



PER- AND POLYFLUOROALKYL SUBSTANCES SUBSURFACE INVESTIGATION

RACER TRUST
Flint West #12990
Flint, Michigan
EPA ID# MIK204011722

Æ Project # 11-4317-102

September 22, 2021

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1. INTRODUCTION AND BACKGROUND

1.1 Introduction

This report of the Per- and Polyfluoroalkyl Substances (PFAS) subsurface investigation has been prepared on behalf of the Revitalizing Auto Communities Environmental Response (RACER) Trust for the property identified as “Flint West Industrial Land,” RACER Site #12990 Flint West, located in Flint, Michigan (Site) (Appendix A, Figure 1).

The purpose of the investigation was to characterize and to delineate further the extent of PFAS detected in groundwater on the Site based on samples collected from monitoring wells. This report details the methodology and results of this investigation and includes recommendations for further investigation.

1.2 Background

The Site consists of approximately three acres of land located west of Stevens Street and north of Glenwood Avenue in Flint, Genesee County, Michigan. The Site is developed with a Consumers Energy electrical substation in its central portion. Almost the entire Site is paved with concrete remaining after the demolition of a former manufacturing building. The concrete pavement is supported by a concrete retaining wall that runs east-west and immediately south of the northern property line. A small area on the northern portion of the property is unpaved, consisting of part of a former railroad. Nearly all of the Site is secured within a locked chain-link fence.

A Genesee County Parks (GCP) walking/bike trail runs along the northern property boundary, beyond which is located the Chevy Commons (formerly known as Chevy-in-the-Hole) property. Former industrial land is located to the west and to the east across Stevens Street. Current and former commercial uses are located to the southwest and south. A General Motors tool and die facility is located to the southeast.

Subsurface lithology consists of sandy glacial tills comprised primarily of silty sand and clay layers in the upper approximately 20 feet to 30 feet below grade with shallow groundwater perched on a clay layer. Because site topography varies approximately 8 feet to 10 feet due to the retaining wall, the depth to groundwater ranges from approximately eight to 17 feet below grade, the saturated thickness above the clay ranges from about 10 feet to 15 feet, and groundwater flow in this unit is generally to the northwest toward the Flint River. Bedrock was encountered at approximately 20 feet below grade on the northern portion of the Site. Groundwater velocity is estimated to range from approximately 0.0017 ft/day to 0.17 ft/day based on the gradient calculated using the July 2019 gauging data (0.018 ft/ft), the range of hydraulic conductivity values for silty sand (0.0284 ft/day to 2.84 ft/day¹), and an effective porosity of 0.30.

Subsurface investigations and corrective actions have been conducted at the site to address primarily historical releases of Chlorinated Volatile Organic Compounds (CVOCs). No significant source mass was found in unsaturated soils. The highest remaining concentrations of trichloroethene are in the saturated unit and underlying clay in the central portion of the Site and immediately adjacent to the GCP trail.

¹ Fetter, C.W. 1988, *Applied Hydrogeology, Second Edition*, Merrill Publishing Company

Groundwater first was analyzed for PFAS in samples collected in January 2018. Several PFAS compounds, including Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS), were detected in groundwater samples from monitoring wells MW-111S and MW-112S. PFAS compounds subsequently have been detected in all monitoring wells except MW-102S, MW-104S, MW-105S, and MW-108S. The Michigan Department of Environment, Great Lakes and Energy (EGLE) established drinking water Maximum Contaminant Levels (MCLs) in August 2020 for seven PFAS, including PFOA and PFOS. On December 21, 2020, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) had adopted the MCLs of all seven PFAS as Part 201 Residential and Nonresidential Groundwater Generic Cleanup Criteria and Screening Levels. Concentrations of PFOA and/or PFOS exceeding these Part 201 criteria have been detected in groundwater samples from MW-100S, MW-101S, MW-103S, MW-106SR, MW-107S, MW-109S, MW-110S, MW-111S, MW-112S, MW-113S, and MW-114S.

2. SUBSURFACE INVESTIGATION

The subsurface investigation was conducted with the general objectives of characterizing and delineating the PFAS on and off the Site. Locations of the borings are shown on Appendix A, Figure 2.

2.1 Soil Borings

A total of 16 soil borings were advanced on and off the Site, using a Geoprobe® direct push drilling rig operated by Fibertec Environmental Service (Fibertec). Soil borings were advanced to depths of 15 to 30 feet below ground surface (bgs)), and soils encountered were logged continuously. Two or three soil samples were selected from each boring for laboratory analysis. The criteria for selecting the laboratory samples were:

- Sample at or above the water table. (Note, one sample from SB-16-21 from the bottom of the boring was selected for laboratory analysis, because no water sample could be collected from that boring.);
- Samples with the highest photoionization detector (PID) values in each boring; and
- If PID readings were all below detection limits, a sample from just above the water table and a sample from between the surface and the water table most likely to be impacted based on field observation.

Soil samples were submitted to Merit Laboratories, Inc. (Merit) to be analyzed for PFAS by Method ASTM D7968. Boring logs are included as Appendix B.

In addition to soil samples collected for PFAS analysis, four soil samples [SB-11-21 (15'), SB-11-21 (18'), SB-12-21 (9'), and SB-12-21 (19')] were submitted to Merit to be analyzed for fraction organic carbon by Method SM2540B (Walkley-Black). These sample locations were selected because they were expected not to be contaminated.

Soil boring locations are shown on Figure 2 in Appendix A. Latitudes and Longitudes of the soil borings are included in Table 1.

2.2 Groundwater Sampling

One or two groundwater samples were collected at and below the water table for laboratory analysis using a Geoprobe Screen Point 16 system (SP-16), which allowed for sampling at specific depths through a two-inch screen. The depths of the SP-16 screens were selected based on:

- The zone where soil PID values were the highest;
- If PID values were all below detection limits, then the depth would be set just below the water table; and
- At the bottom of the boring.

Collection of a water sample from SB-16-21 was attempted; however, SP-16 produced insufficient water for sampling, therefore a soil sample from the bottom of the boring was submitted to the laboratory for analysis. Groundwater samples were submitted to Merit to be analyzed for PFAS by Method ASTM D7979-19.

Additionally, as part of this subsurface investigation, one groundwater sample was collected from monitoring well MW-103S and submitted to Merit to be analyzed for Total Oxidizable Precursor Assay (TOP Assay). The groundwater sample was collected via low-flow sampling procedures that consisted of lowering a dedicated length of high-density polyethylene (HDPE) tubing to a depth of approximately the mid-point of the well screen and then drawing groundwater up through the tubing with a battery-powered peristaltic pump at a low-flow rate of approximately 100 milliliters per minute. The monitoring well was gauged as water was pumped to verify draw-down of less than 0.1 foot. The groundwater then flowed through a properly calibrated water quality meter that measured temperature, pH, dissolved oxygen, specific conductivity, oxidation-reduction potential, and turbidity in the groundwater. Results of the field parameter monitoring were recorded on an electronic groundwater sampling sheet. When each of the parameters stabilized to an acceptable range, the water being drawn from the well was considered representative of the groundwater at that location. A sample then was collected from a sampling port in front of the stability parameter measurement probes in laboratory-supplied containers and stored on ice in a cooler.

2.3 Field Investigation Methods and Protocols

The following general protocols were followed to ensure data quality.

2.3.1 Disposable Equipment and Supplies Used

High-density polyethylene (HDPE) tubing was used with the SP-16 system for collection of groundwater and for monitoring well sampling.

Laboratory-supplied PFAS-free distilled water was used for decontamination of all non-disposable equipment or, in the case of drilling equipment, as a final rinse after steam cleaning.

Stainless steel tools and nitrile gloves were used for handling of all soil samples.

Soil samples were split and placed into two separate PFAS-free plastic bags, one for potential laboratory sample and one for PID screening. Note that plastic bags used for screening were determined to be PFAS-free based on a tested blank. PFAS-free water was placed in a plastic baggie and left for 24 hours at room temperature. A sample of the water (Baggie) and a duplicate of the sample (Baggie-Dup) were collected and submitted to Merit to be analyzed for PFAS by Method ASTM D7979-19. No PFAS were detected above laboratory detection limits in either sample. The laboratory report for this blank is included in Appendix C.

2.3.2 Utilities Marking

Prior to drilling activities, Applied EcoSystems used the MISS Dig system to mark subsurface utilities. Fibertec also used ground penetrating radar (GPR) to identify unmapped utilities at each boring location.

2.3.3 Field Screening

Although field monitoring equipment is not available for screening of PFAS, soils were screened in the field for VOCs using a calibrated PID as an indicator of a possible release of contaminants at the Site. The samples were placed in sealed plastic bags, and the tip of the PID was inserted into the bag to obtain a reading of VOCs that volatilized into the air headspace in the bag. The PID had a detection level of one part per million (ppm) VOCs.

2.3.4 Decontamination Procedures

The drilling equipment was decontaminated between borings using potable water and a steam cleaner, with a final rinse performed with PFAS-free water. Other non-disposable equipment was cleaned with PFAS-free distilled water and Alconox[®], with a final rinse using PFAS-free water.

2.3.5 Sample Preservation and Handling

Samples were collected in laboratory-supplied containers appropriate for the intended analysis. The samples were placed in a cooler on ice for transport to the laboratory. Quality Control/Quality Assurance (QA/QC) samples and blanks were submitted to the laboratory for analysis. Samples were transported under proper chain-of-custody protocols.

3. RESULTS

The following is a discussion of the results of this subsurface investigation.

3.1 Geology

The soils encountered during this investigation were consistent with previous investigations at the Site. Soils were primarily fine sands and silty sands from below the pavement to depths of 13 to 27 feet bgs, where stiff grey clay was encountered in each boring except SB-12-21 and SB-16-21 due to refusal. The depth where clay was encountered generally increased to the southeast. Perched groundwater was encountered at depths ranging from 11 to 24 feet bgs.

3.2 Soil Analytical Results

3.2.1 PFAS

Only PFAS analytes Perfluorooctanoic Acid (PFOA), N-Ethyl Perfluorooctane Sulfonamidoacetic Acid (EtFOSAA), Perfluorooctane Sulfonic Acid (PFOS), Perfluorooctane Sulfonic Acid-LN (PFOS-LN), Perfluorooctane Sulfonic Acid-BR (PFOS-BR), Perfluorobutanoic Acid (PFBA) and Perfluorodecane Sulfonic Acid (PFDS) were detected in soil samples collected during this investigation. Concentrations detected were:

- PFOA was detected in soil samples SB-12-21 (7'), SB-13-21 (6'), and SB-16-21 (3') at concentrations of 19 ng/Kg, 27 ng/Kg, and 62 ng/Kg.
- PFOS, PFOS-LN, and PFOS-BR were detected in soil samples collected from all of the 16 borings except SB-5-21, and SB-15-21. Detected concentrations ranged from 14 ng/Kg to 630 ng/Kg. The highest concentrations of PFOS were detected in soil from borings SB-12-21, SB-2-21, SB-9-21, and SB-13-21.
- PFBA was detected only in soil sample SB-16-21 (3') at a concentration of 61 ng/Kg.
- PFDS was detected only in soil sample SB-11-21 (1') at a concentration of 37 ng/Kg.
- EtFOSAA was detected only in soil sample SB-6-21 (15') at a concentration of 89 ng/Kg.

The only criteria currently available for PFAS in soil is groundwater/surface water interface protection (GSIP) criteria for PFOS and PFOA. PFOS exceeded GSIP in soil samples SB-1-21 (6'), SB-2-21 (6'), SB-9-21 (8') SB-9-21 (11'), and SB-13-21 (6'). Soil analytical results are summarized in Appendix D, Table 2 and Appendix A, Figure 3.

3.2.2 Fraction Organic Carbon

Fraction organic carbon (foc) was detected in soil samples SB-11-21 (15'), SB-11-21 (18'), SB-12-21 (9'), and SB-12-21 (19') at concentrations of 3,400 mg/Kg (0.34%), 900 mg/Kg (0.09%), less than 500 mg/Kg (0.05%), and 1,100 mg/Kg (0.11%), respectively. The laboratory report for foc is included on Appendix C.

3.3 Groundwater Analytical Results

3.3.1 Groundwater from Borings

One or more PFAS compounds were detected in all groundwater samples collected during this investigation. Of the seven PFAS compounds with EGLE Part 201 groundwater criteria, only the criteria for PFOA and PFOS were exceeded.

PFOA concentrations, when detected, ranged from 1.7 ng/L to 11 ng/L. PFOA only exceeded EGLE drinking water criteria in SB-13-21 (12') and SB-13-21 (15'). Soil Boring SB-13-21 is located near the northeast corner of the Site.

PFOS concentrations, when detected, ranged from 2.3 ng/L to 170 ng/L. PFOS exceeded EGLE drinking water and GIS criteria in water sample SB-1-21 (15'), SB-1-21 (17'), SB-2-21 (17'), SB-2-21 (19'), SB-3-21 (23'), SB-4-21 (19'), SB-6-21 (22'), SB-6-21 (24'), SB-7-21 (21'), SB-12-21 (15'), SB-13-21 (15'), and SB-14-21 (17'). PFOS concentrations exceed only GSI criteria in samples SB-8-21 (20'), SB-9-21 (19'), SB-9-21 (22'), SB-13-21 (12'), and SB-14-21 (15'). Borings with PFOS exceeding EGLE criteria are generally in the north/northeastern portion of the Site, except SB-12-21 that is located in the southwestern portion of the Site.

Groundwater analytical results are summarized on Appendix D, Table 3 and Appendix A, Figure 4.

3.3.2 Groundwater from MW-103S (TOP Assay)

One groundwater sample from MW-103S was collected for the TOP Assay. The sample was analyzed for PFAS. Then a duplicate sample was oxidized, and the oxidized sample was analyzed for PFAS. The following table is a comparison of the un-oxidized and oxidized sample. Only PFAS compounds detected are included in the table.

PFAS Compounds Detected in Groundwater Sample From MW-103S

PFAS Compound	Un-Oxidized (ng/L)	Oxidized (ng/L)	EGLE Criteria
PFPeA*	<4.0	39	No criteria
PFHxA*	<2.0	40	400,000 ng/L (drinking water (DW))
PFOA	2.7	6.5	8 ng/L (DW), 12,000 ng/L (GSI)
PFOS	19	19	16 ng/L (DW), 12 ng/L (GSI)
PFOS-LN	6.9	7.6	No criteria
PFOS-BR	12	<5.2	No criteria

* Note, concentrations of PFPeA and PFHxA were detected in the laboratory blank sample for the analysis, designated with the qualifier "B" (compound also found in associated method blank).

PFOA showed an increase in concentration after oxidation. The PFOS concentration remained the same. PFPeA and PFHxA were not detected in the unoxidized sample but were detected at 39 ng/L and 40 ng/L, respectively, after oxidation.

3.4 Data Validation

On April 19-21, 2021, AEC collected 45 soil samples including four duplicates and 48 groundwater samples including four field blanks, one trip blank, one equipment blank, and four duplicates for PFAS analysis. Samples were collected in appropriate laboratory-provided bottles and maintained on ice until delivery under complete chain-of-custody protocols to Merit Laboratories within appropriate holding times. No sample condition issues were identified in the field or upon laboratory receipt. All laboratory analyses were performed within appropriate holding times, except an exceedance for the oxidized TOP Analysis sample.

Laboratory deliverables included five laboratory reports, quality control reports, and chains of custody for each sampling event. Each laboratory report contained a case narrative, laboratory accreditation/certification information, laboratory contact information, analytical methods, and reporting limits (RLs). Submittal of this report was held up due to the laboratory not providing the method detection limits (MDLs) in the original laboratory received. During the timeframe of this report, revised laboratory reports containing MDLs were received for only two of the laboratory reports. The decision was made to finalize this report based on the available laboratory reports. Data qualifiers were identified and evaluated in the Data Validation Report provided as Appendix E. All surrogate recoveries were within their allowable ranges for each surrogate compound, indicating satisfactory laboratory performance. Analysis of laboratory blank samples identified no indication of cross-contamination except for PFPeA and PFHxA in the MW-103S Top Assay sample. Field blanks and equipment blanks identified no detectable analytes. Laboratory Control (LCS) and LCS Duplicate analyses indicated no likely analytical concerns, and matrix spikes and their duplicates identified no interferences in detected analytes. No significant data qualifiers were identified relating to detected analyte concentrations.

Based on the assessment detailed in the foregoing QA/QC summary, the laboratory data are acceptable with the specific qualifications noted therein.

Three out of five laboratory reports received from Merit Laboratories for the project did not include identification of MDLs.

Principal qualifications were associated with elevated PFAS detection or reporting limits for some PFAS compounds due matrix interferences in three of the 31 soil samples (10%) and 12 of the 43 groundwater samples (28%). These conditions likely result in non-detection of low concentrations of some PFAS compounds in affected samples.

The Tops Assay evaluation of PFAS oxidation (weathering) was completed by the laboratory outside the sample holding time, had method blank exceedances, and laboratory control sample exceedances. These conditions suggest that predicted oxidation was elevated relative to actual conditions.

4. CONCLUSIONS/RECOMMENDATIONS

PFAS was detected across most of the Site, with the highest concentrations in the north/northeastern portion of the Site, where PFAS was identified as present in both soil and groundwater. High concentrations of PFAS were detected generally in the same areas of the Site.

Fraction organic carbon (foc) is one indicator of the expected adsorption of PFAS. The reported concentrations of foc indicate that the concentration of foc is variable but is present and therefore adsorption of certain PFAS, such as PFOS, and its attenuation in groundwater is expected.

The Top Assay results indicate that percussors are present in the groundwater, but overall precursor concentrations do not appear to be sufficiently elevated to generate significant amounts of PFOA, PFOS, or other PFAS. Of the compounds detected in the oxidized sample, none exceeded available PFAS criteria except PFOS, however, the pre and post oxidation concentrations of PFOS were the same. Note, also concentrations of PFPeA and PFHxA were detected in the laboratory blank sample for the analysis.

Based on review of the data, the PFAS impacts in soil and groundwater exceeding drinking water and/or GSI/GSIP criteria are primarily located in the northern and western portions of the Site. This is the same area where semi-annual groundwater sampling has shown PFAS impact. No drinking water receptors are known in the vicinity of the Site, and PFOS and PFOA concentrations in groundwater are expected to attenuate to below EGLE criteria before reaching the Flint River. The potential for groundwater exceeding GSI criteria seeping into storm sewers and discharging to the Flint River requires further evaluation. Attempts to obtain sanitary and storm sewer information from City of Flint have not been successful but attempts will continue to determine if there is a potential for groundwater to seep into the storm sewers or sanitary sewers and discharge to the Flint River.

Along with further evaluation of the potential storm sewer pathway additional monitoring is recommended to further characterize PFAS in groundwater. Three monitoring wells are proposed. Figure 5 shows the locations of the proposed monitoring wells; and Table 4 shows the objective, estimated depth, etc. of each proposed boring. Groundwater samples from the three proposed new wells will be collected after they are installed and the samples will be analyzed for all Site COCs. After review of the first data set, recommendations regarding how to include these wells in routine monitoring will be made.

5. SIGNATURES

This report was prepared under the supervision of the following Environmental Professionals.



Michael D. Smith, Senior Technical Manager

September 22, 2021

Date

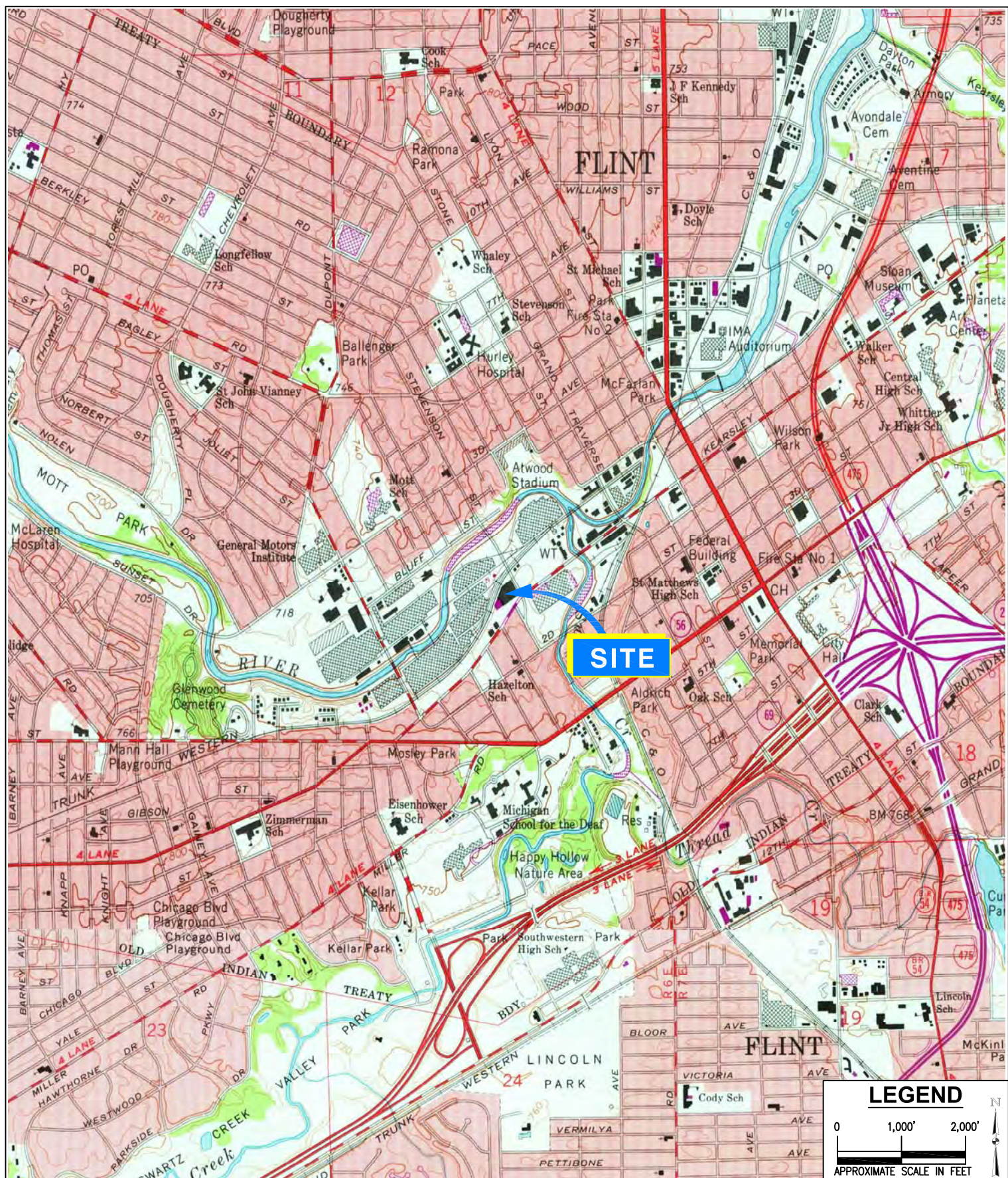


Rodney Abke, Senior Geologist

September 22, 2021

Date





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Phone: 810.715.2525; Fax: 810.715.2526

Site Location Map

RACER Flint West #12990

Glenwood Avenue & Stevenson Street
Flint, Michigan

SOURCE: USGS FLINT SOUTH QUADRANGLE
(PROVISIONAL EDITION 1975)

DRAWING DATE:

09/18/2019

CHECKED BY:

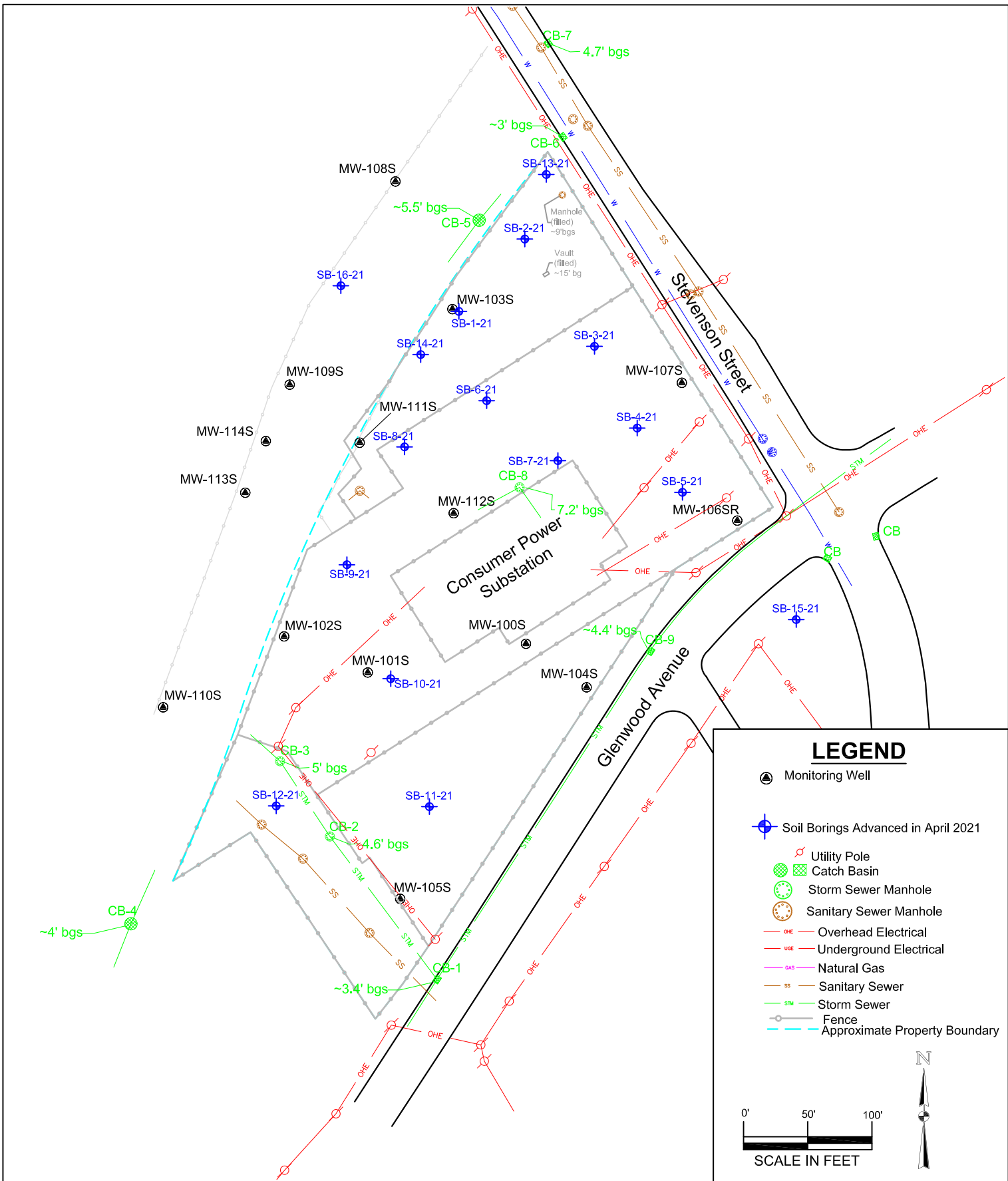
MDS

PROJECT:

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FIGURE:

1



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Site Map

Racier Flint West -12990
Flint West Industrial Land, Flint, Michigan

DATE:

09/14/2021

CHECKED BY:

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FIGURE:

2

SB-16-21				
DATE:	4/21/21			
ANALYTE	3'	8'	16'	
PFBA	61	<140	<120	
PFOA	62	<69	<58	
PFOS	140	<69	23	
PFOS-LN	64	<69	13	
PFOS_BR	71	<69	<58	

SB-1-21				
DATE:	4/21/21			
ANALYTE	6'	14-15'		
PFOS	520	100		
PFOS-LN	370	69		
PFOS_BR	140	33		

SB-2-21				
DATE:	4/21/21			
ANALYTE	6'	15'		
PFOS	470	49		
PFOS-LN	250	32		
PFOS_BR	220	15		

SB-13-21				
DATE:	4/21/21			
ANALYTE	6'	11'		
PFOA	27	<55		
PFOS	420	30		
PFOS-LN	290	14		
PFOS_BR	130	14		

SB-3-21				
DATE:	4/20/21			
ANALYTE	5'	11'		
PFOS	<60	53		
PFOS-LN	<60	21		
PFOS_BR	<60	29		

SB-4-21				
DATE:	4/20/21			
ANALYTE	7'	17'		
PFOS	<67	14		
PFOS-LN	<67	<61		
PFOS_BR	<67	<61		

SB-7-21				
DATE:	4/21/21			
ANALYTE	7'	15'		
PFOS	24	41		
PFOS-LN	15	18		
PFOS_BR	<55	19		

SB-6-21				
DATE:	4/21/21			
ANALYTE	7'	15'		
EIFOSAA	<58	89		
PFOS	<58	73		
PFOS-LN	<58	56		
PFOS_BR	<58	15		

SB-8-21				
DATE:	4/21/21			
ANALYTE	7'	10'		
PFOS	20	85		
PFOS-LN	15	22		
PFOS_BR	<53	60		

SB-9-21				
DATE:	4/21/21			
ANALYTE	8'	11'		
PFOS	410	630		
PFOS-LN	120	510		
PFOS_BR	280	120		

SB-12-21				
DATE:	4/19/21			
ANALYTE	7'	13'		
PFOA	19	<52		
PFOS	200	96		
PFOS-LN	170	69		
PFOS_BR	27	25		

SB-11-21				
DATE:	4/19/21			
ANALYTE	1'	15'		
PFOS	180	<59		
PFOS-LN	120	<59		
PFOS-BR	59	<59		
PFDS	37	<59		

SB-10-21				
DATE:	4/19/21			
ANALYTE	1'	12'		
PFOS	18	63		
PFOS-LN	13	13		
PFOS_BR	<59	48		

SB-5-21				
DATE:	4/21/21			
ANALYTE	8'	16'		
All PFAS	ND	ND		

SB-15-21				
DATE:	4/19/21			
ANALYTE	6'	13'		
All PFAS	ND	ND		

LEGEND

Monitoring Well

Soil Borings Advanced in April 2021

Concentrations presented in parts per trillion (ng/Kg).

Only detected constituents listed.

ND – No PFAS compounds detected for this sample.

PFAS Constituents

Perfluorooctanoic acid (PFOA)

Perfluorobutanoic Acid (PFBA)

N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSSAA)

Perfluorooctane sulfonic acid (PFOS)

Perfluorooctane sulfonic acid-LN (PFOS-LN)

Perfluorooctane sulfonic acid-BR (PFOS-BR)

Perfluorodecane Sulfonic Acid (PFDS)

GSIP = Ground Water to Surface Water Interface Protection.

= Compound exceeds GSIP criteria

Utility Pole

Catch Basin

Storm Sewer Manhole

Sanitary Sewer Manhole

Overhead Electrical

Underground Electrical

Natural Gas

Sanitary Sewer

Storm Sewer

Fence

Approximate Property Boundary

0 80 160

SCALE IN FEET

N



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PFAS Soil Analytical
April 2021 Subsurface Investigation

Racer Flint West -12990
Flint West Industrial Land, Flint, Michigan

DRAWING DATE: CHECKED BY:

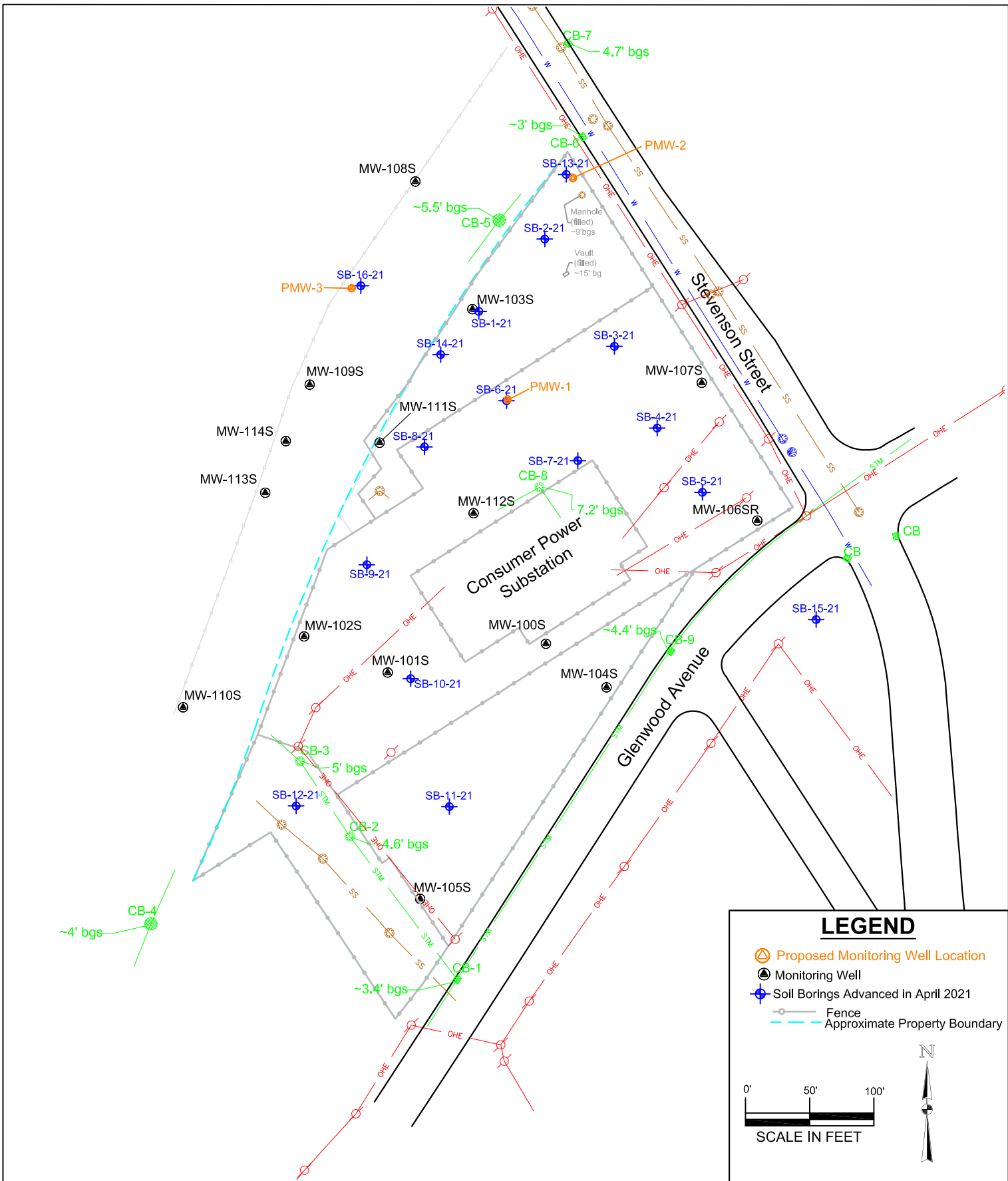
09/14/2021 MDS

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FIGURE:

3



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Proposed Monitoring Wells

Racer Flint West -12990
Flint West Industrial Land, Flint, Michigan

DATE:

09/14/2021

CHECKED BY:

MDS

PROJECT:

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FIGURE:

5



Log of Borehole: SB-1-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE					
Depth	Soil Type	Description	Symbol	Sample ID	PID ppm 250
0		Ground Surface			
		CONCRETE, Grey			
		SAND, fine, brown, loose, moist			0.0
2	SM	SAND, fine with silt, brown, loose, moist			0.0
	SM	SILT, fine with sand, brown, plastic, moist			0.0
4	SC	SAND, fine with clay, brown, dense, moist			0.0
					0.0
6		SAND, fine with trace silt, brown, loose, moist		SB-1-21 (6')	0.3
	SP				0.0
8					0.0
					0.0
10					0.0
		SAND, fine, reddish brown to grey after 13', loose, moist			0.0
12	SP			SB-1-21 (14-15')	2.3
					2.7
14					3.3
	SP	SAND, fine, grey, loose, moist		SB-1-21 (15' W)	1.0
16					1.0
	CL	CLAY, grey with gravel after 18', plastic, moist		SB-1-21 (17' W)	0.1
18					0.0
	CL	CLAY and SILT, grey with some gravel, stiff, moist			0.0
20					
		End of Log			

Drilled By: Fibertec

Borehole Size: 2"

Drill Method: Geoprobe

Drill Date: 4/21/21

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-2-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE						
Depth	Soil Type	Description	Symbol	Sample ID	PID ppm	
0		Ground Surface			0	500
		CONCRETE, Grey				
2	SM	SAND and SILT, fine, brown, loose, moist with dry seam at 2'			0.0	
					0.0	
					0.0	
4					0.0	
	SP	SAND, fine, brown, loose, moist			0.0	
6				SB-2-21 (6') Soil	1.3	
					0.0	
8	SP	SAND, fine with trace silt, brown, loose, moist			0.0	
					0.0	
10					0.0	
	SM	SAND, fine with silt and with clay after 12', brown, loose, moist			0.0	
12					0.0	
					0.0	
14	SP	SAND, fine with plastic clay, brown, loose, moist			0.0	
				SB-2-21 (15') Soil	0.0	
16	CL	CLAY, grey, plastic, moist to wet			0.0	
					0.0	
18	CL	CLAY, grey with some gravel and a brown outer layer, medium-stiff to hard, dry		SB-2-21 (17') W	0.0	
					0.0	
	CL	CLAY and SILT and GRAVEL, grey, loose, moist		SB-2-21 (19') W	0.0	
20					0.5	
		CLAY and SILT and GRAVEL, grey to brown, medium-stiff, dry				
		End of Log				

Drilled By: Fibertec

Borehole Size: 2"

Drill Method: Geoprobe

Drill Date: 4/21/21

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-3-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE									
Depth	Soil Type	Description	Symbol	Sample ID	PID ppm				
					0		250		500
0		Ground Surface							
		CONCRETE, Grey							
		SAND, fine, brown, loose, moist			0.0				
2	SM	SAND and SILT, fine, brown, loose, moist			0.0				
					0.0				
	ML	SILT, fine with trace sand and gravel, brown, loose, moist			0.0				
4	SP	SAND, fine with silt, brown, loose, moist			0.0				
					0.0				
6	SM	SAND and SILT, fine with gravel, brown, loose, wet		SB-3-21 (5') Soil	0.0				
					0.0				
		SAND, fine silty, brown, loose, moist to saturated after 11'			0.0				
8					0.0				
					0.0				
10	SM				0.0				
					0.0				
12				SB-3-21 (11') Soil	0.0				
					0.0				
					0.0				
14	CL	CLAY, brown with sand, plastic, wet			0.0				
					0.0				
16	SM	SAND, fine silty with clay throughout, brown, loose, saturated			0.0				
					0.0				
18	SP	SAND, fine with some silt, brown, loose, saturated			0.0				
					0.0				
20	SC	SAND and CLAY, fine, brown and grey with some silt and no sand after 21', medium-stiff to plastic, wet to moist after 22'			0.0				
					0.0				
22					0.0				
					0.0				
24	CL	CLAY, grey with trace gravel, plastic, dry		SB-3-21 (23') W	0.0				
					0.0				
		End of Log			0.0				

Drilled By: Fibertec

Borehole Size: 2"

Drill Method: Geoprobe

Drill Date: 4/21/21

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-4-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE					
Depth	Soil Type	Description	Symbol	Sample ID	PID ppm 250
0		Ground Surface			0
0		CONCRETE, Grey			0.0
2	ML	SAND, fine silty, reddish brown, loose, moist			0.0
4	ML	SILT, fine, brown, loose, moist			0.0
6	ML	SILT, fine, brown, plastic, wet to saturated to moist after 7'		SB-4-21 (7') Soil	0.0
8	SM	SAND and SILT, fine, brown and grey, loose, moist			0.0
10	SM				0.0
12	SC	SAND, fine with clay, brownish grey, loose, moist			0.0
14	SP	SAND, fine with some silt and clay after 14', brownish grey, loose, moist		SB-4-21 (15') Soil	0.0
16	SM	SILT and SAND after 18', fine with clay and a clay seam at 19', brown, plastic to loose, wet to saturated after 17'			0.0
18	SM			SB-4-21 (19') W	0.0
20	SM	SAND, fine with silt and clay from 21'-22' and 23'-24' and a clay seam at 20', brown, loose, plastic, wet			0.0
22	SM				0.0
24	SM			SB-4-21 (24') W	0.0
26	CL	CLAY, grey with sand after 26' and dry gravel after 27', plastic, moist			0.0
28		End of Log			0.0

Drilled By: Fibertec

Drill Method: Geoprobe

Drill Date: 4/21/21

Borehole Size: 2"

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-5-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE

Depth	Soil Type	Description	Symbol	Sample ID	PID ppm 250
0		Ground Surface			0
		CONCRETE, Grey			0.0
2	SM	SILT, fine with sand, reddish brown, loose, moist			0.0
	SM	SILT, fine, brown, medium stiff, moist to dry			0.0
4		SILT, fine sandy to sand with silt after 7', brown, medium stiff, moist to dry to moist after 5'			0.0
6	SM				0.0
8					0.0
10		CLAY and SILT, grey, medium stiff, moist			0.0
12	CL	CLAY, grey to brown sand, medium stiff, moist			0.0
14	SP	SAND, fine with clay, brown, loose, moist to wet after 15'			0.0
16	SP	SAND, fine with silt, brown, loose, saturated			0.0
18	SP	SAND, fine, brown, loose, saturated			0.0
20	CL	SAND, fine with silt and clay, brown, loose, wet			0.0
		CLAY, grey, medium stiff, wet			0.0
22	CL	CLAY, grey, loose, wet			0.0
	CL	CLAY, grey with trace sand, medium stiff, wet			0.0
24	CL	CLAY, grey, loose, wet			0.0
26	CL	CLAY, grey with sand seam at 26' and trace gravel after 27', medium stiff to plastic, wet			0.0
28		End of Log			0.0

Drilled By: Fibertec

Drill Method: Geoprobe

Drill Date: 4/21/21

Borehole Size: 2"

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-6-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE

Depth	Soil Type	Description	Symbol	Sample ID	PID ppm 250
0		Ground Surface			
		CONCRETE, Grey			
2	SP	SAND, fine, brown, loose, moist		SB-6-21 (7') Soil	0.0
	SM	SAND, fine with slag, brown, loose, moist			0.0
	ML	SAND and SILT, fine, brown, loose, moist			0.0
4		SILT, fine, brown, medium dense, moist			0.0
	SM	SAND, fine and silt, brown, loose, moist			0.0
6	SM	SILT, fine with trace sand, brown, medium dense, moist			0.0
8	SM	SAND and SILT, fine, brown, loose, moist			0.0
10	SP	SAND, fine with trace silt and clay, brown, loose, moist			0.0
12		SAND, fine with clay and trace silt, brown, loose, moist			0.0
14	SC				0.0
16		SAND, fine with trace silt and clay, brown, loose, saturated		SB-6-21 (15') Soil	0.0
18	SP				0.0
20					0.0
22	SM	SAND and SILT, fine with a clay seam, brown, loose to medium dense, saturated		SB-6-21 (22') W	0.0
24	CL	CLAY and SILT, grey with gravel and rocks, plastic, wet		SB-6-21 (24') W	0.0
26		End of Log			0.0

Drilled By: Fibertec

Borehole Size: 2"

Drill Method: Geoprobe

Drill Date: 4/21/21

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-7-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE					
Depth	Soil Type	Description	Symbol	Sample ID	PID ppm 250
0		Ground Surface			0
		CONCRETE, Grey			0.0
2	SP	SAND, fine silty, reddish brown, loose, moist			0.0
		SAND, fine, brown, loose, moist			0.0
4	ML	SILT, fine with trace sand, stiff, brown, loose, moist			0.0
		SAND, fine with trace silt, brown, loose, moist			0.0
6					0.0
8	SP			SB-7-21 (7') Soil	0.0
10	SM	SAND and SILT, fine with trace clay, brown, loose, moist			0.0
12	CL	CLAY, brown with sandy silt, loose, plastic, moist			0.0
14	SM	SAND and SILT after 14', fine with trace clay, brown, loose, moist to saturated after 15'		SB-7-21 (15') Soil	0.0
16		SAND, fine with silt, brown, loose, saturated			0.0
18	SM				0.0
20	CL	CLAY, grey with silt and sand, stiff and plastic, wet			0.0
22	CL	CLAY, grey with silt and sand from 22'-23', medium stiff and plastic, wet		SB-7-21 (21') W	1.2
24				SB-7-21 (24') W	0.0
26		End of Log			0.0

Drilled By: Fibertec

Borehole Size: 2"

Drill Method: Geoprobe

Drill Date: 4/21/21

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-8-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE

Depth	Soil Type	Description	Symbol	Sample ID	PID ppm 0 250 500
0		Ground Surface			
		CONCRETE, Grey			
2	SM	SAND and SILT, fine with mixed wood peices at 2', brown, loose, moist			1.0
4					10.9
6	SM	SAND and SILT, fine with gravel after 6' and clay after 7', brown, loose, moist			0.9
8					1.2
10	CL	CLAY, brown, medium stiff, moist			1.0
12	GW	SILT and GRAVEL, dark grey, loose, moist			2.2
14	CL	CLAY and SILT, grey, medium stiff, moist			6.5
16	SP	SAND, fine, brown, loose, moist			1.5
18					20.2
20	SP	SAND, fine, brown with a clay seam, loose, moist			74.2
22	SP	SAND, fine with clay seam, brown, loose, moist			6.9
24	SP	SAND, fine, grey brown with silt seam, loose, moist			0.1
26	CL	CLAY, grey with some sand, medium stiff, wet			0.1
	SM	SAND and SILT, fine with some clay, brown, loose, wet			0.1
	CL	CLAY, grey, medium stiff, wet to moist			0.0
					0.0
					0.7
					0.5
					0.5
					0.1
					0.5
					0.6
					0.1
					1.3
					3.1
					10.6
					0.0

Drilled By: Fibertec

Borehole Size: 2"

Drill Method: Geoprobe

Drill Date: 4/21/21

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-9-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE			Symbol	Sample ID	PID ppm 250 500
Depth	Soil Type	Description			
0		Ground Surface			
0		CONCRETE, Grey			
2	SM	SAND and SILT, fine with gravel after 6' to no gravel and clay after 7', reddish brown to brown, loose, moist			1.0
4					0.8
6					1.4
8					1.0
10					1.0
12					1.4
14					1.7
16					1.9
18				SB-9-21 (8') Soil	1.3
20					1.7
22				SB-9-21 (11') Soil	2.4
24					2.1
26					1.3
28					1.2
30					1.2
32					1.4
34					0.9
36					1.1
38				SB-9-21 (19') W	1.3
40					2.7
42					1.6
44				SB-9-21 (22') W	5.1
46					11.4
48					17.3
50					7.4
52					7.3
54					8.1
56					9.6
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Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-10-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE

Depth	Soil Type	Description	Symbol	Sample ID	PID ppm 250
0		Ground Surface			0
		CONCRETE, Grey			66.1
2	SP	SAND, fine, reddish brown, loose, moist		SB-10-21 (1') Soil	8.1
4	SP	SAND, fine with trace gravel, brown, loose, moist			10.1
6	SP	SAND, fine, brown, loose, moist			8.6
8	CL	CLAY and SILT, grey, plastic, wet			8.4
10	SM	SAND and SILT, fine, brown, medium dense, moist			4.8
12	SP	SAND, fine with clay, brown, loose, loose			6.0
14	SC	SILT and CLAY, fine, brown, plastic, moist to wet		SB-10-21 (12') Soil	6.3
16	SM	SAND and SILT, fine with clay, brown, plastic, wet			5.3
18	SM	SAND and SILT, fine with clay, brown, medium dense, saturated		SB-10-21 (17') W	7.0
20	CL	CLAY, grey, plastic, wet		SB-10-21 (19') W	4.6
22					11.2
24		End of Log			6.3

Drilled By: Fibertec

Drill Method: Geoprobe

Drill Date: 4/21/21

Borehole Size: 2"

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-11-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE

Depth	Soil Type	Description	Symbol	Sample ID	PID ppm 250
0		Ground Surface			
		CONCRETE, grey			
2	SP	SAND, fine with gravel, brown, loose, moist SAND, fine, reddish brown, loose, moist		SB-11-21 (1') Soil	3.3 2.2 1.4
4	SM	SAND and SILT, very fine, reddish brown, loose to medium dense after 5', moist			2.0 3.0
6	SM	SILT, very fine with sand, brown, medium dense, moist			2.5 2.2
8	SP	SAND, fine, brown, loose, moist			2.1 1.6
10	SP	SAND, very fine, brown, loose, moist			2.0 2.1
12	SM	SILT, fine, brown, medium dense, moist to wet			2.1 1.0
14	SM	SILT, fine with sand, brown, medium dense, moist to wet		SB-11-21 (15') Soil	0.3 2.5 2.8
16					3.0 3.2
18	SP	SAND, fine, brown, loose, wet		SB-11-21 (19') W	1.8
20	CL	CLAY, grey, medium stiff, wet		SB-11-21 (20') W	2.0
22		End of Log			

Drilled By: Fibertec

Borehole Size: 2"

Drill Method: Geoprobe

Drill Date: 4/19/21

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-12-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE

Depth	Soil Type	Description	Symbol	Sample ID	PID ppm 250
0		Ground Surface			
		CONCRETE, Grey			
2	SP	SAND, fine with trace gravel and clay after 6', reddish brown, loose, moist			
4					
6					
8	SP	SAND, fine with trace clay, reddish brown, loose, wet		SB-12-21 (7') Soil	
10					
12	SP	SAND, fine with clay seam at 11' and 15', brown, loose, moist			
14					
16					
18	SM	SAND and SILT, fine, brown, loose to medium dense, moist to wet after 16' to saturated after 18'		SB-12-21 (15') W	
20					
		End of Log		SB-12-21 (19') W	

Drilled By: Fibertec

Borehole Size: 2"

Drill Method: Geoprobe

Drill Date: 4/19/21

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-13-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE

Depth	Soil Type	Description	Symbol	Sample ID	PID ppm 250
0		Ground Surface			
	Con	CONCRETE, Grey			
	SP	SAND, fine with trace silt and trace concrete dust, brown, loose, moist			0.4
2	SP	SAND, fine with trace silt, brown, loose, moist			0.3
					0.0
4	SM	SAND, fine with silt, brown, loose, moist			0.0
					0.0
	ML	SILT, fine with trace sand, brown, plastic, moist			0.4
6	SP	SAND, fine with silt after 7', brown, loose, moist		SB-13-21 (6') Soil	0.0
					0.0
8	SP	SAND, fine with trace silt to no silt after 9', brown, loose, moist			0.4
					0.5
10	SP	SAND, fine with silt seam, brown, loose, moist		SB-13-21 (11') Soil	0.6
					0.3
12	SP	SAND, fine with silt after 12', brown, loose, saturated		SB-13-21 (12') W	0.3
					0.4
14	CL	CLAY, silty with trace gravel, brown, plastic, moist			0.3
				SB-13-21 (15') W	
16		End of Log			

Drilled By: Fibertec

Borehole Size: 2"

Drill Method: Geoprobe

Drill Date: 4/21/21

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

Log of Borehole: SB-14-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE

Depth	Soil Type	Description	Symbol	Sample ID	PID ppm 250
0		Ground Surface			0
		CONCRETE, Grey			
0	SM	SAND and SILT, fine, reddish brown, loose, moist			0.0
2	SP	SAND, fine with some silt, reddish brown, loose, moist			0.0
4	SP	SAND, fine with some silt, brown, loose, moist			0.0
6	SP	SAND, fine trace silt, brown, loose, moist			0.0
8	SP				0.0
10	SP				0.0
12	SM	SAND, fine, brown, plastic, moist			0.0
14	SP	SAND, fine with trace silt, brown, loose, moist			0.0
16	CL	SILT and CLAY, fine, brown, plastic, wet to saturated			0.0
18	CL	CLAY, brown, medium stiff, wet			0.0
20	CL	CLAY, grey with gravel, medium stiff to stiff, moist to dry			0.0
		End of Log			1.3

Drilled By: Fibertec

Drill Method: Geoprobe

Drill Date: 4/21/21

Borehole Size: 2"

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

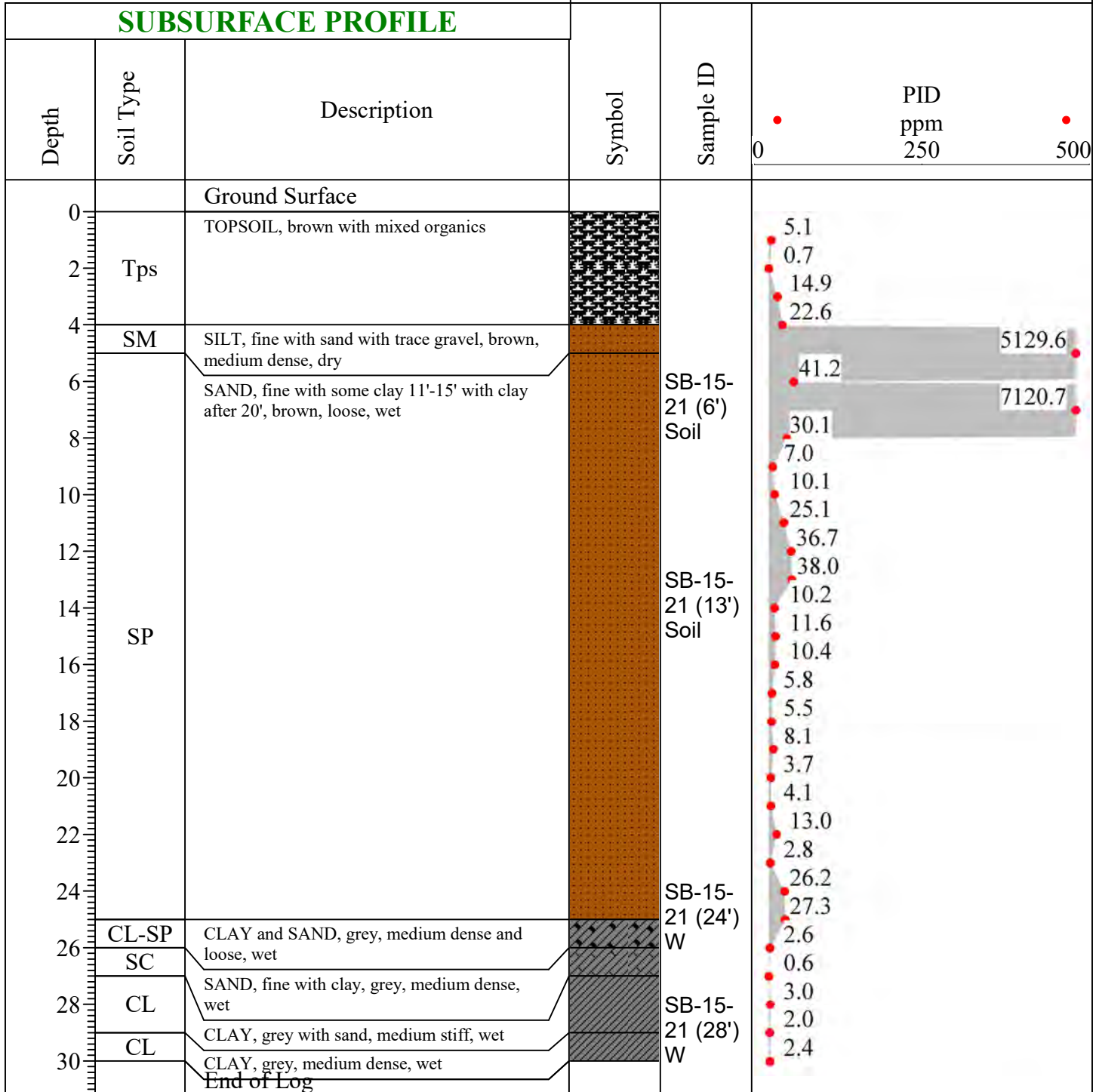
Log of Borehole: SB-15-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE



Drilled By: Fibertec

Borehole Size: 2"

Drill Method: Geoprobe

Drill Date: 4/21/21

Sheet: 1 of 1

Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810)715-2525 Fax: (810)715-2526

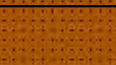
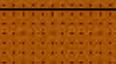
Log of Borehole: SB-16-21

Project No.: 11-4317-102

Address: 12990-11-01, Flint West Site

City: Flint, Michigan

SUBSURFACE PROFILE

Depth	Soil Type	Description	Symbol	Sample ID	PID ppm				
					0	250	500		
0		Ground Surface							
	Tps	TOPSOIL, brown with trace gravel and with mixed organics		SB-16-21 (3') Soil	0.0				
2	SM	SAND and SILT, fine wth trace gravel, brown, loose, moist			0.0				
	SP	SAND, fine with trace clay, brown, loose, moist			0.0				
4	SM	SAND and SILT, fine, brown, loose, moist			0.0				
6	SM	SAND, fine with silt and trace gravel after 7', brown, loose, moist			0.0				
8	SP	SAND, fine with trace silt, brown, loose, moist		SB-16-21 (8') Soil	0.0				
10	CL-SP	CLAY and SAND, brownish grey, medium stiff, moist			0.0				
12	CL	CLAY, grey with sand and gravel, medium stiff, moist			0.0				
14	SM	SILT, fine with sand and gravel, grey, medium stiff, moist to dry		SB-16-21 (16') Soil	0.1				
	SM	SAND, fine with silt and trace gravel, grey, loose, wet			0.1				
16		End of Log			2.2				

Drilled By: Fibertec

Borehole Size: 2"

Drill Method: Geoprobe

Drill Date: 4/21/21

Sheet: 1 of 1





Report ID: S23495.01(02)
Generated on 08/26/2021
Replaces report S23495.01(01) generated on 05/14/2021

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S23495.01-S23495.17
Project: RACER Flint West #12990
Collected Date(s): 04/19/2021
Submitted Date/Time: 04/23/2021 14:10
Sampled by: Unknown
P.O. #: 795930

Table of Contents

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Maya Murshak
Technical Director



General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the

FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Report Narrative

Results reported to MDL per client request

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
ASTM D7968-17M	ASTM Method D7968 - 17 Modified (Isotopic Dilution)
ASTMD7979-19M	ASTM Method D7979 - 19 Modified (Isotopic Dilution)
SM2540B	Standard Method 2540 B 2011

Parameter Summary

Parameter	Synonym	Cas #
PFBA	Perfluorobutanoic Acid	375-22-4
PFPeA	Perfluoropentanoic Acid	2706-90-3
4:2 FTSA	4:2 Fluorotelomer Sulfonic Acid	757124-72-4
PFHxA	Perfluorohexanoic Acid	307-24-4
PFBS	Perfluorobutane sulfonic Acid	375-73-5
PFHpA	Perfluoroheptanoic Acid	375-85-9
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4
6:2 FTSA	6:2 Fluorotelomer Sulfonic Acid	27619-97-2
PFOA	Perfluorooctanoic Acid	335-67-1
PFHxS	Perfluorohexane Sulfonic Acid	355-46-4
PFHxS-LN	Perfluorohexane Sulfonic Acid - LN	355-46-4-LN
PFHxS-BR	Perfluorohexane Sulfonic Acid - BR	355-46-4-BR
PFNA	Perfluorononanoic Acid	375-95-1
8:2 FTSA	8:2 Fluorotelomer Sulfonic Acid	39108-34-4
PFHpS	Perfluoroheptane Sulfonic Acid	375-92-8
PFDA	Perfluorodecanoic Acid	335-76-2
N-MeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9
EtFOSAA	N-Ethyl Perfluorooctane Sulfonamidoacetic Acid	2991-50-6
PFOS	Perfluorooctane Sulfonic Acid	1763-23-1
PFOS-LN	Perfluorooctane Sulfonic Acid - LN	1763-23-1-LN
PFOS-BR	Perfluorooctane Sulfonic Acid - BR	1763-23-1-BR
PFUnDA	Perfluoroundecanoic Acid	2058-94-8
PFNS	Perfluorononane Sulfonic Acid	68259-12-1
PFDoDA	Perfluorododecanoic Acid	307-55-1
PFDS	Perfluorodecane Sulfonic Acid	335-77-3
PFTTrDA	Perfluorotridecanoic Acid	72629-94-8
FOSA	Perfluorooctane Sulfonamide	754-91-6
PFTeDA	Perfluorotetradecanoic Acid	376-06-7
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone1-sulfonic acid	756426-58-1
ADONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4
HFPO-DA	Hexafluoropropylene oxide dimer	13252-13-6



Sample Summary (17 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S23495.01	SB-11-21 1'	Soil	04/19/21 10:10
S23495.02	SB-11-21 15'	Soil	04/19/21 10:14
S23495.03	SB-11-21 B	Liquid	04/19/21 10:00
S23495.04	SB-11-21 T	Liquid	04/19/21 10:20
S23495.05	SB-15-21 28'	Liquid	04/19/21 11:50
S23495.06	SB-15-21 24'	Liquid	04/19/21 12:05
S23495.07	SB-15-21 6'	Soil	04/19/21 12:58
S23495.08	SB-15-21 13'	Soil	04/19/21 13:02
S23495.09	SB-12-21 19'	Liquid	04/19/21 13:34
S23495.10	SB-12-21 7'	Soil	04/19/21 13:55
S23495.11	SB-12-21 13'	Soil	04/19/21 14:01
S23495.12	SB-10-21 1'	Soil	04/19/21 15:30
S23495.13	SB-10-21 12'	Soil	04/19/21 15:35
S23495.14	SB-12-21 15'	Liquid	04/19/21 13:48
S23495.15	Field Blank	Water	04/19/21 08:36
S23495.16	SB-10-21 17'	Liquid	04/19/21 15:05
S23495.17	SB-10-21 19'	Liquid	04/19/21 14:43

Lab Sample ID: S23495.01

Sample Tag: SB-11-21 1'

Collected Date/Time: 04/19/2021 10:10

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.39/6.86/10	ASTM D7968-17M	04/27/21 14:30	KCV	
Initial wt. (g) / Final wt. (g) / Volume (ml) (Rep#)	8.39/6.83/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:30, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	93	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 10:26, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	140	38	ng/kg	7.03	375-22-4	
PFPeA*	Not detected	70	22	ng/kg	7.03	2706-90-3	
4:2 FTSA*	Not detected	70	15	ng/kg	7.03	757124-72-4	
PFHxA*	Not detected	70	14	ng/kg	7.03	307-24-4	
PFBS*	Not detected	70	16	ng/kg	7.03	375-73-5	
PFHpA*	Not detected	70	20	ng/kg	7.03	375-85-9	
PFPeS*	Not detected	70	20	ng/kg	7.03	2706-91-4	
6:2 FTSA*	Not detected	70	23	ng/kg	7.03	27619-97-2	
PFOA*	Not detected	70	12	ng/kg	7.03	335-67-1	
PFHxS*	Not detected	70	9.8	ng/kg	7.03	355-46-4	
PFHxS-LN*	Not detected	70	9.8	ng/kg	7.03	355-46-4-LN	
PFHxS-BR*	Not detected	70	9.8	ng/kg	7.03	355-46-4-BR	
PFNA*	Not detected	70	18	ng/kg	7.03	375-95-1	
8:2 FTSA*	Not detected	70	28	ng/kg	7.03	39108-34-4	
PFHpS*	Not detected	70	21	ng/kg	7.03	375-92-8	
PFDA*	Not detected	70	34	ng/kg	7.03	335-76-2	
N-MeFOSAA*	Not detected	70	15	ng/kg	7.03	2355-31-9	
EtFOSAA*	Not detected	70	27	ng/kg	7.03	2991-50-6	
PFOS*	180	70	12	ng/kg	7.03	1763-23-1	
PFOS-LN*	120	70	12	ng/kg	7.03	1763-23-1-LN	
PFOS-BR*	59	70	12	ng/kg	7.03	1763-23-1-BR	J
PFUnDA*	Not detected	70	17	ng/kg	7.03	2058-94-8	
PFNS*	Not detected	70	15	ng/kg	7.03	68259-12-1	
PFDoDA*	Not detected	70	18	ng/kg	7.03	307-55-1	
PFDS*	37	70	20	ng/kg	7.03	335-77-3	J
PFTTrDA*	Not detected	70	16	ng/kg	7.03	72629-94-8	
FOSA*	Not detected	70	14	ng/kg	7.03	754-91-6	
PFTeDA*	Not detected	70	13	ng/kg	7.03	376-06-7	
11CI-PF3OUdS*	Not detected	70	17	ng/kg	7.03	763051-92-9	

J-Estimated value less than reporting limit, but greater than MDL

Lab Sample ID: S23495.01 (continued)

Sample Tag: SB-11-21 1'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 10:26, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
9CI-PF3ONS*	Not detected	70	15	ng/kg	7.03	756426-58-1	
ADONA*	Not detected	70	20	ng/kg	7.03	919005-14-4	
HFPO-DA*	Not detected	70	18	ng/kg	7.03	13252-13-6	

28 PFAs (Replicate 01), Method: ASTM D7968-17M, Run Date: 04/28/21 21:14, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	100	28	ng/kg	5.22	375-22-4	
PFPeA*	Not detected	52	17	ng/kg	5.22	2706-90-3	
4:2 FTSA*	Not detected	52	11	ng/kg	5.22	757124-72-4	
PFHxA*	Not detected	52	10	ng/kg	5.22	307-24-4	
PFBS*	Not detected	52	12	ng/kg	5.22	375-73-5	
PFHpA*	Not detected	52	15	ng/kg	5.22	375-85-9	
PFPeS*	Not detected	52	15	ng/kg	5.22	2706-91-4	
6:2 FTSA*	Not detected	52	17	ng/kg	5.22	27619-97-2	
PFOA*	Not detected	52	8.9	ng/kg	5.22	335-67-1	
PFHxS*	Not detected	52	7.3	ng/kg	5.22	355-46-4	
PFHxS-LN*	Not detected	52	7.3	ng/kg	5.22	355-46-4-LN	
PFHxS-BR*	Not detected	52	7.3	ng/kg	5.22	355-46-4-BR	
PFNA*	Not detected	52	14	ng/kg	5.22	375-95-1	
8:2 FTSA*	Not detected	52	21	ng/kg	5.22	39108-34-4	
PFHpS*	Not detected	52	16	ng/kg	5.22	375-92-8	
PFDA*	Not detected	52	25	ng/kg	5.22	335-76-2	
N-MeFOSAA*	Not detected	52	11	ng/kg	5.22	2355-31-9	
EtFOSAA*	Not detected	52	20	ng/kg	5.22	2991-50-6	
PFOS*	34	52	8.9	ng/kg	5.22	1763-23-1	J
PFOS-LN*	27	52	8.9	ng/kg	5.22	1763-23-1-LN	J
PFOS-BR*	Not detected	52	8.9	ng/kg	5.22	1763-23-1-BR	
PFUnDA*	Not detected	52	13	ng/kg	5.22	2058-94-8	
PFNS*	Not detected	52	11	ng/kg	5.22	68259-12-1	
PFDoDA*	Not detected	52	14	ng/kg	5.22	307-55-1	
PFDS*	31	52	15	ng/kg	5.22	335-77-3	J
PFTTrDA*	Not detected	52	12	ng/kg	5.22	72629-94-8	
FOSA*	Not detected	52	10	ng/kg	5.22	754-91-6	
PFTeDA*	Not detected	52	9.9	ng/kg	5.22	376-06-7	
11CI-PF3OUdS*	Not detected	52	13	ng/kg	5.22	763051-92-9	
9CI-PF3ONS*	Not detected	52	11	ng/kg	5.22	756426-58-1	
ADONA*	Not detected	52	15	ng/kg	5.22	919005-14-4	
HFPO-DA*	Not detected	52	13	ng/kg	5.22	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23495.02

Sample Tag: SB-11-21 15'

Collected Date/Time: 04/19/2021 10:14

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.92/6.81/10	ASTM D7968-17M	04/27/21 14:30	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:30, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	80	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 10:45, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	32	ng/kg	5.92	375-22-4	
PFPeA*	Not detected	59	19	ng/kg	5.92	2706-90-3	
4:2 FTSA*	Not detected	59	13	ng/kg	5.92	757124-72-4	
PFHxA*	Not detected	59	12	ng/kg	5.92	307-24-4	
PFBS*	Not detected	59	14	ng/kg	5.92	375-73-5	
PFHpA*	Not detected	59	17	ng/kg	5.92	375-85-9	
PFPeS*	Not detected	59	17	ng/kg	5.92	2706-91-4	
6:2 FTSA*	Not detected	59	20	ng/kg	5.92	27619-97-2	
PFOA*	Not detected	59	10	ng/kg	5.92	335-67-1	
PFHxS*	Not detected	59	8.3	ng/kg	5.92	355-46-4	
PFHxS-LN*	Not detected	59	8.3	ng/kg	5.92	355-46-4-LN	
PFHxS-BR*	Not detected	59	8.3	ng/kg	5.92	355-46-4-BR	
PFNA*	Not detected	59	15	ng/kg	5.92	375-95-1	
8:2 FTSA*	Not detected	59	24	ng/kg	5.92	39108-34-4	
PFHpS*	Not detected	59	18	ng/kg	5.92	375-92-8	
PFDA*	Not detected	59	28	ng/kg	5.92	335-76-2	
N-MeFOSAA*	Not detected	59	13	ng/kg	5.92	2355-31-9	
EtFOSAA*	Not detected	59	23	ng/kg	5.92	2991-50-6	
PFOS*	Not detected	59	10	ng/kg	5.92	1763-23-1	
PFOS-LN*	Not detected	59	10	ng/kg	5.92	1763-23-1-LN	
PFOS-BR*	Not detected	59	10	ng/kg	5.92	1763-23-1-BR	
PFUnDA*	Not detected	59	14	ng/kg	5.92	2058-94-8	
PFNS*	Not detected	59	12	ng/kg	5.92	68259-12-1	
PFDODA*	Not detected	59	15	ng/kg	5.92	307-55-1	
PFDS*	Not detected	59	17	ng/kg	5.92	335-77-3	
PFTDA*	Not detected	59	14	ng/kg	5.92	72629-94-8	
FOSA*	Not detected	59	12	ng/kg	5.92	754-91-6	
PFTeDA*	Not detected	59	11	ng/kg	5.92	376-06-7	
11Cl-PF3OUdS*	Not detected	59	14	ng/kg	5.92	763051-92-9	
9Cl-PF3ONS*	Not detected	59	13	ng/kg	5.92	756426-58-1	
ADONA*	Not detected	59	17	ng/kg	5.92	919005-14-4	



Lab Sample ID: S23495.02 (continued)
Sample Tag: SB-11-21 15'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 10:45, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	59	15	ng/kg	5.92	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23495.03

Sample Tag: SB-11-21 B

Collected Date/Time: 04/19/2021 10:00

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.43/6.85/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/26/21 22:46, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.9	9.9	ng/L	1.97	375-22-4	
PFPeA*	1.0	3.9	0.99	ng/L	1.97	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.97	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.97	307-24-4	
PFBS*	1.9	2.0	1.4	ng/L	1.97	375-73-5	J
PFHpA*	Not detected	2.0	1.4	ng/L	1.97	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.97	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.97	27619-97-2	
PFOA*	3.8	2.0	1.6	ng/L	1.97	335-67-1	
PFHxS*	3.6	2.0	1.6	ng/L	1.97	355-46-4	
PFHxS-LN*	3.3	2.0	1.6	ng/L	1.97	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.97	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.97	375-95-1	
8:2 FTSA*	Not detected	2.0	0.99	ng/L	1.97	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.97	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.97	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.97	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.97	2991-50-6	
PFOS*	Not detected	2.0	1.9	ng/L	1.97	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.97	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.97	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.97	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.97	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.97	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.97	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.97	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.97	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.97	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.97	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.97	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.97	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	1.97	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23495.04

Sample Tag: SB-11-21 T

Collected Date/Time: 04/19/2021 10:20

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.35/6.85/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/26/21 23:05, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2	375-22-4	
PFPeA*	Not detected	4.0	1.0	ng/L	2	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2	307-24-4	
PFBS*	2.0	2.0	1.4	ng/L	2	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2	27619-97-2	
PFOA*	2.0	2.0	1.6	ng/L	2	335-67-1	J
PFHxS*	2.1	2.0	1.6	ng/L	2	355-46-4	
PFHxS-LN*	1.7	2.0	1.6	ng/L	2	355-46-4-LN	J
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2	2991-50-6	
PFOS*	2.3	2.0	2.0	ng/L	2	1763-23-1	
PFOS-LN*	Not detected	2.0	2.0	ng/L	2	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	2.0	ng/L	2	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	2	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23495.05

Sample Tag: SB-15-21 28'

Collected Date/Time: 04/19/2021 11:50

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.00/6.92/10	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/26/21 23:25, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.9	9.9	ng/L	1.97	375-22-4	
PFPeA*	2.0	3.9	0.99	ng/L	1.97	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.97	757124-72-4	
PFHxA*	2.1	2.0	1.4	ng/L	1.97	307-24-4	
PFBS*	2.3	2.0	1.4	ng/L	1.97	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.97	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.97	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.97	27619-97-2	
PFOA*	5.3	2.0	1.6	ng/L	1.97	335-67-1	
PFHxS*	2.6	2.0	1.6	ng/L	1.97	355-46-4	
PFHxS-LN*	1.9	2.0	1.6	ng/L	1.97	355-46-4-LN	J
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.97	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.97	375-95-1	
8:2 FTSA*	Not detected	2.0	0.99	ng/L	1.97	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.97	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.97	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.97	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.97	2991-50-6	
PFOS*	Not detected	2.0	1.9	ng/L	1.97	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.97	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.97	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.97	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.97	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.97	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.97	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.97	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.97	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.97	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.97	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.97	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.97	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	1.97	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23495.06

Sample Tag: SB-15-21 24'

Collected Date/Time: 04/19/2021 12:05

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.58/6.91/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/27/21 20:16, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.7	9.7	ng/L	1.94	375-22-4	
PFPeA*	3.0	3.9	0.97	ng/L	1.94	2706-90-3	J
4:2 FTSA*	Not detected	1.9	1.6	ng/L	1.94	757124-72-4	
PFHxA*	3.7	1.9	1.4	ng/L	1.94	307-24-4	
PFBS*	2.7	1.9	1.4	ng/L	1.94	375-73-5	
PFHpA*	1.6	1.9	1.4	ng/L	1.94	375-85-9	J
PFPeS*	Not detected	1.9	1.7	ng/L	1.94	2706-91-4	
6:2 FTSA*	Not detected	1.9	1.9	ng/L	1.94	27619-97-2	
PFOA*	4.2	1.9	1.6	ng/L	1.94	335-67-1	
PFHxS*	4.3	1.9	1.6	ng/L	1.94	355-46-4	
PFHxS-LN*	3.4	1.9	1.6	ng/L	1.94	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.6	ng/L	1.94	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.94	375-95-1	
8:2 FTSA*	Not detected	1.9	0.97	ng/L	1.94	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.94	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.94	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.94	2355-31-9	
EtFOSAA*	Not detected	3.9	1.9	ng/L	1.94	2991-50-6	
PFOS*	Not detected	1.9	1.9	ng/L	1.94	1763-23-1	
PFOS-LN*	Not detected	1.9	1.9	ng/L	1.94	1763-23-1-LN	
PFOS-BR*	Not detected	1.9	1.9	ng/L	1.94	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.4	ng/L	1.94	2058-94-8	
PFNS*	Not detected	1.9	1.4	ng/L	1.94	68259-12-1	
PFDODA*	Not detected	1.9	1.6	ng/L	1.94	307-55-1	
PFDS*	Not detected	1.9	1.4	ng/L	1.94	335-77-3	
PFTTrDA*	Not detected	1.9	1.2	ng/L	1.94	72629-94-8	
FOSA*	Not detected	1.9	1.7	ng/L	1.94	754-91-6	
PFTeDA*	Not detected	3.9	1.7	ng/L	1.94	376-06-7	
11Cl-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.94	763051-92-9	
9Cl-PF3ONS*	Not detected	1.9	1.4	ng/L	1.94	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.94	919005-14-4	
HFPO-DA*	Not detected	1.9	1.9	ng/L	1.94	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23495.07

Sample Tag: SB-15-21 6'

Collected Date/Time: 04/19/2021 12:58

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.60/6.83/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:30, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	89	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 21:34, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	130	34	ng/kg	6.35	375-22-4	
PFPeA*	Not detected	64	20	ng/kg	6.35	2706-90-3	
4:2 FTSA*	Not detected	64	14	ng/kg	6.35	757124-72-4	
PFHxA*	Not detected	64	13	ng/kg	6.35	307-24-4	
PFBS*	Not detected	64	15	ng/kg	6.35	375-73-5	
PFHpA*	Not detected	64	18	ng/kg	6.35	375-85-9	
PFPeS*	Not detected	64	18	ng/kg	6.35	2706-91-4	
6:2 FTSA*	Not detected	64	21	ng/kg	6.35	27619-97-2	
PFOA*	Not detected	64	11	ng/kg	6.35	335-67-1	
PFHxS*	Not detected	64	8.9	ng/kg	6.35	355-46-4	
PFHxS-LN*	Not detected	64	8.9	ng/kg	6.35	355-46-4-LN	
PFHxS-BR*	Not detected	64	8.9	ng/kg	6.35	355-46-4-BR	
PFNA*	Not detected	64	17	ng/kg	6.35	375-95-1	
8:2 FTSA*	Not detected	64	25	ng/kg	6.35	39108-34-4	
PFHpS*	Not detected	64	19	ng/kg	6.35	375-92-8	
PFDA*	Not detected	64	30	ng/kg	6.35	335-76-2	
N-MeFOSAA*	Not detected	64	14	ng/kg	6.35	2355-31-9	
EtFOSAA*	Not detected	64	25	ng/kg	6.35	2991-50-6	
PFOS*	Not detected	64	11	ng/kg	6.35	1763-23-1	
PFOS-LN*	Not detected	64	11	ng/kg	6.35	1763-23-1-LN	
PFOS-BR*	Not detected	64	11	ng/kg	6.35	1763-23-1-BR	
PFUnDA*	Not detected	64	15	ng/kg	6.35	2058-94-8	
PFNS*	Not detected	64	13	ng/kg	6.35	68259-12-1	
PFDoDA*	Not detected	64	17	ng/kg	6.35	307-55-1	
PFDS*	Not detected	64	18	ng/kg	6.35	335-77-3	
PFTTrDA*	Not detected	64	15	ng/kg	6.35	72629-94-8	
FOSA*	Not detected	64	13	ng/kg	6.35	754-91-6	
PFTeDA*	Not detected	64	12	ng/kg	6.35	376-06-7	
11Cl-PF3OUdS*	Not detected	64	15	ng/kg	6.35	763051-92-9	
9Cl-PF3ONS*	Not detected	64	14	ng/kg	6.35	756426-58-1	
ADONA*	Not detected	64	18	ng/kg	6.35	919005-14-4	



Lab Sample ID: S23495.07 (continued)

Sample Tag: SB-15-21 6'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 21:34, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	64	16	ng/kg	6.35	13252-13-6	



Lab Sample ID: S23495.08

Sample Tag: SB-15-21 13'

Collected Date/Time: 04/19/2021 13:02

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	9.06/6.88/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:30, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	82	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 22:13, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	110	30	ng/kg	5.59	375-22-4	
PFPeA*	Not detected	56	18	ng/kg	5.59	2706-90-3	
4:2 FTSA*	Not detected	56	12	ng/kg	5.59	757124-72-4	
PFHxA*	Not detected	56	11	ng/kg	5.59	307-24-4	
PFBS*	Not detected	56	13	ng/kg	5.59	375-73-5	
PFHpA*	Not detected	56	16	ng/kg	5.59	375-85-9	
PFPeS*	Not detected	56	16	ng/kg	5.59	2706-91-4	
6:2 FTSA*	Not detected	56	18	ng/kg	5.59	27619-97-2	
PFOA*	Not detected	56	9.5	ng/kg	5.59	335-67-1	
PFHxS*	Not detected	56	7.8	ng/kg	5.59	355-46-4	
PFHxS-LN*	Not detected	56	7.8	ng/kg	5.59	355-46-4-LN	
PFHxS-BR*	Not detected	56	7.8	ng/kg	5.59	355-46-4-BR	
PFNA*	Not detected	56	15	ng/kg	5.59	375-95-1	
8:2 FTSA*	Not detected	56	22	ng/kg	5.59	39108-34-4	
PFHpS*	Not detected	56	17	ng/kg	5.59	375-92-8	
PFDA*	Not detected	56	27	ng/kg	5.59	335-76-2	
N-MeFOSAA*	Not detected	56	12	ng/kg	5.59	2355-31-9	
EtFOSAA*	Not detected	56	22	ng/kg	5.59	2991-50-6	
PFOS*	Not detected	56	9.5	ng/kg	5.59	1763-23-1	
PFOS-LN*	Not detected	56	9.5	ng/kg	5.59	1763-23-1-LN	
PFOS-BR*	Not detected	56	9.5	ng/kg	5.59	1763-23-1-BR	
PFUnDA*	Not detected	56	13	ng/kg	5.59	2058-94-8	
PFNS*	Not detected	56	12	ng/kg	5.59	68259-12-1	
PFDoDA*	Not detected	56	15	ng/kg	5.59	307-55-1	
PFDS*	Not detected	56	16	ng/kg	5.59	335-77-3	
PFTTrDA*	Not detected	56	13	ng/kg	5.59	72629-94-8	
FOSA*	Not detected	56	11	ng/kg	5.59	754-91-6	
PFTeDA*	Not detected	56	11	ng/kg	5.59	376-06-7	
11Cl-PF3OUdS*	Not detected	56	13	ng/kg	5.59	763051-92-9	
9Cl-PF3ONS*	Not detected	56	12	ng/kg	5.59	756426-58-1	
ADONA*	Not detected	56	16	ng/kg	5.59	919005-14-4	



Lab Sample ID: S23495.08 (continued)
Sample Tag: SB-15-21 13'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 22:13, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	56	14	ng/kg	5.59	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23495.09

Sample Tag: SB-12-21 19'

