

Addendum No. 1

Evaluation of Port Huron Wastewater Treatment Plant Biosolids Land Application Fort Gratiot Agricultural Field Parcel ID 74-20-019-1007-01

1. Introduction

This document serves as an addendum to the Technical Memorandum titled [Evaluation of Port Huron WWTP Biosolids Land Application Fort Gratiot Agricultural Field Parcel ID 74-20-019-1007-01](#). The purpose of this investigation was to track the concentrations of per- and polyfluoroalkyl substances (PFAS), at land application sites, including nearby surface waters, in Eastern St Clair County, which may have received historical (i.e., 1980s) land applications of industrially impacted biosolids containing high concentrations of PFAS from the Port Huron Wastewater Treatment Plant (WWTP). This document summarizes additional investigations by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Water Resources Division (WRD) at a second agricultural field in Fort Gratiot, Michigan, consisting of parcel IDs 74-20-018-1001-000, 74-15-013-3002-00, and 74-15-013-2002-00 (Agricultural Field-1), and of surface waters throughout portions of Eastern St Clair County in April 2023. Incremental soil methodology (ISM), surface water, and tile drain sampling were conducted on April 10-11, 2023.

2. Background

The April 2023 sampling event, conducted by EGLE WRD, was performed in accordance with applicable EGLE and Interstate Technology and Regulatory Council (ITRC) guidance documents, including the Eastern St. Clair County Area of Interest PFAS Investigation April 2023 – Sampling and Analysis Plan (SAP) and the Statewide PFAS Evaluation of WWTP and Land-Applied Biosolids Agricultural Fields Quality Assurance Project Plan (QAPP), previously developed in 2018 and recently revised in March 2021 (EGLE, 2023, 2022b, 2021c, 2019a, 2018a, 2018b, 2018c; ITRC 2020). The United States Environmental Protection Agency (USEPA) has classified PFAS as emerging contaminants that EGLE regulates under Part 201, Environmental Remediation, and Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and their respective administrative rules, specifically Rule 299.44-299.50 (Generic Cleanup Criteria) and Rule 323.1057 (Rule 57) (Toxic Substances) of the Michigan Administrative Code. PFAS are a complex family of more than 9,000 human-made fluorinated organic chemicals. Due to their unique chemical properties, PFAS have been used in many industries and consumer products since the late 1950s.

The city of Port Huron began sampling effluent from the Port Huron WWTP in June 2018 as part of the Industrial Pretreatment Program (IPP) PFAS Initiative. This sampling event identified elevated concentrations of perfluorooctanesulfonic acid (PFOS) in the WWTP effluent. Through the Initiative, they identified a few industrial sources of PFAS to the sanitary sewer. Industrial

sources included two landfills; one decorative chrome metal finisher; and two paper manufacturers. EGLE sampled the influent, effluent, and biosolids from the WWTP on November 15, 2018, as part of a statewide study, and confirmed the elevated concentrations of PFOS in the effluent. In August 2018, the Port Huron WWTP was required to sample the effluent on a quarterly basis for PFAS while influent sampling was recommended. This frequency was increased to monthly in April 2019 due to the level of PFOS in the effluent exceeding 50 parts per trillion (ppt). PFOS was also detected in the WWTP biosolids at 77.6 micrograms/kilogram ($\mu\text{g}/\text{Kg}$) or parts per billion (ppb) in 2018. Based on EGLE's Interim Strategy for Land Application of Biosolids Containing PFAS (EGLE, 2022a), present-day biosolids at the Port Huron WWTP have not exceeded the industrially impacted threshold (currently 100 ppb) for PFOS or perfluorooctanoic acid (PFOA) and are below the threshold (currently 20 ppb) for PFOS or PFOA for required mitigation prior to land application (reduced land application rate and source identification). The analytical results from sampling the influent, effluent, and biosolids at the Port Huron WWTP represent only the conditions at the time of sampling. The levels of PFOS in the WWTP effluent have declined over time. This has been accomplished by the WWTP no longer accepting the leachate from one of the landfills, the metal finisher discontinued their chrome plating line, and the two paper mills are no longer in business.

Sample Location	Sample Year	PFOA ¹ (detection range)	PFOS ¹ (detection range)
Influent	2018	40 – 64.6	19.5 – 40
Influent	2019	27 – 80	16 – 36
Influent	2020	46 – 58	14 – 29
Influent	2021	25 - 58	11 - 27
Influent	2022	26 - 29	13 - 30
Influent	2023	83	15
Effluent	2018	40 – 90	13.1 – 80
Effluent	2019	32 – 660	15 – 1,150
Effluent	2020	37 – 54	9.7 – 21
Effluent	2021	29 - 69	8.5 - 21
Effluent	2022	21 - 61	8.5 - 15
Effluent	2023	20 - 81	7.4 - 16
Biosolids	2018	4.42	77.6
Biosolids	2019	2.7	13
Biosolids	2020	4.65	30.9
Biosolids	2021	5.2 – 8.8	36 - 38
Biosolids	2022	<9.1	9.1
Biosolids	2023	<2.2	9.6

¹Units for aqueous samples are in nanograms per liter (ng/L) or ppt, and solid samples are in micrograms per kilogram ($\mu\text{g}/\text{Kg}$) or parts per billion (ppb).

There is not enough historic information to accurately estimate the concentrations of PFOS and PFOA within the Port Huron WWTP in the past, including the biosolids. However, based on the historical industrial users (e.g., paper mills, chrome plating facility, landfills) the Port Huron WWTP was receiving highly elevated levels of PFOS and PFOA prior to 2018. Information provided by one paper mill indicated that PFOS chemicals were combined with starch in the papermaking process for grease resistance in specialty papers and process water and excess wastes were disposed of in the sanitary sewer from 1980 to October 1989. In October 1989, the process wastewater from this facility was redirected from the sanitary sewer to the mill process WWTP. Based on this information, it is expected that the concentrations of PFOS in the WWTP's biosolids were significantly higher (i.e., industrially impacted) in the past (e.g., in the 1980s). PFAS samples were previously collected from multiple environmental media from one agricultural field (Parcel ID 74-20-019-1007-01) where industrially impacted biosolids from the Port Huron WWTP were land applied in the 1980s. The results for the Port Huron WWTP and the one agricultural field evaluated are presented in two reports (AECOM, 2021a, 2021b).

Agricultural Field-1, located on the north side of Keewahdin Road and east of North Road, consists of approximately 270 acres of active, non-irrigated, agricultural fields (Figure 3A). Industrially impacted biosolids from the Port Huron WWTP were applied to portions of Agricultural Field-1 in the 1980's according to the farmer that owns and farms the field. EGLE did not have any records for the above mentioned biosolids application(s) to portions of Agricultural Field-1 as it pre-dates the current Biosolids Program which began in 1999. Biosolids applications made during this period were under another division's purview and records of the applications were likely disposed of in accordance with record retention policies at the time. Therefore, the number of applications, application rate, and total dry tons applied to Agricultural Field-1 are unknown.

3. Surface Water, Tile Drain, and Incremental Soil Sampling and Analytical Methodology

Surface waters and tributaries that have been previously sampled for PFAS throughout the [Eastern St Clair County Area of Interest](#) were resampled in April 2023 as well as multiple new locations upstream and downstream of previously measured locations. Surface water samples were collected in three areas of Eastern St. Clair County (northern, central, and southern investigation areas), including at and around Agricultural Field-1 in the central investigation area (Figure 1). These areas were targeted based on previously high PFOS concentrations in the surface waters in exceedance of the Rule 57 Water Quality Value (WQV) of 12 ng/L (EGLE, 2021b, 2020, 2019b, 2019c).

Grab samples of ambient surface water were collected at 31 locations in Doe Creek, Brandymore Drain, the Burch Creek drainages, as well as other unnamed drainages (Figures 2, 3B, 3C, 4). Based on information from the farmer, Agricultural Field-1 has seven tile drains. EGLE was only able to locate two of the seven tile drains in the field and collected grab samples

from the two tile drain discharges (Figure 3C). The tile drain samples were collected prior to entering the unnamed surface water body. No additional surface water samples were collected based on field observations.

Four field replicate samples were collected at four separate surface water locations for quality control purposes, as specified in [Table 1](#). A field blank was also prepared for each day; Field Blank 1 was collected on April 10, 2023, and Field Blank 2 was collected on April 11, 2023.

Shallow soil sampling was conducted following ISM protocol on three parcels (74-20-018-1001-000, 74-15-013-3002-00, and 74-15-013-2002-00) on Agricultural Field-1. ISM is designed such that the resulting surficial soil samples are representative of the decision unit (DU) for which the decision is being made. A total of six primary DUs labeled DU1, DU2, DU3, DU4, DU5 and DU6 were identified for this soil investigation (Figure 6A). Approximately 50 increments were collected from each DU. The soil increments were collected with a $\frac{3}{4}$ inch inner diameter, stainless steel soil core sampler and collected from a depth of 0 to 8 inches below ground surface (bgs). The sampling depth was selected due to the injection depth for biosolids which is typically within the top 12 inches of soil. The increments followed a systematic random sampling/systematic grid sampling with a random start serpentine approach. To ensure that the sampling was appropriate to evaluate the distributional heterogeneity of the DUs and is reproducible, a triplicate sample was collected from DU2.

Selection of the DUs was determined by historic biosolids application information provided by the farmer and drainages on the fields. Based on initial information provided by the farmer in early 2022, industrially impacted biosolids from the Port Huron WWTP were land applied in the early 1980s on approximately 10 acres within parcel ID 74-15-013-2002-00 and the northern portion of parcel ID 74-20-018-1001-000, and on approximately 30 acres within the central/southern portion of parcel ID 74-20-018-1001-000. Industrially impacted biosolids from the Port Huron WWTP were also land applied on all acreage within parcel ID 74-15-013-3002-00 in the early 1980s (2022 Conceptual Site Model, Figure 5). The farmer was able to provide additional information on historic land application areas when working with EGLE in 2023. While most of the information EGLE received from the farmer in 2023 was consistent with 2022 Conceptual Site Model, there were some differences in land application areas noted, especially for parcel ID 74-20-018-1001-000. Since EGLE did not have any records for the above mentioned biosolids application(s) to portions of Agricultural Field-1 as it pre-dates the current Biosolids Program, it is impossible to verify where biosolids were applied within Agricultural Field-1, the number of applications received, as well as the application rate, and total dry tons that were applied. As a result, EGLE used the most-recent information provided by the farmer in 2023 to design the DUs. According to the farmer, biosolids were not applied on DU1, DU4, and DU5. Doe Creek was used to divide DU4 from DU5. DU2 and DU3 each received one application of industrially impacted biosolids from the Port Huron WWTP in the early 1980's, while the farmer was unable to recall if DU6 had received biosolids

(2023 Conceptual Site Model, Figures 5, 6A). In terms of crops, sugar beets were grown on DU1 and DU2 and corn was grown on DU3, DU4, DU5, and DU6 in 2022. For the 2023 growing season, the farmer planned to grow soybeans on DU1 and DU2, and sugar beets on DU3, DU4, DU5, and DU6. The April 2023 sampling was conducted prior to planting in 2023.

4. Sampling Results and Discussion

4.1 Surface Water Sampling Results

Surface water sampling was conducted in three areas of eastern St. Clair County (northern, central, and southern investigation areas). The three investigation areas were chosen based on detections of PFOS from previous surface water sampling events that indicated a significant source of PFAS contamination in those areas (EGLE, 2021b, 2020, 2019b, 2019c). The laboratory analytical results for the surface water samples collected in 2023 are summarized below and presented in Table 1 and on Figures 2, 3B, 3C, 4. Laboratory analytical reports are provided in Appendix A. The total PFAS, PFOS, PFOA, perfluorobutane sulfonic acid (PFBS), perfluorohexane sulfonic acid (PFHxS), and perfluorononanoic acid (PFNA) data from the surface water samples are summarized in the following table.

Investigation Area	Surface Water Sample ID	Sample Date	Total PFAS ¹	PFOS ¹	PFOA ¹	PFBS ¹	PFHxS ¹	PFNA ¹
Northern	FG55_20230410	4/10/2023	65.0	47.2	10.8	1.38	< 4.16	< 4.16
Northern	FG56_20230410	4/10/2023	ND	< 3.98	< 3.98	< 3.98	< 3.98	< 3.98
Northern	FG57_20230410	4/10/2023	ND	< 3.90	< 3.90	< 3.90	< 3.90	< 3.90
Northern	FG58_20230410	4/10/2023	ND	< 4.09	< 4.09	< 4.09	< 4.09	< 4.09
Northern	FG59_20230410	4/10/2023	392	210	3.42	15.3	131	< 3.93
Central	FG28_20230411	4/11/2023	3.39	< 3.92	< 3.92	3.39	< 3.92	< 3.92
Central	FG29_20230411	4/11/2023	80.8	50.3	11.8	3.35	< 4.10	< 4.10
Central	FG30_20230411	4/11/2023	75.3	8.49	9.34	22.2	1.51	< 4.47
Central	FG31_20230411	4/11/2023	1,649	1,270	331	2.30	2.45	5.05
Central	FG32_20230411	4/11/2023	1,271	1,090	124	12.8	2.60	3.40
Central	FG33_20230411	4/11/2023	835	739	76.5	4.18	1.30	1.30
Central	FG34_20230411	4/11/2023	540	468	51.6	3.37	1.08	1.23
Central	FG38_20230410	4/10/2023	1,138	981	125	3.15	2.19	2.10
Central	FG39_20230410	4/10/2023	69.5	59.2	5.17	1.72	< 3.81	< 3.81
Central	FG40_20230410	4/10/2023	17.8	1.55	2.55	2.62	< 4.14	< 4.14

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Parcel ID 74-20-019-1007-01**

Investigation Area	Surface Water Sample ID	Sample Date	Total PFAS ¹	PFOS ¹	PFOA ¹	PFBS ¹	PFHxS ¹	PFNA ¹
Central	FG40-FR_20230410	4/10/2023	17.9	1.17	2.62	3.05	< 4.13	< 4.13
Central	FG41_20230411	4/11/2023	39.7	32.5	3.88	1.66	< 3.98	< 3.98
Central	FG42_20230411	4/11/2023	940	815	99.3	2.38	2.09	1.46
Central	FG44_20230410	4/10/2023	818	705	91.0	2.01	2.09	1.20
Central	FG45_20230410	4/10/2023	808	700	79.2	2.11	1.46	1.02
Central	FG46_20230411	4/11/2023	308	236	43.9	1.96	1.16	< 4.04
Central	FG47_20230410	4/10/2023	91.26	48.8	13.3	1.97	< 4.04	< 4.04
Central	FG48_20230410	4/10/2023	1,315	1,110	164	1.60	1.61	2.75
Central	FG49_20230411	4/11/2023	296	223	47.0	1.93	< 4.02	< 4.02
Central	FG50_20230410	4/10/2023	765	645	95.6	2.06	2.28	1.47
Central	FG51_20230410	4/10/2023	34	30.7	3.26	< 4.12	< 4.12	< 4.12
Central	FG52_20230410	4/10/2023	33.3	15.6	2.72	1.21	< 3.99	< 3.99
Central	FG52-FR_20230410	4/10/2023	33.4	16.2	3.02	1.34	< 3.92	< 3.92
Central	FG54_20230410	4/10/2023	7.23	1.44	1.38	< 4.23	< 4.23	< 4.23
Southern	FG60_20230411	4/11/2023	821	675	111	2.52	4.53	2.34
Southern	FG61_20230411	4/11/2023	994	822	131	2.47	5.40	2.99
Southern	FG61-FR_20230411	4/11/2023	970	793	135	2.58	5.40	3.01
Southern	FG63_20230411	4/11/2023	19.9	6.69	1.3	3.07	< 4.19	< 4.19
Southern	FG64_20230411	4/11/2023	8.77	2.02	< 4.18	1.86	< 4.18	< 4.18

¹Units are in ng/L or ppt. Non-Detect (ND) = There were no PFAS detected; please refer to Table 1 for the reporting limits for each PFAS. Detections are shown in bold.

Five surface water samples were collected in the northern investigation area in Burtchville Township within the Lake Huron Direct Drainage watershed that drains to Lake Huron. Two of the five surface water samples exceeded the Rule 57 WQV for PFOS of 12 ng/L or ppt. No exceedances of the WQVs were observed for PFOA, PFBS, PFHxS, and PFNA of 170, 670,000, 210, and 30 ppt respectively. PFOS ranged from ND to 210 ppt, PFOA ranged from ND to 10.8 ppt, and total PFAS ranged from ND to 392 ppt in surface water samples collected within the northern investigation area.

Twenty-two surface water samples were collected in the central investigation area in Clyde and Fort Gratiot Townships within the Lower Black River watershed which drains to the St. Clair River. Seventeen of the 22 surface water samples exceeded the Rule 57 WQV for PFOS of 12 ppt, one of which also exceeded the Rule 57 WQV for PFOA of 170 ppt. No exceedances of the WQVs were observed for PFBS, PFHxS, and PFNA of 670,000, 210, and 30 ppt respectively. The surface water results in the central investigation area for PFOS ranged from ND to 1,270 ppt, PFOA ranged from ND to 331 ppt, and total PFAS ranged from 3.39 to 1,649 ppt.

Four surface water samples were collected in the southern investigation area in China Township within the Lower Black River watershed that drains to the St. Clair River. Two of the four surface water samples exceeded the Rule 57 WQV for PFOS of 12 ppt. No exceedances of the WQVs were observed for PFOA, PFBS, PFHxS, and PFNA of 170, 670,000, 210, and 30 ppt respectively. The surface water results in the southern investigation area for PFOS ranged from 2.02 to 822 ppt, PFOA from ND to 135 ppt, and total PFAS ranged from 8.77 to 994 ppt.

Based on historical land application records (prior to the start of EGLE's current Biosolids Program in 1999) that EGLE was able to obtain from the Port Huron WWTP, elevated concentrations of PFAS in surface water samples in the east-central and southern investigation areas are consistent with locations of agricultural fields that received industrially impacted biosolids from the WWTP during the 1980s. Surface water samples near the fields that have received industrially impacted biosolids are dominated by detections of PFOS.

EGLE has no records of any biosolids applications on the agricultural fields in the west-central investigation area near sample IDs FG28, FG29, FG30, FG31, and FG32. However, surface water results for sample IDs FG31 and FG32 are high in PFOS, indicating that the 80-acre agricultural field upgradient or west of the sampling locations may have received one or more applications of industrially impacted biosolids. It should be noted, the 80-acre field located west of sample ID FG31 and FG32 was once farmed as two, 40-acre fields—an eastern field and a western field—based on historical aerial photos. Sample IDs FG28, FG29, and FG30 were collected on the former western 40-acre field and PFAS detections were low and dominated by PFBS. Sample IDs FG31 and FG32 were collected just east or downgradient of the former eastern 40-acre field, and PFAS detections were high and dominated by PFOS. Based on the results from sample IDs FG28, FG29, FG30, FG31 and FG32, it appears historical application(s) of industrially impacted biosolids may have been conducted on the former eastern 40-acre field because of the high level of PFOS in sample IDs FG31 and FG32.

While historic biosolids applications appear to be the most probable source of PFAS in those areas, the elevated concentrations of PFAS in the surface water sample in the northern investigation area, sample ID FG59, was not consistent with historic biosolids land application. The northern investigation area in particular has a different PFAS signature than the other two areas, as PFHxS was detected in the surface water samples at higher concentrations in this area. This indicates that the source of PFAS to surface waters in the northern investigation area

is potentially a source other than historic applications of industrially impacted biosolids. EGLE is continuing to work to identify potential sources of PFAS in this area, which may include but is not limited to, historic applications of biosolids for which EGLE and the Port Huron WWTP do not have records, applications of other industrial residuals or byproducts containing PFAS, application of septage, Aqueous Film Forming Foam (AFFF) use or other sources yet to be determined.

4.2 Tile Drain Sampling Results

Tile drain sampling was conducted on Agricultural Field-1 to assess potential impacts that drainage from the field may have on nearby surface water bodies. EGLE was only able to locate two of the seven tile drains identified by the farmer. The laboratory analytical results for the tile drain samples collected in 2023 are summarized below and presented in Table 1 and on Figure 3C. Laboratory analytical reports are provided in Appendix A. The total PFAS, PFOS, PFOA, PFBS, PFHxS, and PFNA data from the tile drain samples are summarized in the following table.

Investigation Area	Tile Drain Sample ID	Sample Date	Agricultural Field Site	Total PFAS ¹	PFOS ¹	PFOA ¹	PFBS ¹	PFHxS ¹	PFNA ¹
Central	TD4_20230410	4/10/2023	Agricultural Field-1	11,372	9,630	1,480	3.39	18.4	15.7
Central	TD7_FR_20230410	4/10/2023	Agricultural Field-1	213	182	23.5	1.48	2.74	<3.78
Central	TD7_20230410	4/10/2023	Agricultural Field-1	184	150	24.1	1.61	2.95	<3.86

¹Units are in ng/L or ppt. ND = There were no PFAS detected; please refer to Table 1 for the reporting limits for each PFAS. Detections are shown in bold.

Both tile drain samples, TD4 and TD7, exceeded the Rule 57 WQV for PFOS of 12 ppt. Tile drain sample TD4 also exceeded the Rule 57 WQV for PFOA of 170 ppt. No exceedances of the WQVs were observed for PFBS, PFHxS, and PFNA of 170, 670,000, 210, and 30 ppt respectively. In tile drain sample TD4, PFOS was detected at 9,630 ppt, PFOA at 1,480 ppt, and total PFAS at 11,372 ppt. PFOS was detected at 150 ppt, PFOA at 24.1 ppt and total PFAS at 184 ppt in tile drain sample TD7. TD4 drains portions of Agricultural Field-1 within soil sampling DU3, and TD7 drains portions of Agricultural Field-1 within soil sampling DU1. Higher levels of PFOS and total PFAS were observed in TD4, which corresponds with the higher PFOS and total PFAS concentrations observed in soil in DU3 (see Section 4.3). While concentrations of PFOS and total PFAS were noticeably lower in DU1, EGLE still saw an impact to drainage from that portion of the agricultural field resulting in an exceedance the WQV for PFOS in TD7.

4.3 Soil Sampling Results

Shallow soil sampling was conducted following ISM protocol and in accordance with the SAP within all 6 DUs on Agricultural Field-1. The laboratory analytical results for the soil samples are summarized below and presented in Table 2 and on Figure 6B. Laboratory analytical reports are provided in Appendix A. The total PFAS, PFOS, and PFOA data from the soil samples are summarized in the table below.

Investigation Area	Soil Sample ID	Sample Date	Agricultural Field Site	Sample Depth (bgs)	Total PFAS ¹	PFOA ¹	PFOS ¹
Central	DU-1_20230410	4/10/2023	Agricultural Field-1	0-8"	13.8	0.782	13.0
Central	DU-2A_20230410	4/10/2023	Agricultural Field-1	0-8"	55.6	1.80	49.6
Central	DU-2B_20230410	4/10/2023	Agricultural Field-1	0-8"	54.9	1.65	49.3
Central	DU-2C_20230410	4/10/2023	Agricultural Field-1	0-8"	56.8	1.66	51.3
Central	DU-3_20230410	4/10/2023	Agricultural Field-1	0-8"	75.2	1.98	62.1
Central	DU-4_20230410	4/11/2023	Agricultural Field-1	0-8"	68.2	1.66	57.7
Central	DU-5_20230410	4/11/2023	Agricultural Field-1	0-8"	16.2	0.918	15.3
Central	DU-6_20230410	4/11/2023	Agricultural Field-1	0-8"	12.8	0.826	12.0

¹Units are in µg/Kg or ppb. bgs = below ground surface. ND = There were no PFAS detected; please refer to Table 1 for the reporting limits for each PFAS. Detections are shown in bold.

The soil samples collected from DU2 and DU3, which had received one application of industrially impacted biosolids in the 1980s according to the farmer, detected relatively high total PFAS, ranging from 54.9 to 75.2 ppb and PFOS, ranging from 49.3 to 62.1 ppb. PFOA ranged from 1.65 to 1.98 ppb. Relatively high concentrations PFOS were also observed in DU4, which was thought to have never received biosolids based on interviews with the farmer. Total PFAS, PFOS, and PFOA in DU4 were detected at 68.2, 57.7, and 1.66 ppb, respectively. Based on the concentrations detected in DU4, it is likely that industrially impacted biosolids from the Port Huron WWTP were also land applied in DU4, in addition to DU2 and DU3, in the 1980s. 2-(N-ethylperfluorooctanesulfonamido) acetic acid (EtFOSAA) and perfluorooctanesulfonamide (PFOSA) were also detected in soil samples collected from DU2, DU3, and DU4. No other PFAS analytes were detected.

Lower PFOS and PFOA soil concentrations were reported in DU1 and DU5, which had never received applications of biosolids according to the farmer. Total PFAS ranged from 12.2 to 13.8 ppb, PFOS ranged from 13 to 15.3 ppb, and PFOA ranged from 0.78 to 0.92 ppb. Similar PFOS and PFOA concentrations were also observed in DU6 (which was unclear if biosolids had been applied to), of 12.8, 12, and 0.83 ppb, respectively. No other PFAS analytes were detected in DU1, DU5, and DU6.

While PFOS and PFOA concentrations were lower in soils from DU1, DU5, and DU6 than those observed in DU2, DU3, and DU4, the concentrations are still elevated. Based on the concentrations observed in DU1, DU5, and DU6 it is likely that these areas received historic applications of biosolids from the Port Huron WWTP or another WWTP (potentially receiving fewer applications, use of a lower application rate, and/or biosolids with lower levels of PFAS), or another source of PFAS (e.g., cross-contamination from other portions of Agricultural Field-1 from field management practices, herbicides, pesticides) in the past, potentially under prior ownership.

Without land application records for Agricultural Field-1, it is impossible to verify the portions of the field that received biosolids, the number of applications, application rates, and total dry tons applied. While total PFAS, PFOS, and PFOA soil concentrations observed in Agricultural Field-1 are generally lower than the field investigated in 2019, Parcel ID 74-20-019-1007-01, the soil concentrations are consistent with those observed at other land application sites that received industrially impacted biosolids across the state (AECOM, 2021b; EGLE, 2021a).

4.4 Quality Assurance and Quality Control

No deviations from the SAP were made while in the field. However, it should be noted that Field Blank 2 had a detection of PFOS at 11 ppt, but no other PFAS compounds were detected. The field blank water was provided by Enthalpy Analytical (formerly Vista Analytical Lab). Based on EGLE's review of the Tier 4 report and follow-up with the lab, the PFOS detection did not appear to be a lab artifact. All other quality assurance/quality control (QA/QC) samples collected during the two-day field event did not appear to have any detection issues. Further, the triplicate sample collected in DU2 showed consistent results, indicating that the incremental soil sampling design used provided representative samples for DUs in Agricultural Field-1.

5. Residential Well Sampling

As part of the Eastern St. Clair County Area of Interest investigation, EGLE and the Michigan Department of Health and Human Services (MDHHS) also conducted multiple rounds of residential drinking water well sampling in the northern and central investigation areas from 2018-2023. EGLE targeted these two areas for residential well sampling out of an abundance of caution. The central investigation area had the highest detections of PFOS in surface water samples and the northern investigation area had elevated PFOS concentrations in surface water with a few of the nearby residential wells installed at less than 50 feet bgs. PFAS was detected

in only one of the 39 residential wells (Location ID 14) sampled in the northern and central investigation areas. The well at Location ID 14 is not used for drinking water. The resident previously installed a new well for drinking water (for non-PFAS reasons), which was non-detect for PFAS (Location ID 9). EGLE, MDHHS, and the St. Clair County Health Department decided not to sample residential wells in the southern investigation area due to the presence of deeper wells and a confining clay layer (wells are mainly screened deeper than 100 ft bgs) and based on the fact that the previous residential well sampling of the northern and central investigation areas, which have similar geology, did not show impacts from PFAS. The laboratory analytical results for the residential well samples are presented in Table 3 and Figures 7 and 8.

6. Conclusions

The purpose of this investigation was to track the concentrations of PFAS, at land application sites, including nearby surface waters, in Eastern St Clair County, which may have received historical (i.e., 1980s) land applications of industrially impacted biosolids containing high concentrations of PFAS from the Port Huron WWTP. Surface waters and tributaries that have been previously sampled for PFAS throughout the [Eastern St Clair County Area of Interest](#) were resampled in April 2023 as well as multiple new locations upstream and downstream of previously measured locations. Surface water samples were collected in three areas of Eastern St. Clair County (i.e., northern, central, and southern investigation areas), including at and around Agricultural Field-1 in the central investigation area. These areas where targeted based on previously high PFOS concentrations in the surface waters in exceedance of the Rule 57 WQV of 12 ng/L. In the central and southern investigation areas the surface water samples were dominated by PFOS, while the northern investigation area surface water samples were dominated by PFHxS. Based on a review of the data and available land application site records, the elevated levels of PFOS in surface water in the central and southern investigation areas are likely due to the historic applications of industrially impacted biosolids from the Port Huron WWTP. EGLE has not identified a source of PFAS to surface waters in the northern investigation area.

On Agricultural Field-1 shallow soil sampling was conducted following ISM protocol within 6 DUs (i.e., DU1 DU2, DU3, DU4, DU5, and DU6). Based on the most recent information provided by the farmer, DU2 and DU3 each received one application of industrially impacted biosolids from the Port Huron WWTP in the early 1980s. Elevated PFOS and PFOA concentrations were detected in soils from DU2 and DU3, which is consistent with the land application information provided by the farmer. Similar PFOS and PFOA concentrations were also detected in soils from DU4; as a result, it is likely that industrially impacted biosolids from the Port Huron WWTP were also land applied in DU4 in the 1980s. While lower PFOS and PFOA soil concentrations were reported in DU1 and DU5 (which had never received applications of biosolids according to the farmer) and DU6 (which was unclear if biosolids had been applied to), the concentrations are still elevated above what EGLE would expect. Based on the concentrations observed in

DU1, DU5, and DU6 it is likely that these areas were also impacted by a source(s) of PFAS (e.g., historic applications of biosolids from the Port Huron WWTP or another WWTP, cross-contamination from other portions of Agricultural Field-1 from field management practices, herbicides, pesticides) in the past, potentially under prior ownership.

Tile drain sampling was also conducted on Agricultural Field-1 to assess potential impacts that drainage from the field may have on nearby surface water bodies. EGLE was only able to locate two of the seven tile drains identified by the farmer. Tile drain PFAS concentrations correlated with the soil PFAS concentrations of the fields they were draining. Tile drain samples and soil samples were dominated by PFOS; however, the tile drain samples contained detections of additional PFAS compounds that were not detected in the soil samples.

As part of the Eastern St. Clair County Area of Interest investigation, EGLE and MDHHS also conducted multiple rounds of residential drinking water well sampling in the northern and central investigation areas from 2018-2023. PFAS was detected in only one of the 39 residential wells (Location ID 14). The well at Location ID 14 is not used for drinking water. The resident previously installed a new well for drinking water (for non-PFAS reasons), which was non-detect for PFAS (Location ID 9). The investigated areas within Eastern St. Clair County typically have an average of 100 feet of clay protecting the drinking water aquifer. Based on the results collected to date from the residential wells, and the regional geology, there does not appear to be a significant potential risk from PFAS to other drinking water wells in the area as a result of the historic land application of industrially impacted biosolids from the Port Huron WWTP. Residential well sampling will be expanded if determined to be necessary.

