RAMBOLL

ENVIRONMENT
& HEALTH

Ms. Tiffany Minder
Environmental Compliance Supervisor
City of Flint Water Pollution
Water Pollution Control Facilities
G4652 Beecher Rd.
Flint, MI, 48532

RE: ***Discharge Permit Submittal– April 2023 through June 2023***
Permit No.: 6-08-04-04-GML1
FILE: 1088190/1940103462/Docs

Dear **Ms. Minder:**

July 24, 2023

In accordance with requirements of the above referenced discharge permit, we are providing you with the following discharge information for the period April 1, 2023 to June 30, 2023 for the Coldwater Road Landfill facility, located at 6220 Horton Avenue, Mount Morris, Michigan. In addition, we are reporting the performance of the per- and polyfluoroalkyl substances (PFAS) pretreatment system in this letter and will continue to do so as long as the pretreatment system is in operation.

Ramboll
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- Periodic Report on Continued Compliance, certification
- Periodic Report on Continued Compliance Sample (Table 1)
- Daily Discharge Summary Table (Table 2)
- PFAS Sampling Results Table (Table 3)
- Analytical Reports provided by Merit Laboratories, Inc. for samples from the on-Site, above ground collection tank collected on May 17, 2023.
- Analytical Reports provided by Merit Laboratories, Inc. for samples from the on-Site, PFAS pretreatment system collected on June 5, 2023 and June 6, 2023 during the discharge of the liquids from the on-Site, above ground collection tank through the system.
- Copy of Chain-of-Custody forms.

The laboratory analytical results indicate concentrations in the effluent were below the Sewer Use Permit limits for the required monitoring parameters during the discharge period.

In addition, the PFAS analytical results for the effluent sample were below the Sewer Use Permit limits and were below the current EGLE Part 4, Water Quality Standards, Rule 57 Water Quality Values. Therefore, the PFAS pretreatment system is operating as designed.

Breakthrough samples were collected from GAC vessels on June 5, 2023 and June 6, 2023 during the accumulation tank discharge. The influent sample had a detection of 8,200 ng/L for perfluorooctane sulfonic acid (PFOS).

PFOS was detected at a concentration 7.8 ng/l from the primary GAC vessel sample collected at the start of the discharge on June 5, 2023. In the samples collected just before discharge was discontinued, PFOS was detected at a concentration of 2.4 ng/l in the primary GAC vessel and was not detected above the reporting limit in the secondary, tertiary (third), and quaternary (fourth) GAC vessels.

The GAC vessels will continue to be utilized for the next discharge event, and we will evaluate whether changing out the GAC in the primary vessel will be necessary following that discharge event. If it is determined that the primary GAC vessel should be changed out, then new GAC would be placed in the primary vessel and the system components would be changed so that the existing quaternary (fourth), tertiary (third), and secondary GAC vessels would be moved up in position making the primary vessel the new quaternary vessel (last vessel before discharge) for the approved four-vessel pretreatment system.

The sediment on the bottom of the tank that caused the discharge meter to malfunction during the first and second quarter was washed out, and collected on June 7, 2023 and June 8, 2023. The sediment will be properly disposed of, and the discharge meter will be cleaned during the third quarter.

Please call me at 313-333-0211 if you have any questions.

Yours sincerely,
RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

Clifford S. Yantz
Project Manager

M 313.333.0211
Clifford.yantz@ramboll.com

cc: Mr. Kevin Forbes – Beecher Metropolitan District, Flint, MI
Ms. Nicole Sanabria – EGLE (via email)
Ms. Christina Hebert – EGLE (via email)
Mr. David Favero – RACER Trust
Mr. Kevin Schneider – Ramboll

City of Flint
Industrial Pretreatment Program

Periodic Report on Continued Compliance

Company Name: RACER Trust, Coldwater Road
Street Address: 6220 Horton Avenue, Flint, Michigan
Permit Number: 6-08-04-04-GML1
Outfall Number: 001

Reporting Period: April 1, 2023 through June 30, 2023

Average Volume of Daily Discharge (during reporting period): 2,904 gallons
(Two One Day Events)

Complete the following:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name of Authorized Representative: Clifford Yantz

Title of Authorized Representative: Project Manager, Ramboll Americas Engineering Solutions, Inc., As agent for the RACER Trust

Signature of Authorized Representative: Clifford Scott Yantz as agent for RACER Trust

Date Signed by Authorized Representative: 7/24/23

If required to implement a Toxic Organics Management Plan (TOMP), complete the following:

"Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standard for total toxic organics (TTO), I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewaters has occurred since filing of the last Periodic Report on Continued Compliance. I further certify that, this facility is implementing the toxic organic management plan submitted to the control authority."

Name of Authorized Representative: N/A

Title of Authorized Representative: N/A

Signature of Authorized Representative: N/A

Date Signed by Authorized Representative: N/A

Table 1
Periodic Report on Continued Compliance
City of Flint Sewer User Self-Monitoring Report
Second Quarter - 2023 - GSWVR Sample

RACER Trust - Coldwater Road Landfill Facility Permit Number 6-08-04-04-GML1 6220 Horton Avenue						
Analytical Parameter	**Ammonia-N**	**BOD5**	**HEM**	**pH @ 25°C**	**Phosphorus**	**TSS**
Units	**mg/L**	**mg/L**	**mg/L**	**SU**	**mg/L**	**mg/L**
Sampling Frequency	**Per Batch**	**Per Batch**	**Per Batch**	**Per Batch**	**Per Batch**	**Per Batch**
Sampling Procedure	**Grab sample**	**Grab sample**	**Grab sample**	**Grab sample**	**Grab sample**	**Grab sample**
Daily Maximum Limit	**110**	**1196**	**100**	NA	**14**	**570**
Maximum Limit	NA	NA	NA	**10.5**	NA	NA
Minimum Limit	NA	NA	NA	**6**	NA	NA
Test Result	**0.70**	**<3**	**<2**	**7.63**	**0.08**	**72.8**
Test Method	4500-NH3 G	10360	1664A	4500-H+ B	4500-PE	2540 D
Test Date	5/24/2023	5/18/2023	5/23/2023	5/17/2023	5/23/2023	5/22/2023
Sample Date	5/17/2023	5/17/2023	5/17/2023	5/17/2023	5/17/2023	5/17/2023
Sample Type	wastewater	wastewater	wastewater	wastewater	wastewater	wastewater
Test Result						
Test Method						
Test Date						
Sample Date						
Sample Type						
Test Result						
Test Method						
Test Date						
Sample Date						
Sample Type						
Average Daily Conc.						
No. of Samples						
Number of Limit Exceedances						

Table 1
Periodic Report on Continued Compliance
City of Flint Sewer User Self-Monitoring Report
Second Quarter - 2023 - GSWVR Sample

RACER Trust - Coldwater Road Landfill Facility Permit Number 6-08-04-04-GML1 6220 Horton Avenue							
Analytical Parameter	**Arsenic**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Cyanide, available**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Sampling Frequency	**Per Batch**	**Per Batch**	**Per Batch**	**Per Batch**	**Per Batch**	**Per Batch**	**Per Batch**
Sampling Procedure	**Grab sample**	**Grab sample**	**Grab sample**	**Grab sample**	**Grab sample**	**Grab sample**	**Grab sample**
Daily Maximum Limit	**0.051**	**1.273**	**1.714**	**0.000012**	**0.543**	**2.626**	**0.165**
Maximum Limit	NA	NA	NA	NA	NA	NA	NA
Minimum Limit	NA	NA	NA	NA	NA	NA	NA
Test Result	**0.005**	**0.059**	**0.228**	**<0.0002**	**0.087**	**0.030**	**<0.002**
Test Method	E200.8	200.8	200.8	245.1	200.8	200.8	1677
Test Date	5/18/2023	5/18/2023	5/18/2023	5/19/2023	5/18/2023	5/18/2023	5/18/2023
Sample Date	5/17/2023	5/17/2023	5/17/2023	5/17/2023	5/17/2023	5/17/2023	5/17/2023
Sample Type	wastewater	wastewater	wastewater	wastewater	wastewater	wastewater	wastewater
Test Result							
Test Method							
Test Date							
Sample Date							
Sample Type							
Test Result							
Test Method							
Test Date							
Sample Date							
Sample Type							
Average Daily Conc.							
No. of Samples							
Number of Limit Exceedances							

TABLE 2
RACER Trust - Coldwater Road
Daily Discharge Summary Table
Second Quarter 2023
6-08-04-04-GML1

Date	Beginning Flow Meter Reading	End Flow Meter Reading	Gallons Discharged	Begin Time of Discharge	End Time of Discharge	Average Flow (gal/min)	Temperature at Discharge (C)	(F)	pH
6/5/2023	0	--	--	9:45 am (6/5/2023)	--	2.80	19.1	66.4	8.51
6/6/2023	--	5,808	**5,808**	--	8:46 pm (6/6/2023)	2.80	20.2	68.4	7.52

Total Discharge Volume: **5,808**
Average Discharge Volume (2 Days): **2,904**

NOTES : Discharge meter was found not to be recording during the discharge event. The total gallons discharged were calculated by a digital garden watering flow meter attached to the discharge hose as backup for the main discharge meter.
Accumulation tank discharged continuously from 9:45 a.m. on June 5, 2023 to 8:46 p.m. on June 6, 2023.

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TABLE 3
RACER Trust - Coldwater Road
Pre-and Polyfluroalkyl Substances (PFAS) Sampling Results - June 2023

Coldwater Road - PFAS Pretreatment System Samples

Perfluorinated Compound	Well/Sample ID: / Sample Date:	Beecher Metropolitan District Sewer Use Permit - Discharge Pollutant Limitations and Monitoring Requirements	02-PRCC-23-INF (Influent Sample) 6/5/2023	02-PRCC-23-PRIM (Primary GAC Vessel Sample) 6/5/2023	02-PRCC-23-PRIM-129 (Primary GAC Vessel Sample after 129 Bed Volumes) 6/6/2023	02-PRCC-23-MID-1-129 (Secondary GAC Vessel Sample after 129 Bed Volumes) 6/6/2023	02-PRCC-23-MID-2-129 (Tertiary GAC Vessel Sample after 129 Bed Volumes) 6/6/2023	02-PRCC-23-EFF-129 (Effluent Sample after 129 Bed Volumes) 6/6/2023
Perfluorobutanoic Acid (PFBA)		--	<140 IX	<10	<9.8	<10	<9.7	<10
Perfluoropentanoic Acid (PFPeA)		--	**190**	<4.0	<3.9	<4.0	<3.9	<4.1
4:2 Fluorotelomer Sulfonic Acid (4:2 FTSA)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorohexanoic Acid (PFHxA)		**400,000**	**160**	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorobutane Sulfonic Acid (PFBS)		**420**	**120**	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluoroheptanoic Acid (PFHpA)		--	**27**	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluoropentane Sulfonic Acid (PFPeS)		--	**190**	<2.0	<2.0	<2.0	<1.9	<2.1
6:2 Fluorotelomer Sulfonic Acid (6:2 FTSA)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorooctanoic Acid (**PFOA**)		**8**	**66**	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorohexane Sulfonic Acid (PFHxS)		**51**	**550**	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)		--	**460**	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)		--	**89**	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorononanoic Acid (PFNA)		**6**	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
8:2 Fluorotelomer Sulfonic Acid (8:2 FTSA)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluoroheptane Sulfonic Acid (PFHpS)		--	**110**	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorodecanoic Acid (PFDA)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
N-methyl Perfluorooctanesulfonamidoacetic Acid (N-MeFOSAA)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
N-Ethyl Perfluorooctane Sulfonamidoacetic Acid (EtFOSAA)		--	<4.1	<4.0	<3.9	<4.0	<3.9	<4.1
Perfluorooctane Sulfonic Acid (**PFOS**)		**16**	**8,200**	**7.8**	**2.4**	<2.0	<1.9	<2.1
Perfluorooctane Sulfonic Acid (**PFOS**-LN)		--	**5,100**	**6.1**	<2.0	<2.0	<1.9	<2.1
Perfluorooctane Sulfonic Acid (**PFOS**-BR)		--	**3,100**	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluoroundecanoic Acid (PFUnDA)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorononane Sulfonic Acid (PFNS)		--	**4.4**	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorododecanoic Acid (PFDoDA)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorodecane Sulfonic Acid (PFDS)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorotridecanoic Acid (PFTrDA)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorooctane Sulfonamide (FOSA)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluorotetradecanoic Acid (PFTeDA)		--	<4.1	<4.0	<3.9	<4.0	<3.9	<4.1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9Cl-PF3ONS)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
Hexafluoropropylene oxide dimer (HFPO-DA)		--	<4.1	<4.0	<3.9	<4.0	<3.9	<4.1
3-Perfluoroheptyl propanoic acid (FHpPA (7:3 FTCA))		--	<4.1	<4.0	<3.9	<4.0	<3.9	<4.1
3-Perfluoroheptyl propanoic acid (FPePA (5:3 FTCA))		--	<4.1	<4.0	<3.9	<4.0	<3.9	<4.1
3-Perfluoroheptyl propanoic acid (FPrPA (3:3 FTCA))		--	<4.1	<4.0	<3.9	<4.0	<3.9	<4.1
Perfluorobutanesulfonamide (PFBSA)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
Perfluoro-4-ethylcyclohexanesulfonate (PFECHS)		--	**13,000**	**2.2**	**6.3**	<2.0	<1.9	<2.1
Perfluorohexanesulfonamide (PFHxSA)		--	<2.0	<2.0	<2.0	<2.0	<1.9	<2.1
Total Per-and Polyfluoroalkyl Substances		--	**22,617.4**	**10.0**	**8.7**	**0.0**	**0.0**	**0.0**

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) Beecher Metropolitan District Sewer Use Permit
Discharge Pollutant Limitations and Monitoring Requirements - October 15, 2021.
7) Concentrations above the discharge limit are highlighted in yellow.
8) Number after Prim (Primary GAC vessel), Mid (Secondary GAC vessel), and Eff (Effluent sample after tertiary GAC vessel) samples equals number of GAC Bed volumes discharged through the pretreatment system at the time of sample collection. One bed volume equals 45 gallons.
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) QA/QC Samples were either not detected above the reporting limit or below the Beecher Metropolitan District Sewer Use Permit Discharge Limits.