Collected Date/Time: 04/19/2021 13:34

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.21/6.87/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/27/21 00:04, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.06	375-22-4	
PFPeA*	2.1	4.1	1.0	ng/L	2.06	2706-90-3	J
4:2 FTSA*	Not detected	2.1	1.6	ng/L	2.06	757124-72-4	
PFHxA*	2.0	2.1	1.4	ng/L	2.06	307-24-4	J
PFBS*	1.9	2.1	1.4	ng/L	2.06	375-73-5	J
PFHpA*	Not detected	2.1	1.4	ng/L	2.06	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.06	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.06	27619-97-2	
PFOA*	6.5	2.1	1.6	ng/L	2.06	335-67-1	
PFHxS*	5.2	2.1	1.6	ng/L	2.06	355-46-4	
PFHxS-LN*	4.5	2.1	1.6	ng/L	2.06	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.06	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.06	39108-34-4	
PFHpS*	2.6	2.1	2.1	ng/L	2.06	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.06	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.06	2355-31-9	
EtFOSAA*	Not detected	4.1	2.1	ng/L	2.06	2991-50-6	
PFOS*	7.8	2.1	2.0	ng/L	2.06	1763-23-1	
PFOS-LN*	Not detected	2.1	2.0	ng/L	2.06	1763-23-1-LN	
PFOS-BR*	6.9	2.1	2.0	ng/L	2.06	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.4	ng/L	2.06	2058-94-8	
PFNS*	Not detected	2.1	1.4	ng/L	2.06	68259-12-1	
PFDODA*	Not detected	2.1	1.6	ng/L	2.06	307-55-1	
PFDS*	Not detected	2.1	1.4	ng/L	2.06	335-77-3	
PFTTrDA*	Not detected	2.1	1.2	ng/L	2.06	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.06	754-91-6	
PFTeDA*	Not detected	4.1	1.9	ng/L	2.06	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.06	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.4	ng/L	2.06	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.06	919005-14-4	
HFPO-DA*	Not detected	2.1	2.1	ng/L	2.06	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL

Lab Sample ID: S23495.10

Sample Tag: SB-12-21 7'

Collected Date/Time: 04/19/2021 13:55

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	9.01/6.85/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:30, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	81	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 22:52, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	110	31	ng/kg	5.72	375-22-4	
PFPeA*	Not detected	57	18	ng/kg	5.72	2706-90-3	
4:2 FTSA*	Not detected	57	13	ng/kg	5.72	757124-72-4	
PFHxA*	Not detected	57	11	ng/kg	5.72	307-24-4	
PFBS*	Not detected	57	13	ng/kg	5.72	375-73-5	
PFHpA*	Not detected	57	16	ng/kg	5.72	375-85-9	
PFPeS*	Not detected	57	16	ng/kg	5.72	2706-91-4	
6:2 FTSA*	Not detected	57	19	ng/kg	5.72	27619-97-2	
PFOA*	19	57	9.7	ng/kg	5.72	335-67-1	J
PFHxS*	Not detected	57	8.0	ng/kg	5.72	355-46-4	
PFHxS-LN*	Not detected	57	8.0	ng/kg	5.72	355-46-4-LN	
PFHxS-BR*	Not detected	57	8.0	ng/kg	5.72	355-46-4-BR	
PFNA*	Not detected	57	15	ng/kg	5.72	375-95-1	
8:2 FTSA*	Not detected	57	23	ng/kg	5.72	39108-34-4	
PFHpS*	Not detected	57	17	ng/kg	5.72	375-92-8	
PFDA*	Not detected	57	27	ng/kg	5.72	335-76-2	
N-MeFOSAA*	Not detected	57	13	ng/kg	5.72	2355-31-9	
EtFOSAA*	Not detected	57	22	ng/kg	5.72	2991-50-6	
PFOS*	200	57	9.7	ng/kg	5.72	1763-23-1	
PFOS-LN*	170	57	9.7	ng/kg	5.72	1763-23-1-LN	
PFOS-BR*	27	57	9.7	ng/kg	5.72	1763-23-1-BR	J
PFUnDA*	Not detected	57	14	ng/kg	5.72	2058-94-8	
PFNS*	Not detected	57	12	ng/kg	5.72	68259-12-1	
PFDoDA*	Not detected	57	15	ng/kg	5.72	307-55-1	
PFDS*	Not detected	57	16	ng/kg	5.72	335-77-3	
PFTTrDA*	Not detected	57	13	ng/kg	5.72	72629-94-8	
FOSA*	Not detected	57	11	ng/kg	5.72	754-91-6	
PFTeDA*	Not detected	57	11	ng/kg	5.72	376-06-7	
11CI-PF3OUdS*	Not detected	57	14	ng/kg	5.72	763051-92-9	
9CI-PF3ONS*	Not detected	57	13	ng/kg	5.72	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23495.10 (continued)

Sample Tag: SB-12-21 7'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 22:52, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	57	16	ng/kg	5.72	919005-14-4	
HFPO-DA*	Not detected	57	14	ng/kg	5.72	13252-13-6	

Lab Sample ID: S23495.11

Sample Tag: SB-12-21 13'

Collected Date/Time: 04/19/2021 14:01

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	9.15/6.90/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:30, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	86	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 23:11, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	100	28	ng/kg	5.17	375-22-4	
PFPeA*	Not detected	52	17	ng/kg	5.17	2706-90-3	
4:2 FTSA*	Not detected	52	11	ng/kg	5.17	757124-72-4	
PFHxA*	Not detected	52	10	ng/kg	5.17	307-24-4	
PFBS*	Not detected	52	12	ng/kg	5.17	375-73-5	
PFHpA*	Not detected	52	14	ng/kg	5.17	375-85-9	
PFPeS*	Not detected	52	14	ng/kg	5.17	2706-91-4	
6:2 FTSA*	Not detected	52	17	ng/kg	5.17	27619-97-2	
PFOA*	Not detected	52	8.8	ng/kg	5.17	335-67-1	
PFHxS*	Not detected	52	7.2	ng/kg	5.17	355-46-4	
PFHxS-LN*	Not detected	52	7.2	ng/kg	5.17	355-46-4-LN	
PFHxS-BR*	Not detected	52	7.2	ng/kg	5.17	355-46-4-BR	
PFNA*	Not detected	52	13	ng/kg	5.17	375-95-1	
8:2 FTSA*	Not detected	52	21	ng/kg	5.17	39108-34-4	
PFHpS*	Not detected	52	16	ng/kg	5.17	375-92-8	
PFDA*	Not detected	52	25	ng/kg	5.17	335-76-2	
N-MeFOSAA*	Not detected	52	11	ng/kg	5.17	2355-31-9	
EtFOSAA*	Not detected	52	20	ng/kg	5.17	2991-50-6	
PFOS*	96	52	8.8	ng/kg	5.17	1763-23-1	
PFOS-LN*	69	52	8.8	ng/kg	5.17	1763-23-1-LN	
PFOS-BR*	25	52	8.8	ng/kg	5.17	1763-23-1-BR	J
PFUnDA*	Not detected	52	12	ng/kg	5.17	2058-94-8	
PFNS*	Not detected	52	11	ng/kg	5.17	68259-12-1	
PFDoDA*	Not detected	52	13	ng/kg	5.17	307-55-1	
PFDS*	Not detected	52	14	ng/kg	5.17	335-77-3	
PFTTrDA*	Not detected	52	12	ng/kg	5.17	72629-94-8	
FOSA*	Not detected	52	10	ng/kg	5.17	754-91-6	
PFTeDA*	Not detected	52	9.8	ng/kg	5.17	376-06-7	
11CI-PF3OUdS*	Not detected	52	12	ng/kg	5.17	763051-92-9	
9CI-PF3ONS*	Not detected	52	11	ng/kg	5.17	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23495.11 (continued)

Sample Tag: SB-12-21 13'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 23:11, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	52	14	ng/kg	5.17	919005-14-4	
HFPO-DA*	Not detected	52	13	ng/kg	5.17	13252-13-6	

Lab Sample ID: S23495.12

Sample Tag: SB-10-21 1'

Collected Date/Time: 04/19/2021 15:30

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.66/6.88/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:30, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	95	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 23:31, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	32	ng/kg	5.91	375-22-4	
PFPeA*	Not detected	59	19	ng/kg	5.91	2706-90-3	
4:2 FTSA*	Not detected	59	13	ng/kg	5.91	757124-72-4	
PFHxA*	Not detected	59	12	ng/kg	5.91	307-24-4	
PFBS*	Not detected	59	14	ng/kg	5.91	375-73-5	
PFHpA*	Not detected	59	17	ng/kg	5.91	375-85-9	
PFPeS*	Not detected	59	17	ng/kg	5.91	2706-91-4	
6:2 FTSA*	Not detected	59	20	ng/kg	5.91	27619-97-2	
PFOA*	Not detected	59	10	ng/kg	5.91	335-67-1	
PFHxS*	Not detected	59	8.3	ng/kg	5.91	355-46-4	
PFHxS-LN*	Not detected	59	8.3	ng/kg	5.91	355-46-4-LN	
PFHxS-BR*	Not detected	59	8.3	ng/kg	5.91	355-46-4-BR	
PFNA*	Not detected	59	15	ng/kg	5.91	375-95-1	
8:2 FTSA*	Not detected	59	24	ng/kg	5.91	39108-34-4	
PFHpS*	Not detected	59	18	ng/kg	5.91	375-92-8	
PFDA*	Not detected	59	28	ng/kg	5.91	335-76-2	
N-MeFOSAA*	Not detected	59	13	ng/kg	5.91	2355-31-9	
EtFOSAA*	Not detected	59	23	ng/kg	5.91	2991-50-6	
PFOS*	18	59	10	ng/kg	5.91	1763-23-1	J
PFOS-LN*	13	59	10	ng/kg	5.91	1763-23-1-LN	J
PFOS-BR*	Not detected	59	10	ng/kg	5.91	1763-23-1-BR	
PFUnDA*	Not detected	59	14	ng/kg	5.91	2058-94-8	
PFNS*	Not detected	59	12	ng/kg	5.91	68259-12-1	
PFDoDA*	Not detected	59	15	ng/kg	5.91	307-55-1	
PFDS*	Not detected	59	17	ng/kg	5.91	335-77-3	
PFTTrDA*	Not detected	59	14	ng/kg	5.91	72629-94-8	
FOSA*	Not detected	59	12	ng/kg	5.91	754-91-6	
PFTeDA*	Not detected	59	11	ng/kg	5.91	376-06-7	
11CI-PF3OUdS*	Not detected	59	14	ng/kg	5.91	763051-92-9	
9CI-PF3ONS*	Not detected	59	13	ng/kg	5.91	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23495.12 (continued)

Sample Tag: SB-10-21 1'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 23:31, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	59	17	ng/kg	5.91	919005-14-4	
HFPO-DA*	Not detected	59	15	ng/kg	5.91	13252-13-6	



Lab Sample ID: S23495.13

Sample Tag: SB-10-21 12'

Collected Date/Time: 04/19/2021 15:35

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.73/6.81/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:30, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	83	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 23:50, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	130	34	ng/kg	6.28	375-22-4	
PFPeA*	Not detected	63	20	ng/kg	6.28	2706-90-3	
4:2 FTSA*	Not detected	63	14	ng/kg	6.28	757124-72-4	
PFHxA*	Not detected	63	13	ng/kg	6.28	307-24-4	
PFBS*	Not detected	63	14	ng/kg	6.28	375-73-5	
PFHpA*	Not detected	63	18	ng/kg	6.28	375-85-9	
PFPeS*	Not detected	63	18	ng/kg	6.28	2706-91-4	
6:2 FTSA*	Not detected	63	21	ng/kg	6.28	27619-97-2	
PFOA*	Not detected	63	11	ng/kg	6.28	335-67-1	
PFHxS*	Not detected	63	8.8	ng/kg	6.28	355-46-4	
PFHxS-LN*	Not detected	63	8.8	ng/kg	6.28	355-46-4-LN	
PFHxS-BR*	Not detected	63	8.8	ng/kg	6.28	355-46-4-BR	
PFNA*	Not detected	63	16	ng/kg	6.28	375-95-1	
8:2 FTSA*	Not detected	63	25	ng/kg	6.28	39108-34-4	
PFHpS*	Not detected	63	19	ng/kg	6.28	375-92-8	
PFDA*	Not detected	63	30	ng/kg	6.28	335-76-2	
N-MeFOSAA*	Not detected	63	14	ng/kg	6.28	2355-31-9	
EtFOSAA*	Not detected	63	24	ng/kg	6.28	2991-50-6	
PFOS*	63	63	11	ng/kg	6.28	1763-23-1	
PFOS-LN*	13	63	11	ng/kg	6.28	1763-23-1-LN	J
PFOS-BR*	48	63	11	ng/kg	6.28	1763-23-1-BR	J
PFUnDA*	Not detected	63	15	ng/kg	6.28	2058-94-8	
PFNS*	Not detected	63	13	ng/kg	6.28	68259-12-1	
PFDODA*	Not detected	63	16	ng/kg	6.28	307-55-1	
PFDS*	Not detected	63	18	ng/kg	6.28	335-77-3	
PFTDA*	Not detected	63	14	ng/kg	6.28	72629-94-8	
FOSA*	Not detected	63	13	ng/kg	6.28	754-91-6	
PFTeDA*	Not detected	63	12	ng/kg	6.28	376-06-7	
11CI-PF3OUdS*	Not detected	63	15	ng/kg	6.28	763051-92-9	
9CI-PF3ONS*	Not detected	63	14	ng/kg	6.28	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23495.13 (continued)

Sample Tag: SB-10-21 12'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/28/21 23:50, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	63	18	ng/kg	6.28	919005-14-4	
HFPO-DA*	Not detected	63	16	ng/kg	6.28	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23495.14

Sample Tag: SB-12-21 15'

Collected Date/Time: 04/19/2021 13:48

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.30/6.82/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/27/21 00:23, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.01	375-22-4	
PFPeA*	3.1	4.0	1.0	ng/L	2.01	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.01	757124-72-4	
PFHxA*	2.4	2.0	1.4	ng/L	2.01	307-24-4	
PFBS*	2.4	2.0	1.4	ng/L	2.01	375-73-5	
PFHpA*	1.4	2.0	1.4	ng/L	2.01	375-85-9	J
PFPeS*	Not detected	2.0	1.8	ng/L	2.01	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.01	27619-97-2	
PFOA*	6.2	2.0	1.6	ng/L	2.01	335-67-1	
PFHxS*	3.7	2.0	1.6	ng/L	2.01	355-46-4	
PFHxS-LN*	3.1	2.0	1.6	ng/L	2.01	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.01	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.01	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.01	39108-34-4	
PFHpS*	2.3	2.0	2.0	ng/L	2.01	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.01	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.01	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2.01	2991-50-6	
PFOS*	22	2.0	2.0	ng/L	2.01	1763-23-1	
PFOS-LN*	11	2.0	2.0	ng/L	2.01	1763-23-1-LN	
PFOS-BR*	9.7	2.0	2.0	ng/L	2.01	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.01	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.01	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2.01	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.01	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2.01	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.01	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2.01	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.01	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.01	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.01	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	2.01	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23495.15

Sample Tag: Field Blank

Collected Date/Time: 04/19/2021 08:36

Matrix: Water

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.41/6.99/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/27/21 00:42, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.03	375-22-4	
PFPeA*	Not detected	4.1	1.0	ng/L	2.03	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.03	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2.03	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2.03	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2.03	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.03	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.03	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2.03	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2.03	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.03	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.03	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.03	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.03	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.03	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.03	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.03	2355-31-9	
EtFOSAA*	Not detected	4.1	2.0	ng/L	2.03	2991-50-6	
PFOS*	Not detected	2.0	2.0	ng/L	2.03	1763-23-1	
PFOS-LN*	Not detected	2.0	2.0	ng/L	2.03	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	2.0	ng/L	2.03	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.03	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.03	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2.03	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.03	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2.03	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.03	754-91-6	
PFTeDA*	Not detected	4.1	1.8	ng/L	2.03	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.03	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.03	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.03	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	2.03	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23495.16

Sample Tag: SB-10-21 17'

Collected Date/Time: 04/19/2021 15:05

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.17/6.86/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/27/21 01:02, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.07	375-22-4	
PFPeA*	4.8	4.1	1.0	ng/L	2.07	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.7	ng/L	2.07	757124-72-4	
PFHxA*	2.5	2.1	1.4	ng/L	2.07	307-24-4	
PFBS*	2.2	2.1	1.4	ng/L	2.07	375-73-5	
PFHpA*	Not detected	2.1	1.4	ng/L	2.07	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.07	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.07	27619-97-2	
PFOA*	4.3	2.1	1.7	ng/L	2.07	335-67-1	
PFHxS*	Not detected	2.1	1.7	ng/L	2.07	355-46-4	
PFHxS-LN*	Not detected	2.1	1.7	ng/L	2.07	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.7	ng/L	2.07	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.07	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.07	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.07	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.07	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.07	2355-31-9	
EtFOSAA*	Not detected	4.1	2.1	ng/L	2.07	2991-50-6	
PFOS*	9.1	2.1	2.0	ng/L	2.07	1763-23-1	
PFOS-LN*	3.9	2.1	2.0	ng/L	2.07	1763-23-1-LN	
PFOS-BR*	4.8	2.1	2.0	ng/L	2.07	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.4	ng/L	2.07	2058-94-8	
PFNS*	Not detected	2.1	1.4	ng/L	2.07	68259-12-1	
PFDODA*	Not detected	2.1	1.7	ng/L	2.07	307-55-1	
PFDS*	Not detected	2.1	1.4	ng/L	2.07	335-77-3	
PFTTrDA*	Not detected	2.1	1.2	ng/L	2.07	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.07	754-91-6	
PFTeDA*	Not detected	4.1	1.9	ng/L	2.07	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.07	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.4	ng/L	2.07	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.07	919005-14-4	
HFPO-DA*	Not detected	2.1	2.1	ng/L	2.07	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23495.17

Sample Tag: SB-10-21 19'

Collected Date/Time: 04/19/2021 14:43

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.52/6.96/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/27/21 01:21, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.9	9.9	ng/L	1.98	375-22-4	
PFPeA*	3.4	4.0	0.99	ng/L	1.98	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.98	757124-72-4	
PFHxA*	2.3	2.0	1.4	ng/L	1.98	307-24-4	
PFBS*	1.4	2.0	1.4	ng/L	1.98	375-73-5	J
PFHpA*	1.4	2.0	1.4	ng/L	1.98	375-85-9	J
PFPeS*	Not detected	2.0	1.8	ng/L	1.98	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.98	27619-97-2	
PFOA*	1.7	2.0	1.6	ng/L	1.98	335-67-1	J
PFHxS*	Not detected	2.0	1.6	ng/L	1.98	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.98	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.98	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.98	375-95-1	
8:2 FTSA*	Not detected	2.0	0.99	ng/L	1.98	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.98	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.98	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.98	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	1.98	2991-50-6	
PFOS*	Not detected	2.0	1.9	ng/L	1.98	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.98	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.98	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.98	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.98	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.98	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.98	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.98	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.98	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	1.98	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.98	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.98	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.98	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	1.98	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL

Merit Laboratories Login Checklist

Lab Set ID:S23495

Client:APPLIED (Applied Ecosystems)

Project: RACER Flint West #12990

Submitted:04/23/2021 14:10 Login User: MMC

Attention: Rodney Abke

Address: Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525

FAX:

Email: rabke@appliedecosystems.com

Selection	Description	Note
Sample Receiving		
01. ☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer #	IR 5.4
02. ☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun	
03. ☐ Yes ☒ No ☐ N/A	Samples shipped	
04. ☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box	
05. ☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody		
06. ☒ Yes ☐ No ☐ N/A	COC adequately filled out	
07. ☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab	
08. ☐ Yes ☒ No ☐ N/A	Sample tag on bottles match COC	Many depths and collection times do not match from bottle label to COC
09. ☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontracted to:	
Preservation		
10. ☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation	
11. ☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)	
12. ☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions		
13. ☒ Yes ☐ No ☐ N/A	All bottles intact	
14. ☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used	
15. ☒ Yes ☐ No ☐ N/A	Merit bottles used	
16. ☒ Yes ☐ No ☐ N/A	Sufficient sample volume received	
17. ☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration	
18. ☒ Yes ☐ No ☐ N/A	Samples submitted within holding time	
19. ☐ Yes ☐ No ☒ N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME				Rodney Abke							
COMPANY				Applied EcoSystems							
ADDRESS								G-4300 South Saginaw Street			
CITY						STATE		MI		ZIP CODE	
Burton										48529	
PHONE NO.				FAX NO.				P.O. NO.			
810-715-2525				810-715-2526				PO795930			
E-MAIL ADDRESS								QUOTE NO.			
rabke@appliedecosystems.com											

CONTACT NAME		Monica Wallingford		☐ SAME	
COMPANY		Revitalizing Auto Communities Environmental Response (RACER) Trust			
ADDRESS					
CITY			STATE		ZIP CODE
PHONE NO.		313.486.2978		E-MAIL ADDRESS mwallingford@racertrust.org	

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME RACER Flint West #12990	SAMPLER(S) - PLEASE PRINT/SIGN NAME
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____	
DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____	

MATRIX	GW=GROUNDWATER	WW=WASTEWATER	S=SOIL	L=LIQUID	SD=SOLID
CODE:	SL=SLUDGE	DW=DRINKING WATER	O=OIL	WP=WIPE	A=AIR
					W=WASTE

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	PFAS							☐ Other _____	Special Instructions
	DATE	TIME																			
2349501	4-19	10:10	SB-11-21 1'	S	4	1							X							** - 28 Compound List	
.02	4-19	10:14	SB-11-21 15'	S	4	X							X								
.03	4-19	10:00	SB-11-21 B	W	3	X							X								
.04	4-19	10:20	SB-11-21 T	W	3	X							X								
.05	4-19	11:50	SB-15-21 28'	W	3	X							X								
.06	4-19	12:05	SB-15-21 15'	W	3	T							X								
.07	4-19	12:08	SB-15-21 6'	S	4	X							X								
.08	4-19	13:02	SB-15-21 13'	S	4	X							X								
.09	4-19	13:14	SB-12-21 19'	W	3	X							X								
.10	4-19	13:55	SB-12-21 7'	S	4	X							X								
.11	4-19	14:00	SB-12-21 13'	S	4	X							X								
.12	4-19	15:30	SB-10-21 12' / 1'	S	4	X							X								

RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>Joshua Hernandez</i>	☐ Sampler	DATE 4-19	TIME 16:30
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>AO</i>		DATE 4-19	TIME 16:20
RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>AE</i>		DATE 4/23/21	TIME 11:30
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>Tran</i>		DATE 4/23/21	TIME 11:30

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE 4/23/21		TIME 1410	
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 4/23/21		TIME 1410	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES:	TEMP. ON ARRIVAL	5.4
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS			

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



Report ID: S23498.01(02)
Generated on 08/26/2021
Replaces report S23498.01(01) generated on 05/14/2021

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S23498.01-S23498.67
Project: RACER Flint West #12990
Collected Date(s): 04/19/2021 - 04/21/2021
Submitted Date/Time: 04/23/2021 14:10
Sampled by: Unknown
P.O. #: 795930

Table of Contents

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Maya Murshak
Technical Director



General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the

FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Report Narrative

Results reported down to MDL per client request

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
ASTM D7968-17M	ASTM Method D7968 - 17 Modified (Isotopic Dilution)
ASTMD7979-19M	ASTM Method D7979 - 19 Modified (Isotopic Dilution)
SM2540B	Standard Method 2540 B 2011

Parameter Summary

Parameter	Synonym	Cas #
PFBA	Perfluorobutanoic Acid	375-22-4
PFPeA	Perfluoropentanoic Acid	2706-90-3
4:2 FTSA	4:2 Fluorotelomer Sulfonic Acid	757124-72-4
PFHxA	Perfluorohexanoic Acid	307-24-4
PFBS	Perfluorobutane sulfonic Acid	375-73-5
PFHpA	Perfluoroheptanoic Acid	375-85-9
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4
6:2 FTSA	6:2 Fluorotelomer Sulfonic Acid	27619-97-2
PFOA	Perfluorooctanoic Acid	335-67-1
PFHxS	Perfluorohexane Sulfonic Acid	355-46-4
PFHxS-LN	Perfluorohexane Sulfonic Acid - LN	355-46-4-LN
PFHxS-BR	Perfluorohexane Sulfonic Acid - BR	355-46-4-BR
PFNA	Perfluorononanoic Acid	375-95-1
8:2 FTSA	8:2 Fluorotelomer Sulfonic Acid	39108-34-4
PFHpS	Perfluoroheptane Sulfonic Acid	375-92-8
PFDA	Perfluorodecanoic Acid	335-76-2
N-MeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9
EtFOSAA	N-Ethyl Perfluorooctane Sulfonamidoacetic Acid	2991-50-6
PFOS	Perfluorooctane Sulfonic Acid	1763-23-1
PFOS-LN	Perfluorooctane Sulfonic Acid - LN	1763-23-1-LN
PFOS-BR	Perfluorooctane Sulfonic Acid - BR	1763-23-1-BR
PFUnDA	Perfluoroundecanoic Acid	2058-94-8
PFNS	Perfluorononane Sulfonic Acid	68259-12-1
PFDoDA	Perfluorododecanoic Acid	307-55-1
PFDS	Perfluorodecane Sulfonic Acid	335-77-3
PFTTrDA	Perfluorotridecanoic Acid	72629-94-8
FOSA	Perfluorooctane Sulfonamide	754-91-6
PFTeDA	Perfluorotetradecanoic Acid	376-06-7
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone1-sulfonic acid	756426-58-1
ADONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4
HFPO-DA	Hexafluoropropylene oxide dimer	13252-13-6



Sample Summary (67 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S23498.01	SB-9-21 8'	Soil	04/20/21 09:24
S23498.02	SB-9-21 11'	Soil	04/20/21 09:31
S23498.03	SB-9-21 19'	Liquid	04/20/21 09:30
S23498.04	SB-9-21 22'	Liquid	04/20/21 09:53
S23498.05	SB-8-21 24'	Liquid	04/20/21 10:50
S23498.06	SB-8-21 20'	Liquid	04/20/21 11:04
S23498.07	SB-8-21 10'	Soil	04/20/21 10:54
S23498.08	SB-8-21 7'	Soil	04/20/21 11:51
S23498.09	SB-6-21 7'	Soil	04/20/21 12:00
S23498.10	SB-6-21 15'	Soil	04/20/21 12:08
S23498.11	SB-6-21 24'	Liquid	04/20/21 11:57
S23498.12	SB-6-21 22'	Liquid	04/20/21 12:30
S23498.13	SB-3-21 5'	Soil	04/20/21 14:15
S23498.14	SB-3-21 11'	Soil	04/20/21 14:09
S23498.15	SB-3-21 23'	Liquid	04/20/21 14:17
S23498.16	SB-4-21 7'	Soil	04/20/21 15:38
S23498.17	SB-4-21 15'	Soil	04/20/21 15:34
S23498.18	SB-4-21 24'	Liquid	04/20/21 15:42
S23498.19	SB-4-21 19'	Liquid	04/20/21 15:50
S23498.20	SB-5-21 25'	Liquid	04/21/21 09:10
S23498.21	SB-5-21 8'	Soil	04/21/21 09:06
S23498.22	SB-5-21 16'	Soil	04/21/21 09:13
S23498.23	SB-5-21 21'	Liquid	04/21/21 09:20
S23498.24	SB-7-21 7'	Soil	04/21/21 10:04
S23498.25	SB-7-21 24'	Liquid	04/21/21 10:10
S23498.26	SB-7-21 15'	Soil	04/21/21 10:14
S23498.27	SB-7-21 21'	Liquid	04/21/21 10:21
S23498.28	SB-16-21 16'	Soil	04/21/21 11:26
S23498.29	SB-16-21 8'	Soil	04/21/21 11:30
S23498.30	SB-16-21 3'	Soil	04/21/21 11:32
S23498.31	SB-2-21 19'	Liquid	04/21/21 12:52
S23498.32	SB-2-21 6'	Soil	04/21/21 13:10
S23498.33	SB-2-21 17'	Liquid	04/21/21 13:12
S23498.34	SB-2-21 15'	Soil	04/21/21 13:17
S23498.35	SB-1-21 6'	Soil	04/21/21 13:58
S23498.36	SB-1-21 14-15'	Soil	04/21/21 14:30
S23498.37	SB-1-21 15'	Liquid	04/21/21 13:56
S23498.38	SB-1-21 17'	Liquid	04/21/21 13:46
S23498.39	SB-14-21 17'	Liquid	04/21/21 14:39
S23498.40	SB-14-21 15'	Liquid	04/21/21 14:49
S23498.41	SB-14-21 6'	Soil	04/21/21 14:55
S23498.42	SB-14-21 11'	Soil	04/21/21 15:02
S23498.43	SB-13-21 15'	Liquid	04/21/21 15:37
S23498.44	SB-13-21 11'	Soil	04/21/21 15:40
S23498.45	SB-13-21 6'	Soil	04/21/21 15:32
S23498.46	SB-13-21 12'	Liquid	04/21/21 15:44
S23498.47	Equip Blank	Water	04/21/21 15:47
S23498.48	Topps Assay 15'	Liquid	04/21/21 13:56
S23498.49	Field Blank	Water	04/20/21 08:55
S23498.50	Field Blank	Water	04/21/21 08:51
S23498.51	Trip Blank	Water	04/19/21 07:48
S23498.52	Dupe 1	Soil	04/19/21 00:01
S23498.53	Dupe 2	Soil	04/19/21 00:01



Sample Summary (continued)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S23498.54	Dupe 3	Liquid	04/19/21 00:01
S23498.55	Dupe 4	Liquid	04/19/21 00:01
S23498.56	Dupe 5	Soil	04/19/21 00:01
S23498.57	Dupe 6	Soil	04/19/21 00:01
S23498.58	Dupe 7	Liquid	04/19/21 00:01
S23498.59	Dupe 8	Liquid	04/19/21 00:01
S23498.60	Dupe 9	Liquid	04/19/21 00:01
S23498.61	Dupe 10	Liquid	04/19/21 00:01
S23498.62	Dupe 11	Soil	04/19/21 00:01
S23498.63	Dupe 12	Soil	04/19/21 00:01
S23498.64	Dupe 13	Liquid	04/19/21 00:01
S23498.65	Dupe 14	Liquid	04/19/21 00:01
S23498.66	Dupe 15	Soil	04/19/21 00:01
S23498.67	Dupe 16	Soil	04/19/21 00:01



Lab Sample ID: S23498.01

Sample Tag: SB-9-21 8'

Collected Date/Time: 04/20/2021 09:24

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.67/6.82/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	87	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 00:10, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	34	ng/kg	6.21	375-22-4	
PFPeA*	Not detected	62	20	ng/kg	6.21	2706-90-3	
4:2 FTSA*	Not detected	62	14	ng/kg	6.21	757124-72-4	
PFHxA*	Not detected	62	12	ng/kg	6.21	307-24-4	
PFBS*	Not detected	62	14	ng/kg	6.21	375-73-5	
PFHpA*	Not detected	62	17	ng/kg	6.21	375-85-9	
PFPeS*	Not detected	62	17	ng/kg	6.21	2706-91-4	
6:2 FTSA*	Not detected	62	20	ng/kg	6.21	27619-97-2	
PFOA*	Not detected	62	11	ng/kg	6.21	335-67-1	
PFHxS*	Not detected	62	8.7	ng/kg	6.21	355-46-4	
PFHxS-LN*	Not detected	62	8.7	ng/kg	6.21	355-46-4-LN	
PFHxS-BR*	Not detected	62	8.7	ng/kg	6.21	355-46-4-BR	
PFNA*	Not detected	62	16	ng/kg	6.21	375-95-1	
8:2 FTSA*	Not detected	62	25	ng/kg	6.21	39108-34-4	
PFHpS*	Not detected	62	19	ng/kg	6.21	375-92-8	
PFDA*	Not detected	62	30	ng/kg	6.21	335-76-2	
N-MeFOSAA*	Not detected	62	14	ng/kg	6.21	2355-31-9	
EtFOSAA*	Not detected	62	24	ng/kg	6.21	2991-50-6	
PFOS*	410	62	11	ng/kg	6.21	1763-23-1	
PFOS-LN*	120	62	11	ng/kg	6.21	1763-23-1-LN	
PFOS-BR*	280	62	11	ng/kg	6.21	1763-23-1-BR	
PFUnDA*	Not detected	62	15	ng/kg	6.21	2058-94-8	
PFNS*	Not detected	62	13	ng/kg	6.21	68259-12-1	
PFDoDA*	Not detected	62	16	ng/kg	6.21	307-55-1	
PFDS*	Not detected	62	17	ng/kg	6.21	335-77-3	
PFTTrDA*	Not detected	62	14	ng/kg	6.21	72629-94-8	
FOSA*	Not detected	62	12	ng/kg	6.21	754-91-6	
PFTeDA*	Not detected	62	12	ng/kg	6.21	376-06-7	
11CI-PF3OUdS*	Not detected	62	15	ng/kg	6.21	763051-92-9	
9CI-PF3ONS*	Not detected	62	14	ng/kg	6.21	756426-58-1	
ADONA*	Not detected	62	17	ng/kg	6.21	919005-14-4	



Lab Sample ID: S23498.01 (continued)

Sample Tag: SB-9-21 8'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 00:10, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	62	16	ng/kg	6.21	13252-13-6	



Lab Sample ID: S23498.02

Sample Tag: SB-9-21 11'

Collected Date/Time: 04/20/2021 09:31

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.63/6.97/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	87	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 00:29, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	140	37	ng/kg	6.92	375-22-4	
PFPeA*	Not detected	69	22	ng/kg	6.92	2706-90-3	
4:2 FTSA*	Not detected	69	15	ng/kg	6.92	757124-72-4	
PFHxA*	Not detected	69	14	ng/kg	6.92	307-24-4	
PFBS*	Not detected	69	16	ng/kg	6.92	375-73-5	
PFHpA*	Not detected	69	19	ng/kg	6.92	375-85-9	
PFPeS*	Not detected	69	19	ng/kg	6.92	2706-91-4	
6:2 FTSA*	Not detected	69	23	ng/kg	6.92	27619-97-2	
PFOA*	Not detected	69	12	ng/kg	6.92	335-67-1	
PFHxS*	Not detected	69	9.7	ng/kg	6.92	355-46-4	
PFHxS-LN*	Not detected	69	9.7	ng/kg	6.92	355-46-4-LN	
PFHxS-BR*	Not detected	69	9.7	ng/kg	6.92	355-46-4-BR	
PFNA*	Not detected	69	18	ng/kg	6.92	375-95-1	
8:2 FTSA*	Not detected	69	28	ng/kg	6.92	39108-34-4	
PFHpS*	Not detected	69	21	ng/kg	6.92	375-92-8	
PFDA*	Not detected	69	33	ng/kg	6.92	335-76-2	
N-MeFOSAA*	Not detected	69	15	ng/kg	6.92	2355-31-9	
EtFOSAA*	Not detected	69	27	ng/kg	6.92	2991-50-6	
PFOS*	630	69	12	ng/kg	6.92	1763-23-1	
PFOS-LN*	510	69	12	ng/kg	6.92	1763-23-1-LN	
PFOS-BR*	120	69	12	ng/kg	6.92	1763-23-1-BR	
PFUnDA*	Not detected	69	17	ng/kg	6.92	2058-94-8	
PFNS*	Not detected	69	15	ng/kg	6.92	68259-12-1	
PFDoDA*	Not detected	69	18	ng/kg	6.92	307-55-1	
PFDS*	Not detected	69	19	ng/kg	6.92	335-77-3	
PFTTrDA*	Not detected	69	16	ng/kg	6.92	72629-94-8	
FOSA*	Not detected	69	14	ng/kg	6.92	754-91-6	
PFTeDA*	Not detected	69	13	ng/kg	6.92	376-06-7	
11CI-PF3OUdS*	Not detected	69	17	ng/kg	6.92	763051-92-9	
9CI-PF3ONS*	Not detected	69	15	ng/kg	6.92	756426-58-1	
ADONA*	Not detected	69	19	ng/kg	6.92	919005-14-4	



Lab Sample ID: S23498.02 (continued)

Sample Tag: SB-9-21 11'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 00:29, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	69	17	ng/kg	6.92	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.03

Sample Tag: SB-9-21 19'

Collected Date/Time: 04/20/2021 09:30

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.40/6.95/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/27/21 01:41, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.02	375-22-4	
PFPeA*	Not detected	4.0	1.0	ng/L	2.02	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.02	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2.02	307-24-4	
PFBS*	1.7	2.0	1.4	ng/L	2.02	375-73-5	J
PFHpA*	Not detected	2.0	1.4	ng/L	2.02	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.02	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.02	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2.02	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2.02	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.02	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.02	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.02	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.02	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.02	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.02	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.02	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2.02	2991-50-6	
PFOS*	13	2.0	2.0	ng/L	2.02	1763-23-1	
PFOS-LN*	7.3	2.0	2.0	ng/L	2.02	1763-23-1-LN	
PFOS-BR*	6.0	2.0	2.0	ng/L	2.02	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.02	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.02	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2.02	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.02	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2.02	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.02	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2.02	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.02	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.02	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.02	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	2.02	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.04

Sample Tag: SB-9-21 22'

Collected Date/Time: 04/20/2021 09:53

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.42/6.94/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/27/21 02:00, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.01	375-22-4	
PFPeA*	Not detected	4.0	1.0	ng/L	2.01	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.01	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2.01	307-24-4	
PFBS*	1.9	2.0	1.4	ng/L	2.01	375-73-5	J
PFHpA*	Not detected	2.0	1.4	ng/L	2.01	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.01	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.01	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2.01	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2.01	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.01	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.01	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.01	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.01	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.01	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.01	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.01	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2.01	2991-50-6	
PFOS*	13	2.0	2.0	ng/L	2.01	1763-23-1	
PFOS-LN*	8.0	2.0	2.0	ng/L	2.01	1763-23-1-LN	
PFOS-BR*	5.1	2.0	2.0	ng/L	2.01	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.01	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.01	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2.01	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.01	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2.01	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.01	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2.01	376-06-7	
11CI-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.01	763051-92-9	
9CI-PF3ONS*	Not detected	2.0	1.4	ng/L	2.01	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.01	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	2.01	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.05

Sample Tag: SB-8-21 24'

Collected Date/Time: 04/20/2021 10:50

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.45/6.94/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/27/21 02:20, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	12	10	ng/L	2	375-22-4	
PFPeA*	Not detected	4.0	1.0	ng/L	2	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2	307-24-4	
PFBS*	2.1	2.0	1.4	ng/L	2	375-73-5	
PFHpA*	1.8	2.0	1.4	ng/L	2	375-85-9	J
PFPeS*	Not detected	2.0	1.8	ng/L	2	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2	27619-97-2	
PFOA*	2.5	2.0	1.6	ng/L	2	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2	2991-50-6	
PFOS*	8.2	2.0	2.0	ng/L	2	1763-23-1	
PFOS-LN*	3.0	2.0	2.0	ng/L	2	1763-23-1-LN	
PFOS-BR*	4.9	2.0	2.0	ng/L	2	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	2	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.06

Sample Tag: SB-8-21 20'

Collected Date/Time: 04/20/2021 11:04

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.50/6.88/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/27/21 02:39, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	12	9.8	ng/L	1.96	375-22-4	
PFPeA*	Not detected	3.9	0.98	ng/L	1.96	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.96	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.96	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.96	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.96	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.96	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.96	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.96	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.96	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.96	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.96	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.96	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.96	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.96	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.96	2991-50-6	
PFOS*	13	2.0	1.9	ng/L	1.96	1763-23-1	
PFOS-LN*	8.9	2.0	1.9	ng/L	1.96	1763-23-1-LN	
PFOS-BR*	3.7	2.0	1.9	ng/L	1.96	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.96	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.96	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.96	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.96	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.96	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.96	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.96	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.96	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.96	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.96	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	1.96	13252-13-6	

Lab Sample ID: S23498.07

Sample Tag: SB-8-21 10'

Collected Date/Time: 04/20/2021 10:54

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.65/6.85/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	88	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/30/21 20:48, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	130	34	ng/kg	6.31	375-22-4	
PFPeA*	Not detected	63	20	ng/kg	6.31	2706-90-3	
4:2 FTSA*	Not detected	63	14	ng/kg	6.31	757124-72-4	I
PFHxA*	Not detected	63	13	ng/kg	6.31	307-24-4	
PFBS*	Not detected	63	15	ng/kg	6.31	375-73-5	
PFHpA*	Not detected	63	18	ng/kg	6.31	375-85-9	
PFPeS*	Not detected	63	18	ng/kg	6.31	2706-91-4	
6:2 FTSA*	Not detected	63	21	ng/kg	6.31	27619-97-2	I
PFOA*	Not detected	63	11	ng/kg	6.31	335-67-1	
PFHxS*	Not detected	63	8.8	ng/kg	6.31	355-46-4	
PFHxS-LN*	Not detected	63	8.8	ng/kg	6.31	355-46-4-LN	
PFHxS-BR*	Not detected	63	8.8	ng/kg	6.31	355-46-4-BR	
PFNA*	Not detected	63	16	ng/kg	6.31	375-95-1	
8:2 FTSA*	Not detected	63	25	ng/kg	6.31	39108-34-4	I
PFHpS*	Not detected	63	19	ng/kg	6.31	375-92-8	
PFDA*	Not detected	63	30	ng/kg	6.31	335-76-2	
N-MeFOSAA*	Not detected	63	14	ng/kg	6.31	2355-31-9	
EtFOSAA*	Not detected	63	25	ng/kg	6.31	2991-50-6	
PFOS*	85	63	11	ng/kg	6.31	1763-23-1	
PFOS-LN*	22	63	11	ng/kg	6.31	1763-23-1-LN	J
PFOS-BR*	60	63	11	ng/kg	6.31	1763-23-1-BR	J
PFUnDA*	Not detected	63	15	ng/kg	6.31	2058-94-8	
PFNS*	Not detected	63	13	ng/kg	6.31	68259-12-1	
PFDoDA*	Not detected	63	16	ng/kg	6.31	307-55-1	
PFDS*	Not detected	63	18	ng/kg	6.31	335-77-3	
PFTTrDA*	Not detected	63	15	ng/kg	6.31	72629-94-8	
FOSA*	Not detected	63	13	ng/kg	6.31	754-91-6	I
PFTeDA*	Not detected	63	12	ng/kg	6.31	376-06-7	
11CI-PF3OUdS*	Not detected	63	15	ng/kg	6.31	763051-92-9	

I-Matrix interference with internal standard

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.07 (continued)

Sample Tag: SB-8-21 10'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/30/21 20:48, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
9CI-PF3ONS*	Not detected	63	14	ng/kg	6.31	756426-58-1	
ADONA*	Not detected	63	18	ng/kg	6.31	919005-14-4	
HFPO-DA*	Not detected	63	16	ng/kg	6.31	13252-13-6	

Lab Sample ID: S23498.08

Sample Tag: SB-8-21 7'

Collected Date/Time: 04/20/2021 11:51

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.99/6.92/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	91	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 01:08, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	110	29	ng/kg	5.31	375-22-4	
PFPeA*	Not detected	53	17	ng/kg	5.31	2706-90-3	
4:2 FTSA*	Not detected	53	12	ng/kg	5.31	757124-72-4	
PFHxA*	Not detected	53	11	ng/kg	5.31	307-24-4	
PFBS*	Not detected	53	12	ng/kg	5.31	375-73-5	
PFHpA*	Not detected	53	15	ng/kg	5.31	375-85-9	
PFPeS*	Not detected	53	15	ng/kg	5.31	2706-91-4	
6:2 FTSA*	Not detected	53	18	ng/kg	5.31	27619-97-2	
PFOA*	Not detected	53	9.0	ng/kg	5.31	335-67-1	
PFHxS*	Not detected	53	7.4	ng/kg	5.31	355-46-4	
PFHxS-LN*	Not detected	53	7.4	ng/kg	5.31	355-46-4-LN	
PFHxS-BR*	Not detected	53	7.4	ng/kg	5.31	355-46-4-BR	
PFNA*	Not detected	53	14	ng/kg	5.31	375-95-1	
8:2 FTSA*	Not detected	53	21	ng/kg	5.31	39108-34-4	
PFHpS*	Not detected	53	16	ng/kg	5.31	375-92-8	
PFDA*	Not detected	53	25	ng/kg	5.31	335-76-2	
N-MeFOSAA*	Not detected	53	12	ng/kg	5.31	2355-31-9	
EtFOSAA*	Not detected	53	21	ng/kg	5.31	2991-50-6	
PFOS*	20	53	9.0	ng/kg	5.31	1763-23-1	J
PFOS-LN*	15	53	9.0	ng/kg	5.31	1763-23-1-LN	J
PFOS-BR*	Not detected	53	9.0	ng/kg	5.31	1763-23-1-BR	
PFUnDA*	Not detected	53	13	ng/kg	5.31	2058-94-8	
PFNS*	Not detected	53	11	ng/kg	5.31	68259-12-1	
PFDoDA*	Not detected	53	14	ng/kg	5.31	307-55-1	
PFDS*	Not detected	53	15	ng/kg	5.31	335-77-3	
PFTTrDA*	Not detected	53	12	ng/kg	5.31	72629-94-8	
FOSA*	Not detected	53	11	ng/kg	5.31	754-91-6	
PFTeDA*	Not detected	53	10	ng/kg	5.31	376-06-7	
11CI-PF3OUdS*	Not detected	53	13	ng/kg	5.31	763051-92-9	
9CI-PF3ONS*	Not detected	53	12	ng/kg	5.31	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.08 (continued)

Sample Tag: SB-8-21 7'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 01:08, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	53	15	ng/kg	5.31	919005-14-4	
HFPO-DA*	Not detected	53	13	ng/kg	5.31	13252-13-6	



Lab Sample ID: S23498.09

Sample Tag: SB-6-21 7'

Collected Date/Time: 04/20/2021 12:00

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.90/6.84/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	84	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 01:28, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	31	ng/kg	5.78	375-22-4	
PFPeA*	Not detected	58	18	ng/kg	5.78	2706-90-3	
4:2 FTSA*	Not detected	58	13	ng/kg	5.78	757124-72-4	
PFHxA*	Not detected	58	12	ng/kg	5.78	307-24-4	
PFBS*	Not detected	58	13	ng/kg	5.78	375-73-5	
PFHpA*	Not detected	58	16	ng/kg	5.78	375-85-9	
PFPeS*	Not detected	58	16	ng/kg	5.78	2706-91-4	
6:2 FTSA*	Not detected	58	19	ng/kg	5.78	27619-97-2	
PFOA*	Not detected	58	9.8	ng/kg	5.78	335-67-1	
PFHxS*	Not detected	58	8.1	ng/kg	5.78	355-46-4	
PFHxS-LN*	Not detected	58	8.1	ng/kg	5.78	355-46-4-LN	
PFHxS-BR*	Not detected	58	8.1	ng/kg	5.78	355-46-4-BR	
PFNA*	Not detected	58	15	ng/kg	5.78	375-95-1	
8:2 FTSA*	Not detected	58	23	ng/kg	5.78	39108-34-4	
PFHpS*	Not detected	58	17	ng/kg	5.78	375-92-8	
PFDA*	Not detected	58	28	ng/kg	5.78	335-76-2	
N-MeFOSAA*	Not detected	58	13	ng/kg	5.78	2355-31-9	
EtFOSAA*	Not detected	58	23	ng/kg	5.78	2991-50-6	
PFOS*	Not detected	58	9.8	ng/kg	5.78	1763-23-1	
PFOS-LN*	Not detected	58	9.8	ng/kg	5.78	1763-23-1-LN	
PFOS-BR*	Not detected	58	9.8	ng/kg	5.78	1763-23-1-BR	
PFUnDA*	Not detected	58	14	ng/kg	5.78	2058-94-8	
PFNS*	Not detected	58	12	ng/kg	5.78	68259-12-1	
PFDoDA*	Not detected	58	15	ng/kg	5.78	307-55-1	
PFDS*	Not detected	58	16	ng/kg	5.78	335-77-3	
PFTTrDA*	Not detected	58	13	ng/kg	5.78	72629-94-8	
FOSA*	Not detected	58	12	ng/kg	5.78	754-91-6	
PFTeDA*	Not detected	58	11	ng/kg	5.78	376-06-7	
11CI-PF3OUdS*	Not detected	58	14	ng/kg	5.78	763051-92-9	
9CI-PF3ONS*	Not detected	58	13	ng/kg	5.78	756426-58-1	
ADONA*	Not detected	58	16	ng/kg	5.78	919005-14-4	



Lab Sample ID: S23498.09 (continued)

Sample Tag: SB-6-21 7'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 01:28, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	58	14	ng/kg	5.78	13252-13-6	



Lab Sample ID: S23498.10

Sample Tag: SB-6-21 15'

Collected Date/Time: 04/20/2021 12:08

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.72/6.82/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	93	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 01:47, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	110	31	ng/kg	5.66	375-22-4	
PFPeA*	Not detected	57	18	ng/kg	5.66	2706-90-3	
4:2 FTSA*	Not detected	57	12	ng/kg	5.66	757124-72-4	
PFHxA*	Not detected	57	11	ng/kg	5.66	307-24-4	
PFBS*	Not detected	57	13	ng/kg	5.66	375-73-5	
PFHpA*	Not detected	57	16	ng/kg	5.66	375-85-9	
PFPeS*	Not detected	57	16	ng/kg	5.66	2706-91-4	
6:2 FTSA*	Not detected	57	19	ng/kg	5.66	27619-97-2	
PFOA*	Not detected	57	9.6	ng/kg	5.66	335-67-1	
PFHxS*	Not detected	57	7.9	ng/kg	5.66	355-46-4	
PFHxS-LN*	Not detected	57	7.9	ng/kg	5.66	355-46-4-LN	
PFHxS-BR*	Not detected	57	7.9	ng/kg	5.66	355-46-4-BR	
PFNA*	Not detected	57	15	ng/kg	5.66	375-95-1	
8:2 FTSA*	Not detected	57	23	ng/kg	5.66	39108-34-4	
PFHpS*	Not detected	57	17	ng/kg	5.66	375-92-8	
PFDA*	Not detected	57	27	ng/kg	5.66	335-76-2	
N-MeFOSAA*	Not detected	57	12	ng/kg	5.66	2355-31-9	
EtFOSAA*	89	57	22	ng/kg	5.66	2991-50-6	
PFOS*	73	57	9.6	ng/kg	5.66	1763-23-1	
PFOS-LN*	56	57	9.6	ng/kg	5.66	1763-23-1-LN	J
PFOS-BR*	15	57	9.6	ng/kg	5.66	1763-23-1-BR	J
PFUnDA*	Not detected	57	14	ng/kg	5.66	2058-94-8	
PFNS*	Not detected	57	12	ng/kg	5.66	68259-12-1	
PFDoDA*	Not detected	57	15	ng/kg	5.66	307-55-1	
PFDS*	Not detected	57	16	ng/kg	5.66	335-77-3	
PFTTrDA*	Not detected	57	13	ng/kg	5.66	72629-94-8	
FOSA*	Not detected	57	11	ng/kg	5.66	754-91-6	
PFTeDA*	Not detected	57	11	ng/kg	5.66	376-06-7	
11CI-PF3OUdS*	Not detected	57	14	ng/kg	5.66	763051-92-9	
9CI-PF3ONS*	Not detected	57	12	ng/kg	5.66	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.10 (continued)

Sample Tag: SB-6-21 15'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 01:47, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	57	16	ng/kg	5.66	919005-14-4	
HFPO-DA*	Not detected	57	14	ng/kg	5.66	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.11

Sample Tag: SB-6-21 24'

Collected Date/Time: 04/20/2021 11:57

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.32/6.99/11	ASTMD7979-19M	04/23/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/27/21 02:59, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.06	375-22-4	
PFPeA*	Not detected	4.1	1.0	ng/L	2.06	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.6	ng/L	2.06	757124-72-4	I
PFHxA*	Not detected	2.1	1.4	ng/L	2.06	307-24-4	
PFBS*	2.0	2.1	1.4	ng/L	2.06	375-73-5	J
PFHpA*	Not detected	2.1	1.4	ng/L	2.06	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.06	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.06	27619-97-2	
PFOA*	2.9	2.1	1.6	ng/L	2.06	335-67-1	
PFHxS*	4.7	2.1	1.6	ng/L	2.06	355-46-4	
PFHxS-LN*	3.3	2.1	1.6	ng/L	2.06	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.06	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.06	39108-34-4	
PFHpS*	3.0	2.1	2.1	ng/L	2.06	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.06	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.06	2355-31-9	
EtFOSAA*	14	4.1	2.1	ng/L	2.06	2991-50-6	
PFOS*	170	2.1	2.0	ng/L	2.06	1763-23-1	
PFOS-LN*	110	2.1	2.0	ng/L	2.06	1763-23-1-LN	
PFOS-BR*	60	2.1	2.0	ng/L	2.06	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.4	ng/L	2.06	2058-94-8	
PFNS*	Not detected	2.1	1.4	ng/L	2.06	68259-12-1	
PFDODA*	Not detected	2.1	1.6	ng/L	2.06	307-55-1	
PFDS*	Not detected	2.1	1.4	ng/L	2.06	335-77-3	
PFTTrDA*	Not detected	2.1	1.2	ng/L	2.06	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.06	754-91-6	
PFTeDA*	Not detected	4.1	1.9	ng/L	2.06	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.06	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.4	ng/L	2.06	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.06	919005-14-4	
HFPO-DA*	Not detected	2.1	2.1	ng/L	2.06	13252-13-6	

I-Matrix interference with internal standard

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.12

Sample Tag: SB-6-21 22'

Collected Date/Time: 04/20/2021 12:30

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.34/6.81/11	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 08:33, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	30	10.0	ng/L	1.99	375-22-4	X
PFPeA*	Not detected	4.0	1.00	ng/L	1.99	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.99	757124-72-4	I
PFHxA*	Not detected	2.8	1.4	ng/L	1.99	307-24-4	X
PFBS*	Not detected	2.0	1.4	ng/L	1.99	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.99	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.99	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.99	27619-97-2	
PFOA*	2.5	2.0	1.6	ng/L	1.99	335-67-1	
PFHxS*	5.9	2.0	1.6	ng/L	1.99	355-46-4	
PFHxS-LN*	3.4	2.0	1.6	ng/L	1.99	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.99	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.99	375-95-1	
8:2 FTSA*	Not detected	2.0	1.00	ng/L	1.99	39108-34-4	
PFHpS*	2.1	2.0	2.0	ng/L	1.99	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.99	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.99	2355-31-9	
EtFOSAA*	32	4.0	2.0	ng/L	1.99	2991-50-6	
PFOS*	150	2.0	2.0	ng/L	1.99	1763-23-1	
PFOS-LN*	94	2.0	2.0	ng/L	1.99	1763-23-1-LN	
PFOS-BR*	55	2.0	2.0	ng/L	1.99	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.99	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.99	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.99	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.99	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.99	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.99	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	1.99	376-06-7	
11CI-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.99	763051-92-9	
9CI-PF3ONS*	Not detected	2.0	1.4	ng/L	1.99	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.99	919005-14-4	
HFPO-DA*	Not detected	10.0	2.0	ng/L	1.99	13252-13-6	

X-Elevated reporting limit due to matrix interference

I-Matrix interference with internal standard



Lab Sample ID: S23498.13

Sample Tag: SB-3-21 5'

Collected Date/Time: 04/20/2021 14:15

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.86/6.98/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	89	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 02:07, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	32	ng/kg	5.98	375-22-4	
PFPeA*	Not detected	60	19	ng/kg	5.98	2706-90-3	
4:2 FTSA*	Not detected	60	13	ng/kg	5.98	757124-72-4	
PFHxA*	Not detected	60	12	ng/kg	5.98	307-24-4	
PFBS*	Not detected	60	14	ng/kg	5.98	375-73-5	
PFHpA*	Not detected	60	17	ng/kg	5.98	375-85-9	
PFPeS*	Not detected	60	17	ng/kg	5.98	2706-91-4	
6:2 FTSA*	Not detected	60	20	ng/kg	5.98	27619-97-2	
PFOA*	Not detected	60	10	ng/kg	5.98	335-67-1	
PFHxS*	Not detected	60	8.4	ng/kg	5.98	355-46-4	
PFHxS-LN*	Not detected	60	8.4	ng/kg	5.98	355-46-4-LN	
PFHxS-BR*	Not detected	60	8.4	ng/kg	5.98	355-46-4-BR	
PFNA*	Not detected	60	16	ng/kg	5.98	375-95-1	
8:2 FTSA*	Not detected	60	24	ng/kg	5.98	39108-34-4	
PFHpS*	Not detected	60	18	ng/kg	5.98	375-92-8	
PFDA*	Not detected	60	29	ng/kg	5.98	335-76-2	
N-MeFOSAA*	Not detected	60	13	ng/kg	5.98	2355-31-9	
EtFOSAA*	Not detected	60	23	ng/kg	5.98	2991-50-6	
PFOS*	Not detected	60	10	ng/kg	5.98	1763-23-1	
PFOS-LN*	Not detected	60	10	ng/kg	5.98	1763-23-1-LN	
PFOS-BR*	Not detected	60	10	ng/kg	5.98	1763-23-1-BR	
PFUnDA*	Not detected	60	14	ng/kg	5.98	2058-94-8	
PFNS*	Not detected	60	13	ng/kg	5.98	68259-12-1	
PFDoDA*	Not detected	60	16	ng/kg	5.98	307-55-1	
PFDS*	Not detected	60	17	ng/kg	5.98	335-77-3	
PFTTrDA*	Not detected	60	14	ng/kg	5.98	72629-94-8	
FOSA*	Not detected	60	12	ng/kg	5.98	754-91-6	
PFTeDA*	Not detected	60	11	ng/kg	5.98	376-06-7	
11CI-PF3OUdS*	Not detected	60	14	ng/kg	5.98	763051-92-9	
9CI-PF3ONS*	Not detected	60	13	ng/kg	5.98	756426-58-1	
ADONA*	Not detected	60	17	ng/kg	5.98	919005-14-4	



Lab Sample ID: S23498.13 (continued)
Sample Tag: SB-3-21 5'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 02:07, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	60	15	ng/kg	5.98	13252-13-6	



Lab Sample ID: S23498.14

Sample Tag: SB-3-21 11'

Collected Date/Time: 04/20/2021 14:09

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.84/6.79/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	85	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 02:26, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	110	31	ng/kg	5.74	375-22-4	
PFPeA*	Not detected	57	18	ng/kg	5.74	2706-90-3	
4:2 FTSA*	Not detected	57	13	ng/kg	5.74	757124-72-4	
PFHxA*	Not detected	57	11	ng/kg	5.74	307-24-4	
PFBS*	Not detected	57	13	ng/kg	5.74	375-73-5	
PFHpA*	Not detected	57	16	ng/kg	5.74	375-85-9	
PFPeS*	Not detected	57	16	ng/kg	5.74	2706-91-4	
6:2 FTSA*	Not detected	57	19	ng/kg	5.74	27619-97-2	
PFOA*	Not detected	57	9.8	ng/kg	5.74	335-67-1	
PFHxS*	Not detected	57	8.0	ng/kg	5.74	355-46-4	
PFHxS-LN*	Not detected	57	8.0	ng/kg	5.74	355-46-4-LN	
PFHxS-BR*	Not detected	57	8.0	ng/kg	5.74	355-46-4-BR	
PFNA*	Not detected	57	15	ng/kg	5.74	375-95-1	
8:2 FTSA*	Not detected	57	23	ng/kg	5.74	39108-34-4	
PFHpS*	Not detected	57	17	ng/kg	5.74	375-92-8	
PFDA*	Not detected	57	28	ng/kg	5.74	335-76-2	
N-MeFOSAA*	Not detected	57	13	ng/kg	5.74	2355-31-9	
EtFOSAA*	Not detected	57	22	ng/kg	5.74	2991-50-6	
PFOS*	53	57	9.8	ng/kg	5.74	1763-23-1	J
PFOS-LN*	21	57	9.8	ng/kg	5.74	1763-23-1-LN	J
PFOS-BR*	29	57	9.8	ng/kg	5.74	1763-23-1-BR	J
PFUnDA*	Not detected	57	14	ng/kg	5.74	2058-94-8	
PFNS*	Not detected	57	12	ng/kg	5.74	68259-12-1	
PFDoDA*	Not detected	57	15	ng/kg	5.74	307-55-1	
PFDS*	Not detected	57	16	ng/kg	5.74	335-77-3	
PFTTrDA*	Not detected	57	13	ng/kg	5.74	72629-94-8	
FOSA*	Not detected	57	11	ng/kg	5.74	754-91-6	
PFTeDA*	Not detected	57	11	ng/kg	5.74	376-06-7	
11CI-PF3OUdS*	Not detected	57	14	ng/kg	5.74	763051-92-9	
9CI-PF3ONS*	Not detected	57	13	ng/kg	5.74	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.14 (continued)

Sample Tag: SB-3-21 11'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 02:26, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	57	16	ng/kg	5.74	919005-14-4	
HFPO-DA*	Not detected	57	14	ng/kg	5.74	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.15

Sample Tag: SB-3-21 23'

Collected Date/Time: 04/20/2021 14:17

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.24/6.90/11	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 09:12, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.06	375-22-4	
PFPeA*	Not detected	4.1	1.0	ng/L	2.06	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.6	ng/L	2.06	757124-72-4	
PFHxA*	Not detected	2.1	1.4	ng/L	2.06	307-24-4	
PFBS*	Not detected	2.1	1.4	ng/L	2.06	375-73-5	
PFHpA*	Not detected	2.1	1.4	ng/L	2.06	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.06	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.06	27619-97-2	
PFOA*	Not detected	2.1	1.6	ng/L	2.06	335-67-1	
PFHxS*	Not detected	2.5	1.6	ng/L	2.06	355-46-4	X
PFHxS-LN*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.06	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.06	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.06	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.06	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.06	2355-31-9	
EtFOSAA*	Not detected	4.1	2.1	ng/L	2.06	2991-50-6	
PFOS*	86	2.1	2.0	ng/L	2.06	1763-23-1	
PFOS-LN*	56	2.1	2.0	ng/L	2.06	1763-23-1-LN	
PFOS-BR*	29	2.1	2.0	ng/L	2.06	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.4	ng/L	2.06	2058-94-8	
PFNS*	Not detected	2.1	1.4	ng/L	2.06	68259-12-1	
PFDODA*	Not detected	2.1	1.6	ng/L	2.06	307-55-1	
PFDS*	Not detected	2.1	1.4	ng/L	2.06	335-77-3	
PFTTrDA*	Not detected	2.1	1.2	ng/L	2.06	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.06	754-91-6	
PFTeDA*	Not detected	4.1	1.9	ng/L	2.06	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.06	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.4	ng/L	2.06	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.06	919005-14-4	
HFPO-DA*	Not detected	10	2.1	ng/L	2.06	13252-13-6	

X-Elevated reporting limit due to matrix interference



Lab Sample ID: S23498.16

Sample Tag: SB-4-21 7'

Collected Date/Time: 04/20/2021 15:38

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.88/6.96/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	78	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 02:46, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	130	36	ng/kg	6.68	375-22-4	
PFPeA*	Not detected	67	21	ng/kg	6.68	2706-90-3	
4:2 FTSA*	Not detected	67	15	ng/kg	6.68	757124-72-4	
PFHxA*	Not detected	67	13	ng/kg	6.68	307-24-4	
PFBS*	Not detected	67	15	ng/kg	6.68	375-73-5	
PFHpA*	Not detected	67	19	ng/kg	6.68	375-85-9	
PFPeS*	Not detected	67	19	ng/kg	6.68	2706-91-4	
6:2 FTSA*	Not detected	67	22	ng/kg	6.68	27619-97-2	
PFOA*	Not detected	67	11	ng/kg	6.68	335-67-1	
PFHxS*	Not detected	67	9.4	ng/kg	6.68	355-46-4	
PFHxS-LN*	Not detected	67	9.4	ng/kg	6.68	355-46-4-LN	
PFHxS-BR*	Not detected	67	9.4	ng/kg	6.68	355-46-4-BR	
PFNA*	Not detected	67	17	ng/kg	6.68	375-95-1	
8:2 FTSA*	Not detected	67	27	ng/kg	6.68	39108-34-4	
PFHpS*	Not detected	67	20	ng/kg	6.68	375-92-8	
PFDA*	Not detected	67	32	ng/kg	6.68	335-76-2	
N-MeFOSAA*	Not detected	67	15	ng/kg	6.68	2355-31-9	
EtFOSAA*	Not detected	67	26	ng/kg	6.68	2991-50-6	
PFOS*	Not detected	67	11	ng/kg	6.68	1763-23-1	
PFOS-LN*	Not detected	67	11	ng/kg	6.68	1763-23-1-LN	
PFOS-BR*	Not detected	67	11	ng/kg	6.68	1763-23-1-BR	
PFUnDA*	Not detected	67	16	ng/kg	6.68	2058-94-8	
PFNS*	Not detected	67	14	ng/kg	6.68	68259-12-1	
PFDoDA*	Not detected	67	17	ng/kg	6.68	307-55-1	
PFDS*	Not detected	67	19	ng/kg	6.68	335-77-3	
PFTTrDA*	Not detected	67	15	ng/kg	6.68	72629-94-8	
FOSA*	Not detected	67	13	ng/kg	6.68	754-91-6	
PFTeDA*	Not detected	67	13	ng/kg	6.68	376-06-7	
11CI-PF3OUdS*	Not detected	67	16	ng/kg	6.68	763051-92-9	
9CI-PF3ONS*	Not detected	67	15	ng/kg	6.68	756426-58-1	
ADONA*	Not detected	67	19	ng/kg	6.68	919005-14-4	



Lab Sample ID: S23498.16 (continued)

Sample Tag: SB-4-21 7'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 02:46, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	67	17	ng/kg	6.68	13252-13-6	

Lab Sample ID: S23498.17

Sample Tag: SB-4-21 15'

Collected Date/Time: 04/20/2021 15:34

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.93/6.94/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	83	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 03:05, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	33	ng/kg	6.05	375-22-4	
PFPeA*	Not detected	61	19	ng/kg	6.05	2706-90-3	
4:2 FTSA*	Not detected	61	13	ng/kg	6.05	757124-72-4	
PFHxA*	Not detected	61	12	ng/kg	6.05	307-24-4	
PFBS*	Not detected	61	14	ng/kg	6.05	375-73-5	
PFHpA*	Not detected	61	17	ng/kg	6.05	375-85-9	
PFPeS*	Not detected	61	17	ng/kg	6.05	2706-91-4	
6:2 FTSA*	Not detected	61	20	ng/kg	6.05	27619-97-2	
PFOA*	Not detected	61	10	ng/kg	6.05	335-67-1	
PFHxS*	Not detected	61	8.5	ng/kg	6.05	355-46-4	
PFHxS-LN*	Not detected	61	8.5	ng/kg	6.05	355-46-4-LN	
PFHxS-BR*	Not detected	61	8.5	ng/kg	6.05	355-46-4-BR	
PFNA*	Not detected	61	16	ng/kg	6.05	375-95-1	
8:2 FTSA*	Not detected	61	24	ng/kg	6.05	39108-34-4	
PFHpS*	Not detected	61	18	ng/kg	6.05	375-92-8	
PFDA*	Not detected	61	29	ng/kg	6.05	335-76-2	
N-MeFOSAA*	Not detected	61	13	ng/kg	6.05	2355-31-9	
EtFOSAA*	Not detected	61	24	ng/kg	6.05	2991-50-6	
PFOS*	14	61	10	ng/kg	6.05	1763-23-1	J
PFOS-LN*	Not detected	61	10	ng/kg	6.05	1763-23-1-LN	
PFOS-BR*	Not detected	61	10	ng/kg	6.05	1763-23-1-BR	
PFUnDA*	Not detected	61	15	ng/kg	6.05	2058-94-8	
PFNS*	Not detected	61	13	ng/kg	6.05	68259-12-1	
PFDoDA*	Not detected	61	16	ng/kg	6.05	307-55-1	
PFDS*	Not detected	61	17	ng/kg	6.05	335-77-3	
PFTTrDA*	Not detected	61	14	ng/kg	6.05	72629-94-8	
FOSA*	Not detected	61	12	ng/kg	6.05	754-91-6	
PFTeDA*	Not detected	61	11	ng/kg	6.05	376-06-7	
11CI-PF3OUdS*	Not detected	61	15	ng/kg	6.05	763051-92-9	
9CI-PF3ONS*	Not detected	61	13	ng/kg	6.05	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.17 (continued)

Sample Tag: SB-4-21 15'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 03:05, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	61	17	ng/kg	6.05	919005-14-4	
HFPO-DA*	Not detected	61	15	ng/kg	6.05	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.18

Sample Tag: SB-4-21 24'

Collected Date/Time: 04/20/2021 15:42

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.36/6.92/11	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 09:51, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	20	10	ng/L	2.02	375-22-4	X
PFPeA*	Not detected	4.0	1.0	ng/L	2.02	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.02	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2.02	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2.02	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2.02	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.02	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.02	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2.02	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2.02	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.02	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.02	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.02	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.02	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.02	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.02	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.02	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2.02	2991-50-6	
PFOS*	4.9	2.0	2.0	ng/L	2.02	1763-23-1	
PFOS-LN*	2.5	2.0	2.0	ng/L	2.02	1763-23-1-LN	
PFOS-BR*	2.1	2.0	2.0	ng/L	2.02	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.02	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.02	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2.02	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.02	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2.02	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.02	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2.02	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.02	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.02	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.02	919005-14-4	
HFPO-DA*	Not detected	10	2.0	ng/L	2.02	13252-13-6	

X-Elevated reporting limit due to matrix interference



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.19

Sample Tag: SB-4-21 19'

Collected Date/Time: 04/20/2021 15:50

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.47/6.86/11	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 10:11, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	20	9.8	ng/L	1.96	375-22-4	X
PFPeA*	Not detected	3.9	0.98	ng/L	1.96	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.96	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.96	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.96	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.96	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.96	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.96	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.96	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.96	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.96	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.96	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.96	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.96	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.96	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.96	2991-50-6	
PFOS*	48	2.0	1.9	ng/L	1.96	1763-23-1	
PFOS-LN*	33	2.0	1.9	ng/L	1.96	1763-23-1-LN	
PFOS-BR*	15	2.0	1.9	ng/L	1.96	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.96	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.96	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.96	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.96	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.96	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.96	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.96	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.96	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.96	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.96	919005-14-4	
HFPO-DA*	Not detected	9.8	2.0	ng/L	1.96	13252-13-6	

X-Elevated reporting limit due to matrix interference



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.20

Sample Tag: SB-5-21 25'

Collected Date/Time: 04/21/2021 09:10

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.90/6.90/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 10:30, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2	375-22-4	
PFPeA*	1.8	4.0	1.0	ng/L	2	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2	757124-72-4	
PFHxA*	1.7	2.0	1.4	ng/L	2	307-24-4	J
PFBS*	2.2	2.0	1.4	ng/L	2	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2	27619-97-2	
PFOA*	2.7	2.0	1.6	ng/L	2	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2	2991-50-6	
PFOS*	Not detected	2.0	2.0	ng/L	2	1763-23-1	
PFOS-LN*	Not detected	2.0	2.0	ng/L	2	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	2.0	ng/L	2	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2	919005-14-4	
HFPO-DA*	Not detected	10	2.0	ng/L	2	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.21

Sample Tag: SB-5-21 8'

Collected Date/Time: 04/21/2021 09:06

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.89/6.92/10	ASTM D7968-17M	04/28/21 12:00	KCV	
Initial wt. (g) / Final wt. (g) / Volume (ml) (Rep#)	50/6.79/10	ASTM D7968-17M	05/12/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	92	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 05/13/21 19:35, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	130	34	ng/kg	6.36	375-22-4	
PFPeA*	Not detected	64	20	ng/kg	6.36	2706-90-3	
4:2 FTSA*	Not detected	64	14	ng/kg	6.36	757124-72-4	I
PFHxA*	Not detected	64	13	ng/kg	6.36	307-24-4	
PFBS*	Not detected	64	15	ng/kg	6.36	375-73-5	
PFHpA*	Not detected	64	18	ng/kg	6.36	375-85-9	
PFPeS*	Not detected	64	18	ng/kg	6.36	2706-91-4	
6:2 FTSA*	Not detected	64	21	ng/kg	6.36	27619-97-2	
PFOA*	Not detected	64	11	ng/kg	6.36	335-67-1	
PFHxS*	Not detected	64	8.9	ng/kg	6.36	355-46-4	
PFHxS-LN*	Not detected	64	8.9	ng/kg	6.36	355-46-4-LN	
PFHxS-BR*	Not detected	64	8.9	ng/kg	6.36	355-46-4-BR	
PFNA*	Not detected	64	17	ng/kg	6.36	375-95-1	
8:2 FTSA*	Not detected	64	25	ng/kg	6.36	39108-34-4	
PFHpS*	Not detected	64	19	ng/kg	6.36	375-92-8	
PFDA*	Not detected	64	31	ng/kg	6.36	335-76-2	
N-MeFOSAA*	Not detected	64	14	ng/kg	6.36	2355-31-9	
EtFOSAA*	Not detected	64	25	ng/kg	6.36	2991-50-6	
PFOS*	Not detected	64	11	ng/kg	6.36	1763-23-1	
PFOS-LN*	Not detected	64	11	ng/kg	6.36	1763-23-1-LN	
PFOS-BR*	Not detected	64	11	ng/kg	6.36	1763-23-1-BR	
PFUnDA*	Not detected	64	15	ng/kg	6.36	2058-94-8	
PFNS*	Not detected	64	13	ng/kg	6.36	68259-12-1	
PFDoDA*	Not detected	64	17	ng/kg	6.36	307-55-1	
PFDS*	Not detected	64	18	ng/kg	6.36	335-77-3	
PFTTrDA*	Not detected	64	15	ng/kg	6.36	72629-94-8	
FOSA*	Not detected	64	13	ng/kg	6.36	754-91-6	
PFTeDA*	Not detected	64	12	ng/kg	6.36	376-06-7	
11CI-PF3OUdS*	Not detected	64	15	ng/kg	6.36	763051-92-9	

I-Matrix interference with internal standard



Lab Sample ID: S23498.21 (continued)

Sample Tag: SB-5-21 8'

28 PFAs, Method: ASTM D7968-17M, Run Date: 05/13/21 19:35, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
9CI-PF3ONS*	Not detected	64	14	ng/kg	6.36	756426-58-1	
ADONA*	Not detected	64	18	ng/kg	6.36	919005-14-4	
HFPO-DA*	Not detected	64	16	ng/kg	6.36	13252-13-6	



Lab Sample ID: S23498.22

Sample Tag: SB-5-21 16'

Collected Date/Time: 04/21/2021 09:13

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.64/6.88/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	78	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 03:44, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	150	39	ng/kg	7.28	375-22-4	
PFPeA*	Not detected	73	23	ng/kg	7.28	2706-90-3	
4:2 FTSA*	Not detected	73	16	ng/kg	7.28	757124-72-4	
PFHxA*	Not detected	73	15	ng/kg	7.28	307-24-4	
PFBS*	Not detected	73	17	ng/kg	7.28	375-73-5	
PFHpA*	Not detected	73	20	ng/kg	7.28	375-85-9	
PFPeS*	Not detected	73	20	ng/kg	7.28	2706-91-4	
6:2 FTSA*	Not detected	73	24	ng/kg	7.28	27619-97-2	
PFOA*	Not detected	73	12	ng/kg	7.28	335-67-1	
PFHxS*	Not detected	73	10	ng/kg	7.28	355-46-4	
PFHxS-LN*	Not detected	73	10	ng/kg	7.28	355-46-4-LN	
PFHxS-BR*	Not detected	73	10	ng/kg	7.28	355-46-4-BR	
PFNA*	Not detected	73	19	ng/kg	7.28	375-95-1	
8:2 FTSA*	Not detected	73	29	ng/kg	7.28	39108-34-4	
PFHpS*	Not detected	73	22	ng/kg	7.28	375-92-8	
PFDA*	Not detected	73	35	ng/kg	7.28	335-76-2	
N-MeFOSAA*	Not detected	73	16	ng/kg	7.28	2355-31-9	
EtFOSAA*	Not detected	73	28	ng/kg	7.28	2991-50-6	
PFOS*	Not detected	73	12	ng/kg	7.28	1763-23-1	
PFOS-LN*	Not detected	73	12	ng/kg	7.28	1763-23-1-LN	
PFOS-BR*	Not detected	73	12	ng/kg	7.28	1763-23-1-BR	
PFUnDA*	Not detected	73	17	ng/kg	7.28	2058-94-8	
PFNS*	Not detected	73	15	ng/kg	7.28	68259-12-1	
PFDoDA*	Not detected	73	19	ng/kg	7.28	307-55-1	
PFDS*	Not detected	73	20	ng/kg	7.28	335-77-3	
PFTTrDA*	Not detected	73	17	ng/kg	7.28	72629-94-8	
FOSA*	Not detected	73	15	ng/kg	7.28	754-91-6	
PFTeDA*	Not detected	73	14	ng/kg	7.28	376-06-7	
11CI-PF3OUdS*	Not detected	73	17	ng/kg	7.28	763051-92-9	
9CI-PF3ONS*	Not detected	73	16	ng/kg	7.28	756426-58-1	
ADONA*	Not detected	73	20	ng/kg	7.28	919005-14-4	



Lab Sample ID: S23498.22 (continued)

Sample Tag: SB-5-21 16'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 03:44, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	73	18	ng/kg	7.28	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.23

Sample Tag: SB-5-21 21'

Collected Date/Time: 04/21/2021 09:20

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.46/6.85/11	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 10:50, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.96	375-22-4	
PFPeA*	Not detected	3.9	0.98	ng/L	1.96	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.96	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.96	307-24-4	
PFBS*	2.9	2.0	1.4	ng/L	1.96	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.96	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.96	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.96	27619-97-2	
PFOA*	3.7	2.0	1.6	ng/L	1.96	335-67-1	
PFHxS*	2.5	2.0	1.6	ng/L	1.96	355-46-4	
PFHxS-LN*	1.8	2.0	1.6	ng/L	1.96	355-46-4-LN	J
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.96	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.96	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.96	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.96	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.96	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.96	2991-50-6	
PFOS*	5.8	2.0	1.9	ng/L	1.96	1763-23-1	
PFOS-LN*	2.0	2.0	1.9	ng/L	1.96	1763-23-1-LN	
PFOS-BR*	3.4	2.0	1.9	ng/L	1.96	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.96	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.96	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.96	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.96	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.96	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.96	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.96	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.96	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.96	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.96	919005-14-4	
HFPO-DA*	Not detected	9.8	2.0	ng/L	1.96	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.24

Sample Tag: SB-7-21 7'

Collected Date/Time: 04/21/2021 10:04

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.92/6.87/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	89	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 04:04, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	110	30	ng/kg	5.48	375-22-4	
PFPeA*	Not detected	55	18	ng/kg	5.48	2706-90-3	
4:2 FTSA*	Not detected	55	12	ng/kg	5.48	757124-72-4	
PFHxA*	Not detected	55	11	ng/kg	5.48	307-24-4	
PFBS*	Not detected	55	13	ng/kg	5.48	375-73-5	
PFHpA*	Not detected	55	15	ng/kg	5.48	375-85-9	
PFPeS*	Not detected	55	15	ng/kg	5.48	2706-91-4	
6:2 FTSA*	Not detected	55	18	ng/kg	5.48	27619-97-2	
PFOA*	Not detected	55	9.3	ng/kg	5.48	335-67-1	
PFHxS*	Not detected	55	7.7	ng/kg	5.48	355-46-4	
PFHxS-LN*	Not detected	55	7.7	ng/kg	5.48	355-46-4-LN	
PFHxS-BR*	Not detected	55	7.7	ng/kg	5.48	355-46-4-BR	
PFNA*	Not detected	55	14	ng/kg	5.48	375-95-1	
8:2 FTSA*	Not detected	55	22	ng/kg	5.48	39108-34-4	
PFHpS*	Not detected	55	16	ng/kg	5.48	375-92-8	
PFDA*	Not detected	55	26	ng/kg	5.48	335-76-2	
N-MeFOSAA*	Not detected	55	12	ng/kg	5.48	2355-31-9	
EtFOSAA*	Not detected	55	21	ng/kg	5.48	2991-50-6	
PFOS*	24	55	9.3	ng/kg	5.48	1763-23-1	J
PFOS-LN*	15	55	9.3	ng/kg	5.48	1763-23-1-LN	J
PFOS-BR*	Not detected	55	9.3	ng/kg	5.48	1763-23-1-BR	
PFUnDA*	Not detected	55	13	ng/kg	5.48	2058-94-8	
PFNS*	Not detected	55	12	ng/kg	5.48	68259-12-1	
PFDoDA*	Not detected	55	14	ng/kg	5.48	307-55-1	
PFDS*	Not detected	55	15	ng/kg	5.48	335-77-3	
PFTTrDA*	Not detected	55	13	ng/kg	5.48	72629-94-8	
FOSA*	Not detected	55	11	ng/kg	5.48	754-91-6	
PFTeDA*	Not detected	55	10	ng/kg	5.48	376-06-7	
11CI-PF3OUdS*	Not detected	55	13	ng/kg	5.48	763051-92-9	
9CI-PF3ONS*	Not detected	55	12	ng/kg	5.48	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.24 (continued)

Sample Tag: SB-7-21 7'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 04:04, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	55	15	ng/kg	5.48	919005-14-4	
HFPO-DA*	Not detected	55	14	ng/kg	5.48	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.25

Sample Tag: SB-7-21 24'

