

Mr. Brian Zuber

Senior Environmental Quality Analyst

Emerging Pollutants Section, WRD
Department of Environment, Great Lakes,
and Energy
PO Box 30473
Lansing, MI 48909-7974

**Mr. John McCabe and Ms. Nicole
Sanabria**

Environmental Quality Analyst and Geologist

Materials Management Division
Department of Environment, Great Lakes,
and Energy
PO Box 30241
Lansing, MI 48909-7741

RE: Corrective Action Plan – South of Site Evaluation Supplement
Coldwater Road Site
6220 Horton Street, Mount Morris, MI
MID 005 356 860

FILE: 1088190/1940102192/Report

Dear Mr. Zuber, Mr. McCabe, and Ms. Sanabria:

Date December 2, 2022

On behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust, Ramboll Americas Engineering Solutions, Inc. (Ramboll) is providing the following update to the July 15, 2022, South of Site Evaluation Letter related to the storm sewer system south of Coldwater Road at the RACER Coldwater Road Facility located at 6220 Horton Street, Mount Morris, Genesee County, Michigan (Site).

Additional storm water sample collection and historical property search were completed to provide further information to the South of Site Evaluation Letter and Task 1 of the June 3, 2022, Corrective Action Plan (CAP) submitted to the Michigan Department of Environmental, Great Lakes, and Energy (EGLE) Water Resources Division, via MIWaters to address Violation Notice (No. VN-012757) dated May 4, 2022.

The evaluation was also conducted in response to the analytical results from per- and polyfluoroalkyl substances (PFAS), specifically perfluorooctanesulfonic acid (PFOS), from samples collected on September 22, 2021 by EGLE along the Cornwell Drain.

The purpose of this letter is to provide additional information which has been collected related to the storm sewer system along the southern Site boundary east of the middle entry drive and south of Coldwater Road, provide the results/information, and provide recommendations for additional investigation/evaluation or other activities and timelines.

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Historical Property Information

A second request was submitted to Environmental Data Resources Inc. (EDR) to receive the historical property information for the properties further east and west along Coldwater Road, and along Harry Street between Coldwater Road and Carpenter Road, and east and west along Carpenter Road south of Harry Street (**Appendix A** and **Figure 2**). During the evaluation it was determined that Carpenter Road is outside our area of evaluation and not included in this letter report. EDR provided the historical directory listings from 1960 to 2017.

The following eight commercial properties were identified during the first record search. The past and current property uses include:

Coldwater Road

- Plumbing supply sales; 1985-Present (1240 E. Coldwater Road)
- Plumbing supply warehouse (1329 E. Coldwater Road) Not included in city directories but observed
- United Automobile Works (UAW) office; 1960-1995 / Titling office; 2017 (1272 E. Coldwater Road)
- Retail store; 1975-2005 (1292 E. Coldwater Road)
- Banking; 1980-2017 (1314 E. Coldwater Road) Spartan Paving, Concrete, and Paving is listed on the sign for the property, but was not listed in the city directory.
- Roofing and siding; 1960 / Metal supplier; 1985-Present (1400 E. Coldwater Road)
- Construction services; 2010 / Truck repair; 2010-Present (1415 E. Coldwater Road)
- Restaurant; 1960-1985 (5469 N. Dort Hwy)
- Petroleum oil terminal; 1965-Present (6065 N. Dort Hwy)

The results from the second property search identified the following twenty-two commercial properties. No commercial properties were identified along Harry Street. The past and current property uses include:

Coldwater Road

- Mental health services; 1987-Present (1057 E. Coldwater Road)
- Beverage distribution; 1965-1974 (1121 E. Coldwater Road)
- Automobile sales; 1987 (1192 E. Coldwater Road)
- Plumbing supply sales; 1960 (1206 E. Coldwater Road)
- Gasoline station; 1960 / Automobile sales 1987-1995 (1226 E. Coldwater Road)
- Automobile sales; 1960 (1248 E. Coldwater Road)
- Laundromat; 1974 (1362 E. Coldwater Road)
- Automobile repair; 1992-1995 (2134 E. Coldwater Road)
- Asphalt company; 1974-2010 (2184 E. Coldwater Road)
- Oil company; 1974 (2288 E. Coldwater Road)
- Leather retailer; 1974 (44465 E. Coldwater Road)

No past or current commercial properties were identified along Harry Street between Coldwater Road and Carpenter Road. It is unknown at this time if during their times of operation, the identified current or former occupants used or stored products which may have contained PFAS. There is the potential that paving/roofing materials could have contained PFAS. Laundromats may have used stain-resistant clothing, and automotive and leather products could have contained PFAS. In addition, there is a

potential that aqueous film forming foam (AFFF) could have been used at the petroleum terminal if there were any fires in the past.

Sample Collection

On August 4, 2022, an additional round of samples were collected from SS-12, SS-13, SS-14, SS-15, and MW-10E-W. Prior to collecting the samples for this event there was approximately 1.72 inches of precipitation on August 3, 2022 in the area. The sample location SS-11 on East Kurtz Avenue west of Harry Street (and EGLE's CD-10 sample location) had no flow or standing water and was not sampled this event.

No flow was observed coming from the east or west of the manhole south of SS-02 during this sampling event. This manhole is along the southside of Coldwater Road at the intersection of Harry Street, which is the short east-west line that connects to the north-south sewer line (see **Figure 1**).

SS-12 is located just north of Kurtz Avenue (see **Figure 1**), on Harry Street and was collected from the water flowing from the north to the south. The approximate flow rate during sampling was 1.3 gallons per minute (gpm).

SS-13 is located east of manhole SS-02 and was collected from water flowing from the northeast pipe coming into the manhole from the Site. The approximate flow rate during sampling was 0.4 gpm.

SS-14 is located in the same manhole as SS-02 and was collected from the city storm sewer pipe that flows into manhole SS-02 from the west. The approximate flow rate during sampling was 0.9 gpm.

SS-15 is located in the open storm water ditch along the westside of Harry Street at the intersection of East Grand Boulevard and was collected from the water flowing from the north to the south through a drainage culvert. The approximate flow rate during sampling was 5 gpm.

MH-10E-W is located along the northside of Coldwater Road west of SS-02 and was collected from the municipal water flowing east. No flow was observed from the plug within manhole MH-10E which is the plugged pipe from the Site that formerly discharged into manhole MH-10E. The pipe from the Site entering manhole MH-10E was plugged and the manhole sealed where the pipe entered the manhole, and one upstream, on-Site storm sewer catch basin was capped in May 2020 to mitigate stormwater leaving the Site from this line into the municipal system. The approximate flow rate during sampling was undetermined at the time of sampling.

The samples were collected with a peristaltic pump and polyethylene tubing that was weighted down with a stainless-steel weight and lowered into the manhole.

The samples were labeled, packed on ice, and shipped via courier under routine chain-of-custody protocols to Merit Laboratories, Inc. (Merit) of East Lansing, Michigan.

Analytical Results

The storm water samples were analyzed for PFAS by method ASTM D7979-19 (no preservative). The analytical results for the five recent storm water samples and historical storm water samples collected

south of the Site are summarized in **Table 2**, and the analytical laboratory reports are included in **Appendix B**.

The maximum concentrations exceeding the Rule 57 Water Quality Value of 12 ng/l for PFOS, were detected at the two samples located furthest downstream from the Site along Harry Street at a concentration of 220 ng/l for PFOS in sample SS-15 and at sample location SS-12 upstream of SS-15 at a concentration of 190 ng/l for PFOS.

The sample results collected from the three locations along the Site boundary (MH-10E-W, SS-13, and SS-14) were detected at a lower concentration slightly above the Rule 57 Water Quality Value of 12 ng/l for PFOS. Detected concentrations of PFOS in samples from MH-10E-W and SS-13 increased slightly from the previous events, and the concentration of PFOS in the sample from SS-14 decreased slightly but all results were comparable to historical analytical results.

Conclusions and Recommendations

The sampling locations were selected to evaluate locations near the property boundary most likely to receive storm water from the Site. Based on the data collected, the concentrations of PFOS in the upstream samples collected near the property boundary (MH-10E-W, SS-13 & SS-14) continue to be below that of SS-12 and SS-15 which were located further downstream. It is unclear why downstream PFOS concentrations are higher than PFOS concentrations at the Site perimeter.

Based on the results of this sampling and the lack of analytical data collected in this area to date, we propose to continue with a step wise approach to evaluating PFOS concentrations further downstream, especially because concentrations are increasing further away from the Site.

We propose to collect an additional round of storm water samples to obtain additional data to continue to establish a database for further evaluation of how PFOS concentrations in the storm sewers south of the Site change over time and under varying conditions. The sampling will include the locations that were recently sampled in August along with additional locations. Sampling would be conducted in December 2022 within 24 hours of a rain event. The proposed sample locations are:

- SS-11 through SS-15
- MH-10E-W (municipal flow west of SS-02)
- New sample locations (SS-16 & SS-17) at the discharge points for the storm water sewer along the eastside of Princeton Avenue and Harry Street (**Figure 2**). SS-16 will be collected from storm water flowing from the north that heads east at Princeton Avenue. SS-17 will be collected from storm water flowing from the west along Princeton Avenue and south along Harry Street where it combines the discharge east of the intersection. More evaluation is needed to determine where the storm water flows from the west and south of Princeton Avenue and Harry Street.

Because the concentration of PFOS detected in the sample from SS-12 was higher than concentrations detected closer to the Site, a sample is proposed of the concrete pipe from the storm sewer pipe just south of SS-12 before it flows underneath Kurtz Avenue to evaluate whether PFAS may be retained in and leaching from the concrete pipe contributing to the increased PFOS detections further downstream.

