	38.0	"	152		88.2	50-150				
N-EtFOSA	4.30	3.80	"	15.2		28.3	50-150	Low Bias			
Surrogate: M3PFBS	43.9		"	44.3		99.1	25-150				
Surrogate: M5PFHxA	47.4		"	47.6		99.6	25-150				
Surrogate: M4PFHpA	43.2		"	47.6		90.8	25-150				
Surrogate: M3PFHxS	45.7		"	45.1		101	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	44.3		"	47.6		93.1	25-150				
Surrogate: M6PFDA	25.5		"	23.8		107	25-150				
Surrogate: M7PFUdA	31.1		"	23.8		131	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BD31981 - EPA 1633 Prep

LCS (BD31981-BS2)

Prepared & Analyzed: 04/30/2023

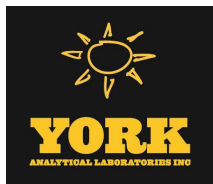
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	25.2		ng/L	23.8		106	25-150				
Surrogate: M2PFTeDA	14.9		"	23.8		62.7	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	204		"	190		107	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	53.1		"	45.6		117	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	97.4		"	95.1		102	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	52.6		"	47.6		111	10-150				
Surrogate: d3-N-MeFOSAA	65.3		"	95.1		68.6	25-150				
Surrogate: d5-N-EtFOSAA	71.2		"	95.1		74.9	25-150				
Surrogate: M2-6:2 FTS	57.8		"	90.5		64.0	25-200				
Surrogate: M2-8:2 FTS	66.2		"	91.3		72.5	25-200				
Surrogate: M9PFNA	40.6		"	23.8		171	25-150				
Surrogate: M2-4:2 FTS	66.9		"	89.2		75.0	25-150				
Surrogate: d-N-MeFOSA	41.9		"	47.6		88.2	25-150				
Surrogate: d-N-EtFOSA	63.7		"	47.6		134	25-150				
Surrogate: M3HFPO-DA	231		"	190		122	25-150				
Surrogate: d9-N-EtFOSE	184		"	476		38.8	25-150				
Surrogate: d7-N-MeFOSE	264		"	476		55.5	25-150				

Batch BD32003 - EPA 1633 Prep

Blank (BD32003-BLK1)

Prepared: 04/28/2023 Analyzed: 05/04/2023

Perfluorobutanesulfonic acid (PFBS)	ND	0.176	ug/kg wet								
Perfluorohexanoic acid (PFHxA)	ND	0.198	"								
Perfluoroheptanoic acid (PFHpA)	ND	0.198	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	0.182	"								
Perfluorooctanoic acid (PFOA)	ND	0.198	"								
Perfluorooctanesulfonic acid (PFOS)	ND	0.185	"								
Perfluorononanoic acid (PFNA)	ND	0.198	"								
Perfluorodecanoic acid (PFDA)	ND	0.198	"								
Perfluoroundecanoic acid (PFUnA)	ND	0.198	"								
Perfluorododecanoic acid (PFDoA)	ND	0.198	"								
Perfluorotridecanoic acid (PFTrDA)	ND	0.198	"								
Perfluorotetradecanoic acid (PFTA)	ND	0.198	"								
N-MeFOSAA	ND	0.198	"								
N-EtFOSAA	ND	0.198	"								
Perfluoropentanoic acid (PFPeA)	ND	0.397	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	0.198	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.198	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	0.191	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	0.754	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	0.762	"								
Perfluoro-n-butanoic acid (PFBA)	ND	0.794	"								
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.353	"								
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.397	"								
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.397	"								



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BD32003 - EPA 1633 Prep**

**Blank (BD32003-BLK1)**

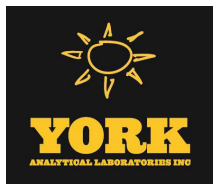
Prepared: 04/28/2023 Analyzed: 05/04/2023

Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.397	ug/kg wet								
Perfluoro-1-pentanesulfonate (PFPeS)	ND	0.187	"								
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	0.744	"								
HFPO-DA (Gen-X)	ND	0.794	"								
11CL-PF3OUdS	ND	0.750	"								
9CL-PF3ONS	ND	0.742	"								
ADONA	ND	0.750	"								
Perfluorododecanesulfonic acid (PFDoS)	ND	0.192	"								
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	0.190	"								
3-Perfluoropropyl propanoic acid (FPrPA)	ND	0.992	"								
3-Perfluoropentyl propanoic acid (FPePA)	ND	4.96	"								
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	4.96	"								
N-MeFOSE	ND	1.98	"								
N-MeFOSA	ND	0.198	"								
N-EtFOSE	ND	1.98	"								
N-EtFOSA	ND	0.198	"								
<i>Surrogate: M3PFBS</i>	2.41		"	2.31		104	25-150				
<i>Surrogate: M5PFHxA</i>	2.49		"	2.48		100	25-150				
<i>Surrogate: M4PFHpA</i>	2.27		"	2.48		91.4	25-150				
<i>Surrogate: M3PFHxS</i>	1.75		"	2.35		74.4	25-150				
<i>Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)</i>	2.06		"	2.48		82.9	25-150				
<i>Surrogate: M6PFDA</i>	0.523		"	1.24		42.2	25-150				
<i>Surrogate: M7PFUdA</i>	0.794		"	1.24		64.0	25-150				
<i>Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)</i>	0.547		"	1.24		44.1	25-150				
<i>Surrogate: M2PFTeDA</i>	0.611		"	1.24		49.3	10-150				
<i>Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)</i>	11.7		"	9.92		117	25-150				
<i>Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)</i>	1.74		"	2.38		73.4	25-150				
<i>Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)</i>	6.13		"	4.96		124	25-150				
<i>Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)</i>	1.16		"	2.48		46.9	10-150				
<i>Surrogate: d3-N-MeFOSAA</i>	2.80		"	4.96		56.4	25-150				
<i>Surrogate: d5-N-EtFOSAA</i>	2.52		"	4.96		50.7	25-150				
<i>Surrogate: M2-6:2 FTS</i>	4.06		"	4.72		86.0	25-200				
<i>Surrogate: M2-8:2 FTS</i>	2.61		"	4.76		54.8	25-200				
<i>Surrogate: M9PFNA</i>	0.958		"	1.24		77.2	25-150				
<i>Surrogate: M2-4:2 FTS</i>	3.77		"	4.65		81.1	25-150				
<i>Surrogate: d-N-MeFOSA</i>	1.08		"	2.48		43.5	25-150				
<i>Surrogate: d-N-EtFOSA</i>	2.60		"	2.48		105	25-150				
<i>Surrogate: M3HFPO-DA</i>	11.5		"	9.92		116	25-150				
<i>Surrogate: d9-N-EtFOSE</i>	8.61		"	24.8		34.7	25-150				
<i>Surrogate: d7-N-MeFOSE</i>	10.1		"	24.8		40.6	25-150				



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BD32003 - EPA 1633 Prep</b>											
<b>LCS (BD32003-BS1)</b>											
Prepared: 04/28/2023 Analyzed: 05/04/2023											
Perfluorobutanesulfonic acid (PFBS)	3.95	0.175	ug/kg wet	3.50		113	50-150				
Perfluorohexanoic acid (PFHxA)	5.17	0.198	"	3.95		131	50-150				
Perfluoroheptanoic acid (PFHpA)	4.46	0.198	"	3.95		113	50-150				
Perfluorohexanesulfonic acid (PFHxS)	4.25	0.181	"	3.62		117	50-150				
Perfluorooctanoic acid (PFOA)	4.37	0.198	"	3.95		111	50-150				
Perfluorooctanesulfonic acid (PFOS)	5.10	0.184	"	3.68		139	50-150				
Perfluorononanoic acid (PFNA)	5.65	0.198	"	3.95		143	50-150				
Perfluorodecanoic acid (PFDA)	4.75	0.198	"	3.95		120	50-150				
Perfluoroundecanoic acid (PFUnA)	5.57	0.198	"	3.95		141	50-150				
Perfluorododecanoic acid (PFDoA)	3.29	0.198	"	3.95		83.3	50-150				
Perfluorotridecanoic acid (PFTriDA)	4.29	0.198	"	3.95		109	50-150				
Perfluorotetradecanoic acid (PFTA)	4.18	0.198	"	3.95		106	50-150				
N-MeFOSAA	3.95	0.198	"	3.95		100	50-150				
N-EtFOSAA	5.27	0.198	"	3.95		133	50-150				
Perfluoropentanoic acid (PFPeA)	8.48	0.395	"	7.91		107	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	4.29	0.198	"	3.95		108	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	4.94	0.198	"	3.77		131	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	4.79	0.191	"	3.81		126	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	17.0	0.751	"	15.0		113	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	9.02	0.759	"	15.2		59.5	50-150				
Perfluoro-n-butanoic acid (PFBA)	18.6	0.791	"	15.8		118	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	9.27	0.352	"	7.04		132	50-150				
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	11.8	0.395	"	7.91		149	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	10.1	0.395	"	7.91		127	50-150				
Perfluoro-5-oxahexanoic acid (PFMBA)	9.57	0.395	"	7.91		121	50-150				
Perfluoro-1-pentanesulfonate (PFPeS)	5.25	0.186	"	3.72		141	50-150				
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	17.4	0.741	"	14.8		117	50-150				
HFPO-DA (Gen-X)	7.75	0.791	"	7.91		98.1	50-150				
11CL-PF3OUdS	3.36	0.747	"	7.47		45.0	50-150	Low Bias			
9CL-PF3ONS	3.61	0.739	"	7.39		48.9	50-150	Low Bias			
ADONA	5.91	0.747	"	7.47		79.2	50-150				
Perfluorododecanesulfonic acid (PFDoS)	4.07	0.192	"	3.83		106	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	3.55	0.190	"	3.79		93.7	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	56.9	0.988	"	15.8		360	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	97.7	4.94	"	79.1		124	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	19.6	4.94	"	79.1		24.8	50-150	Low Bias			
N-MeFOSE	30.4	1.98	"	39.5		77.0	50-150				
N-MeFOSA	4.40	0.198	"	3.95		111	50-150				
N-EtFOSE	35.4	1.98	"	39.5		89.4	50-150				
N-EtFOSA	1.70	0.198	"	3.95		42.9	50-150	Low Bias			
Surrogate: M3PFBS	2.84		"	2.30		123	25-150				
Surrogate: M5PFHxA	2.56		"	2.47		104	25-150				
Surrogate: M4PFHpA	2.37		"	2.47		96.0	25-150				
Surrogate: M3PFHxS	1.95		"	2.34		83.2	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	1.94		"	2.47		78.5	25-150				
Surrogate: M6PFDA	0.581		"	1.24		47.0	25-150				
Surrogate: M7PFUDA	0.596		"	1.24		48.2	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BD32003 - EPA 1633 Prep

LCS (BD32003-BS1)

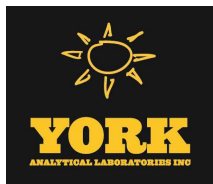
Prepared: 04/28/2023 Analyzed: 05/04/2023

Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.710		ug/kg wet	1.24		57.5	25-150				
Surrogate: M2PFTeDA	0.655		"	1.24		53.0	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	11.5		"	9.88		116	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.42		"	2.37		60.0	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	6.20		"	4.94		125	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	0.857		"	2.47		34.7	10-150				
Surrogate: d3-N-MeFOSAA	2.65		"	4.94		53.6	25-150				
Surrogate: d5-N-EtFOSAA	2.01		"	4.94		40.6	25-150				
Surrogate: M2-6:2 FTS	4.90		"	4.70		104	25-200				
Surrogate: M2-8:2 FTS	4.33		"	4.74		91.4	25-200				
Surrogate: M9PFNA	0.721		"	1.24		58.3	25-150				
Surrogate: M2-4:2 FTS	5.08		"	4.63		110	25-150				
Surrogate: d-N-MeFOSA	1.00		"	2.47		40.6	25-150				
Surrogate: d-N-EtFOSA	2.79		"	2.47		113	25-150				
Surrogate: M3HFPO-DA	12.1		"	9.88		123	25-150				
Surrogate: d9-N-EtFOSE	9.27		"	24.7		37.5	25-150				
Surrogate: d7-N-MeFOSE	11.3		"	24.7		45.6	25-150				

LCS (BD32003-BS2)

Prepared: 04/28/2023 Analyzed: 05/04/2023

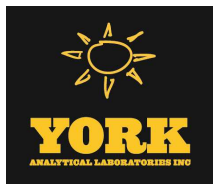
Perfluorobutanesulfonic acid (PFBS)	0.628	0.176	ug/kg wet	0.704		89.3	50-150				
Perfluorohexanoic acid (PFHxA)	0.844	0.199	"	0.795		106	50-150				
Perfluoroheptanoic acid (PFHpA)	0.754	0.199	"	0.795		94.8	50-150				
Perfluorohexanesulfonic acid (PFHxS)	0.692	0.182	"	0.728		95.1	50-150				
Perfluorooctanoic acid (PFOA)	0.879	0.199	"	0.795		110	50-150				
Perfluorooctanesulfonic acid (PFOS)	0.532	0.185	"	0.740		71.9	50-150				
Perfluorononanoic acid (PFNA)	0.659	0.199	"	0.795		82.9	50-150				
Perfluorodecanoic acid (PFDA)	0.777	0.199	"	0.795		97.7	50-150				
Perfluoroundecanoic acid (PFUnA)	1.45	0.199	"	0.795		182	50-150			High Bias	
Perfluorododecanoic acid (PFDoA)	0.681	0.199	"	0.795		85.7	50-150				
Perfluorotridecanoic acid (PFTrDA)	0.965	0.199	"	0.795		121	50-150				
Perfluorotetradecanoic acid (PFTA)	0.688	0.199	"	0.795		86.5	50-150				
N-MeFOSAA	0.282	0.199	"	0.795		35.5	50-150			Low Bias	
N-EtFOSAA	0.901	0.199	"	0.795		113	50-150				
Perfluoropentanoic acid (PFPeA)	1.57	0.398	"	1.59		98.6	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	0.632	0.199	"	0.795		79.5	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	0.562	0.199	"	0.759		74.0	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	0.324	0.192	"	0.767		42.3	50-150			Low Bias	
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	3.01	0.755	"	3.02		99.5	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	2.95	0.763	"	3.05		96.6	50-150				
Perfluoro-n-butanoic acid (PFBA)	3.18	0.795	"	3.18		99.9	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	1.60	0.354	"	1.42		113	50-150				
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	2.00	0.398	"	1.59		126	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	1.78	0.398	"	1.59		112	50-150				
Perfluoro-5-oxahexanoic acid (PFMBA)	1.51	0.398	"	1.59		95.2	50-150				
Perfluoro-1-pentanesulfonate (PFPeS)	0.725	0.187	"	0.748		97.0	50-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BD32003 - EPA 1633 Prep</b>											
<b>LCS (BD32003-BS2)</b>											
Prepared: 04/28/2023 Analyzed: 05/04/2023											
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	2.65	0.746	ug/kg wet	2.98		88.9	50-150				
HFPO-DA (Gen-X)	1.32	0.795	"	1.59		82.9	50-150				
11CL-PF3OUdS	0.555	0.751	"	1.50		36.9	50-150	Low Bias			
9CL-PF3ONS	0.598	0.744	"	1.49		40.2	50-150	Low Bias			
ADONA	1.04	0.751	"	1.50		69.2	50-150				
Perfluorododecanesulfonic acid (PFDoS)	0.288	0.193	"	0.771		37.3	50-150	Low Bias			
Perfluoro-1-nonanesulfonic acid (PFNS)	0.548	0.191	"	0.763		71.8	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	10.1	0.994	"	3.18		318	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	18.9	4.97	"	15.9		119	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	3.55	4.97	"	15.9		22.3	50-150	Low Bias			
N-MeFOSE	6.12	1.99	"	7.95		76.9	50-150				
N-MeFOSA	0.665	0.199	"	0.795		83.7	50-150				
N-EtFOSE	6.82	1.99	"	7.95		85.7	50-150				
N-EtFOSA	0.255	0.199	"	0.795		32.1	50-150	Low Bias			
Surrogate: M3PFBS	2.84		"	2.32		123	25-150				
Surrogate: M5PFHxA	2.27		"	2.49		91.4	25-150				
Surrogate: M4PFHpA	1.97		"	2.49		79.3	25-150				
Surrogate: M3PFHxS	1.94		"	2.36		82.3	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	1.99		"	2.49		80.1	25-150				
Surrogate: M6PFDA	0.568		"	1.24		45.7	25-150				
Surrogate: M7PFUdA	0.553		"	1.24		44.5	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.601		"	1.24		48.3	25-150				
Surrogate: M2PFTeDA	0.514		"	1.24		41.4	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	11.2		"	9.94		113	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.83		"	2.38		76.7	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	5.85		"	4.97		118	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.03		"	2.49		41.4	10-150				
Surrogate: d3-N-MeFOSAA	2.39		"	4.97		48.1	25-150				
Surrogate: d5-N-EtFOSAA	1.53		"	4.97		30.7	25-150				
Surrogate: M2-6:2 FTS	3.53		"	4.73		74.7	25-200				
Surrogate: M2-8:2 FTS	2.96		"	4.77		62.1	25-200				
Surrogate: M9PFNA	0.905		"	1.24		72.8	25-150				
Surrogate: M2-4:2 FTS	5.01		"	4.66		108	25-150				
Surrogate: d-N-MeFOSA	1.49		"	2.49		60.0	25-150				
Surrogate: d-N-EtFOSA	2.75		"	2.49		111	25-150				
Surrogate: M3HFPO-DA	11.1		"	9.94		111	25-150				
Surrogate: d9-N-EtFOSE	7.16		"	24.9		28.8	25-150				
Surrogate: d7-N-MeFOSE	8.89		"	24.9		35.8	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BD32003 - EPA 1633 Prep</b>											
<b>Duplicate (BD32003-DUP1)</b>	*Source sample: 23D1619-06 (SB-119 1-3)						Prepared: 04/28/2023 Analyzed: 05/04/2023				
Perfluorobutanesulfonic acid (PFBS)	ND	0.189	ug/kg dry		ND					30	
Perfluorohexanoic acid (PFHxA)	ND	0.214	"		ND					30	
Perfluoroheptanoic acid (PFHpA)	ND	0.214	"		ND					30	
Perfluorohexanesulfonic acid (PFHxS)	ND	0.196	"		ND					30	
Perfluorooctanoic acid (PFOA)	ND	0.214	"		ND					30	
Perfluorooctanesulfonic acid (PFOS)	ND	0.199	"		ND					30	
Perfluorononanoic acid (PFNA)	ND	0.214	"		ND					30	
Perfluorodecanoic acid (PFDA)	ND	0.214	"		ND					30	
Perfluoroundecanoic acid (PFUnA)	ND	0.214	"		ND					30	
Perfluorododecanoic acid (PFDoA)	ND	0.214	"		ND					30	
Perfluorotridecanoic acid (PFTriDA)	ND	0.214	"		ND					30	
Perfluorotetradecanoic acid (PFTA)	ND	0.214	"		ND					30	
N-MeFOSAA	ND	0.214	"		ND					30	
N-EtFOSAA	ND	0.214	"		ND					30	
Perfluoropentanoic acid (PFPeA)	ND	0.428	"		ND					30	
Perfluoro-1-octanesulfonamide (FOSA)	ND	0.214	"		ND					30	
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.214	"		ND					30	
Perfluoro-1-decanesulfonic acid (PFDS)	ND	0.207	"		ND					30	
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	0.814	"		ND					30	
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	0.822	"		ND					30	
Perfluoro-n-butanoic acid (PFBA)	ND	0.856	"		ND					30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.381	"		ND					30	
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.428	"		ND					30	
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.428	"		ND					30	
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.428	"		ND					30	
Perfluoro-1-pentanesulfonate (PFPeS)	ND	0.201	"		ND					30	
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	0.803	"		ND					30	
HFPO-DA (Gen-X)	ND	0.856	"		ND					30	
11CL-PF3OUdS	ND	0.809	"		ND					30	
9CL-PF3ONS	ND	0.801	"		ND					30	
ADONA	ND	0.809	"		ND					30	
Perfluorododecanesulfonic acid (PFDoS)	ND	0.208	"		ND					30	
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	0.206	"		ND					30	
3-Perfluoropropyl propanoic acid (FPPrPA)	ND	1.07	"		ND					30	
3-Perfluoropentyl propanoic acid (FPePA)	ND	5.35	"		ND					30	
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	5.35	"		ND					30	
N-MeFOSE	ND	2.14	"		ND					30	
N-MeFOSA	ND	0.214	"		ND					30	
N-EtFOSE	ND	2.14	"		ND					30	
N-EtFOSA	ND	0.214	"		ND					30	
Surrogate: M3PFBS	3.39		"	2.49		136	25-150				
Surrogate: M5PFHxA	3.27		"	2.68		122	25-150				
Surrogate: M4PFHpA	3.11		"	2.68		116	25-150				
Surrogate: M3PFHxS	3.71		"	2.54		146	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	3.28		"	2.68		123	25-150				
Surrogate: M6PFDA	1.01		"	1.34		75.4	25-150				
Surrogate: M7PFUdA	1.37		"	1.34		102	25-150				



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

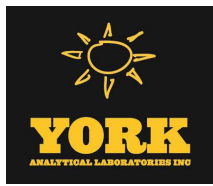
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BD32003 - EPA 1633 Prep**

Duplicate (BD32003-DUP1)	*Source sample: 23D1619-06 (SB-119 1-3)				Prepared: 04/28/2023 Analyzed: 05/04/2023		
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	1.49		ug/kg dry	1.34	111	25-150	
Surrogate: M2PFTeDA	1.44		"	1.34	107	10-150	
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	12.5		"	10.7	116	25-150	
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	3.11		"	2.56	121	25-150	
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	6.82		"	5.35	127	25-150	
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	2.39		"	2.68	89.5	10-150	
Surrogate: d3-N-MeFOSAA	7.52		"	5.35	140	25-150	
Surrogate: d5-N-EtFOSAA	7.01		"	5.35	131	25-150	
Surrogate: M2-6:2 FTS	5.99		"	5.09	118	25-200	
Surrogate: M2-8:2 FTS	5.46		"	5.14	106	25-200	
Surrogate: M9PFNA	2.07		"	1.34	155	25-150	
Surrogate: M2-4:2 FTS	6.50		"	5.02	130	25-150	
Surrogate: d-N-MeFOSA	1.65		"	2.68	61.8	25-150	
Surrogate: d-N-EtFOSA	3.95		"	2.68	148	25-150	
Surrogate: M3HFPO-DA	14.8		"	10.7	138	25-150	
Surrogate: d9-N-EtFOSE	20.2		"	26.8	75.4	25-150	
Surrogate: d7-N-MeFOSE	21.5		"	26.8	80.2	25-150	

**Batch BE30057 - EPA 1633 Prep**

Blank (BE30057-BLK1)	Prepared: 05/01/2023 Analyzed: 05/04/2023					
Perfluorobutanesulfonic acid (PFBS)	ND	0.176	ug/kg wet			
Perfluorohexanoic acid (PFHxA)	ND	0.198	"			
Perfluoroheptanoic acid (PFHpA)	ND	0.198	"			
Perfluorohexanesulfonic acid (PFHxS)	ND	0.182	"			
Perfluorooctanoic acid (PFOA)	ND	0.198	"			
Perfluorooctanesulfonic acid (PFOS)	ND	0.185	"			
Perfluorononanoic acid (PFNA)	ND	0.198	"			
Perfluorodecanoic acid (PFDA)	ND	0.198	"			
Perfluoroundecanoic acid (PFUnA)	ND	0.198	"			
Perfluorododecanoic acid (PFDoA)	ND	0.198	"			
Perfluorotridecanoic acid (PFTrDA)	ND	0.198	"			
Perfluorotetradecanoic acid (PFTA)	ND	0.198	"			
N-MeFOSAA	ND	0.198	"			
N-EtFOSAA	ND	0.198	"			
Perfluoropentanoic acid (PFPeA)	ND	0.397	"			
Perfluoro-1-octanesulfonamide (FOSA)	ND	0.198	"			
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.198	"			
Perfluoro-1-decanesulfonic acid (PFDS)	ND	0.191	"			
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	0.754	"			
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	0.762	"			
Perfluoro-n-butanoic acid (PFBA)	ND	0.794	"			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.353	"			
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.397	"			
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.397	"			



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

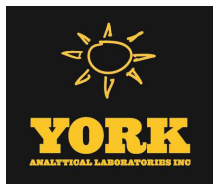
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BE30057 - EPA 1633 Prep**

**Blank (BE30057-BLK1)**

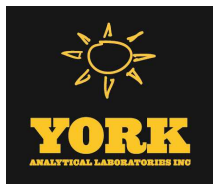
Prepared: 05/01/2023 Analyzed: 05/04/2023

Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.397	ug/kg wet								
Perfluoro-1-pentanesulfonate (PFPeS)	ND	0.187	"								
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	0.744	"								
HFPO-DA (Gen-X)	ND	0.794	"								
11CL-PF3OUdS	ND	0.750	"								
9CL-PF3ONS	ND	0.742	"								
ADONA	ND	0.750	"								
Perfluorododecanesulfonic acid (PFDoS)	ND	0.192	"								
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	0.190	"								
3-Perfluoropropyl propanoic acid (FPrPA)	ND	0.992	"								
3-Perfluoropentyl propanoic acid (FPePA)	ND	4.96	"								
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	4.96	"								
N-MeFOSE	ND	1.98	"								
N-MeFOSA	ND	0.198	"								
N-EtFOSE	ND	1.98	"								
N-EtFOSA	ND	0.198	"								
<i>Surrogate: M3PFBS</i>	3.23		"	2.31		140	25-150				
<i>Surrogate: M5PFHxA</i>	2.56		"	2.48		103	25-150				
<i>Surrogate: M4PFHpA</i>	2.40		"	2.48		96.6	25-150				
<i>Surrogate: M3PFHxS</i>	2.43		"	2.35		103	25-150				
<i>Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)</i>	1.88		"	2.48		75.6	25-150				
<i>Surrogate: M6PFDA</i>	0.987		"	1.24		79.6	25-150				
<i>Surrogate: M7PFUdA</i>	0.968		"	1.24		78.1	25-150				
<i>Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)</i>	0.851		"	1.24		68.6	25-150				
<i>Surrogate: M2PFTeDA</i>	0.795		"	1.24		64.1	10-150				
<i>Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)</i>	10.3		"	9.92		104	25-150				
<i>Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)</i>	1.58		"	2.38		66.3	25-150				
<i>Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)</i>	5.60		"	4.96		113	25-150				
<i>Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)</i>	1.46		"	2.48		58.8	10-150				
<i>Surrogate: d3-N-MeFOSAA</i>	2.72		"	4.96		54.8	25-150				
<i>Surrogate: d5-N-EtFOSAA</i>	3.09		"	4.96		62.3	25-150				
<i>Surrogate: M2-6:2 FTS</i>	4.37		"	4.72		92.6	25-200				
<i>Surrogate: M2-8:2 FTS</i>	4.70		"	4.76		98.6	25-200				
<i>Surrogate: M9PFNA</i>	1.16		"	1.24		93.6	25-150				
<i>Surrogate: M2-4:2 FTS</i>	4.60		"	4.65		98.9	25-150				
<i>Surrogate: d-N-MeFOSA</i>	1.06		"	2.48		42.6	25-150				
<i>Surrogate: d-N-EtFOSA</i>	2.15		"	2.48		86.7	25-150				
<i>Surrogate: M3HFPO-DA</i>	11.8		"	9.92		119	25-150				
<i>Surrogate: d9-N-EtFOSE</i>	8.19		"	24.8		33.0	25-150				
<i>Surrogate: d7-N-MeFOSE</i>	10.8		"	24.8		43.7	25-150				



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting		Spike Level	Source*		%REC Limits	Flag	RPD	
		Limit	Units		Result	%REC			RPD	Limit
<b>Batch BE30057 - EPA 1633 Prep</b>										
<b>LCS (BE30057-BS1)</b>										
Prepared: 05/01/2023 Analyzed: 05/04/2023										
Perfluorobutanesulfonic acid (PFBS)	3.30	0.176	ug/kg wet	3.51	94.1	50-150				
Perfluorohexanoic acid (PFHxA)	4.49	0.198	"	3.97	113	50-150				
Perfluoroheptanoic acid (PFHpA)	4.16	0.198	"	3.97	105	50-150				
Perfluorohexanesulfonic acid (PFHxS)	3.38	0.182	"	3.63	93.0	50-150				
Perfluorooctanoic acid (PFOA)	4.87	0.198	"	3.97	123	50-150				
Perfluorooctanesulfonic acid (PFOS)	4.47	0.185	"	3.69	121	50-150				
Perfluorononanoic acid (PFNA)	2.91	0.198	"	3.97	73.4	50-150				
Perfluorodecanoic acid (PFDA)	5.19	0.198	"	3.97	131	50-150				
Perfluoroundecanoic acid (PFUnA)	5.72	0.198	"	3.97	144	50-150				
Perfluorododecanoic acid (PFDoA)	3.04	0.198	"	3.97	76.5	50-150				
Perfluorotridecanoic acid (PFTrDA)	3.59	0.198	"	3.97	90.4	50-150				
Perfluorotetradecanoic acid (PFTA)	3.32	0.198	"	3.97	83.6	50-150				
N-MeFOSAA	4.95	0.198	"	3.97	125	50-150				
N-EtFOSAA	4.63	0.198	"	3.97	117	50-150				
Perfluoropentanoic acid (PFPeA)	8.46	0.397	"	7.94	107	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	3.54	0.198	"	3.97	89.3	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	4.68	0.198	"	3.79	123	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	3.76	0.191	"	3.83	98.1	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	19.7	0.754	"	15.1	130	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	13.1	0.762	"	15.2	85.9	50-150				
Perfluoro-n-butanoic acid (PFBA)	13.6	0.794	"	15.9	85.6	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	8.05	0.353	"	7.06	114	50-150				
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	9.57	0.397	"	7.94	121	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	1.25	0.397	"	7.94	15.7	50-150			Low Bias	
Perfluoro-5-oxahexanoic acid (PFMBA)	11.6	0.397	"	7.94	146	50-150				
Perfluoro-1-pentanesulfonate (PFPeS)	4.28	0.187	"	3.73	115	50-150				
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	14.6	0.744	"	14.9	98.3	50-150				
HFPO-DA (Gen-X)	7.97	0.794	"	7.94	100	50-150				
11CL-PF3OUdS	3.58	0.750	"	7.50	47.7	50-150			Low Bias	
9CL-PF3ONS	4.89	0.742	"	7.42	65.9	50-150				
ADONA	6.00	0.750	"	7.50	80.0	50-150				
Perfluorododecanesulfonic acid (PFDoS)	5.01	0.192	"	3.85	130	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	4.99	0.190	"	3.81	131	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	53.2	0.992	"	15.9	335	50-150			High Bias	
3-Perfluoropentyl propanoic acid (FPePA)	84.9	4.96	"	79.4	107	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	13.6	4.96	"	79.4	17.2	50-150			Low Bias	
N-MeFOSE	34.8	1.98	"	39.7	87.6	50-150				
N-MeFOSA	2.27	0.198	"	3.97	57.2	50-150				
N-EtFOSE	34.3	1.98	"	39.7	86.4	50-150				
N-EtFOSA	1.78	0.198	"	3.97	44.9	50-150			Low Bias	
Surrogate: M3PFBS	2.79		"	2.31	121	25-150				
Surrogate: M5PFHxA	2.37		"	2.48	95.6	25-150				
Surrogate: M4PFHpA	1.97		"	2.48	79.5	25-150				
Surrogate: M3PFHxS	1.99		"	2.35	84.8	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	1.71		"	2.48	69.1	25-150				
Surrogate: M6PFDA	0.554		"	1.24	44.6	25-150				
Surrogate: M7PFUDA	0.600		"	1.24	48.4	25-150				



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BE30057 - EPA 1633 Prep**

**LCS (BE30057-BS1)**

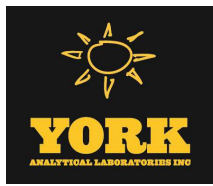
Prepared: 05/01/2023 Analyzed: 05/04/2023

Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.617		ug/kg wet	1.24		49.8	25-150				
Surrogate: M2PFTeDA	0.689		"	1.24		55.5	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.391		"	9.92		3.94	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.36		"	2.38		57.2	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	3.43		"	4.96		69.1	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.16		"	2.48		46.6	10-150				
Surrogate: d3-N-MeFOSAA	2.92		"	4.96		58.9	25-150				
Surrogate: d5-N-EtFOSAA	2.27		"	4.96		45.8	25-150				
Surrogate: M2-6:2 FTS	3.36		"	4.72		71.2	25-200				
Surrogate: M2-8:2 FTS	3.44		"	4.76		72.3	25-200				
Surrogate: M9PFNA	1.18		"	1.24		95.1	25-150				
Surrogate: M2-4:2 FTS	4.91		"	4.65		106	25-150				
Surrogate: d-N-MeFOSA	1.64		"	2.48		65.9	25-150				
Surrogate: d-N-EtFOSA	2.53		"	2.48		102	25-150				
Surrogate: M3HFPO-DA	10.1		"	9.92		102	25-150				
Surrogate: d9-N-EtFOSE	9.03		"	24.8		36.4	25-150				
Surrogate: d7-N-MeFOSE	10.3		"	24.8		41.4	25-150				

**LCS (BE30057-BS2)**

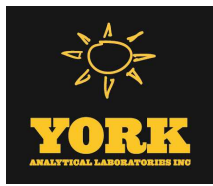
Prepared: 05/01/2023 Analyzed: 05/04/2023

Perfluorobutanesulfonic acid (PFBS)	0.642	0.176	ug/kg wet	0.704		91.2	50-150				
Perfluorohexanoic acid (PFHxA)	0.866	0.199	"	0.795		109	50-150				
Perfluoroheptanoic acid (PFHpA)	0.729	0.199	"	0.795		91.7	50-150				
Perfluorohexanesulfonic acid (PFHxS)	0.810	0.182	"	0.728		111	50-150				
Perfluorooctanoic acid (PFOA)	0.851	0.199	"	0.795		107	50-150				
Perfluorooctanesulfonic acid (PFOS)	0.898	0.185	"	0.740		121	50-150				
Perfluorononanoic acid (PFNA)	0.516	0.199	"	0.795		64.9	50-150				
Perfluorodecanoic acid (PFDA)	1.02	0.199	"	0.795		128	50-150				
Perfluoroundecanoic acid (PFUnA)	0.925	0.199	"	0.795		116	50-150				
Perfluorododecanoic acid (PFDoA)	0.744	0.199	"	0.795		93.5	50-150				
Perfluorotridecanoic acid (PFTrDA)	0.610	0.199	"	0.795		76.7	50-150				
Perfluorotetradecanoic acid (PFTA)	0.816	0.199	"	0.795		103	50-150				
N-MeFOSAA	0.421	0.199	"	0.795		53.0	50-150				
N-EtFOSAA	0.440	0.199	"	0.795		55.4	50-150				
Perfluoropentanoic acid (PFPeA)	1.64	0.398	"	1.59		103	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	0.590	0.199	"	0.795		74.2	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	1.24	0.199	"	0.759		163	50-150	High Bias			
Perfluoro-1-decanesulfonic acid (PFDS)	1.01	0.192	"	0.767		131	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	4.24	0.755	"	3.02		140	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	3.47	0.763	"	3.05		114	50-150				
Perfluoro-n-butanoic acid (PFBA)	3.38	0.795	"	3.18		106	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	1.68	0.354	"	1.42		119	50-150				
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	2.08	0.398	"	1.59		131	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	1.94	0.398	"	1.59		122	50-150				
Perfluoro-5-oxahexanoic acid (PFMBA)	1.82	0.398	"	1.59		114	50-150				
Perfluoro-1-pentanesulfonate (PFPeS)	0.780	0.187	"	0.748		104	50-150				



