GEI Consultants

Consulting Engineers and Scientists

February 9, 2023
Project 2102778

Mr. Matt Thompson
Hydrogeologist – Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
1300 W. Clairemont Avenue
Eau Claire, WI 54701

Re: Status Report
Wausau Business Incubator (Former)
1300 Cleveland Avenue, Wausau, WI
WDNR BRRTS# 02-37-587081

Dear Mr. Thompson:

On behalf of the City of Wausau, GEI Consultants, Inc. (GEI) is submitting this status report for the Wausau Business Incubator (Former) site located at 1300 Cleveland Avenue in the City of Wausau, Marathon County, Wisconsin. This status report summarizes the results of groundwater sampling for Pre- and Polyfluoroalkyl Substances (PFAS) that was completed to address a request from the Wisconsin Department of Natural Resources (WDNR) for PFAS groundwater sampling in a Site Investigation Report (SIR) Conditional Approval letter dated April 28, 2022, and in an email correspondence from you dated August 2, 2022. Groundwater elevations were measured, groundwater was purged, and groundwater samples were collected from the five existing monitoring wells at the site (SB-1R, SB-5R, SB-14R, SBGW-1R, and SBGW-3R) on December 20, 2022.

Procedures

PFAS groundwater sampling was completed in general accordance with published guidance, including the Michigan Department of Environment, Great Lakes, and Energy's (EGLE's) *General PFAS Sampling Guidance* dated October 2018. Prior to sampling, groundwater levels were recorded using an electronic water level indicator that was decontaminated with Alconox soap followed by several water rinses using laboratory-provided, PFAS-free water. The water level indicator probe was decontaminated before its use at each well, with water from the final rinse at the first well location being collected for analysis as an equipment blank (Equipment Blank) for quality control (QC). Based on measured depths to groundwater and the top of well casing elevations established during a previous site survey, groundwater elevations were determined. After recording the depth to groundwater, dedicated high-density polyethylene (HDPE) bailers and dedicated nylon rope were used to purge approximately four well volumes and then collect a groundwater sample from each well. A duplicate sample was collected from one well (SB-1R DUP) for QC per Chapter NR 716, Wisconsin Administrative Code. Additionally, a field blank sample (Field Blank) was generated during the monitoring event for QC by slowly pouring PFAS-free water from one laboratory-provided container into another laboratory-provided container while at the site. The five primary groundwater samples, one duplicate groundwater

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sample, one equipment blank sample, and one field blank sample were delivered under chain-of-custody control to an analytical laboratory with WDNR PFAS certification (Pace Analytical Services, LLC in West Columbia, South Carolina) for analysis of the 33 analytes included on the WDNR's PFAS list effective March 1, 2021.

Purge water generated during sampling was collected in 5-gallon buckets with lids, which were staged on site pending receipt of the groundwater analytical results.

Results

Observations

Wells SB-1R, SB-5R, SB-14R, SBGW-1R, and SBGW-3R were accessible and observed in good condition, and contained sufficient water for sampling. Purge water recovered from the wells was documented to be clear to light brown with no sheen or obvious odor.

The groundwater elevation table included in the SIR (Table A.6.) is attached and has been updated to include groundwater elevations measured during this monitoring event. Groundwater elevations obtained during this event were used to update the groundwater contour map included in the SIR (Figure B.3.c.), which is also attached. Collectively, the attached table and figure indicate a depth to groundwater ranging between 25.12 and 31.40 feet below ground surface, groundwater flow direction to the southeast, and an approximate hydraulic gradient of 0.0006 (1 foot per 1,630 feet).

Analytical Results

The groundwater analytical results table included in the SIR (Table A.1) is attached and has been updated to include the PFAS groundwater sampling results. The laboratory analytical report is also attached.

Laboratory analytical results identified several PFAS analytes above the levels of detection (LODs) in each groundwater sample; however, most of the detections were "j-flagged" as being estimated concentrations below the limits of quantitation (LOQs). Two PFAS analytes were also detected between the LODs and LOQs in the equipment blank sample and one PFAS analyte was detected between the LOD and LOQ in the field blank sample, which suggests that atmospheric conditions, sampling methods, and/or the laboratory-supplied decontamination water and/or sample containers (i.e., not completely PFAS-free) may have slightly influenced the groundwater sampling results (i.e., biased high). PFAS analytes and the ranges of concentrations (in nanograms per liter [ng/L]) detected in groundwater and QC samples include:

- 6:2 FTS (4.9 – 7.6 ng/L)
- PFBS (1.7 – 13 ng/L)
- PFHpS (0.47 ng/L)
- PFPeS (0.82 – 1.3 ng/L)
- PFHxS (1.6 – 7.7 ng/L)
- PFBA (2.1 – 18 ng/L)
- PFHpA (0.97 – 5.2 ng/L)
- PFHxA (1.0 – 5.6 ng/L)
- PFNA (0.43 ng/L)
- PFOA (3.7 – 19 ng/L)
- PFPeA (0.52 – 3.5 ng/L)
- PFOS (4.0 – 23 ng/L)

Currently, there are no established federal or state groundwater standards for the 33 analytes included on the WDNR's PFAS list. The Environmental Protection Agency (EPA) has issued interim recommendations for addressing PFAS detected in groundwater (*Interim Recommendations to Address Groundwater Contaminated with Perfluorooctanoic Acid and Perfluorooctanesulfonate, December 2019*), which include an individual screening level (concentration that, if detected in groundwater, would warrant additional assessment) of 40 ng/L for PFOA and PFOS. The WDNR has not issued similar recommendations, but in Chapter NR 809, WAC, the WDNR has established a Maximum Containment Level (MCL) of 70 ng/L for PFOA and PFAS (individually or combined) in drinking water. Neither PFOA nor PFAS were detected individually at a concentration above 40 ng/L, and the combined concentrations of PFOA and PFOS are not above 70 ng/L at any of the monitoring well locations.

The Wisconsin Department of Health Services (DHS) has provided recommended groundwater standards to the WDNR for 18 of the 33 analytes included on the WDNR's PFAS list. Among individual standards, the DHS has recommended a combined Preventive Action Limit (PAL) of 2 ng/L and a combined Enforcement Standard (ES) of 20 ng/L for the following analytes: FOSA, NEtFOSE, NEtFOSA, NEtFOSAA, PFOS, and PFOA. However, such recommendations have not been codified and therefore, are not currently enforceable standards. The combined concentrations of PFOA and PFOS are above the DHS recommended ES of 20 ng/L at two well locations on this site: SBGW-3R (42 ng/L) and SB-14R (34 ng/L). SBGW-3R is an upgradient well located in the northwest corner of the on the site, and SB-14R is the nearest well downgradient of SBGW-3.

Conclusions and Recommendations

Laboratory analytical results identified low-level detections of PFAS analytes at each monitoring well location and in both the equipment blank and field blank samples. The presence of PFAS analytes in the equipment and field blank samples at concentrations between the LOD and LOQ suggests that atmospheric conditions, sampling methods, and/or the laboratory-supplied sample containers and/or decontamination water may have slightly influenced the groundwater sampling results (i.e., biased high). Nevertheless, neither PFOA nor PFAS was detected individually at a concentration above the EPA's recommended interim groundwater screening level of 40 ng/L, and the combined concentration of PFOA and PFOS is not above the WDNR's drinking water MCL of 70 ng/L at any of the monitoring well locations. Although the combined concentrations of PFOA and PFOS at two of the well locations are above DHS' recommended ES, because the most elevated concentrations were reported at the upgradient monitoring well (SBGW-3) on the site, and the second-most elevated concentrations occurred in the nearest well downgradient of that location (SB-14R), it is our opinion that the PFAS detections in groundwater on the site are most likely related to an upgradient source and/or are representative of regional groundwater conditions.

We reiterate our opinion from the SIR submitted to the WDNR in February 2022, that PFAS are not a contaminant of concern at this site. Our opinion is based on there being no known source of PFAS at the site, no detections of PFAS in shallow soil/fill above currently established soil standards, and no detections of PFAS in soil at depth nearer to the groundwater interface, and the groundwater sampling results summarized above. Accordingly, it is our opinion that further groundwater assessment at this site is not warranted, and we reiterate our recommendation from the SIR that the existing monitoring wells be abandoned to reduce the potential for damage that

may result from ongoing heavy vehicle traffic (excavators, etc.) by the city and/or their contractors on the site.

We anticipate that the purge water generated during the groundwater monitoring event will be approved for disposal via the City's publicly-owned treatment works (Wausau Water Works). Documentation of purge water disposal will be provided to the WDNR when it is available.

If you have any questions regarding this submittal, please contact Mr. Mike DeBraske at (920) 455-8655.

Sincerely,

GEI CONSULTANTS, INC.

Madison Seymour
Staff Professional

Michael L. DeBraske, P.E.
Senior Project Engineer

Attachments:
- Table A.1 – Groundwater Analytical Results
- Table A.6 – Groundwater Elevation Data Summary
- Figure B.3.c – Groundwater Contour Map (December 20, 2022)
- Laboratory Analytical Report (Pace Project #40256306)

Cc: Mr. Eric Lindman, City of Wausau

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Table A.1.
Groundwater Analytical Results
1300 Cleveland Avenue, Wausau, WI
BRRTS #02-37-587081