Analytical Laboratory Report

Report ID: S48682.01(01)
Generated on 05/24/2023

Report to

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

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S48682.01
Project: RACER Coldwater Road
Collected Date(s): 05/17/2023
Submitted Date/Time: 05/17/2023 12:35
Sampled by: Kevin Schneider
P.O. #: 1940006516 TASK 001

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
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.

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

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

Method Summary

Method	Version
E1664A	EPA Method 1664 Revision A February 1999
E200.8	EPA Method 200.8 Revision 5.4
E245.1	EPA Method 245.1 Revision 3.0
OIA-1677	EPA Method OIA-1677-09
SM2540D	Standard Method 2540 D 2015
SM2550B	Standard Method 2550 B 2011
SM4500-H+ B	Standard Method 4500 H + B 2011
SM4500-NH3 G	Standard Method 4500 NH3 G 2017
SM4500-PE	Standard Method 4500 P E 2011 / 4500 P B(5) 2011
SM5210B/HACH1036	Standard Method 5210 B 2016 / HACH 10360
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Analytical Laboratory Report

Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S48682.01	02-PRCC-23	Wastewater	05/17/23 09:50

Analytical Laboratory Report

Lab Sample ID: S48682.01
Sample Tag: 02-PRCC-23
Collected Date/Time: 05/17/2023 09:50
Matrix: Wastewater
COC Reference: 155899

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	1L Plastic	None	Yes	5.3	IR
1	125ml Plastic	HNO3	Yes	5.3	IR
1	500ml Plastic	None	Yes	5.3	IR
1	125ml Amber	PbCO3/NaOH	Yes	5.3	IR
1	32oz Glass	HCL	Yes	5.3	IR
2	250ml Plastic	H2SO4	Yes	5.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	05/19/23 12:40	CTV	
TBOD5 - Set*	Completed	SM5210B/HACH1036	05/18/23 16:30	SSM	
Metal Digestion	Completed	SW3015A	05/18/23 09:50	CCM	

Inorganics

Method: E1664A, Run Date: 05/23/23 14:00, Analyst: JW

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Oil & Grease n-Hexane Extract.	Not detected	2		mg/L	1		

Method: SM2540D, Run Date: 05/22/23 15:15, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	72.8	3		mg/L	2		

Method: SM2550B, Run Date: 05/17/23 09:50, Analyst: KS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Field Temperature*	58	1		oF	1		

Method: SM4500-H+ B, Run Date: 05/17/23 09:50, Analyst: KS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Field pH*	7.63	0.01		STD Units	1		

Method: SM4500-NH3 G, Run Date: 05/24/23 12:57, Analyst: MJC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Ammonia-N (Undistilled)*	0.70	0.10		mg/L	5	7664-41-7	

Method: SM4500-PE, Run Date: 05/23/23 16:50, Analyst: MJC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Phosphorus	0.08	0.01	0.009	mg/L	1	7723-14-0	

Method: SM5210B/HACH1036, Run Date: 05/23/23 16:42, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TBOD5*	Not detected	3		mg/L	1.5		

Metals

Method: E200.8, Run Date: 05/18/23 11:32, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.005	0.002		mg/L	5	7440-38-2	

Lab Sample ID: S48682.01 (continued)

Sample Tag: 02-PRCC-23

Method: E200.8, Run Date: 05/18/23 11:32, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	0.059	0.005		mg/L	5	7440-47-3	
Copper	0.228	0.005		mg/L	5	7440-50-8	
Nickel	0.087	0.005		mg/L	5	7440-02-0	
Zinc	0.030	0.005		mg/L	5	7440-66-6	

Method: E245.1, Run Date: 05/19/23 14:09, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002		mg/L	1	7439-97-6	

Other / Misc.

Method: OIA-1677, Run Date: 05/18/23 11:22, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Available Cyanide	Not detected	0.002	0.0015	mg/L	1	57-12-5	

Merit Laboratories Login Checklist

Lab Set ID: S48682
Client: RAMBOLL (Ramboll Americas)
Project: RACER Coldwater Road
Submitted: 05/17/2023 12:35 Login User: MMC

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

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

	Selection			Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 5.3
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] 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: _____

Merit Laboratories Bottle Preservation Check

Lab Set ID: S48682 Submitted: 05/17/2023 12:35

Client: RAMBOLL (Ramboll Americas)

Project: RACER Coldwater Road

Initial Preservation Check: 05/17/2023 13:32 MMC

Preservation Recheck (E200.8): N/A

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

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

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S48682.01	125ml Amber PbCO3/NaOH	>12			
S48682.01	125ml Plastic HNO3	<2			
S48682.01	250ml Plastic H2SO4	<2			
S48682.01	250ml Plastic H2SO4	<2			
S48682.01	32oz Glass HCL	<2			

Merit Laboratories, Inc.
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 155899

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Clifford Yantz / Kevin Schneider
COMPANY: Ramboll
ADDRESS: 2090 Commonwealth Blvd
CITY: Ann Arbor STATE: MI ZIP CODE: 48116
PHONE NO.: CELL NO.: 313-333-0211
P.O. NO.: 1940006516 Task 001
E-MAIL ADDRESS: clifford.yantz@ramboll.com kevin.schneider@ramboll.com
QUOTE NO.:

INVOICE TO

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

PROJECT NO./NAME: RACER Coldwater Road
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: W=WATER GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR WS=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

MERIT LAB NO. (FOR LAB USE ONLY)	COLLECTION DATE	COLLECTION TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	Available Cyanide	BOD / TSS	Ammonia - Nitrogen	Total Phosphorus	FOG (HEX-Ext)	Special Instructions
48682.01	5/17/23	950	02-PRCC-23	ww	6	2	1	1	1			1	X	X	X	X	X	X	Metals ARE: As, Cu, Cr, Hg, Ni, Zn
																			Analysis per City of Flint including QC Report
																			Field Temp 14.2
																			Field pH 7.63

RELINQUISHED BY: SIGNATURE/ORGANIZATION	X Sampler	DATE 5/17/23	TIME 10:40	
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 5/17/23	TIME 10:40	
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE 5/17/23	TIME 10:35	
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 5/17/23	TIME 1235	

RELINQUISHED BY: SIGNATURE/ORGANIZATION — DATE — TIME
RECEIVED BY: SIGNATURE/ORGANIZATION — DATE — TIME

SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS
SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS

NOTES: TEMP. ON ARRIVAL 5.3

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

Rev. 1.26.22

Quality Control Report

Report ID: QC-S48682-01
Generated on 05/24/2023

Report to

Attention: Clifford Yantz
Ramboll
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): S48682.01
Project: RACER Coldwater Road
Submitted Date/Time: 05/17/2023 12:35
Sampled by: Kevin Schneider
P.O. #: 1940006516 TASK 001

QC Report Sections

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: S48682.01
Sample Tag: 02-PRCC-23
Collected Date/Time: 05/17/2023 09:50
Matrix: Wastewater
COC Reference: 155899

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Ammonia-N (Undistilled)	SM4500-NH3 G	05/24/23 12:57	AMN230524B	AMN230524B	No	BLK/LCS/MS/DUP
Oil & Grease n-Hexane Extract.	E1664A	05/23/23 14:00	OGHEX230523W1	OGHEX230523W1	No	BLK/LCS
TBOD5	SM5210B/HACH10360	05/23/23 16:42	BOD230518	BOD230518	No	BLK/LCS/DUP
Total Phosphorus	SM4500-PE	05/23/23 16:50	PHS230523QC	PHS230523QC	No	BLK/LCS/MS/DUP
Total Suspended Solids	SM2540D	05/22/23 15:15	TSS230522A	TSS230522A	No	BLK/LCS/DUP
Metals						
Arsenic	E200.8	05/18/23 11:32	MT4-23-0518A	MTD-051823-3	No	BLK/LCS/MS/MSD
Chromium	E200.8	05/18/23 11:32	MT4-23-0518A	MTD-051823-3	No	BLK/LCS/MS/MSD
Copper	E200.8	05/18/23 11:32	MT4-23-0518A	MTD-051823-3	No	BLK/LCS/MS/MSD
Mercury	E245.1	05/19/23 14:09	HG-23-0519A	HGD-051923-1	No	BLK/LCS/MS/MSD
Nickel	E200.8	05/18/23 11:32	MT4-23-0518A	MTD-051823-3	No	BLK/LCS/MS/MSD
Zinc	E200.8	05/18/23 11:32	MT4-23-0518A	MTD-051823-3	No	BLK/LCS/MS/MSD
Other / Misc.						
Available Cyanide	OIA-1677	05/18/23 11:22	ACN230518-W2	ACN230518-W2	No	BLK/LCS/MS/MSD/DU

QC Report - Prep Batch Summary

Inorganics, Prep Batch ID: AMN230524B

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S48682.01	Ammonia-N (Undistilled)	SM4500-NH3 G	05/24/23 12:57	AMN230524B

Inorganics, Prep Batch ID: BOD230518

Surrogates: No, QC Types: BLK/LCS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S48682.01	TBOD5	SM5210B/HACH1036	05/23/23 16:42	BOD230518

Inorganics, Prep Batch ID: OGHEX230523W1

Surrogates: No, QC Types: BLK/LCS

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S48682.01	Oil & Grease n-Hexane Extract.	E1664A	05/23/23 14:00	OGHEX230523W1

Inorganics, Prep Batch ID: PHS230523QC

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S48682.01	Total Phosphorus	SM4500-PE	05/23/23 16:50	PHS230523QC

Inorganics, Prep Batch ID: TSS230522A

Surrogates: No, QC Types: BLK/LCS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S48682.01	Total Suspended Solids	SM2540D	05/22/23 15:15	TSS230522A

Metals, Prep Batch ID: HGD-051923-1

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S48682.01	Mercury	E245.1	05/19/23 14:09	HG-23-0519A

Metals, Prep Batch ID: MTD-051823-3

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S48682.01	Arsenic	E200.8	05/18/23 11:32	MT4-23-0518A
S48682.01	Chromium	E200.8	05/18/23 11:32	MT4-23-0518A
S48682.01	Copper	E200.8	05/18/23 11:32	MT4-23-0518A
S48682.01	Nickel	E200.8	05/18/23 11:32	MT4-23-0518A
S48682.01	Zinc	E200.8	05/18/23 11:32	MT4-23-0518A

Other / Misc., Prep Batch ID: ACN230518-W2

Surrogates: No, QC Types: BLK/LCS/MS/MSD/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S48682.01	Available Cyanide	OIA-1677	05/18/23 11:22	ACN230518-W2

Inorganics, Prep Batch ID: AMN230524B

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Blank (BLK)

Lab Sample ID: AMN230524B.LRB1

Run in Batch: AMN230524B, Run Date: 05/24/2023 12:09, Prep Date: 05/24/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Ammonia-N (Undistilled)		ND	0.02	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: AMN230524B.LCS1

Run in Batch: AMN230524B, Run Date: 05/24/2023 12:13, Prep Date: 05/24/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		98.0	90	110

Matrix Spike (MS)

Lab Sample ID: AMN230524B.MS1, Parent Sample ID: S48663.10

Run in Batch: AMN230524B, Run Date: 05/24/2023 12:31, Prep Date: 05/24/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		104.0	80	120

Duplicate (DUP)

Lab Sample ID: AMN230524B.DP1, Parent Sample ID: S48879.01

Run in Batch: AMN230524B, Run Date: 05/24/2023 12:39, Prep Date: 05/24/2023, Matrix: Liquid, Dilution: 50

Analyte	Flags	RPD	RPD CL
Ammonia-N (Undistilled)		2.7	20

Inorganics, Prep Batch ID: BOD230518

Surrogates: No, QC Types: BLK/LCS/DUP

Blank (BLK)

Lab Sample ID: BOD230518.LRB1

Run in Batch: BOD230518, Run Date: 05/23/2023 16:42, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
TBOD5		ND	3	mg/L

Blank (BLK)

Lab Sample ID: BOD230518.LRB2

Run in Batch: BOD230518, Run Date: 05/23/2023 16:42, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
TBOD5		ND	3	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: BOD230518.LCS1

Run in Batch: BOD230518, Run Date: 05/23/2023 16:42, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 30

Analyte	Flags	% Rec	LCL	UCL
TBOD5		91.8	51.3	166

Laboratory Control Sample (LCS)

Lab Sample ID: BOD230518.LCS2

Run in Batch: BOD230518, Run Date: 05/23/2023 16:42, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 30

Analyte	Flags	% Rec	LCL	UCL
TBOD5		92.7	51.3	166

Duplicate (DUP)

Lab Sample ID: BOD230518.DP1, Parent Sample ID: S48666.02

Run in Batch: BOD230518, Run Date: 05/23/2023 16:42, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 60

Analyte	Flags	RPD	RPD CL
TBOD5		10.6	20

Duplicate (DUP)

Lab Sample ID: BOD230518.DP2, Parent Sample ID: S48726.02

Run in Batch: BOD230518, Run Date: 05/23/2023 16:42, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 60