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

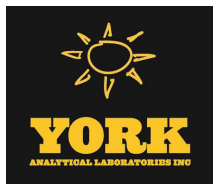
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30057 - EPA 1633 Prep</b>											
<b>LCS (BE30057-BS2)</b>											
Prepared: 05/01/2023 Analyzed: 05/04/2023											
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	3.90	0.746	ug/kg wet	2.98		131	50-150				
HFPO-DA (Gen-X)	1.08	0.795	"	1.59		68.1	50-150				
11CL-PF3OUdS	0.758	0.751	"	1.50		50.4	50-150				
9CL-PF3ONS	1.06	0.744	"	1.49		71.5	50-150				
ADONA	1.31	0.751	"	1.50		87.5	50-150				
Perfluorododecanesulfonic acid (PFDoS)	0.703	0.193	"	0.771		91.1	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	0.933	0.191	"	0.763		122	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	15.0	0.994	"	3.18		472	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	19.7	4.97	"	15.9		124	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	3.81	4.97	"	15.9		23.9	50-150	Low Bias			
N-MeFOSE	6.75	1.99	"	7.95		84.9	50-150				
N-MeFOSA	0.564	0.199	"	0.795		70.9	50-150				
N-EtFOSE	6.21	1.99	"	7.95		78.1	50-150				
N-EtFOSA	0.601	0.199	"	0.795		75.6	50-150				
Surrogate: M3PFBS	2.87		"	2.32		124	25-150				
Surrogate: M5PFHxA	2.65		"	2.49		107	25-150				
Surrogate: M4PFHpA	2.66		"	2.49		107	25-150				
Surrogate: M3PFHxS	2.24		"	2.36		95.3	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	2.33		"	2.49		93.6	25-150				
Surrogate: M6PFDA	0.541		"	1.24		43.5	25-150				
Surrogate: M7PFUdA	0.824		"	1.24		66.3	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.767		"	1.24		61.8	25-150				
Surrogate: M2PFTeDA	0.760		"	1.24		61.2	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	10.3		"	9.94		104	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.74		"	2.38		73.2	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	5.59		"	4.97		112	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.80		"	2.49		72.4	10-150				
Surrogate: d3-N-MeFOSAA	3.49		"	4.97		70.1	25-150				
Surrogate: d5-N-EtFOSAA	3.15		"	4.97		63.3	25-150				
Surrogate: M2-6:2 FTS	3.81		"	4.73		80.7	25-200				
Surrogate: M2-8:2 FTS	3.41		"	4.77		71.4	25-200				
Surrogate: M9PFNA	1.45		"	1.24		117	25-150				
Surrogate: M2-4:2 FTS	4.20		"	4.66		90.0	25-150				
Surrogate: d-N-MeFOSA	1.27		"	2.49		51.1	25-150				
Surrogate: d-N-EtFOSA	2.55		"	2.49		102	25-150				
Surrogate: M3HFPO-DA	12.1		"	9.94		121	25-150				
Surrogate: d9-N-EtFOSE	11.1		"	24.9		44.6	25-150				
Surrogate: d7-N-MeFOSE	12.0		"	24.9		48.2	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag	
<b>Batch BE30057 - EPA 1633 Prep</b>												
<b>Duplicate (BE30057-DUP1)</b>		*Source sample: 23D1619-23 (SB-104 16-18)						Prepared: 05/01/2023 Analyzed: 05/04/2023				
Perfluorobutanesulfonic acid (PFBS)	ND	0.201	ug/kg dry		ND					30		
Perfluorohexanoic acid (PFHxA)	ND	0.227	"		ND					30		
Perfluoroheptanoic acid (PFHpA)	ND	0.227	"		ND					30		
Perfluorohexanesulfonic acid (PFHxS)	ND	0.207	"		ND					30		
Perfluorooctanoic acid (PFOA)	ND	0.227	"		ND					30		
Perfluorooctanesulfonic acid (PFOS)	0.208	0.211	"		0.193				7.16	30		
Perfluorononanoic acid (PFNA)	ND	0.227	"		ND					30		
Perfluorodecanoic acid (PFDA)	ND	0.227	"		ND					30		
Perfluoroundecanoic acid (PFUnA)	ND	0.227	"		ND					30		
Perfluorododecanoic acid (PFDoA)	ND	0.227	"		ND					30		
Perfluorotridecanoic acid (PFTriDA)	ND	0.227	"		ND					30		
Perfluorotetradecanoic acid (PFTA)	ND	0.227	"		ND					30		
N-MeFOSAA	ND	0.227	"		ND					30		
N-EtFOSAA	ND	0.227	"		ND					30		
Perfluoropentanoic acid (PFPeA)	ND	0.453	"		ND					30		
Perfluoro-1-octanesulfonamide (FOSA)	ND	0.227	"		ND					30		
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.227	"		ND					30		
Perfluoro-1-decanesulfonic acid (PFDS)	ND	0.219	"		ND					30		
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	0.861	"		ND					30		
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	0.870	"		ND					30		
Perfluoro-n-butanoic acid (PFBA)	ND	0.907	"		ND					30		
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.403	"		ND					30		
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.453	"		ND					30		
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.453	"		ND					30		
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.453	"		ND					30		
Perfluoro-1-pentanesulfonate (PFPeS)	ND	0.213	"		ND					30		
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	0.850	"		ND					30		
HFPO-DA (Gen-X)	ND	0.907	"		ND					30		
11CL-PF3OUdS	ND	0.857	"		ND					30		
9CL-PF3ONS	ND	0.848	"		ND					30		
ADONA	ND	0.857	"		ND					30		
Perfluorododecanesulfonic acid (PFDoS)	ND	0.220	"		ND					30		
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	0.218	"		ND					30		
3-Perfluoropropyl propanoic acid (FPrPA)	ND	1.13	"		ND					30		
3-Perfluoropentyl propanoic acid (FPePA)	ND	5.67	"		ND					30		
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	5.67	"		ND					30		
N-MeFOSE	ND	2.27	"		ND					30		
N-MeFOSA	ND	0.227	"		ND					30		
N-EtFOSE	ND	2.27	"		ND					30		
N-EtFOSA	ND	0.227	"		ND					30		
Surrogate: M3PFBS	3.21		"	2.64		122	25-150					
Surrogate: M5PFHxA	3.06		"	2.83		108	25-150					
Surrogate: M4PFHpA	2.70		"	2.83		95.3	25-150					
Surrogate: M3PFHxS	3.07		"	2.69		114	25-150					
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	2.60		"	2.83		91.7	25-150					
Surrogate: M6PFDA	1.21		"	1.42		85.1	25-150					
Surrogate: M7PFUdA	1.19		"	1.42		83.9	25-150					



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BE30057 - EPA 1633 Prep

Duplicate (BE30057-DUP1)

\*Source sample: 23D1619-23 (SB-104 16-18)

Prepared: 05/01/2023 Analyzed: 05/04/2023

Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	1.14		ug/kg dry	1.42		80.5	25-150				
Surrogate: M2PFTeDA	1.02		"	1.42		71.9	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	11.2		"	11.3		99.2	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	2.06		"	2.71		75.9	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	6.13		"	5.67		108	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	2.13		"	2.83		75.2	10-150				
Surrogate: d3-N-MeFOSAA	4.16		"	5.67		73.3	25-150				
Surrogate: d5-N-EtFOSAA	4.57		"	5.67		80.7	25-150				
Surrogate: M2-6:2 FTS	6.26		"	5.39		116	25-200				
Surrogate: M2-8:2 FTS	6.54		"	5.44		120	25-200				
Surrogate: M9PFNA	1.49		"	1.42		105	25-150				
Surrogate: M2-4:2 FTS	4.45		"	5.31		83.8	25-150				
Surrogate: d-N-MeFOSA	1.93		"	2.83		68.1	25-150				
Surrogate: d-N-EtFOSA	3.18		"	2.83		112	25-150				
Surrogate: M3HFPO-DA	12.4		"	11.3		110	25-150				
Surrogate: d9-N-EtFOSE	17.0		"	28.3		59.9	25-150				
Surrogate: d7-N-MeFOSE	18.3		"	28.3		64.8	25-150				

Duplicate (BE30057-DUP2)

\*Source sample: 23D1619-07 (SB-119 3-5)

Prepared: 05/01/2023 Analyzed: 05/05/2023

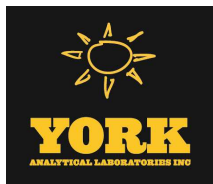
Perfluorobutanesulfonic acid (PFBS)	ND	0.195	ug/kg dry		ND					30	
Perfluorohexanoic acid (PFHxA)	ND	0.220	"		ND					30	
Perfluoroheptanoic acid (PFHpA)	ND	0.220	"		ND					30	
Perfluorohexanesulfonic acid (PFHxS)	ND	0.201	"		ND					30	
Perfluorooctanoic acid (PFOA)	ND	0.220	"		ND					30	
Perfluorooctanesulfonic acid (PFOS)	ND	0.205	"		ND					30	
Perfluorononanoic acid (PFNA)	ND	0.220	"		ND					30	
Perfluorodecanoic acid (PFDA)	ND	0.220	"		ND					30	
Perfluoroundecanoic acid (PFUnA)	ND	0.220	"		ND					30	
Perfluorododecanoic acid (PFDoA)	ND	0.220	"		ND					30	
Perfluorotridecanoic acid (PFTrDA)	ND	0.220	"		ND					30	
Perfluorotetradecanoic acid (PFTA)	ND	0.220	"		ND					30	
N-MeFOSAA	ND	0.220	"		ND					30	
N-EtFOSAA	ND	0.220	"		ND					30	
Perfluoropentanoic acid (PFPeA)	0.154	0.440	"		ND					30	
Perfluoro-1-octanesulfonamide (FOSA)	ND	0.220	"		ND					30	
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.220	"		ND					30	
Perfluoro-1-decanesulfonic acid (PFDS)	ND	0.212	"		ND					30	
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	0.836	"		ND					30	
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	0.845	"		ND					30	
Perfluoro-n-butanoic acid (PFBA)	ND	0.880	"		ND					30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.392	"		ND					30	
Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND	0.440	"		ND					30	
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.440	"		ND					30	
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.440	"		ND					30	
Perfluoro-1-pentanesulfonate (PFPeS)	ND	0.207	"		ND					30	



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

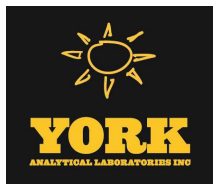
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30057 - EPA 1633 Prep</b>											
<b>Duplicate (BE30057-DUP2)</b>	*Source sample: 23D1619-07 (SB-119 3-5)						Prepared: 05/01/2023 Analyzed: 05/05/2023				
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	0.825	ug/kg dry		ND					30	
HFPO-DA (Gen-X)	ND	0.880	"		ND					30	
11CL-PF3OUdS	ND	0.832	"		ND					30	
9CL-PF3ONS	ND	0.823	"		ND					30	
ADONA	ND	0.832	"		ND					30	
Perfluorododecanesulfonic acid (PFDoS)	ND	0.213	"		ND					30	
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	0.211	"		ND					30	
3-Perfluoropropyl propanoic acid (FPrPA)	ND	1.10	"		ND					30	
3-Perfluoropentyl propanoic acid (FPePA)	ND	5.50	"		ND					30	
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	5.50	"		ND					30	
N-MeFOSE	ND	2.20	"		ND					30	
N-MeFOSA	ND	0.220	"		ND					30	
N-EtFOSE	ND	2.20	"		ND					30	
N-EtFOSA	ND	0.220	"		ND					30	
Surrogate: M3PFBS	2.50		"	2.56		97.5	25-150				
Surrogate: M5PFHxA	2.74		"	2.75		99.4	25-150				
Surrogate: M4PFHpA	2.66		"	2.75		96.8	25-150				
Surrogate: M3PFHxS	2.94		"	2.61		113	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	2.32		"	2.75		84.5	25-150				
Surrogate: M6PFDA	1.30		"	1.38		94.7	25-150				
Surrogate: M7PFUdA	1.59		"	1.38		116	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	1.39		"	1.38		101	25-150				
Surrogate: M2PFTeDA	1.26		"	1.38		91.8	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.0827		"	11.0		0.752	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	3.03		"	2.64		115	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	0.328		"	5.50		5.95	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	2.30		"	2.75		83.5	10-150				
Surrogate: d3-N-MeFOSAA	5.14		"	5.50		93.5	25-150				
Surrogate: d5-N-EtFOSAA	5.00		"	5.50		90.8	25-150				
Surrogate: M2-6:2 FTS	4.50		"	5.23		85.9	25-200				
Surrogate: M2-8:2 FTS	5.03		"	5.28		95.2	25-200				
Surrogate: M9PFNA	1.38		"	1.38		100	25-150				
Surrogate: M2-4:2 FTS	4.80		"	5.16		92.9	25-150				
Surrogate: d-N-MeFOSA	1.92		"	2.75		69.6	25-150				
Surrogate: d-N-EtFOSA	2.97		"	2.75		108	25-150				
Surrogate: M3HFPO-DA	11.1		"	11.0		101	25-150				
Surrogate: d9-N-EtFOSE	17.5		"	27.5		63.6	25-150				
Surrogate: d7-N-MeFOSE	17.9		"	27.5		65.1	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30075 - EPA 1633 Prep</b>											
<b>Blank (BE30075-BLK1)</b>											
Prepared: 05/01/2023 Analyzed: 05/05/2023											
Perfluorobutanesulfonic acid (PFBS)	ND	0.177	ug/kg wet								
Perfluorohexanoic acid (PFHxA)	ND	0.200	"								
Perfluoroheptanoic acid (PFHpA)	ND	0.200	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	0.183	"								
Perfluorooctanoic acid (PFOA)	ND	0.200	"								
Perfluorooctanesulfonic acid (PFOS)	ND	0.186	"								
Perfluorononanoic acid (PFNA)	ND	0.200	"								
Perfluorodecanoic acid (PFDA)	ND	0.200	"								
Perfluoroundecanoic acid (PFUnA)	ND	0.200	"								
Perfluorododecanoic acid (PFDoA)	ND	0.200	"								
Perfluorotridecanoic acid (PFTriDA)	ND	0.200	"								
Perfluorotetradecanoic acid (PFTA)	ND	0.200	"								
N-MeFOSAA	ND	0.200	"								
N-EtFOSAA	ND	0.200	"								
Perfluoropentanoic acid (PFPeA)	ND	0.400	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	0.200	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.200	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	0.193	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	0.760	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	0.768	"								
Perfluoro-n-butanoic acid (PFBA)	ND	0.800	"								
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.356	"								
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.400	"								
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.400	"								
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.400	"								
Perfluoro-1-pentanesulfonate (PFPeS)	ND	0.188	"								
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	0.750	"								
HFPO-DA (Gen-X)	ND	0.800	"								
11CL-PF3OUdS	ND	0.756	"								
9CL-PF3ONS	ND	0.748	"								
ADONA	ND	0.756	"								
Perfluorododecanesulfonic acid (PFDoS)	ND	0.194	"								
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	0.192	"								
3-Perfluoropropyl propanoic acid (FPrPA)	ND	1.00	"								
3-Perfluoropentyl propanoic acid (FPePA)	ND	5.00	"								
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	5.00	"								
N-MeFOSE	ND	2.00	"								
N-MeFOSA	ND	0.200	"								
N-EtFOSE	ND	2.00	"								
N-EtFOSA	ND	0.200	"								
Surrogate: M3PFBS	2.70		"	2.33		116	25-150				
Surrogate: M5PFHxA	2.47		"	2.50		98.7	25-150				
Surrogate: M4PFHpA	2.35		"	2.50		94.1	25-150				
Surrogate: M3PFHxS	2.00		"	2.37		84.4	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	1.93		"	2.50		77.4	25-150				
Surrogate: M6PFDA	0.922		"	1.25		73.8	25-150				
Surrogate: M7PFUDA	0.924		"	1.25		73.9	25-150				



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BE30075 - EPA 1633 Prep**

**Blank (BE30075-BLK1)**

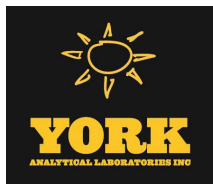
Prepared: 05/01/2023 Analyzed: 05/05/2023

Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.717		ug/kg wet	1.25		57.4	25-150				
Surrogate: M2PFTeDA	0.596		"	1.25		47.7	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	9.36		"	10.0		93.6	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.64		"	2.40		68.4	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	5.38		"	5.00		108	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.43		"	2.50		57.2	10-150				
Surrogate: d3-N-MeFOSAA	2.38		"	5.00		47.7	25-150				
Surrogate: d5-N-EtFOSAA	2.15		"	5.00		43.1	25-150				
Surrogate: M2-6:2 FTS	5.06		"	4.76		106	25-200				
Surrogate: M2-8:2 FTS	3.53		"	4.80		73.5	25-200				
Surrogate: M9PFNA	1.17		"	1.25		93.4	25-150				
Surrogate: M2-4:2 FTS	4.93		"	4.69		105	25-150				
Surrogate: d-N-MeFOSA	1.03		"	2.50		41.1	25-150				
Surrogate: d-N-EtFOSA	2.07		"	2.50		82.6	25-150				
Surrogate: M3HFPO-DA	10.5		"	10.0		105	25-150				
Surrogate: d9-N-EtFOSE	3.87		"	25.0		15.5	25-150				
Surrogate: d7-N-MeFOSE	6.02		"	25.0		24.1	25-150				

**LCS (BE30075-BS1)**

Prepared: 05/01/2023 Analyzed: 05/05/2023

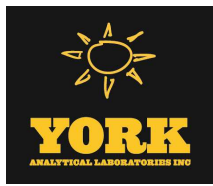
Perfluorobutanesulfonic acid (PFBS)	3.54	0.175	ug/kg wet	3.50		101	50-150				
Perfluorohexanoic acid (PFHxA)	3.81	0.198	"	3.96		96.1	50-150				
Perfluoroheptanoic acid (PFHpA)	3.88	0.198	"	3.96		97.9	50-150				
Perfluorohexanesulfonic acid (PFHxS)	3.74	0.181	"	3.62		103	50-150				
Perfluorooctanoic acid (PFOA)	4.22	0.198	"	3.96		107	50-150				
Perfluorooctanesulfonic acid (PFOS)	3.75	0.184	"	3.68		102	50-150				
Perfluorononanoic acid (PFNA)	2.07	0.198	"	3.96		52.3	50-150				
Perfluorodecanoic acid (PFDA)	3.05	0.198	"	3.96		77.0	50-150				
Perfluoroundecanoic acid (PFUnA)	5.36	0.198	"	3.96		135	50-150				
Perfluorododecanoic acid (PFDoA)	3.50	0.198	"	3.96		88.4	50-150				
Perfluorotridecanoic acid (PFTrDA)	3.95	0.198	"	3.96		99.7	50-150				
Perfluorotetradecanoic acid (PFTA)	3.58	0.198	"	3.96		90.4	50-150				
N-MeFOSAA	5.29	0.198	"	3.96		133	50-150				
N-EtFOSAA	4.24	0.198	"	3.96		107	50-150				
Perfluoropentanoic acid (PFPeA)	7.71	0.396	"	7.92		97.3	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	4.23	0.198	"	3.96		107	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	3.45	0.198	"	3.78		91.1	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	3.19	0.191	"	3.82		83.4	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	14.4	0.752	"	15.0		95.8	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	20.1	0.760	"	15.2		132	50-150				
Perfluoro-n-butanoic acid (PFBA)	13.3	0.792	"	15.8		83.9	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	8.00	0.352	"	7.05		113	50-150				
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	8.69	0.396	"	7.92		110	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	1.48	0.396	"	7.92		18.6	50-150			Low Bias	
Perfluoro-5-oxahexanoic acid (PFMBA)	14.5	0.396	"	7.92		183	50-150			High Bias	
Perfluoro-1-pentanesulfonate (PFPeS)	4.49	0.186	"	3.72		120	50-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

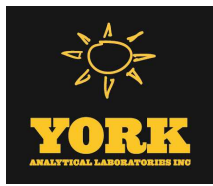
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30075 - EPA 1633 Prep</b>											
<b>LCS (BE30075-BS1)</b>											
Prepared: 05/01/2023 Analyzed: 05/05/2023											
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	14.4	0.743	ug/kg wet	14.9		97.0	50-150				
HFPO-DA (Gen-X)	7.45	0.792	"	7.92		94.0	50-150				
11CL-PF3OUdS	3.28	0.749	"	7.49		43.8	50-150	Low Bias			
9CL-PF3ONS	4.63	0.741	"	7.41		62.5	50-150				
ADONA	5.31	0.749	"	7.49		70.9	50-150				
Perfluorododecanesulfonic acid (PFDoS)	4.49	0.192	"	3.84		117	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	3.92	0.190	"	3.80		103	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	43.2	0.990	"	15.8		273	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	72.5	4.95	"	79.2		91.6	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	11.2	4.95	"	79.2		14.1	50-150	Low Bias			
N-MeFOSE	31.9	1.98	"	39.6		80.6	50-150				
N-MeFOSA	2.88	0.198	"	3.96		72.8	50-150				
N-EtFOSE	30.0	1.98	"	39.6		75.8	50-150				
N-EtFOSA	2.06	0.198	"	3.96		52.1	50-150				
Surrogate: M3PFBS	2.46		"	2.31		107	25-150				
Surrogate: M5PFHxA	2.24		"	2.48		90.4	25-150				
Surrogate: M4PFHpA	1.54		"	2.48		62.2	25-150				
Surrogate: M3PFHxS	1.38		"	2.35		59.0	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	1.35		"	2.48		54.4	25-150				
Surrogate: M6PFDA	0.678		"	1.24		54.8	25-150				
Surrogate: M7PFUdA	0.616		"	1.24		49.8	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.667		"	1.24		53.9	25-150				
Surrogate: M2PFTeDA	0.657		"	1.24		53.1	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.346		"	9.90		3.49	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.34		"	2.37		56.6	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	1.53		"	4.95		30.9	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	0.770		"	2.48		31.1	10-150				
Surrogate: d3-N-MeFOSAA	1.71		"	4.95		34.6	25-150				
Surrogate: d5-N-EtFOSAA	2.04		"	4.95		41.3	25-150				
Surrogate: M2-6:2 FTS	3.63		"	4.71		77.2	25-200				
Surrogate: M2-8:2 FTS	2.46		"	4.75		51.8	25-200				
Surrogate: M9PFNA	1.15		"	1.24		93.2	25-150				
Surrogate: M2-4:2 FTS	4.43		"	4.64		95.5	25-150				
Surrogate: d-N-MeFOSA	0.984		"	2.48		39.7	25-150				
Surrogate: d-N-EtFOSA	2.12		"	2.48		85.6	25-150				
Surrogate: M3HFPO-DA	9.52		"	9.90		96.1	25-150				
Surrogate: d9-N-EtFOSE	10.3		"	24.8		41.7	25-150				
Surrogate: d7-N-MeFOSE	10.6		"	24.8		42.9	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30075 - EPA 1633 Prep</b>											
<b>LCS (BE30075-BS2)</b>											
Prepared: 05/01/2023 Analyzed: 05/05/2023											
Perfluorobutanesulfonic acid (PFBS)	0.823	0.177	ug/kg wet	0.707		116	50-150				
Perfluorohexanoic acid (PFHxA)	1.01	0.200	"	0.798		127	50-150				
Perfluoroheptanoic acid (PFHpA)	0.816	0.200	"	0.798		102	50-150				
Perfluorohexanesulfonic acid (PFHxS)	0.678	0.183	"	0.731		92.8	50-150				
Perfluorooctanoic acid (PFOA)	1.07	0.200	"	0.798		134	50-150				
Perfluorooctanesulfonic acid (PFOS)	1.04	0.186	"	0.743		140	50-150				
Perfluorononanoic acid (PFNA)	0.681	0.200	"	0.798		85.3	50-150				
Perfluorodecanoic acid (PFDA)	0.882	0.200	"	0.798		110	50-150				
Perfluoroundecanoic acid (PFUnA)	1.36	0.200	"	0.798		170	50-150	High Bias			
Perfluorododecanoic acid (PFDoA)	1.06	0.200	"	0.798		133	50-150				
Perfluorotridecanoic acid (PFTriDA)	0.881	0.200	"	0.798		110	50-150				
Perfluorotetradecanoic acid (PFTA)	0.691	0.200	"	0.798		86.5	50-150				
N-MeFOSAA	0.866	0.200	"	0.798		108	50-150				
N-EtFOSAA	0.825	0.200	"	0.798		103	50-150				
Perfluoropentanoic acid (PFPeA)	1.78	0.399	"	1.60		112	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	0.660	0.200	"	0.798		82.7	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	1.69	0.200	"	0.762		222	50-150	High Bias			
Perfluoro-1-decanesulfonic acid (PFDS)	1.14	0.193	"	0.770		149	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	3.94	0.758	"	3.03		130	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	3.03	0.766	"	3.07		98.8	50-150				
Perfluoro-n-butanoic acid (PFBA)	3.02	0.798	"	3.19		94.7	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	1.88	0.355	"	1.42		132	50-150				
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	1.89	0.399	"	1.60		119	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	0.274	0.399	"	1.60		17.2	50-150	Low Bias			
Perfluoro-5-oxahexanoic acid (PFMBA)	3.61	0.399	"	1.60		226	50-150	High Bias			
Perfluoro-1-pentanesulfonate (PFPeS)	0.890	0.188	"	0.750		119	50-150				
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	3.34	0.749	"	2.99		112	50-150				
HFPO-DA (Gen-X)	1.88	0.798	"	1.60		118	50-150				
11CL-PF3OUdS	0.827	0.754	"	1.51		54.8	50-150				
9CL-PF3ONS	0.961	0.747	"	1.49		64.4	50-150				
ADONA	1.39	0.754	"	1.51		92.1	50-150				
Perfluorododecanesulfonic acid (PFDoS)	0.938	0.194	"	0.774		121	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	1.49	0.192	"	0.766		194	50-150	High Bias			
3-Perfluoropropyl propanoic acid (FPPrPA)	12.2	0.998	"	3.19		382	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	18.7	4.99	"	16.0		117	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	2.57	4.99	"	16.0		16.1	50-150	Low Bias			
N-MeFOSE	7.40	2.00	"	7.98		92.7	50-150				
N-MeFOSA	0.764	0.200	"	0.798		95.7	50-150				
N-EtFOSE	7.54	2.00	"	7.98		94.5	50-150				
N-EtFOSA	0.542	0.200	"	0.798		67.9	50-150				
Surrogate: M3PFBS	2.47		"	2.33		106	25-150				
Surrogate: M5PFHxA	2.48		"	2.50		99.4	25-150				
Surrogate: M4PFHpA	2.27		"	2.50		91.1	25-150				
Surrogate: M3PFHxS	2.26		"	2.37		95.7	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	1.83		"	2.50		73.2	25-150				
Surrogate: M6PFDA	0.680		"	1.25		54.5	25-150				
Surrogate: M7PFUDA	0.690		"	1.25		55.3	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BE30075 - EPA 1633 Prep

LCS (BE30075-BS2)

Prepared: 05/01/2023 Analyzed: 05/05/2023

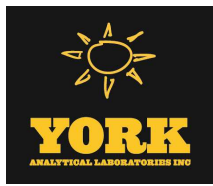
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.647		ug/kg wet	1.25		51.8	25-150				
Surrogate: M2PFTeDA	0.778		"	1.25		62.4	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.313		"	9.98		3.13	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.30		"	2.39		54.3	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	1.37		"	4.99		27.4	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.69		"	2.50		67.8	10-150				
Surrogate: d3-N-MeFOSAA	3.50		"	4.99		70.1	25-150				
Surrogate: d5-N-EtFOSAA	3.02		"	4.99		60.5	25-150				
Surrogate: M2-6:2 FTS	3.16		"	4.75		66.5	25-200				
Surrogate: M2-8:2 FTS	2.62		"	4.79		54.7	25-200				
Surrogate: M9PFNA	1.13		"	1.25		90.2	25-150				
Surrogate: M2-4:2 FTS	4.25		"	4.68		90.8	25-150				
Surrogate: d-N-MeFOSA	1.38		"	2.50		55.2	25-150				
Surrogate: d-N-EtFOSA	2.70		"	2.50		108	25-150				
Surrogate: M3HFPO-DA	11.3		"	9.98		113	25-150				
Surrogate: d9-N-EtFOSE	13.4		"	25.0		53.8	25-150				
Surrogate: d7-N-MeFOSE	14.2		"	25.0		56.8	25-150				

Batch BE30533 - EPA 1633 Prep

Blank (BE30533-BLK1)

Prepared: 05/08/2023 Analyzed: 05/10/2023

Perfluorobutanesulfonic acid (PFBS)	ND	0.175	ug/kg wet								
Perfluorohexanoic acid (PFHxA)	ND	0.198	"								
Perfluoroheptanoic acid (PFHpA)	ND	0.198	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	0.181	"								
Perfluorooctanoic acid (PFOA)	ND	0.198	"								
Perfluorooctanesulfonic acid (PFOS)	ND	0.184	"								
Perfluorononanoic acid (PFNA)	ND	0.198	"								
Perfluorodecanoic acid (PFDA)	ND	0.198	"								
Perfluoroundecanoic acid (PFUnA)	ND	0.198	"								
Perfluorododecanoic acid (PFDoA)	ND	0.198	"								
Perfluorotridecanoic acid (PFTrDA)	ND	0.198	"								
Perfluorotetradecanoic acid (PFTA)	ND	0.198	"								
N-MeFOSAA	ND	0.198	"								
N-EtFOSAA	ND	0.198	"								
Perfluoropentanoic acid (PFPeA)	ND	0.395	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	0.198	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.198	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	0.191	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	0.751	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	0.759	"								
Perfluoro-n-butanoic acid (PFBA)	ND	0.791	"								
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.352	"								
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.395	"								
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.395	"								



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

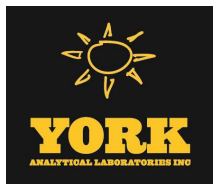
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BE30533 - EPA 1633 Prep**

**Blank (BE30533-BLK1)**

Prepared: 05/08/2023 Analyzed: 05/10/2023

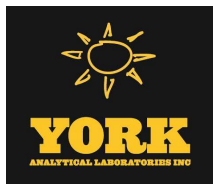
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.395	ug/kg wet								
Perfluoro-1-pentanesulfonate (PFPeS)	ND	0.186	"								
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	0.741	"								
HFPO-DA (Gen-X)	ND	0.791	"								
11CL-PF3OUdS	ND	0.747	"								
9CL-PF3ONS	ND	0.739	"								
ADONA	ND	0.747	"								
Perfluorododecanesulfonic acid (PFDoS)	ND	0.192	"								
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	0.190	"								
3-Perfluoropropyl propanoic acid (FPrPA)	ND	0.988	"								
3-Perfluoropentyl propanoic acid (FPePA)	ND	4.94	"								
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	4.94	"								
N-MeFOSE	ND	1.98	"								
N-MeFOSA	ND	0.198	"								
N-EtFOSE	ND	1.98	"								
N-EtFOSA	ND	0.198	"								
<i>Surrogate: M3PFBS</i>	3.07		"	2.30		133	25-150				
<i>Surrogate: M5PFHxA</i>	2.53		"	2.47		103	25-150				
<i>Surrogate: M4PFHpA</i>	2.51		"	2.47		102	25-150				
<i>Surrogate: M3PFHxS</i>	2.11		"	2.34		90.0	25-150				
<i>Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)</i>	1.68		"	2.47		68.2	25-150				
<i>Surrogate: M6PFDA</i>	0.747		"	1.24		60.5	25-150				
<i>Surrogate: M7PFUdA</i>	0.899		"	1.24		72.8	25-150				
<i>Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)</i>	0.865		"	1.24		70.1	25-150				
<i>Surrogate: M2PFTeDA</i>	0.851		"	1.24		68.9	10-150				
<i>Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)</i>	9.59		"	9.88		97.0	25-150				
<i>Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)</i>	1.40		"	2.37		59.0	25-150				
<i>Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)</i>	5.33		"	4.94		108	25-150				
<i>Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)</i>	1.69		"	2.47		68.3	10-150				
<i>Surrogate: d3-N-MeFOSAA</i>	3.63		"	4.94		73.5	25-150				
<i>Surrogate: d5-N-EtFOSAA</i>	3.13		"	4.94		63.4	25-150				
<i>Surrogate: M2-6:2 FTS</i>	4.09		"	4.70		87.1	25-200				
<i>Surrogate: M2-8:2 FTS</i>	2.19		"	4.74		46.1	25-200				
<i>Surrogate: M9PFNA</i>	0.853		"	1.24		69.0	25-150				
<i>Surrogate: M2-4:2 FTS</i>	6.42		"	4.63		138	25-150				
<i>Surrogate: d-N-MeFOSA</i>	1.23		"	2.47		49.6	25-150				
<i>Surrogate: d-N-EtFOSA</i>	4.71		"	2.47		191	25-150				
<i>Surrogate: M3HFPO-DA</i>	11.9		"	9.88		120	25-150				
<i>Surrogate: d9-N-EtFOSE</i>	12.8		"	24.7		51.8	25-150				
<i>Surrogate: d7-N-MeFOSE</i>	13.8		"	24.7		55.7	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30533 - EPA 1633 Prep</b>											
<b>LCS (BE30533-BS1)</b>											
Prepared: 05/08/2023 Analyzed: 05/10/2023											
Perfluorobutanesulfonic acid (PFBS)	3.57	0.176	ug/kg wet	3.51		102	50-150				
Perfluorohexanoic acid (PFHxA)	4.48	0.198	"	3.97		113	50-150				
Perfluoroheptanoic acid (PFHpA)	3.61	0.198	"	3.97		91.0	50-150				
Perfluorohexanesulfonic acid (PFHxS)	3.60	0.182	"	3.63		99.0	50-150				
Perfluorooctanoic acid (PFOA)	4.76	0.198	"	3.97		120	50-150				
Perfluorooctanesulfonic acid (PFOS)	5.28	0.185	"	3.69		143	50-150				
Perfluorononanoic acid (PFNA)	2.64	0.198	"	3.97		66.6	50-150				
Perfluorodecanoic acid (PFDA)	3.58	0.198	"	3.97		90.1	50-150				
Perfluoroundecanoic acid (PFUnA)	4.84	0.198	"	3.97		122	50-150				
Perfluorododecanoic acid (PFDoA)	3.43	0.198	"	3.97		86.4	50-150				
Perfluorotridecanoic acid (PFTrDA)	3.14	0.198	"	3.97		79.2	50-150				
Perfluorotetradecanoic acid (PFTA)	3.36	0.198	"	3.97		84.6	50-150				
N-MeFOSAA	4.55	0.198	"	3.97		115	50-150				
N-EtFOSAA	4.42	0.198	"	3.97		111	50-150				
Perfluoropentanoic acid (PFPeA)	7.84	0.397	"	7.94		98.7	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	3.68	0.198	"	3.97		92.7	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	4.32	0.198	"	3.79		114	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	4.26	0.191	"	3.83		111	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	17.2	0.754	"	15.1		114	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	13.4	0.762	"	15.2		87.6	50-150				
Perfluoro-n-butanoic acid (PFBA)	16.6	0.794	"	15.9		104	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.82	0.353	"	7.06		111	50-150				
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	9.49	0.397	"	7.94		120	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	7.76	0.397	"	7.94		97.8	50-150				
Perfluoro-5-oxahexanoic acid (PFMBA)	7.21	0.397	"	7.94		90.8	50-150				
Perfluoro-1-pentanesulfonate (PFPeS)	3.74	0.187	"	3.73		100	50-150				
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	14.4	0.744	"	14.9		96.6	50-150				
HFPO-DA (Gen-X)	7.24	0.794	"	7.94		91.2	50-150				
11CL-PF3OUdS	4.48	0.750	"	7.50		59.7	50-150				
9CL-PF3ONS	5.04	0.742	"	7.42		67.9	50-150				
ADONA	6.25	0.750	"	7.50		83.4	50-150				
Perfluorododecanesulfonic acid (PFDoS)	4.16	0.192	"	3.85		108	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	4.63	0.190	"	3.81		122	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	58.3	0.992	"	15.9		367	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	84.9	4.96	"	79.4		107	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	16.1	4.96	"	79.4		20.3	50-150	Low Bias			
N-MeFOSE	32.4	1.98	"	39.7		81.5	50-150				
N-MeFOSA	4.12	0.198	"	3.97		104	50-150				
N-EtFOSE	32.3	1.98	"	39.7		81.3	50-150				
N-EtFOSA	1.42	0.198	"	3.97		35.7	50-150	Low Bias			
Surrogate: M3PFBS	2.49		"	2.31		108	25-150				
Surrogate: M5PFHxA	2.31		"	2.48		93.1	25-150				
Surrogate: M4PFHpA	2.34		"	2.48		94.3	25-150				
Surrogate: M3PFHxS	2.17		"	2.35		92.3	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	1.92		"	2.48		77.3	25-150				
Surrogate: M6PFDA	0.712		"	1.24		57.4	25-150				
Surrogate: M7PFUdA	0.745		"	1.24		60.1	25-150				