Collected Date/Time: 04/21/2021 10:10

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.20/6.81/11	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 11:09, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	20	10	ng/L	2.04	375-22-4	X
PFPeA*	Not detected	4.1	1.0	ng/L	2.04	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.04	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2.04	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2.04	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2.04	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.04	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.04	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2.04	335-67-1	
PFHxS*	2.3	2.0	1.6	ng/L	2.04	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.04	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.04	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.04	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.04	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.04	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.04	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.04	2355-31-9	
EtFOSAA*	Not detected	4.1	2.0	ng/L	2.04	2991-50-6	
PFOS*	12	2.0	2.0	ng/L	2.04	1763-23-1	
PFOS-LN*	8.1	2.0	2.0	ng/L	2.04	1763-23-1-LN	
PFOS-BR*	3.2	2.0	2.0	ng/L	2.04	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.04	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.04	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2.04	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.04	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2.04	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.04	754-91-6	
PFTeDA*	Not detected	4.1	1.8	ng/L	2.04	376-06-7	
11CI-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.04	763051-92-9	
9CI-PF3ONS*	Not detected	2.0	1.4	ng/L	2.04	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.04	919005-14-4	
HFPO-DA*	Not detected	10	2.0	ng/L	2.04	13252-13-6	

X-Elevated reporting limit due to matrix interference

Lab Sample ID: S23498.26

Sample Tag: SB-7-21 15'

Collected Date/Time: 04/21/2021 10:14

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.67/6.82/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	83	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 06:20, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	130	35	ng/kg	6.51	375-22-4	
PFPeA*	Not detected	65	21	ng/kg	6.51	2706-90-3	
4:2 FTSA*	Not detected	65	14	ng/kg	6.51	757124-72-4	
PFHxA*	Not detected	65	13	ng/kg	6.51	307-24-4	
PFBS*	Not detected	65	15	ng/kg	6.51	375-73-5	
PFHpA*	Not detected	65	18	ng/kg	6.51	375-85-9	
PFPeS*	Not detected	65	18	ng/kg	6.51	2706-91-4	
6:2 FTSA*	Not detected	65	21	ng/kg	6.51	27619-97-2	
PFOA*	Not detected	65	11	ng/kg	6.51	335-67-1	
PFHxS*	Not detected	65	9.1	ng/kg	6.51	355-46-4	
PFHxS-LN*	Not detected	65	9.1	ng/kg	6.51	355-46-4-LN	
PFHxS-BR*	Not detected	65	9.1	ng/kg	6.51	355-46-4-BR	
PFNA*	Not detected	65	17	ng/kg	6.51	375-95-1	
8:2 FTSA*	Not detected	65	26	ng/kg	6.51	39108-34-4	
PFHpS*	Not detected	65	20	ng/kg	6.51	375-92-8	
PFDA*	Not detected	65	31	ng/kg	6.51	335-76-2	
N-MeFOSAA*	Not detected	65	14	ng/kg	6.51	2355-31-9	
EtFOSAA*	Not detected	65	25	ng/kg	6.51	2991-50-6	
PFOS*	41	65	11	ng/kg	6.51	1763-23-1	J
PFOS-LN*	18	65	11	ng/kg	6.51	1763-23-1-LN	J
PFOS-BR*	19	65	11	ng/kg	6.51	1763-23-1-BR	J
PFUnDA*	Not detected	65	16	ng/kg	6.51	2058-94-8	
PFNS*	Not detected	65	14	ng/kg	6.51	68259-12-1	
PFDoDA*	Not detected	65	17	ng/kg	6.51	307-55-1	
PFDS*	Not detected	65	18	ng/kg	6.51	335-77-3	
PFTTrDA*	Not detected	65	15	ng/kg	6.51	72629-94-8	
FOSA*	Not detected	65	13	ng/kg	6.51	754-91-6	
PFTeDA*	Not detected	65	12	ng/kg	6.51	376-06-7	
11CI-PF3OUdS*	Not detected	65	16	ng/kg	6.51	763051-92-9	
9CI-PF3ONS*	Not detected	65	14	ng/kg	6.51	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.26 (continued)

Sample Tag: SB-7-21 15'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 06:20, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	65	18	ng/kg	6.51	919005-14-4	
HFPO-DA*	Not detected	65	16	ng/kg	6.51	13252-13-6	



Lab Sample ID: S23498.27

Sample Tag: SB-7-21 21'

Collected Date/Time: 04/21/2021 10:21

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.06/6.89/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 11:29, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.7	9.7	ng/L	1.93	375-22-4	
PFPeA*	Not detected	3.9	0.97	ng/L	1.93	2706-90-3	
4:2 FTSA*	Not detected	1.9	1.5	ng/L	1.93	757124-72-4	
PFHxA*	Not detected	1.9	1.4	ng/L	1.93	307-24-4	
PFBS*	Not detected	1.9	1.4	ng/L	1.93	375-73-5	
PFHpA*	Not detected	1.9	1.4	ng/L	1.93	375-85-9	
PFPeS*	Not detected	1.9	1.7	ng/L	1.93	2706-91-4	
6:2 FTSA*	Not detected	1.9	1.9	ng/L	1.93	27619-97-2	
PFOA*	Not detected	1.9	1.5	ng/L	1.93	335-67-1	
PFHxS*	Not detected	1.9	1.5	ng/L	1.93	355-46-4	
PFHxS-LN*	Not detected	1.9	1.5	ng/L	1.93	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.5	ng/L	1.93	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.93	375-95-1	
8:2 FTSA*	Not detected	1.9	0.97	ng/L	1.93	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.93	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.93	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.93	2355-31-9	
EtFOSAA*	Not detected	3.9	1.9	ng/L	1.93	2991-50-6	
PFOS*	48	1.9	1.9	ng/L	1.93	1763-23-1	
PFOS-LN*	35	1.9	1.9	ng/L	1.93	1763-23-1-LN	
PFOS-BR*	10	1.9	1.9	ng/L	1.93	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.4	ng/L	1.93	2058-94-8	
PFNS*	Not detected	1.9	1.4	ng/L	1.93	68259-12-1	
PFDODA*	Not detected	1.9	1.5	ng/L	1.93	307-55-1	
PFDS*	Not detected	1.9	1.4	ng/L	1.93	335-77-3	
PFTTrDA*	Not detected	1.9	1.2	ng/L	1.93	72629-94-8	
FOSA*	Not detected	1.9	1.7	ng/L	1.93	754-91-6	
PFTeDA*	Not detected	3.9	1.7	ng/L	1.93	376-06-7	
11Cl-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.93	763051-92-9	
9Cl-PF3ONS*	Not detected	1.9	1.4	ng/L	1.93	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.93	919005-14-4	
HFPO-DA*	Not detected	9.7	1.9	ng/L	1.93	13252-13-6	



Lab Sample ID: S23498.28

Sample Tag: SB-16-21 16'

Collected Date/Time: 04/21/2021 11:26

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.79/6.88/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	90	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 06:59, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	31	ng/kg	5.82	375-22-4	
PFPeA*	Not detected	58	19	ng/kg	5.82	2706-90-3	
4:2 FTSA*	Not detected	58	13	ng/kg	5.82	757124-72-4	
PFHxA*	Not detected	58	12	ng/kg	5.82	307-24-4	
PFBS*	Not detected	58	13	ng/kg	5.82	375-73-5	
PFHpA*	Not detected	58	16	ng/kg	5.82	375-85-9	
PFPeS*	Not detected	58	16	ng/kg	5.82	2706-91-4	
6:2 FTSA*	Not detected	58	19	ng/kg	5.82	27619-97-2	
PFOA*	Not detected	58	9.9	ng/kg	5.82	335-67-1	
PFHxS*	Not detected	58	8.1	ng/kg	5.82	355-46-4	
PFHxS-LN*	Not detected	58	8.1	ng/kg	5.82	355-46-4-LN	
PFHxS-BR*	Not detected	58	8.1	ng/kg	5.82	355-46-4-BR	
PFNA*	Not detected	58	15	ng/kg	5.82	375-95-1	
8:2 FTSA*	Not detected	58	23	ng/kg	5.82	39108-34-4	
PFHpS*	Not detected	58	17	ng/kg	5.82	375-92-8	
PFDA*	Not detected	58	28	ng/kg	5.82	335-76-2	
N-MeFOSAA*	Not detected	58	13	ng/kg	5.82	2355-31-9	
EtFOSAA*	Not detected	58	23	ng/kg	5.82	2991-50-6	
PFOS*	23	58	9.9	ng/kg	5.82	1763-23-1	J
PFOS-LN*	13	58	9.9	ng/kg	5.82	1763-23-1-LN	J
PFOS-BR*	Not detected	58	9.9	ng/kg	5.82	1763-23-1-BR	
PFUnDA*	Not detected	58	14	ng/kg	5.82	2058-94-8	
PFNS*	Not detected	58	12	ng/kg	5.82	68259-12-1	
PFDoDA*	Not detected	58	15	ng/kg	5.82	307-55-1	
PFDS*	Not detected	58	16	ng/kg	5.82	335-77-3	
PFTTrDA*	Not detected	58	13	ng/kg	5.82	72629-94-8	
FOSA*	Not detected	58	12	ng/kg	5.82	754-91-6	
PFTeDA*	Not detected	58	11	ng/kg	5.82	376-06-7	
11CI-PF3OUdS*	Not detected	58	14	ng/kg	5.82	763051-92-9	
9CI-PF3ONS*	Not detected	58	13	ng/kg	5.82	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.28 (continued)

Sample Tag: SB-16-21 16'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 06:59, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	58	16	ng/kg	5.82	919005-14-4	
HFPO-DA*	Not detected	58	15	ng/kg	5.82	13252-13-6	



Lab Sample ID: S23498.29

Sample Tag: SB-16-21 8'

Collected Date/Time: 04/21/2021 11:30

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.62/7.00/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	89	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 07:38, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	140	37	ng/kg	6.94	375-22-4	
PFPeA*	Not detected	69	22	ng/kg	6.94	2706-90-3	
4:2 FTSA*	Not detected	69	15	ng/kg	6.94	757124-72-4	
PFHxA*	Not detected	69	14	ng/kg	6.94	307-24-4	
PFBS*	Not detected	69	16	ng/kg	6.94	375-73-5	
PFHpA*	Not detected	69	19	ng/kg	6.94	375-85-9	
PFPeS*	Not detected	69	19	ng/kg	6.94	2706-91-4	
6:2 FTSA*	Not detected	69	23	ng/kg	6.94	27619-97-2	
PFOA*	Not detected	69	12	ng/kg	6.94	335-67-1	
PFHxS*	Not detected	69	9.7	ng/kg	6.94	355-46-4	
PFHxS-LN*	Not detected	69	9.7	ng/kg	6.94	355-46-4-LN	
PFHxS-BR*	Not detected	69	9.7	ng/kg	6.94	355-46-4-BR	
PFNA*	Not detected	69	18	ng/kg	6.94	375-95-1	
8:2 FTSA*	Not detected	69	28	ng/kg	6.94	39108-34-4	
PFHpS*	Not detected	69	21	ng/kg	6.94	375-92-8	
PFDA*	Not detected	69	33	ng/kg	6.94	335-76-2	
N-MeFOSAA*	Not detected	69	15	ng/kg	6.94	2355-31-9	
EtFOSAA*	Not detected	69	27	ng/kg	6.94	2991-50-6	
PFOS*	Not detected	69	12	ng/kg	6.94	1763-23-1	
PFOS-LN*	Not detected	69	12	ng/kg	6.94	1763-23-1-LN	
PFOS-BR*	Not detected	69	12	ng/kg	6.94	1763-23-1-BR	
PFUnDA*	Not detected	69	17	ng/kg	6.94	2058-94-8	
PFNS*	Not detected	69	15	ng/kg	6.94	68259-12-1	
PFDoDA*	Not detected	69	18	ng/kg	6.94	307-55-1	
PFDS*	Not detected	69	19	ng/kg	6.94	335-77-3	
PFTTrDA*	Not detected	69	16	ng/kg	6.94	72629-94-8	
FOSA*	Not detected	69	14	ng/kg	6.94	754-91-6	
PFTeDA*	Not detected	69	13	ng/kg	6.94	376-06-7	
11CI-PF3OUdS*	Not detected	69	17	ng/kg	6.94	763051-92-9	
9CI-PF3ONS*	Not detected	69	15	ng/kg	6.94	756426-58-1	
ADONA*	Not detected	69	19	ng/kg	6.94	919005-14-4	



Lab Sample ID: S23498.29 (continued)
Sample Tag: SB-16-21 8'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 07:38, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	69	17	ng/kg	6.94	13252-13-6	

Lab Sample ID: S23498.30

Sample Tag: SB-16-21 3'

Collected Date/Time: 04/21/2021 11:32

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.68/6.84/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	93	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 07:58, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	61	120	32	ng/kg	5.84	375-22-4	J
PFPeA*	Not detected	58	19	ng/kg	5.84	2706-90-3	
4:2 FTSA*	Not detected	58	13	ng/kg	5.84	757124-72-4	
PFHxA*	Not detected	58	12	ng/kg	5.84	307-24-4	
PFBS*	Not detected	58	13	ng/kg	5.84	375-73-5	
PFHpA*	Not detected	58	16	ng/kg	5.84	375-85-9	
PFPeS*	Not detected	58	16	ng/kg	5.84	2706-91-4	
6:2 FTSA*	Not detected	58	19	ng/kg	5.84	27619-97-2	
PFOA*	62	58	9.9	ng/kg	5.84	335-67-1	
PFHxS*	Not detected	58	8.2	ng/kg	5.84	355-46-4	
PFHxS-LN*	Not detected	58	8.2	ng/kg	5.84	355-46-4-LN	
PFHxS-BR*	Not detected	58	8.2	ng/kg	5.84	355-46-4-BR	
PFNA*	Not detected	58	15	ng/kg	5.84	375-95-1	
8:2 FTSA*	Not detected	58	23	ng/kg	5.84	39108-34-4	
PFHpS*	Not detected	58	18	ng/kg	5.84	375-92-8	
PFDA*	Not detected	58	28	ng/kg	5.84	335-76-2	
N-MeFOSAA*	Not detected	58	13	ng/kg	5.84	2355-31-9	
EtFOSAA*	Not detected	58	23	ng/kg	5.84	2991-50-6	
PFOS*	140	58	9.9	ng/kg	5.84	1763-23-1	
PFOS-LN*	64	58	9.9	ng/kg	5.84	1763-23-1-LN	
PFOS-BR*	71	58	9.9	ng/kg	5.84	1763-23-1-BR	
PFUnDA*	Not detected	58	14	ng/kg	5.84	2058-94-8	
PFNS*	Not detected	58	12	ng/kg	5.84	68259-12-1	
PFDoDA*	Not detected	58	15	ng/kg	5.84	307-55-1	
PFDS*	Not detected	58	16	ng/kg	5.84	335-77-3	
PFTTrDA*	Not detected	58	13	ng/kg	5.84	72629-94-8	
FOSA*	Not detected	58	12	ng/kg	5.84	754-91-6	
PFTeDA*	Not detected	58	11	ng/kg	5.84	376-06-7	
11CI-PF3OUdS*	Not detected	58	14	ng/kg	5.84	763051-92-9	
9CI-PF3ONS*	Not detected	58	13	ng/kg	5.84	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.30 (continued)
Sample Tag: SB-16-21 3'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 07:58, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	58	16	ng/kg	5.84	919005-14-4	
HFPO-DA*	Not detected	58	15	ng/kg	5.84	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.31

Sample Tag: SB-2-21 19'

Collected Date/Time: 04/21/2021 12:52

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.27/6.82/11	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 11:48, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.02	375-22-4	
PFPeA*	Not detected	4.0	1.0	ng/L	2.02	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.02	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2.02	307-24-4	
PFBS*	1.6	2.0	1.4	ng/L	2.02	375-73-5	J
PFHpA*	Not detected	2.0	1.4	ng/L	2.02	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.02	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.02	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2.02	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2.02	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.02	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.02	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.02	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.02	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.02	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.02	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.02	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2.02	2991-50-6	
PFOS*	24	2.0	2.0	ng/L	2.02	1763-23-1	
PFOS-LN*	14	2.0	2.0	ng/L	2.02	1763-23-1-LN	
PFOS-BR*	9.2	2.0	2.0	ng/L	2.02	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.02	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.02	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2.02	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.02	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2.02	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.02	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2.02	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.02	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.02	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.02	919005-14-4	
HFPO-DA*	Not detected	10	2.0	ng/L	2.02	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL

Lab Sample ID: S23498.32

Sample Tag: SB-2-21 6'

Collected Date/Time: 04/21/2021 13:10

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.89/6.99/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	93	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 08:17, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	110	31	ng/kg	5.66	375-22-4	
PFPeA*	Not detected	57	18	ng/kg	5.66	2706-90-3	
4:2 FTSA*	Not detected	57	12	ng/kg	5.66	757124-72-4	
PFHxA*	Not detected	57	11	ng/kg	5.66	307-24-4	
PFBS*	Not detected	57	13	ng/kg	5.66	375-73-5	
PFHpA*	Not detected	57	16	ng/kg	5.66	375-85-9	
PFPeS*	Not detected	57	16	ng/kg	5.66	2706-91-4	
6:2 FTSA*	Not detected	57	19	ng/kg	5.66	27619-97-2	
PFOA*	Not detected	57	9.6	ng/kg	5.66	335-67-1	
PFHxS*	Not detected	57	7.9	ng/kg	5.66	355-46-4	
PFHxS-LN*	Not detected	57	7.9	ng/kg	5.66	355-46-4-LN	
PFHxS-BR*	Not detected	57	7.9	ng/kg	5.66	355-46-4-BR	
PFNA*	Not detected	57	15	ng/kg	5.66	375-95-1	
8:2 FTSA*	Not detected	57	23	ng/kg	5.66	39108-34-4	
PFHpS*	Not detected	57	17	ng/kg	5.66	375-92-8	
PFDA*	Not detected	57	27	ng/kg	5.66	335-76-2	
N-MeFOSAA*	Not detected	57	12	ng/kg	5.66	2355-31-9	
EtFOSAA*	Not detected	57	22	ng/kg	5.66	2991-50-6	
PFOS*	470	57	9.6	ng/kg	5.66	1763-23-1	
PFOS-LN*	250	57	9.6	ng/kg	5.66	1763-23-1-LN	
PFOS-BR*	220	57	9.6	ng/kg	5.66	1763-23-1-BR	
PFUnDA*	Not detected	57	14	ng/kg	5.66	2058-94-8	
PFNS*	Not detected	57	12	ng/kg	5.66	68259-12-1	
PFDoDA*	Not detected	57	15	ng/kg	5.66	307-55-1	
PFDS*	Not detected	57	16	ng/kg	5.66	335-77-3	
PFTeDA*	Not detected	57	13	ng/kg	5.66	72629-94-8	
FOSA*	Not detected	57	11	ng/kg	5.66	754-91-6	
PFTeDA*	Not detected	57	11	ng/kg	5.66	376-06-7	
11CI-PF3OUdS*	Not detected	57	14	ng/kg	5.66	763051-92-9	
9CI-PF3ONS*	Not detected	57	12	ng/kg	5.66	756426-58-1	
ADONA*	Not detected	57	16	ng/kg	5.66	919005-14-4	



Lab Sample ID: S23498.32 (continued)

Sample Tag: SB-2-21.6'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 08:17, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	57	14	ng/kg	5.66	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.33

Sample Tag: SB-2-21 17'

Collected Date/Time: 04/21/2021 13:12

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.71/6.92/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 12:08, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.09	375-22-4	
PFPeA*	Not detected	4.2	1.0	ng/L	2.09	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.7	ng/L	2.09	757124-72-4	
PFHxA*	Not detected	2.1	1.5	ng/L	2.09	307-24-4	
PFBS*	Not detected	2.1	1.5	ng/L	2.09	375-73-5	
PFHpA*	Not detected	2.1	1.5	ng/L	2.09	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.09	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.09	27619-97-2	
PFOA*	Not detected	2.1	1.7	ng/L	2.09	335-67-1	
PFHxS*	Not detected	2.1	1.7	ng/L	2.09	355-46-4	
PFHxS-LN*	Not detected	2.1	1.7	ng/L	2.09	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.7	ng/L	2.09	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.09	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.09	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.09	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.09	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.09	2355-31-9	
EtFOSAA*	Not detected	4.2	2.1	ng/L	2.09	2991-50-6	
PFOS*	32	2.1	2.0	ng/L	2.09	1763-23-1	
PFOS-LN*	19	2.1	2.0	ng/L	2.09	1763-23-1-LN	
PFOS-BR*	13	2.1	2.0	ng/L	2.09	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.5	ng/L	2.09	2058-94-8	
PFNS*	Not detected	2.1	1.5	ng/L	2.09	68259-12-1	
PFDODA*	Not detected	2.1	1.7	ng/L	2.09	307-55-1	
PFDS*	Not detected	2.1	1.5	ng/L	2.09	335-77-3	
PFTTrDA*	Not detected	2.1	1.3	ng/L	2.09	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.09	754-91-6	
PFTeDA*	Not detected	4.2	1.9	ng/L	2.09	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.09	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.5	ng/L	2.09	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.09	919005-14-4	
HFPO-DA*	Not detected	10	2.1	ng/L	2.09	13252-13-6	

Lab Sample ID: S23498.34

Sample Tag: SB-2-21 15'

Collected Date/Time: 04/21/2021 13:17

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	9.07/6.91/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	81	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 08:37, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	110	31	ng/kg	5.72	375-22-4	
PFPeA*	Not detected	57	18	ng/kg	5.72	2706-90-3	
4:2 FTSA*	Not detected	57	13	ng/kg	5.72	757124-72-4	
PFHxA*	Not detected	57	11	ng/kg	5.72	307-24-4	
PFBS*	Not detected	57	13	ng/kg	5.72	375-73-5	
PFHpA*	Not detected	57	16	ng/kg	5.72	375-85-9	
PFPeS*	Not detected	57	16	ng/kg	5.72	2706-91-4	
6:2 FTSA*	Not detected	57	19	ng/kg	5.72	27619-97-2	
PFOA*	Not detected	57	9.7	ng/kg	5.72	335-67-1	
PFHxS*	Not detected	57	8.0	ng/kg	5.72	355-46-4	
PFHxS-LN*	Not detected	57	8.0	ng/kg	5.72	355-46-4-LN	
PFHxS-BR*	Not detected	57	8.0	ng/kg	5.72	355-46-4-BR	
PFNA*	Not detected	57	15	ng/kg	5.72	375-95-1	
8:2 FTSA*	Not detected	57	23	ng/kg	5.72	39108-34-4	
PFHpS*	Not detected	57	17	ng/kg	5.72	375-92-8	
PFDA*	Not detected	57	27	ng/kg	5.72	335-76-2	
N-MeFOSAA*	Not detected	57	13	ng/kg	5.72	2355-31-9	
EtFOSAA*	Not detected	57	22	ng/kg	5.72	2991-50-6	
PFOS*	49	57	9.7	ng/kg	5.72	1763-23-1	J
PFOS-LN*	32	57	9.7	ng/kg	5.72	1763-23-1-LN	J
PFOS-BR*	15	57	9.7	ng/kg	5.72	1763-23-1-BR	J
PFUnDA*	Not detected	57	14	ng/kg	5.72	2058-94-8	
PFNS*	Not detected	57	12	ng/kg	5.72	68259-12-1	
PFDoDA*	Not detected	57	15	ng/kg	5.72	307-55-1	
PFDS*	Not detected	57	16	ng/kg	5.72	335-77-3	
PFTTrDA*	Not detected	57	13	ng/kg	5.72	72629-94-8	
FOSA*	Not detected	57	11	ng/kg	5.72	754-91-6	
PFTeDA*	Not detected	57	11	ng/kg	5.72	376-06-7	
11CI-PF3OUdS*	Not detected	57	14	ng/kg	5.72	763051-92-9	
9CI-PF3ONS*	Not detected	57	13	ng/kg	5.72	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.34 (continued)
Sample Tag: SB-2-21 15'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 08:37, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	57	16	ng/kg	5.72	919005-14-4	
HFPO-DA*	Not detected	57	14	ng/kg	5.72	13252-13-6	



Lab Sample ID: S23498.35

Sample Tag: SB-1-21 6'

Collected Date/Time: 04/21/2021 13:58

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.74/6.81/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	90	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 08:56, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	31	ng/kg	5.76	375-22-4	
PFPeA*	Not detected	58	18	ng/kg	5.76	2706-90-3	
4:2 FTSA*	Not detected	58	13	ng/kg	5.76	757124-72-4	
PFHxA*	Not detected	58	12	ng/kg	5.76	307-24-4	
PFBS*	Not detected	58	13	ng/kg	5.76	375-73-5	
PFHpA*	Not detected	58	16	ng/kg	5.76	375-85-9	
PFPeS*	Not detected	58	16	ng/kg	5.76	2706-91-4	
6:2 FTSA*	Not detected	58	19	ng/kg	5.76	27619-97-2	
PFOA*	Not detected	58	9.8	ng/kg	5.76	335-67-1	
PFHxS*	Not detected	58	8.1	ng/kg	5.76	355-46-4	
PFHxS-LN*	Not detected	58	8.1	ng/kg	5.76	355-46-4-LN	
PFHxS-BR*	Not detected	58	8.1	ng/kg	5.76	355-46-4-BR	
PFNA*	Not detected	58	15	ng/kg	5.76	375-95-1	
8:2 FTSA*	Not detected	58	23	ng/kg	5.76	39108-34-4	
PFHpS*	Not detected	58	17	ng/kg	5.76	375-92-8	
PFDA*	Not detected	58	28	ng/kg	5.76	335-76-2	
N-MeFOSAA*	Not detected	58	13	ng/kg	5.76	2355-31-9	
EtFOSAA*	Not detected	58	22	ng/kg	5.76	2991-50-6	
PFOS*	520	58	9.8	ng/kg	5.76	1763-23-1	
PFOS-LN*	370	58	9.8	ng/kg	5.76	1763-23-1-LN	
PFOS-BR*	140	58	9.8	ng/kg	5.76	1763-23-1-BR	
PFUnDA*	Not detected	58	14	ng/kg	5.76	2058-94-8	
PFNS*	Not detected	58	12	ng/kg	5.76	68259-12-1	
PFDoDA*	Not detected	58	15	ng/kg	5.76	307-55-1	
PFDS*	Not detected	58	16	ng/kg	5.76	335-77-3	
PFTTrDA*	Not detected	58	13	ng/kg	5.76	72629-94-8	
FOSA*	Not detected	58	12	ng/kg	5.76	754-91-6	
PFTeDA*	Not detected	58	11	ng/kg	5.76	376-06-7	
11CI-PF3OUdS*	Not detected	58	14	ng/kg	5.76	763051-92-9	
9CI-PF3ONS*	Not detected	58	13	ng/kg	5.76	756426-58-1	
ADONA*	Not detected	58	16	ng/kg	5.76	919005-14-4	



Lab Sample ID: S23498.35 (continued)

Sample Tag: SB-1-21 6'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 08:56, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	58	14	ng/kg	5.76	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.36

Sample Tag: SB-1-21 14-15'

Collected Date/Time: 04/21/2021 14:30

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.60/6.94/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	87	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/30/21 21:27, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	140	37	ng/kg	6.92	375-22-4	
PFPeA*	Not detected	69	22	ng/kg	6.92	2706-90-3	
4:2 FTSA*	Not detected	69	15	ng/kg	6.92	757124-72-4	
PFHxA*	Not detected	69	14	ng/kg	6.92	307-24-4	
PFBS*	Not detected	69	16	ng/kg	6.92	375-73-5	
PFHpA*	Not detected	69	19	ng/kg	6.92	375-85-9	
PFPeS*	Not detected	69	19	ng/kg	6.92	2706-91-4	
6:2 FTSA*	Not detected	69	23	ng/kg	6.92	27619-97-2	
PFOA*	Not detected	69	12	ng/kg	6.92	335-67-1	
PFHxS*	Not detected	69	9.7	ng/kg	6.92	355-46-4	
PFHxS-LN*	Not detected	69	9.7	ng/kg	6.92	355-46-4-LN	
PFHxS-BR*	Not detected	69	9.7	ng/kg	6.92	355-46-4-BR	
PFNA*	Not detected	69	18	ng/kg	6.92	375-95-1	
8:2 FTSA*	Not detected	69	28	ng/kg	6.92	39108-34-4	
PFHpS*	Not detected	69	21	ng/kg	6.92	375-92-8	
PFDA*	Not detected	69	33	ng/kg	6.92	335-76-2	
N-MeFOSAA*	Not detected	69	15	ng/kg	6.92	2355-31-9	I
EtFOSAA*	Not detected	69	27	ng/kg	6.92	2991-50-6	I
PFOS*	100	69	12	ng/kg	6.92	1763-23-1	
PFOS-LN*	69	69	12	ng/kg	6.92	1763-23-1-LN	J
PFOS-BR*	33	69	12	ng/kg	6.92	1763-23-1-BR	J
PFUnDA*	Not detected	69	17	ng/kg	6.92	2058-94-8	
PFNS*	Not detected	69	15	ng/kg	6.92	68259-12-1	
PFDoDA*	Not detected	69	18	ng/kg	6.92	307-55-1	
PFDS*	Not detected	69	19	ng/kg	6.92	335-77-3	
PFTTrDA*	Not detected	69	16	ng/kg	6.92	72629-94-8	
FOSA*	Not detected	69	14	ng/kg	6.92	754-91-6	I
PFTeDA*	Not detected	69	13	ng/kg	6.92	376-06-7	
11CI-PF3OUdS*	Not detected	69	17	ng/kg	6.92	763051-92-9	

I-Matrix interference with internal standard

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.36 (continued)

Sample Tag: SB-1-21 14-15'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/30/21 21:27, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
9CI-PF3ONS*	Not detected	69	15	ng/kg	6.92	756426-58-1	
ADONA*	Not detected	69	19	ng/kg	6.92	919005-14-4	
HFPO-DA*	Not detected	69	17	ng/kg	6.92	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.37

Sample Tag: SB-1-21 15'

Collected Date/Time: 04/21/2021 13:56

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.84/6.98/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 12:27, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	82	10	ng/L	2.06	375-22-4	X
PFPeA*	Not detected	4.1	1.0	ng/L	2.06	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.6	ng/L	2.06	757124-72-4	I
PFHxA*	Not detected	2.1	1.4	ng/L	2.06	307-24-4	
PFBS*	Not detected	2.1	1.4	ng/L	2.06	375-73-5	
PFHpA*	Not detected	2.1	1.4	ng/L	2.06	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.06	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.06	27619-97-2	
PFOA*	1.8	2.1	1.6	ng/L	2.06	335-67-1	J
PFHxS*	Not detected	2.1	1.6	ng/L	2.06	355-46-4	
PFHxS-LN*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.06	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.06	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.06	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.06	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.06	2355-31-9	
EtFOSAA*	2.6	4.1	2.1	ng/L	2.06	2991-50-6	J
PFOS*	84	2.1	2.0	ng/L	2.06	1763-23-1	
PFOS-LN*	59	2.1	2.0	ng/L	2.06	1763-23-1-LN	
PFOS-BR*	22	2.1	2.0	ng/L	2.06	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.4	ng/L	2.06	2058-94-8	
PFNS*	Not detected	2.1	1.4	ng/L	2.06	68259-12-1	
PFDODA*	Not detected	2.1	1.6	ng/L	2.06	307-55-1	
PFDS*	Not detected	2.1	1.4	ng/L	2.06	335-77-3	
PFTTrDA*	Not detected	2.1	1.2	ng/L	2.06	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.06	754-91-6	
PFTeDA*	Not detected	4.1	1.9	ng/L	2.06	376-06-7	
11CI-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.06	763051-92-9	
9CI-PF3ONS*	Not detected	2.1	1.4	ng/L	2.06	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.06	919005-14-4	
HFPO-DA*	Not detected	10	2.1	ng/L	2.06	13252-13-6	

X-Elevated reporting limit due to matrix interference

I-Matrix interference with internal standard

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.38

Sample Tag: SB-1-21 17'

Collected Date/Time: 04/21/2021 13:46

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.00/6.82/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 12:47, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	77	9.7	ng/L	1.93	375-22-4	X
PFPeA*	Not detected	3.9	0.97	ng/L	1.93	2706-90-3	
4:2 FTSA*	Not detected	1.9	1.5	ng/L	1.93	757124-72-4	I
PFHxA*	Not detected	1.9	1.4	ng/L	1.93	307-24-4	
PFBS*	Not detected	1.9	1.4	ng/L	1.93	375-73-5	
PFHpA*	Not detected	1.9	1.4	ng/L	1.93	375-85-9	
PFPeS*	Not detected	1.9	1.7	ng/L	1.93	2706-91-4	
6:2 FTSA*	Not detected	1.9	1.9	ng/L	1.93	27619-97-2	
PFOA*	1.7	1.9	1.5	ng/L	1.93	335-67-1	J
PFHxS*	Not detected	1.9	1.5	ng/L	1.93	355-46-4	
PFHxS-LN*	Not detected	1.9	1.5	ng/L	1.93	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.5	ng/L	1.93	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.93	375-95-1	
8:2 FTSA*	Not detected	1.9	0.97	ng/L	1.93	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.93	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.93	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.93	2355-31-9	
EtFOSAA*	3.9	3.9	1.9	ng/L	1.93	2991-50-6	
PFOS*	82	1.9	1.9	ng/L	1.93	1763-23-1	
PFOS-LN*	55	1.9	1.9	ng/L	1.93	1763-23-1-LN	
PFOS-BR*	26	1.9	1.9	ng/L	1.93	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.4	ng/L	1.93	2058-94-8	
PFNS*	Not detected	1.9	1.4	ng/L	1.93	68259-12-1	
PFDODA*	Not detected	1.9	1.5	ng/L	1.93	307-55-1	
PFDS*	Not detected	1.9	1.4	ng/L	1.93	335-77-3	
PFTTrDA*	Not detected	1.9	1.2	ng/L	1.93	72629-94-8	
FOSA*	Not detected	1.9	1.7	ng/L	1.93	754-91-6	
PFTeDA*	Not detected	3.9	1.7	ng/L	1.93	376-06-7	
11CI-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.93	763051-92-9	
9CI-PF3ONS*	Not detected	1.9	1.4	ng/L	1.93	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.93	919005-14-4	
HFPO-DA*	Not detected	9.7	1.9	ng/L	1.93	13252-13-6	

X-Elevated reporting limit due to matrix interference

I-Matrix interference with internal standard

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.39

Sample Tag: SB-14-21 17'

Collected Date/Time: 04/21/2021 14:39

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.88/6.87/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 13:06, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	30	10	ng/L	2	375-22-4	X
PFPeA*	Not detected	4.0	1.0	ng/L	2	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2	2991-50-6	
PFOS*	22	2.0	2.0	ng/L	2	1763-23-1	
PFOS-LN*	13	2.0	2.0	ng/L	2	1763-23-1-LN	
PFOS-BR*	8.1	2.0	2.0	ng/L	2	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2	919005-14-4	
HFPO-DA*	Not detected	10	2.0	ng/L	2	13252-13-6	

X-Elevated reporting limit due to matrix interference



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.40

Sample Tag: SB-14-21 15'

Collected Date/Time: 04/21/2021 14:49

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.17/6.79/11	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 13:26, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	51	10	ng/L	2.04	375-22-4	X
PFPeA*	Not detected	4.1	1.0	ng/L	2.04	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.04	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2.04	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2.04	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2.04	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.04	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.04	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2.04	335-67-1	
PFHxS*	Not detected	2.6	1.6	ng/L	2.04	355-46-4	X
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.04	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.04	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.04	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.04	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.04	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.04	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.04	2355-31-9	
EtFOSAA*	Not detected	4.1	2.0	ng/L	2.04	2991-50-6	
PFOS*	16	2.0	2.0	ng/L	2.04	1763-23-1	
PFOS-LN*	8.8	2.0	2.0	ng/L	2.04	1763-23-1-LN	
PFOS-BR*	6.5	2.0	2.0	ng/L	2.04	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.04	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.04	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2.04	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.04	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2.04	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.04	754-91-6	
PFTeDA*	Not detected	4.1	1.8	ng/L	2.04	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.04	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.04	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.04	919005-14-4	
HFPO-DA*	Not detected	10	2.0	ng/L	2.04	13252-13-6	

X-Elevated reporting limit due to matrix interference

Lab Sample ID: S23498.41

Sample Tag: SB-14-21 6'

Collected Date/Time: 04/21/2021 14:55

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	9.04/6.91/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	91	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 09:35, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	100	28	ng/kg	5.16	375-22-4	
PFPeA*	Not detected	52	17	ng/kg	5.16	2706-90-3	
4:2 FTSA*	Not detected	52	11	ng/kg	5.16	757124-72-4	
PFHxA*	Not detected	52	10	ng/kg	5.16	307-24-4	
PFBS*	Not detected	52	12	ng/kg	5.16	375-73-5	
PFHpA*	Not detected	52	14	ng/kg	5.16	375-85-9	
PFPeS*	Not detected	52	14	ng/kg	5.16	2706-91-4	
6:2 FTSA*	Not detected	52	17	ng/kg	5.16	27619-97-2	
PFOA*	Not detected	52	8.8	ng/kg	5.16	335-67-1	
PFHxS*	Not detected	52	7.2	ng/kg	5.16	355-46-4	
PFHxS-LN*	Not detected	52	7.2	ng/kg	5.16	355-46-4-LN	
PFHxS-BR*	Not detected	52	7.2	ng/kg	5.16	355-46-4-BR	
PFNA*	Not detected	52	13	ng/kg	5.16	375-95-1	
8:2 FTSA*	Not detected	52	21	ng/kg	5.16	39108-34-4	
PFHpS*	Not detected	52	15	ng/kg	5.16	375-92-8	
PFDA*	Not detected	52	25	ng/kg	5.16	335-76-2	
N-MeFOSAA*	Not detected	52	11	ng/kg	5.16	2355-31-9	
EtFOSAA*	Not detected	52	20	ng/kg	5.16	2991-50-6	
PFOS*	100	52	8.8	ng/kg	5.16	1763-23-1	
PFOS-LN*	61	52	8.8	ng/kg	5.16	1763-23-1-LN	
PFOS-BR*	39	52	8.8	ng/kg	5.16	1763-23-1-BR	J
PFUnDA*	Not detected	52	12	ng/kg	5.16	2058-94-8	
PFNS*	Not detected	52	11	ng/kg	5.16	68259-12-1	
PFDoDA*	Not detected	52	13	ng/kg	5.16	307-55-1	
PFDS*	Not detected	52	14	ng/kg	5.16	335-77-3	
PFTTrDA*	Not detected	52	12	ng/kg	5.16	72629-94-8	
FOSA*	Not detected	52	10	ng/kg	5.16	754-91-6	
PFTeDA*	Not detected	52	9.8	ng/kg	5.16	376-06-7	
11CI-PF3OUdS*	Not detected	52	12	ng/kg	5.16	763051-92-9	
9CI-PF3ONS*	Not detected	52	11	ng/kg	5.16	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.41 (continued)
Sample Tag: SB-14-21 6'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 09:35, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	52	14	ng/kg	5.16	919005-14-4	
HFPO-DA*	Not detected	52	13	ng/kg	5.16	13252-13-6	

Lab Sample ID: S23498.42

Sample Tag: SB-14-21 11'

Collected Date/Time: 04/21/2021 15:02

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.74/6.83/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	86	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 09:55, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	33	ng/kg	6.09	375-22-4	
PFPeA*	Not detected	61	19	ng/kg	6.09	2706-90-3	
4:2 FTSA*	Not detected	61	13	ng/kg	6.09	757124-72-4	
PFHxA*	Not detected	61	12	ng/kg	6.09	307-24-4	
PFBS*	Not detected	61	14	ng/kg	6.09	375-73-5	
PFHpA*	Not detected	61	17	ng/kg	6.09	375-85-9	
PFPeS*	Not detected	61	17	ng/kg	6.09	2706-91-4	
6:2 FTSA*	Not detected	61	20	ng/kg	6.09	27619-97-2	
PFOA*	25	61	10	ng/kg	6.09	335-67-1	J
PFHxS*	Not detected	61	8.5	ng/kg	6.09	355-46-4	
PFHxS-LN*	Not detected	61	8.5	ng/kg	6.09	355-46-4-LN	
PFHxS-BR*	Not detected	61	8.5	ng/kg	6.09	355-46-4-BR	
PFNA*	Not detected	61	16	ng/kg	6.09	375-95-1	
8:2 FTSA*	Not detected	61	24	ng/kg	6.09	39108-34-4	
PFHpS*	Not detected	61	18	ng/kg	6.09	375-92-8	
PFDA*	Not detected	61	29	ng/kg	6.09	335-76-2	
N-MeFOSAA*	Not detected	61	13	ng/kg	6.09	2355-31-9	
EtFOSAA*	Not detected	61	24	ng/kg	6.09	2991-50-6	
PFOS*	210	61	10	ng/kg	6.09	1763-23-1	
PFOS-LN*	120	61	10	ng/kg	6.09	1763-23-1-LN	
PFOS-BR*	82	61	10	ng/kg	6.09	1763-23-1-BR	
PFUnDA*	Not detected	61	15	ng/kg	6.09	2058-94-8	
PFNS*	Not detected	61	13	ng/kg	6.09	68259-12-1	
PFDoDA*	Not detected	61	16	ng/kg	6.09	307-55-1	
PFDS*	Not detected	61	17	ng/kg	6.09	335-77-3	
PFTTrDA*	Not detected	61	14	ng/kg	6.09	72629-94-8	
FOSA*	Not detected	61	12	ng/kg	6.09	754-91-6	
PFTeDA*	Not detected	61	12	ng/kg	6.09	376-06-7	
11CI-PF3OUdS*	Not detected	61	15	ng/kg	6.09	763051-92-9	
9CI-PF3ONS*	Not detected	61	13	ng/kg	6.09	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.42 (continued)

Sample Tag: SB-14-21 11'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 09:55, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	61	17	ng/kg	6.09	919005-14-4	
HFPO-DA*	Not detected	61	15	ng/kg	6.09	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.43

Sample Tag: SB-13-21 15'

Collected Date/Time: 04/21/2021 15:37

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.97/6.96/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 13:45, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	16	10	10	ng/L	2	375-22-4	
PFPeA*	3.9	4.0	1.0	ng/L	2	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2	757124-72-4	
PFHxA*	2.6	2.0	1.4	ng/L	2	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2	375-73-5	
PFHpA*	2.3	2.0	1.4	ng/L	2	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2	27619-97-2	
PFOA*	11	2.0	1.6	ng/L	2	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2	2991-50-6	
PFOS*	19	2.0	2.0	ng/L	2	1763-23-1	
PFOS-LN*	8.9	2.0	2.0	ng/L	2	1763-23-1-LN	
PFOS-BR*	10	2.0	2.0	ng/L	2	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2	919005-14-4	
HFPO-DA*	Not detected	10	2.0	ng/L	2	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL

Lab Sample ID: S23498.44

Sample Tag: SB-13-21 11'

Collected Date/Time: 04/21/2021 15:40

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.84/6.79/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	89	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 10:14, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	110	30	ng/kg	5.48	375-22-4	
PFPeA*	Not detected	55	18	ng/kg	5.48	2706-90-3	
4:2 FTSA*	Not detected	55	12	ng/kg	5.48	757124-72-4	
PFHxA*	Not detected	55	11	ng/kg	5.48	307-24-4	
PFBS*	Not detected	55	13	ng/kg	5.48	375-73-5	
PFHpA*	Not detected	55	15	ng/kg	5.48	375-85-9	
PFPeS*	Not detected	55	15	ng/kg	5.48	2706-91-4	
6:2 FTSA*	Not detected	55	18	ng/kg	5.48	27619-97-2	
PFOA*	Not detected	55	9.3	ng/kg	5.48	335-67-1	
PFHxS*	Not detected	55	7.7	ng/kg	5.48	355-46-4	
PFHxS-LN*	Not detected	55	7.7	ng/kg	5.48	355-46-4-LN	
PFHxS-BR*	Not detected	55	7.7	ng/kg	5.48	355-46-4-BR	
PFNA*	Not detected	55	14	ng/kg	5.48	375-95-1	
8:2 FTSA*	Not detected	55	22	ng/kg	5.48	39108-34-4	
PFHpS*	Not detected	55	16	ng/kg	5.48	375-92-8	
PFDA*	Not detected	55	26	ng/kg	5.48	335-76-2	
N-MeFOSAA*	Not detected	55	12	ng/kg	5.48	2355-31-9	
EtFOSAA*	Not detected	55	21	ng/kg	5.48	2991-50-6	
PFOS*	30	55	9.3	ng/kg	5.48	1763-23-1	J
PFOS-LN*	14	55	9.3	ng/kg	5.48	1763-23-1-LN	J
PFOS-BR*	14	55	9.3	ng/kg	5.48	1763-23-1-BR	J
PFUnDA*	Not detected	55	13	ng/kg	5.48	2058-94-8	
PFNS*	Not detected	55	12	ng/kg	5.48	68259-12-1	
PFDoDA*	Not detected	55	14	ng/kg	5.48	307-55-1	
PFDS*	Not detected	55	15	ng/kg	5.48	335-77-3	
PFTTrDA*	Not detected	55	13	ng/kg	5.48	72629-94-8	
FOSA*	Not detected	55	11	ng/kg	5.48	754-91-6	
PFTeDA*	Not detected	55	10	ng/kg	5.48	376-06-7	
11CI-PF3OUdS*	Not detected	55	13	ng/kg	5.48	763051-92-9	
9CI-PF3ONS*	Not detected	55	12	ng/kg	5.48	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.44 (continued)

Sample Tag: SB-13-21 11'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 10:14, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	55	15	ng/kg	5.48	919005-14-4	
HFPO-DA*	Not detected	55	14	ng/kg	5.48	13252-13-6	

Lab Sample ID: S23498.45

Sample Tag: SB-13-21 6'

Collected Date/Time: 04/21/2021 15:32

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.87/6.96/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	86	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 10:34, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	33	ng/kg	6.09	375-22-4	
PFPeA*	Not detected	61	19	ng/kg	6.09	2706-90-3	
4:2 FTSA*	Not detected	61	13	ng/kg	6.09	757124-72-4	
PFHxA*	Not detected	61	12	ng/kg	6.09	307-24-4	
PFBS*	Not detected	61	14	ng/kg	6.09	375-73-5	
PFHpA*	Not detected	61	17	ng/kg	6.09	375-85-9	
PFPeS*	Not detected	61	17	ng/kg	6.09	2706-91-4	
6:2 FTSA*	Not detected	61	20	ng/kg	6.09	27619-97-2	
PFOA*	27	61	10	ng/kg	6.09	335-67-1	J
PFHxS*	Not detected	61	8.5	ng/kg	6.09	355-46-4	
PFHxS-LN*	Not detected	61	8.5	ng/kg	6.09	355-46-4-LN	
PFHxS-BR*	Not detected	61	8.5	ng/kg	6.09	355-46-4-BR	
PFNA*	Not detected	61	16	ng/kg	6.09	375-95-1	
8:2 FTSA*	Not detected	61	24	ng/kg	6.09	39108-34-4	
PFHpS*	Not detected	61	18	ng/kg	6.09	375-92-8	
PFDA*	Not detected	61	29	ng/kg	6.09	335-76-2	
N-MeFOSAA*	Not detected	61	13	ng/kg	6.09	2355-31-9	
EtFOSAA*	Not detected	61	24	ng/kg	6.09	2991-50-6	
PFOS*	420	61	10	ng/kg	6.09	1763-23-1	
PFOS-LN*	290	61	10	ng/kg	6.09	1763-23-1-LN	
PFOS-BR*	130	61	10	ng/kg	6.09	1763-23-1-BR	
PFUnDA*	Not detected	61	15	ng/kg	6.09	2058-94-8	
PFNS*	Not detected	61	13	ng/kg	6.09	68259-12-1	
PFDoDA*	Not detected	61	16	ng/kg	6.09	307-55-1	
PFDS*	Not detected	61	17	ng/kg	6.09	335-77-3	
PFTTrDA*	Not detected	61	14	ng/kg	6.09	72629-94-8	
FOSA*	Not detected	61	12	ng/kg	6.09	754-91-6	
PFTeDA*	Not detected	61	12	ng/kg	6.09	376-06-7	
11CI-PF3OUdS*	Not detected	61	15	ng/kg	6.09	763051-92-9	
9CI-PF3ONS*	Not detected	61	13	ng/kg	6.09	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.45 (continued)

Sample Tag: SB-13-21 6'

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 10:34, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	61	17	ng/kg	6.09	919005-14-4	
HFPO-DA*	Not detected	61	15	ng/kg	6.09	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.46

Sample Tag: SB-13-21 12'

Collected Date/Time: 04/21/2021 15:44

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.96/6.88/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 14:05, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	15	9.9	9.9	ng/L	1.97	375-22-4	
PFPeA*	2.0	3.9	0.99	ng/L	1.97	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.97	757124-72-4	
PFHxA*	2.5	2.0	1.4	ng/L	1.97	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.97	375-73-5	
PFHpA*	2.3	2.0	1.4	ng/L	1.97	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.97	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.97	27619-97-2	
PFOA*	11	2.0	1.6	ng/L	1.97	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.97	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.97	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.97	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.97	375-95-1	
8:2 FTSA*	Not detected	2.0	0.99	ng/L	1.97	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.97	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.97	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.97	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.97	2991-50-6	
PFOS*	13	2.0	1.9	ng/L	1.97	1763-23-1	
PFOS-LN*	5.7	2.0	1.9	ng/L	1.97	1763-23-1-LN	
PFOS-BR*	6.5	2.0	1.9	ng/L	1.97	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.97	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.97	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.97	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.97	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.97	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.97	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.97	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.97	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.97	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.97	919005-14-4	
HFPO-DA*	Not detected	9.9	2.0	ng/L	1.97	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.47

Sample Tag: Equip Blank

Collected Date/Time: 04/21/2021 15:47

Matrix: Water

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.78/6.81/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 14:24, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.01	375-22-4	
PFPeA*	Not detected	4.0	1.0	ng/L	2.01	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.01	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2.01	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2.01	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2.01	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.01	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.01	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2.01	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2.01	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.01	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.01	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.01	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.01	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.01	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.01	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.01	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2.01	2991-50-6	
PFOS*	Not detected	2.0	2.0	ng/L	2.01	1763-23-1	
PFOS-LN*	Not detected	2.0	2.0	ng/L	2.01	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	2.0	ng/L	2.01	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.01	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.01	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2.01	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.01	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2.01	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.01	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2.01	376-06-7	
11CI-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.01	763051-92-9	
9CI-PF3ONS*	Not detected	2.0	1.4	ng/L	2.01	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.01	919005-14-4	
HFPO-DA*	Not detected	10	2.0	ng/L	2.01	13252-13-6	



Lab Sample ID: S23498.48
Sample Tag: Topps Assay 15'
Collected Date/Time: 04/21/2021 13:56
Matrix: Liquid
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Other / Misc.

Method: , Run Date: 04/26/21 08:30, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.49

Sample Tag: Field Blank

Collected Date/Time: 04/20/2021 08:55

Matrix: Water

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.94/6.81/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 14:44, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.95	375-22-4	
PFPeA*	Not detected	3.9	0.98	ng/L	1.95	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.95	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.95	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.95	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.95	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.95	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.95	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.95	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.95	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.95	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.95	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.95	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.95	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.95	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.95	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.95	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.95	2991-50-6	
PFOS*	Not detected	2.0	1.9	ng/L	1.95	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.95	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.95	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.95	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.95	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.95	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.95	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.95	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.95	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.95	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.95	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.95	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.95	919005-14-4	
HFPO-DA*	Not detected	9.8	2.0	ng/L	1.95	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.50

Sample Tag: Field Blank

Collected Date/Time: 04/21/2021 08:51

Matrix: Water

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.94/6.87/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 15:03, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.9	9.9	ng/L	1.97	375-22-4	
PFPeA*	Not detected	3.9	0.99	ng/L	1.97	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.97	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.97	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.97	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.97	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.97	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.97	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.97	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.97	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.97	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.97	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.97	375-95-1	
8:2 FTSA*	Not detected	2.0	0.99	ng/L	1.97	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.97	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.97	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.97	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.97	2991-50-6	
PFOS*	Not detected	2.0	1.9	ng/L	1.97	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.97	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.97	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.97	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.97	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.97	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.97	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.97	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.97	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.97	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.97	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.97	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.97	919005-14-4	
HFPO-DA*	Not detected	9.9	2.0	ng/L	1.97	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.51

Sample Tag: Trip Blank

Collected Date/Time: 04/19/2021 07:48

Matrix: Water

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.52/6.75/11	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 15:23, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.6	9.6	ng/L	1.91	375-22-4	
PFPeA*	Not detected	3.8	0.96	ng/L	1.91	2706-90-3	
4:2 FTSA*	Not detected	1.9	1.5	ng/L	1.91	757124-72-4	
PFHxA*	Not detected	1.9	1.3	ng/L	1.91	307-24-4	
PFBS*	Not detected	1.9	1.3	ng/L	1.91	375-73-5	
PFHpA*	Not detected	1.9	1.3	ng/L	1.91	375-85-9	
PFPeS*	Not detected	1.9	1.7	ng/L	1.91	2706-91-4	
6:2 FTSA*	Not detected	1.9	1.9	ng/L	1.91	27619-97-2	
PFOA*	Not detected	1.9	1.5	ng/L	1.91	335-67-1	
PFHxS*	Not detected	1.9	1.5	ng/L	1.91	355-46-4	
PFHxS-LN*	Not detected	1.9	1.5	ng/L	1.91	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.5	ng/L	1.91	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.91	375-95-1	
8:2 FTSA*	Not detected	1.9	0.96	ng/L	1.91	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.91	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.91	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.91	2355-31-9	
EtFOSAA*	Not detected	3.8	1.9	ng/L	1.91	2991-50-6	
PFOS*	Not detected	1.9	1.9	ng/L	1.91	1763-23-1	
PFOS-LN*	Not detected	1.9	1.9	ng/L	1.91	1763-23-1-LN	
PFOS-BR*	Not detected	1.9	1.9	ng/L	1.91	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.3	ng/L	1.91	2058-94-8	
PFNS*	Not detected	1.9	1.3	ng/L	1.91	68259-12-1	
PFDODA*	Not detected	1.9	1.5	ng/L	1.91	307-55-1	
PFDS*	Not detected	1.9	1.3	ng/L	1.91	335-77-3	
PFTTrDA*	Not detected	1.9	1.1	ng/L	1.91	72629-94-8	
FOSA*	Not detected	1.9	1.7	ng/L	1.91	754-91-6	
PFTeDA*	Not detected	3.8	1.7	ng/L	1.91	376-06-7	
11Cl-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.91	763051-92-9	
9Cl-PF3ONS*	Not detected	1.9	1.3	ng/L	1.91	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.91	919005-14-4	
HFPO-DA*	Not detected	9.6	1.9	ng/L	1.91	13252-13-6	



Lab Sample ID: S23498.52
Sample Tag: Dupe 1
Collected Date/Time: 04/19/2021 00:01
Matrix: Soil
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Other / Misc.

Method: , Run Date: 04/26/21 08:30, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Lab Sample ID: S23498.53
Sample Tag: Dupe 2
Collected Date/Time: 04/19/2021 00:01
Matrix: Soil
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Other / Misc.

Method: , Run Date: 04/26/21 08:30, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.54

Sample Tag: Dupe 3

Collected Date/Time: 04/19/2021 00:01

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.65/6.80/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 15:42, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	2.1	10	ng/L	2.06	375-22-4	X
PFPeA*	Not detected	4.1	1.0	ng/L	2.06	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.6	ng/L	2.06	757124-72-4	
PFHxA*	Not detected	2.1	1.4	ng/L	2.06	307-24-4	
PFBS*	Not detected	2.1	1.4	ng/L	2.06	375-73-5	
PFHpA*	Not detected	2.1	1.4	ng/L	2.06	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.06	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.06	27619-97-2	
PFOA*	Not detected	2.1	1.6	ng/L	2.06	335-67-1	
PFHxS*	Not detected	2.1	1.6	ng/L	2.06	355-46-4	
PFHxS-LN*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.06	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.06	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.06	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.06	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.06	2355-31-9	
EtFOSAA*	Not detected	4.1	2.1	ng/L	2.06	2991-50-6	
PFOS*	44	2.1	2.0	ng/L	2.06	1763-23-1	
PFOS-LN*	31	2.1	2.0	ng/L	2.06	1763-23-1-LN	
PFOS-BR*	11	2.1	2.0	ng/L	2.06	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.4	ng/L	2.06	2058-94-8	
PFNS*	Not detected	2.1	1.4	ng/L	2.06	68259-12-1	
PFDODA*	Not detected	2.1	1.6	ng/L	2.06	307-55-1	
PFDS*	Not detected	2.1	1.4	ng/L	2.06	335-77-3	
PFTTrDA*	Not detected	2.1	1.2	ng/L	2.06	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.06	754-91-6	
PFTeDA*	Not detected	4.1	1.9	ng/L	2.06	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.06	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.4	ng/L	2.06	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.06	919005-14-4	
HFPO-DA*	Not detected	10	2.1	ng/L	2.06	13252-13-6	

X-Elevated reporting limit due to matrix interference



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.55

Sample Tag: Dupe 4

Collected Date/Time: 04/19/2021 00:01

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.40/6.81/11	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 16:02, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	20	9.9	ng/L	1.97	375-22-4	X
PFPeA*	Not detected	3.9	0.99	ng/L	1.97	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.97	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.97	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.97	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.97	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.97	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.97	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.97	335-67-1	
PFHxS*	2.1	2.0	1.6	ng/L	1.97	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.97	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.97	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.97	375-95-1	
8:2 FTSA*	Not detected	2.0	0.99	ng/L	1.97	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.97	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.97	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.97	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.97	2991-50-6	
PFOS*	13	2.0	1.9	ng/L	1.97	1763-23-1	
PFOS-LN*	9.6	2.0	1.9	ng/L	1.97	1763-23-1-LN	
PFOS-BR*	3.2	2.0	1.9	ng/L	1.97	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.97	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.97	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.97	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.97	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.97	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.97	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.97	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.97	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.97	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.97	919005-14-4	
HFPO-DA*	Not detected	9.9	2.0	ng/L	1.97	13252-13-6	

X-Elevated reporting limit due to matrix interference

Lab Sample ID: S23498.56

Sample Tag: Dupe 5

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.79/6.87/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	90	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 10:53, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	31	ng/kg	5.79	375-22-4	
PFPeA*	Not detected	58	19	ng/kg	5.79	2706-90-3	
4:2 FTSA*	Not detected	58	13	ng/kg	5.79	757124-72-4	
PFHxA*	Not detected	58	12	ng/kg	5.79	307-24-4	
PFBS*	Not detected	58	13	ng/kg	5.79	375-73-5	
PFHpA*	Not detected	58	16	ng/kg	5.79	375-85-9	
PFPeS*	Not detected	58	16	ng/kg	5.79	2706-91-4	
6:2 FTSA*	Not detected	58	19	ng/kg	5.79	27619-97-2	
PFOA*	Not detected	58	9.8	ng/kg	5.79	335-67-1	
PFHxS*	Not detected	58	8.1	ng/kg	5.79	355-46-4	
PFHxS-LN*	Not detected	58	8.1	ng/kg	5.79	355-46-4-LN	
PFHxS-BR*	Not detected	58	8.1	ng/kg	5.79	355-46-4-BR	
PFNA*	Not detected	58	15	ng/kg	5.79	375-95-1	
8:2 FTSA*	Not detected	58	23	ng/kg	5.79	39108-34-4	
PFHpS*	Not detected	58	17	ng/kg	5.79	375-92-8	
PFDA*	Not detected	58	28	ng/kg	5.79	335-76-2	
N-MeFOSAA*	Not detected	58	13	ng/kg	5.79	2355-31-9	
EtFOSAA*	Not detected	58	23	ng/kg	5.79	2991-50-6	
PFOS*	190	58	9.8	ng/kg	5.79	1763-23-1	
PFOS-LN*	76	58	9.8	ng/kg	5.79	1763-23-1-LN	
PFOS-BR*	110	58	9.8	ng/kg	5.79	1763-23-1-BR	
PFUnDA*	Not detected	58	14	ng/kg	5.79	2058-94-8	
PFNS*	Not detected	58	12	ng/kg	5.79	68259-12-1	
PFDoDA*	Not detected	58	15	ng/kg	5.79	307-55-1	
PFDS*	Not detected	58	16	ng/kg	5.79	335-77-3	
PFTTrDA*	Not detected	58	13	ng/kg	5.79	72629-94-8	
FOSA*	Not detected	58	12	ng/kg	5.79	754-91-6	
PFTeDA*	Not detected	58	11	ng/kg	5.79	376-06-7	
11CI-PF3OUdS*	Not detected	58	14	ng/kg	5.79	763051-92-9	
9CI-PF3ONS*	Not detected	58	13	ng/kg	5.79	756426-58-1	
ADONA*	Not detected	58	16	ng/kg	5.79	919005-14-4	



Lab Sample ID: S23498.56 (continued)
Sample Tag: Dupe 5

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 10:53, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	58	14	ng/kg	5.79	13252-13-6	



Lab Sample ID: S23498.57

Sample Tag: Dupe 6

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.97/6.90/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	80	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 11:13, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	33	ng/kg	6.04	375-22-4	
PFPeA*	Not detected	60	19	ng/kg	6.04	2706-90-3	
4:2 FTSA*	Not detected	60	13	ng/kg	6.04	757124-72-4	
PFHxA*	Not detected	60	12	ng/kg	6.04	307-24-4	
PFBS*	Not detected	60	14	ng/kg	6.04	375-73-5	
PFHpA*	Not detected	60	17	ng/kg	6.04	375-85-9	
PFPeS*	Not detected	60	17	ng/kg	6.04	2706-91-4	
6:2 FTSA*	Not detected	60	20	ng/kg	6.04	27619-97-2	
PFOA*	Not detected	60	10	ng/kg	6.04	335-67-1	
PFHxS*	Not detected	60	8.5	ng/kg	6.04	355-46-4	
PFHxS-LN*	Not detected	60	8.5	ng/kg	6.04	355-46-4-LN	
PFHxS-BR*	Not detected	60	8.5	ng/kg	6.04	355-46-4-BR	
PFNA*	Not detected	60	16	ng/kg	6.04	375-95-1	
8:2 FTSA*	Not detected	60	24	ng/kg	6.04	39108-34-4	
PFHpS*	Not detected	60	18	ng/kg	6.04	375-92-8	
PFDA*	Not detected	60	29	ng/kg	6.04	335-76-2	
N-MeFOSAA*	Not detected	60	13	ng/kg	6.04	2355-31-9	
EtFOSAA*	Not detected	60	24	ng/kg	6.04	2991-50-6	
PFOS*	82	60	10	ng/kg	6.04	1763-23-1	
PFOS-LN*	51	60	10	ng/kg	6.04	1763-23-1-LN	J
PFOS-BR*	29	60	10	ng/kg	6.04	1763-23-1-BR	J
PFUnDA*	Not detected	60	14	ng/kg	6.04	2058-94-8	
PFNS*	Not detected	60	13	ng/kg	6.04	68259-12-1	
PFDoDA*	Not detected	60	16	ng/kg	6.04	307-55-1	
PFDS*	Not detected	60	17	ng/kg	6.04	335-77-3	
PFTTrDA*	Not detected	60	14	ng/kg	6.04	72629-94-8	
FOSA*	Not detected	60	12	ng/kg	6.04	754-91-6	
PFTeDA*	Not detected	60	11	ng/kg	6.04	376-06-7	
11CI-PF3OUdS*	Not detected	60	14	ng/kg	6.04	763051-92-9	
9CI-PF3ONS*	Not detected	60	13	ng/kg	6.04	756426-58-1	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.57 (continued)

Sample Tag: Dupe 6

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/29/21 11:13, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	60	17	ng/kg	6.04	919005-14-4	
HFPO-DA*	Not detected	60	15	ng/kg	6.04	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.58

Sample Tag: Dupe 7

Collected Date/Time: 04/19/2021 00:01

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.97/6.86/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 16:21, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.96	375-22-4	
PFPeA*	Not detected	3.9	0.98	ng/L	1.96	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.96	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.96	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.96	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.96	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.96	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.96	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.96	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.96	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.96	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.96	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.96	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.96	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.96	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.96	2991-50-6	
PFOS*	26	2.0	1.9	ng/L	1.96	1763-23-1	
PFOS-LN*	15	2.0	1.9	ng/L	1.96	1763-23-1-LN	
PFOS-BR*	11	2.0	1.9	ng/L	1.96	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.96	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.96	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.96	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.96	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.96	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.96	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.96	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.96	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.96	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.96	919005-14-4	
HFPO-DA*	Not detected	9.8	2.0	ng/L	1.96	13252-13-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S23498.59

Sample Tag: Dupe 8

Collected Date/Time: 04/19/2021 00:01

Matrix: Liquid

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.87/6.84/10	ASTMD7979-19M	04/28/21 15:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/29/21 16:41, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10.0	10.0	ng/L	1.99	375-22-4	
PFPeA*	Not detected	4.0	1.00	ng/L	1.99	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.99	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.99	307-24-4	
PFBS*	1.6	2.0	1.4	ng/L	1.99	375-73-5	J
PFHpA*	Not detected	2.0	1.4	ng/L	1.99	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.99	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.99	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.99	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.99	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.99	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.99	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.99	375-95-1	
8:2 FTSA*	Not detected	2.0	1.00	ng/L	1.99	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.99	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.99	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.99	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	1.99	2991-50-6	
PFOS*	23	2.0	2.0	ng/L	1.99	1763-23-1	
PFOS-LN*	13	2.0	2.0	ng/L	1.99	1763-23-1-LN	
PFOS-BR*	8.8	2.0	2.0	ng/L	1.99	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.99	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.99	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.99	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.99	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.99	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.99	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	1.99	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.99	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.99	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.99	919005-14-4	
HFPO-DA*	Not detected	10.0	2.0	ng/L	1.99	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Lab Sample ID: S23498.60
Sample Tag: Dupe 9
Collected Date/Time: 04/19/2021 00:01
Matrix: Liquid
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Other / Misc.

Method: , Run Date: 04/26/21 08:30, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Lab Sample ID: S23498.61
Sample Tag: Dupe 10
Collected Date/Time: 04/19/2021 00:01
Matrix: Liquid
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Other / Misc.

Method: , Run Date: 04/26/21 08:30, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		

Lab Sample ID: S23498.62

Sample Tag: Dupe 11

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.68/6.85/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	89	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/30/21 21:46, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	120	33	ng/kg	6.14	375-22-4	
PFPeA*	Not detected	61	20	ng/kg	6.14	2706-90-3	
4:2 FTSA*	Not detected	61	14	ng/kg	6.14	757124-72-4	
PFHxA*	Not detected	61	12	ng/kg	6.14	307-24-4	
PFBS*	Not detected	61	14	ng/kg	6.14	375-73-5	
PFHpA*	Not detected	61	17	ng/kg	6.14	375-85-9	
PFPeS*	Not detected	61	17	ng/kg	6.14	2706-91-4	
6:2 FTSA*	Not detected	61	20	ng/kg	6.14	27619-97-2	
PFOA*	Not detected	61	10	ng/kg	6.14	335-67-1	
PFHxS*	Not detected	61	8.6	ng/kg	6.14	355-46-4	
PFHxS-LN*	Not detected	61	8.6	ng/kg	6.14	355-46-4-LN	
PFHxS-BR*	Not detected	61	8.6	ng/kg	6.14	355-46-4-BR	
PFNA*	Not detected	61	16	ng/kg	6.14	375-95-1	
8:2 FTSA*	Not detected	61	25	ng/kg	6.14	39108-34-4	
PFHpS*	Not detected	61	18	ng/kg	6.14	375-92-8	
PFDA*	Not detected	61	29	ng/kg	6.14	335-76-2	
N-MeFOSAA*	Not detected	61	14	ng/kg	6.14	2355-31-9	
EtFOSAA*	Not detected	61	24	ng/kg	6.14	2991-50-6	
PFOS*	420	61	10	ng/kg	6.14	1763-23-1	
PFOS-LN*	310	61	10	ng/kg	6.14	1763-23-1-LN	
PFOS-BR*	110	61	10	ng/kg	6.14	1763-23-1-BR	
PFUnDA*	Not detected	61	15	ng/kg	6.14	2058-94-8	
PFNS*	Not detected	61	13	ng/kg	6.14	68259-12-1	
PFDoDA*	Not detected	61	16	ng/kg	6.14	307-55-1	
PFDS*	Not detected	61	17	ng/kg	6.14	335-77-3	
PFTTrDA*	Not detected	61	14	ng/kg	6.14	72629-94-8	
FOSA*	Not detected	61	12	ng/kg	6.14	754-91-6	
PFTeDA*	Not detected	61	12	ng/kg	6.14	376-06-7	
11CI-PF3OUdS*	Not detected	61	15	ng/kg	6.14	763051-92-9	
9CI-PF3ONS*	Not detected	61	14	ng/kg	6.14	756426-58-1	
ADONA*	Not detected	61	17	ng/kg	6.14	919005-14-4	



Lab Sample ID: S23498.62 (continued)

Sample Tag: Dupe 11

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/30/21 21:46, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
HFPO-DA*	Not detected	61	15	ng/kg	6.14	13252-13-6	



Lab Sample ID: S23498.63

Sample Tag: Dupe 12

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	8.65/6.89/10	ASTM D7968-17M	04/28/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:55, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	86	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/30/21 22:06, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	130	36	ng/kg	6.61	375-22-4	
PFPeA*	Not detected	66	21	ng/kg	6.61	2706-90-3	
4:2 FTSA*	Not detected	66	15	ng/kg	6.61	757124-72-4	
PFHxA*	Not detected	66	13	ng/kg	6.61	307-24-4	
PFBS*	Not detected	66	15	ng/kg	6.61	375-73-5	
PFHpA*	Not detected	66	19	ng/kg	6.61	375-85-9	
PFPeS*	Not detected	66	19	ng/kg	6.61	2706-91-4	
6:2 FTSA*	Not detected	66	22	ng/kg	6.61	27619-97-2	
PFOA*	Not detected	66	11	ng/kg	6.61	335-67-1	
PFHxS*	Not detected	66	9.3	ng/kg	6.61	355-46-4	
PFHxS-LN*	Not detected	66	9.3	ng/kg	6.61	355-46-4-LN	
PFHxS-BR*	Not detected	66	9.3	ng/kg	6.61	355-46-4-BR	
PFNA*	Not detected	66	17	ng/kg	6.61	375-95-1	
8:2 FTSA*	Not detected	66	26	ng/kg	6.61	39108-34-4	
PFHpS*	Not detected	66	20	ng/kg	6.61	375-92-8	
PFDA*	Not detected	66	32	ng/kg	6.61	335-76-2	
N-MeFOSAA*	Not detected	66	15	ng/kg	6.61	2355-31-9	
EtFOSAA*	Not detected	66	26	ng/kg	6.61	2991-50-6	
PFOS*	55	66	11	ng/kg	6.61	1763-23-1	J
PFOS-LN*	19	66	11	ng/kg	6.61	1763-23-1-LN	J
PFOS-BR*	Not detected	66	11	ng/kg	6.61	1763-23-1-BR	
PFUnDA*	Not detected	66	16	ng/kg	6.61	2058-94-8	
PFNS*	Not detected	66	14	ng/kg	6.61	68259-12-1	
PFDoDA*	Not detected	66	17	ng/kg	6.61	307-55-1	
PFDS*	Not detected	66	19	ng/kg	6.61	335-77-3	
PFTTrDA*	Not detected	66	15	ng/kg	6.61	72629-94-8	
FOSA*	Not detected	66	13	ng/kg	6.61	754-91-6	I
PFTeDA*	Not detected	66	13	ng/kg	6.61	376-06-7	
11CI-PF3OUdS*	Not detected	66	16	ng/kg	6.61	763051-92-9	

J-Estimated value less than reporting limit, but greater than MDL

I-Matrix interference with internal standard



Lab Sample ID: S23498.63 (continued)

Sample Tag: Dupe 12

28 PFAs, Method: ASTM D7968-17M, Run Date: 04/30/21 22:06, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
9CI-PF3ONS*	Not detected	66	15	ng/kg	6.61	756426-58-1	
ADONA*	Not detected	66	19	ng/kg	6.61	919005-14-4	
HFPO-DA*	Not detected	66	17	ng/kg	6.61	13252-13-6	



Lab Sample ID: S23498.64
Sample Tag: Dupe 13
Collected Date/Time: 04/19/2021 00:01
Matrix: Liquid
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Other / Misc.

Method: , Run Date: 04/26/21 08:30, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Lab Sample ID: S23498.65
Sample Tag: Dupe 14
Collected Date/Time: 04/19/2021 00:01
Matrix: Liquid
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR

Other / Misc.

Method: , Run Date: 04/26/21 08:30, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Lab Sample ID: S23498.66

Sample Tag: Dupe 15

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Other / Misc.

Method: , Run Date: 04/26/21 08:30, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Lab Sample ID: S23498.67

Sample Tag: Dupe 16

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.4	IR
1	250ml Plastic	None	Yes	5.4	IR

Other / Misc.

Method: , Run Date: 04/26/21 08:30, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		

Merit Laboratories Login Checklist

Lab Set ID:S23498

Client:APPLIED (Applied Ecosystems)

Project: RACER Flint West #12990

Submitted:04/23/2021 14:10 Login User: MMC

Attention: Rodney Abke

Address: Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525

FAX:

Email: rabke@appliedecosystems.com

Selection	Description	Note
Sample Receiving		
01. ☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer #	IR 5.4
02. ☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun	
03. ☐ Yes ☒ No ☐ N/A	Samples shipped	
04. ☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box	
05. ☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody		
06. ☒ Yes ☐ No ☐ N/A	COC adequately filled out	
07. ☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab	
08. ☐ Yes ☒ No ☐ N/A	Sample tag on bottles match COC	Many depths and collection times do not match from bottle label to COC
09. ☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontracted to:	
Preservation		
10. ☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation	
11. ☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)	
12. ☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions		
13. ☒ Yes ☐ No ☐ N/A	All bottles intact	
14. ☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used	
15. ☒ Yes ☐ No ☐ N/A	Merit bottles used	
16. ☒ Yes ☐ No ☐ N/A	Sufficient sample volume received	
17. ☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration	
18. ☒ Yes ☐ No ☐ N/A	Samples submitted within holding time	
19. ☐ Yes ☐ No ☒ N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____



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C.O.C. PAGE # 1 OF 6

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME **Rodney Abke**
COMPANY **Applied EcoSystems**
ADDRESS **G-4300 South Saginaw Street**
CITY **Burton** STATE **MI** ZIP CODE **48529**
PHONE NO. **810-715-2525** FAX NO. **810-715-2526** P.O. NO. **PO795930**
E-MAIL ADDRESS **rabke@appliedecosystems.com** QUOTE NO.

CONTACT NAME **Monica Wallingford** ☐ SAME
COMPANY **Revitalizing Auto Communities Environmental Response (RACER) Trust**
ADDRESS
CITY STATE ZIP CODE
PHONE NO. **313.486.2978** E-MAIL ADDRESS **mwallingford@racertrust.org**

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME **RACER Flint West #12990** SAMPLER(S) - PLEASE PRINT/SIGN NAME
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER
DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID
SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIFE A=AIR W=WASTE

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	PFAS/PFOS **	Certifications ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES Project Locations ☐ Detroit ☐ New York ☐ Other Special Instructions
23498.01	4-20	9:24	SB-9-21 8'	S	4	X							X	
.02	4-20	9:31	SB-9-21 11'	S	4	X							X	
.03	4-20	9:30	SB-9-21 19'	W	3	X							X	
.04	4-20	9:53	SB-9-21 22'	W	3	X							X	
.05	4-20	10:50	SB-8-21 24'	W	3	X							X	
.06	4-20	11:04	SB-8-21 20'	W	3	X							X	
.07	4-20	11:54	SB-8-21 10'	S	4	X							X	
.08	4-20	11:51	SB-8-21 7'	S	4	X							X	
.09	4-20	12:00	SB-6-21 7'	S	4	X							X	
.10	4-20	12:08	SB-6-21 15'	S	4	X							X	
.11	4-20	11:57	SB-6-21 24'	W	4	X							X	
.12	4-20	12:30	SB-6-21 22'	W	4	X							X	

RELINQUISHED BY: **Joshua Hunsicker** ☐ Sampler DATE **4-20-21** TIME **16:45**
SIGNATURE/ORGANIZATION **AE**
RECEIVED BY: **AE** DATE **4/20/21** TIME **16:45**
SIGNATURE/ORGANIZATION **AE**
RELINQUISHED BY: **AE** DATE **4/20/21** TIME **11:30**
SIGNATURE/ORGANIZATION **AE**
RECEIVED BY: **AE** DATE **4/20/21** TIME **11:30**
SIGNATURE/ORGANIZATION **AE**

RELINQUISHED BY: **Monica Wallingford** DATE **4/23/21** TIME **14:10**
SIGNATURE/ORGANIZATION **M Wallingford**
RECEIVED BY: **M Wallingford** DATE **4/23/21** TIME **14:10**
SIGNATURE/ORGANIZATION **M Wallingford**
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
NOTES: **5.4** TEMP. ON ARRIVAL

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



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C.O.C. PAGE # 2 OF 5

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME **Rodney Abke**
COMPANY **Applied EcoSystems**
ADDRESS **G-4300 South Saginaw Street**
CITY **Burton** STATE **MI** ZIP CODE **48529**
PHONE NO. **810-715-2525** FAX NO. **810-715-2526** P.O. NO. **PO795930**
E-MAIL ADDRESS **rabke@appliedecosystems.com** QUOTE NO.

CONTACT NAME **Monica Wallingford** ☐ SAME
COMPANY **Revitalizing Auto Communities Environmental Response (RACER) Trust**
ADDRESS
CITY STATE ZIP CODE
PHONE NO. **313.486.2978** E-MAIL ADDRESS **mwallingford@racertrust.org**

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME **RACER Flint West #12990** SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID
SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIFE A=AIR W=WASTE

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER
2348.13	4-20	11:15	SB-3-21 5'	S	4	X						
.14	4-20	14:17	SB-3-21	S	4	X						
.15	4-20	14:17	SB-7-21	W	3	X						
.16	4-20	15:38	SB-4-21	S	4	X						
.17	4-20	15:34	SB-4-21	S	4	X						
.18	4-20	15:42	SB-4-21 24'	W	3	X						
.19	4-20	15:50	SB-4-21 19'	W	3	X						
.20	4-21	9:10	SB-5-21 25'	W	3	X						
.21	4-21	9:06	SB-5-21 8'	S	4	X						
.22	4-21	9:13	SB-5-21 10'	S	4	X						
.23	4-21	9:20	SB-5-21 21'	W	3	X						
.24	4-21	10:04	SB-7-21 7'	S	4	X						

PFAS/PFOS **

Certifications

☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☐ New York
☐ Other

Special Instructions

** - 28 Compound List

RELINQUISHED BY: *Joshua Hough* ☐ Sampler
SIGNATURE/ORGANIZATION *AE*
RECEIVED BY: *AE*
SIGNATURE/ORGANIZATION *AE*
RELINQUISHED BY: *AE*
SIGNATURE/ORGANIZATION *AE*
RECEIVED BY: *AE*
SIGNATURE/ORGANIZATION *AE*

RELINQUISHED BY: *Monica Wallingford*
SIGNATURE/ORGANIZATION *Monica Wallingford*
RECEIVED BY: *M. Wallingford*
SIGNATURE/ORGANIZATION *M. Wallingford*
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
NOTES: TEMP. ON ARRIVAL **5.4**

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



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C.O.C. PAGE # 3 OF 5

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME Rodney Abke		
COMPANY Applied EcoSystems		
ADDRESS G-4300 South Saginaw Street		
CITY Burton	STATE MI	ZIP CODE 48529
PHONE NO. 810-715-2525	FAX NO. 810-715-2526	P.O. NO. PO795930
E-MAIL ADDRESS rabke@appliedecosystems.com		QUOTE NO.