Analyte	Flags	RPD	RPD CL
TBOD5		2.3	20

Inorganics, Prep Batch ID: OGHEX230523W1

Surrogates: No, QC Types: BLK/LCS

Blank (BLK)

Lab Sample ID: OGHEX230523W1.LRB1

Run in Batch: OGHEX230523W1, Run Date: 05/23/2023 09:00, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Oil & Grease n-Hexane Extract.		ND	1	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: OGHEX230523W1.LCS1

Run in Batch: OGHEX230523W1, Run Date: 05/23/2023 09:00, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Oil & Grease n-Hexane Extract.		95	78	114

Laboratory Control Sample (LCS)

Lab Sample ID: OGHEX230523W1.LCS2

Run in Batch: OGHEX230523W1, Run Date: 05/23/2023 09:00, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Oil & Grease n-Hexane Extract.		90	78	114

Inorganics, Prep Batch ID: PHS230523QC

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Blank (BLK)

Lab Sample ID: PHS230523QC.LRB1

Run in Batch: PHS230523QC, Run Date: 05/23/2023 11:54, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Phosphorus		ND	0.01	mg/L

Blank (BLK)

Lab Sample ID: PHS230523QC.LRB2

Run in Batch: PHS230523QC, Run Date: 05/23/2023 12:01, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Phosphorus		ND	0.01	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: PHS230523QC.LCS1

Run in Batch: PHS230523QC, Run Date: 05/23/2023 12:08, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		96	90	110

Matrix Spike (MS)

Lab Sample ID: PHS230523QC.MS1, Parent Sample ID: S48668.06

Run in Batch: PHS230523QC, Run Date: 05/23/2023 17:47, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		92	80	120

Duplicate (DUP)

Lab Sample ID: PHS230523QC.DP1, Parent Sample ID: S48798.02

Run in Batch: PHS230523QC, Run Date: 05/23/2023 17:42, Prep Date: 05/23/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Phosphorus		2.7	20

Inorganics, Prep Batch ID: TSS230522A

Surrogates: No, QC Types: BLK/LCS/DUP

Blank (BLK)

Lab Sample ID: TSS230522A.LRB1

Run in Batch: TSS230522A, Run Date: 05/22/2023 15:15, Prep Date: 05/22/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Suspended Solids		ND	3	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: TSS230522A.LCS1

Run in Batch: TSS230522A, Run Date: 05/22/2023 15:15, Prep Date: 05/22/2023, Matrix: Liquid, Dilution: 10

Analyte	Flags	% Rec	LCL	UCL
Total Suspended Solids		89.3	80.2	113

Duplicate (DUP)

Lab Sample ID: TSS230522A.DP1, Parent Sample ID: S48725.01

Run in Batch: TSS230522A, Run Date: 05/22/2023 15:15, Prep Date: 05/22/2023, Matrix: Liquid, Dilution: 20

Analyte	Flags	RPD	RPD CL
Total Suspended Solids		8.9	10

Metals, Prep Batch ID: HGD-051923-1

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Blank (BLK)

Lab Sample ID: HG-23-0519A.015.LRB

Run in Batch: HG-23-0519A, Run Date: 05/19/2023 13:20, Prep Date: 05/19/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Mercury		ND	0.20	ug/L

Laboratory Control Sample (LCS)

Lab Sample ID: HG-23-0519A.014.LCS

Run in Batch: HG-23-0519A, Run Date: 05/19/2023 13:17, Prep Date: 05/19/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		108	85	115

Matrix Spike (MS)

Lab Sample ID: HG-23-0519A.026.MS, Parent Sample ID: S48642.01

Run in Batch: HG-23-0519A, Run Date: 05/19/2023 13:56, Prep Date: 05/19/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		95	80	120

Matrix Spike (MS)

Lab Sample ID: HG-23-0519A.039.MS, Parent Sample ID: S48746.01

Run in Batch: HG-23-0519A, Run Date: 05/19/2023 14:39, Prep Date: 05/19/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		93	80	120

Matrix Spike Duplicate (MSD)

Lab Sample ID: HG-23-0519A.027.MSD, Parent Sample ID: HG-23-0519A.026.MS

Run in Batch: HG-23-0519A, Run Date: 05/19/2023 14:00, Prep Date: 05/19/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Mercury		98	80	120	2	20

Matrix Spike Duplicate (MSD)

Lab Sample ID: HG-23-0519A.040.MSD, Parent Sample ID: HG-23-0519A.039.MS

Run in Batch: HG-23-0519A, Run Date: 05/19/2023 14:42, Prep Date: 05/19/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Mercury		89	80	120	4	20

Metals, Prep Batch ID: MTD-051823-3

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Blank (BLK)

Lab Sample ID: MT4-23-0518A.018.LRB

Run in Batch: MT4-23-0518A, Run Date: 05/18/2023 10:58, Prep Date: 05/18/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Arsenic		ND	0.0004	mg/L
Chromium		ND	0.001	mg/L
Copper		ND	0.001	mg/L
Nickel		ND	0.001	mg/L
Zinc		ND	0.001	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: MT4-23-0518A.017.LCS

Run in Batch: MT4-23-0518A, Run Date: 05/18/2023 10:57, Prep Date: 05/18/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Arsenic		97	85	115
Chromium		99	85	115
Copper		99	85	115
Nickel		100	85	115
Zinc		92	85	115

Matrix Spike (MS)

Lab Sample ID: MT4-23-0518A.039.MS, Parent Sample ID: S48474.04

Run in Batch: MT4-23-0518A, Run Date: 05/18/2023 11:19, Prep Date: 05/18/2023, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Arsenic		99	75	125
Chromium		104	75	125
Copper		97	75	125
Nickel		101	75	125
Zinc		89	75	125

Matrix Spike (MS)

Lab Sample ID: MT4-23-0518A.062.MS, Parent Sample ID: S48682.01

Run in Batch: MT4-23-0518A, Run Date: 05/18/2023 11:43, Prep Date: 05/18/2023, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Arsenic		104	75	125
Chromium		104	75	125
Copper		95	75	125
Nickel		98	75	125
Zinc		92	75	125

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-23-0518A.040.MSD, Parent Sample ID: MT4-23-0518A.039.MS

Run in Batch: MT4-23-0518A, Run Date: 05/18/2023 11:20, Prep Date: 05/18/2023, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		97	75	125	2	20
Chromium		104	75	125	0	20
Copper		97	75	125	0	20
Nickel		99	75	125	2	20
Zinc		89	75	125	0	20

Metals, Prep Batch ID: MTD-051823-3 (continued)

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-23-0518A.063.MSD, Parent Sample ID: MT4-23-0518A.062.MS

Run in Batch: MT4-23-0518A, Run Date: 05/18/2023 11:44, Prep Date: 05/18/2023, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		104	75	125	0	20
Chromium		102	75	125	1	20
Copper		95	75	125	0	20
Nickel		99	75	125	1	20
Zinc		94	75	125	2	20

Other / Misc., Prep Batch ID: ACN230518-W2

Surrogates: No, QC Types: BLK/LCS/MS/MSD/DUP

Blank (BLK)

Lab Sample ID: ACN230518-W2.LRB1

Run in Batch: ACN230518-W2, Run Date: 05/18/2023 10:42, Prep Date: 05/18/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Available Cyanide		ND	0.002	mg/L

Blank (BLK)

Lab Sample ID: ACN230518-W2.LRB2

Run in Batch: ACN230518-W2, Run Date: 05/18/2023 11:30, Prep Date: 05/18/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Available Cyanide		ND	0.002	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: ACN230518-W2.LCS1

Run in Batch: ACN230518-W2, Run Date: 05/18/2023 10:46, Prep Date: 05/18/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Available Cyanide		100	88	109

Matrix Spike (MS)

Lab Sample ID: ACN230518-W2.MS1, Parent Sample ID: S48663.06

Run in Batch: ACN230518-W2, Run Date: 05/18/2023 11:00, Prep Date: 05/18/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Available Cyanide		94	82	130

Matrix Spike Duplicate (MSD)

Lab Sample ID: ACN230518-W2.MSD1, Parent Sample ID: ACN230518-W2.MS1

Run in Batch: ACN230518-W2, Run Date: 05/18/2023 11:02, Prep Date: 05/18/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Available Cyanide		98	82	130	4	15

Duplicate (DUP)

Lab Sample ID: ACN230518-W2.DP1, Parent Sample ID: S48663.06

Run in Batch: ACN230518-W2, Run Date: 05/18/2023 10:56, Prep Date: 05/18/2023, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Available Cyanide		<1	15

Merit Laboratories, Inc.
2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
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C.O.C. PAGE # 1 OF 1 155899

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Clifford Yantz / Kevin Schneider
COMPANY: Ramboll
ADDRESS: 2090 Commonwealth Blvd
CITY: Ann Arbor STATE: MI ZIP CODE: 48116
PHONE NO.: CELL NO.: 313-333-0211
P.O. NO.: 1940006516 Task 001
E-MAIL ADDRESS: clifford.yantz@ramboll.com kevin.schneider@ramboll.com
QUOTE NO.:

INVOICE TO

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

PROJECT NO./NAME: RACER Coldwater Road
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: W=WATER GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR WS=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

MERIT LAB NO. (FOR LAB USE ONLY)	COLLECTION DATE	COLLECTION TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	Available Cyanide	BOD / TSS	Ammonia - Nitrogen	Total Phosphorus	FOG (HEX-Ext)	Special Instructions
48682.01	5/17/23	950	02-PRCC-23	ww	6	2	1	1	1			1	X	X	X	X	X	X	Metals ARE: As, Cu, Cr, Hg, Ni, Zn
																			Analysis per City of Flint including QC Report
																			Field Temp 14.2
																			Field pH 7.63

RELINQUISHED BY: SIGNATURE/ORGANIZATION	X Sampler	DATE 5/17/23	TIME 10:40	
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 5/17/23	TIME 10:40	
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE 5/17/23	TIME 10:35	
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 5/17/23	TIME 1235	

RELINQUISHED BY: SIGNATURE/ORGANIZATION — DATE — TIME
RECEIVED BY: SIGNATURE/ORGANIZATION — DATE — TIME

SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS
SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS

NOTES: TEMP. ON ARRIVAL 5.3

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

Rev. 1.26.22

Analytical Laboratory Report

Report ID: S49308.01(01)
Generated on 06/27/2023

Report to

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

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S49308.01-S49308.02
Project: RACER Coldwater Road
Collected Date(s): 06/05/2023
Submitted Date/Time: 06/05/2023 12:55
Sampled by: Kevin Schneider
P.O. #: 1940006516 TASK 37

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
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.

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

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

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
PFTrDA	Perfluorotridecanoic Acid	72629-94-8
FOSA	Perfluorooctane Sulfonamide	754-91-6
PFTeDA	Perfluorotetradecanoic Acid	376-06-7
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone1-sulfonic acid	756426-58-1
ADONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4
HFPO-DA	Hexafluoropropylene oxide dimer	13252-13-6
FHpPA (7:3 FTCA)	3-Perfluoroheptyl propanoic acid	812-70-4
FPePA (5:3 FTCA)	3-Perfluoropentyl propanoic acid	914637-49-3
FPrPA (3:3 FTCA)	3-Perfluoropropyl propanoic acid	356-02-5
PFBSA	Perfluorobutanesulfonamide	30334-69-1
PFECHS	Perfluoro-4-ethylcyclohexanesulfonate	67584-42-3
PFHxSA	Perfluorohexanesulfonamide	41997-13-1

Analytical Laboratory Report

Sample Summary (2 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S49308.01	02-PRCC-23-INF	Wastewater	06/05/23 09:47
S49308.02	02-PRCC-23-PRIM	Wastewater	06/05/23 09:57

Lab Sample ID: S49308.01
Sample Tag: 02-PRCC-23-INF
Collected Date/Time: 06/05/2023 09:47
Matrix: Wastewater
COC Reference: 153084

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.87/6.47/11	ASTMD7979-19M	06/16/23 10:00	AB	

Organics

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 01:20, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	140	10	ng/L	2.04	375-22-4	IX
PFPeA*	190	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*	160	2.0	1.4	ng/L	2.04	307-24-4	
PFBS*	120	2.0	1.4	ng/L	2.04	375-73-5	
PFHpA*	27	2.0	1.4	ng/L	2.04	375-85-9	
PFPeS*	190	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*	66	2.0	1.6	ng/L	2.04	335-67-1	
PFHxS*	550	2.0	1.6	ng/L	2.04	355-46-4	
PFHxS-LN*	460	2.0	1.6	ng/L	2.04	355-46-4-LN	
PFHxS-BR*	89	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*	110	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*	8,200	2.0	2.0	ng/L	2.04	1763-23-1	
PFOS-LN*	5,100	2.0	2.0	ng/L	2.04	1763-23-1-LN	
PFOS-BR*	3,100	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*	4.4	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	
PFTrDA*	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	4.1	2.0	ng/L	2.04	13252-13-6	
FHpPA (7:3 FTCA)*	Not detected	4.1	3.1	ng/L	2.04	812-70-4	
FPePA (5:3 FTCA)*	Not detected	4.1	2.2	ng/L	2.04	914637-49-3	
FPrPA (3:3 FTCA)*	Not detected	4.1	1.2	ng/L	2.04	356-02-5	
PFBSA*	Not detected	2.0	1.2	ng/L	2.04	30334-69-1	

I-Matrix interference with internal standard X-Elevated reporting limit due to matrix interference

Lab Sample ID: S49308.01 (continued)
Sample Tag: 02-PRCC-23-INF

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 01:20, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFECHS*	13,000	2.0	1.2	ng/L	2.04	67584-42-3	
PFHxSA*	Not detected	2.0	1.0	ng/L	2.04	41997-13-1	

Merit Laboratories, Inc.