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BE30533 - EPA 1633 Prep**

**LCS (BE30533-BS1)**

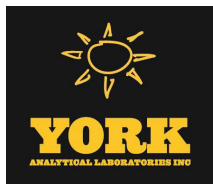
Prepared: 05/08/2023 Analyzed: 05/10/2023

Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.757		ug/kg wet	1.24		61.0	25-150				
Surrogate: M2PFTeDA	0.953		"	1.24		76.8	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	8.31		"	9.92		83.8	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.79		"	2.38		75.2	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	4.71		"	4.96		94.9	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.61		"	2.48		64.8	10-150				
Surrogate: d3-N-MeFOSAA	3.60		"	4.96		72.7	25-150				
Surrogate: d5-N-EtFOSAA	3.15		"	4.96		63.6	25-150				
Surrogate: M2-6:2 FTS	4.12		"	4.72		87.4	25-200				
Surrogate: M2-8:2 FTS	3.57		"	4.76		74.9	25-200				
Surrogate: M9PFNA	1.29		"	1.24		104	25-150				
Surrogate: M2-4:2 FTS	5.21		"	4.65		112	25-150				
Surrogate: d-N-MeFOSA	1.42		"	2.48		57.3	25-150				
Surrogate: d-N-EtFOSA	4.29		"	2.48		173	25-150				
Surrogate: M3HFPO-DA	10.8		"	9.92		109	25-150				
Surrogate: d9-N-EtFOSE	16.0		"	24.8		64.4	25-150				
Surrogate: d7-N-MeFOSE	17.9		"	24.8		72.0	25-150				

**LCS (BE30533-BS2)**

Prepared: 05/08/2023 Analyzed: 05/10/2023

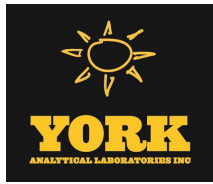
Perfluorobutanesulfonic acid (PFBS)	0.645	0.175	ug/kg wet	0.700		92.2	50-150				
Perfluorohexanoic acid (PFHxA)	0.688	0.198	"	0.791		87.0	50-150				
Perfluoroheptanoic acid (PFHpA)	0.687	0.198	"	0.791		86.9	50-150				
Perfluorohexanesulfonic acid (PFHxS)	0.639	0.181	"	0.723		88.4	50-150				
Perfluorooctanoic acid (PFOA)	1.00	0.198	"	0.791		127	50-150				
Perfluorooctanesulfonic acid (PFOS)	1.05	0.184	"	0.735		143	50-150				
Perfluorononanoic acid (PFNA)	0.618	0.198	"	0.791		78.2	50-150				
Perfluorodecanoic acid (PFDA)	0.801	0.198	"	0.791		101	50-150				
Perfluoroundecanoic acid (PFUnA)	0.947	0.198	"	0.791		120	50-150				
Perfluorododecanoic acid (PFDoA)	0.650	0.198	"	0.791		82.2	50-150				
Perfluorotridecanoic acid (PFTrDA)	0.663	0.198	"	0.791		83.9	50-150				
Perfluorotetradecanoic acid (PFTA)	0.905	0.198	"	0.791		114	50-150				
N-MeFOSAA	1.28	0.198	"	0.791		162	50-150	High Bias			
N-EtFOSAA	0.830	0.198	"	0.791		105	50-150				
Perfluoropentanoic acid (PFPeA)	1.43	0.395	"	1.58		90.6	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	0.698	0.198	"	0.791		88.3	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	0.874	0.198	"	0.755		116	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	0.580	0.191	"	0.763		76.0	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	3.22	0.751	"	3.00		107	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	3.26	0.759	"	3.04		107	50-150				
Perfluoro-n-butanoic acid (PFBA)	3.02	0.791	"	3.16		95.6	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	1.28	0.352	"	1.41		91.1	50-150				
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	1.50	0.395	"	1.58		94.6	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	1.49	0.395	"	1.58		93.9	50-150				
Perfluoro-5-oxahexanoic acid (PFMBA)	1.39	0.395	"	1.58		87.9	50-150				
Perfluoro-1-pentanesulfonate (PFPeS)	0.741	0.186	"	0.743		99.7	50-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

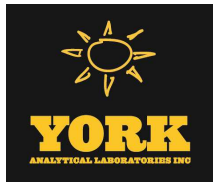
York Analytical Laboratories, Inc. - Stratford

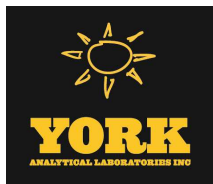
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30533 - EPA 1633 Prep</b>											
<b>LCS (BE30533-BS2)</b>											
Prepared: 05/08/2023 Analyzed: 05/10/2023											
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	2.98	0.741	ug/kg wet	2.96		100	50-150				
HFPO-DA (Gen-X)	1.74	0.791	"	1.58		110	50-150				
11CL-PF3OUdS	0.743	0.747	"	1.49		49.7	50-150	Low Bias			
9CL-PF3ONS	1.04	0.739	"	1.48		70.2	50-150				
ADONA	1.22	0.747	"	1.49		81.4	50-150				
Perfluorododecanesulfonic acid (PFDoS)	0.474	0.192	"	0.767		61.8	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	0.673	0.190	"	0.759		88.7	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	10.4	0.988	"	3.16		330	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	13.3	4.94	"	15.8		84.2	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	2.63	4.94	"	15.8		16.6	50-150	Low Bias			
N-MeFOSE	7.46	1.98	"	7.91		94.4	50-150				
N-MeFOSA	0.726	0.198	"	0.791		91.8	50-150				
N-EtFOSE	6.52	1.98	"	7.91		82.5	50-150				
N-EtFOSA	0.395	0.198	"	0.791		50.0	50-150				
Surrogate: M3PFBS	2.76		"	2.30		120	25-150				
Surrogate: M5PFHxA	2.81		"	2.47		114	25-150				
Surrogate: M4PFHpA	2.59		"	2.47		105	25-150				
Surrogate: M3PFHxS	2.56		"	2.34		110	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	2.18		"	2.47		88.4	25-150				
Surrogate: M6PFDA	0.812		"	1.24		65.7	25-150				
Surrogate: M7PFUdA	0.797		"	1.24		64.5	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.748		"	1.24		60.6	25-150				
Surrogate: M2PFTeDA	0.646		"	1.24		52.3	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	7.84		"	9.88		79.3	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	2.12		"	2.37		89.6	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	4.90		"	4.94		99.2	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.99		"	2.47		80.6	10-150				
Surrogate: d3-N-MeFOSAA	3.34		"	4.94		67.5	25-150				
Surrogate: d5-N-EtFOSAA	3.05		"	4.94		61.8	25-150				
Surrogate: M2-6:2 FTS	5.01		"	4.70		107	25-200				
Surrogate: M2-8:2 FTS	4.17		"	4.74		88.0	25-200				
Surrogate: M9PFNA	1.30		"	1.24		105	25-150				
Surrogate: M2-4:2 FTS	5.19		"	4.63		112	25-150				
Surrogate: d-N-MeFOSA	1.95		"	2.47		78.8	25-150				
Surrogate: d-N-EtFOSA	3.17		"	2.47		128	25-150				
Surrogate: M3HFPO-DA	11.2		"	9.88		113	25-150				
Surrogate: d9-N-EtFOSE	12.7		"	24.7		51.2	25-150				
Surrogate: d7-N-MeFOSE	12.8		"	24.7		51.9	25-150				



**Miscellaneous Physical Parameters - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30079 - % Solids Prep</b>											
<b>Duplicate (BE30079-DUP1)</b>	*Source sample: 23D1619-02 (SB-109 3-5)					Prepared & Analyzed: 05/01/2023					
% Solids	83.4	0.100	%		83.9				0.564	20	
<b>Batch BE30163 - % Solids Prep</b>											
<b>Duplicate (BE30163-DUP1)</b>	*Source sample: 23D1619-09 (SB-120 3-5)					Prepared & Analyzed: 05/02/2023					
% Solids	87.5	0.100	%		86.5				1.08	20	
<b>Batch BE30249 - % Solids Prep</b>											
<b>Duplicate (BE30249-DUP1)</b>	*Source sample: 23D1619-17 (SB-116 3-5)					Prepared & Analyzed: 05/03/2023					
% Solids	89.3	0.100	%		88.4				1.06	20	





## Sample and Data Qualifiers Relating to This Work Order

J Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.

### Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.



# Field Chain-of-Custody Record

YORK Project No. 23D1619

120 Research Drive Stratford, CT 06615 132-02 89th Ave Queens, NY 11418 clientservices@yorklab.com www.yorklab.com 800-306-YORK 800-306-9675

**Report To:** Company: LAUREL ENVIRONMENTAL **Report / EDD Type (circle selections)** **YOUR Project Number** 27215  
**Report To:** Company: Suff **Report / EDD Type (circle selections)** **YOUR Project Number** 15000  
 Address: 53 West Hill Road **Report / EDD Type (circle selections)** **YOUR Project Number** 15000  
 Address: Hempstead Harbor, NY (VDC) **Report / EDD Type (circle selections)** **YOUR Project Number** 15000  
 Phone: (923) 673-0612 **Report / EDD Type (circle selections)** **YOUR Project Number** 15000  
 Phone: 516-271-1234 **Report / EDD Type (circle selections)** **YOUR Project Number** 15000  
 Contact: Scott Vancick **Report / EDD Type (circle selections)** **YOUR Project Number** 15000  
 Contact: 196 Results @ Laurel Blvd **Report / EDD Type (circle selections)** **YOUR Project Number** 15000  
 E-mail: 196 Results @ Laurel Blvd **Report / EDD Type (circle selections)** **YOUR Project Number** 15000

**Matrix Codes:** S - soil / solid **Matrix Codes:** S - soil / solid  
 GW - groundwater **Matrix Codes:** GW - groundwater  
 DW - drinking water **Matrix Codes:** DW - drinking water  
 WW - wastewater **Matrix Codes:** WW - wastewater  
 O - Oil **Matrix Codes:** O - Oil

**Sample Matrix** **Sample Matrix**

**Matrix Codes:** S - soil / solid **Matrix Codes:** S - soil / solid  
 GW - groundwater **Matrix Codes:** GW - groundwater  
 DW - drinking water **Matrix Codes:** DW - drinking water  
 WW - wastewater **Matrix Codes:** WW - wastewater  
 O - Oil **Matrix Codes:** O - Oil

**Sample Identification**

Samples Collected by: (print AND sign your name) MWS

Samples Collected by: (print AND sign your name) Nicholas Kidup

Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
S	4/27/23 9:15	PFA 1633	254mL
S	9:15		
S	9:30		
S	9:50		
S	9:50		
S	10:00		
S	10:30		
S	10:00		
S	10:00		

**Comments:**

Preservation: (check all that apply) HCl \_\_\_ MeOH \_\_\_ HNO3 \_\_\_ H2SO4 \_\_\_ NaOH \_\_\_  
 ZnAc \_\_\_ Ascorbic Acid \_\_\_ Other: \_\_\_

1. Samples Relinquished by / Company	Date/Time	2. Samples Relinquished by / Company	Date/Time
<u>MWS</u>	<u>4/27/23 10:20</u>	<u>Kidup York</u>	<u>4/27/23 10:20 AM</u>
		<u>196 Results @ Laurel Blvd</u>	<u>4/27/23 17:55</u>



# Field Chain-of-Custody Record

York Analytical Laboratories, Inc. (YORK)'s Standard Terms & Conditions are listed on the back side of this document. This document serves as your written authorization for YORK to proceed with the analyses requested below. Your signature binds you to YORK's Standard Terms & Conditions.

120 Research Drive Stratford, CT 06615 132-02 89th Ave Queens, NY 11418 client-services@yorklab.com www.yorklab.com 800-306-YORK 800-306-9675

YORK Project No.  
23D 1619

Page 2 of 4

<b>Report To:</b>		<b>Report To:</b>	
Company: Laura Ellison-Monahan	Address: 53 West Falls Road	Company:	Address: 37-215
Phone: Han-Fishin Station NY 11746	Phone: Scott	YOUR Project Number	YOUR Project Name
Contact: Carol G. Scola	Contact: Scott		(State Road Glenhead)
E-mail: Scott Yankov	E-mail: Scott		Lehigh, NY

**YOUR PO#:**

**Report / EDD Type (circle selections)**

Summary Report	Standard Excel EDD
QA Report	CT RCP
NY ASP A Package	CT RCP DQA/DUE
NY ASP B Package	NUDEP Reduced
	Deliverables
	NUJDKQP
	Other:

**YORK Reg. Comp.**  
Compared to the following Regulation(s): (please fill in)

Matrix Codes	Samples From	Report / EDD Type (circle selections)	YORK Reg. Comp.
S - soil / solid	New York	Summary Report	Compared to the following Regulation(s): (please fill in)
GW - groundwater	New Jersey	QA Report	
DW - drinking water	Connecticut	NY ASP A Package	
WW - wastewater	Pennsylvania	NY ASP B Package	
O - Oil	Other:		

Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
S	4/27/23 10:15	PTA 1633	ASUAL
S	4/27/23 10:45		
S	4/27/23 10:55		
S	4/27/23 11:15		
S	4/27/23 11:15		
S	4/27/23 11:30		
S	4/27/23 11:30		
S	4/27/23 11:40		
S	4/27/23 11:40		

**Comments:**

**Preservation: (check all that apply)**

HCl \_\_\_ MeOH \_\_\_ HNO3 \_\_\_ H2SO4 \_\_\_ NaOH \_\_\_

ZnAc \_\_\_ Ascorbic Acid \_\_\_ Other: \_\_\_

1. Samples Relinquished by / Company	Date/Time	2. Samples Relinquished by / Company	Date/Time
7/11/20	4/27/23 10:20 AM	K. Boudreau	4/27/23 17:55
Samples Received by / Company	Date/Time	Samples Received by / Company	Date/Time
Samples Relinquished by / Company	Date/Time	Samples Received in LAB by	Date/Time
			4/27/23 17:55
Samples Relinquished by / Company	Date/Time	Temperature	Degrees C
			6.0



# Field Chain-of-Custody Record

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YORK Project No.

23D1619

Page 3 of 3

120 Research Drive Stratford, CT 06615 132-02 89th Ave Queens, NY 11418 clientservices@yorklab.com www.yorklab.com 800-306-YORK 800-306-9675

<b>YOUR Information</b>		<b>Report To:</b>		<b>Invoice To:</b>		<b>YOUR Project Number</b>		<b>Turn-Around Time</b>	
Company: Laurel Education Center	Company: Scott	Company: Kelly	Company: York Analytical Laboratories	Company: York Analytical Laboratories	Company: York Analytical Laboratories	Company: York Analytical Laboratories	Company: York Analytical Laboratories	Company: York Analytical Laboratories	Company: York Analytical Laboratories
Address: 53 West Hills Road	Address: Scott	Address: Kelly	Address: York Analytical Laboratories	Address: York Analytical Laboratories	Address: York Analytical Laboratories	Address: York Analytical Laboratories	Address: York Analytical Laboratories	Address: York Analytical Laboratories	Address: York Analytical Laboratories
Phone: (832) 673-0618	Phone: Scott	Phone: Kelly	Phone: York Analytical Laboratories	Phone: York Analytical Laboratories	Phone: York Analytical Laboratories	Phone: York Analytical Laboratories	Phone: York Analytical Laboratories	Phone: York Analytical Laboratories	Phone: York Analytical Laboratories
Contact: Scott	Contact: Scott	Contact: Kelly	Contact: York Analytical Laboratories	Contact: York Analytical Laboratories	Contact: York Analytical Laboratories	Contact: York Analytical Laboratories	Contact: York Analytical Laboratories	Contact: York Analytical Laboratories	Contact: York Analytical Laboratories
E-mail: lvsresults@laureledu.com	E-mail: Scott	E-mail: Kelly	E-mail: York Analytical Laboratories	E-mail: York Analytical Laboratories	E-mail: York Analytical Laboratories	E-mail: York Analytical Laboratories	E-mail: York Analytical Laboratories	E-mail: York Analytical Laboratories	E-mail: York Analytical Laboratories

**YOUR PO#:**

**YOUR Project Name:** 1 Shenandoah, Glenwood, Litchfield, NY

**Report / EDD Type (circle selections):**

Summary Report	Standard Excel EDD
QA Report	CT RCP
NY-ASRA Package	CT RCP DQA/DUE
NY ASP B Package	EQUIS (Standard)
	EQUIS (Standard)
	NYSDC EQUIS
	NJDEP Reduced
	Deliverables
	NJDEP-SRP HazSite
	Other:
	NJDKQP

Matrix Codes	Samples From	Analysis Requested	Container Description
S - soil / solid	New York	PFAS 1633	250ml
GW - groundwater	New Jersey		
DW - drinking water	Connecticut		
WW - wastewater	Pennsylvania		
O - Oil	Other:		
Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
S	4/16/23 12:25		
S	12:25		
S	12:50		
S	12:50		
S	13:25		
S	13:50		
S	13:50		
S	14:30		
S	14:30		

**Preservation: (check all that apply)**

HCl \_\_\_ MeOH \_\_\_ HNO3 \_\_\_ H2SO4 \_\_\_ NaOH \_\_\_

ZnAc \_\_\_ Ascorbic Acid \_\_\_ Other: \_\_\_

**Comments:**

1. Samples Relinquished by / Company: York Analytical Laboratories 4/27/23 10:20 AM

2. Samples Relinquished by / Company: York Analytical Laboratories 4/27/23 17:55

3. Samples Relinquished by / Company: York Analytical Laboratories 4/27/23 17:55

4. Samples Relinquished by / Company: York Analytical Laboratories 4/27/23 17:55

Date/Time: 4/27/23 17:55

Temperature: 6.0 Degrees C



# Field Chain-of-Custody Record

York Analytical Laboratories, Inc. (YORK)'s Standard Terms & Conditions are listed on the back side of this document. This document serves as your written authorization for YORK to proceed with the analyses requested below. Your signature binds you to YORK's Standard Terms & Conditions.

120 Research Drive Stratford, CT 06615 132-02 89th Ave Queens, NY 11418 56 Church Hill Rd. #2 Newtown, CT 06470 clientservices@yorklab.com www.yorklab.com 800-306-YORK

YORK Project No. **2301619**

Page **4** of **4**

<b>YOUR Information</b>		<b>Report To:</b>		<b>Invoice To:</b>		<b>YOUR Project Number</b>		<b>Turn-Around Time</b>	
Company: <b>Laura Environmental Geos(Inc)</b>	Company:	Address: <b>53 West Hills Lane</b>		Address:		YOUR Project Name		RUSH - Next Day	
Address: <b>Huntville, AL 35894</b>	Address:	Phone: <b>205-333-1176</b>		Phone:		<b>1 Stone Road</b>		RUSH - Two Day	
Phone: <b>(205) 333-1176</b>	Phone:	Contact: <b>Scott</b>		Contact:		<b>Clemens, Hwy 103, NW</b>		RUSH - Three Day	
Contact: <b>Scott Yip</b>	Contact:	E-mail:		E-mail:		<b>YOUR PO#:</b>		RUSH - Four Day	
E-mail: <b>labsresults@univinc.com</b>	E-mail:	Matrix Codes		Matrix Codes				RUSH - Five Day	

**Report / EDD Type (circle selections)**

Summary Report  CT RCP  EQUIS-(Standard)   
 QA Report  CT RCP DQA/DUE  NYSDEC EQUIS   
 CMDP  NJDEP Reduced  NJDKQP   
 Standard Excl EDD  Deliverables  NJDEP SRP HazSite   
 (NY ASP B Package) Other:

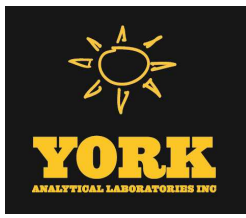
Sample Identification	Sample Matrix	Sample Date/Time	Sample Date/Time	Analyses Requested	Container Type	No.
<b>SB-106 r3</b>	S	4/27/23 8:45 AM	4/27/23 8:45 AM	PFAS 1633	250ml	1
<b>SB-106 12-1M</b>	S	4/27/23 12:15 PM	4/27/23 12:15 PM	PFAS 1633		
<b>DUP</b>	S	4/27/23 7:00 AM	4/27/23 7:00 AM	PFAS 1633	250ml	1
<b>Equipment Blank</b>	O	4/27/23 7:00 AM	4/27/23 7:00 AM	PFAS 1633	250ml	2
<b>Matrix spike CSB-1103-F</b>	S	4/27/23 10:20 AM	4/27/23 10:20 AM	PFAS 1633	250ml	1
<b>Matrix spike Dup CSB-1103-F</b>	S	4/27/23 10:20 AM	4/27/23 10:20 AM	PFAS 1633	250ml	1

**Comments:**

Preservation: (check all that apply)  
 HCl \_\_\_ MeOH \_\_\_ HNO3 \_\_\_ H2SO4 \_\_\_ NaOH \_\_\_  
 ZnAc \_\_\_ Ascorbic Acid \_\_\_ Other: \_\_\_

Samples received/chilled at time of lab pickup? circle Yes or No

1. Samples Relinquished by / Company **LABORATORY** Date/Time **4/27/23 10:20 AM**  
 2. Samples Relinquished by / Company **LABORATORY** Date/Time **4/27/23 4:27/23**  
 3. Samples Relinquished by / Company **LABORATORY** Date/Time **4/27/23 17:55**  
 4. Samples Relinquished by / Company **LABORATORY** Date/Time **4/27/23 17:55** Temperature **6.0** Degrees C



# Technical Report

prepared for:

**Laurel Environmental Geosciences, D.P.C.**

53 W Hills Road, Suite 1  
Huntington Station NY, 11746  
**Attention: Scott Yanuck**

Report Date: 05/10/2023

**Client Project ID: 1 Shore Road Glenwood Landing, NY 21-215**

York Project (SDG) No.: 23D1735

CT Cert. No. PH-0723

New Jersey Cert. No. CT005 and NY037



New York Cert. Nos. 10854 and 12058

PA Cert. No. 68-04440

120 RESEARCH DRIVE  
[www.YORKLAB.com](http://www.YORKLAB.com)

STRATFORD, CT 06615  
(203) 325-1371

132-02 89th AVENUE  
FAX (203) 357-0166

RICHMOND HILL, NY 11418  
[ClientServices@yorklab.com](mailto:ClientServices@yorklab.com)

Report Date: 05/10/2023  
Client Project ID: 1 Shore Road Glenwood Landing, NY 21-215  
York Project (SDG) No.: 23D1735

**Laurel Environmental Geosciences, D.P.C.**  
53 W Hills Road, Suite 1  
Huntington Station NY, 11746  
Attention: Scott Yanuck

---

## Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on April 28, 2023 and listed below. The project was identified as your project: **1 Shore Road Glenwood Landing, NY 21-215**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

<u>York Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
23D1735-01	SB 107 1-3	Soil	04/27/2023	04/28/2023
23D1735-02	SB 107 12-14	Soil	04/27/2023	04/28/2023
23D1735-03	SB 115 1-3	Soil	04/27/2023	04/28/2023
23D1735-04	SB 115 12-14	Soil	04/27/2023	04/28/2023
23D1735-05	SB 114 1-3	Soil	04/27/2023	04/28/2023
23D1735-06	SB 114 12-14	Soil	04/27/2023	04/28/2023
23D1735-07	SB 113 1-3	Soil	04/27/2023	04/28/2023
23D1735-08	SB 113 12-14	Soil	04/27/2023	04/28/2023
23D1735-09	SB 112 1-3	Soil	04/27/2023	04/28/2023
23D1735-10	SB 112 11-13	Soil	04/27/2023	04/28/2023
23D1735-11	SB 110 1-3	Soil	04/27/2023	04/28/2023
23D1735-12	SB 110 12-14	Soil	04/27/2023	04/28/2023
23D1735-13	DUP	Soil	04/27/2023	04/28/2023
23D1735-14	Equipment Blank	Water	04/27/2023	04/28/2023

## **General Notes for York Project (SDG) No.: 23D1735**

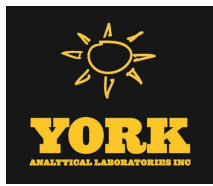
1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

**Approved By:** 

**Date:** 05/10/2023

Cassie L. Mosher  
Laboratory Manager





### Sample Information

**Client Sample ID:** SB 107 1-3

**York Sample ID:** 23D1735-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 8:15 am

04/28/2023

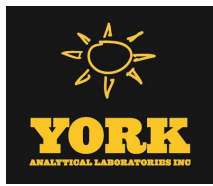
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	1.06	1.69	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.505	1.91	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	1.00	1.91	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	1.71	1.74	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	1.64	1.91	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	1.59	1.77	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	1.80	1.91	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	1.82	1.91	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	1.89	1.91	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	1.55	1.91	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	1.19	1.91	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.981	1.91	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	1.41	1.91	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	1.85	1.91	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	1.04	3.81	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	1.39	1.91	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	1.48	1.91	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	1.82	1.84	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	5.67	7.24	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	7.19	7.32	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	1.04	7.62	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/08/2023 17:38	05/10/2023 13:30	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	1.32	3.39	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ



### Sample Information

**Client Sample ID:** SB 107 1-3

**York Sample ID:** 23D1735-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 8:15 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

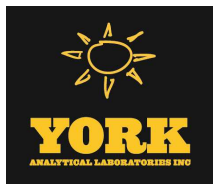
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
151772-58-6	* Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		ug/kg dry	1.84	3.81	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.591	3.81	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.914	3.81	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	1.50	1.79	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	5.67	7.14	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	5.79	7.62	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	2.96	7.20	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	2.34	7.12	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	1.66	7.20	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	1.61	1.85	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	1.18	1.83	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPrPA)	ND		ug/kg dry	6.04	9.53	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	20.0	47.6	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	14.3	47.6	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	5.82	19.1	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	1.71	1.91	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	6.64	19.1	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	1.89	1.91	1	EPA 1633 Draft 2 Certifications:	05/08/2023 17:38	05/10/2023 13:30	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	127 %	25-150
Surrogate: M5PFHxA	103 %	25-150
Surrogate: M4PFHpA	114 %	25-150
Surrogate: M3PFHxS	112 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	106 %	25-150
Surrogate: M6PFDA	138 %	25-150
Surrogate: M7PFUdA	128 %	25-150



### Sample Information

**Client Sample ID:** SB 107 1-3 **York Sample ID:** 23D1735-01  
**York Project (SDG) No.:** 23D1735 **Client Project ID:** 1 Shore Road Glenwood Landing, NY 21-215  
**Matrix:** Soil **Collection Date/Time:** April 27, 2023 8:15 am  
**Date Received:** 04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	113 %			25-150						
	Surrogate: M2PFTeDA	116 %			10-150						
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	105 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	104 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	99.5 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	87.2 %			10-150						
	Surrogate: d3-N-MeFOSAA	82.9 %			25-150						
	Surrogate: d5-N-EtFOSAA	81.0 %			25-150						
	Surrogate: M2-6:2 FTS	97.0 %			25-200						
	Surrogate: M2-8:2 FTS	96.0 %			25-200						
	Surrogate: M9PFNA	103 %			25-150						
	Surrogate: M2-4:2 FTS	110 %			25-150						
	Surrogate: d-N-MeFOSA	60.0 %			25-150						
	Surrogate: d-N-EtFOSA	127 %			25-150						
	Surrogate: M3HFPO-DA	116 %			25-150						
	Surrogate: d9-N-EtFOSE	56.8 %			25-150						
	Surrogate: d7-N-MeFOSE	65.2 %			25-150						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	93.7		%	0.100	1	SM 2540G	05/08/2023 15:21	05/08/2023 15:26	AC	
Certifications:								CTDOH-PH-0723			

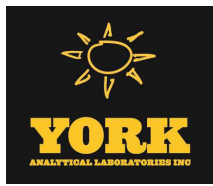
### Sample Information

**Client Sample ID:** SB 107 12-14 **York Sample ID:** 23D1735-02  
**York Project (SDG) No.:** 23D1735 **Client Project ID:** 1 Shore Road Glenwood Landing, NY 21-215  
**Matrix:** Soil **Collection Date/Time:** April 27, 2023 8:15 am  
**Date Received:** 04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**



### Sample Information

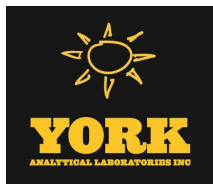
**Client Sample ID:** SB 107 12-14

**York Sample ID:** 23D1735-02

<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 8:15 am	<u>Date Received</u> 04/28/2023
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Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.118	0.188	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0562	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.111	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.190	0.194	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.182	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.177	0.197	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.201	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.203	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.210	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.173	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.133	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.109	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.157	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.206	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.116	0.424	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.155	0.212	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.164	0.212	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.203	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.631	0.806	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.801	0.815	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.116	0.849	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:05	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.147	0.378	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.205	0.424	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0658	0.424	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ



### Sample Information

**Client Sample ID:** SB 107 12-14

**York Sample ID:** 23D1735-02

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 8:15 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

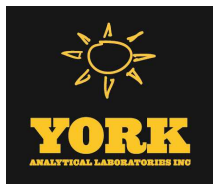
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.102	0.424	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.167	0.199	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.631	0.796	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.645	0.849	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.330	0.802	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.261	0.794	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.185	0.802	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.179	0.206	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.132	0.204	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.673	1.06	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.23	5.30	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.59	5.30	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.648	2.12	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.191	0.212	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.739	2.12	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.210	0.212	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:05	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	139 %	25-150
Surrogate: M5PFHxA	102 %	25-150
Surrogate: M4PFHpA	88.8 %	25-150
Surrogate: M3PFHxS	122 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	74.9 %	25-150
Surrogate: M6PFDA	40.8 %	25-150
Surrogate: M7PFUdA	58.6 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	52.6 %	25-150
Surrogate: M2PFTeDA	58.3 %	10-150



### Sample Information

**Client Sample ID:** SB 107 12-14

**York Sample ID:** 23D1735-02

<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 8:15 am	<u>Date Received</u> 04/28/2023
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**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	97.0 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	48.2 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	106 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	57.0 %			10-150						
	Surrogate: d3-N-MeFOSAA	57.9 %			25-150						
	Surrogate: d5-N-EtFOSAA	53.0 %			25-150						
	Surrogate: M2-6:2 FTS	98.6 %			25-200						
	Surrogate: M2-8:2 FTS	80.2 %			25-200						
	Surrogate: M9PFNA	121 %			25-150						
	Surrogate: M2-4:2 FTS	106 %			25-150						
	Surrogate: d-N-MeFOSA	61.2 %			25-150						
	Surrogate: d-N-EtFOSA	106 %			25-150						
	Surrogate: M3HFPO-DA	115 %			25-150						
	Surrogate: d9-N-EtFOSE	47.7 %			25-150						
	Surrogate: d7-N-MeFOSE	48.9 %			25-150						

**Total Solids**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	93.9		%	0.100	1	SM 2540G	05/08/2023 15:21	05/08/2023 15:26	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** SB 115 1-3

**York Sample ID:** 23D1735-03

<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 8:45 am	<u>Date Received</u> 04/28/2023
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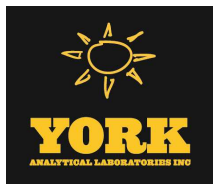
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.118	0.188	1	EPA 1633 Draft 2	05/01/2023 17:34	05/05/2023 03:42	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB 115 1-3

**York Sample ID:** 23D1735-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 8:45 am

04/28/2023

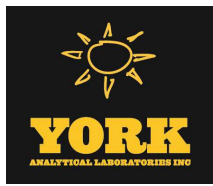
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0562	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.111	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.190	0.194	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.182	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.177	0.197	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.200	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.203	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.210	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.173	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.133	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.109	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.157	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.206	0.212	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.116	0.424	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.155	0.212	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.164	0.212	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.203	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.631	0.806	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.801	0.814	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.116	0.848	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:42	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.147	0.378	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
151772-58-6	* Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		ug/kg dry	0.205	0.424	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0657	0.424	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ



### Sample Information

**Client Sample ID:** SB 115 1-3

**York Sample ID:** 23D1735-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 8:45 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

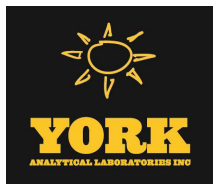
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.102	0.424	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.166	0.199	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.631	0.795	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.645	0.848	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.330	0.802	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.261	0.793	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.185	0.802	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.179	0.206	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.131	0.204	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.672	1.06	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.22	5.30	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.59	5.30	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.648	2.12	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.191	0.212	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.739	2.12	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.210	0.212	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:42	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	132 %	25-150
Surrogate: M5PFHxA	101 %	25-150
Surrogate: M4PFHpA	102 %	25-150
Surrogate: M3PFHxS	114 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	92.7 %	25-150
Surrogate: M6PFDA	89.1 %	25-150
Surrogate: M7PFUdA	90.1 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	92.4 %	25-150
Surrogate: M2PFTeDA	81.8 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB 115 1-3					<b>York Sample ID:</b> 23D1735-03
<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 8:45 am	<u>Date Received</u> 04/28/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	95.7 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	107 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	105 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	89.5 %			10-150						
	Surrogate: d3-N-MeFOSAA	90.0 %			25-150						
	Surrogate: d5-N-EtFOSAA	86.0 %			25-150						
	Surrogate: M2-6:2 FTS	140 %			25-200						
	Surrogate: M2-8:2 FTS	103 %			25-200						
	Surrogate: M9PFNA	94.4 %			25-150						
	Surrogate: M2-4:2 FTS	98.1 %			25-150						
	Surrogate: d-N-MeFOSA	78.1 %			25-150						
	Surrogate: d-N-EtFOSA	124 %			25-150						
	Surrogate: M3HFPO-DA	115 %			25-150						
	Surrogate: d9-N-EtFOSE	84.2 %			25-150						
	Surrogate: d7-N-MeFOSE	83.7 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	92.6		%	0.100	1	SM 2540G	05/08/2023 15:21	05/08/2023 15:26	AC
Certifications:								CTDOH-PH-0723		

### Sample Information

<b>Client Sample ID:</b> SB 115 12-14					<b>York Sample ID:</b> 23D1735-04
<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 8:45 am	<u>Date Received</u> 04/28/2023	

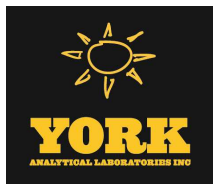
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.121	0.192	1	EPA 1633 Draft 2	05/01/2023 17:34	05/05/2023 03:54	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB 115 12-14

**York Sample ID:** 23D1735-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 8:45 am

04/28/2023

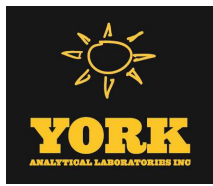
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0576	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.114	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.195	0.199	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.187	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.182	0.202	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.205	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.208	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.215	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.177	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.136	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.112	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.161	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.211	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.118	0.435	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.159	0.217	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.168	0.217	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.208	0.210	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.647	0.826	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.821	0.835	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.118	0.870	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 03:54	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.151	0.387	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
151772-58-6	* Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		ug/kg dry	0.210	0.435	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0674	0.435	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ



### Sample Information

**Client Sample ID:** SB 115 12-14

**York Sample ID:** 23D1735-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 8:45 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

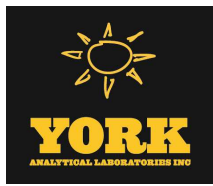
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.104	0.435	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.171	0.204	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.647	0.815	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.661	0.870	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.338	0.822	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.267	0.813	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.189	0.822	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.184	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.135	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.689	1.09	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.28	5.44	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.63	5.44	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.664	2.17	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.196	0.217	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.758	2.17	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.215	0.217	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 03:54	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	114 %	25-150
Surrogate: M5PFHxA	109 %	25-150
Surrogate: M4PFHpA	96.6 %	25-150
Surrogate: M3PFHxS	99.7 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	93.0 %	25-150
Surrogate: M6PFDA	100 %	25-150
Surrogate: M7PFUdA	99.8 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	90.8 %	25-150
Surrogate: M2PFTeDA	72.4 %	10-150



Sample Information

Client Sample ID: SB 115 12-14

York Sample ID: 23D1735-04

York Project (SDG) No. 23D1735 Client Project ID 1 Shore Road Glenwood Landing, NY 21-215 Matrix Soil Collection Date/Time April 27, 2023 8:45 am Date Received 04/28/2023

PFAS, EPA 1633 Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

Table with 12 columns: CAS No., Parameter, Result, Flag, Units, Reported to LOD/MDL, LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Lists various surrogate PFAS compounds and their results.