The sample from the concrete pipe will be collected under dry conditions by drilling a 1-3/8 to 1-1/2-inch diameter hole using a rotary hammer drill. The powder produced during drilling will be collected and placed in a laboratory-provided jar. A shallow and deep sample will be collected. One sample from zero to approximately 1/2 inch deep, and a second deeper sample will be collected approximately 1/2 to 1-inch deep.

After the sampling is complete and analytical results are delivered, we will evaluate the data and prepare and distribute a summary letter which will contain a summary of the data, context for the results, and further recommendations. The target submittal date for the report is the end of January 2023 but could vary some depending on when conditions are right for sampling.

If you have any questions, feel free to contact me at (313) 333-0211.

Yours sincerely,

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.



Clifford Yantz

Senior Hydrogeologist

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CC:

David Favero (RACER Trust)

Kevin Schneider (Ramboll)

Enclosures:

Table 1 - Storm Water PFAS Sample Results

Figure 1 - Storm Water Sewers - Horton Street to Dort Highway

Figure 2 - City Directory Property Locations

Appendix A - City Directory

Appendix B - Analytical Laboratory Report

TABLE



TABLE 2
RACER Trust - Coldwater Road Peregrine Facilities
Per-and Polyfluoroalkyl Substances Sampling Results - Storm Water Samples South Portion of Site

Coldwater Road - Storm Water Samples - South Portion of Site

Perfluorinated Compound	Well/Sample ID: EGLE Part 201 Generic Groundwater Surface Water Interface Criteria / Rule 57 Surface Water Quality Values	SS-02	SS-02 (DUP-1)	SS-02	SS-04	SS-DUP-2/SS-04	SS-08
		(Storm Sewer)	(Storm Sewer)	(Storm Sewer)	(Storm Sewer)	(Storm Sewer)	(Storm Sewer)
Sample Date:		11/12/2018	11/12/2018	12/21/2021	3/19/2020	3/19/2020	8/28/2020
Perfluorobutanoic Acid (PFBA)	--	20	20	13	<100	<100	<10
Perfluoropentanoic Acid (PFPeA)	--	<10	<10	6.1	<10	<10	<4.1
4:2 Fluorotelomer Sulfonic Acid (4:2 FTSA)	--	<10	<10	<2.1	<10	<10	<2.1
Perfluorohexanoic Acid (PFHxA)	--	10	10	4.5	<10	<10	<2.1
Perfluorobutane Sulfonic Acid (PFBS)	670,000	<10	<10	3.1	<10	<10	<2.1
Perfluoroheptanoic Acid (PFHpA)	--	<10	<10	2.2	<10	<10	<2.1
Perfluoropentane Sulfonic Acid (PFPeS)	--	<10	<10	<2.1	<10	<10	<2.1
6:2 Fluorotelomer Sulfonic Acid (6:2 FTSA)	--	<10	<10	<4.2	<10	<10	<2.1
Perfluorooctanoic Acid (PFOA)	170	20	20	4.8	<10	<10	1.9 J
Perfluorohexane Sulfonic Acid (PFHxS)	--	20	20	3.7	<10	<10	<2.1
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)	--	20	20	2.8	<10	<10	<2.1
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)	--	<10	<10	<2.1	<10	<10	<2.1
Perfluorononanoic Acid (PFNA)	--	<10	<10	<2.1	<10	<10	<2.1
8:2 Fluorotelomer Sulfonic Acid (8:2 FTSA)	--	<10	<10	<4.2	<10	<10	<2.1
Perfluoroheptane Sulfonic Acid (PFHpS)	--	10	<10	<2.1	<10	<10	<2.1
Perfluorodecanoic Acid (PFDA)	--	<10	<10	<2.1	<10	<10	<2.1
N-methyl Perfluorooctanesulfonamidoacetic Acid (N-MeFOSAA)	--	<10	<10	<2.1	<10	<10	<2.1
N-Ethyl Perfluorooctane Sulfonamidoacetic Acid (EtFOSAA)	--	<10	<10	<4.2	<10	<10	<4.1
Perfluorooctane Sulfonic Acid (PFOS)	12	1520	1250	86	<10	<10	7.3
Perfluorooctane Sulfonic Acid (PFOS -LN)	--	1160	950	62	<10	<10	4.1
Perfluorooctane Sulfonic Acid (PFOS -BR)	--	380	280	24	<10	<10	2.8
Perfluoroundecanoic Acid (PFUnDA)	--	<10	<10	<2.1	<10	<10	<2.1
Perfluorononane Sulfonic Acid (PFNS)	--	<10	<10	<2.1	<10	<10	<2.1
Perfluorododecanoic Acid (PFDoDA)	--	<10	<10	<2.1	<10	<10	<2.1
Perfluorodecane Sulfonic Acid (PFDS)	--	<10	<10	<2.1	<10	<10	<2.1
Perfluorotridecanoic Acid (PFTrDA)	--	<10	<10	<2.1	<10	<10	<2.1
Perfluorooctane Sulfonamide (FOSA)	--	<10	<10	<2.1	<10	<10	<2.1
Perfluorotetradecanoic Acid (PFTeDA)	--	<10	<10	<4.2	<10	<10	<4.1
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF30uDS)	--	--	--	<2.1	<10	<10	<2.1
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF30NS)	--	--	--	<2.1	<10	<10	<2.1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	--	--	--	<2.1	<10	<10	<2.1
Hexafluoropropylene oxide dimer (HFPO-DA)	--	--	--	<10	<10	<10	<2.1
Total Per-and Polyfluoroalkyl Substances	--	1600.0	1320.0	123.4	0.0	0.0	9.2

Notes

- 1) Detections in **bold**.
- 2) Concentrations in ng/L.
- 3) < = Not detected at specified reporting limit.
- 4) -- = Not analyzed/No criteria.
- 5) Dup = Duplicate sample.
- 6) EGLE Part 201 Groundwater Generic Cleanup Criteria and Screening Levels, December 21, 2020 and Rule 57 Surface Water Quality Values.
- 7) Concentration above the groundwater surface water interface (GSI) criteria are highlighted in yellow.
- 8) B - Compound also found in associated method blank.
- 9) I - Matrix interference with internal standard.
- 10) J - Estimated value less than reporting limit, but greater than MDL.
- 11) X - Elevated reporting limit due to matrix interference.
- 12) Light gray header is most recent sampling event result.
- 13) QA/QC Samples were either not detected above the reporting limit or below the EGLE Part 201 Groundwater Generic Cleanup Criteria.



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RACER Trust - Coldwater Road Peregrine Facilities
Per-and Polyfluoroalkyl Substances Sampling Results - Storm Water Samples South Portion of Site

Coldwater Road - Storm Water Samples - South Portion of Site

Perfluorinated Compound	Well/Sample ID:	EGLE Part 201 Generic Groundwater Surface Water Interface Criteria / Rule 57 Surface Water Quality Values	SS-11 (Storm Water)	SS-12 (Storm Sewer)	SS-12 (Storm Sewer)	SS-12 (Storm Sewer)	SS-13 (Storm Sewer)	SS-13 (Storm Sewer)
	Sample Date:		4/14/2022	4/14/2022	6/22/2022	8/4/2022	5/16/2022	8/4/2022
Perfluorobutanoic Acid (PFBA)	--	--	<9.8	<9.8	<11	<10	<39	<10
Perfluoropentanoic Acid (PFPeA)	--	--	<3.9	2.1 J	4.0 J	4.2	<3.9	1.6 J
4:2 Fluorotelomer Sulfonic Acid (4:2 FTSA)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
Perfluorohexanoic Acid (PFHxA)	--	--	<2.0	3.3	5.2	4.2	2.5	3.2
Perfluorobutane Sulfonic Acid (PFBS)	670,000	82	82	2.0	5.6	3.9	<2.0	3.5
Perfluoroheptanoic Acid (PFHpA)	--	--	<2.0	2.1	2.7	2.7	<2.0	1.8 J
Perfluoropentane Sulfonic Acid (PFPeS)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
6:2 Fluorotelomer Sulfonic Acid (6:2 FTSA)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
Perfluorooctanoic Acid (PFOA)	170	170	<2.0	5.8	11	7.5	<2.0	4.8
Perfluorohexane Sulfonic Acid (PFHxS)	--	--	<2.0	2.8	3.5	3.0	<2.0	3.5
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)	--	--	<2.0	1.7 J	2.8	2.4	<2.0	2.5
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
Perfluorononanoic Acid (PFNA)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
8:2 Fluorotelomer Sulfonic Acid (8:2 FTSA)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
Perfluoroheptane Sulfonic Acid (PFHpS)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
Perfluorodecanoic Acid (PFDA)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
N-methyl Perfluorooctanesulfonamidoacetic Acid (N-MeFOSAA)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
N-Ethyl Perfluorooctane Sulfonamidoacetic Acid (EtFOSAA)	--	--	<3.9	<3.9	<4.2	<4.1	<3.9	<4.0
Perfluorooctane Sulfonic Acid (PFOS)	12	12	4.8	140	91	190	20	25
Perfluorooctane Sulfonic Acid (PFOS -LN)	--	--	<2.0	100	63	140	16	17
Perfluorooctane Sulfonic Acid (PFOS -BR)	--	--	4.1	34	28	44	4.0	6.7
Perfluoroundecanoic Acid (PFUnDA)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
Perfluorononane Sulfonic Acid (PFNS)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
Perfluorododecanoic Acid (PFDoDA)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
Perfluorodecane Sulfonic Acid (PFDS)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
Perfluorotridecanoic Acid (PFTrDA)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
Perfluorooctane Sulfonamide (FOSA)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
Perfluorotetradecanoic Acid (PFTeDA)	--	--	<3.9	<3.9	<4.2	<4.1	<3.9	<4.0
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9Cl-PF3ONS)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	--	--	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0
Hexafluoropropylene oxide dimer (HFPO-DA)	--	--	<3.9	<3.9	<11	<10	<3.9	<10
Total Per-and Polyfluoroalkyl Substances	--	--	86.8	158.1	123.0	215.5	22.5	43.4

- Notes
- 1) Detections in **bold**.
 - 2) Concentrations in ng/L.
 - 3) < = Not detected at specified reporting limit.
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 - 5) Dup = Duplicate sample.
 - 6) EGLE Part 201 Groundwater Generic Cleanup Criteria and Screening Levels, December 21, 2020 and Rule 57 Surface Water Quality Values.
 - 7) Concentration above the groundwater surface water interface (GSI) criteria are highlighted in yellow.
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 - 12) Light gray header is most recent sampling event result.
 - 13) QA/QC Samples were either not detected above the reporting limit or below the EGLE Part 201 Groundwater Generic Cleanup Criteria.