Analytical Laboratory Report

Lab Sample ID: S49308.02
Sample Tag: 02-PRCC-23-PRIM
Collected Date/Time: 06/05/2023 09:57
Matrix: Wastewater
COC Reference: 153084

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.50/6.53/12	ASTMD7979-19M	06/16/23 10:00	AB	

Organics

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 01:40, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.01	375-22-4	
PFPeA*	Not detected	4.0	1.0	ng/L	2.01	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.01	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2.01	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2.01	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2.01	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.01	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.01	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2.01	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2.01	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.01	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.01	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.01	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.01	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.01	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.01	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.01	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2.01	2991-50-6	
PFOS*	7.8	2.0	2.0	ng/L	2.01	1763-23-1	
PFOS-LN*	6.1	2.0	2.0	ng/L	2.01	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	2.0	ng/L	2.01	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.01	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.01	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	2.01	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.01	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	2.01	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.01	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2.01	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.01	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.01	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.01	919005-14-4	
HFPO-DA*	Not detected	4.0	2.0	ng/L	2.01	13252-13-6	
FHpPA (7:3 FTCA)*	Not detected	4.0	3.0	ng/L	2.01	812-70-4	
FPePA (5:3 FTCA)*	Not detected	4.0	2.2	ng/L	2.01	914637-49-3	
FPrPA (3:3 FTCA)*	Not detected	4.0	1.2	ng/L	2.01	356-02-5	
PFBSA*	Not detected	2.0	1.2	ng/L	2.01	30334-69-1	
PFECHS*	2.2	2.0	1.2	ng/L	2.01	67584-42-3	

Lab Sample ID: S49308.02 (continued)
Sample Tag: 02-PRCC-23-PRIM

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 01:40, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxSA*	Not detected	2.0	1.0	ng/L	2.01	41997-13-1	

Merit Laboratories Login Checklist

Lab Set ID: S49308
Client: RAMBOLL (Ramboll Americas)
Project: RACER Coldwater Road
Submitted: 06/05/2023 12:55 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.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 3.8
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[ ] Yes	[ ] No	[X] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] 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: _____

Merit Laboratories, Inc.
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 153084

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Kevin Schneider / Clifford Yantz
COMPANY: Ramboll
ADDRESS: 2090 Commonwealth Blvd
CITY: Ann Arbor STATE: MI ZIP CODE: 48105
PHONE NO: 313-333-0211 CELL NO:
P.O. NO.: 1940006516 Task 37
E-MAIL ADDRESS: Kevin.Schneider@Ramboll.com / clifford.yantz@ramboll.com
QUOTE NO.:

INVOICE TO

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

PROJECT NO./NAME: RACER Coldwater Road
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: W=WATER GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR WS=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	COLLECTION DATE	COLLECTION TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS (1979)	Special Instructions
49308.01	6/5/23	947	02- PRCC-23-INF	ww	3	3							X	low level Reporting limit w/ estimated values
.02	6/5/23	957	02- PRCC-23-PRIMER (PFAS)	ww	3	3							X	34 PFAS List

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
	☒ Sampler	6/5/23	1814
RECEIVED BY: SIGNATURE/ORGANIZATION	Doug A Miller	6/5/23	1820
RELINQUISHED BY: SIGNATURE/ORGANIZATION		6/5/23	2351
RECEIVED BY: SIGNATURE/ORGANIZATION	M Chilcote	6/5/23	1255

RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 3.8

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

Rev. 1.26.22

Quality Control Report

Report ID: QC-S49308-01
Generated on 06/27/2023

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): S49308.01-S49308.02
Project: RACER Coldwater Road
Submitted Date/Time: 06/05/2023 12:55
Sampled by: Kevin Schneider
P.O. #: 1940006516 TASK 37

QC Report Sections

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

Lab Sample ID: S49308.01

Sample Tag: 02-PRCC-23-INF

Collected Date/Time: 06/05/2023 09:47

Matrix: Wastewater

COC Reference: 153084

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
34 PFAs	ASTMD7979-19M	06/17/23 01:20	AK230616W	PF230616W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S49308.02
Sample Tag: 02-PRCC-23-PRIM
Collected Date/Time: 06/05/2023 09:57
Matrix: Wastewater
COC Reference: 153084

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
34 PFAs	ASTMD7979-19M	06/17/23 01:40	AK230616W	PF230616W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF230616W2

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S49308.01	34 PFAs	ASTMD7979-19M	06/17/23 01:20	AK230616W
S49308.02	34 PFAs	ASTMD7979-19M	06/17/23 01:40	AK230616W

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S49308.01

Sample Tag: 02-PRCC-23-INF

Collected Date/Time: 06/05/2023 09:47

Matrix: Wastewater

COC Reference: 153084

Organics - Volatiles, Analysis: 34 PFAs

Run in Batch: AK230616W, Run Date: 06/17/2023 01:20, Matrix: WW, Dilution: 2.04

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**143.5**	50.0	150.0
M2-6:2FTSA		**81.6**	50.0	150.0
M2-8:2FTSA		**54.9**	50.0	150.0
M2PFTeDA		**101.6**	12.0	218.0
M3PFBS		**93.3**	50.0	150.0
M3PFHxS		**123.1**	50.0	150.0
M4PFHpA		**97.0**	50.0	150.0
M5PFHxA		**89.3**	50.0	150.0
M5PFPeA		**63.6**	50.0	150.0
M6PFDA		**102.5**	50.0	150.0
M7PFUnDA		**101.9**	50.0	150.0
M8FOSA		**94.7**	50.0	150.0
M8PFOA		**119.1**	50.0	150.0
M8PFOS		**92.6**	50.0	150.0
M9-PFNA		**100.0**	50.0	150.0
MPFBA	*	**37.0**	50.0	150.0
MPFDoDA		**107.5**	50.0	150.0
d3N-MeFOSAA		**102.7**	50.0	150.0
d5EtFOSAA		**81.9**	50.0	150.0
MHFPO-DA		**97.2**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S49308.02

Sample Tag: 02-PRCC-23-PRIM

Collected Date/Time: 06/05/2023 09:57

Matrix: Wastewater

COC Reference: 153084

Organics - Volatiles, Analysis: 34 PFAs

Run in Batch: AK230616W, Run Date: 06/17/2023 01:40, Matrix: WW, Dilution: 2.01

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**87.4**	50.0	150.0
M2-6:2FTSA		**73.5**	50.0	150.0
M2-8:2FTSA		**81.0**	50.0	150.0
M2PFTeDA		**113.2**	12.0	218.0
M3PFBS		**112.4**	50.0	150.0
M3PFHxS		**110.9**	50.0	150.0
M4PFHpA		**106.5**	50.0	150.0
M5PFHxA		**115.4**	50.0	150.0
M5PFPeA		**106.5**	50.0	150.0
M6PFDA		**90.0**	50.0	150.0
M7PFUnDA		**104.5**	50.0	150.0
M8FOSA		**91.9**	50.0	150.0
M8PFOA		**115.8**	50.0	150.0
M8PFOS		**99.9**	50.0	150.0
M9-PFNA		**98.5**	50.0	150.0
MPFBA		**106.6**	50.0	150.0
MPFDoDA		**101.1**	50.0	150.0
d3N-MeFOSAA		**90.0**	50.0	150.0
d5EtFOSAA		**83.5**	50.0	150.0
MHFPO-DA		**120.8**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF230616W2

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

Blank (BLK)

Lab Sample ID: AK230616W.BLK230616

Run in Batch: AK230616W, Run Date: 06/17/2023 01:01, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**80.5**	50.0	150.0
M2-6:2FTSA		**77.1**	50.0	150.0
M2-8:2FTSA		**91.6**	50.0	150.0
M2PFTeDA		**89.5**	12.0	218.0
M3PFBS		**95.6**	50.0	150.0
M3PFHxS		**107.8**	50.0	150.0
M4PFHpA		**92.4**	50.0	150.0
M5PFHxA		**102.4**	50.0	150.0
M5PFPeA		**98.7**	50.0	150.0
M6PFDA		**87.8**	50.0	150.0
M7PFUnDA		**88.5**	50.0	150.0
M8FOSA		**87.2**	50.0	150.0
M8PFOA		**100.9**	50.0	150.0
M8PFOS		**92.4**	50.0	150.0
M9-PFNA		**105.0**	50.0	150.0
MPFBA		**97.5**	50.0	150.0
MPFDoDA		**91.4**	50.0	150.0
d3N-MeFOSAA		**78.7**	50.0	150.0
d5EtFOSAA		**82.8**	50.0	150.0
MHFPO-DA		**111.0**	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK230616W.LCS230616

Run in Batch: AK230616W, Run Date: 06/17/2023 00:22, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**87.3**	50.0	150.0
M2-6:2FTSA		**78.7**	50.0	150.0
M2-8:2FTSA		**82.7**	50.0	150.0
M2PFTeDA		**94.2**	12.0	218.0
M3PFBS		**90.3**	50.0	150.0
M3PFHxS		**109.8**	50.0	150.0
M4PFHpA		**95.3**	50.0	150.0
M5PFHxA		**108.9**	50.0	150.0
M5PFPeA		**98.1**	50.0	150.0
M6PFDA		**100.4**	50.0	150.0
M7PFUnDA		**109.1**	50.0	150.0
M8FOSA		**88.1**	50.0	150.0
M8PFOA		**109.6**	50.0	150.0
M8PFOS		**93.8**	50.0	150.0
M9-PFNA		**100.6**	50.0	150.0
MPFBA		**99.1**	50.0	150.0
MPFDoDA		**96.2**	50.0	150.0
d3N-MeFOSAA		**87.2**	50.0	150.0
d5EtFOSAA		**79.8**	50.0	150.0
MHFPO-DA		**114.0**	50.0	150.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK230616W.LCSD230616, Parent Sample ID: AK230616W.LCS230616

Run in Batch: AK230616W, Run Date: 06/17/2023 00:41, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**82.1**	50.0	150.0
M2-6:2FTSA		**69.9**	50.0	150.0
M2-8:2FTSA		**89.3**	50.0	150.0
M2PFTeDA		**100.7**	12.0	218.0
M3PFBS		**95.5**	50.0	150.0
M3PFHxS		**107.5**	50.0	150.0
M4PFHpA		**89.0**	50.0	150.0
M5PFHxA		**106.5**	50.0	150.0
M5PFPeA		**91.4**	50.0	150.0
M6PFDA		**87.8**	50.0	150.0
M7PFUnDA		**92.5**	50.0	150.0
M8FOSA		**87.8**	50.0	150.0
M8PFOA		**101.4**	50.0	150.0
M8PFOS		**94.3**	50.0	150.0
M9-PFNA		**100.5**	50.0	150.0
MPFBA		**96.7**	50.0	150.0
MPFDoDA		**90.7**	50.0	150.0
d3N-MeFOSAA		**78.2**	50.0	150.0
d5EtFOSAA		**78.3**	50.0	150.0
MHFPO-DA		**112.9**	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK230616W.4933402M, Parent Sample ID: S49334.02

Run in Batch: AK230616W, Run Date: 06/17/2023 02:58, Prep Date: 06/16/2023, Matrix: WW, Dilution: 2.01

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**79.3**	50.0	150.0
M2-6:2FTSA		**74.7**	50.0	150.0
M2-8:2FTSA		**90.7**	50.0	150.0
M2PFTeDA		**100.3**	12.0	218.0
M3PFBS		**95.6**	50.0	150.0
M3PFHxS		**104.9**	50.0	150.0
M4PFHpA		**95.9**	50.0	150.0
M5PFHxA		**103.4**	50.0	150.0
M5PFPeA		**94.6**	50.0	150.0
M6PFDA		**92.5**	50.0	150.0
M7PFUnDA		**106.9**	50.0	150.0
M8FOSA		**100.1**	50.0	150.0
M8PFOA		**108.9**	50.0	150.0
M8PFOS		**93.0**	50.0	150.0
M9-PFNA		**104.1**	50.0	150.0
MPFBA		**99.4**	50.0	150.0
MPFDoDA		**92.5**	50.0	150.0
d3N-MeFOSAA		**80.1**	50.0	150.0
d5EtFOSAA		**78.9**	50.0	150.0
MHFPO-DA		**123.4**	50.0	150.0

Duplicate (DUP)

Lab Sample ID: AK230616W.4933403D, Parent Sample ID: S49334.03

Run in Batch: AK230616W, Run Date: 06/17/2023 03:37, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1.92

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**77.4**	50.0	150.0
M2-6:2FTSA		**70.0**	50.0	150.0
M2-8:2FTSA		**75.4**	50.0	150.0
M2PFTeDA		**98.7**	12.0	218.0
M3PFBS		**88.9**	50.0	150.0
M3PFHxS		**110.3**	50.0	150.0
M4PFHpA		**97.7**	50.0	150.0
M5PFHxA		**98.1**	50.0	150.0
M5PFPeA		**95.5**	50.0	150.0
M6PFDA		**85.9**	50.0	150.0
M7PFUnDA		**91.5**	50.0	150.0
M8FOSA		**93.0**	50.0	150.0
M8PFOA		**108.8**	50.0	150.0
M8PFOS		**93.7**	50.0	150.0
M9-PFNA		**94.3**	50.0	150.0
MPFBA		**95.9**	50.0	150.0
MPFDoDA		**95.9**	50.0	150.0
d3N-MeFOSAA		**80.2**	50.0	150.0
d5EtFOSAA		**81.7**	50.0	150.0
MHFPO-DA		**104.0**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF230616W2