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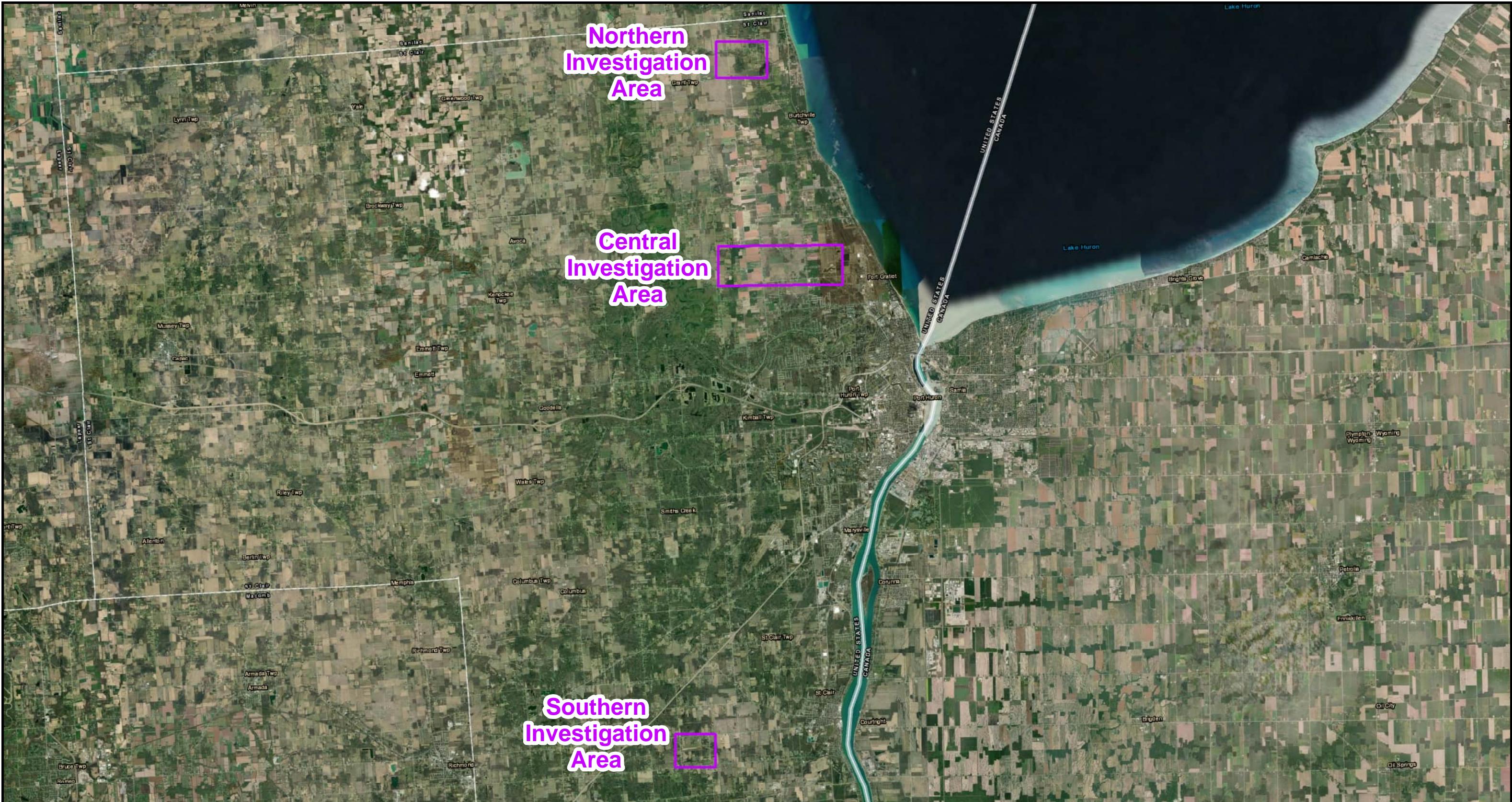
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Attachments:

- [**Figure 1**](#) Eastern Saint Clair County Areas of Interest (AOI's)
- [**Figure 2**](#) Northern Investigation Area PFAS Surface Water Results
- [**Figure 3A**](#) Central Investigation Area
- [**Figure 3B**](#) West-Central Investigation Area PFAS Surface Water Results
- [**Figure 3C**](#) East-Central Investigation Area PFAS Surface Water Results
- [**Figure 4**](#) Southern Investigation Area PFAS Surface Water Results
- [**Figure 5**](#) Agricultural Field 1 2022 and 2023 Conceptual Site Model
- [**Figure 6A**](#) Agricultural Field 1 PFAS ISM Soil Sampling Locations
- [**Figure 6B**](#) Agricultural Field 1 PFAS ISM Soil Sampling Results
- [**Figure 7**](#) Northern Investigation Area PFAS Residential Well Results
- [**Figure 8**](#) Central Investigation Area PFAS Residential Well Results
- [**Table 1**](#) Aqueous Samples PFAS Analytical Results Summary
- [**Table 2**](#) Soil Samples PFAS Analytical Results Summary
- [**Table 3**](#) Drinking Water Samples PFAS Analytical Results Summary
- [**Appendix A**](#) 2023 Analytical Laboratory Reports

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Legend
 Areas of Interest



0 5.5 11 Miles

FIGURE 1

EASTERN SAINT CLAIR COUNTY
AREAS OF INTEREST (AOI's)

SAINT CLAIR COUNTY



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Legend

▲ Surface Water Sample

— Surface Water

Surface Water ID	Sample Date
Total PFAS (PFOA PFOS PFBS PFHxS PFNA)	

Michigan Rule 57 Water Quality Value (WQV) for non-drinking water, ng/L
PFOA = 170 PFOS = 12 PFBS = 670,000

PFHxS = 210 PFNA = 30

Red text indicates exceedance of Rule 57 WQV for Surface Water Samples.

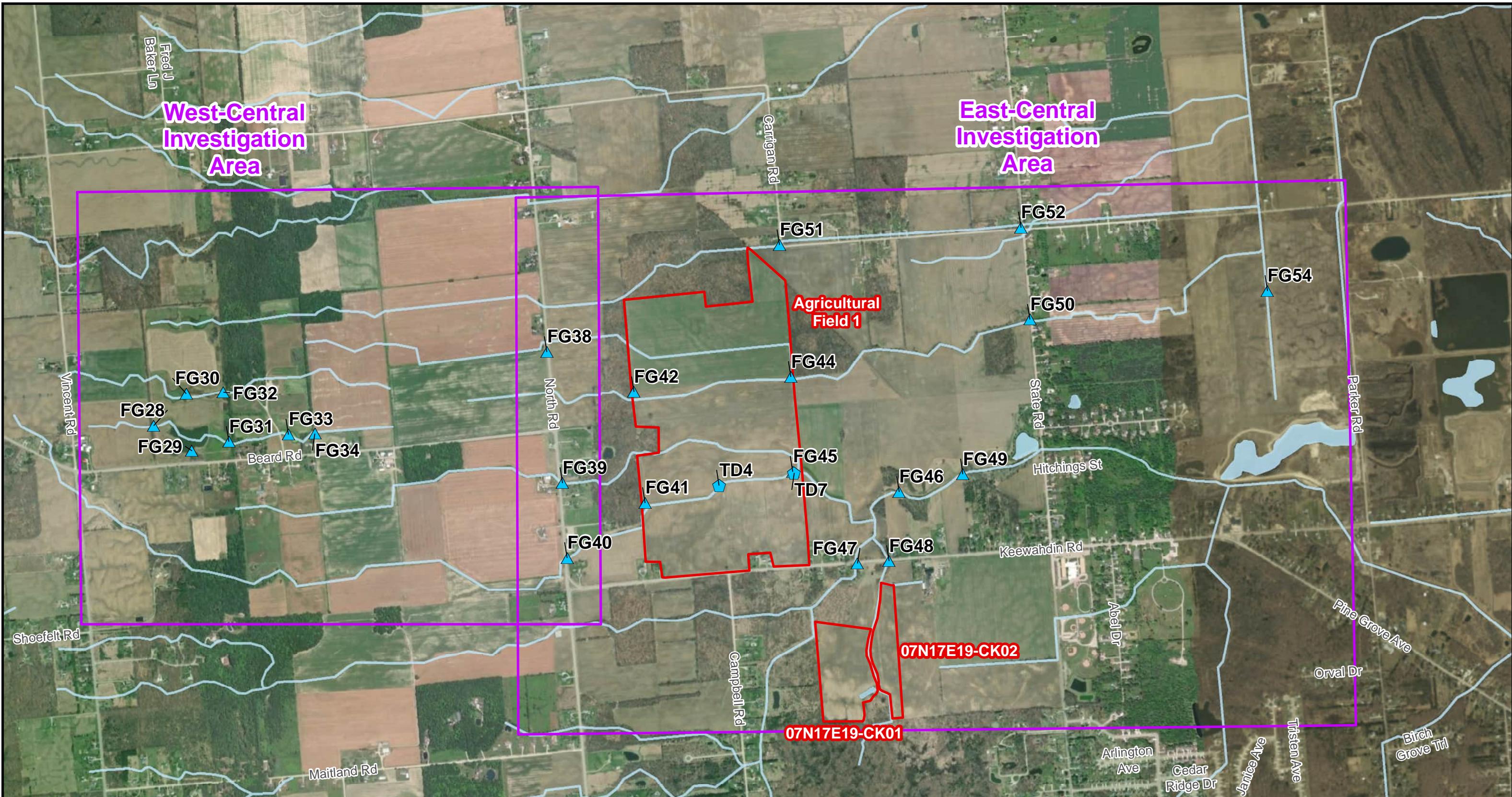
Results reported in units ng/L or parts per trillion (ppt).

Total PFAS is sum of 29 PFAS compounds.

ND = Non-Detect

0 350 700 1,400
Feet

FIGURE 2
NORTHERN INVESTIGATION AREA
PFAS SURFACE WATER RESULTS
SAINT CLAIR COUNTY



EGLE

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Approved: DB	Date: 12/19/2023
Project #: 60588767	



N
0 0.5 1 Miles

FIGURE 3A

CENTRAL INVESTIGATION AREA

SAINT CLAIR COUNTY

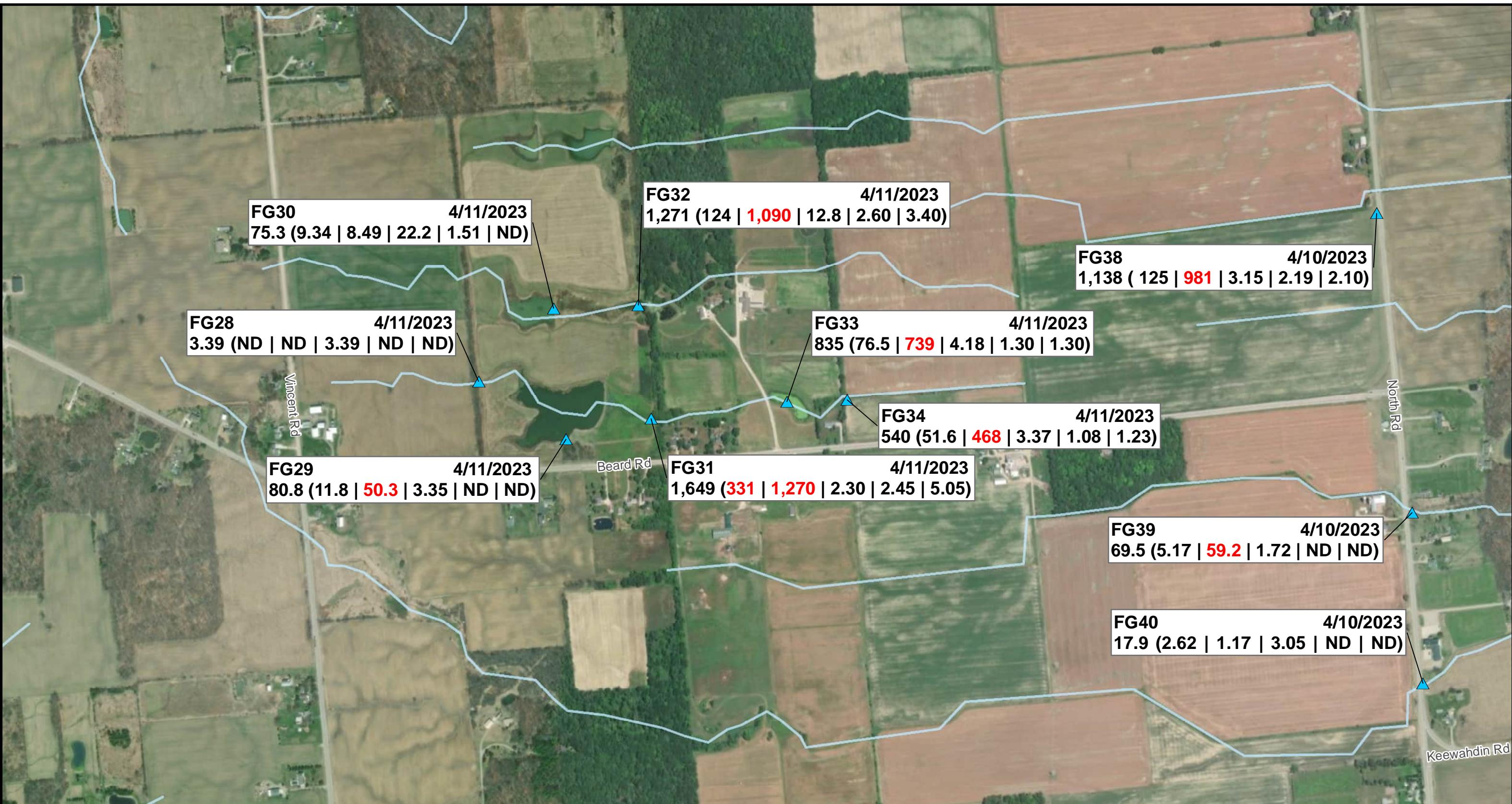
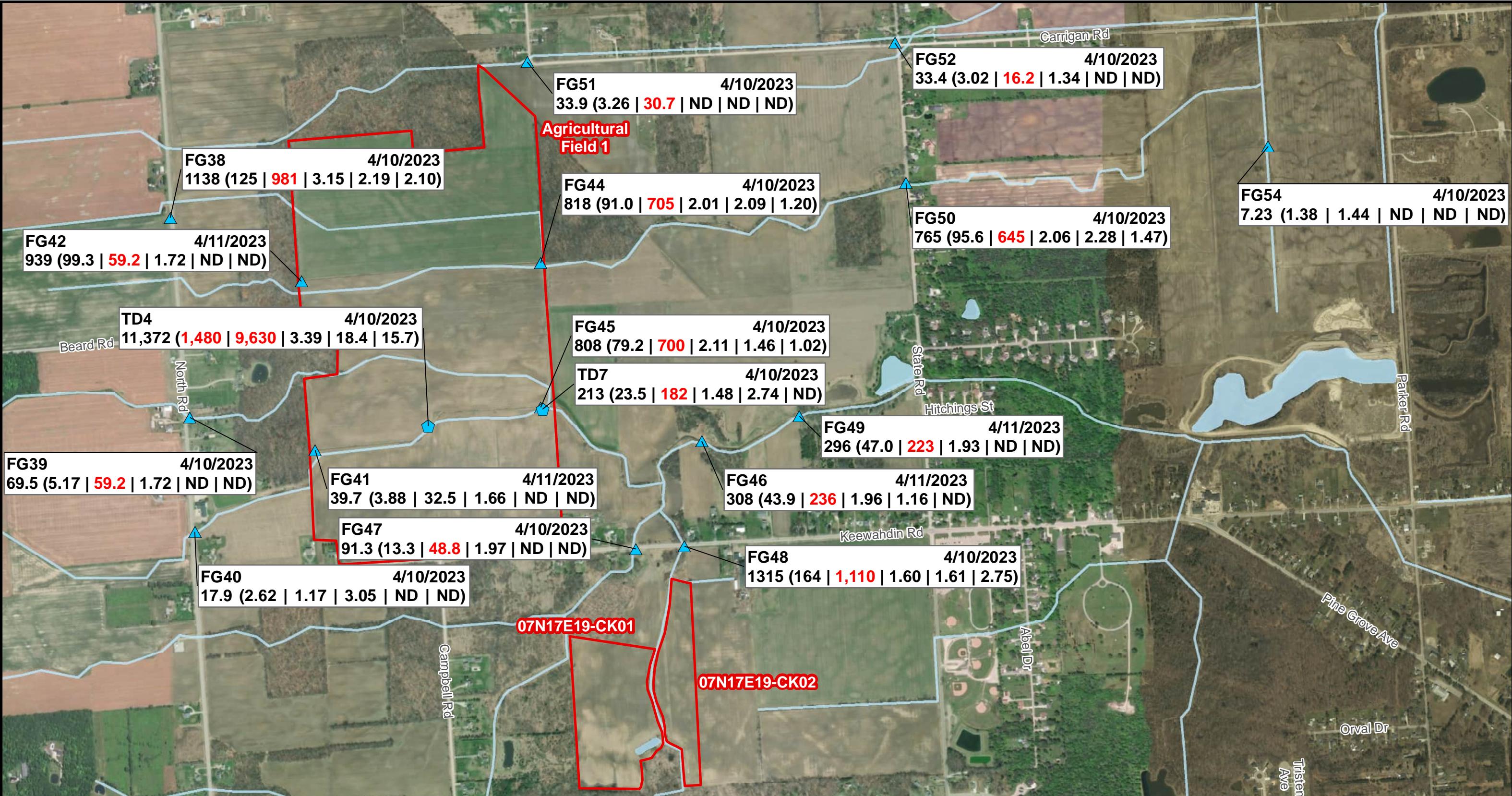


FIGURE 3B

WEST-CENTRAL INVESTIGATION AREA
PFAS SURFACE WATER RESULTS
SAINT CLAIR COUNTY

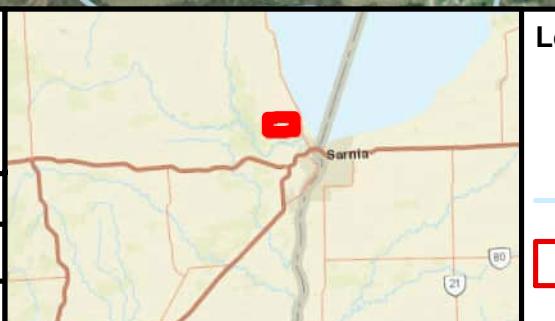


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Legend

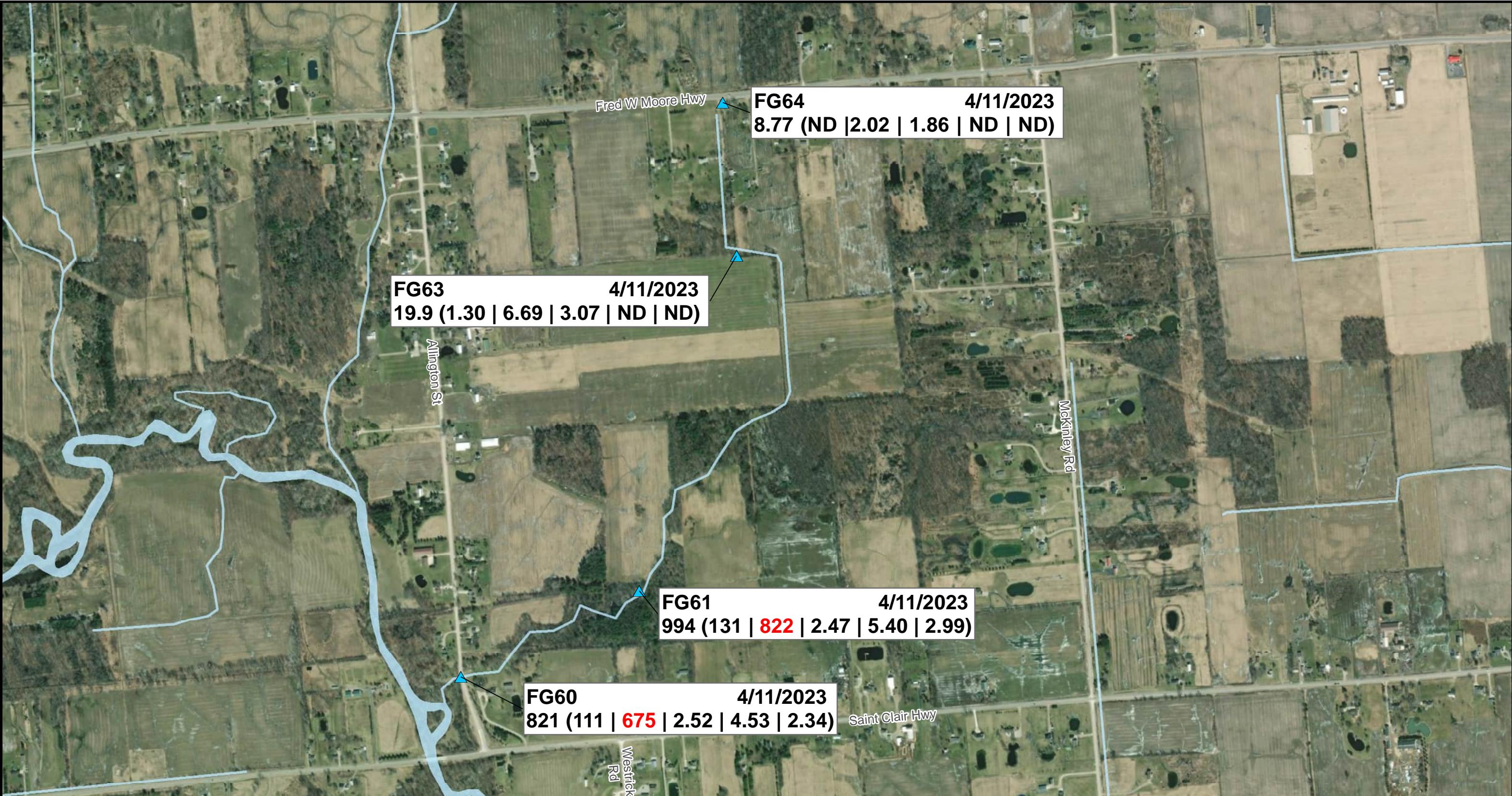
- ▲ Surface Water Sample
- ◆ Tile Drain Sample
- Surface Water
- Biosolids Application Field

Michigan Rule 57 Water Quality Value (WQV) for non-drinking water, ng/L
 PFOA = 170 PFOS = 12 PFBS = 670,000
 PFHxS = 210 PFNA = 30
 Red text indicates exceedance of Rule 57 WQV for Surface Water Samples.
 Results reported in units ng/L or parts per trillion (ppt).
 Total PFAS is sum of 29 PFAS compounds.
 ND = Non-Detect

Surface Water ID	Sample Date
Total PFAS (PFOA PFOS PFBS PFHxS PFNA)	

0 300 600 1,200 1,800
Feet

FIGURE 3C
EAST-CENTRAL INVESTIGATION AREA
PFAS SURFACE WATER RESULTS
SAINT CLAIR COUNTY



EGLE

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Project #: 60588767

Legend

- ▲ Surface Water Sample
- Surface Water

Surface Water ID	Sample Date
Total PFAS (PFOA PFOS PFBS PFHxS PFNA)	

Michigan Rule 57 Water Quality Value (WQV) for non-drinking water, ng/L
 PFOA = 170 PFOS = 12 PFBS = 670,000
 PFHxS = 210 PFNA = 30

Red text indicates exceedance of Rule 57 WQV for Surface Water Samples.

Results reported in units ng/L or parts per trillion (ppt).

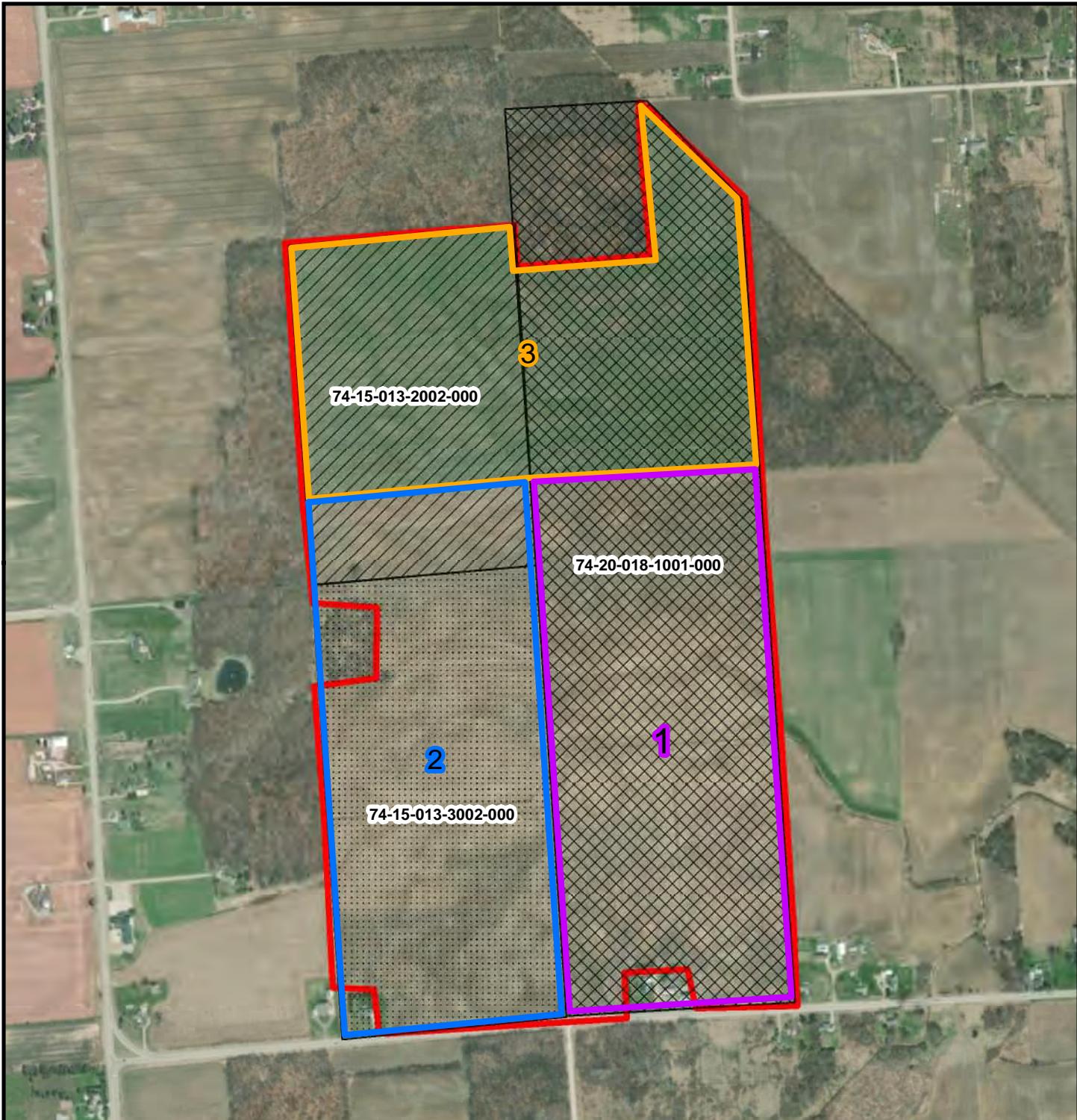
Total PFAS is sum of 29 PFAS compounds.

ND = Non-Detect

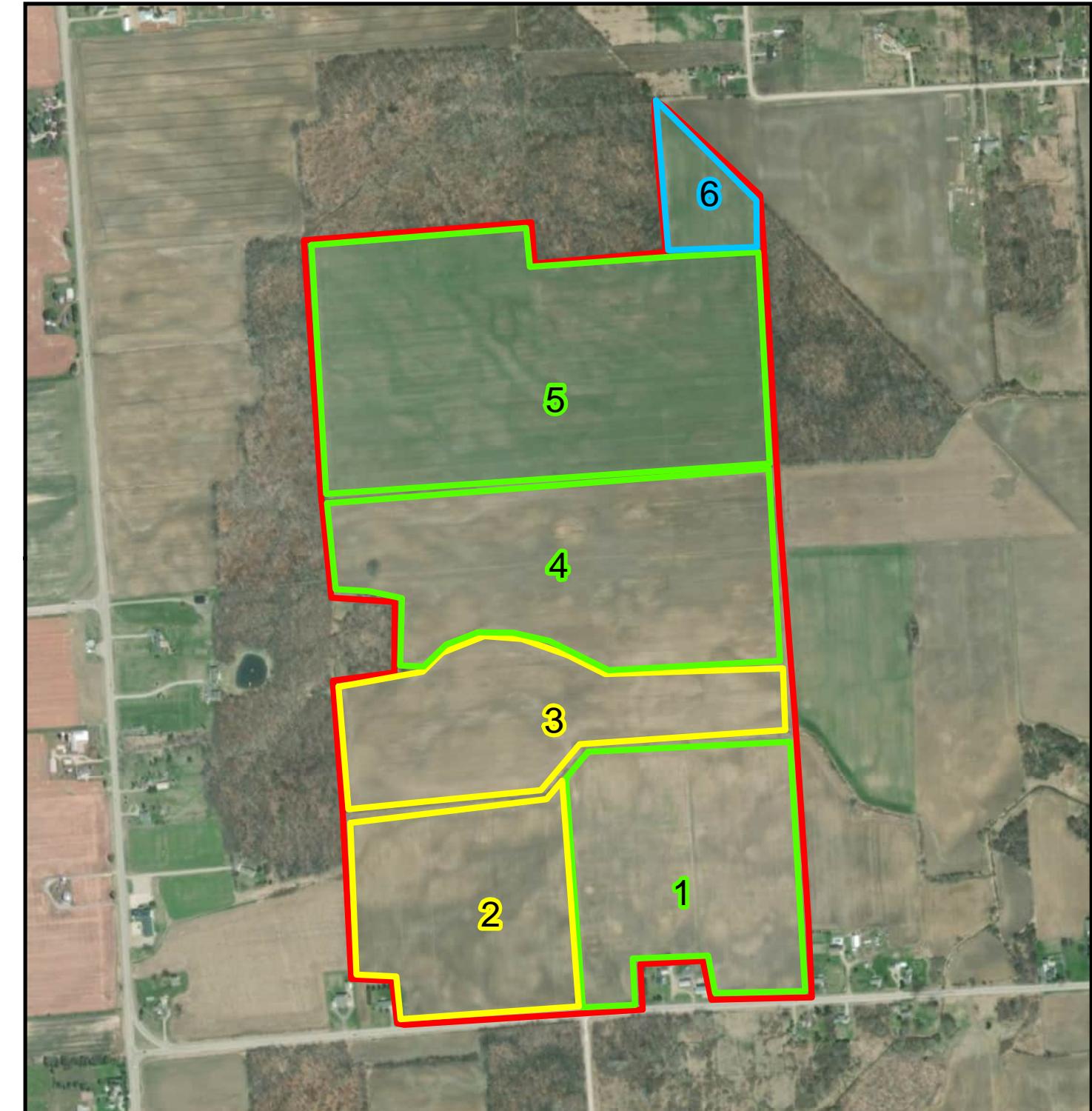
0 300 600 1,200
Feet

FIGURE 4
SOUTHERN INVESTIGATION AREA
PFAS SURFACE WATER RESULTS
SAINT CLAIR COUNTY

2022 Conceptual Site Model



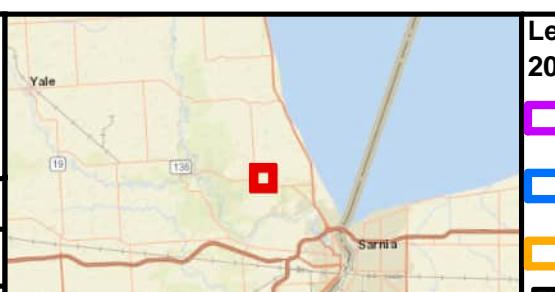
2023 Conceptual Site Model



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Legend

2022 Conceptual Site Model

- Biosolids expected to have been applied on 30 acres
- Biosolids expected to have been applied to full acreage
- Biosolids expected to have been applied on 10 acres
- Parcel Boundaries

Agricultural Field 1

2023 Conceptual Site Model

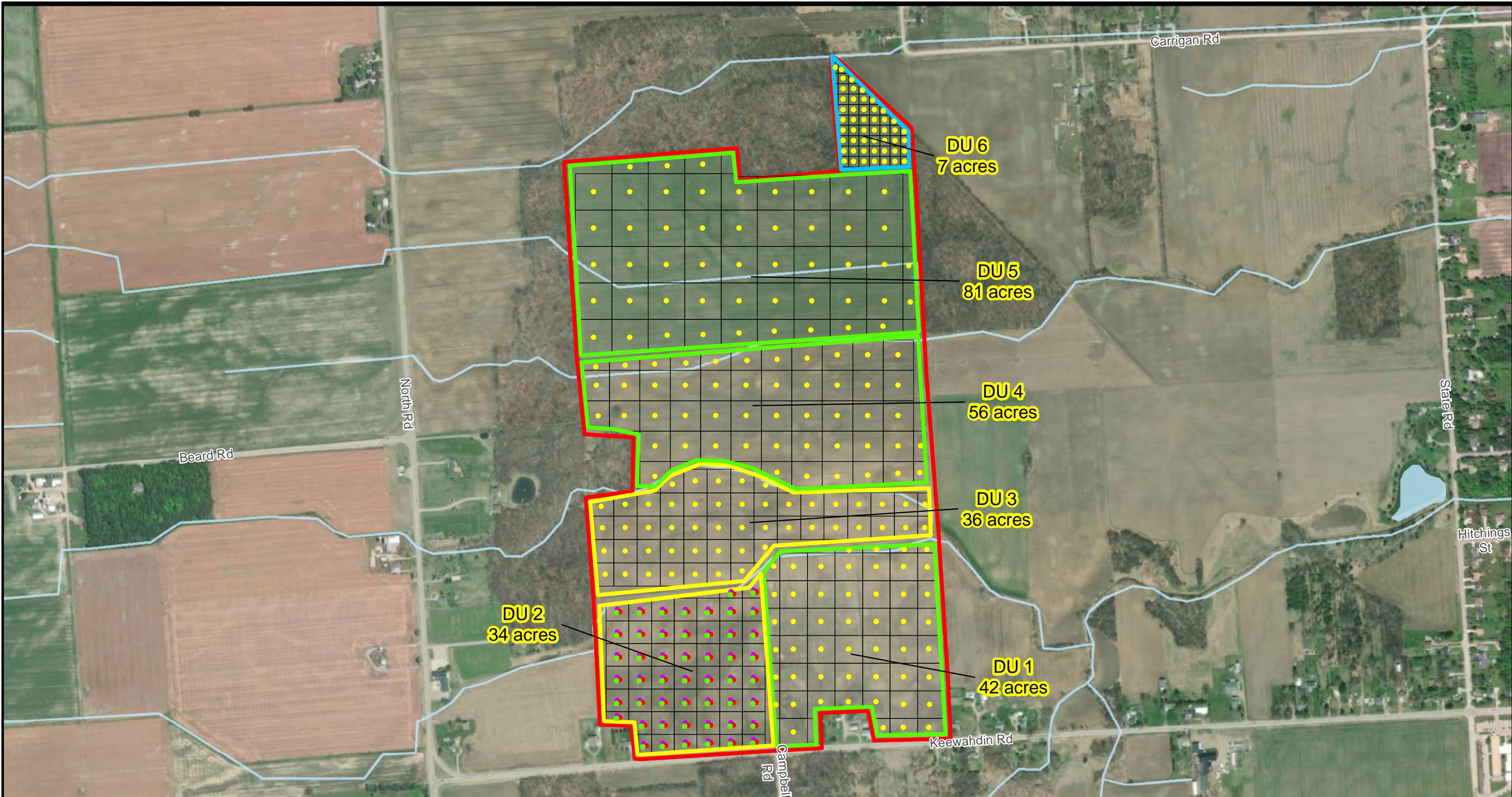
- Biosolids expected to have been applied
- Biosolids not expected to have been applied
- Uncertain if biosolids were applied

*EGLE does not have land applications records to verify where biosolids were applied.

