December 7, 2021

Mr. Justin Bragg
Environmental Quality Analyst
Michigan Department of Environment, Great Lakes and Energy
Gaylord District Office
Water Resources Division 2100 West M-32
Gaylord, Michigan 49735-9282

E-Mail: BraggJ@Michigan.gov

Subject: **Short Term Storm Water Characterization Study (STSWCS) Results - PFAS**
National Pollutant Discharge Elimination System (NPDES)
Certificate of Coverage No. MIS110546
Designated Name: Mich ARNG-Camp Grayling
Compliance Communication CC-002853
Camp Grayling Cantonment
Grayling, Michigan 49739

Dear Mr. Bragg:

AMEC Engineering and Consulting of Michigan, Inc. (AMEC) is submitting the results of a Short-Term Storm Water Characterization Study (STSWCS) on behalf of our Client, the Michigan Department of Military and Veterans Affairs (MDMVA), for the Cantonment Area at the Camp Grayling Joint Maneuver and Training Center (CGJMTC) located near Grayling, Michigan.

The following sections provide Site information, a discussion of the work completed including information regarding each qualifying storm event and precipitation estimates, sample methods, and a summary of the analytical laboratory results.

Site Information

The Cantonment is located approximately three miles southwest of the city of Grayling (Figure 1) and contains 288 buildings including office buildings, post exchange, gymnasium, Officer's Club, housing for transient troops and motor pools, building maintenance, storage, and utility buildings. Ancillary support structures include wash racks, athletic fields, and outdoor training areas. CGJMTC is staffed by full-time, part-time, and seasonal personnel. Cantonment personnel perform a variety of tasks to support the training operations conducted at the facility.

The Cantonment borders approximately 1.25 miles of shoreline along the south shoreline of Lake Margrethe. As shown on Figure 2, storm water either flows (as sheet flow) directly into Lake Margrethe, is discharged via storm water conveyance pipes into Lake Margrethe or is discharged into onsite stormwater detention areas via storm water conveyance pipes. Approximately 60% (738 acres) of the Cantonment is forested. The buildings and support facilities are on the

remaining 40% (505 acres) of the Cantonment, less than one-third of which is covered with impermeable surface (pavement, roofs, etc.). Surface soils are generally sandy in which much of the storm water infiltrates directly into the ground. The elevation of the terrain descends from south to north toward the lake. Several higher elevation areas are present on the Cantonment east and south of Lake Margrethe.

On August 27, 2019, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Water Resources Division (WRD) performed an Industrial Storm Water Inspection (ISWI) at the Cantonment. As a result of the ISWI, a Compliance Communication was issued by EGLE WRD on December 28, 2020 (CC-002853) indicating that efforts are being taken by EGLE to evaluate water discharges from industrial facilities with high potential for having historically used per – and polyfluoroalkyl substances (PFAS) containing chemicals, specifically perfluorooctanesulfonic acids (PFOS) and perfluorooctanoic acid (PFOA), and as such, a STSWCS for PFAS was to be completed for the Cantonment.

A STSWCS Plan was submitted to EGLE for review and approved on April 5, 2021. The STSWCS Plan identified 14 points of discharge that are directed to outfall locations by way of storm sewer conveyance systems, drainage ditches, or culverts. Of the 14 discharge points, 11 locations were identified by AMEC for sampling. Three locations were eliminated to reduce or eliminate duplicate sample locations and identify single points of discharge for each defined drainage area.

Sample Methods and Constraints

All storm water samples for this STSWCS were collected by Mr. Adam Weeks (Certified Storm Water Operator Number I-17885), of AMEC following EGLE's *General PFAS Sampling Guidance* document dated October 16, 2018. The collection and visual inspection of each sample was completed in accordance with the *EGLE Water Resources Division Visual Assessments of Industrial Storm Water* guide (2014). Samples were collected at least 72-hours after the previous storm event that caused a discharge. Weather conditions and 72-hour precipitation measurements were obtained from KGOV, a National Oceanic and Atmospheric Administration weather station located at the Grayling Army Airfield, approximately 4.5 miles northwest of the Cantonment. Due to the location of KGOV and the nature of weather patterns in the area, the total rainfall amounts and measurements used in this study are estimated and may not represent total precipitation at the Cantonment.

According to the United States Department of Agriculture Soil Survey for Crawford County, Michigan, the hydraulic nature of the soils (Grayling sands) at the Cantonment is excessively drained and provides low to negligible runoff, depending on slope. Over the course of this study, the estimated observed rainfall amounts required to produce discharge on the Site are >0. 09-inches; any rainfall to a lesser extent was observed as insufficient for sample collection. In some instances, the variations in rainfall attributed to negligible flow from outfall locations and samples were unable to be collected.

As mentioned in the previous section, storm water generated from the Cantonment flows (as sheet flow) directly into Lake Margrethe, is discharged via storm water conveyance pipes into Lake Margrethe or is discharged into onsite stormwater detention areas via storm water conveyance pipes (Figure 2). Each conveyance pipe transports storm water from a different collection area within the Cantonment. Drainage areas were determined using raster imagery provided by MDMVA and by evaluating storm water conveyance pipes. The estimated amount of total runoff was calculated using hydraulic soil types and respective Runoff Curve Number (RCN) for various land use and soil group combinations.

Samples for this study were collected by direct dipping effluent flow from storm sewer conveyance systems, drainage ditches, or culverts. Observations and sample collections occurred within 60-minutes of observed discharge as prescribed by the Visual Assessments of Industrial Storm Water guide. AMEC staff was limited to sample collection during normal business operations at the Cantonment (Monday through Friday, 8am-5pm). Due to these limitations storm water sampling was unable to be completed during early morning, late evening, and weekend storm events.

Figure 2 shows the 11 locations (AOC-14-1-A, AOC-14-3-A, AOC-14-6-A, AOC-14-6-B, AOC-14-6-C, AOC-14-3-A, AOC-15-2-B, AOC-15-2-C, AOC-15-2-D, AOC-15-4-A, and AOC-15-5-A) sampled by AMEC.

Sample Events

AMEC conducted three wet weather storm water sampling events on June 24, 2021, July 13, 2021, and October 8, 2021 (Figures 3-5), and one dry weather flow sample event on August 4, 2021 (Figure 6). AMEC collected storm water effluent (grab) samples from locations (AOI-15-2-B, AOI-15-2-C, AOI-15-2-D, AOI-14-6-C, AOI-14-6-B, and AOI-14-6-A) prior to storm water entering Lake Margrethe, and collected a grab sample from the effluent discharge points (AOI-14-1-A, AOI-14-3-A, AOI-15-4-A, AOI-15-4-B, and AOI-15-5-A) at storm water detention and conveyance points. On June 24, 2021, outfalls AOI-14-6-B and AOI-14-6-C did not produce discharge, and on all occasions, conveyance point AOI-15-4-B was not sampleable.

Dry weather samples were collected from AOI-15-4-A and AOI-15-2-B.

The table below contains the date each sample was collected, the type and estimated amount of precipitation at the time of the sample event, and the elapsed time (in days) between each sample event. Information regarding the estimated precipitation amount was obtained from Weather Underground online (https://www.wunderground.com/weather/KGOV). This information was used to estimate the total discharge volume of storm water from the Site during each sample event. Grab samples were collected from sample points on the dates listed in the table below and analyzed within prescribed holding times for PFAS samples.

Sample Dates and Rainfall Data

Sample Date	Precipitation Type	Duration and Estimated Amount of Precipitation	Date/Time of Last Qualifying Storm Event	Estimated Rainfall Volume*	Elapsed Time Between Sample Events
6-24-21	Rain	0.09 Inches of rainfall recorded at KGOV. 1.5 hours of rainfall onsite. Discharge began at 1140. Samples were collected under light to moderate rain, temperature 64 degrees. F.	6-14-2021 0300	940,272 gallons	N/A
7-13-21	Rain	0.27 inches of rain fell between 0800 and 0900. Discharge began at 0805. Samples were collected under light to moderate rain, temperature 65 degrees F.	7-05-2021 2100	2,826,880 gallons	19 days
8-4-21	Dry Flow Sample	72-hour dry period prior to sample. No precipitation during sample	N/A	N/A	22 days
10-8-21	Rain	0.42 inches of rain fell between 1400 and 1700. Discharge began at 1500. Samples were collected under light to moderate rain, temperature 64 degrees F.	10-3-2021 2100	4,397,360 gallons	65 Days

Note:
*Estimated discharge was calculated by multiplying surface area by inches of rainfall and converting into gallons and represents total volume of water.

The samples collected on June 24, 2021, July 13, 2021, August 4, 2021, and October 8, 2021 were submitted to Vista Analytical Laboratory of Eldorado Hills, California (Vista) for PFAS analysis. Vista is approved by the State of Michigan for aqueous PFAS analyses.

Sample Results

The analytical laboratory results for each sample event are presented in Tables 1 through 4 (attached). PFOS was the only regulated PFAS compound identified in the storm water samples collected at a concentration above its respective Part 201 Groundwater Surface Water Interface (GSI) criteria used as screening criteria for this STSWCS study. The other regulated PFAS compounds; PFOA, Perfluorononanoic acid (PFNA), Perfluorohexane sulfonic acid (PFHxS), Perfluorohexanoic acid (PFHxA), Perfluorobutane sulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) were detected at levels below their respective screening criteria. Other PFAS compounds were identified in the samples submitted for laboratory analysis; however, these compounds are not regulated and currently have criteria agreed upon for the STSWCS. Copies of the analytical laboratory results and Chains-of-Custody for each sample event are contained in Attachments A through D.

The table below summarizes PFOS concentrations identified above EGLE screening criteria. Detections for PFOS above screening criteria were identified at two locations, AOI-15-2-C and AOI-15-2-D, throughout the duration of the study. PFOS concentrations in the effluent samples varied over time. PFOS was detected (14. 5 ng/L) once above screening criteria at AOI-15-2-D (Figure 4) over the three sampling events. The dry weather sample event reported no concentrations above criteria for the two locations sampled (AOC-15-4-A and AOI-15-2-B).

Identified Exceedances and Estimated Discharge

Sample Date	PFOS Detected above GSI (Yes/No)	Sample Location	Estimated Discharge	PFOS Concentration
6-24-21	Yes	AOI-15-2-C	4,675 Gallons	439 ng/L
7-13-21	Yes	AOI-15-2-C	59,300 Gallons	321 ng/L
		AOI-15-2-D	59,300* Gallons	14.5 ng/L
10-8-21	Yes	AOI-15-2-C	120,650 Gallons	238 ng/L

Notes:
Results represent screening exceedances only, for all results see attached Tables 1-4.
* Sample discharge area estimated due to unknown pipe connections.
ng/L – nanograms per liter
Location AOI-15-2-C and AOI-15-2-D are storm water conveyance pipes.
EGLE Criteria for PFOS – 12 ng/L

No abnormalities (i. e., exceedance of holding times, etc.) were identified in the sample results.

If you have any questions regarding the results of this STSWCS, please do not hesitate to contact Ms. Julie Werner, MIARNG Stormwater Program Lead at wernerj1@michigan.gov.

Sincerely,

AMEC Engineering and Consulting of Michigan, Inc.

Adam R. Weeks
Environmental Scientist

Scott Rought
Associate Project Manager

s// As consultants to Michigan Department of Military and Veterans Affairs, Army National Guard Construction Facilities and Maintenance Office Environmental Section.

Attachments

TABLES

Table 1
PFAS Analytical Results - June 2021
Camp Grayling
Grayling, Michigan

Location		EGLE GSIC	AOI-14-1-A	AOI-14-3-A	AOI-14-6-A	AOI-14-6-B	AOI-14-6-C	AOI-15-2-B	AOI-15-2-C	AOI-15-2-D	AOI-15-4-A	AOI-15-4-B	AOI-15-5-A
Date			6/24/2021	6/24/2021	6/24/2021	6/24/2021	6/24/2021	6/24/2021	6/24/2021	6/24/2021	6/24/2021	6/24/2021	6/24/2021
Analyte	Acronym												
Perfluorobutanoic acid	PFBA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	1.28 J	7.35	*< 3.92*	1.83 J	*NS*	13.9
Perfluoropentanoic acid	PFPeA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	1.77 J	13.8	*< 3.92*	2.53 J	*NS*	*< 3.98*
Perfluorobutanesulfonic acid	PFBS	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	1.33 J,Q	2.60 J	*< 3.92*	1.27 J	*NS*	*< 3.98*
4:2 Fluorotelomer sulfonic acid - linear	4:2 FTS	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluorohexanoic acid	PFHxA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	1.14 J	22.8	*< 3.92*	2.21 J	*NS*	2.26 J
Perfluoropentanesulfonic acid	PFPeS	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	8.64	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Hexafluoropropylene oxide dimer acid	HFPO-DA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluoroheptanoic acid	PFHpA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	11.0	*< 3.92*	1.04 J	*NS*	1.41 J
4,8-dioxa-3H-perfluorononanoic acid	ADONA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluorohexanesulfonic acid	PFHxS	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	2.61 J	178	3.90 J	4.80	*NS*	*< 3.98*
6:2 fluorotelomer sulfonate	6:2 FTS	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluorooctanoic acid	PFOA	12,000	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	35.3	1.17 J	*< 3.92*	*NS*	4.38
Perfluoroheptanesulfonate	PFHpS	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	18.0	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluorononanoic acid	PFNA	NA	*< 4.20*	1.31 J,Q	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	1.18 J
Perfluorooctanesulfonamide	PFOSA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluorooctanesulfonic acid	PFOS	12	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	3.94 J,Q	439	5.23	8.20	*NS*	1.81 J
9-chlorohexadecafluoro-3-oxanone-1-suflonic acid	9Cl-PF3ONS	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluorodecanoic acid	PFDA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	1.50 J
8:2 fluorotelomer sulfonate	8:2 FTS	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluorononanesulfonic acid	PFNS	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
N-Methylperfluorooctane sulfonamidoacetic acid	MeFOSAA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
N-Ethyl perfluorooctane sulfonamido acetic acid	EtFOSAA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluoroundecanoic acid	PFUnA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluorodecanesulfonic acid	PFDS	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
11-chloroeicosafluoro-3oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluorododecanoic acid	PFDoA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluorotridecanoic acid	PFTrDA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*
Perfluorotetradecanoic acid	PFTeDA	NA	*< 4.20*	*< 3.91*	*< 3.88*	*NS*	*NS*	*< 4.10*	*< 4.02*	*< 3.92*	*< 3.92*	*NS*	*< 3.98*

All PFAS results/screening levels in nanograms per liter (ng/L; i.e. parts per trillion)
EGLE screening levels for per- and polyfluoroalkyl substances (PFAS) established in 2018
Blue - exceeds Groundwater Surface Water Interface Criteria (GSIC; "non-drink").
J - Analyte was positively identified; the numerical value is the approximate concentration of the analyte in the sample.
Q - The ion transition ratio is outside of the acceptance criteria.
NS - Sample location did not produce discharge at the time of sampling.
Vista - Vista Analytical Laboratory, Eldorado Hills, California
EGLE - Michigan Department of Environment, Great Lakes, and Energy

Table 2
PFAS Analytical Results - July 2021
Camp Grayling
Grayling, Michigan

Location		EGLE GSIC	AOI-14-1-A	AOI-14-3-A	AOI-14-6-A	AOI-14-6-B	AOI-14-6-C	AOI-15-2-B	AOI-15-2-C	AOI-15-2-D	AOI-15-4-B	AOI-15-5-A	AOI-15-4-A
Date			7/13/2021	7/13/2021	7/13/2021	7/13/2021	7/13/2021	7/13/2021	7/13/2021	7/13/2021	7/13/2021	7/13/2021	7/13/2021
Analyte	Acronym												
Perfluorobutanoic acid	PFBA	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	1.14 J	5.31	1.23 J	NS	1.81 J	1.77 J
Perfluoropentanoic acid	PFPeA	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	1.30 J	8.70	< 4.21	NS	< 4.19	2.42 J
Perfluorobutanesulfonic acid	PFBS	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	1.09 J	1.26 J	< 4.21	NS	< 4.19	1.93 J,Q
4:2 Fluorotelomer sulfonic acid - linear	4:2 FTS	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluorohexanoic acid	PFHxA	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	1.29 J	9.72	1.27 J,Q	NS	< 4.19	2.36 J
Perfluoropentanesulfonic acid	PFPeS	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	< 4.26	3.05 J	< 4.21	NS	< 4.19	< 4.02
Hexafluoropropylene oxide dimer acid	HFPO-DA	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluoroheptanoic acid	PFHpA	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	1.07 J	5.91	< 4.21	NS	< 4.19	1.25 J,Q
4,8-dioxa-3H-perfluorononanoic acid	ADONA	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluorohexanesulfonic acid	PFHxS	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	2.43 J	64.9	3.58 J,Q	NS	< 4.19	3.50 J
6:2 fluorotelomer sulfonate	6:2 FTS	NA	< 4.10	< 4.14	2.04 J	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluorooctanoic acid	PFOA	12,000	< 4.10	1.35 J	< 4.32	< 4.05	< 4.11	< 4.26	24.7	2.45 J	NS	< 4.19	< 4.02
Perfluoroheptanesulfonate	PFHpS	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	< 4.26	9.22	< 4.21	NS	< 4.19	< 4.02
Perfluorononanoic acid	PFNA	NA	< 4.10	1.71 J	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluorooctanesulfonamide	PFOSA	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluorooctanesulfonic acid	PFOS	12	< 4.10	< 4.14	1.24 J	< 4.05	< 4.11	3.30 J	321	14.5	NS	< 4.19	10.9
9-chlorohexadecafluoro-3-oxanone-1-suflonic acid	9Cl-PF3ONS	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluorodecanoic acid	PFDA	NA	< 4.10	8.93	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
8:2 fluorotelomer sulfonate	8:2 FTS	NA	< 4.10	< 4.14	1.85 J,Q	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluorononanesulfonic acid	PFNS	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
N-Methylperfluorooctane sulfonamidoacetic acid	MeFOSAA	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
N-Ethyl perfluorooctane sulfonamido acetic acid	EtFOSAA	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluoroundecanoic acid	PFUnA	NA	< 4.10	8.40	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluorodecanesulfonic acid	PFDS	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
11-chloroeicosafluoro-3oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	NA	< 4.10	< 4.14	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluorodoecanoic acid	PFDoA	NA	< 4.10	19.0	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluorotridecanoic acid	PFTrDA	NA	< 4.10	2.03 J	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02
Perfluorotetradecanoic acid	PFTeDA	NA	< 4.10	4.01 J	< 4.32	< 4.05	< 4.11	< 4.26	< 4.02	< 4.21	NS	< 4.19	< 4.02

All PFAS results/screening levels in nanograms per liter (ng/L; i.e. parts per trillion)
EGLE screening levels for per- and polyfluoroalkyl substances (PFAS) established in 2018
Blue - exceeds Groundwater Surface Water Interface Criteria (GSIC; "non-drink").
J - Analyte was positively identified; the numerical value is the approximate concentration of the analyte in the sample.
Q - The ion transition ratio is outside of the acceptance criteria.
NS - Sample location did not produce discharge at the time of sampling.
Vista - Vista Analytical Laboratory, Eldorado Hills, California
EGLE - Michigan Department of Environment, Great Lakes, and Energy

Table 3
PFAS Analytical Results - August 2021
Dry Sample Event
Camp Grayling
Grayling, Michigan

Location		EGLE GSIC	AOI-14-1-A	AOI-14-3-A	AOI-14-6-A	AOI-14-6-B	AOI-14-6-C	AOI-15-4-A	AOI-15-2-B	AOI-15-4-B	AOI-15-5-A	AOI-15-2-D	AOI-15-2-C
Date			8/4/2021	8/4/2021	8/4/2021	8/4/2021	8/4/2021	8/4/2021	8/4/2021	8/4/2021	8/4/2021	8/4/2021	8/4/2021
Analyte	Acronym												
Perfluorobutanoic acid	PFBA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	1.47 J	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluoropentanoic acid	PFPeA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	2.56 J	1.49 J	*NS*	*NS*	*NS*	*NS*
Perfluorobutanesulfonic acid	PFBS	NA	*NS*	*NS*	*NS*	*NS*	*NS*	1.74 J,Q	*< 4.05*	*NS*	*NS*	*NS*	*NS*
4:2 Fluorotelomer sulfonic acid - linear	4:2 FTS	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluorohexanoic acid	PFHxA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	2.18 J	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluoropentanesulfonic acid	PFPeS	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Hexafluoropropylene oxide dimer acid	HFPO-DA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluoroheptanoic acid	PFHpA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	1.11 J,Q	*< 4.05*	*NS*	*NS*	*NS*	*NS*
4,8-dioxa-3H-perfluorononanoic acid	ADONA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluorohexanesulfonic acid	PFHxS	NA	*NS*	*NS*	*NS*	*NS*	*NS*	4.83	4.00 J	*NS*	*NS*	*NS*	*NS*
6:2 fluorotelomer sulfonate	6:2 FTS	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluorooctanoic acid	PFOA	12,000	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluoroheptanesulfonate	PFHpS	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluorononanoic acid	PFNA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluorooctanesulfonamide	PFOSA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluorooctanesulfonic acid	PFOS	12	*NS*	*NS*	*NS*	*NS*	*NS*	3.26 J	*< 4.05*	*NS*	*NS*	*NS*	*NS*
9-chlorohexadecafluoro-3-oxanone-1-suflonic acid	9Cl-PF3ONS	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluorodecanoic acid	PFDA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
8:2 fluorotelomer sulfonate	8:2 FTS	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluorononanesulfonic acid	PFNS	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
N-Methylperfluorooctane sulfonamidoacetic acid	MeFOSAA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
N-Ethyl perfluorooctane sulfonamido acetic acid	EtFOSAA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluoroundecanoic acid	PFUnA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluorodecanesulfonic acid	PFDS	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
11-chloroeicosafluoro-3oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluorododecanoic acid	PFDoA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluorotridecanoic acid	PFTrDA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*
Perfluorotetradecanoic acid	PFTeDA	NA	*NS*	*NS*	*NS*	*NS*	*NS*	*< 4.01*	*< 4.05*	*NS*	*NS*	*NS*	*NS*

All PFAS results/screening levels in nanograms per liter (ng/L; i.e. parts per trillion)
EGLE screening levels for per- and polyfluoroalkyl substances (PFAS) established in 2018
Blue - exceeds Groundwater Surface Water Interface Criteria (GSIC; "non-drink").
J - Analyte was positively identified; the numerical value is the approximate concentration of the analyte in the sample.
Q - The ion transition ratio is outside of the acceptance criteria.
NS - Sample location did not produce discharge at the time of sampling.
Vista - Vista Analytical Laboratory, Eldorado Hills, California
EGLE - Michigan Department of Environment, Great Lakes, and Energy