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

Blank (BLK)

Lab Sample ID: AK230616W.BLK230616

Run in Batch: AK230616W, Run Date: 06/17/2023 01:01, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	10	ng/l
PFMPA		ND	2	ng/l
FPrPA (3:3 FTCA)		ND	4	ng/l
PFPrS		ND	2	ng/l
PFPeA		ND	4	ng/l
PFMBA		ND	2	ng/l
4:2 FTSA		ND	2	ng/l
NFDHA		ND	2	ng/l
PFHxA		ND	2	ng/l
PFBS		ND	2	ng/l
HFPO-DA		ND	4	ng/l
FPePA (5:3 FTCA)		ND	4	ng/l
PFEESA		ND	2	ng/l
PFHpA		ND	2	ng/l
PFPeS		ND	2	ng/l
ADONA		ND	2	ng/l
6:2 FTSA		ND	2	ng/l
PFBSA		ND	2	ng/l
PFOA		ND	2	ng/l
PFHxS-BR		ND	2	ng/l
PFHxS		ND	2	ng/l
PFHxS-LN		ND	2	ng/l
FHpPA (7:3 FTCA)		ND	4	ng/l
PFNA		ND	2	ng/l
PFECHS		ND	2	ng/l
8:2 FTSA		ND	2	ng/l
PFHpS		ND	2	ng/l
N-MeFOSAA		ND	2	ng/l
PFDA		ND	2	ng/l
PFOS-BR		ND	2	ng/l
EtFOSAA		ND	4	ng/l
PFOS		ND	2	ng/l
PFOS-LN		ND	2	ng/l
PFHxSA		ND	2	ng/l
PFUnDA		ND	2	ng/l
9CL-PF3ONS		ND	2	ng/l
PFNS		ND	2	ng/l
PFDoDA		ND	2	ng/l
PFDS		ND	2	ng/l
PFTrDA		ND	2	ng/l
11CL-PF3OUdS		ND	2	ng/l
FOSA		ND	2	ng/l
PFTeDA		ND	4	ng/l

Organics - Volatiles, Prep Batch ID: PF230616W2 (continued)

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

Laboratory Control Sample (LCS)

Lab Sample ID: AK230616W.LCS230616

Run in Batch: AK230616W, Run Date: 06/17/2023 00:22, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		94.4	70.0	130.0
PFMPA		98.2	70.0	130.0
FPrPA (3:3 FTCA)	*	134.0	70.0	130.0
PFPrS		104.6	70.0	130.0
PFPeA		90.2	70.0	130.0
PFMBA		87.4	70.0	130.0
4:2 FTSA		86.0	70.0	130.0
NFDHA		102.4	70.0	130.0
PFHxA		94.8	70.0	130.0
PFBS		118.6	70.0	130.0
HFPO-DA		88.2	70.0	130.0
FPePA (5:3 FTCA)		116.2	70.0	130.0
PFEESA		96.8	70.0	130.0
PFHpA		100.8	70.0	130.0
PFPeS		105.0	70.0	130.0
ADONA		123.6	70.0	130.0
6:2 FTSA		89.2	70.0	130.0
PFBSA		112.2	70.0	130.0
PFOA		91.6	70.0	130.0
PFHxS		104.2	70.0	130.0
FHpPA (7:3 FTCA)		123.8	70.0	130.0
PFNA		98.0	70.0	130.0
PFECHS		97.2	70.0	130.0
8:2 FTSA		89.2	70.0	130.0
PFHpS		89.2	70.0	130.0
N-MeFOSAA		87.6	70.0	130.0
PFDA		99.4	70.0	130.0
EtFOSAA		103.4	70.0	130.0
PFOS		105.4	70.0	130.0
PFHxSA		114.2	70.0	130.0
PFUnDA		79.6	70.0	130.0
9CL-PF3ONS		107.0	70.0	130.0
PFNS		111.8	70.0	130.0
PFDoDA		95.2	70.0	130.0
PFDS		98.4	70.0	130.0
PFTrDA		103.0	70.0	130.0
11CL-PF3OUdS		98.8	70.0	130.0
FOSA		108.4	70.0	130.0
PFTeDA		93.4	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK230616W.LCSD230616, Parent Sample ID: AK230616W.LCS230616

Run in Batch: AK230616W, Run Date: 06/17/2023 00:41, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		101.6	70.0	130.0	7.3	30.0
PFMPA		94.8	70.0	130.0	3.5	30.0

Organics - Volatiles, Prep Batch ID: PF230616W2 (continued)

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

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK230616W.LCSD230616, Parent Sample ID: AK230616W.LCS230616

Run in Batch: AK230616W, Run Date: 06/17/2023 00:41, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
FPrPA (3:3 FTCA)		119.6	70.0	130.0	11.4	30.0
PFPrS		99.2	70.0	130.0	5.3	30.0
PFPeA		99.2	70.0	130.0	9.5	30.0
PFMBA		89.4	70.0	130.0	2.3	30.0
4:2 FTSA		94.6	70.0	130.0	9.5	30.0
NFDHA		97.8	70.0	130.0	4.6	30.0
PFHxA		93.0	70.0	130.0	1.9	30.0
PFBS		102.6	70.0	130.0	14.5	30.0
HFPO-DA		107.0	70.0	130.0	19.3	30.0
FPePA (5:3 FTCA)		118.4	70.0	130.0	1.9	30.0
PFEESA		86.2	70.0	130.0	11.6	30.0
PFHpA		108.6	70.0	130.0	7.4	30.0
PFPeS		92.2	70.0	130.0	13.0	30.0
ADONA		115.0	70.0	130.0	7.2	30.0
6:2 FTSA		100.6	70.0	130.0	12.0	30.0
PFBSA		103.2	70.0	130.0	8.4	30.0
PFOA		99.4	70.0	130.0	8.2	30.0
PFHxS		95.6	70.0	130.0	8.6	30.0
FHpPA (7:3 FTCA)	*	150.0	70.0	130.0	19.1	30.0
PFNA		110.6	70.0	130.0	12.1	30.0
PFECHS		86.6	70.0	130.0	11.5	30.0
8:2 FTSA		81.8	70.0	130.0	8.7	30.0
PFHpS		97.8	70.0	130.0	9.2	30.0
N-MeFOSAA		103.8	70.0	130.0	16.9	30.0
PFDA		103.6	70.0	130.0	4.1	30.0
EtFOSAA		95.4	70.0	130.0	8.0	30.0
PFOS		101.6	70.0	130.0	3.7	30.0
PFHxSA		99.8	70.0	130.0	13.5	30.0
PFUnDA		104.6	70.0	130.0	27.1	30.0
9CL-PF3ONS		98.8	70.0	130.0	8.0	30.0
PFNS		108.0	70.0	130.0	3.5	30.0
PFDoDA		110.0	70.0	130.0	14.4	30.0
PFDS		102.6	70.0	130.0	4.2	30.0
PFTrDA		112.4	70.0	130.0	8.7	30.0
11CL-PF3OUdS		102.4	70.0	130.0	3.6	30.0
FOSA		113.8	70.0	130.0	4.9	30.0
PFTeDA		96.6	70.0	130.0	3.4	30.0

Matrix Spike (MS)

Lab Sample ID: AK230616W.4933402M, Parent Sample ID: S49334.02

Run in Batch: AK230616W, Run Date: 06/17/2023 02:58, Prep Date: 06/16/2023, Matrix: WW, Dilution: 2.01

Analyte	Flags	% Rec	LCL	UCL
PFBA		108.9	70.0	130.0
PFPeA		97.0	70.0	130.0
4:2 FTSA		99.0	70.0	130.0
PFHxA		108.9	70.0	130.0

Organics - Volatiles, Prep Batch ID: PF230616W2 (continued)

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

Matrix Spike (MS) (continued)

Lab Sample ID: AK230616W.4933402M, Parent Sample ID: S49334.02

Run in Batch: AK230616W, Run Date: 06/17/2023 02:58, Prep Date: 06/16/2023, Matrix: WW, Dilution: 2.01

Analyte	Flags	% Rec	LCL	UCL
PFBS		99.0	70.0	130.0
PFHpA		99.0	70.0	130.0
PFPeS		99.0	70.0	130.0
6:2 FTSA		97.0	70.0	130.0
PFOA		99.0	70.0	130.0
PFHxS		108.9	70.0	130.0
PFNA		90.1	70.0	130.0
8:2 FTSA		88.1	70.0	130.0
PFHpS		96.0	70.0	130.0
PFDA		108.9	70.0	130.0
N-MeFOSAA		94.1	70.0	130.0
EtFOSAA		108.9	70.0	130.0
PFOS		108.9	70.0	130.0
PFUnDA		90.1	70.0	130.0
PFNS		108.9	70.0	130.0
PFDoDA		118.8	70.0	130.0
PFDS		99.0	70.0	130.0
PFTrDA		118.8	70.0	130.0
FOSA		108.9	70.0	130.0
PFTeDA		99.0	70.0	130.0
11CL-PF3OUdS		98.0	70.0	130.0
9CL-PF3ONS		99.0	70.0	130.0
ADONA		128.7	70.0	130.0
HFPO-DA		88.1	70.0	130.0
FHpPA (7:3 FTCA)		118.8	70.0	130.0
FPePA (5:3 FTCA)		128.7	70.0	130.0
FPrPA (3:3 FTCA)	*	138.6	70.0	130.0
PFBSA		91.1	70.0	130.0
PFECHS		91.1	70.0	130.0
PFHxSA		96.0	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK230616W.4933403D, Parent Sample ID: S49334.03

Run in Batch: AK230616W, Run Date: 06/17/2023 03:37, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1.92

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		NC	30.0
4:2 FTSA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0

Organics - Volatiles, Prep Batch ID: PF230616W2 (continued)

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

Duplicate (DUP) (continued)

Lab Sample ID: AK230616W.4933403D, Parent Sample ID: S49334.03

Run in Batch: AK230616W, Run Date: 06/17/2023 03:37, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1.92

Analyte	Flags	RPD	RPD CL
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		NC	30.0
PFOS-LN		NC	30.0
PFOS-BR		NC	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDoDA		NC	30.0
PFDS		NC	30.0
PFTrDA		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
FHpPA (7:3 FTCA)		NC	30.0
FPePA (5:3 FTCA)		NC	30.0
FPrPA (3:3 FTCA)		NC	30.0
PFBSA		NC	30.0
PFECHS		NC	30.0
PFHxSA		NC	30.0

Merit Laboratories, Inc.
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 153084

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Kevin Schneider / Clifford Yantz
COMPANY: Ramboll
ADDRESS: 2090 Commonwealth Blvd
CITY: Ann Arbor STATE: MI ZIP CODE: 48105
PHONE NO: 313-333-0211 CELL NO:
P.O. NO.: 1940006516 Task 37
E-MAIL ADDRESS: Kevin.Schneider@Ramboll.com / clifford.yantz@ramboll.com
QUOTE NO.:

INVOICE TO

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

PROJECT NO./NAME: RACER Coldwater Road
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: W=WATER GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR WS=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	COLLECTION DATE	COLLECTION TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS (1979)	Special Instructions
49308.01	6/5/23	947	02- PRCC-23-INF	ww	3	3							X	low level Reporting limit w/ estimated values
.02	6/5/23	957	02- PRCC-23-PRIMER (PFAS)	ww	3	3							X	34 PFAS List

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
	☒ Sampler	6/5/23	1814
RECEIVED BY: SIGNATURE/ORGANIZATION	Doug A Miller	6/5/23	1820
RELINQUISHED BY: SIGNATURE/ORGANIZATION		6/5/23	2351
RECEIVED BY: SIGNATURE/ORGANIZATION	M Chilcote	6/5/23	1255

RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 3.8

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

Rev. 1.26.22

Analytical Laboratory Report

Report ID: S49457.01(01)
Generated on 06/28/2023

Report to

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

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

Addtional 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 Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S49457.01-S49457.05
Project: RACER Coldwater Road
Collected Date(s): 06/06/2023
Submitted Date/Time: 06/07/2023 15:10
Sampled by: Kevin Schneider
P.O. #: 1940006516 TASK 37

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
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.