FIGURE 5

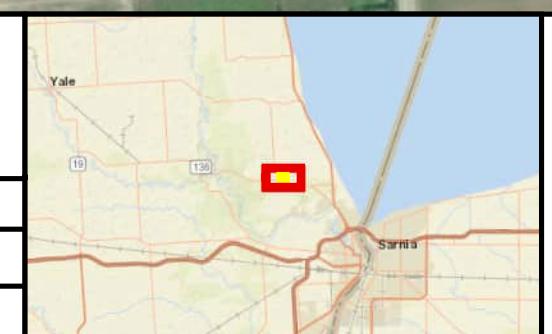
AGRICULTURAL FIELD 1
2022 AND 2023
CONCEPTUAL SITE MODEL

SAINT CLAIR COUNTY



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Legend

- Agricultural Field 1
- ISM Soil Sampling Decision Unit (DU)
- Biosolids expected to have been applied
- Biosolids not expected to have been applied
- Uncertain if biosolids were applied
- DU Sampling Grid
- Surface Water

DU Sample Point

- Location

DU TriPLICATE Sample Point

- Location
- Location B
- Location C

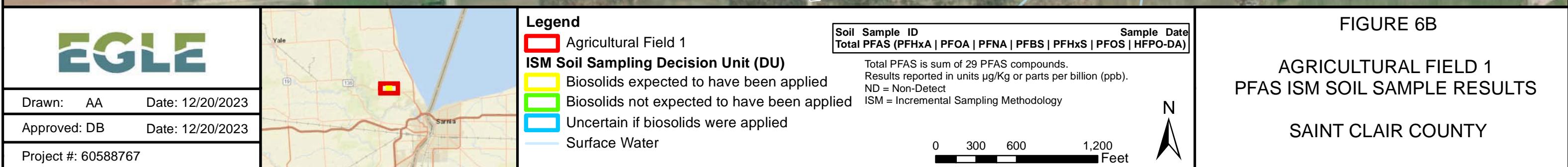
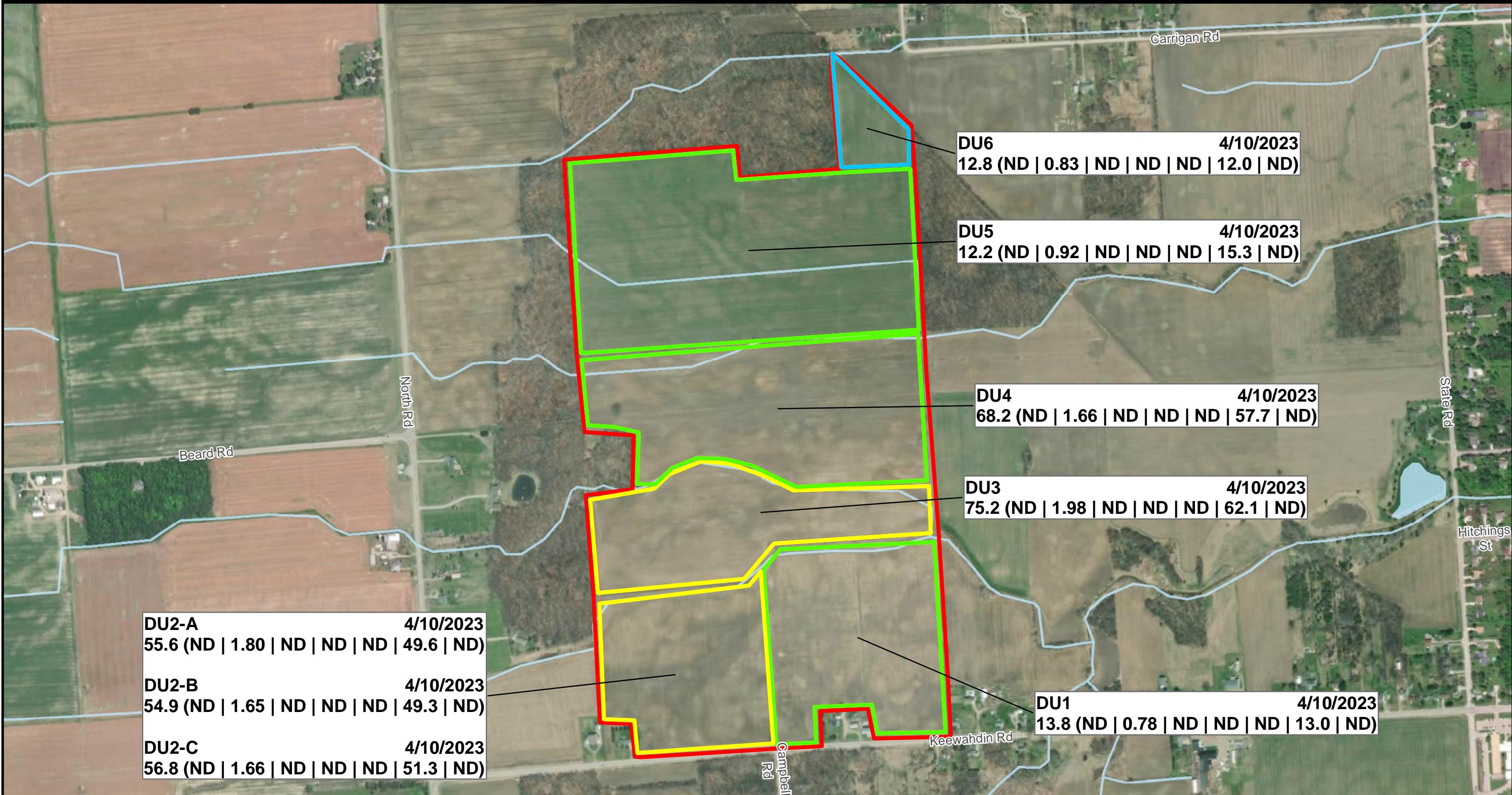
ISM = Incremental Sampling Methodology



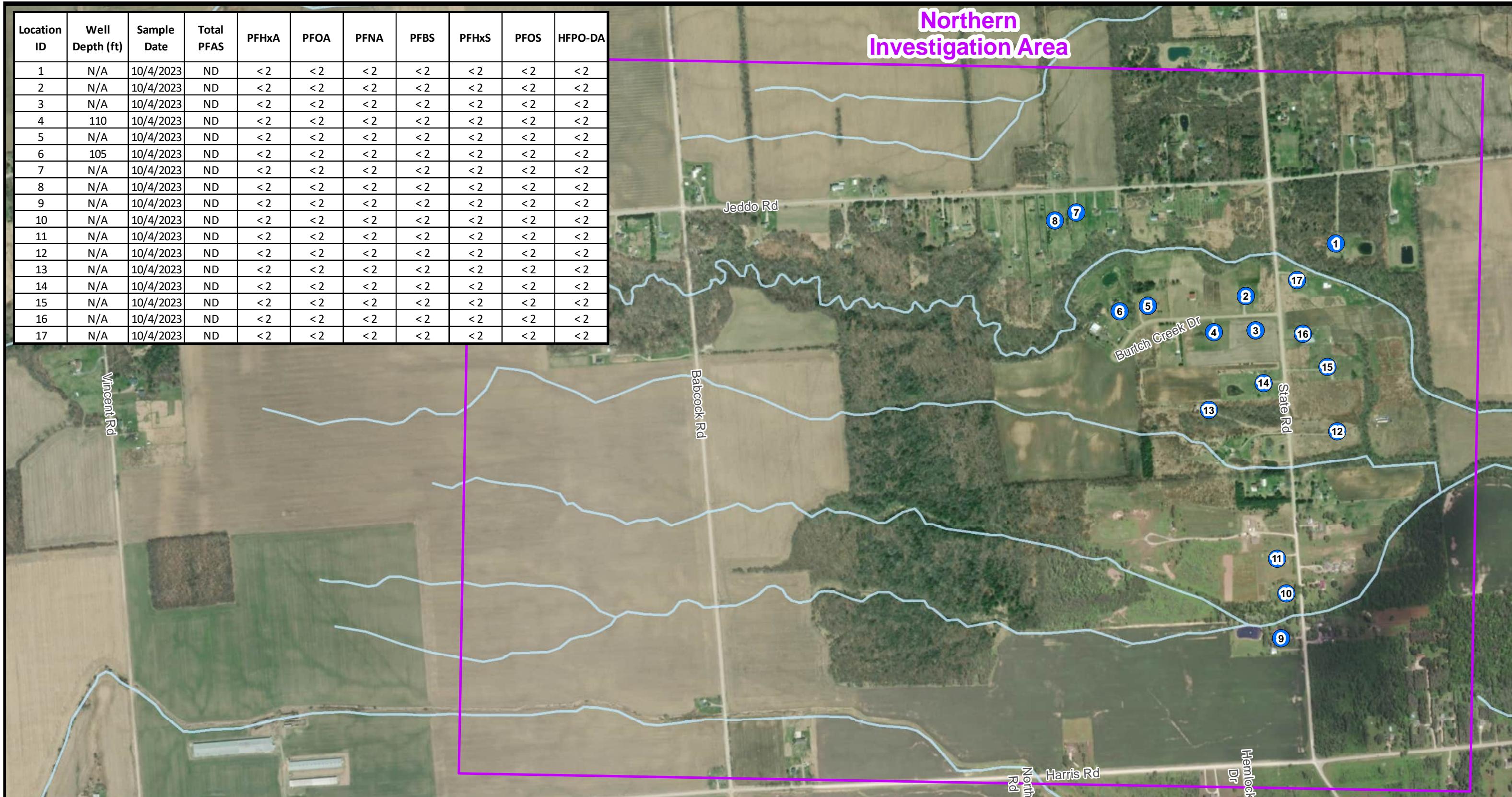
0 300 600 1,200
Feet

FIGURE 6A

AGRICULTURAL FIELD 1
PFAS ISM SOIL SAMPLE LOCATIONS
SAINT CLAIR COUNTY



Location ID	Well Depth (ft)	Sample Date	Total PFAS	PFHxA	PFOA	PFNA	PFBS	PFHxS	PFOS	HFPO-DA
1	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
2	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
3	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
4	110	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
5	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
6	105	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
7	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
8	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
9	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
10	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
11	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
12	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
13	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
14	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
15	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
16	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2
17	N/A	10/4/2023	ND	<2	<2	<2	<2	<2	<2	<2



Document Path: C:\Users\aldeaa\AECOM\GDS GIS Services - GIS CAD PROJECTS\DCS AMERICAS\REMWEST\F463\Biosolids_MDEQ\20231218\02_Work\F7_St Clair_Residential Well Results North Area.mxd

EGLE

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Project #: 60588767



Legend

- Residential Sample Location
- Surface Water
- Area of Investigation

Michigan Part 201 Residential & Nonresidential
Drinking Water Criteria (DWC), ng/L
PFHxA = 400,000 PFOA = 8 PFNA = 6 PFBS = 420 PFHxS = 51 PFOS = 16 HFPO-DA = 370
Red text indicates exceedance of Part 201 DWC for residential samples.
Results reported in units ng/L or parts per trillion (ppt).
Total PFAS is sum of 25 PFAS compounds.
ND = Non-Detect
N/A = Not Available

0 400 800 1,200 Feet



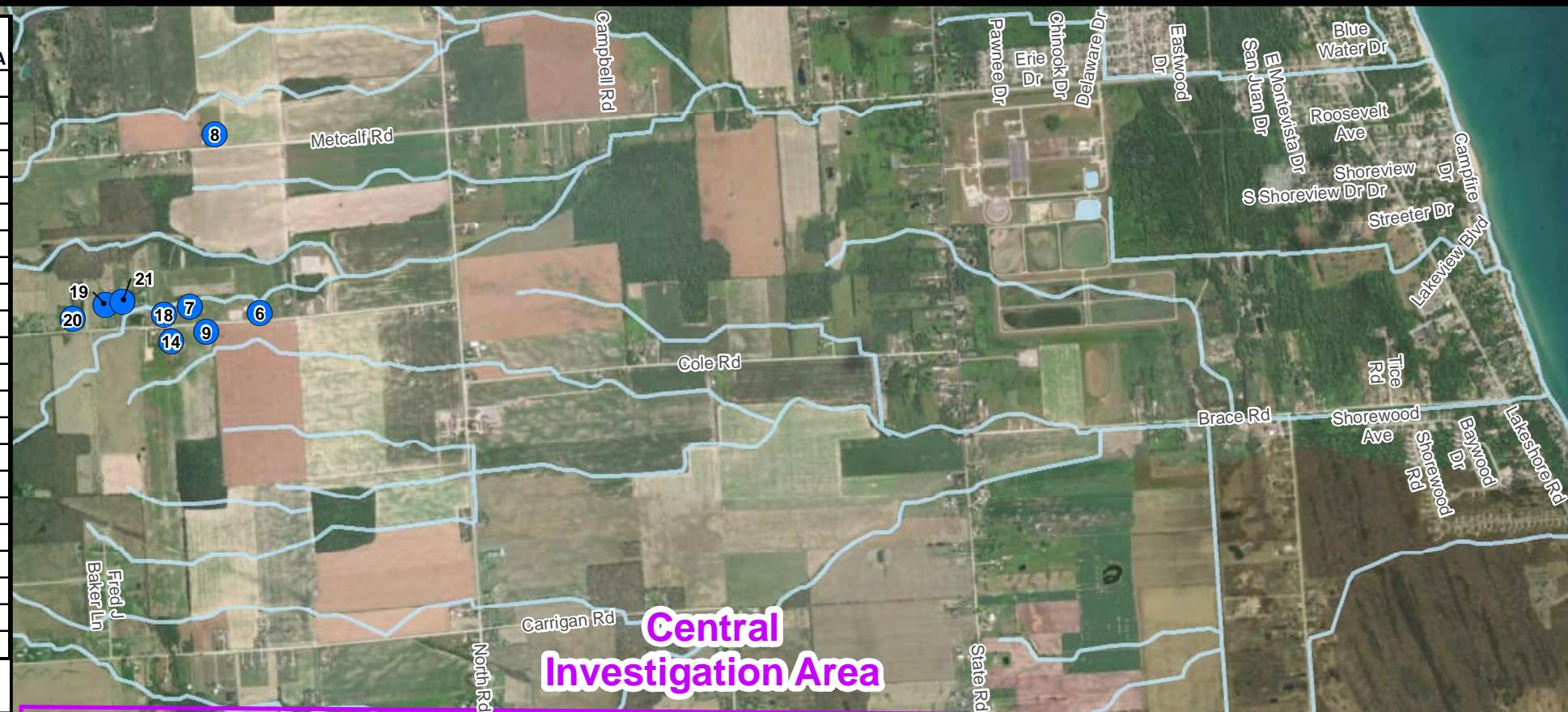
FIGURE 7

**NORTHERN INVESTIGATION AREA
PFAS RESIDENTIAL WELL RESULTS
SAINT CLAIR COUNTY**

Location ID	Well Depth (ft)	Sample Date	Total PFAS	PFHxA	PFOA	PFNA	PFBS	PFHxS	PFOS	HFPO-DA
1	N/A	11/7/2018	ND	<2	<2	<2	<2	<2	<2	NA
2	N/A	11/14/2019	ND	<2	<2	<2	<2	<2	<2	NA
3	N/A	11/14/2019	ND	<2	<2	<2	<2	<2	<2	NA
4	N/A	12/18/2019	ND	<2	<2	<2	<2	<2	<2	<4
5	140	9/29/2021	ND	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
6	N/A	9/29/2021	ND	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
7	27	9/29/2021	ND	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
8	N/A	9/29/2021	ND	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
9*	205	9/29/2021	ND	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
10	N/A	9/29/2021	ND	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
11	N/A	9/29/2021	ND	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
12	N/A	9/29/2021	ND	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9
13	N/A	9/29/2021	ND	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
14**	N/A	9/29/2021	4.9	<2.0	<2.0	<2.0	<2.0	<2.0	4.9	<2.0
15	N/A	9/29/2021	ND	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9
16	160	9/29/2021	ND	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
17	N/A	9/29/2021	ND	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9
18	N/A	9/30/2021	ND	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
19	130	9/30/2021	ND	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
20	N/A	9/30/2021	ND	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
21	126	9/30/2021	ND	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
22	138	9/30/2021	ND	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

* Location 9 services drinking water to Location 14.

** Location 14 not used for drinking water.



Legend

- Residential Sample Location
- Surface Water
- Area of Investigation
- Biosolids Application Field

Michigan Part 201 Residential & Nonresidential
Drinking Water Criteria (DWC), ng/L
PFHxA = 400,000 PFNA = 6 PFHxS = 51 HFPO-DA = 370
PFOA = 8 PFBS = 420 PFOS = 16
Red text indicates exceedance of Part 201 DWC for residential samples.
Results reported in units ng/L or parts per trillion (ppt).
Total PFAS is sum of 14, 18 or 39 PFAS compounds.
ND = Non-Detect
NA = Not Analyzed
N/A = Not Available

0 1,000 2,000 3,000 Feet

FIGURE 8
CENTRAL INVESTIGATION AREA
PFAS RESIDENTIAL WELL RESULTS
SAINT CLAIR COUNTY

EGLE

Drawn: AA Date: 12/21/2023

Approved: DB Date: 12/21/2023

Project #: 60588767

Table 1
Aqueous Samples
PFAS Analytical Results Summary

Investigation Area	Sample	Sample Type	Sample Date	Lab Report	Total PFAS	PFBA	PPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTrDA	PFTeDA	PFBS	PPeS	PFHxS	PFHpS	PFOS	PFNS	PFDS	
Northern	FG55_20230410	Surface Water	4/10/2023	2304118	65.0	1.43 J	1.71 J	2.45 J	< 4.16 U	10.8	< 4.16 U	1.38 J	< 4.16 U	< 4.16 U	< 4.16 U	47.2	< 4.16 U	< 4.16 U						
Northern	FG56_20230410	Surface Water	4/10/2023	2304118	ND	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U														
Northern	FG57_20230410	Surface Water	4/10/2023	2304118	ND	< 3.90 U	< 3.90 U	< 3.90 U	< 3.90 U	< 3.90 U														
Northern	FG58_20230410	Surface Water	4/10/2023	2304118	ND	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U														
Northern	FG59_20230410	Surface Water	4/10/2023	2304118	392	1.45 J	1.04 J	6.77	1.18 J	3.42 J	< 3.93 U	15.3	14.6	131	7.29	210 O	< 3.93 U	< 3.93 U						
Central	FG28_20230411	Surface Water	4/11/2023	2304117	3.39	< 3.92 U	3.39 J	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U										
Central	FG29_20230411	Surface Water	4/11/2023	2304117	80.8	6.25	3.60 J	3.58 J	1.88 J	11.8	< 4.10 U	3.35 J	< 4.10 U	< 4.10 U	50.3	< 4.10 U	< 4.10 U	< 4.10 U						
Central	FG30_20230411	Surface Water	4/11/2023	2304117	75.3	9.16	10.4	10.3	3.94 J	9.34	< 4.47 U	22.2	< 4.47 U	1.51 J	< 4.47 U	8.49	< 4.47 U	< 4.47 U	< 4.47 U					
Central	FG31_20230411	Surface Water	4/11/2023	2304117	1,649	2.89 J	< 4.07 U	6.64	19.0	331	5.05	< 4.07 U	2.30 J	< 4.07 U	2.45 J	9.32	1,270	< 4.07 U	< 4.07 U	< 4.07 U				
Central	FG32_20230411	Surface Water	4/11/2023	2304117	1,271	6.93	4.46	7.19	9.28	124	3.40 J	< 4.34 U	12.8	< 4.34 U	2.60 J	3.65 J	1,090	< 4.34 U	< 4.34 U	< 4.34 U				
Central	FG33_20230411	Surface Water	4/11/2023	2304117	835	2.04 J	< 4.05 U	2.58 J	4.26	76.5	1.30 J	< 4.05 U	4.18	< 4.05 U	1.30 J	3.98 J	739	< 4.05 U	< 4.05 U	< 4.05 U				
Central	FG34_20230411	Surface Water	4/11/2023	2304117	540	3.68 J	2.36 J	2.91 J	3.62 J	51.6	1.23 J	< 3.97 U	3.37 J	< 3.97 U	1.08 J	2.59 J	468	< 3.97 U	< 3.97 U	< 3.97 U				
Central	FG38_20230410	Surface Water	4/10/2023	2304117	1,138	2.62 J	1.97 J	4.16	7.10	125	2.10 J	< 4.01 U	3.15 J	< 4.01 U	2.19 J	5.68	981	< 4.01 U	< 4.01 U	< 4.01 U				
Central	FG39_20230410	Surface Water	4/10/2023	2304117	69.5	2.30 J	1.15 J	< 3.81 U	< 3.81 U	5.17	< 3.81 U	1.72 J	< 3.81 U	< 3.81 U	< 3.81 U	59.2	< 3.81 U	< 3.81 U	< 3.81 U					
Central	FG40_20230410	Surface Water	4/10/2023	2304117	17.8	2.49 J	2.74 J	3.77 J	2.06 J	2.55 J	< 4.14 U	2.62 J	< 4.14 U	< 4.14 U	1.55 J, Q	< 4.14 U	< 4.14 U	< 4.14 U	< 4.14 U					
Central	FG40-FR_20230410	Surface Water	4/10/2023	2304117	17.9	2.47 J	2.84 J	3.73 J	2.06 J	2.62 J	< 4.13 U	3.05 J	< 4.13 U	< 4.13 U	1.17 J	< 4.13 U	< 4.13 U	< 4.13 U	< 4.13 U					
Central	FG41_20230411	Surface Water	4/11/2023	2304117	39.7	1.64 J	< 3.98 U	< 3.98 U	< 3.98 U	3.88 J	< 3.98 U	1.66 J	< 3.98 U	< 3.98 U	32.5	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U					
Central	FG42_20230411	Surface Water	4/11/2023	2304117	940	2.76 J	1.64 J	3.44 J	6.42	99.3	1.46 J	< 4.16 U	2.38 J	< 4.16 U	2.09 J	5.40	815	< 4.16 U	< 4.16 U	< 4.16 U				
Central	FG44_20230410	Surface Water	4/10/2023	2304117	818	2.51 J	1.09 J	2.32 J	4.92	91.0	1.20 J	< 4.02 U	2.01 J	< 4.02 U	2.09 J	4.93	705	< 4.02 U	< 4.02 U	< 4.02 U				
Central	FG45_20230410	Surface Water	4/10/2023	2304117	808	1.74 J	2.02 J	3.95	5.62	79.2	1.02 J	< 3.91 U	2.11 J	< 3.91 U	1.46 J	3.70 J	700	< 3.91 U	< 3.91 U	< 3.91 U				
Central	FG46_20230411	Surface Water	4/11/2023	2304117	308	3.56 J	5.48	7.52	6.28	43.9	< 4.04 U	1.96 J	< 4.04 U	1.16 J	1.75 J	236	< 4.04 U	< 4.04 U	< 4.04 U					
Central	FG47_20230410	Surface Water	4/10/2023	2304117	91.3	3.82 J	7.57	9.77	6.03	13.3	< 4.04 U	1.97 J	< 4.04 U	< 4.04 U	48.8	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U					
Central	FG48_20230410	Surface Water	4/10/2023	2304117	1,315	4.02 J	2.47 J	7.67	12.1	164	2.75 J	< 4.07 U	1.60 J	< 4.07 U	1.61 J	8.28	1,110	< 4.07 U	< 4.07 U	< 4.07 U				
Central	FG49_20230411	Surface Water	4/11/2023	2304118	296	3.37 J	5.28	7.47	6.25	47.0	< 4.02 U	1.93 J	< 4.02 U	1.77 J	223	< 4.02 U	< 4.02 U	< 4.02 U	< 4.02 U					
Central	FG50_20230410	Surface Water	4/10/2023	2304117	765	3.59 J	1.33 J	3.59 J	5.37	95.6	1.47 J	< 4.09 U	2.06 J	< 4.09 U	2.28 J	4.48	645	<						

Table 1
Aqueous Samples
PFAS Analytical Results Summary

Investigation Area	Sample	Sample Type	Sample Date	Lab Report	PFOSA	4:2 FTSA	6:2 FTSA	8:2 FTSA	NETFOSAA	NMeFOSAA	PFecHS	9CI-PF3ONS	11CI-PF3OUDs	ADONA	HFPO-DA
Northern	FG55_20230410	Surface Water	4/10/2023	2304118	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	
Northern	FG56_20230410	Surface Water	4/10/2023	2304118	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	
Northern	FG57_20230410	Surface Water	4/10/2023	2304118	< 3.90 U	< 3.90 U	< 3.90 U	< 3.90 U	< 3.90 U	< 3.90 U	< 3.90 U	< 3.90 U	< 3.90 U	< 3.90 U	
Northern	FG58_20230410	Surface Water	4/10/2023	2304118	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	
Northern	FG59_20230410	Surface Water	4/10/2023	2304118	< 3.93 U	< 3.93 U	< 3.93 U	< 3.93 U	< 3.93 U	< 3.93 U	< 3.93 U	< 3.93 U	< 3.93 U	< 3.93 U	
Central	FG28_20230411	Surface Water	4/11/2023	2304117	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	
Central	FG29_20230411	Surface Water	4/11/2023	2304117	< 4.10 U	< 4.10 U	< 4.10 U	< 4.10 U	< 4.10 U	< 4.10 U	< 4.10 U	< 4.10 U	< 4.10 U	< 4.10 U	
Central	FG30_20230411	Surface Water	4/11/2023	2304117	< 4.47 U	< 4.47 U	< 4.47 U	< 4.47 U	< 4.47 U	< 4.47 U	< 4.47 U	< 4.47 U	< 4.47 U	< 4.47 U	
Central	FG31_20230411	Surface Water	4/11/2023	2304117	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	
Central	FG32_20230411	Surface Water	4/11/2023	2304117	3.67 J	< 4.34 U	< 4.34 U	< 4.34 U	3.17 J	< 4.34 U	< 4.34 U	< 4.34 U	< 4.34 U	< 4.34 U	
Central	FG33_20230411	Surface Water	4/11/2023	2304117	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U	
Central	FG34_20230411	Surface Water	4/11/2023	2304117	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	
Central	FG38_20230410	Surface Water	4/10/2023	2304117	1.49 J, Q	< 4.01 U	< 4.01 U	< 4.01 U	1.44 J	< 4.01 U	< 4.01 U	< 4.01 U	< 4.01 U	< 4.01 U	
Central	FG39_20230410	Surface Water	4/10/2023	2304117	< 3.81 U	< 3.81 U	< 3.81 U	< 3.81 U	< 3.81 U	< 3.81 U	< 3.81 U	< 3.81 U	< 3.81 U	< 3.81 U	
Central	FG40_20230410	Surface Water	4/10/2023	2304117	< 4.14 U	< 4.14 U	< 4.14 U	< 4.14 U	< 4.14 U	< 4.14 U	< 4.14 U	< 4.14 U	< 4.14 U	< 4.14 U	
Central	FG40-FR_20230410	Surface Water	4/10/2023	2304117	< 4.13 U	< 4.13 U	< 4.13 U	< 4.13 U	< 4.13 U	< 4.13 U	< 4.13 U	< 4.13 U	< 4.13 U	< 4.13 U	
Central	FG41_20230411	Surface Water	4/11/2023	2304117	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	< 3.98 U	
Central	FG42_20230411	Surface Water	4/11/2023	2304117	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	< 4.16 U	
Central	FG44_20230410	Surface Water	4/10/2023	2304117	< 4.02 U	< 4.02 U	< 4.02 U	< 4.02 U	1.27 J	< 4.02 U	< 4.02 U	< 4.02 U	< 4.02 U	< 4.02 U	
Central	FG45_20230410	Surface Water	4/10/2023	2304117	3.68 J, Q	< 3.91 U	< 3.91 U	< 3.91 U	3.60 J	< 3.91 U	< 3.91 U	< 3.91 U	< 3.91 U	< 3.91 U	
Central	FG46_20230411	Surface Water	4/11/2023	2304117	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	
Central	FG47_20230410	Surface Water	4/10/2023	2304117	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	< 4.04 U	
Central	FG48_20230410	Surface Water	4/10/2023	2304117	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	< 4.07 U	
Central	FG49_20230411	Surface Water	4/11/2023	2304118	< 4.02 U	< 4.02 U	< 4.02 U	< 4.02 U	< 4.02 U	< 4.02 U	< 4.02 U	< 4.02 U	< 4.02 U	< 4.02 U	
Central	FG50_20230410	Surface Water	4/10/2023	2304117	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	< 4.09 U	
Central	FG51_20230410	Surface Water	4/10/2023	2304117	< 4.12 U	< 4.12 U	< 4.12 U	< 4.12 U	< 4.12 U	< 4.12 U	< 4.12 U	< 4.12 U	< 4.12 U	< 4.12 U	
Central	FG52_20230410	Surface Water	4/10/2023	2304118	< 3.99 U	< 3.99 U	< 3.99 U	< 3.99 U	< 3.99 U	< 3.99 U	< 3.99 U	< 3.99 U	< 3.99 U	< 3.99 U	
Central	FG52-FR_20230410	Surface Water	4/10/2023	2304118	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	< 3.92 U	
Central	FG54_20230410	Surface Water	4/10/2023	2304118	< 4.23 U	< 4.23 U	< 4.23 U	< 4.23 U	< 4.23 U	< 4.23 U	< 4.23 U	< 4.23 U	< 4.23 U	< 4.23 U	
Central	TD4_20230410	Tile Drain	4/10/2023	2304116	23.9 Q	< 3.88 U	< 3.88 U	< 3.88 U	5.44	< 3.88 U	< 3.88 U	< 3.88 U	< 3.88 U	< 3.88 U	
Central	TD7 FR_20230410	Tile Drain	4/10/2023	2304116	< 3.78 U	< 3.78 U	< 3.78 U	< 3.78 U	< 3.78 U	< 3.78 U	< 3.78 U	< 3.78 U	< 3.78 U	< 3.78 U	
Central	TD7_20230410	Tile Drain	4/10/2023	2304116	< 3.86 U	< 3.86 U	< 3.86 U	< 3.86 U	< 3.86 U	< 3.86 U	< 3.86 U	< 3.86 U	< 3.86 U	< 3.86 U	
Southern	FG60_20230411	Surface Water	4/11/2023	2304118	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	< 3.97 U	
Southern	FG61_20230411	Surface Water	4/11/2023	2304118	< 3.95 U	< 3.95 U	< 3.95 U	< 3.95 U	< 3.95 U	< 3.95 U	< 3.95 U	< 3.95 U	< 3.95 U	< 3.95 U	
Southern	FG61-FR_20230411	Surface Water	4/11/2023	2304118	< 4.08 U	< 4.08 U	< 4.08 U	< 4.08 U	< 4.08 U	< 4.08 U	< 4.08 U	< 4.08 U	< 4.08 U	< 4.08 U	
Southern	FG63_20230411	Surface Water	4/11/2023	2304118	< 4.19 U	< 4.19 U	< 4.19 U	< 4.19 U	< 4.19 U	< 4.19 U	< 4.19 U	< 4.19 U	< 4.19 U	< 4.19 U	
Southern	FG64_20230411	Surface Water	4/11/2023	2304118	< 4.18 U	< 4.18 U	< 4.18 U	< 4.18 U	< 4.18 U	< 4.18 U	< 4.18 U	< 4.18 U	< 4.18 U	< 4.18 U	
	EQUIPMENT BLANK 1_20230411	QA/QC	4/11/2023	2304116	< 3.94 U	< 3.94 U	< 3.94 U	< 3.94 U							