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

Table with 12 columns: CAS No., Parameter, Result, Flag, Units, Reported to LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Shows Total Solids result of 90.7%.

Sample Information

Client Sample ID: SB 114 1-3

York Sample ID: 23D1735-05

York Project (SDG) No. 23D1735 Client Project ID 1 Shore Road Glenwood Landing, NY 21-215 Matrix Soil Collection Date/Time April 27, 2023 9:15 am Date Received 04/28/2023

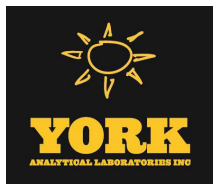
PFAS, EPA 1633 Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

Table with 12 columns: CAS No., Parameter, Result, Flag, Units, Reported to LOD/MDL, LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Shows Perfluorobutanesulfonic acid (PFBS) result of ND.



### Sample Information

**Client Sample ID:** SB 114 1-3

**York Sample ID:** 23D1735-05

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 9:15 am

04/28/2023

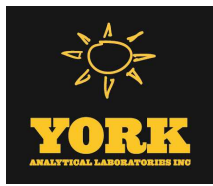
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0560	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.111	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.189	0.193	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.182	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
1763-23-1	<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.202</b>		ug/kg dry	0.176	0.196	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.200	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.202	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.209	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.172	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		ug/kg dry	0.132	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.109	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.156	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.205	0.211	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.115	0.422	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.154	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.164	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.202	0.204	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.628	0.803	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.797	0.811	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.115	0.845	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:06	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	0.147	0.376	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
151772-58-6	* Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ug/kg dry	0.204	0.422	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0655	0.422	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ



### Sample Information

**Client Sample ID:** SB 114 1-3

**York Sample ID:** 23D1735-05

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 9:15 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

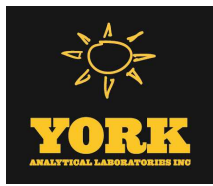
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.101	0.422	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.166	0.199	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.628	0.792	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.642	0.845	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.328	0.798	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.260	0.790	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.184	0.798	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.178	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.131	0.203	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.670	1.06	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.22	5.28	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.58	5.28	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.645	2.11	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
31506-32-8	* N-MeFOA	ND		ug/kg dry	0.190	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.736	2.11	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ
4151-50-2	* N-EtFOA	ND		ug/kg dry	0.209	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:06	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	121 %	25-150
Surrogate: M5PFHxA	102 %	25-150
Surrogate: M4PFHpA	96.6 %	25-150
Surrogate: M3PFHxS	111 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	87.7 %	25-150
Surrogate: M6PFDA	82.8 %	25-150
Surrogate: M7PFUdA	86.0 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	111 %	25-150
Surrogate: M2PFTeDA	79.2 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB 114 1-3					<b>York Sample ID:</b> 23D1735-05
<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 9:15 am	<u>Date Received</u> 04/28/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	95.3 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	98.5 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	103 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	64.6 %			10-150						
	Surrogate: d3-N-MeFOSAA	69.5 %			25-150						
	Surrogate: d5-N-EtFOSAA	78.0 %			25-150						
	Surrogate: M2-6:2 FTS	117 %			25-200						
	Surrogate: M2-8:2 FTS	86.9 %			25-200						
	Surrogate: M9PFNA	120 %			25-150						
	Surrogate: M2-4:2 FTS	98.1 %			25-150						
	Surrogate: d-N-MeFOSA	34.6 %			25-150						
	Surrogate: d-N-EtFOSA	76.4 %			25-150						
	Surrogate: M3HFPO-DA	105 %			25-150						
	Surrogate: d9-N-EtFOSE	43.8 %			25-150						
	Surrogate: d7-N-MeFOSE	51.7 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	94.1		%	0.100	1	SM 2540G	05/08/2023 15:21	05/08/2023 15:26	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB 114 12-14					<b>York Sample ID:</b> 23D1735-06
<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 9:15 am	<u>Date Received</u> 04/28/2023	

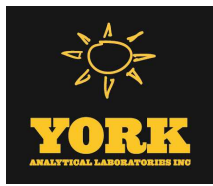
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.112	0.178	1	EPA 1633 Draft 2	05/01/2023 17:34	05/05/2023 04:19	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB 114 12-14

**York Sample ID:** 23D1735-06

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 9:15 am

04/28/2023

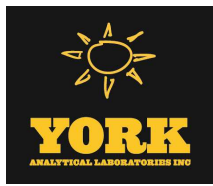
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0533	0.201	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.106	0.201	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.180	0.184	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
335-67-1	<b>Perfluorooctanoic acid (PFOA)</b>	<b>0.220</b>		ug/kg dry	0.173	0.201	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.168	0.187	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.190	0.201	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.192	0.201	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.199	0.201	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.164	0.201	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		ug/kg dry	0.126	0.201	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.104	0.201	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.149	0.201	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.195	0.201	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.110	0.402	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.147	0.201	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.156	0.201	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.192	0.194	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.598	0.764	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.759	0.772	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.110	0.804	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:19	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	0.140	0.358	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
151772-58-6	* Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ug/kg dry	0.194	0.402	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0623	0.402	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ



### Sample Information

**Client Sample ID:** SB 114 12-14

**York Sample ID:** 23D1735-06

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 9:15 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

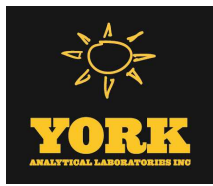
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.0965	0.402	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.158	0.189	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.598	0.754	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.611	0.804	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.313	0.760	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.247	0.752	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.175	0.760	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.170	0.195	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.125	0.193	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.638	1.01	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.11	5.03	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.51	5.03	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.614	2.01	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
31506-32-8	* N-MeFOA	ND		ug/kg dry	0.181	0.201	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.701	2.01	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ
4151-50-2	* N-EtFOA	ND		ug/kg dry	0.199	0.201	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:19	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	136 %	25-150
Surrogate: M5PFHxA	101 %	25-150
Surrogate: M4PFHpA	100 %	25-150
Surrogate: M3PFHxS	141 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	80.6 %	25-150
Surrogate: M6PFDA	57.3 %	25-150
Surrogate: M7PFUdA	66.9 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	72.4 %	25-150
Surrogate: M2PFTeDA	67.3 %	10-150



### Sample Information

**Client Sample ID:** SB 114 12-14

**York Sample ID:** 23D1735-06

<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 9:15 am	<u>Date Received</u> 04/28/2023
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**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	88.2 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	87.8 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	99.9 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	74.3 %			10-150						
	Surrogate: d3-N-MeFOSAA	72.7 %			25-150						
	Surrogate: d5-N-EtFOSAA	85.5 %			25-150						
	Surrogate: M2-6:2 FTS	133 %			25-200						
	Surrogate: M2-8:2 FTS	114 %			25-200						
	Surrogate: M9PFNA	91.5 %			25-150						
	Surrogate: M2-4:2 FTS	113 %			25-150						
	Surrogate: d-N-MeFOSA	36.3 %			25-150						
	Surrogate: d-N-EtFOSA	75.5 %			25-150						
	Surrogate: M3HFPO-DA	107 %			25-150						
	Surrogate: d9-N-EtFOSE	43.7 %			25-150						
	Surrogate: d7-N-MeFOSE	52.8 %			25-150						

**Total Solids**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	98.3		%	0.100	1	SM 2540G	05/08/2023 15:21	05/08/2023 15:26	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** SB 113 1-3

**York Sample ID:** 23D1735-07

<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 9:30 am	<u>Date Received</u> 04/28/2023
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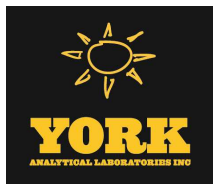
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.116	0.185	1	EPA 1633 Draft 2	05/01/2023 17:34	05/05/2023 04:31	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB 113 1-3

**York Sample ID:** 23D1735-07

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 9:30 am

04/28/2023

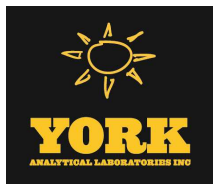
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0555	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.110	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.187	0.192	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.180	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
1763-23-1	<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.799</b>		ug/kg dry	0.175	0.195	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.198	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.200	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.207	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.171	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		ug/kg dry	0.131	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.108	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.155	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.203	0.209	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.114	0.419	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.153	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.162	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.200	0.202	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.623	0.796	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.791	0.804	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.114	0.838	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:31	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	0.146	0.373	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
151772-58-6	* Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ug/kg dry	0.202	0.419	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0649	0.419	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ



### Sample Information

**Client Sample ID:** SB 113 1-3

**York Sample ID:** 23D1735-07

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 9:30 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

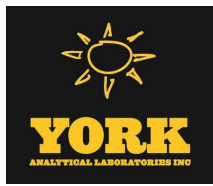
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.101	0.419	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.164	0.197	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.623	0.785	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.637	0.838	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.326	0.792	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.258	0.783	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.182	0.792	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.177	0.203	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.130	0.201	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.664	1.05	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.20	5.24	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.57	5.24	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.640	2.09	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.188	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.730	2.09	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.207	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:31	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	108 %	25-150
Surrogate: M5PFHxA	81.1 %	25-150
Surrogate: M4PFHpA	66.3 %	25-150
Surrogate: M3PFHxS	71.4 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	58.4 %	25-150
Surrogate: M6PFDA	39.4 %	25-150
Surrogate: M7PFUdA	38.9 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	44.8 %	25-150
Surrogate: M2PFTeDA	50.0 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB 113 1-3					<b>York Sample ID:</b> 23D1735-07
<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 9:30 am	<u>Date Received</u> 04/28/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	100 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	59.9 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	98.4 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	39.4 %			10-150						
	Surrogate: d3-N-MeFOSAA	50.8 %			25-150						
	Surrogate: d5-N-EtFOSAA	46.1 %			25-150						
	Surrogate: M2-6:2 FTS	80.8 %			25-200						
	Surrogate: M2-8:2 FTS	57.9 %			25-200						
	Surrogate: M9PFNA	64.7 %			25-150						
	Surrogate: M2-4:2 FTS	93.8 %			25-150						
	Surrogate: d-N-MeFOSA	42.2 %			25-150						
	Surrogate: d-N-EtFOSA	92.1 %			25-150						
	Surrogate: M3HFPO-DA	93.2 %			25-150						
	Surrogate: d9-N-EtFOSE	35.0 %			25-150						
	Surrogate: d7-N-MeFOSE	38.8 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	94.9		%	0.100	1	SM 2540G	05/08/2023 15:21	05/08/2023 15:26	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB 113 12-14					<b>York Sample ID:</b> 23D1735-08
<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 9:30 am	<u>Date Received</u> 04/28/2023	

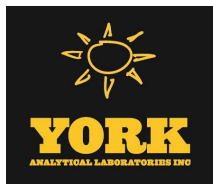
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.114	0.181	1	EPA 1633 Draft 2	05/01/2023 17:34	05/05/2023 04:43	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB 113 12-14

**York Sample ID:** 23D1735-08

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 9:30 am

04/28/2023

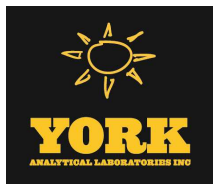
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0542	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.107	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.183	0.187	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.176	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.171	0.190	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.193	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.195	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.203	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.167	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.128	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.105	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.151	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.199	0.205	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.112	0.409	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.149	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.159	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.195	0.197	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.609	0.778	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.773	0.786	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.112	0.819	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:43	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.142	0.364	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.197	0.409	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0634	0.409	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ



### Sample Information

**Client Sample ID:** SB 113 12-14

**York Sample ID:** 23D1735-08

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 9:30 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.0982	0.409	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.161	0.192	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.609	0.767	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.622	0.819	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.318	0.774	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.252	0.765	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.178	0.774	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.173	0.199	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.127	0.196	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.649	1.02	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.15	5.12	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.53	5.12	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.625	2.05	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
31506-32-8	* N-MeFOFA	ND		ug/kg dry	0.184	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.713	2.05	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ
4151-50-2	* N-EtFOFA	ND		ug/kg dry	0.203	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:43	ESJ

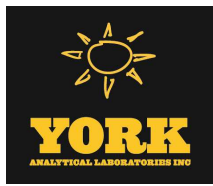
**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	131 %	25-150
Surrogate: M5PFHxA	98.3 %	25-150
Surrogate: M4PFHpA	91.3 %	25-150
Surrogate: M3PFHxS	107 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	72.2 %	25-150
Surrogate: M6PFDA	53.8 %	25-150
Surrogate: M7PFUdA	70.4 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	63.4 %	25-150
Surrogate: M2PFTeDA	67.0 %	10-150





### Sample Information

**Client Sample ID:** SB 113 12-14

**York Sample ID:** 23D1735-08

<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 9:30 am	<u>Date Received</u> 04/28/2023
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**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	82.9 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	90.7 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	110 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	67.5 %			10-150						
	Surrogate: d3-N-MeFOSAA	62.3 %			25-150						
	Surrogate: d5-N-EtFOSAA	63.7 %			25-150						
	Surrogate: M2-6:2 FTS	108 %			25-200						
	Surrogate: M2-8:2 FTS	95.4 %			25-200						
	Surrogate: M9PFNA	65.1 %			25-150						
	Surrogate: M2-4:2 FTS	100 %			25-150						
	Surrogate: d-N-MeFOSA	50.0 %			25-150						
	Surrogate: d-N-EtFOSA	78.0 %			25-150						
	Surrogate: M3HFPO-DA	114 %			25-150						
	Surrogate: d9-N-EtFOSE	48.3 %			25-150						
	Surrogate: d7-N-MeFOSE	49.8 %			25-150						

**Total Solids**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	97.5		%	0.100	1	SM 2540G	05/08/2023 15:21	05/08/2023 15:26	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** SB 112 1-3

**York Sample ID:** 23D1735-09

<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 9:45 am	<u>Date Received</u> 04/28/2023
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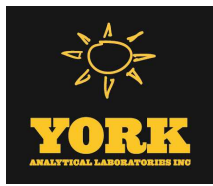
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.118	0.189	1	EPA 1633 Draft 2	05/01/2023 17:34	05/05/2023 04:56	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB 112 1-3

**York Sample ID:** 23D1735-09

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 9:45 am

04/28/2023

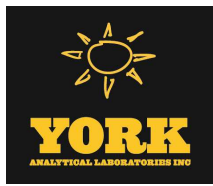
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0565	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.112	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.191	0.195	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.183	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.178	0.198	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.202	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.204	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.211	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.174	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.133	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.110	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.158	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.207	0.213	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.116	0.427	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.156	0.213	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.165	0.213	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.204	0.206	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.635	0.811	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.805	0.819	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
375-22-4	<b>Perfluoro-n-butanoic acid (PFBA)</b>	<b>0.454</b>	J	ug/kg dry	0.116	0.853	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 04:56	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	0.148	0.380	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
151772-58-6	* Perfluoro-3,6-dioxheptanoic acid (NFDHA)	ND		ug/kg dry	0.206	0.427	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0661	0.427	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ



### Sample Information

**Client Sample ID:** SB 112 1-3

**York Sample ID:** 23D1735-09

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 9:45 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

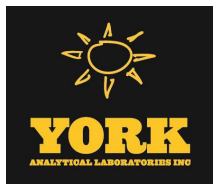
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.102	0.427	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.167	0.201	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.635	0.800	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.649	0.853	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.332	0.806	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.262	0.798	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.186	0.806	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.180	0.207	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.132	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.676	1.07	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.24	5.33	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.60	5.33	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.652	2.13	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.192	0.213	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.743	2.13	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.211	0.213	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 04:56	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	100 %	25-150
Surrogate: M5PFHxA	101 %	25-150
Surrogate: M4PFHpA	94.4 %	25-150
Surrogate: M3PFHxS	93.1 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	96.5 %	25-150
Surrogate: M6PFDA	80.4 %	25-150
Surrogate: M7PFUdA	119 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	108 %	25-150
Surrogate: M2PFTeDA	92.6 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB 112 1-3					<b>York Sample ID:</b> 23D1735-09
<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 9:45 am	<u>Date Received</u> 04/28/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	1.18 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	121 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	35.0 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	80.1 %			10-150						
	Surrogate: d3-N-MeFOSAA	78.1 %			25-150						
	Surrogate: d5-N-EtFOSAA	77.3 %			25-150						
	Surrogate: M2-6:2 FTS	100 %			25-200						
	Surrogate: M2-8:2 FTS	68.7 %			25-200						
	Surrogate: M9PFNA	119 %			25-150						
	Surrogate: M2-4:2 FTS	91.5 %			25-150						
	Surrogate: d-N-MeFOSA	63.9 %			25-150						
	Surrogate: d-N-EtFOSA	83.3 %			25-150						
	Surrogate: M3HFPO-DA	116 %			25-150						
	Surrogate: d9-N-EtFOSE	50.1 %			25-150						
	Surrogate: d7-N-MeFOSE	51.6 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	93.4		%	0.100	1	SM 2540G	05/08/2023 15:21	05/08/2023 15:26	AC
Certifications: CTDOH-PH-0723										

### Sample Information

<b>Client Sample ID:</b> SB 112 11-13					<b>York Sample ID:</b> 23D1735-10
<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 9:45 am	<u>Date Received</u> 04/28/2023	

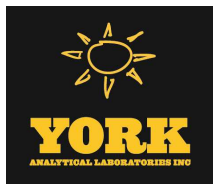
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.130	0.207	1	EPA 1633 Draft 2	05/01/2023 17:34	05/05/2023 05:08	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB 112 11-13

**York Sample ID:** 23D1735-10

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 9:45 am

04/28/2023

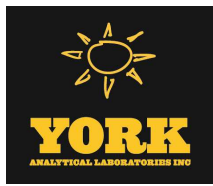
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0619	0.233	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.123	0.233	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.209	0.214	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.201	0.233	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.195	0.217	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.221	0.233	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.223	0.233	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.231	0.233	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.190	0.233	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.146	0.233	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.120	0.233	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.173	0.233	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.226	0.233	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.127	0.467	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.170	0.233	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.181	0.233	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.223	0.225	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.694	0.887	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.881	0.896	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
375-22-4	<b>Perfluoro-n-butanoic acid (PFBA)</b>	<b>0.671</b>	J	ug/kg dry	0.127	0.934	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:08	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	0.162	0.415	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
151772-58-6	* Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ug/kg dry	0.225	0.467	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0724	0.467	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ



### Sample Information

**Client Sample ID:** SB 112 11-13

**York Sample ID:** 23D1735-10

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 9:45 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

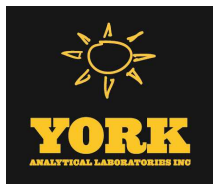
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.112	0.467	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.183	0.219	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.694	0.875	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.710	0.934	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.363	0.882	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.287	0.873	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.203	0.882	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.197	0.226	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.145	0.224	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.740	1.17	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.45	5.84	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.75	5.84	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.713	2.33	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.210	0.233	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.813	2.33	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.231	0.233	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:08	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	139 %	25-150
Surrogate: M5PFHxA	111 %	25-150
Surrogate: M4PFHpA	110 %	25-150
Surrogate: M3PFHxS	121 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	86.1 %	25-150
Surrogate: M6PFDA	61.2 %	25-150
Surrogate: M7PFUdA	80.5 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	70.0 %	25-150
Surrogate: M2PFTeDA	81.8 %	10-150



### Sample Information

**Client Sample ID:** SB 112 11-13

**York Sample ID:** 23D1735-10

<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 9:45 am	<u>Date Received</u> 04/28/2023
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**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.987 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	96.6 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	41.7 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	89.7 %			10-150						
	Surrogate: d3-N-MeFOSAA	84.8 %			25-150						
	Surrogate: d5-N-EtFOSAA	90.6 %			25-150						
	Surrogate: M2-6:2 FTS	116 %			25-200						
	Surrogate: M2-8:2 FTS	114 %			25-200						
	Surrogate: M9PFNA	108 %			25-150						
	Surrogate: M2-4:2 FTS	100 %			25-150						
	Surrogate: d-N-MeFOSA	76.1 %			25-150						
	Surrogate: d-N-EtFOSA	72.5 %			25-150						
	Surrogate: M3HFPO-DA	119 %			25-150						
	Surrogate: d9-N-EtFOSE	59.0 %			25-150						
	Surrogate: d7-N-MeFOSE	58.1 %			25-150						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	85.3		%	0.100	1	SM 2540G	05/08/2023 15:21	05/08/2023 15:26	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** SB 110 1-3

**York Sample ID:** 23D1735-11

<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 10:00 am	<u>Date Received</u> 04/28/2023
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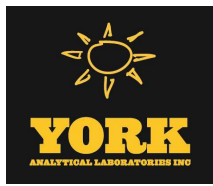
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.115	0.184	1	EPA 1633 Draft 2	05/01/2023 17:34	05/05/2023 05:20	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB 110 1-3

**York Sample ID:** 23D1735-11

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 10:00 am

04/28/2023

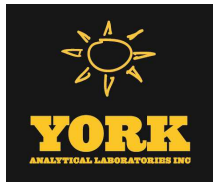
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0551	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.109	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.186	0.190	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.179	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.174	0.193	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.196	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.198	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.206	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.169	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.130	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.107	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.154	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.202	0.208	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.113	0.416	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.152	0.208	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.161	0.208	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.198	0.201	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.618	0.790	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.785	0.798	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.113	0.831	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:20	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.144	0.370	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
151772-58-6	* Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND		ug/kg dry	0.201	0.416	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0644	0.416	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ



### Sample Information

**Client Sample ID:** SB 110 1-3

**York Sample ID:** 23D1735-11

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 10:00 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

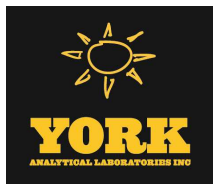
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.0998	0.416	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.163	0.195	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.618	0.779	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.632	0.831	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.323	0.786	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.256	0.777	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.181	0.786	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.176	0.202	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.129	0.200	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.659	1.04	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.18	5.20	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.56	5.20	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.635	2.08	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.187	0.208	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.724	2.08	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.206	0.208	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:20	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	105 %	25-150
Surrogate: M5PFHxA	100 %	25-150
Surrogate: M4PFHpA	101 %	25-150
Surrogate: M3PFHxS	95.4 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	83.4 %	25-150
Surrogate: M6PFDA	46.8 %	25-150
Surrogate: M7PFUdA	63.8 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	69.2 %	25-150
Surrogate: M2PFTeDA	64.9 %	10-150



### Sample Information

<b>Client Sample ID:</b> SB 110 1-3					<b>York Sample ID:</b> 23D1735-11
<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 10:00 am	<u>Date Received</u> 04/28/2023	

#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	1.40 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	93.5 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	38.8 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	68.1 %			10-150						
	Surrogate: d3-N-MeFOSAA	66.1 %			25-150						
	Surrogate: d5-N-EtFOSAA	65.4 %			25-150						
	Surrogate: M2-6:2 FTS	82.4 %			25-200						
	Surrogate: M2-8:2 FTS	61.0 %			25-200						
	Surrogate: M9PFNA	87.1 %			25-150						
	Surrogate: M2-4:2 FTS	81.9 %			25-150						
	Surrogate: d-N-MeFOSA	53.8 %			25-150						
	Surrogate: d-N-EtFOSA	106 %			25-150						
	Surrogate: M3HFPO-DA	113 %			25-150						
	Surrogate: d9-N-EtFOSE	54.0 %			25-150						
	Surrogate: d7-N-MeFOSE	55.5 %			25-150						

#### Total Solids

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	95.3		%	0.100	1	SM 2540G	05/08/2023 15:21	05/08/2023 15:26	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

<b>Client Sample ID:</b> SB 110 12-14					<b>York Sample ID:</b> 23D1735-12
<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 10:00 am	<u>Date Received</u> 04/28/2023	

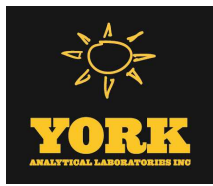
#### PFAS, EPA 1633 Target List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.114	0.182	1	EPA 1633 Draft 2	05/01/2023 17:34	05/05/2023 05:32	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** SB 110 12-14

**York Sample ID:** 23D1735-12

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 10:00 am

04/28/2023

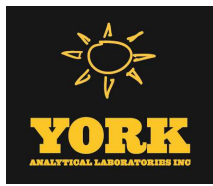
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0545	0.206	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.108	0.206	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.184	0.188	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.177	0.206	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
1763-23-1	<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>0.254</b>		ug/kg dry	0.172	0.191	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.194	0.206	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.196	0.206	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.204	0.206	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.168	0.206	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		ug/kg dry	0.129	0.206	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.106	0.206	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.152	0.206	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.199	0.206	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.112	0.411	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.150	0.206	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.159	0.206	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.196	0.198	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.612	0.781	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.776	0.790	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
375-22-4	<b>Perfluoro-n-butanoic acid (PFBA)</b>	<b>0.358</b>	J	ug/kg dry	0.112	0.823	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 05:32	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND		ug/kg dry	0.143	0.366	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
151772-58-6	* Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ug/kg dry	0.198	0.411	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0637	0.411	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ



### Sample Information

**Client Sample ID:** SB 110 12-14

**York Sample ID:** 23D1735-12

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 10:00 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

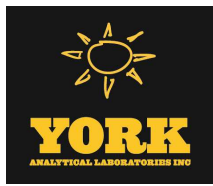
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.0987	0.411	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.161	0.193	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.612	0.771	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.625	0.823	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.320	0.777	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.253	0.769	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.179	0.777	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.174	0.199	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.127	0.197	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.652	1.03	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.16	5.14	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.54	5.14	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.628	2.06	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
31506-32-8	* N-MeFOA	ND		ug/kg dry	0.185	0.206	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.717	2.06	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ
4151-50-2	* N-EtFOA	ND		ug/kg dry	0.204	0.206	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 05:32	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	147 %	25-150
Surrogate: M5PFHxA	114 %	25-150
Surrogate: M4PFHpA	102 %	25-150
Surrogate: M3PFHxS	119 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	98.6 %	25-150
Surrogate: M6PFDA	79.1 %	25-150
Surrogate: M7PFUdA	103 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	87.6 %	25-150
Surrogate: M2PFTeDA	99.1 %	10-150



### Sample Information

**Client Sample ID:** SB 110 12-14

**York Sample ID:** 23D1735-12

<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 10:00 am	<u>Date Received</u> 04/28/2023
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**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	1.46 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	88.1 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	42.5 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	73.1 %			10-150						
	Surrogate: d3-N-MeFOSAA	71.8 %			25-150						
	Surrogate: d5-N-EtFOSAA	75.0 %			25-150						
	Surrogate: M2-6:2 FTS	124 %			25-200						
	Surrogate: M2-8:2 FTS	109 %			25-200						
	Surrogate: M9PFNA	109 %			25-150						
	Surrogate: M2-4:2 FTS	115 %			25-150						
	Surrogate: d-N-MeFOSA	47.4 %			25-150						
	Surrogate: d-N-EtFOSA	105 %			25-150						
	Surrogate: M3HFPO-DA	118 %			25-150						
	Surrogate: d9-N-EtFOSE	66.1 %			25-150						
	Surrogate: d7-N-MeFOSE	64.9 %			25-150						

**Total Solids**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	95.7		%	0.100	1	SM 2540G	05/08/2023 15:21	05/08/2023 15:26	AC	
Certifications:								CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** DUP

**York Sample ID:** 23D1735-13

<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 6:00 am	<u>Date Received</u> 04/28/2023
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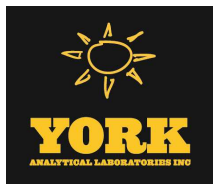
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.121	0.193	1	EPA 1633 Draft 2	05/01/2023 17:34	05/05/2023 06:09	ESJ
Certifications:											



### Sample Information

**Client Sample ID:** DUP

**York Sample ID:** 23D1735-13

**York Project (SDG) No.**

**Client Project ID**

**Matrix**

**Collection Date/Time**

**Date Received**

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 6:00 am

04/28/2023

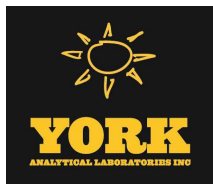
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.0577	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.114	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.195	0.199	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.187	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.182	0.203	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.206	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.208	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.216	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.178	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.136	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
376-06-7	Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.112	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
2355-31-9	N-MeFOSAA	ND		ug/kg dry	0.161	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
2991-50-6	N-EtFOSAA	ND		ug/kg dry	0.211	0.218	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.119	0.436	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.159	0.218	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.169	0.218	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.208	0.210	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.648	0.828	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.822	0.836	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
375-22-4	<b>Perfluoro-n-butanoic acid (PFBA)</b>	<b>0.300</b>	J	ug/kg dry	0.119	0.871	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/01/2023 17:34	05/05/2023 06:09	ESJ
113507-82-7	* Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ug/kg dry	0.151	0.388	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
151772-58-6	* Perfluoro-3,6-dioxheptanoic acid (NFDHA)	ND		ug/kg dry	0.210	0.436	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
377-73-1	* Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ug/kg dry	0.0675	0.436	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ



### Sample Information

**Client Sample ID:** DUP

**York Sample ID:** 23D1735-13

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 6:00 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

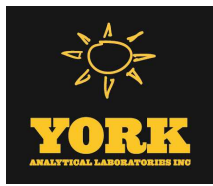
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	* Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ug/kg dry	0.105	0.436	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
2706-91-4	* Perfluoro-1-pentanesulfonate (PFPeS)	ND		ug/kg dry	0.171	0.205	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
757124-72-4	* 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ug/kg dry	0.648	0.817	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
13252-13-6	* HFPO-DA (Gen-X)	ND		ug/kg dry	0.662	0.871	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
763051-92-9	* 11CL-PF3OUdS	ND		ug/kg dry	0.339	0.823	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
756426-58-1	* 9CL-PF3ONS	ND		ug/kg dry	0.268	0.815	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
919005-14-4	* ADONA	ND		ug/kg dry	0.190	0.823	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ug/kg dry	0.184	0.211	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ug/kg dry	0.135	0.209	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPiPA)	ND		ug/kg dry	0.691	1.09	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ug/kg dry	2.28	5.45	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ug/kg dry	1.63	5.45	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
24448-09-7	* N-MeFOSE	ND		ug/kg dry	0.665	2.18	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
31506-32-8	* N-MeFOSA	ND		ug/kg dry	0.196	0.218	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
1691-99-2	* N-EtFOSE	ND		ug/kg dry	0.759	2.18	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ
4151-50-2	* N-EtFOSA	ND		ug/kg dry	0.216	0.218	1	EPA 1633 Draft 2 Certifications:	05/01/2023 17:34	05/05/2023 06:09	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	124 %	25-150
Surrogate: M5PFHxA	96.0 %	25-150
Surrogate: M4PFHpA	101 %	25-150
Surrogate: M3PFHxS	109 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	92.7 %	25-150
Surrogate: M6PFDA	73.2 %	25-150
Surrogate: M7PFUdA	77.8 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	68.7 %	25-150
Surrogate: M2PFTeDA	69.0 %	10-150



### Sample Information

**Client Sample ID:** DUP

**York Sample ID:** 23D1735-13

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 6:00 am

04/28/2023

**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.994 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	120 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	28.0 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	79.2 %			10-150						
	Surrogate: d3-N-MeFOSAA	76.3 %			25-150						
	Surrogate: d5-N-EtFOSAA	70.9 %			25-150						
	Surrogate: M2-6:2 FTS	80.2 %			25-200						
	Surrogate: M2-8:2 FTS	75.8 %			25-200						
	Surrogate: M9PFNA	109 %			25-150						
	Surrogate: M2-4:2 FTS	95.0 %			25-150						
	Surrogate: d-N-MeFOSA	58.2 %			25-150						
	Surrogate: d-N-EtFOSA	70.8 %			25-150						
	Surrogate: M3HFPO-DA	102 %			25-150						
	Surrogate: d9-N-EtFOSE	48.8 %			25-150						
	Surrogate: d7-N-MeFOSE	46.6 %			25-150						