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Per-and Polyfluoroalkyl Substances Sampling Results - Storm Water Samples South Portion of Site

Coldwater Road - Storm Water Samples - South Portion of Site

Perfluorinated Compound	Well/Sample ID:	EGLE Part 201 Generic Groundwater Surface Water Interface Criteria / Rule 57 Surface Water Quality Values	SS-14 (Storm Sewer)	SS-14 (Storm Sewer)	SS-14 (Storm Sewer)	SS-15 (Storm Sewer)
		Sample Date:	5/16/2022	6/22/2022	8/4/2022	8/4/2022
Perfluorobutanoic Acid (PFBA)	--	--	14	12	<10	<10
Perfluoropentanoic Acid (PFPeA)	--	--	2.1 J	5.2	3.5 J	4.1 J
4:2 Fluorotelomer Sulfonic Acid (4:2 FTSA)	--	--	<2.1	<2.1	<2.0	<2.1
Perfluorohexanoic Acid (PFHxA)	--	--	4.3	7.0	3.5	3.5
Perfluorobutane Sulfonic Acid (PFBS)	670,000	--	2.8	6.7	3.5	3.5
Perfluoroheptanoic Acid (PFHpA)	--	--	2.3	5.0	2.9	1.8 J
Perfluoropentane Sulfonic Acid (PFPeS)	--	--	<2.1	<2.1	<2.0	<2.1
6:2 Fluorotelomer Sulfonic Acid (6:2 FTSA)	--	--	<2.1	<2.1	<2.0	<2.1
Perfluorooctanoic Acid (PFOA)	170	--	8.4	15	5.1	5.5
Perfluorohexane Sulfonic Acid (PFHxS)	--	--	1.8 J	4.5	2.1	2.9
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)	--	--	<2.1	3.7	<2.0	2.2
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)	--	--	<2.1	<2.1	<2.0	<2.1
Perfluorononanoic Acid (PFNA)	--	--	<2.1	<2.1	<2.0	<2.1
8:2 Fluorotelomer Sulfonic Acid (8:2 FTSA)	--	--	<2.1	<2.1	<2.0	<2.1
Perfluoroheptane Sulfonic Acid (PFHpS)	--	--	<2.1	<2.1	<2.0	<2.1
Perfluorodecanoic Acid (PFDA)	--	--	<2.1	<2.1	<2.0	<2.1
N-methyl Perfluorooctanesulfonamidoacetic Acid (N-MeFOSAA)	--	--	<2.1	<2.1	<2.0	<2.1
N-Ethyl Perfluorooctane Sulfonamidoacetic Acid (EtFOSAA)	--	--	<4.1	<4.1	<4.0	<4.1
Perfluorooctane Sulfonic Acid (PFOS)	12	--	30	39	21	220
Perfluorooctane Sulfonic Acid (PFOS -LN)	--	--	20	24	13	170
Perfluorooctane Sulfonic Acid (PFOS -BR)	--	--	9.1	14	8	50
Perfluoroundecanoic Acid (PFUnDA)	--	--	<2.1	<2.1	<2.0	<2.1
Perfluorononane Sulfonic Acid (PFNS)	--	--	<2.1	<2.1	<2.0	<2.1
Perfluorododecanoic Acid (PFDoDA)	--	--	<2.1	<2.1	<2.0	<2.1
Perfluorodecane Sulfonic Acid (PFDS)	--	--	<2.1	<2.1	<2.0	<2.1
Perfluorotridecanoic Acid (PFTrDA)	--	--	<2.1	<2.1	<2.0	<2.1
Perfluorooctane Sulfonamide (FOSA)	--	--	<2.1	<2.1	<2.0	<2.1
Perfluorotetradecanoic Acid (PFTeDA)	--	--	<4.1	<4.1	<4.0	<4.1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	--	--	<2.1	<2.1	<2.0	<2.1
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9Cl-PF3ONS)	--	--	<2.1	<2.1	<2.0	<2.1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	--	--	<2.1	<2.1	<2.0	<2.1
Hexafluoropropylene oxide dimer (HFPO-DA)	--	--	<4.1	<10	<10	<10
Total Per-and Polyfluoroalkyl Substances	--	--	65.7	94.4	41.6	241.3

Notes

- 1) Detections in **bold**.
- 2) Concentrations in ng/L.
- 3) < = Not detected at specified reporting limit.
- 4) -- = Not analyzed/No criteria.
- 5) Dup = Duplicate sample.
- 6) EGLE Part 201 Groundwater Generic Cleanup Criteria and Screening Levels, December 21, 2020 and Rule 57 Surface Water Quality Values.
- 7) Concentration above the groundwater surface water interface (GSI) criteria are highlighted in yellow.
- 8) B - Compound also found in associated method blank.
- 9) I - Matrix interference with internal standard.
- 10) J - Estimated value less than reporting limit, but greater than MDL.
- 11) X - Elevated reporting limit due to matrix interference.
- 12) Light gray header is most recent sampling event result.
- 13) QA/QC Samples were either not detected above the reporting limit or below the EGLE Part 201 Groundwater Generic Cleanup Criteria.



TABLE 2
RACER Trust - Coldwater Road Peregrine Facilities
Per-and Polyfluoroalkyl Substances Sampling Results - Storm Water Samples South Portion of Site

Coldwater Road - Storm Water Samples - South Portion of Site

Perfluorinated Compound	Well/Sample ID: EGLE Part 201 Generic Groundwater Surface Water Interface Criteria / Rule 57 Surface Water Quality Values	MH-10E	MH-10E	MH-10E-W	MH-10E-W	MH-10E-W	MH-10E-W
		(Storm Sewer)	(Storm Sewer)	(Storm Sewer)	(Storm Sewer)	(Storm Sewer)	(Storm Sewer)
Sample Date:		3/19/2020	8/3/2020	8/3/2020	12/18/2020	3/11/2021	8/4/2022
Perfluorobutanoic Acid (PFBA)	--	<98	<9.9	<9.8	<10	<10	<9.8
Perfluoropentanoic Acid (PFPeA)	--	<9.8	1.4 J	1.3 J	<4.2	<4.1	3.5 J
4:2 Fluorotelomer Sulfonic Acid (4:2 FTSA)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
Perfluorohexanoic Acid (PFHxA)	--	<9.8	2.9	2.2	<2.1	<2.1	3.2
Perfluorobutane Sulfonic Acid (PFBS)	670,000	<9.8	1.9 J	4.0	4.7	<2.1	3.5
Perfluoroheptanoic Acid (PFHpA)	--	<9.8	2.0	1.6 J	<2.1	<2.1	2.1
Perfluoropentane Sulfonic Acid (PFPeS)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
6:2 Fluorotelomer Sulfonic Acid (6:2 FTSA)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
Perfluorooctanoic Acid (PFOA)	170	<9.8	4.8	5.8	<2.1	<2.1	6.6
Perfluorohexane Sulfonic Acid (PFHxS)	--	<9.8	<2.0	2.2	<2.1	<2.1	<2.0
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)	--	<9.8	<2.0	1.7 J	<2.1	<2.1	<2.0
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
Perfluorononanoic Acid (PFNA)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
8:2 Fluorotelomer Sulfonic Acid (8:2 FTSA)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
Perfluoroheptane Sulfonic Acid (PFHpS)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
Perfluorodecanoic Acid (PFDA)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
N-methyl Perfluorooctanesulfonamidoacetic Acid (N-MeFOSAA)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
N-Ethyl Perfluorooctane Sulfonamidoacetic Acid (EtFOSAA)	--	<9.8	<3.9	<3.9	<4.2	<4.1	<3.9
Perfluorooctane Sulfonic Acid (PFOS)	12	70	61	39	10	3.2	15
Perfluorooctane Sulfonic Acid (PFOS -LN)	--	49	44	24	3.5	<2.1	8.3
Perfluorooctane Sulfonic Acid (PFOS -BR)	--	19	14	12	5.9	<2.1	6.1
Perfluoroundecanoic Acid (PFUnDA)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
Perfluorononane Sulfonic Acid (PFNS)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
Perfluorododecanoic Acid (PFDoDA)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
Perfluorodecane Sulfonic Acid (PFDS)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
Perfluorotridecanoic Acid (PFTrDA)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
Perfluorooctane Sulfonamide (FOSA)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
Perfluorotetradecanoic Acid (PFTeDA)	--	<9.8	<3.9	<3.9	<4.2	<4.1	<3.9
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9Cl-PF3ONS)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	--	<9.8	<2.0	<2.0	<2.1	<2.1	<2.0
Hexafluoropropylene oxide dimer (HFPO-DA)	--	<9.8	<2.0	<2.0	<2.0	<2.1	<9.8
Total Per-and Polyfluoroalkyl Substances	--	70.0	74.0	56.1	14.7	3.2	33.9

Notes

- 1) Detections in **bold**.
- 2) Concentrations in ng/L.
- 3) < = Not detected at specified reporting limit.
- 4) -- = Not analyzed/No criteria.
- 5) Dup = Duplicate sample.
- 6) EGLE Part 201 Groundwater Generic Cleanup Criteria and Screening Levels, December 21, 2020 and Rule 57 Surface Water Quality Values.
- 7) Concentration above the groundwater surface water interface (GSI) criteria are highlighted in yellow.
- 8) B - Compound also found in associated method blank.
- 9) I - Matrix interference with internal standard.
- 10) J - Estimated value less than reporting limit, but greater than MDL.
- 11) X - Elevated reporting limit due to matrix interference.
- 12) Light gray header is most recent sampling event result.
- 13) QA/QC Samples were either not detected above the reporting limit or below the EGLE Part 201 Groundwater Generic Cleanup Criteria.