CONTACT NAME Monica Wallingford		☐ SAME
COMPANY Revitalizing Auto Communities Environmental Response (RACER) Trust		
ADDRESS		
CITY	STATE	ZIP CODE
PHONE NO. 313.486.2978	E-MAIL ADDRESS mwallingford@racertrust.org	

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME RACER Flint West #12990	SAMPLER(S) - PLEASE PRINT/SIGN NAME
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER	
DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER	

MATRIX CODE:	GW=GROUNDWATER	WW=WASTEWATER	S=SOIL	L=LIQUID	SD=SOLID	
	SL=SLUDGE	DW=DRINKING WATER	O=OIL	WP=WIFE	A=AIR	W=WASTE

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	PFAS/PFOS **
	DATE	TIME											
2349825	4-21	10:10	SB-7-21 24'	W	3	x							x
26	4-21	10:14	SB-7-21 15'	S	4	x							x
27	4-21	10:21	SB-7-21 21'	W	3	x							x
28	4-21	11:24	SB-16-21 16'	S	4	x							x
29	4-21	11:30	SB-16-21 8'	S	4	x							x
30	4-21	11:32	SB-16-21 3'	S	4	x							x
31	4-21	12:52	SB-2-21 19'	W	3	x							x
32	4-21	13:10	SB-2-21 6'	S	4	x							x
33	4-21	13:12	SB-2-21 17'	W	3	x							x
34	4-21	13:17	SB-2-21 15'	S	4	x							x
35	4-21	13:58	SB-121 6'	S	4	x							x
36	4-21	14:30	SB-1-21 14-15'	S	4	x							x

Certifications

☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☐ New York
☐ Other

Special Instructions

** - 28 Compound List

RELINQUISHED BY: Joshua Anderson	☐ Sampler	DATE 4/20/21	TIME 16:45
SIGNATURE/ORGANIZATION		DATE 4/21/21	TIME 13:30
RECEIVED BY: AE		DATE 4/20/21-4/21/21	TIME 13:30
SIGNATURE/ORGANIZATION		DATE 4/20/21	TIME 11:30
RELINQUISHED BY: AE		DATE 4/20/21	TIME 11:30
SIGNATURE/ORGANIZATION		DATE 4/20/21	TIME 11:30

RELINQUISHED BY: J. Wallingford	DATE 4/22/21	TIME 14:14
SIGNATURE/ORGANIZATION	DATE 4/23/21	TIME 14:10
RECEIVED BY: M. Chilton		
SIGNATURE/ORGANIZATION		
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS
NOTES:		TEMP. ON ARRIVAL 5.4

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



Report ID: S24077.01(02)
Generated on 07/27/2021
Replaces report S24077.01(01) generated on 06/09/2021

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Report produced by

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Contacts for report questions:
John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S24077.01
Project: RACER Flint West #12990
Collected Date(s): 05/07/2021
Submitted Date/Time: 05/11/2021 16:20
Sampled by: Unknown
P.O. #: 795930

Table of Contents

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Sample Summary (Page 5)

Maya Murshak
Technical Director



General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

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Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the

FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Report Narrative

Results reported to MDL per client request

**Laboratory Certifications**

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
ASTMD7979-19M	ASTM Method D7979 - 19 Modified (Isotopic Dilution)

Parameter Summary

Parameter	Synonym	Cas #
PFBA	Perfluorobutanoic Acid	375-22-4
PFPeA	Perfluoropentanoic Acid	2706-90-3
4:2 FTSA	4:2 Fluorotelomer Sulfonic Acid	757124-72-4
PFHxA	Perfluorohexanoic Acid	307-24-4
PFBS	Perfluorobutane sulfonic Acid	375-73-5
PFHpA	Perfluoroheptanoic Acid	375-85-9
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4
6:2 FTSA	6:2 Fluorotelomer Sulfonic Acid	27619-97-2
PFOA	Perfluorooctanoic Acid	335-67-1
PFHxS	Perfluorohexane Sulfonic Acid	355-46-4
PFHxS-LN	Perfluorohexane Sulfonic Acid - LN	355-46-4-LN
PFHxS-BR	Perfluorohexane Sulfonic Acid - BR	355-46-4-BR
PFNA	Perfluorononanoic Acid	375-95-1
8:2 FTSA	8:2 Fluorotelomer Sulfonic Acid	39108-34-4
PFHpS	Perfluoroheptane Sulfonic Acid	375-92-8
PFDA	Perfluorodecanoic Acid	335-76-2
N-MeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9
EtFOSAA	N-Ethyl Perfluorooctane Sulfonamidoacetic Acid	2991-50-6
PFOS	Perfluorooctane Sulfonic Acid	1763-23-1
PFOS-LN	Perfluorooctane Sulfonic Acid - LN	1763-23-1-LN
PFOS-BR	Perfluorooctane Sulfonic Acid - BR	1763-23-1-BR
PFUnDA	Perfluoroundecanoic Acid	2058-94-8
PFNS	Perfluorononane Sulfonic Acid	68259-12-1
PFDoDA	Perfluorododecanoic Acid	307-55-1
PFDS	Perfluorodecane Sulfonic Acid	335-77-3
PFTTrDA	Perfluorotridecanoic Acid	72629-94-8
FOSA	Perfluorooctane Sulfonamide	754-91-6
PFTeDA	Perfluorotetradecanoic Acid	376-06-7
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone1-sulfonic acid	756426-58-1
ADONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4
HFPO-DA	Hexafluoropropylene oxide dimer	13252-13-6



Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S24077.01	MW-103S Topps Assay	Water	05/07/21 12:54



Analytical Laboratory Report

Revised Report

Lab Sample ID: S24077.01

Sample Tag: MW-103S Topps Assay

Collected Date/Time: 05/07/2021 12:54

Matrix: Water

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	15ml Centrifuge Tube	None	Yes	4.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.51/6.97/11	ASTMD7979-19M	05/18/21 14:00	KCV	
Initial wt. (g) / Final wt. (g) / Volume (ml) (Rep)	2.75/6.95/30	ASTMD7979-19M	06/04/21 17:00	JGH	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 05/18/21 21:19, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10.0	10.0	ng/L	1.99	375-22-4	
PFPeA*	1.7	4.0	1.00	ng/L	1.99	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.99	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.99	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.99	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.99	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.99	2706-91-4	
6:2 FTSA*	Not detected	4.0	2.0	ng/L	1.99	27619-97-2	
PFOA*	2.7	2.0	1.6	ng/L	1.99	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.99	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.99	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.99	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.99	375-95-1	
8:2 FTSA*	Not detected	2.0	1.00	ng/L	1.99	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.99	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.99	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.99	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	1.99	2991-50-6	
PFOS*	19	2.0	2.0	ng/L	1.99	1763-23-1	
PFOS-LN*	6.9	2.0	2.0	ng/L	1.99	1763-23-1-LN	
PFOS-BR*	12	2.0	2.0	ng/L	1.99	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.99	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.99	68259-12-1	
PfDoDA*	Not detected	2.0	1.6	ng/L	1.99	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.99	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.99	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.99	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	1.99	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.99	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.99	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.99	919005-14-4	
HFPO-DA*	Not detected	10.0	2.0	ng/L	1.99	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Revised Report

Lab Sample ID: S24077.01 (continued)

Sample Tag: MW-103S Topps Assay

28 PFAs TOP ASSAY, Method: ASTMD7979-19M, Run Date: 06/08/21 13:23, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	26		ng/L	5.17	375-22-4	
PFPeA*	39	10		ng/L	5.17	2706-90-3	B
4:2 FTSA*	Not detected	5.2		ng/L	5.17	757124-72-4	
PFHxA*	40	5.2		ng/L	5.17	307-24-4	B
PFBS*	Not detected	5.2		ng/L	5.17	375-73-5	
PFHpA*	Not detected	5.2		ng/L	5.17	375-85-9	
PFPeS*	Not detected	5.2		ng/L	5.17	2706-91-4	
6:2 FTSA*	Not detected	5.2		ng/L	5.17	27619-97-2	
PFOA*	6.5	5.2		ng/L	5.17	335-67-1	
PFHxS*	Not detected	5.2		ng/L	5.17	355-46-4	
PFHxS-LN*	Not detected	5.2		ng/L	5.17	355-46-4-LN	
PFHxS-BR*	Not detected	5.2		ng/L	5.17	355-46-4-BR	
PFNA*	Not detected	5.2		ng/L	5.17	375-95-1	
8:2 FTSA*	Not detected	5.2		ng/L	5.17	39108-34-4	
PFHpS*	Not detected	5.2		ng/L	5.17	375-92-8	
PFDA*	Not detected	5.2		ng/L	5.17	335-76-2	
N-MeFOSAA*	Not detected	5.2		ng/L	5.17	2355-31-9	
EtFOSAA*	Not detected	10		ng/L	5.17	2991-50-6	
PFOS*	19	5.2		ng/L	5.17	1763-23-1	
PFOS-LN*	7.6	5.2		ng/L	5.17	1763-23-1-LN	
PFOS-BR*	Not detected	5.2		ng/L	5.17	1763-23-1-BR	
PFUnDA*	Not detected	5.2		ng/L	5.17	2058-94-8	
PFNS*	Not detected	5.2		ng/L	5.17	68259-12-1	
PFDODA*	Not detected	5.2		ng/L	5.17	307-55-1	
PFDS*	Not detected	5.2		ng/L	5.17	335-77-3	
PFTTrDA*	Not detected	5.2		ng/L	5.17	72629-94-8	
FOSA*	Not detected	5.2		ng/L	5.17	754-91-6	
PFTeDA*	Not detected	10		ng/L	5.17	376-06-7	
11Cl-PF3OUdS*	Not detected	5.2		ng/L	5.17	763051-92-9	
9Cl-PF3ONS*	Not detected	5.2		ng/L	5.17	756426-58-1	
ADONA*	Not detected	5.2		ng/L	5.17	919005-14-4	
HFPO-DA*	Not detected	5.2		ng/L	5.17	13252-13-6	

B-Compound also found in associated method blank

Merit Laboratories Login Checklist

Lab Set ID:S24077

Client:APPLIED (Applied Ecosystems)

Project: RACER Flint West #12990

Submitted:05/11/2021 16:20 Login User: SRS

Attention: Rodney Abke

Address: Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525

FAX:

Email: rabke@appliedecosystems.com

Selection	Description	Note
Sample Receiving		
01. ☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C	Thermometer # IR 4.2
02. ☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun	
03. ☐ Yes ☒ No ☐ N/A	Samples shipped	
04. ☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box	
05. ☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody		
06. ☒ Yes ☐ No ☐ N/A	COC adequately filled out	
07. ☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab	
08. ☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC	
09. ☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontracted to:	
Preservation		
10. ☐ Yes ☐ No ☒ N/A	Do sample have correct chemical preservation	
11. ☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)	
12. ☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions		
13. ☒ Yes ☐ No ☐ N/A	All bottles intact	
14. ☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used	
15. ☒ Yes ☐ No ☐ N/A	Merit bottles used	
16. ☒ Yes ☐ No ☐ N/A	Sufficient sample volume received	
17. ☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration	
18. ☒ Yes ☐ No ☐ N/A	Samples submitted within holding time	
19. ☐ Yes ☐ No ☒ N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME Rodney Abke		CONTACT NAME Monica Wallingford		☐ SAME	
COMPANY Applied EcoSystems		COMPANY Revitalizing Auto Communities Environmental Response (RACER) Trust			
ADDRESS G-4300 South Saginaw Street		ADDRESS			
CITY Burton		STATE MI	ZIP CODE 48529		
PHONE NO. 810-715-2525	FAX NO. 810-715-2526	P.O. NO. PO795930		PHONE NO. 313.486.2978	E-MAIL ADDRESS mwallingford@racertrust.org
E-MAIL ADDRESS rabke@appliedecosystems.com		QUOTE NO.		ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)	

PROJECT NO./NAME RACER Flint West #12990			SAMPLER(S) - PLEASE PRINT/SIGN NAME																				Certifications	
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER																							☐ OHIO VAP ☐ Drinking Water	
DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER																							☐ DoD ☐ NPDES	
MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIFE A=AIR W=WASTE													# Containers & Preservatives										Project Locations	
																							☐ Detroit ☐ New York	
																							☐ Other	
																							Special Instructions	
																							**- 28 Compound List	

RELINQUISHED BY: <i>Joel Hernandez</i>	☒ Sampler	DATE	TIME	RELINQUISHED BY: <i>J. Miller</i>	DATE	TIME
SIGNATURE/ORGANIZATION		5-7-21	14:30	SIGNATURE/ORGANIZATION	5/11/21	16:28
RECEIVED BY: <i>AE</i>		DATE	TIME	RECEIVED BY: <i>Sam Smith</i>	DATE	TIME
SIGNATURE/ORGANIZATION		5-7-21	14:30	SIGNATURE/ORGANIZATION	5/11/21	16:00
RELINQUISHED BY:		DATE	TIME	SEAL NO.	SEAL INTACT	INITIALS
SIGNATURE/ORGANIZATION <i>AE</i>		5/11/21	11:55		YES ☐ NO ☐	
RECEIVED BY:		DATE	TIME	SEAL NO.	SEAL INTACT	INITIALS
SIGNATURE/ORGANIZATION <i>J. Miller</i>		5/11/21	11:58		YES ☐ NO ☐	
				NOTES: TEMP. ON ARRIVAL <u>4.2</u>		

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

TOP ASSAY



S24077.01

Sample Tag
Date/Time Collected
Matrix

MW-103S Top Assay
5/7/2021 12:54
Water

TOTAL

ANALYTES		Pre-TOP	Post-TOP	Blank	Delta PFAS (less blank)
PFBA	ng/L	<10	<26		
PFPeA	ng/L	<4	39	43	-4
4:2 FTSA	ng/L	<2	<5.2		
PFHxA	ng/L	<2	40	43	-3
PFBS	ng/L	<2	<5.2		
PFHpA	ng/L	<2	<5.2		
PFPeS	ng/L	<2	<5.2		
6:2 FTSA	ng/L	<2	<5.2		
PFOA	ng/L	2.7	2.7		0
PFHxS	ng/L	<2	<5.2		
PFHxS-LN	ng/L	<2	<5.2		
PFHxS-BR	ng/L	<2	<5.2		
PFNA	ng/L	<2	<5.2		
8:2 FTSA	ng/L	<2	<5.2		
PFHpS	ng/L	<2	<5.2		
PFDA	ng/L	<2	<5.2		
N-MeFOSAA	ng/L	<2	<5.2		
EtFOSAA	ng/L	<2	<5.2		
PFOS	ng/L	19	19		0
PFOS-LN	ng/L	6.9	7		0
PFOS-BR	ng/L	12	12		0
PFUnDA	ng/L	<2	<5.2		
PFNS	ng/L	<2	<5.2		
PFDoDA	ng/L	<2	<5.2		
PFDS	ng/L	<2	<5.2		
PFTTrDA	ng/L	<2	<5.2		
FOSA	ng/L	<2	<5.2		
PFTeDA	ng/L	<2	<5.2		
11Cl-PF3OUdS	ng/L	<2	<5.2		
9Cl-PF3ONS	ng/L	<2	<5.2		
ADONA	ng/L	<2	<5.2		
HFPO-DA	ng/L	<10	<25		
SUM PFAS	ng/L	22	101	86	-7

TOTAL PFC
%Change
-32.3%



Analytical Laboratory Report

Report ID: S23493.01(01)
Generated on 05/04/2021

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S23493.01-S23493.04
Project: RACER Flint West #12990
Collected Date(s): 04/19/2021
Submitted Date/Time: 04/23/2021 14:10
Sampled by: Unknown
P.O. #: 795930

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Method Summary (Page 4)
Sample Summary (Page 5)

Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

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PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the

FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



Analytical Laboratory Report

Method Summary

Method	Version
SM2540B	Standard Method 2540 B 2011
Walkley Black	Walkley Black



Analytical Laboratory Report

Sample Summary (4 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S23493.01	SB-11-21 15'	Soil	04/19/21 10:14
S23493.02	SB-11-21 18'	Soil	04/19/21 10:22
S23493.03	SB-12-21 19'	Soil	04/19/21 14:03
S23493.04	SB-12-21 9'	Soil	04/19/21 14:06



Analytical Laboratory Report

Lab Sample ID: S23493.01
Sample Tag: SB-11-21 15'
Collected Date/Time: 04/19/2021 10:14
Matrix: Soil
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	5.4	IR

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:30, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	77	1		%	1		

Method: Walkley Black, Run Date: 05/04/21 12:00, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fractional Organic Carbon*	3,400	500		mg/kg	1		



Analytical Laboratory Report

Lab Sample ID: S23493.02
Sample Tag: SB-11-21 18'
Collected Date/Time: 04/19/2021 10:22
Matrix: Soil
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	5.4	IR

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:30, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	78	1		%	1		

Method: Walkley Black, Run Date: 05/04/21 12:30, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fractional Organic Carbon*	900	500		mg/kg	1		



Analytical Laboratory Report

Lab Sample ID: S23493.03
Sample Tag: SB-12-21 19'
Collected Date/Time: 04/19/2021 14:03
Matrix: Soil
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	5.4	IR

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:30, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	78	1		%	1		

Method: Walkley Black, Run Date: 05/04/21 12:45, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fractional Organic Carbon*	1,100	500		mg/kg	1		



Analytical Laboratory Report

Lab Sample ID: S23493.04
Sample Tag: SB-12-21 9'
Collected Date/Time: 04/19/2021 14:06
Matrix: Soil
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	5.4	IR

Inorganics

Method: SM2540B, Run Date: 04/24/21 11:30, Analyst: ELR

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	95	1		%	1		

Method: Walkley Black, Run Date: 05/04/21 13:00, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fractional Organic Carbon*	Not detected	500		mg/kg	1		

Merit Laboratories Login Checklist

Lab Set ID:S23493

Client:APPLIED (Applied Ecosystems)

Project: RACER Flint West #12990

Submitted:04/23/2021 14:10 Login User: MMC

Attention: Rodney Abke

Address: Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525

FAX:

Email: rabke@appliedecosystems.com

Selection	Description	Note
Sample Receiving		
01. ☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C	Thermometer # IR 5.4
02. ☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun	
03. ☐ Yes ☒ No ☐ N/A	Samples shipped	
04. ☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box	
05. ☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody		
06. ☒ Yes ☐ No ☐ N/A	COC adequately filled out	
07. ☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab	
08. ☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC	
09. ☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontacted to:	
Preservation		
10. ☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation	
11. ☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)	
12. ☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions		
13. ☒ Yes ☐ No ☐ N/A	All bottles intact	
14. ☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used	
15. ☒ Yes ☐ No ☐ N/A	Merit bottles used	
16. ☒ Yes ☐ No ☐ N/A	Sufficient sample volume received	
17. ☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration	
18. ☒ Yes ☐ No ☐ N/A	Samples submitted within holding time	
19. ☐ Yes ☐ No ☒ N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME				Rodney Abke							
COMPANY				Applied EcoSystems							
ADDRESS								G-4300 South Saginaw Street			
CITY						STATE		MI		ZIP CODE	
Burton										48529	
PHONE NO.				FAX NO.				P.O. NO.			
810-715-2525				810-715-2526				PO795930			
E-MAIL ADDRESS								QUOTE NO.			
rabke@appliedecosystems.com											

CONTACT NAME		Monica Wallingford		☐ SAME	
COMPANY		Revitalizing Auto Communities Environmental Response (RACER) Trust			
ADDRESS					
CITY				STATE	ZIP CODE
PHONE NO.		E-MAIL ADDRESS			
313.486.2978		mwallingford@racetrust.org			

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME	RACER Flint West #12990	SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

MATRIX	GW=GROUNDWATER	WW=WASTEWATER	S=SOIL	L=LIQUID	SD=SOLID
CODE:	SL=SLUDGE	DW=DRINKING WATER	O=OIL	WP=WIPE	A=AIR
		W=WASTE			

Containers & Preservatives

[illegible]

Certifications

☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☐ New York

Special Instructions

~~** - 28 Compound List~~

FOX

RELINQUISHED BY: Joshua Hurdickson	☐ Sampler	DATE	TIME
SIGNATURE/ORGANIZATION <i>[Signature]</i> AE		4-19	16:30
RECEIVED BY:		DATE	TIME
SIGNATURE/ORGANIZATION <i>[Signature]</i> AE		4-19	16:30
RELINQUISHED BY:		DATE	TIME
SIGNATURE/ORGANIZATION <i>[Signature]</i> AE		4/19/01	11:30
RECEIVED BY:		DATE	TIME
SIGNATURE/ORGANIZATION <i>[Signature]</i>		4/19/01	11:30

RELINQUISHED BY:		SIGNATURE/ORGANIZATION		DATE		TIME	
		<i>[Signature]</i>		4/23/21		14:10	
RECEIVED BY:		SIGNATURE/ORGANIZATION		DATE		TIME	
		<i>[Signature]</i>		4/23/21		14:10	
SEAL NO.	SEAL INTACT	INITIALS	NOTES:	TEMP. ON ARRIVAL			
	YES ☐ NO ☐						
SEAL NO.	SEAL INTACT	INITIALS					
	YES ☐ NO ☐				5.4		

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12



Analytical Laboratory Report

Report ID: S22884.01(01)
Generated on 04/15/2021

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S22884.01-S22884.02
Project: RACER Flint West #12990
Collected Date(s): 04/06/2021
Submitted Date/Time: 04/06/2021 12:55
Sampled by: Rodney Abke
P.O. #: 795930

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Maya Murshak
Technical Director



Analytical Laboratory Report

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FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
ASTMD7979-19M	ASTM Method D7979 - 19 Modified (Isotopic Dilution)

Parameter Summary

Parameter	Synonym	Cas #
PFBA	Perfluorobutanoic Acid	375-22-4
PFPeA	Perfluoropentanoic Acid	2706-90-3
4:2 FTSA	4:2 Fluorotelomer Sulfonic Acid	757124-72-4
PFHxA	Perfluorohexanoic Acid	307-24-4
PFBS	Perfluorobutane sulfonic Acid	375-73-5
PFHpA	Perfluoroheptanoic Acid	375-85-9
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4
6:2 FTSA	6:2 Fluorotelomer Sulfonic Acid	27619-97-2
PFOA	Perfluorooctanoic Acid	335-67-1
PFHxS	Perfluorohexane Sulfonic Acid	355-46-4
PFHxS-LN	Perfluorohexane Sulfonic Acid - LN	355-46-4-LN
PFHxS-BR	Perfluorohexane Sulfonic Acid - BR	355-46-4-BR
PFNA	Perfluorononanoic Acid	375-95-1
8:2 FTSA	8:2 Fluorotelomer Sulfonic Acid	39108-34-4
PFHpS	Perfluoroheptane Sulfonic Acid	375-92-8
PFDA	Perfluorodecanoic Acid	335-76-2
N-MeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9
EtFOSAA	N-Ethyl Perfluorooctane Sulfonamidoacetic Acid	2991-50-6
PFOS	Perfluorooctane Sulfonic Acid	1763-23-1
PFOS-LN	Perfluorooctane Sulfonic Acid - LN	1763-23-1-LN
PFOS-BR	Perfluorooctane Sulfonic Acid - BR	1763-23-1-BR
PFUnDA	Perfluoroundecanoic Acid	2058-94-8
PFNS	Perfluorononane Sulfonic Acid	68259-12-1
PFDoDA	Perfluorododecanoic Acid	307-55-1
PFDS	Perfluorodecane Sulfonic Acid	335-77-3
PFTTrDA	Perfluorotridecanoic Acid	72629-94-8
FOSA	Perfluorooctane Sulfonamide	754-91-6
PFTeDA	Perfluorotetradecanoic Acid	376-06-7
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone1-sulfonic acid	756426-58-1
ADONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4
HFPO-DA	Hexafluoropropylene oxide dimer	13252-13-6



Analytical Laboratory Report

Sample Summary (2 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S22884.01	Baggie	Water	04/06/21 10:50
S22884.02	Baggie - DUP	Water	04/06/21 10:50



Analytical Laboratory Report

Lab Sample ID: S22884.01

Sample Tag: Baggie

Collected Date/Time: 04/06/2021 10:50

Matrix: Water

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.03/6.84/10	ASTMD7979-19M	04/09/21 11:45	KCV	
Initial wt. (g) / Final wt. (g) / Volume (ml) (Rep)	2.79/6.85/11	ASTMD7979-19M	04/13/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/13/21 22:40, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.3	9.3	ng/L	1.85	375-22-4	
PFPeA*	Not detected	3.7	0.93	ng/L	1.85	2706-90-3	
4:2 FTSA*	Not detected	1.9	1.5	ng/L	1.85	757124-72-4	
PFHxA*	Not detected	1.9	1.3	ng/L	1.85	307-24-4	
PFBS*	Not detected	1.9	1.3	ng/L	1.85	375-73-5	
PFHpA*	Not detected	1.9	1.3	ng/L	1.85	375-85-9	
PFPeS*	Not detected	1.9	1.7	ng/L	1.85	2706-91-4	
6:2 FTSA*	Not detected	1.9	1.9	ng/L	1.85	27619-97-2	
PFOA*	Not detected	1.9	1.5	ng/L	1.85	335-67-1	
PFHxS*	Not detected	1.9	1.5	ng/L	1.85	355-46-4	
PFHxS-LN*	Not detected	1.9	1.5	ng/L	1.85	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.5	ng/L	1.85	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.85	375-95-1	
8:2 FTSA*	Not detected	1.9	0.93	ng/L	1.85	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.85	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.85	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.85	2355-31-9	
EtFOSAA*	Not detected	3.7	1.9	ng/L	1.85	2991-50-6	
PFOS*	Not detected	1.9	1.8	ng/L	1.85	1763-23-1	
PFOS-LN*	Not detected	1.9	1.8	ng/L	1.85	1763-23-1-LN	
PFOS-BR*	Not detected	1.9	1.8	ng/L	1.85	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.3	ng/L	1.85	2058-94-8	
PFNS*	Not detected	1.9	1.3	ng/L	1.85	68259-12-1	
PFDODA*	Not detected	1.9	1.5	ng/L	1.85	307-55-1	I
PFDS*	Not detected	1.9	1.3	ng/L	1.85	335-77-3	
PFTDA*	Not detected	1.9	1.1	ng/L	1.85	72629-94-8	I
FOSA*	Not detected	1.9	1.7	ng/L	1.85	754-91-6	
PFTeDA*	Not detected	3.7	1.7	ng/L	1.85	376-06-7	I
11CI-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.85	763051-92-9	
9CI-PF3ONS*	Not detected	1.9	1.3	ng/L	1.85	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.85	919005-14-4	
HFPO-DA*	Not detected	1.9	1.9	ng/L	1.85	13252-13-6	

I-Matrix interference with internal standard



Analytical Laboratory Report

Lab Sample ID: S22884.02

Sample Tag: Baggie - DUP

Collected Date/Time: 04/06/2021 10:50

Matrix: Water

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.98/6.88/10	ASTMD7979-19M	04/09/21 11:45	KCV	
Initial wt. (g) / Final wt. (g) / Volume (ml) (Rep)	2.21/6.88/10	ASTMD7979-19M	04/13/21 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 04/13/21 23:38, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.4	9.4	ng/L	1.88	375-22-4	
PFPeA*	Not detected	3.8	0.94	ng/L	1.88	2706-90-3	
4:2 FTSA*	Not detected	1.9	1.5	ng/L	1.88	757124-72-4	
PFHxA*	Not detected	1.9	1.3	ng/L	1.88	307-24-4	
PFBS*	Not detected	1.9	1.3	ng/L	1.88	375-73-5	
PFHpA*	Not detected	1.9	1.3	ng/L	1.88	375-85-9	
PFPeS*	Not detected	1.9	1.7	ng/L	1.88	2706-91-4	
6:2 FTSA*	Not detected	1.9	1.9	ng/L	1.88	27619-97-2	
PFOA*	Not detected	1.9	1.5	ng/L	1.88	335-67-1	
PFHxS*	Not detected	1.9	1.5	ng/L	1.88	355-46-4	
PFHxS-LN*	Not detected	1.9	1.5	ng/L	1.88	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.5	ng/L	1.88	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.88	375-95-1	
8:2 FTSA*	Not detected	1.9	0.94	ng/L	1.88	39108-34-4	I
PFHpS*	Not detected	1.9	1.9	ng/L	1.88	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.88	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.88	2355-31-9	
EtFOSAA*	Not detected	3.8	1.9	ng/L	1.88	2991-50-6	
PFOS*	Not detected	1.9	1.8	ng/L	1.88	1763-23-1	
PFOS-LN*	Not detected	1.9	1.8	ng/L	1.88	1763-23-1-LN	
PFOS-BR*	Not detected	1.9	1.8	ng/L	1.88	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.3	ng/L	1.88	2058-94-8	I
PFNS*	Not detected	1.9	1.3	ng/L	1.88	68259-12-1	
PFDODA*	Not detected	1.9	1.5	ng/L	1.88	307-55-1	I
PFDS*	Not detected	1.9	1.3	ng/L	1.88	335-77-3	
PFTDA*	Not detected	1.9	1.1	ng/L	1.88	72629-94-8	I
FOSA*	Not detected	1.9	1.7	ng/L	1.88	754-91-6	
PFTeDA*	Not detected	3.8	1.7	ng/L	1.88	376-06-7	
11Cl-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.88	763051-92-9	
9Cl-PF3ONS*	Not detected	1.9	1.3	ng/L	1.88	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.88	919005-14-4	
HFPO-DA*	Not detected	1.9	1.9	ng/L	1.88	13252-13-6	

I-Matrix interference with internal standard

Merit Laboratories Login Checklist

Lab Set ID:S22884

Client:APPLIED (Applied Ecosystems)

Project: RACER Flint West #12990

Submitted:04/06/2021 12:55 Login User: SRS

Attention: Rodney Abke

Address: Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525

FAX:

Email: rabke@appliedecosystems.com

Selection	Description	Note
Sample Receiving		
01. ☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C	Thermometer # IR 4.9
02. ☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun	
03. ☐ Yes ☒ No ☐ N/A	Samples shipped	
04. ☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box	
05. ☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody		
06. ☒ Yes ☐ No ☐ N/A	COC adequately filled out	
07. ☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab	
08. ☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC	
09. ☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontracted to:	
Preservation		
10. ☐ Yes ☐ No ☒ N/A	Do sample have correct chemical preservation	
11. ☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)	
12. ☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions		
13. ☒ Yes ☐ No ☐ N/A	All bottles intact	
14. ☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used	
15. ☒ Yes ☐ No ☐ N/A	Merit bottles used	
16. ☒ Yes ☐ No ☐ N/A	Sufficient sample volume received	
17. ☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration	
18. ☒ Yes ☐ No ☐ N/A	Samples submitted within holding time	
19. ☐ Yes ☐ No ☒ N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME Rodney Abke			
COMPANY Applied EcoSystems			
ADDRESS G-4300 South Saginaw Street			
CITY Burton		STATE MI	ZIP CODE 48529
PHONE NO. 810-715-2525	FAX NO. 810-715-2526	P.O. NO. PO795930	
E-MAIL ADDRESS rabke@appliedecosystems.com		QUOTE NO.	

CONTACT NAME		Monica Wallingford		☐ SAME	
COMPANY					
Revitalizing Auto Communities Environmental Response (RACER) Trust					
ADDRESS					
CITY				STATE	ZIP CODE
PHONE NO.		E-MAIL ADDRESS			
313.486.2978		mwallingford@racetrust.org			

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME	RACER Flint West #12990	SAMPLER(S) - PLEASE PRINT SIGN NAME	Rodney Abke

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☒ OTHER 04/15/2021

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

MATRIX:	GW=GROUNDWATER	WW=WASTEWATER	S=SOIL	L=LIQUID	SD=SOLID
CODE:	SL=SLUDGE	DW=DRINKING WATER	O=OIL	WP=WIPE	A=AIR
					W=WASTE

Containers & Preservatives[illegible]

HCl
HNO ₃
H ₂ SO ₄
NaOH
MnOH

PFAS/PFOS **

Certifications

☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☐ New York
☐ Other _____

Special Instructions

**_28 Compound List

RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>	☒ Sampler	DATE 4-8-21	TIME 10:55
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>		DATE 4/10/21	TIME 10:50
RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>		DATE 4/6/21	TIME 10:55
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>		DATE 4/10/21	TIME 12:00

RELINQUISHED BY: SIGNATURE/ORGANIZATION			DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION			DATE	TIME
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL _____ 4.9	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS		

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



Quality Control Report

Report ID: QC-S23495-01
Generated on 05/14/2021

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S23495.01-S23495.17
Project: RACER Flint West #12990
Submitted Date/Time: 04/23/2021 14:10
Sampled by: Unknown
P.O. #: 795930

QC Report Sections

Cover Page (Page 1)
Analysis Summary (Pages 2-18)
Prep Batch Summary (Page 19)
Internal Standards per Lab Sample (Pages 20-36)
Internal Standards per QC Sample (Pages 37-45)
Batch QC Results (Pages 46-59)

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S23495.01

Sample Tag: SB-11-21 1'

Collected Date/Time: 04/19/2021 10:10

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:30	TS210424B	TS210424B	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/28/21 10:26	DQ210427R	PF210427S1	Yes	BLK/LCS/LCSD/MS/DU
28 PFAs (Replicate 01)	ASTM D7968-17M	04/28/21 21:14	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.02

Sample Tag: SB-11-21 15'

Collected Date/Time: 04/19/2021 10:14

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Total Solids	SM2540B	04/24/21 11:30	TS210424B	TS210424B	No	BLK/LCS/DUP
Organics - Volatiles						
28 PFAs	ASTM D7968-17M	04/28/21 10:45	DQ210427R	PF210427S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.03

Sample Tag: SB-11-21 B

Collected Date/Time: 04/19/2021 10:00

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/26/21 22:46	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.04

Sample Tag: SB-11-21 T

Collected Date/Time: 04/19/2021 10:20

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/26/21 23:05	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.05

Sample Tag: SB-15-21 28'

Collected Date/Time: 04/19/2021 11:50

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/26/21 23:25	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.06

Sample Tag: SB-15-21 24'

Collected Date/Time: 04/19/2021 12:05

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/27/21 20:16	DQ210427	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.07

Sample Tag: SB-15-21 6'

Collected Date/Time: 04/19/2021 12:58

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:30	TS210424B	TS210424B	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/28/21 21:34	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.08

Sample Tag: SB-15-21 13'

Collected Date/Time: 04/19/2021 13:02

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:30	TS210424B	TS210424B	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/28/21 22:13	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.09

Sample Tag: SB-12-21 19'

Collected Date/Time: 04/19/2021 13:34

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/27/21 00:04	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.10

Sample Tag: SB-12-21 7'

Collected Date/Time: 04/19/2021 13:55

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:30	TS210424B	TS210424B	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/28/21 22:52	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.11

Sample Tag: SB-12-21 13'

Collected Date/Time: 04/19/2021 14:01

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:30	TS210424B	TS210424B	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/28/21 23:11	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.12

Sample Tag: SB-10-21 1'

Collected Date/Time: 04/19/2021 15:30

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:30	TS210424B	TS210424B	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/28/21 23:31	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.13

Sample Tag: SB-10-21 12'

Collected Date/Time: 04/19/2021 15:35

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:30	TS210424B	TS210424B	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/28/21 23:50	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.14

Sample Tag: SB-12-21 15'

Collected Date/Time: 04/19/2021 13:48

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/27/21 00:23	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.15

Sample Tag: Field Blank

Collected Date/Time: 04/19/2021 08:36

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/27/21 00:42	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.16

Sample Tag: SB-10-21 17'

Collected Date/Time: 04/19/2021 15:05

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/27/21 01:02	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23495.17

Sample Tag: SB-10-21 19'

Collected Date/Time: 04/19/2021 14:43

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/27/21 01:21	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Inorganics, Prep Batch ID: TS210424B

Surrogates: No, QC Types: BLK/LCS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23495.01	Total Solids	SM2540B	04/24/21 11:30	TS210424B
S23495.02	Total Solids	SM2540B	04/24/21 11:30	TS210424B
S23495.07	Total Solids	SM2540B	04/24/21 11:30	TS210424B
S23495.08	Total Solids	SM2540B	04/24/21 11:30	TS210424B
S23495.10	Total Solids	SM2540B	04/24/21 11:30	TS210424B
S23495.11	Total Solids	SM2540B	04/24/21 11:30	TS210424B
S23495.12	Total Solids	SM2540B	04/24/21 11:30	TS210424B
S23495.13	Total Solids	SM2540B	04/24/21 11:30	TS210424B

Organics - Volatiles, Prep Batch ID: PF210423W3

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23495.03	28 PFAs	ASTMD7979-19M	04/26/21 22:46	DQ210426
S23495.04	28 PFAs	ASTMD7979-19M	04/26/21 23:05	DQ210426
S23495.05	28 PFAs	ASTMD7979-19M	04/26/21 23:25	DQ210426
S23495.06	28 PFAs	ASTMD7979-19M	04/27/21 20:16	DQ210427
S23495.09	28 PFAs	ASTMD7979-19M	04/27/21 00:04	DQ210426
S23495.14	28 PFAs	ASTMD7979-19M	04/27/21 00:23	DQ210426
S23495.15	28 PFAs	ASTMD7979-19M	04/27/21 00:42	DQ210426
S23495.16	28 PFAs	ASTMD7979-19M	04/27/21 01:02	DQ210426
S23495.17	28 PFAs	ASTMD7979-19M	04/27/21 01:21	DQ210426

Organics - Volatiles, Prep Batch ID: PF210427S1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23495.01	28 PFAs	ASTM D7968-17M	04/28/21 10:26	DQ210427R
S23495.02	28 PFAs	ASTM D7968-17M	04/28/21 10:45	DQ210427R

Organics - Volatiles, Prep Batch ID: PF210428S1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23495.01	28 PFAs (Replicate 01)	ASTM D7968-17M	04/28/21 21:14	DQ210428S1
S23495.07	28 PFAs	ASTM D7968-17M	04/28/21 21:34	DQ210428S1
S23495.08	28 PFAs	ASTM D7968-17M	04/28/21 22:13	DQ210428S1
S23495.10	28 PFAs	ASTM D7968-17M	04/28/21 22:52	DQ210428S1
S23495.11	28 PFAs	ASTM D7968-17M	04/28/21 23:11	DQ210428S1
S23495.12	28 PFAs	ASTM D7968-17M	04/28/21 23:31	DQ210428S1
S23495.13	28 PFAs	ASTM D7968-17M	04/28/21 23:50	DQ210428S1

Lab Sample ID: S23495.01

Sample Tag: SB-11-21 1'

Collected Date/Time: 04/19/2021 10:10

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210427R, Run Date: 04/28/2021 10:26, Matrix: SO, Dilution: 7.03

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		98.2	50.0	150.0
M2-6:2FTSA		113.7	50.0	150.0
M2-8:2FTSA		83.3	50.0	150.0
M2PFTeDA		103.6	12.0	218.0
M3PFBS		94.2	50.0	150.0
M3PFHxS		90.3	50.0	150.0
M4PFHpA		88.8	50.0	150.0
M5PFHxA		92.4	50.0	150.0
M5PFPeA		95.1	50.0	150.0
M6PFDA		86.2	50.0	150.0
M7PFUnDA		97.7	50.0	150.0
M8FOSA		84.5	50.0	150.0
M8PFOA		96.2	50.0	150.0
M8PFOS		102.8	50.0	150.0
M9-PFNA		83.8	50.0	150.0
MPFBA		94.2	50.0	150.0
MPFDoDA		101.6	50.0	150.0
d3N-MeFOSAA		88.2	50.0	150.0
d5EtFOSAA		81.0	50.0	150.0

Organics - Volatiles, Analysis: 28 PFAs (Replicate 01)

Run in Batch: DQ210428S1, Run Date: 04/28/2021 21:14, Matrix: SO, Dilution: 5.22

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		85.8	50.0	150.0
M2-6:2FTSA		113.0	50.0	150.0
M2-8:2FTSA		113.9	50.0	150.0
M2PFTeDA		135.5	12.0	218.0
M3PFBS		91.6	50.0	150.0
M3PFHxS		89.8	50.0	150.0
M4PFHpA		89.6	50.0	150.0
M5PFHxA		91.5	50.0	150.0
M5PFPeA		93.4	50.0	150.0
M6PFDA		96.9	50.0	150.0
M7PFUnDA		111.7	50.0	150.0
M8FOSA		102.5	50.0	150.0
M8PFOA		111.0	50.0	150.0
M8PFOS		109.4	50.0	150.0
M9-PFNA		114.1	50.0	150.0
MPFBA		96.0	50.0	150.0
MPFDoDA		115.2	50.0	150.0
d3N-MeFOSAA		113.1	50.0	150.0
d5EtFOSAA		113.6	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.02

Sample Tag: SB-11-21 15'

Collected Date/Time: 04/19/2021 10:14

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210427R, Run Date: 04/28/2021 10:45, Matrix: SO, Dilution: 5.92

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		77.6	50.0	150.0
M2-6:2FTSA		80.2	50.0	150.0
M2-8:2FTSA		71.2	50.0	150.0
M2PFTeDA		83.1	12.0	218.0
M3PFBS		90.3	50.0	150.0
M3PFHxS		84.5	50.0	150.0
M4PFHpA		89.8	50.0	150.0
M5PFHxA		85.4	50.0	150.0
M5PFPeA		87.0	50.0	150.0
M6PFDA		78.7	50.0	150.0
M7PFUnDA		89.4	50.0	150.0
M8FOSA		84.8	50.0	150.0
M8PFOA		90.0	50.0	150.0
M8PFOS		93.3	50.0	150.0
M9-PFNA		83.0	50.0	150.0
MPFBA		92.6	50.0	150.0
MPFDoDA		88.5	50.0	150.0
d3N-MeFOSAA		86.3	50.0	150.0
d5EtFOSAA		75.8	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.03

Sample Tag: SB-11-21 B

Collected Date/Time: 04/19/2021 10:00

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/26/2021 22:46, Matrix: WW, Dilution: 1.97

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		92.4	50.0	150.0
M2-6:2FTSA		106.0	50.0	150.0
M2-8:2FTSA		107.8	50.0	150.0
M2PFTeDA		104.2	12.0	218.0
M3PFBS		117.0	50.0	150.0
M3PFHxS		124.0	50.0	150.0
M4PFHpA		116.1	50.0	150.0
M5PFHxA		105.6	50.0	150.0
M5PFPeA		116.7	50.0	150.0
M6PFDA		113.8	50.0	150.0
M7PFUnDA		128.7	50.0	150.0
M8FOSA		112.4	50.0	150.0
M8PFOA		132.4	50.0	150.0
M8PFOS		139.8	50.0	150.0
M9-PFNA		121.6	50.0	150.0
MPFBA		121.0	50.0	150.0
MPFDoDA		108.8	50.0	150.0
d3N-MeFOSAA		131.6	50.0	150.0
d5EtFOSAA		119.6	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.04

Sample Tag: SB-11-21 T

Collected Date/Time: 04/19/2021 10:20

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/26/2021 23:05, Matrix: WW, Dilution: 2

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		92.9	50.0	150.0
M2-6:2FTSA		114.0	50.0	150.0
M2-8:2FTSA		120.4	50.0	150.0
M2PFTeDA		87.6	12.0	218.0
M3PFBS		111.4	50.0	150.0
M3PFHxS		108.6	50.0	150.0
M4PFHpA		111.6	50.0	150.0
M5PFHxA		112.4	50.0	150.0
M5PFPeA		122.2	50.0	150.0
M6PFDA		126.3	50.0	150.0
M7PFUnDA		119.8	50.0	150.0
M8FOSA		121.2	50.0	150.0
M8PFOA		134.6	50.0	150.0
M8PFOS		112.4	50.0	150.0
M9-PFNA		123.6	50.0	150.0
MPFBA		122.6	50.0	150.0
MPFDoDA		124.7	50.0	150.0
d3N-MeFOSAA		113.6	50.0	150.0
d5EtFOSAA		120.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.05

Sample Tag: SB-15-21 28'

Collected Date/Time: 04/19/2021 11:50

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/26/2021 23:25, Matrix: WW, Dilution: 1.97

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		80.2	50.0	150.0
M2-6:2FTSA		101.3	50.0	150.0
M2-8:2FTSA		118.5	50.0	150.0
M2PFTeDA		102.1	12.0	218.0
M3PFBS		110.2	50.0	150.0
M3PFHxS		113.9	50.0	150.0
M4PFHpA		105.6	50.0	150.0
M5PFHxA		109.2	50.0	150.0
M5PFPeA		114.3	50.0	150.0
M6PFDA		113.4	50.0	150.0
M7PFUnDA		124.9	50.0	150.0
M8FOSA		113.5	50.0	150.0
M8PFOA		125.9	50.0	150.0
M8PFOS		125.3	50.0	150.0
M9-PFNA		102.0	50.0	150.0
MPFBA		114.8	50.0	150.0
MPFDoDA		112.0	50.0	150.0
d3N-MeFOSAA		118.0	50.0	150.0
d5EtFOSAA		106.3	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.06

Sample Tag: SB-15-21 24'

Collected Date/Time: 04/19/2021 12:05

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210427, Run Date: 04/27/2021 20:16, Matrix: WW, Dilution: 1.94

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		125.1	50.0	150.0
M2-6:2FTSA		120.1	50.0	150.0
M2-8:2FTSA		140.7	50.0	150.0
M2PFTeDA		123.8	12.0	218.0
M3PFBS		108.8	50.0	150.0
M3PFHxS		107.2	50.0	150.0
M4PFHpA		113.5	50.0	150.0
M5PFHxA		105.0	50.0	150.0
M5PFPeA		106.5	50.0	150.0
M6PFDA		110.4	50.0	150.0
M7PFUnDA		115.3	50.0	150.0
M8FOSA		107.7	50.0	150.0
M8PFOA		119.7	50.0	150.0
M8PFOS		120.6	50.0	150.0
M9-PFNA		116.0	50.0	150.0
MPFBA		107.9	50.0	150.0
MPFDoDA		108.0	50.0	150.0
d3N-MeFOSAA		108.5	50.0	150.0
d5EtFOSAA		113.3	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.07

Sample Tag: SB-15-21 6'

Collected Date/Time: 04/19/2021 12:58

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/28/2021 21:34, Matrix: SO, Dilution: 6.35

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		84.7	50.0	150.0
M2-6:2FTSA		103.5	50.0	150.0
M2-8:2FTSA		89.9	50.0	150.0
M2PFTeDA		136.4	12.0	218.0
M3PFBS		92.4	50.0	150.0
M3PFHxS		92.8	50.0	150.0
M4PFHpA		91.5	50.0	150.0
M5PFHxA		90.9	50.0	150.0
M5PFPeA		92.7	50.0	150.0
M6PFDA		114.8	50.0	150.0
M7PFUnDA		105.5	50.0	150.0
M8FOSA		97.1	50.0	150.0
M8PFOA		92.0	50.0	150.0
M8PFOS		93.9	50.0	150.0
M9-PFNA		104.9	50.0	150.0
MPFBA		92.3	50.0	150.0
MPFDoDA		102.6	50.0	150.0
d3N-MeFOSAA		119.4	50.0	150.0
d5EtFOSAA		93.6	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.08

Sample Tag: SB-15-21 13'

Collected Date/Time: 04/19/2021 13:02

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/28/2021 22:13, Matrix: SO, Dilution: 5.59

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		77.5	50.0	150.0
M2-6:2FTSA		104.8	50.0	150.0
M2-8:2FTSA		105.8	50.0	150.0
M2PFTeDA		150.4	12.0	218.0
M3PFBS		96.0	50.0	150.0
M3PFHxS		99.0	50.0	150.0
M4PFHpA		105.3	50.0	150.0
M5PFHxA		90.6	50.0	150.0
M5PFPeA		93.8	50.0	150.0
M6PFDA		100.4	50.0	150.0
M7PFUnDA		109.7	50.0	150.0
M8FOSA		102.6	50.0	150.0
M8PFOA		92.6	50.0	150.0
M8PFOS		99.1	50.0	150.0
M9-PFNA		97.4	50.0	150.0
MPFBA		89.7	50.0	150.0
MPFDoDA		109.2	50.0	150.0
d3N-MeFOSAA		111.6	50.0	150.0
d5EtFOSAA		96.0	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.09

Sample Tag: SB-12-21 19'

Collected Date/Time: 04/19/2021 13:34

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/27/2021 00:04, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		90.4	50.0	150.0
M2-6:2FTSA		112.6	50.0	150.0
M2-8:2FTSA		125.1	50.0	150.0
M2PFTeDA		100.8	12.0	218.0
M3PFBS		115.5	50.0	150.0
M3PFHxS		120.8	50.0	150.0
M4PFHpA		120.7	50.0	150.0
M5PFHxA		108.6	50.0	150.0
M5PFPeA		118.4	50.0	150.0
M6PFDA		129.9	50.0	150.0
M7PFUnDA		139.6	50.0	150.0
M8FOSA		115.4	50.0	150.0
M8PFOA		126.0	50.0	150.0
M8PFOS		131.6	50.0	150.0
M9-PFNA		125.6	50.0	150.0
MPFBA		119.6	50.0	150.0
MPFDoDA		114.6	50.0	150.0
d3N-MeFOSAA		125.1	50.0	150.0
d5EtFOSAA		121.9	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.10

Sample Tag: SB-12-21 7'

Collected Date/Time: 04/19/2021 13:55

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/28/2021 22:52, Matrix: SO, Dilution: 5.72

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		83.9	50.0	150.0
M2-6:2FTSA		117.5	50.0	150.0
M2-8:2FTSA		93.2	50.0	150.0
M2PFTeDA		121.1	12.0	218.0
M3PFBS		92.0	50.0	150.0
M3PFHxS		98.7	50.0	150.0
M4PFHpA		84.3	50.0	150.0
M5PFHxA		93.9	50.0	150.0
M5PFPeA		95.2	50.0	150.0
M6PFDA		96.9	50.0	150.0
M7PFUnDA		103.4	50.0	150.0
M8FOSA		102.1	50.0	150.0
M8PFOA		100.1	50.0	150.0
M8PFOS		100.0	50.0	150.0
M9-PFNA		106.8	50.0	150.0
MPFBA		92.6	50.0	150.0
MPFDoDA		100.7	50.0	150.0
d3N-MeFOSAA		98.8	50.0	150.0
d5EtFOSAA		87.8	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.11

Sample Tag: SB-12-21 13'

Collected Date/Time: 04/19/2021 14:01

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/28/2021 23:11, Matrix: SO, Dilution: 5.17

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		75.7	50.0	150.0
M2-6:2FTSA		101.1	50.0	150.0
M2-8:2FTSA		105.4	50.0	150.0
M2PFTeDA		115.9	12.0	218.0
M3PFBS		86.3	50.0	150.0
M3PFHxS		85.5	50.0	150.0
M4PFHpA		93.7	50.0	150.0
M5PFHxA		93.5	50.0	150.0
M5PFPeA		90.4	50.0	150.0
M6PFDA		99.9	50.0	150.0
M7PFUnDA		95.6	50.0	150.0
M8FOSA		99.2	50.0	150.0
M8PFOA		96.2	50.0	150.0
M8PFOS		98.4	50.0	150.0
M9-PFNA		99.7	50.0	150.0
MPFBA		89.6	50.0	150.0
MPFDoDA		105.3	50.0	150.0
d3N-MeFOSAA		100.3	50.0	150.0
d5EtFOSAA		94.7	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.12

Sample Tag: SB-10-21 1'

Collected Date/Time: 04/19/2021 15:30

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/28/2021 23:31, Matrix: SO, Dilution: 5.91

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		76.5	50.0	150.0
M2-6:2FTSA		92.3	50.0	150.0
M2-8:2FTSA		108.0	50.0	150.0
M2PFTeDA		144.9	12.0	218.0
M3PFBS		87.9	50.0	150.0
M3PFHxS		95.6	50.0	150.0
M4PFHpA		98.6	50.0	150.0
M5PFHxA		91.8	50.0	150.0
M5PFPeA		92.1	50.0	150.0
M6PFDA		99.3	50.0	150.0
M7PFUnDA		110.1	50.0	150.0
M8FOSA		97.3	50.0	150.0
M8PFOA		97.9	50.0	150.0
M8PFOS		104.9	50.0	150.0
M9-PFNA		117.1	50.0	150.0
MPFBA		93.0	50.0	150.0
MPFDoDA		114.7	50.0	150.0
d3N-MeFOSAA		111.4	50.0	150.0
d5EtFOSAA		117.1	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.13

Sample Tag: SB-10-21 12'

Collected Date/Time: 04/19/2021 15:35

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/28/2021 23:50, Matrix: SO, Dilution: 6.28

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		84.6	50.0	150.0
M2-6:2FTSA		92.4	50.0	150.0
M2-8:2FTSA		106.3	50.0	150.0
M2PFTeDA		146.2	12.0	218.0
M3PFBS		87.5	50.0	150.0
M3PFHxS		92.4	50.0	150.0
M4PFHpA		97.8	50.0	150.0
M5PFHxA		88.3	50.0	150.0
M5PFPeA		89.9	50.0	150.0
M6PFDA		102.0	50.0	150.0
M7PFUnDA		92.1	50.0	150.0
M8FOSA		91.8	50.0	150.0
M8PFOA		105.7	50.0	150.0
M8PFOS		101.6	50.0	150.0
M9-PFNA		107.0	50.0	150.0
MPFBA		90.6	50.0	150.0
MPFDoDA		109.2	50.0	150.0
d3N-MeFOSAA		105.7	50.0	150.0
d5EtFOSAA		92.0	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.14

Sample Tag: SB-12-21 15'

Collected Date/Time: 04/19/2021 13:48

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/27/2021 00:23, Matrix: WW, Dilution: 2.01

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		97.9	50.0	150.0
M2-6:2FTSA		110.0	50.0	150.0
M2-8:2FTSA		131.6	50.0	150.0
M2PFTeDA		90.2	12.0	218.0
M3PFBS		107.3	50.0	150.0
M3PFHxS		124.0	50.0	150.0
M4PFHpA		126.8	50.0	150.0
M5PFHxA		115.8	50.0	150.0
M5PFPeA		121.0	50.0	150.0
M6PFDA		127.8	50.0	150.0
M7PFUnDA		109.1	50.0	150.0
M8FOSA		111.6	50.0	150.0
M8PFOA		137.4	50.0	150.0
M8PFOS		121.2	50.0	150.0
M9-PFNA		128.6	50.0	150.0
MPFBA		125.2	50.0	150.0
MPFDoDA		122.4	50.0	150.0
d3N-MeFOSAA		116.7	50.0	150.0
d5EtFOSAA		121.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.15

Sample Tag: Field Blank

Collected Date/Time: 04/19/2021 08:36

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/27/2021 00:42, Matrix: WW, Dilution: 2.03

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		111.0	50.0	150.0
M2-6:2FTSA		132.2	50.0	150.0
M2-8:2FTSA		134.4	50.0	150.0
M2PFTeDA		86.0	12.0	218.0
M3PFBS		116.9	50.0	150.0
M3PFHxS		124.7	50.0	150.0
M4PFHpA		127.8	50.0	150.0
M5PFHxA		118.7	50.0	150.0
M5PFPeA		122.7	50.0	150.0
M6PFDA		138.3	50.0	150.0
M7PFUnDA		105.3	50.0	150.0
M8FOSA		108.1	50.0	150.0
M8PFOA		126.8	50.0	150.0
M8PFOS		141.8	50.0	150.0
M9-PFNA		125.7	50.0	150.0
MPFBA		127.2	50.0	150.0
MPFDoDA		105.2	50.0	150.0
d3N-MeFOSAA		133.0	50.0	150.0
d5EtFOSAA		113.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.16

Sample Tag: SB-10-21 17'

Collected Date/Time: 04/19/2021 15:05

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/27/2021 01:02, Matrix: WW, Dilution: 2.07

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		97.1	50.0	150.0
M2-6:2FTSA		120.9	50.0	150.0
M2-8:2FTSA		137.1	50.0	150.0
M2PFTeDA		99.8	12.0	218.0
M3PFBS		102.9	50.0	150.0
M3PFHxS		134.0	50.0	150.0
M4PFHpA		117.3	50.0	150.0
M5PFHxA		118.9	50.0	150.0
M5PFPeA		114.9	50.0	150.0
M6PFDA		121.3	50.0	150.0
M7PFUnDA		123.5	50.0	150.0
M8FOSA		125.1	50.0	150.0
M8PFOA		133.7	50.0	150.0
M8PFOS		144.3	50.0	150.0
M9-PFNA		134.8	50.0	150.0
MPFBA		121.9	50.0	150.0
MPFDoDA		123.9	50.0	150.0
d3N-MeFOSAA		125.4	50.0	150.0
d5EtFOSAA		112.1	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23495.17

Sample Tag: SB-10-21 19'

Collected Date/Time: 04/19/2021 14:43

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/27/2021 01:21, Matrix: WW, Dilution: 1.98

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		85.0	50.0	150.0
M2-6:2FTSA		117.9	50.0	150.0
M2-8:2FTSA		118.9	50.0	150.0
M2PFTeDA		85.1	12.0	218.0
M3PFBS		112.3	50.0	150.0
M3PFHxS		115.5	50.0	150.0
M4PFHpA		112.9	50.0	150.0
M5PFHxA		106.2	50.0	150.0
M5PFPeA		114.5	50.0	150.0
M6PFDA		117.1	50.0	150.0
M7PFUnDA		107.1	50.0	150.0
M8FOSA		108.2	50.0	150.0
M8PFOA		125.9	50.0	150.0
M8PFOS		135.0	50.0	150.0
M9-PFNA		116.7	50.0	150.0
MPFBA		118.8	50.0	150.0
MPFDoDA		106.9	50.0	150.0
d3N-MeFOSAA		111.1	50.0	150.0
d5EtFOSAA		109.2	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF210423W3

QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: DQ210426.BLK210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 16:52, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		87.4	50.0	150.0
M2-6:2FTSA		97.8	50.0	150.0
M2-8:2FTSA		96.6	50.0	150.0
M2PFTeDA		74.8	12.0	218.0
M3PFBS		101.5	50.0	150.0
M3PFHxS		112.2	50.0	150.0
M4PFHpA		114.8	50.0	150.0
M5PFHxA		98.8	50.0	150.0
M5PFPeA		111.5	50.0	150.0
M6PFDA		101.2	50.0	150.0
M7PFUnDA		101.4	50.0	150.0
M8FOSA		93.9	50.0	150.0
M8PFOA		109.4	50.0	150.0
M8PFOS		116.1	50.0	150.0
M9-PFNA		103.1	50.0	150.0
MPFBA		79.9	50.0	150.0
MPFDoDA		94.4	50.0	150.0
d3N-MeFOSAA		111.4	50.0	150.0
d5EtFOSAA		107.5	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: DQ210426.LCS210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 18:32, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		80.2	50.0	150.0
M2-6:2FTSA		94.4	50.0	150.0
M2-8:2FTSA		96.8	50.0	150.0
M2PFTeDA		77.5	12.0	218.0
M3PFBS		109.2	50.0	150.0
M3PFHxS		111.4	50.0	150.0
M4PFHpA		119.3	50.0	150.0
M5PFHxA		103.5	50.0	150.0
M5PFPeA		115.8	50.0	150.0
M6PFDA		119.9	50.0	150.0
M7PFUnDA		98.8	50.0	150.0
M8FOSA		109.7	50.0	150.0
M8PFOA		120.0	50.0	150.0
M8PFOS		111.5	50.0	150.0
M9-PFNA		111.9	50.0	150.0
MPFBA		115.4	50.0	150.0
MPFDoDA		109.3	50.0	150.0
d3N-MeFOSAA		104.5	50.0	150.0
d5EtFOSAA		108.7	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ210426.LCSD214023WC, Parent Sample ID: DQ210426.LCS210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 18:52, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		93.3	50.0	150.0
M2-6:2FTSA		100.0	50.0	150.0
M2-8:2FTSA		107.9	50.0	150.0
M2PFTeDA		75.4	12.0	218.0
M3PFBS		111.0	50.0	150.0
M3PFHxS		107.4	50.0	150.0
M4PFHpA		113.6	50.0	150.0
M5PFHxA		105.6	50.0	150.0
M5PFPeA		116.9	50.0	150.0
M6PFDA		119.2	50.0	150.0
M7PFUnDA		116.2	50.0	150.0
M8FOSA		106.0	50.0	150.0
M8PFOA		123.9	50.0	150.0
M8PFOS		108.1	50.0	150.0
M9-PFNA		118.8	50.0	150.0
MPFBA		116.8	50.0	150.0
MPFDoDA		104.2	50.0	150.0
d3N-MeFOSAA		110.3	50.0	150.0
d5EtFOSAA		120.1	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: DQ210426.2347201M, Parent Sample ID: S23472.01

Run in Batch: DQ210426, Run Date: 04/26/2021 20:10, Prep Date: 04/23/2021, Matrix: WW, Dilution: 2.08

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		97.0	50.0	150.0
M2-6:2FTSA		94.7	50.0	150.0
M2-8:2FTSA		101.7	50.0	150.0
M2PFTeDA		92.8	12.0	218.0
M3PFBS		106.6	50.0	150.0
M3PFHxS		117.9	50.0	150.0
M4PFHpA		108.7	50.0	150.0
M5PFHxA		100.7	50.0	150.0
M5PFPeA		115.8	50.0	150.0
M6PFDA		115.6	50.0	150.0
M7PFUnDA		116.3	50.0	150.0
M8FOSA		105.9	50.0	150.0
M8PFOA		117.7	50.0	150.0
M8PFOS		114.4	50.0	150.0
M9-PFNA		118.1	50.0	150.0
MPFBA		112.0	50.0	150.0
MPFDoDA		109.8	50.0	150.0
d3N-MeFOSAA		111.2	50.0	150.0
d5EtFOSAA		115.8	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: DQ210426.2347202D, Parent Sample ID: S23472.02

Run in Batch: DQ210426, Run Date: 04/26/2021 20:49, Prep Date: 04/23/2021, Matrix: WW, Dilution: 2.08

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		88.3	50.0	150.0
M2-6:2FTSA		101.2	50.0	150.0
M2-8:2FTSA		120.2	50.0	150.0
M2PFTeDA		102.8	12.0	218.0
M3PFBS		108.1	50.0	150.0
M3PFHxS		115.7	50.0	150.0
M4PFHpA		109.4	50.0	150.0
M5PFHxA		109.6	50.0	150.0
M5PFPeA		120.9	50.0	150.0
M6PFDA		134.8	50.0	150.0
M7PFUnDA		125.0	50.0	150.0
M8FOSA		105.2	50.0	150.0
M8PFOA		133.1	50.0	150.0
M8PFOS		120.0	50.0	150.0
M9-PFNA		126.0	50.0	150.0
MPFBA		117.6	50.0	150.0
MPFDoDA		127.1	50.0	150.0
d3N-MeFOSAA		120.0	50.0	150.0
d5EtFOSAA		134.1	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF210427S1

QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: DQ210427.BLK210427

Run in Batch: DQ210427, Run Date: 04/27/2021 19:37, Prep Date: 04/27/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		133.0	50.0	150.0
M2-6:2FTSA		109.7	50.0	150.0
M2-8:2FTSA		120.5	50.0	150.0
M2PFTeDA		104.3	12.0	218.0
M3PFBS		97.9	50.0	150.0
M3PFHxS		103.9	50.0	150.0
M4PFHpA		105.4	50.0	150.0
M5PFHxA		108.0	50.0	150.0
M5PFPeA		98.2	50.0	150.0
M6PFDA		108.6	50.0	150.0
M7PFUnDA		113.3	50.0	150.0
M8FOSA		104.5	50.0	150.0
M8PFOA		126.2	50.0	150.0
M8PFOS		116.7	50.0	150.0
M9-PFNA		107.2	50.0	150.0
MPFBA		103.5	50.0	150.0
MPFDoDA		94.4	50.0	150.0
d3N-MeFOSAA		109.1	50.0	150.0
d5EtFOSAA		128.5	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: DQ210427.LCS210427

Run in Batch: DQ210427, Run Date: 04/27/2021 18:58, Prep Date: 04/27/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		123.7	50.0	150.0
M2-6:2FTSA		113.5	50.0	150.0
M2-8:2FTSA		113.3	50.0	150.0
M2PFTeDA		125.3	12.0	218.0
M3PFBS		97.7	50.0	150.0
M3PFHxS		100.6	50.0	150.0
M4PFHpA		99.0	50.0	150.0
M5PFHxA		92.0	50.0	150.0
M5PFPeA		100.0	50.0	150.0
M6PFDA		111.2	50.0	150.0
M7PFUnDA		116.4	50.0	150.0
M8FOSA		111.5	50.0	150.0
M8PFOA		119.9	50.0	150.0
M8PFOS		103.2	50.0	150.0
M9-PFNA		112.9	50.0	150.0
MPFBA		99.0	50.0	150.0
MPFDoDA		110.6	50.0	150.0
d3N-MeFOSAA		109.0	50.0	150.0
d5EtFOSAA		121.1	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ210427.LCSD210427, Parent Sample ID: DQ210427.LCS210427

Run in Batch: DQ210427, Run Date: 04/27/2021 19:18, Prep Date: 04/27/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		124.4	50.0	150.0
M2-6:2FTSA		117.4	50.0	150.0
M2-8:2FTSA		112.0	50.0	150.0
M2PFTeDA		114.3	12.0	218.0
M3PFBS		101.1	50.0	150.0
M3PFHxS		93.3	50.0	150.0
M4PFHpA		101.3	50.0	150.0
M5PFHxA		102.3	50.0	150.0
M5PFPeA		97.8	50.0	150.0
M6PFDA		108.8	50.0	150.0
M7PFUnDA		99.0	50.0	150.0
M8FOSA		104.7	50.0	150.0
M8PFOA		124.4	50.0	150.0
M8PFOS		113.2	50.0	150.0
M9-PFNA		113.9	50.0	150.0
MPFBA		102.7	50.0	150.0
MPFDoDA		95.5	50.0	150.0
d3N-MeFOSAA		104.4	50.0	150.0
d5EtFOSAA		113.0	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: DQ210427.2349501M, Parent Sample ID: S23495.01

Run in Batch: DQ210427, Run Date: 04/27/2021 21:15, Prep Date: 04/27/2021, Matrix: SO, Dilution: 7.03

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	175.5	50.0	150.0
M2-6:2FTSA	*	177.4	50.0	150.0
M2-8:2FTSA	*	177.1	50.0	150.0
M2PFTeDA		167.9	12.0	218.0
M3PFBS		112.8	50.0	150.0
M3PFHxS		120.3	50.0	150.0
M4PFHpA		124.6	50.0	150.0
M5PFHxA		121.7	50.0	150.0
M5PFPeA		114.5	50.0	150.0
M6PFDA		144.1	50.0	150.0
M7PFUnDA		144.4	50.0	150.0
M8FOSA		125.0	50.0	150.0
M8PFOA		140.9	50.0	150.0
M8PFOS		129.9	50.0	150.0
M9-PFNA		139.0	50.0	150.0
MPFBA		119.0	50.0	150.0
MPFDoDA		131.4	50.0	150.0
d3N-MeFOSAA		144.5	50.0	150.0
d5EtFOSAA	*	160.1	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: DQ210427.2349502D, Parent Sample ID: S23495.02

Run in Batch: DQ210427, Run Date: 04/27/2021 21:54, Prep Date: 04/27/2021, Matrix: SO, Dilution: 5.92

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	150.5	50.0	150.0
M2-6:2FTSA		146.2	50.0	150.0
M2-8:2FTSA		136.5	50.0	150.0
M2PFTeDA		159.6	12.0	218.0
M3PFBS		109.7	50.0	150.0
M3PFHxS		107.2	50.0	150.0
M4PFHpA		125.6	50.0	150.0
M5PFHxA		119.4	50.0	150.0
M5PFPeA		112.5	50.0	150.0
M6PFDA		128.2	50.0	150.0
M7PFUnDA		137.4	50.0	150.0
M8FOSA		124.2	50.0	150.0
M8PFOA		134.2	50.0	150.0
M8PFOS		129.2	50.0	150.0
M9-PFNA		130.9	50.0	150.0
MPFBA		115.8	50.0	150.0
MPFDoDA		132.4	50.0	150.0
d3N-MeFOSAA		139.1	50.0	150.0
d5EtFOSAA		135.2	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF210428S1

QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: DQ210428S1.BLK210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 20:35, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		74.6	50.0	150.0
M2-6:2FTSA		95.3	50.0	150.0
M2-8:2FTSA		94.4	50.0	150.0
M2PFTeDA		130.1	12.0	218.0
M3PFBS		81.8	50.0	150.0
M3PFHxS		96.3	50.0	150.0
M4PFHpA		85.5	50.0	150.0
M5PFHxA		94.8	50.0	150.0
M5PFPeA		88.1	50.0	150.0
M6PFDA		88.8	50.0	150.0
M7PFUnDA		104.7	50.0	150.0
M8FOSA		94.0	50.0	150.0
M8PFOA		91.7	50.0	150.0
M8PFOS		98.1	50.0	150.0
M9-PFNA		102.2	50.0	150.0
MPFBA		88.6	50.0	150.0
MPFDoDA		99.0	50.0	150.0
d3N-MeFOSAA		109.0	50.0	150.0
d5EtFOSAA		81.9	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: DQ210428S1.LCS210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 19:57, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		73.1	50.0	150.0
M2-6:2FTSA		94.6	50.0	150.0
M2-8:2FTSA		84.7	50.0	150.0
M2PFTeDA		107.1	12.0	218.0
M3PFBS		78.0	50.0	150.0
M3PFHxS		88.1	50.0	150.0
M4PFHpA		80.3	50.0	150.0
M5PFHxA		82.9	50.0	150.0
M5PFPeA		83.8	50.0	150.0
M6PFDA		91.4	50.0	150.0
M7PFUnDA		89.9	50.0	150.0
M8FOSA		84.5	50.0	150.0
M8PFOA		88.8	50.0	150.0
M8PFOS		88.4	50.0	150.0
M9-PFNA		98.5	50.0	150.0
MPFBA		82.4	50.0	150.0
MPFDoDA		85.7	50.0	150.0
d3N-MeFOSAA		100.4	50.0	150.0
d5EtFOSAA		91.6	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ210428S1.LCSD210428S1, Parent Sample ID: DQ210428S1.LCS210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 20:16, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		73.5	50.0	150.0
M2-6:2FTSA		102.1	50.0	150.0
M2-8:2FTSA		93.3	50.0	150.0
M2PFTeDA		148.6	12.0	218.0
M3PFBS		84.5	50.0	150.0
M3PFHxS		87.2	50.0	150.0
M4PFHpA		87.2	50.0	150.0
M5PFHxA		86.3	50.0	150.0
M5PFPeA		87.2	50.0	150.0
M6PFDA		99.3	50.0	150.0
M7PFUnDA		97.0	50.0	150.0
M8FOSA		88.6	50.0	150.0
M8PFOA		92.2	50.0	150.0
M8PFOS		91.8	50.0	150.0
M9-PFNA		106.8	50.0	150.0
MPFBA		87.2	50.0	150.0
MPFDoDA		99.4	50.0	150.0
d3N-MeFOSAA		99.9	50.0	150.0
d5EtFOSAA		87.0	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: DQ210428S1.2349507M, Parent Sample ID: S23495.07

Run in Batch: DQ210428S1, Run Date: 04/28/2021 21:53, Prep Date: 04/28/2021, Matrix: SO, Dilution: 6.35

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		82.7	50.0	150.0
M2-6:2FTSA		98.3	50.0	150.0
M2-8:2FTSA		113.8	50.0	150.0
M2PFTeDA		123.7	12.0	218.0
M3PFBS		99.8	50.0	150.0
M3PFHxS		98.3	50.0	150.0
M4PFHpA		106.0	50.0	150.0
M5PFHxA		102.0	50.0	150.0
M5PFPeA		99.5	50.0	150.0
M6PFDA		116.3	50.0	150.0
M7PFUnDA		113.4	50.0	150.0
M8FOSA		105.3	50.0	150.0
M8PFOA		112.4	50.0	150.0
M8PFOS		111.2	50.0	150.0
M9-PFNA		108.3	50.0	150.0
MPFBA		96.1	50.0	150.0
MPFDoDA		108.5	50.0	150.0
d3N-MeFOSAA		120.2	50.0	150.0
d5EtFOSAA		106.1	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: DQ210428S1.2349508D, Parent Sample ID: S23495.08

Run in Batch: DQ210428S1, Run Date: 04/28/2021 22:32, Prep Date: 04/28/2021, Matrix: SO, Dilution: 5.59

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		84.5	50.0	150.0
M2-6:2FTSA		97.7	50.0	150.0
M2-8:2FTSA		101.2	50.0	150.0
M2PFTeDA		126.3	12.0	218.0
M3PFBS		88.1	50.0	150.0
M3PFHxS		89.0	50.0	150.0
M4PFHpA		95.7	50.0	150.0
M5PFHxA		94.8	50.0	150.0
M5PFPeA		91.8	50.0	150.0
M6PFDA		106.2	50.0	150.0
M7PFUnDA		103.6	50.0	150.0
M8FOSA		96.3	50.0	150.0
M8PFOA		100.6	50.0	150.0
M8PFOS		105.4	50.0	150.0
M9-PFNA		95.9	50.0	150.0
MPFBA		89.5	50.0	150.0
MPFDoDA		109.3	50.0	150.0
d3N-MeFOSAA		107.4	50.0	150.0
d5EtFOSAA		102.4	50.0	150.0

QC Report - Batch QC Results

Inorganics, Prep Batch ID: TS210424B

Surrogates: No, QC Types: BLK/LCS/DUP

Blank (BLK)

Lab Sample ID: TS210424B.LRB1

Run in Batch: TS210424B, Run Date: 04/24/2021 11:30, Prep Date: 04/24/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Solids		ND	1	%

Laboratory Control Sample (LCS)

Lab Sample ID: TS210424B.LCS1

Run in Batch: TS210424B, Run Date: 04/24/2021 11:30, Prep Date: 04/24/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Solids		100	90	110

Duplicate (DUP)

Lab Sample ID: TS210424B.DP1, Parent Sample ID: S23486.02

Run in Batch: TS210424B, Run Date: 04/24/2021 11:30, Prep Date: 04/24/2021, Matrix: Soil, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Solids		0	5

Duplicate (DUP)

Lab Sample ID: TS210424B.DP2, Parent Sample ID: S23493.04

Run in Batch: TS210424B, Run Date: 04/24/2021 11:30, Prep Date: 04/24/2021, Matrix: Soil, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Solids		0	5

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210423W3

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: DQ210426.BLK210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 16:52, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	6	ng/l
PFMPA		ND	2	ng/l
FPrPA (3:3 FTCA)		ND	5.0	ng/l
PFPPrS		ND	2	ng/l
PFPeA		ND	5.0	ng/l
PFMBA		ND	2	ng/l
4:2 FTSA		ND	2	ng/l
NFDHA		ND	2	ng/l
PFHxA		ND	2	ng/l
PFBS		ND	2	ng/l
HFPO-DA		ND	2	ng/l
FPePA (5:3 FTCA)		ND	5.0	ng/l
PFEESA		ND	2	ng/l
PFFHpA		ND	2	ng/l
PFPeS		ND	2	ng/l
ADONA		ND	2	ng/l
PFBSA		ND	2	ng/l
6:2 FTSA		ND	2	ng/l
PFOA		ND	2	ng/l
PFHxS-BR		ND	2	ng/l
PFHxS		ND	2	ng/l
PFHxS-LN		ND	2	ng/l
FHpPA (7:3 FTCA)		ND	5.0	ng/l
PFNA		ND	2	ng/l
8:2 FTSA		ND	2	ng/l
PFECHS		ND	2	ng/l
PFFHpS		ND	2	ng/l
N-MeFOSAA		ND	2	ng/l
PFDA		ND	2	ng/l
PFOS-BR		ND	2	ng/l
EtFOSAA		ND	2	ng/l
PFOS		ND	2	ng/l
PFHxSA		ND	2	ng/l
PFOS-LN		ND	2	ng/l
PFUnDA		ND	2	ng/l
9CL-PF3ONS		ND	2	ng/l
PFNS		ND	2	ng/l
PFDODA		ND	2	ng/l
PFDS		ND	5.0	ng/l
PFTTrDA		ND	2	ng/l
FOSA		ND	2	ng/l
11CL-PF3OUdS		ND	2	ng/l
PFTeDA		ND	2	ng/l

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210423W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample (LCS)

Lab Sample ID: DQ210426.LCS210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 18:32, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		104.0	70.0	130.0
PFMPA		107.0	70.0	130.0
FPrPA (3:3 FTCA)		101.0	70.0	130.0
PFPPrS		113.0	70.0	130.0
PFPeA		103.0	70.0	130.0
PFMBA		105.0	70.0	130.0
4:2 FTSA		122.0	70.0	130.0
NFDHA		109.0	70.0	130.0
PFHxA		105.0	70.0	130.0
PFBS		110.0	70.0	130.0
HFPO-DA		101.0	70.0	130.0
FPePA (5:3 FTCA)		107.0	70.0	130.0
PFEESA		120.0	70.0	130.0
PFHpA		98.8	70.0	130.0
PFPeS		103.0	70.0	130.0
ADONA		99.0	70.0	130.0
PFBSA		119.0	70.0	130.0
6:2 FTSA		111.0	70.0	130.0
PFOA		108.0	70.0	130.0
PFHxS		100.0	70.0	130.0
FHpPA (7:3 FTCA)		109.0	70.0	130.0
PFNA		107.0	70.0	130.0
8:2 FTSA		122.0	70.0	130.0
PFECHS		110.0	70.0	130.0
PFHpS		100.0	70.0	130.0
N-MeFOSAA		93.1	70.0	130.0
PFDA		103.0	70.0	130.0
EtFOSAA		97.3	70.0	130.0
PFOS		99.7	70.0	130.0
PFHxSA		93.4	70.0	130.0
PFUnDA		130.0	70.0	130.0
9CL-PF3ONS		112.0	70.0	130.0
PFNS		105.0	70.0	130.0
PFDoDA		90.7	70.0	130.0
PFDS		106.0	70.0	130.0
PFTTrDA		90.5	70.0	130.0
FOSA		93.6	70.0	130.0
11CL-PF3OUdS		95.3	70.0	130.0
PFTeDA		99.0	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ210426.LCSD214023WC, Parent Sample ID: DQ210426.LCS210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 18:52, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		99.7	70.0	130.0	4.2	30.0
PFMPA		107.0	70.0	130.0	0.0	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210423W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: DQ210426.LCSD214023WC, Parent Sample ID: DQ210426.LCS210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 18:52, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
FPrPA (3:3 FTCA)		99.9	70.0	130.0	1.1	30.0
PFPPrS		104.0	70.0	130.0	8.3	30.0
PFPeA		95.5	70.0	130.0	7.6	30.0
PFMBA		106.0	70.0	130.0	0.9	30.0
4:2 FTSA		110.0	70.0	130.0	10.3	30.0
NFDHA		111.0	70.0	130.0	1.8	30.0
PFHxA		98.1	70.0	130.0	6.8	30.0
PFBS		106.0	70.0	130.0	3.7	30.0
HFPO-DA		109.0	70.0	130.0	7.6	30.0
FPePA (5:3 FTCA)		98.5	70.0	130.0	8.3	30.0
PFEESA		118.0	70.0	130.0	1.7	30.0
PFHpA		104.0	70.0	130.0	5.1	30.0
PFPeS		98.0	70.0	130.0	5.0	30.0
ADONA		99.4	70.0	130.0	0.4	30.0
PFBSA		113.0	70.0	130.0	5.2	30.0
6:2 FTSA		109.0	70.0	130.0	1.8	30.0
PFOA		112.0	70.0	130.0	3.6	30.0
PFHxS		101.0	70.0	130.0	1.0	30.0
FHpPA (7:3 FTCA)		97.1	70.0	130.0	11.5	30.0
PFNA		91.8	70.0	130.0	15.3	30.0
8:2 FTSA		112.0	70.0	130.0	8.5	30.0
PFECHS		105.0	70.0	130.0	4.7	30.0
PFHpS		112.0	70.0	130.0	11.3	30.0
N-MeFOSAA		95.5	70.0	130.0	2.5	30.0
PFDA		109.0	70.0	130.0	5.7	30.0
EtFOSAA		75.2	70.0	130.0	25.6	30.0
PFOS		107.0	70.0	130.0	7.1	30.0
PFHxSA		96.7	70.0	130.0	3.5	30.0
PFUnDA		103.0	70.0	130.0	23.2	30.0
9CL-PF3ONS		110.0	70.0	130.0	1.8	30.0
PFNS		106.0	70.0	130.0	0.9	30.0
PFDODA		92.5	70.0	130.0	2.0	30.0
PFDS		102.0	70.0	130.0	3.8	30.0
PFTTrDA		84.9	70.0	130.0	6.4	30.0
FOSA		99.4	70.0	130.0	6.0	30.0
11CL-PF3OUdS		97.8	70.0	130.0	2.6	30.0
PFTeDA		91.0	70.0	130.0	8.4	30.0

Matrix Spike (MS)

Lab Sample ID: DQ210426.2347201M, Parent Sample ID: S23472.01

Run in Batch: DQ210426, Run Date: 04/26/2021 20:10, Prep Date: 04/23/2021, Matrix: WW, Dilution: 2.08

Analyte	Flags	% Rec	LCL	UCL
PFBA		97.3	70.0	130.0
PFMPA		96.2	70.0	130.0
FPrPA (3:3 FTCA)		96.2	70.0	130.0
PFPPrS		100.0	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210423W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Matrix Spike (MS) (continued)

Lab Sample ID: DQ210426.2347201M, Parent Sample ID: S23472.01

Run in Batch: DQ210426, Run Date: 04/26/2021 20:10, Prep Date: 04/23/2021, Matrix: WW, Dilution: 2.08

Analyte	Flags	% Rec	LCL	UCL
PFPeA		90.4	70.0	130.0
PFMBA		96.2	70.0	130.0
4:2 FTSA		92.3	70.0	130.0
NFDHA		105.8	70.0	130.0
PFHxA		101.0	70.0	130.0
PFBS		94.2	70.0	130.0
HFPO-DA		105.8	70.0	130.0
FPePA (5:3 FTCA)		105.8	70.0	130.0
PFEESA		105.8	70.0	130.0
PFHpA		95.2	70.0	130.0
PFPeS		112.5	70.0	130.0
ADONA		105.8	70.0	130.0
PFBSA		96.2	70.0	130.0
6:2 FTSA		105.8	70.0	130.0
PFOA		107.7	70.0	130.0
PFHxS		115.4	70.0	130.0
FHpPA (7:3 FTCA)		105.8	70.0	130.0
PFNA		84.6	70.0	130.0
8:2 FTSA		125.0	70.0	130.0
PFECHS		96.2	70.0	130.0
PFHpS		87.4	70.0	130.0
N-MeFOSAA		89.4	70.0	130.0
PFDA		105.8	70.0	130.0
EtFOSAA		93.3	70.0	130.0
PFOS		113.5	70.0	130.0
PFHxSA		115.4	70.0	130.0
PFUnDA		105.8	70.0	130.0
9CL-PF3ONS		96.2	70.0	130.0
PFNS		96.2	70.0	130.0
PFDoDA		83.7	70.0	130.0
PFDS		105.8	70.0	130.0
PFTTrDA		91.3	70.0	130.0
FOSA		95.2	70.0	130.0
11CL-PF3OUdS		96.2	70.0	130.0
PFTeDA		96.2	70.0	130.0

Duplicate (DUP)

Lab Sample ID: DQ210426.2347202D, Parent Sample ID: S23472.02

Run in Batch: DQ210426, Run Date: 04/26/2021 20:49, Prep Date: 04/23/2021, Matrix: WW, Dilution: 2.08

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFMPA		NC	30.0
FPrPA (3:3 FTCA)		NC	30.0
PFPPrS		NC	30.0
PFPeA		NC	30.0
PFMBA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210423W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Duplicate (DUP) (continued)

Lab Sample ID: DQ210426.2347202D, Parent Sample ID: S23472.02

Run in Batch: DQ210426, Run Date: 04/26/2021 20:49, Prep Date: 04/23/2021, Matrix: WW, Dilution: 2.08