**Total Solids**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst	
solids	* % Solids	91.5		%	0.100	1	SM 2540G	05/08/2023 15:21	05/08/2023 15:26	AC	
								Certifications: CTDOH-PH-0723			

### Sample Information

**Client Sample ID:** Equipment Blank

**York Sample ID:** 23D1735-14

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Water

April 27, 2023 11:00 am

04/28/2023

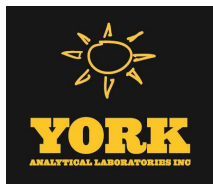
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		ng/L	0.459	1.73	1	EPA 1633 Draft 2	05/03/2023 16:49	05/08/2023 16:48	ESJ
								Certifications: NELAC-NY12058			



### Sample Information

**Client Sample ID:** Equipment Blank

**York Sample ID:** 23D1735-14

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Water

April 27, 2023 11:00 am

04/28/2023

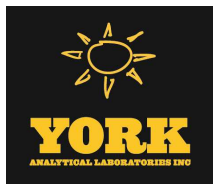
**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		ng/L	0.342	1.95	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		ng/L	0.693	1.95	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		ng/L	0.664	1.79	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
335-67-1	Perfluorooctanoic acid (PFOA)	ND		ng/L	0.410	1.95	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		ng/L	0.800	1.82	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
375-95-1	Perfluorononanoic acid (PFNA)	ND		ng/L	0.507	1.95	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
335-76-2	Perfluorodecanoic acid (PFDA)	ND		ng/L	0.732	1.95	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		ng/L	1.10	1.95	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		ng/L	0.859	1.95	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	0.722	1.95	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	0.673	1.95	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ
2355-31-9	N-MeFOSAA	ND		ng/L	0.771	1.95	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
2991-50-6	N-EtFOSAA	ND		ng/L	1.01	1.95	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		ng/L	0.224	3.90	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	0.859	1.95	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ng/L	0.888	1.86	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	1.29	1.88	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ng/L	1.03	7.42	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	7.50	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
375-22-4	Perfluoro-n-butanoic acid (PFBA)	ND		ng/L	0.322	7.81	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND		ng/L	0.488	3.47	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
151772-58-6	Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND		ng/L	2.09	3.90	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
377-73-1	Perfluoro-4-oxapentanoic acid (PFMPA)	ND		ng/L	0.244	3.90	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ



### Sample Information

**Client Sample ID:** Equipment Blank

**York Sample ID:** 23D1735-14

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1735

1 Shore Road Glenwood Landing, NY 21-215

Water

April 27, 2023 11:00 am

04/28/2023

**PFAS, EPA 1633 Target List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 1633 Prep

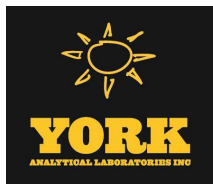
CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
863090-89-5	Perfluoro-5-oxahexanoic acid (PFMBA)	ND		ng/L	0.361	3.90	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
2706-91-4	Perfluoro-1-pentanesulfonate (PFPeS)	ND		ng/L	0.742	1.83	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND		ng/L	1.75	7.32	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
13252-13-6	HFPO-DA (Gen-X)	ND		ng/L	3.15	7.81	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
763051-92-9	11CL-PF3OUdS	ND		ng/L	1.35	7.38	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
756426-58-1	9CL-PF3ONS	ND		ng/L	0.683	7.30	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
919005-14-4	ADONA	ND		ng/L	0.517	7.38	1	EPA 1633 Draft 2 Certifications: NELAC-NY12058	05/03/2023 16:49	05/08/2023 16:48	ESJ
79780-39-5	* Perfluorododecanesulfonic acid (PFDoS)	ND		ng/L	0.908	1.89	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ
68259-12-1	* Perfluoro-1-nonanesulfonic acid (PFNS)	ND		ng/L	0.839	1.87	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ
356-02-5	* 3-Perfluoropropyl propanoic acid (FPPrPA)	ND		ng/L	1.98	4.88	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ
914637-49-3	* 3-Perfluoropentyl propanoic acid (FPePA)	ND		ng/L	7.15	24.4	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ
812-70-4	* 3-Perfluoroheptyl propanoic acid (FHpPA)	ND		ng/L	9.24	24.4	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ
24448-09-7	* N-MeFOSE	ND		ng/L	3.89	19.5	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ
31506-32-8	* N-MeFOSA	ND		ng/L	1.54	1.95	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ
1691-99-2	* N-EtFOSE	ND		ng/L	3.89	19.5	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ
4151-50-2	* N-EtFOSA	ND		ng/L	1.76	1.95	1	EPA 1633 Draft 2 Certifications:	05/03/2023 16:49	05/08/2023 16:48	ESJ

**Surrogate Recoveries**

**Result**

**Acceptance Range**

Surrogate: M3PFBS	147 %	25-150
Surrogate: M5PFHxA	88.1 %	25-150
Surrogate: M4PFHpA	85.0 %	25-150
Surrogate: M3PFHxS	157 %	25-150
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	99.9 %	25-150
Surrogate: M6PFDA	80.4 %	25-150
Surrogate: M7PFUdA	84.9 %	25-150
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	65.2 %	25-150
Surrogate: M2PFTeDA	31.1 %	10-150



**Sample Information**

**Client Sample ID:** Equipment Blank

**York Sample ID:** 23D1735-14

<u>York Project (SDG) No.</u> 23D1735	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Water	<u>Collection Date/Time</u> April 27, 2023 11:00 am	<u>Date Received</u> 04/28/2023
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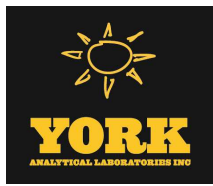
**PFAS, EPA 1633 Target List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 1633 Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	7.71 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	79.0 %			25-150						
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	86.7 %			25-150						
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	84.0 %			10-150						
	Surrogate: d3-N-MeFOSAA	68.3 %			25-150						
	Surrogate: d5-N-EtFOSAA	61.4 %			25-150						
	Surrogate: M2-6:2 FTS	145 %			25-200						
	Surrogate: M2-8:2 FTS	108 %			25-200						
	Surrogate: M9PFNA	72.9 %			25-150						
	Surrogate: M2-4:2 FTS	138 %			25-150						
	Surrogate: d-N-MeFOSA	54.5 %			25-150						
	Surrogate: d-N-EtFOSA	104 %			25-150						
	Surrogate: M3HFPO-DA	104 %			25-150						
	Surrogate: d9-N-EtFOSE	19.8 %			25-150						
	Surrogate: d7-N-MeFOSE	26.9 %			25-150						



## Analytical Batch Summary

**Batch ID:** BE30075

**Preparation Method:** EPA 1633 Prep

**Prepared By:** BAMW

YORK Sample ID	Client Sample ID	Preparation Date
23D1735-02	SB 107 12-14	05/01/23
23D1735-03	SB 115 1-3	05/01/23
23D1735-04	SB 115 12-14	05/01/23
23D1735-05	SB 114 1-3	05/01/23
23D1735-06	SB 114 12-14	05/01/23
23D1735-07	SB 113 1-3	05/01/23
23D1735-08	SB 113 12-14	05/01/23
23D1735-09	SB 112 1-3	05/01/23
23D1735-10	SB 112 11-13	05/01/23
23D1735-11	SB 110 1-3	05/01/23
23D1735-12	SB 110 12-14	05/01/23
23D1735-13	DUP	05/01/23
BE30075-BLK1	Blank	05/01/23
BE30075-BS1	LCS	05/01/23
BE30075-BS2	LCS	05/01/23

**Batch ID:** BE30255

**Preparation Method:** EPA 1633 Prep

**Prepared By:** BAMW

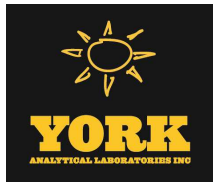
YORK Sample ID	Client Sample ID	Preparation Date
23D1735-14	Equipment Blank	05/03/23
BE30255-BLK1	Blank	05/03/23
BE30255-BS1	LCS	05/03/23
BE30255-BS2	LCS	05/03/23
BE30255-DUP1	Duplicate	05/03/23

**Batch ID:** BE30519

**Preparation Method:** % Solids Prep

**Prepared By:** AC

YORK Sample ID	Client Sample ID	Preparation Date
23D1735-01	SB 107 1-3	05/08/23
23D1735-02	SB 107 12-14	05/08/23
23D1735-03	SB 115 1-3	05/08/23
23D1735-04	SB 115 12-14	05/08/23
23D1735-05	SB 114 1-3	05/08/23
23D1735-06	SB 114 12-14	05/08/23
23D1735-07	SB 113 1-3	05/08/23
23D1735-08	SB 113 12-14	05/08/23
23D1735-09	SB 112 1-3	05/08/23
23D1735-10	SB 112 11-13	05/08/23
23D1735-11	SB 110 1-3	05/08/23
23D1735-12	SB 110 12-14	05/08/23
23D1735-13	DUP	05/08/23
BE30519-DUP1	Duplicate	05/08/23

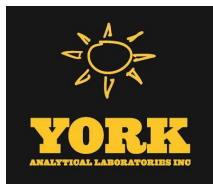


**Batch ID:** BE30533

**Preparation Method:** EPA 1633 Prep

**Prepared By:** BAMW

YORK Sample ID	Client Sample ID	Preparation Date
23D1735-01	SB 107 1-3	05/08/23
BE30533-BLK1	Blank	05/08/23
BE30533-BS1	LCS	05/08/23
BE30533-BS2	LCS	05/08/23
BE30533-DUP1	Duplicate	05/08/23
BE30533-DUP2	Duplicate	05/08/23



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

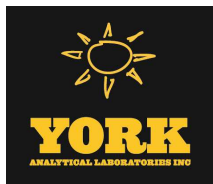
Analyte	Result	Reporting	Units	Spike	Source*	%REC	%REC	Flag	RPD	RPD	Limit	Flag
		Limit		Level	Result	Limits	Limit					

**Batch BE30075 - EPA 1633 Prep**

**Blank (BE30075-BLK1)**

Prepared: 05/01/2023 Analyzed: 05/05/2023

Perfluorobutanesulfonic acid (PFBS)	ND	0.177	ug/kg wet									
Perfluorohexanoic acid (PFHxA)	ND	0.200	"									
Perfluoroheptanoic acid (PFHpA)	ND	0.200	"									
Perfluorohexanesulfonic acid (PFHxS)	ND	0.183	"									
Perfluorooctanoic acid (PFOA)	ND	0.200	"									
Perfluorooctanesulfonic acid (PFOS)	ND	0.186	"									
Perfluorononanoic acid (PFNA)	ND	0.200	"									
Perfluorodecanoic acid (PFDA)	ND	0.200	"									
Perfluoroundecanoic acid (PFUnA)	ND	0.200	"									
Perfluorododecanoic acid (PFDoA)	ND	0.200	"									
Perfluorotridecanoic acid (PFTrDA)	ND	0.200	"									
Perfluorotetradecanoic acid (PFTA)	ND	0.200	"									
N-MeFOSAA	ND	0.200	"									
N-EtFOSAA	ND	0.200	"									
Perfluoropentanoic acid (PFPeA)	ND	0.400	"									
Perfluoro-1-octanesulfonamide (FOSA)	ND	0.200	"									
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.200	"									
Perfluoro-1-decanesulfonic acid (PFDS)	ND	0.193	"									
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	0.760	"									
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	0.768	"									
Perfluoro-n-butanoic acid (PFBA)	ND	0.800	"									
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.356	"									
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.400	"									
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.400	"									
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.400	"									
Perfluoro-1-pentanesulfonate (PFPeS)	ND	0.188	"									
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	0.750	"									
HFPO-DA (Gen-X)	ND	0.800	"									
11CL-PF3OUdS	ND	0.756	"									
9CL-PF3ONS	ND	0.748	"									
ADONA	ND	0.756	"									
Perfluorododecanesulfonic acid (PFDoS)	ND	0.194	"									
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	0.192	"									
3-Perfluoropropyl propanoic acid (FPrPA)	ND	1.00	"									
3-Perfluoropentyl propanoic acid (FPePA)	ND	5.00	"									
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	5.00	"									
N-MeFOSE	ND	2.00	"									
N-MeFOSA	ND	0.200	"									
N-EtFOSE	ND	2.00	"									
N-EtFOSA	ND	0.200	"									
Surrogate: M3PFBS	2.70		"	2.33		116	25-150					
Surrogate: M5PFHxA	2.47		"	2.50		98.7	25-150					
Surrogate: M4PFHpA	2.35		"	2.50		94.1	25-150					
Surrogate: M3PFHxS	2.00		"	2.37		84.4	25-150					
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	1.93		"	2.50		77.4	25-150					
Surrogate: M6PFDA	0.922		"	1.25		73.8	25-150					



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BE30075 - EPA 1633 Prep

Blank (BE30075-BLK1)

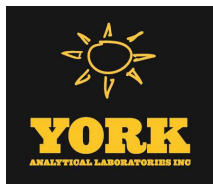
Prepared: 05/01/2023 Analyzed: 05/05/2023

Surrogate: M7PFUdA	0.924		ug/kg wet	1.25		73.9	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.717		"	1.25		57.4	25-150				
Surrogate: M2PFTeDA	0.596		"	1.25		47.7	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	9.36		"	10.0		93.6	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.64		"	2.40		68.4	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	5.38		"	5.00		108	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.43		"	2.50		57.2	10-150				
Surrogate: d3-N-MeFOSAA	2.38		"	5.00		47.7	25-150				
Surrogate: d5-N-EtFOSAA	2.15		"	5.00		43.1	25-150				
Surrogate: M2-6:2 FTS	5.06		"	4.76		106	25-200				
Surrogate: M2-8:2 FTS	3.53		"	4.80		73.5	25-200				
Surrogate: M9PFNA	1.17		"	1.25		93.4	25-150				
Surrogate: M2-4:2 FTS	4.93		"	4.69		105	25-150				
Surrogate: d-N-MeFOSA	1.03		"	2.50		41.1	25-150				
Surrogate: d-N-EtFOSA	2.07		"	2.50		82.6	25-150				
Surrogate: M3HFPO-DA	10.5		"	10.0		105	25-150				
Surrogate: d9-N-EtFOSE	3.87		"	25.0		15.5	25-150				
Surrogate: d7-N-MeFOSE	6.02		"	25.0		24.1	25-150				

LCS (BE30075-BS1)

Prepared: 05/01/2023 Analyzed: 05/05/2023

Perfluorobutanesulfonic acid (PFBS)	3.54	0.175	ug/kg wet	3.50		101	50-150				
Perfluorohexanoic acid (PFHxA)	3.81	0.198	"	3.96		96.1	50-150				
Perfluoroheptanoic acid (PFHpA)	3.88	0.198	"	3.96		97.9	50-150				
Perfluorohexanesulfonic acid (PFHxS)	3.74	0.181	"	3.62		103	50-150				
Perfluorooctanoic acid (PFOA)	4.22	0.198	"	3.96		107	50-150				
Perfluorooctanesulfonic acid (PFOS)	3.75	0.184	"	3.68		102	50-150				
Perfluorononanoic acid (PFNA)	2.07	0.198	"	3.96		52.3	50-150				
Perfluorodecanoic acid (PFDA)	3.05	0.198	"	3.96		77.0	50-150				
Perfluoroundecanoic acid (PFUnA)	5.36	0.198	"	3.96		135	50-150				
Perfluorododecanoic acid (PFDoA)	3.50	0.198	"	3.96		88.4	50-150				
Perfluorotridecanoic acid (PFTrDA)	3.95	0.198	"	3.96		99.7	50-150				
Perfluorotetradecanoic acid (PFTA)	3.58	0.198	"	3.96		90.4	50-150				
N-MeFOSAA	5.29	0.198	"	3.96		133	50-150				
N-EtFOSAA	4.24	0.198	"	3.96		107	50-150				
Perfluoropentanoic acid (PFPeA)	7.71	0.396	"	7.92		97.3	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	4.23	0.198	"	3.96		107	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	3.45	0.198	"	3.78		91.1	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	3.19	0.191	"	3.82		83.4	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	14.4	0.752	"	15.0		95.8	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	20.1	0.760	"	15.2		132	50-150				
Perfluoro-n-butanoic acid (PFBA)	13.3	0.792	"	15.8		83.9	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	8.00	0.352	"	7.05		113	50-150				
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	8.69	0.396	"	7.92		110	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	1.48	0.396	"	7.92		18.6	50-150			Low Bias	
Perfluoro-5-oxahexanoic acid (PFMBA)	14.5	0.396	"	7.92		183	50-150			High Bias	



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30075 - EPA 1633 Prep</b>											
<b>LCS (BE30075-BS1)</b>											
Prepared: 05/01/2023 Analyzed: 05/05/2023											
Perfluoro-1-pentanesulfonate (PFPeS)	4.49	0.186	ug/kg wet	3.72		120	50-150				
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	14.4	0.743	"	14.9		97.0	50-150				
HFPO-DA (Gen-X)	7.45	0.792	"	7.92		94.0	50-150				
11CL-PF3OUdS	3.28	0.749	"	7.49		43.8	50-150	Low Bias			
9CL-PF3ONS	4.63	0.741	"	7.41		62.5	50-150				
ADONA	5.31	0.749	"	7.49		70.9	50-150				
Perfluorododecanesulfonic acid (PFDoS)	4.49	0.192	"	3.84		117	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	3.92	0.190	"	3.80		103	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	43.2	0.990	"	15.8		273	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	72.5	4.95	"	79.2		91.6	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	11.2	4.95	"	79.2		14.1	50-150	Low Bias			
N-MeFOSE	31.9	1.98	"	39.6		80.6	50-150				
N-MeFOSA	2.88	0.198	"	3.96		72.8	50-150				
N-EtFOSE	30.0	1.98	"	39.6		75.8	50-150				
N-EtFOSA	2.06	0.198	"	3.96		52.1	50-150				
Surrogate: M3PFBS	2.46		"	2.31		107	25-150				
Surrogate: M5PFHxA	2.24		"	2.48		90.4	25-150				
Surrogate: M4PFHpA	1.54		"	2.48		62.2	25-150				
Surrogate: M3PFHxS	1.38		"	2.35		59.0	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	1.35		"	2.48		54.4	25-150				
Surrogate: M6PFDA	0.678		"	1.24		54.8	25-150				
Surrogate: M7PFUdA	0.616		"	1.24		49.8	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.667		"	1.24		53.9	25-150				
Surrogate: M2PFTeDA	0.657		"	1.24		53.1	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.346		"	9.90		3.49	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.34		"	2.37		56.6	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	1.53		"	4.95		30.9	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	0.770		"	2.48		31.1	10-150				
Surrogate: d3-N-MeFOSAA	1.71		"	4.95		34.6	25-150				
Surrogate: d5-N-EtFOSAA	2.04		"	4.95		41.3	25-150				
Surrogate: M2-6:2 FTS	3.63		"	4.71		77.2	25-200				
Surrogate: M2-8:2 FTS	2.46		"	4.75		51.8	25-200				
Surrogate: M9PFNA	1.15		"	1.24		93.2	25-150				
Surrogate: M2-4:2 FTS	4.43		"	4.64		95.5	25-150				
Surrogate: d-N-MeFOSA	0.984		"	2.48		39.7	25-150				
Surrogate: d-N-EtFOSA	2.12		"	2.48		85.6	25-150				
Surrogate: M3HFPO-DA	9.52		"	9.90		96.1	25-150				
Surrogate: d9-N-EtFOSE	10.3		"	24.8		41.7	25-150				
Surrogate: d7-N-MeFOSE	10.6		"	24.8		42.9	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30075 - EPA 1633 Prep</b>											
<b>LCS (BE30075-BS2)</b>											
Prepared: 05/01/2023 Analyzed: 05/05/2023											
Perfluorobutanesulfonic acid (PFBS)	0.823	0.177	ug/kg wet	0.707		116	50-150				
Perfluorohexanoic acid (PFHxA)	1.01	0.200	"	0.798		127	50-150				
Perfluoroheptanoic acid (PFHpA)	0.816	0.200	"	0.798		102	50-150				
Perfluorohexanesulfonic acid (PFHxS)	0.678	0.183	"	0.731		92.8	50-150				
Perfluorooctanoic acid (PFOA)	1.07	0.200	"	0.798		134	50-150				
Perfluorooctanesulfonic acid (PFOS)	1.04	0.186	"	0.743		140	50-150				
Perfluorononanoic acid (PFNA)	0.681	0.200	"	0.798		85.3	50-150				
Perfluorodecanoic acid (PFDA)	0.882	0.200	"	0.798		110	50-150				
Perfluoroundecanoic acid (PFUnA)	1.36	0.200	"	0.798		170	50-150	High Bias			
Perfluorododecanoic acid (PFDoA)	1.06	0.200	"	0.798		133	50-150				
Perfluorotridecanoic acid (PFTriDA)	0.881	0.200	"	0.798		110	50-150				
Perfluorotetradecanoic acid (PFTA)	0.691	0.200	"	0.798		86.5	50-150				
N-MeFOSAA	0.866	0.200	"	0.798		108	50-150				
N-EtFOSAA	0.825	0.200	"	0.798		103	50-150				
Perfluoropentanoic acid (PFPeA)	1.78	0.399	"	1.60		112	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	0.660	0.200	"	0.798		82.7	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	1.69	0.200	"	0.762		222	50-150	High Bias			
Perfluoro-1-decanesulfonic acid (PFDS)	1.14	0.193	"	0.770		149	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	3.94	0.758	"	3.03		130	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	3.03	0.766	"	3.07		98.8	50-150				
Perfluoro-n-butanoic acid (PFBA)	3.02	0.798	"	3.19		94.7	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	1.88	0.355	"	1.42		132	50-150				
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	1.89	0.399	"	1.60		119	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	0.274	0.399	"	1.60		17.2	50-150	Low Bias			
Perfluoro-5-oxahexanoic acid (PFMBA)	3.61	0.399	"	1.60		226	50-150	High Bias			
Perfluoro-1-pentanesulfonate (PFPeS)	0.890	0.188	"	0.750		119	50-150				
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	3.34	0.749	"	2.99		112	50-150				
HFPO-DA (Gen-X)	1.88	0.798	"	1.60		118	50-150				
11CL-PF3OUdS	0.827	0.754	"	1.51		54.8	50-150				
9CL-PF3ONS	0.961	0.747	"	1.49		64.4	50-150				
ADONA	1.39	0.754	"	1.51		92.1	50-150				
Perfluorododecanesulfonic acid (PFDoS)	0.938	0.194	"	0.774		121	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	1.49	0.192	"	0.766		194	50-150	High Bias			
3-Perfluoropropyl propanoic acid (FPrPA)	12.2	0.998	"	3.19		382	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	18.7	4.99	"	16.0		117	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	2.57	4.99	"	16.0		16.1	50-150	Low Bias			
N-MeFOSE	7.40	2.00	"	7.98		92.7	50-150				
N-MeFOSA	0.764	0.200	"	0.798		95.7	50-150				
N-EtFOSE	7.54	2.00	"	7.98		94.5	50-150				
N-EtFOSA	0.542	0.200	"	0.798		67.9	50-150				
Surrogate: M3PFBS	2.47		"	2.33		106	25-150				
Surrogate: M5PFHxA	2.48		"	2.50		99.4	25-150				
Surrogate: M4PFHpA	2.27		"	2.50		91.1	25-150				
Surrogate: M3PFHxS	2.26		"	2.37		95.7	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	1.83		"	2.50		73.2	25-150				
Surrogate: M6PFDA	0.680		"	1.25		54.5	25-150				
Surrogate: M7PFUDA	0.690		"	1.25		55.3	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BE30075 - EPA 1633 Prep

LCS (BE30075-BS2)

Prepared: 05/01/2023 Analyzed: 05/05/2023

Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.647		ug/kg wet	1.25		51.8	25-150				
Surrogate: M2PFTeDA	0.778		"	1.25		62.4	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	0.313		"	9.98		3.13	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.30		"	2.39		54.3	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	1.37		"	4.99		27.4	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.69		"	2.50		67.8	10-150				
Surrogate: d3-N-MeFOSAA	3.50		"	4.99		70.1	25-150				
Surrogate: d5-N-EtFOSAA	3.02		"	4.99		60.5	25-150				
Surrogate: M2-6:2 FTS	3.16		"	4.75		66.5	25-200				
Surrogate: M2-8:2 FTS	2.62		"	4.79		54.7	25-200				
Surrogate: M9PFNA	1.13		"	1.25		90.2	25-150				
Surrogate: M2-4:2 FTS	4.25		"	4.68		90.8	25-150				
Surrogate: d-N-MeFOSA	1.38		"	2.50		55.2	25-150				
Surrogate: d-N-EtFOSA	2.70		"	2.50		108	25-150				
Surrogate: M3HFPO-DA	11.3		"	9.98		113	25-150				
Surrogate: d9-N-EtFOSE	13.4		"	25.0		53.8	25-150				
Surrogate: d7-N-MeFOSE	14.2		"	25.0		56.8	25-150				

Batch BE30255 - EPA 1633 Prep

Blank (BE30255-BLK1)

Prepared: 05/03/2023 Analyzed: 05/05/2023

Perfluorobutanesulfonic acid (PFBS)	ND	3.54	ng/L								
Perfluorohexanoic acid (PFHxA)	ND	4.00	"								
Perfluoroheptanoic acid (PFHpA)	ND	4.00	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	3.66	"								
Perfluorooctanoic acid (PFOA)	ND	4.00	"								
Perfluorooctanesulfonic acid (PFOS)	ND	3.72	"								
Perfluorononanoic acid (PFNA)	ND	4.00	"								
Perfluorodecanoic acid (PFDA)	ND	4.00	"								
Perfluoroundecanoic acid (PFUnA)	ND	4.00	"								
Perfluorododecanoic acid (PFDoA)	ND	4.00	"								
Perfluorotridecanoic acid (PFTrDA)	ND	4.00	"								
Perfluorotetradecanoic acid (PFTA)	ND	4.00	"								
N-MeFOSAA	ND	4.00	"								
N-EtFOSAA	ND	4.00	"								
Perfluoropentanoic acid (PFPeA)	ND	8.00	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	4.00	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	3.82	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	3.86	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	15.2	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	15.4	"								
Perfluoro-n-butanoic acid (PFBA)	ND	16.0	"								
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	7.12	"								
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	ND	8.00	"								
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	8.00	"								



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BE30255 - EPA 1633 Prep

Blank (BE30255-BLK1)

Prepared: 05/03/2023 Analyzed: 05/05/2023

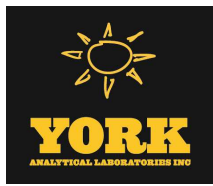
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	8.00	ng/L								
Perfluoro-1-pentanesulfonate (PFPeS)	ND	3.76	"								
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	15.0	"								
HFPO-DA (Gen-X)	ND	16.0	"								
11CL-PF3OUdS	ND	15.1	"								
9CL-PF3ONS	ND	15.0	"								
ADONA	ND	15.1	"								
Perfluorododecanesulfonic acid (PFDoS)	ND	3.88	"								
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	3.84	"								
3-Perfluoropropyl propanoic acid (FPrPA)	ND	10.0	"								
3-Perfluoropentyl propanoic acid (FPePA)	ND	50.0	"								
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	50.0	"								
N-MeFOSE	ND	40.0	"								
N-MeFOSA	ND	4.00	"								
N-EtFOSE	ND	40.0	"								
N-EtFOSA	ND	4.00	"								
Surrogate: M3PFBS	76.2		"	46.6		164	25-150				
Surrogate: M5PFHxA	65.5		"	50.0		131	25-150				
Surrogate: M4PFHpA	64.1		"	50.0		128	25-150				
Surrogate: M3PFHxS	67.1		"	47.4		142	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	55.6		"	50.0		111	25-150				
Surrogate: M6PFDA	29.8		"	25.0		119	25-150				
Surrogate: M7PFUdA	33.9		"	25.0		136	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	32.6		"	25.0		131	25-150				
Surrogate: M2PFTeDA	27.2		"	25.0		109	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	24.7		"	200		12.4	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	53.7		"	47.9		112	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	115		"	100		115	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	52.3		"	50.0		105	10-150				
Surrogate: d3-N-MeFOSAA	105		"	100		105	25-150				
Surrogate: d5-N-EtFOSAA	97.1		"	100		97.1	25-150				
Surrogate: M2-6:2 FTS	119		"	95.1		125	25-200				
Surrogate: M2-8:2 FTS	108		"	96.0		112	25-200				
Surrogate: M9PFNA	21.2		"	25.0		84.7	25-150				
Surrogate: M2-4:2 FTS	128		"	93.8		137	25-150				
Surrogate: d-N-MeFOSA	53.1		"	50.0		106	25-150				
Surrogate: d-N-EtFOSA	67.6		"	50.0		135	25-150				
Surrogate: M3HFPO-DA	281		"	200		141	25-150				
Surrogate: d9-N-EtFOSE	463		"	500		92.6	25-150				
Surrogate: d7-N-MeFOSE	518		"	500		104	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30255 - EPA 1633 Prep</b>											
<b>LCS (BE30255-BS1)</b>											
Prepared: 05/03/2023 Analyzed: 05/05/2023											
Perfluorobutanesulfonic acid (PFBS)	67.3	3.54	ng/L	70.8		95.1	50-150				
Perfluorohexanoic acid (PFHxA)	90.6	4.00	"	80.0		113	50-150				
Perfluoroheptanoic acid (PFHpA)	75.5	4.00	"	80.0		94.4	50-150				
Perfluorohexanesulfonic acid (PFHxS)	72.1	3.66	"	73.2		98.5	50-150				
Perfluorooctanoic acid (PFOA)	91.8	4.00	"	80.0		115	50-150				
Perfluorooctanesulfonic acid (PFOS)	79.2	3.72	"	74.4		106	50-150				
Perfluorononanoic acid (PFNA)	56.5	4.00	"	80.0		70.7	50-150				
Perfluorodecanoic acid (PFDA)	110	4.00	"	80.0		137	50-150				
Perfluoroundecanoic acid (PFUnA)	101	4.00	"	80.0		126	50-150				
Perfluorododecanoic acid (PFDoA)	79.1	4.00	"	80.0		98.8	50-150				
Perfluorotridecanoic acid (PFTriDA)	74.1	4.00	"	80.0		92.6	50-150				
Perfluorotetradecanoic acid (PFTA)	70.6	4.00	"	80.0		88.2	50-150				
N-MeFOSAA	128	4.00	"	80.0		160	50-150	High Bias			
N-EtFOSAA	88.1	4.00	"	80.0		110	50-150				
Perfluoropentanoic acid (PFPeA)	160	8.00	"	160		100	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	76.8	4.00	"	80.0		96.0	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	78.3	3.82	"	76.4		103	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	77.9	3.86	"	77.2		101	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	359	15.2	"	304		118	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	292	15.4	"	307		95.1	50-150				
Perfluoro-n-butanoic acid (PFBA)	305	16.0	"	320		95.3	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	168	7.12	"	142		118	50-150				
Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	205	8.00	"	160		128	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	74.1	8.00	"	160		46.3	50-150	Low Bias			
Perfluoro-5-oxahexanoic acid (PFMBA)	175	8.00	"	160		110	50-150				
Perfluoro-1-pentanesulfonate (PFPeS)	73.6	3.76	"	75.2		97.9	50-150				
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	270	15.0	"	300		90.1	50-150				
HFPO-DA (Gen-X)	128	16.0	"	160		79.9	50-150				
11CL-PF3OUdS	105	15.1	"	151		69.6	50-150				
9CL-PF3ONS	157	15.0	"	150		105	50-150				
ADONA	126	15.1	"	151		83.3	50-150				
Perfluorododecanesulfonic acid (PFDoS)	90.7	3.88	"	77.6		117	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	86.4	3.84	"	76.8		112	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	1530	10.0	"	320		477	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	1920	50.0	"	1600		120	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	348	50.0	"	1600		21.8	50-150	Low Bias			
N-MeFOSE	686	40.0	"	800		85.7	50-150				
N-MeFOSA	65.5	4.00	"	80.0		81.8	50-150				
N-EtFOSE	622	40.0	"	800		77.7	50-150				
N-EtFOSA	51.4	4.00	"	80.0		64.3	50-150				
Surrogate: M3PFBS	81.8		"	46.6		176	25-150				
Surrogate: M5PFHxA	60.6		"	50.0		121	25-150				
Surrogate: M4PFHpA	61.9		"	50.0		124	25-150				
Surrogate: M3PFHxS	76.3		"	47.4		161	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	50.6		"	50.0		101	25-150				
Surrogate: M6PFDA	21.1		"	25.0		84.5	25-150				
Surrogate: M7PFUDA	27.5		"	25.0		110	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BE30255 - EPA 1633 Prep

LCS (BE30255-BS1)

Prepared: 05/03/2023 Analyzed: 05/05/2023

Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	24.4		ng/L	25.0		97.5	25-150				
Surrogate: M2PFTeDA	25.7		"	25.0		103	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	27.1		"	200		13.6	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	61.2		"	47.9		128	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	122		"	100		122	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	48.9		"	50.0		97.8	10-150				
Surrogate: d3-N-MeFOSAA	78.4		"	100		78.4	25-150				
Surrogate: d5-N-EtFOSAA	94.0		"	100		94.0	25-150				
Surrogate: M2-6:2 FTS	162		"	95.1		171	25-200				
Surrogate: M2-8:2 FTS	126		"	96.0		132	25-200				
Surrogate: M9PFNA	40.3		"	25.0		161	25-150				
Surrogate: M2-4:2 FTS	163		"	93.8		174	25-150				
Surrogate: d-N-MeFOSA	42.6		"	50.0		85.1	25-150				
Surrogate: d-N-EtFOSA	58.9		"	50.0		118	25-150				
Surrogate: M3HFPO-DA	284		"	200		142	25-150				
Surrogate: d9-N-EtFOSE	450		"	500		90.0	25-150				
Surrogate: d7-N-MeFOSE	475		"	500		95.0	25-150				

LCS (BE30255-BS2)