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

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

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
PFTrDA	Perfluorotridecanoic Acid	72629-94-8
FOSA	Perfluorooctane Sulfonamide	754-91-6
PFTeDA	Perfluorotetradecanoic Acid	376-06-7
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone1-sulfonic acid	756426-58-1
ADONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4
HFPO-DA	Hexafluoropropylene oxide dimer	13252-13-6
FHpPA (7:3 FTCA)	3-Perfluoroheptyl propanoic acid	812-70-4
FPePA (5:3 FTCA)	3-Perfluoropentyl propanoic acid	914637-49-3
FPrPA (3:3 FTCA)	3-Perfluoropropyl propanoic acid	356-02-5
PFBSA	Perfluorobutanesulfonamide	30334-69-1
PFECHS	Perfluoro-4-ethylcyclohexanesulfonate	67584-42-3
PFHxSA	Perfluorohexanesulfonamide	41997-13-1

Analytical Laboratory Report

Sample Summary (5 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S49457.01	Field Blank-060623	Water	06/06/23 15:34
S49457.02	02-PRCC-23-EFF-129	Wastewater	06/06/23 15:36
S49457.03	02-PRCC-23-MID-2-129	Wastewater	06/06/23 15:38
S49457.04	02-PRCC-23-MID-1-129	Wastewater	06/06/23 15:40
S49457.05	02-PRCC-23-PRIM-129	Wastewater	06/06/23 15:42

Analytical Laboratory Report

Lab Sample ID: S49457.01
Sample Tag: Field Blank-060623
Collected Date/Time: 06/06/2023 15:34
Matrix: Water
COC Reference: 156509

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.23/6.50/10	ASTMD7979-19M	06/16/23 10:00	AB	

Organics

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 05:15, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	11	11	ng/L	2.11	375-22-4	
PFPeA*	Not detected	4.2	1.1	ng/L	2.11	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.7	ng/L	2.11	757124-72-4	
PFHxA*	Not detected	2.1	1.5	ng/L	2.11	307-24-4	
PFBS*	Not detected	2.1	1.5	ng/L	2.11	375-73-5	
PFHpA*	Not detected	2.1	1.5	ng/L	2.11	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.11	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.11	27619-97-2	
PFOA*	Not detected	2.1	1.7	ng/L	2.11	335-67-1	
PFHxS*	Not detected	2.1	1.7	ng/L	2.11	355-46-4	
PFHxS-LN*	Not detected	2.1	1.7	ng/L	2.11	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.7	ng/L	2.11	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.11	375-95-1	
8:2 FTSA*	Not detected	2.1	1.1	ng/L	2.11	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.11	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.11	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.11	2355-31-9	
EtFOSAA*	Not detected	4.2	2.1	ng/L	2.11	2991-50-6	
PFOS*	Not detected	2.1	2.1	ng/L	2.11	1763-23-1	
PFOS-LN*	Not detected	2.1	2.1	ng/L	2.11	1763-23-1-LN	
PFOS-BR*	Not detected	2.1	2.1	ng/L	2.11	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.5	ng/L	2.11	2058-94-8	
PFNS*	Not detected	2.1	1.5	ng/L	2.11	68259-12-1	
PFDoDA*	Not detected	2.1	1.7	ng/L	2.11	307-55-1	
PFDS*	Not detected	2.1	1.5	ng/L	2.11	335-77-3	
PFTrDA*	Not detected	2.1	1.3	ng/L	2.11	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.11	754-91-6	
PFTeDA*	Not detected	4.2	1.9	ng/L	2.11	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.11	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.5	ng/L	2.11	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.11	919005-14-4	
HFPO-DA*	Not detected	4.2	2.1	ng/L	2.11	13252-13-6	
FHpPA (7:3 FTCA)*	Not detected	4.2	3.2	ng/L	2.11	812-70-4	
FPePA (5:3 FTCA)*	Not detected	4.2	2.3	ng/L	2.11	914637-49-3	
FPrPA (3:3 FTCA)*	Not detected	4.2	1.3	ng/L	2.11	356-02-5	
PFBSA*	Not detected	2.1	1.3	ng/L	2.11	30334-69-1	
PFECHS*	Not detected	2.1	1.3	ng/L	2.11	67584-42-3	

Lab Sample ID: S49457.01 (continued)

Sample Tag: Field Blank-060623

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 05:15, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxSA*	Not detected	2.1	1.1	ng/L	2.11	41997-13-1	

Lab Sample ID: S49457.02
Sample Tag: 02-PRCC-23-EFF-129
Collected Date/Time: 06/06/2023 15:36
Matrix: Wastewater
COC Reference: 156509

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.42/6.54/10	ASTMD7979-19M	06/16/23 10:00	AB	

Organics

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 05:34, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.05	375-22-4	
PFPeA*	Not detected	4.1	1.0	ng/L	2.05	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.6	ng/L	2.05	757124-72-4	
PFHxA*	Not detected	2.1	1.4	ng/L	2.05	307-24-4	
PFBS*	Not detected	2.1	1.4	ng/L	2.05	375-73-5	
PFHpA*	Not detected	2.1	1.4	ng/L	2.05	375-85-9	
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*	Not detected	2.1	1.6	ng/L	2.05	335-67-1	
PFHxS*	Not detected	2.1	1.6	ng/L	2.05	355-46-4	
PFHxS-LN*	Not detected	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*	Not detected	2.1	2.0	ng/L	2.05	1763-23-1	
PFOS-LN*	Not detected	2.1	2.0	ng/L	2.05	1763-23-1-LN	
PFOS-BR*	Not detected	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	
PFTrDA*	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	4.1	2.1	ng/L	2.05	13252-13-6	
FHpPA (7:3 FTCA)*	Not detected	4.1	3.1	ng/L	2.05	812-70-4	
FPePA (5:3 FTCA)*	Not detected	4.1	2.3	ng/L	2.05	914637-49-3	
FPrPA (3:3 FTCA)*	Not detected	4.1	1.2	ng/L	2.05	356-02-5	
PFBSA*	Not detected	2.1	1.2	ng/L	2.05	30334-69-1	
PFECHS*	Not detected	2.1	1.2	ng/L	2.05	67584-42-3	

Lab Sample ID: S49457.02 (continued)
Sample Tag: 02-PRCC-23-EFF-129

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 05:34, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxSA*	Not detected	2.1	1.0	ng/L	2.05	41997-13-1	

Lab Sample ID: S49457.03
Sample Tag: 02-PRCC-23-MID-2-129
Collected Date/Time: 06/06/2023 15:38
Matrix: Wastewater
COC Reference: 156509

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.71/6.53/12	ASTMD7979-19M	06/16/23 10:00	AB	

Organics

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 05:54, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.7	9.7	ng/L	1.94	375-22-4	
PFPeA*	Not detected	3.9	0.97	ng/L	1.94	2706-90-3	
4:2 FTSA*	Not detected	1.9	1.6	ng/L	1.94	757124-72-4	
PFHxA*	Not detected	1.9	1.4	ng/L	1.94	307-24-4	
PFBS*	Not detected	1.9	1.4	ng/L	1.94	375-73-5	
PFHpA*	Not detected	1.9	1.4	ng/L	1.94	375-85-9	
PFPeS*	Not detected	1.9	1.7	ng/L	1.94	2706-91-4	
6:2 FTSA*	Not detected	1.9	1.9	ng/L	1.94	27619-97-2	
PFOA*	Not detected	1.9	1.6	ng/L	1.94	335-67-1	
PFHxS*	Not detected	1.9	1.6	ng/L	1.94	355-46-4	
PFHxS-LN*	Not detected	1.9	1.6	ng/L	1.94	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.6	ng/L	1.94	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.94	375-95-1	
8:2 FTSA*	Not detected	1.9	0.97	ng/L	1.94	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.94	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.94	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.94	2355-31-9	
EtFOSAA*	Not detected	3.9	1.9	ng/L	1.94	2991-50-6	
PFOS*	Not detected	1.9	1.9	ng/L	1.94	1763-23-1	
PFOS-LN*	Not detected	1.9	1.9	ng/L	1.94	1763-23-1-LN	
PFOS-BR*	Not detected	1.9	1.9	ng/L	1.94	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.4	ng/L	1.94	2058-94-8	
PFNS*	Not detected	1.9	1.4	ng/L	1.94	68259-12-1	
PFDoDA*	Not detected	1.9	1.6	ng/L	1.94	307-55-1	
PFDS*	Not detected	1.9	1.4	ng/L	1.94	335-77-3	
PFTrDA*	Not detected	1.9	1.2	ng/L	1.94	72629-94-8	
FOSA*	Not detected	1.9	1.7	ng/L	1.94	754-91-6	
PFTeDA*	Not detected	3.9	1.7	ng/L	1.94	376-06-7	
11Cl-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.94	763051-92-9	
9Cl-PF3ONS*	Not detected	1.9	1.4	ng/L	1.94	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.94	919005-14-4	
HFPO-DA*	Not detected	3.9	1.9	ng/L	1.94	13252-13-6	
FHpPA (7:3 FTCA)*	Not detected	3.9	2.9	ng/L	1.94	812-70-4	
FPePA (5:3 FTCA)*	Not detected	3.9	2.1	ng/L	1.94	914637-49-3	
FPrPA (3:3 FTCA)*	Not detected	3.9	1.2	ng/L	1.94	356-02-5	
PFBSA*	Not detected	1.9	1.2	ng/L	1.94	30334-69-1	
PFECHS*	Not detected	1.9	1.2	ng/L	1.94	67584-42-3	

Lab Sample ID: S49457.03 (continued)
Sample Tag: 02-PRCC-23-MID-2-129

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 05:54, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxSA*	Not detected	1.9	0.97	ng/L	1.94	41997-13-1	

Lab Sample ID: S49457.04
Sample Tag: 02-PRCC-23-MID-1-129
Collected Date/Time: 06/06/2023 15:40
Matrix: Wastewater
COC Reference: 156509

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.54/6.56/10	ASTMD7979-19M	06/16/23 10:00	AB	

Organics

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 06:13, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.01	375-22-4	
PFPeA*	Not detected	4.0	1.0	ng/L	2.01	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.01	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2.01	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2.01	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2.01	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.01	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.01	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2.01	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2.01	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.01	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.01	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.01	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.01	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.01	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.01	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.01	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2.01	2991-50-6	
PFOS*	Not detected	2.0	2.0	ng/L	2.01	1763-23-1	
PFOS-LN*	Not detected	2.0	2.0	ng/L	2.01	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	2.0	ng/L	2.01	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.01	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.01	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	2.01	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.01	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	2.01	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.01	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2.01	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.01	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.01	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.01	919005-14-4	
HFPO-DA*	Not detected	4.0	2.0	ng/L	2.01	13252-13-6	
FHpPA (7:3 FTCA)*	Not detected	4.0	3.0	ng/L	2.01	812-70-4	
FPePA (5:3 FTCA)*	Not detected	4.0	2.2	ng/L	2.01	914637-49-3	
FPrPA (3:3 FTCA)*	Not detected	4.0	1.2	ng/L	2.01	356-02-5	
PFBSA*	Not detected	2.0	1.2	ng/L	2.01	30334-69-1	
PFECHS*	Not detected	2.0	1.2	ng/L	2.01	67584-42-3	

Lab Sample ID: S49457.04 (continued)
Sample Tag: 02-PRCC-23-MID-1-129

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 06:13, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxSA*	Not detected	2.0	1.0	ng/L	2.01	41997-13-1	

Analytical Laboratory Report

Lab Sample ID: S49457.05
Sample Tag: 02-PRCC-23-PRIM-129
Collected Date/Time: 06/06/2023 15:42
Matrix: Wastewater
COC Reference: 156509

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.19/6.55/11	ASTMD7979-19M	06/16/23 10:00	AB	

Organics

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 06:33, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.95	375-22-4	
PFPeA*	Not detected	3.9	0.98	ng/L	1.95	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.95	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.95	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.95	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.95	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.95	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.95	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.95	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.95	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.95	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.95	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.95	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.95	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.95	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.95	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.95	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.95	2991-50-6	
PFOS*	2.4	2.0	1.9	ng/L	1.95	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.95	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.95	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.95	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.95	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	1.95	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.95	335-77-3	
PFTrDA*	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	3.9	2.0	ng/L	1.95	13252-13-6	
FHpPA (7:3 FTCA)*	Not detected	3.9	2.9	ng/L	1.95	812-70-4	
FPePA (5:3 FTCA)*	Not detected	3.9	2.1	ng/L	1.95	914637-49-3	
FPrPA (3:3 FTCA)*	Not detected	3.9	1.2	ng/L	1.95	356-02-5	
PFBSA*	Not detected	2.0	1.2	ng/L	1.95	30334-69-1	
PFECHS*	6.3	2.0	1.2	ng/L	1.95	67584-42-3	

Lab Sample ID: S49457.05 (continued)
Sample Tag: 02-PRCC-23-PRIM-129

34 PFAs, Method: ASTMD7979-19M, Run Date: 06/17/23 06:33, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxSA*	Not detected	2.0	0.98	ng/L	1.95	41997-13-1	

Merit Laboratories Login Checklist

Lab Set ID: S49457
Client: RAMBOLL (Ramboll Americas)
Project: RACER Coldwater Road
Submitted: 06/07/2023 15:10 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.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 2.9
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[ ] Yes	[ ] No	[X] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] 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: _____

Merit Laboratories, Inc.
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

156509

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Clifford Yantz / Kevin Schneider
COMPANY: Ramboll
ADDRESS: 2090 Commonwealth Blvd
CITY: Ann Arbor STATE: MI ZIP CODE: 48105
PHONE NO.: CELL NO.: 313-333-0211
P.O. NO.: 1940006516 Task 37
E-MAIL ADDRESS: Clifford.Yantz@Ramboll.com Kevin.Schneider@Ramboll.com
QUOTE NO.:

INVOICE TO

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

PROJECT NO./NAME: RACER Coldwater Road
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: W=WATER GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR WS=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	COLLECTION DATE	COLLECTION TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS (1633)
49457.01	6/6/23	1534	Field Blank-060623	L	1	1							X
.02		1536	02-PRCC-23-EFF-129	ww	3	3							X
.03		1538	02-PRCC-23-MID-2-129	ww	3	3							X
.04		1540	02-PRCC-23-MID-1-129	ww	3	3							X
.05		1542	02-PRCC-23-PRIM-129	ww	3	3							X

Special Instructions: Low Level Reporting with estimated values

34 compound PFAS List

RELINQUISHED BY: SIGNATURE/ORGANIZATION	☒ Sampler	DATE 6/5/23	TIME 1415
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 6/5/23	TIME 1615
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE 6/7/23	TIME 1510
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 6/7/23	TIME 1510

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 2.9

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

Rev. 1.26.22

Quality Control Report

Report ID: QC-S49457-01
Generated on 06/28/2023

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): S49457.01-S49457.05
Project: RACER Coldwater Road
Submitted Date/Time: 06/07/2023 15:10
Sampled by: Kevin Schneider
P.O. #: 1940006516 TASK 37