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
NFDHA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
HFPO-DA		NC	30.0
FPePA (5:3 FTCA)		NC	30.0
PFEESA		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
ADONA		NC	30.0
PFBSA		NC	30.0
6:2 FTSA		NC	30.0
PFOA		NC	30.0
PFHxS-BR		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0
FHpPA (7:3 FTCA)		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFECHS		NC	30.0
PFHpS		NC	30.0
N-MeFOSAA		NC	30.0
PFDA		NC	30.0
PFOS-BR		NC	30.0
EtFOSAA		NC	30.0
PFOS		NC	30.0
PFHxSA		NC	30.0
PFOS-LN		NC	30.0
PFUnDA		NC	30.0
9CL-PF3ONS		NC	30.0
PFNS		NC	30.0
PFDODA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
11CL-PF3OUdS		NC	30.0
PFTeDA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210427S1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: DQ210427.BLK210427

Run in Batch: DQ210427, Run Date: 04/27/2021 19:37, Prep Date: 04/27/2021, Matrix: SO, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	10	ng/kg
PFPeA		ND	4	ng/kg
4:2 FTSA		ND	2	ng/kg
PFHxA		ND	2	ng/kg
PFBS		ND	2	ng/kg
HFPO-DA		ND	2	ng/kg
PFFHpA		ND	2	ng/kg
PFPeS		ND	2	ng/kg
ADONA		ND	2	ng/kg
6:2 FTSA		ND	2	ng/kg
PFOA		ND	2	ng/kg
PFHxS-BR		ND	2	ng/kg
PFHxS		ND	2	ng/kg
PFHxS-LN		ND	2	ng/kg
PFNA		ND	2	ng/kg
8:2 FTSA		ND	2	ng/kg
PFFHpS		ND	2	ng/kg
N-MeFOSAA		ND	2	ng/kg
PFDA		ND	2	ng/kg
PFOS-BR		ND	2	ng/kg
EtFOSAA		ND	4	ng/kg
PFOS		ND	2	ng/kg
PFOS-LN		ND	2	ng/kg
PFUnDA		ND	2	ng/kg
9CL-PF3ONS		ND	2	ng/kg
PFNS		ND	2	ng/kg
PFDODA		ND	2	ng/kg
PFDS		ND	2	ng/kg
PFTTrDA		ND	2	ng/kg
FOSA		ND	2	ng/kg
11CL-PF3OUdS		ND	2	ng/kg
PFTeDA		ND	4	ng/kg

Laboratory Control Sample (LCS)

Lab Sample ID: DQ210427.LCS210427

Run in Batch: DQ210427, Run Date: 04/27/2021 18:58, Prep Date: 04/27/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		101.0	70.0	130.0
PFPeA		102.0	70.0	130.0
4:2 FTSA		110.0	70.0	130.0
PFHxA		108.0	70.0	130.0
PFBS		98.6	70.0	130.0
HFPO-DA		114.0	70.0	130.0
PFFHpA		103.0	70.0	130.0
PFPeS		95.6	70.0	130.0
ADONA		86.6	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210427S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: DQ210427.LCS210427

Run in Batch: DQ210427, Run Date: 04/27/2021 18:58, Prep Date: 04/27/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		102.0	70.0	130.0
PFOA		96.2	70.0	130.0
PFHxS		106.0	70.0	130.0
PFNA		99.2	70.0	130.0
8:2 FTSA		113.0	70.0	130.0
PFHpS		86.5	70.0	130.0
N-MeFOSAA		82.7	70.0	130.0
PFDA		105.0	70.0	130.0
EtFOSAA		93.6	70.0	130.0
PFOS		93.3	70.0	130.0
PFUnDA		85.6	70.0	130.0
9CL-PF3ONS		117.0	70.0	130.0
PFNS		109.0	70.0	130.0
PFDODA		94.4	70.0	130.0
PFDS		114.0	70.0	130.0
PFTTrDA		107.0	70.0	130.0
FOSA		99.9	70.0	130.0
11CL-PF3OUdS		117.0	70.0	130.0
PFTeDA		80.8	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ210427.LCSD210427, Parent Sample ID: DQ210427.LCS210427

Run in Batch: DQ210427, Run Date: 04/27/2021 19:18, Prep Date: 04/27/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		102.0	70.0	130.0	1.0	30.0
PFPeA		104.0	70.0	130.0	1.9	30.0
4:2 FTSA		117.0	70.0	130.0	6.2	30.0
PFHxA		97.7	70.0	130.0	10.0	30.0
PFBS		92.6	70.0	130.0	6.3	30.0
HFPO-DA		103.0	70.0	130.0	10.1	30.0
PFHpA		95.6	70.0	130.0	7.5	30.0
PFPeS		82.5	70.0	130.0	14.7	30.0
ADONA		86.5	70.0	130.0	0.1	30.0
6:2 FTSA		109.0	70.0	130.0	6.6	30.0
PFOA		82.1	70.0	130.0	15.8	30.0
PFHxS		115.0	70.0	130.0	8.1	30.0
PFNA		98.6	70.0	130.0	0.6	30.0
8:2 FTSA		96.3	70.0	130.0	16.0	30.0
PFHpS		94.8	70.0	130.0	9.2	30.0
N-MeFOSAA		86.6	70.0	130.0	4.6	30.0
PFDA		104.0	70.0	130.0	1.0	30.0
EtFOSAA		121.0	70.0	130.0	25.5	30.0
PFOS		89.5	70.0	130.0	4.2	30.0
PFUnDA		100.0	70.0	130.0	15.5	30.0
9CL-PF3ONS		107.0	70.0	130.0	8.9	30.0
PFNS		104.0	70.0	130.0	4.7	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210427S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: DQ210427.LCSD210427, Parent Sample ID: DQ210427.LCS210427

Run in Batch: DQ210427, Run Date: 04/27/2021 19:18, Prep Date: 04/27/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		103.0	70.0	130.0	8.7	30.0
PFDS		96.1	70.0	130.0	17.0	30.0
PFTTrDA		113.0	70.0	130.0	5.5	30.0
FOSA		112.0	70.0	130.0	11.4	30.0
11CL-PF3OUdS		107.0	70.0	130.0	8.9	30.0
PFTeDA		83.2	70.0	130.0	2.9	30.0

Matrix Spike (MS)

Lab Sample ID: DQ210427.2349501M, Parent Sample ID: S23495.01

Run in Batch: DQ210427, Run Date: 04/27/2021 21:15, Prep Date: 04/27/2021, Matrix: SO, Dilution: 7.03

Analyte	Flags	% Rec	LCL	UCL
PFBA		93.8	70.0	130.0
PFPeA		93.8	70.0	130.0
4:2 FTSA		93.8	70.0	130.0
PFHxA		90.9	70.0	130.0
PFBS		96.6	70.0	130.0
PFHpA		93.8	70.0	130.0
PFPeS		79.5	70.0	130.0
6:2 FTSA		88.1	70.0	130.0
PFOA		93.8	70.0	130.0
PFHxS		93.8	70.0	130.0
PFNA		88.1	70.0	130.0
8:2 FTSA		93.8	70.0	130.0
PFHpS		82.4	70.0	130.0
PFDA		99.4	70.0	130.0
N-MeFOSAA		73.9	70.0	130.0
EtFOSAA		93.8	70.0	130.0
PFOS	*	36.9	70.0	130.0
PFUnDA		93.8	70.0	130.0
PFNS		82.4	70.0	130.0
PFDoDA		102.3	70.0	130.0
PFDS		110.8	70.0	130.0
PFTTrDA		99.4	70.0	130.0
FOSA		88.1	70.0	130.0
PFTeDA		71.0	70.0	130.0
11CL-PF3OUdS		99.4	70.0	130.0
9CL-PF3ONS		102.3	70.0	130.0
ADONA		102.3	70.0	130.0
HFPO-DA		110.8	70.0	130.0

Duplicate (DUP)

Lab Sample ID: DQ210427.2349502D, Parent Sample ID: S23495.02

Run in Batch: DQ210427, Run Date: 04/27/2021 21:54, Prep Date: 04/27/2021, Matrix: SO, Dilution: 5.92

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210427S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Duplicate (DUP) (continued)

Lab Sample ID: DQ210427.2349502D, Parent Sample ID: S23495.02

Run in Batch: DQ210427, Run Date: 04/27/2021 21:54, Prep Date: 04/27/2021, Matrix: SO, Dilution: 5.92

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		NC	30.0
PFOS-LN		NC	30.0
PFOS-BR		NC	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDoDA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
PFTeDA		NC	30.0
11CL-PF3OUdS		NC	30.0
9CL-PF3ONS		NC	30.0
ADONA		NC	30.0
HFPO-DA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428S1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: DQ210428S1.BLK210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 20:35, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	10	ng/kg
PFPeA		ND	4	ng/kg
4:2 FTSA		ND	2	ng/kg
PFHxA		ND	2	ng/kg
PFBS		ND	2	ng/kg
HFPO-DA		ND	2	ng/kg
PFFHpA		ND	2	ng/kg
PFPeS		ND	2	ng/kg
ADONA		ND	2	ng/kg
6:2 FTSA		ND	2	ng/kg
PFOA		ND	2	ng/kg
PFHxS-BR		ND	2	ng/kg
PFHxS		ND	2	ng/kg
PFHxS-LN		ND	2	ng/kg
PFNA		ND	2	ng/kg
8:2 FTSA		ND	2	ng/kg
PFFHpS		ND	2	ng/kg
N-MeFOSAA		ND	2	ng/kg
PFDA		ND	2	ng/kg
PFOS-BR		ND	2	ng/kg
PFOS		ND	2	ng/kg
EtFOSAA		ND	4	ng/kg
PFOS-LN		ND	2	ng/kg
PFUnDA		ND	2	ng/kg
9CL-PF3ONS		ND	2	ng/kg
PFNS		ND	2	ng/kg
PFDODA		ND	2	ng/kg
PFDS		ND	2	ng/kg
PFTTrDA		ND	2	ng/kg
FOSA		ND	2	ng/kg
11CL-PF3OUdS		ND	2	ng/kg
PFTeDA		ND	4	ng/kg

Laboratory Control Sample (LCS)

Lab Sample ID: DQ210428S1.LCS210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 19:57, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		111.0	70.0	130.0
PFPeA		110.0	70.0	130.0
4:2 FTSA		116.0	70.0	130.0
PFHxA		105.0	70.0	130.0
PFBS		117.0	70.0	130.0
HFPO-DA		115.0	70.0	130.0
PFFHpA		113.0	70.0	130.0
PFPeS		100.0	70.0	130.0
ADONA		95.5	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: DQ210428S1.LCS210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 19:57, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		104.0	70.0	130.0
PFOA		101.0	70.0	130.0
PFHxS		118.0	70.0	130.0
PFNA		96.7	70.0	130.0
8:2 FTSA		120.0	70.0	130.0
PFHpS		102.0	70.0	130.0
N-MeFOSAA		94.7	70.0	130.0
PFDA		109.0	70.0	130.0
PFOS		90.8	70.0	130.0
EtFOSAA		105.0	70.0	130.0
PFUnDA		98.0	70.0	130.0
9CL-PF3ONS		115.0	70.0	130.0
PFNS		106.0	70.0	130.0
PFDODA		119.0	70.0	130.0
PFDS		100.0	70.0	130.0
PFTTrDA		110.0	70.0	130.0
FOSA		120.0	70.0	130.0
11CL-PF3OUdS		112.0	70.0	130.0
PFTeDA		94.4	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ210428S1.LCSD210428S1, Parent Sample ID: DQ210428S1.LCS210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 20:16, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		104.0	70.0	130.0	6.5	30.0
PFPeA		108.0	70.0	130.0	1.8	30.0
4:2 FTSA		113.0	70.0	130.0	2.6	30.0
PFHxA		97.9	70.0	130.0	7.0	30.0
PFBS		92.8	70.0	130.0	23.1	30.0
HFPO-DA		107.0	70.0	130.0	7.2	30.0
PFHpA		97.9	70.0	130.0	14.3	30.0
PFPeS		89.2	70.0	130.0	11.4	30.0
ADONA		88.8	70.0	130.0	7.3	30.0
6:2 FTSA		87.7	70.0	130.0	17.0	30.0
PFOA		96.5	70.0	130.0	4.6	30.0
PFHxS		120.0	70.0	130.0	1.7	30.0
PFNA		90.6	70.0	130.0	6.5	30.0
8:2 FTSA		112.0	70.0	130.0	6.9	30.0
PFHpS		90.5	70.0	130.0	11.9	30.0
N-MeFOSAA		89.6	70.0	130.0	5.5	30.0
PFDA		117.0	70.0	130.0	7.1	30.0
PFOS		84.8	70.0	130.0	6.8	30.0
EtFOSAA		97.2	70.0	130.0	7.7	30.0
PFUnDA		89.3	70.0	130.0	9.3	30.0
9CL-PF3ONS		98.4	70.0	130.0	15.6	30.0
PFNS		99.2	70.0	130.0	6.6	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: DQ210428S1.LCSD210428S1, Parent Sample ID: DQ210428S1.LCS210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 20:16, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		115.0	70.0	130.0	3.4	30.0
PFDS		94.7	70.0	130.0	5.4	30.0
PFTTrDA		115.0	70.0	130.0	4.4	30.0
FOSA		112.0	70.0	130.0	6.9	30.0
11CL-PF3OUdS		97.3	70.0	130.0	14.0	30.0
PFTeDA		89.9	70.0	130.0	4.9	30.0

Matrix Spike (MS)

Lab Sample ID: DQ210428S1.2349507M, Parent Sample ID: S23495.07

Run in Batch: DQ210428S1, Run Date: 04/28/2021 21:53, Prep Date: 04/28/2021, Matrix: SO, Dilution: 6.35

Analyte	Flags	% Rec	LCL	UCL
PFBA		94.3	70.0	130.0
PFPeA		94.3	70.0	130.0
4:2 FTSA		106.9	70.0	130.0
PFHxA		94.3	70.0	130.0
PFBS		91.2	70.0	130.0
PFHpA		84.9	70.0	130.0
PFPeS		84.9	70.0	130.0
6:2 FTSA		106.9	70.0	130.0
PFOA		81.8	70.0	130.0
PFHxS		106.9	70.0	130.0
PFNA		97.5	70.0	130.0
8:2 FTSA		91.2	70.0	130.0
PFHpS		91.2	70.0	130.0
PFDA		81.8	70.0	130.0
N-MeFOSAA		81.8	70.0	130.0
EtFOSAA		88.1	70.0	130.0
PFOS		78.6	70.0	130.0
PFUnDA		91.2	70.0	130.0
PFNS		84.9	70.0	130.0
PFDoDA		94.3	70.0	130.0
PFDS		88.1	70.0	130.0
PFTTrDA		100.6	70.0	130.0
FOSA		94.3	70.0	130.0
PFTeDA		88.1	70.0	130.0
11CL-PF3OUdS		88.1	70.0	130.0
9CL-PF3ONS		94.3	70.0	130.0
ADONA		78.6	70.0	130.0
HFPO-DA		97.5	70.0	130.0

Duplicate (DUP)

Lab Sample ID: DQ210428S1.2349508D, Parent Sample ID: S23495.08

Run in Batch: DQ210428S1, Run Date: 04/28/2021 22:32, Prep Date: 04/28/2021, Matrix: SO, Dilution: 5.59

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Duplicate (DUP) (continued)

Lab Sample ID: DQ210428S1.2349508D, Parent Sample ID: S23495.08

Run in Batch: DQ210428S1, Run Date: 04/28/2021 22:32, Prep Date: 04/28/2021, Matrix: SO, Dilution: 5.59

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		NC	30.0
PFOS-LN		NC	30.0
PFOS-BR		NC	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDODA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
PFTeDA		NC	30.0
11CL-PF3OUdS		NC	30.0
9CL-PF3ONS		NC	30.0
ADONA		NC	30.0
HFPO-DA		NC	30.0



Quality Control Report

Report ID: QC-S23498-01
Generated on 05/14/2021

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S23498.01-S23498.47, S23498.49-S23498.51, S23498.54-S23498.59, S23498.62-S23498.63

Project: RACER Flint West #12990

Submitted Date/Time: 04/23/2021 14:10

Sampled by: Unknown

P.O. #: 795930

QC Report Sections

Cover Page (Page 1)

Analysis Summary (Pages 2-59)

Prep Batch Summary (Pages 60-62)

Internal Standards per Lab Sample (Pages 63-120)

Internal Standards per QC Sample (Pages 121-135)

Batch QC Results (Pages 136-158)

Report Flag Descriptions

*: QC result is outside of indicated control limits

W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S23498.01

Sample Tag: SB-9-21 8'

Collected Date/Time: 04/20/2021 09:24

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424C	TS210424C	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 00:10	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.02

Sample Tag: SB-9-21 11'

Collected Date/Time: 04/20/2021 09:31

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424C	TS210424C	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 00:29	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.03

Sample Tag: SB-9-21 19'

Collected Date/Time: 04/20/2021 09:30

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/27/21 01:41	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.04

Sample Tag: SB-9-21 22'

Collected Date/Time: 04/20/2021 09:53

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/27/21 02:00	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.05

Sample Tag: SB-8-21 24'

Collected Date/Time: 04/20/2021 10:50

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/27/21 02:20	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.06

Sample Tag: SB-8-21 20'

Collected Date/Time: 04/20/2021 11:04

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/27/21 02:39	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.07

Sample Tag: SB-8-21 10'

Collected Date/Time: 04/20/2021 10:54

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424C	TS210424C	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/30/21 20:48	AK210430	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.08

Sample Tag: SB-8-21 7'

Collected Date/Time: 04/20/2021 11:51

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424C	TS210424C	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 01:08	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.09

Sample Tag: SB-6-21 7'

Collected Date/Time: 04/20/2021 12:00

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424C	TS210424C	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 01:28	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.10

Sample Tag: SB-6-21 15'

Collected Date/Time: 04/20/2021 12:08

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424C	TS210424C	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 01:47	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.11

Sample Tag: SB-6-21 24'

Collected Date/Time: 04/20/2021 11:57

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/27/21 02:59	DQ210426	PF210423W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.12

Sample Tag: SB-6-21 22'

Collected Date/Time: 04/20/2021 12:30

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 08:33	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.13

Sample Tag: SB-3-21 5'

Collected Date/Time: 04/20/2021 14:15

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424C	TS210424C	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 02:07	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.14

Sample Tag: SB-3-21 11'

Collected Date/Time: 04/20/2021 14:09

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424C	TS210424C	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 02:26	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.15

Sample Tag: SB-3-21 23'

Collected Date/Time: 04/20/2021 14:17

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 09:12	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.16

Sample Tag: SB-4-21 7'

Collected Date/Time: 04/20/2021 15:38

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424C	TS210424C	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 02:46	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.17

Sample Tag: SB-4-21 15'

Collected Date/Time: 04/20/2021 15:34

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 03:05	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.18

Sample Tag: SB-4-21 24'

Collected Date/Time: 04/20/2021 15:42

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 09:51	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.19

Sample Tag: SB-4-21 19'

Collected Date/Time: 04/20/2021 15:50

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 10:11	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.20

Sample Tag: SB-5-21 25'

Collected Date/Time: 04/21/2021 09:10

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 10:30	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.21

Sample Tag: SB-5-21 8'

Collected Date/Time: 04/21/2021 09:06

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	05/13/21 19:35	AK210513	PF210512S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.22

Sample Tag: SB-5-21 16'

Collected Date/Time: 04/21/2021 09:13

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 03:44	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.23

Sample Tag: SB-5-21 21'

Collected Date/Time: 04/21/2021 09:20

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 10:50	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.24

Sample Tag: SB-7-21 7'

Collected Date/Time: 04/21/2021 10:04

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 04:04	DQ210428S1	PF210428S1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.25

Sample Tag: SB-7-21 24'

Collected Date/Time: 04/21/2021 10:10

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 11:09	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.26

Sample Tag: SB-7-21 15'

Collected Date/Time: 04/21/2021 10:14

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 06:20	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.27

Sample Tag: SB-7-21 21'

Collected Date/Time: 04/21/2021 10:21

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 11:29	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.28

Sample Tag: SB-16-21 16'

Collected Date/Time: 04/21/2021 11:26

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 06:59	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.29

Sample Tag: SB-16-21 8'

Collected Date/Time: 04/21/2021 11:30

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 07:38	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.30

Sample Tag: SB-16-21 3'

Collected Date/Time: 04/21/2021 11:32

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 07:58	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.31

Sample Tag: SB-2-21 19'

Collected Date/Time: 04/21/2021 12:52

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 11:48	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.32

Sample Tag: SB-2-21 6'

Collected Date/Time: 04/21/2021 13:10

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 08:17	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.33

Sample Tag: SB-2-21 17'

Collected Date/Time: 04/21/2021 13:12

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 12:08	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.34

Sample Tag: SB-2-21 15'

Collected Date/Time: 04/21/2021 13:17

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 08:37	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.35

Sample Tag: SB-1-21 6'

Collected Date/Time: 04/21/2021 13:58

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 08:56	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.36

Sample Tag: SB-1-21 14-15'

Collected Date/Time: 04/21/2021 14:30

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/30/21 21:27	AK210430	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.37

Sample Tag: SB-1-21 15'

Collected Date/Time: 04/21/2021 13:56

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 12:27	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.38

Sample Tag: SB-1-21 17'

Collected Date/Time: 04/21/2021 13:46

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 12:47	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.39

Sample Tag: SB-14-21 17'

Collected Date/Time: 04/21/2021 14:39

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 13:06	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.40

Sample Tag: SB-14-21 15'

Collected Date/Time: 04/21/2021 14:49

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 13:26	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.41

Sample Tag: SB-14-21 6'

Collected Date/Time: 04/21/2021 14:55

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 09:35	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.42

Sample Tag: SB-14-21 11'

Collected Date/Time: 04/21/2021 15:02

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 09:55	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.43

Sample Tag: SB-13-21 15'

Collected Date/Time: 04/21/2021 15:37

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 13:45	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.44

Sample Tag: SB-13-21 11'

Collected Date/Time: 04/21/2021 15:40

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 10:14	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.45

Sample Tag: SB-13-21 6'

Collected Date/Time: 04/21/2021 15:32

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 10:34	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.46

Sample Tag: SB-13-21 12'

Collected Date/Time: 04/21/2021 15:44

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 14:05	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.47

Sample Tag: Equip Blank

Collected Date/Time: 04/21/2021 15:47

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 14:24	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.49

Sample Tag: Field Blank

Collected Date/Time: 04/20/2021 08:55

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 14:44	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.50

Sample Tag: Field Blank

Collected Date/Time: 04/21/2021 08:51

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 15:03	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.51

Sample Tag: Trip Blank

Collected Date/Time: 04/19/2021 07:48

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 15:23	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.54

Sample Tag: Dupe 3

Collected Date/Time: 04/19/2021 00:01

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 15:42	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.55

Sample Tag: Dupe 4

Collected Date/Time: 04/19/2021 00:01

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 16:02	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.56

Sample Tag: Dupe 5

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 10:53	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.57

Sample Tag: Dupe 6

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/29/21 11:13	DQ210428S2	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.58

Sample Tag: Dupe 7

Collected Date/Time: 04/19/2021 00:01

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 16:21	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.59

Sample Tag: Dupe 8

Collected Date/Time: 04/19/2021 00:01

Matrix: Liquid

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/29/21 16:41	AK210428W1	PF210428W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.62

Sample Tag: Dupe 11

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/30/21 21:46	AK210430	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S23498.63

Sample Tag: Dupe 12

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Total Solids	SM2540B	04/24/21 11:55	TS210424D	TS210424D	No	BLK/LCS/DUP
<i>Organics - Volatiles</i>						
28 PFAs	ASTM D7968-17M	04/30/21 22:06	AK210430	PF210428S2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Inorganics, Prep Batch ID: TS210424C

Surrogates: No, QC Types: BLK/LCS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23498.01	Total Solids	SM2540B	04/24/21 11:55	TS210424C
S23498.02	Total Solids	SM2540B	04/24/21 11:55	TS210424C
S23498.07	Total Solids	SM2540B	04/24/21 11:55	TS210424C
S23498.08	Total Solids	SM2540B	04/24/21 11:55	TS210424C
S23498.09	Total Solids	SM2540B	04/24/21 11:55	TS210424C
S23498.10	Total Solids	SM2540B	04/24/21 11:55	TS210424C
S23498.13	Total Solids	SM2540B	04/24/21 11:55	TS210424C
S23498.14	Total Solids	SM2540B	04/24/21 11:55	TS210424C
S23498.16	Total Solids	SM2540B	04/24/21 11:55	TS210424C

Inorganics, Prep Batch ID: TS210424D

Surrogates: No, QC Types: BLK/LCS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23498.17	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.21	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.22	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.24	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.26	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.28	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.29	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.30	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.32	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.34	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.35	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.36	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.41	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.42	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.44	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.45	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.56	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.57	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.62	Total Solids	SM2540B	04/24/21 11:55	TS210424D
S23498.63	Total Solids	SM2540B	04/24/21 11:55	TS210424D

Organics - Volatiles, Prep Batch ID: PF210423W3

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23498.03	28 PFAs	ASTMD7979-19M	04/27/21 01:41	DQ210426
S23498.04	28 PFAs	ASTMD7979-19M	04/27/21 02:00	DQ210426
S23498.05	28 PFAs	ASTMD7979-19M	04/27/21 02:20	DQ210426
S23498.06	28 PFAs	ASTMD7979-19M	04/27/21 02:39	DQ210426
S23498.11	28 PFAs	ASTMD7979-19M	04/27/21 02:59	DQ210426

Organics - Volatiles, Prep Batch ID: PF210428S1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23498.01	28 PFAs	ASTM D7968-17M	04/29/21 00:10	DQ210428S1
S23498.02	28 PFAs	ASTM D7968-17M	04/29/21 00:29	DQ210428S1
S23498.07	28 PFAs	ASTM D7968-17M	04/30/21 20:48	AK210430
S23498.08	28 PFAs	ASTM D7968-17M	04/29/21 01:08	DQ210428S1

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF210428S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23498.09	28 PFAs	ASTM D7968-17M	04/29/21 01:28	DQ210428S1
S23498.10	28 PFAs	ASTM D7968-17M	04/29/21 01:47	DQ210428S1
S23498.13	28 PFAs	ASTM D7968-17M	04/29/21 02:07	DQ210428S1
S23498.14	28 PFAs	ASTM D7968-17M	04/29/21 02:26	DQ210428S1
S23498.16	28 PFAs	ASTM D7968-17M	04/29/21 02:46	DQ210428S1
S23498.17	28 PFAs	ASTM D7968-17M	04/29/21 03:05	DQ210428S1
S23498.22	28 PFAs	ASTM D7968-17M	04/29/21 03:44	DQ210428S1
S23498.24	28 PFAs	ASTM D7968-17M	04/29/21 04:04	DQ210428S1

Organics - Volatiles, Prep Batch ID: PF210428S2

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23498.26	28 PFAs	ASTM D7968-17M	04/29/21 06:20	DQ210428S2
S23498.28	28 PFAs	ASTM D7968-17M	04/29/21 06:59	DQ210428S2
S23498.29	28 PFAs	ASTM D7968-17M	04/29/21 07:38	DQ210428S2
S23498.30	28 PFAs	ASTM D7968-17M	04/29/21 07:58	DQ210428S2
S23498.32	28 PFAs	ASTM D7968-17M	04/29/21 08:17	DQ210428S2
S23498.34	28 PFAs	ASTM D7968-17M	04/29/21 08:37	DQ210428S2
S23498.35	28 PFAs	ASTM D7968-17M	04/29/21 08:56	DQ210428S2
S23498.36	28 PFAs	ASTM D7968-17M	04/30/21 21:27	AK210430
S23498.41	28 PFAs	ASTM D7968-17M	04/29/21 09:35	DQ210428S2
S23498.42	28 PFAs	ASTM D7968-17M	04/29/21 09:55	DQ210428S2
S23498.44	28 PFAs	ASTM D7968-17M	04/29/21 10:14	DQ210428S2
S23498.45	28 PFAs	ASTM D7968-17M	04/29/21 10:34	DQ210428S2
S23498.56	28 PFAs	ASTM D7968-17M	04/29/21 10:53	DQ210428S2
S23498.57	28 PFAs	ASTM D7968-17M	04/29/21 11:13	DQ210428S2
S23498.62	28 PFAs	ASTM D7968-17M	04/30/21 21:46	AK210430
S23498.63	28 PFAs	ASTM D7968-17M	04/30/21 22:06	AK210430

Organics - Volatiles, Prep Batch ID: PF210428W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23498.12	28 PFAs	ASTMD7979-19M	04/29/21 08:33	AK210428W1
S23498.15	28 PFAs	ASTMD7979-19M	04/29/21 09:12	AK210428W1
S23498.18	28 PFAs	ASTMD7979-19M	04/29/21 09:51	AK210428W1
S23498.19	28 PFAs	ASTMD7979-19M	04/29/21 10:11	AK210428W1
S23498.20	28 PFAs	ASTMD7979-19M	04/29/21 10:30	AK210428W1
S23498.23	28 PFAs	ASTMD7979-19M	04/29/21 10:50	AK210428W1
S23498.25	28 PFAs	ASTMD7979-19M	04/29/21 11:09	AK210428W1
S23498.27	28 PFAs	ASTMD7979-19M	04/29/21 11:29	AK210428W1
S23498.31	28 PFAs	ASTMD7979-19M	04/29/21 11:48	AK210428W1
S23498.33	28 PFAs	ASTMD7979-19M	04/29/21 12:08	AK210428W1
S23498.37	28 PFAs	ASTMD7979-19M	04/29/21 12:27	AK210428W1
S23498.38	28 PFAs	ASTMD7979-19M	04/29/21 12:47	AK210428W1
S23498.39	28 PFAs	ASTMD7979-19M	04/29/21 13:06	AK210428W1
S23498.40	28 PFAs	ASTMD7979-19M	04/29/21 13:26	AK210428W1
S23498.43	28 PFAs	ASTMD7979-19M	04/29/21 13:45	AK210428W1
S23498.46	28 PFAs	ASTMD7979-19M	04/29/21 14:05	AK210428W1
S23498.47	28 PFAs	ASTMD7979-19M	04/29/21 14:24	AK210428W1

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF210428W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23498.49	28 PFAs	ASTMD7979-19M	04/29/21 14:44	AK210428W1
S23498.50	28 PFAs	ASTMD7979-19M	04/29/21 15:03	AK210428W1
S23498.51	28 PFAs	ASTMD7979-19M	04/29/21 15:23	AK210428W1
S23498.54	28 PFAs	ASTMD7979-19M	04/29/21 15:42	AK210428W1
S23498.55	28 PFAs	ASTMD7979-19M	04/29/21 16:02	AK210428W1
S23498.58	28 PFAs	ASTMD7979-19M	04/29/21 16:21	AK210428W1
S23498.59	28 PFAs	ASTMD7979-19M	04/29/21 16:41	AK210428W1

Organics - Volatiles, Prep Batch ID: PF210512S1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23498.21	28 PFAs	ASTM D7968-17M	05/13/21 19:35	AK210513

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.01

Sample Tag: SB-9-21 8'

Collected Date/Time: 04/20/2021 09:24

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/29/2021 00:10, Matrix: SO, Dilution: 6.21

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		80.1	50.0	150.0
M2-6:2FTSA		98.5	50.0	150.0
M2-8:2FTSA		92.7	50.0	150.0
M2PFTeDA		130.0	12.0	218.0
M3PFBS		87.5	50.0	150.0
M3PFHxS		90.6	50.0	150.0
M4PFHpA		90.0	50.0	150.0
M5PFHxA		92.8	50.0	150.0
M5PFPeA		95.1	50.0	150.0
M6PFDA		99.0	50.0	150.0
M7PFUnDA		100.9	50.0	150.0
M8FOSA		95.5	50.0	150.0
M8PFOA		90.3	50.0	150.0
M8PFOS		107.0	50.0	150.0
M9-PFNA		99.4	50.0	150.0
MPFBA		91.1	50.0	150.0
MPFDoDA		114.0	50.0	150.0
d3N-MeFOSAA		103.7	50.0	150.0
d5EtFOSAA		100.3	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.02

Sample Tag: SB-9-21 11'

Collected Date/Time: 04/20/2021 09:31

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/29/2021 00:29, Matrix: SO, Dilution: 6.92

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		83.3	50.0	150.0
M2-6:2FTSA		106.2	50.0	150.0
M2-8:2FTSA		110.2	50.0	150.0
M2PFTeDA		146.7	12.0	218.0
M3PFBS		87.5	50.0	150.0
M3PFHxS		85.3	50.0	150.0
M4PFHpA		91.7	50.0	150.0
M5PFHxA		94.5	50.0	150.0
M5PFPeA		96.1	50.0	150.0
M6PFDA		98.4	50.0	150.0
M7PFUnDA		112.1	50.0	150.0
M8FOSA		99.1	50.0	150.0
M8PFOA		109.2	50.0	150.0
M8PFOS		98.5	50.0	150.0
M9-PFNA		109.9	50.0	150.0
MPFBA		93.8	50.0	150.0
MPFDoDA		111.4	50.0	150.0
d3N-MeFOSAA		103.7	50.0	150.0
d5EtFOSAA		109.7	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.03

Sample Tag: SB-9-21 19'

Collected Date/Time: 04/20/2021 09:30

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/27/2021 01:41, Matrix: WW, Dilution: 2.02

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		100.2	50.0	150.0
M2-6:2FTSA		114.6	50.0	150.0
M2-8:2FTSA		119.0	50.0	150.0
M2PFTeDA		100.4	12.0	218.0
M3PFBS		116.5	50.0	150.0
M3PFHxS		125.7	50.0	150.0
M4PFHpA		137.1	50.0	150.0
M5PFHxA		108.2	50.0	150.0
M5PFPeA		121.0	50.0	150.0
M6PFDA		126.3	50.0	150.0
M7PFUnDA		119.3	50.0	150.0
M8FOSA		114.4	50.0	150.0
M8PFOA		133.6	50.0	150.0
M8PFOS		118.4	50.0	150.0
M9-PFNA		130.0	50.0	150.0
MPFBA		114.5	50.0	150.0
MPFDoDA		121.2	50.0	150.0
d3N-MeFOSAA		131.0	50.0	150.0
d5EtFOSAA		136.4	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.04

Sample Tag: SB-9-21 22'

Collected Date/Time: 04/20/2021 09:53

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/27/2021 02:00, Matrix: WW, Dilution: 2.01

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		91.3	50.0	150.0
M2-6:2FTSA		100.9	50.0	150.0
M2-8:2FTSA		132.5	50.0	150.0
M2PFTeDA		100.8	12.0	218.0
M3PFBS		111.9	50.0	150.0
M3PFHxS		128.3	50.0	150.0
M4PFHpA		111.6	50.0	150.0
M5PFHxA		98.4	50.0	150.0
M5PFPeA		112.4	50.0	150.0
M6PFDA		128.5	50.0	150.0
M7PFUnDA		110.2	50.0	150.0
M8FOSA		122.9	50.0	150.0
M8PFOA		118.4	50.0	150.0
M8PFOS		124.0	50.0	150.0
M9-PFNA		122.3	50.0	150.0
MPFBA		114.8	50.0	150.0
MPFDoDA		119.3	50.0	150.0
d3N-MeFOSAA		127.8	50.0	150.0
d5EtFOSAA		115.0	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.05

Sample Tag: SB-8-21 24'

Collected Date/Time: 04/20/2021 10:50

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/27/2021 02:20, Matrix: WW, Dilution: 2

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		118.9	50.0	150.0
M2-6:2FTSA		127.0	50.0	150.0
M2-8:2FTSA		136.2	50.0	150.0
M2PFTeDA		102.7	12.0	218.0
M3PFBS		112.1	50.0	150.0
M3PFHxS		124.3	50.0	150.0
M4PFHpA		129.2	50.0	150.0
M5PFHxA		115.6	50.0	150.0
M5PFPeA		112.3	50.0	150.0
M6PFDA		149.5	50.0	150.0
M7PFUnDA		131.3	50.0	150.0
M8FOSA		112.6	50.0	150.0
M8PFOA		123.6	50.0	150.0
M8PFOS		128.4	50.0	150.0
M9-PFNA		117.5	50.0	150.0
MPFBA		115.5	50.0	150.0
MPFDoDA		133.0	50.0	150.0
d3N-MeFOSAA		119.8	50.0	150.0
d5EtFOSAA		138.4	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.06

Sample Tag: SB-8-21 20'

Collected Date/Time: 04/20/2021 11:04

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/27/2021 02:39, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		123.7	50.0	150.0
M2-6:2FTSA		125.5	50.0	150.0
M2-8:2FTSA		119.7	50.0	150.0
M2PFTeDA		103.2	12.0	218.0
M3PFBS		114.1	50.0	150.0
M3PFHxS		124.6	50.0	150.0
M4PFHpA		128.5	50.0	150.0
M5PFHxA		115.1	50.0	150.0
M5PFPeA		126.3	50.0	150.0
M6PFDA		139.0	50.0	150.0
M7PFUnDA		137.2	50.0	150.0
M8FOSA		120.5	50.0	150.0
M8PFOA		142.0	50.0	150.0
M8PFOS		118.1	50.0	150.0
M9-PFNA		124.9	50.0	150.0
MPFBA		119.0	50.0	150.0
MPFDoDA		126.0	50.0	150.0
d3N-MeFOSAA		142.2	50.0	150.0
d5EtFOSAA		120.9	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.07

Sample Tag: SB-8-21 10'

Collected Date/Time: 04/20/2021 10:54

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210430, Run Date: 04/30/2021 20:48, Matrix: SO, Dilution: 6.31

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	196.7	50.0	150.0
M2-6:2FTSA	*	259.2	50.0	150.0
M2-8:2FTSA	*	200.8	50.0	150.0
M2PFTeDA		135.4	12.0	218.0
M3PFBS		105.3	50.0	150.0
M3PFHxS		101.2	50.0	150.0
M4PFHpA		118.3	50.0	150.0
M5PFHxA		122.0	50.0	150.0
M5PFPeA		106.8	50.0	150.0
M6PFDA		105.7	50.0	150.0
M7PFUnDA		111.3	50.0	150.0
M8FOSA	*	185.5	50.0	150.0
M8PFOA		112.8	50.0	150.0
M8PFOS		116.7	50.0	150.0
M9-PFNA		117.2	50.0	150.0
MPFBA		109.3	50.0	150.0
MPFDoDA		112.4	50.0	150.0
d3N-MeFOSAA		142.7	50.0	150.0
d5EtFOSAA		149.7	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.08

Sample Tag: SB-8-21 7'

Collected Date/Time: 04/20/2021 11:51

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/29/2021 01:08, Matrix: SO, Dilution: 5.31

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		92.7	50.0	150.0
M2-6:2FTSA		108.3	50.0	150.0
M2-8:2FTSA		116.1	50.0	150.0
M2PFTeDA		133.2	12.0	218.0
M3PFBS		93.0	50.0	150.0
M3PFHxS		108.9	50.0	150.0
M4PFHpA		106.0	50.0	150.0
M5PFHxA		103.4	50.0	150.0
M5PFPeA		100.6	50.0	150.0
M6PFDA		114.9	50.0	150.0
M7PFUnDA		106.9	50.0	150.0
M8FOSA		110.9	50.0	150.0
M8PFOA		105.4	50.0	150.0
M8PFOS		107.8	50.0	150.0
M9-PFNA		116.1	50.0	150.0
MPFBA		97.6	50.0	150.0
MPFDoDA		112.4	50.0	150.0
d3N-MeFOSAA		115.2	50.0	150.0
d5EtFOSAA		109.2	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.09

Sample Tag: SB-6-21 7'

Collected Date/Time: 04/20/2021 12:00

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/29/2021 01:28, Matrix: SO, Dilution: 5.78

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		77.7	50.0	150.0
M2-6:2FTSA		97.6	50.0	150.0
M2-8:2FTSA		104.7	50.0	150.0
M2PFTeDA		107.5	12.0	218.0
M3PFBS		79.9	50.0	150.0
M3PFHxS		92.3	50.0	150.0
M4PFHpA		98.9	50.0	150.0
M5PFHxA		89.5	50.0	150.0
M5PFPeA		84.3	50.0	150.0
M6PFDA		103.2	50.0	150.0
M7PFUnDA		95.9	50.0	150.0
M8FOSA		93.6	50.0	150.0
M8PFOA		87.7	50.0	150.0
M8PFOS		86.7	50.0	150.0
M9-PFNA		99.0	50.0	150.0
MPFBA		83.0	50.0	150.0
MPFDODA		92.1	50.0	150.0
d3N-MeFOSAA		103.2	50.0	150.0
d5EtFOSAA		92.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.10

Sample Tag: SB-6-21 15'

Collected Date/Time: 04/20/2021 12:08

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/29/2021 01:47, Matrix: SO, Dilution: 5.66

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		76.6	50.0	150.0
M2-6:2FTSA		96.6	50.0	150.0
M2-8:2FTSA		91.7	50.0	150.0
M2PFTeDA		132.1	12.0	218.0
M3PFBS		86.5	50.0	150.0
M3PFHxS		89.4	50.0	150.0
M4PFHpA		86.8	50.0	150.0
M5PFHxA		90.8	50.0	150.0
M5PFPeA		87.9	50.0	150.0
M6PFDA		90.3	50.0	150.0
M7PFUnDA		91.9	50.0	150.0
M8FOSA		91.1	50.0	150.0
M8PFOA		89.5	50.0	150.0
M8PFOS		92.9	50.0	150.0
M9-PFNA		99.1	50.0	150.0
MPFBA		83.7	50.0	150.0
MPFDoDA		105.6	50.0	150.0
d3N-MeFOSAA		94.6	50.0	150.0
d5EtFOSAA		87.0	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.11

Sample Tag: SB-6-21 24'

Collected Date/Time: 04/20/2021 11:57

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210426, Run Date: 04/27/2021 02:59, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	168.0	50.0	150.0
M2-6:2FTSA		120.6	50.0	150.0
M2-8:2FTSA		118.7	50.0	150.0
M2PFTeDA		88.2	12.0	218.0
M3PFBS		119.6	50.0	150.0
M3PFHxS		133.3	50.0	150.0
M4PFHpA		148.3	50.0	150.0
M5PFHxA		131.2	50.0	150.0
M5PFPeA		128.3	50.0	150.0
M6PFDA		135.3	50.0	150.0
M7PFUnDA		142.1	50.0	150.0
M8FOSA		120.6	50.0	150.0
M8PFOA		147.9	50.0	150.0
M8PFOS		138.4	50.0	150.0
M9-PFNA		140.6	50.0	150.0
MPFBA		124.4	50.0	150.0
MPFDoDA		121.3	50.0	150.0
d3N-MeFOSAA		141.8	50.0	150.0
d5EtFOSAA		140.7	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.12

Sample Tag: SB-6-21 22'

Collected Date/Time: 04/20/2021 12:30

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 08:33, Matrix: WW, Dilution: 1.99

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	168.8	50.0	150.0
M2-6:2FTSA		119.2	50.0	150.0
M2-8:2FTSA		115.7	50.0	150.0
M2PFTeDA		119.9	12.0	218.0
M3PFBS		96.7	50.0	150.0
M3PFHxS		99.0	50.0	150.0
M4PFHpA		120.0	50.0	150.0
M5PFHxA		107.0	50.0	150.0
M5PFPeA		102.2	50.0	150.0
M6PFDA		111.9	50.0	150.0
M7PFUnDA		107.8	50.0	150.0
M8FOSA		105.0	50.0	150.0
M8PFOA		103.0	50.0	150.0
M8PFOS		92.3	50.0	150.0
M9-PFNA		92.6	50.0	150.0
MPFBA		106.3	50.0	150.0
MPFDoDA		106.4	50.0	150.0
d3N-MeFOSAA		120.4	50.0	150.0
d5EtFOSAA		99.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.13

Sample Tag: SB-3-21 5'

Collected Date/Time: 04/20/2021 14:15

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/29/2021 02:07, Matrix: SO, Dilution: 5.98

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		94.4	50.0	150.0
M2-6:2FTSA		112.4	50.0	150.0
M2-8:2FTSA		120.8	50.0	150.0
M2PFTeDA		129.6	12.0	218.0
M3PFBS		81.5	50.0	150.0
M3PFHxS		86.3	50.0	150.0
M4PFHpA		91.0	50.0	150.0
M5PFHxA		93.9	50.0	150.0
M5PFPeA		88.6	50.0	150.0
M6PFDA		104.4	50.0	150.0
M7PFUnDA		105.8	50.0	150.0
M8FOSA		104.8	50.0	150.0
M8PFOA		103.7	50.0	150.0
M8PFOS		96.9	50.0	150.0
M9-PFNA		112.6	50.0	150.0
MPFBA		82.2	50.0	150.0
MPFDoDA		101.4	50.0	150.0
d3N-MeFOSAA		110.9	50.0	150.0
d5EtFOSAA		111.6	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.14

Sample Tag: SB-3-21 11'

Collected Date/Time: 04/20/2021 14:09

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/29/2021 02:26, Matrix: SO, Dilution: 5.74

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		74.9	50.0	150.0
M2-6:2FTSA		87.3	50.0	150.0
M2-8:2FTSA		93.6	50.0	150.0
M2PFTeDA		141.9	12.0	218.0
M3PFBS		80.5	50.0	150.0
M3PFHxS		86.2	50.0	150.0
M4PFHpA		79.1	50.0	150.0
M5PFHxA		85.7	50.0	150.0
M5PFPeA		85.0	50.0	150.0
M6PFDA		87.8	50.0	150.0
M7PFUnDA		97.5	50.0	150.0
M8FOSA		91.3	50.0	150.0
M8PFOA		88.9	50.0	150.0
M8PFOS		91.7	50.0	150.0
M9-PFNA		101.1	50.0	150.0
MPFBA		84.2	50.0	150.0
MPFDoDA		99.8	50.0	150.0
d3N-MeFOSAA		93.2	50.0	150.0
d5EtFOSAA		96.0	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.15

Sample Tag: SB-3-21 23'

Collected Date/Time: 04/20/2021 14:17

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 09:12, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		129.5	50.0	150.0
M2-6:2FTSA		94.4	50.0	150.0
M2-8:2FTSA		100.1	50.0	150.0
M2PFTeDA		127.8	12.0	218.0
M3PFBS		100.0	50.0	150.0
M3PFHxS		98.3	50.0	150.0
M4PFHpA		101.5	50.0	150.0
M5PFHxA		103.6	50.0	150.0
M5PFPeA		95.3	50.0	150.0
M6PFDA		102.3	50.0	150.0
M7PFUnDA		111.7	50.0	150.0
M8FOSA		104.1	50.0	150.0
M8PFOA		101.9	50.0	150.0
M8PFOS		93.4	50.0	150.0
M9-PFNA		88.4	50.0	150.0
MPFBA		102.9	50.0	150.0
MPFDoDA		103.7	50.0	150.0
d3N-MeFOSAA		108.8	50.0	150.0
d5EtFOSAA		90.8	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.16

Sample Tag: SB-4-21 7'

Collected Date/Time: 04/20/2021 15:38

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/29/2021 02:46, Matrix: SO, Dilution: 6.68

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		83.3	50.0	150.0
M2-6:2FTSA		96.5	50.0	150.0
M2-8:2FTSA		75.8	50.0	150.0
M2PFTeDA		129.6	12.0	218.0
M3PFBS		80.0	50.0	150.0
M3PFHxS		84.3	50.0	150.0
M4PFHpA		81.6	50.0	150.0
M5PFHxA		85.8	50.0	150.0
M5PFPeA		81.3	50.0	150.0
M6PFDA		93.5	50.0	150.0
M7PFUnDA		98.7	50.0	150.0
M8FOSA		90.0	50.0	150.0
M8PFOA		86.9	50.0	150.0
M8PFOS		87.8	50.0	150.0
M9-PFNA		101.6	50.0	150.0
MPFBA		80.5	50.0	150.0
MPFDoDA		85.9	50.0	150.0
d3N-MeFOSAA		96.1	50.0	150.0
d5EtFOSAA		85.1	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.17

Sample Tag: SB-4-21 15'

Collected Date/Time: 04/20/2021 15:34

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/29/2021 03:05, Matrix: SO, Dilution: 6.05

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		80.1	50.0	150.0
M2-6:2FTSA		114.9	50.0	150.0
M2-8:2FTSA		95.6	50.0	150.0
M2PFTeDA		154.2	12.0	218.0
M3PFBS		81.5	50.0	150.0
M3PFHxS		95.2	50.0	150.0
M4PFHpA		92.6	50.0	150.0
M5PFHxA		91.0	50.0	150.0
M5PFPeA		86.8	50.0	150.0
M6PFDA		102.3	50.0	150.0
M7PFUnDA		109.0	50.0	150.0
M8FOSA		93.7	50.0	150.0
M8PFOA		100.4	50.0	150.0
M8PFOS		97.8	50.0	150.0
M9-PFNA		111.1	50.0	150.0
MPFBA		86.1	50.0	150.0
MPFDoDA		109.4	50.0	150.0
d3N-MeFOSAA		96.1	50.0	150.0
d5EtFOSAA		101.6	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.18

Sample Tag: SB-4-21 24'

Collected Date/Time: 04/20/2021 15:42

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 09:51, Matrix: WW, Dilution: 2.02

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		116.5	50.0	150.0
M2-6:2FTSA		82.9	50.0	150.0
M2-8:2FTSA		93.4	50.0	150.0
M2PFTeDA		139.9	12.0	218.0
M3PFBS		104.2	50.0	150.0
M3PFHxS		103.8	50.0	150.0
M4PFHpA		101.8	50.0	150.0
M5PFHxA		102.6	50.0	150.0
M5PFPeA		99.5	50.0	150.0
M6PFDA		97.4	50.0	150.0
M7PFUnDA		98.1	50.0	150.0
M8FOSA		104.7	50.0	150.0
M8PFOA		100.5	50.0	150.0
M8PFOS		98.5	50.0	150.0
M9-PFNA		97.7	50.0	150.0
MPFBA		106.5	50.0	150.0
MPFDoDA		108.8	50.0	150.0
d3N-MeFOSAA		100.0	50.0	150.0
d5EtFOSAA		86.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.19

Sample Tag: SB-4-21 19'

Collected Date/Time: 04/20/2021 15:50

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 10:11, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		146.9	50.0	150.0
M2-6:2FTSA		97.4	50.0	150.0
M2-8:2FTSA		93.1	50.0	150.0
M2PFTeDA		104.3	12.0	218.0
M3PFBS		97.4	50.0	150.0
M3PFHxS		107.0	50.0	150.0
M4PFHpA		104.0	50.0	150.0
M5PFHxA		97.2	50.0	150.0
M5PFPeA		99.4	50.0	150.0
M6PFDA		105.5	50.0	150.0
M7PFUnDA		91.5	50.0	150.0
M8FOSA		101.5	50.0	150.0
M8PFOA		105.4	50.0	150.0
M8PFOS		98.0	50.0	150.0
M9-PFNA		96.5	50.0	150.0
MPFBA		104.6	50.0	150.0
MPFDODA		98.4	50.0	150.0
d3N-MeFOSAA		100.5	50.0	150.0
d5EtFOSAA		91.2	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.20

Sample Tag: SB-5-21 25'

Collected Date/Time: 04/21/2021 09:10

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 10:30, Matrix: WW, Dilution: 2

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		105.8	50.0	150.0
M2-6:2FTSA		80.3	50.0	150.0
M2-8:2FTSA		81.5	50.0	150.0
M2PFTeDA		80.1	12.0	218.0
M3PFBS		99.3	50.0	150.0
M3PFHxS		104.2	50.0	150.0
M4PFHpA		104.7	50.0	150.0
M5PFHxA		97.3	50.0	150.0
M5PFPeA		97.5	50.0	150.0
M6PFDA		106.0	50.0	150.0
M7PFUnDA		96.9	50.0	150.0
M8FOSA		98.5	50.0	150.0
M8PFOA		107.7	50.0	150.0
M8PFOS		100.5	50.0	150.0
M9-PFNA		88.7	50.0	150.0
MPFBA		101.3	50.0	150.0
MPFDoDA		88.7	50.0	150.0
d3N-MeFOSAA		100.9	50.0	150.0
d5EtFOSAA		79.0	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.21

Sample Tag: SB-5-21 8'

Collected Date/Time: 04/21/2021 09:06

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210513, Run Date: 05/13/2021 19:35, Matrix: SO, Dilution: 6.36

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	162.7	50.0	150.0
M2-6:2FTSA		137.8	50.0	150.0
M2-8:2FTSA		148.2	50.0	150.0
M2PFTeDA		123.9	12.0	218.0
M3PFBS		108.8	50.0	150.0
M3PFHxS		93.4	50.0	150.0
M4PFHpA		97.3	50.0	150.0
M5PFHxA		100.8	50.0	150.0
M5PFPeA		104.8	50.0	150.0
M6PFDA		107.0	50.0	150.0
M7PFUnDA		117.8	50.0	150.0
M8FOSA		111.2	50.0	150.0
M8PFOA		126.2	50.0	150.0
M8PFOS		100.0	50.0	150.0
M9-PFNA		117.3	50.0	150.0
MPFBA		107.8	50.0	150.0
MPFDoDA		124.8	50.0	150.0
d3N-MeFOSAA		111.7	50.0	150.0
d5EtFOSAA		125.0	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.22

Sample Tag: SB-5-21 16'

Collected Date/Time: 04/21/2021 09:13

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/29/2021 03:44, Matrix: SO, Dilution: 7.28

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		92.0	50.0	150.0
M2-6:2FTSA		108.3	50.0	150.0
M2-8:2FTSA		99.8	50.0	150.0
M2PFTeDA		156.1	12.0	218.0
M3PFBS		82.6	50.0	150.0
M3PFHxS		91.5	50.0	150.0
M4PFHpA		80.1	50.0	150.0
M5PFHxA		83.2	50.0	150.0
M5PFPeA		84.6	50.0	150.0
M6PFDA		95.2	50.0	150.0
M7PFUnDA		96.5	50.0	150.0
M8FOSA		104.0	50.0	150.0
M8PFOA		93.5	50.0	150.0
M8PFOS		87.3	50.0	150.0
M9-PFNA		93.0	50.0	150.0
MPFBA		86.1	50.0	150.0
MPFDoDA		107.6	50.0	150.0
d3N-MeFOSAA		98.4	50.0	150.0
d5EtFOSAA		103.2	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.23

Sample Tag: SB-5-21 21'

Collected Date/Time: 04/21/2021 09:20

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 10:50, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		117.9	50.0	150.0
M2-6:2FTSA		81.5	50.0	150.0
M2-8:2FTSA		88.1	50.0	150.0
M2PFTeDA		102.7	12.0	218.0
M3PFBS		100.9	50.0	150.0
M3PFHxS		95.5	50.0	150.0
M4PFHpA		101.2	50.0	150.0
M5PFHxA		106.9	50.0	150.0
M5PFPeA		98.7	50.0	150.0
M6PFDA		97.9	50.0	150.0
M7PFUnDA		97.0	50.0	150.0
M8FOSA		99.3	50.0	150.0
M8PFOA		108.0	50.0	150.0
M8PFOS		95.7	50.0	150.0
M9-PFNA		94.9	50.0	150.0
MPFBA		104.1	50.0	150.0
MPFDoDA		99.1	50.0	150.0
d3N-MeFOSAA		102.0	50.0	150.0
d5EtFOSAA		82.7	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.24

Sample Tag: SB-7-21 7'

Collected Date/Time: 04/21/2021 10:04

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S1, Run Date: 04/29/2021 04:04, Matrix: SO, Dilution: 5.48

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		85.1	50.0	150.0
M2-6:2FTSA		99.3	50.0	150.0
M2-8:2FTSA		98.4	50.0	150.0
M2PFTeDA		115.9	12.0	218.0
M3PFBS		88.0	50.0	150.0
M3PFHxS		93.4	50.0	150.0
M4PFHpA		111.5	50.0	150.0
M5PFHxA		95.3	50.0	150.0
M5PFPeA		90.5	50.0	150.0
M6PFDA		98.8	50.0	150.0
M7PFUnDA		110.0	50.0	150.0
M8FOSA		98.8	50.0	150.0
M8PFOA		93.6	50.0	150.0
M8PFOS		104.4	50.0	150.0
M9-PFNA		101.5	50.0	150.0
MPFBA		88.6	50.0	150.0
MPFDoDA		103.5	50.0	150.0
d3N-MeFOSAA		101.5	50.0	150.0
d5EtFOSAA		100.6	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.25

Sample Tag: SB-7-21 24'

Collected Date/Time: 04/21/2021 10:10

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 11:09, Matrix: WW, Dilution: 2.04

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		123.9	50.0	150.0
M2-6:2FTSA		93.1	50.0	150.0
M2-8:2FTSA		83.9	50.0	150.0
M2PFTeDA		144.9	12.0	218.0
M3PFBS		104.1	50.0	150.0
M3PFHxS		109.0	50.0	150.0
M4PFHpA		107.4	50.0	150.0
M5PFHxA		102.6	50.0	150.0
M5PFPeA		100.3	50.0	150.0
M6PFDA		103.1	50.0	150.0
M7PFUnDA		98.9	50.0	150.0
M8FOSA		100.7	50.0	150.0
M8PFOA		110.4	50.0	150.0
M8PFOS		98.3	50.0	150.0
M9-PFNA		94.8	50.0	150.0
MPFBA		105.0	50.0	150.0
MPFDoDA		117.3	50.0	150.0
d3N-MeFOSAA		96.7	50.0	150.0
d5EtFOSAA		87.2	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.26

Sample Tag: SB-7-21 15'

Collected Date/Time: 04/21/2021 10:14

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 06:20, Matrix: SO, Dilution: 6.51

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		99.3	50.0	150.0
M2-6:2FTSA		107.9	50.0	150.0
M2-8:2FTSA		86.8	50.0	150.0
M2PFTeDA		99.3	12.0	218.0
M3PFBS		95.9	50.0	150.0
M3PFHxS		88.8	50.0	150.0
M4PFHpA		103.1	50.0	150.0
M5PFHxA		97.0	50.0	150.0
M5PFPeA		101.4	50.0	150.0
M6PFDA		98.6	50.0	150.0
M7PFUnDA		91.8	50.0	150.0
M8FOSA		92.6	50.0	150.0
M8PFOA		98.3	50.0	150.0
M8PFOS		92.1	50.0	150.0
M9-PFNA		92.7	50.0	150.0
MPFBA		99.3	50.0	150.0
MPFDoDA		102.9	50.0	150.0
d3N-MeFOSAA		91.5	50.0	150.0
d5EtFOSAA		92.1	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.27

Sample Tag: SB-7-21 21'

Collected Date/Time: 04/21/2021 10:21

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 11:29, Matrix: WW, Dilution: 1.93

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		132.6	50.0	150.0
M2-6:2FTSA		107.5	50.0	150.0
M2-8:2FTSA		102.3	50.0	150.0
M2PFTeDA		106.6	12.0	218.0
M3PFBS		104.9	50.0	150.0
M3PFHxS		111.0	50.0	150.0
M4PFHpA		108.3	50.0	150.0
M5PFHxA		102.2	50.0	150.0
M5PFPeA		103.9	50.0	150.0
M6PFDA		105.8	50.0	150.0
M7PFUnDA		100.4	50.0	150.0
M8FOSA		101.1	50.0	150.0
M8PFOA		116.9	50.0	150.0
M8PFOS		92.9	50.0	150.0
M9-PFNA		94.6	50.0	150.0
MPFBA		108.4	50.0	150.0
MPFDoDA		103.3	50.0	150.0
d3N-MeFOSAA		109.8	50.0	150.0
d5EtFOSAA		87.9	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.28

Sample Tag: SB-16-21 16'

Collected Date/Time: 04/21/2021 11:26

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 06:59, Matrix: SO, Dilution: 5.82

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		109.5	50.0	150.0
M2-6:2FTSA		119.0	50.0	150.0
M2-8:2FTSA		84.5	50.0	150.0
M2PFTeDA		139.5	12.0	218.0
M3PFBS		103.3	50.0	150.0
M3PFHxS		98.4	50.0	150.0
M4PFHpA		104.4	50.0	150.0
M5PFHxA		103.9	50.0	150.0
M5PFPeA		110.3	50.0	150.0
M6PFDA		108.8	50.0	150.0
M7PFUnDA		112.0	50.0	150.0
M8FOSA		105.4	50.0	150.0
M8PFOA		112.8	50.0	150.0
M8PFOS		108.1	50.0	150.0
M9-PFNA		112.1	50.0	150.0
MPFBA		109.4	50.0	150.0
MPFDoDA		114.9	50.0	150.0
d3N-MeFOSAA		105.4	50.0	150.0
d5EtFOSAA		88.8	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.29

Sample Tag: SB-16-21 8'

Collected Date/Time: 04/21/2021 11:30

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 07:38, Matrix: SO, Dilution: 6.94

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		97.1	50.0	150.0
M2-6:2FTSA		108.2	50.0	150.0
M2-8:2FTSA		97.5	50.0	150.0
M2PFTeDA		124.4	12.0	218.0
M3PFBS		94.9	50.0	150.0
M3PFHxS		95.4	50.0	150.0
M4PFHpA		107.6	50.0	150.0
M5PFHxA		96.2	50.0	150.0
M5PFPeA		103.2	50.0	150.0
M6PFDA		104.4	50.0	150.0
M7PFUnDA		112.4	50.0	150.0
M8FOSA		98.5	50.0	150.0
M8PFOA		92.3	50.0	150.0
M8PFOS		96.9	50.0	150.0
M9-PFNA		115.6	50.0	150.0
MPFBA		103.5	50.0	150.0
MPFDoDA		114.5	50.0	150.0
d3N-MeFOSAA		97.1	50.0	150.0
d5EtFOSAA		83.4	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.30

Sample Tag: SB-16-21 3'

Collected Date/Time: 04/21/2021 11:32

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 07:58, Matrix: SO, Dilution: 5.84

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		115.2	50.0	150.0
M2-6:2FTSA		105.1	50.0	150.0
M2-8:2FTSA		109.7	50.0	150.0
M2PFTeDA		112.8	12.0	218.0
M3PFBS		103.8	50.0	150.0
M3PFHxS		105.9	50.0	150.0
M4PFHpA		102.7	50.0	150.0
M5PFHxA		101.0	50.0	150.0
M5PFPeA		111.4	50.0	150.0
M6PFDA		115.6	50.0	150.0
M7PFUnDA		105.2	50.0	150.0
M8FOSA		99.8	50.0	150.0
M8PFOA		103.8	50.0	150.0
M8PFOS		113.9	50.0	150.0
M9-PFNA		111.7	50.0	150.0
MPFBA		110.6	50.0	150.0
MPFDoDA		119.6	50.0	150.0
d3N-MeFOSAA		114.1	50.0	150.0
d5EtFOSAA		88.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.31

Sample Tag: SB-2-21 19'

Collected Date/Time: 04/21/2021 12:52

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 11:48, Matrix: WW, Dilution: 2.02

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		123.6	50.0	150.0
M2-6:2FTSA		94.2	50.0	150.0
M2-8:2FTSA		92.0	50.0	150.0
M2PFTeDA		130.9	12.0	218.0
M3PFBS		103.7	50.0	150.0
M3PFHxS		107.3	50.0	150.0
M4PFHpA		109.9	50.0	150.0
M5PFHxA		104.2	50.0	150.0
M5PFPeA		98.4	50.0	150.0
M6PFDA		106.8	50.0	150.0
M7PFUnDA		102.7	50.0	150.0
M8FOSA		100.7	50.0	150.0
M8PFOA		98.9	50.0	150.0
M8PFOS		96.2	50.0	150.0
M9-PFNA		96.9	50.0	150.0
MPFBA		101.9	50.0	150.0
MPFDoDA		112.1	50.0	150.0
d3N-MeFOSAA		100.6	50.0	150.0
d5EtFOSAA		95.0	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.32

Sample Tag: SB-2-21 6'

Collected Date/Time: 04/21/2021 13:10

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 08:17, Matrix: SO, Dilution: 5.66

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		113.3	50.0	150.0
M2-6:2FTSA		108.5	50.0	150.0
M2-8:2FTSA		90.9	50.0	150.0
M2PFTeDA		129.5	12.0	218.0
M3PFBS		101.5	50.0	150.0
M3PFHxS		108.9	50.0	150.0
M4PFHpA		105.8	50.0	150.0
M5PFHxA		104.1	50.0	150.0
M5PFPeA		105.2	50.0	150.0
M6PFDA		98.5	50.0	150.0
M7PFUnDA		110.4	50.0	150.0
M8FOSA		103.4	50.0	150.0
M8PFOA		109.5	50.0	150.0
M8PFOS		106.5	50.0	150.0
M9-PFNA		112.1	50.0	150.0
MPFBA		105.4	50.0	150.0
MPFDoDA		118.5	50.0	150.0
d3N-MeFOSAA		110.7	50.0	150.0
d5EtFOSAA		96.4	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.33

Sample Tag: SB-2-21 17'

Collected Date/Time: 04/21/2021 13:12

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 12:08, Matrix: WW, Dilution: 2.09

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		124.1	50.0	150.0
M2-6:2FTSA		95.5	50.0	150.0
M2-8:2FTSA		92.4	50.0	150.0
M2PFTeDA		122.0	12.0	218.0
M3PFBS		104.1	50.0	150.0
M3PFHxS		108.8	50.0	150.0
M4PFHpA		107.8	50.0	150.0
M5PFHxA		102.1	50.0	150.0
M5PFPeA		98.8	50.0	150.0
M6PFDA		95.9	50.0	150.0
M7PFUnDA		104.7	50.0	150.0
M8FOSA		103.0	50.0	150.0
M8PFOA		106.6	50.0	150.0
M8PFOS		97.4	50.0	150.0
M9-PFNA		91.9	50.0	150.0
MPFBA		104.2	50.0	150.0
MPFDoDA		108.0	50.0	150.0
d3N-MeFOSAA		97.4	50.0	150.0
d5EtFOSAA		89.0	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.34

Sample Tag: SB-2-21 15'

Collected Date/Time: 04/21/2021 13:17

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 08:37, Matrix: SO, Dilution: 5.72

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		124.6	50.0	150.0
M2-6:2FTSA		115.5	50.0	150.0
M2-8:2FTSA		99.5	50.0	150.0
M2PFTeDA		103.3	12.0	218.0
M3PFBS		106.8	50.0	150.0
M3PFHxS		108.1	50.0	150.0
M4PFHpA		116.9	50.0	150.0
M5PFHxA		109.4	50.0	150.0
M5PFPeA		116.4	50.0	150.0
M6PFDA		116.1	50.0	150.0
M7PFUnDA		110.0	50.0	150.0
M8FOSA		100.8	50.0	150.0
M8PFOA		111.5	50.0	150.0
M8PFOS		107.9	50.0	150.0
M9-PFNA		121.5	50.0	150.0
MPFBA		115.8	50.0	150.0
MPFDoDA		116.7	50.0	150.0
d3N-MeFOSAA		116.7	50.0	150.0
d5EtFOSAA		101.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.35

Sample Tag: SB-1-21 6'

Collected Date/Time: 04/21/2021 13:58

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 08:56, Matrix: SO, Dilution: 5.76

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		110.8	50.0	150.0
M2-6:2FTSA		112.4	50.0	150.0
M2-8:2FTSA		95.8	50.0	150.0
M2PFTeDA		110.6	12.0	218.0
M3PFBS		98.8	50.0	150.0
M3PFHxS		111.2	50.0	150.0
M4PFHpA		111.9	50.0	150.0
M5PFHxA		98.3	50.0	150.0
M5PFPeA		115.5	50.0	150.0
M6PFDA		113.9	50.0	150.0
M7PFUnDA		106.4	50.0	150.0
M8FOSA		106.8	50.0	150.0
M8PFOA		113.4	50.0	150.0
M8PFOS		104.8	50.0	150.0
M9-PFNA		113.1	50.0	150.0
MPFBA		109.8	50.0	150.0
MPFDoDA		114.9	50.0	150.0
d3N-MeFOSAA		115.3	50.0	150.0
d5EtFOSAA		97.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.36

Sample Tag: SB-1-21 14-15'

Collected Date/Time: 04/21/2021 14:30

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210430, Run Date: 04/30/2021 21:27, Matrix: SO, Dilution: 6.92

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		110.4	50.0	150.0
M2-6:2FTSA		133.0	50.0	150.0
M2-8:2FTSA		136.4	50.0	150.0
M2PFTeDA		161.3	12.0	218.0
M3PFBS		105.9	50.0	150.0
M3PFHxS		113.1	50.0	150.0
M4PFHpA		110.3	50.0	150.0
M5PFHxA		114.0	50.0	150.0
M5PFPeA		110.7	50.0	150.0
M6PFDA		128.0	50.0	150.0
M7PFUnDA		134.2	50.0	150.0
M8FOSA	*	191.3	50.0	150.0
M8PFOA		131.0	50.0	150.0
M8PFOS		106.4	50.0	150.0
M9-PFNA		127.5	50.0	150.0
MPFBA		112.2	50.0	150.0
MPFDoDA		139.3	50.0	150.0
d3N-MeFOSAA	*	152.0	50.0	150.0
d5EtFOSAA	*	161.4	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.37

Sample Tag: SB-1-21 15'

Collected Date/Time: 04/21/2021 13:56

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 12:27, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	206.8	50.0	150.0
M2-6:2FTSA		149.8	50.0	150.0
M2-8:2FTSA		134.1	50.0	150.0
M2PFTeDA		114.9	12.0	218.0
M3PFBS		106.1	50.0	150.0
M3PFHxS		115.8	50.0	150.0
M4PFHpA		114.9	50.0	150.0
M5PFHxA		114.5	50.0	150.0
M5PFPeA		103.2	50.0	150.0
M6PFDA		119.1	50.0	150.0
M7PFUnDA		117.7	50.0	150.0
M8FOSA		110.8	50.0	150.0
M8PFOA		111.8	50.0	150.0
M8PFOS		93.9	50.0	150.0
M9-PFNA		101.4	50.0	150.0
MPFBA		102.1	50.0	150.0
MPFDoDA		123.4	50.0	150.0
d3N-MeFOSAA		122.7	50.0	150.0
d5EtFOSAA		123.0	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.38

Sample Tag: SB-1-21 17'

Collected Date/Time: 04/21/2021 13:46

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 12:47, Matrix: WW, Dilution: 1.93

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	202.5	50.0	150.0
M2-6:2FTSA		146.8	50.0	150.0
M2-8:2FTSA		139.8	50.0	150.0
M2PFTeDA		186.5	12.0	218.0
M3PFBS		97.4	50.0	150.0
M3PFHxS		115.5	50.0	150.0
M4PFHpA		112.6	50.0	150.0
M5PFHxA		98.9	50.0	150.0
M5PFPeA		103.7	50.0	150.0
M6PFDA		115.5	50.0	150.0
M7PFUnDA		124.2	50.0	150.0
M8FOSA		117.0	50.0	150.0
M8PFOA		110.9	50.0	150.0
M8PFOS		96.6	50.0	150.0
M9-PFNA		105.7	50.0	150.0
MPFBA		98.4	50.0	150.0
MPFDoDA		134.5	50.0	150.0
d3N-MeFOSAA		124.3	50.0	150.0
d5EtFOSAA		121.8	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.39

Sample Tag: SB-14-21 17'

Collected Date/Time: 04/21/2021 14:39

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 13:06, Matrix: WW, Dilution: 2

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		133.5	50.0	150.0
M2-6:2FTSA		101.3	50.0	150.0
M2-8:2FTSA		87.4	50.0	150.0
M2PFTeDA		72.6	12.0	218.0
M3PFBS		102.5	50.0	150.0
M3PFHxS		113.1	50.0	150.0
M4PFHpA		113.6	50.0	150.0
M5PFHxA		105.4	50.0	150.0
M5PFPeA		97.9	50.0	150.0
M6PFDA		92.0	50.0	150.0
M7PFUnDA		94.8	50.0	150.0
M8FOSA		97.1	50.0	150.0
M8PFOA		109.4	50.0	150.0
M8PFOS		86.5	50.0	150.0
M9-PFNA		101.0	50.0	150.0
MPFBA		105.1	50.0	150.0
MPFDoDA		88.6	50.0	150.0
d3N-MeFOSAA		94.9	50.0	150.0
d5EtFOSAA		96.4	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.40

Sample Tag: SB-14-21 15'

Collected Date/Time: 04/21/2021 14:49

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 13:26, Matrix: WW, Dilution: 2.04

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		131.3	50.0	150.0
M2-6:2FTSA		91.4	50.0	150.0
M2-8:2FTSA		96.5	50.0	150.0
M2PFTeDA		117.7	12.0	218.0
M3PFBS		99.9	50.0	150.0
M3PFHxS		105.8	50.0	150.0
M4PFHpA		108.6	50.0	150.0
M5PFHxA		99.2	50.0	150.0
M5PFPeA		93.4	50.0	150.0
M6PFDA		110.3	50.0	150.0
M7PFUnDA		101.5	50.0	150.0
M8FOSA		95.4	50.0	150.0
M8PFOA		102.8	50.0	150.0
M8PFOS		95.1	50.0	150.0
M9-PFNA		91.6	50.0	150.0
MPFBA		101.9	50.0	150.0
MPFDoDA		99.1	50.0	150.0
d3N-MeFOSAA		97.2	50.0	150.0
d5EtFOSAA		96.6	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.41

Sample Tag: SB-14-21 6'

Collected Date/Time: 04/21/2021 14:55

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 09:35, Matrix: SO, Dilution: 5.16

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		145.9	50.0	150.0
M2-6:2FTSA		138.0	50.0	150.0
M2-8:2FTSA		119.6	50.0	150.0
M2PFTeDA		139.3	12.0	218.0
M3PFBS		115.3	50.0	150.0
M3PFHxS		120.5	50.0	150.0
M4PFHpA		113.0	50.0	150.0
M5PFHxA		109.6	50.0	150.0
M5PFPeA		113.4	50.0	150.0
M6PFDA		116.5	50.0	150.0
M7PFUnDA		128.5	50.0	150.0
M8FOSA		112.6	50.0	150.0
M8PFOA		116.2	50.0	150.0
M8PFOS		124.5	50.0	150.0
M9-PFNA		123.8	50.0	150.0
MPFBA		112.9	50.0	150.0
MPFDoDA		137.9	50.0	150.0
d3N-MeFOSAA		120.4	50.0	150.0
d5EtFOSAA		116.9	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.42

Sample Tag: SB-14-21 11'

Collected Date/Time: 04/21/2021 15:02

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 09:55, Matrix: SO, Dilution: 6.09

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		128.9	50.0	150.0
M2-6:2FTSA		102.6	50.0	150.0
M2-8:2FTSA		109.8	50.0	150.0
M2PFTeDA		98.2	12.0	218.0
M3PFBS		112.5	50.0	150.0
M3PFHxS		117.4	50.0	150.0
M4PFHpA		121.1	50.0	150.0
M5PFHxA		114.9	50.0	150.0
M5PFPeA		116.3	50.0	150.0
M6PFDA		118.1	50.0	150.0
M7PFUnDA		121.8	50.0	150.0
M8FOSA		107.7	50.0	150.0
M8PFOA		108.3	50.0	150.0
M8PFOS		115.0	50.0	150.0
M9-PFNA		109.6	50.0	150.0
MPFBA		117.8	50.0	150.0
MPFDoDA		112.7	50.0	150.0
d3N-MeFOSAA		116.2	50.0	150.0
d5EtFOSAA		108.2	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.43

Sample Tag: SB-13-21 15'

Collected Date/Time: 04/21/2021 15:37

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 13:45, Matrix: WW, Dilution: 2

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		115.2	50.0	150.0
M2-6:2FTSA		85.1	50.0	150.0
M2-8:2FTSA		90.0	50.0	150.0
M2PFTeDA		72.7	12.0	218.0
M3PFBS		104.9	50.0	150.0
M3PFHxS		106.2	50.0	150.0
M4PFHpA		108.9	50.0	150.0
M5PFHxA		104.8	50.0	150.0
M5PFPeA		97.8	50.0	150.0
M6PFDA		99.6	50.0	150.0
M7PFUnDA		95.6	50.0	150.0
M8FOSA		98.7	50.0	150.0
M8PFOA		108.1	50.0	150.0
M8PFOS		106.2	50.0	150.0
M9-PFNA		96.9	50.0	150.0
MPFBA		103.5	50.0	150.0
MPFDoDA		92.9	50.0	150.0
d3N-MeFOSAA		106.3	50.0	150.0
d5EtFOSAA		91.4	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.44

Sample Tag: SB-13-21 11'

Collected Date/Time: 04/21/2021 15:40

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 10:14, Matrix: SO, Dilution: 5.48

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		108.2	50.0	150.0
M2-6:2FTSA		116.4	50.0	150.0
M2-8:2FTSA		105.0	50.0	150.0
M2PFTeDA		156.9	12.0	218.0
M3PFBS		107.6	50.0	150.0
M3PFHxS		106.3	50.0	150.0
M4PFHpA		112.7	50.0	150.0
M5PFHxA		120.0	50.0	150.0
M5PFPeA		120.2	50.0	150.0
M6PFDA		123.1	50.0	150.0
M7PFUnDA		131.0	50.0	150.0
M8FOSA		116.9	50.0	150.0
M8PFOA		112.1	50.0	150.0
M8PFOS		107.7	50.0	150.0
M9-PFNA		126.9	50.0	150.0
MPFBA		112.6	50.0	150.0
MPFDoDA		132.1	50.0	150.0
d3N-MeFOSAA		121.8	50.0	150.0
d5EtFOSAA		104.7	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.45

Sample Tag: SB-13-21 6'

Collected Date/Time: 04/21/2021 15:32

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 10:34, Matrix: SO, Dilution: 6.09

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		127.4	50.0	150.0
M2-6:2FTSA		112.2	50.0	150.0
M2-8:2FTSA		116.3	50.0	150.0
M2PFTeDA		142.3	12.0	218.0
M3PFBS		114.4	50.0	150.0
M3PFHxS		118.3	50.0	150.0
M4PFHpA		113.9	50.0	150.0
M5PFHxA		113.7	50.0	150.0
M5PFPeA		119.5	50.0	150.0
M6PFDA		114.6	50.0	150.0
M7PFUnDA		122.9	50.0	150.0
M8FOSA		109.3	50.0	150.0
M8PFOA		119.7	50.0	150.0
M8PFOS		105.9	50.0	150.0
M9-PFNA		127.1	50.0	150.0
MPFBA		118.2	50.0	150.0
MPFDoDA		133.0	50.0	150.0
d3N-MeFOSAA		142.3	50.0	150.0
d5EtFOSAA		105.3	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.46

Sample Tag: SB-13-21 12'

Collected Date/Time: 04/21/2021 15:44

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 14:05, Matrix: WW, Dilution: 1.97

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		118.4	50.0	150.0
M2-6:2FTSA		88.7	50.0	150.0
M2-8:2FTSA		91.0	50.0	150.0
M2PFTeDA		85.2	12.0	218.0
M3PFBS		106.5	50.0	150.0
M3PFHxS		103.0	50.0	150.0
M4PFHpA		102.3	50.0	150.0
M5PFHxA		106.1	50.0	150.0
M5PFPeA		97.7	50.0	150.0
M6PFDA		96.8	50.0	150.0
M7PFUnDA		94.2	50.0	150.0
M8FOSA		99.7	50.0	150.0
M8PFOA		102.3	50.0	150.0
M8PFOS		104.1	50.0	150.0
M9-PFNA		97.5	50.0	150.0
MPFBA		104.3	50.0	150.0
MPFDoDA		93.6	50.0	150.0
d3N-MeFOSAA		97.5	50.0	150.0
d5EtFOSAA		89.2	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.47

Sample Tag: Equip Blank

Collected Date/Time: 04/21/2021 15:47

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 14:24, Matrix: WW, Dilution: 2.01

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		93.6	50.0	150.0
M2-6:2FTSA		91.3	50.0	150.0
M2-8:2FTSA		111.6	50.0	150.0
M2PFTeDA		122.0	12.0	218.0
M3PFBS		105.1	50.0	150.0
M3PFHxS		114.7	50.0	150.0
M4PFHpA		108.8	50.0	150.0
M5PFHxA		102.3	50.0	150.0
M5PFPeA		101.2	50.0	150.0
M6PFDA		102.8	50.0	150.0
M7PFUnDA		103.8	50.0	150.0
M8FOSA		100.1	50.0	150.0
M8PFOA		108.5	50.0	150.0
M8PFOS		100.7	50.0	150.0
M9-PFNA		104.2	50.0	150.0
MPFBA		101.9	50.0	150.0
MPFDoDA		110.7	50.0	150.0
d3N-MeFOSAA		113.2	50.0	150.0
d5EtFOSAA		108.2	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.49

Sample Tag: Field Blank

Collected Date/Time: 04/20/2021 08:55

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 14:44, Matrix: WW, Dilution: 1.95

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		102.3	50.0	150.0
M2-6:2FTSA		109.2	50.0	150.0
M2-8:2FTSA		114.7	50.0	150.0
M2PFTeDA		110.6	12.0	218.0
M3PFBS		113.0	50.0	150.0
M3PFHxS		106.1	50.0	150.0
M4PFHpA		118.1	50.0	150.0
M5PFHxA		110.4	50.0	150.0
M5PFPeA		102.5	50.0	150.0
M6PFDA		108.0	50.0	150.0
M7PFUnDA		104.0	50.0	150.0
M8FOSA		95.0	50.0	150.0
M8PFOA		108.0	50.0	150.0
M8PFOS		90.1	50.0	150.0
M9-PFNA		100.7	50.0	150.0
MPFBA		102.5	50.0	150.0
MPFDoDA		104.5	50.0	150.0
d3N-MeFOSAA		142.4	50.0	150.0
d5EtFOSAA		108.8	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.50

Sample Tag: Field Blank

Collected Date/Time: 04/21/2021 08:51

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 15:03, Matrix: WW, Dilution: 1.97

