RAMBOLL

ENVIRONMENT
& HEALTH

Mr. Tom Hutchings
City of Flint Water Pollution
Water Pollution Control Facilities
G4652 Beecher Rd.
Flint, MI, 48532

RE: ***Discharge Permit Submittal– April 2022 through June 2022***
Permit No.: 6-08-04-04-GML1
FILE: 1088190/1940102192/Docs

Dear **Mr. Hutchings:**

July 25, 2022

In accordance with requirements of the above referenced discharge permit, we are providing you with the following discharge information for the period April 1, 2022 to June 30, 2022 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
2090 Commonwealth Blvd.
Ann Arbor, MI 48105
USA

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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 19, 2022.
- Analytical Reports provided by Merit Laboratories, Inc. for samples from the on-Site, PFAS pretreatment system collected on June 9, 2022 and June 13, 2022 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 non-detect or below the Sewer Use Permit limits and therefore were reduced 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 9, 2022 and June 13, 2022 during the accumulation tank discharge. The influent sample collected on June 9, 2022 had a detection of 3,500 ng/L for perfluorooctane sulfonic acid (PFOS).

The highest PFOS detection from the primary GAC drum samples was detected at 8.4 ng/L in the sample collected on June 9, 2022 and had a detection of 8.3 ng/L on June 13, 2022. PFOS was not detected in the samples collected from the secondary, tertiary, and effluent GAC drums on June 13, 2022. The primary GAC drum will remain in place for the next discharge event.

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

Yours sincerely,
RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

Clifford S. Yantz
Managing Hydrogeologist
1943864 - MIDWEST EAST Resources 056

M 313.333.0211
Clifford.yantz@ramboll.com

cc: Mr. Kevin Forbes – Beecher Metropolitan District, Flint, MI
Mr. Jacob Runge – 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, 2022 through June 30, 2022

Average Volume of Daily Discharge (during reporting period): 4,289 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: Managing Hydrogeologist, Ramboll Americas Engineering Solutions, Inc., As agent for the RACER Trust

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

Date Signed by Authorized Representative: 7/29/22

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 - 2022 - 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	5.6	13.5	<2	8.00	0.02	17
Test Method	4500-NH3 D	10360	1664A	4500-H+ B	4500-PE	2540 D
Test Date	5/29/2022	5/25/2022	5/23/2022	5/19/2022	5/26/2022	5/26/2022
Sample Date	5/19/2022	5/19/2022	5/19/2022	5/19/2022	5/19/2022	5/19/2022
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 - 2022 - 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	1.797	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	0.351	<0.0002	0.126	0.013	<0.002
Test Method	200.8	200.8	200.8	245.1	200.8	200.8	1677
Test Date	5/26/2022	5/26/2022	5/26/2022	5/24/2022	5/26/2022	5/26/2022	5/20/2022
Sample Date	5/19/2022	5/19/2022	5/19/2022	5/19/2022	5/19/2022	5/19/2022	5/19/2022
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 2022
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
6/9/2022 - 6/10/2022	777,173	782,113	**4,940**	10:03 AM (6/9/22)	9:45 AM (6/10/22)	3.47	18.6	65.4	9.69
6/12/2022 - 6/13/2022	782,113	785,751	**3,638**	1:30 PM (6/12/22)	7:30 AM (6/13/22)	3.36	22.2	72.0	7.37

Total Discharge Volume: **8,578**
Average Discharge Volume (2 Days): **4,289**

NOTES :

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TABLE 3
RACER Trust - Coldwater Road
Pre-and Polyfluroalkyl Substances (PFAS) Sampling Results - July 2022

Coldwater Road - PFAS Pretreatment System Samples

Perfluorinated Compound / Well/Sample ID: / Sample Date:	EGLE Part 201 Generic Groundwater Surface Water Interface Criteria / Rule 57 Surface Water Quality Values	02-PRCC-22-INF (Influent Sample) 6/9/2022	02-PRCC-22-PRIM (Primary GAC Drum Sample) 6/9/2022	02-PRCC-22-PRIM-190 (Primary GAC Drum Sample after 190 Bed Volumes) 6/13/2022	02-PRCC-22-MID-1-190 (Secondary GAC Drum Sample after 190 Bed Volumes) 6/13/2022	02-PRCC-22-MID-2-190 (Tertiary GAC Drum Sample after 190 Bed Volumes) 6/13/2022	02-PRCC-22-EFF-190 (Effluent Sample after 190 Bed Volumes) 6/13/2022
Perfluorobutanoic Acid (PFBA)	--	**200 X**	<10	<9.8	<9.7	<9.8	<9.9
Perfluoropentanoic Acid (PFPeA)	--	<4.1	<4.1	<3.9	<3.9	<3.9	<3.9
4:2 Fluorotelomer Sulfonic Acid (4:2 FTSA)	--	<2.1	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluorohexanoic Acid (PFHxA)	--	**27 X**	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluorobutane Sulfonic Acid (PFBS)	--	**48**	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluoroheptanoic Acid (PFHpA)	--	**14**	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluoropentane Sulfonic Acid (PFPeS)	--	**120**	<2.0	<2.0	<1.9	<2.0	<2.0
6:2 Fluorotelomer Sulfonic Acid (6:2 FTSA)	--	<2.1	<2.0	<2.0	<1.9	<3.9	<3.9
Perfluorooctanoic Acid (**PFOA**)	**12,000**	**45**	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluorohexane Sulfonic Acid (PFHxS)	--	**330**	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)	--	**270**	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)	--	**54**	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluorononanoic Acid (PFNA)	--	<2.1	<2.0	<2.0	<1.9	<2.0	<2.0
8:2 Fluorotelomer Sulfonic Acid (8:2 FTSA)	--	<2.1	<2.0	<2.0	<1.9	<2.0	<2.0 I
Perfluoroheptane Sulfonic Acid (PFHpS)	--	**60**	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluorodecanoic Acid (PFDA)	--	<2.1	<2.0	<2.0	<1.9	<2.0	<2.0
N-methyl Perfluorooctanesulfonamidoacetic Acid (N-MeFOSAA)	--	<2.1	<2.0	<2.0	<1.9 I	<2.0	<2.0 I
N-Ethyl Perfluorooctane Sulfonamidoacetic Acid (EtFOSAA)	--	<4.1	<4.1	<3.9	<3.9	<3.9	<3.9
Perfluorooctane Sulfonic Acid (**PFOS**)	**12**	**3,500**	**8.4**	**8.3**	<1.9	<2.0	<2.0
Perfluorooctane Sulfonic Acid (**PFOS**-LN)	--	**2,000**	**6.8**	**5.9**	<1.9	<2.0	<2.0
Perfluorooctane Sulfonic Acid (**PFOS**-BR)	--	**1,500**	<2.0	**2.2**	<1.9	<2.0	<2.0
Perfluoroundecanoic Acid (PFUnDA)	--	<2.1	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluorononane Sulfonic Acid (PFNS)	--	<2.1	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluorododecanoic Acid (PFDoDA)	--	<2.1	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluorodecane Sulfonic Acid (PFDS)	--	<2.1	<2.0	<2.0	<1.9	<2.0	**2.1**
Perfluorotridecanoic Acid (PFTrDA)	--	<2.1	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluorooctane Sulfonamide (FOSA)	--	<2.1	<2.0	<2.0	<1.9	<2.0	<2.0
Perfluorotetradecanoic Acid (PFTeDA)	--	<4.1	<4.1	<3.9	<3.9	<3.9	<3.9
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	--	<2.1	<2.0	<2.0	<1.9	<2.0	<2.0
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9Cl-PF3ONS)	--	<2.1	<2.0	<2.0	<1.9	<2.0	<2.0
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	--	<2.1	<2.0	<2.0	<1.9	<2.0	<2.0
Hexafluoropropylene oxide dimer (HFPO-DA)	--	<10	<10	<9.8	<9.7	<9.8	<9.9
Total Per-and Polyfluoroalkyl Substances	--	**4,344.0**	**8.4**	**8.3**	**0.0**	**0.0**	**2.1**