Table 2
Soil Samples
PFAS Analytical Results Summary

Investigation Area	Agricultural Field Site	Sample	Sample Type	Sample Date	Lab Report	Total PFAS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTrDA	PFTeDA	PFBS	PPeS	PFHxS	PFHpS	PFOS	PFNS	PFDS
Central	Agricultural Field 1	DU-1_20230410	Soil	4/10/2023	2304116	13.8	< 2.23 U	< 2.23 U	< 2.23 U	< 2.23 U	0.782 J	< 2.23 U	13.0	< 2.23 U	< 2.23 U									
Central	Agricultural Field 1	DU-2A_20230410	Soil	4/10/2023	2304116	55.6	< 2.45 U	< 2.45 U	< 2.45 U	< 2.45 U	1.80 J	< 2.45 U	49.6	< 2.45 U	< 2.45 U									
Central	Agricultural Field 1	DU-2B_20230410	Soil	4/10/2023	2304116	54.9	< 2.33 U	< 2.33 U	< 2.33 U	< 2.33 U	1.65 J	< 2.33 U	49.3	< 2.33 U	< 2.33 U									
Central	Agricultural Field 1	DU-2C_20230410	Soil	4/10/2023	2304116	56.8	< 2.25 U	< 2.25 U	< 2.25 U	< 2.25 U	1.66 J	< 2.25 U	51.3	< 2.25 U	< 2.25 U									
Central	Agricultural Field 1	DU-3_20230410	Soil	4/10/2023	2304116	75.2	< 2.38 U	< 2.38 U	< 2.38 U	< 2.38 U	1.98 J	< 2.38 U	62.1	< 2.38 U	< 2.38 U									
Central	Agricultural Field 1	DU-4_20230411	Soil	4/11/2023	2304116	68.2	< 2.47 U	< 2.47 U	< 2.47 U	< 2.47 U	1.66 J	< 2.47 U	57.7	< 2.47 U	< 2.47 U									
Central	Agricultural Field 1	DU-5_20230411	Soil	4/11/2023	2304116	16.2	< 2.32 U	< 2.32 U	< 2.32 U	< 2.32 U	0.918 J	< 2.32 U	15.3	< 2.32 U	< 2.32 U									
Central	Agricultural Field 1	DU-6_20230411	Soil	4/11/2023	2304116	12.8	< 2.39 U	< 2.39 U	< 2.39 U	< 2.39 U	0.826 J	< 2.39 U	12.0	< 2.39 U	< 2.39 U									

Legend:

All values are in nanograms per liter (**ng/g**) or parts per billion (**ppb**)"<" = Values Below Level of Quantitation (**LOQ**) or Reporting Limit (**RL**)

"---" = Not analyzed

"J" = Estimated Concentration. The amount detected is below the LOQ.

"Q" = This compound was also detected in the method blank.

Bolded values indicate detection

Perfluoroalkyl Carboxylic Acids (PFCAs)	PFBA = Perfluorobutanoic acid	PFOSA = Perfluoroctane sulfonamide
Perfluoroalkane Sulfonic Acids (PFASes)	PFPeA = Perfluoropentanoic acid	4:2 FTSA = 4:2 Fluorotelomer sulfonic acid
Perfluoroalkane Sulfonamides (FASAs)	PFHxA = Perfluorohexanoic acid	6:2 FTSA = 4:2 Fluorotelomer sulfonic acid
Fluorotelomer Sulfonic Acids (FTSAs)	PFHpA = Perfluoroheptanoic acid	8:2 FTSA = 4:2 Fluorotelomer sulfonic acid
N-Ethyl Perfluoroalkane Sulfonamidoacetic Acids (N-EtFASAA)	PFOA = Perfluorooctanoic acid	N-EtFOSAA = N-Ethyl perfluoroctane sulfonamidoacetic acid
N-Methyl Perfluoroalkane Sulfonamidoacetic Acids (N-MeFASAA)	PFNA = Perfluorononanoic acid	N-MeFOSAA = N-Methyl perfluoroctane sulfonamidoacetic acid
Cyclic PFAS	PFDA = Perfluorodecanoic acid	PFECHS = Perfluoroethylcyclohexanesulfonate
PFAS Replacement Chemistry Compounds	PFUnDA = Perfluoroundecanoic acid	9CI-PF3ONS or F53B-Minor = 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid
	PFDoDA = Perfluorododecanoic acid	11CI-PF3ONS or F53B-Major = 11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid
	PFTrDA = Perfluorotridecanoic acid	ADONA = Dodecafluoro-3H-4,8-dioxanonanoate
	PFTeDA = Perfluorotetradecanoic acid	HFPO-DA or Gen-X = Hexafluoropropylene oxide dimer acid
	PFBS = Perfluorobutane sulfonic acid	
	PPeS = Perfluoropentane sulfonic acid	
	PFHxS = Perfluorohexane sulfonic acid	
	PFHpS = Perfluoroheptane sulfonic acid	
	PFOS = Perfluoroctane sulfonic acid	
	PFNS = Perfluorononane sulfonic acid	
	PFDS = Perfluorodecane sulfonic acid	

Table 2
Soil Samples
PFAS Analytical Results Summary

Investigation Area	Agricultural Field Site	Sample	Sample Type	Sample Date	Lab Report	PFOSA	4:2 FTSA	6:2 FTSA	8:2 FTSA	N-EtFOSAA	N-MeFOSAA	PFechs	9CI-PF3ONS	11CI-PF3OUdS	ADONA	HFPO-DA
Central	Agricultural Field 1	DU-1_20230410	Soil	4/10/2023	2304116	< 2.23 U	< 2.23 U	< 2.23 U	< 2.23 U	< 2.23 U	< 2.23 U	< 2.23 U	< 2.23 U	< 2.23 U	< 2.23 U	< 2.23 U
Central	Agricultural Field 1	DU-2A_20230410	Soil	4/10/2023	2304116	1.95 J, Q	< 2.45 U	< 2.45 U	< 2.45 U	2.20 J	< 2.45 U	< 2.45 U	< 2.45 U	< 2.45 U	< 2.45 U	< 2.45 U
Central	Agricultural Field 1	DU-2B_20230410	Soil	4/10/2023	2304116	2.15 J	< 2.33 U	< 2.33 U	< 2.33 U	1.84 J	< 2.33 U	< 2.33 U	< 2.33 U	< 2.33 U	< 2.33 U	< 2.33 U
Central	Agricultural Field 1	DU-2C_20230410	Soil	4/10/2023	2304116	1.99 J, Q	< 2.25 U	< 2.25 U	< 2.25 U	1.89 J	< 2.25 U	< 2.25 U	< 2.25 U	< 2.25 U	< 2.25 U	< 2.25 U
Central	Agricultural Field 1	DU-3_20230410	Soil	4/10/2023	2304116	5.91	< 2.38 U	< 2.38 U	< 2.38 U	5.16	< 2.38 U	< 2.38 U	< 2.38 U	< 2.38 U	< 2.38 U	< 2.38 U
Central	Agricultural Field 1	DU-4_20230411	Soil	4/11/2023	2304116	4.71	< 2.47 U	< 2.47 U	< 2.47 U	4.08	< 2.47 U	< 2.47 U	< 2.47 U	< 2.47 U	< 2.47 U	< 2.47 U
Central	Agricultural Field 1	DU-5_20230411	Soil	4/11/2023	2304116	< 2.32 U	< 2.32 U	< 2.32 U	< 2.32 U	< 2.32 U	< 2.32 U	< 2.32 U	< 2.32 U	< 2.32 U	< 2.32 U	< 2.32 U
Central	Agricultural Field 1	DU-6_20230411	Soil	4/11/2023	2304116	< 2.39 U	< 2.39 U	< 2.39 U	< 2.39 U	< 2.39 U	< 2.39 U	< 2.39 U	< 2.39 U	< 2.39 U	< 2.39 U	< 2.39 U

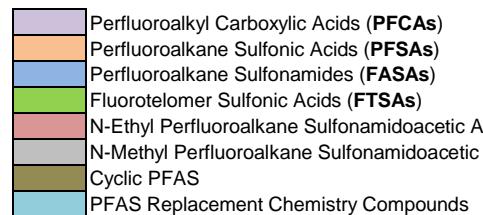
Legend:

All values are in nanograms per liter (**ng/g**) or parts per billion (**ppb**)"<" = Values Below Level of Quantitation (**LOQ**) or Reporting Limit (**RL**)

"---" = Not analyzed

"J" = Estimated Concentration. The amount detected is below the LOQ.

"Q" = This compound was also detected in the method blank.

Bolded values indicate detection

PFBA = Perfluorobutanoic acid
 PFPeA = Perfluoropentanoic acid
 PFHxA = Perfluorohexanoic acid
 PFHpA = Perfluoroheptanoic acid
 PFOA = Perfluorooctanoic acid
 PFNA = Perfluorononanoic acid
 PFDA = Perfluorodecanoic acid
 PFUnDA = Perfluoroundecanoic acid
 PFDoDA = Perfluorododecanoic acid
 PFTrDA = Perfluorotridecanoic acid
 PFTeDA = Perfluorotetradecanoic acid
 PFBS = Perfluorobutane sulfonic acid
 PFPeS = Perfluoropentane sulfonic acid
 PFHxS = Perfluorohexane sulfonic acid
 PFHpS = Perfluoroheptane sulfonic acid
 PFOS = Perfluorooctane sulfonic acid
 PFNS = Perfluorononane sulfonic acid
 PFDS = Perfluorodecane sulfonic acid

PFOSA = Perfluorooctane sulfonamide
 4:2 FTSA = 4:2 Fluorotelomer sulfonic acid
 6:2 FTSA = 4:2 Fluorotelomer sulfonic acid
 8:2 FTSA = 4:2 Fluorotelomer sulfonic acid
 N-EtFOSAA = N-Ethyl perfluorooctane sulfonamidoacetic acid
 N-MeFOSAA = N-Methyl perfluorooctane sulfonamidoacetic acid
 PFECHS = Perfluoroethylcyclohexanesulfonate
 9CI-PF3ONS or F53B-Minor = 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid
 11CI-PF3ONS or F53B-Major = 11-chloroeicosfluoro-3-oxaundecane-1-sulfonic acid
 ADONA = Dodecafluoro-3H-4,8-dioxananoate
 HFPO-DA or Gen-X = Hexafluoropropylene oxide dimer acid



May 19, 2023

**Enthalpy Analytical - El Dorado Hills
Work Order No. 2304116**

Mr. Kevin Wojciechowski
Michigan EGLE
525 West Allegan
Lansing, MI 48933

Dear Mr. Wojciechowski,

Enclosed are the results for the sample set received at Enthalpy Analytical - EDH on April 13, 2023 under your Project Name 'St. Clair County'.

Enthalpy Analytical - EDH is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at james.fox@enthalpy.com.

Thank you for choosing Enthalpy Analytical - EDH as part of your analytical support team.

Sincerely,

Jamie Fox
Senior Program Manager



Enthalpy Analytical -EDH certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Enthalpy Analytical -EDH.

Enthalpy Analytical - EDH Work Order No. 2304116
Case Narrative

Sample Condition on Receipt:

Eight soil samples and six aqueous samples were received and stored securely in accordance with Enthalpy Analytical - EDH standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements. A revised Chain-of-Custody (CoC) was received by email on April 21, 2023. A sample ID discrepancy was noted for sample "Equipment Blank 1" between the container label and the Chain-of-Custody (CoC). The sample ID has been reported as listed on the CoC.

Analytical Notes:

PFAS Isotope Dilution Method - Solid

The samples were extracted and analyzed for a selected list of PFAS using Enthalpy Analytical - EDH's Isotope Dilution Method. 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 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 for all QC and field samples were within the acceptance criteria.

PFAS Isotope Dilution Method - Aqueous

The samples were extracted and analyzed for a selected list of PFAS using Enthalpy Analytical - EDH's PFAS Isotope Dilution Method. 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 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 labeled standard recoveries for all QC and field samples were within the acceptance criteria.

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Sample Inventory Report

Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2304116-01	DU-1	10-Apr-23 14:20	13-Apr-23 10:13	Plastic Bag
2304116-02	DU-2A	10-Apr-23 12:00	13-Apr-23 10:13	Plastic Bag
2304116-03	DU-2B	10-Apr-23 11:55	13-Apr-23 10:13	Plastic Bag
2304116-04	DU-2C	10-Apr-23 14:13	13-Apr-23 10:13	Plastic Bag
2304116-05	DU-3	10-Apr-23 15:45	13-Apr-23 10:13	Plastic Bag
2304116-06	DU-4	11-Apr-23 10:50	13-Apr-23 10:13	Plastic Bag
2304116-07	DU-5	11-Apr-23 10:45	13-Apr-23 10:13	Plastic Bag
2304116-08	DU-6	11-Apr-23 11:50	13-Apr-23 10:13	Plastic Bag
2304116-09	Field Blank #1	10-Apr-23 16:29	13-Apr-23 10:13	HDPE Bottle, 250 mL
2304116-10	Field Blank #2	11-Apr-23 11:11	13-Apr-23 10:13	HDPE Bottle, 250 mL
2304116-11	TD4	10-Apr-23 16:42	13-Apr-23 10:13	HDPE Bottle, 250 mL
2304116-12	TD7	10-Apr-23 17:10	13-Apr-23 10:13	HDPE Bottle, 250 mL
2304116-13	TD7 FR	10-Apr-23 17:12	13-Apr-23 10:13	HDPE Bottle, 250 mL
2304116-14	Equipment Blank 1	11-Apr-23 11:20	13-Apr-23 10:13	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank										PFAS Isotope Dilution Method			
Client Data					Laboratory Data								
Name:	Michigan EGLE	Matrix:	Solid	Lab Sample:	B23E057-BLK1			Column:	BEH C18				
Analyte	CAS Number	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
PFBA	375-22-4	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFPeA	2706-90-3	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFBS	375-73-5	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
4:2 FTS	757124-72-4	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFHxA	307-24-4	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFPeS	2706-91-4	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
HFPO-DA	13252-13-6	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFHpA	375-85-9	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
ADONA	919005-14-4	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFHxS	355-46-4	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
6:2 FTS	27619-97-2	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFOA	335-67-1	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFecHS	646-83-3	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFHpS	375-92-8	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFNA	375-95-1	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFOSA	754-91-6	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFOS	1763-23-1	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
9Cl-PF3ONS	756426-58-1	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFDA	335-76-2	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
8:2 FTS	39108-34-4	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFNS	68259-12-1	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
MeFOSAA	2355-31-9	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
EtFOSAA	2991-50-6	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFUnA	2058-94-8	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFDS	335-77-3	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
11Cl-PF3OUdS	763051-92-9	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFDoA	307-55-1	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFTrDA	72629-94-8	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
PFTeDA	376-06-7	ND	0.500	1.00	2.00		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
13C3-PFBA	IS	88.0	25 - 150			B23E057	09-May-23	1.00 g	13-May-23 01:52	1			
13C3-PFPeA	IS	86.2	25 - 150			B23E057	09-May-23	1.00 g	13-May-23 01:52	1			
13C3-PFBS	IS	89.3	25 - 150			B23E057	09-May-23	1.00 g	13-May-23 01:52	1			
13C2-4:2 FTS	IS	87.7	25 - 150			B23E057	09-May-23	1.00 g	13-May-23 01:52	1			
13C2-PFHxA	IS	92.1	25 - 150			B23E057	09-May-23	1.00 g	13-May-23 01:52	1			
13C3-HFPO-DA	IS	92.3	25 - 150			B23E057	09-May-23	1.00 g	13-May-23 01:52	1			
13C4-PFHpA	IS	87.9	25 - 150			B23E057	09-May-23	1.00 g	13-May-23 01:52	1			
13C3-PFHxS	IS	86.3	25 - 150			B23E057	09-May-23	1.00 g	13-May-23 01:52	1			

Sample ID: Method Blank								PFAS Isotope Dilution Method			
Client Data				Laboratory Data							
Name:	Michigan EGLE	Matrix:	Solid	Lab Sample: B23E057-BLK1				Column: BEH C18			
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C2-6:2 FTS	IS	75.3	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
13C2-PFOA	IS	80.2	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
13C5-PFNA	IS	70.3	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
13C8-PFOSA	IS	29.3	10 - 150		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
13C8-PFOS	IS	73.8	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
13C2-PFDA	IS	50.8	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
13C2-8:2 FTS	IS	67.5	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
d3-MeFOSAA	IS	54.6	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
d5-EtFOSAA	IS	53.9	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
13C2-PFUnA	IS	48.1	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
13C2-PFDoA	IS	50.2	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		
13C2-PFTeDA	IS	59.6	20 - 150		B23E057	09-May-23	1.00 g	13-May-23 01:52	1		

DL - Detection Limit

LOD - Limit of Detection

The results are reported in dry weight.

LOQ - Limit of quantitation

The sample size is reported in wet weight.

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 Method**

Client Data		Laboratory Data									
Name:	Michigan EGLE	Matrix:	Solid	Lab Sample:	B23E057-BS1			Column:	BEH C18		
Analyte	CAS Number	Amt Found (ng/g)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	9.33	10.0	93.3	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFPeA	2706-90-3	9.22	10.0	92.2	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFBS	375-73-5	8.82	10.0	88.2	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
4:2 FTS	757124-72-4	9.02	10.0	90.2	60 - 145		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFHxA	307-24-4	8.90	10.0	89.0	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFPeS	2706-91-4	9.40	10.0	94.0	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
HFPO-DA	13252-13-6	9.20	10.0	92.0	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFHpA	375-85-9	9.13	10.0	91.3	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
ADONA	919005-14-4	8.88	10.0	88.8	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFHxS	355-46-4	9.16	10.0	91.6	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
6:2 FTS	27619-97-2	9.06	10.0	90.6	60 - 140		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFOA	335-67-1	8.88	10.0	88.8	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFecHS	646-83-3	9.05	10.0	90.5	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFHpS	375-92-8	12.1	10.0	121	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFNA	375-95-1	9.43	10.0	94.3	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFOSA	754-91-6	9.83	10.0	98.3	65 - 140		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFOS	1763-23-1	9.14	10.0	91.4	65 - 140		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
9Cl-PF3ONS	756426-58-1	7.76	10.0	77.6	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFDA	335-76-2	9.91	10.0	99.1	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
8:2 FTS	39108-34-4	9.09	10.0	90.9	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFNS	68259-12-1	7.22	10.0	72.2	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
MeFOSAA	2355-31-9	8.80	10.0	88.0	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
EtFOSAA	2991-50-6	8.48	10.0	84.8	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFUnA	2058-94-8	9.23	10.0	92.3	65 - 140		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFDS	335-77-3	7.02	10.0	70.2	50 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
11Cl-PF3OUdS	763051-92-9	10.1	10.0	101	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFDoA	307-55-1	8.84	10.0	88.4	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFTrDA	72629-94-8	9.46	10.0	94.6	60 - 140		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
PFTeDA	376-06-7	7.82	10.0	78.2	65 - 135		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
Labeled Standards		Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C3-PFBA		IS	97.7	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1	
13C3-PFPeA		IS	99.2	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1	
13C3-PFBS		IS	95.0	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1	
13C2-4:2 FTS		IS	95.9	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1	
13C2-PFHxA		IS	103	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1	

Sample ID: OPR
PFAS Isotope Dilution Method

Client Data		Laboratory Data								
Name:	Michigan EGLE	Matrix:	Solid	Lab Sample:	B23E057-BS1		Column:	BEH C18		
Labeled Standards		Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-HFPO-DA		IS	106	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
13C4-PFH _p A		IS	95.9	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
13C3-PFH _x S		IS	92.7	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
13C2-6:2 FTS		IS	83.6	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
13C2-PFOA		IS	86.9	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
13C5-PFNA		IS	63.5	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
13C8-PFOSA		IS	31.3	10 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
13C8-PFOS		IS	64.2	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
13C2-PFDA		IS	44.5	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
13C2-8:2 FTS		IS	58.6	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
d3-MeFOSAA		IS	50.9	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
d5-EtFOSAA		IS	50.5	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
13C2-PFUnA		IS	42.1	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
13C2-PFD _o A		IS	42.1	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1
13C2-PFTeDA		IS	49.6	20 - 150		B23E057	09-May-23	1.00 g	13-May-23 02:02	1

Sample ID: DU-1											PFAS Isotope Dilution Method				
Client Data				Laboratory Data											
Name:	Michigan EGLE	Matrix:	Soil	Lab Sample:	2304116-01					Column:	BEH C18				
Project:	St. Clair County	Date Collected:	10-Apr-23 14:20	Date Received:	13-Apr-23 10:13					% Solids:	83.6				
Analyte	CAS Number	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
PFBA	375-22-4	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFPeA	2706-90-3	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFBS	375-73-5	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
4:2 FTS	757124-72-4	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFHxA	307-24-4	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFPeS	2706-91-4	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
HFPO-DA	13252-13-6	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFHpA	375-85-9	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
ADONA	919005-14-4	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFHxS	355-46-4	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
6:2 FTS	27619-97-2	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFOA	335-67-1	0.782	0.559	1.12	2.23	J	B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFecHS	646-83-3	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFHpS	375-92-8	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFNA	375-95-1	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFOSA	754-91-6	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFOS	1763-23-1	13.0	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
9Cl-PF3ONS	756426-58-1	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFDA	335-76-2	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
8:2 FTS	39108-34-4	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFNS	68259-12-1	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
MeFOSAA	2355-31-9	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
EtFOSAA	2991-50-6	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFUnA	2058-94-8	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFDS	335-77-3	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
11Cl-PF3OUdS	763051-92-9	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFDoA	307-55-1	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFTrDA	72629-94-8	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
PFTeDA	376-06-7	ND	0.559	1.12	2.23		B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
13C3-PFBA	IS	101		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
13C3-PFPeA	IS	103		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
13C3-PFBS	IS	102		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
13C2-4:2 FTS	IS	111		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
13C2-PFHxA	IS	106		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
13C3-HFPO-DA	IS	109		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 02:33	1				
13C4-PFHpA	IS	103		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 02:33	1				

Sample ID: DU-1

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Soil
 Date Collected: 10-Apr-23 14:20

Laboratory Data

Lab Sample: 2304116-01
 Date Received: 13-Apr-23 10:13
 % Solids: 83.6

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFHxS	IS	102	25 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1
13C2-6:2 FTS	IS	94.9	25 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1
13C2-PFOA	IS	100	25 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1
13C5-PFNA	IS	91.5	25 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1
13C8-PFOSA	IS	53.2	10 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1
13C8-PFOS	IS	100	25 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1
13C2-PFDA	IS	75.2	25 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1
13C2-8:2 FTS	IS	94.8	25 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1
d3-MeFOSAA	IS	84.5	25 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1
d5-EtFOSAA	IS	86.6	25 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1
13C2-PFUnA	IS	69.8	25 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1
13C2-PFDoA	IS	74.8	25 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1
13C2-PFTeDA	IS	79.6	20 - 150		B23E057	09-May-23	1.07 g	13-May-23 02:33	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

The results are reported in dry weight.

The sample size is reported in wet weight.

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: DU-2A											PFAS Isotope Dilution Method				
Client Data					Laboratory Data										
Name:	Michigan EGLE	Matrix:	Soil		Lab Sample:	2304116-02		Column:		BEH C18					
Project:	St. Clair County	Date Collected:	10-Apr-23 12:00		Date Received:	13-Apr-23 10:13		% Solids:		80.0					
Analyte	CAS Number	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
PFBA	375-22-4	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFPeA	2706-90-3	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFBS	375-73-5	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
4:2 FTS	757124-72-4	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFHxA	307-24-4	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFPeS	2706-91-4	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
HFPO-DA	13252-13-6	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFHpA	375-85-9	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
ADONA	919005-14-4	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFHxS	355-46-4	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
6:2 FTS	27619-97-2	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFOA	335-67-1	1.80	0.613	1.23	2.45	J	B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFecHS	646-83-3	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFHpS	375-92-8	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFNA	375-95-1	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFOSA	754-91-6	1.95	0.613	1.23	2.45	J, Q	B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFOS	1763-23-1	49.6	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
9Cl-PF3ONS	756426-58-1	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFDA	335-76-2	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
8:2 FTS	39108-34-4	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFNS	68259-12-1	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
MeFOSAA	2355-31-9	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
EtFOSAA	2991-50-6	2.20	0.613	1.23	2.45	J	B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFUnA	2058-94-8	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFDS	335-77-3	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
11Cl-PF3OUdS	763051-92-9	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFDoA	307-55-1	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFTrDA	72629-94-8	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
PFTeDA	376-06-7	ND	0.613	1.23	2.45		B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
13C3-PFBA	IS	98.5		25 - 150			B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
13C3-PFPeA	IS	97.8		25 - 150			B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
13C3-PFBS	IS	93.8		25 - 150			B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
13C2-4:2 FTS	IS	107		25 - 150			B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
13C2-PFHxA	IS	101		25 - 150			B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
13C3-HFPO-DA	IS	106		25 - 150			B23E057	09-May-23	1.02 g	13-May-23 02:44	1				
13C4-PFHpA	IS	96.4		25 - 150			B23E057	09-May-23	1.02 g	13-May-23 02:44	1				

Sample ID: DU-2A

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Soil
 Date Collected: 10-Apr-23 12:00

Laboratory Data

Lab Sample: 2304116-02
 Date Received: 13-Apr-23 10:13
 % Solids: 80.0

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	97.9	25 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1
13C2-6:2 FTS	IS	93.0	25 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1
13C2-PFOA	IS	94.6	25 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1
13C5-PFNA	IS	89.0	25 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1
13C8-PFOSA	IS	60.8	10 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1
13C8-PFOS	IS	101	25 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1
13C2-PFDA	IS	78.0	25 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1
13C2-8:2 FTS	IS	94.1	25 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1
d3-MeFOSAA	IS	78.7	25 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1
d5-EtFOSAA	IS	82.1	25 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1
13C2-PFUnA	IS	71.4	25 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1
13C2-PFDoA	IS	76.9	25 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1
13C2-PFTeDA	IS	63.8	20 - 150		B23E057	09-May-23	1.02 g	13-May-23 02:44	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

The results are reported in dry weight.

The sample size is reported in wet weight.

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: DU-2B											PFAS Isotope Dilution Method				
Client Data					Laboratory Data										
Name:	Michigan EGLE	Matrix:	Soil		Lab Sample:	2304116-03					Column:	BEH C18			
Project:	St. Clair County	Date Collected:	10-Apr-23 11:55		Date Received:	13-Apr-23 10:13					% Solids:	84.9			
Analyte	CAS Number	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
PFBA	375-22-4	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFPeA	2706-90-3	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFBS	375-73-5	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
4:2 FTS	757124-72-4	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFHxA	307-24-4	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFPeS	2706-91-4	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
HFPO-DA	13252-13-6	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFHpA	375-85-9	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
ADONA	919005-14-4	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFHxS	355-46-4	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
6:2 FTS	27619-97-2	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFOA	335-67-1	1.65	0.583	1.17	2.33	J	B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFecHS	646-83-3	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFHpS	375-92-8	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFNA	375-95-1	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFOSA	754-91-6	2.15	0.583	1.17	2.33	J	B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFOS	1763-23-1	49.3	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
9Cl-PF3ONS	756426-58-1	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFDA	335-76-2	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
8:2 FTS	39108-34-4	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFNS	68259-12-1	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
MeFOSAA	2355-31-9	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
EtFOSAA	2991-50-6	1.84	0.583	1.17	2.33	J	B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFUnA	2058-94-8	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFDS	335-77-3	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
11Cl-PF3OUdS	763051-92-9	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFDoA	307-55-1	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFTrDA	72629-94-8	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
PFTeDA	376-06-7	ND	0.583	1.17	2.33		B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
Labeled Standards	Type	% Recovery		Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution					
13C3-PFBA	IS	95.6		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
13C3-PFPeA	IS	95.2		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
13C3-PFBS	IS	95.4		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
13C2-4:2 FTS	IS	103		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
13C2-PFHxA	IS	98.8		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
13C3-HFPO-DA	IS	103		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 02:54	1				
13C4-PFHpA	IS	95.7		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 02:54	1				

Sample ID: DU-2B

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Soil
 Date Collected: 10-Apr-23 11:55

Laboratory Data

Lab Sample: 2304116-03
 Date Received: 13-Apr-23 10:13
 % Solids: 84.9

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	90.8	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1
13C2-6:2 FTS	IS	90.5	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1
13C2-PFOA	IS	90.8	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1
13C5-PFNA	IS	86.2	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1
13C8-PFOSA	IS	55.1	10 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1
13C8-PFOS	IS	96.5	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1
13C2-PFDA	IS	76.0	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1
13C2-8:2 FTS	IS	92.4	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1
d3-MeFOSAA	IS	73.2	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1
d5-EtFOSAA	IS	79.1	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1
13C2-PFUnA	IS	69.0	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1
13C2-PFDaA	IS	73.3	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1
13C2-PFTeDA	IS	65.9	20 - 150		B23E057	09-May-23	1.01 g	13-May-23 02:54	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

The results are reported in dry weight.