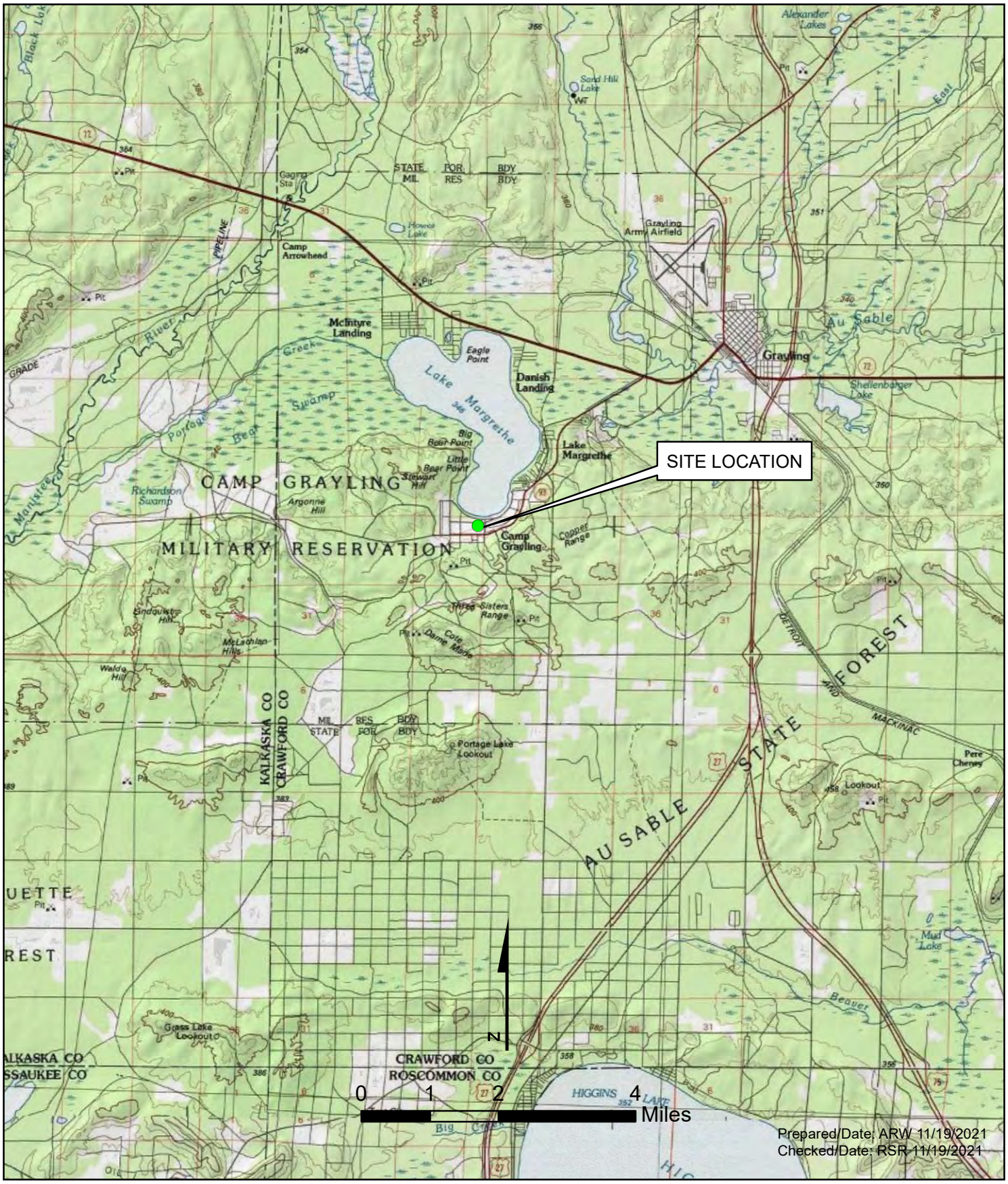
Table 4
PFAS Analytical Results - October 2021
Camp Grayling
Grayling, Michigan

Location		EGLE GSIC	AOI-14-1-A	AOI-14-3-A	AOI-14-6-A	AOI-14-6-B	AOI-14-6-C	AOI-15-2-B	AOI-15-2-C	AOI-15-4-A	AOI-15-4-B	AOI-15-5-A	AOI-15-2-D
Date			10/8/2021	10/8/2021	10/8/2021	10/8/2021	10/8/2021	10/8/2021	10/8/2021	10/8/2021	10/8/2021	10/8/2021	10/8/2021
Analyte	Acronym												
Perfluorobutanoic acid	PFBA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	1.52 J	5.93	2.16 J	NS	1.63 J	1.09 J
Perfluoropentanoic acid	PFPeA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	1.43 J	9.35	3.01 J	NS	< 4.28	< 4.00
Perfluorobutanesulfonic acid	PFBS	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	1.58 J	3.13 J	NS	< 4.28	< 4.00
4:2 Fluorotelomer sulfonic acid - linear	4:2 FTS	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
Perfluorohexanoic acid	PFHxA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	1.14 J	9.90	3.05 J	NS	< 4.28	< 4.00
Perfluoropentanesulfonic acid	PFPeS	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	3.15 J	< 4.11	NS	< 4.28	< 4.00
Hexafluoropropylene oxide dimer acid	HFPO-DA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
Perfluoroheptanoic acid	PFHpA	NA	< 4.26	1.05 J	1.03 J,Q	< 4.05	< 4.24	< 4.01	6.11	1.38 J	NS	< 4.28	< 4.00
4,8-dioxa-3H-perfluorononanoic acid	ADONA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
Perfluorohexanesulfonic acid	PFHxS	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	3.46 J,Q	66.1	3.93 J	NS	< 4.28	3.52 J
6:2 fluorotelomer sulfonate	6:2 FTS	NA	< 4.26	< 4.20	2.04 J,Q	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
Perfluorooctanoic acid	PFOA	12,000	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	19.0	1.26 J	NS	< 4.28	1.04 J
Perfluoroheptanesulfonate	PFHpS	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	8.11	< 4.11	NS	< 4.28	< 4.00
Perfluorononanoic acid	PFNA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
Perfluorooctanesulfonamide	PFOSA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
Perfluorooctanesulfonic acid	PFOS	12	< 4.26	< 4.20	3.56 J	< 4.05	< 4.24	2.91 J	238	5.71	NS	< 4.28	10.2
9-chlorohexadecafluoro-3-oxanone-1-suflonic acid	9Cl-PF3ONS	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
Perfluorodecanoic acid	PFDA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
8:2 fluorotelomer sulfonate	8:2 FTS	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
Perfluorononanesulfonic acid	PFNS	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
N-Methylperfluorooctane sulfonamidoacetic acid	MeFOSAA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
N-Ethyl perfluorooctane sulfonamido acetic acid	EtFOSAA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
Perfluoroundecanoic acid	PFUnA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
Perfluorodecanesulfonic acid	PFDS	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
11-chloroeicosafluoro-3oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
Perfluorodoecanoic acid	PFDoA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	1.13 J	< 4.00
Perfluorotridecanoic acid	PFTrDA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00
Perfluorotetradecanoic acid	PFTeDA	NA	< 4.26	< 4.20	< 4.10	< 4.05	< 4.24	< 4.01	< 4.04	< 4.11	NS	< 4.28	< 4.00

All PFAS results/screening levels in nanograms per liter (ng/L; i.e. parts per trillion)
EGLE screening levels for per- and polyfluoroalkyl substances (PFAS) established in 2018
Blue - exceeds Groundwater Surface Water Interface Criteria (GSIC; "non-drink").
J - Analyte was positively identified; the numerical value is the approximate concentration of the analyte in the sample.
Q - The ion transition ratio is outside of the acceptance criteria.
NS - Sample location did not produce discharge at the time of sampling.
Vista - Vista Analytical Laboratory, Eldorado Hills, California
EGLE - Michigan Department of Environment, Great Lakes, and Energy

FIGURES

Document Path: C:\Users\adam.weeks\OneDrive - Wood PLC\Wood Drawings\Camp Grayling\STSWCS\Site Locaiton Topo.mxd



CAMP GRAYLING CANTONMENT GRAYLING, MICHIGAN	wood.	SITE LOCATION MAP FIGURE 1

Document Path: C:\Users\adam.weeks\OneDrive - Wood PLC\Wood Drawings\Camp Grayling\STSWCS\Discharge Areas.mxd

Legend

- Sample Location
- Storm Water Pipe / Culvert
- Generalized Flow Direction

EXTENT OF AERIAL IMAGERY

AOI-14-1-A

AOI-14-6-A

47.8 Acres

AOI-14-6-B

34.7 Acres

AOI-14-6-C

43.1 Acres

AOI-15-2-B

76.7 Acres

AOI-15-2-C

AOI-15-2-D

18.9 Acres

AOI-14-3-A

AOI-15-4-B

AOI-15-4-A

37.1 Acres

75.9 Acres

AOI-15-5-A

21.5 Acres

29.9 Acres

N

0 250 500 1,000 Feet

DRAFT

Prepared/Date: ARW 11/19/2021
Checked/Date: RSR 11/19/2021

CAMP GRAYLING CANTONMENT GRAYLING, MICHIGAN	wood.	STSWCS DISCHARGE AREAS FIGURE 2

Document Path: C:\Users\adam.weeks\OneDrive - Wood PLC\Wood Drawings\Camp Grayling\STSWCS\GIS Criteria.mxd

CAMP GRAYLING CANTONMENT GRAYLING, MICHIGAN	wood.	STSWCS PFAS SAMPLE RESULTS JUNE 24, 2021 FIGURE 3

Document Path: C:\Users\adam.weeks\OneDrive - Wood PLC\Wood Drawings\Camp Grayling\STSWCS\GIS Criteria 7.13.21.mxd

EXTENT OF AERIAL IMAGERY

Lake Margrethe

AOI-14-1-A

AOI-14-6-A

AOI-14-6-B

AOI-14-6-C

AOI-14-3-A

AOI-15-2-B

AOI-15-2-C	
13-JULY-2021	
PFOS	321

AOI-15-2-C

AOI-15-2-D

AOI-15-2-D	
13-JULY-2021	
PFOS	14.5

AOI-15-4-B

AOI-15-4-A

AOI-15-5-A

N

0 250 500 1,000 Feet

DRAFT

Prepared/Date: ARW 11/19/2021
Checked/Date: RSR 11/19/2021

Legend

- Sample Results >GSI Criteria for Regulated PFAS Compounds
- Sample Results < GSI Criteria

Notes:
GSI = Groundwater Surface Water Interface Criteria

CAMP GRAYLING CANTONMENT
GRAYLING, MICHIGAN

wood.

STSWCS PFAS SAMPLE RESULTS
JULY 13, 2021

FIGURE 4

Document Path: C:\Users\adam.weeks\OneDrive - Wood PLC\Wood Drawings\Camp Grayling\STSWCS\GIS Criteria 10.21.21.mxd

EXTENT OF AERIAL IMAGERY

AOI-14-1-A

AOI-14-6-A

AOI-14-6-B

AOI-14-6-C

AOI-15-2-B

Lake Margrethe

AOI-15-2-C	
8-Oct-2021	
PFOS	238

AOI-15-2-C

AOI-15-2-D

AOI-14-3-A

AOI-15-4-B

AOI-15-4-A

AOI-15-5-A

N

0 250 500 1,000 Feet

DRAFT

Prepared/Date: ARW 11/19/2021
Checked/Date: RSR 11/19/2021

Legend

- Sample Results > GSI Criteria for Regulated PFAS Compounds
- Sample Results < GSI Criteria

Notes:
GSI = Groundwater Surface Water Interface

CAMP GRAYLING CANTONMENT
GRAYLING, MICHIGAN

wood.

STSWCS PFAS SAMPLE RESULTS
OCTOBER 8, 2021

FIGURE 5

Document Path: C:\Users\adam.weeks\OneDrive - Wood PLC\Wood Drawings\Camp Grayling\STSWCS\GIS Criteria 8.4.21.mxd

DRAFT

Prepared/Date: ARW 12/3/2021
Checked/Date: RSR 12/3/2021

Legend

- Sample Results < GSI Criteria

Notes:
GSI = Groundwater Surface Water Interface Criteria

CAMP GRAYLING CANTONMENT
GRAYLING, MICHIGAN

wood.

STSWCS PFAS SAMPLE RESULTS
AUGUST 04, 2021
DRY SAMPLE EVENT
FIGURE 6

ATTACHMENT A

ANALYTICAL LABORATORY REPORT
JUNE 24, 2021 SAMPLE EVENT

July 14, 2021

Vista Work Order No. 2106219

Mr. Scott Rought
Wood Environment & Infrastructure
41 Hughest Drive
Traverse City, MI 49696

Dear Mr. Rought,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on June 29, 2021 under your Project Name 'MICH-ANG-CAMP GRAYLING'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

for

Martha Maier
Laboratory Director

Vista Work Order No. 2106219
Case Narrative

Sample Condition on Receipt:

Nine effluent samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements.

Analytical Notes:

PFAS Isotope Dilution/LC-MSMS Method Compliant with Table B-15 of DoD QSM 5.3 (Aqueous)

The following samples contained particulate and were centrifuged prior to extraction:

Laboratory ID	Sample Name
2106219-01	AOI-14-3-A
2106219-02	AOI-15-5-A
2106219-07	AOI-14-6-A
2106219-08	AOI-14-1-A

The samples were extracted and analyzed for a selected list of PFAS using Isotope Dilution and LC-MS/MS compliant with Table B-15 of DoD QSM 5.3. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

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

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

The labeled standard recoveries outside the acceptance criteria are flagged with an "H" qualifier.

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2106219-01	AOI-14-3-A	24-Jun-21 11:48	29-Jun-21 08:10	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2106219-02	AOI-15-5-A	24-Jun-21 11:55	29-Jun-21 08:10	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2106219-03	AOI-15-4-A	24-Jun-21 11:58	29-Jun-21 08:10	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2106219-04	AOI-15-2-B	24-Jun-21 12:05	29-Jun-21 08:10	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2106219-05	AOI-15-2-C	24-Jun-21 12:20	29-Jun-21 08:10	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2106219-06	AOI-15-2-D	24-Jun-21 12:30	29-Jun-21 08:10	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2106219-07	AOI-14-6-A	24-Jun-21 12:42	29-Jun-21 08:10	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2106219-08	AOI-14-1-A	24-Jun-21 12:45	29-Jun-21 08:10	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2106219-09	FIELD BLANK	24-Jun-21 12:50	29-Jun-21 08:10	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Aqueous

Laboratory Data

Lab Sample: B1G0014-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFPeA	2706-90-3	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFBS	375-73-5	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
4:2 FTS	757124-72-4	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFHxA	307-24-4	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFPeS	2706-91-4	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
HFPO-DA	13252-13-6	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFHpA	375-85-9	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
ADONA	919005-14-4	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFHxS	355-46-4	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
6:2 FTS	27619-97-2	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFOA	335-67-1	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFHpS	375-92-8	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFNA	375-95-1	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFOSA	754-91-6	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFOS	1763-23-1	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
9Cl-PF3ONS	756426-58-1	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFDA	335-76-2	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
8:2 FTS	39108-34-4	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFNS	68259-12-1	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
MeFOSAA	2355-31-9	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
EtFOSAA	2991-50-6	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFUnA	2058-94-8	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFDS	335-77-3	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
11Cl-PF3OUdS	763051-92-9	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFDoA	307-55-1	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFTrDA	72629-94-8	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
PFTeDA	376-06-7	ND	1.00	2.00	4.00		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	119	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C3-PFPeA	IS	93.6	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C3-PFBS	IS	83.4	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C2-4:2 FTS	IS	77.3	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C2-PFHxA	IS	75.7	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C4-PFHpA	IS	76.9	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C3-PFHxS	IS	96.9	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C2-6:2 FTS	IS	122	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C5-PFNA	IS	90.3	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1

Sample ID: Method Blank

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Aqueous

Laboratory Data

Lab Sample: B1G0014-BLK1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOSA	IS	40.8	50 - 150	H	B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C2-PFOA	IS	79.6	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C8-PFOS	IS	81.5	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C2-PFDA	IS	76.6	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C2-8:2 FTS	IS	91.7	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
d3-MeFOSAA	IS	60.0	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C2-PFUnA	IS	68.7	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
d5-EtFOSAA	IS	60.0	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C2-PFDoA	IS	66.9	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1
13C2-PFTeDA	IS	81.1	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:48	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

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

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Aqueous

Laboratory Data

Lab Sample: B1G0014-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	42.3	40.0	106	73 - 129		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFPeA	2706-90-3	41.0	40.0	103	72 - 129		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFBS	375-73-5	35.3	40.0	88.3	72 - 130		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
4:2 FTS	757124-72-4	39.7	40.0	99.2	63 - 143		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFHxA	307-24-4	46.3	40.0	116	72 - 129		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFPeS	2706-91-4	39.4	40.0	98.6	71 - 127		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
HFPO-DA	13252-13-6	46.7	40.0	117	65 - 135		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFHpA	375-85-9	39.8	40.0	99.6	72 - 130		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
ADONA	919005-14-4	40.2	40.0	100	65 - 135		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFHxS	355-46-4	47.2	40.0	118	68 - 131		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
6:2 FTS	27619-97-2	46.7	40.0	117	64 - 140		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFOA	335-67-1	40.2	40.0	101	71 - 133		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFHpS	375-92-8	42.5	40.0	106	69 - 134		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFNA	375-95-1	42.0	40.0	105	69 - 130		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFOSA	754-91-6	49.0	40.0	123	67 - 137		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFOS	1763-23-1	39.0	40.0	97.5	65 - 140		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
9Cl-PF3ONS	756426-58-1	35.8	40.0	89.5	65 - 135		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFDA	335-76-2	45.6	40.0	114	71 - 129		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
8:2 FTS	39108-34-4	45.1	40.0	113	67 - 138		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFNS	68259-12-1	37.3	40.0	93.3	69 - 127		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
MeFOSAA	2355-31-9	38.9	40.0	97.2	65 - 136		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
EtFOSAA	2991-50-6	47.4	40.0	119	61 - 135		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFUnA	2058-94-8	48.3	40.0	121	69 - 133		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFDS	335-77-3	34.8	40.0	87.1	53 - 142		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
11Cl-PF3OUdS	763051-92-9	49.8	40.0	125	65 - 135		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFDoA	307-55-1	42.4	40.0	106	72 - 134		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFTrDA	72629-94-8	48.0	40.0	120	65 - 144		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
PFTeDA	376-06-7	42.0	40.0	105	71 - 132		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	122	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C3-PFPeA	IS	86.3	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C3-PFBS	IS	98.6	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C2-4:2 FTS	IS	86.7	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C2-PFHxA	IS	86.2	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C4-PFHpA	IS	88.6	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1

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

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Aqueous

Laboratory Data

Lab Sample: B1G0014-BS1
Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFHxS	IS	85.9	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C2-6:2 FTS	IS	118	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C5-PFNA	IS	80.5	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C8-PFOSA	IS	40.7	50 - 150	H	B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C2-PFOA	IS	77.1	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C8-PFOS	IS	89.5	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C2-PFDA	IS	81.0	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C2-8:2 FTS	IS	66.9	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
d3-MeFOSAA	IS	64.1	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C2-PFUnA	IS	71.0	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
d5-EtFOSAA	IS	49.3	50 - 150	H	B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C2-PFDoA	IS	66.0	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1
13C2-PFTeDA	IS	79.5	50 - 150		B1G0014	02-Jul-21	0.250 L	09-Jul-21 12:58	1

Sample ID: AOI-14-3-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB

Matrix: Effluent
Date Collected: 24-Jun-21 11:48

Laboratory Data

Lab Sample: 2106219-01
Date Received: 29-Jun-21 08:10

Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFPeA	2706-90-3	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFBS	375-73-5	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
4:2 FTS	757124-72-4	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFHxA	307-24-4	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFPeS	2706-91-4	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
HFPO-DA	13252-13-6	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFHpA	375-85-9	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
ADONA	919005-14-4	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFHxS	355-46-4	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
6:2 FTS	27619-97-2	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFOA	335-67-1	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFHpS	375-92-8	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFNA	375-95-1	1.31	0.979	1.96	3.91	J, Q	B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFOSA	754-91-6	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFOS	1763-23-1	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
9Cl-PF3ONS	756426-58-1	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFDA	335-76-2	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
8:2 FTS	39108-34-4	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFNS	68259-12-1	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
MeFOSAA	2355-31-9	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
EtFOSAA	2991-50-6	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFUnA	2058-94-8	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFDS	335-77-3	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
11Cl-PF3OUdS	763051-92-9	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFDoA	307-55-1	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFTrDA	72629-94-8	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
PFTeDA	376-06-7	ND	0.979	1.96	3.91		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	18.7	50 - 150	H	B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C3-PFPeA	IS	62.3	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C3-PFBS	IS	96.8	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C2-4:2 FTS	IS	86.3	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C2-PFHxA	IS	81.4	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C4-PFHpA	IS	90.0	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C3-PFHxS	IS	109	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C2-6:2 FTS	IS	147	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1

Sample ID: AOI-14-3-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 11:48

Laboratory Data

Lab Sample: 2106219-01
Date Received: 29-Jun-21 08:10
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	112	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C8-PFOSA	IS	64.5	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C2-PFOA	IS	92.3	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C8-PFOS	IS	91.8	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C2-PFDA	IS	88.7	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C2-8:2 FTS	IS	103	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
d3-MeFOSAA	IS	74.1	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C2-PFUnA	IS	85.7	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
d5-EtFOSAA	IS	66.3	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C2-PFDoA	IS	80.2	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1
13C2-PFTeDA	IS	64.2	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 13:40	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-5-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 11:55

Laboratory Data

Lab Sample: 2106219-02
Date Received: 29-Jun-21 08:10
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	13.9	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFPeA	2706-90-3	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFBS	375-73-5	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
4:2 FTS	757124-72-4	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFHxA	307-24-4	2.26	0.995	1.99	3.98	J	B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFPeS	2706-91-4	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
HFPO-DA	13252-13-6	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFHpA	375-85-9	1.41	0.995	1.99	3.98	J	B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
ADONA	919005-14-4	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFHxS	355-46-4	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
6:2 FTS	27619-97-2	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFOA	335-67-1	4.38	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFHpS	375-92-8	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFNA	375-95-1	1.18	0.995	1.99	3.98	J	B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFOSA	754-91-6	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFOS	1763-23-1	1.81	0.995	1.99	3.98	J	B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
9Cl-PF3ONS	756426-58-1	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFDA	335-76-2	1.50	0.995	1.99	3.98	J	B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
8:2 FTS	39108-34-4	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFNS	68259-12-1	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
MeFOSAA	2355-31-9	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
EtFOSAA	2991-50-6	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFUnA	2058-94-8	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFDS	335-77-3	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
11Cl-PF3OUdS	763051-92-9	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFDoA	307-55-1	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFTrDA	72629-94-8	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
PFTeDA	376-06-7	ND	0.995	1.99	3.98		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	87.7	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C3-PFPeA	IS	93.9	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C3-PFBS	IS	102	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C2-4:2 FTS	IS	90.0	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C2-PFHxA	IS	93.4	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C4-PFHpA	IS	91.0	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C3-PFHxS	IS	99.3	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C2-6:2 FTS	IS	125	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1