Laboratory Analytes		Wisconsin Regulatory Standards[1,2]		Location	SBGW-1[%]	SBGW-1R		SBGW-2[%]	SBGW-3[%]	SBGW-3R		SB-1R		SB-1R DUP	SB-5R		SB-14R		SB-14R (DUP)	Equipment Blank	Field Blank
Name & CAS #		**NR 140 PAL**	**NR 140 ES**	Date	10/12/20	08/18/21	12/20/22	10/12/20	10/12/20	08/18/21	12/20/22	08/18/21	12/20/22		08/18/21	12/20/22	08/18/21	12/20/22	08/18/21	12/20/22	12/20/22
PRIORITY POLLUTANT METALS[3] (ug/L)																					
Antimony	7440-36-0	1.2	6.0		< 0.15	---	---	< 0.15	< 0.15	---	---	---	---	---	---	---	< 0.15	---	< 0.15	---	---
Arsenic	7440-38-2	1	10		0.45 J	---	---	< 0.28	< 0.28	---	---	---	---	---	---	---	< 0.28	---	< 0.28	---	---
Beryllium	7440-41-7	0.4	4.0		< 0.25	---	---	< 0.25	< 0.25	---	---	---	---	---	---	---	< 0.25	---	< 0.25	---	---
Cadmium	7440-43-9	0.5	5.0		< 0.15	---	---	< 0.15	< 0.15	---	---	---	---	---	---	---	< 0.15	---	< 0.15	---	---
Chromium	7440-47-3	10	100		< 1.0	---	---	< 1.0	< 1.0	---	---	---	---	---	---	---	1.4 J	---	1.1 J	---	---
Copper	7440-50-8	1,300	130		6.8	---	---	< 1.9	< 1.9	---	---	---	---	---	---	---	< 1.9	---	< 1.9	---	---
Lead	7439-92-1	1.5	15		< 0.24	---	---	< 0.24	< 0.24	---	---	---	---	---	< 0.24	---	< 0.24	---	< 0.24	---	---
Nickel	7440-02-0	100	20		1.0	---	---	5.7	9.7	---	---	---	---	---	---	---	3.0	---	3.0	---	---
Selenium	7782-49-2	10	50		< 0.32	---	---	< 0.32	< 0.32	---	---	---	---	---	---	---	< 0.32	---	< 0.32	---	---
Silver	7440-22-4	10	50		< 0.13	---	---	< 0.13	< 0.13	---	---	---	---	---	---	---	< 0.13	---	< 0.13	---	---
Thallium	7440-28-0	0.4	2.0		< 0.14	< 0.14	---	< 0.14	< 0.14	---	---	< 0.14	---	---	---	---	< 0.14	---	< 0.14	---	---
Zinc	7440-66-6	5	2.5		< 10.3	---	---	< 10.3	< 10.3	---	---	---	---	---	---	---	< 10.3	---	< 10.3	---	---
Mercury	7439-97-6	0.2	2.0		< 0.066	---	---	< 0.066	< 0.066	---	---	---	---	---	---	---	< 0.066	---	< 0.066	---	---
SEMI-VOLATILE ORGANIC COMPOUNDS[3] (µg/L)																					
Acenaphthene	83-32-9	NE	NE		< 0.0055	< 0.013	---	< 0.0057	< 0.0054	< 0.013	---	< 0.013	---	---	< 0.013	---	< 0.014	---	< 0.014	---	---
Acenaphthylene	208-96-8	NE	NE		< 0.0045	< 0.012	---	< 0.0047	< 0.0044	< 0.012	---	< 0.011	---	---	< 0.012	---	< 0.013	---	< 0.013	---	---
Anthracene	120-12-7	600	3,000		0.082	< 0.017	---	0.090	0.26	0.063	---	< 0.017	---	---	< 0.017	---	< 0.019	---	< 0.018	---	---
Benzo(a)anthracene	56-55-3	NE	NE		0.011 J	< 0.012	---	< 0.0071	0.010 J	< 0.012	---	< 0.012	---	---	< 0.013	---	< 0.014	---	< 0.013	---	---
Benzo(a)pyrene	50-32-8	0.02	0.2		< 0.0095	< 0.018	---	< 0.0098	< 0.0094	< 0.018	---	< 0.018	---	---	< 0.019	---	< 0.020	---	< 0.019	---	---
Benzo(b)fluoranthene	205-99-2	0.02	0.2		< 0.0052	< 0.018	---	< 0.0054	0.0054 J	< 0.018	---	< 0.018	---	---	< 0.018	---	< 0.020	---	< 0.019	---	---
Benzo(g,h,i)perylene	191-24-2	NE	NE		< 0.0061	< 0.021	---	< 0.0063	< 0.0061	< 0.021	---	< 0.021	---	---	< 0.022	---	< 0.023	---	< 0.023	---	---
Benzo(k)fluoranthene	207-08-9	NE	NE		< 0.0068	< 0.020	---	< 0.0071	< 0.0067	< 0.020	---	< 0.020	---	---	< 0.021	---	< 0.022	---	< 0.022	---	---
Chrysene[4]	218-01-9	0.02	0.2		0.027 J	< 0.024	---	0.020 J	0.052 J	< 0.024	---	< 0.024	---	---	< 0.025	---	< 0.027	---	< 0.026	---	---
Dibenzo(a,h)anthracene	53-70-3	NE	NE		< 0.0090	< 0.016	---	< 0.0094	< 0.0089	< 0.016	---	< 0.016	---	---	< 0.017	---	< 0.018	---	< 0.017	---	---
Fluoranthene	206-44-0	80	400		0.010 J	< 0.024	---	0.013 J	0.017 J	< 0.024	---	< 0.024	---	---	< 0.025	---	< 0.026	---	< 0.026	---	---
Fluorene	86-73-7	80	400		< 0.0072	< 0.022	---	< 0.0074	0.030 J	< 0.022	---	< 0.021	---	---	< 0.022	---	< 0.024	---	< 0.023	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	NE	NE		< 0.016	< 0.014	---	< 0.016	< 0.016	< 0.014	---	< 0.014	---	---	< 0.015	---	< 0.016	---	< 0.015	---	---
1-Methylnaphthalene	90-12-0	NE	NE		< 0.0053	< 0.016	---	< 0.0055	< 0.0053	< 0.016	---	< 0.016	---	---	< 0.017	---	< 0.018	---	< 0.018	---	---
2-Methylnaphthalene	91-57-6	NE	NE		< 0.0044	< 0.013	---	< 0.0046	< 0.0044	< 0.013	---	0.020 J	---	---	< 0.013	---	< 0.014	---	< 0.014	---	---
Naphthalene	91-20-3	10	100		< 0.017	< 0.018	---	< 0.017	< 0.016	< 0.018	---	0.025 J	---	---	< 0.019	---	0.13	---	< 0.020	---	---
Pentachlorophenol	87-86-5	0.1	1.0		< 4.3	---	---	< 4.4	< 4.3	---	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	85-01-8	NE	NE		0.095	< 0.023	---	0.072	0.044 J	< 0.024	---	< 0.023	---	---	< 0.024	---	< 0.026	---	< 0.025	---	---
Pyrene	129-00-0	50	250		0.014 J	< 0.021	---	0.018 J	0.020 J	< 0.021	---	< 0.021	---	---	< 0.021	---	< 0.023	---	< 0.022	---	---
PFAS (ng/L)																					
9Cl-PF3ONS	756426-58-1	NE	NE		---	---	< 0.43	---	---	---	< 0.44	---	< 0.45	< 0.45	---	< 0.45	---	< 0.45	---	< 0.45	< 0.44
11Cl-PF3OUdS	763051-92-9	NE	NE		---	---	< 0.60	---	---	---	< 0.61	---	< 0.62	< 0.63	---	< 0.62	---	< 0.62	---	< 0.63	< 0.6
8:2 FTS	39108-34-4	NE	NE		---	---	< 1.4	---	---	---	< 1.5	---	< 1.5	< 1.5	---	< 1.5	---	< 1.5	---	< 1.5	< 1.5
6:2 FTS	27619-97-2	NE	NE		---	---	< 1.8	---	---	---	7.6	---	< 1.9	< 1.9	---	4.9 J	---	< 1.9	---	6.0 J	< 1.8
4:2 FTS	757124-72-4	NE	NE		---	---	< 0.78	---	---	---	< 0.80	---	< 0.82	< 0.82	---	< 0.82	---	< 0.81	---	< 0.82	< 0.8
HFPO-DA	13252-13-6	NE	NE		---	---	< 1.9	---	---	---	< 1.9	---	< 1.9	< 2.0	---	< 1.9	---	< 1.9	---	< 2.0	< 1.9
DONA	919005-14-4	NE	NE		---	---	< 0.43	---	---	---	< 0.44	---	< 0.45	< 0.46	---	< 0.45	---	< 0.45	---	< 0.46	< 0.44
NEtFOSA	4151-50-2	NE	NE		---	---	< 1.2	---	---	---	< 1.2	---	< 1.3	< 1.3	---	< 1.3	---	< 1.3	---	< 1.3	< 1.2
NEtFOSAA	2991-50-6	NE	NE		---	---	< 0.67	---	---	---	< 0.69	---	< 0.70	< 0.71	---	< 0.70	---	< 0.70	---	< 0.71	< 0.68
NEtFOSE	1691-99-2	NE	NE		---	---	< 0.86	---	---	---	< 0.87	---	< 0.89	< 0.90	---	< 0.89	---	< 0.89	---	< 0.9	< 0.87
NMeFOSA	31506-32-8	NE	NE		---	---	< 1.1	---	---	---	< 1.2	---	< 1.2	< 1.2	---	< 1.2	---	< 1.2	---	< 1.2	< 1.1
NMeFOSAA	2355-31-9	NE	NE		---	---	< 0.84	---	---	---	< 0.85	---	< 0.87	< 0.88	---	< 0.87	---	< 0.87	---	< 0.88	< 0.85
NMeFOSE	24448-09-7	NE	NE		---	---	< 1.2	---	---	---	< 1.2	---	< 1.2	< 1.2	---	< 1.2	---	< 1.2	---	< 1.2	< 1.2

Table A.1.
Groundwater Analytical Results
1300 Cleveland Avenue, Wausau, WI
BRRTS #02-37-587081

Laboratory Analytes		Wisconsin Regulatory Standards[1,2]		Location	SBGW-1[%]	SBGW-1R		SBGW-2[%]	SBGW-3[%]	SBGW-3R		SB-1R		SB-1R DUP	SB-5R		SB-14R		SB-14R (DUP)	Equipment Blank	Field Blank
Name & CAS #		**NR 140 PAL**	**NR 140 ES**	Date	10/12/20	08/18/21	12/20/22	10/12/20	10/12/20	08/18/21	12/20/22	08/18/21	12/20/22		08/18/21	12/20/22	08/18/21	12/20/22	08/18/21	12/20/22	12/20/22
PFAS (ng/L) - continued																					
PFBS	375-73-5	NE	NE		---	---	1.7 J	---	---	---	13	---	3.5 J	3.5 J	---	1.8 J	---	5.8	---	< 0.39	< 0.38
PFDS	335-77-3	NE	NE		---	---	< 0.70	---	---	---	< 0.71	---	< 0.73	< 0.73	---	< 0.73	---	< 0.72	---	< 0.73	< 0.71
PFHpS	375-92-8	NE	NE		---	---	< 0.45	---	---	---	0.47 J	---	< 0.47	< 0.47	---	< 0.47	---	< 0.46	---	< 0.47	< 0.46
PFNS	68259-12-1	NE	NE		---	---	< 0.64	---	---	---	< 0.65	---	< 0.67	< 0.67	---	< 0.66	---	< 0.66	---	< 0.67	< 0.65
PFOSA	754-91-6	NE	NE		---	---	< 0.55	---	---	---	< 0.56	---	< 0.57	< 0.58	---	< 0.57	---	< 0.57	---	< 0.58	< 0.56
PFPeS	2706-91-4	NE	NE		---	---	< 0.53	---	---	---	1.3 J	---	1.1 J	1.2 J	---	0.82 J	---	1.3 J	---	< 0.56	< 0.54
PFDoS	79780-39-5	NE	NE		---	---	< 0.94	---	---	---	< 0.96	---	< 0.98	< 0.99	---	< 0.98	---	< 0.97	---	< 0.99	< 0.95
PFHxS	355-46-4	NE	NE		---	---	1.6 J	---	---	---	7.7	---	5.0	4.4	---	2.4 J	---	6.4	---	< 0.52	< 0.5
PFBA	375-22-4	NE	NE		---	---	2.2 J	---	---	---	9.4	---	18 BJ	14 BJ	---	7.2 B	---	17 BJ	---	2.2 BJ	2.1 BJ
PFDA	335-76-2	NE	NE		---	---	< 0.47	---	---	---	< 0.48	---	< 0.49	< 0.50	---	< 0.49	---	< 0.49	---	< 0.50	< 0.48
PFDoA	307-55-1	NE	NE		---	---	< 0.42	---	---	---	< 0.43	---	< 0.44	< 0.45	---	< 0.44	---	< 0.44	---	< 0.45	< 0.43
PFHpA	375-85-9	NE	NE		---	---	0.87 J	---	---	---	5.2	---	1.2 J	1.1 J	---	1.8 J	---	4.0	---	< 0.42	< 0.41
PFHxA	307-24-4	NE	NE		---	---	< 0.62	---	---	---	5.6	---	1.0 J	1.2 J	---	1.7 J	---	5.1	---	< 0.65	< 0.63
PFNA	375-95-1	NE	NE		---	---	< 0.41	---	---	---	0.43 J	---	< 0.43	< 0.44	---	< 0.43	---	< 0.43	---	< 0.44	< 0.42
PFOA	335-67-1	NE	NE		---	---	3.7	---	---	---	19	---	7.0	6.6	---	7.0	---	17	---	< 0.78	< 0.76
PFPeA	2706-90-3	NE	NE		---	---	< 0.49	---	---	---	3.5 J	---	0.52 J	0.73 J	---	1.4 J	---	2.7 J	---	< 0.51	< 0.5
PFTA	376-06-7	NE	NE		---	---	< 0.54	---	---	---	< 0.55	---	< 0.56	< 0.57	---	< 0.56	---	< 0.56	---	< 0.57	< 0.55
PFTrDA	72629-94-8	NE	NE		---	---	< 0.48	---	---	---	< 0.48	---	< 0.50	< 0.50	---	< 0.49	---	< 0.49	---	< 0.50	< 0.48
PFUnA	2058-94-8	NE	NE		---	---	< 0.56	---	---	---	< 0.57	---	< 0.59	< 0.59	---	< 0.58	---	< 0.58	---	< 0.59	< 0.57
PFOS	1763-23-1	NE	NE		---	---	4.0	---	---	---	23	---	9.6	9.8	---	4.7	---	17	---	< 1.9	< 1.8
VOLATILE ORGANIC COMPOUNDS[3] (µg/L)																					
No VOCs Identified Above Method Detection Limit (MDL)					< MDL	---	---	< MDL	< MDL	---	---	---	---	---	---	---	---	---	---	---	---