Notes
1) Detections in **bold**.
2) Concentrations in ng/L.
3) < = Not detected at specified reporting limit.
4) -- = Not analyzed/No criteria.
5) Dup = Duplicate sample.
6) EGLE Part 201 Groundwater Generic Cleanup Criteria and Screening Levels, December 21, 2020 and Rule 57 Surface Water Quality Values.
7) Concentration above the groundwater surface water interface (GSI) criteria are highlighted in yellow.
8) Number after Prim (Primary GAC drum), Mid (Secondary GAC drum), and Eff (Effluent sample after tertiary GAC drum) 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 EGLE Part 201 Groundwater Generic Cleanup Criteria.

Analytical Laboratory Report

Report ID: S36186.01(01)
Generated on 05/31/2022

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): S36186.01
Project: RACER Coldwater Road
Collected Date(s): 05/19/2022
Submitted Date/Time: 05/19/2022 16:00
Sampled by: Kevin Schneider
P.O. #: 1940004462 TASK 1

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
HACH 10360	HACH 10360
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 D	Standard Method 4500 NH3 D 2011
SM4500-PE	Standard Method 4500 P E 2011 / 4500 P B(5) 2011
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S36186.01	02-PRCC-22	Wastewater	05/19/22 10:15

Analytical Laboratory Report

Lab Sample ID: S36186.01
Sample Tag: 02-PRCC-22
Collected Date/Time: 05/19/2022 10:15
Matrix: Wastewater
COC Reference: 150204

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	1L Plastic	None	Yes	5.0	IR
1	125ml Plastic	HNO3	Yes	5.0	IR
1	125ml Plastic	None	Yes	5.0	IR
1	125ml Amber	NaOH	Yes	5.0	IR
1	32oz Glass	HCL	Yes	5.0	IR
1	250ml Plastic	H2SO4	Yes	5.0	IR
1	500ml Plastic	None	Yes	5.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	05/24/22 10:00	JRH	
TBOD5 - Set*	Completed	HACH 10360	05/20/22 10:15	PJH	
Metal Digestion	Completed	SW3015A	05/26/22 10:45	CCM	

Inorganics

Method: E1664A, Run Date: 05/23/22 08:00, Analyst: JW

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

Method: HACH 10360, Run Date: 05/25/22 11:01, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TBOD5*	13.5	3		mg/L	6		

Method: SM2540D, Run Date: 05/26/22 19:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	17	3		mg/L	2		

Method: SM2550B, Run Date: 05/19/22 10:15, Analyst: KS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Field Temperature*	63	1		oF	1		

Method: SM4500-H+ B, Run Date: 05/19/22 10:15, Analyst: KS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Field pH*	8.00	0.01		STD Units	1		

Method: SM4500-NH3 D, Run Date: 05/29/22 15:22, Analyst: MJC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Ammonia-N (Undistilled)	5.6	0.2	0.03	mg/L	10	7664-41-7	

Method: SM4500-PE, Run Date: 05/26/22 11:59, Analyst: MJC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Phosphorus	0.02	0.01	0.009	mg/L	1	7723-14-0	

Lab Sample ID: S36186.01 (continued)
Sample Tag: 02-PRCC-22

Metals

Method: E200.8, Run Date: 05/26/22 12:29, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.005	0.002		mg/L	5	7440-38-2	
Chromium	0.059	0.005		mg/L	5	7440-47-3	
Copper	0.351	0.005		mg/L	5	7440-50-8	
Nickel	0.126	0.005		mg/L	5	7440-02-0	
Zinc	0.013	0.005		mg/L	5	7440-66-6	

Method: E245.1, Run Date: 05/24/22 14:54, Analyst: JRH

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: 05/20/22 11:09, 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: S36186
Client: OBG02 (Ramboll Americas)
Project: RACER Coldwater Road
Submitted: 05/19/2022 16:00 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 5.0
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: S36186 Submitted: 05/19/2022 16:00

Client: OBG02 (Ramboll Americas)

Project: RACER Coldwater Road

Initial Preservation Check: 05/19/2022 16:52 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
S36186.01	125ml Amber NaOH	7	1.0	>12	Lot# 1015215N
S36186.01	125ml Plastic HNO3	<2			
S36186.01	250ml Plastic H2SO4	<2			
S36186.01	32oz Glass HCL	3	1.0	<2	Lot# 2020080697

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 150204

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.: 313-333-0211 CELL NO.:
P.O. NO.: 1940004462 task 1
QUOTE NO.:
E-MAIL ADDRESS: clifford.yantz@ramboll.com / kevin.schneider@ramboll.com

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
36186.01	5/19/22	1015	02-PRCC-22	WW	3	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 17.4°C
																			Field pH 8.00