Prepared: 05/03/2023 Analyzed: 05/05/2023

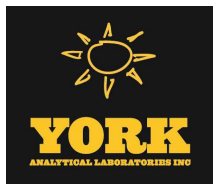
Perfluorobutanesulfonic acid (PFBS)	14.8	3.54	ng/L	14.2		105	50-150				
Perfluorohexanoic acid (PFHxA)	17.3	4.00	"	16.0		108	50-150				
Perfluoroheptanoic acid (PFHpA)	13.7	4.00	"	16.0		85.5	50-150				
Perfluorohexanesulfonic acid (PFHxS)	17.1	3.66	"	14.6		117	50-150				
Perfluorooctanoic acid (PFOA)	17.2	4.00	"	16.0		107	50-150				
Perfluorooctanesulfonic acid (PFOS)	20.6	3.72	"	14.9		138	50-150				
Perfluorononanoic acid (PFNA)	10.8	4.00	"	16.0		67.7	50-150				
Perfluorodecanoic acid (PFDA)	16.8	4.00	"	16.0		105	50-150				
Perfluoroundecanoic acid (PFUnA)	19.1	4.00	"	16.0		120	50-150				
Perfluorododecanoic acid (PFDoA)	18.8	4.00	"	16.0		118	50-150				
Perfluorotridecanoic acid (PFTrDA)	17.6	4.00	"	16.0		110	50-150				
Perfluorotetradecanoic acid (PFTA)	14.1	4.00	"	16.0		88.3	50-150				
N-MeFOSAA	14.9	4.00	"	16.0		93.1	50-150				
N-EtFOSAA	19.7	4.00	"	16.0		123	50-150				
Perfluoropentanoic acid (PFPeA)	28.9	8.00	"	32.0		90.2	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	14.2	4.00	"	16.0		88.6	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	17.1	3.82	"	15.3		112	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	18.5	3.86	"	15.4		120	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	71.2	15.2	"	60.8		117	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	82.6	15.4	"	61.4		134	50-150				
Perfluoro-n-butanoic acid (PFBA)	65.4	16.0	"	64.0		102	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	33.4	7.12	"	28.5		117	50-150				
Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	39.2	8.00	"	32.0		122	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	28.6	8.00	"	32.0		89.3	50-150				
Perfluoro-5-oxahexanoic acid (PFMBA)	33.7	8.00	"	32.0		105	50-150				
Perfluoro-1-pentanesulfonate (PFPeS)	14.0	3.76	"	15.0		93.0	50-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30255 - EPA 1633 Prep</b>											
<b>LCS (BE30255-BS2)</b>											
Prepared: 05/03/2023 Analyzed: 05/05/2023											
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	68.5	15.0	ng/L	60.0		114	50-150				
HFPO-DA (Gen-X)	49.1	16.0	"	32.0		154	50-150	High Bias			
11CL-PF3OUdS	29.0	15.1	"	30.2		95.8	50-150				
9CL-PF3ONS	30.0	15.0	"	29.9		100	50-150				
ADONA	26.0	15.1	"	30.2		86.1	50-150				
Perfluorododecanesulfonic acid (PFDoS)	12.3	3.88	"	15.5		79.1	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	15.0	3.84	"	15.4		97.7	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	312	10.0	"	64.0		487	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	410	50.0	"	320		128	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	77.8	50.0	"	320		24.3	50-150	Low Bias			
N-MeFOSE	127	40.0	"	160		79.6	50-150				
N-MeFOSA	16.9	4.00	"	16.0		105	50-150				
N-EtFOSE	125	40.0	"	160		77.9	50-150				
N-EtFOSA	9.90	4.00	"	16.0		61.9	50-150				
Surrogate: M3PFBS	57.4		"	46.6		123	25-150				
Surrogate: M5PFHxA	58.4		"	50.0		117	25-150				
Surrogate: M4PFHpA	63.8		"	50.0		128	25-150				
Surrogate: M3PFHxS	55.9		"	47.4		118	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	54.6		"	50.0		109	25-150				
Surrogate: M6PFDA	27.0		"	25.0		108	25-150				
Surrogate: M7PFUdA	28.2		"	25.0		113	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	24.5		"	25.0		98.0	25-150				
Surrogate: M2PFTeDA	19.8		"	25.0		79.3	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	154		"	200		77.2	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	45.1		"	47.9		94.2	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	118		"	100		118	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	48.4		"	50.0		96.9	10-150				
Surrogate: d3-N-MeFOSAA	82.0		"	100		82.1	25-150				
Surrogate: d5-N-EtFOSAA	85.6		"	100		85.7	25-150				
Surrogate: M2-6:2 FTS	95.9		"	95.1		101	25-200				
Surrogate: M2-8:2 FTS	94.9		"	96.0		98.8	25-200				
Surrogate: M9PFNA	34.1		"	25.0		137	25-150				
Surrogate: M2-4:2 FTS	106		"	93.8		113	25-150				
Surrogate: d-N-MeFOSA	33.9		"	50.0		67.8	25-150				
Surrogate: d-N-EtFOSA	59.8		"	50.0		120	25-150				
Surrogate: M3HFPO-DA	251		"	200		125	25-150				
Surrogate: d9-N-EtFOSE	263		"	500		52.6	25-150				
Surrogate: d7-N-MeFOSE	319		"	500		63.8	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30255 - EPA 1633 Prep</b>											
<b>Duplicate (BE30255-DUP1)</b>	*Source sample: 23E0034-02 (Duplicate)						Prepared: 05/03/2023 Analyzed: 05/08/2023				
Perfluorobutanesulfonic acid (PFBS)	380	3.28	ng/L		351				8.07	30	
Perfluorohexanoic acid (PFHxA)	262	3.71	"		305				15.2	30	
Perfluoroheptanoic acid (PFHpA)	86.8	3.71	"		89.2				2.73	30	
Perfluorohexanesulfonic acid (PFHxS)	2.87	3.40	"		3.54				20.9	30	
Perfluorooctanoic acid (PFOA)	52.2	3.71	"		49.8				4.64	30	
Perfluorooctanesulfonic acid (PFOS)	87.6	3.45	"		125				35.0	30	Non-dir.
Perfluorononanoic acid (PFNA)	6.19	3.71	"		7.44				18.3	30	
Perfluorodecanoic acid (PFDA)	1.82	3.71	"		1.51				18.7	30	
Perfluoroundecanoic acid (PFUnA)	ND	3.71	"		ND					30	
Perfluorododecanoic acid (PFDoA)	ND	3.71	"		ND					30	
Perfluorotridecanoic acid (PFTriDA)	ND	3.71	"		ND					30	
Perfluorotetradecanoic acid (PFTA)	ND	3.71	"		ND					30	
N-MeFOSAA	ND	3.71	"		ND					30	
N-EtFOSAA	ND	3.71	"		ND					30	
Perfluoropentanoic acid (PFPeA)	192	7.42	"		179				6.74	30	
Perfluoro-1-octanesulfonamide (FOSA)	ND	3.71	"		ND					30	
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	3.54	"		ND					30	
Perfluoro-1-decanesulfonic acid (PFDS)	ND	3.58	"		ND					30	
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	14.1	"		ND					30	
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	14.3	"		ND					30	
Perfluoro-n-butanoic acid (PFBA)	44.1	14.8	"		61.4				32.7	30	Non-dir.
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	6.61	"		ND					30	
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	7.42	"		ND					30	
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	7.42	"		ND					30	
Perfluoro-5-oxahexanoic acid (PFMBA)	0.709	7.42	"		1.49				71.1	30	Non-dir.
Perfluoro-1-pentanesulfonate (PFPeS)	2.16	3.49	"		1.83				16.8	30	
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	13.9	"		ND					30	
HFPO-DA (Gen-X)	8.31	14.8	"		ND					30	
11CL-PF3OUdS	ND	14.0	"		ND					30	
9CL-PF3ONS	ND	13.9	"		ND					30	
ADONA	ND	14.0	"		1.16					30	
Perfluorododecanesulfonic acid (PFDoS)	ND	3.60	"		ND					30	
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	3.56	"		ND					30	
3-Perfluoropropyl propanoic acid (FPrPA)	ND	9.28	"		ND					30	
3-Perfluoropentyl propanoic acid (FPePA)	34.8	46.4	"		ND					30	
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	46.4	"		ND					30	
N-MeFOSE	ND	37.1	"		ND					30	
N-MeFOSA	ND	3.71	"		ND					30	
N-EtFOSE	ND	37.1	"		ND					30	
N-EtFOSA	ND	3.71	"		ND					30	
Surrogate: M3PFBS	44.9		"	43.2		104	25-150				
Surrogate: M5PFHxA	58.9		"	46.4		127	25-150				
Surrogate: M4PFHpA	41.3		"	46.4		89.0	25-150				
Surrogate: M3PFHxS	49.3		"	44.0		112	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	58.7		"	46.4		127	25-150				
Surrogate: M6PFDA	26.5		"	23.2		114	25-150				
Surrogate: M7PFUDA	23.4		"	23.2		101	25-150				



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

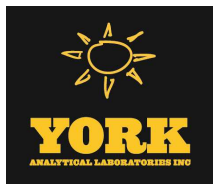
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BE30255 - EPA 1633 Prep**

Duplicate (BE30255-DUP1)	*Source sample: 23E0034-02 (Duplicate)				Prepared: 05/03/2023 Analyzed: 05/08/2023						
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	21.3		ng/L	23.2		91.6	25-150				
Surrogate: M2PFTeDA	22.9		"	23.2		98.7	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	18.0		"	186		9.69	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	101		"	44.4		227	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	106		"	92.8		114	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	72.2		"	46.4		156	10-150				
Surrogate: d3-N-MeFOSAA	142		"	92.8		153	25-150				
Surrogate: d5-N-EtFOSAA	176		"	92.8		190	25-150				
Surrogate: M2-6:2 FTS	398		"	88.2		451	25-200				
Surrogate: M2-8:2 FTS	190		"	89.1		213	25-200				
Surrogate: M9PFNA	23.7		"	23.2		102	25-150				
Surrogate: M2-4:2 FTS	420		"	87.0		482	25-150				
Surrogate: d-N-MeFOSA	43.7		"	46.4		94.3	25-150				
Surrogate: d-N-EtFOSA	82.5		"	46.4		178	25-150				
Surrogate: M3HFPO-DA	266		"	186		143	25-150				
Surrogate: d9-N-EtFOSE	484		"	464		104	25-150				
Surrogate: d7-N-MeFOSE	514		"	464		111	25-150				

**Batch BE30533 - EPA 1633 Prep**

Blank (BE30533-BLK1)	Prepared: 05/08/2023 Analyzed: 05/10/2023										
Perfluorobutanesulfonic acid (PFBS)	ND	0.175	ug/kg wet								
Perfluorohexanoic acid (PFHxA)	ND	0.198	"								
Perfluoroheptanoic acid (PFHpA)	ND	0.198	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	0.181	"								
Perfluorooctanoic acid (PFOA)	ND	0.198	"								
Perfluorooctanesulfonic acid (PFOS)	ND	0.184	"								
Perfluorononanoic acid (PFNA)	ND	0.198	"								
Perfluorodecanoic acid (PFDA)	ND	0.198	"								
Perfluoroundecanoic acid (PFUnA)	ND	0.198	"								
Perfluorododecanoic acid (PFDoA)	ND	0.198	"								
Perfluorotridecanoic acid (PFTrDA)	ND	0.198	"								
Perfluorotetradecanoic acid (PFTA)	ND	0.198	"								
N-MeFOSAA	ND	0.198	"								
N-EtFOSAA	ND	0.198	"								
Perfluoropentanoic acid (PFPeA)	ND	0.395	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	0.198	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.198	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	0.191	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	0.751	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	0.759	"								
Perfluoro-n-butanoic acid (PFBA)	ND	0.791	"								
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	0.352	"								
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.395	"								
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.395	"								



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

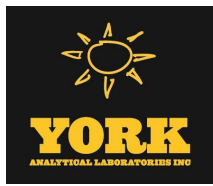
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BE30533 - EPA 1633 Prep

Blank (BE30533-BLK1)

Prepared: 05/08/2023 Analyzed: 05/10/2023

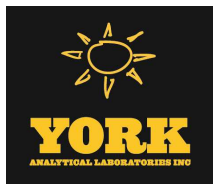
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.395	ug/kg wet								
Perfluoro-1-pentanesulfonate (PFPeS)	ND	0.186	"								
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	0.741	"								
HFPO-DA (Gen-X)	ND	0.791	"								
11CL-PF3OUdS	ND	0.747	"								
9CL-PF3ONS	ND	0.739	"								
ADONA	ND	0.747	"								
Perfluorododecanesulfonic acid (PFDoS)	ND	0.192	"								
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	0.190	"								
3-Perfluoropropyl propanoic acid (FPrPA)	ND	0.988	"								
3-Perfluoropentyl propanoic acid (FPePA)	ND	4.94	"								
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	4.94	"								
N-MeFOSE	ND	1.98	"								
N-MeFOSA	ND	0.198	"								
N-EtFOSE	ND	1.98	"								
N-EtFOSA	ND	0.198	"								
Surrogate: M3PFBS	3.07		"	2.30		133	25-150				
Surrogate: M5PFHxA	2.53		"	2.47		103	25-150				
Surrogate: M4PFHpA	2.51		"	2.47		102	25-150				
Surrogate: M3PFHxS	2.11		"	2.34		90.0	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	1.68		"	2.47		68.2	25-150				
Surrogate: M6PFDA	0.747		"	1.24		60.5	25-150				
Surrogate: M7PFUdA	0.899		"	1.24		72.8	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.865		"	1.24		70.1	25-150				
Surrogate: M2PFTeDA	0.851		"	1.24		68.9	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	9.59		"	9.88		97.0	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.40		"	2.37		59.0	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	5.33		"	4.94		108	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.69		"	2.47		68.3	10-150				
Surrogate: d3-N-MeFOSAA	3.63		"	4.94		73.5	25-150				
Surrogate: d5-N-EtFOSAA	3.13		"	4.94		63.4	25-150				
Surrogate: M2-6:2 FTS	4.09		"	4.70		87.1	25-200				
Surrogate: M2-8:2 FTS	2.19		"	4.74		46.1	25-200				
Surrogate: M9PFNA	0.853		"	1.24		69.0	25-150				
Surrogate: M2-4:2 FTS	6.42		"	4.63		138	25-150				
Surrogate: d-N-MeFOSA	1.23		"	2.47		49.6	25-150				
Surrogate: d-N-EtFOSA	4.71		"	2.47		191	25-150				
Surrogate: M3HFPO-DA	11.9		"	9.88		120	25-150				
Surrogate: d9-N-EtFOSE	12.8		"	24.7		51.8	25-150				
Surrogate: d7-N-MeFOSE	13.8		"	24.7		55.7	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30533 - EPA 1633 Prep</b>											
<b>LCS (BE30533-BS1)</b>											
Prepared: 05/08/2023 Analyzed: 05/10/2023											
Perfluorobutanesulfonic acid (PFBS)	3.57	0.176	ug/kg wet	3.51		102	50-150				
Perfluorohexanoic acid (PFHxA)	4.48	0.198	"	3.97		113	50-150				
Perfluoroheptanoic acid (PFHpA)	3.61	0.198	"	3.97		91.0	50-150				
Perfluorohexanesulfonic acid (PFHxS)	3.60	0.182	"	3.63		99.0	50-150				
Perfluorooctanoic acid (PFOA)	4.76	0.198	"	3.97		120	50-150				
Perfluorooctanesulfonic acid (PFOS)	5.28	0.185	"	3.69		143	50-150				
Perfluorononanoic acid (PFNA)	2.64	0.198	"	3.97		66.6	50-150				
Perfluorodecanoic acid (PFDA)	3.58	0.198	"	3.97		90.1	50-150				
Perfluoroundecanoic acid (PFUnA)	4.84	0.198	"	3.97		122	50-150				
Perfluorododecanoic acid (PFDoA)	3.43	0.198	"	3.97		86.4	50-150				
Perfluorotridecanoic acid (PFTriDA)	3.14	0.198	"	3.97		79.2	50-150				
Perfluorotetradecanoic acid (PFTA)	3.36	0.198	"	3.97		84.6	50-150				
N-MeFOSAA	4.55	0.198	"	3.97		115	50-150				
N-EtFOSAA	4.42	0.198	"	3.97		111	50-150				
Perfluoropentanoic acid (PFPeA)	7.84	0.397	"	7.94		98.7	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	3.68	0.198	"	3.97		92.7	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	4.32	0.198	"	3.79		114	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	4.26	0.191	"	3.83		111	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	17.2	0.754	"	15.1		114	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	13.4	0.762	"	15.2		87.6	50-150				
Perfluoro-n-butanoic acid (PFBA)	16.6	0.794	"	15.9		104	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	7.82	0.353	"	7.06		111	50-150				
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	9.49	0.397	"	7.94		120	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	7.76	0.397	"	7.94		97.8	50-150				
Perfluoro-5-oxahexanoic acid (PFMBA)	7.21	0.397	"	7.94		90.8	50-150				
Perfluoro-1-pentanesulfonate (PFPeS)	3.74	0.187	"	3.73		100	50-150				
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	14.4	0.744	"	14.9		96.6	50-150				
HFPO-DA (Gen-X)	7.24	0.794	"	7.94		91.2	50-150				
11CL-PF3OUdS	4.48	0.750	"	7.50		59.7	50-150				
9CL-PF3ONS	5.04	0.742	"	7.42		67.9	50-150				
ADONA	6.25	0.750	"	7.50		83.4	50-150				
Perfluorododecanesulfonic acid (PFDoS)	4.16	0.192	"	3.85		108	50-150				
Perfluoro-1-nonanesulfonic acid (PFNS)	4.63	0.190	"	3.81		122	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	58.3	0.992	"	15.9		367	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	84.9	4.96	"	79.4		107	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	16.1	4.96	"	79.4		20.3	50-150	Low Bias			
N-MeFOSE	32.4	1.98	"	39.7		81.5	50-150				
N-MeFOSA	4.12	0.198	"	3.97		104	50-150				
N-EtFOSE	32.3	1.98	"	39.7		81.3	50-150				
N-EtFOSA	1.42	0.198	"	3.97		35.7	50-150	Low Bias			
Surrogate: M3PFBS	2.49		"	2.31		108	25-150				
Surrogate: M5PFHxA	2.31		"	2.48		93.1	25-150				
Surrogate: M4PFHpA	2.34		"	2.48		94.3	25-150				
Surrogate: M3PFHxS	2.17		"	2.35		92.3	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	1.92		"	2.48		77.3	25-150				
Surrogate: M6PFDA	0.712		"	1.24		57.4	25-150				
Surrogate: M7PFUdA	0.745		"	1.24		60.1	25-150				



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BE30533 - EPA 1633 Prep**

**LCS (BE30533-BS1)**

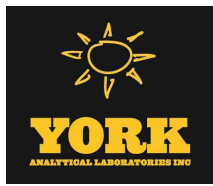
Prepared: 05/08/2023 Analyzed: 05/10/2023

Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.757		ug/kg wet	1.24		61.0	25-150				
Surrogate: M2PFTeDA	0.953		"	1.24		76.8	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	8.31		"	9.92		83.8	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	1.79		"	2.38		75.2	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	4.71		"	4.96		94.9	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.61		"	2.48		64.8	10-150				
Surrogate: d3-N-MeFOSAA	3.60		"	4.96		72.7	25-150				
Surrogate: d5-N-EtFOSAA	3.15		"	4.96		63.6	25-150				
Surrogate: M2-6:2 FTS	4.12		"	4.72		87.4	25-200				
Surrogate: M2-8:2 FTS	3.57		"	4.76		74.9	25-200				
Surrogate: M9PFNA	1.29		"	1.24		104	25-150				
Surrogate: M2-4:2 FTS	5.21		"	4.65		112	25-150				
Surrogate: d-N-MeFOSA	1.42		"	2.48		57.3	25-150				
Surrogate: d-N-EtFOSA	4.29		"	2.48		173	25-150				
Surrogate: M3HFPO-DA	10.8		"	9.92		109	25-150				
Surrogate: d9-N-EtFOSE	16.0		"	24.8		64.4	25-150				
Surrogate: d7-N-MeFOSE	17.9		"	24.8		72.0	25-150				

**LCS (BE30533-BS2)**

Prepared: 05/08/2023 Analyzed: 05/10/2023

Perfluorobutanesulfonic acid (PFBS)	0.645	0.175	ug/kg wet	0.700		92.2	50-150				
Perfluorohexanoic acid (PFHxA)	0.688	0.198	"	0.791		87.0	50-150				
Perfluoroheptanoic acid (PFHpA)	0.687	0.198	"	0.791		86.9	50-150				
Perfluorohexanesulfonic acid (PFHxS)	0.639	0.181	"	0.723		88.4	50-150				
Perfluorooctanoic acid (PFOA)	1.00	0.198	"	0.791		127	50-150				
Perfluorooctanesulfonic acid (PFOS)	1.05	0.184	"	0.735		143	50-150				
Perfluorononanoic acid (PFNA)	0.618	0.198	"	0.791		78.2	50-150				
Perfluorodecanoic acid (PFDA)	0.801	0.198	"	0.791		101	50-150				
Perfluoroundecanoic acid (PFUnA)	0.947	0.198	"	0.791		120	50-150				
Perfluorododecanoic acid (PFDoA)	0.650	0.198	"	0.791		82.2	50-150				
Perfluorotridecanoic acid (PFTrDA)	0.663	0.198	"	0.791		83.9	50-150				
Perfluorotetradecanoic acid (PFTA)	0.905	0.198	"	0.791		114	50-150				
N-MeFOSAA	1.28	0.198	"	0.791		162	50-150	High Bias			
N-EtFOSAA	0.830	0.198	"	0.791		105	50-150				
Perfluoropentanoic acid (PFPeA)	1.43	0.395	"	1.58		90.6	50-150				
Perfluoro-1-octanesulfonamide (FOSA)	0.698	0.198	"	0.791		88.3	50-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	0.874	0.198	"	0.755		116	50-150				
Perfluoro-1-decanesulfonic acid (PFDS)	0.580	0.191	"	0.763		76.0	50-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	3.22	0.751	"	3.00		107	50-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	3.26	0.759	"	3.04		107	50-150				
Perfluoro-n-butanoic acid (PFBA)	3.02	0.791	"	3.16		95.6	50-150				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	1.28	0.352	"	1.41		91.1	50-150				
Perfluoro-3,6-dioxahexanoic acid (NFDHA)	1.50	0.395	"	1.58		94.6	50-150				
Perfluoro-4-oxapentanoic acid (PFMPA)	1.49	0.395	"	1.58		93.9	50-150				
Perfluoro-5-oxahexanoic acid (PFMBA)	1.39	0.395	"	1.58		87.9	50-150				
Perfluoro-1-pentanesulfonate (PFPeS)	0.741	0.186	"	0.743		99.7	50-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30533 - EPA 1633 Prep</b>											
<b>LCS (BE30533-BS2)</b>											
Prepared: 05/08/2023 Analyzed: 05/10/2023											
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	2.98	0.741	ug/kg wet	2.96		100	50-150				
HFPO-DA (Gen-X)	1.74	0.791	"	1.58		110	50-150				
11CL-PF3OUdS	0.743	0.747	"	1.49		49.7	50-150	Low Bias			
9CL-PF3ONS	1.04	0.739	"	1.48		70.2	50-150				
ADONA	1.22	0.747	"	1.49		81.4	50-150				
Perfluorododecanesulfonic acid (PFDoS)	0.474	0.192	"	0.767		61.8	50-150				
Perfluoro-1-nonananesulfonic acid (PFNS)	0.673	0.190	"	0.759		88.7	50-150				
3-Perfluoropropyl propanoic acid (FPrPA)	10.4	0.988	"	3.16		330	50-150	High Bias			
3-Perfluoropentyl propanoic acid (FPePA)	13.3	4.94	"	15.8		84.2	50-150				
3-Perfluoroheptyl propanoic acid (FHpPA)	2.63	4.94	"	15.8		16.6	50-150	Low Bias			
N-MeFOSE	7.46	1.98	"	7.91		94.4	50-150				
N-MeFOSA	0.726	0.198	"	0.791		91.8	50-150				
N-EtFOSE	6.52	1.98	"	7.91		82.5	50-150				
N-EtFOSA	0.395	0.198	"	0.791		50.0	50-150				
Surrogate: M3PFBS	2.76		"	2.30		120	25-150				
Surrogate: M5PFHxA	2.81		"	2.47		114	25-150				
Surrogate: M4PFHpA	2.59		"	2.47		105	25-150				
Surrogate: M3PFHxS	2.56		"	2.34		110	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	2.18		"	2.47		88.4	25-150				
Surrogate: M6PFDA	0.812		"	1.24		65.7	25-150				
Surrogate: M7PFUdA	0.797		"	1.24		64.5	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.748		"	1.24		60.6	25-150				
Surrogate: M2PFTeDA	0.646		"	1.24		52.3	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	7.84		"	9.88		79.3	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	2.12		"	2.37		89.6	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	4.90		"	4.94		99.2	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.99		"	2.47		80.6	10-150				
Surrogate: d3-N-MeFOSAA	3.34		"	4.94		67.5	25-150				
Surrogate: d5-N-EtFOSAA	3.05		"	4.94		61.8	25-150				
Surrogate: M2-6:2 FTS	5.01		"	4.70		107	25-200				
Surrogate: M2-8:2 FTS	4.17		"	4.74		88.0	25-200				
Surrogate: M9PFNA	1.30		"	1.24		105	25-150				
Surrogate: M2-4:2 FTS	5.19		"	4.63		112	25-150				
Surrogate: d-N-MeFOSA	1.95		"	2.47		78.8	25-150				
Surrogate: d-N-EtFOSA	3.17		"	2.47		128	25-150				
Surrogate: M3HFPO-DA	11.2		"	9.88		113	25-150				
Surrogate: d9-N-EtFOSE	12.7		"	24.7		51.2	25-150				
Surrogate: d7-N-MeFOSE	12.8		"	24.7		51.9	25-150				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30533 - EPA 1633 Prep</b>											
<b>Duplicate (BE30533-DUP1)</b>	*Source sample: 23D1735-01 (SB 107 1-3)						Prepared: 05/08/2023 Analyzed: 05/10/2023				
Perfluorobutanesulfonic acid (PFBS)	ND	1.69	ug/kg dry		ND					30	
Perfluorohexanoic acid (PFHxA)	ND	1.91	"		ND					30	
Perfluoroheptanoic acid (PFHpA)	ND	1.91	"		ND					30	
Perfluorohexanesulfonic acid (PFHxS)	ND	1.74	"		ND					30	
Perfluorooctanoic acid (PFOA)	ND	1.91	"		ND					30	
Perfluorooctanesulfonic acid (PFOS)	ND	1.77	"		ND					30	
Perfluorononanoic acid (PFNA)	ND	1.91	"		ND					30	
Perfluorodecanoic acid (PFDA)	ND	1.91	"		ND					30	
Perfluoroundecanoic acid (PFUnA)	ND	1.91	"		ND					30	
Perfluorododecanoic acid (PFDoA)	ND	1.91	"		ND					30	
Perfluorotridecanoic acid (PFTriDA)	ND	1.91	"		ND					30	
Perfluorotetradecanoic acid (PFTA)	ND	1.91	"		ND					30	
N-MeFOSAA	ND	1.91	"		ND					30	
N-EtFOSAA	ND	1.91	"		ND					30	
Perfluoropentanoic acid (PFPeA)	ND	3.81	"		ND					30	
Perfluoro-1-octanesulfonamide (FOSA)	ND	1.91	"		ND					30	
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	1.91	"		ND					30	
Perfluoro-1-decanesulfonic acid (PFDS)	ND	1.84	"		ND					30	
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	7.24	"		ND					30	
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	7.32	"		ND					30	
Perfluoro-n-butanoic acid (PFBA)	ND	7.62	"		ND					30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	3.39	"		ND					30	
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	3.81	"		ND					30	
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	3.81	"		ND					30	
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	3.81	"		ND					30	
Perfluoro-1-pentanesulfonate (PFPeS)	ND	1.79	"		ND					30	
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	7.14	"		ND					30	
HFPO-DA (Gen-X)	ND	7.62	"		ND					30	
11CL-PF3OUdS	ND	7.20	"		ND					30	
9CL-PF3ONS	ND	7.12	"		ND					30	
ADONA	ND	7.20	"		ND					30	
Perfluorododecanesulfonic acid (PFDoS)	ND	1.85	"		ND					30	
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	1.83	"		ND					30	
3-Perfluoropropyl propanoic acid (FPPrPA)	ND	9.53	"		ND					30	
3-Perfluoropentyl propanoic acid (FPePA)	ND	47.6	"		ND					30	
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	47.6	"		ND					30	
N-MeFOSE	ND	19.1	"		ND					30	
N-MeFOSA	ND	1.91	"		ND					30	
N-EtFOSE	ND	19.1	"		ND					30	
N-EtFOSA	ND	1.91	"		ND					30	
<i>Surrogate: M3PFBS</i>	26.3		"	22.2		118	25-150				
<i>Surrogate: M5PFHxA</i>	25.7		"	23.8		108	25-150				
<i>Surrogate: M4PFHpA</i>	23.1		"	23.8		96.9	25-150				
<i>Surrogate: M3PFHxS</i>	25.3		"	22.6		112	25-150				
<i>Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)</i>	22.9		"	23.8		96.0	25-150				
<i>Surrogate: M6PFDA</i>	9.28		"	11.9		78.0	25-150				
<i>Surrogate: M7PFUdA</i>	9.15		"	11.9		76.9	25-150				



**PFAS Target compounds by LC/MS-MS - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BE30533 - EPA 1633 Prep**

<b>Duplicate (BE30533-DUP1)</b>	<b>*Source sample: 23D1735-01 (SB 107 1-3)</b>					<b>Prepared: 05/08/2023 Analyzed: 05/10/2023</b>					
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	10.5		ug/kg dry	11.9		88.0	25-150				
Surrogate: M2PFTeDA	11.1		"	11.9		93.4	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	81.0		"	95.3		85.0	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	17.1		"	22.8		74.9	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	47.5		"	47.6		99.8	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	20.2		"	23.8		85.0	10-150				
Surrogate: d3-N-MeFOSAA	44.4		"	47.6		93.2	25-150				
Surrogate: d5-N-EtFOSAA	38.5		"	47.6		80.8	25-150				
Surrogate: M2-6:2 FTS	54.2		"	45.3		120	25-200				
Surrogate: M2-8:2 FTS	47.9		"	45.7		105	25-200				
Surrogate: M9PFNA	15.0		"	11.9		126	25-150				
Surrogate: M2-4:2 FTS	51.1		"	44.7		114	25-150				
Surrogate: d-N-MeFOSA	11.0		"	23.8		46.2	25-150				
Surrogate: d-N-EtFOSA	31.3		"	23.8		131	25-150				
Surrogate: M3HFPO-DA	111		"	95.3		117	25-150				
Surrogate: d9-N-EtFOSE	126		"	238		53.1	25-150				
Surrogate: d7-N-MeFOSE	143		"	238		59.9	25-150				

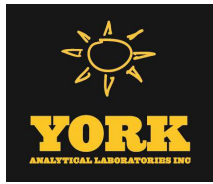
<b>Duplicate (BE30533-DUP2)</b>	<b>*Source sample: 23E0204-01 (Duplicate)</b>					<b>Prepared: 05/08/2023 Analyzed: 05/10/2023</b>					
Perfluorobutanesulfonic acid (PFBS)	ND	0.186	ug/kg dry		ND						30
Perfluorohexanoic acid (PFHxA)	ND	0.210	"		ND						30
Perfluoroheptanoic acid (PFHpA)	ND	0.210	"		ND						30
Perfluorohexanesulfonic acid (PFHxS)	ND	0.192	"		ND						30
Perfluorooctanoic acid (PFOA)	ND	0.210	"		ND						30
Perfluorooctanesulfonic acid (PFOS)	ND	0.195	"		ND						30
Perfluorononanoic acid (PFNA)	ND	0.210	"		ND						30
Perfluorodecanoic acid (PFDA)	ND	0.210	"		ND						30
Perfluoroundecanoic acid (PFUnA)	ND	0.210	"		ND						30
Perfluorododecanoic acid (PFDoA)	ND	0.210	"		ND						30
Perfluorotridecanoic acid (PFTrDA)	ND	0.210	"		ND						30
Perfluorotetradecanoic acid (PFTA)	ND	0.210	"		ND						30
N-MeFOSAA	1.57	0.210	"		1.62				2.83		30
N-EtFOSAA	11.0	0.210	"		8.91				21.0		30
Perfluoropentanoic acid (PFPeA)	ND	0.420	"		ND						30
Perfluoro-1-octanesulfonamide (FOSA)	0.249	0.210	"		0.187				28.2		30
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.210	"		ND						30
Perfluoro-1-decanesulfonic acid (PFDS)	0.677	0.203	"		0.707				4.30		30
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	0.798	"		ND						30
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	0.807	"		ND						30
Perfluoro-n-butanoic acid (PFBA)	ND	0.840	"		ND						30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.374	"		ND						30
Perfluoro-3,6-dioxahheptanoic acid (NFDHA)	ND	0.420	"		ND						30
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.420	"		ND						30
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.420	"		ND						30
Perfluoro-1-pentanesulfonate (PFPeS)	ND	0.197	"		ND						30



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30533 - EPA 1633 Prep</b>											
<b>Duplicate (BE30533-DUP2)</b>	<b>*Source sample: 23E0204-01 (Duplicate)</b>						<b>Prepared: 05/08/2023 Analyzed: 05/10/2023</b>				
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	ND	0.788	ug/kg dry		ND					30	
HFPO-DA (Gen-X)	ND	0.840	"		ND					30	
11CL-PF3OUdS	ND	0.794	"		ND					30	
9CL-PF3ONS	ND	0.786	"		ND					30	
ADONA	ND	0.794	"		ND					30	
Perfluorododecanesulfonic acid (PFDoS)	ND	0.204	"		ND					30	
Perfluoro-1-nonanesulfonic acid (PFNS)	ND	0.202	"		ND					30	
3-Perfluoropropyl propanoic acid (FPrPA)	ND	1.05	"		ND					30	
3-Perfluoropentyl propanoic acid (FPePA)	ND	5.25	"		ND					30	
3-Perfluoroheptyl propanoic acid (FHpPA)	ND	5.25	"		ND					30	
N-MeFOSE	ND	2.10	"		ND					30	
N-MeFOSA	ND	0.210	"		ND					30	
N-EtFOSE	ND	2.10	"		ND					30	
N-EtFOSA	ND	0.210	"		ND					30	
Surrogate: M3PFBS	3.23		"	2.45		132	25-150				
Surrogate: M5PFHxA	2.25		"	2.63		85.7	25-150				
Surrogate: M4PFHpA	2.44		"	2.63		93.0	25-150				
Surrogate: M3PFHxS	3.11		"	2.49		125	25-150				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	2.17		"	2.63		82.7	25-150				
Surrogate: M6PFDA	0.777		"	1.31		59.2	25-150				
Surrogate: M7PFUdA	0.999		"	1.31		76.1	25-150				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	0.914		"	1.31		69.6	25-150				
Surrogate: M2PFTeDA	0.727		"	1.31		55.3	10-150				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	7.48		"	10.5		71.2	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	2.46		"	2.52		97.9	25-150				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	4.56		"	5.25		86.8	25-150				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	1.73		"	2.63		66.1	10-150				
Surrogate: d3-N-MeFOSAA	4.43		"	5.25		84.3	25-150				
Surrogate: d5-N-EtFOSAA	4.34		"	5.25		82.7	25-150				
Surrogate: M2-6:2 FTS	7.08		"	4.99		142	25-200				
Surrogate: M2-8:2 FTS	5.91		"	5.04		117	25-200				
Surrogate: M9PFNA	1.48		"	1.31		112	25-150				
Surrogate: M2-4:2 FTS	5.34		"	4.93		108	25-150				
Surrogate: d-N-MeFOSA	1.86		"	2.63		70.7	25-150				
Surrogate: d-N-EtFOSA	3.17		"	2.63		121	25-150				
Surrogate: M3HFPO-DA	10.2		"	10.5		96.7	25-150				
Surrogate: d9-N-EtFOSE	10.9		"	26.3		41.7	25-150				
Surrogate: d7-N-MeFOSE	13.1		"	26.3		49.8	25-150				



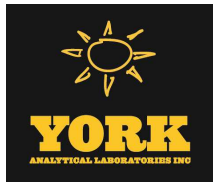
Miscellaneous Physical Parameters - Quality Control Data

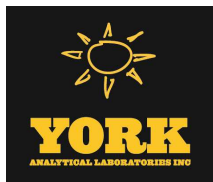
York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BE30519 - % Solids Prep**

<b>Duplicate (BE30519-DUP1)</b>	*Source sample: 23D1735-01 (SB 107 1-3)						Prepared & Analyzed: 05/08/2023				
% Solids	95.0	0.100	%		93.7				1.38	20	





## Sample and Data Qualifiers Relating to This Work Order

J Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.

### Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.



# Field Chain-of-Custody Record

York Analytical Laboratories, Inc. (YORK)'s Standard Terms & Conditions are listed on the back side of this document. This document serves as your written authorization for YORK to proceed with the analyses requested below. Your signature binds you to YORK's Standard Terms & Conditions.

120 Research Drive Stratford, CT 06615 132-02 89th Ave Queens, NY 11418 56 Church Hill Rd. #2 Newtown, CT 06470 clientservices@yorklab.com www.yorklab.com 800-306-YORK

**YOUR INFORMATION**  
 Company: Laurel Environmental  
 Address: 53 West Hill Road  
 Huntington Station, NY 11746  
 Phone: (631) 673-0838  
 Contact: Scott Yehle  
 E-mail: laurel@yorklab.com

YORK Project No.  
2301735

Page 1 of 2

**Report To:**  
 Company: [Blank]  
 Address: [Blank]  
 Phone: [Blank]  
 Contact: [Blank]  
 E-mail: [Blank]

**Invoice To:**  
 Company: [Blank]  
 Address: Cathy  
 Phone: [Blank]  
 Contact: [Blank]  
 E-mail: [Blank]

**YOUR Project Number**  
21-915

**YOUR Project Name**  
1 Shore Road, Glenwood, NY

**YOUR PO#:**

**Report / EDD Type (circle selections)**  
 Summary Report  
 QA Report  
 CMDP  
 Standard Excel EDD  
 NY ASP B Package  
 Other:

**Matrix Codes**  
 S - soil / solid  
 GW - groundwater  
 DW - drinking water  
 WW - wastewater  
 O - Oil  
 Other:

**Report / EDD Type (circle selections)**  
 Summary Report  
 QA Report  
 CMDP  
 Standard Excel EDD  
 NY ASP B Package  
 Other:

**Report / EDD Type (circle selections)**  
 CT RCP  
 CT RCP DQ/DUE  
 NJDEP Reduced Deliverables  
 NJDEP SRP HazSite  
 Other:

Sample Identification	Sample Matrix	Matrix Codes	Samples From	Date/Time Sampled	Analyses Requested	Container Type	No.
SB 107 1-3	S	GW - groundwater	New York	4/27/13 815	PFA, 1633	2502	1
SB 107 12-14	S	GW - groundwater	New Jersey	815			
SB 115 1-3	S	DW - drinking water	Connecticut	845			
SB 115 12-14	S	WW - wastewater	Pennsylvania	845			
SB 114 1-3	S	O - Oil	Other:	915			
SB 114 12-14	S			915			
SB 113 1-3	S			930			
SB 112 1-3	S			930			
SB 112 11-13	S			945			
SB 112 11-13	S			945			

**Comments:**

**Preservation: (check all that apply)**  
 HCl \_\_\_ MeOH \_\_\_ HNO3 \_\_\_ H2SO4 \_\_\_ NaOH \_\_\_  
 ZnAc \_\_\_ Ascorbic Acid \_\_\_ Other: \_\_\_

**Special Instruction**  
 Field Filtered  
 Lab to Filter

1. Samples Relinquished by / Company: [Signature] Date/Time: 4/28/13 11:20 AM  
 2. Samples Relinquished by / Company: [Signature] Date/Time: 4/28/13 11:20 AM  
 3. Samples Relinquished by / Company: [Signature] Date/Time: 4/28/13 16:30  
 4. Samples Relinquished by / Company: [Signature] Date/Time: 4/28/13 16:30

Temperature: 14.2  
 Degrees C: [Signature]

# Field Chain-of-Custody Record

York Analytical Laboratories, Inc. (YORK)'s Standard Terms & Conditions are listed on the back side of this document. This document serves as your written authorization for YORK to proceed with the analyses requested below. Your signature binds you to YORK's Standard Terms & Conditions.

120 Research Drive Stratford, CT 06615 132-02 89th Ave Queens, NY 11418 56 Church Hill Rd. #2 Newtown, CT 06470 clientservices@yorklab.com www.yorklab.com 800-306-YORK Page 2 of 2

YORK Project No.  
23D1735

**YOUR INFORMATION**  
 Company: L...  
 Address: 53 West Hill Road  
 Phone: (631) 673-0042  
 Contact: Scott  
 E-mail: kb@results.com

**Report To:**  
 Company: Scott  
 Address: Kathy  
 Phone:  
 Contact:  
 E-mail:

**Invoice To:**  
 Company:  
 Address:  
 Phone:  
 Contact:  
 E-mail:

**YOUR PROJECT NUMBER**  
21-915

**YOUR PROJECT NAME**  
1 Stone Road  
Electronix Logistics, NY

**YOUR PO#:**

**Turn-Around Time**  
 RUSH - Next Day  
 RUSH - Two Day  
 RUSH - Three Day  
 RUSH - Four Day  
 RUSH - Five Day  
 Standard (6-9 Day)   
 PFAS Standard is 7-10 Days

**Report / EDD Type (circle selections)**  
 Summary Report  CT RCP  
 QA Report  CT RCP DQ/DUE NY/SD/EC EQUIS  
 CMDP  NUDEP Reduced NJDKQP  
 Standard Excel EDD  Deliverables NUDEP SRP HazSite  
 (NY ASP B Package) Other:

Matrix Codes	Samples From	Report / EDD Type	Analysis Requested	Container Type	No.
S - soil / solid	New York	Summary Report	PFAS 1633	250ML	1
GW - groundwater	New Jersey	QA Report	PFAS 1633	250ML	1
DW - drinking water	Connecticut	CMDP			
WW - wastewater	Pennsylvania	Standard Excel EDD			
O - Oil   Other:	Other:	(NY ASP B Package) Other:			
<b>Sample Matrix</b>	<b>Date/Time Sampled</b>				
S	4/12/23 1000		PFAS 1633		
S	4/12/23 1000		PFAS 1633		
S	4/12/23 815		PFAS 1633		
S	4/12/23 815		PFAS 1633		
S	4/12/23 6000		PFAS 1633		
D	4/12/23 1100		PFAS 1633		

**Comments:**

1. Samples Relinquished by / Company: [Signature] 4/12/23 1120 AM

2. Samples Received by / Company: [Signature] 4/28/23 1630

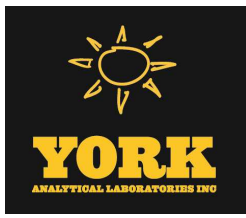
3. Samples Relinquished by / Company: [Signature] 4/28/23 1630

4. Samples Received by / Company: [Signature] 4/28/23 1630

**Preservation: (check all that apply)**  
 HCl \_\_\_ MeOH \_\_\_ HNO3 \_\_\_ H2SO4 \_\_\_ NaOH \_\_\_  
 ZnAc \_\_\_ Ascorbic Acid \_\_\_ Other: \_\_\_

**Special Instruction**  
 Field Filtered  
 Lab to Filter

**Temperature**  
 14.2 Degrees C



# Technical Report

prepared for:

**Laurel Environmental Geosciences, D.P.C.**

53 W Hills Road, Suite 1  
Huntington Station NY, 11746  
**Attention: Scott Yanuck**

Report Date: 05/11/2023

**Client Project ID: 1 Shore Road Glenwood Landing, NY 21-215**

York Project (SDG) No.: 23D1733

CT Cert. No. PH-0723

New Jersey Cert. No. CT005 and NY037



New York Cert. Nos. 10854 and 12058

PA Cert. No. 68-04440

120 RESEARCH DRIVE  
[www.YORKLAB.com](http://www.YORKLAB.com)

STRATFORD, CT 06615  
(203) 325-1371

132-02 89th AVENUE  
FAX (203) 357-0166

RICHMOND HILL, NY 11418  
[ClientServices@yorklab.com](mailto:ClientServices@yorklab.com)

Report Date: 05/11/2023  
Client Project ID: 1 Shore Road Glenwood Landing, NY 21-215  
York Project (SDG) No.: 23D1733

**Laurel Environmental Geosciences, D.P.C.**  
53 W Hills Road, Suite 1  
Huntington Station NY, 11746  
Attention: Scott Yanuck

## Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on April 28, 2023 and listed below. The project was identified as your project: **1 Shore Road Glenwood Landing, NY 21-215**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

<u>York Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
23D1733-01	WC-20230427	Soil	04/27/2023	04/28/2023

## General Notes for York Project (SDG) No.: 23D1733

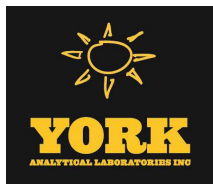
1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By: 

Date: 05/11/2023

Cassie L. Mosher  
Laboratory Manager





### Sample Information

**Client Sample ID:** WC-20230427

**York Sample ID:** 23D1733-01

<u>York Project (SDG) No.</u>	<u>Client Project ID</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Date Received</u>
23D1733	1 Shore Road Glenwood Landing, NY 21-215	Soil	April 27, 2023 11:00 am	04/28/2023

**Polychlorinated Biphenyls (PCB)**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0191	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP,PADEP	05/07/2023 09:49	05/09/2023 00:38	BCJ
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0191	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP,PADEP	05/07/2023 09:49	05/09/2023 00:38	BCJ
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0191	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP,PADEP	05/07/2023 09:49	05/09/2023 00:38	BCJ
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0191	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP,PADEP	05/07/2023 09:49	05/09/2023 00:38	BCJ
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0191	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP,PADEP	05/07/2023 09:49	05/09/2023 00:38	BCJ
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0191	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP,PADEP	05/07/2023 09:49	05/09/2023 00:38	BCJ
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0191	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP,PADEP	05/07/2023 09:49	05/09/2023 00:38	BCJ
1336-36-3	* Total PCBs	ND		mg/kg dry	0.0191	1	EPA 8082A Certifications:	05/07/2023 09:49	05/09/2023 00:38	BCJ

**Surrogate Recoveries**

	Surrogate	Result	Acceptance Range
877-09-8	Surrogate: Tetrachloro-m-xylene	72.5 %	30-140
2051-24-3	Surrogate: Decachlorobiphenyl	104 %	30-140

**Metals, TCLP RCRA**

Log-in Notes:

Sample Notes:

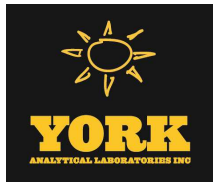
Sample Prepared by Method: EPA 3015A/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	Arsenic	ND		mg/L	0.375	1	EPA 6010D/1311 Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP,PADEP	05/10/2023 08:21	05/10/2023 15:41	CW
7440-39-3	Barium	ND		mg/L	0.625	1	EPA 6010D/1311 Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP,PADEP	05/10/2023 08:21	05/10/2023 15:41	CW
7440-43-9	Cadmium	ND		mg/L	0.075	1	EPA 6010D/1311 Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP,PADEP	05/10/2023 08:21	05/10/2023 15:41	CW
7440-47-3	Chromium	ND		mg/L	0.125	1	EPA 6010D/1311 Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP,PADEP	05/10/2023 08:21	05/10/2023 15:41	CW
7439-92-1	Lead	ND		mg/L	0.125	1	EPA 6010D/1311 Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP,PADEP	05/10/2023 08:21	05/10/2023 15:41	CW
7782-49-2	Selenium	ND		mg/L	0.625	1	EPA 6010D/1311 Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP,PADEP	05/10/2023 08:21	05/10/2023 15:41	CW
7440-22-4	Silver	ND		mg/L	0.125	1	EPA 6010D/1311 Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP,PADEP	05/10/2023 08:21	05/10/2023 15:41	CW

**Mercury, TCLP**

Log-in Notes:

Sample Notes:



### Sample Information

**Client Sample ID:** WC-20230427

**York Sample ID:** 23D1733-01

<u>York Project (SDG) No.</u> 23D1733	<u>Client Project ID</u> 1 Shore Road Glenwood Landing, NY 21-215	<u>Matrix</u> Soil	<u>Collection Date/Time</u> April 27, 2023 11:00 am	<u>Date Received</u> 04/28/2023
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Sample Prepared by Method: EPA SW846-7470A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	ND		mg/L	0.000200	1	EPA 7470/1311 Certifications: CTDOH-PH-0723,NJDEP,PADEP,NELAC-NY10854	05/09/2023 20:47	05/09/2023 20:47	AA

**Corrosivity (pH) by SM 4500/EPA 9045D**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	pH	5.45		pH units	0.500	1	EPA 9045D Certifications: NELAC-NY10854,CTDOH-PH-0723,PADEP	05/05/2023 08:16	05/05/2023 11:13	VR

**Reactivity-Cyanide**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	* Reactivity - Cyanide	ND		mg/kg	0.250	1	EPA SW-846 Ch.7.3.3 Certifications: CTDOH-PH-0723,PADEP	05/09/2023 14:38	05/09/2023 19:49	SL

**Reactivity-Sulfide**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	* Reactivity - Sulfide	19.0		mg/kg	15.0	1	EPA SW-846 Ch.7.3.4 Certifications: CTDOH-PH-0723,PADEP	05/09/2023 14:44	05/09/2023 19:54	SL

**Temperature**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	* Temperature	22.1		°C	1.00	1	EPA 170.1 Certifications:	05/05/2023 08:16	05/05/2023 11:13	VR

**Ignitability**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	* Ignitability	Non-Ignit.		None	1	1	EPA 1030P Certifications:	05/08/2023 18:55	05/08/2023 21:17	ZTS

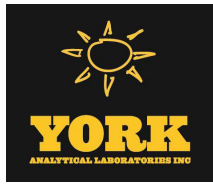
**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	86.2		%	0.100	1	SM 2540G Certifications: CTDOH-PH-0723	05/11/2023 07:36	05/11/2023 14:49	sgs



**Sample Information**

**Client Sample ID:** WC-20230427

**York Sample ID:** 23D1733-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

23D1733

1 Shore Road Glenwood Landing, NY 21-215

Soil

April 27, 2023 11:00 am

04/28/2023

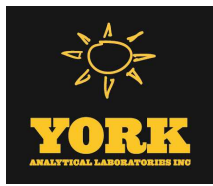
**TCLP Extraction for METALS EPA 1311**

**Log-in Notes:**

**Sample Notes: EXT-Temp**

Sample Prepared by Method: EPA SW 846-1311 TCLP ext. for metals

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
TCLP Extraction		Completed		N/A	1.00	1	EPA 1311 Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP,PADEP	05/08/2023 12:33	05/09/2023 09:34	LC



### Analytical Batch Summary

**Batch ID:** BE30358                      **Preparation Method:** Analysis Preparation                      **Prepared By:** VR

YORK Sample ID	Client Sample ID	Preparation Date
23D1733-01	WC-20230427	05/05/23
BE30358-DUP1	Duplicate	05/05/23

**Batch ID:** BE30435                      **Preparation Method:** EPA 3550C                      **Prepared By:** kaz

YORK Sample ID	Client Sample ID	Preparation Date
23D1733-01	WC-20230427	05/07/23
BE30435-BLK2	Blank	05/07/23
BE30435-BS2	LCS	05/07/23

**Batch ID:** BE30499                      **Preparation Method:** EPA SW 846-1311 TCLP ext. for meta                      **Prepared By:** AD2

YORK Sample ID	Client Sample ID	Preparation Date
23D1733-01	WC-20230427	05/08/23
BE30499-BLK1	Blank	05/08/23

**Batch ID:** BE30535                      **Preparation Method:** Analysis Preparation                      **Prepared By:** ZTS

YORK Sample ID	Client Sample ID	Preparation Date
23D1733-01	WC-20230427	05/08/23

**Batch ID:** BE30613                      **Preparation Method:** Analysis Preparation                      **Prepared By:** SL

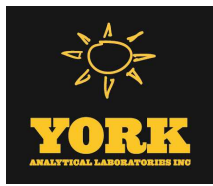
YORK Sample ID	Client Sample ID	Preparation Date
23D1733-01	WC-20230427	05/09/23
BE30613-BLK1	Blank	05/09/23

**Batch ID:** BE30616                      **Preparation Method:** Analysis Preparation                      **Prepared By:** SL

YORK Sample ID	Client Sample ID	Preparation Date
23D1733-01	WC-20230427	05/09/23
BE30616-BLK1	Blank	05/09/23
BE30616-DUP1	Duplicate	05/09/23

**Batch ID:** BE30627                      **Preparation Method:** EPA SW846-7470A                      **Prepared By:** AA

YORK Sample ID	Client Sample ID	Preparation Date
23D1733-01	WC-20230427	05/09/23
BE30627-BLK1	Blank	05/09/23
BE30627-BS1	LCS	05/09/23
BE30627-BS2	LCS	05/09/23



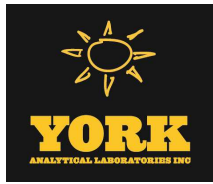
BE30627-DUP1 Duplicate 05/09/23  
BE30627-LBK1 Leach Fluid Blank 05/09/23

**Batch ID:** BE30642      **Preparation Method:** EPA 3015A/1311      **Prepared By:** MCS

YORK Sample ID	Client Sample ID	Preparation Date
23D1733-01	WC-20230427	05/10/23
BE30642-BLK1	Blank	05/10/23
BE30642-BS1	LCS	05/10/23
BE30642-DUP1	Duplicate	05/10/23
BE30642-LBK1	Leach Fluid Blank	05/10/23
BE30642-MS1	Matrix Spike	05/10/23
BE30642-PS1	Post Spike	05/10/23

**Batch ID:** BE30723      **Preparation Method:** % Solids Prep      **Prepared By:** sgs

YORK Sample ID	Client Sample ID	Preparation Date
23D1733-01	WC-20230427	05/11/23
BE30723-DUP1	Duplicate	05/11/23



**Polychlorinated Biphenyls by GC/ECD - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BE30435 - EPA 3550C**

**Blank (BE30435-BLK2)**

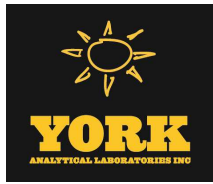
Prepared: 05/07/2023 Analyzed: 05/08/2023

Aroclor 1016	ND	0.0167	mg/kg wet								
Aroclor 1221	ND	0.0167	"								
Aroclor 1232	ND	0.0167	"								
Aroclor 1242	ND	0.0167	"								
Aroclor 1248	ND	0.0167	"								
Aroclor 1254	ND	0.0167	"								
Aroclor 1260	ND	0.0167	"								
Total PCBs	ND	0.0167	"								
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>0.0570</i>		<i>"</i>	<i>0.0667</i>		<i>85.5</i>	<i>30-140</i>				
<i>Surrogate: Decachlorobiphenyl</i>	<i>0.0640</i>		<i>"</i>	<i>0.0667</i>		<i>96.0</i>	<i>30-140</i>				

**LCS (BE30435-BS2)**

Prepared: 05/07/2023 Analyzed: 05/08/2023

Aroclor 1016	0.326	0.0167	mg/kg wet	0.333		97.9	40-130				
Aroclor 1260	0.367	0.0167	"	0.333		110	40-130				
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>0.0560</i>		<i>"</i>	<i>0.0667</i>		<i>84.0</i>	<i>30-140</i>				
<i>Surrogate: Decachlorobiphenyl</i>	<i>0.0633</i>		<i>"</i>	<i>0.0667</i>		<i>95.0</i>	<i>30-140</i>				



**Metals by ICP - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
---------	--------	-----------------	-------	-------------	----------------	------	-------------	------	-----	-----------	------

**Batch BE30642 - EPA 3015A/1311**

**Blank (BE30642-BLK1)**

Prepared & Analyzed: 05/10/2023

Arsenic	ND	0.017	mg/L								
Barium	ND	0.028	"								
Cadmium	ND	0.003	"								
Chromium	ND	0.006	"								
Lead	ND	0.006	"								
Selenium	ND	0.028	"								
Silver	ND	0.006	"								

**LCS (BE30642-BS1)**

Prepared & Analyzed: 05/10/2023

Arsenic	1.78		ug/mL	2.00		88.9	80-120				
Barium	2.00		"	2.00		99.8	80-120				
Cadmium	0.045		"	0.0500		90.3	80-120				
Chromium	0.188		"	0.200		93.8	80-120				
Lead	0.466		"	0.500		93.3	80-120				
Selenium	1.52		"	2.00		75.8	80-120	Low Bias			
Silver	0.047		"	0.0500		93.8	80-120				

**Duplicate (BE30642-DUP1)**

\*Source sample: 23E0283-01 (Duplicate)

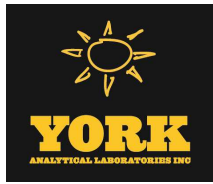
Prepared & Analyzed: 05/10/2023

Arsenic	ND	0.375	mg/L		ND						20
Barium	ND	0.625	"		ND						20
Cadmium	ND	0.075	"		ND						20
Chromium	ND	0.125	"		ND						20
Lead	ND	0.125	"		ND						20
Selenium	ND	0.625	"		ND						20
Silver	ND	0.125	"		ND						20

**Leach Fluid Blank (BE30642-LBK1)**

Prepared & Analyzed: 05/10/2023

Arsenic	ND	0.375	mg/L								
Barium	ND	0.625	"								
Cadmium	ND	0.075	"								
Chromium	ND	0.125	"								
Lead	ND	0.125	"								
Selenium	ND	0.625	"								
Silver	ND	0.125	"								



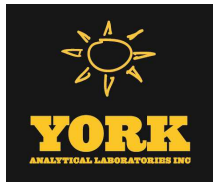
**Metals by ICP - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC %REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BE30642 - EPA 3015A/1311**

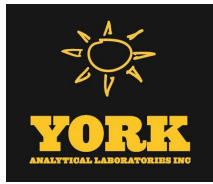
<b>Matrix Spike (BE30642-MS1)</b>	*Source sample: 23E0283-01 (Matrix Spike)						Prepared & Analyzed: 05/10/2023				
Arsenic	46.3	0.375	mg/L	50.0	ND	92.5	75-125				
Barium	50.3	0.625	"	50.0	ND	101	75-125				
Cadmium	1.15	0.075	"	1.25	ND	92.1	75-125				
Chromium	4.72	0.125	"	5.00	ND	94.4	75-125				
Lead	11.7	0.125	"	12.5	ND	93.9	75-125				
Selenium	39.5	0.625	"	50.0	ND	78.9	75-125				
Silver	1.12	0.125	"	1.25	ND	89.4	75-125				

<b>Post Spike (BE30642-PS1)</b>	*Source sample: 23E0283-01 (Post Spike)						Prepared & Analyzed: 05/10/2023				
Arsenic	2.20		ug/mL	2.00	-0.004	110	75-125				
Barium	2.37		"	2.00	0.002	118	75-125				
Cadmium	0.055		"	0.0500	0.0001	110	75-125				
Chromium	0.223		"	0.200	0.002	111	75-125				
Lead	0.561		"	0.500	-0.003	112	75-125				
Selenium	1.88		"	2.00	-0.003	94.1	75-125				
Silver	0.015		"	0.0500	-0.000007	29.6	75-125	Low Bias			



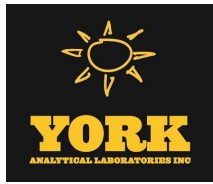
**Mercury by EPA 7000/200 Series Methods - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30627 - EPA SW846-7470A</b>											
<b>Blank (BE30627-BLK1)</b> <span style="float:right">Prepared &amp; Analyzed: 05/09/2023</span>											
Mercury	ND	0.000200	mg/L								
<b>LCS (BE30627-BS1)</b> <span style="float:right">Prepared &amp; Analyzed: 05/09/2023</span>											
Mercury	0.00200	0.000200	mg/L	0.00200		100	80-120				
<b>LCS (BE30627-BS2)</b> <span style="float:right">Prepared &amp; Analyzed: 05/09/2023</span>											
Mercury	0.00209	0.000200	mg/L	0.00200		105	80-120				
<b>Duplicate (BE30627-DUP1)</b> <span style="float:right">Prepared &amp; Analyzed: 05/09/2023</span>											
	*Source sample: 23E0008-01 (Duplicate)										
Mercury	ND	0.000200	mg/L		ND						20
<b>Leach Fluid Blank (BE30627-LBK1)</b> <span style="float:right">Prepared &amp; Analyzed: 05/09/2023</span>											
Mercury	ND	0.000200	mg/L								



**Wet Chemistry Parameters - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
<b>Batch BE30358 - Analysis Preparation</b>											
<b>Duplicate (BE30358-DUP1)</b>	*Source sample: 23E0332-03 (Duplicate)						Prepared & Analyzed: 05/05/2023				
pH	7.80	0.500	pH units		7.84				0.512	10	
Temperature	22.2	1.00	°C		22.0				0.905	200	
<b>Batch BE30613 - Analysis Preparation</b>											
<b>Blank (BE30613-BLK1)</b>							Prepared & Analyzed: 05/09/2023				
Reactivity - Cyanide	ND	0.250	mg/kg								
<b>Batch BE30616 - Analysis Preparation</b>											
<b>Blank (BE30616-BLK1)</b>							Prepared & Analyzed: 05/09/2023				
Reactivity - Sulfide	ND	15.0	mg/kg								
<b>Duplicate (BE30616-DUP1)</b>	*Source sample: 23E0298-01 (Duplicate)						Prepared & Analyzed: 05/09/2023				
Reactivity - Sulfide	32.0	15.0	mg/kg		24.0				28.6	50	



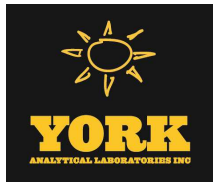
Miscellaneous Physical Parameters - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BE30723 - % Solids Prep**

<b>Duplicate (BE30723-DUP1)</b>	*Source sample: 23E0648-03 (Duplicate)							Prepared & Analyzed: 05/11/2023			
% Solids	97.2	0.100	%		97.8				0.679	20	



**Leachate Preparations - Quality Control Data**  
**York Analytical Laboratories, Inc. - Stratford**

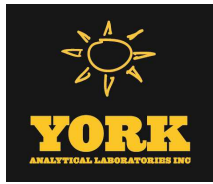
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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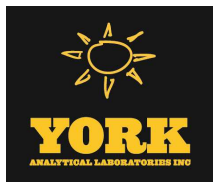
**Batch BE30499 - EPA SW 846-1311 TCLP ext. for metals**

**Blank (BE30499-BLK1)**

Prepared: 05/08/2023 Analyzed: 05/09/2023

TCLP Extraction	Completed	1.00	N/A								
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## Sample and Data Qualifiers Relating to This Work Order

IGN-01 Non-Ignit.  
EXT-Temp Extraction temperature slightly exceeded acceptance range.  
EXT-COMP Completed

### Definitions and Other Explanations

\* Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.

ND NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)

RL REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.

LOQ LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.

LOD LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW -846.

MDL METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.

Reported to This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.

NR Not reported

RPD Relative Percent Difference

Wet The data has been reported on an as-received (wet weight) basis

Low Bias Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.

High Bias High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.

Non-Dir. Non-dir. flag (Non-Directional Bias ) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

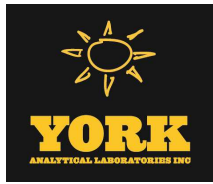
If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.



For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

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# Field Chain-of-Custody Record

York Analytical Laboratories, Inc. (YORK)'s Standard Terms & Conditions are listed on the back side of this document. This document serves as your written authorization for YORK to proceed with the analyses requested below. Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No.

2301735  
2301733

120 Research Drive Stratford, CT 06615 132-02 89th Ave Queens, NY 11418 56 Church Hill Rd. #2 Newtown, CT 06470 clientservices@yorklab.com 800-306-YORK

Page 1 of 1

<b>YOUR INFORMATION</b>		<b>Report To:</b>		<b>Invoice To:</b>		<b>YOUR Project Number</b>		<b>Turn-Around Time</b>	
Company:	Labco Environmental	Company:		Company:		91-215		RUSH - Next Day	
Address:	53 West Hill Road Huntington Station, NY 11746	Address:	Scott	Address:	Kathy	YOUR Project Name		RUSH - Two Day	
Phone:	631-473-0622	Phone:		Phone:		1 Shore Road		RUSH - Three Day	
Contact:	Scott Yonck	Contact:		Contact:		Glenwood Landing, NY		RUSH - Four Day	
E-mail:	labsresults@labcoenv.com	E-mail:		E-mail:		YOUR PO#:		RUSH - Five Day	

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Matrix Codes	Samples From	Report / EDD Type (circle selections)	YORK Reg. Comp.	
			Compared to the following Regulation(s): (please fill in)	PFAS Standard is 7-10 Days
S - soil / solid	New York	<input checked="" type="checkbox"/> Summary Report	CT RCP	EQUS (Standard)
GW - groundwater	New Jersey	<input type="checkbox"/> QA Report	CT RCP DQADUE	NYSDEC EQUS
DW - drinking water	Connecticut	<input type="checkbox"/> CMDP	NJDEP Reduced	NJDKQP
WW - wastewater	Pennsylvania	<input type="checkbox"/> Standard Excel EDD	Deliverables	NJDEP SRP HazSite
O - Oil	Other:	<input type="checkbox"/> NY ASP B Package	Other:	
<b>Sample Matrix</b>	<b>Date/Time Sampled</b>	<b>Analyses Requested</b>	<b>Container Type</b>	<b>No.</b>
S	4/28/23 1100	Hold for Further Analysis	402	2
			802	2
			404	4

**Comments:**

1. Samples Relinquished by / Company: [Signature] 4/28/23 1120 AM  
 Date/Time: 4/28/23 1120 AM

2. Samples Relinquished by / Company: [Signature] 4/28/23 1630  
 Date/Time: 4/28/23 1630

3. Samples Relinquished by / Company: [Signature] 4/28/23 1630  
 Date/Time: 4/28/23 1630

4. Samples Relinquished by / Company: [Signature] 4/28/23 1630  
 Date/Time: 4/28/23 1630

Preservation: (check all that apply)  
 HCl \_\_\_ MeOH \_\_\_ HNO3 \_\_\_ H2SO4 \_\_\_ NaOH \_\_\_  
 ZnAc \_\_\_ Ascorbic Acid \_\_\_ Other: \_\_\_

Temperature: 6.0 Degrees C

## **APPENDIX F**

### **Waste Disposal Documentation**

3 27849-23

5207290

5/22

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of 1

3. Emergency Response Phone (267) 406-0083

4. Waste Tracking Number 44607

5. Generator's Name and Mailing Address Woodstock Construction Group, Ltd. 41 Ludlam Avenue Bayville NY 11709

Att: Andrew Woodstock

Generator's Site Address (if different than mailing address) Woodstock Construction Group, Ltd. 1 Shore Road Glenwood Landing NY 11547

Generator's Phone: 516 922-9509

6. Transporter 1 Company Name Innovative Recycling Technologies, Inc.

U.S. EPA ID Number NYR000134940

7. Transporter 2 Company Name Republic Environmental Systems (Trans Group) LLC

U.S. EPA ID Number PAD982661381

8. Designated Facility Name and Site Address Republic Environmental Systems (PA), LLC 2869 Sandstone Drive Hatfield PA 19440

U.S. EPA ID Number PAD085690592

Facility's Phone: 215 822-8995

9. Waste Shipping Name and Description

10. Containers

11. Total Quantity

12. Unit Wt./Vol.

1. Non Hazardous Drill Cuttings Non-DOT Regulated Material

No.

Type

1

DM

40

P

13. Special Handling Instructions and Additional Information

9.1) Doc#

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offero's Printed/Typed Name

Signature

Month Day Year 5 17 23

15. International Shipments

Import to U.S.

Export from U.S.

Port of entry/exit:

Date leaving U.S.:

Transporter Signature (for exports only):

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name

Signature

Month Day Year 5 17 23

Transporter 2 Printed/Typed Name

Signature

Month Day Year 5 19 23

17. Discrepancy

17a. Discrepancy Indication Space

Quantity

Type

Residue

Partial Rejection

Full Rejection

17b. Alternate Facility (or Generator)

Manifest Reference Number:

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name

Signature

Month Day Year 05 22 23

**CERTIFICATE OF TREATMENT, RECYCLING, AND/OR DISPOSAL**

**Generator:** 704551 - WOODSTOCK CONSTRUCTION  
1 SHORE ROAD  
GLENWOOD LANDING NY, 11547  
EPA ID: CESQG

**Facility:** REPUBLIC ENV SYS (PA) LLC  
2869 SANDSTONE DRIVE  
HATFIELD PA, 19440  
EPA ID: PAD085690592

**Manifest #:** 44607  
**Waste Receipt #:** HAT-19673  
**Date Received:** 05/22/2023

Line Profile	Material Description	Treatment/ Disposal Description
1 2300004514-00	NON-RCRA, NON-DOT REGULATED MATERIAL (DRILL CUTTINGS)	H141 THIS SITE RECEIVING THIS WASTE STORED/BULKED AND TRANSFERRED THE WASTE WITH

**Name:** MARCIA THOMAS

**Signature :**

*Marcia Thomas*

**Title :** Logistic Coordinator

## **APPENDIX G**

### **Personnel Qualifications**

## **SCOTT A. YANUCK, P.G.**

**PRESIDENT & SENIOR HYDROGEOLOGIST, *Laurel Environmental Geosciences, DPC.***  
*New York State Licensed Professional Geologist: #000330*

### **EDUCATION: STATE UNIVERSITY OF NEW YORK AT STONY BROOK**

B.A., Earth and Space Sciences, December 1987, Minor in Technology and Society.  
M.S., Hydrogeology, May 1993.

### **PROFESSIONAL HIGHLIGHTS:**

- Founded Laurel Environmental Associates, Ltd. (currently known as *Laurel Environmental Geosciences, DPC*) in 1992.
- Directed landmark environmental projects under key New York State (NYS) and New York City (NYC) regulatory programs, including NYS Superfund; NYS Brownfield Cleanup Program (BCP); NYS Spills Program and projects involving the NYC Office of Environmental Remediation (OER).
- Performed hundreds of due diligence projects on behalf of real estate developers, financial institutions, private investors and legal counsel nationwide.
- Provided expert testimony related to cases in New York State pertaining to environmental damages and cost recovery.
- Served on key American Society for Testing and Materials (ASTM) committees related to environmental assessments, site investigations and underground storage tanks.
- Managed land development and construction projects employing Green Technology and environmentally sustainable practices.
- Certified and experienced in a wide range of environmental fields including asbestos surveying, mold sampling, well drilling, geophysics and remote sensing and environmental site evaluation.

### **SELECTED PROJECT EXPERIENCE:**

- Managed project that was the first to receive Green Property Certification from NYC Mayor's Office of Environmental Remediation (OER).
- Member of a development team that acquired and redeveloped 24 Brownfield properties in Nassau County, New York.
- Obtained a NYSDEC Certificate of Completion (COC) under the State Voluntary Cleanup Program (VCP) at a State Superfund Site in Plainview, NY.
- Tank removal, remediation and monitoring of an "E" designated site in Greenpoint, Brooklyn, New York. Obtained spill closure and notice to proceed.
- Completed a large project for the NYC Mass Transit Authority (MTA) utilizing an *in-situ* remedial technology to promote biodegradation of leaked petroleum compounds in soil.
- Conducted Clean Ground EKO/GRID® pilot studies, using electro-kinetic technology to remediate hydrocarbons in soil and groundwater.
- Site investigation, delineation and successful remediation and RCRA Closure conducted at an inactive hazardous waste facility in Farmingdale, NY.
- Investigation, remediation and regulatory closure of an undocumented hazardous waste landfill at an industrial property in Westbury, NY.
- Conducted testing, delineation and successful remediation and spill closure at a former gas station in Maspeth, NY. Site is now a hotel.
- Performed environmental site investigations and cleanup at the Hess Oil Refinery in St. Croix, U.S. Virgin Islands after *Hurricane Hugo*.