Notes

(µg/L) = micrograms per liter < = not detected above method detection limit (MDL)

J = concentration between detection limit and reporting limit NE = Not Established B=Detected in Method Blank --- = not analyzed

[1] NR 140 PAL = Chapter NR 140, Wisconsin Administrative Code, Preventive Action Limit

[2] NR 140 ES = Chapter NR 140, Wisconsin Administrative Code, Enforcement Standard

[3]Only detected analytes are listed; refer to the laboratory analytical report for a full list of assessed analytes

[3]Initial detections of chrysene above a PAL at SBGW-1 and SBGW-3 were not confirmed during the Site Investigation and therefore, they are not

% = Small Diameter/Temporary Well (other wells installed, developed and purged per WAC, Chapter NR 141)

Exceeds NR 140 PAL: *100* Exceeds NR 140 ES: **100**

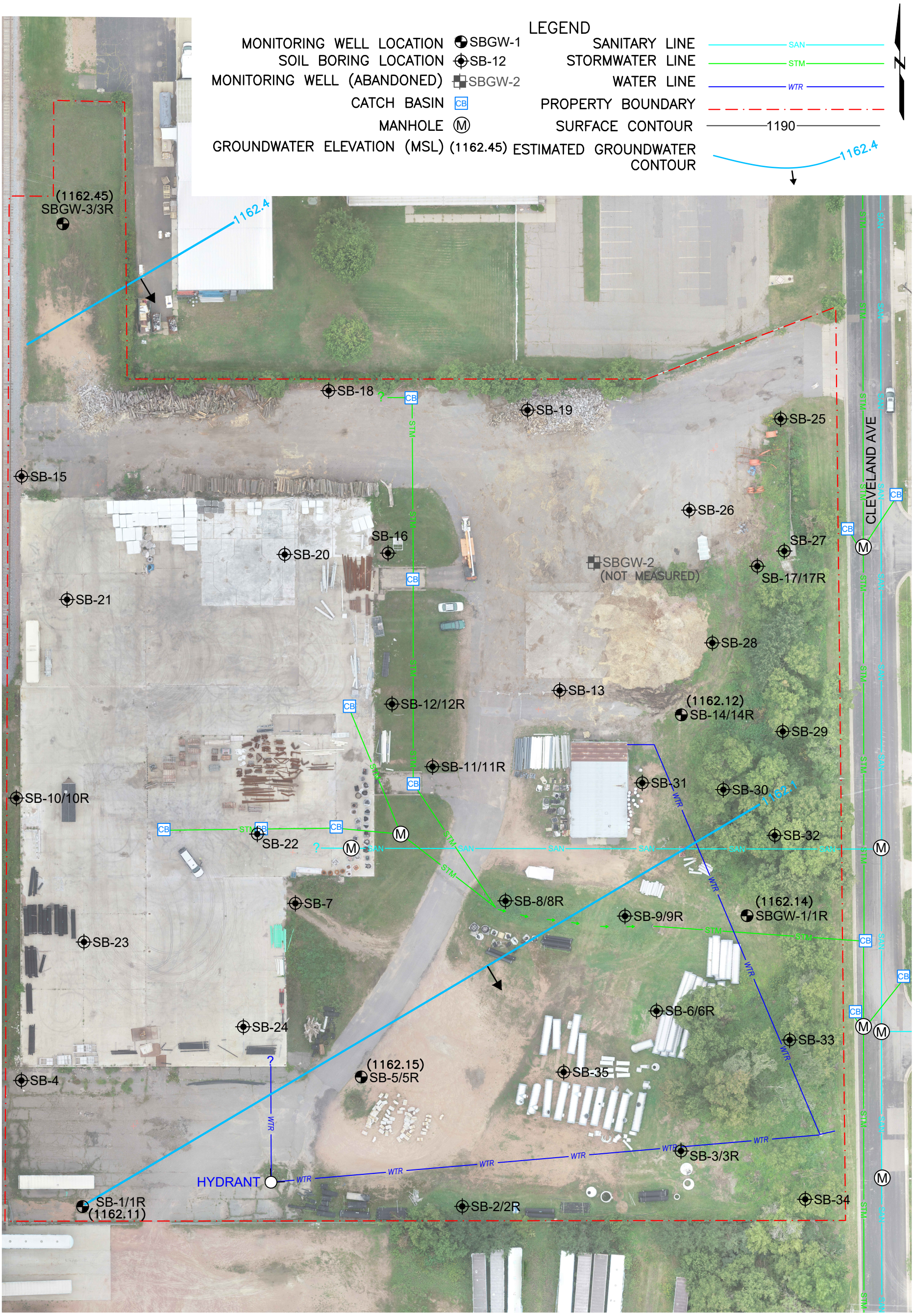
Table A.6.

Groundwater Elevation Data Summary

1300 Cleveland Avenue, Wausau, WI

BRRTS #02-37-587081

Location	SB-1R		SB-5R		SB-14R		SBGW-1R		SBGW-3R	
Date Installed	8/3/21		8/3/21		8/4/21		8/2/21		8/2/21	
Well Depth (ft)	31.8		30.0		30.5		29.5		37.0	
Screen Length (ft)	10.0		10.0		10.0		10.0		10.0	
TOC Elevation	1192.04		1190.57		1189.87		1191.31		1196.30	
GS Elevation	1189.76		1188.03		1187.24		1188.80		1193.85	
Screen Interval	1,167.96 - 1,157.96		1,168.03 - 1,158.03		1,166.74 - 1,156.74		1,169.30 - 1,159.30		1,166.85 - 1,156.85	
Sample Date	**TOC to SWL (Ft)**	**GW Elevation (Ft AMSL)**	**TOC to SWL (Ft)**	**GW Elevation (Ft AMSL)**	**TOC to SWL (Ft)**	**GW Elevation (Ft AMSL)**	**TOC to SWL (Ft)**	**GW Elevation (Ft AMSL)**	**TOC to SWL (Ft)**	**GW Elevation (Ft AMSL)**
8/18/2021	28.47	1163.57	26.87	1163.70	26.02	1163.85	27.58	1163.73	31.85	1164.45
12/20/2022	29.93	1162.11	28.42	1162.15	27.75	1162.12	29.17	1162.14	33.85	1162.45



NOTES:

1. HORIZONTAL DATUM WISCONSIN MARATHON COUNTY COORDINATE SYSTEM
2. VERTICAL DATUM NAVD 88
3. BACKGROUND IMAGE GEI DRONE SURVEY DATED 8-27-2021

WDNR BRRTS #02-37-587081 1300 CLEVELAND AVE WAUSAU, WI	GEI Consultants	GROUNDWATER CONTOUR MAP (DECEMBER 20, 2022)
CITY OF WAUSAU WAUSAU, WI	Project 2102778	FEB 2023 Fig. B.3.c.

BURGER, DAVE J:\2021\City Of Wausau\Fig B3c Groundwater Contour Map 1-23.dwg - 2/10/2023

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

February 06, 2023

Mike Debraske
GEI Consultants, Inc.
3159 Voyager Drive
Green Bay, WI 54311

RE: Project: 2102778 WAUSAU 1300 W CLEVELAN
Pace Project No.: 40256306

Dear Mike Debraske:

Enclosed are the analytical results for sample(s) received by the laboratory on December 20, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Christopher Hyska

Christopher Hyska
christopher.hyska@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 2102778 WAUSAU 1300 W CLEVELAN
Pace Project No.: 40256306

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40256306001	**EQUIPMENT BLANK**	Water	12/20/22 12:10	12/20/22 17:06
40256306002	**FIELD BLANK**	Water	12/20/22 12:20	12/20/22 17:06
40256306003	**SB-1R**	Water	12/20/22 13:25	12/20/22 17:06
40256306004	**SB-1R DUP**	Water	12/20/22 13:30	12/20/22 17:06
40256306005	**SB-5R**	Water	12/20/22 13:15	12/20/22 17:06
40256306006	**SB-14R**	Water	12/20/22 13:55	12/20/22 17:06
40256306007	**SBGW-1R**	Water	12/20/22 13:50	12/20/22 17:06
40256306008	**SBGW-3R**	Water	12/20/22 15:00	12/20/22 17:06

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 40256306

ALL SHADED AREAS are for LAB USE ONLY

Company: GEI Consultants, Inc	Billing Information: 3151 Voyager Dr Green Bay, WI
Address: Same →	
Report To: Mike DeBraske	Email To: mdebraske@geiconsultants.com
Copy To: Wausau 1300 Cleveland Ave	Site Collection Info/Address: 1300 Cleveland Ave Wausau, WI
Customer Project Name/Number:	State: WI County/City: Wausau Time Zone Collected: [ ]PT [ ]MT [ ]CT [ ]ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print):	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)
	Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses

Lab Profile/Line:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	PFAS (WI)	Lab Profile/Line
Equipment Blank	GW	G/C+B	12-20-22	12:10				2	X	001
Field Blank	GW			12:20				2	X	002
SB-1R	GW			13:25				2	X	003
SB-1R Dup	GW			13:30				2	X	004
SB-5R	GW			13:15				2	X	005
SB-14R	GW			13:55				2	X	006
SBGW-1R	GW			13:50				2	X	007
SBGW-3R	GW	↓	↓	15:00				2	X	008

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips: _____	
Sample pH Acceptable	Y N NA
pH Strips: _____	
Sulfide Present	Y N NA
Lead Acetate Strips: _____	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet / Blue / Dry / None — Seal Cooler 12/21/22 MP

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2785119

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: _____oC
Cooler 1 Therm Corr. Factor: _____oC
Cooler 1 Corrected Temp: _____oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Madison Aspinwall	12/20/2022 5:06 pm		12/20/22 1706
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page _____ of: _____

Sample Preservation Receipt Form

Client Name: GEI Consultants Project # 405763061

All containers needing preservation have been checked and noted below ☐Yes ☐No ☒N/A Lab Std #ID of preservation (if pH adjusted).