Sample ID: AOI-15-5-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 11:55

Laboratory Data

Lab Sample: 2106219-02
Date Received: 29-Jun-21 08:10
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	103	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C8-PFOSA	IS	77.2	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C2-PFOA	IS	88.6	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C8-PFOS	IS	87.5	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C2-PFDA	IS	90.0	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C2-8:2 FTS	IS	103	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
d3-MeFOSAA	IS	78.9	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C2-PFUnA	IS	87.4	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
d5-EtFOSAA	IS	84.2	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C2-PFDoA	IS	86.5	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1
13C2-PFTeDA	IS	74.2	50 - 150		B1G0014	02-Jul-21	0.251 L	09-Jul-21 13:51	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-4-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 11:58

Laboratory Data

Lab Sample: 2106219-03
Date Received: 29-Jun-21 08:10
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	1.83	0.980	1.96	3.92	J	B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFPeA	2706-90-3	2.53	0.980	1.96	3.92	J	B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFBS	375-73-5	1.27	0.980	1.96	3.92	J	B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
4:2 FTS	757124-72-4	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFHxA	307-24-4	2.21	0.980	1.96	3.92	J	B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFPeS	2706-91-4	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
HFPO-DA	13252-13-6	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFHpA	375-85-9	1.04	0.980	1.96	3.92	J	B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
ADONA	919005-14-4	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFHxS	355-46-4	4.80	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
6:2 FTS	27619-97-2	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFOA	335-67-1	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFHpS	375-92-8	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFNA	375-95-1	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFOSA	754-91-6	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFOS	1763-23-1	8.20	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
9Cl-PF3ONS	756426-58-1	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFDA	335-76-2	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
8:2 FTS	39108-34-4	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFNS	68259-12-1	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
MeFOSAA	2355-31-9	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
EtFOSAA	2991-50-6	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFUnA	2058-94-8	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFDS	335-77-3	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
11Cl-PF3OUdS	763051-92-9	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFDoA	307-55-1	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFTrDA	72629-94-8	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
PFTeDA	376-06-7	ND	0.980	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	111	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C3-PFPeA	IS	94.5	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C3-PFBS	IS	91.8	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C2-4:2 FTS	IS	82.4	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C2-PFHxA	IS	93.0	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C4-PFHpA	IS	91.1	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C3-PFHxS	IS	95.1	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C2-6:2 FTS	IS	117	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1

Sample ID: AOI-15-4-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 11:58

Laboratory Data

Lab Sample: 2106219-03
Date Received: 29-Jun-21 08:10
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	97.1	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C8-PFOSA	IS	70.1	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C2-PFOA	IS	87.0	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C8-PFOS	IS	88.3	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C2-PFDA	IS	96.1	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C2-8:2 FTS	IS	91.9	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
d3-MeFOSAA	IS	94.0	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C2-PFUnA	IS	87.4	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
d5-EtFOSAA	IS	80.3	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C2-PFDoA	IS	83.5	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1
13C2-PFTeDA	IS	89.6	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:01	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-2-B

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB

Matrix: Effluent
Date Collected: 24-Jun-21 12:05

Laboratory Data

Lab Sample: 2106219-04
Date Received: 29-Jun-21 08:10

Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	1.28	1.03	2.05	4.10	J	B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFPeA	2706-90-3	1.77	1.03	2.05	4.10	J	B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFBS	375-73-5	1.33	1.03	2.05	4.10	J, Q	B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
4:2 FTS	757124-72-4	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFHxA	307-24-4	1.14	1.03	2.05	4.10	J	B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFPeS	2706-91-4	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
HFPO-DA	13252-13-6	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFHpA	375-85-9	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
ADONA	919005-14-4	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFHxS	355-46-4	2.61	1.03	2.05	4.10	J	B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
6:2 FTS	27619-97-2	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFOA	335-67-1	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFHpS	375-92-8	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFNA	375-95-1	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFOSA	754-91-6	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFOS	1763-23-1	3.94	1.03	2.05	4.10	J, Q	B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
9Cl-PF3ONS	756426-58-1	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFDA	335-76-2	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
8:2 FTS	39108-34-4	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFNS	68259-12-1	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
MeFOSAA	2355-31-9	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
EtFOSAA	2991-50-6	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFUnA	2058-94-8	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFDS	335-77-3	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
11Cl-PF3OUdS	763051-92-9	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFDoA	307-55-1	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFTrDA	72629-94-8	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
PFTeDA	376-06-7	ND	1.03	2.05	4.10		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	106	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C3-PFPeA	IS	96.4	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C3-PFBS	IS	98.5	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C2-4:2 FTS	IS	73.3	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C2-PFHxA	IS	87.8	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C4-PFHpA	IS	93.4	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C3-PFHxS	IS	102	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C2-6:2 FTS	IS	104	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1

Sample ID: AOI-15-2-B

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 12:05

Laboratory Data

Lab Sample: 2106219-04
Date Received: 29-Jun-21 08:10
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	85.5	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C8-PFOSA	IS	73.6	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C2-PFOA	IS	84.6	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C8-PFOS	IS	91.4	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C2-PFDA	IS	94.1	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C2-8:2 FTS	IS	75.9	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
d3-MeFOSAA	IS	95.4	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C2-PFUnA	IS	80.1	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
d5-EtFOSAA	IS	82.1	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C2-PFDoA	IS	80.5	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1
13C2-PFTeDA	IS	72.1	50 - 150		B1G0014	02-Jul-21	0.244 L	09-Jul-21 14:12	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-2-C

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 12:20

Laboratory Data

Lab Sample: 2106219-05
Date Received: 29-Jun-21 08:10
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	7.35	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFPeA	2706-90-3	13.8	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFBS	375-73-5	2.60	1.01	2.01	4.02	J	B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
4:2 FTS	757124-72-4	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFHxA	307-24-4	22.8	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFPeS	2706-91-4	8.64	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
HFPO-DA	13252-13-6	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFHpA	375-85-9	11.0	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
ADONA	919005-14-4	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFHxS	355-46-4	178	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
6:2 FTS	27619-97-2	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFOA	335-67-1	35.3	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFHpS	375-92-8	18.0	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFNA	375-95-1	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFOSA	754-91-6	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFOS	1763-23-1	439	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
9Cl-PF3ONS	756426-58-1	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFDA	335-76-2	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
8:2 FTS	39108-34-4	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFNS	68259-12-1	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
MeFOSAA	2355-31-9	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
EtFOSAA	2991-50-6	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFUnA	2058-94-8	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFDS	335-77-3	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFDoA	307-55-1	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFTrDA	72629-94-8	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
PFTeDA	376-06-7	ND	1.01	2.01	4.02		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	109	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C3-PFPeA	IS	94.2	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C3-PFBS	IS	92.6	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C2-4:2 FTS	IS	78.2	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C2-PFHxA	IS	90.0	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C4-PFHpA	IS	85.8	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C3-PFHxS	IS	100	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C2-6:2 FTS	IS	104	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1

Sample ID: AOI-15-2-C

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 12:20

Laboratory Data

Lab Sample: 2106219-05
Date Received: 29-Jun-21 08:10
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	89.7	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C8-PFOSA	IS	70.3	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C2-PFOA	IS	73.2	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C8-PFOS	IS	80.2	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C2-PFDA	IS	84.6	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C2-8:2 FTS	IS	84.7	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
d3-MeFOSAA	IS	76.6	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C2-PFUnA	IS	81.7	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
d5-EtFOSAA	IS	79.3	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C2-PFDoA	IS	82.4	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1
13C2-PFTeDA	IS	78.9	50 - 150		B1G0014	02-Jul-21	0.249 L	09-Jul-21 14:22	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-2-D **PFAS Isotope Dilution Table B-15**

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 12:30

Laboratory Data

Lab Sample: 2106219-06
Date Received: 29-Jun-21 08:10
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFPeA	2706-90-3	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFBS	375-73-5	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
4:2 FTS	757124-72-4	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFHxA	307-24-4	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFPeS	2706-91-4	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
HFPO-DA	13252-13-6	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFHpA	375-85-9	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
ADONA	919005-14-4	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFHxS	355-46-4	3.90	0.981	1.96	3.92	J	B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
6:2 FTS	27619-97-2	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFOA	335-67-1	1.17	0.981	1.96	3.92	J	B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFHpS	375-92-8	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFNA	375-95-1	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFOSA	754-91-6	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFOS	1763-23-1	5.23	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
9Cl-PF3ONS	756426-58-1	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFDA	335-76-2	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
8:2 FTS	39108-34-4	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFNS	68259-12-1	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
MeFOSAA	2355-31-9	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
EtFOSAA	2991-50-6	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFUnA	2058-94-8	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFDS	335-77-3	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
11Cl-PF3OUdS	763051-92-9	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFDoA	307-55-1	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFTrDA	72629-94-8	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
PFTeDA	376-06-7	ND	0.981	1.96	3.92		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	106	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C3-PFPeA	IS	95.0	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C3-PFBS	IS	88.3	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C2-4:2 FTS	IS	82.9	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C2-PFHxA	IS	86.6	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C4-PFHpA	IS	87.8	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C3-PFHxS	IS	93.2	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C2-6:2 FTS	IS	117	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1

Sample ID: AOI-15-2-D

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 12:30

Laboratory Data

Lab Sample: 2106219-06
Date Received: 29-Jun-21 08:10
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	102	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C8-PFOSA	IS	73.8	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C2-PFOA	IS	86.2	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C8-PFOS	IS	94.8	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C2-PFDA	IS	93.5	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C2-8:2 FTS	IS	89.1	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
d3-MeFOSAA	IS	84.6	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C2-PFUnA	IS	79.4	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
d5-EtFOSAA	IS	75.3	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C2-PFDoA	IS	77.7	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1
13C2-PFTeDA	IS	78.3	50 - 150		B1G0014	02-Jul-21	0.255 L	09-Jul-21 14:33	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-14-6-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB

Matrix: Effluent
Date Collected: 24-Jun-21 12:42

Laboratory Data

Lab Sample: 2106219-07
Date Received: 29-Jun-21 08:10

Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFPeA	2706-90-3	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFBS	375-73-5	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
4:2 FTS	757124-72-4	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFHxA	307-24-4	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFPeS	2706-91-4	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
HFPO-DA	13252-13-6	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFHpA	375-85-9	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
ADONA	919005-14-4	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFHxS	355-46-4	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
6:2 FTS	27619-97-2	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFOA	335-67-1	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFHpS	375-92-8	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFNA	375-95-1	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFOSA	754-91-6	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFOS	1763-23-1	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
9Cl-PF3ONS	756426-58-1	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFDA	335-76-2	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
8:2 FTS	39108-34-4	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFNS	68259-12-1	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
MeFOSAA	2355-31-9	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
EtFOSAA	2991-50-6	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFUnA	2058-94-8	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFDS	335-77-3	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
11Cl-PF3OUdS	763051-92-9	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFDoA	307-55-1	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFTrDA	72629-94-8	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
PFTeDA	376-06-7	ND	0.971	1.94	3.88		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	80.7	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C3-PFPeA	IS	86.6	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C3-PFBS	IS	95.8	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C2-4:2 FTS	IS	96.6	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C2-PFHxA	IS	84.4	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C4-PFHpA	IS	90.0	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C3-PFHxS	IS	99.9	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C2-6:2 FTS	IS	113	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1

Sample ID: AOI-14-6-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 12:42

Laboratory Data

Lab Sample: 2106219-07
Date Received: 29-Jun-21 08:10
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	86.7	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C8-PFOSA	IS	60.2	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C2-PFOA	IS	82.6	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C8-PFOS	IS	91.9	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C2-PFDA	IS	85.1	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C2-8:2 FTS	IS	101	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
d3-MeFOSAA	IS	82.0	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C2-PFUnA	IS	78.9	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
d5-EtFOSAA	IS	69.6	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C2-PFDoA	IS	76.9	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1
13C2-PFTeDA	IS	60.1	50 - 150		B1G0014	02-Jul-21	0.258 L	09-Jul-21 14:43	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-14-1-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 12:45

Laboratory Data

Lab Sample: 2106219-08
Date Received: 29-Jun-21 08:10
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFPeA	2706-90-3	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFBS	375-73-5	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
4:2 FTS	757124-72-4	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFHxA	307-24-4	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFPeS	2706-91-4	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
HFPO-DA	13252-13-6	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFHpA	375-85-9	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
ADONA	919005-14-4	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFHxS	355-46-4	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
6:2 FTS	27619-97-2	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFOA	335-67-1	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFHpS	375-92-8	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFNA	375-95-1	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFOSA	754-91-6	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFOS	1763-23-1	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
9Cl-PF3ONS	756426-58-1	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFDA	335-76-2	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
8:2 FTS	39108-34-4	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFNS	68259-12-1	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
MeFOSAA	2355-31-9	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
EtFOSAA	2991-50-6	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFUnA	2058-94-8	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFDS	335-77-3	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
11Cl-PF3OUdS	763051-92-9	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFDoA	307-55-1	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFTrDA	72629-94-8	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
PFTeDA	376-06-7	ND	1.05	2.10	4.20		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	52.1	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C3-PFPeA	IS	92.1	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C3-PFBS	IS	93.5	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C2-4:2 FTS	IS	92.9	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C2-PFHxA	IS	89.1	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C4-PFHpA	IS	89.4	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C3-PFHxS	IS	83.4	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C2-6:2 FTS	IS	121	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1

Sample ID: AOI-14-1-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: STORM WATER GRAB
Matrix: Effluent
Date Collected: 24-Jun-21 12:45

Laboratory Data

Lab Sample: 2106219-08
Date Received: 29-Jun-21 08:10
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	86.4	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C8-PFOSA	IS	66.1	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C2-PFOA	IS	84.2	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C8-PFOS	IS	79.5	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C2-PFDA	IS	90.6	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C2-8:2 FTS	IS	97.3	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
d3-MeFOSAA	IS	82.5	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C2-PFUnA	IS	87.7	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
d5-EtFOSAA	IS	74.8	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C2-PFDoA	IS	83.8	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1
13C2-PFTeDA	IS	72.6	50 - 150		B1G0014	02-Jul-21	0.238 L	09-Jul-21 14:54	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: FIELD BLANK

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: FIELD BLANK
Matrix: Effluent
Date Collected: 24-Jun-21 12:50

Laboratory Data

Lab Sample: 2106219-09
Date Received: 29-Jun-21 08:10
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFPeA	2706-90-3	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFBS	375-73-5	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
4:2 FTS	757124-72-4	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFHxA	307-24-4	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFPeS	2706-91-4	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
HFPO-DA	13252-13-6	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFHpA	375-85-9	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
ADONA	919005-14-4	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFHxS	355-46-4	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
6:2 FTS	27619-97-2	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFOA	335-67-1	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFHpS	375-92-8	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFNA	375-95-1	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFOSA	754-91-6	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFOS	1763-23-1	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
9Cl-PF3ONS	756426-58-1	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFDA	335-76-2	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
8:2 FTS	39108-34-4	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFNS	68259-12-1	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
MeFOSAA	2355-31-9	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
EtFOSAA	2991-50-6	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFUnA	2058-94-8	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFDS	335-77-3	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFDoA	307-55-1	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFTrDA	72629-94-8	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
PFTeDA	376-06-7	ND	1.01	2.02	4.04		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	121	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C3-PFPeA	IS	95.9	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C3-PFBS	IS	89.5	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C2-4:2 FTS	IS	86.6	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C2-PFHxA	IS	87.2	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C4-PFHpA	IS	89.7	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C3-PFHxS	IS	101	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C2-6:2 FTS	IS	121	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1

Sample ID: FIELD BLANK

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: FIELD BLANK
Matrix: Effluent
Date Collected: 24-Jun-21 12:50

Laboratory Data

Lab Sample: 2106219-09
Date Received: 29-Jun-21 08:10
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	87.2	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C8-PFOSA	IS	47.2	50 - 150	H	B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C2-PFOA	IS	91.8	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C8-PFOS	IS	90.5	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C2-PFDA	IS	89.2	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C2-8:2 FTS	IS	86.2	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
d3-MeFOSAA	IS	84.2	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C2-PFUnA	IS	84.9	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
d5-EtFOSAA	IS	76.1	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C2-PFDoA	IS	79.1	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1
13C2-PFTeDA	IS	73.9	50 - 150		B1G0014	02-Jul-21	0.248 L	09-Jul-21 15:04	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

DATA QUALIFIERS & ABBREVIATIONS

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

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

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-26
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1980678
New Hampshire Environmental Accreditation Program	207720
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-016
Pennsylvania Department of Environmental Protection	017
Texas Commission on Environmental Quality	T104704189-21-12
Vermont Department of Health	VT-4042
Virginia Department of General Services	10769
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p- Dioxins & Polychlorinated Dibenzofurans	EPA 23
Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613/1613B
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537.1
Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry	EPA 533
Perfluorooctanesulonate (PFOS) and Perfluorooctanoate (PFOA) - Method for Unfiltered Samples Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 2106219 Temp: 4.5 °C
Storage ID: R-13, WR-2 Storage Secured: Yes ☑ No ☐

Project ID: MICH-ANG-CAMP GRAYLING PO#: 1749 Sampler: ADAM WEEKS (name)

TAT (check one): Standard: ☒ 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify:

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
ADAM WEEKS	6/28/21	1346	Marissa Sparks	06/29/21	0810

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: _____

Method of Shipment: _____

Tracking No.: _____

Add Analysis(es) Requested

Container(s): Quantity | Type | Matrix

PFAS by Isotope Dilution: PFOA/ PFOS | UCMR3 PFAS List:6 | 537.1 List: 14 or 18 (Circle One) | EPA Draft List of 24 | OTHER: Please attach analyte list

EPA Method 537 (DW only): PFOA/ PFOS | UCMR3 PFAS List:6 | 537.1 List of 14 | 537.1 List of 18

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFOA/ PFOS	UCMR3 PFAS List:6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFOA/ PFOS	UCMR3 PFAS List:6	537.1 List of 14	537.1 List of 18	Comments
A01-14-3-A	6/24/21	1148	STORM WATER GRAB	2	P	EF					X (ATTACHED)					M1 LIST OF 28 ANALYTES (ATT.)
A01-15-5-A		1155									X					
A01-15-4-A		1158									X					
A01-15-2-B		1205									X					
A01-15-2-C		1220									X					
A01-15-2-D		1230									X					
A01-14-6-A		1242									X					
A01-14-1-A		1245	↓								X					
FIELD BLANK	↓	1250	FIELD BLANK	↓	↓	↓					X					
											X					

Special Instructions/Comment
ALSO SEND RESULTS TO: ADAM.WEEKS@WOODPLC.COM
HELEN.ROUGHT@WOODPLC.COM

SEND DOCUMENTATION AND RESULTS TO:

Name: SCOTT ROUGHT
Company: 41 HUGHES DRIVE (WOOD)
Address: _____
City: TRAVERSE CITY State: MI Zip: 49696
Phone: 231.463.8353
Email: SCOTT.ROUGHT@WOODPLC.COM

Container Types: P = HDPE, PJ = HDPE Jar, PY = Polypropylene, O= Other _____

Bottle Preservation Type: TZ= Trizma: _____

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other _____

2106219

Compound	Acronym	CAS Number
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorobutane sulfonate	PFBS	375-73-5
4:2 Fluorotelomer sulfonate	4:2 FTS	757124-72-4
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
Perfluoroheptanoic acid	PFHpA	375-85-9
4,8-Dioxa-3H_perfluorononaoic acid	ADONA	919005-14-4
Perfluorohexane sulfonate	PFHxS	355-46-4
6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
Perfluoro-n-Octanoic acid	PFOA	335-67-1
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorononanoic acid	PFNA	375-95-1
Perfluorooctanesulfonamide	PFOSA	754-91-6
Perfluorooctane sulfonate	PFOS	1763-23-1
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9C1-PF3ONS	756426-58-1
Perfluorodecanoic acid	PFDA	335-76-2
8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorononanesulfonic acid	PFNS	68259-12-1
2-(N-Methyl-perfluorooctane sulfonamido) acetic acid	MeFOSAA	2355-31-9
2-(N-Eethyl-perfluorooctane sulfonamido) acetic acid	EtFOSAA	2991-50-6
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorodecane sulfonic acid	PFDS	335-77-3
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11C1-PF3OUdS	763051-92-9
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2106219 TAT Std

Samples Arrival:	**Date/Time** 06/29/21 0810		**Initials:** WWS		**Location:** WR-2 **Shelf/Rack:** N/A		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Techni Ice	Dry Ice	None
Temp °C: 4.6 (uncorrected) **Temp °C:** 4.5 (corrected)			**Probe used: Y / (N)**		**Thermometer ID:** IR-4		

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill — Trk # 7741 1736 7063	✓		
Shipping Documentation Present?	✓		
Shipping Container: (Vista) Client (Retain) Return Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** 06/29/21 0824	**Initials:** WWS	**Location:** R-13, WR-2 **Shelf/Rack:** B-3, E-4		
COC Anomaly/Sample Acceptance Form completed?				✓	✓

Comments:

CoC/Label Reconciliation Report WO# 2106219

LabNumber	CoC Sample ID		SampleAlias	Sample Date/Time		Container	BaseMatrix	Sample Comments
2106219-01	A AOI-14-3-A	☑	STORM WATER GRAB	24-Jun-21 11:48	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-01	B AOI-14-3-A	☑	STORM WATER GRAB	24-Jun-21 11:48	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-02	A AOI-15-5-A	☑	STORM WATER GRAB	24-Jun-21 11:55	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-02	B AOI-15-5-A	☑	STORM WATER GRAB	24-Jun-21 11:55	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-03	A AOI-15-4-A	☑	STORM WATER GRAB	24-Jun-21 11:58	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-03	B AOI-15-4-A	☑	STORM WATER GRAB	24-Jun-21 11:58	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-04	A AOI-15-2-B	☑	STORM WATER GRAB	24-Jun-21 12:05	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-04	B AOI-15-2-B	☑	STORM WATER GRAB	24-Jun-21 12:05	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-05	A AOI-15-2-C	☑	STORM WATER GRAB	24-Jun-21 12:20	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-05	B AOI-15-2-C	☑	STORM WATER GRAB	24-Jun-21 12:20	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-06	A AOI-15-2-D	☑	STORM WATER GRAB	24-Jun-21 12:30	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-06	B AOI-15-2-D	☑	STORM WATER GRAB	24-Jun-21 12:30	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-07	A AOI-14-6-A	☑	STORM WATER GRAB	24-Jun-21 12:42	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-07	B AOI-14-6-A	☑	STORM WATER GRAB	24-Jun-21 12:42	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-08	A AOI-14-1-A	☑	STORM WATER GRAB	24-Jun-21 12:45	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-08	B AOI-14-1-A	☐ (8)	STORM WATER GRAB	24-Jun-21 12:45	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-09	A FIELD BLANK	☑	FIELD BLANK	24-Jun-21 12:50	☑	HDPE Bottle, 250 mL	Aqueous	
2106219-09	B FIELD BLANK	☑	FIELD BLANK	24-Jun-21 12:50	☑	HDPE Bottle, 250 mL	Aqueous	

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

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

Comments: ⓐ sample label: 201-4-1-a

Preservation Documented: Na2S2O3 Trizma NH4CH3CO2 None (all) Other

Verifed by/Date: WWS 06/29/21

ATTACHMENT B

ANALYTICAL LABORATORY REPORT
JULY 13, 2021 SAMPLE EVENT

Vista
an Enthalpy Analytical Laboratory

August 27, 2021

Vista Work Order No. 2107127

Mr. Scott Rought
Wood Environment & Infrastructure
41 Hughest Drive
Traverse City, MI 49696

Dear Mr. Rought,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on July 14, 2021 under your Project Name 'MICH-ANG-CAMP GRAYLING'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at jfox@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Jamie Fox
Laboratory Director

Vista Work Order No. 2107127
Case Narrative

Sample Condition on Receipt:

Twelve effluent samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements.