### **LICENSES AND CERTIFICATIONS:**

New York State Licensed Professional Geologist: #000330  
OSHA 40 Hour HAZWOPER Supervisors course,  
OSHA 8 Hour Refresher Courses  
OSHA 10 Hour Construction Safety course

**LICENSES AND CERTIFICATIONS (continued):**

NYS DOL Asbestos Inspector, #AH97-08528  
New York State Well Driller's License, #NGW0193969  
NYC Department of Housing Mold Remediation and Management Course  
ASTM Environmental Site Assessment Training Course for Professionals.  
GSSI Certification in Ground Penetrating Radar  
Geoprobe Systems Training on Direct Push Techniques  
NJDEPE UST Certification Program.

**AFFILIATIONS:**

Air & Waste Management Association  
American Institute of Professional Geologists  
American Society for Testing and Materials

- Active Committee Member E-40, Subsurface Investigations
- Active Committee Member E-50, Environmental Assessment
- Active Committee Member E-50.1, Underground Storage Tanks

Environmental Assessment Association, Certified Environmental Inspector and Specialist, #12200.  
Hazardous Materials Control Resources Institute  
Huntington Chamber of Commerce  
Huntington Historical Society  
Long Island Association  
Long Island Builders Institute  
Long Island Geologists, Past President  
National Fire Protection Association  
National Ground Water Society  
New York State Council of Professional Geologists  
Stony Brook University  
US Green Building Council

## **MARC T. CALIFANO, P.G.**

**Project Director/Senior Geologist, Laurel Environmental Geosciences, D.P.C.**  
*New York State Licensed Professional Geologist: #000669*

### **EDUCATION:**

*B.S., ENVIRONMENTAL SCIENCE, 1999 - STATE UNIVERSITY OF NEW YORK AT ONEONTA*

### **RELATED COURSES:**

Environmental Geology, Earth Materials, Mineralogy, Environmental Geophysics, Field Geology, Structural Geology, Glacial Geology, Hydrogeology, Mapping Techniques in Geosciences, Geomorphology, Paleontology, Oceanography, Biology, Chemistry, Physics, and Calculus.

### **WORK EXPERIENCE:**

Mr. Marc Califano, P.G. has over 25 years of experience in the environmental consulting field and has performed Phase I Environmental Site Assessments (ESA's), Phase II Soil, Groundwater and Vapor Intrusion Sampling Investigations, and Phase III Site Remediation projects for both municipal and private clients. Mr. Califano has extensive field experience, technical report writing skills and comprehensive knowledge of New York State, New York City and County (Nassau and Suffolk) regulatory compliance standards/requirements. Through this experience, Mr. Califano has closed many New York State Department of Environmental Conservation (NYSDEC) spill cases, remediated and closed several Suffolk County Department of Health Services (SCDHS) Underground Injection Control (UIC) cases and prepared several permit applications, technical reports, health and safety plans, remedial work plans and closure reports. Mr. Califano has been involved in many commercial redevelopment projects through the preparation of remedial work plans, sampling plans, engineering reports, site management plans and has extensive experience interrupting analytical data for the disposal of contaminated and hazardous materials.

### **LICENSES/CERTIFICATIONS**

Licensed Professional Geologist, New York State, No. 000669  
OSHA 40 Hour HAZWOPER Course  
OSHA 8 Hour HAZWOPER Refresher Courses  
Amtrak On-Track Safety Certification  
MTA New York City Transit – Tack Safety Training  
EPA Radon Training and Certification  
Environmental Data Resources – ASTM E1527-21 Due Diligence update

### **AFFILIATIONS**

Long Island Association of Professional Geologists

## **BRIAN C. MCCABE**

### **EDUCATION: STONY BROOK UNIVERSITY**

B.S., Geology, September 1991, Minor in Marine Science

M.S., Hydrogeology, Pending.

### **RELATED COURSES:**

Geophysics, Geochemistry,  
Hydrogeology, Organic contaminant Hydrology, and Bioremediation.

### **EXPERIENCE:**

**Senior Geologist/Senior Project Manager**, Laurel Environmental Geosciences, DPC.  
January 2012 - present

- Project Health and Safety Officer
- Project QA/QC Officer
- Phase I Environmental Site Assessments.
- Phase II Environmental Assessments.
- Remedial Investigations/Feasibility Studies
- NYC Office of Environmental Restoration (OER) Investigations
- Underground Storage Tanks (UST's): testing, removal, closure.
- Underground Injection Well Closure (UIC)
- Hazardous Waste Site Remediation.
- Design and Management of *In-situ* Bioremediation Systems
- Installation of Sub-Slab Depressurization Systems
- Operation and Maintenance of Groundwater Extraction and Treatment Systems
- Installation of Vapor Barrier Systems
- Installation of Air Sparging/Soil Vapor Extraction Systems

**Department Manager: Professional Services**, Fenley & Nicol  
September 1997 - January 2012

- Phase I Environmental Assessments.
- Phase II Environmental Assessments.
- Groundwater Contamination Studies.
- Underground Storage Tanks (UST'S): testing, removal, closure.
- Underground Injection Well Closure (UIC)
- Hazardous Site Remediation.
- Construction and operation of remediation system.

### **CERTIFICATIONS:**

OSHA 40-Hr. HAZWOPER Course  
Preston Groundwater Remediation Course  
ASTM 1527-13 Environmental Site Assessment training course  
Waterloo University, Groundwater Modeling Training Course  
ExxonMobil, LPS training  
LIRR Track Safety training

### **AFFILIATIONS:**

Long Island Geologists  
United States Coast Guard Auxiliary

## **JAMIE BURGHER**

### **EDUCATION: STONY BROOK UNIVERSITY**

B.S., Geology, May 2016

Departmental Honors, Magna Cum Laude

### **RELATED COURSES:**

Field Geology, Geophysical Survey Methods, Introduction to Geochronology and Thermochronology, Introduction to Geophysics, Igneous and Metamorphic Petrology, Sedimentation and Stratigraphy, Structural Geology, Mineralogy, GIS Design and Application, GIS Database Design, GIS Project Management, Linear Algebra, Differential Equations.

### **EXPERIENCE:**

**Geologist II**, Laurel Environmental Geosciences, DPC. Huntington, NY.

June 2016 - Present

- Perform Phase I & Phase II Environmental Site Assessments (ESAs)
- Calibrate and maintain instruments used in Phase II ESAs
- Conduct asbestos surveys
- Provide construction and remedial oversight to ensure compliance with environmental regulations
- Draft reports documenting fieldwork and clearly outlining any necessary corrective actions
- Interface with public agencies to achieve regulatory closure of oil spills, tank removals, and underground structure abandonments
- Construct Electronic Database Deliverables for submission to the NYSDEC
- Collaborate with project managers to develop proposals meeting site-specific needs
- Mentor junior staff in proper field investigative techniques while providing professional development assessments for review by senior management

**Research Assistant**, Stony Brook University. Stony Brook, NY.

September 2015 – December 2016

- Carry out geophysical investigations of suspected glaciotectionic structures
- Maintain and repair equipment used in fieldwork
- Give presentations to classes prior to undertaking fieldwork which established project goals
- Lead small groups in successfully completing fieldwork
- Use java-based GIS systems to map extent of objects and establish relationships

### **FIELD AND TECHNICAL SKILLS:**

- Extensive experience using ground penetrating radar (GPR) units (50 – 800 MHz)
- Processing of GPR data for use in presentations and publications
- Practical experience in the use of magnetometers and gravimeters
- Knowledge of surveying techniques to make accurate topographic measurements
- Use of EQuIS Data Processor to create geodatabases meeting NYSDEC standards
- Use of ArcGIS and jMARS software to create information products
- Proficient in the use of Microsoft Office suite of software

### **CERTIFICATIONS:**

OSHA 40 Hr. HAZWOPER Course, NIOSH 582  
OSHA 30 Hr. Construction Safety  
NYS DOL Asbestos Inspector  
XRF Safety Training

## **NICHOLAS KIDERIS**

### **EDUCATION: STONY BROOK UNIVERSITY**

Bachelor of Science, Geology, Second Major, Earth and Space Sciences, May 2019

### **RELATED COURSES:**

Mineralogy, Structural Geology, Sedimentation and Stratigraphy, Igneous and Metamorphic Petrology, Remote Sensing, Topics in Planetary Science, Glacial Geology, Waves Tides and Beaches, Environmental Problems and Solutions.

### **EXPERIENCE:**

**Geologist**, Laurel Environmental Geosciences, DPC. Huntington Station, NY.  
December 2019 – Present

- ❑ Phase I Environmental Assessments (ESAs) at residential, commercial, and industrial properties
- ❑ Phase II Investigations including soil, groundwater, and air sampling
- ❑ Prepared Phase II Investigation workplans and reports
- ❑ Underground Injection Control (UIC) sampling, structures including drywells, storm drains, septic tanks, and leeching pools
- ❑ Maintained and calibrated equipment for Phase II Investigations
- ❑ Prepared site-specific Health and Safety Plans
- ❑ Completed RIR and RAR on OER projects

### **CERTIFICATIONS**

40 Hour HAZWOPER

OSHA 30 Hour Construction

## **JOSHUA YANUCK**

### **EDUCATION: SUNY GENESEO**

Bachelor of Science, Geology, May 2022

### **RELATED COURSES:**

Mineralogy, Principles of Structural Geology, Stratigraphy, Petrology, Historical Geology, Geomorphology, Applied Geophysics, Basin Analysis, Invertebrate Paleontology,

### **EXPERIENCE:**

**Geologist**, Laurel Environmental Geosciences, DPC. Huntington Station, NY.  
September 2022 – Present

- ❑ Phase I Environmental Assessments (ESAs) at residential, commercial, and industrial properties
- ❑ Phase II Investigations including soil, groundwater, and air sampling
- ❑ Prepared Phase II Investigation workplans and reports
- ❑ Underground Injection Control (UIC) sampling, structures including drywells, storm drains, septic tanks, and leeching pools
- ❑ Maintained and calibrated equipment for Phase II Investigations
- ❑ Prepared site-specific Health and Safety Plans

### **CERTIFICATIONS**

40 Hour HAZWOPER

OSHA 30 Hour Construction

**Christine A. Camardella, P.G., PMP**

54 Prentice Road

Levittown, New York 11756

[chriscamardella@hotmail.com](mailto:chriscamardella@hotmail.com)

516-946-1121

Data Validation/Data Review/ Environmental Consultant

Providing consultation, data validation and data review services. These services include evaluation of analytical data with the objective to determine whether the data presented meets the site/project specific criteria for data quality and data use. Validation and review will be performed in accordance with the NYSDEC DER10 and USEPA 600/8-91/003, EPA 540/R/94/093 & EPA 540/R/94/097, USEPA National Functional Guidelines for Data Validation and EPA Region 2 SOPs for Data Validation.

Over 25 years of experience in both the laboratory and the environmental consulting field, with expertise in chemistry and environmental technology. Working knowledge of state and federal laws, regulations, and guidelines for the environment, water quality, and health including NYSDEC, NYCDEP, OER and NYSDOH. Additional skills are in quality control and quality assurance, data validation, expert technical review, chemical analysis, client communication and service, staff supervision and mentoring, regulatory interface, compliance management, work plan and proposal preparation, soil and groundwater investigation oversight, project scheduling and tracking, and technical editing as well as extensive financial management experience including forecasting and budget management. Manage and train junior staff.

**Experience:**

**Lead Project Manager, Complex Project Management – Gas**

National Grid – April 2018 - Present

- Prioritize, plan and coordinate project development activities according to stakeholder requirements.
- Supervise project team on daily basis to execute assigned projects within deadlines and budget.
- Prepare project proposals and develop project plan, schedule, and budget.
- Determine resource requirements and identify resources with the right skills to successfully execute projects.
- Assess potential risks and technical challenges and develop appropriate mitigation plans.
- Perform cash flow analysis and process invoices in a timely fashion.
- Develop cost reduction initiatives while maintaining quality and productivity.
- Analyze and resolve project issues in a timely and accurate manner.
- Provide technical guidance for large-scale projects.

**Senior Project Manager**

Advanced Site Restoration, LLC – September 2016 - February 2017

- Provided management and support for several retail petroleum clients.
- Prepared Phase I and Phase II Environmental Site Assessments.
- Knowledge in state and federal laws, regulations, and guidelines for the environment, water quality, and health including NYSDEC, NYCDEP, NYC OER and NYSDOH.
- Prepared high-level technical reports including Remedial Action Plans.
- Provided high level technical review of reports.
- Acted as a liaison between client and regulatory agencies.
- Provided data validation and data summary usability reports for clients.
- Managed and train junior staff while providing mentoring and support.
- Prepared proposals for clients.
- Managed several complex projects involving chemistry data QA/QC, asbestos removal, shoring installation, soil excavation, UST removal, and remediation system installation, in-situ bioremediation and soil and groundwater remediation.

**Project Manager**

Impact Environmental Consulting, Inc. - January 2011 - September 2016

- Managed retail petroleum client portfolios for projects in Nassau, Suffolk, Brooklyn, Queens, Bronx and Westchester.
- Advised clients on most cost-effective remedial strategies to obtain cleanup objectives.
- Expertise in Phase I and Phase II Environmental Site Assessments, remedial systems, in-situ bioremediation, UST removal, excavation, Site redevelopment, and soil and groundwater chemistry.
- Worked closely with regulatory agencies as well as local municipalities.
- Prepared and reviewed technical reports for client and/or regulatory submittal.

Pro Developed budgets and cost estimates.

- Managed and trained junior staff.

### **Senior Project Manager**

Sovereign Consulting, Inc.- February 2009 - August 2010

- Provided project management and support for a multi-million-dollar project for a major retail petroleum company.
- Served as technical support on project with client and other team members, which has resulted in additional assessment work to obtain soil and groundwater characteristics in area of major plume.
- Managed quarterly sampling activities for an extensive groundwater monitoring well network including staffing, equipment, regulatory coordination and permits.
- Provided additional project management support for several retail petroleum projects in Brooklyn, Queens, and Nassau & Suffolk Counties.
- Maintained excellent client relationship and adhere to client expectations.
- Prepared and review technical reports for the client and regulatory agency.
- Documented cost savings of over \$500,000 resulting in an award from the client.

### **Senior Project Manager**

Kleinfelder, Inc. - January 2004 - February 2009

- Provided project management for a multi-million-dollar portfolio in Kings County for a major retail petroleum company.
- Supervised a staff of 5 professionals and provide mentorship and guidance.
- Communicated with regulatory agencies and maintain a working relationship with key regulators.
- Provided financial management and support.
- Assisted in providing technical guidance for large-scale projects, including reviewing and recommending new technologies.
- Provided management and support for several complex projects involving asbestos removal, shoring install, excavation, UST removal, and remediation system install and groundwater and soil remediation.
- Adhered to all company and client health and safety programs.

### **Project Environmental Scientist**

Groundwater & Environmental Services, Inc.- December 2001 - December 2003

- Provided project management support activities including client involvement, work plan and proposal preparation, project scheduling and tracking, budget evaluation and analysis, and technical editing and report finalization.
- Developed and implemented Site work plans and proposals.
- Communicated with regulatory agencies.
- Performed oversight of soil and groundwater investigations.
- Conducted Phase I/II Site assessments for acquisitions and divestments of properties: including all associated fieldwork and reports.

### **Water Quality Specialist/Assistant Laboratory Director**

Long Island Water Corporation - January 1992 – November 2001

- Responsible for maintaining laboratory certification for potable water via EPA and Nassau County Dept. of Health (NCDOH) approved testing methods.
- Assisted in evaluating laboratory programs, coordinated sampling/testing procedures to assure regulatory compliance.
- Established and directed quality assurance programs. Prepared reports and made recommendations as needed.

**Chemist**

Nassau County Department of Health, Division of Labs & Research - January 1990 - January 1992

- Analyzed potable and non-potable waters through EPA and NYSDOH requirements.
- Provided assistance with quality control systems and techniques.

**Education:**

New York Institute of Technology  
Master Degree with Distinction, Environmental Technology, 2002

Adelphi University  
Master Degree, Chemistry, 1994

St. Bonaventure University  
Bachelor of Science Degree, Chemistry, 1990

Nassau Community College  
Courses taken in Biology & Microbiology, 1998

**Licenses:**

Professional Geologist, License No. 1003

**Certifications:**

Project Management Professional (PMP)

**Professional Memberships:**

Project Management Institute (PMI) Long Island Chapter  
New York State Council of Professional Geologists (NYSCPG)  
Long Island Association of Professional Geologists (LIAPG)





## **APPENDIX H**

### **Data Usability Summary Reports**

**DATA USABILITY SUMMARY REPORT**  
**FOR**  
**1 Shore Road, Glenwood Landing, NY**

York Analytical Laboratories Inc  
**York Project (SDG) No.: 23D1619**  
Soil Samples  
Collection Date – April 26, 2023

**PREPARED FOR:**

Laurel Environmental Geosciences D.P.C.  
55 West Hills Road  
Huntington Station, New York  
Attn: Scott Yanuck

**PREPARED BY:**

Christine A. Camardella  
54 Prentice Road  
Levittown, New York 11756  
[chriscamardella@hotmail.com](mailto:chriscamardella@hotmail.com)  
516-946-1121

July 5, 2023

1 Shore Road, Glenwood Landing, NY  
April 26, 2023, Sampling Event  
**York Project (SDG) No.: 23D1619**  
July 5, 2023

## **Data Usability Summary Report Introduction & Notes**

**Site:** 1 Shore Rd., Glenwood Landing, NY  
**Laboratory:** York Analytical Laboratories Inc  
**Sample Collection Date:** April 26, 2023  
**York Project (SDG) No. 23D1619**

**Date of Final Review:** July 5, 2023  
**Reviewed by:** Christine A. Camardella

### **Sample Identification:**

<b>CLIENT SAMPLE ID</b>	<b>LAB ID</b>	<b>MATRIX</b>
SB-109 1-3	23D1619-01	SOIL
SB-109 3-5	23D1619-02	SOIL
SB-111 3-5	23D1619-03	SOIL
SB-118 1-3	23D1619-04	SOIL
SB-118 3-5	23D1619-05	SOIL
SB-119 1-3	23D1619-06	SOIL
SB-119 3-5	23D1619-07	SOIL
SB-120 1-3	23D1619-08	SOIL
SB-120 3-5	23D1619-09	SOIL
SB-121 1-3	23D1619-10	SOIL
SB-121 3-5	23D1619-11	SOIL
SB-122 1-3	23D1619-12	SOIL
SB-122 3-5	23D1619-13	SOIL
SB-117 1-3	23D1619-14	SOIL
SB-117 3-5	23D1619-15	SOIL
SB-116 1-3	23D1619-16	SOIL
SB-116 3-5	23D1619-17	SOIL
SB-108 1-3	23D1619-18	SOIL
SB-108 3-5	23D1619-19	SOIL
SB-103 1-3	23D1619-20	SOIL
SB-103 16-18	23D1619-21	SOIL
SB-104 1-3	23D1619-22	SOIL
SB-104 16-18	23D1619-23	SOIL
SB-102 1-3	23D1619-24	SOIL
SB-102 20-22	23D1619-25	SOIL
SB-101 1-3	23D1619-26	SOIL
SB-101 23-25	23D1619-27	SOIL
SB-105 1-3	23D1619-28	SOIL
SB-105 12-14	23D1619-29	SOIL
SB-106 1-3	23D1619-30	SOIL
SB-106 12-14	23D1619-31	SOIL
DUP	23D1619-32	SOIL
Equipment Blank	23D1619-33	Water

1 Shore Road, Glenwood Landing, NY  
April 26, 2023, Sampling Event  
**York Project (SDG) No.: 23D1619**  
July 5, 2023

**Notes:**

GW – Groundwater  
NA – Not Analyzed  
PFAS – Polyfluoroalkyl Substances  
VOCs – Volatile Organic Compounds  
SV – Soil Vapor  
SVOCs – Semi-Volatile Organic Compounds  
Herbs – Herbicides  
PCBs – Polychlorinated Biphenyls  
Pest - Pesticides  
LCS – Lab Control Sample  
LCSD – Lab Control Sample Duplicate

York Analytical Laboratories Inc. – Definitions and Acronyms – please refer to laboratory report, page 166, for a complete list.

**The data package was evaluated as per:**

- New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER) 10/Technical Guidance for Site Investigation and Remediation – May 3, 2010, Appendix 2B – Guidance for the Development of DUSRs.
- United States Environmental Protection Agency (USEPA) Laboratory Contract Program.

The Data Usability Summary follows for each sample.

## **Data Usability Summary Report**

### **A. PFAS, EPA 1663 TARGET LIST – SOIL SAMPLES**

1. Is the data package complete as defined under the requirements for the most current DEC Analytical Services Protocol (ASP) Category B or USEPA CLP data deliverables?
  - a. Yes, the data package is complete as per DEC ASP Category B.
2. Have all the holding times been met?
  - a. Yes, all holding times have been met – Reviewed Holding Time Summary.
3. Form I – METHOD BLANK DATA SHEET
  - a. Review of reported laboratory data for SOIL and WATER samples (Blank):
  - b. Water – Laboratory ID: BD31981-BLK1
    - Qualifiers used:
    - U – Indicates the compound was analyzed for but not detected.
    - J – Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
  - c. Soil – Laboratory ID: BD32003-BLK1, BE30057-BLK1, BE30075-BLK1, BE30533-BLK1
    - Qualifiers used:
    - U – Indicates the compound was analyzed for but not detected.
    - \* - Value outside of QC limits.
  - d. Data is Acceptable.
4. Form I – Organic Analysis Data Sheet
  - a. Soil samples – SB-109 1-3, SB-109 3-5, SB-111 3-5, SB-118 1-3, SB-118 3-5, SB-119 1-3, SB-119 3-5, SB-120 1-3, SB-120 3-5, SB-121 1-3, SB-121 3-5, SB-122 1-3, SB-122 3-5, SB-117 1-3, SB-117 3-5, SB-116 1-3, SB-116 3-5, SB-108 1-3, SB-108 3-5, SB-103 1-3, SB-103 16-18, SB-104 1-3, SB-104 16-18, SB-102 1-3, SB-102 20-22, SB-101 1-3, SB-101 23-25, SB-105 1-3, SB-105 12-14, SB-106 1-3, SB-106 12-14, DUP
    - Qualifiers used:
    - U – Indicates the compound was analyzed for but not detected.
    - \* - Value outside of QC limits.
5. Do all the QC data; blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

- a. Yes, all the QC Data falls within the protocol required limits and specifications.
- b. Form II – Surrogate Standard Recovery and RT Summary
  - Qualifiers used:
    - \* - Value outside of QC limits.
    - Data reviewed.
  - No exceptions noted - Acceptable.
- c. Form III – LCS/LCS Duplicate Recovery
  - Laboratory ID: BD31981-BS1
    - Two (2) values outside of QC limits.
    - No Exceptions noted – Acceptable.
  - Laboratory ID: BD31981-BS2
    - Three (3) values outside of QC limits.
    - No exceptions noted – Acceptable.
  - Laboratory ID: BD32003-BS1
    - Five (5) values outside of QC limits.
    - No exceptions noted – Acceptable.
  - Laboratory ID: BD32003-BS2
    - Nine (9) values outside of QC limits.
    - No exceptions noted – Acceptable.
  - Laboratory ID: BE30057-BS1
    - Five (5) values outside of QC limits.
    - No exceptions noted – Acceptable.
  - Laboratory ID: BE30057-BS2
    - Three (3) values outside of QC limits.
    - No exceptions noted – Acceptable.
  - Laboratory ID: BE30075-BS1
    - Five (5) values outside of QC limits.
    - No exceptions noted – Acceptable.
  - Laboratory ID: BD30075-BS2
    - Seven (7) values outside of QC limits.
    - No exceptions noted – Acceptable.
  - Laboratory ID: BE30533-BS1
    - Three (3) values outside of QC limits.
    - No exceptions noted – Acceptable.
  - Laboratory ID: BE30533-BS2
    - Four (4) values outside of QC limits.
    - No exceptions noted – Acceptable.
- d. Form IV – Preparation Batch Summary

- Batch BD32003 – No Exceptions Noted – Acceptable.
  - Batch BE30057 – No Exceptions Noted – Acceptable.
  - Batch BE30075 – No Exceptions Noted – Acceptable.
  - Batch BE30533 – No Exceptions Noted – Acceptable.
- e. Form V – Analysis Batch (Sequence) Summary
- No exceptions noted – Acceptable.
- f. Form VI – Initial Calibration Data
- No exceptions noted – Acceptable.
  - Second-Source Calibration Verification – No exceptions noted – Acceptable.
- g. Form VII – Continuing Calibration Check
- No exceptions noted – qualifiers checked – Acceptable.
- h. Form VIII – Internal Standard Area and Retention Time Summary
- All samples met internal standard area and retention time criteria. No exceptions noted.
  - Acceptable.
- i. Quantitation Results Report – Quantitation was acceptable. A review of the Quantitation Report was conducted.
- j. Duplicates
- SB-119 1-3 – Data Reviewed and Checked – Acceptable
  - SB-104 16-18 – Data Reviewed and Checked – Acceptable
  - SB-119 3-5 – Data Reviewed and Checked – Acceptable
6. Have all the data been generated using established and agreed upon analytical protocols?
- a. Yes, all the data has been generated using established and agreed upon analytical protocols.
7. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?
- a. Yes, the raw data confirms the results provided in the data summary sheets and quality control verification forms.
8. Have the correct data qualifiers been used and are they consistent with the most current DEC ASP?

- a. Yes, the correct data qualifiers have been used.
- 9. Have any quality control (QC) exceedances been specifically noted in the DUSR?
  - a. The Quality Control data has been checked; any exceedances have been noted.

## **B. INORGANIC ANALYSIS DATA SHEET – SOIL SAMPLES**

- 1. Form I – Inorganic Analysis Data Sheet - % Solids
  - a. Soil samples – SB-109 1-3, SB-109 3-5, SB-111 3-5, SB-118 1-3, SB-118 3-5, SB-119 1-3, SB-119 3-5, SB-120 1-3, SB-120 3-5, SB-121 1-3, SB-121 3-5, SB-122 1-3, SB-122 3-5, SB-117 1-3, SB-117 3-5, SB-116 1-3, SB-116 3-5, SB-108 1-3, SB-108 3-5, SB-103 1-3, SB-103 16-18, SB-104 1-3, SB-104 16-18, SB-102 1-3, SB-102 20-22, SB-101 1-3, SB-101 23-25, SB-105 1-3, SB-105 12-14, SB-106 1-3, SB-106 12-14, DUP, DUPLICATES SB-109 3-5, DUPLICATES SB-120 3-5, SB-116 3-5.
    - i. No Qualifiers used.
  - b. Data is Acceptable.
- 2. Form IV – Preparation Batch Summary
  - a. No Exceptions Noted – Acceptable.

1 Shore Road, Glenwood Landing, NY  
April 26, 2023, Sampling Event  
**York Project (SDG) No.: 23D1619**  
July 5, 2023

**DATA USABILITY SUMMARY REPORT**  
**FOR**  
**1 Shore Road, Glenwood Landing, NY**

York Analytical Laboratories Inc  
**York Project (SDG) No.: 23D1735**  
Soil Samples  
Collection Date – April 27, 2023

**PREPARED FOR:**

Laurel Environmental Geosciences D.P.C.  
55 West Hills Road  
Huntington Station, New York  
Attn: Scott Yanuck

**PREPARED BY:**

Christine A. Camardella  
54 Prentice Road  
Levittown, New York 11756  
[chriscamardella@hotmail.com](mailto:chriscamardella@hotmail.com)  
516-946-1121

July 5, 2023

1 Shore Road, Glenwood Landing, NY  
April 27, 2023, Sampling Event  
**York Project (SDG) No.: 23D1735**  
July 5, 2023

## **Data Usability Summary Report Introduction & Notes**

**Site:** 1 Shore Rd., Glenwood Landing, NY  
**Laboratory:** York Analytical Laboratories Inc  
**Sample Collection Date:** April 26, 2023  
**York Project (SDG) No. 23D1735**

**Date of Final Review:** July 5, 2023  
**Reviewed by:** Christine A. Camardella

### **Sample Identification:**

<b>CLIENT SAMPLE ID</b>	<b>LAB ID</b>	<b>MATRIX</b>
SB-107 1-3	23D1735-01	SOIL
SB-107 12-14	23D1735-02	SOIL
SB-115 3-5	23D1735-03	SOIL
SB-115 12-14	23D1735-04	SOIL
SB-114 1-3	23D1735-05	SOIL
SB-114 12-14	23D1735-06	SOIL
SB-113 1-3	23D1735-07	SOIL
SB-113 12-14	23D1735-08	SOIL
SB-112 1-3	23D1735-09	SOIL
SB-112 11-13	23D1735-10	SOIL
SB-110 1-3	23D1735-11	SOIL
SB-110 12-14	23D1735-12	SOIL
DUP	23D1735-13	SOIL
Equipment Blank	23D1735-14	Water

### **Notes:**

GW – Groundwater  
NA – Not Analyzed  
PFAS – Polyfluoroalkyl Substances  
VOCs – Volatile Organic Compounds  
SV – Soil Vapor  
SVOCs – Semi-Volatile Organic Compounds  
Herbs – Herbicides  
PCBs – Polychlorinated Biphenyls  
Pest - Pesticides  
LCS – Lab Control Sample  
LCSD – Lab Control Sample Duplicate

York Analytical Laboratories Inc. – Definitions and Acronyms – please refer to laboratory report, page 88, for a complete list.

1 Shore Road, Glenwood Landing, NY  
April 27, 2023, Sampling Event  
**York Project (SDG) No.: 23D1735**  
July 5, 2023

**The data package was evaluated as per:**

- New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER) 10/Technical Guidance for Site Investigation and Remediation – May 3, 2010, Appendix 2B – Guidance for the Development of DUSRs.
- United States Environmental Protection Agency (USEPA) Laboratory Contract Program.

The Data Usability Summary follows for each sample.

## **Data Usability Summary Report**

### **A. PFAS, EPA 1663 TARGET LIST – SOIL SAMPLES**

1. Is the data package complete as defined under the requirements for the most current DEC Analytical Services Protocol (ASP) Category B or USEPA CLP data deliverables?
  - a. Yes, the data package is complete as per DEC ASP Category B.
2. Have all the holding times been met?
  - a. Yes, all holding times have been met – Reviewed Holding Time Summary.
3. Form I – METHOD BLANK DATA SHEET
  - a. Review of reported laboratory data for SOIL and WATER samples (Blank):
  - b. Water – Laboratory ID: Equipment Blank, BE30075-BLK1, BE30255-BLK1, BE30533-BLK1
    - Qualifiers used:
    - U – Indicates the compound was analyzed for but not detected.
    - \* - Value outside of QC limits.
  - c. Data is Acceptable.
4. Form I – Organic Analysis Data Sheet
  - a. Soil samples – SB-107 1-3, SB-107 12-14, SB-115 1-3, SB-115 12-14, SB-114 1-3, SB-114 12-14, SB-113 1-3, SB-113 12-14, SB-112 1-3, SB-113 11-13, SB-110 1-3, SB-110 12-14, DUP
    - Qualifiers used:
    - U – Indicates the compound was analyzed for but not detected.
    - J – Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
    - \* - Value outside of QC limits.
5. Do all the QC data; blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?
  - a. Yes, all the QC Data falls within the protocol required limits and specifications.
  - b. Form II – Surrogate Standard Recovery and RT Summary
    - Qualifiers used:
      - \* - Value outside of QC limits.
      - Data reviewed.

- No exceptions noted - Acceptable.
- c. Form III – LCS/LCS Duplicate Recovery
- Laboratory ID: BE30075-BS1
    - Five (5) values outside of QC limits.
    - No Exceptions noted – Acceptable.
  - Laboratory ID: BE30075-BS2
    - Seven (7) values outside of QC limits.
    - No exceptions noted – Acceptable.
  - Laboratory ID: BE30255-BS1
    - Four (4) values outside of QC limits.
    - No exceptions noted – Acceptable.
  - Laboratory ID: BE30255-BS2
    - Three (3) values outside of QC limits.
    - No exceptions noted – Acceptable.
  - Laboratory ID: BE30533-BS1
    - Three (3) values outside of QC limits.
    - No exceptions noted – Acceptable.
  - Laboratory ID: BE30533-BS2
    - Four (4) values outside of QC limits.
    - No exceptions noted – Acceptable.
- d. Form IV – Preparation Batch Summary
- Batch BE30075 – No Exceptions Noted – Acceptable.
  - Batch BE30255 – No Exceptions Noted – Acceptable.
  - Batch BE30533 – No Exceptions Noted – Acceptable.
- e. Form V – Analysis Batch (Sequence) Summary
- No exceptions noted – Acceptable.
- f. Form VI – Initial Calibration Data
- No exceptions noted – Acceptable.
  - Second-Source Calibration Verification – No exceptions noted – Acceptable.
- g. Form VII – Continuing Calibration Check
- No exceptions noted – qualifiers checked – Acceptable.
- h. Form VIII – Internal Standard Area and Retention Time Summary
- All samples met internal standard area and retention time criteria. No exceptions noted.
  - Acceptable.

- i. Quantitation Results Report – Quantitation was acceptable. A review of the Quantitation Report was conducted.
- j. Duplicates
  - SB-119 1-3 – Data Reviewed and Checked – Acceptable
  - SB-104 16-18 – Data Reviewed and Checked – Acceptable
  - SB-119 3-5 – Data Reviewed and Checked – Acceptable
6. Have all the data been generated using established and agreed upon analytical protocols?
  - a. Yes, all the data has been generated using established and agreed upon analytical protocols.
7. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?
  - a. Yes, the raw data confirms the results provided in the data summary sheets and quality control verification forms.
8. Have the correct data qualifiers been used and are they consistent with the most current DEC ASP?
  - a. Yes, the correct data qualifiers have been used.
9. Have any quality control (QC) exceedances been specifically noted in the DUSR?
  - a. The Quality Control data has been checked; any exceedances have been noted.

## **B. INORGANIC ANALYSIS DATA SHEET – SOIL SAMPLES**

1. Form I – Inorganic Analysis Data Sheet - % Solids
  - a. Soil samples – SB-107 1-3, SB-107 12-14, SB-114 1-3, SB-114 12-14, SB-113 1-3, SB-113 12-14, SB-112 1-3, SB-110 1-3, SB-110 12-14, DUP, DUPLICATE SB 107 1-3
    - i. No Qualifiers used.
  - b. Data is Acceptable.
2. Form IV – Preparation Batch Summary
  - a. No Exceptions Noted – Acceptable.

1 Shore Road, Glenwood Landing, NY  
April 27, 2023, Sampling Event  
**York Project (SDG) No.: 23D1735**  
July 5, 2023