RELINQUISHED BY: SIGNATURE/ORGANIZATION	☒ Sampler	DATE 5/19/22	TIME 1044
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 5/19/22	TIME 10:45
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE 5/19/22	TIME 16:18
RECEIVED BY: SIGNATURE/ORGANIZATION	Patriot	DATE 5/19/22	TIME 1800

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 5.0

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

Rev. 1.26.22

Quality Control Report

Report ID: QC-S36186-01
Generated on 05/31/2022

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): S36186.01
Project: RACER Coldwater Road
Submitted Date/Time: 05/19/2022 16:00
Sampled by: Kevin Schneider
P.O. #: 1940004462 TASK 1

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: S36186.01
Sample Tag: 02-PRCC-22
Collected Date/Time: 05/19/2022 10:15
Matrix: Wastewater
COC Reference: 150204

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Ammonia-N (Undistilled)	SM4500-NH3 D	05/29/22 15:22	AMN220529QC	AMN220529QC	No	BLK/LCS/MS/DUP
Oil & Grease n-Hexane Extract.	E1664A	05/23/22 08:00	OGHEX220523W1	OGHEX220523W1	No	BLK/LCS
TBOD5	HACH 10360	05/25/22 11:01	BOD220520	BOD220520	No	BLK/LCS/DUP
Total Phosphorus	SM4500-PE	05/26/22 11:59	PHS220526QC	PHS220526QC	No	BLK/LCS/MS/DUP
Total Suspended Solids	SM2540D	05/26/22 19:00	TSS220526	TSS220526	No	BLK/LCS/DUP
Metals						
Arsenic	E200.8	05/26/22 12:29	MT4-22-0526B	MTD-052622-2	No	BLK/LCS/MS/MSD
Chromium	E200.8	05/26/22 12:29	MT4-22-0526B	MTD-052622-2	No	BLK/LCS/MS/MSD
Copper	E200.8	05/26/22 12:29	MT4-22-0526B	MTD-052622-2	No	BLK/LCS/MS/MSD
Mercury	E245.1	05/24/22 14:54	HG-22-0524A	HGD-052422-1	No	BLK/LCS/MS/MSD
Nickel	E200.8	05/26/22 12:29	MT4-22-0526B	MTD-052622-2	No	BLK/LCS/MS/MSD
Zinc	E200.8	05/26/22 12:29	MT4-22-0526B	MTD-052622-2	No	BLK/LCS/MS/MSD
Other / Misc.						
Available Cyanide	OIA-1677	05/20/22 11:09	ACN220520-W1	ACN220520-W1	No	BLK/LCS/MS/MSD/DU

QC Report - Prep Batch Summary

Inorganics, Prep Batch ID: AMN220529QC

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S36186.01	Ammonia-N (Undistilled)	SM4500-NH3 D	05/29/22 15:22	AMN220529QC

Inorganics, Prep Batch ID: BOD220520

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S36186.01	TBOD5	HACH 10360	05/25/22 11:01	BOD220520

Inorganics, Prep Batch ID: OGHEX220523W1

Surrogates: No, QC Types: BLK/LCS

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S36186.01	Oil & Grease n-Hexane Extract.	E1664A	05/23/22 08:00	OGHEX220523W1

Inorganics, Prep Batch ID: PHS220526QC

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S36186.01	Total Phosphorus	SM4500-PE	05/26/22 11:59	PHS220526QC

Inorganics, Prep Batch ID: TSS220526

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S36186.01	Total Suspended Solids	SM2540D	05/26/22 19:00	TSS220526

Metals, Prep Batch ID: HGD-052422-1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S36186.01	Mercury	E245.1	05/24/22 14:54	HG-22-0524A

Metals, Prep Batch ID: MTD-052622-2

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S36186.01	Arsenic	E200.8	05/26/22 12:29	MT4-22-0526B
S36186.01	Chromium	E200.8	05/26/22 12:29	MT4-22-0526B
S36186.01	Copper	E200.8	05/26/22 12:29	MT4-22-0526B
S36186.01	Nickel	E200.8	05/26/22 12:29	MT4-22-0526B
S36186.01	Zinc	E200.8	05/26/22 12:29	MT4-22-0526B

Other / Misc., Prep Batch ID: ACN220520-W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S36186.01	Available Cyanide	OIA-1677	05/20/22 11:09	ACN220520-W1

Inorganics, Prep Batch ID: AMN220529QC

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

Blank (BLK)

Lab Sample ID: AMN220529QC.LRB1

Run in Batch: AMN220529QC, Run Date: 05/29/2022 13:04, Prep Date: 05/29/2022, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: AMN220529QC.LCS1

Run in Batch: AMN220529QC, Run Date: 05/29/2022 14:15, Prep Date: 05/29/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		99	90	110

Matrix Spike (MS)

Lab Sample ID: AMN220529QC.MS1, Parent Sample ID: S36186.01

Run in Batch: AMN220529QC, Run Date: 05/29/2022 15:30, Prep Date: 05/29/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		102	80	120

Duplicate (DUP)

Lab Sample ID: AMN220529QC.DP1, Parent Sample ID: S36180.01

Run in Batch: AMN220529QC, Run Date: 05/29/2022 15:01, Prep Date: 05/29/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Ammonia-N (Undistilled)		1.7	20

Inorganics, Prep Batch ID: BOD220520

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

Blank (BLK)

Lab Sample ID: BOD220520.LRB1

Run in Batch: BOD220520, Run Date: 05/25/2022 11:01, Prep Date: 05/25/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
TBOD5		ND	3	mg/L

Blank (BLK)

Lab Sample ID: BOD220520.LRB2

Run in Batch: BOD220520, Run Date: 05/25/2022 17:29, Prep Date: 05/25/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
TBOD5		ND	3	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: BOD220520.LCS1

Run in Batch: BOD220520, Run Date: 05/25/2022 11:01, Prep Date: 05/25/2022, Matrix: Liquid, Dilution: 20

Analyte	Flags	% Rec	LCL	UCL
TBOD5		88.8	50.8	166

Laboratory Control Sample (LCS)

Lab Sample ID: BOD220520.LCS2

Run in Batch: BOD220520, Run Date: 05/25/2022 17:29, Prep Date: 05/25/2022, Matrix: Liquid, Dilution: 20

Analyte	Flags	% Rec	LCL	UCL
TBOD5		92.3	50.8	166

Duplicate (DUP)