Analytical Notes:

PFAS Isotope Dilution/LC-MSMS Method Compliant with Table B-15 of DoD QSM 5.3 (Aqueous)

The following samples contained particulate and were centrifuged prior to extraction:

Laboratory ID	Sample Name
2107127-01	AOI-14-3-A
2107127-04	AOI-14-6-C
2107127-05	AOI-14-6-A
2107127-07	AOI-14-6-B
2107127-08	AOI-15-2-C
2107127-12	BD-1

The samples were extracted and analyzed for a selected list of PFAS using Isotope Dilution and LC-MS/MS compliant with Table B-15 of DoD QSM 5.3. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

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

A Method Blank and Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) were extracted and analyzed with preparation batch B1G0114. No analytes were detected in the Method Blank above 1/2 the LOQ. The recovery of PFPeS was greater than 127% in the LCSD. This analyte was not detected in the samples. The RPDs of 4:2 FTS, PFPeS and PFDA were greater than 30%. The recoveries and RPDs of all other analytes were within the acceptance criteria.

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

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2107127-01	AOI-14-3-A	13-Jul-21 08:19	14-Jul-21 07:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2107127-02	AOI-15-5-A	13-Jul-21 08:20	14-Jul-21 07:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2107127-03	AOI-15-4-A	13-Jul-21 08:26	14-Jul-21 07:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2107127-04	AOI-14-6-C	13-Jul-21 08:31	14-Jul-21 07:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2107127-05	AOI-14-6-A	13-Jul-21 08:36	14-Jul-21 07:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2107127-06	AOI-14-1-A	13-Jul-21 08:38	14-Jul-21 07:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2107127-07	AOI-14-6-B	13-Jul-21 08:43	14-Jul-21 07:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2107127-08	AOI-15-2-C	13-Jul-21 08:51	14-Jul-21 07:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2107127-09	AOI-15-2-D	13-Jul-21 08:55	14-Jul-21 07:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2107127-10	AOI-15-2-B	13-Jul-21 08:57	14-Jul-21 07:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2107127-11	FIELD BLANK	13-Jul-21 00:00	14-Jul-21 07:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2107127-12	BD-1	13-Jul-21 08:12	14-Jul-21 07:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Aqueous

Laboratory Data

Lab Sample: B1G0114-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFPeA	2706-90-3	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFBS	375-73-5	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
4:2 FTS	757124-72-4	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFHxA	307-24-4	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFPeS	2706-91-4	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
HFPO-DA	13252-13-6	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFHpA	375-85-9	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
ADONA	919005-14-4	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFHxS	355-46-4	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
6:2 FTS	27619-97-2	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFOA	335-67-1	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFHpS	375-92-8	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFNA	375-95-1	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFOSA	754-91-6	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFOS	1763-23-1	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
9Cl-PF3ONS	756426-58-1	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFDA	335-76-2	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
8:2 FTS	39108-34-4	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFNS	68259-12-1	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
MeFOSAA	2355-31-9	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
EtFOSAA	2991-50-6	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFUnA	2058-94-8	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFDS	335-77-3	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
11Cl-PF3OUdS	763051-92-9	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFDoA	307-55-1	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFTrDA	72629-94-8	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
PFTeDA	376-06-7	ND	1.00	2.00	4.00		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	63.5	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C3-PFPeA	IS	61.5	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C3-PFBS	IS	13.4	50 - 150	H	B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C2-4:2 FTS	IS	35.2	50 - 150	H	B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C2-PFHxA	IS	77.2	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C4-PFHpA	IS	79.1	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C3-PFHxS	IS	31.0	50 - 150	H	B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C2-6:2 FTS	IS	63.5	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C5-PFNA	IS	97.0	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1

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

Client Data

Name: Wood Environment & Infrastructure Matrix: Aqueous

Project: MICH-ANG-CAMP GRAYLING

Laboratory Data

Lab Sample: B1G0114-BLK1 Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOSA	IS	49.8	50 - 150	H	B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C2-PFOA	IS	87.7	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C8-PFOS	IS	54.5	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C2-PFDA	IS	88.8	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C2-8:2 FTS	IS	82.7	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
d3-MeFOSAA	IS	34.7	50 - 150	H	B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C2-PFUnA	IS	91.3	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
d5-EtFOSAA	IS	30.7	50 - 150	H	B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C2-PFDoA	IS	79.0	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1
13C2-PFTeDA	IS	75.8	50 - 150		B1G0114	24-Jul-21	0.250 L	06-Aug-21 15:48	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: LCSD **PFAS Isotope Dilution Table B-15**

Name:	Wood Environment & Infrastructure	Lab Sample:	B1G0114-BS1/B1G0114-BSD1
Project:	MICH-ANG-CAMP GRAYLING	QC Batch:	B1G0114
Matrix:	Aqueous	Samp Size:	0.250/0.250 L
		Date Extracted:	24-Jul-21
		Column:	BEH C18

Analyte	CAS Number	LCS (ng/L)	LCS Spike	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBA	375-22-4	38.2	40.0	95.6		39.1	40.0	97.9	2.39		73-129	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFPeA	2706-90-3	37.8	40.0	94.4		41.2	40.0	103	8.68		72-129	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFBS	375-73-5	33.2	40.0	83.0		41.5	40.0	104	22.2		72-130	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
4:2 FTS	757124-72-4	27.2	40.0	68.1		40.9	40.0	102	40.0	H	63-143	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFHxA	307-24-4	37.7	40.0	94.2		39.5	40.0	98.7	4.69		72-129	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFPeS	2706-91-4	45.8	40.0	115		67.0	40.0	168	37.5	H	71-127	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
HFPO-DA	13252-13-6	40.1	40.0	100		38.4	40.0	96.1	4.25		65-135	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFHpA	375-85-9	39.2	40.0	98.1		44.4	40.0	111	12.4		72-130	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
ADONA	919005-14-4	36.2	40.0	90.5		42.9	40.0	107	16.9		65-135	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFHxS	355-46-4	33.9	40.0	84.8		40.4	40.0	101	17.5		68-131	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
6:2 FTS	27619-97-2	31.3	40.0	78.2		42.0	40.0	105	29.2		64-140	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFOA	335-67-1	46.5	40.0	116		49.4	40.0	124	6.10		71-133	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFHpS	375-92-8	37.6	40.0	94.0		35.2	40.0	88.0	6.59		69-134	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFNA	375-95-1	46.8	40.0	117		41.5	40.0	104	11.9		69-130	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFOSA	754-91-6	37.3	40.0	93.3		38.8	40.0	97.0	3.85		67-137	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFOS	1763-23-1	40.2	40.0	101		44.8	40.0	112	10.9		65-140	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
9Cl-PF3ONS	756426-58-1	43.0	40.0	107		42.2	40.0	105	1.87		65-135	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFDA	335-76-2	34.2	40.0	85.6		47.1	40.0	118	31.6	H	71-129	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
8:2 FTS	39108-34-4	45.7	40.0	114		47.4	40.0	118	3.66		67-138	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFNS	68259-12-1	38.5	40.0	96.3		44.1	40.0	110	13.5		69-127	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
MeFOSAA	2355-31-9	38.3	40.0	95.7		44.3	40.0	111	14.5		65-136	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
EtFOSAA	2991-50-6	40.0	40.0	99.9		35.8	40.0	89.4	11.1		61-135	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFUnA	2058-94-8	37.0	40.0	92.6		45.6	40.0	114	20.6		69-133	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFDS	335-77-3	42.4	40.0	106		45.1	40.0	113	6.19		53-142	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
11Cl-PF3OUdS	763051-92-9	39.5	40.0	98.7		43.1	40.0	108	8.71		65-135	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFDoA	307-55-1	36.8	40.0	91.9		41.3	40.0	103	11.7		72-134	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFTrDA	72629-94-8	31.3	40.0	78.1		34.4	40.0	86.1	9.68		65-144	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1
PFTeDA	376-06-7	39.5	40.0	98.6		41.4	40.0	103	4.72		71-132	30	04-Aug-21 23:17	1	06-Aug-21 16:09	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C3-PFBA	IS	73.5		80.7		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C3-PFPeA	IS	74.8		72.4		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C3-PFBS	IS	36.7	H	21.4	H	50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1

Sample ID: LCSD **PFAS Isotope Dilution Table B-15**

Name:	Wood Environment & Infrastructure	Lab Sample:	B1G0114-BS1/B1G0114-BSD1	Date Extracted:	24-Jul-21
Project:	MICH-ANG-CAMP GRAYLING	QC Batch:	B1G0114	Column:	BEH C18
Matrix:	Aqueous	Samp Size:	0.250/0.250 L		

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-4:2 FTS	IS	63.3		46.1	H	50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C2-PFHxA	IS	85.9		79.5		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C4-PFHpA	IS	82.6		79.1		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C3-PFHxS	IS	60.4		47.4	H	50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C2-6:2 FTS	IS	70.3		61.4		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C5-PFNA	IS	68.3		96.4		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C8-PFOSA	IS	43.2	H	44.4	H	50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C2-PFOA	IS	77.5		72.0		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C8-PFOS	IS	68.9		70.0		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C2-PFDA	IS	86.6		85.4		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C2-8:2 FTS	IS	79.2		68.2		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
d3-MeFOSAA	IS	47.9	H	36.8	H	50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C2-PFUnA	IS	75.5		79.8		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
d5-EtFOSAA	IS	38.2	H	36.9	H	50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C2-PFDoA	IS	65.3		68.6		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1
13C2-PFTeDA	IS	57.1		68.8		50 - 150	04-Aug-21 23:17	1	06-Aug-21 16:09	1

Sample ID: AOI-14-3-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:19

Laboratory Data

Lab Sample: 2107127-01
Date Received: 14-Jul-21 07:30
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFPeA	2706-90-3	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFBS	375-73-5	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
4:2 FTS	757124-72-4	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFHxA	307-24-4	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFPeS	2706-91-4	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
HFPO-DA	13252-13-6	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFHpA	375-85-9	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
ADONA	919005-14-4	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFHxS	355-46-4	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
6:2 FTS	27619-97-2	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFOA	335-67-1	1.35	1.04	2.07	4.14	J	B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFHpS	375-92-8	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFNA	375-95-1	1.71	1.04	2.07	4.14	J	B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFOSA	754-91-6	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFOS	1763-23-1	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
9Cl-PF3ONS	756426-58-1	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFDA	335-76-2	8.93	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
8:2 FTS	39108-34-4	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFNS	68259-12-1	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
MeFOSAA	2355-31-9	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
EtFOSAA	2991-50-6	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFUnA	2058-94-8	8.40	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFDS	335-77-3	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFDoA	307-55-1	19.0	1.04	2.07	4.14		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFTrDA	72629-94-8	2.03	1.04	2.07	4.14	J	B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
PFTeDA	376-06-7	4.01	1.04	2.07	4.14	J	B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	47.0	50 - 150	H	B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C3-PFPeA	IS	84.7	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C3-PFBS	IS	25.3	50 - 150	H	B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C2-4:2 FTS	IS	55.0	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C2-PFHxA	IS	87.9	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C4-PFHpA	IS	81.5	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C3-PFHxS	IS	45.0	50 - 150	H	B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C2-6:2 FTS	IS	69.0	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1

Sample ID: AOI-14-3-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:19

Laboratory Data

Lab Sample: 2107127-01
Date Received: 14-Jul-21 07:30
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	87.9	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C8-PFOSA	IS	70.1	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C2-PFOA	IS	81.6	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C8-PFOS	IS	64.7	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C2-PFDA	IS	87.5	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C2-8:2 FTS	IS	84.7	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
d3-MeFOSAA	IS	44.2	50 - 150	H	B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C2-PFUnA	IS	83.3	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
d5-EtFOSAA	IS	49.5	50 - 150	H	B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C2-PFDoA	IS	66.9	50 - 150		B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1
13C2-PFTeDA	IS	27.7	50 - 150	H	B1G0114	24-Jul-21	0.241 L	06-Aug-21 16:20	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-5-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:20

Laboratory Data

Lab Sample: 2107127-02
Date Received: 14-Jul-21 07:30
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	1.81	1.05	2.09	4.19	J	B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFPeA	2706-90-3	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFBS	375-73-5	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
4:2 FTS	757124-72-4	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFHxA	307-24-4	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFPeS	2706-91-4	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
HFPO-DA	13252-13-6	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFHpA	375-85-9	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
ADONA	919005-14-4	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFHxS	355-46-4	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
6:2 FTS	27619-97-2	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFOA	335-67-1	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFHpS	375-92-8	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFNA	375-95-1	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFOSA	754-91-6	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFOS	1763-23-1	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
9Cl-PF3ONS	756426-58-1	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFDA	335-76-2	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
8:2 FTS	39108-34-4	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFNS	68259-12-1	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
MeFOSAA	2355-31-9	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
EtFOSAA	2991-50-6	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFUnA	2058-94-8	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFDS	335-77-3	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
11Cl-PF3OUdS	763051-92-9	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFDoA	307-55-1	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFTrDA	72629-94-8	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
PFTeDA	376-06-7	ND	1.05	2.09	4.19		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	88.1	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C3-PFPeA	IS	85.9	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C3-PFBS	IS	53.4	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C2-4:2 FTS	IS	73.9	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C2-PFHxA	IS	93.5	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C4-PFHpA	IS	82.4	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C3-PFHxS	IS	76.2	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C2-6:2 FTS	IS	89.6	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1

Sample ID: AOI-15-5-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:20

Laboratory Data

Lab Sample: 2107127-02
Date Received: 14-Jul-21 07:30
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	86.9	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C8-PFOSA	IS	78.6	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C2-PFOA	IS	94.7	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C8-PFOS	IS	83.4	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C2-PFDA	IS	95.4	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C2-8:2 FTS	IS	108	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
d3-MeFOSAA	IS	74.2	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C2-PFUnA	IS	81.0	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
d5-EtFOSAA	IS	62.5	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C2-PFDoA	IS	80.6	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1
13C2-PFTeDA	IS	78.3	50 - 150		B1G0114	24-Jul-21	0.239 L	05-Aug-21 00:20	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-4-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:26

Laboratory Data

Lab Sample: 2107127-03
Date Received: 14-Jul-21 07:30
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	1.77	1.00	2.01	4.02	J	B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFPeA	2706-90-3	2.42	1.00	2.01	4.02	J	B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFBS	375-73-5	1.93	1.00	2.01	4.02	J, Q	B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
4:2 FTS	757124-72-4	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFHxA	307-24-4	2.36	1.00	2.01	4.02	J	B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFPeS	2706-91-4	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
HFPO-DA	13252-13-6	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFHpA	375-85-9	1.25	1.00	2.01	4.02	J, Q	B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
ADONA	919005-14-4	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFHxS	355-46-4	3.50	1.00	2.01	4.02	J	B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
6:2 FTS	27619-97-2	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFOA	335-67-1	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFHpS	375-92-8	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFNA	375-95-1	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFOSA	754-91-6	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFOS	1763-23-1	10.9	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
9Cl-PF3ONS	756426-58-1	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFDA	335-76-2	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
8:2 FTS	39108-34-4	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFNS	68259-12-1	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
MeFOSAA	2355-31-9	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
EtFOSAA	2991-50-6	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFUnA	2058-94-8	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFDS	335-77-3	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
11Cl-PF3OUdS	763051-92-9	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFDoA	307-55-1	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFTrDA	72629-94-8	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
PFTeDA	376-06-7	ND	1.00	2.01	4.02		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	102	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C3-PFPeA	IS	86.9	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C3-PFBS	IS	43.1	50 - 150	H	B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C2-4:2 FTS	IS	69.0	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C2-PFHxA	IS	91.9	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C4-PFHpA	IS	80.5	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C3-PFHxS	IS	64.2	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C2-6:2 FTS	IS	77.0	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1

Sample ID: AOI-15-4-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:26

Laboratory Data

Lab Sample: 2107127-03
Date Received: 14-Jul-21 07:30
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	81.2	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C8-PFOSA	IS	74.5	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C2-PFOA	IS	85.2	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C8-PFOS	IS	76.9	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C2-PFDA	IS	90.2	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C2-8:2 FTS	IS	83.3	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
d3-MeFOSAA	IS	60.5	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C2-PFUnA	IS	79.3	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
d5-EtFOSAA	IS	58.1	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C2-PFDoA	IS	81.8	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1
13C2-PFTeDA	IS	85.4	50 - 150		B1G0114	24-Jul-21	0.249 L	05-Aug-21 00:30	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-14-6-C

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:31

Laboratory Data

Lab Sample: 2107127-04
Date Received: 14-Jul-21 07:30
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFPeA	2706-90-3	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFBS	375-73-5	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
4:2 FTS	757124-72-4	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFHxA	307-24-4	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFPeS	2706-91-4	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
HFPO-DA	13252-13-6	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFHpA	375-85-9	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
ADONA	919005-14-4	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFHxS	355-46-4	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
6:2 FTS	27619-97-2	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFOA	335-67-1	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFHpS	375-92-8	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFNA	375-95-1	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFOSA	754-91-6	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFOS	1763-23-1	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
9Cl-PF3ONS	756426-58-1	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFDA	335-76-2	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
8:2 FTS	39108-34-4	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFNS	68259-12-1	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
MeFOSAA	2355-31-9	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
EtFOSAA	2991-50-6	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFUnA	2058-94-8	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFDS	335-77-3	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
11Cl-PF3OUdS	763051-92-9	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFDoA	307-55-1	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFTrDA	72629-94-8	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
PFTeDA	376-06-7	ND	1.03	2.06	4.11		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	52.0	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C3-PFPeA	IS	97.3	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C3-PFBS	IS	77.1	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C2-4:2 FTS	IS	99.7	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C2-PFHxA	IS	92.6	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C4-PFHpA	IS	89.2	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C3-PFHxS	IS	93.1	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C2-6:2 FTS	IS	92.1	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1

Sample ID: AOI-14-6-C

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:31

Laboratory Data

Lab Sample: 2107127-04
Date Received: 14-Jul-21 07:30
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	107	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C8-PFOSA	IS	72.0	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C2-PFOA	IS	91.6	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C8-PFOS	IS	98.0	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C2-PFDA	IS	95.4	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C2-8:2 FTS	IS	90.7	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
d3-MeFOSAA	IS	86.8	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C2-PFUnA	IS	89.0	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
d5-EtFOSAA	IS	82.6	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C2-PFDoA	IS	72.9	50 - 150		B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1
13C2-PFTeDA	IS	42.1	50 - 150	H	B1G0114	24-Jul-21	0.243 L	06-Aug-21 17:12	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-14-6-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:36

Laboratory Data

Lab Sample: 2107127-05
Date Received: 14-Jul-21 07:30
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFPeA	2706-90-3	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFBS	375-73-5	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
4:2 FTS	757124-72-4	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFHxA	307-24-4	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFPeS	2706-91-4	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
HFPO-DA	13252-13-6	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFHpA	375-85-9	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
ADONA	919005-14-4	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFHxS	355-46-4	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
6:2 FTS	27619-97-2	2.04	1.08	2.16	4.32	J	B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFOA	335-67-1	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFHpS	375-92-8	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFNA	375-95-1	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFOSA	754-91-6	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFOS	1763-23-1	1.24	1.08	2.16	4.32	J	B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
9Cl-PF3ONS	756426-58-1	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFDA	335-76-2	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
8:2 FTS	39108-34-4	1.85	1.08	2.16	4.32	J, Q	B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFNS	68259-12-1	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
MeFOSAA	2355-31-9	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
EtFOSAA	2991-50-6	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFUnA	2058-94-8	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFDS	335-77-3	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
11Cl-PF3OUdS	763051-92-9	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFDoA	307-55-1	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFTrDA	72629-94-8	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
PFTeDA	376-06-7	ND	1.08	2.16	4.32		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	74.7	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C3-PFPeA	IS	98.3	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C3-PFBS	IS	97.7	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C2-4:2 FTS	IS	95.1	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C2-PFHxA	IS	102	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C4-PFHpA	IS	85.3	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C3-PFHxS	IS	87.7	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C2-6:2 FTS	IS	90.5	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1

Sample ID: AOI-14-6-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:36

Laboratory Data

Lab Sample: 2107127-05
Date Received: 14-Jul-21 07:30
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	101	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C8-PFOSA	IS	76.8	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C2-PFOA	IS	91.8	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C8-PFOS	IS	94.3	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C2-PFDA	IS	114	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C2-8:2 FTS	IS	106	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
d3-MeFOSAA	IS	84.0	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C2-PFUnA	IS	106	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
d5-EtFOSAA	IS	77.6	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C2-PFDoA	IS	85.0	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1
13C2-PFTeDA	IS	53.5	50 - 150		B1G0114	24-Jul-21	0.232 L	06-Aug-21 17:23	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-14-1-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:38

Laboratory Data

Lab Sample: 2107127-06
Date Received: 14-Jul-21 07:30
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFPeA	2706-90-3	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFBS	375-73-5	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
4:2 FTS	757124-72-4	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFHxA	307-24-4	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFPeS	2706-91-4	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
HFPO-DA	13252-13-6	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFHpA	375-85-9	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
ADONA	919005-14-4	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFHxS	355-46-4	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
6:2 FTS	27619-97-2	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFOA	335-67-1	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFHpS	375-92-8	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFNA	375-95-1	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFOSA	754-91-6	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFOS	1763-23-1	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
9Cl-PF3ONS	756426-58-1	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFDA	335-76-2	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
8:2 FTS	39108-34-4	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFNS	68259-12-1	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
MeFOSAA	2355-31-9	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
EtFOSAA	2991-50-6	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFUnA	2058-94-8	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFDS	335-77-3	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
11Cl-PF3OUdS	763051-92-9	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFDoA	307-55-1	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFTrDA	72629-94-8	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
PFTeDA	376-06-7	ND	1.02	2.05	4.10		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	86.3	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C3-PFPeA	IS	93.4	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C3-PFBS	IS	94.6	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C2-4:2 FTS	IS	83.4	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C2-PFHxA	IS	94.9	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C4-PFHpA	IS	90.0	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C3-PFHxS	IS	86.1	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C2-6:2 FTS	IS	88.7	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1