QC Report Sections

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

Lab Sample ID: S49457.01

Sample Tag: Field Blank-060623

Collected Date/Time: 06/06/2023 15:34

Matrix: Water

COC Reference: 156509

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
34 PFAs	ASTMD7979-19M	06/17/23 05:15	AK230616W	PF230616W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S49457.02
Sample Tag: 02-PRCC-23-EFF-129
Collected Date/Time: 06/06/2023 15:36
Matrix: Wastewater
COC Reference: 156509

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
34 PFAs	ASTMD7979-19M	06/17/23 05:34	AK230616W	PF230616W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S49457.03
Sample Tag: 02-PRCC-23-MID-2-129
Collected Date/Time: 06/06/2023 15:38
Matrix: Wastewater
COC Reference: 156509

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
34 PFAs	ASTMD7979-19M	06/17/23 05:54	AK230616W	PF230616W2	Yes	BLK/LCS/LCSD/MS/DU

Lab Sample ID: S49457.04

Sample Tag: 02-PRCC-23-MID-1-129

Collected Date/Time: 06/06/2023 15:40

Matrix: Wastewater

COC Reference: 156509

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
34 PFAs	ASTMD7979-19M	06/17/23 06:13	AK230616W	PF230616W2	Yes	BLK/LCS/LCSD/MS/DU

Lab Sample ID: S49457.05

Sample Tag: 02-PRCC-23-PRIM-129

Collected Date/Time: 06/06/2023 15:42

Matrix: Wastewater

COC Reference: 156509

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
34 PFAs	ASTMD7979-19M	06/17/23 06:33	AK230616W	PF230616W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF230616W2

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S49457.01	34 PFAs	ASTMD7979-19M	06/17/23 05:15	AK230616W
S49457.02	34 PFAs	ASTMD7979-19M	06/17/23 05:34	AK230616W
S49457.03	34 PFAs	ASTMD7979-19M	06/17/23 05:54	AK230616W
S49457.04	34 PFAs	ASTMD7979-19M	06/17/23 06:13	AK230616W
S49457.05	34 PFAs	ASTMD7979-19M	06/17/23 06:33	AK230616W

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S49457.01

Sample Tag: Field Blank-060623

Collected Date/Time: 06/06/2023 15:34

Matrix: Water

COC Reference: 156509

Organics - Volatiles, Analysis: 34 PFAs

Run in Batch: AK230616W, Run Date: 06/17/2023 05:15, Matrix: WW, Dilution: 2.11

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**86.1**	50.0	150.0
M2-6:2FTSA		**74.6**	50.0	150.0
M2-8:2FTSA		**88.1**	50.0	150.0
M2PFTeDA		**99.6**	12.0	218.0
M3PFBS		**102.3**	50.0	150.0
M3PFHxS		**113.7**	50.0	150.0
M4PFHpA		**102.0**	50.0	150.0
M5PFHxA		**110.3**	50.0	150.0
M5PFPeA		**99.5**	50.0	150.0
M6PFDA		**92.4**	50.0	150.0
M7PFUnDA		**93.6**	50.0	150.0
M8FOSA		**94.6**	50.0	150.0
M8PFOA		**100.9**	50.0	150.0
M8PFOS		**94.8**	50.0	150.0
M9-PFNA		**97.6**	50.0	150.0
MPFBA		**101.9**	50.0	150.0
MPFDoDA		**89.4**	50.0	150.0
d3N-MeFOSAA		**88.4**	50.0	150.0
d5EtFOSAA		**86.3**	50.0	150.0
MHFPO-DA		**125.7**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S49457.02

Sample Tag: 02-PRCC-23-EFF-129

Collected Date/Time: 06/06/2023 15:36

Matrix: Wastewater

COC Reference: 156509

Organics - Volatiles, Analysis: 34 PFAs

Run in Batch: AK230616W, Run Date: 06/17/2023 05:34, Matrix: WW, Dilution: 2.05

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**79.7**	50.0	150.0
M2-6:2FTSA		**74.0**	50.0	150.0
M2-8:2FTSA		**84.9**	50.0	150.0
M2PFTeDA		**116.5**	12.0	218.0
M3PFBS		**94.9**	50.0	150.0
M3PFHxS		**107.7**	50.0	150.0
M4PFHpA		**103.4**	50.0	150.0
M5PFHxA		**108.9**	50.0	150.0
M5PFPeA		**96.3**	50.0	150.0
M6PFDA		**92.5**	50.0	150.0
M7PFUnDA		**85.5**	50.0	150.0
M8FOSA		**90.3**	50.0	150.0
M8PFOA		**104.3**	50.0	150.0
M8PFOS		**99.4**	50.0	150.0
M9-PFNA		**101.6**	50.0	150.0
MPFBA		**102.7**	50.0	150.0
MPFDoDA		**99.6**	50.0	150.0
d3N-MeFOSAA		**90.2**	50.0	150.0
d5EtFOSAA		**74.7**	50.0	150.0
MHFPO-DA		**117.9**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S49457.03

Sample Tag: 02-PRCC-23-MID-2-129

Collected Date/Time: 06/06/2023 15:38

Matrix: Wastewater

COC Reference: 156509

Organics - Volatiles, Analysis: 34 PFAs

Run in Batch: AK230616W, Run Date: 06/17/2023 05:54, Matrix: WW, Dilution: 1.94

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**79.4**	50.0	150.0
M2-6:2FTSA		**66.0**	50.0	150.0
M2-8:2FTSA		**89.7**	50.0	150.0
M2PFTeDA		**79.5**	12.0	218.0
M3PFBS		**99.0**	50.0	150.0
M3PFHxS		**109.1**	50.0	150.0
M4PFHpA		**105.6**	50.0	150.0
M5PFHxA		**116.2**	50.0	150.0
M5PFPeA		**95.0**	50.0	150.0
M6PFDA		**87.9**	50.0	150.0
M7PFUnDA		**95.2**	50.0	150.0
M8FOSA		**92.3**	50.0	150.0
M8PFOA		**110.2**	50.0	150.0
M8PFOS		**103.0**	50.0	150.0
M9-PFNA		**93.2**	50.0	150.0
MPFBA		**101.7**	50.0	150.0
MPFDoDA		**90.6**	50.0	150.0
d3N-MeFOSAA		**79.4**	50.0	150.0
d5EtFOSAA		**82.3**	50.0	150.0
MHFPO-DA		**128.8**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S49457.04

Sample Tag: 02-PRCC-23-MID-1-129

Collected Date/Time: 06/06/2023 15:40

Matrix: Wastewater

COC Reference: 156509

Organics - Volatiles, Analysis: 34 PFAs

Run in Batch: AK230616W, Run Date: 06/17/2023 06:13, Matrix: WW, Dilution: 2.01

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**74.5**	50.0	150.0
M2-6:2FTSA		**66.6**	50.0	150.0
M2-8:2FTSA		**77.2**	50.0	150.0
M2PFTeDA		**108.3**	12.0	218.0
M3PFBS		**96.1**	50.0	150.0
M3PFHxS		**110.8**	50.0	150.0
M4PFHpA		**102.0**	50.0	150.0
M5PFHxA		**106.0**	50.0	150.0
M5PFPeA		**102.2**	50.0	150.0
M6PFDA		**96.6**	50.0	150.0
M7PFUnDA		**101.7**	50.0	150.0
M8FOSA		**92.7**	50.0	150.0
M8PFOA		**109.5**	50.0	150.0
M8PFOS		**94.5**	50.0	150.0
M9-PFNA		**107.8**	50.0	150.0
MPFBA		**104.0**	50.0	150.0
MPFDoDA		**103.2**	50.0	150.0
d3N-MeFOSAA		**85.1**	50.0	150.0
d5EtFOSAA		**96.1**	50.0	150.0
MHFPO-DA		**126.0**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S49457.05

Sample Tag: 02-PRCC-23-PRIM-129

Collected Date/Time: 06/06/2023 15:42

Matrix: Wastewater

COC Reference: 156509

Organics - Volatiles, Analysis: 34 PFAs

Run in Batch: AK230616W, Run Date: 06/17/2023 06:33, Matrix: WW, Dilution: 1.95

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**78.0**	50.0	150.0
M2-6:2FTSA		**66.8**	50.0	150.0
M2-8:2FTSA		**84.5**	50.0	150.0
M2PFTeDA		**103.2**	12.0	218.0
M3PFBS		**100.9**	50.0	150.0
M3PFHxS		**109.7**	50.0	150.0
M4PFHpA		**95.6**	50.0	150.0
M5PFHxA		**107.8**	50.0	150.0
M5PFPeA		**97.3**	50.0	150.0
M6PFDA		**85.3**	50.0	150.0
M7PFUnDA		**98.1**	50.0	150.0
M8FOSA		**94.4**	50.0	150.0
M8PFOA		**102.6**	50.0	150.0
M8PFOS		**94.2**	50.0	150.0
M9-PFNA		**103.7**	50.0	150.0
MPFBA		**97.6**	50.0	150.0
MPFDoDA		**94.9**	50.0	150.0
d3N-MeFOSAA		**85.4**	50.0	150.0
d5EtFOSAA		**76.8**	50.0	150.0
MHFPO-DA		**124.7**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF230616W2

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

Blank (BLK)

Lab Sample ID: AK230616W.BLK230616

Run in Batch: AK230616W, Run Date: 06/17/2023 01:01, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**80.5**	50.0	150.0
M2-6:2FTSA		**77.1**	50.0	150.0
M2-8:2FTSA		**91.6**	50.0	150.0
M2PFTeDA		**89.5**	12.0	218.0
M3PFBS		**95.6**	50.0	150.0
M3PFHxS		**107.8**	50.0	150.0
M4PFHpA		**92.4**	50.0	150.0
M5PFHxA		**102.4**	50.0	150.0
M5PFPeA		**98.7**	50.0	150.0
M6PFDA		**87.8**	50.0	150.0
M7PFUnDA		**88.5**	50.0	150.0
M8FOSA		**87.2**	50.0	150.0
M8PFOA		**100.9**	50.0	150.0
M8PFOS		**92.4**	50.0	150.0
M9-PFNA		**105.0**	50.0	150.0
MPFBA		**97.5**	50.0	150.0
MPFDoDA		**91.4**	50.0	150.0
d3N-MeFOSAA		**78.7**	50.0	150.0
d5EtFOSAA		**82.8**	50.0	150.0
MHFPO-DA		**111.0**	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK230616W.LCS230616

Run in Batch: AK230616W, Run Date: 06/17/2023 00:22, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**87.3**	50.0	150.0
M2-6:2FTSA		**78.7**	50.0	150.0
M2-8:2FTSA		**82.7**	50.0	150.0
M2PFTeDA		**94.2**	12.0	218.0
M3PFBS		**90.3**	50.0	150.0
M3PFHxS		**109.8**	50.0	150.0
M4PFHpA		**95.3**	50.0	150.0
M5PFHxA		**108.9**	50.0	150.0
M5PFPeA		**98.1**	50.0	150.0
M6PFDA		**100.4**	50.0	150.0
M7PFUnDA		**109.1**	50.0	150.0
M8FOSA		**88.1**	50.0	150.0
M8PFOA		**109.6**	50.0	150.0
M8PFOS		**93.8**	50.0	150.0
M9-PFNA		**100.6**	50.0	150.0
MPFBA		**99.1**	50.0	150.0
MPFDoDA		**96.2**	50.0	150.0
d3N-MeFOSAA		**87.2**	50.0	150.0
d5EtFOSAA		**79.8**	50.0	150.0
MHFPO-DA		**114.0**	50.0	150.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK230616W.LCSD230616, Parent Sample ID: AK230616W.LCS230616

Run in Batch: AK230616W, Run Date: 06/17/2023 00:41, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**82.1**	50.0	150.0
M2-6:2FTSA		**69.9**	50.0	150.0
M2-8:2FTSA		**89.3**	50.0	150.0
M2PFTeDA		**100.7**	12.0	218.0
M3PFBS		**95.5**	50.0	150.0
M3PFHxS		**107.5**	50.0	150.0
M4PFHpA		**89.0**	50.0	150.0
M5PFHxA		**106.5**	50.0	150.0
M5PFPeA		**91.4**	50.0	150.0
M6PFDA		**87.8**	50.0	150.0
M7PFUnDA		**92.5**	50.0	150.0
M8FOSA		**87.8**	50.0	150.0
M8PFOA		**101.4**	50.0	150.0
M8PFOS		**94.3**	50.0	150.0
M9-PFNA		**100.5**	50.0	150.0
MPFBA		**96.7**	50.0	150.0
MPFDoDA		**90.7**	50.0	150.0
d3N-MeFOSAA		**78.2**	50.0	150.0
d5EtFOSAA		**78.3**	50.0	150.0
MHFPO-DA		**112.9**	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK230616W.4933402M, Parent Sample ID: S49334.02

Run in Batch: AK230616W, Run Date: 06/17/2023 02:58, Prep Date: 06/16/2023, Matrix: WW, Dilution: 2.01

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**79.3**	50.0	150.0
M2-6:2FTSA		**74.7**	50.0	150.0
M2-8:2FTSA		**90.7**	50.0	150.0
M2PFTeDA		**100.3**	12.0	218.0
M3PFBS		**95.6**	50.0	150.0
M3PFHxS		**104.9**	50.0	150.0
M4PFHpA		**95.9**	50.0	150.0
M5PFHxA		**103.4**	50.0	150.0
M5PFPeA		**94.6**	50.0	150.0
M6PFDA		**92.5**	50.0	150.0
M7PFUnDA		**106.9**	50.0	150.0
M8FOSA		**100.1**	50.0	150.0
M8PFOA		**108.9**	50.0	150.0
M8PFOS		**93.0**	50.0	150.0
M9-PFNA		**104.1**	50.0	150.0
MPFBA		**99.4**	50.0	150.0
MPFDoDA		**92.5**	50.0	150.0
d3N-MeFOSAA		**80.1**	50.0	150.0
d5EtFOSAA		**78.9**	50.0	150.0
MHFPO-DA		**123.4**	50.0	150.0