Lab Sample ID: BOD220520.DP1, Parent Sample ID: S36187.01

Run in Batch: BOD220520, Run Date: 05/25/2022 11:01, Prep Date: 05/25/2022, Matrix: Liquid, Dilution: 60

Analyte	Flags	RPD	RPD CL
TBOD5		3.4	20

Duplicate (DUP)

Lab Sample ID: BOD220520.DP2, Parent Sample ID: S36272.01

Run in Batch: BOD220520, Run Date: 05/25/2022 17:29, Prep Date: 05/25/2022, Matrix: Liquid, Dilution: 60

Analyte	Flags	RPD	RPD CL
TBOD5		0.3	20

Inorganics, Prep Batch ID: OGHEX220523W1

Surrogates: No, QC Types: BLK/LCS

Blank (BLK)

Lab Sample ID: OGHEX220523W1.LRB1

Run in Batch: OGHEX220523W1, Run Date: 05/23/2022 08:00, Prep Date: 05/23/2022, 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: OGHEX220523W1.LCS1

Run in Batch: OGHEX220523W1, Run Date: 05/23/2022 08:00, Prep Date: 05/23/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Oil & Grease n-Hexane Extract.		85	78	114

Laboratory Control Sample (LCS)

Lab Sample ID: OGHEX220523W1.LCS2

Run in Batch: OGHEX220523W1, Run Date: 05/23/2022 08:00, Prep Date: 05/23/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Oil & Grease n-Hexane Extract.		93	78	114

Inorganics, Prep Batch ID: PHS220526QC

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

Blank (BLK)

Lab Sample ID: PHS220526QC.LRB1

Run in Batch: PHS220526QC, Run Date: 05/26/2022 10:30, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 1

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

Blank (BLK)

Lab Sample ID: PHS220526QC.LRB2

Run in Batch: PHS220526QC, Run Date: 05/26/2022 10:37, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: PHS220526QC.LCS1

Run in Batch: PHS220526QC, Run Date: 05/26/2022 10:45, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		96	90	110

Matrix Spike (MS)

Lab Sample ID: PHS220526QC.MS1, Parent Sample ID: S36080.02

Run in Batch: PHS220526QC, Run Date: 05/26/2022 15:53, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		91	80	120

Duplicate (DUP)

Lab Sample ID: PHS220526QC.DP1, Parent Sample ID: S36180.01

Run in Batch: PHS220526QC, Run Date: 05/26/2022 15:49, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Phosphorus		2.9	20

Inorganics, Prep Batch ID: TSS220526

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

Blank (BLK)

Lab Sample ID: TSS220526.LRB1

Run in Batch: TSS220526, Run Date: 05/26/2022 19:00, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: TSS220526.LCS1

Run in Batch: TSS220526, Run Date: 05/26/2022 19:00, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 10

Analyte	Flags	% Rec	LCL	UCL
Total Suspended Solids		98.2	77.6	114

Duplicate (DUP)

Lab Sample ID: TSS220526.DP1, Parent Sample ID: S36167.01

Run in Batch: TSS220526, Run Date: 05/26/2022 19:00, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 3.33

Analyte	Flags	RPD	RPD CL
Total Suspended Solids		7.5	10

Metals, Prep Batch ID: HGD-052422-1

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

Blank (BLK)

Lab Sample ID: HG-22-0524A.015.LRB

Run in Batch: HG-22-0524A, Run Date: 05/24/2022 13:27, Prep Date: 05/24/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Mercury		ND	0.05	ug/L

Laboratory Control Sample (LCS)

Lab Sample ID: HG-22-0524A.014.LCS

Run in Batch: HG-22-0524A, Run Date: 05/24/2022 13:23, Prep Date: 05/24/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		95	85	115

Matrix Spike (MS)

Lab Sample ID: HG-22-0524A.019.MS, Parent Sample ID: S36063.02

Run in Batch: HG-22-0524A, Run Date: 05/24/2022 13:40, Prep Date: 05/24/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		89	80	120

Matrix Spike (MS)

Lab Sample ID: HG-22-0524A.037.MS, Parent Sample ID: S36223.01

Run in Batch: HG-22-0524A, Run Date: 05/24/2022 15:04, Prep Date: 05/24/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		97	80	120

Matrix Spike Duplicate (MSD)

Lab Sample ID: HG-22-0524A.020.MSD, Parent Sample ID: HG-22-0524A.019.MS

Run in Batch: HG-22-0524A, Run Date: 05/24/2022 13:43, Prep Date: 05/24/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Mercury		89	80	120	0	20

Matrix Spike Duplicate (MSD)

Lab Sample ID: HG-22-0524A.038.MSD, Parent Sample ID: HG-22-0524A.037.MS

Run in Batch: HG-22-0524A, Run Date: 05/24/2022 15:08, Prep Date: 05/24/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Mercury		96	80	120	1	20

Metals, Prep Batch ID: MTD-052622-2

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

Blank (BLK)

Lab Sample ID: MT4-22-0526B.022.LRB

Run in Batch: MT4-22-0526B, Run Date: 05/26/2022 12:00, Prep Date: 05/26/2022, 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: MT4-22-0526B.020.LCS

Run in Batch: MT4-22-0526B, Run Date: 05/26/2022 11:53, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Arsenic		98	85	115
Chromium		105	85	115
Copper		106	85	115
Nickel		108	85	115
Zinc		106	85	115

Matrix Spike (MS)

Lab Sample ID: MT4-22-0526B.038.MS, Parent Sample ID: S36158.01

Run in Batch: MT4-22-0526B, Run Date: 05/26/2022 12:36, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Arsenic		102	75	125
Chromium		104	75	125
Copper		96	75	125
Nickel		102	75	125
Zinc		108	75	125

Matrix Spike (MS)

Lab Sample ID: MT4-22-0526B.053.MS, Parent Sample ID: S36281.01

Run in Batch: MT4-22-0526B, Run Date: 05/26/2022 12:59, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 25

Analyte	Flags	% Rec	LCL	UCL
Arsenic		106	75	125
Chromium		105	75	125
Copper		98	75	125
Nickel		105	75	125
Zinc		110	75	125

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-22-0526B.039.MSD, Parent Sample ID: MT4-22-0526B.038.MS

Run in Batch: MT4-22-0526B, Run Date: 05/26/2022 12:37, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		102	75	125	0	20
Chromium		104	75	125	0	20
Copper		99	75	125	2	20
Nickel		102	75	125	0	20
Zinc		109	75	125	1	20