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		100.3	50.0	150.0
M2-6:2FTSA		114.4	50.0	150.0
M2-8:2FTSA		109.7	50.0	150.0
M2PFTeDA		79.9	12.0	218.0
M3PFBS		116.3	50.0	150.0
M3PFHxS		112.9	50.0	150.0
M4PFHpA		111.6	50.0	150.0
M5PFHxA		112.0	50.0	150.0
M5PFPeA		110.7	50.0	150.0
M6PFDA		105.2	50.0	150.0
M7PFUnDA		107.6	50.0	150.0
M8FOSA		104.9	50.0	150.0
M8PFOA		124.4	50.0	150.0
M8PFOS		96.8	50.0	150.0
M9-PFNA		98.6	50.0	150.0
MPFBA		106.8	50.0	150.0
MPFDoDA		100.6	50.0	150.0
d3N-MeFOSAA		143.8	50.0	150.0
d5EtFOSAA		101.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.51

Sample Tag: Trip Blank

Collected Date/Time: 04/19/2021 07:48

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 15:23, Matrix: WW, Dilution: 1.91

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		111.3	50.0	150.0
M2-6:2FTSA		103.1	50.0	150.0
M2-8:2FTSA		100.2	50.0	150.0
M2PFTeDA		46.1	12.0	218.0
M3PFBS		101.8	50.0	150.0
M3PFHxS		111.8	50.0	150.0
M4PFHpA		121.3	50.0	150.0
M5PFHxA		107.5	50.0	150.0
M5PFPeA		103.5	50.0	150.0
M6PFDA		105.5	50.0	150.0
M7PFUnDA		102.5	50.0	150.0
M8FOSA		100.3	50.0	150.0
M8PFOA		116.7	50.0	150.0
M8PFOS		102.3	50.0	150.0
M9-PFNA		103.3	50.0	150.0
MPFBA		105.7	50.0	150.0
MPFDoDA		85.6	50.0	150.0
d3N-MeFOSAA		115.3	50.0	150.0
d5EtFOSAA		99.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.54

Sample Tag: Dupe 3

Collected Date/Time: 04/19/2021 00:01

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 15:42, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		139.6	50.0	150.0
M2-6:2FTSA		99.9	50.0	150.0
M2-8:2FTSA		92.5	50.0	150.0
M2PFTeDA		135.7	12.0	218.0
M3PFBS		108.8	50.0	150.0
M3PFHxS		102.9	50.0	150.0
M4PFHpA		117.8	50.0	150.0
M5PFHxA		107.7	50.0	150.0
M5PFPeA		98.2	50.0	150.0
M6PFDA		93.1	50.0	150.0
M7PFUnDA		101.3	50.0	150.0
M8FOSA		107.2	50.0	150.0
M8PFOA		104.8	50.0	150.0
M8PFOS		98.3	50.0	150.0
M9-PFNA		96.8	50.0	150.0
MPFBA		107.7	50.0	150.0
MPFDoDA		111.7	50.0	150.0
d3N-MeFOSAA		112.1	50.0	150.0
d5EtFOSAA		99.1	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.55

Sample Tag: Dupe 4

Collected Date/Time: 04/19/2021 00:01

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 16:02, Matrix: WW, Dilution: 1.97

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		129.8	50.0	150.0
M2-6:2FTSA		104.0	50.0	150.0
M2-8:2FTSA		79.1	50.0	150.0
M2PFTeDA		97.8	12.0	218.0
M3PFBS		105.4	50.0	150.0
M3PFHxS		113.1	50.0	150.0
M4PFHpA		108.7	50.0	150.0
M5PFHxA		100.5	50.0	150.0
M5PFPeA		99.9	50.0	150.0
M6PFDA		106.8	50.0	150.0
M7PFUnDA		98.3	50.0	150.0
M8FOSA		104.7	50.0	150.0
M8PFOA		111.3	50.0	150.0
M8PFOS		88.6	50.0	150.0
M9-PFNA		94.5	50.0	150.0
MPFBA		109.9	50.0	150.0
MPFDoDA		98.3	50.0	150.0
d3N-MeFOSAA		94.0	50.0	150.0
d5EtFOSAA		86.7	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.56

Sample Tag: Dupe 5

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 10:53, Matrix: SO, Dilution: 5.79

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		131.9	50.0	150.0
M2-6:2FTSA		123.6	50.0	150.0
M2-8:2FTSA		103.0	50.0	150.0
M2PFTeDA		138.6	12.0	218.0
M3PFBS		121.9	50.0	150.0
M3PFHxS		120.2	50.0	150.0
M4PFHpA		134.2	50.0	150.0
M5PFHxA		121.9	50.0	150.0
M5PFPeA		133.2	50.0	150.0
M6PFDA		134.7	50.0	150.0
M7PFUnDA		136.4	50.0	150.0
M8FOSA		126.8	50.0	150.0
M8PFOA		129.4	50.0	150.0
M8PFOS		132.1	50.0	150.0
M9-PFNA		137.5	50.0	150.0
MPFBA		128.3	50.0	150.0
MPFDoDA		129.6	50.0	150.0
d3N-MeFOSAA		126.9	50.0	150.0
d5EtFOSAA		109.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.57

Sample Tag: Dupe 6

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: DQ210428S2, Run Date: 04/29/2021 11:13, Matrix: SO, Dilution: 6.04

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		118.6	50.0	150.0
M2-6:2FTSA		122.7	50.0	150.0
M2-8:2FTSA		88.9	50.0	150.0
M2PFTeDA		116.3	12.0	218.0
M3PFBS		107.3	50.0	150.0
M3PFHxS		110.2	50.0	150.0
M4PFHpA		110.2	50.0	150.0
M5PFHxA		113.3	50.0	150.0
M5PFPeA		116.0	50.0	150.0
M6PFDA		112.6	50.0	150.0
M7PFUnDA		127.3	50.0	150.0
M8FOSA		105.6	50.0	150.0
M8PFOA		112.9	50.0	150.0
M8PFOS		112.6	50.0	150.0
M9-PFNA		130.4	50.0	150.0
MPFBA		113.3	50.0	150.0
MPFDoDA		118.4	50.0	150.0
d3N-MeFOSAA		117.3	50.0	150.0
d5EtFOSAA		98.3	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.58

Sample Tag: Dupe 7

Collected Date/Time: 04/19/2021 00:01

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 16:21, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		121.2	50.0	150.0
M2-6:2FTSA		91.7	50.0	150.0
M2-8:2FTSA		90.7	50.0	150.0
M2PFTeDA		123.5	12.0	218.0
M3PFBS		103.4	50.0	150.0
M3PFHxS		113.8	50.0	150.0
M4PFHpA		112.9	50.0	150.0
M5PFHxA		106.3	50.0	150.0
M5PFPeA		102.9	50.0	150.0
M6PFDA		104.2	50.0	150.0
M7PFUnDA		100.9	50.0	150.0
M8FOSA		101.5	50.0	150.0
M8PFOA		113.1	50.0	150.0
M8PFOS		95.6	50.0	150.0
M9-PFNA		92.7	50.0	150.0
MPFBA		106.6	50.0	150.0
MPFDoDA		105.0	50.0	150.0
d3N-MeFOSAA		100.6	50.0	150.0
d5EtFOSAA		88.1	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.59

Sample Tag: Dupe 8

Collected Date/Time: 04/19/2021 00:01

Matrix: Liquid

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210428W1, Run Date: 04/29/2021 16:41, Matrix: WW, Dilution: 1.99

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		129.7	50.0	150.0
M2-6:2FTSA		102.4	50.0	150.0
M2-8:2FTSA		97.1	50.0	150.0
M2PFTeDA		107.6	12.0	218.0
M3PFBS		104.1	50.0	150.0
M3PFHxS		111.4	50.0	150.0
M4PFHpA		110.8	50.0	150.0
M5PFHxA		101.1	50.0	150.0
M5PFPeA		103.6	50.0	150.0
M6PFDA		92.2	50.0	150.0
M7PFUnDA		97.7	50.0	150.0
M8FOSA		96.3	50.0	150.0
M8PFOA		98.6	50.0	150.0
M8PFOS		94.7	50.0	150.0
M9-PFNA		91.1	50.0	150.0
MPFBA		106.1	50.0	150.0
MPFDoDA		98.1	50.0	150.0
d3N-MeFOSAA		104.4	50.0	150.0
d5EtFOSAA		88.1	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.62

Sample Tag: Dupe 11

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210430, Run Date: 04/30/2021 21:46, Matrix: SO, Dilution: 6.14

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		144.7	50.0	150.0
M2-6:2FTSA		94.1	50.0	150.0
M2-8:2FTSA		99.0	50.0	150.0
M2PFTeDA		17.6	12.0	218.0
M3PFBS		109.5	50.0	150.0
M3PFHxS		106.1	50.0	150.0
M4PFHpA		116.6	50.0	150.0
M5PFHxA		113.3	50.0	150.0
M5PFPeA		107.2	50.0	150.0
M6PFDA		127.3	50.0	150.0
M7PFUnDA		106.8	50.0	150.0
M8FOSA		117.8	50.0	150.0
M8PFOA		123.2	50.0	150.0
M8PFOS		114.6	50.0	150.0
M9-PFNA		127.1	50.0	150.0
MPFBA		108.3	50.0	150.0
MPFDoDA		80.2	50.0	150.0
d3N-MeFOSAA		115.9	50.0	150.0
d5EtFOSAA		112.8	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S23498.63

Sample Tag: Dupe 12

Collected Date/Time: 04/19/2021 00:01

Matrix: Soil

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210430, Run Date: 04/30/2021 22:06, Matrix: SO, Dilution: 6.61

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		96.2	50.0	150.0
M2-6:2FTSA		81.8	50.0	150.0
M2-8:2FTSA		67.3	50.0	150.0
M2PFTeDA		209.4	12.0	218.0
M3PFBS		101.7	50.0	150.0
M3PFHxS		97.8	50.0	150.0
M4PFHpA		113.8	50.0	150.0
M5PFHxA		114.7	50.0	150.0
M5PFPeA		111.5	50.0	150.0
M6PFDA		123.4	50.0	150.0
M7PFUnDA		139.8	50.0	150.0
M8FOSA	*	163.6	50.0	150.0
M8PFOA		127.7	50.0	150.0
M8PFOS		111.4	50.0	150.0
M9-PFNA		125.7	50.0	150.0
MPFBA		113.1	50.0	150.0
MPFDoDA		137.0	50.0	150.0
d3N-MeFOSAA		128.5	50.0	150.0
d5EtFOSAA		118.0	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF210423W3

QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: DQ210426.BLK210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 16:52, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		87.4	50.0	150.0
M2-6:2FTSA		97.8	50.0	150.0
M2-8:2FTSA		96.6	50.0	150.0
M2PFTeDA		74.8	12.0	218.0
M3PFBS		101.5	50.0	150.0
M3PFHxS		112.2	50.0	150.0
M4PFHpA		114.8	50.0	150.0
M5PFHxA		98.8	50.0	150.0
M5PFPeA		111.5	50.0	150.0
M6PFDA		101.2	50.0	150.0
M7PFUnDA		101.4	50.0	150.0
M8FOSA		93.9	50.0	150.0
M8PFOA		109.4	50.0	150.0
M8PFOS		116.1	50.0	150.0
M9-PFNA		103.1	50.0	150.0
MPFBA		79.9	50.0	150.0
MPFDoDA		94.4	50.0	150.0
d3N-MeFOSAA		111.4	50.0	150.0
d5EtFOSAA		107.5	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: DQ210426.LCS210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 18:32, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		80.2	50.0	150.0
M2-6:2FTSA		94.4	50.0	150.0
M2-8:2FTSA		96.8	50.0	150.0
M2PFTeDA		77.5	12.0	218.0
M3PFBS		109.2	50.0	150.0
M3PFHxS		111.4	50.0	150.0
M4PFHpA		119.3	50.0	150.0
M5PFHxA		103.5	50.0	150.0
M5PFPeA		115.8	50.0	150.0
M6PFDA		119.9	50.0	150.0
M7PFUnDA		98.8	50.0	150.0
M8FOSA		109.7	50.0	150.0
M8PFOA		120.0	50.0	150.0
M8PFOS		111.5	50.0	150.0
M9-PFNA		111.9	50.0	150.0
MPFBA		115.4	50.0	150.0
MPFDoDA		109.3	50.0	150.0
d3N-MeFOSAA		104.5	50.0	150.0
d5EtFOSAA		108.7	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ210426.LCSD214023WC, Parent Sample ID: DQ210426.LCS210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 18:52, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		93.3	50.0	150.0
M2-6:2FTSA		100.0	50.0	150.0
M2-8:2FTSA		107.9	50.0	150.0
M2PFTeDA		75.4	12.0	218.0
M3PFBS		111.0	50.0	150.0
M3PFHxS		107.4	50.0	150.0
M4PFHpA		113.6	50.0	150.0
M5PFHxA		105.6	50.0	150.0
M5PFPeA		116.9	50.0	150.0
M6PFDA		119.2	50.0	150.0
M7PFUnDA		116.2	50.0	150.0
M8FOSA		106.0	50.0	150.0
M8PFOA		123.9	50.0	150.0
M8PFOS		108.1	50.0	150.0
M9-PFNA		118.8	50.0	150.0
MPFBA		116.8	50.0	150.0
MPFDoDA		104.2	50.0	150.0
d3N-MeFOSAA		110.3	50.0	150.0
d5EtFOSAA		120.1	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: DQ210426.2347201M, Parent Sample ID: S23472.01

Run in Batch: DQ210426, Run Date: 04/26/2021 20:10, Prep Date: 04/23/2021, Matrix: WW, Dilution: 2.08

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		97.0	50.0	150.0
M2-6:2FTSA		94.7	50.0	150.0
M2-8:2FTSA		101.7	50.0	150.0
M2PFTeDA		92.8	12.0	218.0
M3PFBS		106.6	50.0	150.0
M3PFHxS		117.9	50.0	150.0
M4PFHpA		108.7	50.0	150.0
M5PFHxA		100.7	50.0	150.0
M5PFPeA		115.8	50.0	150.0
M6PFDA		115.6	50.0	150.0
M7PFUnDA		116.3	50.0	150.0
M8FOSA		105.9	50.0	150.0
M8PFOA		117.7	50.0	150.0
M8PFOS		114.4	50.0	150.0
M9-PFNA		118.1	50.0	150.0
MPFBA		112.0	50.0	150.0
MPFDoDA		109.8	50.0	150.0
d3N-MeFOSAA		111.2	50.0	150.0
d5EtFOSAA		115.8	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: DQ210426.2347202D, Parent Sample ID: S23472.02

Run in Batch: DQ210426, Run Date: 04/26/2021 20:49, Prep Date: 04/23/2021, Matrix: WW, Dilution: 2.08

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		88.3	50.0	150.0
M2-6:2FTSA		101.2	50.0	150.0
M2-8:2FTSA		120.2	50.0	150.0
M2PFTeDA		102.8	12.0	218.0
M3PFBS		108.1	50.0	150.0
M3PFHxS		115.7	50.0	150.0
M4PFHpA		109.4	50.0	150.0
M5PFHxA		109.6	50.0	150.0
M5PFPeA		120.9	50.0	150.0
M6PFDA		134.8	50.0	150.0
M7PFUnDA		125.0	50.0	150.0
M8FOSA		105.2	50.0	150.0
M8PFOA		133.1	50.0	150.0
M8PFOS		120.0	50.0	150.0
M9-PFNA		126.0	50.0	150.0
MPFBA		117.6	50.0	150.0
MPFDoDA		127.1	50.0	150.0
d3N-MeFOSAA		120.0	50.0	150.0
d5EtFOSAA		134.1	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF210428S1

QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: DQ210428S1.BLK210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 20:35, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		74.6	50.0	150.0
M2-6:2FTSA		95.3	50.0	150.0
M2-8:2FTSA		94.4	50.0	150.0
M2PFTeDA		130.1	12.0	218.0
M3PFBS		81.8	50.0	150.0
M3PFHxS		96.3	50.0	150.0
M4PFHpA		85.5	50.0	150.0
M5PFHxA		94.8	50.0	150.0
M5PFPeA		88.1	50.0	150.0
M6PFDA		88.8	50.0	150.0
M7PFUnDA		104.7	50.0	150.0
M8FOSA		94.0	50.0	150.0
M8PFOA		91.7	50.0	150.0
M8PFOS		98.1	50.0	150.0
M9-PFNA		102.2	50.0	150.0
MPFBA		88.6	50.0	150.0
MPFDoDA		99.0	50.0	150.0
d3N-MeFOSAA		109.0	50.0	150.0
d5EtFOSAA		81.9	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: DQ210428S1.LCS210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 19:57, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		73.1	50.0	150.0
M2-6:2FTSA		94.6	50.0	150.0
M2-8:2FTSA		84.7	50.0	150.0
M2PFTeDA		107.1	12.0	218.0
M3PFBS		78.0	50.0	150.0
M3PFHxS		88.1	50.0	150.0
M4PFHpA		80.3	50.0	150.0
M5PFHxA		82.9	50.0	150.0
M5PFPeA		83.8	50.0	150.0
M6PFDA		91.4	50.0	150.0
M7PFUnDA		89.9	50.0	150.0
M8FOSA		84.5	50.0	150.0
M8PFOA		88.8	50.0	150.0
M8PFOS		88.4	50.0	150.0
M9-PFNA		98.5	50.0	150.0
MPFBA		82.4	50.0	150.0
MPFDoDA		85.7	50.0	150.0
d3N-MeFOSAA		100.4	50.0	150.0
d5EtFOSAA		91.6	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ210428S1.LCSD210428S1, Parent Sample ID: DQ210428S1.LCS210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 20:16, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		73.5	50.0	150.0
M2-6:2FTSA		102.1	50.0	150.0
M2-8:2FTSA		93.3	50.0	150.0
M2PFTeDA		148.6	12.0	218.0
M3PFBS		84.5	50.0	150.0
M3PFHxS		87.2	50.0	150.0
M4PFHpA		87.2	50.0	150.0
M5PFHxA		86.3	50.0	150.0
M5PFPeA		87.2	50.0	150.0
M6PFDA		99.3	50.0	150.0
M7PFUnDA		97.0	50.0	150.0
M8FOSA		88.6	50.0	150.0
M8PFOA		92.2	50.0	150.0
M8PFOS		91.8	50.0	150.0
M9-PFNA		106.8	50.0	150.0
MPFBA		87.2	50.0	150.0
MPFDoDA		99.4	50.0	150.0
d3N-MeFOSAA		99.9	50.0	150.0
d5EtFOSAA		87.0	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: DQ210428S1.2349507M, Parent Sample ID: S23495.07

Run in Batch: DQ210428S1, Run Date: 04/28/2021 21:53, Prep Date: 04/28/2021, Matrix: SO, Dilution: 6.35

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		82.7	50.0	150.0
M2-6:2FTSA		98.3	50.0	150.0
M2-8:2FTSA		113.8	50.0	150.0
M2PFTeDA		123.7	12.0	218.0
M3PFBS		99.8	50.0	150.0
M3PFHxS		98.3	50.0	150.0
M4PFHpA		106.0	50.0	150.0
M5PFHxA		102.0	50.0	150.0
M5PFPeA		99.5	50.0	150.0
M6PFDA		116.3	50.0	150.0
M7PFUnDA		113.4	50.0	150.0
M8FOSA		105.3	50.0	150.0
M8PFOA		112.4	50.0	150.0
M8PFOS		111.2	50.0	150.0
M9-PFNA		108.3	50.0	150.0
MPFBA		96.1	50.0	150.0
MPFDoDA		108.5	50.0	150.0
d3N-MeFOSAA		120.2	50.0	150.0
d5EtFOSAA		106.1	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: DQ210428S1.2349508D, Parent Sample ID: S23495.08

Run in Batch: DQ210428S1, Run Date: 04/28/2021 22:32, Prep Date: 04/28/2021, Matrix: SO, Dilution: 5.59

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		84.5	50.0	150.0
M2-6:2FTSA		97.7	50.0	150.0
M2-8:2FTSA		101.2	50.0	150.0
M2PFTeDA		126.3	12.0	218.0
M3PFBS		88.1	50.0	150.0
M3PFHxS		89.0	50.0	150.0
M4PFHpA		95.7	50.0	150.0
M5PFHxA		94.8	50.0	150.0
M5PFPeA		91.8	50.0	150.0
M6PFDA		106.2	50.0	150.0
M7PFUnDA		103.6	50.0	150.0
M8FOSA		96.3	50.0	150.0
M8PFOA		100.6	50.0	150.0
M8PFOS		105.4	50.0	150.0
M9-PFNA		95.9	50.0	150.0
MPFBA		89.5	50.0	150.0
MPFDoDA		109.3	50.0	150.0
d3N-MeFOSAA		107.4	50.0	150.0
d5EtFOSAA		102.4	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF210428S2

QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: DQ210428S2.BLK210428S2

Run in Batch: DQ210428S2, Run Date: 04/29/2021 06:01, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		110.5	50.0	150.0
M2-6:2FTSA		97.0	50.0	150.0
M2-8:2FTSA		93.7	50.0	150.0
M2PFTeDA		108.8	12.0	218.0
M3PFBS		92.1	50.0	150.0
M3PFHxS		94.5	50.0	150.0
M4PFHpA		95.5	50.0	150.0
M5PFHxA		96.3	50.0	150.0
M5PFPeA		102.1	50.0	150.0
M6PFDA		107.0	50.0	150.0
M7PFUnDA		97.8	50.0	150.0
M8FOSA		98.9	50.0	150.0
M8PFOA		100.5	50.0	150.0
M8PFOS		112.0	50.0	150.0
M9-PFNA		95.6	50.0	150.0
MPFBA		98.9	50.0	150.0
MPFDoDA		99.1	50.0	150.0
d3N-MeFOSAA		86.7	50.0	150.0
d5EtFOSAA		89.2	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: DQ210428S2.LCS210428S2

Run in Batch: DQ210428S2, Run Date: 04/29/2021 05:22, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		103.9	50.0	150.0
M2-6:2FTSA		91.2	50.0	150.0
M2-8:2FTSA		86.3	50.0	150.0
M2PFTeDA		125.6	12.0	218.0
M3PFBS		95.8	50.0	150.0
M3PFHxS		92.6	50.0	150.0
M4PFHpA		105.4	50.0	150.0
M5PFHxA		96.3	50.0	150.0
M5PFPeA		101.8	50.0	150.0
M6PFDA		93.7	50.0	150.0
M7PFUnDA		98.9	50.0	150.0
M8FOSA		96.3	50.0	150.0
M8PFOA		102.9	50.0	150.0
M8PFOS		101.4	50.0	150.0
M9-PFNA		103.4	50.0	150.0
MPFBA		99.1	50.0	150.0
MPFDoDA		113.9	50.0	150.0
d3N-MeFOSAA		83.9	50.0	150.0
d5EtFOSAA		84.2	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ210428S2.LCSD210428S2, Parent Sample ID: DQ210428S2.LCS210428S2

Run in Batch: DQ210428S2, Run Date: 04/29/2021 05:41, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		104.0	50.0	150.0
M2-6:2FTSA		106.2	50.0	150.0
M2-8:2FTSA		101.8	50.0	150.0
M2PFTeDA		105.5	12.0	218.0
M3PFBS		94.8	50.0	150.0
M3PFHxS		105.1	50.0	150.0
M4PFHpA		96.6	50.0	150.0
M5PFHxA		96.1	50.0	150.0
M5PFPeA		104.9	50.0	150.0
M6PFDA		104.7	50.0	150.0
M7PFUnDA		115.1	50.0	150.0
M8FOSA		93.6	50.0	150.0
M8PFOA		104.0	50.0	150.0
M8PFOS		107.1	50.0	150.0
M9-PFNA		95.8	50.0	150.0
MPFBA		99.9	50.0	150.0
MPFDoDA		108.0	50.0	150.0
d3N-MeFOSAA		91.2	50.0	150.0
d5EtFOSAA		81.8	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: DQ210428S2.2349826M, Parent Sample ID: S23498.26

Run in Batch: DQ210428S2, Run Date: 04/29/2021 06:40, Prep Date: 04/28/2021, Matrix: SO, Dilution: 6.51

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		114.1	50.0	150.0
M2-6:2FTSA		115.3	50.0	150.0
M2-8:2FTSA		85.2	50.0	150.0
M2PFTeDA		130.9	12.0	218.0
M3PFBS		101.0	50.0	150.0
M3PFHxS		105.5	50.0	150.0
M4PFHpA		110.1	50.0	150.0
M5PFHxA		99.1	50.0	150.0
M5PFPeA		104.9	50.0	150.0
M6PFDA		111.7	50.0	150.0
M7PFUnDA		122.9	50.0	150.0
M8FOSA		102.3	50.0	150.0
M8PFOA		115.1	50.0	150.0
M8PFOS		105.8	50.0	150.0
M9-PFNA		104.3	50.0	150.0
MPFBA		106.1	50.0	150.0
MPFDoDA		111.9	50.0	150.0
d3N-MeFOSAA		110.4	50.0	150.0
d5EtFOSAA		92.9	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: DQ210428S2.2349828D, Parent Sample ID: S23498.28

Run in Batch: DQ210428S2, Run Date: 04/29/2021 07:19, Prep Date: 04/28/2021, Matrix: SO, Dilution: 5.82

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		115.2	50.0	150.0
M2-6:2FTSA		105.6	50.0	150.0
M2-8:2FTSA		84.5	50.0	150.0
M2PFTeDA		111.9	12.0	218.0
M3PFBS		99.5	50.0	150.0
M3PFHxS		97.6	50.0	150.0
M4PFHpA		102.7	50.0	150.0
M5PFHxA		95.0	50.0	150.0
M5PFPeA		107.0	50.0	150.0
M6PFDA		100.4	50.0	150.0
M7PFUnDA		106.6	50.0	150.0
M8FOSA		96.4	50.0	150.0
M8PFOA		103.2	50.0	150.0
M8PFOS		106.4	50.0	150.0
M9-PFNA		102.0	50.0	150.0
MPFBA		105.1	50.0	150.0
MPFDoDA		111.5	50.0	150.0
d3N-MeFOSAA		94.6	50.0	150.0
d5EtFOSAA		87.9	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF210428W1

QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: AK210428W1.BLK210428W1

Run in Batch: AK210428W1, Run Date: 04/29/2021 08:14, Prep Date: 04/28/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		115.2	50.0	150.0
M2-6:2FTSA		102.9	50.0	150.0
M2-8:2FTSA		114.0	50.0	150.0
M2PFTeDA		86.9	12.0	218.0
M3PFBS		98.7	50.0	150.0
M3PFHxS		109.5	50.0	150.0
M4PFHpA		109.9	50.0	150.0
M5PFHxA		100.0	50.0	150.0
M5PFPeA		100.7	50.0	150.0
M6PFDA		104.4	50.0	150.0
M7PFUnDA		89.0	50.0	150.0
M8FOSA		94.8	50.0	150.0
M8PFOA		110.4	50.0	150.0
M8PFOS		102.9	50.0	150.0
M9-PFNA		92.9	50.0	150.0
MPFBA		101.4	50.0	150.0
MPFDoDA		92.8	50.0	150.0
d3N-MeFOSAA		115.1	50.0	150.0
d5EtFOSAA		106.0	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK210428W1.LCS210428W1

Run in Batch: AK210428W1, Run Date: 04/29/2021 07:35, Prep Date: 04/28/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		102.9	50.0	150.0
M2-6:2FTSA		92.9	50.0	150.0
M2-8:2FTSA		98.9	50.0	150.0
M2PFTeDA		116.9	12.0	218.0
M3PFBS		99.1	50.0	150.0
M3PFHxS		97.0	50.0	150.0
M4PFHpA		99.9	50.0	150.0
M5PFHxA		102.5	50.0	150.0
M5PFPeA		94.8	50.0	150.0
M6PFDA		98.3	50.0	150.0
M7PFUnDA		94.0	50.0	150.0
M8FOSA		91.0	50.0	150.0
M8PFOA		99.7	50.0	150.0
M8PFOS		93.9	50.0	150.0
M9-PFNA		85.4	50.0	150.0
MPFBA		97.8	50.0	150.0
MPFDoDA		104.4	50.0	150.0
d3N-MeFOSAA		104.0	50.0	150.0
d5EtFOSAA		97.5	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK210428W1.LCSD210428W1, Parent Sample ID: AK210428W1.LCS210428W1

Run in Batch: AK210428W1, Run Date: 04/29/2021 07:54, Prep Date: 04/28/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		100.0	50.0	150.0
M2-6:2FTSA		101.5	50.0	150.0
M2-8:2FTSA		101.4	50.0	150.0
M2PFTeDA		111.0	12.0	218.0
M3PFBS		99.3	50.0	150.0
M3PFHxS		107.9	50.0	150.0
M4PFHpA		105.9	50.0	150.0
M5PFHxA		102.0	50.0	150.0
M5PFPeA		96.8	50.0	150.0
M6PFDA		102.6	50.0	150.0
M7PFUnDA		102.8	50.0	150.0
M8FOSA		89.0	50.0	150.0
M8PFOA		101.8	50.0	150.0
M8PFOS		83.5	50.0	150.0
M9-PFNA		93.5	50.0	150.0
MPFBA		96.7	50.0	150.0
MPFDoDA		106.7	50.0	150.0
d3N-MeFOSAA		109.3	50.0	150.0
d5EtFOSAA		99.8	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK210428W1.2349812M, Parent Sample ID: S23498.12

Run in Batch: AK210428W1, Run Date: 04/29/2021 08:53, Prep Date: 04/28/2021, Matrix: WW, Dilution: 1.99

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	174.5	50.0	150.0
M2-6:2FTSA		121.9	50.0	150.0
M2-8:2FTSA		100.0	50.0	150.0
M2PFTeDA		113.4	12.0	218.0
M3PFBS		102.5	50.0	150.0
M3PFHxS		111.8	50.0	150.0
M4PFHpA		106.2	50.0	150.0
M5PFHxA		101.8	50.0	150.0
M5PFPeA		94.4	50.0	150.0
M6PFDA		99.0	50.0	150.0
M7PFUnDA		98.4	50.0	150.0
M8FOSA		98.8	50.0	150.0
M8PFOA		100.4	50.0	150.0
M8PFOS		95.9	50.0	150.0
M9-PFNA		97.8	50.0	150.0
MPFBA		102.9	50.0	150.0
MPFDoDA		108.9	50.0	150.0
d3N-MeFOSAA		99.2	50.0	150.0
d5EtFOSAA		101.1	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: AK210428W1.2349815D, Parent Sample ID: S23498.15

Run in Batch: AK210428W1, Run Date: 04/29/2021 09:32, Prep Date: 04/28/2021, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		128.1	50.0	150.0
M2-6:2FTSA		96.1	50.0	150.0
M2-8:2FTSA		93.9	50.0	150.0
M2PFTeDA		109.6	12.0	218.0
M3PFBS		105.9	50.0	150.0
M3PFHxS		104.5	50.0	150.0
M4PFHpA		119.3	50.0	150.0
M5PFHxA		107.7	50.0	150.0
M5PFPeA		101.8	50.0	150.0
M6PFDA		106.0	50.0	150.0
M7PFUnDA		105.3	50.0	150.0
M8FOSA		103.0	50.0	150.0
M8PFOA		105.0	50.0	150.0
M8PFOS		100.1	50.0	150.0
M9-PFNA		94.8	50.0	150.0
MPFBA		109.2	50.0	150.0
MPFDoDA		103.3	50.0	150.0
d3N-MeFOSAA		100.2	50.0	150.0
d5EtFOSAA		96.5	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF210512S1

QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: AK210512.BLK210512

Run in Batch: AK210512, Run Date: 05/12/2021 20:01, Prep Date: 05/12/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		84.1	50.0	150.0
M2-6:2FTSA		74.9	50.0	150.0
M2-8:2FTSA		88.0	50.0	150.0
M2PFTeDA		163.4	12.0	218.0
M3PFBS		105.2	50.0	150.0
M3PFHxS		91.7	50.0	150.0
M4PFHpA		96.3	50.0	150.0
M5PFHxA		103.6	50.0	150.0
M5PFPeA		100.4	50.0	150.0
M6PFDA		87.0	50.0	150.0
M7PFUnDA		98.8	50.0	150.0
M8FOSA		99.7	50.0	150.0
M8PFOA		100.3	50.0	150.0
M8PFOS		112.6	50.0	150.0
M9-PFNA		107.2	50.0	150.0
MPFBA		99.7	50.0	150.0
MPFDoDA		100.6	50.0	150.0
d3N-MeFOSAA		97.8	50.0	150.0
d5EtFOSAA		99.3	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK210512.LCS210512

Run in Batch: AK210512, Run Date: 05/12/2021 19:22, Prep Date: 05/12/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		78.2	50.0	150.0
M2-6:2FTSA		75.1	50.0	150.0
M2-8:2FTSA		82.7	50.0	150.0
M2PFTeDA		160.7	12.0	218.0
M3PFBS		101.9	50.0	150.0
M3PFHxS		88.0	50.0	150.0
M4PFHpA		98.3	50.0	150.0
M5PFHxA		105.2	50.0	150.0
M5PFPeA		92.3	50.0	150.0
M6PFDA		84.6	50.0	150.0
M7PFUnDA		90.0	50.0	150.0
M8FOSA		95.7	50.0	150.0
M8PFOA		91.3	50.0	150.0
M8PFOS		98.3	50.0	150.0
M9-PFNA		91.4	50.0	150.0
MPFBA		92.4	50.0	150.0
MPFDoDA		98.9	50.0	150.0
d3N-MeFOSAA		95.5	50.0	150.0
d5EtFOSAA		91.2	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK210512.LCSD210512, Parent Sample ID: AK210512.LCS210512

Run in Batch: AK210512, Run Date: 05/12/2021 19:41, Prep Date: 05/12/2021, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		81.4	50.0	150.0
M2-6:2FTSA		76.4	50.0	150.0
M2-8:2FTSA		84.7	50.0	150.0
M2PFTeDA		141.2	12.0	218.0
M3PFBS		102.8	50.0	150.0
M3PFHxS		92.8	50.0	150.0
M4PFHpA		100.3	50.0	150.0
M5PFHxA		96.3	50.0	150.0
M5PFPeA		94.1	50.0	150.0
M6PFDA		90.9	50.0	150.0
M7PFUnDA		104.4	50.0	150.0
M8FOSA		97.6	50.0	150.0
M8PFOA		91.8	50.0	150.0
M8PFOS		106.9	50.0	150.0
M9-PFNA		79.4	50.0	150.0
MPFBA		95.0	50.0	150.0
MPFDoDA		101.3	50.0	150.0
d3N-MeFOSAA		107.4	50.0	150.0
d5EtFOSAA		92.8	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK210512.2404702M, Parent Sample ID: S24047.02

Run in Batch: AK210512, Run Date: 05/12/2021 21:38, Prep Date: 05/12/2021, Matrix: SO, Dilution: 1.76

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		83.4	50.0	150.0
M2-6:2FTSA		65.7	50.0	150.0
M2-8:2FTSA		74.9	50.0	150.0
M2PFTeDA		165.5	12.0	218.0
M3PFBS		108.7	50.0	150.0
M3PFHxS		99.5	50.0	150.0
M4PFHpA		93.9	50.0	150.0
M5PFHxA		99.7	50.0	150.0
M5PFPeA		99.0	50.0	150.0
M6PFDA		91.9	50.0	150.0
M7PFUnDA		113.8	50.0	150.0
M8FOSA		100.7	50.0	150.0
M8PFOA		99.8	50.0	150.0
M8PFOS		108.4	50.0	150.0
M9-PFNA		102.7	50.0	150.0
MPFBA		98.9	50.0	150.0
MPFDoDA		119.2	50.0	150.0
d3N-MeFOSAA		91.1	50.0	150.0
d5EtFOSAA		99.8	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: AK210512.2404703D, Parent Sample ID: S24047.03

Run in Batch: AK210512, Run Date: 05/12/2021 22:17, Prep Date: 05/12/2021, Matrix: SO, Dilution: 3.36

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	166.2	50.0	150.0
M2-6:2FTSA	*	157.3	50.0	150.0
M2-8:2FTSA		148.2	50.0	150.0
M2PFTeDA		140.7	12.0	218.0
M3PFBS		106.0	50.0	150.0
M3PFHxS		85.7	50.0	150.0
M4PFHpA		99.0	50.0	150.0
M5PFHxA		102.0	50.0	150.0
M5PFPeA		104.7	50.0	150.0
M6PFDA		109.8	50.0	150.0
M7PFUnDA		108.0	50.0	150.0
M8FOSA		103.2	50.0	150.0
M8PFOA		103.1	50.0	150.0
M8PFOS		109.7	50.0	150.0
M9-PFNA		111.4	50.0	150.0
MPFBA		101.3	50.0	150.0
MPFDoDA		129.5	50.0	150.0
d3N-MeFOSAA		131.6	50.0	150.0
d5EtFOSAA		129.4	50.0	150.0

QC Report - Batch QC Results

Inorganics, Prep Batch ID: TS210424C

Surrogates: No, QC Types: BLK/LCS/DUP

Blank (BLK)

Lab Sample ID: TS210424C.LRB1

Run in Batch: TS210424C, Run Date: 04/24/2021 11:55, Prep Date: 04/24/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Solids		ND	1	%

Laboratory Control Sample (LCS)

Lab Sample ID: TS210424C.LCS1

Run in Batch: TS210424C, Run Date: 04/24/2021 11:55, Prep Date: 04/24/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Solids		100	90	110

Duplicate (DUP)

Lab Sample ID: TS210424C.DP1, Parent Sample ID: S23497.04

Run in Batch: TS210424C, Run Date: 04/24/2021 11:55, Prep Date: 04/24/2021, Matrix: Soil, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Solids		0	5

Duplicate (DUP)

Lab Sample ID: TS210424C.DP2, Parent Sample ID: S23497.14

Run in Batch: TS210424C, Run Date: 04/24/2021 11:55, Prep Date: 04/24/2021, Matrix: Soil, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Solids		1	5

QC Report - Batch QC Results

Inorganics, Prep Batch ID: TS210424D

Surrogates: No, QC Types: BLK/LCS/DUP

Blank (BLK)

Lab Sample ID: TS210424D.LRB1

Run in Batch: TS210424D, Run Date: 04/24/2021 11:55, Prep Date: 04/24/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Solids		ND	1	%

Laboratory Control Sample (LCS)

Lab Sample ID: TS210424D.LCS1

Run in Batch: TS210424D, Run Date: 04/24/2021 11:55, Prep Date: 04/24/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Solids		100	90	110

Duplicate (DUP)

Lab Sample ID: TS210424D.DP1, Parent Sample ID: S23498.17

Run in Batch: TS210424D, Run Date: 04/24/2021 11:55, Prep Date: 04/24/2021, Matrix: Soil, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Solids		1	5

Duplicate (DUP)

Lab Sample ID: TS210424D.DP2, Parent Sample ID: S23498.35

Run in Batch: TS210424D, Run Date: 04/24/2021 11:55, Prep Date: 04/24/2021, Matrix: Soil, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Solids		0	5

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210423W3

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: DQ210426.BLK210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 16:52, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	6	ng/l
PFMPA		ND	2	ng/l
FPrPA (3:3 FTCA)		ND	5.0	ng/l
PFPPrS		ND	2	ng/l
PFPpA		ND	5.0	ng/l
PFMBA		ND	2	ng/l
4:2 FTSA		ND	2	ng/l
NFDHA		ND	2	ng/l
PFHxA		ND	2	ng/l
PFBS		ND	2	ng/l
HFPO-DA		ND	2	ng/l
FPePA (5:3 FTCA)		ND	5.0	ng/l
PFEESA		ND	2	ng/l
PFFHpA		ND	2	ng/l
PFFPeS		ND	2	ng/l
ADONA		ND	2	ng/l
PFBSA		ND	2	ng/l
6:2 FTSA		ND	2	ng/l
PFOA		ND	2	ng/l
PFHxS-BR		ND	2	ng/l
PFHxS		ND	2	ng/l
PFHxS-LN		ND	2	ng/l
FHpPA (7:3 FTCA)		ND	5.0	ng/l
PFNA		ND	2	ng/l
8:2 FTSA		ND	2	ng/l
PFECHS		ND	2	ng/l
PFFHpS		ND	2	ng/l
N-MeFOSAA		ND	2	ng/l
PFDA		ND	2	ng/l
PFOS-BR		ND	2	ng/l
EtFOSAA		ND	2	ng/l
PFOS		ND	2	ng/l
PFHxSA		ND	2	ng/l
PFOS-LN		ND	2	ng/l
PFUnDA		ND	2	ng/l
9CL-PF3ONS		ND	2	ng/l
PFNS		ND	2	ng/l
PFDODA		ND	2	ng/l
PFDS		ND	5.0	ng/l
PFTTrDA		ND	2	ng/l
FOSA		ND	2	ng/l
11CL-PF3OUdS		ND	2	ng/l
PFTeDA		ND	2	ng/l

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210423W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample (LCS)

Lab Sample ID: DQ210426.LCS210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 18:32, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		104.0	70.0	130.0
PFMPA		107.0	70.0	130.0
FPrPA (3:3 FTCA)		101.0	70.0	130.0
PFPPrS		113.0	70.0	130.0
PFPeA		103.0	70.0	130.0
PFMBA		105.0	70.0	130.0
4:2 FTSA		122.0	70.0	130.0
NFDHA		109.0	70.0	130.0
PFHxA		105.0	70.0	130.0
PFBS		110.0	70.0	130.0
HFPO-DA		101.0	70.0	130.0
FPePA (5:3 FTCA)		107.0	70.0	130.0
PFEESA		120.0	70.0	130.0
PFHpA		98.8	70.0	130.0
PFPeS		103.0	70.0	130.0
ADONA		99.0	70.0	130.0
PFBSA		119.0	70.0	130.0
6:2 FTSA		111.0	70.0	130.0
PFOA		108.0	70.0	130.0
PFHxS		100.0	70.0	130.0
FHpPA (7:3 FTCA)		109.0	70.0	130.0
PFNA		107.0	70.0	130.0
8:2 FTSA		122.0	70.0	130.0
PFECHS		110.0	70.0	130.0
PFHpS		100.0	70.0	130.0
N-MeFOSAA		93.1	70.0	130.0
PFDA		103.0	70.0	130.0
EtFOSAA		97.3	70.0	130.0
PFOS		99.7	70.0	130.0
PFHxSA		93.4	70.0	130.0
PFUnDA		130.0	70.0	130.0
9CL-PF3ONS		112.0	70.0	130.0
PFNS		105.0	70.0	130.0
PFDoDA		90.7	70.0	130.0
PFDS		106.0	70.0	130.0
PFTTrDA		90.5	70.0	130.0
FOSA		93.6	70.0	130.0
11CL-PF3OUdS		95.3	70.0	130.0
PFTeDA		99.0	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ210426.LCSD214023WC, Parent Sample ID: DQ210426.LCS210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 18:52, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		99.7	70.0	130.0	4.2	30.0
PFMPA		107.0	70.0	130.0	0.0	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210423W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: DQ210426.LCSD214023WC, Parent Sample ID: DQ210426.LCS210423WC

Run in Batch: DQ210426, Run Date: 04/26/2021 18:52, Prep Date: 04/23/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
FPrPA (3:3 FTCA)		99.9	70.0	130.0	1.1	30.0
PFPPrS		104.0	70.0	130.0	8.3	30.0
PFPeA		95.5	70.0	130.0	7.6	30.0
PFMBA		106.0	70.0	130.0	0.9	30.0
4:2 FTSA		110.0	70.0	130.0	10.3	30.0
NFDHA		111.0	70.0	130.0	1.8	30.0
PFHxA		98.1	70.0	130.0	6.8	30.0
PFBS		106.0	70.0	130.0	3.7	30.0
HFPO-DA		109.0	70.0	130.0	7.6	30.0
FPePA (5:3 FTCA)		98.5	70.0	130.0	8.3	30.0
PFEESA		118.0	70.0	130.0	1.7	30.0
PFHpA		104.0	70.0	130.0	5.1	30.0
PFPeS		98.0	70.0	130.0	5.0	30.0
ADONA		99.4	70.0	130.0	0.4	30.0
PFBSA		113.0	70.0	130.0	5.2	30.0
6:2 FTSA		109.0	70.0	130.0	1.8	30.0
PFOA		112.0	70.0	130.0	3.6	30.0
PFHxS		101.0	70.0	130.0	1.0	30.0
FHpPA (7:3 FTCA)		97.1	70.0	130.0	11.5	30.0
PFNA		91.8	70.0	130.0	15.3	30.0
8:2 FTSA		112.0	70.0	130.0	8.5	30.0
PFECHS		105.0	70.0	130.0	4.7	30.0
PFHpS		112.0	70.0	130.0	11.3	30.0
N-MeFOSAA		95.5	70.0	130.0	2.5	30.0
PFDA		109.0	70.0	130.0	5.7	30.0
EtFOSAA		75.2	70.0	130.0	25.6	30.0
PFOS		107.0	70.0	130.0	7.1	30.0
PFHxSA		96.7	70.0	130.0	3.5	30.0
PFUnDA		103.0	70.0	130.0	23.2	30.0
9CL-PF3ONS		110.0	70.0	130.0	1.8	30.0
PFNS		106.0	70.0	130.0	0.9	30.0
PFDoDA		92.5	70.0	130.0	2.0	30.0
PFDS		102.0	70.0	130.0	3.8	30.0
PFTTrDA		84.9	70.0	130.0	6.4	30.0
FOSA		99.4	70.0	130.0	6.0	30.0
11CL-PF3OUdS		97.8	70.0	130.0	2.6	30.0
PFTeDA		91.0	70.0	130.0	8.4	30.0

Matrix Spike (MS)

Lab Sample ID: DQ210426.2347201M, Parent Sample ID: S23472.01

Run in Batch: DQ210426, Run Date: 04/26/2021 20:10, Prep Date: 04/23/2021, Matrix: WW, Dilution: 2.08

Analyte	Flags	% Rec	LCL	UCL
PFBA		97.3	70.0	130.0
PFMPA		96.2	70.0	130.0
FPrPA (3:3 FTCA)		96.2	70.0	130.0
PFPPrS		100.0	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210423W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Matrix Spike (MS) (continued)

Lab Sample ID: DQ210426.2347201M, Parent Sample ID: S23472.01

Run in Batch: DQ210426, Run Date: 04/26/2021 20:10, Prep Date: 04/23/2021, Matrix: WW, Dilution: 2.08

Analyte	Flags	% Rec	LCL	UCL
PFPeA		90.4	70.0	130.0
PFMBA		96.2	70.0	130.0
4:2 FTSA		92.3	70.0	130.0
NFDHA		105.8	70.0	130.0
PFHxA		101.0	70.0	130.0
PFBS		94.2	70.0	130.0
HFPO-DA		105.8	70.0	130.0
FPePA (5:3 FTCA)		105.8	70.0	130.0
PFEESA		105.8	70.0	130.0
PFHpA		95.2	70.0	130.0
PFPeS		112.5	70.0	130.0
ADONA		105.8	70.0	130.0
PFBSA		96.2	70.0	130.0
6:2 FTSA		105.8	70.0	130.0
PFOA		107.7	70.0	130.0
PFHxS		115.4	70.0	130.0
FHpPA (7:3 FTCA)		105.8	70.0	130.0
PFNA		84.6	70.0	130.0
8:2 FTSA		125.0	70.0	130.0
PFECHS		96.2	70.0	130.0
PFHpS		87.4	70.0	130.0
N-MeFOSAA		89.4	70.0	130.0
PFDA		105.8	70.0	130.0
EtFOSAA		93.3	70.0	130.0
PFOS		113.5	70.0	130.0
PFHxSA		115.4	70.0	130.0
PFUnDA		105.8	70.0	130.0
9CL-PF3ONS		96.2	70.0	130.0
PFNS		96.2	70.0	130.0
PFDoDA		83.7	70.0	130.0
PFDS		105.8	70.0	130.0
PFTTrDA		91.3	70.0	130.0
FOSA		95.2	70.0	130.0
11CL-PF3OUdS		96.2	70.0	130.0
PFTeDA		96.2	70.0	130.0

Duplicate (DUP)

Lab Sample ID: DQ210426.2347202D, Parent Sample ID: S23472.02

Run in Batch: DQ210426, Run Date: 04/26/2021 20:49, Prep Date: 04/23/2021, Matrix: WW, Dilution: 2.08

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFMPA		NC	30.0
FPrPA (3:3 FTCA)		NC	30.0
PFPPrS		NC	30.0
PFPeA		NC	30.0
PFMBA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210423W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Duplicate (DUP) (continued)

Lab Sample ID: DQ210426.2347202D, Parent Sample ID: S23472.02

Run in Batch: DQ210426, Run Date: 04/26/2021 20:49, Prep Date: 04/23/2021, Matrix: WW, Dilution: 2.08

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
NFDHA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
HFPO-DA		NC	30.0
FPePA (5:3 FTCA)		NC	30.0
PFEESA		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
ADONA		NC	30.0
PFBSA		NC	30.0
6:2 FTSA		NC	30.0
PFOA		NC	30.0
PFHxS-BR		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0
FHpPA (7:3 FTCA)		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFECHS		NC	30.0
PFHpS		NC	30.0
N-MeFOSAA		NC	30.0
PFDA		NC	30.0
PFOS-BR		NC	30.0
EtFOSAA		NC	30.0
PFOS		NC	30.0
PFHxSA		NC	30.0
PFOS-LN		NC	30.0
PFUnDA		NC	30.0
9CL-PF3ONS		NC	30.0
PFNS		NC	30.0
PFDODA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
11CL-PF3OUdS		NC	30.0
PFTeDA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428S1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: DQ210428S1.BLK210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 20:35, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	10	ng/kg
PFPeA		ND	4	ng/kg
4:2 FTSA		ND	2	ng/kg
PFHxA		ND	2	ng/kg
PFBS		ND	2	ng/kg
HFPO-DA		ND	2	ng/kg
PFFHpA		ND	2	ng/kg
PFPeS		ND	2	ng/kg
ADONA		ND	2	ng/kg
6:2 FTSA		ND	2	ng/kg
PFOA		ND	2	ng/kg
PFHxS-BR		ND	2	ng/kg
PFHxS		ND	2	ng/kg
PFHxS-LN		ND	2	ng/kg
PFNA		ND	2	ng/kg
8:2 FTSA		ND	2	ng/kg
PFFHpS		ND	2	ng/kg
N-MeFOSAA		ND	2	ng/kg
PFDA		ND	2	ng/kg
PFOS-BR		ND	2	ng/kg
PFOS		ND	2	ng/kg
EtFOSAA		ND	4	ng/kg
PFOS-LN		ND	2	ng/kg
PFOuDA		ND	2	ng/kg
9CL-PF3ONS		ND	2	ng/kg
PFNS		ND	2	ng/kg
PFDODA		ND	2	ng/kg
PFDS		ND	2	ng/kg
PFTTrDA		ND	2	ng/kg
FOSA		ND	2	ng/kg
11CL-PF3OUdS		ND	2	ng/kg
PFTeDA		ND	4	ng/kg

Laboratory Control Sample (LCS)

Lab Sample ID: DQ210428S1.LCS210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 19:57, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		111.0	70.0	130.0
PFPeA		110.0	70.0	130.0
4:2 FTSA		116.0	70.0	130.0
PFHxA		105.0	70.0	130.0
PFBS		117.0	70.0	130.0
HFPO-DA		115.0	70.0	130.0
PFFHpA		113.0	70.0	130.0
PFPeS		100.0	70.0	130.0
ADONA		95.5	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: DQ210428S1.LCS210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 19:57, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		104.0	70.0	130.0
PFOA		101.0	70.0	130.0
PFHxS		118.0	70.0	130.0
PFNA		96.7	70.0	130.0
8:2 FTSA		120.0	70.0	130.0
PFHpS		102.0	70.0	130.0
N-MeFOSAA		94.7	70.0	130.0
PFDA		109.0	70.0	130.0
PFOS		90.8	70.0	130.0
EtFOSAA		105.0	70.0	130.0
PFUnDA		98.0	70.0	130.0
9CL-PF3ONS		115.0	70.0	130.0
PFNS		106.0	70.0	130.0
PFDODA		119.0	70.0	130.0
PFDS		100.0	70.0	130.0
PFTTrDA		110.0	70.0	130.0
FOSA		120.0	70.0	130.0
11CL-PF3OUdS		112.0	70.0	130.0
PFTeDA		94.4	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ210428S1.LCSD210428S1, Parent Sample ID: DQ210428S1.LCS210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 20:16, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		104.0	70.0	130.0	6.5	30.0
PFPeA		108.0	70.0	130.0	1.8	30.0
4:2 FTSA		113.0	70.0	130.0	2.6	30.0
PFHxA		97.9	70.0	130.0	7.0	30.0
PFBS		92.8	70.0	130.0	23.1	30.0
HFPO-DA		107.0	70.0	130.0	7.2	30.0
PFHpA		97.9	70.0	130.0	14.3	30.0
PFPeS		89.2	70.0	130.0	11.4	30.0
ADONA		88.8	70.0	130.0	7.3	30.0
6:2 FTSA		87.7	70.0	130.0	17.0	30.0
PFOA		96.5	70.0	130.0	4.6	30.0
PFHxS		120.0	70.0	130.0	1.7	30.0
PFNA		90.6	70.0	130.0	6.5	30.0
8:2 FTSA		112.0	70.0	130.0	6.9	30.0
PFHpS		90.5	70.0	130.0	11.9	30.0
N-MeFOSAA		89.6	70.0	130.0	5.5	30.0
PFDA		117.0	70.0	130.0	7.1	30.0
PFOS		84.8	70.0	130.0	6.8	30.0
EtFOSAA		97.2	70.0	130.0	7.7	30.0
PFUnDA		89.3	70.0	130.0	9.3	30.0
9CL-PF3ONS		98.4	70.0	130.0	15.6	30.0
PFNS		99.2	70.0	130.0	6.6	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: DQ210428S1.LCSD210428S1, Parent Sample ID: DQ210428S1.LCS210428S1

Run in Batch: DQ210428S1, Run Date: 04/28/2021 20:16, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		115.0	70.0	130.0	3.4	30.0
PFDS		94.7	70.0	130.0	5.4	30.0
PFTTrDA		115.0	70.0	130.0	4.4	30.0
FOSA		112.0	70.0	130.0	6.9	30.0
11CL-PF3OUdS		97.3	70.0	130.0	14.0	30.0
PFTeDA		89.9	70.0	130.0	4.9	30.0

Matrix Spike (MS)

Lab Sample ID: DQ210428S1.2349507M, Parent Sample ID: S23495.07

Run in Batch: DQ210428S1, Run Date: 04/28/2021 21:53, Prep Date: 04/28/2021, Matrix: SO, Dilution: 6.35

Analyte	Flags	% Rec	LCL	UCL
PFBA		94.3	70.0	130.0
PFPeA		94.3	70.0	130.0
4:2 FTSA		106.9	70.0	130.0
PFHxA		94.3	70.0	130.0
PFBS		91.2	70.0	130.0
PFHpA		84.9	70.0	130.0
PFPeS		84.9	70.0	130.0
6:2 FTSA		106.9	70.0	130.0
PFOA		81.8	70.0	130.0
PFHxS		106.9	70.0	130.0
PFNA		97.5	70.0	130.0
8:2 FTSA		91.2	70.0	130.0
PFHpS		91.2	70.0	130.0
PFDA		81.8	70.0	130.0
N-MeFOSAA		81.8	70.0	130.0
EtFOSAA		88.1	70.0	130.0
PFOS		78.6	70.0	130.0
PFUnDA		91.2	70.0	130.0
PFNS		84.9	70.0	130.0
PFDoDA		94.3	70.0	130.0
PFDS		88.1	70.0	130.0
PFTTrDA		100.6	70.0	130.0
FOSA		94.3	70.0	130.0
PFTeDA		88.1	70.0	130.0
11CL-PF3OUdS		88.1	70.0	130.0
9CL-PF3ONS		94.3	70.0	130.0
ADONA		78.6	70.0	130.0
HFPO-DA		97.5	70.0	130.0

Duplicate (DUP)

Lab Sample ID: DQ210428S1.2349508D, Parent Sample ID: S23495.08

Run in Batch: DQ210428S1, Run Date: 04/28/2021 22:32, Prep Date: 04/28/2021, Matrix: SO, Dilution: 5.59

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Duplicate (DUP) (continued)

Lab Sample ID: DQ210428S1.2349508D, Parent Sample ID: S23495.08

Run in Batch: DQ210428S1, Run Date: 04/28/2021 22:32, Prep Date: 04/28/2021, Matrix: SO, Dilution: 5.59

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		NC	30.0
PFOS-LN		NC	30.0
PFOS-BR		NC	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDODA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
PFTeDA		NC	30.0
11CL-PF3OUdS		NC	30.0
9CL-PF3ONS		NC	30.0
ADONA		NC	30.0
HFPO-DA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428S2

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: DQ210428S2.BLK210428S2

Run in Batch: DQ210428S2, Run Date: 04/29/2021 06:01, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	10	ng/kg
PFPeA		ND	4	ng/kg
4:2 FTSA		ND	2	ng/kg
PFHxA		ND	2	ng/kg
PFBS		ND	2	ng/kg
HFPO-DA		ND	2	ng/kg
PFFHpA		ND	2	ng/kg
PFPeS		ND	2	ng/kg
ADONA		ND	2	ng/kg
6:2 FTSA		ND	2	ng/kg
PFOA		ND	2	ng/kg
PFHxS-BR		ND	2	ng/kg
PFHxS		ND	2	ng/kg
PFHxS-LN		ND	2	ng/kg
PFNA		ND	2	ng/kg
8:2 FTSA		ND	2	ng/kg
PFFHpS		ND	2	ng/kg
N-MeFOSAA		ND	2	ng/kg
PFDA		ND	2	ng/kg
EtFOSAA		ND	4	ng/kg
PFOS-BR		ND	2	ng/kg
PFOS		ND	2	ng/kg
PFOS-LN		ND	2	ng/kg
PFUnDA		ND	2	ng/kg
9CL-PF3ONS		ND	2	ng/kg
PFNS		ND	2	ng/kg
PFDODA		ND	2	ng/kg
PFDS		ND	2	ng/kg
PFTTrDA		ND	2	ng/kg
FOSA		ND	2	ng/kg
11CL-PF3OUdS		ND	2	ng/kg
PFTeDA		ND	4	ng/kg

Laboratory Control Sample (LCS)

Lab Sample ID: DQ210428S2.LCS210428S2

Run in Batch: DQ210428S2, Run Date: 04/29/2021 05:22, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		98.7	70.0	130.0
PFPeA		101.0	70.0	130.0
4:2 FTSA		113.0	70.0	130.0
PFHxA		101.0	70.0	130.0
PFBS		101.0	70.0	130.0
HFPO-DA		112.0	70.0	130.0
PFFHpA		94.2	70.0	130.0
PFPeS		92.8	70.0	130.0
ADONA		87.0	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428S2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: DQ210428S2.LCS210428S2

Run in Batch: DQ210428S2, Run Date: 04/29/2021 05:22, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		109.0	70.0	130.0
PFOA		96.2	70.0	130.0
PFHxS		117.0	70.0	130.0
PFNA		97.9	70.0	130.0
8:2 FTSA		94.7	70.0	130.0
PFHpS		90.7	70.0	130.0
N-MeFOSAA		99.8	70.0	130.0
PFDA		127.0	70.0	130.0
EtFOSAA		101.0	70.0	130.0
PFOS		82.5	70.0	130.0
PFUnDA		90.5	70.0	130.0
9CL-PF3ONS		93.1	70.0	130.0
PFNS		98.7	70.0	130.0
PFDODA		101.0	70.0	130.0
PFDS		100.0	70.0	130.0
PFTTrDA		109.0	70.0	130.0
FOSA		108.0	70.0	130.0
11CL-PF3OUdS		99.1	70.0	130.0
PFTeDA		98.5	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ210428S2.LCSD210428S2, Parent Sample ID: DQ210428S2.LCS210428S2

Run in Batch: DQ210428S2, Run Date: 04/29/2021 05:41, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		97.9	70.0	130.0	0.8	30.0
PFPeA		93.0	70.0	130.0	8.2	30.0
4:2 FTSA		104.0	70.0	130.0	8.3	30.0
PFHxA		101.0	70.0	130.0	0.0	30.0
PFBS		106.0	70.0	130.0	4.8	30.0
HFPO-DA		94.1	70.0	130.0	17.4	30.0
PFHpA		101.0	70.0	130.0	7.0	30.0
PFPeS		104.0	70.0	130.0	11.4	30.0
ADONA		86.1	70.0	130.0	1.0	30.0
6:2 FTSA		87.0	70.0	130.0	22.4	30.0
PFOA		82.4	70.0	130.0	15.5	30.0
PFHxS		102.0	70.0	130.0	13.7	30.0
PFNA		103.0	70.0	130.0	5.1	30.0
8:2 FTSA		85.8	70.0	130.0	9.9	30.0
PFHpS		80.0	70.0	130.0	12.5	30.0
N-MeFOSAA		90.0	70.0	130.0	10.3	30.0
PFDA		107.0	70.0	130.0	17.1	30.0
EtFOSAA		101.0	70.0	130.0	0.0	30.0
PFOS		75.5	70.0	130.0	8.9	30.0
PFUnDA		96.1	70.0	130.0	6.0	30.0
9CL-PF3ONS		92.7	70.0	130.0	0.4	30.0
PFNS		88.2	70.0	130.0	11.2	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428S2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: DQ210428S2.LCSD210428S2, Parent Sample ID: DQ210428S2.LCS210428S2

Run in Batch: DQ210428S2, Run Date: 04/29/2021 05:41, Prep Date: 04/28/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		97.9	70.0	130.0	3.1	30.0
PFDS		89.0	70.0	130.0	11.6	30.0
PFTTrDA		96.5	70.0	130.0	12.2	30.0
FOSA		113.0	70.0	130.0	4.5	30.0
11CL-PF3OUdS		92.2	70.0	130.0	7.2	30.0
PFTeDA		96.8	70.0	130.0	1.7	30.0

Matrix Spike (MS)

Lab Sample ID: DQ210428S2.2349826M, Parent Sample ID: S23498.26

Run in Batch: DQ210428S2, Run Date: 04/29/2021 06:40, Prep Date: 04/28/2021, Matrix: SO, Dilution: 6.51

Analyte	Flags	% Rec	LCL	UCL
PFBA		95.1	70.0	130.0
PFPeA		101.2	70.0	130.0
4:2 FTSA		95.1	70.0	130.0
PFHxA		95.1	70.0	130.0
PFBS		92.0	70.0	130.0
PFHpA		92.0	70.0	130.0
PFPeS		85.9	70.0	130.0
6:2 FTSA		89.0	70.0	130.0
PFOA		85.9	70.0	130.0
PFHxS		98.2	70.0	130.0
PFNA		101.2	70.0	130.0
8:2 FTSA		113.5	70.0	130.0
PFHpS		82.8	70.0	130.0
PFDA		92.0	70.0	130.0
N-MeFOSAA		82.8	70.0	130.0
EtFOSAA		89.0	70.0	130.0
PFOS		85.9	70.0	130.0
PFUnDA		79.8	70.0	130.0
PFNS		85.9	70.0	130.0
PFDoDA		116.6	70.0	130.0
PFDS		85.9	70.0	130.0
PFTTrDA		122.7	70.0	130.0
FOSA		95.1	70.0	130.0
PFTeDA		92.0	70.0	130.0
11CL-PF3OUdS		92.0	70.0	130.0
9CL-PF3ONS		101.2	70.0	130.0
ADONA		82.8	70.0	130.0
HFPO-DA		95.1	70.0	130.0

Duplicate (DUP)

Lab Sample ID: DQ210428S2.2349828D, Parent Sample ID: S23498.28

Run in Batch: DQ210428S2, Run Date: 04/29/2021 07:19, Prep Date: 04/28/2021, Matrix: SO, Dilution: 5.82

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428S2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Duplicate (DUP) (continued)

Lab Sample ID: DQ210428S2.2349828D, Parent Sample ID: S23498.28

Run in Batch: DQ210428S2, Run Date: 04/29/2021 07:19, Prep Date: 04/28/2021, Matrix: SO, Dilution: 5.82

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		NC	30.0
PFOS-LN		NC	30.0
PFOS-BR		NC	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDODA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
PFTeDA		NC	30.0
11CL-PF3OUdS		NC	30.0
9CL-PF3ONS		NC	30.0
ADONA		NC	30.0
HFPO-DA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: AK210428W1.BLK210428W1

Run in Batch: AK210428W1, Run Date: 04/29/2021 08:14, Prep Date: 04/28/2021, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	10	ng/l
PFPeA		ND	4	ng/l
4:2 FTSA		ND	2	ng/l
PFHxA		ND	2	ng/l
PFBS		ND	2	ng/l
HFPO-DA		ND	2	ng/l
PFHpA		ND	2	ng/l
PFPeS		ND	2	ng/l
ADONA		ND	2	ng/l
6:2 FTSA		ND	2	ng/l
PFOA		ND	2	ng/l
PFHxS-BR		ND	2	ng/l
PFHxS		ND	2	ng/l
PFHxS-LN		ND	2	ng/l
PFNA		ND	2	ng/l
8:2 FTSA		ND	2	ng/l
PFHpS		ND	2	ng/l
N-MeFOSAA		ND	2	ng/l
PFDA		ND	2	ng/l
PFOS-BR		ND	2	ng/l
PFOS		ND	2	ng/l
EtFOSAA		ND	4	ng/l
PFOS-LN		ND	2	ng/l
PFUnDA		ND	2	ng/l
9CL-PF3ONS		ND	2	ng/l
PFNS		ND	2	ng/l
PFDODA		ND	2	ng/l
PFDS		ND	2	ng/l
PFTTrDA		ND	2	ng/l
11CL-PF3OUdS		ND	2	ng/l
FOSA		ND	2	ng/l
PFTeDA		ND	4	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK210428W1.LCS210428W1

Run in Batch: AK210428W1, Run Date: 04/29/2021 07:35, Prep Date: 04/28/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		103.0	70.0	130.0
PFPeA		107.0	70.0	130.0
4:2 FTSA		110.0	70.0	130.0
PFHxA		94.4	70.0	130.0
PFBS		105.0	70.0	130.0
HFPO-DA		109.0	70.0	130.0
PFHpA		107.0	70.0	130.0
PFPeS		109.0	70.0	130.0
ADONA		106.0	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK210428W1.LCS210428W1

Run in Batch: AK210428W1, Run Date: 04/29/2021 07:35, Prep Date: 04/28/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		111.0	70.0	130.0
PFOA		113.0	70.0	130.0
PFHxS		114.0	70.0	130.0
PFNA		111.0	70.0	130.0
8:2 FTSA		123.0	70.0	130.0
PFHpS		115.0	70.0	130.0
N-MeFOSAA		104.0	70.0	130.0
PFDA		113.0	70.0	130.0
PFOS		86.2	70.0	130.0
EtFOSAA		123.0	70.0	130.0
PFUnDA		117.0	70.0	130.0
9CL-PF3ONS		106.0	70.0	130.0
PFNS		106.0	70.0	130.0
PFDODA		98.6	70.0	130.0
PFDS		97.4	70.0	130.0
PFTTrDA		108.0	70.0	130.0
11CL-PF3OUdS		99.6	70.0	130.0
FOSA		120.0	70.0	130.0
PFTeDA		91.8	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK210428W1.LCSD210428W1, Parent Sample ID: AK210428W1.LCS210428W1

Run in Batch: AK210428W1, Run Date: 04/29/2021 07:54, Prep Date: 04/28/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		105.0	70.0	130.0	1.9	30.0
PFPeA		106.0	70.0	130.0	0.9	30.0
4:2 FTSA		107.0	70.0	130.0	2.8	30.0
PFHxA		98.8	70.0	130.0	4.6	30.0
PFBS		107.0	70.0	130.0	1.9	30.0
HFPO-DA		91.2	70.0	130.0	17.8	30.0
PFHpA		109.0	70.0	130.0	1.9	30.0
PFPeS		103.0	70.0	130.0	5.7	30.0
ADONA		107.0	70.0	130.0	0.9	30.0
6:2 FTSA		92.9	70.0	130.0	17.8	30.0
PFOA		109.0	70.0	130.0	3.6	30.0
PFHxS		107.0	70.0	130.0	6.3	30.0
PFNA		108.0	70.0	130.0	2.7	30.0
8:2 FTSA		120.0	70.0	130.0	2.5	30.0
PFHpS		108.0	70.0	130.0	6.3	30.0
N-MeFOSAA		114.0	70.0	130.0	9.2	30.0
PFDA		110.0	70.0	130.0	2.7	30.0
PFOS		99.8	70.0	130.0	14.6	30.0
EtFOSAA		112.0	70.0	130.0	9.4	30.0
PFUnDA		104.0	70.0	130.0	11.8	30.0
9CL-PF3ONS		120.0	70.0	130.0	12.4	30.0
PFNS		124.0	70.0	130.0	15.7	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK210428W1.LCSD210428W1, Parent Sample ID: AK210428W1.LCS210428W1

Run in Batch: AK210428W1, Run Date: 04/29/2021 07:54, Prep Date: 04/28/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		93.7	70.0	130.0	5.1	30.0
PFDS		121.0	70.0	130.0	21.6	30.0
PFTTrDA		102.0	70.0	130.0	5.7	30.0
11CL-PF3OUdS		121.0	70.0	130.0	19.4	30.0
FOSA		127.0	70.0	130.0	5.7	30.0
PFTeDA		99.5	70.0	130.0	8.1	30.0

Matrix Spike (MS)

Lab Sample ID: AK210428W1.2349812M, Parent Sample ID: S23498.12

Run in Batch: AK210428W1, Run Date: 04/29/2021 08:53, Prep Date: 04/28/2021, Matrix: WW, Dilution: 1.99

Analyte	Flags	% Rec	LCL	UCL
PFBA		120.6	70.0	130.0
PFPeA		100.5	70.0	130.0
4:2 FTSA		100.5	70.0	130.0
PFHxA		98.5	70.0	130.0
PFBS		98.5	70.0	130.0
PFHpA		110.6	70.0	130.0
PFPeS		98.5	70.0	130.0
6:2 FTSA		99.5	70.0	130.0
PFOA		118.1	70.0	130.0
PFHxS		94.6	70.0	130.0
PFNA		100.5	70.0	130.0
8:2 FTSA		120.6	70.0	130.0
PFHpS		93.4	70.0	130.0
PFDA		120.6	70.0	130.0
N-MeFOSAA		110.6	70.0	130.0
EtFOSAA		118.6	70.0	130.0
PFOS		70.4	70.0	130.0
PFUnDA		120.6	70.0	130.0
PFNS		100.5	70.0	130.0
PFDoDA		98.5	70.0	130.0
PFDS		97.5	70.0	130.0
PFTTrDA		100.5	70.0	130.0
FOSA		100.5	70.0	130.0
PFTeDA		110.6	70.0	130.0
11CL-PF3OUdS		100.5	70.0	130.0
9CL-PF3ONS		100.5	70.0	130.0
ADONA		110.6	70.0	130.0
HFPO-DA		110.6	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK210428W1.2349815D, Parent Sample ID: S23498.15

Run in Batch: AK210428W1, Run Date: 04/29/2021 09:32, Prep Date: 04/28/2021, Matrix: WW, Dilution: 2.06

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210428W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Duplicate (DUP) (continued)

Lab Sample ID: AK210428W1.2349815D, Parent Sample ID: S23498.15

Run in Batch: AK210428W1, Run Date: 04/29/2021 09:32, Prep Date: 04/28/2021, Matrix: WW, Dilution: 2.06

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		4.8	30.0
PFOS-LN		0.0	30.0
PFOS-BR		10.9	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDODA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
PFTeDA		NC	30.0
11CL-PF3OUdS		NC	30.0
9CL-PF3ONS		NC	30.0
ADONA		NC	30.0
HFPO-DA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210512S1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: AK210512.BLK210512

Run in Batch: AK210512, Run Date: 05/12/2021 20:01, Prep Date: 05/12/2021, Matrix: SO, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	10	ng/kg
PFPeA		ND	4	ng/kg
4:2 FTSA		ND	2	ng/kg
PFHxA		ND	2	ng/kg
PFBS		ND	2	ng/kg
HFPO-DA		ND	2	ng/kg
PfHpA		ND	2	ng/kg
ADONA		ND	2	ng/kg
PFPeS		ND	2	ng/kg
6:2 FTSA		ND	2	ng/kg
PFOA		ND	2	ng/kg
PFHxS-BR		ND	2	ng/kg
PFHxS		ND	2	ng/kg
PFHxS-LN		ND	2	ng/kg
PFNA		ND	2	ng/kg
8:2 FTSA		ND	2	ng/kg
PfHpS		ND	2	ng/kg
N-MeFOSAA		ND	2	ng/kg
PFDA		ND	2	ng/kg
EtFOSAA		ND	4	ng/kg
PFOS-BR		ND	2	ng/kg
PFOS		ND	2	ng/kg
PFOS-LN		ND	2	ng/kg
PFUnDA		ND	2	ng/kg
9CL-PF3ONS		ND	2	ng/kg
PFNS		ND	2	ng/kg
PFDoDA		ND	2	ng/kg
PFDS		ND	2	ng/kg
PFTTrDA		ND	2	ng/kg
FOSA		ND	2	ng/kg
11CL-PF3OUdS		ND	2	ng/kg
PFTeDA		ND	4	ng/kg

Laboratory Control Sample (LCS)

Lab Sample ID: AK210512.LCS210512

Run in Batch: AK210512, Run Date: 05/12/2021 19:22, Prep Date: 05/12/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		115.0	70.0	130.0
PFPeA		110.0	70.0	130.0
4:2 FTSA		111.0	70.0	130.0
PFHxA		90.5	70.0	130.0
PFBS		119.0	70.0	130.0
HFPO-DA		117.0	70.0	130.0
PfHpA		105.0	70.0	130.0
ADONA		107.0	70.0	130.0
PFPeS		110.0	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210512S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK210512.LCS210512

Run in Batch: AK210512, Run Date: 05/12/2021 19:22, Prep Date: 05/12/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		94.3	70.0	130.0
PFOA		105.0	70.0	130.0
PFHxS		112.0	70.0	130.0
PFNA		97.6	70.0	130.0
8:2 FTSA		112.0	70.0	130.0
PFHpS		113.0	70.0	130.0
N-MeFOSAA		109.0	70.0	130.0
PFDA		108.0	70.0	130.0
EtFOSAA		129.0	70.0	130.0
PFOS		97.8	70.0	130.0
PFUnDA		119.0	70.0	130.0
9CL-PF3ONS		106.0	70.0	130.0
PFNS		119.0	70.0	130.0
PFDODA		110.0	70.0	130.0
PFDS		110.0	70.0	130.0
PFTTrDA		122.0	70.0	130.0
FOSA		108.0	70.0	130.0
11CL-PF3OUdS		112.0	70.0	130.0
PFTeDA		101.0	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK210512.LCSD210512, Parent Sample ID: AK210512.LCS210512

Run in Batch: AK210512, Run Date: 05/12/2021 19:41, Prep Date: 05/12/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		107.0	70.0	130.0	7.2	30.0
PFPeA		108.0	70.0	130.0	1.8	30.0
4:2 FTSA		107.0	70.0	130.0	3.7	30.0
PFHxA		105.0	70.0	130.0	14.8	30.0
PFBS		119.0	70.0	130.0	0.0	30.0
HFPO-DA		87.1	70.0	130.0	29.3	30.0
PFHpA		111.0	70.0	130.0	5.6	30.0
ADONA		96.2	70.0	130.0	10.6	30.0
PFPeS		114.0	70.0	130.0	3.6	30.0
6:2 FTSA		99.4	70.0	130.0	5.3	30.0
PFOA		106.0	70.0	130.0	0.9	30.0
PFHxS		117.0	70.0	130.0	4.4	30.0
PFNA		114.0	70.0	130.0	15.5	30.0
8:2 FTSA		97.3	70.0	130.0	14.0	30.0
PFHpS		105.0	70.0	130.0	7.3	30.0
N-MeFOSAA		96.2	70.0	130.0	12.5	30.0
PFDA		107.0	70.0	130.0	0.9	30.0
EtFOSAA		111.0	70.0	130.0	15.0	30.0
PFOS		87.7	70.0	130.0	10.9	30.0
PFUnDA		106.0	70.0	130.0	11.6	30.0
9CL-PF3ONS		96.7	70.0	130.0	9.2	30.0
PFNS		108.0	70.0	130.0	9.7	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210512S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK210512.LCSD210512, Parent Sample ID: AK210512.LCS210512

Run in Batch: AK210512, Run Date: 05/12/2021 19:41, Prep Date: 05/12/2021, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDODA		101.0	70.0	130.0	8.5	30.0
PFDS		95.2	70.0	130.0	14.4	30.0
PFTTrDA		113.0	70.0	130.0	7.7	30.0
FOSA		105.0	70.0	130.0	2.8	30.0
11CL-PF3OUdS		103.0	70.0	130.0	8.4	30.0
PFTeDA		111.0	70.0	130.0	9.4	30.0

Matrix Spike (MS)

Lab Sample ID: AK210512.2404702M, Parent Sample ID: S24047.02

Run in Batch: AK210512, Run Date: 05/12/2021 21:38, Prep Date: 05/12/2021, Matrix: SO, Dilution: 1.76

Analyte	Flags	% Rec	LCL	UCL
PFBA		111.4	70.0	130.0
PFPeA		79.5	70.0	130.0
4:2 FTSA		88.6	70.0	130.0
PFHxA		101.1	70.0	130.0
PFBS		101.1	70.0	130.0
PFHpA		125.0	70.0	130.0
PFPeS		104.5	70.0	130.0
6:2 FTSA		101.1	70.0	130.0
PFOA		103.4	70.0	130.0
PFHxS		102.3	70.0	130.0
PFNA		100.0	70.0	130.0
8:2 FTSA		109.1	70.0	130.0
PFHpS		95.5	70.0	130.0
PFDA		113.6	70.0	130.0
N-MeFOSAA		113.6	70.0	130.0
EtFOSAA		104.5	70.0	130.0
PFOS		94.3	70.0	130.0
PFUnDA		104.5	70.0	130.0
PFNS		95.5	70.0	130.0
PFDODA		106.8	70.0	130.0
PFDS		93.2	70.0	130.0
PFTTrDA		102.3	70.0	130.0
FOSA		102.3	70.0	130.0
PFTeDA		92.0	70.0	130.0
11CL-PF3OUdS		97.7	70.0	130.0
9CL-PF3ONS		92.0	70.0	130.0
ADONA		89.8	70.0	130.0
HFPO-DA		103.4	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK210512.2404703D, Parent Sample ID: S24047.03

Run in Batch: AK210512, Run Date: 05/12/2021 22:17, Prep Date: 05/12/2021, Matrix: SO, Dilution: 3.36

Analyte	Flags	RPD	RPD CL
PFBA		26.9	30.0
PFPeA		22.2	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210512S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Duplicate (DUP) (continued)

Lab Sample ID: AK210512.2404703D, Parent Sample ID: S24047.03

Run in Batch: AK210512, Run Date: 05/12/2021 22:17, Prep Date: 05/12/2021, Matrix: SO, Dilution: 3.36

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
PFHxA	*	30.8	30.0
PFBS		NC	30.0
PFHpA	*	48.5	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA	*	58.3	30.0
PFHxS	*	45.5	30.0
PFHxS-LN	*	47.1	30.0
PFHxS-BR	*	44.7	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS	*	88.7	30.0
PFOS-LN	*	90.9	30.0
PFOS-BR	*	92.1	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDoDA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
PFTeDA		NC	30.0
11CL-PF3OUdS		NC	30.0
9CL-PF3ONS		NC	30.0
ADONA		NC	30.0
HFPO-DA		NC	30.0



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C.O.C. PAGE # 1 OF 6

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME **Rodney Abke**
COMPANY **Applied EcoSystems**
ADDRESS **G-4300 South Saginaw Street**
CITY **Burton** STATE **MI** ZIP CODE **48529**
PHONE NO. **810-715-2525** FAX NO. **810-715-2526** P.O. NO. **PO795930**
E-MAIL ADDRESS **rabke@appliedecosystems.com** QUOTE NO.

CONTACT NAME **Monica Wallingford** ☐ SAME
COMPANY **Revitalizing Auto Communities Environmental Response (RACER) Trust**
ADDRESS
CITY STATE ZIP CODE
PHONE NO. **313.486.2978** E-MAIL ADDRESS **mwallingford@racertrust.org**

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME **RACER Flint West #12990** SAMPLER(S) - PLEASE PRINT/SIGN NAME
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER
DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID
SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIFE A=AIR W=WASTE

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	PFAS/PFOS **	Certifications ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES Project Locations ☐ Detroit ☐ New York ☐ Other Special Instructions
23498.01	4-20	9:24	SB-9-21 8'	S	4	X							X	
.02	4-20	9:31	SB-9-21 11'	S	4	X							X	
.03	4-20	9:30	SB-9-21 19'	W	3	X							X	
.04	4-20	9:53	SB-9-21 22'	W	3	X							X	
.05	4-20	10:50	SB-8-21 24'	W	3	X							X	
.06	4-20	11:04	SB-8-21 20'	W	3	X							X	
.07	4-20	11:54	SB-8-21 10'	S	4	X							X	
.08	4-20	11:51	SB-8-21 7'	S	4	X							X	
.09	4-20	12:00	SB-6-21 7'	S	4	X							X	
.10	4-20	12:08	SB-6-21 15'	S	4	X							X	
.11	4-20	11:57	SB-6-21 24'	W	4	X							X	
.12	4-20	12:30	SB-6-21 22'	W	4	X							X	

RELINQUISHED BY: **Joshua Hunsicker** ☐ Sampler DATE **4-20-21** TIME **16:45**
SIGNATURE/ORGANIZATION **AE**
RECEIVED BY: **AE** DATE **4/20/21** TIME **16:45**
SIGNATURE/ORGANIZATION **AE**
RELINQUISHED BY: **AE** DATE **4/20/21** TIME **11:30**
SIGNATURE/ORGANIZATION **AE**
RECEIVED BY: **AE** DATE **4/20/21** TIME **11:30**
SIGNATURE/ORGANIZATION **AE**

RELINQUISHED BY: **Monica Wallingford** DATE **4/23/21** TIME **14:10**
SIGNATURE/ORGANIZATION **M Wallingford**
RECEIVED BY: **M Wallingford** DATE **4/23/21** TIME **14:10**
SIGNATURE/ORGANIZATION **M Wallingford**
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
NOTES: TEMP. ON ARRIVAL **5.4**

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



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C.O.C. PAGE # 2 OF 5

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME **Rodney Abke**
COMPANY **Applied EcoSystems**
ADDRESS **G-4300 South Saginaw Street**
CITY **Burton** STATE **MI** ZIP CODE **48529**
PHONE NO. **810-715-2525** FAX NO. **810-715-2526** P.O. NO. **PO795930**
E-MAIL ADDRESS **rabke@appliedecosystems.com** QUOTE NO.