FIGURE



- ⊕ MONITORING WELL / PIEZOMETER
- ⊕ ABANDONED WELL
- ⊗ BORING
- ⊕ PROPOSED CONCRETE SAMPLE
- Ⓜ PROPOSED STORM SEWER SAMPLE
- ⊗ PROPOSED SURFACE WATER SAMPLE
- Ⓜ ABANDONED MANHOLE
- ⊗ STORM SEWER DRAIN
- Ⓜ STORM SEWER MANHOLE
- PIPE PLUG
- ⊗ SURFACE WATER
- ➔ OPEN DRAINAGE DITCH
- ➔ STORM SEWER FORMER
- BUILDING PROPERTY
- ⊔ BOUNDARY

0 175 350
Feet

**GENESEE STORM SEWERS
(HORTON ST TO N DORT HWY)**

RACER TRUST
COLDWATER ROAD
FLINT, MICHIGAN











FIGURE 01

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY



PROJECT: 1940102192 | DATED: 11/15/2022 | DESIGNER: MONETANT
 I:\Race-Tru\1088190\GIS\Coldwater_Road\X\2022_P\AS_OMM\Figure 2 - Genesee Storm Sewers - Coldwater Rd_11152022.mxd



-  PROPOSED SURFACE WATER SAMPLE
-  ABANDONED MANHOLE
-  STORM SEWER DRAIN
-  STORM SEWER MANHOLE
-  PIPE PLUG
-  SURFACE WATER
-  MONITORING WELL / PIEZOMETER
-  ABANDONED WELL
-  STORM SEWER
-  CORNWALL DRAIN



**CITY DIRECTORY PROPERTY LOCATIONS
 COLDWATER RD**

FIGURE 02

RACER TRUST
 COLDWATER ROAD
 FLINT, MICHIGAN

RAMBOLL AMERICAS
 ENGINEERING SOLUTIONS, INC.
 A RAMBOLL COMPANY





APPENDIX A
CITY DIRECTORY



**Appendix A
RACER Trust
Coldwater Road
City Directory
Coldwater Road/Dort Highway**

Road Year of City Directories	East Coldwater Road									
	1057 E Coldwater Road	1121 E Coldwater Road	1192 E Coldwater Road	1206 E Coldwater Road	1226 E Coldwater Road	1240 E Coldwater Road	1248 E Coldwater Road	1272 E Coldwater Road	1292 E Coldwater Road	1314 E Coldwater Road
1960	--	--	--	Bond Vic Sls hdw	Herb's Gulf Serv Gas Sta	--	J & J Auto Sales used cars	UAW- CIO Tern-stedt Local No 326	--	--
1965	--	Moyer Beverage Co WHOL	--	--	--	--	--	--	--	--
1970	--	Moyer Beverage Co beer distr	--	--	--	--	--	Fisher Body Coldwater Rd Local No 326 (UAW)	--	--
1974	--	Moyer Beverage Co	--	--	--	--	--	--	--	--
1975	--	--	--	--	--	--	--	--	Fire-Lighter Studio Mantel & Fireplace Fixtures	--
1977	--	--	--	--	--	--	--	--	--	--
1980	--	--	--	--	--	--	--	--	--	Auto Hardware Federal Credit Union
1982	--	--	--	--	--	--	--	--	--	--
1985	--	--	--	--	--	Vic Bond Sales Elec & Plmb Sup	--	Fisher Body Coldwater Rd Local No 326 (UAW)	Fire-Lighter Studio Mantel & Fireplace Fixtures	Auto Hardware Federal Credit Union
1987	Commnty Industries	--	Eagles Auto City	--	Superior Motors	--	--	--	--	--
1992	Co CMHS Comm Indst	--	--	--	Superior Motors	Vic Bond Sales	--	United Automobile Workers	Fire Lighter Studio	Michigan Federal Credit Union
1995	--	--	--	--	Superior Motors	Vic Bond Sales	--	United Automobile Workers America	Fire Lighter Studio	Michigan Federal Credit Union
2000	--	--	--	--	--	Bond Vic Sales; Vic Bond Sales Plumbing Electrical Heating Cabinetry	--	--	Fire Lighter Studio	Michigan Federal Credit Union
2005	Community Industries	--	--	--	--	Vic Bond Sales	--	--	Fire Lighter Studio	Michigan Federal Credit Union
2010	--	--	--	--	--	Vic Bond Sales Inc	--	--	--	Michigan Federal Credit Union
2014	--	--	--	--	--	Vic Bond Sales Inc	--	--	--	Tripointe Community Credit Union
2017	--	--	--	--	--	--	--	DMH Titling LLC	--	Tripointe Community Credit Union

Light gray header are properties located during first directory search.



**Appendix A
RACER Trust
Coldwater Road
City Directory
Coldwater Road/Dort Highway**

Road	East Coldwater Road							North Dort Highway		
	Year of City Directories	1362 E Coldwater Road	1400 E Coldwater Road	1415 E Coldwater Road	2134 E Coldwater Road	2184 E Coldwater Road	2288 E Coldwater Road	44465 E Coldwater Road	5469 N Dort Hwy	6065 N Dort Hwy
1960	--	Hayes Roofing & Siding	--	--	--	--	--	--	Western Chuck Wagon Resturant	--
1965	--	--	--	--	--	--	--	--	The Stables Tavern	Marathon Oil Co
1970	--	--	--	--	--	--	--	--	The Stables Tavern	Marathon Oil Co
1974	Model Lndry&Cleanr	--	--	--	--	Ace Asphalt & Paving	Dennis Oil Co	R & L Custom Leather GD	--	--
1975	--	--	--	--	--	--	--	--	The Stables Tavern	--
1977	--	--	--	--	--	Ace Asphalt & Paving	--	--	--	--
1980	--	--	--	--	--	--	--	--	The Stables Resturant	Marathon Oil Co
1982	--	--	--	--	--	Ace Asphalt & Paving	--	--	--	--
1985	--	Taylor Steel Corp Steel Distr Whse	--	--	--	--	--	--	The Stables Resturant	Marathon Petroleum Co (Flint Terminal)
1987	--	--	--	--	--	Ace Asphalt Plant, Eagle Expeoiting	--	--	--	--
1992	--	Taylor Steel Company	--	--	Genesee Auto Repair	Ace Asphalt Plant, Ace Asphalt & Paving	--	--	--	Marathon Petroleum Co
1995	--	Taylor Steel Company	--	--	Genesee Auto Repair	Ace Asphalt & Paving Co	--	--	--	--
2000	--	Taylor Steel Company	--	--	--	Ace Asphalt & Paving Company Incorporated	--	--	--	Marathon Oil Co Marathon Ashland Petroleum
2005	--	Mighty Lock	--	--	--	--	--	--	--	Marathon Ashland Petroleum
2010	--	Taylor Steel Company	Infra Source Underground SVC	--	--	Ace Asphalt & Paving Co	--	--	--	Marathon Oil Co
2014	--	Taylor Steel Company	Best Choice Tire & Service LLC	--	--	--	--	--	--	--
2017	--	Taylor Steel Company	--	--	--	--	--	--	--	Marathon Oil Company

Light gray header are properties located during first directory search.

APPENDIX B
ANALYTICAL LABORATORY REPORT



Analytical Laboratory Report

Report ID: S38865.01(01)
Generated on 08/25/2022

Report to

Attention: Clifford Yantz
Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

Phone: 313-333-0211 FAX:
Email: Clifford.Yantz@ramboll.com

Additional Contacts: Kevin Schneider

Report produced by

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

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

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

Report Summary

Lab Sample ID(s): S38865.01-S38865.06
Project: RACER Coldwater Rd
Collected Date(s): 08/04/2022
Submitted Date/Time: 08/04/2022 14:50
Sampled by: Kevin Schneider
P.O. #: 1940004462 TASK 36

Table of Contents

- Cover Page (Page 1)
- General Report Notes (Page 2)
- Report Narrative (Page 2)
- Laboratory Certifications (Page 3)
- Qualifier Descriptions (Page 3)
- Glossary of Abbreviations (Page 3)
- Method Summary (Page 4)
- Sample Summary (Page 5)

Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

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

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

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

When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

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

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

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

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

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

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

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

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

Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

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

Glossary of Abbreviations

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



Analytical Laboratory Report

Method Summary

Method	Version
ASTMD7979-19M	ASTM Method D7979 - 19 Modified (Isotopic Dilution)

Parameter Summary

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



Analytical Laboratory Report

Sample Summary (6 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S38865.01	Field Blank-080422	Liquid	08/04/22 09:47
S38865.02	SS-15	Liquid	08/04/22 09:52
S38865.03	SS-12	Liquid	08/04/22 10:08
S38865.04	MW-10E-W	Liquid	08/04/22 10:25
S38865.05	SS-14	Liquid	08/04/22 10:38
S38865.06	SS-13	Liquid	08/04/22 10:57