Lab Lot# of pH paper

Pace Lab #	Glass: AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	Plastic: BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	Vials: VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	JG9U	WGFU	WPFU	General: SP5T	ZPLC	GN 1	GN 2	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001									2																	2								2.5 / 5
002									2																	2								2.5 / 5
003									2																	2								2.5 / 5
004									2																	2								2.5 / 5
005									2																	2								2.5 / 5
006									2																	2								2.5 / 5
007									2																	2								2.5 / 5
008									2																	2								2.5 / 5
009																																			2.5 / 5
010																										12/20/22 2									2.5 / 5
011																																			2.5 / 5
012																																			2.5 / 5
013																																			2.5 / 5
014																																			2.5 / 5
015																																			2.5 / 5
016																		12/20/22 mp																	2.5 / 5
017																																			2.5 / 5
018																																			2.5 / 5
019																																			2.5 / 5
020																																			2.5 / 5

Exceptions to preservation check VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm). ☐Yes ☐No ☒N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	250 mL poly unpres.
						GN 2	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Client Name: GEI Consultants

Project #:

WO#: 40256306

40256306

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☒ Client ☐ Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____

Thermometer Used SR - 9 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr. 1.0 /Corr: 2.0

Temp Blank Present: ☐ yes ☒ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Person examining contents:
Date: 12/20/22 Initials: MP

Labeled By Initials: SG

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☒No ☐N/A	2. pg# preservation 12/20/22 MP
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- DI VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time.
Short Hold Time Analysis (<72hr):	☐Yes ☒No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume: For Analysis: ☒Yes ☐No MS/MSD: ☐Yes ☒No ☐N/A		8.
Correct Containers Used:	☒Yes ☐No	9.
Correct Type: Pace Green Bay, Pace IR, (Non-Pace)		
Containers Intact.	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: W	☐Yes ☒No ☐N/A	12. 002" field blank - 1 and field blank - 2" 12/20/22 MP 002 "12:00"
Trip Blank Present:	☐Yes ☐No ☒N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logi

Report of Analysis

Pace Analytical Services, LLC
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
Attention: Chris Hyska

Project Name: PFAS

Project Number: 40256306

Lot Number:**XL22014**

Date Completed:02/03/2023
Revision Date: 02/03/2023

02/03/2023 8:56 AM
Approved and released by:
Project Coordinator 1: **Jenna S. Holliday**

Case Narrative
Pace Analytical Services, LLC
Lot Number: XL22014

Report revision 02/03/2023: This PDF report has been revised to include an update sample ID. This report supersedes and replaces any prior reports issued under this lot number.

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

PFAS Analysis
Samples XL22014-001 were collected in client provided HDPE bottles. While this is method compliant, the sample bottles were not provided by the laboratory.

Surrogate recovery for sample XL22014-005 was outside the acceptance limits. This sample did not contain any detects for the target analyte; therefore, the data has been reported.

The method blank associated with batch 64959 had PFBA recovered outside acceptance limits. There was insufficient sample volume remaining to perform re-extraction and/or re-analysis. Therefore, the data have been reported.

Sample Summary
Pace Analytical Services, LLC
Lot Number: XL22014
Project Name: PFAS
Project Number: 40256306

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	EQUIPMENT BLANK	Aqueous	12/20/2022 1210	12/22/2022
002	FIELD BLANK	Aqueous	12/20/2022 1220	12/22/2022
003	SB-1R	Aqueous	12/20/2022 1325	12/22/2022
004	SB-1R DUP	Aqueous	12/20/2022 1330	12/22/2022
005	SB-5R	Aqueous	12/20/2022 1315	12/22/2022
006	SB-14R	Aqueous	12/20/2022 1355	12/22/2022
007	SBGW-1R	Aqueous	12/20/2022 1350	12/22/2022
008	SBGW-3R	Aqueous	12/20/2022 1500	12/22/2022

(8 samples)

Detection Summary

Pace Analytical Services, LLC

Lot Number: XL22014

Project Name: PFAS

Project Number: 40256306

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	EQUIPMENT BLANK	Aqueous	6:2 FTS	PFAS by ID	6.0	J	ng/L	14
001	EQUIPMENT BLANK	Aqueous	PFBA	PFAS by ID	2.2	BJ	ng/L	14
002	FIELD BLANK	Aqueous	PFBA	PFAS by ID	2.1	BJ	ng/L	16
003	SB-1R	Aqueous	PFBS	PFAS by ID	3.5	J	ng/L	18
003	SB-1R	Aqueous	PFPeS	PFAS by ID	1.1	J	ng/L	18
003	SB-1R	Aqueous	PFHxS	PFAS by ID	5.0		ng/L	18
003	SB-1R	Aqueous	PFBA	PFAS by ID	18	BJ	ng/L	18
003	SB-1R	Aqueous	PFHpA	PFAS by ID	1.2	J	ng/L	18
003	SB-1R	Aqueous	PFHxA	PFAS by ID	1.0	J	ng/L	18
003	SB-1R	Aqueous	PFOA	PFAS by ID	7.0		ng/L	18
003	SB-1R	Aqueous	PFPeA	PFAS by ID	0.52	J	ng/L	18
003	SB-1R	Aqueous	PFOS	PFAS by ID	9.6		ng/L	18
004	SB-1R DUP	Aqueous	PFBS	PFAS by ID	3.5	J	ng/L	20
004	SB-1R DUP	Aqueous	PFPeS	PFAS by ID	1.2	J	ng/L	20
004	SB-1R DUP	Aqueous	PFHxS	PFAS by ID	4.4		ng/L	20
004	SB-1R DUP	Aqueous	PFBA	PFAS by ID	14	BJ	ng/L	20
004	SB-1R DUP	Aqueous	PFHpA	PFAS by ID	1.1	J	ng/L	20
004	SB-1R DUP	Aqueous	PFHxA	PFAS by ID	1.2	J	ng/L	20
004	SB-1R DUP	Aqueous	PFOA	PFAS by ID	6.6		ng/L	20
004	SB-1R DUP	Aqueous	PFPeA	PFAS by ID	0.73	J	ng/L	20
004	SB-1R DUP	Aqueous	PFOS	PFAS by ID	9.8		ng/L	20
005	SB-5R	Aqueous	6:2 FTS	PFAS by ID	4.9	J	ng/L	22
005	SB-5R	Aqueous	PFBS	PFAS by ID	1.8	J	ng/L	22
005	SB-5R	Aqueous	PFPeS	PFAS by ID	0.82	J	ng/L	22
005	SB-5R	Aqueous	PFHxS	PFAS by ID	2.4	J	ng/L	22
005	SB-5R	Aqueous	PFBA	PFAS by ID	7.2	B	ng/L	22
005	SB-5R	Aqueous	PFHpA	PFAS by ID	1.8	J	ng/L	22
005	SB-5R	Aqueous	PFHxA	PFAS by ID	1.7	J	ng/L	22
005	SB-5R	Aqueous	PFOA	PFAS by ID	7.0		ng/L	22
005	SB-5R	Aqueous	PFPeA	PFAS by ID	1.4	J	ng/L	22
005	SB-5R	Aqueous	PFOS	PFAS by ID	4.7		ng/L	22
006	SB-14R	Aqueous	PFBS	PFAS by ID	5.8		ng/L	24
006	SB-14R	Aqueous	PFPeS	PFAS by ID	1.3	J	ng/L	24
006	SB-14R	Aqueous	PFHxS	PFAS by ID	6.4		ng/L	24
006	SB-14R	Aqueous	PFBA	PFAS by ID	17	BJ	ng/L	24
006	SB-14R	Aqueous	PFHpA	PFAS by ID	4.0		ng/L	24
006	SB-14R	Aqueous	PFHxA	PFAS by ID	5.1		ng/L	24
006	SB-14R	Aqueous	PFOA	PFAS by ID	17		ng/L	24
006	SB-14R	Aqueous	PFPeA	PFAS by ID	2.7	J	ng/L	24
006	SB-14R	Aqueous	PFOS	PFAS by ID	17		ng/L	24
007	SBGW-1R	Aqueous	PFBS	PFAS by ID	1.7	J	ng/L	26
007	SBGW-1R	Aqueous	PFHxS	PFAS by ID	1.6	J	ng/L	26
007	SBGW-1R	Aqueous	PFBA	PFAS by ID	2.2	J	ng/L	26

Detection Summary (Continued)

Lot Number: XL22014

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
007	SBGW-1R	Aqueous	PFHpA	PFAS by ID	0.87	J	ng/L	26
007	SBGW-1R	Aqueous	PFOA	PFAS by ID	3.7		ng/L	26
007	SBGW-1R	Aqueous	PFOS	PFAS by ID	4.0		ng/L	26
008	SBGW-3R	Aqueous	6:2 FTS	PFAS by ID	7.6		ng/L	28
008	SBGW-3R	Aqueous	PFBS	PFAS by ID	13		ng/L	28
008	SBGW-3R	Aqueous	PFHpS	PFAS by ID	0.47	J	ng/L	28
008	SBGW-3R	Aqueous	PFPeS	PFAS by ID	1.3	J	ng/L	28
008	SBGW-3R	Aqueous	PFHxS	PFAS by ID	7.7		ng/L	28
008	SBGW-3R	Aqueous	PFBA	PFAS by ID	9.4		ng/L	28
008	SBGW-3R	Aqueous	PFHpA	PFAS by ID	5.2		ng/L	28
008	SBGW-3R	Aqueous	PFHxA	PFAS by ID	5.6		ng/L	28
008	SBGW-3R	Aqueous	PFNA	PFAS by ID	0.43	J	ng/L	28
008	SBGW-3R	Aqueous	PFOA	PFAS by ID	19		ng/L	28
008	SBGW-3R	Aqueous	PFPeA	PFAS by ID	3.5	J	ng/L	28
008	SBGW-3R	Aqueous	PFOS	PFAS by ID	23		ng/L	28

(58 detections)

PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-001**

Description: **EQUIPMENT BLANK** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1210** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/11/2023 2304	ALM	01/05/2023 1215	64138
2	SOP SPE	PFAS by ID SOP	1	01/12/2023 1423	ALM	01/05/2023 1215	64138
3	SOP SPE	PFAS by ID SOP	1	01/18/2023 0045	BWS		64959