Metals, Prep Batch ID: MTD-052622-2 (continued)

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

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-22-0526B.054.MSD, Parent Sample ID: MT4-22-0526B.053.MS

Run in Batch: MT4-22-0526B, Run Date: 05/26/2022 13:00, Prep Date: 05/26/2022, Matrix: Liquid, Dilution: 25

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		101	75	125	5	20
Chromium		104	75	125	1	20
Copper		97	75	125	2	20
Nickel		102	75	125	2	20
Zinc		106	75	125	4	20

QC Report - Batch QC Results

Other / Misc., Prep Batch ID: ACN220520-W1

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

Blank (BLK)

Lab Sample ID: ACN220520-W1.LRB1

Run in Batch: ACN220520-W1, Run Date: 05/20/2022 10:27, Prep Date: 05/20/2022, Matrix: Liquid, Dilution: 1

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

Blank (BLK)

Lab Sample ID: ACN220520-W1.LRB2

Run in Batch: ACN220520-W1, Run Date: 05/20/2022 11:13, Prep Date: 05/20/2022, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: ACN220520-W1.LCS1

Run in Batch: ACN220520-W1, Run Date: 05/20/2022 10:31, Prep Date: 05/20/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Available Cyanide		94	88	109

Matrix Spike (MS)

Lab Sample ID: ACN220520-W1.MS1, Parent Sample ID: S36035.01

Run in Batch: ACN220520-W1, Run Date: 05/20/2022 10:45, Prep Date: 05/20/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Available Cyanide		92	82	130

Matrix Spike Duplicate (MSD)

Lab Sample ID: ACN220520-W1.MSD1, Parent Sample ID: ACN220520-W1.MS1

Run in Batch: ACN220520-W1, Run Date: 05/20/2022 10:47, Prep Date: 05/20/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Available Cyanide		94	82	130	2	15

Duplicate (DUP)

Lab Sample ID: ACN220520-W1.DP1, Parent Sample ID: S36035.01

Run in Batch: ACN220520-W1, Run Date: 05/20/2022 10:41, Prep Date: 05/20/2022, 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
www.meritlabs.com

C.O.C. PAGE # 1 OF 1 150204

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.: 313-333-0211 CELL NO.:
P.O. NO.: 1940004462 task 1
QUOTE NO.:
E-MAIL ADDRESS: clifford.yantz@ramboll.com / kevin.schneider@ramboll.com

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
36186.01	5/19/22	1015	02-PRCC-22	WW	3	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 17.4°C
																			Field pH 8.00

RELINQUISHED BY: SIGNATURE/ORGANIZATION	☒ Sampler	DATE 5/19/22	TIME 1044
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 5/19/22	TIME 10:45
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE 5/19/22	TIME 16:18
RECEIVED BY: SIGNATURE/ORGANIZATION	Patriot	DATE 5/19/22	TIME 1800

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 5.0

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

Rev. 1.26.22

Analytical Laboratory Report

Report ID: S37005.01(01)
Generated on 06/29/2022

Report to

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

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

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): S37005.01-S37005.03
Project: RACER Coldwater Road
Collected Date(s): 06/09/2022
Submitted Date/Time: 06/10/2022 15:00
Sampled by: Kevin Schneider
P.O. #: 1940004462 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

Analytical Laboratory Report

Sample Summary (3 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S37005.01	02-PRCC-22-INF	Liquid	06/09/22 10:05
S37005.02	02-PRCC-22-PRIM	Liquid	06/09/22 10:15
S37005.03	Field Blank-061022	Liquid	06/09/22 10:05

Analytical Laboratory Report

Lab Sample ID: S37005.01
Sample Tag: 02-PRCC-22-INF
Collected Date/Time: 06/09/2022 10:05
Matrix: Liquid
COC Reference: 139984

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.34/7.03/11	ASTMD7979-19M	06/23/22 17:15	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/24/22 13:49, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	200	10	10	ng/L	2.07	375-22-4	X
PFPeA*	Not detected	4.1	1.0	ng/L	2.07	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.7	ng/L	2.07	757124-72-4	
PFHxA*	27	2.1	1.4	ng/L	2.07	307-24-4	X
PFBS*	48	2.1	1.4	ng/L	2.07	375-73-5	
PFHpA*	14	2.1	1.4	ng/L	2.07	375-85-9	
PFPeS*	120	2.1	1.9	ng/L	2.07	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.07	27619-97-2	
PFOA*	45	2.1	1.7	ng/L	2.07	335-67-1	
PFHxS*	330	2.1	1.7	ng/L	2.07	355-46-4	
PFHxS-LN*	270	2.1	1.7	ng/L	2.07	355-46-4-LN	
PFHxS-BR*	54	2.1	1.7	ng/L	2.07	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.07	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.07	39108-34-4	
PFHpS*	60	2.1	2.1	ng/L	2.07	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.07	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.07	2355-31-9	
EtFOSAA*	Not detected	4.1	2.1	ng/L	2.07	2991-50-6	
PFOS*	3,500	2.1	2.0	ng/L	2.07	1763-23-1	
PFOS-LN*	2,000	2.1	2.0	ng/L	2.07	1763-23-1-LN	
PFOS-BR*	1,500	2.1	2.0	ng/L	2.07	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.4	ng/L	2.07	2058-94-8	
PFNS*	Not detected	2.1	1.4	ng/L	2.07	68259-12-1	
PFDoDA*	Not detected	2.1	1.7	ng/L	2.07	307-55-1	
PFDS*	Not detected	2.1	1.4	ng/L	2.07	335-77-3	
PFTrDA*	Not detected	2.1	1.2	ng/L	2.07	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.07	754-91-6	
PFTeDA*	Not detected	4.1	1.9	ng/L	2.07	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.07	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.4	ng/L	2.07	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.07	919005-14-4	
HFPO-DA*	Not detected	10	2.1	ng/L	2.07	13252-13-6	

X-Elevated reporting limit due to matrix interference

Analytical Laboratory Report

Lab Sample ID: S37005.02
Sample Tag: 02-PRCC-22-PRIM
Collected Date/Time: 06/09/2022 10:15
Matrix: Liquid
COC Reference: 139984