CONTACT NAME **Monica Wallingford** ☐ SAME
COMPANY **Revitalizing Auto Communities Environmental Response (RACER) Trust**
ADDRESS
CITY STATE ZIP CODE
PHONE NO. **313.486.2978** E-MAIL ADDRESS **mwallingford@racertrust.org**

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME **RACER Flint West #12990** SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID
SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIFE A=AIR W=WASTE

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER
2348.13	4-20	11:15	SB-3-21 5'	S	4	X						
.14	4-20	14:17	SB-3-21	S	4	X						
.15	4-20	14:17	SB-7-21	W	3	X						
.16	4-20	15:38	SB-4-21	S	4	X						
.17	4-20	15:34	SB-4-21	S	4	X						
.18	4-20	15:42	SB-4-21 24'	W	3	X						
.19	4-20	15:50	SB-4-21 19'	W	3	X						
.20	4-21	9:10	SB-5-21 25'	W	3	X						
.21	4-21	9:06	SB-5-21 8'	S	4	X						
.22	4-21	9:13	SB-5-21 10'	S	4	X						
.23	4-21	9:20	SB-5-21 21'	W	3	X						
.24	4-21	10:04	SB-7-21 7'	S	4	X						

PFAS/PFOS **

Certifications

☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☐ New York
☐ Other

Special Instructions

** - 28 Compound List

RELINQUISHED BY: *Joshua Hough* ☐ Sampler
SIGNATURE/ORGANIZATION *AE*
RECEIVED BY: *AE*
SIGNATURE/ORGANIZATION *AE*
RELINQUISHED BY: *AE*
SIGNATURE/ORGANIZATION *AE*
RECEIVED BY: *AE*
SIGNATURE/ORGANIZATION *AE*

RELINQUISHED BY: *Monica Wallingford*
SIGNATURE/ORGANIZATION *Monica Wallingford*
RECEIVED BY: *M. Wallingford*
SIGNATURE/ORGANIZATION *M. Wallingford*
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
NOTES: TEMP. ON ARRIVAL **5.4**

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



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C.O.C. PAGE # 3 OF 5

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME Rodney Abke		
COMPANY Applied EcoSystems		
ADDRESS G-4300 South Saginaw Street		
CITY Burton	STATE MI	ZIP CODE 48529
PHONE NO. 810-715-2525	FAX NO. 810-715-2526	P.O. NO. PO795930
E-MAIL ADDRESS rabke@appliedecosystems.com		QUOTE NO.

CONTACT NAME Monica Wallingford		☐ SAME
COMPANY Revitalizing Auto Communities Environmental Response (RACER) Trust		
ADDRESS		
CITY	STATE	ZIP CODE
PHONE NO. 313.486.2978	E-MAIL ADDRESS mwallingford@racertrust.org	

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME RACER Flint West #12990	SAMPLER(S) - PLEASE PRINT/SIGN NAME
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER	
DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER	

MATRIX CODE:	GW=GROUNDWATER	WW=WASTEWATER	S=SOIL	L=LIQUID	SD=SOLID	
	SL=SLUDGE	DW=DRINKING WATER	O=OIL	WP=WIFE	A=AIR	W=WASTE

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	PFAS/PFOS **
	DATE	TIME											
2349825	4-21	10:10	SB-7-21 24'	W	3	X							X
26	4-21	10:14	SB-7-21 15'	S	4	X							X
27	4-21	10:21	SB-7-21 21'	W	3	X							X
28	4-21	11:24	SB-16-21 16'	S	4	X							X
29	4-21	11:30	SB-16-21 8'	S	4	X							X
30	4-21	11:32	SB-16-21 3'	S	4	X							X
31	4-21	12:52	SB-2-21 19'	W	3	X							X
32	4-21	13:10	SB-2-21 6'	S	4	X							X
33	4-21	13:12	SB-2-21 17'	W	3	X							X
34	4-21	13:17	SB-2-21 15'	S	4	X							X
35	4-21	13:58	SB-121 6'	S	4	X							X
36	4-21	14:30	SB-1-21 14-15'	S	4	X							X

Certifications

☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☐ New York
☐ Other

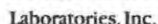
Special Instructions

** - 28 Compound List

RELINQUISHED BY: Joshua Anderson	☐ Sampler	DATE 4/20/21	TIME 16:45
SIGNATURE/ORGANIZATION		DATE 4/21/21	TIME 13:30
RECEIVED BY: AE		DATE 4/20/21-4/21/21	TIME 13:30
SIGNATURE/ORGANIZATION		DATE 4/20/21	TIME 11:30
RELINQUISHED BY: AE		DATE 4/20/21	TIME 11:30
SIGNATURE/ORGANIZATION		DATE 4/20/21	TIME 11:30

RELINQUISHED BY: J. Wallingford	DATE 4/22/21	TIME 14:14
SIGNATURE/ORGANIZATION	DATE 4/23/21	TIME 14:10
RECEIVED BY: M. Chilton		
SIGNATURE/ORGANIZATION		
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS
NOTES:		TEMP. ON ARRIVAL 5.4

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OF



Quality Control Report

Report ID: QC-S24077-01
Generated on 06/09/2021

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S24077.01
Project: RACER Flint West #12990
Submitted Date/Time: 05/11/2021 16:20
Sampled by: Unknown
P.O. #: 795930

QC Report Sections

Cover Page (Page 1)
Analysis Summary (Page 2)
Prep Batch Summary (Page 3)
Internal Standards per Lab Sample (Page 4)
Internal Standards per QC Sample (Pages 5-9)
Batch QC Results (Pages 10-16)

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S24077.01

Sample Tag: MW-103S Topps Assay

Collected Date/Time: 05/07/2021 12:54

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs TOP ASSAY	ASTMD7979-19M	06/08/21 13:23	AK210608TOP	PTOP210604W1	Yes	BLK/LCS/DUP
28 PFAs	ASTMD7979-19M	05/18/21 21:19	AK210518W	PF210518W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF210518W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S24077.01	28 PFAs	ASTMD7979-19M	05/18/21 21:19	AK210518W

Organics - Volatiles, Prep Batch ID: PTOP210604W1

Surrogates: Yes, QC Types: BLK/LCS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S24077.01	28 PFAs TOP ASSAY	ASTMD7979-19M	06/08/21 13:23	AK210608TOP

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S24077.01

Sample Tag: MW-103S Topps Assay

Collected Date/Time: 05/07/2021 12:54

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs TOP ASSAY

Run in Batch: AK210608TOP, Run Date: 06/08/2021 13:23, Matrix: WW, Dilution: 5.17

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		72.9	50.0	150.0
M2-6:2FTSA		58.3	50.0	150.0
M2-8:2FTSA		63.1	50.0	150.0
M2PFTeDA		137.6	12.0	218.0
M3PFBS		82.8	50.0	150.0
M3PFHxS		84.1	50.0	150.0
M4PFHpA		96.0	50.0	150.0
M5PFHxA		89.8	50.0	150.0
M5PFPeA		93.5	50.0	150.0
M6PFDA		86.4	50.0	150.0
M7PFUnDA		97.9	50.0	150.0
M8FOSA		96.6	50.0	150.0
M8PFOA		97.0	50.0	150.0
M8PFOS		83.8	50.0	150.0
M9-PFNA		86.2	50.0	150.0
MPFBA		95.2	50.0	150.0
MPFDoDA		97.4	50.0	150.0
d3N-MeFOSAA		82.3	50.0	150.0
d5EtFOSAA		74.0	50.0	150.0

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210518W, Run Date: 05/18/2021 21:19, Matrix: WW, Dilution: 1.99

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		81.9	50.0	150.0
M2-6:2FTSA		83.0	50.0	150.0
M2-8:2FTSA		91.2	50.0	150.0
M2PFTeDA		93.6	12.0	218.0
M3PFBS		110.0	50.0	150.0
M3PFHxS		107.5	50.0	150.0
M4PFHpA		103.4	50.0	150.0
M5PFHxA		109.6	50.0	150.0
M5PFPeA		100.0	50.0	150.0
M6PFDA		93.8	50.0	150.0
M7PFUnDA		116.0	50.0	150.0
M8FOSA		108.5	50.0	150.0
M8PFOA		97.4	50.0	150.0
M8PFOS		106.6	50.0	150.0
M9-PFNA		98.4	50.0	150.0
MPFBA		105.2	50.0	150.0
MPFDoDA		114.5	50.0	150.0
d3N-MeFOSAA		93.3	50.0	150.0
d5EtFOSAA		99.1	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF210518W1

QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: AK210518W.BLK210518

Run in Batch: AK210518W, Run Date: 05/18/2021 20:40, Prep Date: 05/18/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		96.8	50.0	150.0
M2-6:2FTSA		110.5	50.0	150.0
M2-8:2FTSA		96.9	50.0	150.0
M2PFTeDA		118.0	12.0	218.0
M3PFBS		102.8	50.0	150.0
M3PFHxS		113.8	50.0	150.0
M4PFHpA		100.9	50.0	150.0
M5PFHxA		115.2	50.0	150.0
M5PFPeA		101.2	50.0	150.0
M6PFDA		95.2	50.0	150.0
M7PFUnDA		123.9	50.0	150.0
M8FOSA		110.3	50.0	150.0
M8PFOA		104.1	50.0	150.0
M8PFOS		103.5	50.0	150.0
M9-PFNA		107.9	50.0	150.0
MPFBA		84.4	50.0	150.0
MPFDoDA		113.5	50.0	150.0
d3N-MeFOSAA		101.5	50.0	150.0
d5EtFOSAA		107.8	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK210518W.LCS210518

Run in Batch: AK210518W, Run Date: 05/18/2021 20:01, Prep Date: 05/18/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		102.9	50.0	150.0
M2-6:2FTSA		106.0	50.0	150.0
M2-8:2FTSA		109.8	50.0	150.0
M2PFTeDA		120.1	12.0	218.0
M3PFBS		101.4	50.0	150.0
M3PFHxS		111.6	50.0	150.0
M4PFHpA		100.9	50.0	150.0
M5PFHxA		115.8	50.0	150.0
M5PFPeA		102.6	50.0	150.0
M6PFDA		96.1	50.0	150.0
M7PFUnDA		110.8	50.0	150.0
M8FOSA		97.7	50.0	150.0
M8PFOA		109.4	50.0	150.0
M8PFOS		112.5	50.0	150.0
M9-PFNA		100.4	50.0	150.0
MPFBA		105.4	50.0	150.0
MPFDoDA		117.3	50.0	150.0
d3N-MeFOSAA		102.4	50.0	150.0
d5EtFOSAA		109.3	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK210518W.LCSD210518, Parent Sample ID: AK210518W.LCS210518

Run in Batch: AK210518W, Run Date: 05/18/2021 20:20, Prep Date: 05/18/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		100.7	50.0	150.0
M2-6:2FTSA		101.5	50.0	150.0
M2-8:2FTSA		109.3	50.0	150.0
M2PFTeDA		122.4	12.0	218.0
M3PFBS		103.1	50.0	150.0
M3PFHxS		109.5	50.0	150.0
M4PFHpA		96.3	50.0	150.0
M5PFHxA		108.6	50.0	150.0
M5PFPeA		99.8	50.0	150.0
M6PFDA		98.5	50.0	150.0
M7PFUnDA		115.6	50.0	150.0
M8FOSA		100.0	50.0	150.0
M8PFOA		95.3	50.0	150.0
M8PFOS		97.5	50.0	150.0
M9-PFNA		106.2	50.0	150.0
MPFBA		104.7	50.0	150.0
MPFDoDA		114.3	50.0	150.0
d3N-MeFOSAA		94.9	50.0	150.0
d5EtFOSAA		104.3	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK210518W.2407701M, Parent Sample ID: S24077.01

Run in Batch: AK210518W, Run Date: 05/18/2021 21:38, Prep Date: 05/18/2021, Matrix: WW, Dilution: 1.99

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		88.7	50.0	150.0
M2-6:2FTSA		74.2	50.0	150.0
M2-8:2FTSA		89.7	50.0	150.0
M2PFTeDA		97.3	12.0	218.0
M3PFBS		96.1	50.0	150.0
M3PFHxS		104.2	50.0	150.0
M4PFHpA		105.0	50.0	150.0
M5PFHxA		109.5	50.0	150.0
M5PFPeA		96.7	50.0	150.0
M6PFDA		87.2	50.0	150.0
M7PFUnDA		104.1	50.0	150.0
M8FOSA		103.8	50.0	150.0
M8PFOA		107.5	50.0	150.0
M8PFOS		104.1	50.0	150.0
M9-PFNA		101.7	50.0	150.0
MPFBA		101.5	50.0	150.0
MPFDoDA		103.3	50.0	150.0
d3N-MeFOSAA		92.3	50.0	150.0
d5EtFOSAA		84.2	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: AK210518A.2428301D, Parent Sample ID: S24283.01

Run in Batch: AK210518A, Run Date: 05/19/2021 12:12, Prep Date: 05/18/2021, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		81.8	50.0	150.0
M2-6:2FTSA		73.7	50.0	150.0
M2-8:2FTSA		82.3	50.0	150.0
M2PFTeDA		137.1	12.0	218.0
M3PFBS		102.4	50.0	150.0
M3PFHxS		102.5	50.0	150.0
M4PFHpA		89.7	50.0	150.0
M5PFHxA		99.0	50.0	150.0
M5PFPeA		106.0	50.0	150.0
M6PFDA		125.8	50.0	150.0
M7PFUnDA		111.3	50.0	150.0
M8FOSA		109.1	50.0	150.0
M8PFOA		97.4	50.0	150.0
M8PFOS		105.2	50.0	150.0
M9-PFNA		106.7	50.0	150.0
MPFBA		101.3	50.0	150.0
MPFDoDA		109.7	50.0	150.0
d3N-MeFOSAA		91.6	50.0	150.0
d5EtFOSAA		85.3	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PTOP210604W1

QC Types: BLK/LCS/DUP

Blank (BLK)

Lab Sample ID: AK210608TOP.BLKT08A

Run in Batch: AK210608TOP, Run Date: 06/08/2021 13:04, Prep Date: 06/04/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		72.3	50.0	150.0
M2-6:2FTSA		64.9	50.0	150.0
M2-8:2FTSA		75.0	50.0	150.0
M2PFTeDA		155.1	12.0	218.0
M3PFBS		87.9	50.0	150.0
M3PFHxS		95.7	50.0	150.0
M4PFHpA		90.7	50.0	150.0
M5PFHxA		94.5	50.0	150.0
M5PFPeA		98.9	50.0	150.0
M6PFDA		89.3	50.0	150.0
M7PFUnDA		104.0	50.0	150.0
M8FOSA		94.1	50.0	150.0
M8PFOA		98.0	50.0	150.0
M8PFOS		88.6	50.0	150.0
M9-PFNA		90.3	50.0	150.0
MPFBA		95.9	50.0	150.0
MPFDoDA		108.6	50.0	150.0
d3N-MeFOSAA		72.3	50.0	150.0
d5EtFOSAA		79.5	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK210608TOP.LCST08A

Run in Batch: AK210608TOP, Run Date: 06/08/2021 12:44, Prep Date: 06/04/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		69.6	50.0	150.0
M2-6:2FTSA		60.7	50.0	150.0
M2-8:2FTSA		73.1	50.0	150.0
M2PFTeDA		159.8	12.0	218.0
M3PFBS		82.0	50.0	150.0
M3PFHxS		89.9	50.0	150.0
M4PFHpA		95.5	50.0	150.0
M5PFHxA		92.3	50.0	150.0
M5PFPeA		89.2	50.0	150.0
M6PFDA		90.7	50.0	150.0
M7PFUnDA		92.0	50.0	150.0
M8FOSA		93.4	50.0	150.0
M8PFOA		88.0	50.0	150.0
M8PFOS		87.9	50.0	150.0
M9-PFNA		85.9	50.0	150.0
MPFBA		91.3	50.0	150.0
MPFDoDA		92.9	50.0	150.0
d3N-MeFOSAA		68.3	50.0	150.0
d5EtFOSAA		72.6	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: AK210608TOP.2407701D, Parent Sample ID: S24077.01

Run in Batch: AK210608TOP, Run Date: 06/08/2021 13:43, Prep Date: 06/04/2021, Matrix: WW, Dilution: 5.17

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		78.7	50.0	150.0
M2-6:2FTSA		68.4	50.0	150.0
M2-8:2FTSA		71.6	50.0	150.0
M2PFTeDA		155.9	12.0	218.0
M3PFBS		92.8	50.0	150.0
M3PFHxS		97.0	50.0	150.0
M4PFHpA		107.9	50.0	150.0
M5PFHxA		100.1	50.0	150.0
M5PFPeA		102.9	50.0	150.0
M6PFDA		94.4	50.0	150.0
M7PFUnDA		107.3	50.0	150.0
M8FOSA		99.5	50.0	150.0
M8PFOA		100.3	50.0	150.0
M8PFOS		91.7	50.0	150.0
M9-PFNA		99.1	50.0	150.0
MPFBA		102.8	50.0	150.0
MPFDoDA		107.6	50.0	150.0
d3N-MeFOSAA		82.4	50.0	150.0
d5EtFOSAA		79.1	50.0	150.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210518W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: AK210518W.BLK210518

Run in Batch: AK210518W, Run Date: 05/18/2021 20:40, Prep Date: 05/18/2021, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	10	ng/l
PFPeA		ND	4	ng/l
4:2 FTSA		ND	2	ng/l
PFHxA		ND	2	ng/l
PFBS		ND	2	ng/l
HFPO-DA		ND	2	ng/l
PfHpA		ND	2	ng/l
ADONA		ND	2	ng/l
PFPeS		ND	2	ng/l
6:2 FTSA		ND	2	ng/l
PFOA		ND	2	ng/l
PFHxS-BR		ND	2	ng/l
PFHxS		ND	2	ng/l
PFHxS-LN		ND	2	ng/l
PFNA		ND	2	ng/l
8:2 FTSA		ND	2	ng/l
PfHpS		ND	2	ng/l
N-MeFOSAA		ND	2	ng/l
PFDA		ND	2	ng/l
PFOS-BR		ND	2	ng/l
EtFOSAA		ND	4	ng/l
PFOS		ND	2	ng/l
PFOS-LN		ND	2	ng/l
PFUnDA		ND	2	ng/l
9CL-PF3ONS		ND	2	ng/l
PFNS		ND	2	ng/l
PFDODA		ND	2	ng/l
PFDS		ND	2	ng/l
PFTTrDA		ND	2	ng/l
FOSA		ND	2	ng/l
11CL-PF3OUdS		ND	2	ng/l
PFTeDA		ND	4	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK210518W.LCS210518

Run in Batch: AK210518W, Run Date: 05/18/2021 20:01, Prep Date: 05/18/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		97.8	70.0	130.0
PFPeA		93.6	70.0	130.0
4:2 FTSA		90.9	70.0	130.0
PFHxA		85.8	70.0	130.0
PFBS		113.0	70.0	130.0
HFPO-DA		101.0	70.0	130.0
PfHpA		110.0	70.0	130.0
ADONA		87.2	70.0	130.0
PFPeS		110.0	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210518W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK210518W.LCS210518

Run in Batch: AK210518W, Run Date: 05/18/2021 20:01, Prep Date: 05/18/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		87.8	70.0	130.0
PFOA		89.1	70.0	130.0
PFHxS		96.7	70.0	130.0
PFNA		97.5	70.0	130.0
8:2 FTSA		87.8	70.0	130.0
PFHpS		93.7	70.0	130.0
N-MeFOSAA		93.8	70.0	130.0
PFDA		95.6	70.0	130.0
EtFOSAA		90.0	70.0	130.0
PFOS		71.0	70.0	130.0
PFUnDA		92.8	70.0	130.0
9CL-PF3ONS		83.0	70.0	130.0
PFNS		84.4	70.0	130.0
PFDODA		99.1	70.0	130.0
PFDS		86.4	70.0	130.0
PFTTrDA		113.0	70.0	130.0
FOSA		108.0	70.0	130.0
11CL-PF3OUdS		93.2	70.0	130.0
PFTeDA		93.9	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK210518W.LCSD210518, Parent Sample ID: AK210518W.LCS210518

Run in Batch: AK210518W, Run Date: 05/18/2021 20:20, Prep Date: 05/18/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		102.0	70.0	130.0	4.2	30.0
PFPeA		97.6	70.0	130.0	4.2	30.0
4:2 FTSA		92.7	70.0	130.0	2.0	30.0
PFHxA		98.5	70.0	130.0	13.8	30.0
PFBS		108.0	70.0	130.0	4.5	30.0
HFPO-DA		95.8	70.0	130.0	5.3	30.0
PFHpA		102.0	70.0	130.0	7.5	30.0
ADONA		94.0	70.0	130.0	7.5	30.0
PFPeS		104.0	70.0	130.0	5.6	30.0
6:2 FTSA		113.0	70.0	130.0	25.1	30.0
PFOA		103.0	70.0	130.0	14.5	30.0
PFHxS		107.0	70.0	130.0	10.1	30.0
PFNA		94.9	70.0	130.0	2.7	30.0
8:2 FTSA		101.0	70.0	130.0	14.0	30.0
PFHpS		98.3	70.0	130.0	4.8	30.0
N-MeFOSAA		106.0	70.0	130.0	12.2	30.0
PFDA		109.0	70.0	130.0	13.1	30.0
EtFOSAA		102.0	70.0	130.0	12.5	30.0
PFOS		84.3	70.0	130.0	17.1	30.0
PFUnDA		92.4	70.0	130.0	0.4	30.0
9CL-PF3ONS		91.0	70.0	130.0	9.2	30.0
PFNS		96.1	70.0	130.0	13.0	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210518W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK210518W.LCSD210518, Parent Sample ID: AK210518W.LCS210518

Run in Batch: AK210518W, Run Date: 05/18/2021 20:20, Prep Date: 05/18/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		98.7	70.0	130.0	0.4	30.0
PFDS		93.7	70.0	130.0	8.1	30.0
PFTTrDA		108.0	70.0	130.0	4.5	30.0
FOSA		108.0	70.0	130.0	0.0	30.0
11CL-PF3OUdS		104.0	70.0	130.0	11.0	30.0
PFTeDA		91.1	70.0	130.0	3.0	30.0

Matrix Spike (MS)

Lab Sample ID: AK210518W.2407701M, Parent Sample ID: S24077.01

Run in Batch: AK210518W, Run Date: 05/18/2021 21:38, Prep Date: 05/18/2021, Matrix: WW, Dilution: 1.99

Analyte	Flags	% Rec	LCL	UCL
PFBA		110.6	70.0	130.0
PFPeA		100.5	70.0	130.0
4:2 FTSA		99.5	70.0	130.0
PFHxA		97.5	70.0	130.0
PFBS		120.6	70.0	130.0
PFHpA		92.5	70.0	130.0
PFPeS		110.6	70.0	130.0
6:2 FTSA		110.6	70.0	130.0
PFOA		89.7	70.0	130.0
PFHxS		110.6	70.0	130.0
PFNA		110.6	70.0	130.0
8:2 FTSA		90.5	70.0	130.0
PFHpS		110.6	70.0	130.0
PFDA		120.6	70.0	130.0
N-MeFOSAA		95.5	70.0	130.0
EtFOSAA	*	130.7	70.0	130.0
PFOS		79.4	70.0	130.0
PFUnDA		110.6	70.0	130.0
PFNS		97.5	70.0	130.0
PFDoDA		100.5	70.0	130.0
PFDS		90.5	70.0	130.0
PFTTrDA		97.5	70.0	130.0
FOSA		110.6	70.0	130.0
PFTeDA		81.4	70.0	130.0
11CL-PF3OUdS		93.5	70.0	130.0
9CL-PF3ONS		88.4	70.0	130.0
ADONA		98.5	70.0	130.0
HFPO-DA		110.6	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK210518A.2428301D, Parent Sample ID: S24283.01

Run in Batch: AK210518A, Run Date: 05/19/2021 12:12, Prep Date: 05/18/2021, Matrix: WW, Dilution: 2.06

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210518W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Duplicate (DUP) (continued)

Lab Sample ID: AK210518A.2428301D, Parent Sample ID: S24283.01

Run in Batch: AK210518A, Run Date: 05/19/2021 12:12, Prep Date: 05/18/2021, Matrix: WW, Dilution: 2.06

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
6:2 FTSA		20.4	30.0
PFOA		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		NC	30.0
PFOS-LN		NC	30.0
PFOS-BR		NC	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDODA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
PFTeDA		NC	30.0
11CL-PF3OUdS		NC	30.0
9CL-PF3ONS		NC	30.0
ADONA		NC	30.0
HFPO-DA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PTOP210604W1

Surrogates: Yes, QC Types: BLK/LCS/DUP

Blank (BLK)

Lab Sample ID: AK210608TOP.BLKT08A

Run in Batch: AK210608TOP, Run Date: 06/08/2021 13:04, Prep Date: 06/04/2021, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	10	ng/l
PFPeA	*	14.206	4	ng/l
4:2 FTSA		ND	2	ng/l
PFHxA	*	14.422	2	ng/l
PFBS		ND	2	ng/l
HFPO-DA		ND	2	ng/l
PFHpA		ND	2	ng/l
PFPeS		ND	2	ng/l
ADONA		ND	2	ng/l
6:2 FTSA	*	2.3500	2	ng/l
PFOA		ND	2	ng/l
PFHxS-BR		ND	2	ng/l
PFHxS-LN		ND	2	ng/l
PFHxS		ND	2	ng/l
PFNA		ND	2	ng/l
8:2 FTSA		ND	2	ng/l
PFHpS		ND	2	ng/l
N-MeFOSAA		ND	2	ng/l
PFDA		ND	2	ng/l
EtFOSAA		ND	4	ng/l
PFOS-BR		ND	2	ng/l
PFOS		ND	2	ng/l
PFOS-LN		ND	2	ng/l
PFUnDA		ND	2	ng/l
9CL-PF3ONS		ND	2	ng/l
PFNS		ND	2	ng/l
PFDODA		ND	2	ng/l
PFDS		ND	2	ng/l
PFTTrDA		ND	2	ng/l
11CL-PF3OUdS		ND	2	ng/l
FOSA		ND	2	ng/l
PFTeDA		ND	4	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK210608TOP.LCST08A

Run in Batch: AK210608TOP, Run Date: 06/08/2021 12:44, Prep Date: 06/04/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA	*	153.9	70.0	130.0
PFPeA	*	175.4	70.0	130.0
4:2 FTSA	*	0.0	70.0	130.0
PFHxA	*	188.6	70.0	130.0
PFBS		100.3	70.0	130.0
HFPO-DA		99.4	70.0	130.0
PFHpA	*	151.5	70.0	130.0
PFPeS		96.7	70.0	130.0
ADONA	*	1.8	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PTOP210604W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/DUP

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK210608TOP.LCST08A

Run in Batch: AK210608TOP, Run Date: 06/08/2021 12:44, Prep Date: 06/04/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA	*	6.8	70.0	130.0
PFOA	*	320.4	70.0	130.0
PFHxS		94.0	70.0	130.0
PFNA	*	138.0	70.0	130.0
8:2 FTSA	*	4.2	70.0	130.0
PFHpS		82.0	70.0	130.0
N-MeFOSAA	*	0.5	70.0	130.0
PFDA	*	156.0	70.0	130.0
EtFOSAA	*	7.3	70.0	130.0
PFOS		94.9	70.0	130.0
PFUnDA		102.1	70.0	130.0
9CL-PF3ONS	*	54.2	70.0	130.0
PFNS		88.0	70.0	130.0
PFDODA		91.6	70.0	130.0
PFDS		87.7	70.0	130.0
PFTTrDA		102.7	70.0	130.0
11CL-PF3OUdS	*	24.7	70.0	130.0
FOSA	*	1.0	70.0	130.0
PFTeDA		78.1	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK210608TOP.2407701D, Parent Sample ID: S24077.01

Run in Batch: AK210608TOP, Run Date: 06/08/2021 13:43, Prep Date: 06/04/2021, Matrix: WW, Dilution: 5.17

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		2.5	30.0
4:2 FTSA		NC	30.0
PFHxA		5.1	30.0
PFBS		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA		0.0	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		5.1	30.0
PFOS-LN		1.3	30.0
PFOS-BR		NC	30.0
PFUnDA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PTOP210604W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/DUP

Duplicate (DUP) (continued)

Lab Sample ID: AK210608TOP.2407701D, Parent Sample ID: S24077.01

Run in Batch: AK210608TOP, Run Date: 06/08/2021 13:43, Prep Date: 06/04/2021, Matrix: WW, Dilution: 5.17

Analyte	Flags	RPD	RPD CL
PFNS		NC	30.0
PFDoDA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
PFTeDA		NC	30.0
11CL-PF3OUdS		NC	30.0
9CL-PF3ONS		NC	30.0
ADONA		NC	30.0
HFPO-DA		NC	30.0

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME Rodney Abke		CONTACT NAME Monica Wallingford		☐ SAME	
COMPANY Applied EcoSystems		COMPANY Revitalizing Auto Communities Environmental Response (RACER) Trust			
ADDRESS G-4300 South Saginaw Street		ADDRESS			
CITY Burton		STATE MI	ZIP CODE 48529		CITY
PHONE NO. 810-715-2525	FAX NO. 810-715-2526	P.O. NO. PO795930		PHONE NO. 313.486.2978	E-MAIL ADDRESS mwallingford@racertrust.org
E-MAIL ADDRESS rabke@appliedecosystems.com		QUOTE NO.		ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)	

[illegible]

RELINQUISHED BY: <i>Joel Hernandez</i>	☒ Sampler	DATE	TIME	RELINQUISHED BY: <i>J. Miller</i>	DATE	TIME
SIGNATURE/ORGANIZATION		5-7-21	14:30	SIGNATURE/ORGANIZATION	5/11/21	16:28
RECEIVED BY: <i>AE</i>		DATE	TIME	RECEIVED BY: <i>Sam Smith</i>	DATE	TIME
SIGNATURE/ORGANIZATION		5-7-21	14:30	SIGNATURE/ORGANIZATION	5/11/21	16:00
RELINQUISHED BY:		DATE	TIME	SEAL NO.	SEAL INTACT	INITIALS
SIGNATURE/ORGANIZATION <i>AE</i>		5/11/21	11:55		YES ☐ NO ☐	
RECEIVED BY:		DATE	TIME	SEAL NO.	SEAL INTACT	INITIALS
SIGNATURE/ORGANIZATION <i>J. Miller</i>		5/11/21	11:58		YES ☐ NO ☐	
				NOTES: TEMP. ON ARRIVAL <u>4.2</u>		

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12



Quality Control Report

Report ID: QC-S23493-01
Generated on 05/04/2021

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S23493.01-S23493.04
Project: RACER Flint West #12990
Submitted Date/Time: 04/23/2021 14:10
Sampled by: Unknown
P.O. #: 795930

QC Report Sections

Cover Page (Page 1)
Analysis Summary (Pages 2-5)
Prep Batch Summary (Page 6)
Batch QC Results (Pages 7-8)

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S23493.01

Sample Tag: SB-11-21 15'

Collected Date/Time: 04/19/2021 10:14

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Fractional Organic Carbon	Walkley Black	05/04/21 12:00	FOC210504-S1	FOC210504-S1	No	BLK/DUP
Total Solids	SM2540B	04/24/21 11:30	TS210424B	TS210424B	No	BLK/LCS/DUP

QC Report - Analysis Summary

Lab Sample ID: S23493.02

Sample Tag: SB-11-21 18'

Collected Date/Time: 04/19/2021 10:22

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Fractional Organic Carbon	Walkley Black	05/04/21 12:30	FOC210504-S1	FOC210504-S1	No	BLK/DUP
Total Solids	SM2540B	04/24/21 11:30	TS210424B	TS210424B	No	BLK/LCS/DUP

QC Report - Analysis Summary

Lab Sample ID: S23493.03

Sample Tag: SB-12-21 19'

Collected Date/Time: 04/19/2021 14:03

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Fractional Organic Carbon	Walkley Black	05/04/21 12:45	FOC210504-S1	FOC210504-S1	No	BLK/DUP
Total Solids	SM2540B	04/24/21 11:30	TS210424B	TS210424B	No	BLK/LCS/DUP

QC Report - Analysis Summary

Lab Sample ID: S23493.04

Sample Tag: SB-12-21 9'

Collected Date/Time: 04/19/2021 14:06

Matrix: Soil

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Inorganics</i>						
Fractional Organic Carbon	Walkley Black	05/04/21 13:00	FOC210504-S1	FOC210504-S1	No	BLK/DUP
Total Solids	SM2540B	04/24/21 11:30	TS210424B	TS210424B	No	BLK/LCS/DUP

QC Report - Prep Batch Summary

Inorganics, Prep Batch ID: FOC210504-S1

Surrogates: No, QC Types: BLK/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23493.01	Fractional Organic Carbon	Walkley Black	05/04/21 12:00	FOC210504-S1
S23493.02	Fractional Organic Carbon	Walkley Black	05/04/21 12:30	FOC210504-S1
S23493.03	Fractional Organic Carbon	Walkley Black	05/04/21 12:45	FOC210504-S1
S23493.04	Fractional Organic Carbon	Walkley Black	05/04/21 13:00	FOC210504-S1

Inorganics, Prep Batch ID: TS210424B

Surrogates: No, QC Types: BLK/LCS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S23493.01	Total Solids	SM2540B	04/24/21 11:30	TS210424B
S23493.02	Total Solids	SM2540B	04/24/21 11:30	TS210424B
S23493.03	Total Solids	SM2540B	04/24/21 11:30	TS210424B
S23493.04	Total Solids	SM2540B	04/24/21 11:30	TS210424B

QC Report - Batch QC Results

Inorganics, Prep Batch ID: FOC210504-S1

Surrogates: No, QC Types: BLK/DUP

Blank (BLK)

Lab Sample ID: FOC210504-S1.LRB1

Run in Batch: FOC210504-S1, Run Date: 05/04/2021 11:30, Prep Date: 05/04/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Fractional Organic Carbon		ND	500	mg/L

Blank (BLK)

Lab Sample ID: FOC210504-S1.LRB2

Run in Batch: FOC210504-S1, Run Date: 05/04/2021 11:45, Prep Date: 05/04/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Fractional Organic Carbon		ND	500	mg/L

Blank (BLK)

Lab Sample ID: FOC210504-S1.LRB3

Run in Batch: FOC210504-S1, Run Date: 05/04/2021 13:15, Prep Date: 05/04/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Fractional Organic Carbon		ND	500	mg/L

Duplicate (DUP)

Lab Sample ID: FOC210504-S1.DP1, Parent Sample ID: S23493.01

Run in Batch: FOC210504-S1, Run Date: 05/04/2021 12:15, Prep Date: 05/04/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Fractional Organic Carbon		8	15

QC Report - Batch QC Results

Inorganics, Prep Batch ID: TS210424B

Surrogates: No, QC Types: BLK/LCS/DUP

Blank (BLK)

Lab Sample ID: TS210424B.LRB1

Run in Batch: TS210424B, Run Date: 04/24/2021 11:30, Prep Date: 04/24/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Solids		ND	1	%

Laboratory Control Sample (LCS)

Lab Sample ID: TS210424B.LCS1

Run in Batch: TS210424B, Run Date: 04/24/2021 11:30, Prep Date: 04/24/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Solids		100	90	110

Duplicate (DUP)

Lab Sample ID: TS210424B.DP1, Parent Sample ID: S23486.02

Run in Batch: TS210424B, Run Date: 04/24/2021 11:30, Prep Date: 04/24/2021, Matrix: Soil, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Solids		0	5

Duplicate (DUP)

Lab Sample ID: TS210424B.DP2, Parent Sample ID: S23493.04

Run in Batch: TS210424B, Run Date: 04/24/2021 11:30, Prep Date: 04/24/2021, Matrix: Soil, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Solids		0	5

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME				Rodney Abke							
COMPANY				Applied EcoSystems							
ADDRESS								G-4300 South Saginaw Street			
CITY						STATE		MI		ZIP CODE	
Burton										48529	
PHONE NO.				FAX NO.				P.O. NO.			
810-715-2525				810-715-2526				PO795930			
E-MAIL ADDRESS								QUOTE NO.			
rabke@appliedecosystems.com											

CONTACT NAME		Monica Wallingford		☐ SAME	
COMPANY		Revitalizing Auto Communities Environmental Response (RACER) Trust			
ADDRESS					
CITY				STATE	ZIP CODE
PHONE NO.		E-MAIL ADDRESS			
313.486.2978		mwallingford@racetrust.org			

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME	RACER Flint West #12990	SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

MATRIX	GW=GROUNDWATER	WW=WASTEWATER	S=SOIL	L=LIQUID	SD=SOLID
CODE:	SL=SLUDGE	DW=DRINKING WATER	O=OIL	WP=WPIE	A=AIR
					W=WASTE

Containers & Preservatives

[illegible]

Certifications

☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☐ New York

Special Instructions

~~** - 28 Compound List~~

FOC

RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>Joshua Hendrickson</i> <i>AE</i>	☐ Sampler	DATE 4-19	TIME 16:30
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>AE</i>		DATE 4-19	TIME 16:30
RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>AE</i>		DATE 4/8/01	TIME 11:30
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>AE</i>		DATE 4/8/01	TIME 11:30

RELINQUISHED BY:		SIGNATURE/ORGANIZATION		DATE		TIME	
		<i>[Signature]</i>		4/23/21		14:10	
RECEIVED BY:		SIGNATURE/ORGANIZATION		DATE		TIME	
		<i>[Signature]</i>		4/23/21		14:10	
SEAL NO.	SEAL INTACT	INITIALS	NOTES:	TEMP. ON ARRIVAL			
	YES ☐ NO ☐						
SEAL NO.	SEAL INTACT	INITIALS					
	YES ☐ NO ☐				5.4		

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12



Quality Control Report

Report ID: QC-S22884-01
Generated on 04/15/2021

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S22884.01-S22884.02
Project: RACER Flint West #12990
Submitted Date/Time: 04/06/2021 12:55
Sampled by: Rodney Abke
P.O. #: 795930

QC Report Sections

Cover Page (Page 1)
Analysis Summary (Pages 2-3)
Prep Batch Summary (Page 4)
Internal Standards per Lab Sample (Pages 5-6)
Internal Standards per QC Sample (Pages 7-9)
Batch QC Results (Pages 10-13)

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S22884.01

Sample Tag: Baggie

Collected Date/Time: 04/06/2021 10:50

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/13/21 22:40	AK210413	PF210413W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S22884.02

Sample Tag: Baggie - DUP

Collected Date/Time: 04/06/2021 10:50

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	04/13/21 23:38	AK210413	PF210413W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF210413W2

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S22884.01	28 PFAs	ASTMD7979-19M	04/13/21 22:40	AK210413
S22884.02	28 PFAs	ASTMD7979-19M	04/13/21 23:38	AK210413

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S22884.01

Sample Tag: Baggie

Collected Date/Time: 04/06/2021 10:50

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210413, Run Date: 04/13/2021 22:40, Matrix: WW, Dilution: 1.85

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		119.9	50.0	150.0
M2-6:2FTSA		105.8	50.0	150.0
M2-8:2FTSA		67.5	50.0	150.0
M2PFTeDA	*	7.9	12.0	218.0
M3PFBS		103.3	50.0	150.0
M3PFHxS		99.3	50.0	150.0
M4PFHpA		106.7	50.0	150.0
M5PFHxA		101.2	50.0	150.0
M5PFPeA		108.8	50.0	150.0
M6PFDA		79.5	50.0	150.0
M7PFUnDA		52.9	50.0	150.0
M8FOSA		103.0	50.0	150.0
M8PFOA		94.0	50.0	150.0
M8PFOS		87.3	50.0	150.0
M9-PFNA		107.0	50.0	150.0
MPFBA		110.6	50.0	150.0
MPFDoDA	*	16.9	50.0	150.0
d3N-MeFOSAA		76.3	50.0	150.0
d5EtFOSAA		97.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S22884.02

Sample Tag: Baggie - DUP

Collected Date/Time: 04/06/2021 10:50

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210413, Run Date: 04/13/2021 23:38, Matrix: WW, Dilution: 1.88

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		116.1	50.0	150.0
M2-6:2FTSA		99.9	50.0	150.0
M2-8:2FTSA	*	46.8	50.0	150.0
M2PFTeDA		14.9	12.0	218.0
M3PFBS		99.6	50.0	150.0
M3PFHxS		98.3	50.0	150.0
M4PFHpA		107.8	50.0	150.0
M5PFHxA		109.6	50.0	150.0
M5PFPeA		107.6	50.0	150.0
M6PFDA		63.1	50.0	150.0
M7PFUnDA	*	25.4	50.0	150.0
M8FOSA		109.9	50.0	150.0
M8PFOA		96.9	50.0	150.0
M8PFOS		68.5	50.0	150.0
M9-PFNA		101.5	50.0	150.0
MPFBA		108.7	50.0	150.0
MPFDoDA	*	6.6	50.0	150.0
d3N-MeFOSAA		60.0	50.0	150.0
d5EtFOSAA		80.3	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF210413W2

QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: AK210413.BLK210413A

Run in Batch: AK210413, Run Date: 04/13/2021 21:41, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		111.2	50.0	150.0
M2-6:2FTSA		112.7	50.0	150.0
M2-8:2FTSA		99.6	50.0	150.0
M2PFTeDA		142.8	12.0	218.0
M3PFBS		104.3	50.0	150.0
M3PFHxS		108.2	50.0	150.0
M4PFHpA		104.2	50.0	150.0
M5PFHxA		103.2	50.0	150.0
M5PFPeA		109.5	50.0	150.0
M6PFDA		118.9	50.0	150.0
M7PFUnDA		114.8	50.0	150.0
M8FOSA		103.3	50.0	150.0
M8PFOA		108.0	50.0	150.0
M8PFOS		101.7	50.0	150.0
M9-PFNA		112.8	50.0	150.0
MPFBA		108.6	50.0	150.0
MPFDoDA		117.1	50.0	150.0
d3N-MeFOSAA		118.1	50.0	150.0
d5EtFOSAA		119.2	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK210413.LCS210413A

Run in Batch: AK210413, Run Date: 04/13/2021 21:02, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		115.3	50.0	150.0
M2-6:2FTSA		105.3	50.0	150.0
M2-8:2FTSA		109.6	50.0	150.0
M2PFTeDA		142.4	12.0	218.0
M3PFBS		105.0	50.0	150.0
M3PFHxS		97.2	50.0	150.0
M4PFHpA		104.1	50.0	150.0
M5PFHxA		103.9	50.0	150.0
M5PFPeA		105.8	50.0	150.0
M6PFDA		112.0	50.0	150.0
M7PFUnDA		111.2	50.0	150.0
M8FOSA		100.9	50.0	150.0
M8PFOA		95.4	50.0	150.0
M8PFOS		99.9	50.0	150.0
M9-PFNA		117.8	50.0	150.0
MPFBA		105.1	50.0	150.0
MPFDoDA		115.7	50.0	150.0
d3N-MeFOSAA		106.6	50.0	150.0
d5EtFOSAA		113.4	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK210413.LCSD210413A, Parent Sample ID: AK210413.LCS210413A

Run in Batch: AK210413, Run Date: 04/13/2021 21:21, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		112.4	50.0	150.0
M2-6:2FTSA		103.3	50.0	150.0
M2-8:2FTSA		99.7	50.0	150.0
M2PFTeDA		110.1	12.0	218.0
M3PFBS		107.4	50.0	150.0
M3PFHxS		102.8	50.0	150.0
M4PFHpA		102.1	50.0	150.0
M5PFHxA		106.6	50.0	150.0
M5PFPeA		107.0	50.0	150.0
M6PFDA		102.8	50.0	150.0
M7PFUnDA		115.7	50.0	150.0
M8FOSA		99.9	50.0	150.0
M8PFOA		107.6	50.0	150.0
M8PFOS		102.5	50.0	150.0
M9-PFNA		115.1	50.0	150.0
MPFBA		108.3	50.0	150.0
MPFDoDA		105.5	50.0	150.0
d3N-MeFOSAA		109.6	50.0	150.0
d5EtFOSAA		110.2	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK210414.2301101M, Parent Sample ID: S23011.01

Run in Batch: AK210414, Run Date: 04/14/2021 18:31, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1.9

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		123.5	50.0	150.0
M2-6:2FTSA		104.0	50.0	150.0
M2-8:2FTSA		97.0	50.0	150.0
M2PFTeDA		30.8	12.0	218.0
M3PFBS		94.6	50.0	150.0
M3PFHxS		101.4	50.0	150.0
M4PFHpA		100.9	50.0	150.0
M5PFHxA		100.2	50.0	150.0
M5PFPeA		101.3	50.0	150.0
M6PFDA		95.9	50.0	150.0
M7PFUnDA		96.9	50.0	150.0
M8FOSA		101.3	50.0	150.0
M8PFOA		99.3	50.0	150.0
M8PFOS		95.9	50.0	150.0
M9-PFNA		98.4	50.0	150.0
MPFBA		107.4	50.0	150.0
MPFDoDA		94.3	50.0	150.0
d3N-MeFOSAA		90.0	50.0	150.0
d5EtFOSAA		108.8	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: AK210413.2301102D, Parent Sample ID: S23011.02

Run in Batch: AK210413, Run Date: 04/14/2021 00:56, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1.91

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		148.3	50.0	150.0
M2-6:2FTSA		120.2	50.0	150.0
M2-8:2FTSA		107.5	50.0	150.0
M2PFTeDA		127.5	12.0	218.0
M3PFBS		107.0	50.0	150.0
M3PFHxS		109.7	50.0	150.0
M4PFHpA		104.5	50.0	150.0
M5PFHxA		109.1	50.0	150.0
M5PFPeA		110.8	50.0	150.0
M6PFDA		104.0	50.0	150.0
M7PFUnDA		117.8	50.0	150.0
M8FOSA		108.1	50.0	150.0
M8PFOA		107.4	50.0	150.0
M8PFOS		107.3	50.0	150.0
M9-PFNA		118.4	50.0	150.0
MPFBA		118.2	50.0	150.0
MPFDoDA		116.8	50.0	150.0
d3N-MeFOSAA		94.2	50.0	150.0
d5EtFOSAA		112.9	50.0	150.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210413W2

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: AK210413.BLK210413A

Run in Batch: AK210413, Run Date: 04/13/2021 21:41, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	10	ng/l
PFPeA		ND	4	ng/l
4:2 FTSA		ND	2	ng/l
PFHxA		ND	2	ng/l
PFBS		ND	2	ng/l
PFFHpA		ND	2	ng/l
PFPeS		ND	2	ng/l
6:2 FTSA		ND	2	ng/l
PFOA		ND	2	ng/l
PFHxS		ND	2	ng/l
PFHxS-LN		ND	2	ng/l
PFHxS-BR		ND	2	ng/l
PFNA		ND	2	ng/l
8:2 FTSA		ND	2	ng/l
PFFHpS		ND	2	ng/l
PFDA		ND	2	ng/l
N-MeFOSAA		ND	2	ng/l
EtFOSAA		ND	4	ng/l
PFOS		ND	2	ng/l
PFOS-LN		ND	2	ng/l
PFOS-BR		ND	2	ng/l
PFOUnDA		ND	2	ng/l
PFNS		ND	2	ng/l
PFDODA		ND	2	ng/l
PFDS		ND	2	ng/l
PFTTrDA		ND	2	ng/l
FOSA		ND	2	ng/l
PFTeDA		ND	4	ng/l
11CL-PF3OUdS		ND	2	ng/l
9CL-PF3ONS		ND	2	ng/l
ADONA		ND	2	ng/l
HFPO-DA		ND	2	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK210413.LCS210413A

Run in Batch: AK210413, Run Date: 04/13/2021 21:02, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		110.0	70.0	130.0
PFPeA		110.0	70.0	130.0
4:2 FTSA		87.8	70.0	130.0
PFHxA		105.0	70.0	130.0
PFBS		111.0	70.0	130.0
HFPO-DA		88.7	70.0	130.0
PFFHpA		108.0	70.0	130.0
PFPeS		114.0	70.0	130.0
ADONA		105.0	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210413W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK210413.LCS210413A

Run in Batch: AK210413, Run Date: 04/13/2021 21:02, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		108.0	70.0	130.0
PFOA		105.0	70.0	130.0
PFHxS		106.0	70.0	130.0
PFNA		108.0	70.0	130.0
8:2 FTSA		87.0	70.0	130.0
PFHpS		119.0	70.0	130.0
N-MeFOSAA		105.0	70.0	130.0
PFDA		99.8	70.0	130.0
PFOS		103.0	70.0	130.0
EtFOSAA		106.0	70.0	130.0
PFUnDA		111.0	70.0	130.0
9CL-PF3ONS		108.0	70.0	130.0
PFNS		110.0	70.0	130.0
PFDODA		103.0	70.0	130.0
PFDS		107.0	70.0	130.0
PFTTrDA		105.0	70.0	130.0
11CL-PF3OUdS		96.9	70.0	130.0
FOSA		111.0	70.0	130.0
PFTeDA		114.0	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK210413.LCSD210413A, Parent Sample ID: AK210413.LCS210413A

Run in Batch: AK210413, Run Date: 04/13/2021 21:21, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		110.0	70.0	130.0	0.0	30.0
PFPeA		110.0	70.0	130.0	0.0	30.0
4:2 FTSA		93.0	70.0	130.0	5.8	30.0
PFHxA		108.0	70.0	130.0	2.8	30.0
PFBS		114.0	70.0	130.0	2.7	30.0
HFPO-DA		94.1	70.0	130.0	5.9	30.0
PFHpA		110.0	70.0	130.0	1.8	30.0
PFPeS		112.0	70.0	130.0	1.8	30.0
ADONA		97.2	70.0	130.0	7.7	30.0
6:2 FTSA		112.0	70.0	130.0	3.6	30.0
PFOA		88.7	70.0	130.0	16.8	30.0
PFHxS		111.0	70.0	130.0	4.6	30.0
PFNA		111.0	70.0	130.0	2.7	30.0
8:2 FTSA		103.0	70.0	130.0	16.8	30.0
PFHpS		122.0	70.0	130.0	2.5	30.0
N-MeFOSAA		103.0	70.0	130.0	1.9	30.0
PFDA		122.0	70.0	130.0	20.0	30.0
PFOS		114.0	70.0	130.0	10.1	30.0
EtFOSAA		118.0	70.0	130.0	10.7	30.0
PFUnDA		107.0	70.0	130.0	3.7	30.0
9CL-PF3ONS		101.0	70.0	130.0	6.7	30.0
PFNS		108.0	70.0	130.0	1.8	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210413W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK210413.LCSD210413A, Parent Sample ID: AK210413.LCS210413A

Run in Batch: AK210413, Run Date: 04/13/2021 21:21, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PfDoDA		110.0	70.0	130.0	6.6	30.0
PFDS		116.0	70.0	130.0	8.1	30.0
PfTrDA		100.0	70.0	130.0	4.9	30.0
11CL-PF3OUdS		99.8	70.0	130.0	2.9	30.0
FOSA		123.0	70.0	130.0	10.3	30.0
PFTeDA		112.0	70.0	130.0	1.8	30.0

Matrix Spike (MS)

Lab Sample ID: AK210414.2301101M, Parent Sample ID: S23011.01

Run in Batch: AK210414, Run Date: 04/14/2021 18:31, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1.9

Analyte	Flags	% Rec	LCL	UCL
PFBA		115.8	70.0	130.0
PFPeA		104.2	70.0	130.0
4:2 FTSA		80.0	70.0	130.0
PFHxA		89.5	70.0	130.0
PFBS		106.5	70.0	130.0
PFHpA		90.5	70.0	130.0
PFPeS		101.1	70.0	130.0
6:2 FTSA		91.6	70.0	130.0
PFOA		83.2	70.0	130.0
PFHxS		73.7	70.0	130.0
PFNA		93.7	70.0	130.0
8:2 FTSA		86.3	70.0	130.0
PFHpS		99.7	70.0	130.0
PFDA		104.2	70.0	130.0
N-MeFOSAA		88.4	70.0	130.0
EtFOSAA		90.5	70.0	130.0
PFOS		126.3	70.0	130.0
PFUnDA		90.5	70.0	130.0
PFNS		103.2	70.0	130.0
PfDoDA		97.9	70.0	130.0
PFDS		92.6	70.0	130.0
PfTrDA		81.1	70.0	130.0
FOSA		97.9	70.0	130.0
PFTeDA		104.2	70.0	130.0
11CL-PF3OUdS		91.6	70.0	130.0
9CL-PF3ONS		97.9	70.0	130.0
ADONA		92.6	70.0	130.0
HFPO-DA		80.0	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK210413.2301102D, Parent Sample ID: S23011.02

Run in Batch: AK210413, Run Date: 04/14/2021 00:56, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1.91

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		11.8	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210413W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Duplicate (DUP) (continued)

Lab Sample ID: AK210413.2301102D, Parent Sample ID: S23011.02

Run in Batch: AK210413, Run Date: 04/14/2021 00:56, Prep Date: 04/13/2021, Matrix: WW, Dilution: 1.91

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
PFHxA		14.3	30.0
PFBS		13.3	30.0
PFHpA		6.5	30.0
PFPeS		7.4	30.0
6:2 FTSA		23.3	30.0
PFOA		18.2	30.0
PFHxS		17.8	30.0
PFHxS-LN		22.0	30.0
PFHxS-BR		10.5	30.0
PFNA		7.4	30.0
8:2 FTSA		NC	30.0
PFHpS		8.0	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		10.5	30.0
PFOS-LN		12.6	30.0
PFOS-BR		10.9	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDODA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
PFTeDA		NC	30.0
11CL-PF3OUdS		NC	30.0
9CL-PF3ONS		NC	30.0
ADONA		NC	30.0
HFPO-DA		NC	30.0

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME				Rodney Abke			
COMPANY				Applied EcoSystems			
ADDRESS							
G-4300 South Saginaw Street							
CITY						STATE	ZIP CODE
Burton						MI	48529
PHONE NO.			FAX NO.			P.O. NO.	
810-715-2525			810-715-2526			PO795930	
E-MAIL ADDRESS						QUOTE NO.	
rabke@appliedecosystems.com							

CONTACT NAME Monica Wallingford		☐ SAME	
COMPANY Revitalizing Auto Communities Environmental Response (RACER) Trust			
ADDRESS			
CITY		STATE	ZIP CODE
PHONE NO. 313.486.2978		E-MAIL ADDRESS mwallingford@racertrust.org	

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME	RACER Flint West #12990	SAMPLER(S) - PLEASE PRINT SIGN NAME	Rodney Abke

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☒ OTHER 04/15/2021

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

MATRIX:	GW=GROUNDWATER	WW=WASTEWATER	S=SOIL	L=LIQUID	SD=SOLID
CODE:	SL=SLUDGE	DW=DRINKING WATER	O=OIL	WP=WIPE	A=AIR
					W=WASTE

15 Rodney Abke 4/15/2021		PFAS/PFOs **	Certifications ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES	
# Containers & Preservatives			Project Locations ☐ Detroit ☐ New York ☐ Other _____	
NONE HCl HNO ₃ H ₂ SO ₄ NaOH MeOH OTHER			Special Instructions	

[illegible]

RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>	☒ Sampler	DATE 4-8-21	TIME 10:51
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>		DATE 4/10/21	TIME 10:51
RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>		DATE 4/6/21	TIME 10:58
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>		DATE 4/10/21	TIME 12:55

RELINQUISHED BY: SIGNATURE/ORGANIZATION			DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION			DATE	TIME
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES:	TEMP. ON ARRIVAL _____ 4.9
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS		

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



TABLE 1
SOIL BORING LATITUDE AND LONGITUDE
RACER 12990 Flint West
Stevenson Street and Glenwood Avenue, Flint, Michigan

Soil Boring	Latitude	Longitude
SB-1-21	43.01243861	-83.70230931
SB-2-21	43.01243861	-83.70230931
SB-3-21	43.01252264	-83.70256115
SB-4-21	43.01235048	-83.70243702
SB-5-21	43.01221166	-83.7023036
SB-6-21	43.01247827	-83.70287369
SB-7-21	43.01227958	-83.70266741
SB-8-21	43.0123086	-83.70312236
SB-9-21	43.01205878	-83.70328749
SB-10-21	43.01181065	-83.70315966
SB-11-21	43.01153797	-83.70304711
SB-12-21	43.01153782	-83.70349412
SB-13-21	43.01243861	-83.70230931
SB-14-21	43.01243861	-83.70230931
SB-15-21	43.0119389	-83.70196713
SB-16-21	43.01243861	-83.70230931

TABLE 2
Soil Analytical Results - Per- and Polyfluoroalkyl Substances (PFAS)
RACER 12990 Flint West
Stevenson Street and Glenwood Avenue, Flint, Michigan

EGLE Generic Residential Cleanup Criteria			PFBA	PFOA	EtFOSAA	PFOS	PFOS-LN	PFOS-BR	PFDS
Chemical Abstract Service Number			375-22-4	335-67-1	2991-50-6	1763-23-1	1763-23-1-LN	1763-23-1-BR	335-77-3
Drinking Water Protection - Residential			NC	NC	NC	NC	NC	NC	NC
Groundwater Surface Water Interface Protection			NC	10,000,000	NC	240	NC	NC	NC
Sample ID	Sample Depth (feet bgs)	Sample Date							
SB-1-21	6	04/21/21	<120	<58	<58	520	370	140	<58
SB-1-21	14-15	04/21/21	<140	<69	<69	100	69	33	<69
SB-2-21	6	04/21/21	<110	<57	<57	470	250	220	<57
Dupe 5 [SB-2-21 (6')]	6	04/19/21	<120	<58	<58	190	76	110	<58
SB-2-21	15	04/21/21	<110	<57	<57	49	32	15	<57
Dupe 6 [SB-2-21 (15')]	15	04/19/21	<120	<60	<60	82	51	29	<60
SB-3-21	5	04/20/21	<120	<60	<60	<60	<60	<60	<60
SB-3-21	11	04/20/21	<110	<57	<57	53	21	29	<57
SB-4-21	7	04/20/21	<130	<67	<67	<67	<67	<67	<67
SB-4-21	15	04/20/21	<120	<61	<61	14	<61	<61	<61
SB-5-21	8	04/21/21	<130	<64	<64	<64	<64	<64	<64
SB-5-21	16	04/21/21	<150	<73	<73	<73	<73	<73	<73
SB-6-21	7	04/20/21	<120	<58	<58	<58	<58	<58	<58
SB-6-21	15	04/20/21	<110	<57	89	73	56	15	<57
SB-7-21	7	04/21/21	<110	<55	<55	24	15	<55	<55
SB-7-21	15	04/21/21	<130	<65	<65	41	18	19	<65
SB-8-21	7	04/20/21	<110	<53	<53	20	15	<53	<53
SB-8-21	10	04/20/21	<130	<63	<63	85	22	60	<63
SB-9-21	8	04/20/21	<120	<62	<62	410	120	280	<62
SB-9-21	11	04/20/21	<140	<69	<69	630	510	120	<69
SB-10-21	1	04/19/21	<120	<59	<59	18	13	<59	<59
SB-10-21	12	04/19/21	<130	<63	<63	63	13	48	<63
SB-11-21	1	04/19/21	<140	<70	<70	180	120	59	37
SB-11-21	15	04/19/21	<120	<59	<59	<59	<59	<59	<59
SB-12-21	7	04/19/21	<110	19	<57	200	170	27	<57
SB-12-21	13	04/19/21	<100	<52	<52	96	69	25	<52
SB-13-21	6	04/21/21	<120	27	<61	420	290	130	<61
Dupe 11 [SB-13-21 (6')]	6	04/21/21	<120	<61	<61	420	310	110	<61
SB-13-21	11	04/21/21	<110	<55	<55	30	14	14	<55
SB-14-21	6	04/21/21	<100	<52	<52	100	61	39	<52
SB-14-21	11	04/21/21	<120	25	<61	210	120	82	<61
SB-15-21	6	04/19/21	<130	<64	<64	<64	<64	<64	<64
SB-15-21	13	04/19/21	<110	<56	<56	<56	<56	<56	<56
SB-16-21	3	04/21/21	61	62	<58	140	64	71	<58
SB-16-21	8	04/21/21	<140	<69	<69	<69	<69	<69	<69
Dupe 12 [SB-16-21 (8')]	8	04/21/21	<130	<66	<66	55	19	<66	<66
SB-16-21	16	04/21/21	<120	<58	<58	23	13	<58	<58

Results in micrograms per kilogram (ng/Kg)

Only PFAS compound detected above laboratory detection limits are summarized on this table. See laboratory report for other compounds.

Footnotes are presented behind the analytical summary tables.

Table 3
Groundwater Analytical Results- Per- and Polyfluoroalkyl Substances (PFAS)
RACER 12990 Flint West
Stevenson Street and Glenwood Avenue, Flint, Michigan

EGLE Generic Residential Cleanup Criteria			PFBA	PFPeA	PFHxA	PFBS	PFHpA	PFOA	PFHxS	PFHxS-LN	PFHpS	EtFOSAA	PFOS	PFOS-LN	PFOS-BR
Chemical Abstract Service Number			375-22-4	2706-90-3	307-24-4	375-73-5	375-85-9	335-67-1	355-46-4	355-46-4-LN	375-92-8	2991-50-6	1763-23-1	1763-23-1-LN	1763-23-1-BR
Drinking Water - Res			NC	NC	400,000	420	NC	8	51	NC	NC	NC	16	NC	NC
Groundwater Surface Water Interface			NC	NC	NC	NC	NC	12,000	NC	NC	NC	NC	12	NC	NC
Sample Location	Depth (bgs)	Sample Date													
SB-1-21	15	04/21/21	<82	<4.1	<2.1	<2.1	<2.1	1.8	<2.1	<2.1	<2.1	2.6	84	59	22
SB-1-21	17	04/21/21	<77	<3.9	<1.9	<1.9	<1.9	1.7	<1.9	<1.9	<1.9	3.9	82	55	26
SB-2-21	17	04/21/21	<10	<4.2	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<4.2	32	19	13
Dupe 7 [SB-2-21 (17')]	17	04/19/21	<9.8	<3.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	26	15	11
SB-2-21	19	04/21/21	<10	<4.0	<2.0	1.6	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	24	14	9.2
Dupe 8 [SB-2-21 (19')]	19	04/19/21	<10.0	<4.0	<2.0	1.6	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	23	13	8.8
SB-3-21	23	04/20/21	<10	<4.1	<2.1	<2.1	<2.1	<2.1	<2.5	<2.1	<2.1	<4.1	86	56	29
SB-4-21	19	04/20/21	<20	<3.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	48	33	15
SB-4-21	24	04/20/21	<20	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	4.9	2.5	2.1
SB-5-21	21	04/21/21	<9.8	<3.9	<2.0	2.9	<2.0	3.7	2.5	1.8	<2.0	<3.9	5.8	2.0	3.4
SB-5-21	25	04/21/21	<10	1.8	1.7	2.2	<2.0	2.7	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0
SB-6-21	22	04/20/21	<30	<4.0	<2.8	<2.0	<2.0	2.5	5.9	3.4	2.1	32	150	94	55
SB-6-21	24	04/20/21	<10	<4.1	<2.1	2.0	<2.1	2.9	4.7	3.3	3	14	170	110	60
SB-7-21	21	04/21/21	<9.7	<3.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<3.9	48	35	10
Dupe 3 [SB-7-21 (21')]	21	04/19/21	<21	<4.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<4.1	44	31	11
SB-7-21	24	04/21/21	<20	<4.1	<2.0	<2.0	<2.0	<2.0	2.3	<2.0	<2.0	<4.1	12	8.1	3.2
Dupe 4 [SB-7-21 (24')]	24	04/19/21	<20	<3.9	<2.0	<2.0	<2.0	<2.0	2.1	<2.0	<2.0	<3.9	13	9.6	3.2
SB-8-21	20	04/20/21	<12	<3.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	13	8.9	3.7
SB-8-21	24	04/20/21	<12	<4.0	<2.0	2.1	1.8	2.5	<2.0	<2.0	<2.0	<4.0	8.2	3	4.9
SB-9-21	19	04/20/21	<10	<4.0	<2.0	1.7	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	13	7.3	6
SB-9-21	22	04/20/21	<10	<4.0	<2.0	1.9	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	13	8	5.1
SB-10-21	17	04/19/21	<10	4.8	2.5	2.2	<2.1	4.3	<2.1	<2.1	<2.1	<4.1	9.1	3.9	4.8
SB-10-21	19	04/19/21	<9.9	3.4	2.3	1.4	1.4	1.7	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0
SB-11-21	19	04/19/21	<10	<4.0	<2.0	2	<2.0	2.0	2.1	1.7	<2.0	<4.0	2.3	<2.0	<2.0
SB-11-21	20	04/19/21	<9.9	1.0	<2.0	1.9	<2.0	3.8	3.6	3.3	<2.0	<3.9	<2.0	<2.0	<2.0
SB-12-21	15	04/19/21	<10	3.1	2.4	2.4	1.4	6.2	3.7	3.1	2.3	<4.0	22	11	9.7
SB-12-21	19	04/19/21	<10	2.1	2.0	1.9	<2.1	6.5	5.2	4.5	2.6	<4.1	7.8	<2.1	6.9
SB-13-21	12	04/21/21	15	2.0	2.5	<2.0	2.3	11	<2.0	<2.0	<2.0	<3.9	13	5.7	6.5
SB-13-21	15	04/21/21	16	3.9	2.6	<2.0	2.3	11	<2.0	<2.0	<2.0	<4.0	19	8.9	10
SB-14-21	15	04/21/21	<51	<4.1	<2.0	<2.0	<2.0	<2.0	<2.6	<2.0	<2.0	<4.1	16	8.8	6.5
SB-14-21	17	04/21/21	<30	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	22	13	8.1
SB-15-21	24	04/19/21	<9.7	3.0	3.7	2.7	1.6	4.2	4.3	3.4	<1.9	<3.9	<1.9	<1.9	<1.9
SB-15-21	28	04/19/21	<9.9	2.0	2.1	2.3	<2.0	5.3	2.6	1.9	<2.0	<3.9	<2.0	<2.0	<2.0
Trip Blank	--	04/19/21	<9.6	<3.8	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<3.8	<1.9	<1.9	<1.9
Equip Blank	--	04/21/21	<10	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0
Field Blank	--	04/19/21	<10	<4.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.1	<2.0	<2.0	<2.0
Field Blank	--	04/20/21	<9.8	<3.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0
Field Blank	--	04/21/21	<9.9	<3.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0

Results in micrograms per liter (ng/L).
Only PFAS compound detected above laboratory detection limits are summarized on this table. See laboratory report for other compounds.
Footnotes are presented behind the analytical summary tables.

TABLE 4
PROPOSED MONITORING WELLS - PFAS

RACER 12990 Flint West
Stevenson Street and Glenwood Avenue, Flint, Michigan

Proposed Location	*Est. Total Depth	*Est. Screen Interval	*Est. Soil Sampling Depths	Analytical Parameters	Objective/Rational
PMW-1	20	12-17	NA	NA	Monitor highest PFAS detected in groundwater at SB-6-21.
PMW-2	20	12-17	NA	NA	Monitor PFAS in groundwater in north corner of the site (at SB-13-21)
PMW-3	20	12-17	NA	NA	Better resolution between wells MW-108S and MW-109S

*** - Note, the total depths, screen intervals, and sampling depth in this table are based on previous subsurface investigations and are only a estimate. The actual depths of the borings, samples and screen intervals will be determined based on field observation during the subsurface investigation.**

**** - All wells will be constructed of 2-inch diameter schedule 40 PVC with 5 feet of 0.010-inch stainless steel slotted screens. Finished with road-rated flush mount at grade.**

Footnotes: Analytical Results Table

DW - Drinking Water Residential Generic Criteria.

GSI - Groundwater Surface Water Interface Generic Criteria per MDEQ Surface Water Division

Exceeds DW criteria	X
Exceeds GSI criteria	X
Exceeds both DW and GSI criteria	X
Insufficient data to develop criterion/no criterion	NC
Not analyzed	NA

Code	Definition
DTW	Depth to Water (sample depth)
bgs	below ground surface
Abbreviation	PFAS Name
PFBA	Perfluorobutanoic Acid
PFPeA	Perfluoropentanoic Acid
4:2 FTSA	4:2 Fluorotelomer Sulfonic Acid
PFHxA	Perfluorohexanoic Acid
PFBS	Perfluorobutane sulfonic Acid
PFHpA	Perfluoroheptanoic Acid
PFPeS	Perfluoropentane Sulfonic Acid
6:2 FTSA	6:2 Fluorotelomer Sulfonic Acid
PFOA	Perfluorooctanoic Acid
PFHxS	Perfluorohexane Sulfonic Acid
PFHxS-LN	Perfluorohexane Sulfonic Acid - LN
PFHxS-BR	Perfluorohexane Sulfonic Acid - BR
PFNA	Perfluorononanoic Acid
8:2 FTSA	8:2 Fluorotelomer Sulfonic Acid
PFHpS	Perfluoroheptane Sulfonic Acid
PFDA	Perfluorodecanoic Acid
N-McFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid
EtFOSAA	N-Ethyl Perfluorooctane Sulfonamidoacetic Acid
PFOS	Perfluorooctane Sulfonic Acid
PFOS-LN	Perfluorooctane Sulfonic Acid - LN
PFOS-BR	Perfluorooctane Sulfonic Acid - BR
PFUnDA	Perfluoroundecanoic Acid
PFNS	Perfluorononane Sulfonic Acid
PFDoDA	Perfluorododecanoic Acid
PFDS	Perfluorodecane Sulfonic Acid
PFTTrDA	Perfluorotridecanoic Acid
FOSA	Perfluorooctane Sulfonamide
PFTeDA	Perfluorotetradecanoic Acid
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone1-sulfonic acid
ADONA	4,8-dioxa-3H-perfluorononanoic acid
HFPO-DA	Hexafluoropropylene oxide dimer

■ 28 PFAS compound per EGLE minimum laboratory PFAS analyte list dated April 2018

Method	Version
ASTM D7968-17M	ASTM Method D7968 - 17 Modified (Isotopic Dilution)
ASTMD7979-19M	ASTM Method D7979 - 19 Modified (Isotopic Dilution)
SM2540B	Standard Method 2540 B 2011

APPENDIX E: LABORATORY DATA VALIDATION



Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services



Applied *Eco*Systems, Inc.

Environmental Management, Consulting & Field Services

**DATA VALIDATION
SPRING 2021 PFAS SUBSURFACE INVESTIGATION**

**RACER Trust
Flint West Industrial Land (#12990)
Glenwood Avenue and Stevenson Street
Flint, Michigan**

September 15, 2021
Project # 11-4317-102

Applied EcoSystems, Inc.
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810) 715-2525 Fax: (810) 715-2526
www.AppliedEcoSystems.com

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Appendix A.....Figures

Figure 1: Site Location Map

Figure 2: Site Map with Sample Locations

Appendix B..... Tables

Table 1: Sample Collection and Analysis Summary

Table 2: Sample Analytical Results and Qualifiers

Table 3: Analytical Methods and Holding Time Criteria

Table 4: Qualified Sample Results Due to Outlying MS/MSD Results

Table 5: Field Sample Duplicate Results and Relative Percent Differences (RPD)

Appendix C..... Laboratory Reports

See Appendix C in Per- and Polyfluoroalkyl Substances Subsurface Investigation Report dated September 7, 2021.

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Acronyms and Abbreviations

Æ	Applied EcoSystems, Inc.
ASTM International (ASTM)	
AAI	All Appropriate Inquiry
BER	Business Environmental Risk
CREC	Controlled Recognized Environmental Condition
DMC	De Minimis Condition(s)
ESA	Environmental Site Assessment
HREC	Historical Recognized Environmental Condition
PEC	Potential Environmental Concern
REC	Recognized Environmental Condition
VEC	Vapor Encroachment Condition
Buildings, Structures, and Materials	
ACBM	Asbestos Containing Building Material
ACM	Asbestos Containing Materials
AST	Aboveground Storage Tank
HVAC	Heating, Ventilation, and Air Conditioning Systems
LUST	Leaking Underground Storage Tank
ROW	Right-of-Way
UST	Underground Storage Tank
Federal Agencies	
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
NRCS	Natural Resources Conservation Service
OSHA	Occupational Health and Safety Administration
SBA	Small Business Administration
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
Federal Environmental Regulations, Programs, and Databases	
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	CERCLA Information System
CESQG	Conditionally Exempt Small Quantity Generator
CFR	Code of Federal Regulations
CORRACTS	Resource Conservation and Recovery Act Corrective Action
CWA	Clean Water Act
ERNS	Emergency Response Notification System
FOIA	Freedom of Information Act
LQG	Large Quantity Generator
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFRAP	No Further Remedial Action Planned
NPL	National Priority List
NRCS	Natural Resources Conservation Service
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SEMS	Superfund Enterprise Management System
SQG	Small Quantity Generator
TSCA	Toxic Substances Control Act
TSD	Treatment, Storage and Disposal Facility

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Hazardous Substances and Petroleum Products	
BTEX	Benzene, Toluene, Ethyl Benzene, Xylenes
CVOCs	Chlorinated Volatile Organic Compounds
MTBE	Methyl Tertiary Butyl Ether
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethene, Tetrachloroethylene, Perchloroethene, PERC
PFAS	Per- and Polyfluoroalkyl Substances, including PFOS, PFOA, and GenX
PNAs	Polynuclear Aromatics - also known as Polycyclic Aromatic Hydrocarbons (PAHs)
SVOCs	Semi-Volatile Organic Compounds
TCE	Trichloroethene, Trichloroethylene
TMBs	Trimethylbenzenes
VOCs	Volatile Organic Compounds
Mapping, Instruments and Units of Measurement	
bgs	Below Ground Surface
GIS	Geographic Information System
msl	Mean Sea Level
PID	Photoionization Detector
ppb	Parts Per Billion
ppb(v)	Parts Per Billion by Volume
ppm	Parts Per Million
ppm(v)	Parts Per Million by Volume
T/R/S	Township, Range, Section
µg/Kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
ng/Kg	Nanograms per Kilogram
ng/L	Nanograms per Liter
Michigan-Specific	
BEA	Baseline Environmental Assessment
NREPA	Natural Resources and Environmental Protection Act
EGLE	Michigan Department of Environment, Great Lakes and Energy and its predecessors below:
MDEQ	Michigan Department of Environmental Quality
MDNRE	Michigan Department of Natural Resources and Environment
MDNR	Michigan Department of Natural Resources
LARA	Michigan Department of Licensing and Regulatory Affairs
GRCC	Generic Residential Cleanup Criteria (or Criterion)
DW/DWP	Drinking Water/Drinking Water Protection
DC	Direct Contact
F/E	Flammability/Explosivity Limit
GS/ GSIP	Groundwater to Surface Water Interface/Groundwater to Surface Water Interface Protection
PI	Particulate Inhalation
VIA	Volatilization to Indoor Air
VOA	Volatilization to Outdoor Air
MI 10 Metals	Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, and Zinc
LGP	Leaded Gasoline Indicator Parameters (includes BTEX, TMBs and other compounds)
ULGP	Unleaded Gasoline Indicator Parameters (includes BTEX, MTBE, TMBs and other compounds)

1. INTRODUCTION

Applied EcoSystems, Inc. (Æ) was retained to conduct a validation review of the laboratory analytical data collected in support of the spring 2021 PFAS subsurface investigation of soil and groundwater at the RACER Flint West #12990 Site. The sampling was performed in accordance with the requirements of the September 29, 2011 RCRA Administrative Order on Consent between the U.S. Environmental Protection Agency (USEPA) and RACER for the Flint West Site, and the Laboratory Data Validation was performed as part of the requirements of the April 1, 2021 project Quality Assurance Project Plan (QAPP).

Soil and groundwater samples were submitted to Merit Laboratories, Inc. of East Lansing, Michigan. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2a and Table 2b. Samples were prepared at the laboratory in accordance with their standard operating procedures for processing each sample media. A summary of the analytical methodology is presented in Table 3.

Standard report deliverables were submitted by the laboratory to Æ. The final results and supporting quality assurance/quality control (QA/QC) data were assessed by Æ, as documented herein. Data evaluation was based on information obtained from the chain of custody forms, field notes, finished report forms, method blank data, duplicate data, and recovery data from surrogate spikes and laboratory control spikes (LCS) and matrix spikes (MS)/matrix spike duplicates (MSD).

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods reference in Table 3, in the April 1, 2021 project QAPP, and in applicable guidance documents (hereafter identified as “Guidelines”), including:

- Michigan Department of Environmental Quality (MDEQ), now Department of Environment, Great Lakes and Energy (EGLE), *Application of Target Detection Limits and Designated Analytical Methods*, dated March 2016, as updated;
- USEPA, Superfund Contract Laboratory Program, *National Functional Guidelines for Organic Superfund Methods Data Review* (SOM02.4), EPA-540-R-2017-002, dated January 2017;
- USEPA, Superfund Contract Laboratory Program, *National Functional Guidelines for Inorganic Superfund Methods Data Review* (ISM02.4), EPA-540-R-2017-001, January 2017; and
- USEPA, Region 9, *Laboratory Data Review for the Non-Chemist*, dated October 2014.

1.1 Property Location and Description

Property Address:	North of Glenwood Avenue and West of Stephenson Street	
Municipality:	City of Flint, Michigan	
County:	Genesee	
T/R/S	T7N, R6E, S12	
Parcel ID:	40-13-177-002	
Land Area:	3.17 acres, per tax records.	

This property is developed with a Consumers Energy electrical substation located near its center. Almost all of the property is covered with concrete pavement remaining after the demolition of a former manufacturing building. The pavement is supported by a concrete retaining wall that extended east/west immediately south of the northern property line. A small area of the northern portion of the property is unpaved, part of a former railroad bed and right-of-way. Nearly all of the property is secured with a locked chain-link fence.

A Genesee County Parks walking path runs along the northern property boundary, beyond which is located the Chevy Commons site. Former industrial land is located to the west of the property and to the east across Stevens Street. Current and former commercial uses are located to the south and southwest of the property. A General Motors tool and die plant is located to the southeast of the property.

1.2 Background

The topographic surface of the property varies approximately 8-10 feet due to the retaining wall. Subsurface lithology generally consists of sandy glacial tills consisting primarily of silty sand and clay layers in the upper 20-30 feet, with shallow groundwater perched on a clay layer typically 8-17 feet below surface grade, with the saturated thickness above the clay lense generally ranging 10-15 feet, with flow northwesterly toward the Flint River. Bedrock was encountered approximately 20 feet below grade on the northern portion of the property.

Subsurface investigations and corrective actions have been conducted at the property primarily to address historical releases of chlorinated volatile organic compounds (CVOCs). No significant source area has been identified in the unsaturated soils. The highest remaining concentrations of trichloroethene were identified in a saturated soil unit and underlying clay in the central portion of the property and immediately adjacent to the walking path.

Groundwater was first analyzed for PFAS in groundwater samples collected in January 2018. Selected PFAS concentrations have been determined to exceed drinking water maximum contaminant levels (MCLs) established by EGLE in August 2020.

1.3 April 2021 Investigation

The April 2021 investigation was performed to characterize and delineate PFAS further, both on- and off-site. Sixteen push-probe borings were advanced to depths of 15-30 feet below ground

surface (bgs). Selected soil samples collected at or above the water table and at the depth with the highest PID reading or from just below the water table were laboratory analyzed for PFAS. Additional selected soil samples not suspected as contaminated were laboratory analyzed for fraction organic carbon. Groundwater samples also were collected at the water table or at the depth with the highest PID reading and at the bottom of the boring using a Geoprobe® Screen Point 16 system and low-flow protocols and analyzed for PFAS. One additional groundwater sample also was analyzed for total oxidizable precursor (TOP) assay.

The results of the investigation are documented in a separate September 7, 2021 report entitled *Poly- and Per-Fluorinated Alkyl Substances Subsurface Investigation*.

2. LABORATORY DELIVERABLES

Five laboratory reports were received from Merit Laboratories -- one for chains-of-custody prepared for samples collected by Æ on April 6, 2021; two for chains-of-custody prepared for samples collected by Æ on April 19, 2021; one for chains-of-custody prepared for samples collected by Æ on April 19-21, 2021; and one for a chain-of-custody prepared for samples collected by Æ on May 7, 2021. All laboratory reports were identified as Merit Laboratories' Level II deliverables, reported by Merit Laboratories to be appropriate under USEPA guidelines for desktop review. Raw laboratory data, including GC/MS scans, instrument calibration data, etc. were not included in the deliverables.

Deliverables included the Merit Laboratories Analytical Laboratory Reports and Quality Control Reports IDs listed following and included in Appendix B:

S22884-01 generated on April 15, 2021,
S23493-01 generated on May 4, 2021,
S23495-01 generated on May 14, 2021,
S23498-01 generated on May 14, 2021, and
S24077-01 generated on June 9, 2021.

Laboratory reports originally received from Merit Laboratories did not include identification of MDLs. Æ requested that the reports be updated to include that information; however, in the timeframe of this report, Merit Laboratories provided updates only for the following reports:

S24077-01(02), regenerated on July 26, 2021, and
S23495-01(02), regenerated on August 26, 2021.