The sample size is reported in wet weight.

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: DU-2C											PFAS Isotope Dilution Method				
Client Data					Laboratory Data										
Name:	Michigan EGLE	Matrix:	Soil		Lab Sample:	2304116-04		Column:		BEH C18					
Project:	St. Clair County	Date Collected:	10-Apr-23 14:13		Date Received:	13-Apr-23 10:13		% Solids:	83.3						
Analyte	CAS Number	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
PFBA	375-22-4	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFPeA	2706-90-3	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFBS	375-73-5	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
4:2 FTS	757124-72-4	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFHxA	307-24-4	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFPeS	2706-91-4	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
HFPO-DA	13252-13-6	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFHpA	375-85-9	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
ADONA	919005-14-4	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFHxS	355-46-4	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
6:2 FTS	27619-97-2	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFOA	335-67-1	1.66	0.561	1.12	2.25	J	B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFecHS	646-83-3	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFHpS	375-92-8	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFNA	375-95-1	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFOSA	754-91-6	1.99	0.561	1.12	2.25	J, Q	B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFOS	1763-23-1	51.3	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
9Cl-PF3ONS	756426-58-1	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFDA	335-76-2	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
8:2 FTS	39108-34-4	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFNS	68259-12-1	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
MeFOSAA	2355-31-9	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
EtFOSAA	2991-50-6	1.89	0.561	1.12	2.25	J	B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFUnA	2058-94-8	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFDS	335-77-3	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
11Cl-PF3OUdS	763051-92-9	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFDoA	307-55-1	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFTrDA	72629-94-8	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
PFTeDA	376-06-7	ND	0.561	1.12	2.25		B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
13C3-PFBA	IS	97.4		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
13C3-PFPeA	IS	96.5		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
13C3-PFBS	IS	96.4		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
13C2-4:2 FTS	IS	103		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
13C2-PFHxA	IS	102		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
13C3-HFPO-DA	IS	104		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 03:05	1				
13C4-PFHpA	IS	92.7		25 - 150			B23E057	09-May-23	1.07 g	13-May-23 03:05	1				

Sample ID: DU-2C

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Soil
 Date Collected: 10-Apr-23 14:13

Laboratory Data

Lab Sample: 2304116-04
 Date Received: 13-Apr-23 10:13
 % Solids: 83.3

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	96.3	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1
13C2-6:2 FTS	IS	85.8	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1
13C2-PFOA	IS	93.9	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1
13C5-PFNA	IS	87.9	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1
13C8-PFOSA	IS	55.2	10 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1
13C8-PFOS	IS	97.7	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1
13C2-PFDA	IS	79.1	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1
13C2-8:2 FTS	IS	97.0	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1
d3-MeFOSAA	IS	80.1	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1
d5-EtFOSAA	IS	79.2	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1
13C2-PFUnA	IS	66.9	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1
13C2-PFDaA	IS	72.2	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1
13C2-PFTeDA	IS	74.0	20 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:05	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

The results are reported in dry weight.

The sample size is reported in wet weight.

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: DU-3											PFAS Isotope Dilution Method				
Client Data					Laboratory Data										
Name:	Michigan EGLE	Matrix:	Soil		Lab Sample:	2304116-05		Column:		BEH C18					
Project:	St. Clair County	Date Collected:	10-Apr-23 15:45		Date Received:	13-Apr-23 10:13		% Solids:		83.1					
Analyte	CAS Number	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
PFBA	375-22-4	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFPeA	2706-90-3	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFBS	375-73-5	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
4:2 FTS	757124-72-4	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFHxA	307-24-4	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFPeS	2706-91-4	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
HFPO-DA	13252-13-6	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFHpA	375-85-9	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
ADONA	919005-14-4	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFHxS	355-46-4	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
6:2 FTS	27619-97-2	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFOA	335-67-1	1.98	0.596	1.19	2.38	J	B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFecHS	646-83-3	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFHpS	375-92-8	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFNA	375-95-1	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFOSA	754-91-6	5.91	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFOS	1763-23-1	62.1	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
9Cl-PF3ONS	756426-58-1	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFDA	335-76-2	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
8:2 FTS	39108-34-4	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFNS	68259-12-1	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
MeFOSAA	2355-31-9	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
EtFOSAA	2991-50-6	5.16	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFUnA	2058-94-8	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFDS	335-77-3	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
11Cl-PF3OUdS	763051-92-9	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFDoA	307-55-1	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFTrDA	72629-94-8	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
PFTeDA	376-06-7	ND	0.596	1.19	2.38		B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
13C3-PFBA	IS	95.7		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
13C3-PFPeA	IS	96.6		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
13C3-PFBS	IS	98.5		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
13C2-4:2 FTS	IS	110		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
13C2-PFHxA	IS	98.3		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
13C3-HFPO-DA	IS	105		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 03:15	1				
13C4-PFHpA	IS	95.2		25 - 150			B23E057	09-May-23	1.01 g	13-May-23 03:15	1				

Sample ID: DU-3

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Soil
 Date Collected: 10-Apr-23 15:45

Laboratory Data

Lab Sample: 2304116-05
 Date Received: 13-Apr-23 10:13
 % Solids: 83.1

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	97.7	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1
13C2-6:2 FTS	IS	94.6	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1
13C2-PFOA	IS	93.4	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1
13C5-PFNA	IS	87.8	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1
13C8-PFOSA	IS	53.4	10 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1
13C8-PFOS	IS	101	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1
13C2-PFDA	IS	79.9	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1
13C2-8:2 FTS	IS	98.8	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1
d3-MeFOSAA	IS	79.2	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1
d5-EtFOSAA	IS	80.7	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1
13C2-PFUnA	IS	74.1	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1
13C2-PFDaA	IS	74.2	25 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1
13C2-PFTeDA	IS	60.1	20 - 150		B23E057	09-May-23	1.01 g	13-May-23 03:15	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

The results are reported in dry weight.

The sample size is reported in wet weight.

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: DU-4											PFAS Isotope Dilution Method			
Client Data					Laboratory Data									
Name:	Michigan EGLE	Matrix:	Soil		Lab Sample:	2304116-06				Column:	BEH C18			
Project:	St. Clair County	Date Collected:	11-Apr-23 10:50		Date Received:	13-Apr-23 10:13				% Solids:	81.0			
Analyte	CAS Number	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
PFBA	375-22-4	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFPeA	2706-90-3	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFBS	375-73-5	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
4:2 FTS	757124-72-4	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFHxA	307-24-4	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFPeS	2706-91-4	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
HFPO-DA	13252-13-6	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFHpA	375-85-9	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
ADONA	919005-14-4	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFHxS	355-46-4	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
6:2 FTS	27619-97-2	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFOA	335-67-1	1.66	0.617	1.23	2.47	J	B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFecHS	646-83-3	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFHpS	375-92-8	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFNA	375-95-1	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFOSA	754-91-6	4.71	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFOS	1763-23-1	57.7	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
9Cl-PF3ONS	756426-58-1	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFDA	335-76-2	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
8:2 FTS	39108-34-4	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFNS	68259-12-1	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
MeFOSAA	2355-31-9	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
EtFOSAA	2991-50-6	4.08	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFUnA	2058-94-8	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFDS	335-77-3	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
11Cl-PF3OUdS	763051-92-9	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFDoA	307-55-1	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFTrDA	72629-94-8	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
PFTeDA	376-06-7	ND	0.617	1.23	2.47		B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
Labeled Standards	Type	% Recovery		Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
13C3-PFBA	IS	101		25 - 150			B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
13C3-PFPeA	IS	97.5		25 - 150			B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
13C3-PFBS	IS	97.5		25 - 150			B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
13C2-4:2 FTS	IS	108		25 - 150			B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
13C2-PFHxA	IS	103		25 - 150			B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
13C3-HFPO-DA	IS	110		25 - 150			B23E057	09-May-23	1.00 g	13-May-23 03:25	1			
13C4-PFHpA	IS	97.6		25 - 150			B23E057	09-May-23	1.00 g	13-May-23 03:25	1			

Sample ID: DU-4

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Soil
 Date Collected: 11-Apr-23 10:50

Laboratory Data

Lab Sample: 2304116-06
 Date Received: 13-Apr-23 10:13
 % Solids: 81.0

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	100	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1
13C2-6:2 FTS	IS	91.7	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1
13C2-PFOA	IS	96.1	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1
13C5-PFNA	IS	87.4	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1
13C8-PFOSA	IS	56.4	10 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1
13C8-PFOS	IS	99.2	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1
13C2-PFDA	IS	78.7	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1
13C2-8:2 FTS	IS	93.4	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1
d3-MeFOSAA	IS	82.2	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1
d5-EtFOSAA	IS	83.7	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1
13C2-PFUnA	IS	73.8	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1
13C2-PFDoA	IS	74.8	25 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1
13C2-PFTeDA	IS	80.3	20 - 150		B23E057	09-May-23	1.00 g	13-May-23 03:25	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

The results are reported in dry weight.

The sample size is reported in wet weight.

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: DU-5
PFAS Isotope Dilution Method

Client Data		Laboratory Data									
Name:	Michigan EGLE	Matrix:	Soil	Lab Sample:		2304116-07	Column:		BEH C18		
Project:	St. Clair County	Date Collected:	11-Apr-23 10:45	Date Received:		13-Apr-23 10:13	% Solids:		80.7		
Analyte	CAS Number	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFPeA	2706-90-3	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFBS	375-73-5	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
4:2 FTS	757124-72-4	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFHxA	307-24-4	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFPeS	2706-91-4	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
HFPO-DA	13252-13-6	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFHpA	375-85-9	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
ADONA	919005-14-4	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFHxS	355-46-4	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
6:2 FTS	27619-97-2	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFOA	335-67-1	0.918	0.579	1.16	2.32	J	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFecHS	646-83-3	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFHpS	375-92-8	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFNA	375-95-1	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFOSA	754-91-6	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFOS	1763-23-1	15.3	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
9Cl-PF3ONS	756426-58-1	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFDA	335-76-2	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
8:2 FTS	39108-34-4	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFNS	68259-12-1	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
MeFOSAA	2355-31-9	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
EtFOSAA	2991-50-6	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFUnA	2058-94-8	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFDS	335-77-3	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
11Cl-PF3OUdS	763051-92-9	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFDoA	307-55-1	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFTrDA	72629-94-8	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
PFTeDA	376-06-7	ND	0.579	1.16	2.32		B23E057	09-May-23	1.07 g	13-May-23 03:36	1
Labeled Standards	Type	% Recovery		Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C3-PFBA	IS	102		25 - 150		B23E057	09-May-23	1.07 g	13-May-23 03:36	1	
13C3-PFPeA	IS	102		25 - 150		B23E057	09-May-23	1.07 g	13-May-23 03:36	1	
13C3-PFBS	IS	97.9		25 - 150		B23E057	09-May-23	1.07 g	13-May-23 03:36	1	
13C2-4:2 FTS	IS	114		25 - 150		B23E057	09-May-23	1.07 g	13-May-23 03:36	1	
13C2-PFHxA	IS	107		25 - 150		B23E057	09-May-23	1.07 g	13-May-23 03:36	1	
13C3-HFPO-DA	IS	113		25 - 150		B23E057	09-May-23	1.07 g	13-May-23 03:36	1	
13C4-PFHpA	IS	101		25 - 150		B23E057	09-May-23	1.07 g	13-May-23 03:36	1	

Sample ID: DU-5

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Soil
 Date Collected: 11-Apr-23 10:45

Laboratory Data

Lab Sample: 2304116-07
 Date Received: 13-Apr-23 10:13
 % Solids: 80.7

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	97.0	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
13C2-6:2 FTS	IS	96.0	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
13C2-PFOA	IS	96.4	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
13C5-PFNA	IS	87.2	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
13C8-PFOSA	IS	54.5	10 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
13C8-PFOS	IS	101	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
13C2-PFDA	IS	79.7	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
13C2-8:2 FTS	IS	99.6	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
d3-MeFOSAA	IS	79.9	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
d5-EtFOSAA	IS	84.6	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
13C2-PFUnA	IS	75.6	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
13C2-PFDaA	IS	78.6	25 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1
13C2-PFTeDA	IS	79.3	20 - 150	B23E057	09-May-23	1.07 g	13-May-23 03:36	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

The results are reported in dry weight.

The sample size is reported in wet weight.

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: DU-6
PFAS Isotope Dilution Method

Client Data		Laboratory Data									
Name:	Michigan EGLE	Matrix:	Soil	Lab Sample:		2304116-08	Column:		BEH C18		
Project:	St. Clair County	Date Collected:	11-Apr-23 11:50	Date Received:		13-Apr-23 10:13	% Solids:		81.3		
Analyte	CAS Number	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFPeA	2706-90-3	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFBS	375-73-5	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
4:2 FTS	757124-72-4	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFHxA	307-24-4	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFPeS	2706-91-4	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
HFPO-DA	13252-13-6	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFHpA	375-85-9	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
ADONA	919005-14-4	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFHxS	355-46-4	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
6:2 FTS	27619-97-2	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFOA	335-67-1	0.826	0.597	1.19	2.39	J	B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFecHS	646-83-3	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFHpS	375-92-8	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFNA	375-95-1	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFOSA	754-91-6	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFOS	1763-23-1	12.0	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
9Cl-PF3ONS	756426-58-1	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFDA	335-76-2	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
8:2 FTS	39108-34-4	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFNS	68259-12-1	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
MeFOSAA	2355-31-9	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
EtFOSAA	2991-50-6	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFUnA	2058-94-8	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFDS	335-77-3	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
11Cl-PF3OUDs	763051-92-9	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFDoA	307-55-1	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFTrDA	72629-94-8	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
PFTeDA	376-06-7	ND	0.597	1.19	2.39		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
Labeled Standards	Type	% Recovery		Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C3-PFBA	IS	97.5		25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1	
13C3-PFPeA	IS	95.7		25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1	
13C3-PFBS	IS	96.2		25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1	
13C2-4:2 FTS	IS	107		25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1	
13C2-PFHxA	IS	103		25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1	
13C3-HFPO-DA	IS	106		25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1	
13C4-PFHpA	IS	93.8		25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1	

Sample ID: DU-6

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Soil
 Date Collected: 11-Apr-23 11:50

Laboratory Data

Lab Sample: 2304116-08
 Date Received: 13-Apr-23 10:13
 % Solids: 81.3

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	95.2	25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
13C2-6:2 FTS	IS	91.1	25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
13C2-PFOA	IS	95.8	25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
13C5-PFNA	IS	88.9	25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
13C8-PFOSA	IS	49.4	10 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
13C8-PFOS	IS	98.7	25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
13C2-PFDA	IS	77.1	25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
13C2-8:2 FTS	IS	99.7	25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
d3-MeFOSAA	IS	79.1	25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
d5-EtFOSAA	IS	84.4	25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
13C2-PFUnA	IS	67.9	25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
13C2-PFDaA	IS	71.4	25 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1
13C2-PFTeDA	IS	87.3	20 - 150		B23E057	09-May-23	1.03 g	13-May-23 03:46	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

The results are reported in dry weight.

The sample size is reported in wet weight.

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: Method Blank										PFAS Isotope Dilution Method				
Client Data				Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		B23D252-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		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFPeA	2706-90-3	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFBS	375-73-5	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
4:2 FTS	757124-72-4	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFHxA	307-24-4	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFPeS	2706-91-4	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
HFPO-DA	13252-13-6	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFHpA	375-85-9	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
ADONA	919005-14-4	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFHxS	355-46-4	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
6:2 FTS	27619-97-2	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFOA	335-67-1	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFecHS	646-83-3	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFHpS	375-92-8	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFNA	375-95-1	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFOSA	754-91-6	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFOS	1763-23-1	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
9Cl-PF3ONS	756426-58-1	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFDA	335-76-2	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
8:2 FTS	39108-34-4	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFNS	68259-12-1	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
MeFOSAA	2355-31-9	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
EtFOSAA	2991-50-6	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFUnA	2058-94-8	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFDS	335-77-3	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
11Cl-PF3OUdS	763051-92-9	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFDoA	307-55-1	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFTrDA	72629-94-8	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
PFTeDA	376-06-7	ND	1.00	2.00	4.00		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
Labeled Standards	Type	% Recovery	Limits			Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
13C3-PFBA	IS	74.6	25 - 150				B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
13C3-PFPeA	IS	86.2	25 - 150				B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
13C3-PFBS	IS	94.2	25 - 150				B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
13C2-4:2 FTS	IS	93.9	25 - 150				B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
13C2-PFHxA	IS	90.0	25 - 150				B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
13C3-HFPO-DA	IS	69.5	25 - 150				B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
13C4-PFHpA	IS	86.0	25 - 150				B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			
13C3-PFHxS	IS	92.9	25 - 150				B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1			

Sample ID: Method Blank								PFAS Isotope Dilution Method			
Client Data				Laboratory Data							
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample: B23D252-BLK1				Column: BEH C18			
Project:	St. Clair County										
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C2-6:2 FTS	IS	89.3	25 - 150		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1		
13C2-PFOA	IS	90.8	25 - 150		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1		
13C5-PFNA	IS	89.6	25 - 150		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1		
13C8-PFOSA	IS	47.4	10 - 150		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1		
13C8-PFOS	IS	103	25 - 150		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1		
13C2-PFDA	IS	87.3	25 - 150		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1		
13C2-8:2 FTS	IS	94.6	25 - 150		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1		
d3-MeFOSAA	IS	78.9	25 - 150		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1		
d5-EtFOSAA	IS	72.0	25 - 150		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1		
13C2-PFUnA	IS	77.7	25 - 150		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1		
13C2-PFDoA	IS	69.7	25 - 150		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1		
13C2-PFTeDA	IS	74.8	20 - 150		B23D252	28-Apr-23	0.250 L	02-May-23 14:33	1		

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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 Method

Name:	Michigan EGLE			Lab Sample:	B23D252-BS1/B23D252-BSD1						Date Extracted:	28-Apr-23				
Project:	St. Clair County			QC Batch:	B23D252						Column:	BEH C18				
Matrix:	Aqueous			Samp Size:	0.250/0.250 L											
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	32.7	40.0	81.8		31.1	40.0	77.8	5.03		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFPeA	2706-90-3	44.6	40.0	112		43.2	40.0	108	3.12		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFBS	375-73-5	39.1	40.0	97.9		40.2	40.0	100	2.53		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
4:2 FTS	757124-72-4	38.3	40.0	95.8		38.4	40.0	96.1	0.282		60-145	30	02-May-23 14:44	1	02-May-23 14:54	1
PFHxA	307-24-4	47.9	40.0	120		45.4	40.0	114	5.39		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFPeS	2706-91-4	43.5	40.0	109		42.0	40.0	105	3.42		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
HFPO-DA	13252-13-6	36.4	40.0	91.1		35.9	40.0	89.8	1.38		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFHpA	375-85-9	41.5	40.0	104		41.9	40.0	105	1.06		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
ADONA	919005-14-4	44.0	40.0	110		42.0	40.0	105	4.68		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFHxS	355-46-4	40.4	40.0	101		37.5	40.0	93.8	7.26		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
6:2 FTS	27619-97-2	39.8	40.0	99.5		40.6	40.0	102	1.98		60-140	30	02-May-23 14:44	1	02-May-23 14:54	1
PFOA	335-67-1	41.6	40.0	104		41.9	40.0	105	0.675		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFecHS	646-83-3	38.2	40.0	95.4		37.5	40.0	93.7	1.85		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFHps	375-92-8	44.8	40.0	112		43.0	40.0	107	4.23		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFNA	375-95-1	41.6	40.0	104		40.1	40.0	100	3.49		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFOSA	754-91-6	41.8	40.0	105		41.1	40.0	103	1.82		65-140	30	02-May-23 14:44	1	02-May-23 14:54	1
PFOS	1763-23-1	40.6	40.0	101		40.5	40.0	101	0.304		65-140	30	02-May-23 14:44	1	02-May-23 14:54	1
9Cl-PF3ONS	756426-58-1	39.0	40.0	97.6		39.5	40.0	98.8	1.32		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFDA	335-76-2	43.8	40.0	109		42.2	40.0	106	3.61		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
8:2 FTS	39108-34-4	40.7	40.0	102		37.5	40.0	93.7	8.23		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFNS	68259-12-1	37.9	40.0	94.7		38.2	40.0	95.4	0.776		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
MeFOSAA	2355-31-9	43.2	40.0	108		43.9	40.0	110	1.56		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
EtFOSAA	2991-50-6	42.8	40.0	107		38.4	40.0	95.9	11.0		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFUnA	2058-94-8	42.9	40.0	107		42.3	40.0	106	1.28		65-140	30	02-May-23 14:44	1	02-May-23 14:54	1
PFDS	335-77-3	31.9	40.0	79.7		32.4	40.0	81.0	1.58		50-150	30	02-May-23 14:44	1	02-May-23 14:54	1
11Cl-PF3OUdS	763051-92-9	42.7	40.0	107		42.0	40.0	105	1.59		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFDoA	307-55-1	43.5	40.0	109		42.5	40.0	106	2.46		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
PFTrDA	72629-94-8	39.2	40.0	98.1		37.7	40.0	94.1	4.14		60-140	30	02-May-23 14:44	1	02-May-23 14:54	1
PFTeDA	376-06-7	43.2	40.0	108		42.8	40.0	107	0.944		65-135	30	02-May-23 14:44	1	02-May-23 14:54	1
Labeled Standards		Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed		LCS Dil	LCSD Analyzed		LCSD Dil			
13C3-PFBA		IS	72.4		69.6		25 - 150	02-May-23 14:44		1	02-May-23 14:54		1			
13C3-PFPeA		IS	84.7		84.9		25 - 150	02-May-23 14:44		1	02-May-23 14:54		1			

Sample ID: LCSD							PFAS Isotope Dilution Method				
Name:	Michigan EGLE	Lab Sample: QC Batch: Samp Size:			B23D252-BS1/B23D252-BSD1 B23D252 0.250/0.250 L	Date Extracted:	28-Apr-23	Column:	BEH C18		
Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil	
13C3-PFBS	IS	93.0		91.9		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C2-4:2 FTS	IS	95.5		89.8		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C2-PFHxA	IS	91.2		88.4		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C3-HFPO-DA	IS	70.3		67.7		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C4-PFHxA	IS	89.5		86.1		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C3-PFHxS	IS	93.7		91.1		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C2-6:2 FTS	IS	91.6		87.7		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C2-PFOA	IS	93.2		89.3		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C5-PFNA	IS	92.4		90.0		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C8-PFOSA	IS	47.8		48.3		10 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C8-PFOS	IS	98.3		93.3		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C2-PFDA	IS	89.6		87.2		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C2-8:2 FTS	IS	90.7		93.3		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
d3-MeFOSAA	IS	80.0		74.3		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
d5-EtFOSAA	IS	74.7		69.7		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C2-PFUnA	IS	82.8		78.5		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C2-PFDmA	IS	68.8		65.8		25 - 150	02-May-23 14:44	1	02-May-23 14:54	1	
13C2-PFTeDA	IS	74.6		69.8		20 - 150	02-May-23 14:44	1	02-May-23 14:54	1	

Sample ID: Field Blank #1										PFAS Isotope Dilution Method				
Client Data					Laboratory Data									
Name:	Michigan EGLE	Matrix:	Aqueous	Date Collected:	10-Apr-23 16:29	Lab Sample:	2304116-09	Date Received:	13-Apr-23 10:13	Column:	BEH C18			
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
PFBA	375-22-4	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFPeA	2706-90-3	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFBS	375-73-5	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
4:2 FTS	757124-72-4	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFHxA	307-24-4	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFPeS	2706-91-4	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
HFPO-DA	13252-13-6	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFHpA	375-85-9	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
ADONA	919005-14-4	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFHxS	355-46-4	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
6:2 FTS	27619-97-2	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFOA	335-67-1	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFecHS	646-83-3	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFHpS	375-92-8	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFNA	375-95-1	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFOSA	754-91-6	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFOS	1763-23-1	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
9Cl-PF3ONS	756426-58-1	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFDA	335-76-2	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
8:2 FTS	39108-34-4	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFNS	68259-12-1	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
MeFOSAA	2355-31-9	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
EtFOSAA	2991-50-6	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFUnA	2058-94-8	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFDS	335-77-3	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
11Cl-PF3OUdS	763051-92-9	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFDoA	307-55-1	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFTrDA	72629-94-8	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
PFTeDA	376-06-7	ND	0.957	1.92	3.83		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
13C3-PFBA	IS	97.6		25 - 150			B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
13C3-PFPeA	IS	109		25 - 150			B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
13C3-PFBS	IS	61.2		25 - 150			B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
13C2-4:2 FTS	IS	104		25 - 150			B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
13C2-PFHxA	IS	95.7		25 - 150			B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
13C3-HFPO-DA	IS	104		25 - 150			B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			
13C4-PFHpA	IS	115		25 - 150			B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1			

Sample ID: Field Blank #1
PFAS Isotope Dilution Method
Client Data

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 10-Apr-23 16:29

Laboratory Data

Lab Sample: 2304116-09
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards
Type
% Recovery
Limits
Qualifiers
Batch
Extracted
Samp Size
Analyzed
Dilution

13C3-PFHxS	IS	96.3	25 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1
13C2-6:2 FTS	IS	107	25 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1
13C2-PFOA	IS	99.4	25 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1
13C5-PFNA	IS	97.3	25 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1
13C8-PFOSA	IS	47.8	10 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1
13C8-PFOS	IS	67.1	25 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1
13C2-PFDA	IS	93.2	25 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1
13C2-8:2 FTS	IS	82.5	25 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1
d3-MeFOSAA	IS	53.9	25 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1
d5-EtFOSAA	IS	55.9	25 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1
13C2-PFUnA	IS	82.7	25 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1
13C2-PFDaA	IS	69.1	25 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	1
13C2-PFTeDA	IS	78.1	20 - 150		B23D252	28-Apr-23	0.261 L	02-May-23 05:55	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 #2										PFAS Isotope Dilution Method			
Client Data					Laboratory Data								
Name:	Michigan EGLE	Matrix:	Aqueous		Lab Sample:	2304116-10				Column:	BEH C18		
Project:	St. Clair County	Date Collected:	11-Apr-23 11:11		Date Received:	13-Apr-23 10:13							
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
PFBA	375-22-4	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFPeA	2706-90-3	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFBS	375-73-5	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
4:2 FTS	757124-72-4	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFHxA	307-24-4	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFPeS	2706-91-4	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
HFPO-DA	13252-13-6	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFHpA	375-85-9	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
ADONA	919005-14-4	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFHxS	355-46-4	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
6:2 FTS	27619-97-2	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFOA	335-67-1	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFecHS	646-83-3	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFHpS	375-92-8	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFNA	375-95-1	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFOSA	754-91-6	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFOS	1763-23-1	11.9	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
9Cl-PF3ONS	756426-58-1	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFDA	335-76-2	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
8:2 FTS	39108-34-4	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFNS	68259-12-1	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
MeFOSAA	2355-31-9	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
EtFOSAA	2991-50-6	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFUnA	2058-94-8	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFDS	335-77-3	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
11Cl-PF3OUdS	763051-92-9	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFDoA	307-55-1	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFTrDA	72629-94-8	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
PFTeDA	376-06-7	ND	0.956	1.91	3.82		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	88.6		25 - 150			B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C3-PFPeA	IS	106		25 - 150			B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C3-PFBS	IS	48.1		25 - 150			B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C2-4:2 FTS	IS	78.2		25 - 150			B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C2-PFHxA	IS	90.8		25 - 150			B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C3-HFPO-DA	IS	88.0		25 - 150			B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C4-PFHpA	IS	118		25 - 150			B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		

Sample ID: Field Blank #2								PFAS Isotope Dilution Method			
Client Data				Laboratory Data							
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample: 2304116-10				Column: BEH C18			
Project:	St. Clair County	Date Collected:	11-Apr-23 11:11	Date Received:	13-Apr-23 10:13						
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFHxS	IS	93.3	25 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C2-6:2 FTS	IS	96.7	25 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C2-PFOA	IS	96.2	25 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C5-PFNA	IS	96.0	25 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C8-PFOSA	IS	45.6	10 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C8-PFOS	IS	62.1	25 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C2-PFDA	IS	97.8	25 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C2-8:2 FTS	IS	81.4	25 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
d3-MeFOSAA	IS	54.7	25 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
d5-EtFOSAA	IS	55.8	25 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C2-PFUnA	IS	73.4	25 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C2-PFDaA	IS	68.7	25 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	1		
13C2-PFTeDA	IS	79.6	20 - 150		B23D252	28-Apr-23	0.262 L	02-May-23 06:06	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.