Analytical Laboratory Report

Lab Sample ID: S38865.01

Sample Tag: Field Blank-080422

Collected Date/Time: 08/04/2022 09:47

Matrix: Liquid

COC Reference: 144818

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	10.96/6.89/8	ASTMD7979-19M	08/17/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 08/17/22 20:34, Analyst: KCV

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



Analytical Laboratory Report

Lab Sample ID: S38865.02

Sample Tag: SS-15

Collected Date/Time: 08/04/2022 09:52

Matrix: Liquid

COC Reference: 144818

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.36/6.99/11	ASTMD7979-19M	08/17/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 08/17/22 20:54, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.05	375-22-4	
PFPeA*	4.1	4.1	1.0	ng/L	2.05	2706-90-3	J
4:2 FTSA*	Not detected	2.1	1.6	ng/L	2.05	757124-72-4	
PFHxA*	3.5	2.1	1.4	ng/L	2.05	307-24-4	
PFBS*	3.5	2.1	1.4	ng/L	2.05	375-73-5	
PFHpA*	1.8	2.1	1.4	ng/L	2.05	375-85-9	J
PFPeS*	Not detected	2.1	1.8	ng/L	2.05	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.05	27619-97-2	
PFOA*	5.5	2.1	1.6	ng/L	2.05	335-67-1	
PFHxS*	2.9	2.1	1.6	ng/L	2.05	355-46-4	
PFHxS-LN*	2.2	2.1	1.6	ng/L	2.05	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.6	ng/L	2.05	355-46-4-BR	
PFNA*	Not detected	2.1	1.8	ng/L	2.05	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.05	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.05	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.05	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.05	2355-31-9	
EtFOSAA*	Not detected	4.1	2.1	ng/L	2.05	2991-50-6	
PFOS*	220	2.1	2.0	ng/L	2.05	1763-23-1	
PFOS-LN*	170	2.1	2.0	ng/L	2.05	1763-23-1-LN	
PFOS-BR*	50	2.1	2.0	ng/L	2.05	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.4	ng/L	2.05	2058-94-8	
PFNS*	Not detected	2.1	1.4	ng/L	2.05	68259-12-1	
PFDoDA*	Not detected	2.1	1.6	ng/L	2.05	307-55-1	
PFDS*	Not detected	2.1	1.4	ng/L	2.05	335-77-3	
PFTTrDA*	Not detected	2.1	1.2	ng/L	2.05	72629-94-8	
FOSA*	Not detected	2.1	1.8	ng/L	2.05	754-91-6	
PFTeDA*	Not detected	4.1	1.8	ng/L	2.05	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.8	ng/L	2.05	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.4	ng/L	2.05	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.05	919005-14-4	
HFPO-DA*	Not detected	10	2.1	ng/L	2.05	13252-13-6	

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



Analytical Laboratory Report

Lab Sample ID: S38865.03

Sample Tag: SS-12

Collected Date/Time: 08/04/2022 10:08

Matrix: Liquid

COC Reference: 144818

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.44/7.06/11	ASTMD7979-19M	08/17/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 08/17/22 21:33, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.04	375-22-4	
PFPeA*	4.2	4.1	1.0	ng/L	2.04	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.04	757124-72-4	
PFHxA*	4.2	2.0	1.4	ng/L	2.04	307-24-4	
PFBS*	3.9	2.0	1.4	ng/L	2.04	375-73-5	
PFHpA*	2.7	2.0	1.4	ng/L	2.04	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.04	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.04	27619-97-2	
PFOA*	7.5	2.0	1.6	ng/L	2.04	335-67-1	
PFHxS*	3.0	2.0	1.6	ng/L	2.04	355-46-4	
PFHxS-LN*	2.4	2.0	1.6	ng/L	2.04	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.04	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.04	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.04	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.04	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.04	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.04	2355-31-9	
EtFOSAA*	Not detected	4.1	2.0	ng/L	2.04	2991-50-6	
PFOS*	190	2.0	2.0	ng/L	2.04	1763-23-1	
PFOS-LN*	140	2.0	2.0	ng/L	2.04	1763-23-1-LN	
PFOS-BR*	44	2.0	2.0	ng/L	2.04	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.04	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.04	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2.04	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.04	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2.04	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.04	754-91-6	
PFTeDA*	Not detected	4.1	1.8	ng/L	2.04	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.04	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.04	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.04	919005-14-4	
HFPO-DA*	Not detected	10	2.0	ng/L	2.04	13252-13-6	



Analytical Laboratory Report

Lab Sample ID: S38865.04

Sample Tag: MW-10E-W

Collected Date/Time: 08/04/2022 10:25

Matrix: Liquid

COC Reference: 144818

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.73/7.10/11	ASTMD7979-19M	08/17/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 08/17/22 22:12, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.95	375-22-4	
PFPeA*	3.5	3.9	0.98	ng/L	1.95	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.95	757124-72-4	
PFHxA*	3.2	2.0	1.4	ng/L	1.95	307-24-4	
PFBS*	3.5	2.0	1.4	ng/L	1.95	375-73-5	
PFHpA*	2.1	2.0	1.4	ng/L	1.95	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.95	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.95	27619-97-2	
PFOA*	6.6	2.0	1.6	ng/L	1.95	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.95	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.95	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.95	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.95	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.95	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.95	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.95	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.95	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.95	2991-50-6	
PFOS*	15	2.0	1.9	ng/L	1.95	1763-23-1	
PFOS-LN*	8.3	2.0	1.9	ng/L	1.95	1763-23-1-LN	
PFOS-BR*	6.1	2.0	1.9	ng/L	1.95	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.95	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.95	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.95	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.95	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.95	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.95	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.95	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.95	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.95	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.95	919005-14-4	
HFPO-DA*	Not detected	9.8	2.0	ng/L	1.95	13252-13-6	

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



Analytical Laboratory Report

Lab Sample ID: S38865.05

Sample Tag: SS-14

Collected Date/Time: 08/04/2022 10:38

Matrix: Liquid

COC Reference: 144818

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.52/7.08/11	ASTMD7979-19M	08/17/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 08/17/22 22:31, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.02	375-22-4	
PFPeA*	3.5	4.0	1.0	ng/L	2.02	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.02	757124-72-4	
PFHxA*	3.5	2.0	1.4	ng/L	2.02	307-24-4	
PFBS*	3.5	2.0	1.4	ng/L	2.02	375-73-5	
PFHpA*	2.9	2.0	1.4	ng/L	2.02	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.02	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.02	27619-97-2	
PFOA*	5.1	2.0	1.6	ng/L	2.02	335-67-1	
PFHxS*	2.1	2.0	1.6	ng/L	2.02	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.02	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.02	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.02	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.02	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.02	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.02	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.02	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2.02	2991-50-6	
PFOS*	21	2.0	2.0	ng/L	2.02	1763-23-1	
PFOS-LN*	13	2.0	2.0	ng/L	2.02	1763-23-1-LN	
PFOS-BR*	8.4	2.0	2.0	ng/L	2.02	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.02	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.02	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2.02	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.02	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2.02	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.02	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2.02	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.02	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.02	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.02	919005-14-4	
HFPO-DA*	Not detected	10	2.0	ng/L	2.02	13252-13-6	

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



Analytical Laboratory Report

Lab Sample ID: S38865.06

Sample Tag: SS-13

Collected Date/Time: 08/04/2022 10:57

Matrix: Liquid

COC Reference: 144818

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.58/7.04/11	ASTMD7979-19M	08/17/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 08/17/22 22:51, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10.0	10.0	ng/L	1.99	375-22-4	
PFPeA*	1.6	4.0	1.00	ng/L	1.99	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.99	757124-72-4	
PFHxA*	3.2	2.0	1.4	ng/L	1.99	307-24-4	
PFBS*	3.5	2.0	1.4	ng/L	1.99	375-73-5	
PFHpA*	1.8	2.0	1.4	ng/L	1.99	375-85-9	J
PFPeS*	Not detected	2.0	1.8	ng/L	1.99	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.99	27619-97-2	
PFOA*	4.8	2.0	1.6	ng/L	1.99	335-67-1	
PFHxS*	3.5	2.0	1.6	ng/L	1.99	355-46-4	
PFHxS-LN*	2.5	2.0	1.6	ng/L	1.99	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.99	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.99	375-95-1	
8:2 FTSA*	Not detected	2.0	1.00	ng/L	1.99	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.99	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.99	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.99	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	1.99	2991-50-6	
PFOS*	25	2.0	2.0	ng/L	1.99	1763-23-1	
PFOS-LN*	17	2.0	2.0	ng/L	1.99	1763-23-1-LN	
PFOS-BR*	6.7	2.0	2.0	ng/L	1.99	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.99	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.99	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.99	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.99	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.99	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.99	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	1.99	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.99	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.99	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.99	919005-14-4	
HFPO-DA*	Not detected	10.0	2.0	ng/L	1.99	13252-13-6	

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

Merit Laboratories Login Checklist

Lab Set ID:S38865

Client:OBG02 (Ramboll Americas)

Project: RACER Coldwater Rd

Submitted:08/04/2022 14:50 Login User: MMC

Attention: Clifford Yantz

Address: Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

Phone: 313-333-0211 FAX:
Email: Clifford.Yantz@ramboll.com

Selection	Description	Note
-----------	-------------	------

Sample Receiving

- | | | |
|-----|--|--|
| 01. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer # IR 4.2 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |

Chain of Custody

- | | | |
|-----|--|--|
| 06. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | COC adequately filled out |
| 07. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | COC signed and relinquished to the lab |
| 08. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Sample tag on bottles match COC |
| 09. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Subcontracting needed? Subcontracted to: |