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.30/6.88/11	ASTMD7979-19M	06/23/22 17:15	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/24/22 14:08, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.03	375-22-4	
PFPeA*	Not detected	4.1	1.0	ng/L	2.03	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.03	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2.03	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2.03	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2.03	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.03	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.03	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2.03	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2.03	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.03	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.03	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.03	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.03	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.03	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.03	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.03	2355-31-9	
EtFOSAA*	Not detected	4.1	2.0	ng/L	2.03	2991-50-6	
PFOS*	8.4	2.0	2.0	ng/L	2.03	1763-23-1	
PFOS-LN*	6.8	2.0	2.0	ng/L	2.03	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	2.0	ng/L	2.03	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.03	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.03	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	2.03	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.03	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	2.03	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.03	754-91-6	
PFTeDA*	Not detected	4.1	1.8	ng/L	2.03	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.03	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.03	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.03	919005-14-4	
HFPO-DA*	Not detected	10	2.0	ng/L	2.03	13252-13-6	

Analytical Laboratory Report

Lab Sample ID: S37005.03
Sample Tag: Field Blank-061022
Collected Date/Time: 06/09/2022 10:05
Matrix: Liquid
COC Reference: 139984

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.39/7.04/11	ASTMD7979-19M	06/23/22 17:15	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/24/22 13:29, Analyst: KCV

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

Merit Laboratories Login Checklist

Lab Set ID: S37005
Client: OBG02 (Ramboll Americas)
Project: RACER Coldwater Road
Submitted: 06/10/2022 15:00 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 2.3
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.	[ ] 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

139984

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Clifford Yantz / Kevin Sunseder
COMPANY: Ramboll
ADDRESS: 2090 Commonwealth Blvd
CITY: Ann Arbor STATE: MI ZIP CODE: 48105
PHONE NO.: 313-333-0211 FAX NO.:
P.O. NO.: 1940004462 Task 37
E-MAIL ADDRESS: Kevin.Sunseder@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 Sunseder

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS [X] STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD [X] LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

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

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)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS (1974)
37005.01	6/9/22	1005	02-PRCC-22-INF	L	3	3							X
.02	6/9/22	1015	02-PRCC-22-PRIM	L	3	3							X

Low Level Reporting with estimated values

Please Report Sample ID "Field Blank-060122" from COC # 148231 in same cooler

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
	[X] Sampler	6/10/22	14:15
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME
		6/10/22	14:15
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
		6/10/22	15:20
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME
		6/10/22	1500

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 2.3

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

Rev. 5.18.12

Quality Control Report

Report ID: QC-S37005-01
Generated on 06/29/2022

Report to

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

Phone: 313-333-0211 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

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

Report Summary

Lab Sample ID(s): S37005.01-S37005.03
Project: RACER Coldwater Road
Submitted Date/Time: 06/10/2022 15:00
Sampled by: Kevin Schneider
P.O. #: 1940004462 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: S37005.01
Sample Tag: 02-PRCC-22-INF
Collected Date/Time: 06/09/2022 10:05
Matrix: Liquid
COC Reference: 139984

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/24/22 13:49	AK220623	PF220623W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S37005.02
Sample Tag: 02-PRCC-22-PRIM
Collected Date/Time: 06/09/2022 10:15
Matrix: Liquid
COC Reference: 139984

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/24/22 14:08	AK220623	PF220623W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S37005.03
Sample Tag: Field Blank-061022
Collected Date/Time: 06/09/2022 10:05
Matrix: Liquid
COC Reference: 139984

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/24/22 13:29	AK220623	PF220623W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF220623W2

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S37005.01	28 PFAs	ASTMD7979-19M	06/24/22 13:49	AK220623
S37005.02	28 PFAs	ASTMD7979-19M	06/24/22 14:08	AK220623
S37005.03	28 PFAs	ASTMD7979-19M	06/24/22 13:29	AK220623

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S37005.01

Sample Tag: 02-PRCC-22-INF

Collected Date/Time: 06/09/2022 10:05

Matrix: Liquid

COC Reference: 139984

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220623, Run Date: 06/24/2022 13:49, Matrix: WW, Dilution: 2.07

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**99.8**	50.0	150.0
M2-6:2FTSA		**96.1**	50.0	150.0
M2-8:2FTSA		**109.1**	50.0	150.0
M2PFTeDA		**183.1**	12.0	218.0
M3PFBS		**102.9**	50.0	150.0
M3PFHxS		**98.4**	50.0	150.0
M4PFHpA		**107.0**	50.0	150.0
M5PFHxA		**91.7**	50.0	150.0
M5PFPeA		**107.3**	50.0	150.0
M6PFDA		**113.7**	50.0	150.0
M7PFUnDA		**123.3**	50.0	150.0
M8FOSA		**105.7**	50.0	150.0
M8PFOA		**109.4**	50.0	150.0
M8PFOS		**107.2**	50.0	150.0
M9-PFNA		**113.3**	50.0	150.0
MPFBA		**73.7**	50.0	150.0
MPFDoDA		**107.5**	50.0	150.0
d3N-MeFOSAA		**83.3**	50.0	150.0
d5EtFOSAA		**101.7**	50.0	150.0
MHFPO-DA		**88.4**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S37005.02

Sample Tag: 02-PRCC-22-PRIM

Collected Date/Time: 06/09/2022 10:15

Matrix: Liquid

COC Reference: 139984

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220623, Run Date: 06/24/2022 14:08, Matrix: WW, Dilution: 2.03

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**85.8**	50.0	150.0
M2-6:2FTSA		**97.6**	50.0	150.0
M2-8:2FTSA		**107.2**	50.0	150.0
M2PFTeDA		**129.1**	12.0	218.0
M3PFBS		**101.5**	50.0	150.0
M3PFHxS		**98.7**	50.0	150.0
M4PFHpA		**116.2**	50.0	150.0
M5PFHxA		**103.5**	50.0	150.0
M5PFPeA		**111.7**	50.0	150.0
M6PFDA		**116.8**	50.0	150.0
M7PFUnDA		**113.0**	50.0	150.0
M8FOSA		**108.5**	50.0	150.0
M8PFOA		**109.9**	50.0	150.0
M8PFOS		**119.7**	50.0	150.0
M9-PFNA		**122.9**	50.0	150.0
MPFBA		**117.4**	50.0	150.0
MPFDoDA		**107.2**	50.0	150.0
d3N-MeFOSAA		**105.0**	50.0	150.0
d5EtFOSAA		**104.9**	50.0	150.0
MHFPO-DA		**102.3**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S37005.03