Sample ID: TD4
PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304116-11	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	10-Apr-23 16:42 <th data-cs="2" data-kind="parent">Date Received:</th> <th data-kind="ghost"></th> <td>13-Apr-23 10:13</td> <th data-cs="4" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th>	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	5.61	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFPeA	2706-90-3	3.47	0.970	1.94	3.88	J	B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFBS	375-73-5	3.39	0.970	1.94	3.88	J	B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
4:2 FTS	757124-72-4	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFHxA	307-24-4	28.2	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFPeS	2706-91-4	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
HFPO-DA	13252-13-6	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFHpA	375-85-9	94.4	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
ADONA	919005-14-4	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFHxS	355-46-4	18.4	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
6:2 FTS	27619-97-2	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFOA	335-67-1	1480	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFecHS	646-83-3	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFHpS	375-92-8	63.6	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFNA	375-95-1	15.7	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFOSA	754-91-6	23.9	0.970	1.94	3.88	Q	B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFOS	1763-23-1	9630	9.70	19.4	38.8	D	B23D252	28-Apr-23	0.258 L	02-May-23 15:04	10	
9Cl-PF3ONS	756426-58-1	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFDA	335-76-2	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
8:2 FTS	39108-34-4	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFNS	68259-12-1	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
MeFOSAA	2355-31-9	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
EtFOSAA	2991-50-6	5.44	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFUnA	2058-94-8	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFDS	335-77-3	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
11Cl-PF3OUdS	763051-92-9	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFDoA	307-55-1	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFTrDA	72629-94-8	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
PFTeDA	376-06-7	ND	0.970	1.94	3.88		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	59.2	25 - 150			B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1		
13C3-PFPeA	IS	105	25 - 150			B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1		
13C3-PFBS	IS	52.9	25 - 150			B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1		
13C2-4:2 FTS	IS	96.5	25 - 150			B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1		
13C2-PFHxA	IS	100	25 - 150			B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1		
13C3-HFPO-DA	IS	113	25 - 150			B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1		
13C4-PFHpA	IS	120	25 - 150			B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1		

Sample ID: TD4**PFAS Isotope Dilution Method****Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 10-Apr-23 16:42

Laboratory Data

Lab Sample: 2304116-11
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	96.8	25 - 150		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1
13C2-6:2 FTS	IS	118	25 - 150		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1
13C2-PFOA	IS	101	25 - 150		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1
13C5-PFNA	IS	89.3	25 - 150		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1
13C8-PFOSA	IS	47.9	10 - 150		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1
13C8-PFOS	IS	81.0	25 - 150	D	B23D252	28-Apr-23	0.258 L	02-May-23 15:04	10
13C2-PFDA	IS	93.9	25 - 150		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1
13C2-8:2 FTS	IS	76.4	25 - 150		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1
d3-MeFOSAA	IS	56.2	25 - 150		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1
d5-EtFOSAA	IS	62.8	25 - 150		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1
13C2-PFUnA	IS	92.2	25 - 150		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1
13C2-PFDaA	IS	70.3	25 - 150		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	1
13C2-PFTeDA	IS	88.8	20 - 150		B23D252	28-Apr-23	0.258 L	02-May-23 06:16	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: TD7
PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304116-12	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	10-Apr-23 17:10 <th data-cs="2" data-kind="parent">Date Received:</th> <th data-kind="ghost"></th> <td>13-Apr-23 10:13</td> <th data-cs="4" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th>	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	1.32	0.965	1.93	3.86	J	B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFPeA	2706-90-3	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFBS	375-73-5	1.61	0.965	1.93	3.86	J	B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
4:2 FTS	757124-72-4	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFHxA	307-24-4	1.30	0.965	1.93	3.86	J	B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFPeS	2706-91-4	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
HFPO-DA	13252-13-6	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFHpA	375-85-9	1.31	0.965	1.93	3.86	J	B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
ADONA	919005-14-4	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFHxS	355-46-4	2.95	0.965	1.93	3.86	J	B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
6:2 FTS	27619-97-2	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFOA	335-67-1	24.1	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFecHS	646-83-3	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFHpS	375-92-8	1.13	0.965	1.93	3.86	J	B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFNA	375-95-1	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFOSA	754-91-6	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFOS	1763-23-1	150	0.965	1.93	3.86	Q	B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
9Cl-PF3ONS	756426-58-1	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFDA	335-76-2	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
8:2 FTS	39108-34-4	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFNS	68259-12-1	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
MeFOSAA	2355-31-9	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
EtFOSAA	2991-50-6	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFUnA	2058-94-8	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFDS	335-77-3	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
11Cl-PF3OUDs	763051-92-9	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFDoA	307-55-1	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFTrDA	72629-94-8	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
PFTeDA	376-06-7	ND	0.965	1.93	3.86		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	55.6	25 - 150			B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1		
13C3-PFPeA	IS	84.6	25 - 150			B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1		
13C3-PFBS	IS	91.8	25 - 150			B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1		
13C2-4:2 FTS	IS	87.8	25 - 150			B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1		
13C2-PFHxA	IS	85.3	25 - 150			B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1		
13C3-HFPO-DA	IS	66.4	25 - 150			B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1		
13C4-PFHpA	IS	85.8	25 - 150			B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1		

Sample ID: TD7

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 10-Apr-23 17:10

Laboratory Data

Lab Sample: 2304116-12
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	83.5	25 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1
13C2-6:2 FTS	IS	82.9	25 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1
13C2-PFOA	IS	88.8	25 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1
13C5-PFNA	IS	87.0	25 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1
13C8-PFOSA	IS	65.0	10 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1
13C8-PFOS	IS	93.4	25 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1
13C2-PFDA	IS	87.5	25 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1
13C2-8:2 FTS	IS	90.8	25 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1
d3-MeFOSAA	IS	88.6	25 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1
d5-EtFOSAA	IS	85.1	25 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1
13C2-PFUnA	IS	81.4	25 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1
13C2-PFDaA	IS	75.8	25 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	1
13C2-PFTeDA	IS	76.6	20 - 150		B23D252	28-Apr-23	0.259 L	02-May-23 15:15	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: TD7 FR										PFAS Isotope Dilution Method			
Client Data					Laboratory Data								
Name:	Michigan EGLE	Matrix:	Aqueous	Date Collected:	10-Apr-23 17:12	Lab Sample:	2304116-13	Date Received:	13-Apr-23 10:13	Column:	BEH C18		
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
PFBA	375-22-4	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFPeA	2706-90-3	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFBS	375-73-5	1.48	0.946	1.89	3.78	J, Q	B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
4:2 FTS	757124-72-4	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFHxA	307-24-4	1.14	0.946	1.89	3.78	J, Q	B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFPeS	2706-91-4	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
HFPO-DA	13252-13-6	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFHpA	375-85-9	1.27	0.946	1.89	3.78	J, Q	B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
ADONA	919005-14-4	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFHxS	355-46-4	2.74	0.946	1.89	3.78	J, Q	B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
6:2 FTS	27619-97-2	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFOA	335-67-1	23.5	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFecHS	646-83-3	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFHpS	375-92-8	1.10	0.946	1.89	3.78	J, Q	B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFNA	375-95-1	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFOSA	754-91-6	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFOS	1763-23-1	182	0.946	1.89	3.78	Q	B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
9Cl-PF3ONS	756426-58-1	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFDA	335-76-2	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
8:2 FTS	39108-34-4	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFNS	68259-12-1	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
MeFOSAA	2355-31-9	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
EtFOSAA	2991-50-6	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFUnA	2058-94-8	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFDS	335-77-3	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
11Cl-PF3OUDs	763051-92-9	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFDoA	307-55-1	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFTrDA	72629-94-8	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
PFTeDA	376-06-7	ND	0.946	1.89	3.78		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	63.8		25 - 150			B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
13C3-PFPeA	IS	102		25 - 150			B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
13C3-PFBS	IS	61.3		25 - 150			B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
13C2-4:2 FTS	IS	98.8		25 - 150			B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
13C2-PFHxA	IS	101		25 - 150			B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
13C3-HFPO-DA	IS	101		25 - 150			B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		
13C4-PFHpA	IS	116		25 - 150			B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1		

Sample ID: TD7 FR
PFAS Isotope Dilution Method

Client Data				Laboratory Data						
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:	2304116-13	Date Received:	13-Apr-23 10:13	Column:	BEH C18	
Project:	St. Clair County	Date Collected:	10-Apr-23 17:12							
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C3-PFHxS	IS	94.9	25 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1	
13C2-6:2 FTS	IS	109	25 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1	
13C2-PFOA	IS	103	25 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1	
13C5-PFNA	IS	93.1	25 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1	
13C8-PFOSA	IS	74.4	10 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1	
13C8-PFOS	IS	67.4	25 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1	
13C2-PFDA	IS	88.6	25 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1	
13C2-8:2 FTS	IS	89.5	25 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1	
d3-MeFOSAA	IS	61.2	25 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1	
d5-EtFOSAA	IS	72.8	25 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1	
13C2-PFUnA	IS	79.4	25 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1	
13C2-PFDaA	IS	74.2	25 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	1	
13C2-PFTeDA	IS	84.2	20 - 150		B23D252	28-Apr-23	0.264 L	02-May-23 07:09	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: Equipment Blank 1										PFAS Isotope Dilution Method			
Client Data					Laboratory Data								
Name:	Michigan EGLE	Matrix:	Aqueous	Date Collected:	11-Apr-23 11:20	Lab Sample:	2304116-14	Date Received:	13-Apr-23 10:13	Column:	BEH C18		
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
PFBA	375-22-4	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFPeA	2706-90-3	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFBS	375-73-5	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
4:2 FTS	757124-72-4	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFHxA	307-24-4	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFPeS	2706-91-4	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
HFPO-DA	13252-13-6	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFHpA	375-85-9	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
ADONA	919005-14-4	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFHxS	355-46-4	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
6:2 FTS	27619-97-2	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFOA	335-67-1	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFecHS	646-83-3	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFHpS	375-92-8	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFNA	375-95-1	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFOSA	754-91-6	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFOS	1763-23-1	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
9Cl-PF3ONS	756426-58-1	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFDA	335-76-2	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
8:2 FTS	39108-34-4	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFNS	68259-12-1	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
MeFOSAA	2355-31-9	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
EtFOSAA	2991-50-6	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFUnA	2058-94-8	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFDS	335-77-3	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
11Cl-PF3OUdS	763051-92-9	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFDoA	307-55-1	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFTrDA	72629-94-8	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
PFTeDA	376-06-7	ND	0.985	1.97	3.94		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	96.6		25 - 150			B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C3-PFPeA	IS	99.9		25 - 150			B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C3-PFBS	IS	59.3		25 - 150			B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C2-4:2 FTS	IS	93.5		25 - 150			B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C2-PFHxA	IS	91.6		25 - 150			B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C3-HFPO-DA	IS	107		25 - 150			B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C4-PFHpA	IS	121		25 - 150			B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		

Sample ID: Equipment Blank 1								PFAS Isotope Dilution Method			
Client Data				Laboratory Data							
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample: 2304116-14				Column: BEH C18			
Project:	St. Clair County	Date Collected:	11-Apr-23 11:20	Date Received:	13-Apr-23 10:13						
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFHxS	IS	97.6	25 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C2-6:2 FTS	IS	119	25 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C2-PFOA	IS	96.6	25 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C5-PFNA	IS	97.3	25 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C8-PFOSA	IS	60.7	10 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C8-PFOS	IS	72.6	25 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C2-PFDA	IS	89.5	25 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C2-8:2 FTS	IS	89.5	25 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
d3-MeFOSAA	IS	51.4	25 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
d5-EtFOSAA	IS	58.8	25 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C2-PFUnA	IS	85.5	25 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C2-PFDaA	IS	72.7	25 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	1		
13C2-PFTeDA	IS	80.5	20 - 150		B23D252	28-Apr-23	0.254 L	02-May-23 07:20	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.

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 $\frac{1}{2}$ 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.

Enthalpy Analytical - EDH 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	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	2211390
Nevada Division of Environmental Protection	CA00413
New Hampshire Environmental Accreditation Program	207721
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-021
Texas Commission on Environmental Quality	T104704189-22-13
Vermont Department of Health	VT-4042
Virginia Department of General Services	11276
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters can be found at Enthalpy.com/Resources/Accreditations.



~~revised COC~~ — rec'd via email on 04/21/23 1040 was 04/23
CHAIN OF CUSTODY
 PFAS Methods

For Laboratory Use Only	
Work Order #	2304116
Storage ID	R-13 WR-2
Temp:	20.8, 40.9 °C
Storage Secured: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Project ID: St. Clair County PO# _____ Sampler: M. W. / Ryan W. Lohm
 (name) _____ (name)

TAT Standard: 21 days
 (check one): Rush (surcharge may apply)
 14 days 7 days Other: _____

Invoice to: Name Mike Jury Company EGLC Address _____ City MI
 State _____ Phone # _____

Relinquished by (printed name and signature) Karen Wojciechowski Date 4/2/23 Time 10:00 Received by (printed name and signature) Sarah Hegenbarth Date 04/13/23 Time 1013

Relinquished by (printed name and signature) _____ Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

SHIP TO: Enthalpy Analytical - EDH
 1104 Windfield Way
 El Dorado Hills, CA 95762
 (916) 673-1520

ATTN: James Fox
Fox

Method of Shipment:
UPS

Tracking No.: _____

Sample ID	Date	Time	Location/ Sample Description
DU-1	4/10/23	220 PM	1 <u>Q</u> <u>SD</u>
DU-2A	1	1200 PM	1
DU-2B	1	1155 AM	1
DU-2C	1	213 PM	1
DU-3	1	345 PM	1
DU-4	4/11/23	1050 AM	1
DU-5	1	1045 AM	1
DU-6	1	1150 AM	1 <u>Q</u> <u>SD</u>
Fried Blank #1	4/10/23	427 PM	1 <u>Q</u> <u>SD</u>
Fried Blank #2	4/11/23	11:11 AM	1 <u>Q</u> <u>SD</u>

Other Instructions/ Comments:

Add Analysis(es) Requested			
Container(s)	Quantity	Type	Matrix
			PFAS by Isotope Dilution
			EPA 1613 Draft
			DoD QSM Table B-15
			Other:
			EPA 533
			EPA 517.1
			list of 29 (S37.1 + S33)

Requirements:

State-specific (list state): MI 28 PFAS + PFCs HS

DoD QSM Compliant

PFAS List Below (or attach compound list):

EGLC is aware the extra mass of the incremental soil samples will increase costs. The samples are likely 3.5-4 kg each

SEND
 DOCUMENTATION
 AND RESULTS TO:

Name: Karen Wojciechowski
 Company: EGLC
 Address: 525 West Allegan St
 City: Lansing State: MI Zip: 48906
 Phone: 586-623-2949
 Email: WojciechowskiK@Michigan.gov

Container Types: P = HDPE, PJ = HDPE Jar

Bottle Preservation Type:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, SD = Sediment, T=Tissue

PY = Polypropylene, O = Other: _____

TZ = Tissue: _____

AA = Amm. Acetate: _____

SL = Sludge, SO = Soil, WW = Wastewater, O = Other: _____

ID: LR-COC

Rev. No. 2

Rev. Date: 1/2/2023

Page: 1 of 1



CHAIN OF CUSTODY

PFAS Methods

For Laboratory Use Only

Work Order #: 2304116 Temp: 208, 409 °C
 Storage ID: R-13 WR-2 Storage Secured: Yes No

Project ID: St. Clair County

PO#:

Sampler: K. Wojciechowski
(name)

TAT Standard: 21 days
 (check one): Rush (surcharge may apply)
 14 days 7 days Other: _____

Invoice to: Name Mike Jury Company ECLC

Address

City

State MI

Phone #

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: Enthalpy Analytical - EDH
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520

ATTN: James Fox
Fox

Method of Shipment:
URS

Tracking No.: _____

Add Analysis(es) Requested

Container(s)

PFAS by Isotope Dilution
EPA 1633 Draft
DoD QSM Table B-15Other:
EPA 533
EPA 537.1
List of 29 (537.1 + 533)

Drinking Water

Requirements:

- State-specific (list state): MI 28 PFAS + PFCs HS
 DoD QSM Compliant
 PFAS List Below (or attach compound list):

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFAS by Isotope Dilution EPA 1633 Draft DoD QSM Table B-15	Other: EPA 533 EPA 537.1 List of 29 (537.1 + 533)	Drinking Water
DU-1	4/10/23	220		1	soil		X		EGLC is aware the extra mass of the incremental soil samples will increase costs. The samples are likely 3.5-4 kg each
DU-2A		1200		1					
DU-2B		1155		1					
DU-2C		213		1					
DU-3		345		1					
DU-4	4/11/23	1050		1					
DU-5		1045		1					
DU-6		1050		1					
Friedl Blank 41	4/10/23	429		1	water	aq			
Friedl Blank B2	4/11/23			1					

Other Instructions/ Comments:

SEND
DOCUMENTATION
AND RESULTS TO:

Name: Kevin Wojciechowski
 Company: ECLC
 Address: 525 West Allegan St
 City: Lansing State: MI Zip: 48909
 Phone: 586-623-2948
 Email: Wojciechowski@Michigan.gov

Container Types: P= HDPE, PJ= HDPE Jar

Bottle Preservation Type:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, SD = Sediment, T=Tissue

PY= Polypropylene, O = Other: _____

TZ = Trzma: _____

AA = Amm. Acetate: _____

SL = Sludge, SO = Soil, WW = Wastewater, O = Other: _____

ID: LR-COC

Rev. No. 2

Rev. Date: 1/2/2023

Page: 1 of 1

Sample Log-In Checklist

 Page # 1 of 2

 Work Order #: 2304116

 TAT Std

Samples Arrival:	Date/Time		Initials:		Location: WR2		
	04/13/23	1013	SNH		Shelf/Rack: NA		
Delivered By:	FedEx	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	Ice	(A)	Blue Ice		Techni Ice	Dry Ice	None
Temp °C: 2.9 (uncorrected)	Probe used: Y / N			Thermometer ID: SR-3			
Temp °C: 2.8 (corrected)							

	YES	NO	NA
Shipping Container(s) Intact?	/		
Shipping Custody Seals Intact?	/		
Airbill (1) Trk # J4603815316	/		
Shipping Documentation Present?	/		
Shipping Container Enthalpy Client Retain Return Dispose			
Chain of Custody / Sample Documentation Present?	/		
Chain of Custody / Sample Documentation Complete?	/		
Holding Time Acceptable?	/		
Logged In: Date/Time Initials: Location: R-13, WR2			
Shelf/Rack: B-4, F-4, G-1			
COC Anomaly/Sample Acceptance Form completed?	/		

Comments: (A) Ice is completely melted

Sample Log-In Checklist



Page # 2 of 2

Work Order #: 2304116 TAT std

Samples Arrival:	Date/Time <u>04/13/22 10:17</u>		Initials: <u>LR</u>		Location: <u>WR-2</u>		
Delivered By:	FedEx	<input checked="" type="checkbox"/> UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	<input checked="" type="checkbox"/> Ice	Blue Ice		Techni Ice	Dry Ice	None	
Temp °C: <u>5.0</u> (uncorrected)	Probe used: Y / <input checked="" type="checkbox"/> N			Thermometer ID: <u>JR-3</u>			
Temp °C: <u>4.9</u> (corrected)							

	YES	NO	NA				
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>						
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>						
Airbill <u>✓</u> Trk # <u>39602815798</u>	<input checked="" type="checkbox"/>						
Shipping Documentation Present?	<input checked="" type="checkbox"/>						
Shipping Container	<input checked="" type="checkbox"/> Enthalpy	<input checked="" type="checkbox"/> Client	<input checked="" type="checkbox"/> Retain	<input checked="" type="checkbox"/> Return	<input checked="" type="checkbox"/> Dispose		
Chain of Custody / Sample Documentation Present?			<u>A) ✓</u>				
Chain of Custody / Sample Documentation Complete?			<input checked="" type="checkbox"/>				
Holding Time Acceptable?			<input checked="" type="checkbox"/>				
Logged In:	Date/Time <u>04/14/23 1321</u>	Initials: <u>MWS</u>	Location: <u>R-3, WR-2</u> Shelf/Rack: <u>A-4, F-4, G-1</u>				
COC Anomaly/Sample Acceptance Form completed?					<input checked="" type="checkbox"/>		

Comments: A) COC present on cooler #

CoC/Label Reconciliation Report WO# 2304116

LabNumber	CoC Sample ID	SampleAlias	Sample Date/Time	Container	BaseMatrix	Sample Comments	
2304116-01	A DU-1	(C)	<input type="checkbox"/>	10-Apr-23 02:20	<input checked="" type="checkbox"/> (B)	Plastic Bag	Solid
2304116-02	A DU-2A	(M)	<input checked="" type="checkbox"/>	10-Apr-23 12:00	<input checked="" type="checkbox"/>	Plastic Bag	Solid
2304116-03	A DU-2B	(C)	<input checked="" type="checkbox"/>	10-Apr-23 11:55	<input checked="" type="checkbox"/>	Plastic Bag	Solid
2304116-04	A DU-2C		<input checked="" type="checkbox"/>	10-Apr-23 02:13	<input checked="" type="checkbox"/>	Plastic Bag	Solid
2304116-05	A DU-3		<input checked="" type="checkbox"/>	10-Apr-23 03:45	<input checked="" type="checkbox"/>	Plastic Bag	Solid
2304116-06	A DU-4	(M)	<input checked="" type="checkbox"/>	11-Apr-23 10:50	<input checked="" type="checkbox"/>	Plastic Bag	Solid
2304116-07	A DU-5		<input checked="" type="checkbox"/>	11-Apr-23 10:45	<input checked="" type="checkbox"/>	Plastic Bag	Solid
2304116-08	A DU-6		<input checked="" type="checkbox"/>	11-Apr-23 11:50	<input checked="" type="checkbox"/>	Plastic Bag	Solid
2304116-09	A Field Blank #1	(C)	<input checked="" type="checkbox"/> (F)	10-Apr-23 04:29	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous FB
2304116-10	A Field Blank #2	(M)	<input checked="" type="checkbox"/>	11-Apr-23 04:00 11041923	<input type="checkbox"/> (C)	HDPE Bottle, 250 mL	Aqueous FB
2304116-11	A TD4	(C)	<input checked="" type="checkbox"/>	10-Apr-23 04:42	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304116-11	B TD4		<input checked="" type="checkbox"/>	10-Apr-23 04:42	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304116-12	A TD7		<input checked="" type="checkbox"/>	10-Apr-23 05:10	<input type="checkbox"/> (D)	HDPE Bottle, 250 mL	Aqueous
2304116-12	B TD7		<input checked="" type="checkbox"/>	10-Apr-23 05:10	<input type="checkbox"/> (E)	HDPE Bottle, 250 mL	Aqueous
2304116-13	A TD7 FR		<input checked="" type="checkbox"/>	10-Apr-23 05:12	<input type="checkbox"/> (E)	HDPE Bottle, 250 mL	Aqueous
2304116-13	B TD7 FR		<input checked="" type="checkbox"/>	10-Apr-23 05:12	<input type="checkbox"/> (E)	HDPE Bottle, 250 mL	Aqueous
2304116-14	A Equipment Blank 1	(M)	<input type="checkbox"/> (B)	11-Apr-23 11:20	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous EB
2304116-14	B Equipment Blank 1		<input type="checkbox"/>	11-Apr-23 11:20	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous EB

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
all

Other

Comments:

C1 = cooler 1 of 2

C2 = cooler 2 of 2

① sample label: Equip. Blank

② no time listed on sample label (date reconciles)

③ no time listed on COC. Pulled from sample label. Date reconciles

④ sample label: 512] date reconciles

⑤ sample label: 510] date reconciles

⑥ no backup volume

Verified by/Date: MJS 04/19/23

KW 04/19/23

ANOMALY FORM

Work Order #

2304116

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: _____
2304116 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.
- _____ 7. The CoC did not include a sample matrix. The following sample matrix will be used: _____
- _____ 8. Insufficient 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: _____

Date of Contact: _____

Lab Project Manager: _____

Resolution: _____



May 15, 2023

**Enthalpy Analytical - El Dorado Hills
Work Order No. 2304117**

Mr. Kevin Wojciechowski
Michigan EGLE
525 West Allegan
Lansing, MI 48933

Dear Mr. Wojciechowski,

Enclosed are the results for the sample set received at Enthalpy Analytical - EDH on April 13, 2023 under your Project Name 'St. Clair County'.

Enthalpy Analytical - EDH is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at james.fox@enthalpy.com.

Thank you for choosing Enthalpy Analytical - EDH as part of your analytical support team.

Sincerely,

Jamie Fox
Senior Program Manager



Enthalpy Analytical -EDH certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Enthalpy Analytical -EDH.

Enthalpy Analytical - EDH Work Order No. 2304117
Case Narrative

Sample Condition on Receipt:

Twenty aqueous samples were received and stored securely in accordance with Enthalpy Analytical - EDH standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements. The collection time for sample "FG28" was listed as "11:31" on the container label.

Analytical Notes:

PFAS Isotope Dilution Method

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

<u>Laboratory ID</u>	<u>Sample Name</u>
2304117-02	FG29
2304117-03	FG30
2304117-05	FG32
2304117-16	FG45
2304117-20	FG51

The samples were extracted and analyzed for a selected list of PFAS using Enthalpy Analytical - EDH's PFAS Isotope Dilution Method. 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 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 acceptance criteria.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

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Sample Inventory Report

Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2304117-01	FG28	11-Apr-23 11:15	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-02	FG29	11-Apr-23 10:58	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-03	FG30	11-Apr-23 11:36	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-04	FG31	11-Apr-23 11:05	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-05	FG32	11-Apr-23 11:12	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-06	FG33	11-Apr-23 10:45	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-07	FG34	11-Apr-23 10:36	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-08	FG41	11-Apr-23 09:15	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-09	FG42	11-Apr-23 09:00	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-10	FG46	11-Apr-23 10:00	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-11	FG38	10-Apr-23 14:49	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-12	FG39	10-Apr-23 14:58	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-13	FG40	10-Apr-23 15:04	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-14	FG40-FR	10-Apr-23 15:06	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-15	FG44	10-Apr-23 15:58	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-16	FG45	10-Apr-23 15:47	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-17	FG47	10-Apr-23 15:15	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-18	FG48	10-Apr-23 15:20	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-19	FG50	10-Apr-23 14:13	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2304117-20	FG51	10-Apr-23 14:31	13-Apr-23 10:13	HDPE Bottle, 250 mL HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank										PFAS Isotope Dilution Method		
Client Data				Laboratory Data								
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		B23D231-BLK1	Column:	BEH C18				
Project:	St. Clair County											
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		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFPeA	2706-90-3	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFBS	375-73-5	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
4:2 FTS	757124-72-4	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFHxA	307-24-4	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFPeS	2706-91-4	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
HFPO-DA	13252-13-6	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFHpA	375-85-9	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
ADONA	919005-14-4	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFHxS	355-46-4	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
6:2 FTS	27619-97-2	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFOA	335-67-1	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFecHS	646-83-3	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFHpS	375-92-8	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFNA	375-95-1	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFOSA	754-91-6	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFOS	1763-23-1	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
9Cl-PF3ONS	756426-58-1	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFDA	335-76-2	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
8:2 FTS	39108-34-4	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFNS	68259-12-1	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
MeFOSAA	2355-31-9	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	01-May-23 20:04	1	
EtFOSAA	2991-50-6	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFUnA	2058-94-8	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFDS	335-77-3	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
11Cl-PF3OUdS	763051-92-9	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFDoA	307-55-1	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFTrDA	72629-94-8	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
PFTeDA	376-06-7	ND	1.00	2.00	4.00		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	105	25 - 150			B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C3-PFPeA	IS	108	25 - 150			B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C3-PFBS	IS	102	25 - 150			B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C2-4:2 FTS	IS	99.6	25 - 150			B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C2-PFHxA	IS	102	25 - 150			B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C3-HFPO-DA	IS	104	25 - 150			B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C4-PFHpA	IS	101	25 - 150			B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C3-PFHxS	IS	101	25 - 150			B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		

Sample ID: Method Blank								PFAS Isotope Dilution Method			
Client Data				Laboratory Data							
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample: B23D231-BLK1				Column: BEH C18			
Project:	St. Clair County										
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C2-6:2 FTS	IS	105	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C2-PFOA	IS	103	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C5-PFNA	IS	103	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C8-PFOSA	IS	50.1	10 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C8-PFOS	IS	96.1	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C2-PFDA	IS	94.6	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C2-8:2 FTS	IS	97.7	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
d3-MeFOSAA	IS	55.4	25 - 150		B23D231	27-Apr-23	0.250 L	01-May-23 20:04	1		
d5-EtFOSAA	IS	81.6	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C2-PFUnA	IS	87.2	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C2-PFDoA	IS	82.4	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		
13C2-PFTeDA	IS	83.5	20 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 01:59	1		

DL - Detection Limit

LOD - Limit of Detection

Results reported to the DL.

LOQ - Limit of quantitation

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 Method			
Client Data				Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:	B23D231-BS1			Column:	BEH C18					
Project:	St. Clair County													
Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
PFBA	375-22-4	35.9	40.0	89.6	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFPeA	2706-90-3	36.3	40.0	90.9	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFBS	375-73-5	35.1	40.0	87.7	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
4:2 FTS	757124-72-4	36.8	40.0	92.0	60 - 145		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFHxA	307-24-4	37.1	40.0	92.8	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFPeS	2706-91-4	40.4	40.0	101	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
HFPO-DA	13252-13-6	36.1	40.0	90.3	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFHpA	375-85-9	35.3	40.0	88.3	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
ADONA	919005-14-4	35.8	40.0	89.5	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFHxS	355-46-4	37.8	40.0	94.4	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
6:2 FTS	27619-97-2	34.7	40.0	86.6	60 - 140		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFOA	335-67-1	36.3	40.0	90.8	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFecHS	646-83-3	37.2	40.0	93.0	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFHpS	375-92-8	41.2	40.0	103	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFNA	375-95-1	37.4	40.0	93.5	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFOSA	754-91-6	35.3	40.0	88.2	65 - 140		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFOS	1763-23-1	36.6	40.0	91.6	65 - 140		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
9Cl-PF3ONS	756426-58-1	36.5	40.0	91.3	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFDA	335-76-2	36.9	40.0	92.3	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
8:2 FTS	39108-34-4	33.9	40.0	84.8	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFNS	68259-12-1	35.3	40.0	88.3	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
MeFOSAA	2355-31-9	30.8	40.0	77.1	65 - 135		B23D231	27-Apr-23	0.250 L	01-May-23 20:14	1			
EtFOSAA	2991-50-6	37.9	40.0	94.8	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFUnA	2058-94-8	37.9	40.0	94.7	65 - 140		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFDS	335-77-3	36.3	40.0	90.7	50 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
11Cl-PF3OUdS	763051-92-9	37.4	40.0	93.6	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFDoA	307-55-1	36.2	40.0	90.6	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFTrDA	72629-94-8	36.2	40.0	90.6	60 - 140		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
PFTeDA	376-06-7	34.1	40.0	85.3	65 - 135		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1			
Labeled Standards		Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
13C3-PFBA		IS	108	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1				
13C3-PFPeA		IS	110	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1				
13C3-PFBS		IS	105	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1				
13C2-4:2 FTS		IS	106	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1				
13C2-PFHxA	Werk Order 2304117	IS	102	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1				

Sample ID: OPR
PFAS Isotope Dilution Method

Client Data		Laboratory Data								
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:	B23D231-BS1		Column:	BEH C18		
Labeled Standards		Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-HFPO-DA		IS	99.5	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
13C4-PFH _p A		IS	105	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
13C3-PFH _x S		IS	101	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
13C2-6:2 FTS		IS	96.9	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
13C2-PFOA		IS	102	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
13C5-PFNA		IS	105	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
13C8-PFOSA		IS	57.8	10 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
13C8-PFOS		IS	97.4	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
13C2-PFDA		IS	99.9	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
13C2-8:2 FTS		IS	104	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
d3-MeFOSAA		IS	73.4	25 - 150		B23D231	27-Apr-23	0.250 L	01-May-23 20:14	1
d5-EtFOSAA		IS	85.2	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
13C2-PFUnA		IS	91.5	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
13C2-PFD _o A		IS	88.9	25 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1
13C2-PFTeDA		IS	89.8	20 - 150		B23D231	27-Apr-23	0.250 L	29-Apr-23 02:09	1

Sample ID: FG28
PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304117-01	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	11-Apr-23 11:15 <th data-cs="2" data-kind="parent">Date Received:</th> <th data-kind="ghost"></th> <td>13-Apr-23 10:13</td> <th data-cs="4" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th>	Date Received:		13-Apr-23 10:13						
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	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFPeA	2706-90-3	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFBS	375-73-5	3.39	0.979	1.96	3.92	J	B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
4:2 FTS	757124-72-4	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFHxA	307-24-4	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFPeS	2706-91-4	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
HFPO-DA	13252-13-6	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFHpA	375-85-9	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
ADONA	919005-14-4	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFHxS	355-46-4	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
6:2 FTS	27619-97-2	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFOA	335-67-1	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFecHS	646-83-3	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFHpS	375-92-8	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFNA	375-95-1	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFOSA	754-91-6	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFOS	1763-23-1	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
9Cl-PF3ONS	756426-58-1	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFDA	335-76-2	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
8:2 FTS	39108-34-4	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFNS	68259-12-1	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
MeFOSAA	2355-31-9	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	01-May-23 20:25	1	
EtFOSAA	2991-50-6	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFUnA	2058-94-8	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFDS	335-77-3	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
11Cl-PF3OUdS	763051-92-9	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFDoA	307-55-1	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFTrDA	72629-94-8	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
PFTeDA	376-06-7	ND	0.979	1.96	3.92		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	81.0	25 - 150			B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1		
13C3-PFPeA	IS	109	25 - 150			B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1		
13C3-PFBS	IS	104	25 - 150			B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1		
13C2-4:2 FTS	IS	105	25 - 150			B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1		
13C2-PFHxA	IS	107	25 - 150			B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1		
13C3-HFPO-DA	IS	108	25 - 150			B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1		
13C4-PFHpA	IS	108	25 - 150			B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1		