Preservation

- | | | |
|-----|--|---|
| 10. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Do sample have correct chemical preservation |
| 11. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Completed pH checks on preserved samples? (no VOAs) |
| 12. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Did any samples need to be preserved in the lab? |

Bottle Conditions

- | | | |
|-----|--|---|
| 13. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | All bottles intact |
| 14. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Appropriate analytical bottles are used |
| 15. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Merit bottles used |
| 16. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Sufficient sample volume received |
| 17. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples require laboratory filtration |
| 18. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples submitted within holding time |
| 19. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Do water VOC or TOX bottles contain headspace |

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

Client Review By: _____ Date: _____



2680 East Lansing Dr., East Lansing, MI 48823
 Phone (517) 332-0167 Fax (517) 332-4034
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1 144818

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Cliff Yantz Kevin Schneider
 COMPANY: Ramboll
 ADDRESS: 2090 Commonwealth Blvd.
 CITY: Ann Arbor STATE: MI ZIP CODE: 48105
 PHONE NO.: 313-333-0211 FAX NO.: _____ P.O. NO.: 1940004462 T22K 36
 E-MAIL ADDRESS: Clifford.Yantz@Ramboll.com Kevin.Schneider@ramboll.com QUOTE NO.: _____

CONTACT NAME: SAME
 COMPANY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO.: _____ E-MAIL ADDRESS: _____

PROJECT NO./NAME: Racer Coldwater Rd SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kevin Schneider
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER _____
 DELIVERABLES REQUIRED: STD LEVEL II LEVEL III LEVEL IV EDD OTHER _____

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

Containers & Preservatives

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	Certifications
	DATE	TIME											
38865.01	8/4/22	9:47	Field Blank - 080422	L	1	X							low level Reporting with estimated values
.02	8/4/22	9:52	SS-15	L	3	X							
.03	8/4/22	10:08	SS-12	L	3	X							
.04	8/4/22	10:25	MW-10E-W	L	3	X							
.05	8/4/22	10:38	SS-14	L	3	X							
.06	8/4/22	10:57	SS-13	L	3	X							
/													

PPAS 7979

RELINQUISHED BY: [Signature] Sampler DATE: 8/4/22 TIME: 11:23
 RECEIVED BY: [Signature] DATE: 8/4/22 TIME: 11:23
 RELINQUISHED BY: [Signature] DATE: 8/4/22 TIME: 14:50
 RECEIVED BY: [Signature] DATE: 8/4/22 TIME: 14:50

RELINQUISHED BY: _____ DATE: _____ TIME: _____
 RECEIVED BY: _____ DATE: _____ TIME: _____
 SEAL NO. SEAL INTACT YES NO INITIALS _____
 SEAL NO. SEAL INTACT YES NO INITIALS _____
 NOTES: TEMP. ON ARRIVAL: 4.2



Quality Control Report

Report ID: QC-S38865-01
Generated on 08/26/2022

Report to

Attention: Clifford Yantz
Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

Phone: 313-333-0211 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

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

Report Summary

Lab Sample ID(s): S38865.01-S38865.06
Project: RACER Coldwater Rd
Submitted Date/Time: 08/04/2022 14:50
Sampled by: Kevin Schneider
P.O. #: 1940004462 TASK 36

QC Report Sections

Cover Page (Page 1)
Analysis Summary (Pages 2-7)
Prep Batch Summary (Page 8)
Internal Standards per Lab Sample (Pages 9-14)
Internal Standards per QC Sample (Pages 15-19)
Batch QC Results (Pages 20-23)

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S38865.01

Sample Tag: Field Blank-080422

Collected Date/Time: 08/04/2022 09:47

Matrix: Liquid

COC Reference: 144818

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	08/17/22 20:34	AK220817	PF220817W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S38865.02

Sample Tag: SS-15

Collected Date/Time: 08/04/2022 09:52

Matrix: Liquid

COC Reference: 144818

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	08/17/22 20:54	AK220817	PF220817W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S38865.03

Sample Tag: SS-12

Collected Date/Time: 08/04/2022 10:08

Matrix: Liquid

COC Reference: 144818

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	08/17/22 21:33	AK220817	PF220817W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S38865.04

Sample Tag: MW-10E-W

Collected Date/Time: 08/04/2022 10:25

Matrix: Liquid

COC Reference: 144818

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	08/17/22 22:12	AK220817	PF220817W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S38865.05

Sample Tag: SS-14

Collected Date/Time: 08/04/2022 10:38

Matrix: Liquid

COC Reference: 144818

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	08/17/22 22:31	AK220817	PF220817W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S38865.06

Sample Tag: SS-13

Collected Date/Time: 08/04/2022 10:57

Matrix: Liquid

COC Reference: 144818

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	08/17/22 22:51	AK220817	PF220817W3	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF220817W3

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S38865.01	28 PFAs	ASTMD7979-19M	08/17/22 20:34	AK220817
S38865.02	28 PFAs	ASTMD7979-19M	08/17/22 20:54	AK220817
S38865.03	28 PFAs	ASTMD7979-19M	08/17/22 21:33	AK220817
S38865.04	28 PFAs	ASTMD7979-19M	08/17/22 22:12	AK220817
S38865.05	28 PFAs	ASTMD7979-19M	08/17/22 22:31	AK220817
S38865.06	28 PFAs	ASTMD7979-19M	08/17/22 22:51	AK220817

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S38865.01

Sample Tag: Field Blank-080422

Collected Date/Time: 08/04/2022 09:47

Matrix: Liquid

COC Reference: 144818

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220817, Run Date: 08/17/2022 20:34, Matrix: WW, Dilution: 1.97

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		75.6	50.0	150.0
M2-6:2FTSA		67.4	50.0	150.0
M2-8:2FTSA		87.3	50.0	150.0
M2PFTeDA		42.1	12.0	218.0
M3PFBS		102.2	50.0	150.0
M3PFHxS		111.6	50.0	150.0
M4PFHpA		84.5	50.0	150.0
M5PFHxA		90.5	50.0	150.0
M5PFPeA		96.1	50.0	150.0
M6PFDA		90.2	50.0	150.0
M7PFUnDA		95.8	50.0	150.0
M8FOSA		88.1	50.0	150.0
M8PFOA		102.5	50.0	150.0
M8PFOS		113.5	50.0	150.0
M9-PFNA		72.0	50.0	150.0
MPFBA		100.7	50.0	150.0
MPFDoDA		78.7	50.0	150.0
d3N-MeFOSAA		90.0	50.0	150.0
d5EtFOSAA		93.5	50.0	150.0
MHFPO-DA		97.4	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S38865.02

Sample Tag: SS-15

Collected Date/Time: 08/04/2022 09:52

Matrix: Liquid

COC Reference: 144818

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220817, Run Date: 08/17/2022 20:54, Matrix: WW, Dilution: 2.05

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		94.3	50.0	150.0
M2-6:2FTSA		86.1	50.0	150.0
M2-8:2FTSA		71.0	50.0	150.0
M2PFTeDA		88.8	12.0	218.0
M3PFBS		105.9	50.0	150.0
M3PFHxS		113.7	50.0	150.0
M4PFHpA		79.4	50.0	150.0
M5PFHxA		96.0	50.0	150.0
M5PFPeA		100.9	50.0	150.0
M6PFDA		101.3	50.0	150.0
M7PFUnDA		96.0	50.0	150.0
M8FOSA		92.7	50.0	150.0
M8PFOA		104.1	50.0	150.0
M8PFOS		123.4	50.0	150.0
M9-PFNA		86.8	50.0	150.0
MPFBA		106.5	50.0	150.0
MPFDoDA		91.4	50.0	150.0
d3N-MeFOSAA		98.8	50.0	150.0
d5EtFOSAA		92.0	50.0	150.0
MHFPO-DA		94.6	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S38865.03

Sample Tag: SS-12

Collected Date/Time: 08/04/2022 10:08

Matrix: Liquid

COC Reference: 144818

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220817, Run Date: 08/17/2022 21:33, Matrix: WW, Dilution: 2.04

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		95.7	50.0	150.0
M2-6:2FTSA		76.2	50.0	150.0
M2-8:2FTSA		72.1	50.0	150.0
M2PFTeDA		77.4	12.0	218.0
M3PFBS		99.5	50.0	150.0
M3PFHxS		109.0	50.0	150.0
M4PFHpA		84.6	50.0	150.0
M5PFHxA		101.3	50.0	150.0
M5PFPeA		103.2	50.0	150.0
M6PFDA		103.3	50.0	150.0
M7PFUnDA		88.8	50.0	150.0
M8FOSA		98.3	50.0	150.0
M8PFOA		112.1	50.0	150.0
M8PFOS		100.8	50.0	150.0
M9-PFNA		87.6	50.0	150.0
MPFBA		108.2	50.0	150.0
MPFDoDA		90.8	50.0	150.0
d3N-MeFOSAA		99.3	50.0	150.0
d5EtFOSAA		89.8	50.0	150.0
MHFPO-DA		92.8	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S38865.04

Sample Tag: MW-10E-W

Collected Date/Time: 08/04/2022 10:25

Matrix: Liquid

COC Reference: 144818

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220817, Run Date: 08/17/2022 22:12, Matrix: WW, Dilution: 1.95

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		85.3	50.0	150.0
M2-6:2FTSA		84.4	50.0	150.0
M2-8:2FTSA		78.9	50.0	150.0
M2PFTeDA		62.7	12.0	218.0
M3PFBS		105.0	50.0	150.0
M3PFHxS		107.7	50.0	150.0
M4PFHpA		94.2	50.0	150.0
M5PFHxA		96.1	50.0	150.0
M5PFPeA		103.0	50.0	150.0
M6PFDA		96.7	50.0	150.0
M7PFUnDA		101.8	50.0	150.0
M8FOSA		90.3	50.0	150.0
M8PFOA		108.4	50.0	150.0
M8PFOS		106.6	50.0	150.0
M9-PFNA		84.0	50.0	150.0
MPFBA		106.7	50.0	150.0
MPFDoDA		88.3	50.0	150.0
d3N-MeFOSAA		85.1	50.0	150.0
d5EtFOSAA		94.4	50.0	150.0
MHFPO-DA		97.5	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S38865.05