Sample ID: AOI-14-1-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:38

Laboratory Data

Lab Sample: 2107127-06
Date Received: 14-Jul-21 07:30
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	88.1	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C8-PFOSA	IS	64.7	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C2-PFOA	IS	85.2	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C8-PFOS	IS	90.6	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C2-PFDA	IS	79.1	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C2-8:2 FTS	IS	92.4	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
d3-MeFOSAA	IS	93.3	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C2-PFUnA	IS	79.1	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
d5-EtFOSAA	IS	82.8	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C2-PFDoA	IS	79.7	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1
13C2-PFTeDA	IS	81.7	50 - 150		B1G0114	24-Jul-21	0.244 L	05-Aug-21 01:02	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-14-6-B

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:43

Laboratory Data

Lab Sample: 2107127-07
Date Received: 14-Jul-21 07:30
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFPeA	2706-90-3	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFBS	375-73-5	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
4:2 FTS	757124-72-4	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFHxA	307-24-4	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFPeS	2706-91-4	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
HFPO-DA	13252-13-6	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFHpA	375-85-9	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
ADONA	919005-14-4	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFHxS	355-46-4	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
6:2 FTS	27619-97-2	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFOA	335-67-1	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFHpS	375-92-8	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFNA	375-95-1	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFOSA	754-91-6	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFOS	1763-23-1	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
9Cl-PF3ONS	756426-58-1	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFDA	335-76-2	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
8:2 FTS	39108-34-4	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFNS	68259-12-1	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
MeFOSAA	2355-31-9	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
EtFOSAA	2991-50-6	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFUnA	2058-94-8	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFDS	335-77-3	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFDoA	307-55-1	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFTrDA	72629-94-8	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
PFTeDA	376-06-7	ND	1.01	2.02	4.05		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	51.7	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C3-PFPeA	IS	89.5	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C3-PFBS	IS	93.9	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C2-4:2 FTS	IS	92.0	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C2-PFHxA	IS	94.9	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C4-PFHpA	IS	85.7	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C3-PFHxS	IS	94.3	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C2-6:2 FTS	IS	93.7	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1

Sample ID: AOI-14-6-B

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:43

Laboratory Data

Lab Sample: 2107127-07
Date Received: 14-Jul-21 07:30
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	84.8	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C8-PFOSA	IS	68.7	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C2-PFOA	IS	85.1	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C8-PFOS	IS	94.1	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C2-PFDA	IS	90.1	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C2-8:2 FTS	IS	106	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
d3-MeFOSAA	IS	81.2	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C2-PFUnA	IS	84.7	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
d5-EtFOSAA	IS	80.8	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C2-PFDoA	IS	74.6	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1
13C2-PFTeDA	IS	50.5	50 - 150		B1G0114	24-Jul-21	0.247 L	05-Aug-21 01:12	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-2-C

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:51

Laboratory Data

Lab Sample: 2107127-08
Date Received: 14-Jul-21 07:30
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	5.31	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFPeA	2706-90-3	8.70	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFBS	375-73-5	1.26	1.01	2.02	4.02	J	B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
4:2 FTS	757124-72-4	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFHxA	307-24-4	9.72	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFPeS	2706-91-4	3.05	1.01	2.02	4.02	J	B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
HFPO-DA	13252-13-6	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFHpA	375-85-9	5.91	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
ADONA	919005-14-4	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFHxS	355-46-4	64.9	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
6:2 FTS	27619-97-2	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFOA	335-67-1	24.7	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFHpS	375-92-8	9.22	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFNA	375-95-1	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFOSA	754-91-6	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFOS	1763-23-1	321	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
9Cl-PF3ONS	756426-58-1	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFDA	335-76-2	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
8:2 FTS	39108-34-4	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFNS	68259-12-1	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
MeFOSAA	2355-31-9	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
EtFOSAA	2991-50-6	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFUnA	2058-94-8	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFDS	335-77-3	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFDoA	307-55-1	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFTrDA	72629-94-8	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
PFTeDA	376-06-7	ND	1.01	2.02	4.02		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	142	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C3-PFPeA	IS	100	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C3-PFBS	IS	88.4	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C2-4:2 FTS	IS	94.7	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C2-PFHxA	IS	102	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C4-PFHpA	IS	88.1	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C3-PFHxS	IS	90.2	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C2-6:2 FTS	IS	86.5	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1

Sample ID: AOI-15-2-C

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:51

Laboratory Data

Lab Sample: 2107127-08
Date Received: 14-Jul-21 07:30
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	103	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C8-PFOSA	IS	69.2	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C2-PFOA	IS	93.6	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C8-PFOS	IS	89.8	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C2-PFDA	IS	102	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C2-8:2 FTS	IS	88.7	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
d3-MeFOSAA	IS	76.5	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C2-PFUnA	IS	94.6	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
d5-EtFOSAA	IS	75.9	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C2-PFDoA	IS	82.4	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1
13C2-PFTeDA	IS	45.1	50 - 150	H	B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:33	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-2-D

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:55

Laboratory Data

Lab Sample: 2107127-09
Date Received: 14-Jul-21 07:30
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	1.23	1.05	2.10	4.21	J	B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFPeA	2706-90-3	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFBS	375-73-5	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
4:2 FTS	757124-72-4	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFHxA	307-24-4	1.27	1.05	2.10	4.21	J, Q	B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFPeS	2706-91-4	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
HFPO-DA	13252-13-6	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFHpA	375-85-9	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
ADONA	919005-14-4	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFHxS	355-46-4	3.58	1.05	2.10	4.21	J, Q	B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
6:2 FTS	27619-97-2	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFOA	335-67-1	2.45	1.05	2.10	4.21	J	B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFHpS	375-92-8	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFNA	375-95-1	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFOSA	754-91-6	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFOS	1763-23-1	14.5	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
9Cl-PF3ONS	756426-58-1	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFDA	335-76-2	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
8:2 FTS	39108-34-4	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFNS	68259-12-1	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
MeFOSAA	2355-31-9	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
EtFOSAA	2991-50-6	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFUnA	2058-94-8	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFDS	335-77-3	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
11Cl-PF3OUdS	763051-92-9	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFDoA	307-55-1	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFTrDA	72629-94-8	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
PFTeDA	376-06-7	ND	1.05	2.10	4.21		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	110	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C3-PFPeA	IS	94.1	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C3-PFBS	IS	74.0	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C2-4:2 FTS	IS	87.8	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C2-PFHxA	IS	95.9	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C4-PFHpA	IS	85.9	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C3-PFHxS	IS	97.5	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C2-6:2 FTS	IS	106	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1

Sample ID: AOI-15-2-D

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:55

Laboratory Data

Lab Sample: 2107127-09
Date Received: 14-Jul-21 07:30
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	83.6	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C8-PFOSA	IS	73.2	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C2-PFOA	IS	76.2	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C8-PFOS	IS	91.5	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C2-PFDA	IS	81.1	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C2-8:2 FTS	IS	89.3	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
d3-MeFOSAA	IS	82.7	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C2-PFUnA	IS	76.7	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
d5-EtFOSAA	IS	69.0	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C2-PFDoA	IS	71.8	50 - 150		B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1
13C2-PFTeDA	IS	47.8	50 - 150	H	B1G0114	24-Jul-21	0.238 L	05-Aug-21 01:33	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-2-B

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:57

Laboratory Data

Lab Sample: 2107127-10
Date Received: 14-Jul-21 07:30
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	1.14	1.06	2.13	4.26	J	B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFPeA	2706-90-3	1.30	1.06	2.13	4.26	J	B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFBS	375-73-5	1.09	1.06	2.13	4.26	J	B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
4:2 FTS	757124-72-4	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFHxA	307-24-4	1.29	1.06	2.13	4.26	J	B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFPeS	2706-91-4	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
HFPO-DA	13252-13-6	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFHpA	375-85-9	1.07	1.06	2.13	4.26	J	B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
ADONA	919005-14-4	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFHxS	355-46-4	2.43	1.06	2.13	4.26	J	B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
6:2 FTS	27619-97-2	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFOA	335-67-1	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFHpS	375-92-8	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFNA	375-95-1	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFOSA	754-91-6	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFOS	1763-23-1	3.30	1.06	2.13	4.26	J	B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
9Cl-PF3ONS	756426-58-1	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFDA	335-76-2	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
8:2 FTS	39108-34-4	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFNS	68259-12-1	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
MeFOSAA	2355-31-9	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
EtFOSAA	2991-50-6	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFUnA	2058-94-8	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFDS	335-77-3	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
11Cl-PF3OUdS	763051-92-9	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFDoA	307-55-1	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFTrDA	72629-94-8	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
PFTeDA	376-06-7	ND	1.06	2.13	4.26		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	113	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C3-PFPeA	IS	94.9	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C3-PFBS	IS	107	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C2-4:2 FTS	IS	83.6	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C2-PFHxA	IS	105	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C4-PFHpA	IS	87.2	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C3-PFHxS	IS	99.3	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C2-6:2 FTS	IS	96.3	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1

Sample ID: AOI-15-2-B

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 13-Jul-21 08:57

Laboratory Data

Lab Sample: 2107127-10
Date Received: 14-Jul-21 07:30
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	87.6	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C8-PFOSA	IS	68.8	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C2-PFOA	IS	95.2	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C8-PFOS	IS	91.0	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C2-PFDA	IS	86.9	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C2-8:2 FTS	IS	98.5	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
d3-MeFOSAA	IS	94.1	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C2-PFUnA	IS	84.8	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
d5-EtFOSAA	IS	83.3	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C2-PFDoA	IS	81.6	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1
13C2-PFTeDA	IS	84.4	50 - 150		B1G0114	24-Jul-21	0.235 L	05-Aug-21 01:44	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: FIELD BLANK

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: FIELD BLANK
Matrix: Effluent
Date Collected: 13-Jul-21 08:12

Laboratory Data

Lab Sample: 2107127-11
Date Received: 14-Jul-21 07:30
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFPeA	2706-90-3	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFBS	375-73-5	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
4:2 FTS	757124-72-4	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFHxA	307-24-4	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFPeS	2706-91-4	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
HFPO-DA	13252-13-6	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFHpA	375-85-9	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
ADONA	919005-14-4	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFHxS	355-46-4	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
6:2 FTS	27619-97-2	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFOA	335-67-1	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFHpS	375-92-8	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFNA	375-95-1	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFOSA	754-91-6	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFOS	1763-23-1	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
9Cl-PF3ONS	756426-58-1	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFDA	335-76-2	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
8:2 FTS	39108-34-4	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFNS	68259-12-1	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
MeFOSAA	2355-31-9	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
EtFOSAA	2991-50-6	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFUnA	2058-94-8	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFDS	335-77-3	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
11Cl-PF3OUdS	763051-92-9	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFDoA	307-55-1	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFTrDA	72629-94-8	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
PFTeDA	376-06-7	ND	1.02	2.04	4.09		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	106	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C3-PFPeA	IS	90.1	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C3-PFBS	IS	88.0	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C2-4:2 FTS	IS	88.8	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C2-PFHxA	IS	95.2	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C4-PFHpA	IS	88.9	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C3-PFHxS	IS	101	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C2-6:2 FTS	IS	99.8	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1

Sample ID: FIELD BLANK

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: FIELD BLANK
Matrix: Effluent
Date Collected: 13-Jul-21 08:12

Laboratory Data

Lab Sample: 2107127-11
Date Received: 14-Jul-21 07:30
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	85.7	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C8-PFOSA	IS	39.7	50 - 150	H	B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C2-PFOA	IS	90.4	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C8-PFOS	IS	95.5	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C2-PFDA	IS	89.3	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C2-8:2 FTS	IS	85.6	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
d3-MeFOSAA	IS	81.9	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C2-PFUnA	IS	74.9	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
d5-EtFOSAA	IS	72.2	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C2-PFDoA	IS	68.7	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1
13C2-PFTeDA	IS	62.2	50 - 150		B1G0114	24-Jul-21	0.245 L	05-Aug-21 01:54	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: BD-1

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: DUPLICATE
Matrix: Effluent
Date Collected: 13-Jul-21 08:12

Laboratory Data

Lab Sample: 2107127-12
Date Received: 14-Jul-21 07:30
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFPeA	2706-90-3	1.44	1.01	2.02	4.03	J	B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFBS	375-73-5	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
4:2 FTS	757124-72-4	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFHxA	307-24-4	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFPeS	2706-91-4	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
HFPO-DA	13252-13-6	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFHpA	375-85-9	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
ADONA	919005-14-4	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFHxS	355-46-4	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
6:2 FTS	27619-97-2	2.67	1.01	2.02	4.03	J	B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFOA	335-67-1	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFHpS	375-92-8	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFNA	375-95-1	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFOSA	754-91-6	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFOS	1763-23-1	1.42	1.01	2.02	4.03	J	B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
9Cl-PF3ONS	756426-58-1	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFDA	335-76-2	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
8:2 FTS	39108-34-4	1.81	1.01	2.02	4.03	J	B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFNS	68259-12-1	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
MeFOSAA	2355-31-9	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
EtFOSAA	2991-50-6	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFUnA	2058-94-8	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFDS	335-77-3	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFDoA	307-55-1	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFTrDA	72629-94-8	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
PFTeDA	376-06-7	ND	1.01	2.02	4.03		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	66.7	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C3-PFPeA	IS	98.8	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C3-PFBS	IS	99.1	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C2-4:2 FTS	IS	91.6	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C2-PFHxA	IS	94.6	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C4-PFHpA	IS	94.8	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C3-PFHxS	IS	89.3	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C2-6:2 FTS	IS	87.6	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1

Sample ID: BD-1

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Location: DUPLICATE
Matrix: Effluent
Date Collected: 13-Jul-21 08:12

Laboratory Data

Lab Sample: 2107127-12
Date Received: 14-Jul-21 07:30
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	102	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C8-PFOSA	IS	79.4	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C2-PFOA	IS	91.7	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C8-PFOS	IS	110	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C2-PFDA	IS	98.6	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C2-8:2 FTS	IS	99.0	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
d3-MeFOSAA	IS	81.1	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C2-PFUnA	IS	111	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
d5-EtFOSAA	IS	85.2	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C2-PFDoA	IS	96.2	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1
13C2-PFTeDA	IS	53.5	50 - 150		B1G0114	24-Jul-21	0.248 L	06-Aug-21 17:54	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

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

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

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-26
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1980678
New Hampshire Environmental Accreditation Program	207720
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-016
Pennsylvania Department of Environmental Protection	017
Texas Commission on Environmental Quality	T104704189-21-12
Vermont Department of Health	VT-4042
Virginia Department of General Services	10769
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p- Dioxins & Polychlorinated Dibenzofurans	EPA 23
Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613/1613B
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537.1
Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry	EPA 533
Perfluorooctanesulonate (PFOS) and Perfluorooctanoate (PFOA) - Method for Unfiltered Samples Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 2107127 Temp: 6.2 °C
Storage ID: R-13, UA-2 Storage Secured: Yes ☐ No ☐

Project ID: MICH-ANG-CAMP GRAYLING PO#: 1749 Sampler: ADAM WEEKS (name)

TAT (check one): Standard: ☒ 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify: _____

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
ADAM WEEKS	7/13/21	1300	Karen + Anita	07/14/21	07:30

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: _____ Method of Shipment: _____ Tracking No.: _____

Add Analysis(es) Requested

Sample ID	Date	Time	Location/ Sample Description	Container(s): Quantity	Type	Matrix	PFOA/ PFOS	UCMR3 PFAS List:6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFAS by Isotope Dilution: PFOA/ PFOS	UCMR3 PFAS List:6	537.1 List of 14	537.1 List of 18	EPA Method 537 (DW only)	Comments
AOI-14-3-A	7-13-21	0819		2	P	EF					X (ATTACHED)						MI LIST OF 28 ANALYTES (ATT.)
AOI-15-5-A		0820									X						
AOI-15-4-A		0826									X						
AOI-14-6-C		0831									X						
AOI-14-6-A		0836									X						
AOI-14-1-A		0838									X						
AOI-14-6-B		0843									X						
AOI-15-2-C		0851									X						
AOI-15-2-D		0855									X						
AOI-15-2-[redacted]B		0857									X						

Special Instructions/Comment: ALSO SEND RESULTS TO: ADAM.WEEKS@WOODPLC.COM
HELEN.ROUGHT@WOODPLC.COM

SEND DOCUMENTATION AND RESULTS TO:

Name: SCOTT ROUGHT
Company: WOOD
Address: 41 HUGHES DRIVE
City: TRAVERSE CITY State: MI Zip: 49696
Phone: 231.463.8353
Email: SCOTT.ROUGHT@WOODPLC.COM

Container Types: P = HDPE, PJ = HDPE Jar, PY = Polypropylene, O= Other _____
Bottle Preservation Type: TZ= Trizma: _____
Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other _____

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 2107127 Temp: 6.2 °C
Storage ID: R-13, WR-2 Storage Secured: Yes ☒ No ☐

TAT (check one): Standard: ☒ 21 days
Rush (surcharge may apply) ☐ 14 days ☐ 7 days Specify: ______

Project ID: MICH-ANG-CAMP GRAYLING PO#: 1749 Sampler: ADAM WEEKS (name)

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
ADAM WEEKS AW	7/13/21	1300	Kenny Acosta	07/14/21	07:70

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: ______

Method of Shipment: ______

Tracking No.: ______

Add Analysis(es) Requested

Sample ID	Date	Time	Location/ Sample Description	Container(s) Quantity	Container(s) Type	Matrix	PFOA/PFOS	UCMR3 PFAS List:6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFAS by Isotope Dilution: PFOA/PFOS	UCMR3 PFAS List:6	537.1 List of 14	537.1 List of 18 (EPA Method 537 (DW only))	Comments
FIELD BLANK	7.13.21		FIELD BLANK	2	P	EF					X (ATTACHED)					MI LIST OF 28 ANALYTES (ATT.)
BD-1	7.13.21	0812	DUPLICATE	2	P	EF					X					↓

Special Instructions/Comment
ALSO SEND RESULTS TO: ADAM.WEEKS@WOODPLC.COM
HELEN.ROUGHT@WOODPLC.COM

SEND DOCUMENTATION AND RESULTS TO:
Name: SCOTT ROUGHT
Company: WOOD
Address: 41 HUGHES DRIVE
City: TRAVERSE CITY State: MI Zip: 49686
Phone: 231-463-8353
Email: SCOTT.ROUGHT@WOODPLC.COM

Container Types: P = HDPE, PJ = HDPE Jar
PY = Polypropylene, O= Other ______

Bottle Preservation Type:
TZ= Trizma: ______

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other ______

ID: LR-537COC Rev. No.: 2 Rev. Date: 08/03/2020 Page: 1 of 1

MI List of 28 Analytes

2107127 6.2°C

Compound	Acronym	CAS Number
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorobutane sulfonate	PFBS	375-73-5
4:2 Fluorotelomer sulfonate	4:2 FTS	757124-72-4
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
Perfluoroheptanoic acid	PFHpA	375-85-9
4,8-Dioxa-3H_perfluorononaoic acid	ADONA	919005-14-4
Perfluorohexane sulfonate	PFHxS	355-46-4
6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
Perfluoro-n-Octanoic acid	PFOA	335-67-1
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorononanoic acid	PFNA	375-95-1
Perfluorooctanesulfonamide	PFOSA	754-91-6
Perfluorooctane sulfonate	PFOS	1763-23-1
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9C1-PF3ONS	756426-58-1
Perfluorodecanoic acid	PFDA	335-76-2
8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorononanesulfonic acid	PFNS	68259-12-1
2-(N-Methyl-perfluorooctane sulfonamido) acetic acid	MeFOSAA	2355-31-9
2-(N-Eethyl-perfluorooctane sulfonamido) acetic acid	EtFOSAA	2991-50-6
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorodecane sulfonic acid	PFDS	335-77-3
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11C1-PF3OUdS	763051-92-9
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7

Vista Analytical Laboratory

Sample Log-In Checklist

Vista Work Order #: 2107127 TAT Std

Samples Arrival:	**Date/Time** 07/14/21 0730		**Initials:** KA		**Location:** WR-2 **Shelf/Rack:** N/A		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Techni Ice	Dry Ice	None
Temp °C: 6.3 (uncorrected) / **Temp °C:** 6.2 (corrected)			**Probe used:** Y / (N)		**Thermometer ID:** IR-3		

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill / Trk # 7742 4651 3769	✓		
Shipping Documentation Present?	✓		
Shipping Container: (Vista) Client (Retain) Return Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** 07/15/21 10:54		**Initials:** VG	**Location:** R-13, WR-2 **Shelf/Rack:** A-2, E-4	
COC Anomaly/Sample Acceptance Form completed?				✓	✓

Comments:

CoC/Label Reconciliation Report WO# 2107127

LabNumber	CoC Sample ID		SampleAlias	Sample Date/Time		Container	BaseMatrix	Sample Comments
2107127-01	A AOI-14-3-A	☑		13-Jul-21 08:19	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-01	B AOI-14-3-A	☑		13-Jul-21 08:19	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-02	A AOI-15-5-A	☑		13-Jul-21 08:20	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-02	B AOI-15-5-A	☑		13-Jul-21 08:20	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-03	A AOI-15-4-A	☑		13-Jul-21 08:26	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-03	B AOI-15-4-A	☑		13-Jul-21 08:26	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-04	A AOI-14-6-C	☑		13-Jul-21 08:31	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-04	B AOI-14-6-C	☑		13-Jul-21 08:31	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-05	A AOI-14-6-A	☑		13-Jul-21 08:36	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-05	B AOI-14-6-A	☑		13-Jul-21 08:36	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-06	A AOI-14-1-A	☑		13-Jul-21 08:38	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-06	B AOI-14-1-A	☑		13-Jul-21 08:38	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-07	A AOI-14-6-B	☑		13-Jul-21 08:43	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-07	B AOI-14-6-B	☑		13-Jul-21 08:43	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-08	A AOI-15-2-C	☑		13-Jul-21 08:51	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-08	B AOI-15-2-C	☑		13-Jul-21 08:51	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-09	A AOI-15-2-D	☑		13-Jul-21 08:55	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-09	B AOI-15-2-D	☑		13-Jul-21 08:55	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-10	A AOI-15-2-B	☑		13-Jul-21 08:57	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-10	B AOI-15-2-B	☑		13-Jul-21 08:57	☑	HDPE Bottle, 250 mL	Aqueous	
2107127-11	A FIELD BLANK	☑	FIELD BLANK	13-Jul-21 08:12	☐ B	HDPE Bottle, 250 mL	Aqueous	
2107127-11	B FIELD BLANK	☑	FIELD BLANK	13-Jul-21 08:12	☐	HDPE Bottle, 250 mL	Aqueous	
2107127-12	A BD-1	☑	DUPLICATE	13-Jul-21 08:12	☐ A	HDPE Bottle, 250 mL	Aqueous	
2107127-12	B BD-1	☑	DUPLICATE	13-Jul-21 08:12	☐	HDPE Bottle, 250 mL	Aqueous	

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

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

Preservation Documented: Na2S2O3 Trizma NH4CH3CO2 None (AW) Other

Comments: (A) No collection time present on sample label.
(B) No collection time present on COC, time pulled directly from sample label.