3. DESKTOP LABORATORY DATA REVIEW

Deliverables were reviewed to verify that the following reporting information was documented fully. Where problems were identified, limitations on data validity were evaluated based on the identified concerns.

All Analytical Laboratory Report cover sheets were signed by Maya Murshak, Technical Director of Merit Laboratories, Inc.

All Quality Control Report cover sheets were signed by Barbara Ball, Quality Assurance Manager of Merit Laboratories, Inc.

3.1 Case Narratives

The case narrative typically is a short summary statement about the analyses that commonly documents any significant concerns with the condition of received samples, analytical problems, or QA/QC concerns. All deliverables identified no conditions warranting narrative beyond general laboratory reporting information.

3.2 Laboratory Accreditation/Certification Information

The following laboratory certifications were identified on each Analytical Laboratory Report:

Authority	Certification ID
Michigan DEQ (EGLE)	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENA	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884

Details of laboratory certifications and accreditations are appended to the Project QAPP.

3.3 Laboratory Contact Information

Each Analytical Laboratory Report identifies the following laboratory contact information:

Merit Laboratories, Inc., 2680 East Lansing Drive, East Lansing, MI 48823

Phone: (517) 332-0167 Fax: (517) 332-6333

Contacts for Report questions:

John Lavery (johnlavery@meritlabs.com)

Barbara Ball (bball@meritlabs.com)

3.4 Time Samples Collected, Received, Prepared, and Analyzed

Sample collection dates and times were tabulated in the Sample Summary of each Analytical Laboratory Report, identified in the header of each sample data report, and on the chain of custody appended to each Report.

Times and dates of sample receipt were documented on the chain of custody appended to each Report but were not documented in the Sample Container/Preservation/Temperature summary for each sample data report.

Times and dates of sample extraction and preparation were documented in the Extraction/Prep. Summary for each sample data report.

Dates and times of sample analyses for each analytical method were documented in each sample data report.

No deviations from Guidelines were identified, except the MW-103S Topps Assay was completed 32 days after sample collection, outside the 28-day holding time for PFAS.

3.5 Laboratory Analytical Methods

Laboratory analytical methods were summarized in the Method Summary of each Analytical Laboratory Report and for each analyte group documented in each sample data report. Analytical methods used for this project were as follows:

Method	Version	Analytes
Walkley Black	Walkley Black Method	Fractional Organic Carbon
SM2540B	Standard Method 2540B 2011	Total Solids
ASTM D7968-17M	ASTM Method D7968-17 Modified (Isotopic Dilution)	PFAS, EGLE Extraction
ASTM D7979-19M	ASTM Method D7979-19 Modified (Isotopic Dilution)	PFAS, EGLE 28 Parameters
TOPS Analysis	ASTM Method D7979-19 Modified (Isotopic Dilution)	PFAS, EGLE 28 Parameters

3.6 Analyte Reporting

Analytes were reported to significant figures established by Method Detection Limits (MDLs) or, where MDLs were not determined, by Reporting Limits (RLs).

Results not detected at or above the laboratory's MDLs and RLs were identified as "Not Detected."

On laboratory reports S22884.01 and S24077.01, the laboratory reported detected results down to the laboratory's MDL for each analyte adjusted for specific sample dilutions, weights, and volumes. For organic analytes, positive analyte detections less than the RL but greater than the MDL were qualified as estimates, indicated by "J" in Table 2 unless qualified otherwise in this report.

On the remaining laboratory reports, the laboratory reported detected results down to the laboratory's RL for each analyte.

3.7 Holding Times and Sample Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times, except the following:

A PFAS Top¹ (Total Oxidizable Precursor) Assay for groundwater sampled from MW-103S on May 7, 2021 was performed initially on May 18, 2021 and was rerun on June 8, 2021, following the 28-day holding time specified for standard PFAS analysis. The initial analysis identified the following detectable compounds: 2.7 ng/L PFOA, 19 ng/L PFOS, 6.9 ng/L PFOS-LN, and 12 ng/L PFOS-BR. Following oxidation (simulation of weathering), the following detectable compounds were identified: 39 ng/L PFPeA, 40 ng/L PFHxA, 6.5 ng/L PFOA, 19 ng/L PFOS, 7.6 ng/L PFOS-LN, and no detectable concentration of PFOS-BR or other PFAS compounds. It also was noted that concentrations of PFPeA and PFHxA were detected in the laboratory blank sample for the analysis, designated with the qualifier "B."

No other associated qualifiers were identified, except the concentration of PFPeA in the groundwater sampled from MW-103S on May 7, 2021 (unoxidized) was designated with a "J" indicating the determined concentration was less than RL but above MDL.

The samples were properly preserved, delivered on ice, and received and stored at the laboratory at the required temperature (0-6° Celsius). No associated qualifiers were identified.

3.8 Units of Measurement

Units of measurement are identified on each sample report of the Analytical Laboratory Reports. Units for each analyte group are as follows:

Analyte Group	Units
Total Solids	percent (%)
Fractional Organic Carbon (FOC)	milligrams per kilogram (mg/Kg)
PFAS	nanograms per kilogram (ng/Kg) or nanograms per liter (ng/L)

¹ Identified as "TOPPS Analysis" in Merit Laboratories' Analytical Laboratory Report S24077 and Æ's applicable chain-of-custody.

Individual tables in project reports may identify concentrations equivalently in different units of measurement.

3.9 Detection/Reporting Limits

Each sample report of the Analytical Laboratory Reports individually tabulates the sample analytical result, Reporting Limit (RL), and dilution factor. Method Detection Limit (MDL) was designated only on Analytical Laboratory Reports S22884.01 and S24077.01. On Table 2, analytical results less than MDLs or less than RLs if MDLs were not determined are identified as less than (<) the specified RL. Concentrations detected less than the RL but greater than the MDL are identified as the detected concentration qualified with a “J” flag.

3.10 Data Qualifiers

The Analytical Laboratory Reports tabulate the following qualifying flags, where applicable:

Qualifier/Flag	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analyses run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDLL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory, with separately attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak
x	Preserved from bulk sample

Of these qualifiers, the following were determined to be applicable to one or more sample laboratory results in Table 2:

Qualifier/Flag	Applicable Samples
B	MW-103S Topps Assay (Oxidized) – PFPeA, PFHxA
I	Baggie (Groundwater) – PFDoDA, PFTrDA, PFTeDA Baggie DUP (Groundwater) – 8:2FTSA, PFUnDA, PFDoDA, PFTrDA SB-1-21 14-15' (Soil) – N-MeFOSAA, EtFOSAA, FOSA SB-1-21 15' (Groundwater) – 4:2FTSA SB-1-21 17' (Groundwater) – 4:2FTSA SB-5-21 8' (Soil) – 4:2FTSA SB-6-21 22' (Groundwater) – 4:2FTSA SB-6-21 24' (Groundwater) – 4:2FTSA SB-8-21 10' (Soil) – 4:2FTSA, 6:2FTSA, 8:2FTSA, FOSA
J	MW-103S (Groundwater) – PFPeA SB-10-21 1' (Soil) – PFOS, PFOS-LN SB-10-21 12' (Soil) – PFOS-LN, PFOS-BR SB-10-21 19' (Groundwater) – PFPeA, PFBS, PFHpA, PFOA SB-11-21 1' (Soil) -- PFOS-BR, PFDS SB-11-21 1' (Soil Duplicate) – PFOS, PFOS-LN, PFDS SB-11-21 B (Groundwater) – PFPeA, PFBS SB-11-21 T (Groundwater) – PFOA, PFHxS-LN SB-12-21 7' (Soil) – PFOA, PFOS-BR SB-12-21 13' (Soil) – PFOS-BR SB-12-21 15' (Groundwater) – PFPeA, PFHpA SB-12-21 19' (Groundwater) – PFPeA, PFHxA, PFBS SB-15-21 24' (Groundwater) – PFeA, PFHpA SB-15-21 28' (Groundwater) – PFPeA, PFHxS-LN
X	– SB-1-21 15' (Groundwater) – PFBA SB-1-21 17' (Groundwater) -- PFBA SB-3-21 23' (Groundwater) – PFHxS SB-4-21 19' (Groundwater) -- PFBA SB-4-21 24' (Groundwater) -- PFBA SB-6-21 22' (Groundwater) – PFBA, PFHxA SB-7-21 24' (Groundwater) -- PFBA SB-8-21 10' (Soil) – PFOS SB-14-21 15' (Groundwater) – PFBA, PFHxS SB-14-21 17' (Groundwater) – PFBA Dupe 3 (Groundwater) – PFBA Dupe 4 (Groundwater) -- PFBA

The qualifiers should be used by all data users to understand and appropriately apply the data.

3.11 Surrogate Recoveries

Surrogates are chemicals similar to the target analyte(s) in chemical composition and behavior that are not expected to be present in the sample(s). Surrogates are added to all environmental samples, blanks, and other QC samples in an analytical batch during the preparation stage for some organic analyses (including PFAS in the subject laboratory analytical reports). Surrogates monitor

analytical performance, especially extraction efficiency, purging efficiency (for volatiles), and possible matrix effects that MS/MSD spikes (which are added only to one sample per batch) cannot.

All surrogate recoveries identified in the laboratory analytical reports were within the percent recovery and allowable range listed for each surrogate compound.

3.12 Blank Analyses

Blanks are designated to measure cross-contamination in different parts of the sampling and analytical process.

3.12.1 Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, except that for the June 8, 2021 TOPS Analysis for which concentrations of PFPeA, PFHxA, and 6:2FTSA exceeded RDLs.

3.12.2 Equipment Blank Analyses

Equipment blanks are designed to monitor the cleanliness of field equipment and the effectiveness of decontamination procedures if equipment is used for multiple sample collections.

For this study, one laboratory equipment blank was analyzed. Analysis of equipment blanks was not performed at the recommended frequency of 1 per 20 investigative samples and/or 1 per batch.

The equipment blank analysis was non-detect for all PFAS parameters.

Based on the equipment blank, equipment was not considered to result in detectable concentrations greater than MDLs and not likely to affect sample result comparisons to cleanup criteria.

3.12.3 Trip/Field Blank Analyses

Trip/Field Blanks are designated to measure cross-contamination that may occur during sample handling and transport, such as from a broken bottle in the sample ice chest.

All three trip/field blank analyses were non-detect. Based on the trip/field blanks, sample handling was not considered to result in detectable concentrations greater than MDLs and not likely to affect sample result comparisons to cleanup criteria.

3.13 Laboratory Control Sample Spike Analyses

Laboratory Control Samples (LCS) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS contained all analytes of interest. LCS recoveries were assessed per the “Guidelines.” All LCS recoveries were within the control limits demonstrating acceptable analytical accuracy, except as discussed following:

LCS T08A in Batch AK210608TOP in Merit Report QC-S24077-01 identified PFAS constituents PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFNA, and PFDA as elevated relative to acceptable recovery limit, indicating a potential for those constituents to be reported high. PFAS constituents 4:2FTSA, 6:2FTSA, 8:2FTSA, ADONA, N-MeFOSAA, EtFOSAA, 9CL-PF3ONS, 11CL-PF3OUdS, and FOSA as low relative to their acceptable recovery limit, indicating a potential for those constituents to be reported low. None of the RPDs exceeded RPD CLs. Potentially affected field samples included:

MW-103S TOPPS ASSEY.

Because PFPeA, PFHxA, and PFOA were detected in field samples above Reporting Limits (RLs), these LCS exceedances may have affected report results. A notes that concentrations of PFPeA and PFHxA also were identified in the laboratory blank for the June 8, 2021 TOPPS Analysis. Because the initial field sample analysis on May 18, 2021 did not identify any detectable concentrations of PFAS constituents identified as exhibiting low recoveries in the LCS for the June 8, 2021 analysis, their lack of detection in the June 8 analysis is not considered likely to have been influenced by the low recoveries.

3.14 Matrix Spike and Matrix Spike Duplicate Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, selected field samples are spiked with a known concentration of the analyte of concern and analyzed as Matrix Spike (MS)/Matrix Spike Duplicate (MSD) samples. The Relative Percent Difference (RPD) between the MS and MSD is used to assess analytical precision.

If the original sample concentration is significantly greater than the spike concentration, or if sample is diluted five times or greater, the recovery is not assessed.

If only the MS or MSD recovery was outside of control limits, no qualification of the data was performed based on the acceptable recovery of the companion spike and the acceptable RPD.

MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with analytes of interest, and the results were evaluated using the “Guidelines.” Table 4 presents the outlying matrix spike results. The associated sample data

were qualified as estimated in Table 2. The remaining percent recoveries and RPD values were within the control limits criteria.

Because all of the matrix spikes and matrix spike duplicates that were identified as falling outside Control Limits were associated with samples relative to which the affected analytes were not detected above reporting limits, the inferred associated matrix interferences were not considered to affect report conclusions significantly.

3.15 Interferences

Interference is bias that is introduced because something in the sample interferes with the analytical system's ability to provide an accurate measurement. The interference may be physical (such as turbidity that could block light transmission in an analysis based on UV absorbance), chemical (a chemical similar to the analyte of interest may react with that analyte affect instrument response), or spectroscopic (with the detector receiving an enhanced or suppressed signal due to an emission or absorbance by some other chemical or material in the matrix). Interferences can be positive or negative. Significant analytical interferences and their effects on the data are identified in the laboratory's case narrative.

No significant interferences were reported in the laboratory's case narratives; however, elevated PFAS detection limits were identified due to matrix interference with the internal standards in soil for the following samples:

SB-1-21 14-15' for N-MeFOSAA, EtFOSAA, and FOSA;

SB-5-21 8' for 4:2FTSA; and

SB-8-21 10' for 4:2FTSA, 6:2FTSA, 8:2FTSA, and FOSA;

and in groundwater for the following samples:

SB-1-21 15' for 4:2FTSA;

SB-1-21 17'for 4:2FTSA;

SB-1-21 17SB-6-21 22' for 4:2FTSA; and

SB-6-21 24' for 4:2FTSA.

Additionally, elevated reporting limits due to matrix interferences were identified for the following soil samples:

SB-8-21 10'for PFOS;

And for the following groundwater samples:

SB-1-21 15' for PFBA;

SB-1-21 17' for PFBA;

SB-3-21 23' for PFHxS;

SB-4-21 19' for PFBA;

SB-4-21 24' for PFBA;

SB-6-21 22' for PFBA and PFHxA;

SB-7-21 21' (DUPE-4) for PFBA;

SB-7-21 24' and DUPE-3 for PFBA;

SB-14-21 15' for PFBA and PFHxS; and

SB-14-21 17' for PFBA.

Additionally, no high target concentrations necessitating 8-times or greater dilutions were identified.

3.16 Field Duplicate Sample Analyses

Eight field duplicate samples, four for groundwater and four for soil, were collected for purposes of evaluating field QA/QC. Eight additional field duplicate samples, four for groundwater and four for soil, that were collected in the field were not analyzed by the laboratory. The field duplicate samples were submitted “blind” to the laboratory, as specified in Table 1 and chains of custody. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value for water samples.

The field duplicate results shown in Table 5 were within acceptable agreement less than 20%, demonstrating acceptable sampling and analytical precision, except as discussed following:

RPDs for the determined concentrations of PFOS, PFOS-LN, and PFOS-BR in soil sample SB-2-21 6' and Dupe-5 and RPDs for the determined concentrations of PFOS in soil sample SB-2-21 15' and Dupe-6 exceeded acceptable precision.

3.18 Chain-of-Custody Forms

Each Merit Analytical Laboratory Report and Quality Control Report was accompanied by a copy of the appropriately executed chain of custody.

3.19 Laboratory Sample Receipt Checklist

Each Merit Analytical Laboratory Report is accompanied by a Merit Laboratories Login Checklist that documented sample conditions on receipt, chain of custody, preservation, and bottle conditions.

All samples were identified as received via courier pickup on ice at temperatures within 2-6 degrees Celsius and transferred to appropriate refrigeration.

All chains of custody were reported to be received adequately filled out, signed, and matched sample labels provided.

No requirement for subcontract laboratory analyses was identified.

All bottles were identified as appropriate and supplied by Merit, intact, filled appropriately, and submitted within holding times.

All samples were received with appropriate preservation.

4. FINDINGS, CONCLUSIONS, AND DATA LIMITATIONS

Based on the assessment detailed in the foregoing QA/QC summary, the laboratory data summarized in Table 2 are acceptable with the specific qualifications noted herein.

Three out of five laboratory reports received from Merit Laboratories for the project did not include identification of MDLs.

Principal qualifications were associated with elevated PFAS detection or reporting limits for some PFAS compounds due matrix interferences in three of the 31 soil samples (10%) and 12 of the 43 groundwater samples (28%). These conditions likely result in non-detection of low concentrations of some PFAS compounds in affected samples.

The Tops Assay evaluation of PFAS oxidation (weathering) was completed by the laboratory outside the sample holding time, had method blank exceedances, and laboratory control sample exceedances. These conditions suggest that predicted oxidation was elevated relative to actual conditions.

5. SIGNATURES

This report was prepared under the supervision of the following Environmental Professionals as defined in §312.10 of 40 CFR 312.



Michael D. Smith, Environmental Professional
Senior Technical Manager of Æ.

September 15, 2021

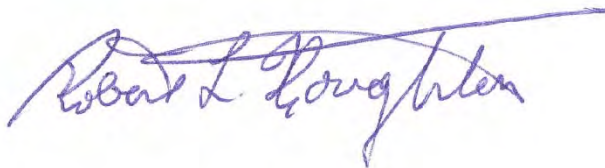
Date



Project Manager
Senior Geologist

September 15, 2021

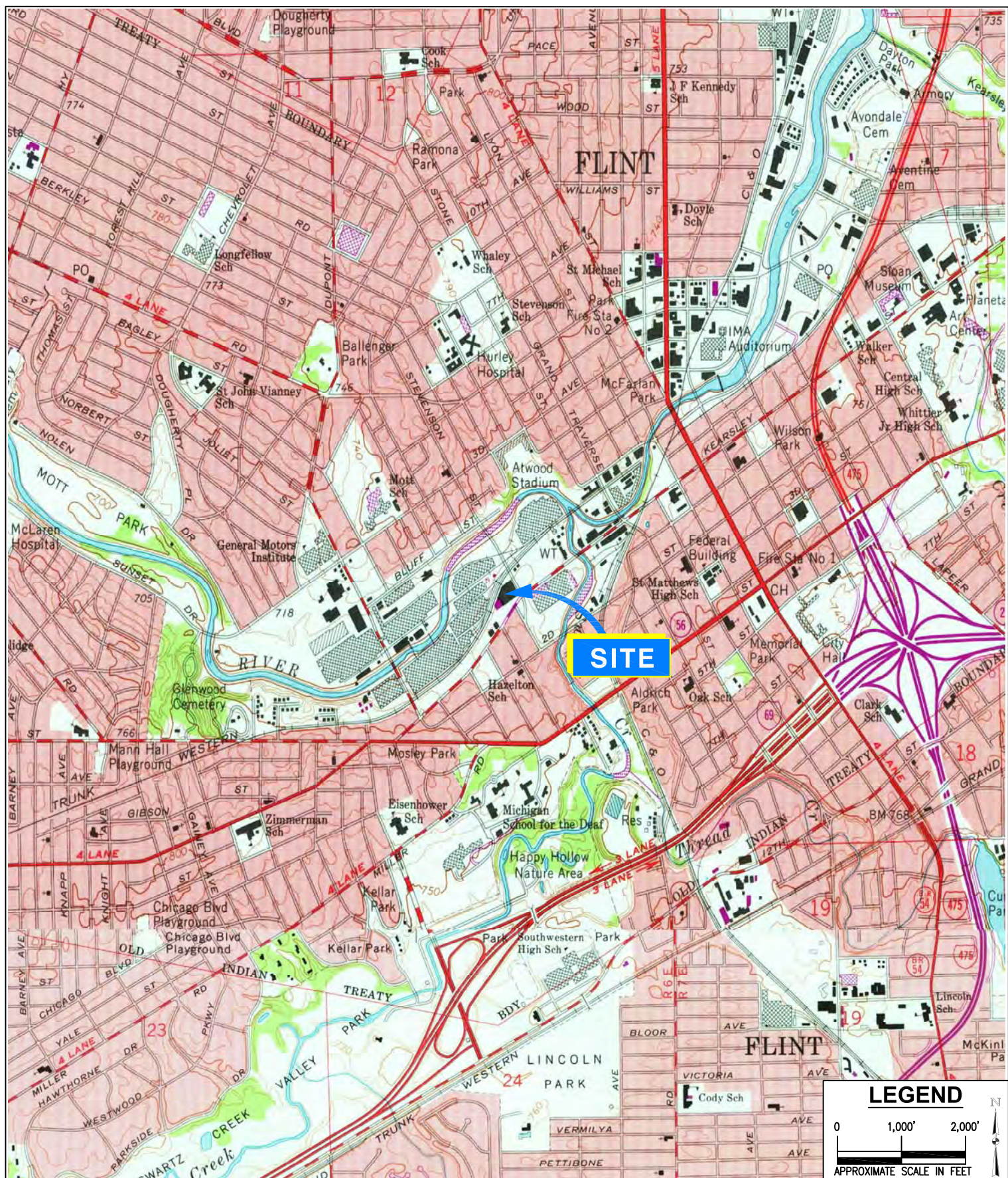
Date



Robert L. Houghton, Environmental Professional,
Æ Senior Technical Advisor,
Æ Quality Assurance Officer

September 15, 2021

Date



Applied EcoSystems, Inc.

Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: 810.715.2525; Fax: 810.715.2526

Site Location Map

RACER Flint West #12990

Glenwood Avenue & Stevenson Street
Flint, Michigan

SOURCE: USGS FLINT SOUTH QUADRANGLE
(PROVISIONAL EDITION 1975)

DRAWING DATE:

09/18/2019

CHECKED BY:

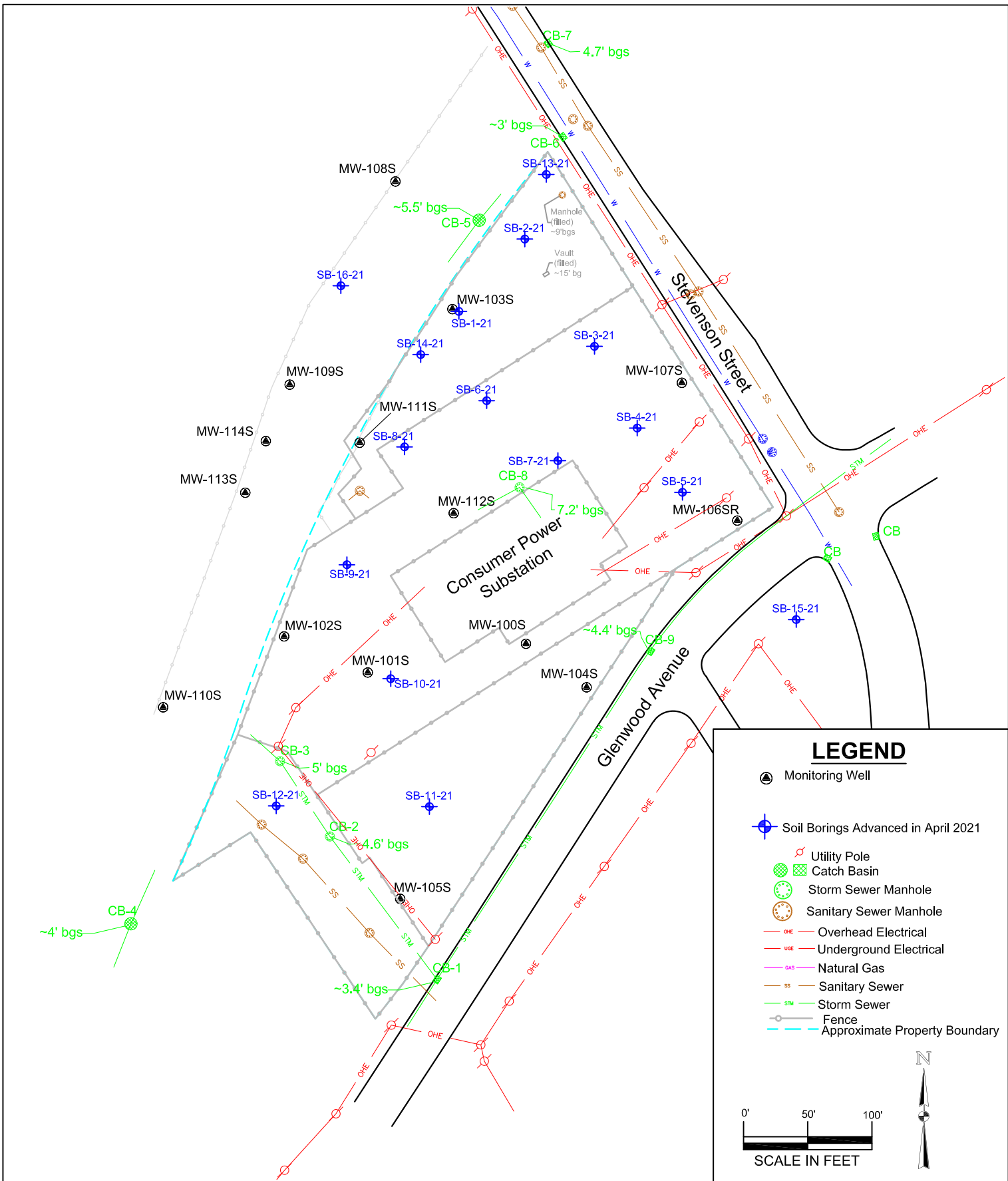
MDS

PROJECT:

11-4317-102

FIGURE:

1





Applied EcoSystems, Inc.
 Environmental Management, Consulting & Field Services
 G-4300 South Saginaw Street, Burton, Michigan 48529
 Phone: 810.715.2525; Fax: 810.715.2526

Site Map

Racier Flint West -12990

Flint West Industrial Land, Flint, Michigan

DATE:	CHECKED BY:
09/14/2021	MDS
PROJECT:	FIGURE:
11-4317-102	2



Table 1
Sample Collection and Analysis Summary
PFAS Subsurface Investigation - April 2021

Lab Sample ID	Field Sample ID (Location)	Matrix	Collection		Analytical Parameters			Comments
			Date (mm/dd/yyyy)	Time (hr:min)	PFAS	FOC	Total Solids	
S22884.01	Baggie	Water	04/04/2021	10:50	X			
S22884.02	Baggie-DUP	Water	04/06/2021	10:50	X			
S23493.01	SB-11-21 15'	Soil	04/19/2021	10:14		X	X	
S23493.02	SB-11-21 18'	Soil	04/19/2021	10:22		X	X	
S23493.03	SB-12-21 19'	Soil	04/19/2021	14:03		X	X	
S23493.04	SB-12-21 9'	Soil	04/19/2021	14:06		X	X	
S23495.01	SB-11-21 1'	Soil	04/19/2021	10:10	X		X	
S23495.02	SB-11-21 15'	Soil	04/19/2021	10:14	X		X	
S23495.03	SB-11-21 B	Groundwater	04/19/2021	10:00	X			
S23495.04	SB-11-21 T	Groundwater	04/19/2021	10:20	X			
S23495.05	SB-15-21 28'	Groundwater	04/19/2021	11:50	X			
S23495.06	SB-15-21 24'	Groundwater	04/19/2021	12:05	X			
S23495.07	SB-15-21 6'	Soil	04/19/2021	12:58	X		X	
S23495.08	SB-15-21 13'	Soil	04/19/2021	13:02	X		X	
S23495.09	SB-12-21 19'	Groundwater	04/19/2021	13:34	X			
S23495.10	SB-12-21 7'	Soil	04/19/2021	13:55	X		X	
S23495.11	SB-12-21 13'	Soil	04/19/2021	14:01	X		X	
S23495.12	SB-10-21 1'	Soil	04/19/2021	15:30	X		X	
S23495.13	SB-10-21 12'	Soil	04/19/2021	15:35	X		X	
S23495.14	SB-12-21 15'	Groundwater	04/19/2021	13:48	X			
S23495.15	Field Blank	Water	04/19/2021	08:36	X			
S23495.16	SB-10-21 17'	Groundwater	04/19/2021	15:05	X			
S23495.17	SB-10-21 19'	Groundwater	04/19/2021	14:43	X			
S23498.01	SB-9-21 8'	Soil	04/20/2021	09:24	X		X	
S23498.02	SB-9-21 11'	Soil	04/20/2021	09:31	X		X	
S23498.03	SB-9-21 19'	Groundwater	04/20/2021	09:30	X			
S23498.04	SB-9-21 22'	Groundwater	04/20/2021	09:53	X			
S23498.05	SB-8-21 24'	Groundwater	04/20/2021	10:50	X			
S23498.06	SB-8-21 20'	Groundwater	04/20/2021	11:04	X			
S23498.07	SB-8-21 10'	Soil	04/20/2021	10:54	X		X	
S23498.08	SB-8-21 7'	Soil	04/20/2021	11:51	X		X	
S23498.09	SB-6-21 7'	Soil	04/20/2021	12:00	X		X	
S23498.10	SB-6-21 15'	Soil	04/20/2021	12:08	X		X	

Table 1
Sample Collection and Analysis Summary
PFAS Subsurface Investigation - April 2021

Lab Sample ID	Field Sample ID (Location)	Matrix	Collection		Analytical Parameters			Comments
			Date (mm/dd/yyyy)	Time (hr:min)	PFAS	FOC	Total Solids	
S23498.11	SB-6-21 24'	Groundwater	04/20/2021	11:57	X			
S23498.12	SB-6-21 22'	Groundwater	04/20/2021	12:20	X			
S23498.13	SB-3-21 5'	Soil	04/20/2021	14:15	X		X	
S23498.14	SB-3-21 11'	Soil	04/20/2021	14:09	X		X	
S23498.15	SB-3-21 23'	Groundwater	04/20/2021	14:17	X			
S23498.16	SB-4-21 7'	Soil	04/20/2021	15:38	X		X	
S23498.17	SB-4-21 15'	Soil	04/20/2021	15:34	X		X	
S23498.18	SB-4-21 24'	Groundwater	04/20/2021	15:42	X			
S23498.19	SB-4-21 19'	Groundwater	04/20/2021	15:50	X			
S23498.20	SB-5-21 25'	Groundwater	04/21/2021	09:10	X			
S23498.21	SB-5-21 8'	Soil	04/21/2021	09:06	X		X	
S23498.22	SB-5-21 16'	Soil	04/21/2021	09:13	X		X	
S23498.23	SB-5-21 21'	Groundwater	04/21/2021	09:20	X			
S23498.24	SB-7-21 7'	Soil	04/21/2021	10:04	X		X	
S23498.25	SB-7-21 24'	Groundwater	04/21/2021	10:10	X			
S23498.26	SB-7-21 15'	Soil	04/21/2021	10:14	X		X	
S23498.27	SB-7-21 21'	Groundwater	04/21/2021	10:21	X			
S23498.28	SB-16-21 16'	Soil	04/21/2021	11:26	X		X	
S23498.29	SB-16-21 8'	Soil	04/21/2021	11:30	X		X	
S23498.30	SB-16-21 3'	Soil	04/21/2021	11:32	X		X	
S23498.31	SB-2-21 19'	Groundwater	04/21/2021	12:52	X			
S23498.32	SB-2-21 6'	Soil	04/21/2021	13:10	X		X	
S23498.33	SB-2-21 17'	Groundwater	04/21/2021	13:12	X			
S23498.34	SB-2-21 15'	Soil	04/21/2021	13:17	X		X	
S23498.35	SB-1-21 6'	Soil	04/21/2021	13:58	X		X	
S23498.36	SB-1-21 14-15'	Soil	04/21/2021	14:30	X		X	
S23498.37	SB-1-21 15'	Groundwater	04/21/2021	13:56	X			
S23498.38	SB-1-21 17'	Groundwater	04/21/2021	13:46	X			
S23498.39	SB-14-21 17'	Groundwater	04/21/2021	14:39	X			
S23498.40	SB-14-21 15'	Groundwater	04/21/2021	14:49	X			
S23498.41	SB-14-21 6'	Soil	04/21/2021	14:55	X		X	
S23498.42	SB-14-21 11'	Soil	04/21/2021	15:02	X		X	
S23498.43	SB-13-21 15'	Groundwater	04/21/2021	15:37	X			
S23498.44	SB-13-21 11'	Soil	04/21/2021	15:40	X		X	

Table 1
Sample Collection and Analysis Summary
PFAS Subsurface Investigation - April 2021

Lab Sample ID	Field Sample ID (Location)	Matrix	Collection		Analytical Parameters			Comments
			Date (mm/dd/yyyy)	Time (hr:min)	PFAS	FOC	Total Solids	
S23498.45	SB-13-21 6'	Soil	04/21/2021	15:32	X		X	
S23498.46	SB-13-21 12'	Groundwater	04/21/2021	15:44	X			
S23498.47	Equip Blank	Water	04/21/2021	15:47	X			Equip Blank
S23498.48	Topps Assay 15'	Water	04/21/2021	13:56				On Hold
S23498.49	Field Blank	Water	04/20/2021	08:55	X			Field Blank
S23498.50	Field Blank	Water	04/21/2021	08:51	X			Field Blank
S23498.51	Trip Blank	Water	04/19/2021	07:48	X			Trip Blank
S23498.52	Dupe 1	Soil	04/19/2021	00:01				On Hold, SB-7-21 5'
S23498.53	Dupe 2	Soil	04/19/2021	00:01				On Hold, SB-7-21 15'
S23498.54	Dupe 3	Groundwater	04/19/2021	00:01	X			SB-7-21 24'
S23498.55	Dupe 4	Groundwater	04/19/2021	00:01	X			SB-7-21 21'
S23498.56	Dupe 5	Soil	04/19/2021	00:01	X		X	SB-2-21 6'
S23498.57	Dupe 6	Soil	04/19/2021	00:01	X		X	SB-6-21 15'
S23498.58	Dupe 7	Groundwater	04/19/2021	00:01	X			SB-14-21 17'
S23498.59	Dupe 8	Groundwater	04/19/2021	00:01	X			SB-12-21 24'
S23498.60	Dupe 9	Groundwater	04/19/2021	00:01				On Hold, SB-1-21 17'
S23498.61	Dupe 10	Groundwater	04/19/2021	00:01				On Hold, SB-1-21 15'
S23498.62	Dupe 11	Soil	04/19/2021	00:01	X		X	SB-13-21 6'
S23498.63	Dupe 12	Soil	04/19/2021	00:01	X		X	SB-16-21 8'
S23498.64	Dupe 13	Groundwater	04/19/2021	00:01				On Hold
S23498.65	Dupe 14	Groundwater	04/19/2021	00:01				On Hold
S23498.66	Dupe 15	Soil	04/19/2021	00:01				On Hold
S23498.67	Dupe 16	Soil	04/19/2021	00:01				On Hold
S24077.01	MW-103S Topps Assay	Groundwater	05/07/2021	12:54	X			

TABLE 2a
Soil Analytical Results - Per- and Polyfluoroalkyl Substances (PFAS) with Flags
RACER 12990 Flint West
Stevenson Street and Glenwood Avenue, Flint, Michigan

EGLE Generic Residential Cleanup Criteria			PFBA	PFPeA	4:2 FTSA	PFHxA	PFBS	PFHpA	PFPeS	6:2 FTSA	PFOA	PFHxS	PFHxS-LN	PFHxS-BR	PFNA	8:2 FTSA	PFHpS	PFDA	N-MeFOSAA	EtFOSAA	PFOS	PFOS-LN
Chemical Abstract Service Number			375-22-4	2706-90-3	757124-72-4	307-24-4	375-73-5	375-85-9	2706-91-4	27619-97-2	335-67-1	355-46-4	355-46-4-LN	355-46-4-BR	375-95-1	39108-34-4	375-92-8	335-76-2	2355-31-9	2991-50-6	1763-23-1	1763-23-1-LN
Drinking Water Protection - Residential			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Groundwater Surface Water Interface Protection			NC	NC	NC	NC	NC	NC	NC	NC	10,000,000	NC	NC	NC	NC	NC	NC	NC	NC	NC	240	NC
Sample ID	Sample Depth (feet bgs)	Sample Date																				
SB-1-21	6	04/21/21	<120	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	520	370
SB-1-21	14-15	04/21/21	<140	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69 I	<69 I	100	69 J
SB-2-21	6	04/21/21	<110	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	470	250
Dupe 5 [SB-2-21 (6'')]	6	04/19/21	<120	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	190	76
SB-2-21	15	04/21/21	<110	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	49 J	32 J
Dupe 6 [SB-2-21 (15'')]	15	04/19/21	<120	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	82	51 J
SB-3-21	5	04/20/21	<120	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60
SB-3-21	11	04/20/21	<110	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	53 J	21 J
SB-4-21	7	04/20/21	<130	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67
SB-4-21	15	04/20/21	<120	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	14 J	<61
SB-5-21	8	04/21/21	<130	<64	<64 I	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64
SB-5-21	16	04/21/21	<150	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73
SB-6-21	7	04/20/21	<120	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58
SB-6-21	15	04/20/21	<110	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	89	73	56 J
SB-7-21	7	04/21/21	<110	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	24 J	15 J
SB-7-21	15	04/21/21	<130	<65	<65	<65	<65	<65	<65	<65	<65	<65	<65	<65	<65	<65	<65	<65	<65	<65	41 J	18 J
SB-8-21	7	04/20/21	<110	<53	<53	<53	<53	<53	<53	<53	<53	<53	<53	<53	<53	<53	<53	<53	<53	<53	20 J	15 J
SB-8-21	10	04/20/21	<130	<63	<63 I	<63	<63	<63	<63	<63 I	<63	<63	<63	<63	<63	<63	<63	<63	<63	<63	85	22 J
SB-9-21	8	04/20/21	<120	<62	<62	<62	<62	<62	<62	<62	<62	<62	<62	<62	<62	<62	<62	<62	<62	<62	410	120
SB-9-21	11	04/20/21	<140	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	630	510
SB-10-21	1	04/19/21	<120	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	18 J	13 J
SB-10-21	12	04/19/21	<130	<63	<63	<63	<63	<63	<63	<63	<63	<63	<63	<63	<63	<63	<63	<63	<63	<63	63	13 J
SB-11-21	1	04/19/21	<140	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	180	120
SB-11-21	15	04/19/21	<120	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59
SB-12-21	7	04/19/21	<110	<57	<57	<57	<57	<57	<57	<57	19 J	<57	<57	<57	<57	<57	<57	<57	<57	<57	200	170
SB-12-21	13	04/19/21	<100	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	96	69
SB-13-21	6	04/21/21	<120	<61	<61	<61	<61	<61	<61	<61	27 J	<61	<61	<61	<61	<61	<61	<61	<61	<61	420	290
Dupe 11 [SB-13-21 (6'')]	6	04/21/21	<120	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	420	310
SB-13-21	11	04/21/21	<110	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	30 J	14 J
SB-14-21	6	04/21/21	<100	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	100	61
SB-14-21	11	04/21/21	<120	<61	<61	<61	<61	<61	<61	<61	25 J	<61	<61	<61	<61	<61	<61	<61	<61	<61	210	120
SB-15-21	6	04/19/21	<130	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64
SB-15-21	13	04/19/21	<110	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56
SB-16-21	3	04/21/21	61 J	<58	<58	<58	<58	<58	<58	<58	62	<58	<58	<58	<58	<58	<58	<58	<58	<58	140	64
SB-16-21	8	04/21/21	<140	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69
Dupe 12 [SB-16-21 (8'')]	8	04/21/21	<130	<66	<66	<66	<66	<66	<66	<66	<66	<66	<66	<66	<66	<66	<66	<66	<66	<66	55 J	19 J
SB-16-21	16	04/21/21	<120	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	23 J	13 J

Results in micrograms per kilogram (ng/Kg)
Only PFAS compound detected above laboratory
detection limits are summarized on this table.
See laboratory report for other compounds.

Footnotes are presented behind the analytical summary tables.

TABLE 2a
Soil Analytical Results - Per- and Polyfluoroalkyl Substances (PFAS) with Flags
RACER 12990 Flint West
Stevenson Street and Glenwood Avenue, Flint, Michigan

EGLE Generic Residential Cleanup Criteria			PFOS-BR	PFUnDA	PFNS	PFDoDA	PFDS	PFTTrDA	FOSA	PFTeDA	11CI-PF3OUdS	9CI-PF3ONS	ADONA	HFPO-DA
Chemical Abstract Service Number			1763-23-1-BR	2058-94-8	68259-12-1	307-55-1	335-77-3	72629-94-8	754-91-6	376-06-7	763051-92-9	756426-58-1	919005-14-4	13252-13-6
Drinking Water Protection - Residential			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Groundwater Surface Water Interface Protection			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Sample ID	Sample Depth (feet bgs)	Sample Date												
SB-1-21	6	04/21/21	140	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58
SB-1-21	14-15	04/21/21	33 J	<69	<69	<69	<69	<69	<69 I	<69	<69	<69	<69	<69
SB-2-21	6	04/21/21	220	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57
Dupe 5 [SB-2-21 (6')]	6	04/19/21	110	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58
SB-2-21	15	04/21/21	15 J	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57
Dupe 6 [SB-2-21 (15')]	15	04/19/21	29 J	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60
SB-3-21	5	04/20/21	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60
SB-3-21	11	04/20/21	29 J	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57
SB-4-21	7	04/20/21	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67
SB-4-21	15	04/20/21	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61
SB-5-21	8	04/21/21	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64
SB-5-21	16	04/21/21	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73	<73
SB-6-21	7	04/20/21	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58
SB-6-21	15	04/20/21	15 J	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57
SB-7-21	7	04/21/21	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55
SB-7-21	15	04/21/21	19 J	<65	<65	<65	<65	<65	<65	<65	<65	<65	<65	<65
SB-8-21	7	04/20/21	<53	<53	<53	<53	<53	<53	<53	<53	<53	<53	<53	<53
SB-8-21	10	04/20/21	60 J	<63	<63	<63	<63	<63	<63 I	<63	<63	<63	<63	<63
SB-9-21	8	04/20/21	280	<62	<62	<62	<62	<62	<62	<62	<62	<62	<62	<62
SB-9-21	11	04/20/21	120	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69
SB-10-21	1	04/19/21	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59
SB-10-21	12	04/19/21	48 J	<63	<63	<63	<63	<63	<63	<63	<63	<63	<63	<63
SB-11-21	1	04/19/21	59 J	<70	<70	<70	37 J	<70	<70	<70	<70	<70	<70	<70
SB-11-21	15	04/19/21	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59	<59
SB-12-21	7	04/19/21	27 J	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57
SB-12-21	13	04/19/21	25 J	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52
SB-13-21	6	04/21/21	130	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61
Dupe 11 [SB-13-21 (6')]	6	04/21/21	110	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61
SB-13-21	11	04/21/21	14 J	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55
SB-14-21	6	04/21/21	39 J	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52	<52
SB-14-21	11	04/21/21	82	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61	<61
SB-15-21	6	04/19/21	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64	<64
SB-15-21	13	04/19/21	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56	<56
SB-16-21	3	04/21/21	71	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58
SB-16-21	8	04/21/21	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69	<69
Dupe 12 [SB-16-21 (8')]	8	04/21/21	<66	<66	<66	<66	<66	<66	<66 I	<66	<66	<66	<66	<66
SB-16-21	16	04/21/21	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58	<58

Results in micrograms per kilogram (ng/Kg)
Only PFAS compound detected above laboratory
detection limits are summarized on this table.
See laboratory report for other compounds.

Footnotes are presented behind the analytical sum

Table 2b

Groundwater Analytical Results- Per- and Polyfluoroalkyl Substances (PFAS) with Flags

RACER 12990 Flint West

Stevenson Street and Glenwood Avenue, Flint, Michigan

EGLE Generic Residential Cleanup Criteria			PFBA	PFPeA	4:2 FTSA	PFHxA	PFBS	PFHpA	PFPeS	6:2 FTSA	PFOA	PFHxS	PFHxS-LN	PFHxS-BR	PFNA	8:2 FTSA	PFHpS	PFDA	N-MeFOSAA	EtFOSAA	PFOS	PFOS-LN	PFOS-BR	PFUnDA
Chemical Abstract Service Number			375-22-4	2706-90-3	757124-72-4	307-24-4	375-73-5	375-85-9	2706-91-4	27619-97-2	335-67-1	355-46-4	355-46-4-LN	355-46-4-BR	375-95-1	39108-34-4	375-92-8	335-76-2	2355-31-9	2991-50-6	1763-23-1	1763-23-1-LN	1763-23-1-BR	2058-94-8
Drinking Water - Res			NC	NC	NC	400,000	420	NC	NC	NC	8	51	NC	NC	6	NC	NC	NC	NC	NC	16	NC	NC	NC
Groundwater Surface Water Interface			NC	NC	NC	NC	NC	NC	NC	NC	12,000	NC	NC	NC	NC	NC	NC	NC	NC	NC	12	NC	NC	NC
Sample Location	Depth (bgs)	Sample Date																						
SB-1-21	15	04/21/21	<82 X	<4.1	<2.1 I	<2.1	<2.1	<2.1	<2.1	<2.1	1.8 J	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	2.6	84	59	22	<2.1
SB-1-21	17	04/21/21	<77 X	<3.9	<1.9 I	<1.9	<1.9	<1.9	<1.9	<1.9	1.7 J	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	3.9	82	55	26	<1.9
SB-2-21	17	04/21/21	<10	<4.2	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<4.2	32	19	13	<2.1
Dupe 7 [SB-2-21 (17')]	17	04/19/21	<9.8	<3.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	26	15	11	<2.0
SB-2-21	19	04/21/21	<10	<4.0	<2.0	<2.0	1.6 J	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	24	14	9.2	<2.0
Dupe 8 [SB-2-21 (19')]	19	04/19/21	<10.0	<4.0	<2.0	<2.0	1.6 J	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	23	13	8.8	<2.0
SB-3-21	23	04/20/21	<10	<4.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.5 X	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<4.1	86	56	29	<2.1
SB-4-21	19	04/20/21	<20 X	<3.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	48	33	15	<2.0
SB-4-21	24	04/20/21	<20 X	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	4.9	2.5	2.1	<2.0
SB-5-21	21	04/21/21	<9.8	<3.9	<2.0	<2.0	2.9	<2.0	<2.0	<2.0	3.7	2.5	1.8 J	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	5.8	2.0	3.4	<2.0
SB-5-21	25	04/21/21	<10	1.8 J	<2.0	1.7 J	2.2	<2.0	<2.0	<2.0	2.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
SB-6-21	22	04/20/21	<30 X	<4.0	<2.0 I	<2.8 X	<2.0	<2.0	<2.0	<2.0	2.5	5.9	3.4	<2.0	<2.0	<2.0	2.1	<2.0	<2.0	32	150	94	55	<2.0
SB-6-21	24	04/20/21	<10	<4.1	<2.1 I	<2.1	2.0 J	<2.1	<2.1	<2.1	2.9	4.7	3.3	<2.1	<2.1	<2.1	3	<2.1	<2.1	14	170	110	60	<2.1
SB-7-21	21	04/21/21	<9.7	<3.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<3.9	48	35	10	<1.9
Dupe 3 [SB-7-21 (21')]	21	04/19/21	<21 X	<4.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<4.1	44	31	11	<2.1
SB-7-21	24	04/21/21	<20 X	<4.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.1	12	8.1	3.2	<2.0
Dupe 4 [SB-7-21 (24')]	24	04/19/21	<20 X	<3.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	13	9.6	3.2	<2.0
SB-8-21	20	04/20/21	<12	<3.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	13	8.9	3.7	<2.0
SB-8-21	24	04/20/21	<12	<4.0	<2.0	<2.0	2.1	1.8 J	<2.0	<2.0	2.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	8.2	3	4.9	<2.0
SB-9-21	19	04/20/21	<10	<4.0	<2.0	<2.0	1.7 J	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	13	7.3	6	<2.0
SB-9-21	22	04/20/21	<10	<4.0	<2.0	<2.0	1.9 J	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	13	8	5.1	<2.0
SB-10-21	17	04/19/21	<10	4.8	<2.1	2.5	2.2	<2.1	<2.1	<2.1	4.3	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<4.1	9.1	3.9	4.8	<2.1
SB-10-21	19	04/19/21	<9.9	3.4 J	<2.0	2.3	1.4 J	1.4 J	<2.0	<2.0	1.7 J	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
SB-11-21	19	04/19/21	<10	<4.0	<2.0	<2.0	2	<2.0	<2.0	<2.0	2.0 J	2.1	1.7 J	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	2.3	<2.0	<2.0	<2.0
SB-11-21	20	04/19/21	<9.9	1.0 J	<2.0	<2.0	1.9 J	<2.0	<2.0	<2.0	3.8	3.6	3.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<2.0
SB-12-21	15	04/19/21	<10	3.1 J	<2.0	2.4	2.4	1.4 J	<2.0	<2.0	6.2	3.7	3.1	<2.0	<2.0	<2.0	2.3	<2.0	<2.0	<4.0	22	11	9.7	<2.0
SB-12-21	19	04/19/21	<10	2.1 J	<2.1	2.0 J	1.9 J	<2.1	<2.1	<2.1	6.5	5.2	4.5	<2.1	<2.1	<2.1	2.6	<2.1	<2.1	<4.1	7.8	<2.1	6.9	<2.1
SB-13-21	12	04/21/21	15	2.0 J	<2.0	2.5	<2.0	2.3	<2.0	<2.0	11	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	13	5.7	6.5	<2.0
SB-13-21	15	04/21/21	16	3.9 J	<2.0	2.6	<2.0	2.3	<2.0	<2.0	11	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	19	8.9	10	<2.0
SB-14-21	15	04/21/21	<51 X	<4.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.6 X	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.1	16	8.8	6.5	<2.0
SB-14-21	17	04/21/21	<30 X	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	22	13	8.1	<2.0
SB-15-21	24	04/19/21	<9.7	3.0 J	<1.9	3.7	2.7	1.6 J	<1.9	<1.9	4.2	4.3	3.4	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<3.9	<1.9	<1.9	<1.9	<1.9
SB-15-21	28	04/19/21	<9.9	2.0 J	<2.0	2.1	2.3	<2.0	<2.0	<2.0	5.3	2.6	1.9 J	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<2.0
Trip Blank	--	04/19/21	<9.6	<3.8	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<3.8	<1.9	<1.9	<1.9	<1.9
Equip Blank	--	04/21/21	<10	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
Field Blank	--	04/19/21	<10	<4.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.1	<2.0	<2.0	<2.0	<2.0
Field Blank	--	04/20/21	<9.8	<3.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<2.0
Field Blank	--	04/21/21	<9.9	<3.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<2.0

Results in micrograms per liter (ng/L).

Only PFAS compound detected above laboratory detection limits are summarized on this table. See laboratory report for other compounds.

Footnotes are presented behind the analytical summary tables.

Table 2b

Groundwater Analytical Results- Per- and Polyfluoroalkyl Substances (PFAS) with Flags

RACER 12990 Flint West

Stevenson Street and Glenwood Avenue, Flint, Michigan

EGLE Generic Residential Cleanup Criteria			PFNS	PFDoDA	PFDS	PFTTrDA	FOSA	PFTTeDA	11Cl-PF3OUdS	9Cl-PF3ONS	ADONA	HFPO-DA
Chemical Abstract Service Number			68259-12-1	307-55-1	335-77-3	72629-94-8	754-91-6	376-06-7	763051-92-9	756426-58-1	919005-14-4	13252-13-6
Drinking Water - Res			NC	NC	NC	NC	NC	NC	NC	NC	NC	370
Groundwater Surface Water Interface			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Sample Location	Depth (bgs)	Sample Date										
SB-1-21	15	04/21/21	<2.1	<2.1	<2.1	<2.1	<2.1	<4.1	<2.1	<2.1	<2.1	<10
SB-1-21	17	04/21/21	<1.9	<1.9	<1.9	<1.9	<1.9	<3.9	<1.9	<1.9	<1.9	<9.7
SB-2-21	17	04/21/21	<2.1	<2.1	<2.1	<2.1	<2.1	<4.2	<2.1	<2.1	<2.1	<10
Dupe 7 [SB-2-21 (17')]	17	04/19/21	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<9.8
SB-2-21	19	04/21/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<10
Dupe 8 [SB-2-21 (19')]	19	04/19/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<10.0
SB-3-21	23	04/20/21	<2.1	<2.1	<2.1	<2.1	<2.1	<4.1	<2.1	<2.1	<2.1	<10
SB-4-21	19	04/20/21	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<9.8
SB-4-21	24	04/20/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<10
SB-5-21	21	04/21/21	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<9.8
SB-5-21	25	04/21/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<10
SB-6-21	22	04/20/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<10.0
SB-6-21	24	04/20/21	<2.1	<2.1	<2.1	<2.1	<2.1	<4.1	<2.1	<2.1	<2.1	<2.1
SB-7-21	21	04/21/21	<1.9	<1.9	<1.9	<1.9	<1.9	<3.9	<1.9	<1.9	<1.9	<9.7
Dupe 3 [SB-7-21 (21')]	21	04/19/21	<2.1	<2.1	<2.1	<2.1	<2.1	<4.1	<2.1	<2.1	<2.1	<10
SB-7-21	24	04/21/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.1	<2.0	<2.0	<2.0	<10
Dupe 4 [SB-7-21 (24')]	24	04/19/21	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<9.9
SB-8-21	20	04/20/21	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<2.0
SB-8-21	24	04/20/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
SB-9-21	19	04/20/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
SB-9-21	22	04/20/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
SB-10-21	17	04/19/21	<2.1	<2.1	<2.1	<2.1	<2.1	<4.1	<2.1	<2.1	<2.1	<2.1
SB-10-21	19	04/19/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
SB-11-21	19	04/19/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
SB-11-21	20	04/19/21	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<2.0
SB-12-21	15	04/19/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
SB-12-21	19	04/19/21	<2.1	<2.1	<2.1	<2.1	<2.1	<4.1	<2.1	<2.1	<2.1	<2.1
SB-13-21	12	04/21/21	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<9.9
SB-13-21	15	04/21/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<10
SB-14-21	15	04/21/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.1	<2.0	<2.0	<2.0	<10
SB-14-21	17	04/21/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<10
SB-15-21	24	04/19/21	<1.9	<1.9	<1.9	<1.9	<1.9	<3.9	<1.9	<1.9	<1.9	<1.9
SB-15-21	28	04/19/21	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<2.0
Trip Blank	--	04/19/21	<1.9	<1.9	<1.9	<1.9	<1.9	<3.8	<1.9	<1.9	<1.9	<9.6
Equip Blank	--	04/21/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<10
Field Blank	--	04/19/21	<2.0	<2.0	<2.0	<2.0	<2.0	<4.1	<2.0	<2.0	<2.0	<2.0
Field Blank	--	04/20/21	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<9.8
Field Blank	--	04/21/21	<2.0	<2.0	<2.0	<2.0	<2.0	<3.9	<2.0	<2.0	<2.0	<9.9

Results in micrograms per liter (ng/L).

Only PFAS compound detected above laboratory detection limits are summarized on this table. See laboratory report for other compounds.

Footnotes are presented behind the analytical summary tables.

Table 3
Analytical Methods and Holding Time Criteria
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Parameter	Analytical Method	Matrix	Sample ID	Holding Time (days)				Approved Holding Time
				Collection Date/Time	Extraction Date/Time	Latest Analytical Date/Time	Actual Holding Time (days)	
PFAS	ASTM D7979-19M	Water	Baggie S22884.01	04/06/21 10:50	NA	04/13/21 22:40	7.51	28 Days
		Water	Baggie DUP S22884.02	04/06/21 10:50		04/13/21 23:38	7.58	
		Soil	SB-1-21 6'	04/21/21 13:58		04/29/21 08:56	7.79	
		Soil	SB-1-21 14-15'	04/21/21 14:30		04/30/21 21:27	9.29	
		Groundwater	SB-1-21 15'	04/21/21 13:56		04/29/21 12:27	7.94	
		Groundwater	SB-1-21 17'	04/21/21 13:46		04/29/21 12:47	7.92	
		Soil	SB-2-21 6'	04/21/21 13:10		04/29/21 08:17	7.75	
		Soil	SB-2-21 6' (Dupe 5)	04/19/21?		04/29/21 10:53	7.98	
		Soil	SB-2-21 15'	04/21/21 13:17		04/29/21 08:37	7.76	
		Groundwater	SB-2-21 17'	04/21/21 13:12		04/29/21 12:08	7.96	
		Groundwater	SB-2-21 19'	04/21/21 12:52		04/29/21 11:48	7.96	
		Soil	SB-3-21 5'	04/20/21 14:15		04/29/21 02:07	8.49	
		Soil	SB-3-21 11'	04/20/21 14:09		04/29/21 02:26	8.49	
		Groundwater	SB-3-21 23'	04/20/21 14:17		04/29/21 09:12	8.80	
		Soil	SB-4-21 7'	04/20/21 15:38		04/29/21 02:46	8.46	
		Soil	SB-4-21 15'	04/20/21 15:34		04/29/21 03:05	8.52	
		Groundwater	SB-4-21 19'	04/20/21 15:50		04/29/21 10:11	8.76	
		Groundwater	SB-4-21 24'	04/20/21 15:42		04/29/21 09:51	8.76	
		Soil	SB-5-21 8'	04/21/21 09:06		05/13/21 19:35	22.44	
		Soil	SB-5-21 16'	04/21/21 09:13		04/29/21 03:44	7.77	
		Groundwater	SB-5-21 21'	04/21/21 09:20		04/29/21 10:50	8.06	
		Groundwater	SB-5-21 25'	04/21/21 09:10		04/29/21 10:30	8.06	
		Soil	SB-6-21 7'	04/20/21 12:00		04/29/21 01:28	8.56	
		Soil	SB-6-21 15'	04/20/21 12:08		04/29/21 01:47	8.57	
		Soil	SB-6-21 15' (Dupe 6)	04/19/21?		04/29/21 11:13	8.96	
PFAS	ASTM D7979-19M	Groundwater	SB-6-21 22'	04/20/21 12:30	NA	04/29/21 08:33	8.84	28 Days
		Groundwater	SB-6-21 24'	04/20/21 11:57		04/27/21 02:59	6.63	
		Soil	SB-7-21 7'	04/21/21 10:04		04/29/21 04:04	8.75	

Table 3
Analytical Methods and Holding Time Criteria
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Parameter	Analytical Method	Matrix	Sample ID	Holding Time (days)				Approved Holding Time
				Collection Date/Time	Extraction Date/Time	Latest Analytical Date/Time	Actual Holding Time (days)	
PFAS	ASTM	Soil	SB-7-21 15'	04/21/21 10:14	NA	04/29/21 06:20	7.84	28 Days
		Groundwater	SB-7-21 21'	04/21/21 10:21		04/29/21 11:29	8.05	
		Groundwater	SB-7-21 21' (Dupe 4)	04/19/21?		04/29/21 16:02		
		Groundwater	SB-7-21 24'	04/21/21 10:10		04/29/21 11:09	8.04	
		Groundwater	SB-7-21 24' (Dupe 3)	04/19/21?		04/29/21 15:42	8.13	
		Soil	SB-8-21 7'	04/20/21 11:51		04/29/21 01:08	8.55	
		Soil	SB-8-21 10'	04/20/21 10:54		04/30/21 20:48	10.41	
		Groundwater	SB-8-21 20'	04/20/21 11:04		04/27/21 02:39	6.65	
		Groundwater	SB-8-21 24'	04/20/21 10:50		04/27/21 02:20	6.65	
		Soil	SB-9-21 8'	04/20/21 09:24		04/29/21 00:10	8.62	
		Soil	SB-9-21 11'	04/20/21 09:31		04/29/21 00:29	8.62	
		Groundwater	SB-9-21 19'	04/20/21 09:30		04/27/21 01:41	6.63	
		Groundwater	SB-9-21 22'	04/20/21 09:53		04/27/21 02:00	6.67	
		Soil	SB-10-21 1'	04/19/21 15:30		04/28/21 23:31	9.33	
		Soil	SB-10-21 12'	04/19/21 15:35		04/28/21 23:50	9.34	
		Groundwater	SB-10-21 17'	04/19/21 15:05		04/27/21 01:02	7.41	
		Groundwater	SB-10-21 19'	04/19/21 14:43		04/27/21 01:21	7.44	
		Soil	SB-11-21 1'	04/19/21 10:10		04/28/21 10:26	9.01	
		Soil	SB-11-21 15'	04/19/21 10:14		04/28/21 10:45	9.02	
		Groundwater	SB-11-21 B	04/19/21 10:00		04/26/21 22:46	7.53	
		Groundwater	SB-11-21 T	04/19/21 10:20		04/26/21 23:05	7.53	
		Soil	SB-12-21 7'	04/19/21 13:55		04/28/21 22:52	9.37	
		Soil	SB-12-21 13'	04/19/21 14:01		04/28/21 23:11	9.38	
		Groundwater	SB-12-21 15'	04/19/21 13:48		04/27/21 00:23	7.44	
		Groundwater	SB-12-21 19'	04/19/21 13:34		04/27/21 00:04	7.45	
		Groundwater	SB-12-21 24' (Dupe 8)	04/19/21?		04/29/21 16:41	9.69	
		Soil	SB-13-21 6'	04/21/21 15:32		04/29/21 10:34	7.79	
		Soil	SB-13-21 6' (Dupe 11)	04/19/21?		04/30/21 21:46	8.47	
		Soil	SB-13-21 11'	04/21/21 15:40		04/29/21 10:14	7.77	
PFAS	ASTM	Groundwater	SB-13-21 12	04/21/21 15:44	NA	04/29/21 14:05	7.93	28 Days

Table 3
Analytical Methods and Holding Time Criteria
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Parameter	Analytical Method	Matrix	Sample ID	Holding Time (days)				Approved Holding Time
				Collection Date/Time	Extraction Date/Time	Latest Analytical Date/Time	Actual Holding Time (days)	
D7979-19M		Groundwater	SB-13-21 15'	04/21/21 15:37		04/29/21 13:45	7.88	
		Soil	SB-14-21 6'	04/21/21 14:55		04/29/21 09:35	7.78	
		Soil	SB-14-21 11'	04-21-21 15:02		04/39/21 09:55	7.75	
		Groundwater	SB-14-21 15'	04/21/21 14:49		04/29/21 13:26	7.94	
		Groundwater	SB-14-21 17'	04/21/21 14:39		04/29/21 13:06	7.94	
		Groundwater	SB-14-21 17' (Dupe 7)	04/19/21?		04/29/21 16:21	8.08	
		Soil	SB-15-21 6'	04/19/21 12:58		04/28/21 21:34	9.36	
		Soil	SB-15-21 13'	04/19/21 13:02		04/28/21 22:13	9.36	
		Groundwater	SB-15-21 28'	04/19/21 11:50		04/26/21 23:25	7.48	
		Groundwater	SB-15-21 24'	04/19/21 12:05		04/27/21 20:16	8.34	
		Soil	SB-16-21 3'	04/21/21 11:32'		04/29/21 07:58	7.81	
		Soil	SB-16-21 8'	04/21/21 11:30		04/29/21 07:38	7.80	
		Soil	SB-16-21 8' (Dupe12)	04/19/21?		04/30/21 22:06	8.60	
		Soil	SB-16-21 16'	04/21/21 11:26		04/29/21 06:59	8.77	
		Groundwater	MW-103S	05/07/21 12:54		05/18/21 21:19	11.35	
			Topps Assay	05/07/21 12:54		06/08/21 13:23	32.02	
		Water	Trip Blank	04/19/21 07:48		04/29/21 15:23	10.32	
		Water	Field Blank	04/19/21 08:36		04/27/21 00:42	7.67	
		Water	Field Blank	04/20/21 08:55		04/29/21 14:44	9.28	
		Water	Field Blank	04/21/21 08:51		04/29/21 15:03	8.26	
		Water	Equip Blank	04/21/21 15:47		04/29/21 14:24	7.94	
FOC	Walkley Black	Soil	SB-11-21 18'	04/19/21 10:22		05/04/21 12:30	15.09	28 Days
		Soil	SB-12-21 9'	04/19/21 14:06		05/04/21 13:00	14.91.	
		Soil	SB-12-21 19'	04/19/21 14:03		05/04/21 12:45	14.95	

Table 4
Qualified Sample Results Due to Outlying MS/MSD Results
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Analyte	Batch or Sample ID	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits		Associated Samples	Qualified Result
					% Recovery	RPD		
Rpt S23495	DQ210427							
4:2FTSA		175.5	150.5	15.34	50.0-150.0	30.0	SB-11-21 1' SB-11-21 15' SB-15-21 24'	ND, potentially low
6:2FTSA		177.4	146.2	19.28				ND, potentially high
8:2FTSA		177.1	136.5	25.89				
EtFOSAA		160.1	139.1	14.04				
PFOS		36.9	NA	--	70.0-130.0		ND on rerun	
Rpt S23498	AK210430							
4:2FTSA		196.7	NA	--	50.0-150.0	30.0	SB-8-21 10'	ND, potentially high; SB-1-21 14/15' and SB-13-21 6' (Dupe 11) also could have similar qualifications
6:2FTSA		259.2						
8:2FTSA		200.8						
FOSA		185.5						
FOSA		191.3						
N-MeFOSAA		152.0						
EtFOSAA		161.4						
FOSA		163.6					SB-1-21 14-15'	
	DQ210426							
4:2FTSA		168.0	NA	--	50.0-150.0	30.0	SB-6-21 24'	Analyte ND, potentially high; SB-8-21 20', SB-8-21 24', SB-9-21 19', and SB-9-21-22 also could have similar qualifications.
	AK210428W1							
4:2FTSA		168.8	NA	--	50.0-150.0	30.0	SB-6-21 22'	Analyte ND, potentially high; SB-2-21 19' SB-3-21 23', SB-4-21 19', SB-5-21 21', SB-5-21 25', SB-6-21 22', SB-7-21 21', and SB-7-21 24' also could have similar qualifications.
4:2FTSA		206.8					SB-1-21 15'	
4:2FTSA		202.5					SB-1-21 17'	
4:2FTSA		174.5	128.1	30.67			SB-6-21 22'	
	AK210513							
4:2FTSA		162.7	NA	--	50.0-150.0	30.0	SB-5-21 8'	Analyte ND, potentially high.

Table 4
Qualified Sample Results Due to Outlying MS/MSD Results
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Analyte	Batch or Sample ID	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits		Associated Samples	Qualified Result
					% Recovery	RPD		
	AK210512							
4:2FTSA		83.4	166.2	66.35	50.0-150.0	30.0		
6:2FTSA		65.7	157.3	82.15				

Table 5
Field Sample Duplicate Results and Relative Percent Differences (RPD)
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Analyte	SB-1-21 15' (Groundwater)			SB-1-21 17' (Groundwater)		
	04/21/21/13:56	Dupe-10	RPD	04/21/21 13:46	Dupe-9	RPD
PFBA	<82	Not analyzed	Not applicable	<77	Not analyzed	Not applicable
PFPeA	<4.1			<3.9		
4:2 FTSA	<2.1			<1.9		
PFHxA	<2.1			<1.9		
PFBS	<2.1			<1.9		
PFHpA	<2.1			<1.9		
PFPeS	<2.1			<1.9		
6:2 FTSA	<2.1			<1.9		
PFOA	<2.1			<1.9		
PFHxS	<2.1			<1.9		
PFHxS-LN	<2.1			<1.9		
PFHxS-BR	<2.1			<1.9		
PFNA	<2.1			<1.9		
8:2 FTSA	<2.1			<1.9		
PFHpS	<2.1			<1.9		
PFDA	<2.1			<1.9		
N-MeFOSAA	<2.1			<1.9		
EtFOSAA	<4.1			3.9		
PFOS	84			82		
PFOS-LN	59			55		
PFOS-BR	22			26		
PFUnDA	<2.1			<1.9		
PFNS	<2.1			<1.9		
PFDoDA	<2.1			<1.9		
PFDS	<2.1			<1.9		
PFTTrDA	<2.1			<1.9		
FOSA	<2.1			<1.9		
PFTeDA	<4.1			<1.9		
11CI-PF3OUdS	<2.1			<3.9		
9CI-PF3ONS	<2.1			<1.9		
ADONA	<2.1			<1.9		
HFPO-DA	<10			<9.7		

Table 5
Field Sample Duplicate Results and Relative Percent Differences (RPD)
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Analyte	SB-2-21 6' (Soil)			SB-2-21 15' (Soil)		
	04/21/21 13:10	Dupe-5	RPD	04/21/21 13:17	Dupe-6	RPD
PFBA	<110	<120	--	<110	<120	--
PFPeA	<57	<58	--	<57	<60	--
4:2 FTSA	<57	<58	--	<57	<60	--
PFHxA	<57	<58	--	<57	<60	--
PFBS	<57	<58	--	<57	<60	--
PFHpA	<57	<58	--	<57	<60	--
PFPeS	<57	<58	--	<57	<60	--
6:2 FTSA	<57	<58	--	<57	<60	--
PFOA	<57	<58	--	<57	<60	--
PFHxS	<57	<58	--	<57	<60	--
PFHxS-LN	<57	<58	--	<57	<60	--
PFHxS-BR	<57	<58	--	<57	<60	--
PFNA	<57	<58	--	<57	<60	--
8:2 FTSA	<57	<58	--	<57	<60	--
PFHpS	<57	<58	--	<57	<60	--
PFDA	<57	<58	--	<57	<60	--
N-MeFOSAA	<57	<58	--	<57	<60	--
EtFOSAA	<57	<58	--	<57	<60	--
PFOS	470	190	84.9	<57	82	96.83
PFOS-LN	250	76	106.75	<57	<60	--
PFOS-BR	220	110	66.67	<57	<60	--
PFUnDA	<57	<58	--	<57	<60	--
PFNS	<57	<58	--	<57	<60	--
PFDoDA	<57	<58	--	<57	<60	--
PFDS	<57	<58	--	<57	<60	--
PFTTrDA	<57	<58	--	<57	<60	--
FOSA	<57	<58	--	<57	<60	--
PFTeDA	<57	<58	--	<57	<60	--
11CI-PF3OUdS	<57	<58	--	<57	<60	--
(CI-PF3ONS	<57	<58	--	<57	<60	--
ADONA	<57	<58	--	<57	<60	--
HFPO-DA	<57	<58	--	<57	<60	--

Table 5
Field Sample Duplicate Results and Relative Percent Differences (RPD)
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Analyte	SB-2-21 17' (Groundwater)			SB-2-21 19' (Groundwater)		
	04/21/21 13:12	Dupe-7	RPD	04/21/21 12:52	Dupe-8	RPD
PFBA	<10	<9.8	--	<10	<10.0	--
PFPeA	<4.2	<3.9	--	<4.0	<4.0	--
4:2 FTSA	<2.1	<2.0	--	<2.0	<2.0	--
PFHxA	<2.1	<2.0	--	<2.0	<2.0	--
PFBS	<2.1	<2.0	--	<2.0	<2.0	--
PFHpA	<2.1	<2.0	--	<2.0	<2.0	--
PFPeS	<2.1	<2.0	--	<2.0	<2.0	--
6:2 FTSA	<2.1	<2.0	--	<2.0	<2.0	--
PFOA	<2.1	<2.0	--	<2.0	<2.0	--
PFHxS	<2.1	<2.0	--	<2.0	<2.0	--
PFHxS-LN	<2.1	<2.0	--	<2.0	<2.0	--
PFHxS-BR	<2.1	<2.0	--	<2.0	<2.0	--
PFNA	<2.1	<2.0	--	<2.0	<2.0	--
8:2 FTSA	<2.1	<2.0	--	<2.0	<2.0	--
PFHpS	<2.1	<2.0	--	<2.0	<2.0	--
PFDA	<2.1	<2.0	--	<2.0	<2.0	--
N-MeFOSAA	<2.1	<2.0	--	<2.0	<2.0	--
EtFOSAA	<4.2	<3.9	--	<4.0	<4.0	--
PFOS	32	26	20.69	24	23	4.26
PFOS-LN	19	15	23.53	14	13	7.41
PFOS-BR	13	11	16.67	9.2	8.8	4.44
PFUnDA	<2.1	<2.0	--	<2.0	<2.0	--
PFNS	<2.1	<2.0	--	<2.0	<2.0	--
PFDoDA	<2.1	<2.0	--	<2.0	<2.0	--
PFDS	<2.1	<2.0	--	<2.0	<2.0	--
PFTTrDA	<2.1	<2.0	--	<2.0	<2.0	--
FOSA	<2.1	<2.0	--	<2.0	<2.0	--
PFTeDA	<4.2	<3.9	--	<4.0	<2.0	--
11CI-PF3OUdS	<2.1	<2.0	--	<2.0	<2.0	--
9CI-PF3ONS	<2.1	<2.0	--	<2.0	<2.0	--
ADONA	<2.1	<2.0	--	<2.0	<2.0	--
HFPO-DA	<10	<9.8	--	<10	<10.0	--

Table 5
Field Sample Duplicate Results and Relative Percent Differences (RPD)
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Analyte	SB-7-21 5' (Soil)			SB-7-21 15' (Soil)		
	04/21/21 10:04	Dupe-1	RPD	04/21/21 10:14	Dupe-2	RPD
PFBA	<110	Not analyzed	Not applicable	<130	Not analyzed	Not applicable
PFPeA	<55			<65		
4:2 FTSA	<55			<65		
PFHxA	<55			<65		
PFBS	<55			<65		
PFHpA	<55			<65		
PFPeS	<55			<65		
6:2 FTSA	<55			<65		
PFOA	<55			<65		
PFHxS	<55			<65		
PFHxS-LN	<55			<65		
PFHxS-BR	<55			<65		
PFNA	<55			<65		
8:2 FTSA	<55			<65		
PFHpS	<55			<65		
PFDA	<55			<65		
N-MeFOSAA	<55			<65		
EtFOSAA	<55			<65		
PFOS	<55			<65		
PFOS-LN	<55			<65		
PFOS-BR	<55			<65		
PFUnDA	<55			<65		
PFNS	<55			<65		
PFDoDA	<55			<65		
PFDS	<55			<65		
PFTTrDA	<55			<65		
FOSA	<55			<65		
PFTeDA	<55			<65		
11CI-PF3OUdS	<55			<65		
9CI-PF3ONS	<55			<65		
ADONA	<55			<65		
HFPO-DA	<55			<65		

Table 5
Field Sample Duplicate Results and Relative Percent Differences (RPD)
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Analyte	SB-7-21 21' (Groundwater)			SB-7-21 24' (Groundwater)		
	04/21/21 10:21	Dupe-3	RPD	04/21/21 10:10	Dupe-4	RPD
PFBA	<9.7	<21	--	<20	<20	--
PFPeA	<3.9	<4.1	--	<4.1	<3.9	--
4:2 FTSA	<1.9	<2.1	--	<2.0	<2.0	--
PFHxA	<1.9	<2.1	--	<2.0	<2.0	--
PFBS	<1.9	<2.1	--	<2.0	<2.0	--
PFHpA	<1.9	<2.1	--	<2.0	<2.0	--
PFPeS	<1.9	<2.1	--	<2.0	<2.0	--
6:2 FTSA	<1.9	<2.1	--	<2.0	<2.0	--
PFOA	<1.9	<2.1	--	<2.0	<2.0	--
PFHxS	<1.9	<2.1	--	2.3	2.1	9.09
PFHxS-LN	<1.9	<2.1	--	<2.0	<2.0	--
PFHxS-BR	<1.9	<2.1	--	<2.0	<2.0	--
PFNA	<1.9	<2.1	--	<2.0	<2.0	--
8:2 FTSA	<1.9	<2.1	--	<2.0	<2.0	--
PFHpS	<1.9	<2.1	--	<2.0	<2.0	--
PFDA	<1.9	<2.1	--	<2.0	<2.0	--
N-MeFOSAA	<1.9	<2.1	--	<2.0	<2.0	--
EtFOSAA	<3.9	<4.1	--	<4.1	<3.9	--
PFOS	48	44	8.70	12	13	8.00
PFOS-LN	35	33	5.88	8.1	9.6	16.95
PFOS-BR	10	9.6	4.08	3.2	3.2	0.00
PFUnDA	<1.9	<2.1	--	<2.0	<2.0	--
PFNS	<1.9	<2.1	--	<2.0	<2.0	--
PFDoDA	<1.9	<2.1	--	<2.0	<2.0	--
PFDS	<1.9	<2.1	--	<2.0	<2.0	--
PFTTrDA	<1.9	<2.1	--	<2.0	<2.0	--
FOSA	<1.9	<2.1	--	<2.0	<2.0	--
PFTeDA	<3.9	<4.1	--	<4.1	<3.9	--
11CIPF3OUdS	<1.9	<2.1	--	<2.0	<2.0	--
9CI-PF3ONS	<1.9	<2.1	--	<2.0	<2.0	--
ADONA	<1.9	<2.1	--	<2.0	<2.0	--
HFPO-DA	<9.7	<10	--	<10	<9.9	--

Table 5
Field Sample Duplicate Results and Relative Percent Differences (RPD)
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Analyte	SB-13-21 6' (Soil)			SB-14-21 6' (Soil)		
	04/21/21 15:32	Dupe-11	RPD	04/21/21 14:56	Dupe-15	RPD
PFBA	<120	<120	--	<100	Not analyzed	Not applicable
PFPeA	<61	<61	--	<52		
4:2 FTSA	<61	<61	--	<52		
PFHxA	<61	<61	--	<52		
PFBS	<61	<61	--	<52		
PFHpA	<61	<61	--	<52		
PFPeS	<61	<61	--	<52		
6:2 FTSA	<61	<61	--	<52		
PFOA	<61	<61	--	<52		
PFHxS	<61	<61	--	<52		
PFHxS-LN	<61	<61	--	<52		
PFHxS-BR	<61	<61	--	<52		
PFNA	<61	<61	--	<52		
8:2 FTSA	<61	<61	--	<52		
PFHpS	<61	<61	--	<52		
PFDA	<61	<61	--	<52		
N-MeFOSAA	<61	<61	--	<52		
EtFOSAA	<61	<61	--	<52		
PFOS	420	420	0.00	100		
PFOS-LN	290	310	6.67	61		
PFOS-BR	130	110	16.67	<52		
PFUnDA	<61	<61	--	<52		
PFNS	<61	<61	--	<52		
PFDoDA	<61	<61	--	<52		
PFDS	<61	<61	--	<52		
PFTTrDA	<61	<61	--	<52		
FOSA	<61	<61	--	<52		
PFTeDA	<61	<61	--	<52		
11CI-PF3OUdS	<61	<61	--	<52		
9CI-PF30NS	<61	<61	--	<52		
ADONA	<61	<61	--	<52		
HFPO-DA	<61	<61	--	<52		

Table 5
Field Sample Duplicate Results and Relative Percent Differences (RPD)
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Analyte	SB-14-21 11' (Soil)			SB-14-21 17' (Groundwater)		
	04/21/21 15:02	Dupe-16	RPD	04/21/21 14:39	Dupe-13	RPD
PFBA	<120	Not analyzed	Not applicable	<30	Not analyzed	Not applicable
PFPeA	<61			<4.0		
4:2 FTSA	<61			<2.0		
PFHxA	<61			<2.0		
PFBS	<61			<2.0		
PFHpA	<61			<2.0		
PFPeS	<61			<2.0		
6:2 FTSA	<61			<2.0		
PFOA	<61			<2.0		
PFHxS	<61			<2.0		
PFHxS-LN	<61			<2.0		
PFHxS-BR	<61			<2.0		
PFNA	<61			<2.0		
8:2 FTSA	<61			<2.0		
PFHpS	<61			<2.0		
PFDA	<61			<2.0		
N-MeFOSAA	<61			<2.0		
EtFOSAA	<61			<4.0		
PFOS	210			22		
PFOS-LN	120			13		
PFOS-BR	82			8.1		
PFUnDA	<61			<2.0		
PFNS	<61			<2.0		
PFDoDA	<61			<2.0		
PFDS	<61			<2.0		
PFTTrDA	<61			<2.0		
FOSA	<61			<2.0		
PFTeDA	<61			<4.0		
11CI-PF3OUdS	<61			<2.0		
9CI-PF3ONS	<61			<2.0		
ADONA	<61			<2.0		
HFPO-DA	<61			<10		

Table 5
Field Sample Duplicate Results and Relative Percent Differences (RPD)
PFAS Subsurface Investigation -- April 2021
RACER Flint West #12990, Flint, Michigan

Analyte	SB-14-21 15' (Groundwater)			SB-16-21 8' (Soil)		
	04/21/21 14:49	Dupe-14	RPD	04/21/21 11:30	Dupe-12	RPD
PFBA	<51	Not analyzed	Not applicable	<140	<130	Not calculated
PFPeA	<4.1			<69	<66	
4:2 FTSA	<2.0			<69	<66	
PFHxA	<2.0			<69	<66	
Pfbs	<2.0			<69	<66	
PFHpA	<2.0			<69	<66	
PFPeS	<2.0			<69	<66	
6:2 FTSA	<2.0			<69	<66	
PFOA	<2.0			<69	<66	
PFHxS	<2.6			<69	<66	
PFHxS-LN	<2.0			<69	<66	
PFHxS-BR	<2.0			<69	<66	
PFNA	<2.0			<69	<66	
8:2 FTSA	<2.0			<69	<66	
PFHpS	<2.0			<69	<66	
PFDA	<2.0			<69	<66	
N-MeFOSAA	<2.0			<69	<66	
EtFOSAA	<4.1			<69	<66	
PFOS	16			<69	<66	
PFOS-LN	8.8			<69	<66	
PFOS-BR	6.5			<69	<66	
PFUnDA	<2.0			<69	<66	
PFNS	<2.0			<69	<66	
PFDoDA	<2.0			<69	<66	
PFDS	<2.0			<69	<66	
PFTTrDA	<2.0			<69	<66	
FOSA	<2.0			<69	<66	
PFTeDA	<4.1			<69	<66	
11CI-PF3OUdS	<2.0			<69	<66	
9CI-PFEONS	<2.0			<69	<66	
ADONA	<20.			<69	<66	
HFPO-DA	<10			<69	<66	