Sample Tag: Field Blank-061022

Collected Date/Time: 06/09/2022 10:05

Matrix: Liquid

COC Reference: 139984

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220623, Run Date: 06/24/2022 13:29, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**105.4**	50.0	150.0
M2-6:2FTSA		**109.5**	50.0	150.0
M2-8:2FTSA		**117.3**	50.0	150.0
M2PFTeDA		**139.3**	12.0	218.0
M3PFBS		**111.9**	50.0	150.0
M3PFHxS		**99.7**	50.0	150.0
M4PFHpA		**117.4**	50.0	150.0
M5PFHxA		**98.4**	50.0	150.0
M5PFPeA		**113.8**	50.0	150.0
M6PFDA		**110.8**	50.0	150.0
M7PFUnDA		**113.2**	50.0	150.0
M8FOSA		**107.5**	50.0	150.0
M8PFOA		**102.5**	50.0	150.0
M8PFOS		**103.8**	50.0	150.0
M9-PFNA		**115.1**	50.0	150.0
MPFBA		**105.2**	50.0	150.0
MPFDoDA		**113.6**	50.0	150.0
d3N-MeFOSAA		**127.7**	50.0	150.0
d5EtFOSAA		**108.7**	50.0	150.0
MHFPO-DA		**115.0**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF220623W2

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

Blank (BLK)

Lab Sample ID: DQ220623.BLK220623BR

Run in Batch: DQ220623, Run Date: 06/24/2022 13:52, Prep Date: 06/23/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**122.3**	50.0	150.0
M2-6:2FTSA		**125.7**	50.0	150.0
M2-8:2FTSA		**107.4**	50.0	150.0
M2PFTeDA		**109.0**	12.0	218.0
M3PFBS		**107.1**	50.0	150.0
M3PFHxS		**98.4**	50.0	150.0
M4PFHpA		**107.6**	50.0	150.0
M5PFHxA		**94.7**	50.0	150.0
M5PFPeA		**101.3**	50.0	150.0
M6PFDA		**107.1**	50.0	150.0
M7PFUnDA		**112.4**	50.0	150.0
M8FOSA		**89.3**	50.0	150.0
M8PFOA		**99.8**	50.0	150.0
M8PFOS		**108.5**	50.0	150.0
M9-PFNA		**92.0**	50.0	150.0
MPFBA		**100.3**	50.0	150.0
MPFDoDA		**107.0**	50.0	150.0
d3N-MeFOSAA		**104.9**	50.0	150.0
d5EtFOSAA		**116.9**	50.0	150.0
MHFPO-DA		**93.4**	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample (LCS)

Lab Sample ID: DQ220623.LCS220623BR

Run in Batch: DQ220623, Run Date: 06/24/2022 13:13, Prep Date: 06/23/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**121.2**	50.0	150.0
M2-6:2FTSA		**117.9**	50.0	150.0
M2-8:2FTSA		**105.7**	50.0	150.0
M2PFTeDA		**118.6**	12.0	218.0
M3PFBS		**94.4**	50.0	150.0
M3PFHxS		**100.7**	50.0	150.0
M4PFHpA		**98.0**	50.0	150.0
M5PFHxA		**92.1**	50.0	150.0
M5PFPeA		**98.7**	50.0	150.0
M6PFDA		**96.3**	50.0	150.0
M7PFUnDA		**105.6**	50.0	150.0
M8FOSA		**86.5**	50.0	150.0
M8PFOA		**101.8**	50.0	150.0
M8PFOS		**81.5**	50.0	150.0
M9-PFNA		**100.7**	50.0	150.0
MPFBA		**91.2**	50.0	150.0
MPFDoDA		**99.5**	50.0	150.0
d3N-MeFOSAA		**95.1**	50.0	150.0
d5EtFOSAA		**108.8**	50.0	150.0
MHFPO-DA		**84.5**	50.0	150.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ220623.LCSD220623BR, Parent Sample ID: DQ220623.LCS220623BR

Run in Batch: DQ220623, Run Date: 06/24/2022 13:33, Prep Date: 06/23/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**125.7**	50.0	150.0
M2-6:2FTSA		**110.6**	50.0	150.0
M2-8:2FTSA		**114.6**	50.0	150.0
M2PFTeDA		**119.7**	12.0	218.0
M3PFBS		**99.0**	50.0	150.0
M3PFHxS		**93.2**	50.0	150.0
M4PFHpA		**98.4**	50.0	150.0
M5PFHxA		**93.8**	50.0	150.0
M5PFPeA		**98.2**	50.0	150.0
M6PFDA		**98.1**	50.0	150.0
M7PFUnDA		**101.8**	50.0	150.0
M8FOSA		**87.0**	50.0	150.0
M8PFOA		**102.2**	50.0	150.0
M8PFOS		**87.1**	50.0	150.0
M9-PFNA		**98.9**	50.0	150.0
MPFBA		**92.7**	50.0	150.0
MPFDoDA		**99.4**	50.0	150.0
d3N-MeFOSAA		**97.3**	50.0	150.0
d5EtFOSAA		**108.5**	50.0	150.0
MHFPO-DA		**95.1**	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: DQ220623.3696803M, Parent Sample ID: S36968.03

Run in Batch: DQ220623, Run Date: 06/23/2022 23:27, Prep Date: 06/23/2022, Matrix: WW, Dilution: 2.1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**106.6**	50.0	150.0
M2-6:2FTSA		**116.4**	50.0	150.0
M2-8:2FTSA		**124.9**	50.0	150.0
M2PFTeDA		**118.1**	12.0	218.0
M3PFBS		**105.5**	50.0	150.0
M3PFHxS		**96.3**	50.0	150.0
M4PFHpA		**112.5**	50.0	150.0
M5PFHxA		**118.5**	50.0	150.0
M5PFPeA		**112.4**	50.0	150.0
M6PFDA		**105.6**	50.0	150.0
M7PFUnDA		**105.2**	50.0	150.0
M8FOSA		**134.1**	50.0	150.0
M8PFOA		**122.2**	50.0	150.0
M8PFOS		**104.5**	50.0	150.0
M9-PFNA		**129.1**	50.0	150.0
MPFBA		**108.7**	50.0	150.0
MPFDoDA		**134.8**	50.0	150.0
d3N-MeFOSAA		**120.8**	50.0	150.0
d5EtFOSAA		**106.3**	50.0	150.0
MHFPO-DA		**110.7**	50.0	150.0