Verified by/Date: VA 07/15/21

ATTACHMENT C

ANALYTICAL LABORATORY REPORT
OCTOBER 8, 2021 SAMPLE EVENT

November 22, 2021

Vista Work Order No. 2110096

Mr. Scott Rought
Wood Environment & Infrastructure
41 Hughest Drive
Traverse City, MI 49696

Dear Mr. Rought,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on October 12, 2021 under your Project Name 'MICH-ANG-CAMP GRAYLING'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at jfox@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Jamie Fox
Laboratory Director

Vista Work Order No. 2110096
Case Narrative

Sample Condition on Receipt:

Eleven effluent samples and one aqueous sample were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements. As directed, this report was amended to remove the data for sample "BD-1".

Analytical Notes:

PFAS Isotope Dilution/LC-MSMS Method Compliant with Table B-15 of DoD QSM 5.3 (Aqueous)

The following samples contained particulate and were centrifuged prior to extraction:

Laboratory ID	Sample Name
2110096-04	AOI-14-1-A
2110096-05	AOI-14-6-A
2110096-07	AOI-14-6-C

The samples were extracted and analyzed for a selected list of PFAS using Isotope Dilution and LC-MS/MS compliant with Table B-15 of DoD QSM 5.3. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

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

A Method Blank and Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 of the LOQ concentrations. The LCS/LCSD recoveries were within the acceptance criteria. The RPD was outside of the acceptance criteria for PFOSA. The RPDs for all other analytes were within the acceptance criteria.

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

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2110096-01	AOI-15-4-A	08-Oct-21 15:09	12-Oct-21 08:20	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2110096-02	AOI-14-3-A	08-Oct-21 15:13	12-Oct-21 08:20	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2110096-03	AOI-15-5-A	08-Oct-21 15:05	12-Oct-21 08:20	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2110096-04	AOI-14-1-A	08-Oct-21 15:18	12-Oct-21 08:20	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2110096-05	AOI-14-6-A	08-Oct-21 15:22	12-Oct-21 08:20	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2110096-06	AOI-14-6-B	08-Oct-21 15:25	12-Oct-21 08:20	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2110096-07	AOI-14-6-C	08-Oct-21 15:29	12-Oct-21 08:20	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2110096-08	AOI-15-2-D	08-Oct-21 15:31	12-Oct-21 08:20	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2110096-09	AOI-15-2-C	08-Oct-21 15:35	12-Oct-21 08:20	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2110096-10	AOI-15-2-B	08-Oct-21 15:46	12-Oct-21 08:20	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2110096-11	Field Blank	08-Oct-21 14:30	12-Oct-21 08:20	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2110096-12	BD-1	08-Oct-21 00:00	12-Oct-21 08:20	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Aqueous

Laboratory Data

Lab Sample: B1J0089-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFPeA	2706-90-3	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFBS	375-73-5	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
4:2 FTS	757124-72-4	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFHxA	307-24-4	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFPeS	2706-91-4	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
HFPO-DA	13252-13-6	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFHpA	375-85-9	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
ADONA	919005-14-4	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFHxS	355-46-4	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
6:2 FTS	27619-97-2	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFOA	335-67-1	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFHpS	375-92-8	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFNA	375-95-1	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFOSA	754-91-6	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFOS	1763-23-1	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
9Cl-PF3ONS	756426-58-1	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFDA	335-76-2	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
8:2 FTS	39108-34-4	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFNS	68259-12-1	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
MeFOSAA	2355-31-9	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
EtFOSAA	2991-50-6	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFUnA	2058-94-8	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFDS	335-77-3	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
11Cl-PF3OUdS	763051-92-9	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFDoA	307-55-1	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFTrDA	72629-94-8	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
PFTeDA	376-06-7	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	99.3	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C3-PFPeA	IS	87.6	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C3-PFBS	IS	89.2	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C2-4:2 FTS	IS	119	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C2-PFHxA	IS	82.8	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C4-PFHpA	IS	79.9	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C3-PFHxS	IS	96.4	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C2-6:2 FTS	IS	88.3	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C5-PFNA	IS	94.0	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1

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

Client Data

Name: Wood Environment & Infrastructure Matrix: Aqueous

Project: MICH-ANG-CAMP GRAYLING

Laboratory Data

Lab Sample: B1J0089-BLK1 Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOSA	IS	31.8	50 - 150	H	B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C2-PFOA	IS	79.6	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C8-PFOS	IS	78.6	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C2-PFDA	IS	79.6	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C2-8:2 FTS	IS	93.7	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
d3-MeFOSAA	IS	79.5	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C2-PFUnA	IS	71.5	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
d5-EtFOSAA	IS	82.8	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C2-PFDoA	IS	67.5	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1
13C2-PFTeDA	IS	80.4	50 - 150		B1J0089	20-Oct-21	0.250 L	28-Oct-21 23:18	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: LCSD **PFAS Isotope Dilution Table B-15**

Name:	Wood Environment & Infrastructure	Lab Sample:	B1J0089-BS1/B1J0089-BSD1
Project:	MICH-ANG-CAMP GRAYLING	QC Batch:	B1J0089
Matrix:	Aqueous	Samp Size:	0.250/0.250 L
		Date Extracted:	20-Oct-21
		Column:	BEH C18

Analyte	CAS Number	LCS (ng/L)	LCS Spike	LCS % Rec	LCS Quals	LCSD (ng/L)	LCSD Spike	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBA	375-22-4	36.2	40.0	90.4		35.9	40.0	89.8	0.690		73-129	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFPeA	2706-90-3	39.4	40.0	98.6		38.3	40.0	95.7	2.99		72-129	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFBS	375-73-5	36.4	40.0	91.0		34.3	40.0	85.8	5.88		72-130	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
4:2 FTS	757124-72-4	40.2	40.0	101		37.1	40.0	92.8	8.00		63-143	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFHxA	307-24-4	39.3	40.0	98.2		40.2	40.0	100	2.18		72-129	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFPeS	2706-91-4	38.8	40.0	97.1		37.2	40.0	92.9	4.38		71-127	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
HFPO-DA	13252-13-6	41.1	40.0	103		41.3	40.0	103	0.458		65-135	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFHpA	375-85-9	40.4	40.0	101		39.4	40.0	98.5	2.61		72-130	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
ADONA	919005-14-4	38.7	40.0	96.8		39.5	40.0	98.7	1.91		65-135	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFHxS	355-46-4	35.1	40.0	87.9		37.7	40.0	94.2	6.97		68-131	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
6:2 FTS	27619-97-2	36.5	40.0	91.3		36.9	40.0	92.3	1.04		64-140	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFOA	335-67-1	43.8	40.0	110		42.1	40.0	105	4.14		71-133	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFHpS	375-92-8	37.8	40.0	94.4		39.7	40.0	99.3	5.10		69-134	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFNA	375-95-1	41.4	40.0	103		38.4	40.0	95.9	7.47		69-130	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFOSA	754-91-6	30.7	40.0	76.8		43.3	40.0	108	34.1	H	67-137	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFOS	1763-23-1	39.2	40.0	98.0		42.4	40.0	106	7.85		65-140	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
9Cl-PF3ONS	756426-58-1	36.6	40.0	91.6		40.2	40.0	100	9.13		65-135	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFDA	335-76-2	50.3	40.0	126		37.6	40.0	94.1	28.8		71-129	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
8:2 FTS	39108-34-4	35.9	40.0	89.8		35.0	40.0	87.5	2.55		67-138	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFNS	68259-12-1	39.5	40.0	98.7		44.2	40.0	111	11.3		69-127	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
MeFOSAA	2355-31-9	40.8	40.0	102		36.3	40.0	90.8	11.8		65-136	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
EtFOSAA	2991-50-6	39.6	40.0	99.0		37.9	40.0	94.7	4.41		61-135	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFUnA	2058-94-8	45.9	40.0	115		42.9	40.0	107	6.76		69-133	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFDS	335-77-3	40.3	40.0	101		42.7	40.0	107	5.76		53-142	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
11Cl-PF3OUdS	763051-92-9	45.1	40.0	113	Q	36.0	40.0	90.0	22.4		65-135	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFDoA	307-55-1	36.7	40.0	91.8		34.4	40.0	86.1	6.48		72-134	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFTrDA	72629-94-8	38.9	40.0	97.4		31.1	40.0	77.7	22.4		65-144	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1
PFTeDA	376-06-7	38.2	40.0	95.5		40.1	40.0	100	4.73		71-132	30	28-Oct-21 23:29	1	28-Oct-21 23:39	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C3-PFBA	IS	103		108		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C3-PFPeA	IS	81.1		88.9		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C3-PFBS	IS	76.1		85.8		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1

Sample ID: LCSD **PFAS Isotope Dilution Table B-15**

Name:	Wood Environment & Infrastructure	Lab Sample:	B1J0089-BS1/B1J0089-BSD1	Date Extracted:	20-Oct-21
Project:	MICH-ANG-CAMP GRAYLING	QC Batch:	B1J0089	Column:	BEH C18
Matrix:	Aqueous	Samp Size:	0.250/0.250 L		

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-4:2 FTS	IS	112		113		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C2-PFHxA	IS	76.3		81.1		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C4-PFHpA	IS	74.1		83.2		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C3-PFHxS	IS	91.7		82.7		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C2-6:2 FTS	IS	81.6		95.5		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C5-PFNA	IS	95.9		99.3		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C8-PFOSA	IS	48.1	H	43.5	H	50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C2-PFOA	IS	76.1		77.9		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C8-PFOS	IS	77.3		74.6		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C2-PFDA	IS	78.2		91.6		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C2-8:2 FTS	IS	107		116		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
d3-MeFOSAA	IS	72.3		82.8		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C2-PFUnA	IS	79.1		78.6		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
d5-EtFOSAA	IS	71.1		80.0		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C2-PFDoA	IS	71.0		87.8		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1
13C2-PFTeDA	IS	78.3		78.0		50 - 150	28-Oct-21 23:29	1	28-Oct-21 23:39	1

Sample ID: AOI-15-4-A **PFAS Isotope Dilution Table B-15**

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:09

Laboratory Data

Lab Sample: 2110096-01
Date Received: 12-Oct-21 08:20
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	2.16	1.03	2.06	4.11	J	B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFPeA	2706-90-3	3.01	1.03	2.06	4.11	J	B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFBS	375-73-5	3.13	1.03	2.06	4.11	J	B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
4:2 FTS	757124-72-4	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFHxA	307-24-4	3.05	1.03	2.06	4.11	J	B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFPeS	2706-91-4	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
HFPO-DA	13252-13-6	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFHpA	375-85-9	1.38	1.03	2.06	4.11	J	B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
ADONA	919005-14-4	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFHxS	355-46-4	3.93	1.03	2.06	4.11	J	B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
6:2 FTS	27619-97-2	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFOA	335-67-1	1.26	1.03	2.06	4.11	J	B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFHpS	375-92-8	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFNA	375-95-1	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFOSA	754-91-6	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFOS	1763-23-1	5.71	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
9Cl-PF3ONS	756426-58-1	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFDA	335-76-2	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
8:2 FTS	39108-34-4	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFNS	68259-12-1	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
MeFOSAA	2355-31-9	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
EtFOSAA	2991-50-6	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFUnA	2058-94-8	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFDS	335-77-3	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
11Cl-PF3OUdS	763051-92-9	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFDoA	307-55-1	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFTrDA	72629-94-8	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
PFTeDA	376-06-7	ND	1.03	2.06	4.11		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	82.0	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C3-PFPeA	IS	79.3	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C3-PFBS	IS	75.1	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C2-4:2 FTS	IS	92.2	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C2-PFHxA	IS	70.3	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C4-PFHpA	IS	74.3	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C3-PFHxS	IS	94.3	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C2-6:2 FTS	IS	85.3	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1

Sample ID: AOI-15-4-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:09

Laboratory Data

Lab Sample: 2110096-01
Date Received: 12-Oct-21 08:20
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	82.8	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C8-PFOSA	IS	59.1	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C2-PFOA	IS	67.0	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C8-PFOS	IS	70.1	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C2-PFDA	IS	82.1	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C2-8:2 FTS	IS	88.4	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
d3-MeFOSAA	IS	87.3	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C2-PFUnA	IS	80.5	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
d5-EtFOSAA	IS	81.3	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C2-PFDoA	IS	72.6	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1
13C2-PFTeDA	IS	72.5	50 - 150		B1J0089	20-Oct-21	0.243 L	28-Oct-21 23:50	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-14-3-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:13

Laboratory Data

Lab Sample: 2110096-02
Date Received: 12-Oct-21 08:20
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFPeA	2706-90-3	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFBS	375-73-5	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
4:2 FTS	757124-72-4	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFHxA	307-24-4	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFPeS	2706-91-4	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
HFPO-DA	13252-13-6	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFHpA	375-85-9	1.05	1.05	2.10	4.20	J	B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
ADONA	919005-14-4	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFHxS	355-46-4	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
6:2 FTS	27619-97-2	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFOA	335-67-1	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFHpS	375-92-8	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFNA	375-95-1	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFOSA	754-91-6	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFOS	1763-23-1	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
9Cl-PF3ONS	756426-58-1	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFDA	335-76-2	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
8:2 FTS	39108-34-4	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFNS	68259-12-1	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
MeFOSAA	2355-31-9	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
EtFOSAA	2991-50-6	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFUnA	2058-94-8	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFDS	335-77-3	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
11Cl-PF3OUdS	763051-92-9	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFDoA	307-55-1	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFTrDA	72629-94-8	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
PFTeDA	376-06-7	ND	1.05	2.10	4.20		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	51.8	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C3-PFPeA	IS	80.4	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C3-PFBS	IS	90.0	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C2-4:2 FTS	IS	116	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C2-PFHxA	IS	84.0	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C4-PFHpA	IS	84.2	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C3-PFHxS	IS	99.1	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C2-6:2 FTS	IS	110	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1

Sample ID: AOI-14-3-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:13

Laboratory Data

Lab Sample: 2110096-02
Date Received: 12-Oct-21 08:20
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	99.7	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C8-PFOSA	IS	83.8	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C2-PFOA	IS	84.9	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C8-PFOS	IS	81.9	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C2-PFDA	IS	89.9	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C2-8:2 FTS	IS	112	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
d3-MeFOSAA	IS	98.0	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C2-PFUnA	IS	82.6	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
d5-EtFOSAA	IS	99.4	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C2-PFDoA	IS	87.6	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1
13C2-PFTeDA	IS	85.4	50 - 150		B1J0089	20-Oct-21	0.238 L	29-Oct-21 00:00	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-5-A **PFAS Isotope Dilution Table B-15**

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:05

Laboratory Data

Lab Sample: 2110096-03
Date Received: 12-Oct-21 08:20
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	1.63	1.07	2.15	4.28	J	B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFPeA	2706-90-3	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFBS	375-73-5	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
4:2 FTS	757124-72-4	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFHxA	307-24-4	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFPeS	2706-91-4	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
HFPO-DA	13252-13-6	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFHpA	375-85-9	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
ADONA	919005-14-4	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFHxS	355-46-4	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
6:2 FTS	27619-97-2	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFOA	335-67-1	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFHpS	375-92-8	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFNA	375-95-1	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFOSA	754-91-6	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFOS	1763-23-1	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
9Cl-PF3ONS	756426-58-1	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFDA	335-76-2	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
8:2 FTS	39108-34-4	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFNS	68259-12-1	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
MeFOSAA	2355-31-9	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
EtFOSAA	2991-50-6	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFUnA	2058-94-8	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFDS	335-77-3	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
11Cl-PF3OUdS	763051-92-9	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFDoA	307-55-1	1.13	1.07	2.15	4.28	J	B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFTrDA	72629-94-8	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
PFTeDA	376-06-7	ND	1.07	2.15	4.28		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	96.9	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C3-PFPeA	IS	91.7	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C3-PFBS	IS	87.5	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C2-4:2 FTS	IS	114	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C2-PFHxA	IS	91.5	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C4-PFHpA	IS	89.1	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C3-PFHxS	IS	89.2	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C2-6:2 FTS	IS	94.8	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1

Sample ID: AOI-15-5-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:05

Laboratory Data

Lab Sample: 2110096-03
Date Received: 12-Oct-21 08:20
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	117	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C8-PFOSA	IS	69.0	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C2-PFOA	IS	81.1	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C8-PFOS	IS	82.3	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C2-PFDA	IS	88.5	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C2-8:2 FTS	IS	101	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
d3-MeFOSAA	IS	91.4	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C2-PFUnA	IS	86.7	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
d5-EtFOSAA	IS	93.1	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C2-PFDoA	IS	90.2	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1
13C2-PFTeDA	IS	86.3	50 - 150		B1J0089	20-Oct-21	0.233 L	29-Oct-21 00:11	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-14-1-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:18

Laboratory Data

Lab Sample: 2110096-04
Date Received: 12-Oct-21 08:20
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFPeA	2706-90-3	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFBS	375-73-5	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
4:2 FTS	757124-72-4	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFHxA	307-24-4	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFPeS	2706-91-4	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
HFPO-DA	13252-13-6	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFHpA	375-85-9	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
ADONA	919005-14-4	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFHxS	355-46-4	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
6:2 FTS	27619-97-2	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFOA	335-67-1	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFHpS	375-92-8	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFNA	375-95-1	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFOSA	754-91-6	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFOS	1763-23-1	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
9Cl-PF3ONS	756426-58-1	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFDA	335-76-2	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
8:2 FTS	39108-34-4	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFNS	68259-12-1	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
MeFOSAA	2355-31-9	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
EtFOSAA	2991-50-6	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFUnA	2058-94-8	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFDS	335-77-3	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
11Cl-PF3OUdS	763051-92-9	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFDoA	307-55-1	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFTrDA	72629-94-8	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
PFTeDA	376-06-7	ND	1.07	2.13	4.26		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	30.1	50 - 150	H	B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C3-PFPeA	IS	80.1	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C3-PFBS	IS	97.2	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C2-4:2 FTS	IS	142	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C2-PFHxA	IS	88.9	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C4-PFHpA	IS	94.7	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C3-PFHxS	IS	112	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C2-6:2 FTS	IS	97.1	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1

Sample ID: AOI-14-1-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:18

Laboratory Data

Lab Sample: 2110096-04
Date Received: 12-Oct-21 08:20
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	107	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C8-PFOSA	IS	86.5	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C2-PFOA	IS	86.8	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C8-PFOS	IS	86.0	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C2-PFDA	IS	96.8	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C2-8:2 FTS	IS	131	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
d3-MeFOSAA	IS	97.8	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C2-PFUnA	IS	103	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
d5-EtFOSAA	IS	104	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C2-PFDoA	IS	95.2	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1
13C2-PFTeDA	IS	82.6	50 - 150		B1J0089	20-Oct-21	0.235 L	29-Oct-21 00:21	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-14-6-A **PFAS Isotope Dilution Table B-15**

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:22

Laboratory Data

Lab Sample: 2110096-05
Date Received: 12-Oct-21 08:20
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFPeA	2706-90-3	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFBS	375-73-5	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
4:2 FTS	757124-72-4	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFHxA	307-24-4	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFPeS	2706-91-4	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
HFPO-DA	13252-13-6	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFHpA	375-85-9	1.03	1.02	2.05	4.10	J, Q	B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
ADONA	919005-14-4	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFHxS	355-46-4	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
6:2 FTS	27619-97-2	2.04	1.02	2.05	4.10	J, Q	B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFOA	335-67-1	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFHpS	375-92-8	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFNA	375-95-1	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFOSA	754-91-6	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFOS	1763-23-1	3.56	1.02	2.05	4.10	J	B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
9Cl-PF3ONS	756426-58-1	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFDA	335-76-2	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
8:2 FTS	39108-34-4	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFNS	68259-12-1	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
MeFOSAA	2355-31-9	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
EtFOSAA	2991-50-6	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFUnA	2058-94-8	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFDS	335-77-3	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
11Cl-PF3OUdS	763051-92-9	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFDoA	307-55-1	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFTrDA	72629-94-8	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
PFTeDA	376-06-7	ND	1.02	2.05	4.10		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	28.8	50 - 150	H	B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C3-PFPeA	IS	73.2	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C3-PFBS	IS	70.0	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C2-4:2 FTS	IS	103	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C2-PFHxA	IS	78.5	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C4-PFHpA	IS	79.6	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C3-PFHxS	IS	85.2	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C2-6:2 FTS	IS	91.7	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1

Sample ID: AOI-14-6-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:22

Laboratory Data

Lab Sample: 2110096-05
Date Received: 12-Oct-21 08:20
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	93.6	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C8-PFOSA	IS	73.8	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C2-PFOA	IS	76.3	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C8-PFOS	IS	80.0	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C2-PFDA	IS	80.7	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C2-8:2 FTS	IS	99.1	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
d3-MeFOSAA	IS	83.6	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C2-PFUnA	IS	85.5	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
d5-EtFOSAA	IS	88.4	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C2-PFDoA	IS	79.0	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1
13C2-PFTeDA	IS	82.6	50 - 150		B1J0089	20-Oct-21	0.244 L	29-Oct-21 00:32	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-14-6-B **PFAS Isotope Dilution Table B-15**

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:25

Laboratory Data

Lab Sample: 2110096-06
Date Received: 12-Oct-21 08:20
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFPeA	2706-90-3	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFBS	375-73-5	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
4:2 FTS	757124-72-4	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFHxA	307-24-4	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFPeS	2706-91-4	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
HFPO-DA	13252-13-6	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFHpA	375-85-9	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
ADONA	919005-14-4	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFHxS	355-46-4	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
6:2 FTS	27619-97-2	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFOA	335-67-1	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFHpS	375-92-8	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFNA	375-95-1	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFOSA	754-91-6	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFOS	1763-23-1	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
9Cl-PF3ONS	756426-58-1	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFDA	335-76-2	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
8:2 FTS	39108-34-4	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFNS	68259-12-1	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
MeFOSAA	2355-31-9	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
EtFOSAA	2991-50-6	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFUnA	2058-94-8	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFDS	335-77-3	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFDoA	307-55-1	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFTrDA	72629-94-8	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
PFTeDA	376-06-7	ND	1.01	2.02	4.05		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	81.6	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C3-PFPeA	IS	86.9	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C3-PFBS	IS	93.2	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C2-4:2 FTS	IS	105	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C2-PFHxA	IS	85.9	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C4-PFHpA	IS	82.2	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C3-PFHxS	IS	95.9	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C2-6:2 FTS	IS	97.2	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1

Sample ID: AOI-14-6-B

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:25

Laboratory Data

Lab Sample: 2110096-06
Date Received: 12-Oct-21 08:20
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	92.6	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C8-PFOSA	IS	75.1	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C2-PFOA	IS	84.1	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C8-PFOS	IS	80.8	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C2-PFDA	IS	81.0	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C2-8:2 FTS	IS	110	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
d3-MeFOSAA	IS	81.0	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C2-PFUnA	IS	88.5	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
d5-EtFOSAA	IS	86.4	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C2-PFDoA	IS	86.6	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1
13C2-PFTeDA	IS	83.4	50 - 150		B1J0089	20-Oct-21	0.247 L	29-Oct-21 00:42	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-14-6-C