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.5	0.45	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.5	0.63	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.5	1.5	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	**27619-97-2**	**PFAS by ID SOP**	**6.0**	**J**	**7.5**	**1.9**	**ng/L**	**2**
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.5	0.82	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.5	2.0	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.5	0.46	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.5	1.3	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.5	0.71	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.5	0.90	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		15	1.2	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.5	0.88	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.5	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		3.8	0.39	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.8	0.73	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.8	0.47	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.8	0.67	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.8	0.58	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.8	0.56	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.5	0.99	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		3.8	0.52	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**2.2**	**BJ**	**3.6**	**0.54**	**ng/L**	**3**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.8	0.50	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.8	0.45	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		3.8	0.42	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.8	0.65	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.8	0.44	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		3.8	0.78	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		3.8	0.51	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.8	0.57	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.8	0.50	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.8	0.59	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.8	1.9	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits	Q	Run 3 % Recovery	Acceptance Limits
13C2_4:2FTS		99	25-150		108	25-150		113	25-150
13C2_6:2FTS		115	25-150		98	25-150		109	25-150
13C2_8:2FTS		83	25-150		98	25-150		108	25-150
13C2_PFDoA		97	25-150		104	25-150		102	25-150
13C2_PFTeDA		104	25-150		98	25-150		96	25-150
13C3_PFBS		98	25-150		94	25-150		104	25-150
13C3_PFHxS		92	25-150		82	25-150		103	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-001**

Description: **EQUIPMENT BLANK** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1210** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits	Q	Run 3 % Recovery	Acceptance Limits
13C3-HFPO-DA		94	25-150		95	25-150		103	25-150
13C4_PFBA		91	25-150		94	25-150		104	25-150
13C4_PFHpA		102	25-150		92	25-150		109	25-150
13C5_PFHxA		97	25-150		97	25-150		113	25-150
13C5_PFPeA		100	25-150		95	25-150		109	25-150
13C6_PFDA		89	25-150		87	25-150		105	25-150
13C7_PFUdA		90	25-150		84	25-150		101	25-150
13C8_PFOA		93	25-150		101	25-150		116	25-150
13C8_PFOS		102	25-150		100	25-150		113	25-150
13C8_PFOSA		97	10-150		92	10-150		97	10-150
13C9_PFNA		120	25-150		124	25-150		130	25-150
d-EtFOSA		71	10-150		68	10-150		72	10-150
d5-EtFOSAA		97	25-150		128	25-150		96	25-150
d9-EtFOSE		83	10-150		89	10-150		77	10-150
d-MeFOSA		71	10-150		79	10-150		77	10-150
d3-MeFOSAA		103	25-150		115	25-150		104	25-150
d7-MeFOSE		85	10-150		88	10-150		75	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-002**

Description: **FIELD BLANK** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1220** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/11/2023 2314	ALM	01/05/2023 1215	64138
2	SOP SPE	PFAS by ID SOP	1	01/18/2023 0056	BWS		64959

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.3	0.44	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.3	0.60	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.3	1.5	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.3	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.3	0.80	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.3	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.3	0.44	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.3	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.3	0.68	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.3	0.87	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		15	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.3	0.85	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.3	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		3.6	0.38	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.6	0.71	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.6	0.46	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.6	0.65	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.6	0.56	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.6	0.54	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.3	0.95	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		3.6	0.50	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**2.1**	**BJ**	**3.6**	**0.53**	**ng/L**	**2**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.6	0.48	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.6	0.43	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		3.6	0.41	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.6	0.63	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.6	0.42	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		3.6	0.76	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		3.6	0.50	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.6	0.55	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.6	0.48	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.6	0.57	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.6	1.8	ng/L	1

Surrogate	Run 1 Q	Run 1 % Recovery	Run 1 Acceptance Limits	Run 2 Q	Run 2 % Recovery	Run 2 Acceptance Limits
13C2_4:2FTS		102	25-150		115	25-150
13C2_6:2FTS		103	25-150		109	25-150
13C2_8:2FTS		78	25-150		108	25-150
13C2_PFDoA		87	25-150		96	25-150
13C2_PFTeDA		94	25-150		91	25-150
13C3_PFBS		88	25-150		106	25-150
13C3_PFHxS		91	25-150		104	25-150
13C3-HFPO-DA		84	25-150		103	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-002**

Description: **FIELD BLANK** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1220** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C4_PFBA		96	25-150		107	25-150
13C4_PFHpA		104	25-150		107	25-150
13C5_PFHxA		86	25-150		108	25-150
13C5_PFPeA		90	25-150		105	25-150
13C6_PFDA		85	25-150		107	25-150
13C7_PFUdA		80	25-150		92	25-150
13C8_PFOA		91	25-150		112	25-150
13C8_PFOS		104	25-150		119	25-150
13C8_PFOSA		88	10-150		98	10-150
13C9_PFNA		118	25-150		129	25-150
d-EtFOSA		75	10-150		60	10-150
d5-EtFOSAA		82	25-150		96	25-150
d9-EtFOSE		81	10-150		76	10-150
d-MeFOSA		82	10-150		61	10-150
d3-MeFOSAA		87	25-150		98	25-150
d7-MeFOSE		87	10-150		73	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-003**

Description: **SB-1R** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1325** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/11/2023 2325	ALM	01/05/2023 1215	64138
2	SOP SPE	PFAS by ID SOP	1	01/18/2023 0658	ALM		64959

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.5	0.45	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.5	0.62	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.5	1.5	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.5	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.5	0.82	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.5	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.5	0.45	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.5	1.3	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.5	0.70	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.5	0.89	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		15	1.2	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.5	0.87	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.5	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**3.5**	**J**	**3.7**	**0.39**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.7	0.73	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.7	0.47	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.7	0.67	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.7	0.57	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	**2706-91-4**	**PFAS by ID SOP**	**1.1**	**J**	**3.7**	**0.56**	**ng/L**	**1**
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.5	0.98	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**5.0**		**3.7**	**0.52**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**18**	**BJ**	**20**	**3.0**	**ng/L**	**2**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.7	0.49	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.7	0.44	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**1.2**	**J**	**3.7**	**0.42**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**1.0**	**J**	**3.7**	**0.64**	**ng/L**	**1**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.7	0.43	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**7.0**		**3.7**	**0.78**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**0.52**	**J**	**3.7**	**0.51**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.7	0.56	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.7	0.50	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.7	0.59	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	**1763-23-1**	**PFAS by ID SOP**	**9.6**		**3.7**	**1.9**	**ng/L**	**1**

Surrogate	Run 1 Q	Run 1 % Recovery	Run 1 Acceptance Limits	Run 2 Q	Run 2 % Recovery	Run 2 Acceptance Limits
13C2_4:2FTS		149	25-150		102	25-150
13C2_6:2FTS		105	25-150		100	25-150
13C2_8:2FTS		81	25-150		105	25-150
13C2_PFDoA		73	25-150		97	25-150
13C2_PFTeDA		52	25-150		93	25-150
13C3_PFBS		92	25-150		101	25-150
13C3_PFHxS		88	25-150		99	25-150
13C3-HFPO-DA		85	25-150		102	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-003**

Description: **SB-1R** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1325** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C4_PFBA		80	25-150		101	25-150
13C4_PFHpA		101	25-150		103	25-150
13C5_PFHxA		110	25-150		99	25-150
13C5_PFPeA		95	25-150		98	25-150
13C6_PFDA		87	25-150		93	25-150
13C7_PFUdA		78	25-150		95	25-150
13C8_PFOA		91	25-150		100	25-150
13C8_PFOS		97	25-150		101	25-150
13C8_PFOSA		86	10-150		94	10-150
13C9_PFNA		92	25-150		98	25-150
d-EtFOSA		54	10-150		71	10-150
d5-EtFOSAA		78	25-150		100	25-150
d9-EtFOSE		60	10-150		88	10-150
d-MeFOSA		68	10-150		76	10-150
d3-MeFOSAA		82	25-150		98	25-150
d7-MeFOSE		70	10-150		92	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-004**

Description: **SB-1R DUP** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1330** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/11/2023 2336	ALM	01/05/2023 1215	64138
2	SOP SPE	PFAS by ID SOP	1	01/18/2023 0709	ALM		64959

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.5	0.45	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.5	0.63	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.5	1.5	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.5	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.5	0.82	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.5	2.0	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.5	0.46	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.5	1.3	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.5	0.71	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.5	0.90	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		15	1.2	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.5	0.88	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.5	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**3.5**	**J**	**3.8**	**0.39**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.8	0.73	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.8	0.47	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.8	0.67	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.8	0.58	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	**2706-91-4**	**PFAS by ID SOP**	**1.2**	**J**	**3.8**	**0.56**	**ng/L**	**1**
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.5	0.99	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**4.4**		**3.8**	**0.52**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**14**	**BJ**	**20**	**3.0**	**ng/L**	**2**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.8	0.50	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.8	0.45	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**1.1**	**J**	**3.8**	**0.42**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**1.2**	**J**	**3.8**	**0.65**	**ng/L**	**1**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.8	0.44	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**6.6**		**3.8**	**0.78**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**0.73**	**J**	**3.8**	**0.51**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.8	0.57	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.8	0.50	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.8	0.59	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	**1763-23-1**	**PFAS by ID SOP**	**9.8**		**3.8**	**1.9**	**ng/L**	**1**

Surrogate	Run 1 Q	Run 1 % Recovery	Run 1 Acceptance Limits	Run 2 Q	Run 2 % Recovery	Run 2 Acceptance Limits
13C2_4:2FTS		138	25-150		113	25-150
13C2_6:2FTS		108	25-150		107	25-150
13C2_8:2FTS		78	25-150		105	25-150
13C2_PFDoA		73	25-150		100	25-150
13C2_PFTeDA		66	25-150		98	25-150
13C3_PFBS		91	25-150		105	25-150
13C3_PFHxS		96	25-150		99	25-150
13C3-HFPO-DA		81	25-150		108	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
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S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-004**

Description: **SB-1R DUP** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1330** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C4_PFBA		80	25-150		111	25-150
13C4_PFHpA		107	25-150		106	25-150
13C5_PFHxA		96	25-150		105	25-150
13C5_PFPeA		93	25-150		104	25-150
13C6_PFDA		87	25-150		98	25-150
13C7_PFUdA		78	25-150		104	25-150
13C8_PFOA		90	25-150		105	25-150
13C8_PFOS		99	25-150		104	25-150
13C8_PFOSA		85	10-150		100	10-150
13C9_PFNA		95	25-150		105	25-150
d-EtFOSA		67	10-150		75	10-150
d5-EtFOSAA		79	25-150		106	25-150
d9-EtFOSE		65	10-150		94	10-150
d-MeFOSA		64	10-150		81	10-150
d3-MeFOSAA		96	25-150		108	25-150
d7-MeFOSE		74	10-150		95	10-150

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-005**

Description: **SB-5R** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1315** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/11/2023 2346	ALM	01/05/2023 1215	64138
2	SOP SPE	PFAS by ID SOP	1	01/16/2023 1243	ALM	01/05/2023 1215	64138
3	SOP SPE	PFAS by ID SOP	1	01/18/2023 0720	ALM		64959