Sample Tag: SS-14

Collected Date/Time: 08/04/2022 10:38

Matrix: Liquid

COC Reference: 144818

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220817, Run Date: 08/17/2022 22:31, Matrix: WW, Dilution: 2.02

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		93.9	50.0	150.0
M2-6:2FTSA		88.3	50.0	150.0
M2-8:2FTSA		69.9	50.0	150.0
M2PFTeDA		68.7	12.0	218.0
M3PFBS		110.0	50.0	150.0
M3PFHxS		104.3	50.0	150.0
M4PFHpA		83.6	50.0	150.0
M5PFHxA		97.7	50.0	150.0
M5PFPeA		102.1	50.0	150.0
M6PFDA		98.7	50.0	150.0
M7PFUnDA		96.0	50.0	150.0
M8FOSA		99.0	50.0	150.0
M8PFOA		105.0	50.0	150.0
M8PFOS		113.8	50.0	150.0
M9-PFNA		84.5	50.0	150.0
MPFBA		108.3	50.0	150.0
MPFDoDA		89.2	50.0	150.0
d3N-MeFOSAA		97.7	50.0	150.0
d5EtFOSAA		93.2	50.0	150.0
MHFPO-DA		101.2	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S38865.06

Sample Tag: SS-13

Collected Date/Time: 08/04/2022 10:57

Matrix: Liquid

COC Reference: 144818

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220817, Run Date: 08/17/2022 22:51, Matrix: WW, Dilution: 1.99

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		91.4	50.0	150.0
M2-6:2FTSA		81.0	50.0	150.0
M2-8:2FTSA		76.6	50.0	150.0
M2PFTeDA		88.1	12.0	218.0
M3PFBS		116.3	50.0	150.0
M3PFHxS		121.9	50.0	150.0
M4PFHpA		93.5	50.0	150.0
M5PFHxA		102.9	50.0	150.0
M5PFPeA		102.8	50.0	150.0
M6PFDA		98.0	50.0	150.0
M7PFUnDA		93.8	50.0	150.0
M8FOSA		97.6	50.0	150.0
M8PFOA		101.2	50.0	150.0
M8PFOS		114.6	50.0	150.0
M9-PFNA		91.9	50.0	150.0
MPFBA		108.9	50.0	150.0
MPFDoDA		94.6	50.0	150.0
d3N-MeFOSAA		84.0	50.0	150.0
d5EtFOSAA		85.3	50.0	150.0
MHFPO-DA		95.1	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF220817W3

QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: AK220817.BLK228017

Run in Batch: AK220817, Run Date: 08/17/2022 18:37, Prep Date: 08/17/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		78.4	50.0	150.0
M2-6:2FTSA		78.9	50.0	150.0
M2-8:2FTSA		76.8	50.0	150.0
M2PFTeDA		13.9	12.0	218.0
M3PFBS		113.7	50.0	150.0
M3PFHxS		113.2	50.0	150.0
M4PFHpA		82.7	50.0	150.0
M5PFHxA		101.8	50.0	150.0
M5PFPeA		101.7	50.0	150.0
M6PFDA		97.0	50.0	150.0
M7PFUnDA		78.0	50.0	150.0
M8FOSA		93.8	50.0	150.0
M8PFOA		111.2	50.0	150.0
M8PFOS		106.5	50.0	150.0
M9-PFNA		85.8	50.0	150.0
MPFBA		102.0	50.0	150.0
MPFDoDA		62.5	50.0	150.0
d3N-MeFOSAA		87.6	50.0	150.0
d5EtFOSAA		94.6	50.0	150.0
MHFPO-DA		105.1	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample (LCS)

Lab Sample ID: AK220817.LCS220817C

Run in Batch: AK220817, Run Date: 08/17/2022 17:58, Prep Date: 08/17/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		80.6	50.0	150.0
M2-6:2FTSA		82.5	50.0	150.0
M2-8:2FTSA		73.4	50.0	150.0
M2PFTeDA		54.0	12.0	218.0
M3PFBS		106.8	50.0	150.0
M3PFHxS		116.9	50.0	150.0
M4PFHpA		87.7	50.0	150.0
M5PFHxA		93.8	50.0	150.0
M5PFPeA		93.7	50.0	150.0
M6PFDA		83.5	50.0	150.0
M7PFUnDA		92.3	50.0	150.0
M8FOSA		88.3	50.0	150.0
M8PFOA		109.4	50.0	150.0
M8PFOS		104.9	50.0	150.0
M9-PFNA		74.2	50.0	150.0
MPFBA		97.2	50.0	150.0
MPFDoDA		80.3	50.0	150.0
d3N-MeFOSAA		92.7	50.0	150.0
d5EtFOSAA		83.5	50.0	150.0
MHFPO-DA		91.0	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK220817.LCSD220817C, Parent Sample ID: AK220817.LCS220817C

Run in Batch: AK220817, Run Date: 08/17/2022 18:18, Prep Date: 08/17/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		89.8	50.0	150.0
M2-6:2FTSA		74.5	50.0	150.0
M2-8:2FTSA		75.6	50.0	150.0
M2PFTeDA		69.2	12.0	218.0
M3PFBS		101.1	50.0	150.0
M3PFHxS		100.1	50.0	150.0
M4PFHpA		81.2	50.0	150.0
M5PFHxA		95.3	50.0	150.0
M5PFPeA		95.1	50.0	150.0
M6PFDA		91.2	50.0	150.0
M7PFUnDA		87.0	50.0	150.0
M8FOSA		95.7	50.0	150.0
M8PFOA		103.0	50.0	150.0
M8PFOS		107.2	50.0	150.0
M9-PFNA		89.5	50.0	150.0
MPFBA		99.8	50.0	150.0
MPFDoDA		90.7	50.0	150.0
d3N-MeFOSAA		84.5	50.0	150.0
d5EtFOSAA		97.4	50.0	150.0
MHFPO-DA		81.4	50.0	150.0

QC Report - Internal Standards per QC Sample

Matrix Spike (MS)

Lab Sample ID: AK220817.3886502M, Parent Sample ID: S38865.02

Run in Batch: AK220817, Run Date: 08/17/2022 21:13, Prep Date: 08/17/2022, Matrix: WW, Dilution: 2.05

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		94.0	50.0	150.0
M2-6:2FTSA		86.8	50.0	150.0
M2-8:2FTSA		78.5	50.0	150.0
M2PFTeDA		85.5	12.0	218.0
M3PFBS		101.3	50.0	150.0
M3PFHxS		109.6	50.0	150.0
M4PFHpA		91.3	50.0	150.0
M5PFHxA		94.8	50.0	150.0
M5PFPeA		99.8	50.0	150.0
M6PFDA		94.5	50.0	150.0
M7PFUnDA		90.2	50.0	150.0
M8FOSA		91.5	50.0	150.0
M8PFOA		106.9	50.0	150.0
M8PFOS		115.5	50.0	150.0
M9-PFNA		84.5	50.0	150.0
MPFBA		107.7	50.0	150.0
MPFDoDA		95.4	50.0	150.0
d3N-MeFOSAA		95.5	50.0	150.0
d5EtFOSAA		87.3	50.0	150.0
MHFPO-DA		93.0	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: AK220817.3886503D, Parent Sample ID: S38865.03

Run in Batch: AK220817, Run Date: 08/17/2022 21:52, Prep Date: 08/17/2022, Matrix: WW, Dilution: 2.04

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		92.9	50.0	150.0
M2-6:2FTSA		87.5	50.0	150.0
M2-8:2FTSA		77.7	50.0	150.0
M2PFTeDA		83.3	12.0	218.0
M3PFBS		104.4	50.0	150.0
M3PFHxS		120.9	50.0	150.0
M4PFHpA		83.6	50.0	150.0
M5PFHxA		100.7	50.0	150.0
M5PFPeA		100.4	50.0	150.0
M6PFDA		102.9	50.0	150.0
M7PFUnDA		91.3	50.0	150.0
M8FOSA		101.5	50.0	150.0
M8PFOA		104.3	50.0	150.0
M8PFOS		108.3	50.0	150.0
M9-PFNA		81.7	50.0	150.0
MPFBA		109.2	50.0	150.0
MPFDoDA		100.2	50.0	150.0
d3N-MeFOSAA		93.6	50.0	150.0
d5EtFOSAA		105.7	50.0	150.0
MHFPO-DA		104.8	50.0	150.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF220817W3

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: AK220817.BLK228017

Run in Batch: AK220817, Run Date: 08/17/2022 18:37, Prep Date: 08/17/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBSA		ND	2	ng/l
PFECHS		ND	2	ng/l
PFHxSA		ND	2	ng/l
PFBA		ND	10	ng/l
PFPeA		ND	4	ng/l
4:2 FTSA		ND	2	ng/l
PFHxA		ND	2	ng/l
PFBS		ND	2	ng/l
PFHpA		ND	2	ng/l
PFPeS		ND	2	ng/l
6:2 FTSA		ND	2	ng/l
PFOA		ND	2	ng/l
PFHxS		ND	2	ng/l
PFHxS-LN		ND	2	ng/l
PFHxS-BR		ND	2	ng/l
PFNA		ND	2	ng/l
8:2 FTSA		ND	2	ng/l
PFHpS		ND	2	ng/l
PFDA		ND	2	ng/l
N-MeFOSAA		ND	2	ng/l
EtFOSAA		ND	4	ng/l
PFOS		ND	2	ng/l
PFOS-LN		ND	2	ng/l
PFOS-BR		ND	2	ng/l
PFUnDA		ND	2	ng/l
PFNS		ND	2	ng/l
PFDODA		ND	2	ng/l
PFDS		ND	2	ng/l
PFTTrDA		ND	2	ng/l
FOSA		ND	2	ng/l
PFTeDA		ND	4	ng/l
11CL-PF3OUdS		ND	2	ng/l
9CL-PF3ONS		ND	2	ng/l
ADONA		ND	2	ng/l
HFPO-DA		ND	2	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK220817.LCS220817C