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:29

Laboratory Data

Lab Sample: 2110096-07
Date Received: 12-Oct-21 08:20
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFPeA	2706-90-3	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFBS	375-73-5	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
4:2 FTS	757124-72-4	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFHxA	307-24-4	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFPeS	2706-91-4	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
HFPO-DA	13252-13-6	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFHpA	375-85-9	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
ADONA	919005-14-4	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFHxS	355-46-4	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
6:2 FTS	27619-97-2	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFOA	335-67-1	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFHpS	375-92-8	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFNA	375-95-1	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFOSA	754-91-6	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFOS	1763-23-1	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
9Cl-PF3ONS	756426-58-1	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFDA	335-76-2	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
8:2 FTS	39108-34-4	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFNS	68259-12-1	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
MeFOSAA	2355-31-9	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
EtFOSAA	2991-50-6	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFUnA	2058-94-8	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFDS	335-77-3	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
11Cl-PF3OUdS	763051-92-9	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFDoA	307-55-1	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFTrDA	72629-94-8	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
PFTeDA	376-06-7	ND	1.06	2.12	4.24		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	44.1	50 - 150	H	B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C3-PFPeA	IS	77.7	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C3-PFBS	IS	76.5	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C2-4:2 FTS	IS	104	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C2-PFHxA	IS	77.8	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C4-PFHpA	IS	84.2	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C3-PFHxS	IS	86.9	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C2-6:2 FTS	IS	89.0	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1

Sample ID: AOI-14-6-C

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:29

Laboratory Data

Lab Sample: 2110096-07
Date Received: 12-Oct-21 08:20
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	104	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C8-PFOSA	IS	76.1	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C2-PFOA	IS	73.5	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C8-PFOS	IS	74.1	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C2-PFDA	IS	86.8	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C2-8:2 FTS	IS	117	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
d3-MeFOSAA	IS	94.2	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C2-PFUnA	IS	82.2	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
d5-EtFOSAA	IS	93.9	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C2-PFDoA	IS	83.1	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1
13C2-PFTeDA	IS	71.4	50 - 150		B1J0089	20-Oct-21	0.236 L	29-Oct-21 00:53	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-2-D **PFAS Isotope Dilution Table B-15**

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:31

Laboratory Data

Lab Sample: 2110096-08
Date Received: 12-Oct-21 08:20
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	1.09	1.00	2.00	4.00	J	B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFPeA	2706-90-3	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFBS	375-73-5	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
4:2 FTS	757124-72-4	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFHxA	307-24-4	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFPeS	2706-91-4	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
HFPO-DA	13252-13-6	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFHpA	375-85-9	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
ADONA	919005-14-4	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFHxS	355-46-4	3.52	1.00	2.00	4.00	J	B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
6:2 FTS	27619-97-2	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFOA	335-67-1	1.04	1.00	2.00	4.00	J	B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFHpS	375-92-8	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFNA	375-95-1	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFOSA	754-91-6	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFOS	1763-23-1	10.2	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
9Cl-PF3ONS	756426-58-1	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFDA	335-76-2	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
8:2 FTS	39108-34-4	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFNS	68259-12-1	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
MeFOSAA	2355-31-9	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
EtFOSAA	2991-50-6	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFUnA	2058-94-8	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFDS	335-77-3	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
11Cl-PF3OUdS	763051-92-9	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFDoA	307-55-1	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFTrDA	72629-94-8	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
PFTeDA	376-06-7	ND	1.00	2.00	4.00		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	79.6	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C3-PFPeA	IS	79.4	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C3-PFBS	IS	72.5	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C2-4:2 FTS	IS	106	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C2-PFHxA	IS	80.4	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C4-PFHpA	IS	80.4	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C3-PFHxS	IS	93.3	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C2-6:2 FTS	IS	80.1	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1

Sample ID: AOI-15-2-D

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:31

Laboratory Data

Lab Sample: 2110096-08
Date Received: 12-Oct-21 08:20
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	94.2	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C8-PFOSA	IS	68.1	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C2-PFOA	IS	78.9	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C8-PFOS	IS	68.4	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C2-PFDA	IS	75.2	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C2-8:2 FTS	IS	93.7	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
d3-MeFOSAA	IS	81.5	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C2-PFUnA	IS	72.9	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
d5-EtFOSAA	IS	81.8	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C2-PFDoA	IS	73.6	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1
13C2-PFTeDA	IS	82.5	50 - 150		B1J0089	20-Oct-21	0.250 L	29-Oct-21 01:03	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-2-C **PFAS Isotope Dilution Table B-15**

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:35

Laboratory Data

Lab Sample: 2110096-09
Date Received: 12-Oct-21 08:20
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	5.93	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFPeA	2706-90-3	9.35	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFBS	375-73-5	1.58	1.01	2.02	4.04	J	B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
4:2 FTS	757124-72-4	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFHxA	307-24-4	9.90	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFPeS	2706-91-4	3.15	1.01	2.02	4.04	J	B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
HFPO-DA	13252-13-6	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFHpA	375-85-9	6.11	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
ADONA	919005-14-4	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFHxS	355-46-4	66.1	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
6:2 FTS	27619-97-2	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFOA	335-67-1	19.0	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFHpS	375-92-8	8.11	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFNA	375-95-1	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFOSA	754-91-6	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFOS	1763-23-1	238	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
9Cl-PF3ONS	756426-58-1	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFDA	335-76-2	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
8:2 FTS	39108-34-4	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFNS	68259-12-1	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
MeFOSAA	2355-31-9	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
EtFOSAA	2991-50-6	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFUnA	2058-94-8	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFDS	335-77-3	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFDoA	307-55-1	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFTrDA	72629-94-8	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
PFTeDA	376-06-7	ND	1.01	2.02	4.04		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	73.3	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C3-PFPeA	IS	82.4	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C3-PFBS	IS	84.7	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C2-4:2 FTS	IS	108	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C2-PFHxA	IS	88.4	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C4-PFHpA	IS	90.8	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C3-PFHxS	IS	87.6	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C2-6:2 FTS	IS	95.4	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1

Sample ID: AOI-15-2-C

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:35

Laboratory Data

Lab Sample: 2110096-09
Date Received: 12-Oct-21 08:20
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	93.1	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C8-PFOSA	IS	58.2	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C2-PFOA	IS	87.4	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C8-PFOS	IS	73.9	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C2-PFDA	IS	79.6	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C2-8:2 FTS	IS	96.6	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
d3-MeFOSAA	IS	91.3	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C2-PFUnA	IS	95.4	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
d5-EtFOSAA	IS	73.0	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C2-PFDoA	IS	80.4	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1
13C2-PFTeDA	IS	73.6	50 - 150		B1J0089	20-Oct-21	0.248 L	29-Oct-21 01:45	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-2-B

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:46

Laboratory Data

Lab Sample: 2110096-10
Date Received: 12-Oct-21 08:20
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	1.52	1.00	2.01	4.01	J	B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFPeA	2706-90-3	1.43	1.00	2.01	4.01	J	B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFBS	375-73-5	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
4:2 FTS	757124-72-4	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFHxA	307-24-4	1.14	1.00	2.01	4.01	J, Q	B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFPeS	2706-91-4	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
HFPO-DA	13252-13-6	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFHpA	375-85-9	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
ADONA	919005-14-4	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFHxS	355-46-4	3.46	1.00	2.01	4.01	J, Q	B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
6:2 FTS	27619-97-2	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFOA	335-67-1	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFHpS	375-92-8	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFNA	375-95-1	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFOSA	754-91-6	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFOS	1763-23-1	2.91	1.00	2.01	4.01	J	B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
9Cl-PF3ONS	756426-58-1	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFDA	335-76-2	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
8:2 FTS	39108-34-4	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFNS	68259-12-1	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
MeFOSAA	2355-31-9	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
EtFOSAA	2991-50-6	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFUnA	2058-94-8	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFDS	335-77-3	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
11Cl-PF3OUdS	763051-92-9	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFDoA	307-55-1	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFTrDA	72629-94-8	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
PFTeDA	376-06-7	ND	1.00	2.01	4.01		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	90.5	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C3-PFPeA	IS	95.2	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C3-PFBS	IS	87.6	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C2-4:2 FTS	IS	128	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C2-PFHxA	IS	98.2	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C4-PFHpA	IS	95.8	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C3-PFHxS	IS	113	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C2-6:2 FTS	IS	102	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1

Sample ID: AOI-15-2-B

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 15:46

Laboratory Data

Lab Sample: 2110096-10
Date Received: 12-Oct-21 08:20
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	95.2	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C8-PFOSA	IS	68.6	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C2-PFOA	IS	87.9	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C8-PFOS	IS	81.1	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C2-PFDA	IS	89.9	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C2-8:2 FTS	IS	111	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
d3-MeFOSAA	IS	98.2	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C2-PFUnA	IS	85.1	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
d5-EtFOSAA	IS	97.1	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C2-PFDoA	IS	88.5	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1
13C2-PFTeDA	IS	69.9	50 - 150		B1J0089	20-Oct-21	0.249 L	29-Oct-21 01:56	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

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

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 14:30

Laboratory Data

Lab Sample: 2110096-11
Date Received: 12-Oct-21 08:20
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFPeA	2706-90-3	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFBS	375-73-5	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
4:2 FTS	757124-72-4	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFHxA	307-24-4	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFPeS	2706-91-4	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
HFPO-DA	13252-13-6	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFHpA	375-85-9	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
ADONA	919005-14-4	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFHxS	355-46-4	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
6:2 FTS	27619-97-2	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFOA	335-67-1	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFHpS	375-92-8	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFNA	375-95-1	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFOSA	754-91-6	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFOS	1763-23-1	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
9Cl-PF3ONS	756426-58-1	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFDA	335-76-2	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
8:2 FTS	39108-34-4	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFNS	68259-12-1	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
MeFOSAA	2355-31-9	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
EtFOSAA	2991-50-6	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFUnA	2058-94-8	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFDS	335-77-3	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
11Cl-PF3OUdS	763051-92-9	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFDoA	307-55-1	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFTrDA	72629-94-8	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
PFTeDA	376-06-7	ND	0.997	1.99	3.99		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	111	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C3-PFPeA	IS	85.6	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C3-PFBS	IS	93.6	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C2-4:2 FTS	IS	117	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C2-PFHxA	IS	94.7	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C4-PFHpA	IS	91.9	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C3-PFHxS	IS	104	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C2-6:2 FTS	IS	111	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1

Sample ID: Field Blank

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MICH-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 08-Oct-21 14:30

Laboratory Data

Lab Sample: 2110096-11
Date Received: 12-Oct-21 08:20
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	99.9	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C8-PFOSA	IS	62.7	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C2-PFOA	IS	84.3	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C8-PFOS	IS	71.1	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C2-PFDA	IS	80.4	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C2-8:2 FTS	IS	102	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
d3-MeFOSAA	IS	82.6	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C2-PFUnA	IS	83.6	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
d5-EtFOSAA	IS	80.5	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C2-PFDoA	IS	87.9	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1
13C2-PFTeDA	IS	82.8	50 - 150		B1J0089	20-Oct-21	0.251 L	29-Oct-21 02:06	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

DATA QUALIFIERS & ABBREVIATIONS

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

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

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-26
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1980678
New Hampshire Environmental Accreditation Program	207720
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-016
Pennsylvania Department of Environmental Protection	017
Texas Commission on Environmental Quality	T104704189-21-12
Vermont Department of Health	VT-4042
Virginia Department of General Services	10769
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p- Dioxins & Polychlorinated Dibenzofurans	EPA 23
Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613/1613B
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537.1
Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry	EPA 533
Perfluorooctanesulonate (PFOS) and Perfluorooctanoate (PFOA) - Method for Unfiltered Samples Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 2110096 Temp: 4.? °C
Storage ID: R-13 WR-2 Storage Secured: Yes ☒ No ☐

Project ID: MICH-ANG-CAMP GRAYLING PO#: 1749 Sampler: ADAM WEEKS (name)

TAT (check one): Standard: ☒ 21 days Rush (surcharge may apply) ☐ 14 days ☐ 7 days Specify: ______

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
ADAM WEEKS [signature]	10/11/21	1100	[signature]	10/12/21	08:20

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: ______

Method of Shipment: ______

Tracking No.: ______

Add Analysis(es) Requested

Sample ID	Date	Time	Location/ Sample Description	Container(s) Quantity	Container(s) Type	Matrix	PFOA/PFOS	UCMR3 PFAS List:6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFAS by Isotope Dilution: PFOA/PFOS	UCMR3 PFAS List:6	537.1 List of 14	537.1 List of 18	Comments
A01-15-4-A	10/8/21	1509		2	P	EF					X					MI LIST OF 28 ANALYTES (ATT.)
A01-14-3-A	↓	1513		↓	↓	↓					↓					↓
A01-13-5-A	↓	1505		↓	↓	↓					↓					↓
A01-14-1-A	↓	1518		↓	↓	↓					↓					↓
A01-14-6-A	↓	1522		↓	↓	↓					↓					↓
A01-14-6-B	↓	1525		↓	↓	↓					↓					↓
A01-14-6-C	↓	1529		↓	↓	↓					↓					↓
~~A01-15-1-A~~		~~1541~~														
~~A01-15-1-B~~		~~1538~~														
A01-15-2-D		1531		2	P	EF					X					MI LIST OF 28 ANALYTES (ATT.)

Special Instructions/Comments:
ALSO EMAIL RESULTS TO: ADAM.WEEKS@WOODPLC.COM
HELEN.ROUGHT@WOODPLC.COM

SEND DOCUMENTATION AND RESULTS TO:
Name: SCOTT ROUGHT @
Company: WOOD
Address: 41 HUGHES DR
City: TRAVERSE CITY MI 49696
Phone: 231-463-8363
Email: SCOTT.ROUGHT@WOODPLC.COM

Container Types: P= HDPE, PJ= HDPE Jar, PY= Polypropylene, O = Other: ______

Bottle Preservation Type: TZ = Trizma: ______

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other ______

ID: LR-537COC Rev. No. 1 Rev. Date: 8/16/2019 Page: 2 of 2

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 2110096 Temp: 4.4 °C
Storage ID: R-17, UR2 Storage Secured: Yes ☑ No ☐

Project ID: MICH-ANG-CAMP GRAYLING PO#: 1749 Sampler: ADAM WEEKS (name)

TAT (check one): Standard: ☒ 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify: ____

ADAM WEEKS	10/11/21	1100	Karen Antic	10/12/21	08:30
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: ____

Method of Shipment: ____

Tracking No.: ____

Add Analysis(es) Requested

Sample ID	Date	Time	Location/ Sample Description	Container(s) Quantity	Type	Matrix	PFAS by Isotope Dilution: PFOA/ PFOS	UCMR3 PFAS List:6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	EPA Method 537 (DW only): PFOA/ PFOS	UCMR3 PFAS List:6	537.1 List of 14	537.1 List of 18	Comments
A01-15-2-C	10/8/21	1535		2	P	EF					X					MI LIST OF 28 ANALYTES (ATT.)
A01-15-2-B	10/8/21	1546		2	↓	↓					↓					↓
FIELD BLANK	10/8/21	1430		2	↓	↓					↓					
BD-1																

Special Instructions/Comments:
ALSO EMAIL RESULTS TO: ADAM.WEEKS@WOODPLC.COM
HELEN.ROUGHT@WOODPLC.COM

SEND DOCUMENTATION AND RESULTS TO:

Name: SCOTT ROUGHT
Company: WOOD
Address: 41 HUGHES DR.
City: TRAVERSE CITY MI 49696
Phone: 231-463-8353
Email: SCOTT.ROUGHT@WOODPLC.COM

Container Types: P= HDPE, PJ= HDPE Jar, PY= Polypropylene, O = Other: ____

Bottle Preservation Type: TZ = Trizma: ____

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other: ____

MI List of 28 Analytes

2110096

Compound	Acronym	CAS Number
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorobutane sulfonate	PFBS	375-73-5
4:2 Fluorotelomer sulfonate	4:2 FTS	757124-72-4
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
Perfluoroheptanoic acid	PFHpA	375-85-9
4,8-Dioxa-3H_perfluorononaoic acid	ADONA	919005-14-4
Perfluorohexane sulfonate	PFHxS	355-46-4
6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
Perfluoro-n-Octanoic acid	PFOA	335-67-1
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorononanoic acid	PFNA	375-95-1
Perfluorooctanesulfonamide	PFOSA	754-91-6
Perfluorooctane sulfonate	PFOS	1763-23-1
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9C1-PF3ONS	756426-58-1
Perfluorodecanoic acid	PFDA	335-76-2
8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorononanesulfonic acid	PFNS	68259-12-1
2-(N-Methyl-perfluorooctane sulfonamido) acetic acid	MeFOSAA	2355-31-9
2-(N-Eethyl-perfluorooctane sulfonamido) acetic acid	EtFOSAA	2991-50-6
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorodecane sulfonic acid	PFDS	335-77-3
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11C1-PF3OUdS	763051-92-9
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2110096 TAT Std

Samples Arrival:	**Date/Time** 10/12/21 ~~08:50~~ 08:20		**Initials:** KA		**Location:** WR-2 **Shelf/Rack:** N1D			
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other	
Preservation:	(Ice)	Blue Ice		Techni Ice	Dry Ice	None		
Temp °C: 4.9 **(uncorrected)** / **Temp °C:** 4.8 **(corrected)**		**Probe used:** Y / (N)			**Thermometer ID:** IR-3			

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill — Trk # 7749 3494 4501	✓		
Shipping Documentation Present?	✓		
Shipping Container: (Vista) / Client / (Retain) / Return / Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** 10/12/21 08:57	**Initials:** KA	**Location:** R-13, WR-2 **Shelf/Rack:** A-3, E-7

	YES	NO	NA
COC Anomaly/Sample Acceptance Form completed?	✓		

Comments:

ID.: LR – SLC *Rev No.:* 6 *Rev Date:* 07/16/2020 *Page:* 1 of 1

CoC/Label Reconciliation Report WO# 2110096

LabNumber	CoC Sample ID	SampleAlias	Sample Date/Time	Container	BaseMatrix	Sample Comments
2110096-01	A AOI-15-4-A		08-Oct-21 15:09	HDPE Bottle, 250 mL	Aqueous	
2110096-01	B AOI-15-4-A		08-Oct-21 15:09	HDPE Bottle, 250 mL	Aqueous	
2110096-02	A AOI-14-3-A		08-Oct-21 15:13	HDPE Bottle, 250 mL	Aqueous	
2110096-02	B AOI-14-3-A		08-Oct-21 15:13	HDPE Bottle, 250 mL	Aqueous	
2110096-03	A AOI-15-5-A		08-Oct-21 15:05	HDPE Bottle, 250 mL	Aqueous	
2110096-03	B AOI-15-5-A		08-Oct-21 15:05	HDPE Bottle, 250 mL	Aqueous	
2110096-04	A AOI-14-1-A		08-Oct-21 15:18	HDPE Bottle, 250 mL	Aqueous	
2110096-04	B AOI-14-1-A		08-Oct-21 15:18	HDPE Bottle, 250 mL	Aqueous	
2110096-05	A AOI-14-6-A		08-Oct-21 15:22	HDPE Bottle, 250 mL	Aqueous	
2110096-05	B AOI-14-6-A		08-Oct-21 15:22	HDPE Bottle, 250 mL	Aqueous	
2110096-06	A AOI-14-6-B		08-Oct-21 15:25	HDPE Bottle, 250 mL	Aqueous	
2110096-06	B AOI-14-6-B		08-Oct-21 15:25	HDPE Bottle, 250 mL	Aqueous	
2110096-07	A AOI-14-6-C		08-Oct-21 15:29	HDPE Bottle, 250 mL	Aqueous	
2110096-07	B AOI-14-6-C		08-Oct-21 15:29	HDPE Bottle, 250 mL	Aqueous	
2110096-08	A AOI-15-2-D		08-Oct-21 15:31	HDPE Bottle, 250 mL	Aqueous	
2110096-08	B AOI-15-2-D		08-Oct-21 15:31	HDPE Bottle, 250 mL	Aqueous	
2110096-09	A AOI-15-2-C		08-Oct-21 15:35	HDPE Bottle, 250 mL	Aqueous	
2110096-09	B AOI-15-2-C		08-Oct-21 15:35	HDPE Bottle, 250 mL	Aqueous	
2110096-10	A AOI-15-2-B		08-Oct-21 15:46	HDPE Bottle, 250 mL	Aqueous	
2110096-10	B AOI-15-2-B		08-Oct-21 15:46	HDPE Bottle, 250 mL	Aqueous	
2110096-11	A Field Blank		08-Oct-21 14:30	HDPE Bottle, 250 mL	Aqueous	
2110096-11	B Field Blank		08-Oct-21 14:30	HDPE Bottle, 250 mL	Aqueous	
2110096-12	A BD-1		08-Oct-21 00:00	HDPE Bottle, 250 mL	Aqueous	
2110096-12	B BD-1		08-Oct-21 00:00	HDPE Bottle, 250 mL	Aqueous	

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

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

Comments: (A) No time listed on COC or Sample Label, 00:00
(B) No Date Listed on COC
(C) Date pulled from Sample Label
10/1/21

Preservation Documented: Na2S2O3 Trizma NH4CH3CO2 (None) Other

Verifed by/Date: STH 10/12/21

Vista Analytical Laboratory

ANOMALY FORM

Vista Work Order 2110096

Initial/Date		The following checked issues were noted during sample receipt and login:
_____	☐	**1. The samples were received out of temperature at (WI-PHT):** _____ Was Ice present: Yes No Melted Blue Ice
_____	☐	2. The Chain-of-Custody (CoC) was not relinquished properly.
_____	☐	3. The CoC did not include collection time(s). 00:00 will be used unless notified otherwise.
_____	☐	4. The sample(s) did not include a sample collection time. All or Sample Name: _____
_____	☐	5. A sample ID discrepancy was found. See the Reconciliation report. The CoC Sample ID will be used unless notified otherwise.
_____	☐	6. A sample date and/or time discrepancy was found. See the Reconciliation report. The CoC Sample date/time will be used unless notified otherwise.
KS 10/13/21	☑	**7. The CoC did not include a sample matrix. The following sample matrix will be used:** Aqueous.
_____	☐	**8. Insufficent volume received for analysis. All or Sample Name:** _____
_____	☐	9. The backup bottle was received broken. Sample Name: _____
_____	☐	**10. CoC not received, illegible or destroyed.**
_____	☐	**11. The sample(s) were received out of holding time. All or Sample Name:** _____
_____	☐	**12. The CoC did not include an analysis. All or Sample Name:** _____
_____	☐	**13. Sample(s) received without collection date. All or Sample Name:** _____
_____	☐	**14. Sample(s) not received. All or Sample Name:** _____
_____	☐	**15. Sample(s) received broken. All or Sample Name:** _____
_____	☐	**16. An incorrect container-type was used. All or Sample Name:** _____
_____	☐	17. The Field Reagent Blank (FRB) preservative was from a different lot than the field samples. Will proceed with analysis and narrate unless notified otherwise.
_____	☐	18. Other:

Bolded items require sign-off

Client Contacted: Scott Rought

Date of Contact: 10/13/2021

Vista Client Manager: KJR

Resolution: Okay to analyze sample BD-1, sample will be reported as aqueous, unless otherwise requested.