Sample ID: FG28

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 11-Apr-23 11:15

Laboratory Data

Lab Sample: 2304117-01
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	109	25 - 150		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1
13C2-6:2 FTS	IS	108	25 - 150		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1
13C2-PFOA	IS	109	25 - 150		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1
13C5-PFNA	IS	112	25 - 150		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1
13C8-PFOSA	IS	76.6	10 - 150		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1
13C8-PFOS	IS	110	25 - 150		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1
13C2-PFDA	IS	107	25 - 150		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1
13C2-8:2 FTS	IS	107	25 - 150		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1
d3-MeFOSAA	IS	85.7	25 - 150		B23D231	27-Apr-23	0.255 L	01-May-23 20:25	1
d5-EtFOSAA	IS	112	25 - 150		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1
13C2-PFUnA	IS	108	25 - 150		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1
13C2-PFDaA	IS	103	25 - 150		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	1
13C2-PFTeDA	IS	99.2	20 - 150		B23D231	27-Apr-23	0.255 L	29-Apr-23 02:19	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: FG29
PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304117-02	Column:	BEH C18				
Project:	St. Clair County	Date Collected:	11-Apr-23 10:58	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	6.25	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFPeA	2706-90-3	3.60	1.03	2.05	4.10	J	B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFBS	375-73-5	3.35	1.03	2.05	4.10	J	B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
4:2 FTS	757124-72-4	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFHxA	307-24-4	3.58	1.03	2.05	4.10	J	B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFPeS	2706-91-4	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
HFPO-DA	13252-13-6	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFHpA	375-85-9	1.88	1.03	2.05	4.10	J	B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
ADONA	919005-14-4	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFHxS	355-46-4	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
6:2 FTS	27619-97-2	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFOA	335-67-1	11.8	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFecHS	646-83-3	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFHpS	375-92-8	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFNA	375-95-1	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFOSA	754-91-6	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFOS	1763-23-1	50.3	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
9Cl-PF3ONS	756426-58-1	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFDA	335-76-2	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
8:2 FTS	39108-34-4	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFNS	68259-12-1	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
MeFOSAA	2355-31-9	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	01-May-23 20:36	1	
EtFOSAA	2991-50-6	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFUnA	2058-94-8	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFDS	335-77-3	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
11Cl-PF3OUdS	763051-92-9	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFDoA	307-55-1	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFTrDA	72629-94-8	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
PFTeDA	376-06-7	ND	1.03	2.05	4.10		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1	
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
13C3-PFBA	IS	56.0	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1		
13C3-PFPeA	IS	114	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1		
13C3-PFBS	IS	105	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1		
13C2-4:2 FTS	IS	92.6	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1		
13C2-PFHxA	IS	109	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1		
13C3-HFPO-DA	IS	107	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1		
13C4-PFHpA	IS	108	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1		

Sample ID: FG29

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 11-Apr-23 10:58

Laboratory Data

Lab Sample: 2304117-02
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	107	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1
13C2-6:2 FTS	IS	103	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1
13C2-PFOA	IS	108	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1
13C5-PFNA	IS	112	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1
13C8-PFOSA	IS	73.1	10 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1
13C8-PFOS	IS	111	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1
13C2-PFDA	IS	105	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1
13C2-8:2 FTS	IS	104	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1
d3-MeFOSAA	IS	85.9	25 - 150		B23D231	27-Apr-23	0.244 L	01-May-23 20:36	1
d5-EtFOSAA	IS	106	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1
13C2-PFUnA	IS	107	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1
13C2-PFDaA	IS	99.4	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	1
13C2-PFTeDA	IS	74.1	20 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 02:30	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: FG30

PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304117-03	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	11-Apr-23 11:36 <th data-cs="2" data-kind="parent">Date Received:</th> <th data-kind="ghost"></th> <td>13-Apr-23 10:13</td> <th data-cs="4" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th>	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	9.16	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFPeA	2706-90-3	10.4	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFBS	375-73-5	22.2	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
4:2 FTS	757124-72-4	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFHxA	307-24-4	10.3	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFPeS	2706-91-4	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
HFPO-DA	13252-13-6	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFHpA	375-85-9	3.94	1.12	2.24	4.47	J	B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
ADONA	919005-14-4	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFHxS	355-46-4	1.51	1.12	2.24	4.47	J	B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
6:2 FTS	27619-97-2	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFOA	335-67-1	9.34	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFecHS	646-83-3	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFHpS	375-92-8	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFNA	375-95-1	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFOSA	754-91-6	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFOS	1763-23-1	8.49	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
9Cl-PF3ONS	756426-58-1	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFDA	335-76-2	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
8:2 FTS	39108-34-4	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFNS	68259-12-1	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
MeFOSAA	2355-31-9	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	01-May-23 20:46	1	
EtFOSAA	2991-50-6	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFUnA	2058-94-8	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFDS	335-77-3	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
11Cl-PF3OUdS	763051-92-9	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFDoA	307-55-1	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFTrDA	72629-94-8	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
PFTeDA	376-06-7	ND	1.12	2.24	4.47		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	61.0	25 - 150			B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1		
13C3-PFPeA	IS	119	25 - 150			B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1		
13C3-PFBS	IS	113	25 - 150			B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1		
13C2-4:2 FTS	IS	109	25 - 150			B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1		
13C2-PFHxA	IS	112	25 - 150			B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1		
13C3-HFPO-DA	IS	112	25 - 150			B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1		
13C4-PFHpA	IS	112	25 - 150			B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1		

Sample ID: FG30

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 11-Apr-23 11:36

Laboratory Data

Lab Sample: 2304117-03
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	109	25 - 150		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1
13C2-6:2 FTS	IS	111	25 - 150		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1
13C2-PFOA	IS	112	25 - 150		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1
13C5-PFNA	IS	115	25 - 150		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1
13C8-PFOSA	IS	67.0	10 - 150		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1
13C8-PFOS	IS	107	25 - 150		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1
13C2-PFDA	IS	111	25 - 150		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1
13C2-8:2 FTS	IS	102	25 - 150		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1
d3-MeFOSAA	IS	83.2	25 - 150		B23D231	27-Apr-23	0.223 L	01-May-23 20:46	1
d5-EtFOSAA	IS	109	25 - 150		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1
13C2-PFUnA	IS	108	25 - 150		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1
13C2-PFDaA	IS	98.3	25 - 150		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	1
13C2-PFTeDA	IS	69.3	20 - 150		B23D231	27-Apr-23	0.223 L	29-Apr-23 02:40	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: FG31

PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304117-04	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	11-Apr-23 11:05 <th data-cs="2" data-kind="parent">Date Received:</th> <th data-kind="ghost"></th> <td>13-Apr-23 10:13</td> <th data-cs="4" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th>	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	2.89	1.02	2.03	4.07	J	B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFPeA	2706-90-3	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFBS	375-73-5	2.30	1.02	2.03	4.07	J	B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
4:2 FTS	757124-72-4	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFHxA	307-24-4	6.64	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFPeS	2706-91-4	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
HFPO-DA	13252-13-6	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFHpA	375-85-9	19.0	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
ADONA	919005-14-4	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFHxS	355-46-4	2.45	1.02	2.03	4.07	J	B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
6:2 FTS	27619-97-2	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFOA	335-67-1	331	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFecHS	646-83-3	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFHpS	375-92-8	9.32	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFNA	375-95-1	5.05	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFOSA	754-91-6	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFOS	1763-23-1	1270	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
9Cl-PF3ONS	756426-58-1	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFDA	335-76-2	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
8:2 FTS	39108-34-4	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFNS	68259-12-1	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
MeFOSAA	2355-31-9	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	01-May-23 20:57	1	
EtFOSAA	2991-50-6	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFUnA	2058-94-8	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFDS	335-77-3	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
11Cl-PF3OUdS	763051-92-9	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFDoA	307-55-1	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFTrDA	72629-94-8	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
PFTeDA	376-06-7	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1	
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
13C3-PFBA	IS	77.3	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1			
13C3-PFPeA	IS	112	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1			
13C3-PFBS	IS	105	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1			
13C2-4:2 FTS	IS	108	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1			
13C2-PFHxA	IS	108	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1			
13C3-HFPO-DA	IS	101	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1			
13C4-PFHpA	IS	109	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1			

Sample ID: FG31

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 11-Apr-23 11:05

Laboratory Data

Lab Sample: 2304117-04
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	105	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1
13C2-6:2 FTS	IS	107	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1
13C2-PFOA	IS	106	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1
13C5-PFNA	IS	106	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1
13C8-PFOSA	IS	77.3	10 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1
13C8-PFOS	IS	109	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1
13C2-PFDA	IS	104	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1
13C2-8:2 FTS	IS	93.8	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1
d3-MeFOSAA	IS	77.6	25 - 150		B23D231	27-Apr-23	0.246 L	01-May-23 20:57	1
d5-EtFOSAA	IS	107	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1
13C2-PFUnA	IS	108	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1
13C2-PFDaA	IS	101	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	1
13C2-PFTeDA	IS	98.6	20 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 02:51	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: FG32

PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304117-05	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	11-Apr-23 11:12 <th data-cs="2" data-kind="parent">Date Received:</th> <th data-kind="ghost"></th> <td>13-Apr-23 10:13</td> <th data-cs="4" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th>	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	6.93	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFPeA	2706-90-3	4.46	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFBS	375-73-5	12.8	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
4:2 FTS	757124-72-4	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFHxA	307-24-4	7.19	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFPeS	2706-91-4	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
HFPO-DA	13252-13-6	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFHpA	375-85-9	9.28	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
ADONA	919005-14-4	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFHxS	355-46-4	2.60	1.09	2.17	4.34	J	B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
6:2 FTS	27619-97-2	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFOA	335-67-1	124	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFecHS	646-83-3	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFHpS	375-92-8	3.65	1.09	2.17	4.34	J	B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFNA	375-95-1	3.40	1.09	2.17	4.34	J	B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFOSA	754-91-6	3.67	1.09	2.17	4.34	J	B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFOS	1763-23-1	1090	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
9Cl-PF3ONS	756426-58-1	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFDA	335-76-2	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
8:2 FTS	39108-34-4	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFNS	68259-12-1	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
MeFOSAA	2355-31-9	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	01-May-23 21:39	1	
EtFOSAA	2991-50-6	3.17	1.09	2.17	4.34	J	B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFUnA	2058-94-8	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFDS	335-77-3	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
11Cl-PF3OUdS	763051-92-9	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFDoA	307-55-1	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFTrDA	72629-94-8	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
PFTeDA	376-06-7	ND	1.09	2.17	4.34		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	44.3	25 - 150			B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1		
13C3-PFPeA	IS	110	25 - 150			B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1		
13C3-PFBS	IS	106	25 - 150			B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1		
13C2-4:2 FTS	IS	110	25 - 150			B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1		
13C2-PFHxA	IS	108	25 - 150			B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1		
13C3-HFPO-DA	IS	101	25 - 150			B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1		
13C4-PFHpA	IS	105	25 - 150			B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1		

Sample ID: FG32

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 11-Apr-23 11:12

Laboratory Data

Lab Sample: 2304117-05
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	105	25 - 150		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1
13C2-6:2 FTS	IS	111	25 - 150		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1
13C2-PFOA	IS	104	25 - 150		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1
13C5-PFNA	IS	103	25 - 150		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1
13C8-PFOSA	IS	64.3	10 - 150		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1
13C8-PFOS	IS	100	25 - 150		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1
13C2-PFDA	IS	97.9	25 - 150		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1
13C2-8:2 FTS	IS	91.1	25 - 150		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1
d3-MeFOSAA	IS	76.5	25 - 150		B23D231	27-Apr-23	0.230 L	01-May-23 21:39	1
d5-EtFOSAA	IS	94.7	25 - 150		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1
13C2-PFUnA	IS	96.4	25 - 150		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1
13C2-PFDoA	IS	88.0	25 - 150		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	1
13C2-PFTeDA	IS	52.1	20 - 150		B23D231	27-Apr-23	0.230 L	29-Apr-23 03:01	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: FG33
PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304117-06	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	11-Apr-23 10:45 <th data-cs="2" data-kind="parent">Date Received:</th> <th data-kind="ghost"></th> <td>13-Apr-23 10:13</td> <th data-cs="4" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th>	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	2.04	1.01	2.02	4.05	J	B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFPeA	2706-90-3	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFBS	375-73-5	4.18	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
4:2 FTS	757124-72-4	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFHxA	307-24-4	2.58	1.01	2.02	4.05	J	B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFPeS	2706-91-4	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
HFPO-DA	13252-13-6	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFHpA	375-85-9	4.26	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
ADONA	919005-14-4	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFHxS	355-46-4	1.30	1.01	2.02	4.05	J	B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
6:2 FTS	27619-97-2	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFOA	335-67-1	76.5	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFecHS	646-83-3	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFHpS	375-92-8	3.98	1.01	2.02	4.05	J	B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFNA	375-95-1	1.30	1.01	2.02	4.05	J	B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFOSA	754-91-6	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFOS	1763-23-1	739	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
9Cl-PF3ONS	756426-58-1	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFDA	335-76-2	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
8:2 FTS	39108-34-4	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFNS	68259-12-1	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
MeFOSAA	2355-31-9	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	01-May-23 21:49	1	
EtFOSAA	2991-50-6	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFUnA	2058-94-8	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFDS	335-77-3	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFDoA	307-55-1	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFTrDA	72629-94-8	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
PFTeDA	376-06-7	ND	1.01	2.02	4.05		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	82.3	25 - 150			B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1		
13C3-PFPeA	IS	110	25 - 150			B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1		
13C3-PFBS	IS	108	25 - 150			B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1		
13C2-4:2 FTS	IS	92.3	25 - 150			B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1		
13C2-PFHxA	IS	106	25 - 150			B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1		
13C3-HFPO-DA	IS	99.5	25 - 150			B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1		
13C4-PFHpA	IS	105	25 - 150			B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1		

Sample ID: FG33

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 11-Apr-23 10:45

Laboratory Data

Lab Sample: 2304117-06
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	103	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1
13C2-6:2 FTS	IS	107	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1
13C2-PFOA	IS	104	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1
13C5-PFNA	IS	106	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1
13C8-PFOSA	IS	73.4	10 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1
13C8-PFOS	IS	103	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1
13C2-PFDA	IS	106	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1
13C2-8:2 FTS	IS	102	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1
d3-MeFOSAA	IS	77.4	25 - 150		B23D231	27-Apr-23	0.247 L	01-May-23 21:49	1
d5-EtFOSAA	IS	106	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1
13C2-PFUnA	IS	103	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1
13C2-PFDaA	IS	99.8	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	1
13C2-PFTeDA	IS	92.2	20 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:11	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: FG34											PFAS Isotope Dilution Method		
Client Data				Laboratory Data									
Name:	Michigan EGLE	Matrix:	Aqueous	Date Collected:	11-Apr-23 10:36						Column:	BEH C18	
Project:	St. Clair County					Lab Sample:	2304117-07						
						Date Received:	13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
PFBA	375-22-4	3.68	0.993	1.98	3.97	J	B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFPeA	2706-90-3	2.36	0.993	1.98	3.97	J	B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFBS	375-73-5	3.37	0.993	1.98	3.97	J	B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
4:2 FTS	757124-72-4	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFHxA	307-24-4	2.91	0.993	1.98	3.97	J	B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFPeS	2706-91-4	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
HFPO-DA	13252-13-6	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFHpA	375-85-9	3.62	0.993	1.98	3.97	J	B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
ADONA	919005-14-4	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFHxS	355-46-4	1.08	0.993	1.98	3.97	J	B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
6:2 FTS	27619-97-2	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFOA	335-67-1	51.6	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFecHS	646-83-3	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFHpS	375-92-8	2.59	0.993	1.98	3.97	J	B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFNA	375-95-1	1.23	0.993	1.98	3.97	J	B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFOSA	754-91-6	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFOS	1763-23-1	468	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
9Cl-PF3ONS	756426-58-1	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFDA	335-76-2	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
8:2 FTS	39108-34-4	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFNS	68259-12-1	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
MeFOSAA	2355-31-9	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	01-May-23 22:00	1		
EtFOSAA	2991-50-6	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFUnA	2058-94-8	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFDS	335-77-3	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
11Cl-PF3OUdS	763051-92-9	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFDoA	307-55-1	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFTrDA	72629-94-8	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
PFTeDA	376-06-7	ND	0.993	1.98	3.97		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	80.5		25 - 150			B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
13C3-PFPeA	IS	115		25 - 150			B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
13C3-PFBS	IS	117		25 - 150			B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
13C2-4:2 FTS	IS	103		25 - 150			B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
13C2-PFHxA	IS	114		25 - 150			B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
13C3-HFPO-DA	IS	109		25 - 150			B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		
13C4-PFHpA	IS	110		25 - 150			B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1		

Sample ID: FG34

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 11-Apr-23 10:36

Laboratory Data

Lab Sample: 2304117-07
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	106	25 - 150		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1
13C2-6:2 FTS	IS	98.7	25 - 150		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1
13C2-PFOA	IS	109	25 - 150		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1
13C5-PFNA	IS	109	25 - 150		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1
13C8-PFOSA	IS	85.7	10 - 150		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1
13C8-PFOS	IS	108	25 - 150		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1
13C2-PFDA	IS	109	25 - 150		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1
13C2-8:2 FTS	IS	107	25 - 150		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1
d3-MeFOSAA	IS	78.6	25 - 150		B23D231	27-Apr-23	0.252 L	01-May-23 22:00	1
d5-EtFOSAA	IS	112	25 - 150		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1
13C2-PFUnA	IS	105	25 - 150		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1
13C2-PFDaA	IS	94.5	25 - 150		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	1
13C2-PFTeDA	IS	80.8	20 - 150		B23D231	27-Apr-23	0.252 L	29-Apr-23 03:22	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: FG41
PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304117-08	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	11-Apr-23 09:15 <th data-cs="2" data-kind="parent">Date Received:</th> <th data-kind="ghost"></th> <td>13-Apr-23 10:13</td> <th data-cs="4" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th>	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	1.64	0.996	1.99	3.98	J	B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFPeA	2706-90-3	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFBS	375-73-5	1.66	0.996	1.99	3.98	J	B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
4:2 FTS	757124-72-4	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFHxA	307-24-4	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFPeS	2706-91-4	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
HFPO-DA	13252-13-6	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFHpA	375-85-9	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
ADONA	919005-14-4	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFHxS	355-46-4	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
6:2 FTS	27619-97-2	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFOA	335-67-1	3.88	0.996	1.99	3.98	J	B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFecHS	646-83-3	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFHpS	375-92-8	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFNA	375-95-1	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFOSA	754-91-6	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFOS	1763-23-1	32.5	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
9Cl-PF3ONS	756426-58-1	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFDA	335-76-2	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
8:2 FTS	39108-34-4	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFNS	68259-12-1	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
MeFOSAA	2355-31-9	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	01-May-23 22:11	1	
EtFOSAA	2991-50-6	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFUnA	2058-94-8	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFDS	335-77-3	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
11Cl-PF3OUdS	763051-92-9	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFDoA	307-55-1	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFTrDA	72629-94-8	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
PFTeDA	376-06-7	ND	0.996	1.99	3.98		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	59.0	25 - 150			B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1		
13C3-PFPeA	IS	109	25 - 150			B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1		
13C3-PFBS	IS	104	25 - 150			B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1		
13C2-4:2 FTS	IS	96.5	25 - 150			B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1		
13C2-PFHxA	IS	105	25 - 150			B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1		
13C3-HFPO-DA	IS	103	25 - 150			B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1		
13C4-PFHpA	IS	106	25 - 150			B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1		

Sample ID: FG41

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 11-Apr-23 09:15

Laboratory Data

Lab Sample: 2304117-08
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	110	25 - 150		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1
13C2-6:2 FTS	IS	100	25 - 150		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1
13C2-PFOA	IS	108	25 - 150		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1
13C5-PFNA	IS	109	25 - 150		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1
13C8-PFOSA	IS	89.6	10 - 150		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1
13C8-PFOS	IS	104	25 - 150		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1
13C2-PFDA	IS	108	25 - 150		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1
13C2-8:2 FTS	IS	107	25 - 150		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1
d3-MeFOSAA	IS	72.7	25 - 150		B23D231	27-Apr-23	0.251 L	01-May-23 22:11	1
d5-EtFOSAA	IS	103	25 - 150		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1
13C2-PFUnA	IS	107	25 - 150		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1
13C2-PFDaA	IS	104	25 - 150		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	1
13C2-PFTeDA	IS	92.1	20 - 150		B23D231	27-Apr-23	0.251 L	29-Apr-23 03:32	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: FG42
PFAS Isotope Dilution Method

Client Data		Laboratory Data											
Name:	Michigan EGLE	Matrix:	Aqueous	Date Collected:	11-Apr-23 09:00	Lab Sample:	2304117-09	Column:	BEH C18				
Project:	St. Clair County	Date Received:	13-Apr-23 10:13										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
PFBA	375-22-4	2.76	1.04	2.08	4.16	J	B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFPeA	2706-90-3	1.64	1.04	2.08	4.16	J	B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFBS	375-73-5	2.38	1.04	2.08	4.16	J	B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
4:2 FTS	757124-72-4	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFHxA	307-24-4	3.44	1.04	2.08	4.16	J	B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFPeS	2706-91-4	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
HFPO-DA	13252-13-6	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFHpA	375-85-9	6.42	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
ADONA	919005-14-4	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFHxS	355-46-4	2.09	1.04	2.08	4.16	J	B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
6:2 FTS	27619-97-2	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFOA	335-67-1	99.3	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFecHS	646-83-3	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFHpS	375-92-8	5.40	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFNA	375-95-1	1.46	1.04	2.08	4.16	J	B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFOSA	754-91-6	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFOS	1763-23-1	815	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
9Cl-PF3ONS	756426-58-1	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFDA	335-76-2	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
8:2 FTS	39108-34-4	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFNS	68259-12-1	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
MeFOSAA	2355-31-9	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	01-May-23 22:21	1		
EtFOSAA	2991-50-6	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFUnA	2058-94-8	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFDS	335-77-3	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFDoA	307-55-1	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFTrDA	72629-94-8	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
PFTeDA	376-06-7	ND	1.04	2.08	4.16		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1		
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
13C3-PFBA	IS	66.2	25 - 150			B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1			
13C3-PFPeA	IS	108	25 - 150			B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1			
13C3-PFBS	IS	107	25 - 150			B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1			
13C2-4:2 FTS	IS	103	25 - 150			B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1			
13C2-PFHxA	IS	103	25 - 150			B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1			
13C3-HFPO-DA	IS	102	25 - 150			B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1			
13C4-PFHpA	IS	101	25 - 150			B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1			

Sample ID: FG42

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 11-Apr-23 09:00

Laboratory Data

Lab Sample: 2304117-09
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	105	25 - 150		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1
13C2-6:2 FTS	IS	100	25 - 150		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1
13C2-PFOA	IS	102	25 - 150		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1
13C5-PFNA	IS	103	25 - 150		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1
13C8-PFOSA	IS	73.6	10 - 150		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1
13C8-PFOS	IS	95.0	25 - 150		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1
13C2-PFDA	IS	102	25 - 150		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1
13C2-8:2 FTS	IS	95.6	25 - 150		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1
d3-MeFOSAA	IS	83.8	25 - 150		B23D231	27-Apr-23	0.240 L	01-May-23 22:21	1
d5-EtFOSAA	IS	102	25 - 150		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1
13C2-PFUnA	IS	103	25 - 150		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1
13C2-PFDaA	IS	94.8	25 - 150		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	1
13C2-PFTeDA	IS	83.0	20 - 150		B23D231	27-Apr-23	0.240 L	29-Apr-23 03:42	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: FG46

PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304117-10	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	11-Apr-23 10:00 <th data-cs="2" data-kind="parent">Date Received:</th> <th data-kind="ghost"></th> <td>13-Apr-23 10:13</td> <th data-cs="4" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th>	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	3.56	1.01	2.02	4.04	J	B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFPeA	2706-90-3	5.48	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFBS	375-73-5	1.96	1.01	2.02	4.04	J	B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
4:2 FTS	757124-72-4	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFHxA	307-24-4	7.52	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFPeS	2706-91-4	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
HFPO-DA	13252-13-6	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFHpA	375-85-9	6.28	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
ADONA	919005-14-4	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFHxS	355-46-4	1.16	1.01	2.02	4.04	J	B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
6:2 FTS	27619-97-2	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFOA	335-67-1	43.9	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFecHS	646-83-3	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFHpS	375-92-8	1.75	1.01	2.02	4.04	J	B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFNA	375-95-1	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFOSA	754-91-6	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFOS	1763-23-1	236	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
9Cl-PF3ONS	756426-58-1	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFDA	335-76-2	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
8:2 FTS	39108-34-4	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFNS	68259-12-1	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
MeFOSAA	2355-31-9	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	01-May-23 22:32	1	
EtFOSAA	2991-50-6	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFUnA	2058-94-8	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFDS	335-77-3	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFDoA	307-55-1	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFTrDA	72629-94-8	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
PFTeDA	376-06-7	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1	
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
13C3-PFBA	IS	57.9	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1			
13C3-PFPeA	IS	110	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1			
13C3-PFBS	IS	103	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1			
13C2-4:2 FTS	IS	98.8	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1			
13C2-PFHxA	IS	104	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1			
13C3-HFPO-DA	IS	100	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1			
13C4-PFHpA	IS	103	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1			

Sample ID: FG46

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 11-Apr-23 10:00

Laboratory Data

Lab Sample: 2304117-10
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	104	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1
13C2-6:2 FTS	IS	97.3	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1
13C2-PFOA	IS	103	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1
13C5-PFNA	IS	104	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1
13C8-PFOSA	IS	77.9	10 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1
13C8-PFOS	IS	103	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1
13C2-PFDA	IS	105	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1
13C2-8:2 FTS	IS	94.7	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1
d3-MeFOSAA	IS	71.8	25 - 150		B23D231	27-Apr-23	0.247 L	01-May-23 22:32	1
d5-EtFOSAA	IS	103	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1
13C2-PFUnA	IS	101	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1
13C2-PFDaA	IS	95.3	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	1
13C2-PFTeDA	IS	86.7	20 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 03:53	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: FG38

PFAS Isotope Dilution Method**Client Data**
Name: Michigan EGLE
Project: St. Clair County

Matrix: Aqueous
Date Collected: 10-Apr-23 14:49
Laboratory Data
Lab Sample: 2304117-11
Date Received: 13-Apr-23 10:13

Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	2.62	1.00	2.01	4.01	J	B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFPeA	2706-90-3	1.97	1.00	2.01	4.01	J	B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFBS	375-73-5	3.15	1.00	2.01	4.01	J	B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
4:2 FTS	757124-72-4	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFHxA	307-24-4	4.16	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFPeS	2706-91-4	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
HFPO-DA	13252-13-6	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFHpA	375-85-9	7.10	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
ADONA	919005-14-4	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFHxS	355-46-4	2.19	1.00	2.01	4.01	J	B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
6:2 FTS	27619-97-2	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFOA	335-67-1	125	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFecHS	646-83-3	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFHpS	375-92-8	5.68	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFNA	375-95-1	2.10	1.00	2.01	4.01	J	B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFOSA	754-91-6	1.49	1.00	2.01	4.01	J, Q	B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFOS	1763-23-1	981	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
9Cl-PF3ONS	756426-58-1	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFDA	335-76-2	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
8:2 FTS	39108-34-4	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFNS	68259-12-1	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
MeFOSAA	2355-31-9	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	01-May-23 22:42	1
EtFOSAA	2991-50-6	1.44	1.00	2.01	4.01	J	B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFUnA	2058-94-8	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFDS	335-77-3	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
11Cl-PF3OUdS	763051-92-9	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFDoA	307-55-1	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFTrDA	72629-94-8	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
PFTeDA	376-06-7	ND	1.00	2.01	4.01		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	65.1	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C3-PFPeA	IS	110	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C3-PFBS	IS	102	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C2-4:2 FTS	IS	105	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C2-PFHxA	IS	109	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C3-HFPO-DA	IS	105	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C4-PFHpA	IS	106	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1

Sample ID: FG38

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 10-Apr-23 14:49

Laboratory Data

Lab Sample: 2304117-11
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	109	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C2-6:2 FTS	IS	97.9	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C2-PFOA	IS	105	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C5-PFNA	IS	108	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C8-PFOSA	IS	78.4	10 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C8-PFOS	IS	104	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C2-PFDA	IS	106	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C2-8:2 FTS	IS	96.5	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
d3-MeFOSAA	IS	65.0	25 - 150		B23D231	27-Apr-23	0.249 L	01-May-23 22:42	1
d5-EtFOSAA	IS	103	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C2-PFUnA	IS	104	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C2-PFDaA	IS	96.7	25 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	1
13C2-PFTeDA	IS	83.1	20 - 150		B23D231	27-Apr-23	0.249 L	29-Apr-23 04:34	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: FG39

PFAS Isotope Dilution Method**Client Data**
Name: Michigan EGLE
Project: St. Clair County

Matrix: Aqueous
Date Collected: 10-Apr-23 14:58
Laboratory Data
Lab Sample: 2304117-12
Date Received: 13-Apr-23 10:13

Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	2.30	0.954	1.91	3.81	J	B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFPeA	2706-90-3	1.15	0.954	1.91	3.81	J	B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFBS	375-73-5	1.72	0.954	1.91	3.81	J	B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
4:2 FTS	757124-72-4	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFHxA	307-24-4	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFPeS	2706-91-4	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
HFPO-DA	13252-13-6	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFHpA	375-85-9	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
ADONA	919005-14-4	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFHxS	355-46-4	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
6:2 FTS	27619-97-2	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFOA	335-67-1	5.17	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFecHS	646-83-3	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFHpS	375-92-8	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFNA	375-95-1	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFOSA	754-91-6	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFOS	1763-23-1	59.2	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
9Cl-PF3ONS	756426-58-1	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFDA	335-76-2	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
8:2 FTS	39108-34-4	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFNS	68259-12-1	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
MeFOSAA	2355-31-9	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	01-May-23 22:53	1
EtFOSAA	2991-50-6	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFUnA	2058-94-8	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFDS	335-77-3	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
11Cl-PF3OUdS	763051-92-9	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFDoA	307-55-1	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFTrDA	72629-94-8	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
PFTeDA	376-06-7	ND	0.954	1.91	3.81		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	53.1	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C3-PFPeA	IS	110	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C3-PFBS	IS	105	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C2-4:2 FTS	IS	101	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C2-PFHxA	IS	105	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C3-HFPO-DA	IS	103	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C4-PFHpA	IS	102	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1

Sample ID: FG39

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 10-Apr-23 14:58

Laboratory Data

Lab Sample: 2304117-12
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	104	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C2-6:2 FTS	IS	101	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C2-PFOA	IS	105	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C5-PFNA	IS	108	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C8-PFOSA	IS	79.4	10 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C8-PFOS	IS	101	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C2-PFDA	IS	104	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C2-8:2 FTS	IS	98.5	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
d3-MeFOSAA	IS	77.9	25 - 150		B23D231	27-Apr-23	0.262 L	01-May-23 22:53	1
d5-EtFOSAA	IS	104	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C2-PFUnA	IS	103	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C2-PFDaA	IS	97.4	25 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	1
13C2-PFTeDA	IS	82.7	20 - 150		B23D231	27-Apr-23	0.262 L	29-Apr-23 04:45	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: FG40
PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304117-13	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	10-Apr-23 15:04 <th data-cs="2" data-kind="parent">Date Received:</th> <th data-kind="ghost"></th> <td>13-Apr-23 10:13</td> <th data-cs="4" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th>	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	2.49	1.03	2.07	4.14	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFPeA	2706-90-3	2.74	1.03	2.07	4.14	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFBS	375-73-5	2.62	1.03	2.07	4.14	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
4:2 FTS	757124-72-4	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFHxA	307-24-4	3.77	1.03	2.07	4.14	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFPeS	2706-91-4	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
HFPO-DA	13252-13-6	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFHpA	375-85-9	2.06	1.03	2.07	4.14	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
ADONA	919005-14-4	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFHxS	355-46-4	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
6:2 FTS	27619-97-2	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFOA	335-67-1	2.55	1.03	2.07	4.14	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFecHS	646-83-3	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFHpS	375-92-8	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFNA	375-95-1	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFOSA	754-91-6	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFOS	1763-23-1	1.55	1.03	2.07	4.14	J, Q	B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
9Cl-PF3ONS	756426-58-1	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFDA	335-76-2	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
8:2 FTS	39108-34-4	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFNS	68259-12-1	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
MeFOSAA	2355-31-9	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	01-May-23 23:03	1	
EtFOSAA	2991-50-6	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFUnA	2058-94-8	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFDS	335-77-3	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
11Cl-PF3OUdS	763051-92-9	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFDoA	307-55-1	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFTrDA	72629-94-8	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
PFTeDA	376-06-7	ND	1.03	2.07	4.14		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1	
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
13C3-PFBA	IS	51.6	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1			
13C3-PFPeA	IS	108	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1			
13C3-PFBS	IS	104	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1			
13C2-4:2 FTS	IS	106	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1			
13C2-PFHxA	IS	106	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1			
13C3-HFPO-DA	IS	109	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1			
13C4-PFHpA	IS	105	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1			