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.5	0.45	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.5	0.62	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.5	1.5	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	**27619-97-2**	**PFAS by ID SOP**	**4.9**	**J**	**7.5**	**1.9**	**ng/L**	**2**
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND	Q	7.5	0.82	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.5	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.5	0.45	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.5	1.3	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.5	0.70	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.5	0.89	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		15	1.2	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.5	0.87	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.5	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**1.8**	**J**	**3.7**	**0.39**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.7	0.73	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.7	0.47	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.7	0.66	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.7	0.57	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	**2706-91-4**	**PFAS by ID SOP**	**0.82**	**J**	**3.7**	**0.55**	**ng/L**	**1**
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.5	0.98	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**2.4**	**J**	**3.7**	**0.51**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**7.2**	**B**	**3.6**	**0.53**	**ng/L**	**3**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.7	0.49	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.7	0.44	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**1.8**	**J**	**3.7**	**0.42**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**1.7**	**J**	**3.7**	**0.64**	**ng/L**	**1**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.7	0.43	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**7.0**		**3.7**	**0.77**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**1.4**	**J**	**3.7**	**0.51**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.7	0.56	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.7	0.49	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.7	0.58	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	**1763-23-1**	**PFAS by ID SOP**	**4.7**		**3.7**	**1.9**	**ng/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits	Q	Run 3 % Recovery	Acceptance Limits
13C2_4:2FTS	N	182	25-150	N	183	25-150	N	184	25-150
13C2_6:2FTS		121	25-150		130	25-150		115	25-150
13C2_8:2FTS		78	25-150		88	25-150		99	25-150
13C2_PFDoA		82	25-150		85	25-150		81	25-150
13C2_PFTeDA		82	25-150		86	25-150		74	25-150
13C3_PFBS		91	25-150		88	25-150		89	25-150
13C3_PFHxS		88	25-150		95	25-150		98	25-150

LOQ = Limit of Quantitation
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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-005**

Description: **SB-5R** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1315** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits	Q	Run 3 % Recovery	Acceptance Limits
13C3-HFPO-DA		80	25-150		98	25-150		92	25-150
13C4_PFBA		62	25-150		62	25-150		59	25-150
13C4_PFHpA		109	25-150		99	25-150		101	25-150
13C5_PFHxA		91	25-150		101	25-150		97	25-150
13C5_PFPeA		85	25-150		83	25-150		82	25-150
13C6_PFDA		91	25-150		95	25-150		89	25-150
13C7_PFUdA		79	25-150		89	25-150		88	25-150
13C8_PFOA		92	25-150		99	25-150		94	25-150
13C8_PFOS		100	25-150		88	25-150		100	25-150
13C8_PFOSA		85	10-150		84	10-150		84	10-150
13C9_PFNA		93	25-150		105	25-150		96	25-150
d-EtFOSA		67	10-150		60	10-150		55	10-150
d5-EtFOSAA		97	25-150		86	25-150		86	25-150
d9-EtFOSE		74	10-150		74	10-150		68	10-150
d-MeFOSA		70	10-150		81	10-150		63	10-150
d3-MeFOSAA		82	25-150		97	25-150		88	25-150
d7-MeFOSE		79	10-150		77	10-150		72	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-006**

Description: **SB-14R** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1355** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/11/2023 2357	ALM	01/05/2023 1215	64138
2	SOP SPE	PFAS by ID SOP	1	01/18/2023 0731	ALM		64959

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.4	0.45	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.4	0.62	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.4	1.5	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.4	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.4	0.81	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.4	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.4	0.45	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.4	1.3	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.4	0.70	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.4	0.89	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		15	1.2	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.4	0.87	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.4	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**5.8**		**3.7**	**0.39**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.7	0.72	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.7	0.46	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.7	0.66	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.7	0.57	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	**2706-91-4**	**PFAS by ID SOP**	**1.3**	**J**	**3.7**	**0.55**	**ng/L**	**1**
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.4	0.97	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**6.4**		**3.7**	**0.51**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**17**	**BJ**	**20**	**3.0**	**ng/L**	**2**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.7	0.49	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.7	0.44	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**4.0**		**3.7**	**0.42**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**5.1**		**3.7**	**0.64**	**ng/L**	**1**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.7	0.43	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**17**		**3.7**	**0.77**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**2.7**	**J**	**3.7**	**0.51**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.7	0.56	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.7	0.49	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.7	0.58	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	**1763-23-1**	**PFAS by ID SOP**	**17**		**3.7**	**1.9**	**ng/L**	**1**

Surrogate	Run 1 Q	Run 1 % Recovery	Run 1 Acceptance Limits	Run 2 Q	Run 2 % Recovery	Run 2 Acceptance Limits
13C2_4:2FTS		124	25-150		98	25-150
13C2_6:2FTS		107	25-150		95	25-150
13C2_8:2FTS		73	25-150		94	25-150
13C2_PFDoA		73	25-150		92	25-150
13C2_PFTeDA		57	25-150		88	25-150
13C3_PFBS		90	25-150		97	25-150
13C3_PFHxS		99	25-150		91	25-150
13C3-HFPO-DA		83	25-150		91	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-006**

Description: **SB-14R** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1355** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C4_PFBA		75	25-150		93	25-150
13C4_PFHpA		111	25-150		94	25-150
13C5_PFHxA		95	25-150		91	25-150
13C5_PFPeA		94	25-150		94	25-150
13C6_PFDA		80	25-150		89	25-150
13C7_PFUdA		75	25-150		88	25-150
13C8_PFOA		95	25-150		96	25-150
13C8_PFOS		90	25-150		93	25-150
13C8_PFOSA		78	10-150		86	10-150
13C9_PFNA		92	25-150		92	25-150
d-EtFOSA		59	10-150		67	10-150
d5-EtFOSAA		75	25-150		95	25-150
d9-EtFOSE		64	10-150		82	10-150
d-MeFOSA		61	10-150		74	10-150
d3-MeFOSAA		76	25-150		91	25-150
d7-MeFOSE		65	10-150		82	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-007**

Description: **SBGW-1R** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1350** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/06/2023 2347	BWS	01/05/2023 1937	64256

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.2	0.43	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.2	0.60	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.2	1.4	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.2	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.2	0.78	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.2	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.2	0.43	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.2	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.2	0.67	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.2	0.86	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.2	0.84	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.2	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**1.7**	**J**	**3.6**	**0.37**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.6	0.70	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.6	0.45	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.6	0.64	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.6	0.55	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.6	0.53	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.2	0.94	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**1.6**	**J**	**3.6**	**0.50**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**2.2**	**J**	**3.6**	**0.54**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.6	0.47	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.6	0.42	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**0.87**	**J**	**3.6**	**0.40**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.6	0.62	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.6	0.41	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**3.7**		**3.6**	**0.74**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		3.6	0.49	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.6	0.54	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.6	0.48	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.6	0.56	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	**1763-23-1**	**PFAS by ID SOP**	**4.0**		**3.6**	**1.8**	**ng/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		119	25-150
13C2_6:2FTS		97	25-150
13C2_8:2FTS		78	25-150
13C2_PFDoA		55	25-150
13C2_PFTeDA		31	25-150
13C3_PFBS		86	25-150
13C3_PFHxS		88	25-150
13C3-HFPO-DA		84	25-150
13C4_PFBA		46	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-007**

Description: **SBGW-1R** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1350** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		86	25-150
13C5_PFHxA		86	25-150
13C5_PFPeA		77	25-150
13C6_PFDA		82	25-150
13C7_PFUdA		72	25-150
13C8_PFOA		91	25-150
13C8_PFOS		84	25-150
13C8_PFOSA		83	10-150
13C9_PFNA		91	25-150
d-EtFOSA		55	10-150
d5-EtFOSAA		62	25-150
d9-EtFOSE		51	10-150
d-MeFOSA		56	10-150
d3-MeFOSAA		68	25-150
d7-MeFOSE		57	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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H = Out of holding time
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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-008**

Description: **SBGW-3R** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1500** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/07/2023 0000	BWS	01/05/2023 1937	64256

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.3	0.44	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.3	0.61	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.3	1.5	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	**27619-97-2**	**PFAS by ID SOP**	**7.6**		**7.3**	**1.8**	**ng/L**	**1**
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.3	0.80	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.3	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.3	0.44	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.3	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.3	0.69	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.3	0.87	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		15	1.2	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.3	0.85	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.3	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**13**		**3.7**	**0.38**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.7	0.71	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	**375-92-8**	**PFAS by ID SOP**	**0.47**	**J**	**3.7**	**0.46**	**ng/L**	**1**
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.7	0.65	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.7	0.56	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	**2706-91-4**	**PFAS by ID SOP**	**1.3**	**J**	**3.7**	**0.54**	**ng/L**	**1**
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.3	0.96	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**7.7**		**3.7**	**0.50**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**9.4**		**3.7**	**0.55**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.7	0.48	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.7	0.43	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**5.2**		**3.7**	**0.41**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**5.6**		**3.7**	**0.63**	**ng/L**	**1**
Perfluoro-n-nonanoic acid (PFNA)	**375-95-1**	**PFAS by ID SOP**	**0.43**	**J**	**3.7**	**0.42**	**ng/L**	**1**
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**19**		**3.7**	**0.76**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**3.5**	**J**	**3.7**	**0.50**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.7	0.55	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.7	0.48	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.7	0.57	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	**1763-23-1**	**PFAS by ID SOP**	**23**		**3.7**	**1.8**	**ng/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		109	25-150
13C2_6:2FTS		98	25-150
13C2_8:2FTS		88	25-150
13C2_PFDoA		63	25-150
13C2_PFTeDA		34	25-150
13C3_PFBS		90	25-150
13C3_PFHxS		93	25-150
13C3-HFPO-DA		89	25-150
13C4_PFBA		67	25-150

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **XL22014-008**

Description: **SBGW-3R** Matrix: **Aqueous**

Date Sampled: **12/20/2022 1500** Project Name: **PFAS**

Date Received: **12/22/2022** Project Number: **40256306**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		92	25-150
13C5_PFHxA		90	25-150
13C5_PFPeA		84	25-150
13C6_PFDA		88	25-150
13C7_PFUdA		81	25-150
13C8_PFOA		93	25-150
13C8_PFOS		88	25-150
13C8_PFOSA		84	10-150
13C9_PFNA		95	25-150
d-EtFOSA		63	10-150
d5-EtFOSAA		72	25-150
d9-EtFOSE		58	10-150
d-MeFOSA		64	10-150
d3-MeFOSAA		80	25-150
d7-MeFOSE		57	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
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H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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QC Summary

PFAS by LC/MS/MS - MB

Sample ID: YQ64138-001
Batch: 64138
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 01/05/2023 1215