Duplicate (DUP)

Lab Sample ID: AK230616W.4933403D, Parent Sample ID: S49334.03

Run in Batch: AK230616W, Run Date: 06/17/2023 03:37, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1.92

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**77.4**	50.0	150.0
M2-6:2FTSA		**70.0**	50.0	150.0
M2-8:2FTSA		**75.4**	50.0	150.0
M2PFTeDA		**98.7**	12.0	218.0
M3PFBS		**88.9**	50.0	150.0
M3PFHxS		**110.3**	50.0	150.0
M4PFHpA		**97.7**	50.0	150.0
M5PFHxA		**98.1**	50.0	150.0
M5PFPeA		**95.5**	50.0	150.0
M6PFDA		**85.9**	50.0	150.0
M7PFUnDA		**91.5**	50.0	150.0
M8FOSA		**93.0**	50.0	150.0
M8PFOA		**108.8**	50.0	150.0
M8PFOS		**93.7**	50.0	150.0
M9-PFNA		**94.3**	50.0	150.0
MPFBA		**95.9**	50.0	150.0
MPFDoDA		**95.9**	50.0	150.0
d3N-MeFOSAA		**80.2**	50.0	150.0
d5EtFOSAA		**81.7**	50.0	150.0
MHFPO-DA		**104.0**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF230616W2

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

Blank (BLK)

Lab Sample ID: AK230616W.BLK230616

Run in Batch: AK230616W, Run Date: 06/17/2023 01:01, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	10	ng/l
PFMPA		ND	2	ng/l
FPrPA (3:3 FTCA)		ND	4	ng/l
PFPrS		ND	2	ng/l
PFPeA		ND	4	ng/l
PFMBA		ND	2	ng/l
4:2 FTSA		ND	2	ng/l
NFDHA		ND	2	ng/l
PFHxA		ND	2	ng/l
PFBS		ND	2	ng/l
HFPO-DA		ND	4	ng/l
FPePA (5:3 FTCA)		ND	4	ng/l
PFEESA		ND	2	ng/l
PFHpA		ND	2	ng/l
PFPeS		ND	2	ng/l
ADONA		ND	2	ng/l
6:2 FTSA		ND	2	ng/l
PFBSA		ND	2	ng/l
PFOA		ND	2	ng/l
PFHxS-BR		ND	2	ng/l
PFHxS		ND	2	ng/l
PFHxS-LN		ND	2	ng/l
FHpPA (7:3 FTCA)		ND	4	ng/l
PFNA		ND	2	ng/l
PFECHS		ND	2	ng/l
8:2 FTSA		ND	2	ng/l
PFHpS		ND	2	ng/l
N-MeFOSAA		ND	2	ng/l
PFDA		ND	2	ng/l
PFOS-BR		ND	2	ng/l
EtFOSAA		ND	4	ng/l
PFOS		ND	2	ng/l
PFOS-LN		ND	2	ng/l
PFHxSA		ND	2	ng/l
PFUnDA		ND	2	ng/l
9CL-PF3ONS		ND	2	ng/l
PFNS		ND	2	ng/l
PFDoDA		ND	2	ng/l
PFDS		ND	2	ng/l
PFTrDA		ND	2	ng/l
11CL-PF3OUdS		ND	2	ng/l
FOSA		ND	2	ng/l
PFTeDA		ND	4	ng/l

Organics - Volatiles, Prep Batch ID: PF230616W2 (continued)

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

Laboratory Control Sample (LCS)

Lab Sample ID: AK230616W.LCS230616

Run in Batch: AK230616W, Run Date: 06/17/2023 00:22, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		94.4	70.0	130.0
PFMPA		98.2	70.0	130.0
FPrPA (3:3 FTCA)	*	134.0	70.0	130.0
PFPrS		104.6	70.0	130.0
PFPeA		90.2	70.0	130.0
PFMBA		87.4	70.0	130.0
4:2 FTSA		86.0	70.0	130.0
NFDHA		102.4	70.0	130.0
PFHxA		94.8	70.0	130.0
PFBS		118.6	70.0	130.0
HFPO-DA		88.2	70.0	130.0
FPePA (5:3 FTCA)		116.2	70.0	130.0
PFEESA		96.8	70.0	130.0
PFHpA		100.8	70.0	130.0
PFPeS		105.0	70.0	130.0
ADONA		123.6	70.0	130.0
6:2 FTSA		89.2	70.0	130.0
PFBSA		112.2	70.0	130.0
PFOA		91.6	70.0	130.0
PFHxS		104.2	70.0	130.0
FHpPA (7:3 FTCA)		123.8	70.0	130.0
PFNA		98.0	70.0	130.0
PFECHS		97.2	70.0	130.0
8:2 FTSA		89.2	70.0	130.0
PFHpS		89.2	70.0	130.0
N-MeFOSAA		87.6	70.0	130.0
PFDA		99.4	70.0	130.0
EtFOSAA		103.4	70.0	130.0
PFOS		105.4	70.0	130.0
PFHxSA		114.2	70.0	130.0
PFUnDA		79.6	70.0	130.0
9CL-PF3ONS		107.0	70.0	130.0
PFNS		111.8	70.0	130.0
PFDoDA		95.2	70.0	130.0
PFDS		98.4	70.0	130.0
PFTrDA		103.0	70.0	130.0
11CL-PF3OUdS		98.8	70.0	130.0
FOSA		108.4	70.0	130.0
PFTeDA		93.4	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK230616W.LCSD230616, Parent Sample ID: AK230616W.LCS230616

Run in Batch: AK230616W, Run Date: 06/17/2023 00:41, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		101.6	70.0	130.0	7.3	30.0
PFMPA		94.8	70.0	130.0	3.5	30.0

Organics - Volatiles, Prep Batch ID: PF230616W2 (continued)

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

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK230616W.LCSD230616, Parent Sample ID: AK230616W.LCS230616

Run in Batch: AK230616W, Run Date: 06/17/2023 00:41, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
FPrPA (3:3 FTCA)		119.6	70.0	130.0	11.4	30.0
PFPrS		99.2	70.0	130.0	5.3	30.0
PFPeA		99.2	70.0	130.0	9.5	30.0
PFMBA		89.4	70.0	130.0	2.3	30.0
4:2 FTSA		94.6	70.0	130.0	9.5	30.0
NFDHA		97.8	70.0	130.0	4.6	30.0
PFHxA		93.0	70.0	130.0	1.9	30.0
PFBS		102.6	70.0	130.0	14.5	30.0
HFPO-DA		107.0	70.0	130.0	19.3	30.0
FPePA (5:3 FTCA)		118.4	70.0	130.0	1.9	30.0
PFEESA		86.2	70.0	130.0	11.6	30.0
PFHpA		108.6	70.0	130.0	7.4	30.0
PFPeS		92.2	70.0	130.0	13.0	30.0
ADONA		115.0	70.0	130.0	7.2	30.0
6:2 FTSA		100.6	70.0	130.0	12.0	30.0
PFBSA		103.2	70.0	130.0	8.4	30.0
PFOA		99.4	70.0	130.0	8.2	30.0
PFHxS		95.6	70.0	130.0	8.6	30.0
FHpPA (7:3 FTCA)	*	150.0	70.0	130.0	19.1	30.0
PFNA		110.6	70.0	130.0	12.1	30.0
PFECHS		86.6	70.0	130.0	11.5	30.0
8:2 FTSA		81.8	70.0	130.0	8.7	30.0
PFHpS		97.8	70.0	130.0	9.2	30.0
N-MeFOSAA		103.8	70.0	130.0	16.9	30.0
PFDA		103.6	70.0	130.0	4.1	30.0
EtFOSAA		95.4	70.0	130.0	8.0	30.0
PFOS		101.6	70.0	130.0	3.7	30.0
PFHxSA		99.8	70.0	130.0	13.5	30.0
PFUnDA		104.6	70.0	130.0	27.1	30.0
9CL-PF3ONS		98.8	70.0	130.0	8.0	30.0
PFNS		108.0	70.0	130.0	3.5	30.0
PFDoDA		110.0	70.0	130.0	14.4	30.0
PFDS		102.6	70.0	130.0	4.2	30.0
PFTrDA		112.4	70.0	130.0	8.7	30.0
11CL-PF3OUdS		102.4	70.0	130.0	3.6	30.0
FOSA		113.8	70.0	130.0	4.9	30.0
PFTeDA		96.6	70.0	130.0	3.4	30.0

Matrix Spike (MS)

Lab Sample ID: AK230616W.4933402M, Parent Sample ID: S49334.02

Run in Batch: AK230616W, Run Date: 06/17/2023 02:58, Prep Date: 06/16/2023, Matrix: WW, Dilution: 2.01

Analyte	Flags	% Rec	LCL	UCL
PFBA		108.9	70.0	130.0
PFPeA		97.0	70.0	130.0
4:2 FTSA		99.0	70.0	130.0
PFHxA		108.9	70.0	130.0

Organics - Volatiles, Prep Batch ID: PF230616W2 (continued)

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

Matrix Spike (MS) (continued)

Lab Sample ID: AK230616W.4933402M, Parent Sample ID: S49334.02

Run in Batch: AK230616W, Run Date: 06/17/2023 02:58, Prep Date: 06/16/2023, Matrix: WW, Dilution: 2.01

Analyte	Flags	% Rec	LCL	UCL
PFBS		99.0	70.0	130.0
PFHpA		99.0	70.0	130.0
PFPeS		99.0	70.0	130.0
6:2 FTSA		97.0	70.0	130.0
PFOA		99.0	70.0	130.0
PFHxS		108.9	70.0	130.0
PFNA		90.1	70.0	130.0
8:2 FTSA		88.1	70.0	130.0
PFHpS		96.0	70.0	130.0
PFDA		108.9	70.0	130.0
N-MeFOSAA		94.1	70.0	130.0
EtFOSAA		108.9	70.0	130.0
PFOS		108.9	70.0	130.0
PFUnDA		90.1	70.0	130.0
PFNS		108.9	70.0	130.0
PFDoDA		118.8	70.0	130.0
PFDS		99.0	70.0	130.0
PFTrDA		118.8	70.0	130.0
FOSA		108.9	70.0	130.0
PFTeDA		99.0	70.0	130.0
11CL-PF3OUdS		98.0	70.0	130.0
9CL-PF3ONS		99.0	70.0	130.0
ADONA		128.7	70.0	130.0
HFPO-DA		88.1	70.0	130.0
FHpPA (7:3 FTCA)		118.8	70.0	130.0
FPePA (5:3 FTCA)		128.7	70.0	130.0
FPrPA (3:3 FTCA)	*	138.6	70.0	130.0
PFBSA		91.1	70.0	130.0
PFECHS		91.1	70.0	130.0
PFHxSA		96.0	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK230616W.4933403D, Parent Sample ID: S49334.03

Run in Batch: AK230616W, Run Date: 06/17/2023 03:37, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1.92

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		NC	30.0
4:2 FTSA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0

Organics - Volatiles, Prep Batch ID: PF230616W2 (continued)

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

Duplicate (DUP) (continued)

Lab Sample ID: AK230616W.4933403D, Parent Sample ID: S49334.03

Run in Batch: AK230616W, Run Date: 06/17/2023 03:37, Prep Date: 06/16/2023, Matrix: WW, Dilution: 1.92

Analyte	Flags	RPD	RPD CL
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		NC	30.0
PFOS-LN		NC	30.0
PFOS-BR		NC	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDoDA		NC	30.0
PFDS		NC	30.0
PFTrDA		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
FHpPA (7:3 FTCA)		NC	30.0
FPePA (5:3 FTCA)		NC	30.0
FPrPA (3:3 FTCA)		NC	30.0
PFBSA		NC	30.0
PFECHS		NC	30.0
PFHxSA		NC	30.0

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www.meritlabs.com

C.O.C. PAGE # 1 OF 1

156509

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Clifford Yantz / Kevin Schneider
COMPANY: Ramboll
ADDRESS: 2090 Commonwealth Blvd
CITY: Ann Arbor STATE: MI ZIP CODE: 48105
PHONE NO.: CELL NO.: 313-333-0211
P.O. NO.: 1940006516 Task 37
E-MAIL ADDRESS: Clifford.Yantz@Ramboll.com Kevin.Schneider@Ramboll.com
QUOTE NO.:

INVOICE TO

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

PROJECT NO./NAME: RACER Coldwater Road
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: W=WATER GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR WS=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	COLLECTION DATE	COLLECTION TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS (1633)
49457.01	6/6/23	1534	Field Blank-060623	L	1	1							X
.02		1536	02-PRCC-23-EFF-129	ww	3	3							X
.03		1538	02-PRCC-23-MID-2-129	ww	3	3							X
.04		1540	02-PRCC-23-MID-1-129	ww	3	3							X
.05		1542	02-PRCC-23-PRIM-129	ww	3	3							X

Special Instructions: Low Level Reporting with estimated values

34 compound PFAS List

RELINQUISHED BY: SIGNATURE/ORGANIZATION	☒ Sampler	DATE 6/5/23	TIME 1415
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 6/5/23	TIME 1615
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE 6/7/23	TIME 1510
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 6/7/23	TIME 1510

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 2.9

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

Rev. 1.26.22