Sample ID: FG40

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 10-Apr-23 15:04

Laboratory Data

Lab Sample: 2304117-13
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFHxS	IS	104	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1
13C2-6:2 FTS	IS	98.0	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1
13C2-PFOA	IS	104	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1
13C5-PFNA	IS	107	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1
13C8-PFOSA	IS	79.8	10 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1
13C8-PFOS	IS	100	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1
13C2-PFDA	IS	104	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1
13C2-8:2 FTS	IS	92.5	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1
d3-MeFOSAA	IS	79.4	25 - 150		B23D231	27-Apr-23	0.242 L	01-May-23 23:03	1
d5-EtFOSAA	IS	105	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1
13C2-PFUnA	IS	107	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1
13C2-PFDaA	IS	102	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	1
13C2-PFTeDA	IS	92.4	20 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 04:55	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: FG40-FR											PFAS Isotope Dilution Method		
Client Data				Laboratory Data									
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:	2304117-14	Column:	BEH C18	Date Collected:	10-Apr-23 15:06	Date Received:	13-Apr-23 10:13		
Project:	St. Clair County												
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
PFBA	375-22-4	2.47	1.03	2.07	4.13	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFPeA	2706-90-3	2.84	1.03	2.07	4.13	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFBS	375-73-5	3.05	1.03	2.07	4.13	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
4:2 FTS	757124-72-4	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFHxA	307-24-4	3.73	1.03	2.07	4.13	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFPeS	2706-91-4	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
HFPO-DA	13252-13-6	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFHpA	375-85-9	2.06	1.03	2.07	4.13	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
ADONA	919005-14-4	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFHxS	355-46-4	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
6:2 FTS	27619-97-2	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFOA	335-67-1	2.62	1.03	2.07	4.13	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFecHS	646-83-3	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFHpS	375-92-8	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFNA	375-95-1	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFOSA	754-91-6	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFOS	1763-23-1	1.17	1.03	2.07	4.13	J	B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
9Cl-PF3ONS	756426-58-1	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFDA	335-76-2	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
8:2 FTS	39108-34-4	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFNS	68259-12-1	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
MeFOSAA	2355-31-9	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	01-May-23 23:14	1		
EtFOSAA	2991-50-6	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFUnA	2058-94-8	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFDS	335-77-3	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
11Cl-PF3OUdS	763051-92-9	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFDoA	307-55-1	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFTrDA	72629-94-8	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
PFTeDA	376-06-7	ND	1.03	2.07	4.13		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
Labeled Standards	Type	% Recovery		Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
13C3-PFBA	IS	54.1		25 - 150			B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
13C3-PFPeA	IS	109		25 - 150			B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
13C3-PFBS	IS	99.2		25 - 150			B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
13C2-4:2 FTS	IS	108		25 - 150			B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
13C2-PFHxA	IS	106		25 - 150			B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
13C3-HFPO-DA	IS	104		25 - 150			B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		
13C4-PFHpA	IS	104		25 - 150			B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1		

Sample ID: FG40-FR
PFAS Isotope Dilution Method

Client Data				Laboratory Data						
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:	2304117-14 <th>Column:</th> <td>BEH C18</td> <th data-cs="3" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th>	Column:	BEH C18			
Project:	St. Clair County	Date Collected:	10-Apr-23 15:06	Date Received:	13-Apr-23 10:13					
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C3-PFHxS	IS	108	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1	
13C2-6:2 FTS	IS	96.3	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1	
13C2-PFOA	IS	101	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1	
13C5-PFNA	IS	107	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1	
13C8-PFOSA	IS	81.5	10 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1	
13C8-PFOS	IS	108	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1	
13C2-PFDA	IS	104	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1	
13C2-8:2 FTS	IS	97.4	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1	
d3-MeFOSAA	IS	84.7	25 - 150		B23D231	27-Apr-23	0.242 L	01-May-23 23:14	1	
d5-EtFOSAA	IS	104	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1	
13C2-PFUnA	IS	103	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1	
13C2-PFDaA	IS	96.6	25 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	1	
13C2-PFTeDA	IS	87.6	20 - 150		B23D231	27-Apr-23	0.242 L	29-Apr-23 05:06	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.

Sample ID: FG44
PFAS Isotope Dilution Method

Client Data		Laboratory Data											
Name:	Michigan EGLE	Matrix:	Aqueous	Date Collected:	10-Apr-23 15:58	Lab Sample:	2304117-15	Column:	BEH C18				
Project:	St. Clair County	Date Received:	13-Apr-23 10:13										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
PFBA	375-22-4	2.51	1.01	2.02	4.02	J	B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFPeA	2706-90-3	1.09	1.01	2.02	4.02	J	B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFBS	375-73-5	2.01	1.01	2.02	4.02	J	B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
4:2 FTS	757124-72-4	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFHxA	307-24-4	2.32	1.01	2.02	4.02	J	B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFPeS	2706-91-4	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
HFPO-DA	13252-13-6	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFHpA	375-85-9	4.92	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
ADONA	919005-14-4	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFHxS	355-46-4	2.09	1.01	2.02	4.02	J	B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
6:2 FTS	27619-97-2	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFOA	335-67-1	91.0	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFecHS	646-83-3	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFHpS	375-92-8	4.93	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFNA	375-95-1	1.20	1.01	2.02	4.02	J	B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFOSA	754-91-6	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFOS	1763-23-1	705	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
9Cl-PF3ONS	756426-58-1	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFDA	335-76-2	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
8:2 FTS	39108-34-4	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFNS	68259-12-1	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
MeFOSAA	2355-31-9	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	01-May-23 23:56	1		
EtFOSAA	2991-50-6	1.27	1.01	2.02	4.02	J	B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFUnA	2058-94-8	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFDS	335-77-3	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFDoA	307-55-1	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFTrDA	72629-94-8	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
PFTeDA	376-06-7	ND	1.01	2.02	4.02		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1		
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
13C3-PFBA	IS	66.4	25 - 150			B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1			
13C3-PFPeA	IS	109	25 - 150			B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1			
13C3-PFBS	IS	100	25 - 150			B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1			
13C2-4:2 FTS	IS	101	25 - 150			B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1			
13C2-PFHxA	IS	105	25 - 150			B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1			
13C3-HFPO-DA	IS	103	25 - 150			B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1			
13C4-PFHpA	IS	103	25 - 150			B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1			

Sample ID: FG44

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 10-Apr-23 15:58

Laboratory Data

Lab Sample: 2304117-15
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	102	25 - 150		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1
13C2-6:2 FTS	IS	99.2	25 - 150		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1
13C2-PFOA	IS	102	25 - 150		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1
13C5-PFNA	IS	105	25 - 150		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1
13C8-PFOSA	IS	75.1	10 - 150		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1
13C8-PFOS	IS	103	25 - 150		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1
13C2-PFDA	IS	102	25 - 150		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1
13C2-8:2 FTS	IS	92.7	25 - 150		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1
d3-MeFOSAA	IS	74.8	25 - 150		B23D231	27-Apr-23	0.248 L	01-May-23 23:56	1
d5-EtFOSAA	IS	97.7	25 - 150		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1
13C2-PFUnA	IS	100	25 - 150		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1
13C2-PFDoA	IS	96.5	25 - 150		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	1
13C2-PFTeDA	IS	82.7	20 - 150		B23D231	27-Apr-23	0.248 L	29-Apr-23 05:16	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: FG45
PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304117-16	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	10-Apr-23 15:47	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	1.74	0.978	1.95	3.91	J	B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFPeA	2706-90-3	2.02	0.978	1.95	3.91	J	B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFBS	375-73-5	2.11	0.978	1.95	3.91	J	B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
4:2 FTS	757124-72-4	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFHxA	307-24-4	3.95	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFPeS	2706-91-4	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
HFPO-DA	13252-13-6	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFHpA	375-85-9	5.62	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
ADONA	919005-14-4	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFHxS	355-46-4	1.46	0.978	1.95	3.91	J	B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
6:2 FTS	27619-97-2	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFOA	335-67-1	79.2	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFecHS	646-83-3	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFHpS	375-92-8	3.70	0.978	1.95	3.91	J	B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFNA	375-95-1	1.02	0.978	1.95	3.91	J	B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFOSA	754-91-6	3.68	0.978	1.95	3.91	J, Q	B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFOS	1763-23-1	700	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
9Cl-PF3ONS	756426-58-1	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFDA	335-76-2	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
8:2 FTS	39108-34-4	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFNS	68259-12-1	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
MeFOSAA	2355-31-9	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	02-May-23 00:07	1	
EtFOSAA	2991-50-6	3.60	0.978	1.95	3.91	J	B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFUnA	2058-94-8	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFDS	335-77-3	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
11Cl-PF3OUdS	763051-92-9	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFDoA	307-55-1	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFTrDA	72629-94-8	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
PFTeDA	376-06-7	ND	0.978	1.95	3.91		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	32.5	25 - 150			B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1		
13C3-PFPeA	IS	107	25 - 150			B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1		
13C3-PFBS	IS	111	25 - 150			B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1		
13C2-4:2 FTS	IS	104	25 - 150			B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1		
13C2-PFHxA	IS	110	25 - 150			B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1		
13C3-HFPO-DA	IS	103	25 - 150			B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1		
13C4-PFHpA	IS	107	25 - 150			B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1		

Sample ID: FG45

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 10-Apr-23 15:47

Laboratory Data

Lab Sample: 2304117-16
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	105	25 - 150		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1
13C2-6:2 FTS	IS	99.5	25 - 150		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1
13C2-PFOA	IS	106	25 - 150		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1
13C5-PFNA	IS	107	25 - 150		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1
13C8-PFOSA	IS	77.0	10 - 150		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1
13C8-PFOS	IS	108	25 - 150		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1
13C2-PFDA	IS	107	25 - 150		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1
13C2-8:2 FTS	IS	96.8	25 - 150		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1
d3-MeFOSAA	IS	87.3	25 - 150		B23D231	27-Apr-23	0.256 L	02-May-23 00:07	1
d5-EtFOSAA	IS	107	25 - 150		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1
13C2-PFUnA	IS	106	25 - 150		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1
13C2-PFDaA	IS	102	25 - 150		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	1
13C2-PFTeDA	IS	85.4	20 - 150		B23D231	27-Apr-23	0.256 L	29-Apr-23 05:26	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: FG47
PFAS Isotope Dilution Method

Client Data		Laboratory Data									
Name:	Michigan EGLE	Matrix:	Aqueous	Date Collected:	10-Apr-23 15:15 <th>Lab Sample:</th> <td>2304117-17</td> <th>Date Received:</th> <td>13-Apr-23 10:13<th>Column:</th><td>BEH C18</td></td>	Lab Sample:	2304117-17	Date Received:	13-Apr-23 10:13 <th>Column:</th> <td>BEH C18</td>	Column:	BEH C18
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	3.82	1.01	2.02	4.04	J	B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFPeA	2706-90-3	7.57	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFBS	375-73-5	1.97	1.01	2.02	4.04	J	B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
4:2 FTS	757124-72-4	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFHxA	307-24-4	9.77	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFPeS	2706-91-4	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
HFPO-DA	13252-13-6	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFHpA	375-85-9	6.03	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
ADONA	919005-14-4	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFHxS	355-46-4	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
6:2 FTS	27619-97-2	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFOA	335-67-1	13.3	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFecHS	646-83-3	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFHpS	375-92-8	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFNA	375-95-1	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFOSA	754-91-6	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFOS	1763-23-1	48.8	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
9Cl-PF3ONS	756426-58-1	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFDA	335-76-2	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
8:2 FTS	39108-34-4	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFNS	68259-12-1	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
MeFOSAA	2355-31-9	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	02-May-23 00:17	1
EtFOSAA	2991-50-6	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFUnA	2058-94-8	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFDS	335-77-3	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
11Cl-PF3OUdS	763051-92-9	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFDoA	307-55-1	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFTrDA	72629-94-8	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
PFTeDA	376-06-7	ND	1.01	2.02	4.04		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	56.4	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1		
13C3-PFPeA	IS	115	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1		
13C3-PFBS	IS	114	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1		
13C2-4:2 FTS	IS	106	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1		
13C2-PFHxA	IS	106	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1		
13C3-HFPO-DA	IS	102	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1		
13C4-PFHpA	IS	105	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1		

Sample ID: FG47

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 10-Apr-23 15:15

Laboratory Data

Lab Sample: 2304117-17
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	105	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
13C2-6:2 FTS	IS	102	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
13C2-PFOA	IS	102	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
13C5-PFNA	IS	106	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
13C8-PFOSA	IS	79.2	10 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
13C8-PFOS	IS	105	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
13C2-PFDA	IS	105	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
13C2-8:2 FTS	IS	103	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
d3-MeFOSAA	IS	76.6	25 - 150		B23D231	27-Apr-23	0.247 L	02-May-23 00:17	1
d5-EtFOSAA	IS	104	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
13C2-PFUnA	IS	101	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
13C2-PFDaA	IS	100	25 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	1
13C2-PFTeDA	IS	90.6	20 - 150		B23D231	27-Apr-23	0.247 L	29-Apr-23 05:37	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: FG48

PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304117-18	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	10-Apr-23 15:20 <th data-cs="2" data-kind="parent">Date Received:</th> <th data-kind="ghost"></th> <td>13-Apr-23 10:13</td> <th data-cs="4" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th>	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	4.02	1.02	2.03	4.07	J	B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFPeA	2706-90-3	2.47	1.02	2.03	4.07	J	B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFBS	375-73-5	1.60	1.02	2.03	4.07	J	B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
4:2 FTS	757124-72-4	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFHxA	307-24-4	7.67	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFPeS	2706-91-4	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
HFPO-DA	13252-13-6	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFHpA	375-85-9	12.1	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
ADONA	919005-14-4	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFHxS	355-46-4	1.61	1.02	2.03	4.07	J	B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
6:2 FTS	27619-97-2	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFOA	335-67-1	164	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFecHS	646-83-3	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFHpS	375-92-8	8.28	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFNA	375-95-1	2.75	1.02	2.03	4.07	J	B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFOSA	754-91-6	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFOS	1763-23-1	1110	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
9Cl-PF3ONS	756426-58-1	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFDA	335-76-2	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
8:2 FTS	39108-34-4	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFNS	68259-12-1	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
MeFOSAA	2355-31-9	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	02-May-23 00:28	1	
EtFOSAA	2991-50-6	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFUnA	2058-94-8	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFDS	335-77-3	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
11Cl-PF3OUdS	763051-92-9	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFDoA	307-55-1	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFTrDA	72629-94-8	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
PFTeDA	376-06-7	ND	1.02	2.03	4.07		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	61.0	25 - 150			B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1		
13C3-PFPeA	IS	104	25 - 150			B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1		
13C3-PFBS	IS	104	25 - 150			B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1		
13C2-4:2 FTS	IS	89.4	25 - 150			B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1		
13C2-PFHxA	IS	98.4	25 - 150			B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1		
13C3-HFPO-DA	IS	94.7	25 - 150			B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1		
13C4-PFHpA	IS	99.3	25 - 150			B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1		

Sample ID: FG48

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 10-Apr-23 15:20

Laboratory Data

Lab Sample: 2304117-18
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	99.8	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1
13C2-6:2 FTS	IS	95.2	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1
13C2-PFOA	IS	95.9	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1
13C5-PFNA	IS	100	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1
13C8-PFOSA	IS	65.6	10 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1
13C8-PFOS	IS	96.5	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1
13C2-PFDA	IS	98.3	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1
13C2-8:2 FTS	IS	89.9	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1
d3-MeFOSAA	IS	63.0	25 - 150		B23D231	27-Apr-23	0.246 L	02-May-23 00:28	1
d5-EtFOSAA	IS	98.0	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1
13C2-PFUnA	IS	97.6	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1
13C2-PFDoA	IS	90.0	25 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	1
13C2-PFTeDA	IS	67.3	20 - 150		B23D231	27-Apr-23	0.246 L	29-Apr-23 05:47	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: FG50
PFAS Isotope Dilution Method

Client Data		Laboratory Data										
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:		2304117-19	Column:		BEH C18			
Project:	St. Clair County	Date Collected:	10-Apr-23 14:13 <th data-cs="2" data-kind="parent">Date Received:</th> <th data-kind="ghost"></th> <td>13-Apr-23 10:13</td> <th data-cs="4" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="2" data-kind="parent"></th> <th data-kind="ghost"></th>	Date Received:		13-Apr-23 10:13						
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBA	375-22-4	3.59	1.02	2.05	4.09	J	B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFPeA	2706-90-3	1.33	1.02	2.05	4.09	J	B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFBS	375-73-5	2.06	1.02	2.05	4.09	J	B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
4:2 FTS	757124-72-4	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFHxA	307-24-4	3.59	1.02	2.05	4.09	J	B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFPeS	2706-91-4	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
HFPO-DA	13252-13-6	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFHpA	375-85-9	5.37	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
ADONA	919005-14-4	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFHxS	355-46-4	2.28	1.02	2.05	4.09	J	B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
6:2 FTS	27619-97-2	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFOA	335-67-1	95.6	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFecHS	646-83-3	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFHpS	375-92-8	4.48	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFNA	375-95-1	1.47	1.02	2.05	4.09	J	B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFOSA	754-91-6	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFOS	1763-23-1	645	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
9Cl-PF3ONS	756426-58-1	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFDA	335-76-2	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
8:2 FTS	39108-34-4	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFNS	68259-12-1	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
MeFOSAA	2355-31-9	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	02-May-23 00:39	1	
EtFOSAA	2991-50-6	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFUnA	2058-94-8	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFDS	335-77-3	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
11Cl-PF3OUdS	763051-92-9	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFDoA	307-55-1	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFTrDA	72629-94-8	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
PFTeDA	376-06-7	ND	1.02	2.05	4.09		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1	
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
13C3-PFBA	IS	58.6	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1		
13C3-PFPeA	IS	110	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1		
13C3-PFBS	IS	100	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1		
13C2-4:2 FTS	IS	97.0	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1		
13C2-PFHxA	IS	104	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1		
13C3-HFPO-DA	IS	100	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1		
13C4-PFHpA	IS	101	25 - 150			B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1		

Sample ID: FG50

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 10-Apr-23 14:13

Laboratory Data

Lab Sample: 2304117-19
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	101	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1
13C2-6:2 FTS	IS	98.9	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1
13C2-PFOA	IS	98.9	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1
13C5-PFNA	IS	106	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1
13C8-PFOSA	IS	72.6	10 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1
13C8-PFOS	IS	97.6	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1
13C2-PFDA	IS	103	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1
13C2-8:2 FTS	IS	106	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1
d3-MeFOSAA	IS	78.5	25 - 150		B23D231	27-Apr-23	0.244 L	02-May-23 00:39	1
d5-EtFOSAA	IS	102	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1
13C2-PFUnA	IS	103	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1
13C2-PFDaA	IS	96.8	25 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	1
13C2-PFTeDA	IS	81.5	20 - 150		B23D231	27-Apr-23	0.244 L	29-Apr-23 05:58	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: FG51

PFAS Isotope Dilution Method

Client Data		Laboratory Data									
Name:	Michigan EGLE	Matrix:	Aqueous	Lab Sample:	2304117-20	Column:	BEH C18				
Project:	St. Clair County	Date Collected:	10-Apr-23 14:31	Date Received:	13-Apr-23 10:13						
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	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFPeA	2706-90-3	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFBS	375-73-5	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
4:2 FTS	757124-72-4	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFHxA	307-24-4	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFPeS	2706-91-4	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
HFPO-DA	13252-13-6	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFHpA	375-85-9	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
ADONA	919005-14-4	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFHxS	355-46-4	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
6:2 FTS	27619-97-2	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFOA	335-67-1	3.26	1.03	2.06	4.12	J	B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFecHS	646-83-3	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFHpS	375-92-8	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFNA	375-95-1	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFOSA	754-91-6	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFOS	1763-23-1	30.7	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
9Cl-PF3ONS	756426-58-1	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFDA	335-76-2	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
8:2 FTS	39108-34-4	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFNS	68259-12-1	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
MeFOSAA	2355-31-9	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	02-May-23 00:49	1
EtFOSAA	2991-50-6	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFUnA	2058-94-8	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFDS	335-77-3	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
11Cl-PF3OUdS	763051-92-9	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFDoA	307-55-1	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFTrDA	72629-94-8	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
PFTeDA	376-06-7	ND	1.03	2.06	4.12		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C3-PFBA	IS	35.1	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1		
13C3-PFPeA	IS	106	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1		
13C3-PFBS	IS	103	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1		
13C2-4:2 FTS	IS	105	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1		
13C2-PFHxA	IS	104	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1		
13C3-HFPO-DA	IS	99.1	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1		
13C4-PFHpA	IS	102	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1		

Sample ID: FG51

PFAS Isotope Dilution Method**Client Data**

Name: Michigan EGLE
 Project: St. Clair County

Matrix: Aqueous
 Date Collected: 10-Apr-23 14:31

Laboratory Data

Lab Sample: 2304117-20
 Date Received: 13-Apr-23 10:13

Column: BEH C18

Labeled Standards**Type****% Recovery****Limits****Qualifiers****Batch****Extracted****Samp Size****Analyzed****Dilution**

13C3-PFHxS	IS	103	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
13C2-6:2 FTS	IS	101	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
13C2-PFOA	IS	100	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
13C5-PFNA	IS	103	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
13C8-PFOSA	IS	69.2	10 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
13C8-PFOS	IS	102	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
13C2-PFDA	IS	102	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
13C2-8:2 FTS	IS	96.3	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
d3-MeFOSAA	IS	77.2	25 - 150		B23D231	27-Apr-23	0.243 L	02-May-23 00:49	1
d5-EtFOSAA	IS	99.7	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
13C2-PFUnA	IS	100	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
13C2-PFDaA	IS	96.6	25 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	1
13C2-PFTeDA	IS	86.0	20 - 150		B23D231	27-Apr-23	0.243 L	29-Apr-23 06:08	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 $\frac{1}{2}$ 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.

Enthalpy Analytical - EDH 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	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	2211390
Nevada Division of Environmental Protection	CA00413
New Hampshire Environmental Accreditation Program	207721
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-021
Texas Commission on Environmental Quality	T104704189-22-13
Vermont Department of Health	VT-4042
Virginia Department of General Services	11276
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters can be found at Enthalpy.com/Resources/Accreditations.



CHAIN OF CUSTODY

PFAS Methods

For Laboratory Use Only

Work Order #: 2304117

Temp: 301, 20 °C

Storage ID: R-13, WR-2

Storage Secured Yes No

Project ID: ST. Clair County

PO#: Sampler: Brian Zuber
(name)

TAT Standard: 21 days
(check one): Rush (surcharge may apply)
 14 days 7 days Other: _____

Invoice to: Name Mikha Jury Company Address _____ City _____ State MI Phone # _____

Relinquished by (printed name and signature) Kevin Wojciechowski *[Signature]* Date 4/12/23 Time 12:00 Received by (printed name and signature) Sarah Hegenbart *[Signature]* Date 4/13/23 Time 10:13

Relinquished by (printed name and signature) _____ Date _____ Time _____ Received by (printed name and signature) _____ Date _____ Time _____

SHIP TO: Enthalpy Analytical - EDH
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520

ATTN: James Fox

Method of Shipment:

Tracking No.: _____

Add Analysis(es) Requested

Container(s)				PFAS by Isotope Dilution	EPA 1633-Draft	DOD QSM Table B-15	Cother:	EPA 533	EPA 537.1	List of 29 (617.1 + 533)	Drinking Water
Quantity	Type	Matrix									
2	4P AQ			X							
FG 38	4/10/23	2:49P									
FG 39	4/10/23	2:58P									
FG 40	4/10/23	3:00P									
FG 40 - FR	4/10/23	3:00P									
FG 44	4/10/23	3:58P									
FG 45	4/10/23	3:47P									
FG 47	4/10/23	3:15P									
FG 48	4/10/23	3:20P									
FG 50	4/10/23	2:13P									
FG 51	4/10/23	2:31P									

Other Instructions/ Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Kevin Wojciechowski
Company: EGLE
Address: 525 W Allegan St
City: Lansing State: MI Zip 48905
Phone: 586-621-2948
Email: wojciechowski@Michigan.gov

Container Types: P = HDPE, PJ = HDPE Jar

PY = Polypropylene, O = Other: _____

Bottle Preservation Type:

TZ = Trizma: _____ AA = Amm. Acetate: _____

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, SD = Sediment, T = Tissue

SL = Sludge, SO = Soil, WW = Wastewater, O = Other: _____

ID: LR-COC

Rev. No. 2

Rev. Date: 1/2/2023

Page: 1 of 1

Sample Log-In Checklist



Page # 1 of 2

Work Order #: 2304117 TAT std

Samples Arrival:	Date/Time		Initials:		Location: WR-2		
	04/13/23	10:13	SPH		Shelf/Rack: NA		
Delivered By:	FedEx	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	Ice	Blue Ice		Techni Ice	Dry Ice	None	
Temp °C: 3.2 (uncorrected)	Probe used: Y / N			Thermometer ID: JR-3			
Temp °C: 3.1 (corrected)							

	YES	NO	NA
Shipping Container(s) Intact?	/	/	
Shipping Custody Seals Intact?	/	/	
Airbill <u>③</u> Trk # <u>J4603815414</u>	/	/	
Shipping Documentation Present?	/	/	
Shipping Container	Enthalpy	Client	Retain
Chain of Custody / Sample Documentation Present?	/ A /		
Chain of Custody / Sample Documentation Complete?	/ /		
Holding Time Acceptable?	/ /		
Logged In:	Date/Time <u>4/14/23 1326</u>	Initials: <u>MJS</u>	Location: R-13, WR-2
Shelf/Rack: <u>A-4 F-4 G-1</u>			
COC Anomaly/Sample Acceptance Form completed? <input checked="" type="checkbox"/>			

Comments: COC in cooler!

Sample Log-In Checklist



Page # 2 of 2

Work Order #: 2304117 TAT std

Samples Arrival:	Date/Time <u>04/13/23</u> <u>1013</u>		Initials: <u>SPH</u>		Location: <u>WR-2</u> Shelf/Rack: <u>NA</u>		
Delivered By:	FedEx	<u>UPS</u>	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	<u>ice</u>	Blue Ice		Techni Ice	Dry Ice	None	
Temp °C: <u>2.1</u> (uncorrected)	Probe used: Y / <u>N</u>				Thermometer ID: <u>IR-3</u>		
Temp °C: <u>2.0</u> (corrected)							

	YES	NO	NA		
Shipping Container(s) Intact?	/				
Shipping Custody Seals Intact?	/				
Airbill <u>④</u> Trk # <u>54603815307</u>	/				
Shipping Documentation Present?	/				
Shipping Container	Enthalpy	<u>Client</u>	Retain	<u>Return</u>	Dispose
Chain of Custody / Sample Documentation Present?				<u>④</u>	/
Chain of Custody / Sample Documentation Complete?					/
Holding Time Acceptable?					/
Logged In:	Date/Time <u>04/14/23 1326</u>	Initials: <u>MJS</u>	Location: <u>R-13, WR-2</u> Shelf/Rack: <u>B-4, F-4, G-1</u>		
COC Anomaly/Sample Acceptance Form completed?				/	

Comments: ④ w/ in cooler!

CoC/Label Reconciliation Report WO# 2304117

LabNumber	CoC Sample ID	Sample Alias	Sample Date/Time	Container	BaseMatrix	Sample Comments
2304117-01	A FG28	C3	11-Apr-23 11:15	<input checked="" type="checkbox"/> 3	HDPE Bottle, 250 mL	Aqueous
2304117-01	B FG28		11-Apr-23 11:15	<input type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-02	A FG29		11-Apr-23 10:58	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-02	B FG29		11-Apr-23 10:58	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-03	A FG30	8	11-Apr-23 11:36	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-03	B FG30		11-Apr-23 11:36	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-04	A FG31		11-Apr-23 11:05	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-04	B FG31		11-Apr-23 11:05	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-05	A FG32	8	11-Apr-23 11:12	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-05	B FG32		11-Apr-23 11:12	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-06	A FG33		11-Apr-23 10:45	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-06	B FG33		11-Apr-23 10:45	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-07	A FG34		11-Apr-23 10:36	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-07	B FG34		11-Apr-23 10:36	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-08	A FG41		11-Apr-23 09:15	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-08	B FG41		11-Apr-23 09:15	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-09	A FG42		11-Apr-23 09:00	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-09	B FG42		11-Apr-23 09:00	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-10	A FG46		11-Apr-23 10:00	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-10	B FG46		11-Apr-23 10:00	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-11	A FG38	CH	10-Apr-23 14:49	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-11	B FG38		10-Apr-23 14:49	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-12	A FG39		10-Apr-23 14:58	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-12	B FG39		10-Apr-23 14:58	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-13	A FG40		10-Apr-23 15:04	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-13	B FG40		10-Apr-23 15:04	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-14	A FG40-FR		10-Apr-23 15:06	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-14	B FG40-FR		10-Apr-23 15:06	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous

2304117-15	A FG44	<input checked="" type="checkbox"/>		10-Apr-23 15:58	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-15	B FG44	<input checked="" type="checkbox"/>		10-Apr-23 15:58	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-16	A FG45	<input checked="" type="checkbox"/>		10-Apr-23 15:47	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-16	B FG45	<input checked="" type="checkbox"/>		10-Apr-23 15:47	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-17	A FG47	<input checked="" type="checkbox"/>		10-Apr-23 15:15	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-17	B FG47	<input checked="" type="checkbox"/>		10-Apr-23 15:15	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-18	A FG48	<input checked="" type="checkbox"/>		10-Apr-23 15:20	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-18	B FG48	<input checked="" type="checkbox"/>		10-Apr-23 15:20	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-19	A FG50	<input checked="" type="checkbox"/>		10-Apr-23 14:13	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-19	B FG50	<input checked="" type="checkbox"/>		10-Apr-23 14:13	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-20	A FG51	<input checked="" type="checkbox"/>		10-Apr-23 14:31	<input checked="" type="checkbox"/>	HDPE Bottle, 250 mL	Aqueous
2304117-20	B FG51	<input checked="" type="checkbox"/>		10-Apr-23 14:31	<input checked="" type="checkbox"/>	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: (3) sample label: 1131 (date reconciles)

(3) ~10% particulate present
5% plus 04/18/23

(C3) = cooler 3 of 4

(C4) = cooler 4 of 4

Preservation Documented: Na2S2O3 Trizma NH4CH3CO2 None Other

all

Verified by/Date: MJS 04/19/23

KW 04/19/23

ANOMALY FORM

Work Order # 2304117

Initial/Dates The following checked issues were noted during sample receipt and login:

- MWS 04/10/23 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.
7. The CoC did not include a sample matrix. The following sample matrix will be used: _____
8. Insufficient 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: _____

Date of Contact: _____

Lab Project Manager: _____

Resolution: _____