Parameter	Result	Q	Dil	LOQ	MDL	Units	Analysis Date
9Cl-PF3ONS	ND		1	8.0	0.48	ng/L	01/11/2023 2149
11Cl-PF3OUdS	ND		1	8.0	0.66	ng/L	01/11/2023 2149
8:2 FTS	ND		1	8.0	1.6	ng/L	01/11/2023 2149
6:2 FTS	ND		1	8.0	2.0	ng/L	01/11/2023 2149
4:2 FTS	ND		1	8.0	0.87	ng/L	01/11/2023 2149
GenX	ND		1	8.0	2.1	ng/L	01/11/2023 2149
ADONA	ND		1	8.0	0.48	ng/L	01/11/2023 2149
EtFOSA	ND		1	8.0	1.4	ng/L	01/11/2023 2149
EtFOSAA	ND		1	8.0	0.75	ng/L	01/11/2023 2149
EtFOSE	ND		1	8.0	0.95	ng/L	01/11/2023 2149
MeFOSA	ND		1	16	1.3	ng/L	01/11/2023 2149
MeFOSAA	ND		1	8.0	0.93	ng/L	01/11/2023 2149
MeFOSE	ND		1	8.0	1.3	ng/L	01/11/2023 2149
PFBS	ND		1	4.0	0.41	ng/L	01/11/2023 2149
PFDS	ND		1	4.0	0.78	ng/L	01/11/2023 2149
PFHpS	ND		1	4.0	0.50	ng/L	01/11/2023 2149
PFNS	ND		1	4.0	0.71	ng/L	01/11/2023 2149
PFOSA	ND		1	4.0	0.61	ng/L	01/11/2023 2149
PFPeS	ND		1	4.0	0.59	ng/L	01/11/2023 2149
PFDOS	ND		1	8.0	1.0	ng/L	01/11/2023 2149
PFHxS	ND		1	4.0	0.55	ng/L	01/11/2023 2149
PFDA	ND		1	4.0	0.52	ng/L	01/11/2023 2149
PFDoA	ND		1	4.0	0.47	ng/L	01/11/2023 2149
PFHpA	ND		1	4.0	0.45	ng/L	01/11/2023 2149
PFHxA	ND		1	4.0	0.69	ng/L	01/11/2023 2149
PFNA	ND		1	4.0	0.46	ng/L	01/11/2023 2149
PFOA	ND		1	4.0	0.83	ng/L	01/11/2023 2149
PFPeA	ND		1	4.0	0.54	ng/L	01/11/2023 2149
PFTeDA	ND		1	4.0	0.60	ng/L	01/11/2023 2149
PFTrDA	ND		1	4.0	0.53	ng/L	01/11/2023 2149
PFUdA	ND		1	4.0	0.63	ng/L	01/11/2023 2149
PFOS	ND		1	4.0	2.0	ng/L	01/11/2023 2149

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		70	25-150
13C2_6:2FTS		118	25-150
13C2_8:2FTS		89	25-150
13C2_PFDoA		84	25-150
13C2_PFTeDA		92	25-150
13C3_PFBS		86	25-150
13C3_PFHxS		88	25-150
13C3-HFPO-DA		78	25-150
13C4_PFBA		92	25-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MB

Sample ID: YQ64138-001
Batch: 64138
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 01/05/2023 1215

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFHpA		99	25-150
13C5_PFHxA		87	25-150
13C5_PFPeA		89	25-150
13C6_PFDA		89	25-150
13C7_PFUdA		87	25-150
13C8_PFOA		97	25-150
13C8_PFOS		94	25-150
13C8_PFOSA		88	10-150
13C9_PFNA		87	25-150
d-EtFOSA		72	10-150
d5-EtFOSAA		87	25-150
d9-EtFOSE		78	10-150
d-MeFOSA		76	10-150
d3-MeFOSAA		99	25-150
d7-MeFOSE		77	10-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: YQ64138-002
Batch: 64138
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 01/05/2023 1215

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9Cl-PF3ONS	15	16		1	111	50-150	01/11/2023 2200
11Cl-PF3OUdS	15	16		1	108	50-150	01/11/2023 2200
8:2 FTS	15	15		1	101	50-150	01/11/2023 2200
6:2 FTS	15	16		1	102	50-150	01/11/2023 2200
4:2 FTS	15	20		1	131	50-150	01/11/2023 2200
GenX	32	30		1	95	50-150	01/11/2023 2200
ADONA	15	16		1	109	50-150	01/11/2023 2200
EtFOSA	16	17		1	105	50-150	01/11/2023 2200
EtFOSAA	16	17		1	108	50-150	01/11/2023 2200
EtFOSE	16	18		1	113	50-150	01/11/2023 2200
MeFOSA	16	17		1	103	50-150	01/11/2023 2200
MeFOSAA	16	18		1	110	50-150	01/11/2023 2200
MeFOSE	16	18		1	110	50-150	01/11/2023 2200
PFBS	14	15		1	103	50-150	01/11/2023 2200
PFDS	15	16		1	106	50-150	01/11/2023 2200
PFHpS	15	16		1	104	50-150	01/11/2023 2200
PFNS	15	17		1	109	50-150	01/11/2023 2200
PFOSA	16	17		1	104	50-150	01/11/2023 2200
PFPeS	15	14		1	96	50-150	01/11/2023 2200
PFDOS	15	16		1	106	50-150	01/11/2023 2200
PFHxS	15	15		1	105	50-150	01/11/2023 2200
PFDA	16	17		1	103	50-150	01/11/2023 2200
PFDoA	16	18		1	111	50-150	01/11/2023 2200
PFHpA	16	19		1	116	50-150	01/11/2023 2200
PFHxA	16	18		1	113	50-150	01/11/2023 2200
PFNA	16	18		1	109	50-150	01/11/2023 2200
PFOA	16	17		1	108	50-150	01/11/2023 2200
PFPeA	16	18		1	110	50-150	01/11/2023 2200
PFTeDA	16	18		1	111	50-150	01/11/2023 2200
PFTrDA	16	16		1	101	50-150	01/11/2023 2200
PFUdA	16	18		1	110	50-150	01/11/2023 2200
PFOS	15	15		1	102	50-150	01/11/2023 2200

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		97	25-150
13C2_6:2FTS		100	25-150
13C2_8:2FTS		95	25-150
13C2_PFDoA		87	25-150
13C2_PFTeDA		92	25-150
13C3_PFBS		95	25-150
13C3_PFHxS		89	25-150
13C3-HFPO-DA		95	25-150
13C4_PFBA		93	25-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: YQ64138-002
Batch: 64138
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 01/05/2023 1215

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFHpA		98	25-150
13C5_PFHxA		90	25-150
13C5_PFPeA		89	25-150
13C6_PFDA		90	25-150
13C7_PFUdA		84	25-150
13C8_PFOA		90	25-150
13C8_PFOS		97	25-150
13C8_PFOSA		92	10-150
13C9_PFNA		89	25-150
d-EtFOSA		67	10-150
d5-EtFOSAA		86	25-150
d9-EtFOSE		82	10-150
d-MeFOSA		68	10-150
d3-MeFOSAA		84	25-150
d7-MeFOSE		86	10-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MB

Sample ID: YQ64256-001
Batch: 64256
Analytical Method: PFAS by ID SOP
Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 01/05/2023 1937

Parameter	Result	Q	Dil	LOQ	MDL	Units	Analysis Date
9Cl-PF3ONS	ND		1	8.0	0.48	ng/L	01/06/2023 1919
11Cl-PF3OUdS	ND		1	8.0	0.66	ng/L	01/06/2023 1919
8:2 FTS	ND		1	8.0	1.6	ng/L	01/06/2023 1919
6:2 FTS	ND		1	8.0	2.0	ng/L	01/06/2023 1919
4:2 FTS	ND		1	8.0	0.87	ng/L	01/06/2023 1919
GenX	ND		1	8.0	2.1	ng/L	01/06/2023 1919
ADONA	ND		1	8.0	0.48	ng/L	01/06/2023 1919
EtFOSA	ND		1	8.0	1.4	ng/L	01/06/2023 1919
EtFOSAA	ND		1	8.0	0.75	ng/L	01/06/2023 1919
EtFOSE	ND		1	8.0	0.95	ng/L	01/06/2023 1919
MeFOSA	ND		1	16	1.3	ng/L	01/06/2023 1919
MeFOSAA	ND		1	8.0	0.93	ng/L	01/06/2023 1919
MeFOSE	ND		1	8.0	1.3	ng/L	01/06/2023 1919
PFBS	ND		1	4.0	0.41	ng/L	01/06/2023 1919
PFDS	ND		1	4.0	0.78	ng/L	01/06/2023 1919
PFHpS	ND		1	4.0	0.50	ng/L	01/06/2023 1919
PFNS	ND		1	4.0	0.71	ng/L	01/06/2023 1919
PFOSA	ND		1	4.0	0.61	ng/L	01/06/2023 1919
PFPeS	ND		1	4.0	0.59	ng/L	01/06/2023 1919
PFDOS	ND		1	8.0	1.0	ng/L	01/06/2023 1919
PFHxS	ND		1	4.0	0.55	ng/L	01/06/2023 1919
PFBA	ND		1	4.0	0.60	ng/L	01/06/2023 1919
PFDA	ND		1	4.0	0.52	ng/L	01/06/2023 1919
PFDoA	ND		1	4.0	0.47	ng/L	01/06/2023 1919
PFHpA	ND		1	4.0	0.45	ng/L	01/06/2023 1919
PFHxA	ND		1	4.0	0.69	ng/L	01/06/2023 1919
PFNA	ND		1	4.0	0.46	ng/L	01/06/2023 1919
PFOA	ND		1	4.0	0.83	ng/L	01/06/2023 1919
PFPeA	ND		1	4.0	0.54	ng/L	01/06/2023 1919
PFTeDA	ND		1	4.0	0.60	ng/L	01/06/2023 1919
PFTrDA	ND		1	4.0	0.53	ng/L	01/06/2023 1919
PFUdA	ND		1	4.0	0.63	ng/L	01/06/2023 1919
PFOS	ND		1	4.0	2.0	ng/L	01/06/2023 1919

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		95	25-150
13C2_6:2FTS		91	25-150
13C2_8:2FTS		92	25-150
13C2_PFDoA		88	25-150
13C2_PFTeDA		87	25-150
13C3_PFBS		95	25-150
13C3_PFHxS		98	25-150
13C3-HFPO-DA		97	25-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MB

Sample ID: YQ64256-001
Batch: 64256
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 01/05/2023 1937

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFBA		92	25-150
13C4_PFHpA		96	25-150
13C5_PFHxA		96	25-150
13C5_PFPeA		98	25-150
13C6_PFDA		96	25-150
13C7_PFUdA		91	25-150
13C8_PFOA		97	25-150
13C8_PFOS		90	25-150
13C8_PFOSA		90	10-150
13C9_PFNA		96	25-150
d-EtFOSA		77	10-150
d5-EtFOSAA		87	25-150
d9-EtFOSE		75	10-150
d-MeFOSA		75	10-150
d3-MeFOSAA		90	25-150
d7-MeFOSE		79	10-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: YQ64256-002
Batch: 64256
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 01/05/2023 1937