ATTACHMENT D

ANALYTICAL LABORATORY REPORT
AUGUST 4, 2021 DRY SAMPLE EVENT

August 30, 2021

Vista Work Order No. 2108035

Mr. Scott Rought
Wood Environment & Infrastructure
41 Hughest Drive
Traverse City, MI 49696

Dear Mr. Rought,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on August 05, 2021 under your Project Name 'MI-ANG-CAMP GRAYLING'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at jfox@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Jamie Fox
Laboratory Director

Vista Work Order No. 2108035
Case Narrative

Sample Condition on Receipt:

Four effluent samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements.

Analytical Notes:

PFAS Isotope Dilution/LC-MSMS Method Compliant with Table B-15 of DoD QSM 5.3 (Aqueous)

The samples were extracted and analyzed for a selected list of PFAS using Isotope Dilution and LC-MS/MS compliant with Table B-15 of DoD QSM 5.3. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

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

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the LOQ. The OPR recoveries were within the method acceptance criteria. A Laboratory Control Sample Duplicate (LCSD) was not analyzed with this preparation batch.

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

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
2108035-01	FIELD BLANK	PFAS Isotope Dilution Table B-15	13C8-PFOSA	H	44.8
B1H0029-BLK1	B1H0029-BLK1	PFAS Isotope Dilution Table B-15	13C8-PFOSA	H	43.8
B1H0029-BS1	B1H0029-BS1	PFAS Isotope Dilution Table B-15	13C8-PFOSA	H	37.2

H = Recovery was outside laboratory acceptance criteria.

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2108035-01	FIELD BLANK	04-Aug-21 11:54	05-Aug-21 07:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2108035-02	AOI-15-2-B	04-Aug-21 12:05	05-Aug-21 07:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2108035-03	AOI-15-4-A	04-Aug-21 12:30	05-Aug-21 07:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2108035-04	BD-1	04-Aug-21 00:00	05-Aug-21 07:35	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

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

Client Data

Name: Wood Environment & Infrastructure Matrix: Aqueous

Project: MI-ANG-CAMP GRAYLING

Laboratory Data

Lab Sample: B1H0029-BLK1 Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFPeA	2706-90-3	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFBS	375-73-5	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
4:2 FTS	757124-72-4	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFHxA	307-24-4	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFPeS	2706-91-4	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
HFPO-DA	13252-13-6	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFHpA	375-85-9	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
ADONA	919005-14-4	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFHxS	355-46-4	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
6:2 FTS	27619-97-2	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFOA	335-67-1	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFHpS	375-92-8	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFNA	375-95-1	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFOSA	754-91-6	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFOS	1763-23-1	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
9Cl-PF3ONS	756426-58-1	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFDA	335-76-2	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
8:2 FTS	39108-34-4	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFNS	68259-12-1	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
MeFOSAA	2355-31-9	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
EtFOSAA	2991-50-6	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFUnA	2058-94-8	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFDS	335-77-3	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
11Cl-PF3OUdS	763051-92-9	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFDoA	307-55-1	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFTrDA	72629-94-8	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
PFTeDA	376-06-7	ND	1.00	2.00	4.00		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	115	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C3-PFPeA	IS	90.7	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C3-PFBS	IS	101	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C2-4:2 FTS	IS	82.8	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C2-PFHxA	IS	89.3	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C4-PFHpA	IS	90.8	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C3-PFHxS	IS	91.7	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C2-6:2 FTS	IS	87.5	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C5-PFNA	IS	95.4	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1

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

Client Data

Name: Wood Environment & Infrastructure
Project: MI-ANG-CAMP GRAYLING
Matrix: Aqueous

Laboratory Data

Lab Sample: B1H0029-BLK1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOSA	IS	43.8	50 - 150	H	B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C2-PFOA	IS	89.1	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C8-PFOS	IS	95.9	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C2-PFDA	IS	89.8	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C2-8:2 FTS	IS	84.9	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
d3-MeFOSAA	IS	72.4	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C2-PFUnA	IS	68.2	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
d5-EtFOSAA	IS	64.6	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C2-PFDoA	IS	70.4	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1
13C2-PFTeDA	IS	74.1	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:36	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

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

Client Data

Name: Wood Environment & Infrastructure
Project: MI-ANG-CAMP GRAYLING
Matrix: Aqueous

Laboratory Data

Lab Sample: B1H0029-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	39.9	40.0	99.7	73 - 129		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFPeA	2706-90-3	44.2	40.0	111	72 - 129		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFBS	375-73-5	38.2	40.0	95.5	72 - 130		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
4:2 FTS	757124-72-4	36.1	40.0	90.3	63 - 143		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFHxA	307-24-4	41.1	40.0	103	72 - 129		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFPeS	2706-91-4	43.0	40.0	107	71 - 127		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
HFPO-DA	13252-13-6	39.9	40.0	99.7	65 - 135		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFHpA	375-85-9	42.3	40.0	106	72 - 130		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
ADONA	919005-14-4	42.4	40.0	106	65 - 135		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFHxS	355-46-4	39.5	40.0	98.7	68 - 131		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
6:2 FTS	27619-97-2	53.1	40.0	133	64 - 140		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFOA	335-67-1	45.6	40.0	114	71 - 133		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFHpS	375-92-8	32.8	40.0	82.1	69 - 134		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFNA	375-95-1	39.8	40.0	99.4	69 - 130		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFOSA	754-91-6	47.2	40.0	118	67 - 137		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFOS	1763-23-1	29.9	40.0	74.8	65 - 140		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
9Cl-PF3ONS	756426-58-1	35.5	40.0	88.8	65 - 135		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFDA	335-76-2	42.7	40.0	107	71 - 129		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
8:2 FTS	39108-34-4	41.5	40.0	104	67 - 138		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFNS	68259-12-1	38.8	40.0	96.9	69 - 127		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
MeFOSAA	2355-31-9	35.7	40.0	89.2	65 - 136		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
EtFOSAA	2991-50-6	36.9	40.0	92.2	61 - 135		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFUnA	2058-94-8	46.2	40.0	116	69 - 133		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFDS	335-77-3	34.8	40.0	87.0	53 - 142		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
11Cl-PF3OUdS	763051-92-9	48.4	40.0	121	65 - 135		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFDoA	307-55-1	38.6	40.0	96.6	72 - 134		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFTrDA	72629-94-8	44.5	40.0	111	65 - 144		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
PFTeDA	376-06-7	45.1	40.0	113	71 - 132		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	111	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C3-PFPeA	IS	84.0	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C3-PFBS	IS	90.3	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C2-4:2 FTS	IS	87.2	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C2-PFHxA	IS	84.7	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C4-PFHpA	IS	88.8	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1

Sample ID: OPR

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MI-ANG-CAMP GRAYLING
Matrix: Aqueous

Laboratory Data

Lab Sample: B1H0029-BS1
Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFHxS	IS	85.6	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C2-6:2 FTS	IS	75.6	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C5-PFNA	IS	88.7	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C8-PFOSA	IS	37.2	50 - 150	H	B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C2-PFOA	IS	80.9	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C8-PFOS	IS	89.0	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C2-PFDA	IS	87.1	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C2-8:2 FTS	IS	82.5	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
d3-MeFOSAA	IS	67.9	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C2-PFUnA	IS	66.2	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
d5-EtFOSAA	IS	69.9	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C2-PFDoA	IS	67.6	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1
13C2-PFTeDA	IS	71.6	50 - 150		B1H0029	16-Aug-21	0.250 L	19-Aug-21 20:57	1

Sample ID: FIELD BLANK

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MI-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 04-Aug-21 11:54

Laboratory Data

Lab Sample: 2108035-01
Date Received: 05-Aug-21 07:35
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFPeA	2706-90-3	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFBS	375-73-5	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
4:2 FTS	757124-72-4	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFHxA	307-24-4	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFPeS	2706-91-4	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
HFPO-DA	13252-13-6	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFHpA	375-85-9	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
ADONA	919005-14-4	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFHxS	355-46-4	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
6:2 FTS	27619-97-2	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFOA	335-67-1	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFHpS	375-92-8	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFNA	375-95-1	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFOSA	754-91-6	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFOS	1763-23-1	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
9Cl-PF3ONS	756426-58-1	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFDA	335-76-2	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
8:2 FTS	39108-34-4	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFNS	68259-12-1	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
MeFOSAA	2355-31-9	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
EtFOSAA	2991-50-6	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFUnA	2058-94-8	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFDS	335-77-3	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
11Cl-PF3OUdS	763051-92-9	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFDoA	307-55-1	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFTrDA	72629-94-8	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
PFTeDA	376-06-7	ND	0.965	1.93	3.86		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	114	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C3-PFPeA	IS	91.4	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C3-PFBS	IS	94.5	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C2-4:2 FTS	IS	85.7	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C2-PFHxA	IS	85.4	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C4-PFHpA	IS	90.4	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C3-PFHxS	IS	93.3	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C2-6:2 FTS	IS	87.0	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1

Sample ID: FIELD BLANK

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MI-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 04-Aug-21 11:54

Laboratory Data

Lab Sample: 2108035-01
Date Received: 05-Aug-21 07:35
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	90.0	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C8-PFOSA	IS	44.8	50 - 150	H	B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C2-PFOA	IS	88.7	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C8-PFOS	IS	93.2	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C2-PFDA	IS	87.9	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C2-8:2 FTS	IS	82.4	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
d3-MeFOSAA	IS	72.7	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C2-PFUnA	IS	70.2	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
d5-EtFOSAA	IS	61.8	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C2-PFDoA	IS	74.9	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1
13C2-PFTeDA	IS	65.0	50 - 150		B1H0029	16-Aug-21	0.259 L	19-Aug-21 23:25	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-2-B

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MI-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 04-Aug-21 12:05

Laboratory Data

Lab Sample: 2108035-02
Date Received: 05-Aug-21 07:35
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFPeA	2706-90-3	1.49	1.01	2.02	4.05	J	B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFBS	375-73-5	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
4:2 FTS	757124-72-4	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFHxA	307-24-4	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFPeS	2706-91-4	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
HFPO-DA	13252-13-6	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFHpA	375-85-9	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
ADONA	919005-14-4	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFHxS	355-46-4	4.00	1.01	2.02	4.05	J	B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
6:2 FTS	27619-97-2	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFOA	335-67-1	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFHpS	375-92-8	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFNA	375-95-1	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFOSA	754-91-6	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFOS	1763-23-1	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
9Cl-PF3ONS	756426-58-1	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFDA	335-76-2	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
8:2 FTS	39108-34-4	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFNS	68259-12-1	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
MeFOSAA	2355-31-9	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
EtFOSAA	2991-50-6	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFUnA	2058-94-8	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFDS	335-77-3	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFDoA	307-55-1	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFTrDA	72629-94-8	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
PFTeDA	376-06-7	ND	1.01	2.02	4.05		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	87.6	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C3-PFPeA	IS	86.3	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C3-PFBS	IS	94.9	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C2-4:2 FTS	IS	73.5	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C2-PFHxA	IS	89.9	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C4-PFHpA	IS	93.5	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C3-PFHxS	IS	93.2	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C2-6:2 FTS	IS	91.3	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1

Sample ID: AOI-15-2-B

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MI-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 04-Aug-21 12:05

Laboratory Data

Lab Sample: 2108035-02
Date Received: 05-Aug-21 07:35
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	89.8	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C8-PFOSA	IS	77.0	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C2-PFOA	IS	86.1	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C8-PFOS	IS	91.1	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C2-PFDA	IS	85.9	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C2-8:2 FTS	IS	76.8	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
d3-MeFOSAA	IS	78.7	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C2-PFUnA	IS	73.4	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
d5-EtFOSAA	IS	73.4	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C2-PFDoA	IS	75.8	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1
13C2-PFTeDA	IS	66.4	50 - 150		B1H0029	16-Aug-21	0.247 L	19-Aug-21 23:35	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: AOI-15-4-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MI-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 04-Aug-21 12:30

Laboratory Data

Lab Sample: 2108035-03
Date Received: 05-Aug-21 07:35
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	1.47	1.00	2.01	4.01	J	B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFPeA	2706-90-3	2.56	1.00	2.01	4.01	J	B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFBS	375-73-5	1.74	1.00	2.01	4.01	J, Q	B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
4:2 FTS	757124-72-4	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFHxA	307-24-4	2.18	1.00	2.01	4.01	J	B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFPeS	2706-91-4	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
HFPO-DA	13252-13-6	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFHpA	375-85-9	1.11	1.00	2.01	4.01	J, Q	B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
ADONA	919005-14-4	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFHxS	355-46-4	4.83	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
6:2 FTS	27619-97-2	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFOA	335-67-1	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFHpS	375-92-8	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFNA	375-95-1	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFOSA	754-91-6	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFOS	1763-23-1	3.26	1.00	2.01	4.01	J	B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
9Cl-PF3ONS	756426-58-1	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFDA	335-76-2	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
8:2 FTS	39108-34-4	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFNS	68259-12-1	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
MeFOSAA	2355-31-9	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
EtFOSAA	2991-50-6	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFUnA	2058-94-8	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFDS	335-77-3	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
11Cl-PF3OUdS	763051-92-9	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFDoA	307-55-1	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFTrDA	72629-94-8	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
PFTeDA	376-06-7	ND	1.00	2.01	4.01		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	91.1	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C3-PFPeA	IS	87.9	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C3-PFBS	IS	94.6	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C2-4:2 FTS	IS	80.5	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C2-PFHxA	IS	82.9	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C4-PFHpA	IS	83.2	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C3-PFHxS	IS	88.5	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C2-6:2 FTS	IS	83.9	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1

Sample ID: AOI-15-4-A

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MI-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 04-Aug-21 12:30

Laboratory Data

Lab Sample: 2108035-03
Date Received: 05-Aug-21 07:35
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	85.2	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C8-PFOSA	IS	68.9	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C2-PFOA	IS	78.6	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C8-PFOS	IS	85.2	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C2-PFDA	IS	83.1	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C2-8:2 FTS	IS	83.1	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
d3-MeFOSAA	IS	76.0	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C2-PFUnA	IS	68.9	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
d5-EtFOSAA	IS	71.6	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C2-PFDoA	IS	69.2	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1
13C2-PFTeDA	IS	70.8	50 - 150		B1H0029	16-Aug-21	0.249 L	19-Aug-21 23:46	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: BD-1

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MI-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 04-Aug-21 00:00

Laboratory Data

Lab Sample: 2108035-04
Date Received: 05-Aug-21 07:35
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFPeA	2706-90-3	1.35	0.969	1.94	3.88	J	B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFBS	375-73-5	0.981	0.969	1.94	3.88	J	B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
4:2 FTS	757124-72-4	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFHxA	307-24-4	1.10	0.969	1.94	3.88	J	B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFPeS	2706-91-4	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
HFPO-DA	13252-13-6	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFHpA	375-85-9	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
ADONA	919005-14-4	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFHxS	355-46-4	3.23	0.969	1.94	3.88	J	B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
6:2 FTS	27619-97-2	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFOA	335-67-1	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFHpS	375-92-8	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFNA	375-95-1	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFOSA	754-91-6	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFOS	1763-23-1	1.68	0.969	1.94	3.88	J	B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
9Cl-PF3ONS	756426-58-1	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFDA	335-76-2	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
8:2 FTS	39108-34-4	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFNS	68259-12-1	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
MeFOSAA	2355-31-9	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
EtFOSAA	2991-50-6	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFUnA	2058-94-8	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFDS	335-77-3	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
11Cl-PF3OUdS	763051-92-9	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFDoA	307-55-1	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFTrDA	72629-94-8	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
PFTeDA	376-06-7	ND	0.969	1.94	3.88		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	86.7	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C3-PFPeA	IS	92.0	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C3-PFBS	IS	98.0	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C2-4:2 FTS	IS	81.5	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C2-PFHxA	IS	85.8	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C4-PFHpA	IS	89.3	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C3-PFHxS	IS	93.8	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C2-6:2 FTS	IS	78.1	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1

Sample ID: BD-1

PFAS Isotope Dilution Table B-15

Client Data

Name: Wood Environment & Infrastructure
Project: MI-ANG-CAMP GRAYLING
Matrix: Effluent
Date Collected: 04-Aug-21 00:00

Laboratory Data

Lab Sample: 2108035-04
Date Received: 05-Aug-21 07:35
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	92.5	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C8-PFOSA	IS	66.8	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C2-PFOA	IS	84.3	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C8-PFOS	IS	88.2	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C2-PFDA	IS	80.7	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C2-8:2 FTS	IS	87.3	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
d3-MeFOSAA	IS	79.5	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C2-PFUnA	IS	71.6	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
d5-EtFOSAA	IS	78.8	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C2-PFDoA	IS	73.3	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1
13C2-PFTeDA	IS	67.0	50 - 150		B1H0029	16-Aug-21	0.258 L	19-Aug-21 23:56	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

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

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

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-26
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1980678
New Hampshire Environmental Accreditation Program	207720
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-016
Pennsylvania Department of Environmental Protection	017
Texas Commission on Environmental Quality	T104704189-21-12
Vermont Department of Health	VT-4042
Virginia Department of General Services	10769
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p- Dioxins & Polychlorinated Dibenzofurans	EPA 23
Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613/1613B
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537.1
Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry	EPA 533
Perfluorooctanesulonate (PFOS) and Perfluorooctanoate (PFOA) - Method for Unfiltered Samples Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only	
Work Order #: 2108035	Temp: 4.2 °C
Storage ID: R-13 w R-2	Storage Secured: Yes ☑ No ☐

Project ID: MI-ANG-CAMP GRAYLING PO#: 1749 Sampler: ADAM WEEKS (name)

TAT (check one): Standard: ☒ 21 days Rush (surcharge may apply) ☐ 14 days ☐ 7 days Specify: ______

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
ADAM WEEKS [signature]	08/04/21	1500	Karen Y. Aust [signature]	08/05/21	07:35

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: ______

Method of Shipment: FED EX

Tracking No.: ______

Add Analysis(es) Requested — PFAS by Isotope Dilution (circled); EPA Method 537 (DW only)

Sample ID	Date	Time	Location/ Sample Description	Container(s) Quantity	Container(s) Type	Matrix	PFOA/ PFOS	UCMR3 PFAS List:6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFOA/ PFOS	UCMR3 PFAS List:6	537.1 List of 14	537.1 List of 18	Comments
FIELD BLANK	8/4/21	1154		2	P	EF					X (ATTACHED)					MI LIST OF 28 ANALYTES (ATT.)
AOI-15-2-B	↓	1205		↓	↓	↓					↓					
AOI-15-4-A	↓	1230		↓	↓	↓					↓					
BD-1	↓	—		↓	↓	↓					↓					

Special Instructions/Comment

ALSO SEND RESULTS TO: HELEN.ROUGHT@WOODPLC.COM
ADAM.WEEKS@WOODPLC.COM

SEND DOCUMENTATION AND RESULTS TO:

Name: SCOTT ROUGHT
Company: WOOD
Address: 41 HUGHES DR.
City: TRAVERSE CITY State: MI Zip: 49696
Phone: 231-463-8353
Email: SCOTT.ROUGHT@WOODPLC.COM

Container Types: P = HDPE, PJ = HDPE Jar
PY = Polypropylene, O= Other ______

Bottle Preservation Type:
TZ= Trizma: ______

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other ______

MI List of 28 Analytes

2108035 4.7°C

Compound	Acronym	CAS Number
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorobutane sulfonate	PFBS	375-73-5
4:2 Fluorotelomer sulfonate	4:2 FTS	757124-72-4
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
Perfluoroheptanoic acid	PFHpA	375-85-9
4,8-Dioxa-3H_perfluorononaoic acid	ADONA	919005-14-4
Perfluorohexane sulfonate	PFHxS	355-46-4
6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
Perfluoro-n-Octanoic acid	PFOA	335-67-1
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorononanoic acid	PFNA	375-95-1
Perfluorooctanesulfonamide	PFOSA	754-91-6
Perfluorooctane sulfonate	PFOS	1763-23-1
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9C1-PF3ONS	756426-58-1
Perfluorodecanoic acid	PFDA	335-76-2
8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorononanesulfonic acid	PFNS	68259-12-1
2-(N-Methyl-perfluorooctane sulfonamido) acetic acid	MeFOSAA	2355-31-9
2-(N-Eethyl-perfluorooctane sulfonamido) acetic acid	EtFOSAA	2991-50-6
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorodecane sulfonic acid	PFDS	335-77-3
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11C1-PF3OUdS	763051-92-9
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2108035 TAT Std

Samples Arrival:	**Date/Time** 08/05/21 07:35		**Initials:** VK		**Location:** WR-2 **Shelf/Rack:** N,2		
Delivered By:	FedEx	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	Ice		Blue Ice		Techni Ice	Dry Ice	None
Temp °C: 4.8 (uncorrected) **Temp °C:** 4.7 (corrected)			**Probe used: Y / N**		**Thermometer ID:** IR-4		

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill ✓ Trk # 7744 4705 1870	✓		
Shipping Documentation Present?	✓		
Shipping Container: Vista / Client / Retain / Return / Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** 08/05/21 08:27	**Initials:** VK	**Location:** R-13, WR-2 **Shelf/Rack:** A-3, F-4	
COC Anomaly/Sample Acceptance Form completed?			✓	✓

Comments:

CoC/Label Reconciliation Report WO# 2108035

LabNumber	CoC Sample ID		SampleAlias	Sample Date/Time		Container	BaseMatrix	Sample Comments
2108035-01	A FIELD BLANK	☑		04-Aug-21 11:54	☑	HDPE Bottle, 250 mL	Aqueous	
2108035-01	B FIELD BLANK	☑		04-Aug-21 11:54	☑	HDPE Bottle, 250 mL	Aqueous	
2108035-02	A AOI-15-2-B	☑		04-Aug-21 12:05	☑	HDPE Bottle, 250 mL	Aqueous	
2108035-02	B AOI-15-2-B	☑		04-Aug-21 12:05	☑	HDPE Bottle, 250 mL	Aqueous	
2108035-03	A AOI-15-4-A	☑		04-Aug-21 12:30	☑	HDPE Bottle, 250 mL	Aqueous	
2108035-03	B AOI-15-4-A	☑		04-Aug-21 12:30	☑	HDPE Bottle, 250 mL	Aqueous	
2108035-04	A BD-1	☑		04-Aug-21 00:00	☐ (A)	HDPE Bottle, 250 mL	Aqueous	
2108035-04	B BD-1	☑		04-Aug-21 00:00	☐	HDPE Bottle, 250 mL	Aqueous	

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

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

Comments: (A) No collection time listed on COC or Sample Label used 00:00

Preservation Documented: Na2S2O3 Trizma NH4CH3CO2 None (ALL) Other

Verifed by/Date: VM 08/5/21