Run in Batch: AK220817, Run Date: 08/17/2022 17:58, Prep Date: 08/17/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		101.2	70.0	130.0
PFPeA		99.8	70.0	130.0
4:2 FTSA		98.2	70.0	130.0
PFHxA		96.6	70.0	130.0
PFBS		117.8	70.0	130.0
HFPO-DA		105.8	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF220817W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK220817.LCS220817C

Run in Batch: AK220817, Run Date: 08/17/2022 17:58, Prep Date: 08/17/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFHpA		86.8	70.0	130.0
PFPeS		103.4	70.0	130.0
ADONA		91.6	70.0	130.0
6:2 FTSA		96.4	70.0	130.0
PFBSA		109.0	70.0	130.0
PFOA		94.6	70.0	130.0
PFHxS		93.8	70.0	130.0
PFNA		107.6	70.0	130.0
PFECHS		105.2	70.0	130.0
8:2 FTSA		127.4	70.0	130.0
PFHpS		83.2	70.0	130.0
N-MeFOSAA		92.4	70.0	130.0
PFDA		106.4	70.0	130.0
PFOS		107.2	70.0	130.0
EtFOSAA		119.0	70.0	130.0
PFHxSA		102.6	70.0	130.0
PFUnDA		103.4	70.0	130.0
9CL-PF3ONS		92.8	70.0	130.0
PFNS		113.8	70.0	130.0
PFDoDA		88.6	70.0	130.0
PFDS		109.6	70.0	130.0
PFTTrDA		99.2	70.0	130.0
FOSA		105.0	70.0	130.0
11CL-PF3OUdS		102.4	70.0	130.0
PFTeDA		122.6	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK220817.LCSD220817C, Parent Sample ID: AK220817.LCS220817C

Run in Batch: AK220817, Run Date: 08/17/2022 18:18, Prep Date: 08/17/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		97.0	70.0	130.0	4.2	30.0
PFPeA		101.4	70.0	130.0	1.6	30.0
4:2 FTSA		93.0	70.0	130.0	5.4	30.0
PFHxA		88.8	70.0	130.0	8.4	30.0
PFBS		112.2	70.0	130.0	4.9	30.0
HFPO-DA		106.8	70.0	130.0	0.9	30.0
PFHpA		89.8	70.0	130.0	3.4	30.0
PFPeS		107.4	70.0	130.0	3.8	30.0
ADONA		107.6	70.0	130.0	16.1	30.0
6:2 FTSA		102.2	70.0	130.0	5.8	30.0
PFBSA		95.6	70.0	130.0	13.1	30.0
PFOA		99.2	70.0	130.0	4.7	30.0
PFHxS		113.0	70.0	130.0	18.6	30.0
PFNA		85.4	70.0	130.0	23.0	30.0
PFECHS		93.6	70.0	130.0	11.7	30.0
8:2 FTSA		113.2	70.0	130.0	11.8	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF220817W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK220817.LCSD220817C, Parent Sample ID: AK220817.LCS220817C

Run in Batch: AK220817, Run Date: 08/17/2022 18:18, Prep Date: 08/17/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFHpS		96.6	70.0	130.0	14.9	30.0
N-MeFOSAA		103.6	70.0	130.0	11.4	30.0
PFDA		106.8	70.0	130.0	0.4	30.0
PFOS		93.6	70.0	130.0	13.5	30.0
EtFOSAA		91.4	70.0	130.0	26.2	30.0
PFHxSA		107.6	70.0	130.0	4.8	30.0
PFUnDA		100.4	70.0	130.0	2.9	30.0
9CL-PF3ONS		89.2	70.0	130.0	4.0	30.0
PFNS		102.6	70.0	130.0	10.4	30.0
PFDoDA		80.0	70.0	130.0	10.2	30.0
PFDS		102.4	70.0	130.0	6.8	30.0
PFTTrDA		92.2	70.0	130.0	7.3	30.0
FOSA		94.4	70.0	130.0	10.6	30.0
11CL-PF3OUdS		105.6	70.0	130.0	3.1	30.0
PFTeDA		103.8	70.0	130.0	16.6	30.0

Matrix Spike (MS)

Lab Sample ID: AK220817.3886502M, Parent Sample ID: S38865.02

Run in Batch: AK220817, Run Date: 08/17/2022 21:13, Prep Date: 08/17/2022, Matrix: WW, Dilution: 2.05

Analyte	Flags	% Rec	LCL	UCL
PFBA		116.5	70.0	130.0
PFPeA		102.8	70.0	130.0
4:2 FTSA		106.8	70.0	130.0
PFHxA		103.4	70.0	130.0
PFBS		113.1	70.0	130.0
PFHpA		80.8	70.0	130.0
PFPeS		106.8	70.0	130.0
6:2 FTSA		97.1	70.0	130.0
PFOA		101.5	70.0	130.0
PFHxS		104.0	70.0	130.0
PFNA		97.1	70.0	130.0
8:2 FTSA		106.8	70.0	130.0
PFHpS		97.1	70.0	130.0
PFDA		106.8	70.0	130.0
N-MeFOSAA		116.5	70.0	130.0
EtFOSAA		116.5	70.0	130.0
PFOS		126.2	70.0	130.0
PFUnDA		106.8	70.0	130.0
PFNS		106.8	70.0	130.0
PFDoDA		90.3	70.0	130.0
PFDS		106.8	70.0	130.0
PFTTrDA		95.1	70.0	130.0
FOSA		106.8	70.0	130.0
PFTeDA		106.8	70.0	130.0
11CL-PF3OUdS		106.8	70.0	130.0
9CL-PF3ONS		94.2	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF220817W3 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Matrix Spike (MS) (continued)

Lab Sample ID: AK220817.3886502M, Parent Sample ID: S38865.02

Run in Batch: AK220817, Run Date: 08/17/2022 21:13, Prep Date: 08/17/2022, Matrix: WW, Dilution: 2.05

Analyte	Flags	% Rec	LCL	UCL
ADONA		116.5	70.0	130.0
HFPO-DA		106.8	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK220817.3886503D, Parent Sample ID: S38865.03

Run in Batch: AK220817, Run Date: 08/17/2022 21:52, Prep Date: 08/17/2022, Matrix: WW, Dilution: 2.04

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA	J*	30.1	30.0
4:2 FTSA		NC	30.0
PFHxA		7.4	30.0
PFBS		10.8	30.0
PFHpA		3.6	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA		15.8	30.0
PFHxS		6.9	30.0
PFHxS-LN		13.3	30.0
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		17.1	30.0
PFOS-LN		15.4	30.0
PFOS-BR		4.7	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDoDA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
PFTeDA		NC	30.0
11CL-PF3OUdS		NC	30.0
9CL-PF3ONS		NC	30.0
ADONA		NC	30.0
HFPO-DA		NC	30.0



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 www.meritlabs.com

C.O.C. PAGE # 1 OF 1 144818

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Cliff Yantz Kevin Schneider
 COMPANY: Ramboll
 ADDRESS: 2090 Commonwealth Blvd.
 CITY: Ann Arbor STATE: MI ZIP CODE: 48105
 PHONE NO.: 313-333-0211 FAX NO.: _____ P.O. NO.: 1940004462 T22K 36
 E-MAIL ADDRESS: Clifford.Yantz@Ramboll.com Kevin.Schneider@ramboll.com QUOTE NO.: _____

CONTACT NAME: SAME
 COMPANY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO.: _____ E-MAIL ADDRESS: _____

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME: Racer Coldwater Rd SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kevin Schneider
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER _____
 DELIVERABLES REQUIRED: STD LEVEL II LEVEL III LEVEL IV EDD OTHER _____

Certifications
 OHIO VAP Drinking Water
 DoD NPDES
 Project Locations
 Detroit New York
 Other _____
 Special Instructions

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

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	Certifications
	DATE	TIME											
38865.01	8/4/22	9:47	Field Blank - 080422	L	1	X							low level reporting with estimated values
.02	8/4/22	9:52	SS-15	L	3	X							
.03	8/4/22	10:08	SS-12	L	3	X							
.04	8/4/22	10:25	MW-10E-W	L	3	X							
.05	8/4/22	10:38	SS-14	L	3	X							
.06	8/4/22	10:57	SS-13	L	3	X							
/													

PPAS 7979

KSS

RELINQUISHED BY: [Signature] Sampler DATE: 8/4/22 TIME: 11:23
 RECEIVED BY: [Signature] DATE: 8/4/22 TIME: 11:23
 RELINQUISHED BY: [Signature] DATE: 8/4/22 TIME: 14:50
 RECEIVED BY: [Signature] DATE: 8/4/22 TIME: 14:50

RELINQUISHED BY: _____ DATE: _____ TIME: _____
 RECEIVED BY: _____ DATE: _____ TIME: _____
 SEAL NO. SEAL INTACT YES NO INITIALS _____
 SEAL NO. SEAL INTACT YES NO INITIALS _____
 NOTES: TEMP. ON ARRIVAL: 4.2

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