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9Cl-PF3ONS	15	16		1	109	50-150	01/06/2023 1932
11Cl-PF3OUdS	15	13		1	86	50-150	01/06/2023 1932
8:2 FTS	15	17		1	113	50-150	01/06/2023 1932
6:2 FTS	15	17		1	112	50-150	01/06/2023 1932
4:2 FTS	15	18		1	118	50-150	01/06/2023 1932
GenX	32	37		1	115	50-150	01/06/2023 1932
ADONA	15	17		1	112	50-150	01/06/2023 1932
EtFOSA	16	17		1	107	50-150	01/06/2023 1932
EtFOSAA	16	19		1	122	50-150	01/06/2023 1932
EtFOSE	16	18		1	113	50-150	01/06/2023 1932
MeFOSA	16	17		1	106	50-150	01/06/2023 1932
MeFOSAA	16	20		1	124	50-150	01/06/2023 1932
MeFOSE	16	17		1	104	50-150	01/06/2023 1932
PFBS	14	16		1	112	50-150	01/06/2023 1932
PFDS	15	14		1	89	50-150	01/06/2023 1932
PFHpS	15	17		1	111	50-150	01/06/2023 1932
PFNS	15	16		1	102	50-150	01/06/2023 1932
PFOSA	16	19		1	119	50-150	01/06/2023 1932
PFPeS	15	17		1	115	50-150	01/06/2023 1932
PFDOS	15	11		1	72	50-150	01/06/2023 1932
PFHxS	15	16		1	110	50-150	01/06/2023 1932
PFBA	16	18		1	113	50-150	01/06/2023 1932
PFDA	16	18		1	113	50-150	01/06/2023 1932
PFDoA	16	19		1	117	50-150	01/06/2023 1932
PFHpA	16	18		1	113	50-150	01/06/2023 1932
PFHxA	16	18		1	112	50-150	01/06/2023 1932
PFNA	16	18		1	111	50-150	01/06/2023 1932
PFOA	16	17		1	109	50-150	01/06/2023 1932
PFPeA	16	18		1	113	50-150	01/06/2023 1932
PFTeDA	16	18		1	111	50-150	01/06/2023 1932
PFTrDA	16	18		1	110	50-150	01/06/2023 1932
PFUdA	16	18		1	114	50-150	01/06/2023 1932
PFOS	15	16		1	108	50-150	01/06/2023 1932

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		79	25-150
13C2_6:2FTS		84	25-150
13C2_8:2FTS		83	25-150
13C2_PFDoA		68	25-150
13C2_PFTeDA		66	25-150
13C3_PFBS		85	25-150
13C3_PFHxS		85	25-150
13C3-HFPO-DA		86	25-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: YQ64256-002
Batch: 64256
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 01/05/2023 1937

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFBA		84	25-150
13C4_PFHpA		85	25-150
13C5_PFHxA		83	25-150
13C5_PFPeA		86	25-150
13C6_PFDA		86	25-150
13C7_PFUdA		77	25-150
13C8_PFOA		90	25-150
13C8_PFOS		83	25-150
13C8_PFOSA		80	10-150
13C9_PFNA		86	25-150
d-EtFOSA		69	10-150
d5-EtFOSAA		70	25-150
d9-EtFOSE		68	10-150
d-MeFOSA		67	10-150
d3-MeFOSAA		74	25-150
d7-MeFOSE		70	10-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MB

Sample ID: YQ64959-001
Batch: 64959
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 12/30/1899 0000

Parameter	Result	Q	Dil	LOQ	MDL	Units	Analysis Date
PFBA	**2.6**	**J**	**1**	**4.0**	**0.60**	**ng/L**	**01/17/2023 2117**

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		102	25-150
13C2_6:2FTS		95	25-150
13C2_8:2FTS		104	25-150
13C2_PFDoA		95	25-150
13C2_PFTeDA		93	25-150
13C3_PFBS		98	25-150
13C3_PFHxS		97	25-150
13C3-HFPO-DA		96	25-150
13C4_PFBA		98	25-150
13C4_PFHpA		96	25-150
13C5_PFHxA		96	25-150
13C5_PFPeA		100	25-150
13C6_PFDA		99	25-150
13C7_PFUdA		91	25-150
13C8_PFOA		101	25-150
13C8_PFOS		102	25-150
13C8_PFOSA		96	10-150
13C9_PFNA		99	25-150
d-EtFOSA		59	10-150
d5-EtFOSAA		92	25-150
d9-EtFOSE		73	10-150
d-MeFOSA		59	10-150
d3-MeFOSAA		92	25-150
d7-MeFOSE		77	10-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: YQ64959-002
Batch: 64959
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 12/30/1899 0000

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
PFBA	16	20		1	124	50-150	01/17/2023 2128

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		99	25-150
13C2_6:2FTS		103	25-150
13C2_8:2FTS		99	25-150
13C2_PFDoA		101	25-150
13C2_PFTeDA		93	25-150
13C3_PFBS		104	25-150
13C3_PFHxS		101	25-150
13C3-HFPO-DA		94	25-150
13C4_PFBA		98	25-150
13C4_PFHpA		93	25-150
13C5_PFHxA		103	25-150
13C5_PFPeA		98	25-150
13C6_PFDA		99	25-150
13C7_PFUdA		94	25-150
13C8_PFOA		101	25-150
13C8_PFOS		104	25-150
13C8_PFOSA		94	10-150
13C9_PFNA		99	25-150
d-EtFOSA		71	10-150
d5-EtFOSAA		93	25-150
d9-EtFOSE		79	10-150
d-MeFOSA		72	10-150
d3-MeFOSAA		94	25-150
d7-MeFOSE		78	10-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Internal Transfer Chain of Custody

Pace Analytical
www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WI
Cert. Needed: [X] Yes ☐ No
Owner Received Date: 12/20/2022 **Results Requested By:** 1/13/2023

Workorder: 40256306 **Workorder Name:** PFAS

Report To	Subcontract To
Christopher Hyska Pace Analytical Green Bay 1241 Bellevue Street Suite 9 Green Bay, WI 54302 Phone (920)469-2436	Pace Analytical West Columbia 106 Vantage Point Drive West Columbia, SC 29172 Phone (803)791-9700

XL22014
JSH

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	WI PFAS 38	LAB USE ONLY
	EQUIPMENT BLANK	PS	12/20/2022 12:10	40256306001	Water	2	X	
	FIELD BLANK	PS	12/20/2022 12:20	40256306002	Water	2	X	
	SB-1R	PS	12/20/2022 13:25	40256306003	Water	2	X	
	SB-1R DUP	PS	12/20/2022 13:30	40256306004	Water	2	X	
	SB-5R	PS	12/20/2022 13:15	40256306005	Water	2	X	
	SB-14R	PS	12/20/2022 13:55	40256306006	Water	2	X	
	SBGW-1R	PS	12/20/2022 13:50	40256306007	Water	2	X	
	SBGW-3R	PS	12/20/2022 15:00	40256306008	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time
	[signature]	12/20/22 16:00		
	FedEx	12-22-2022 1145	[signature]	12/22/22 1145

Comments

Cooler Temperature on Receipt 3.9 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Wednesday, December 21, 2022 8:09:36 AM

FMT-ALL-C-002rev.00 24March2009

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Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 40256306

ALL SHADED AREAS are for LAB USE ONLY

Company: GEI Consultants, Inc	Billing Information: 3151 Voyager Dr Green Bay, WI
Address: Same →	
Report To: Mike DeBrasie	Email To: mdebrasie@geiconsultants.com
Copy To: Wausau 1300 Cleveland Ave	Site Collection Info/Address: 1300 Cleveland Ave Wausau, WI
Customer Project Name/Number:	State: WI County/City: Wausau Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print):	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)	Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: PFAS (GW)	Lab Profile/Line:
Equipment Blank	GW	G/A B	12-20-22	12:10				2	X	001
Field Blank	GW			12:20				2	X	002
SB-1R	GW			13:25				2	X	003
SB-1R Dup	GW			13:30				2	X	004
SB-5R	GW			13:15				2	X	005
SB-14R	GW			13:55				2	X	006
SBGW-1R	GW			13:50				2	X	007
SBGW-3R	GW			15:00				2	X	008

Lab Sample Receipt Checklist:

Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips:
Sample pH Acceptable Y N NA
pH Strips:
Sulfide Present Y N NA
Lead Acetate Strips:

LAB USE ONLY
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet / Blue / Dry / None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2785119

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: °C
Cooler 1 Therm Corr. Factor: °C
Cooler 1 Corrected Temp: °C
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Madison Lemmer	12/20/2022 5:06 pm		12/20/22 1706
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

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PACE ANALYTICAL SERVICES, LLC

DCN_Title: ENV-FRM-GBAY-0035 v02_Sample Preservation Receipt Form
Effective Date: 8/16/2022

Client Name: GEI Consultants Project #
All containers needing preservation have been checked and noted below: ☐Yes ☐No
Lab Lot# of pH paper:
Lab STR #ID of preservation (if pH adjusted):
Initial when completed:
Date/ Time:

Pace Lab #	Glass: AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	Plastic: BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	Vials: VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	JG9U	WGFU	WPFU	General: SP5T	ZPLC	GN 1	GN 2	VOA Vials (>6mm)*	H2SO4 pH ≤2	NaOH+Zn Acet. pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001								2																											2.5/5
002								2																											2.5/5
003								2																											2.5/5
004								2																											2.5/5
005								2																											2.5/5
006								2																											2.5/5
007								2																											2.5/5
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018																																			2.5/5
019																																			2.5/5
020																																			2.5/5

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WIDRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm): ☐Yes ☐No ☒N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/HCl	JGFU	4 oz amber jar unpres	SP5T	120 mL plastic Na Thiosulfate		
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres	ZPLC	ziploc bag		
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres	GN 1	250 mL poly unpres.		
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres	GN 2			
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH						
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI						
BG3U	250 mL clear glass unpres										

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Pace® Analytical Services, LLC

Qualtrax ID: 41307

DC#_Title: ENV-FRM-GBAY-0014 v03_SCUR
Effective Date: 8/17/2022

Sample Condition Upon Receipt Form (SCUR)

Project #: WO#: 40256306

Client Name: GEI Consultants

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco
☒ Client ☐ Pace Other:

Tracking #:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no
Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no
Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other

Thermometer Used SR- 9 Type of Ice: Wet Blue Dry None ☐ Meltwater Only
Cooler Temperature Uncorr: 1.0 /Corr: 2.0
Temp Blank Present: ☐ yes ☒ no Biological Tissue is Frozen: ☐ yes ☐ no

Person examining contents: Date: 12/20/22 Initials: MP
Labeled By Initials:

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☒No ☐N/A	2. pH# preservation 12/20/22 mp
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- DI VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☒No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume:		8.
For Analysis: ☒Yes ☐No MS/MSD: ☐Yes ☒No ☐N/A		
Correct Containers Used:	☒Yes ☐No	9.
Correct Type: Pace Green Bay, Pace IR, Non-Pace		
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☐Yes ☒No ☐N/A	12. 002" field blank - 1 and field blank - 2" 12/20/22 mp 002"12:00"
-Includes date/time/ID/Analysis Matrix: W		
Trip Blank Present:	☐Yes ☐No ☒N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐
Person Contacted: Date/Time:
Comments/ Resolution:

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample login

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Qualtrax ID: 41292 Pace® Analytical Services, LLC

DC#_Title: ENV-FRM-WCOL-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

Sample Receipt Checklist (SRC)

Client: Pace Cooler Inspected by/date: KDRW / 12/22/2022 Lot #: XL22014

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

1.3 / 1.3 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☑ Yes	☐ No	☐ NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC and all sample containers?
☑ Yes	☐ No		7. Was collection date & time listed on the COC and all sample containers?
☑ Yes	☐ No		8. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		9. Were tests to be performed listed on the COC?
☑ Yes	☐ No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		11. Was adequate sample volume available?
☑ Yes	☐ No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☑ Yes	☐ No		13. Were all samples containers accounted for? (No missing/excess)
☐ Yes	☐ No	☑ NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☑ No	☐ NA	18. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. ☐
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA.

Comments:

Qualtrax ID: 56360 Pace® Analytical Services, LLC Page 1 of 1