Duplicate (DUP)

Lab Sample ID: DQ220623.3696804D, Parent Sample ID: S36968.04

Run in Batch: DQ220623, Run Date: 06/24/2022 00:06, Prep Date: 06/23/2022, Matrix: WW, Dilution: 2.12

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**107.6**	50.0	150.0
M2-6:2FTSA		**115.6**	50.0	150.0
M2-8:2FTSA		**118.3**	50.0	150.0
M2PFTeDA		**138.8**	12.0	218.0
M3PFBS		**105.6**	50.0	150.0
M3PFHxS		**111.2**	50.0	150.0
M4PFHpA		**125.3**	50.0	150.0
M5PFHxA		**118.5**	50.0	150.0
M5PFPeA		**117.1**	50.0	150.0
M6PFDA		**123.0**	50.0	150.0
M7PFUnDA		**115.8**	50.0	150.0
M8FOSA		**128.2**	50.0	150.0
M8PFOA		**115.6**	50.0	150.0
M8PFOS		**123.6**	50.0	150.0
M9-PFNA		**112.7**	50.0	150.0
MPFBA		**111.3**	50.0	150.0
MPFDoDA		**115.4**	50.0	150.0
d3N-MeFOSAA		**114.3**	50.0	150.0
d5EtFOSAA		**108.8**	50.0	150.0
MHFPO-DA		**120.7**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF220623W2

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

Blank (BLK)

Lab Sample ID: DQ220623.BLK220623BR

Run in Batch: DQ220623, Run Date: 06/24/2022 13:52, Prep Date: 06/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFMPA		ND	1	ng/l
FPrPA (3:3 FTCA)		ND	1	ng/l
PFPrS		ND	1	ng/l
PFMBA		ND	1	ng/l
NFDHA		ND	1	ng/l
FPePA (5:3 FTCA)		ND	1	ng/l
PFEESA		ND	1	ng/l
PFBSA		ND	1	ng/l
FHpPA (7:3 FTCA)		ND	1	ng/l
PFECHS		ND	1	ng/l
PFHxSA		ND	1	ng/l
PFBA		ND	5	ng/l
PFPeA		ND	2	ng/l
4:2 FTSA		ND	1	ng/l
PFHxA		ND	1	ng/l
PFBS		ND	1	ng/l
PFHpA		ND	1	ng/l
PFPeS		ND	1	ng/l
6:2 FTSA		ND	1	ng/l
PFOA		ND	1	ng/l
PFHxS		ND	1	ng/l
PFHxS-LN		ND	1	ng/l
PFHxS-BR		ND	1	ng/l
PFNA		ND	1	ng/l
8:2 FTSA		ND	1	ng/l
PFHpS		ND	1	ng/l
PFDA		ND	1	ng/l
N-MeFOSAA		ND	1	ng/l
EtFOSAA		ND	2	ng/l
PFOS		ND	1	ng/l
PFOS-LN		ND	1	ng/l
PFOS-BR		ND	1	ng/l
PFUnDA		ND	1	ng/l
PFNS		ND	1	ng/l
PFDoDA		ND	1	ng/l
PFDS		ND	1	ng/l
PFTrDA		ND	1	ng/l
FOSA		ND	1	ng/l
PFTeDA		ND	2	ng/l
11CL-PF3OUdS		ND	1	ng/l
9CL-PF3ONS		ND	1	ng/l
ADONA		ND	1	ng/l
HFPO-DA		ND	1	ng/l

Organics - Volatiles, Prep Batch ID: PF220623W2 (continued)

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

Laboratory Control Sample (LCS)

Lab Sample ID: DQ220623.LCS220623BR

Run in Batch: DQ220623, Run Date: 06/24/2022 13:13, Prep Date: 06/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		90.8	70.0	130.0
PFMPA		105.2	70.0	130.0
FPrPA (3:3 FTCA)		80.8	70.0	130.0
PFPrS		93.0	70.0	130.0
PFPeA		83.8	70.0	130.0
PFMBA		93.2	70.0	130.0
4:2 FTSA		88.6	70.0	130.0
NFDHA		106.4	70.0	130.0
PFHxA		86.4	70.0	130.0
PFBS		98.2	70.0	130.0
HFPO-DA		86.8	70.0	130.0
FPePA (5:3 FTCA)		92.2	70.0	130.0
PFEESA		107.0	70.0	130.0
PFHpA		90.2	70.0	130.0
PFPeS		83.8	70.0	130.0
ADONA		94.4	70.0	130.0
PFBSA		102.6	70.0	130.0
6:2 FTSA		85.0	70.0	130.0
PFOA		89.6	70.0	130.0
PFHxS		77.8	70.0	130.0
FHpPA (7:3 FTCA)		77.8	70.0	130.0
PFNA		83.6	70.0	130.0
8:2 FTSA		101.4	70.0	130.0
PFECHS		100.0	70.0	130.0
PFHpS		72.6	70.0	130.0
N-MeFOSAA		87.8	70.0	130.0
PFDA		85.0	70.0	130.0
EtFOSAA		85.6	70.0	130.0
PFOS		106.8	70.0	130.0
PFHxSA		100.8	70.0	130.0
PFUnDA		83.4	70.0	130.0
9CL-PF3ONS		95.0	70.0	130.0
PFNS		91.0	70.0	130.0
PFDoDA		81.8	70.0	130.0
PFDS		88.4	70.0	130.0
FOSA		88.2	70.0	130.0
PFTrDA		95.2	70.0	130.0
11CL-PF3OUdS		97.4	70.0	130.0
PFTeDA		97.8	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ220623.LCSD220623BR, Parent Sample ID: DQ220623.LCS220623BR

Run in Batch: DQ220623, Run Date: 06/24/2022 13:33, Prep Date: 06/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		89.6	70.0	130.0	1.3	30.0
PFMPA		96.6	70.0	130.0	8.5	30.0

Organics - Volatiles, Prep Batch ID: PF220623W2 (continued)

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

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: DQ220623.LCSD220623BR, Parent Sample ID: DQ220623.LCS220623BR

Run in Batch: DQ220623, Run Date: 06/24/2022 13:33, Prep Date: 06/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
FPrPA (3:3 FTCA)		76.4	70.0	130.0	5.6	30.0
PFPrS		89.4	70.0	130.0	3.9	30.0
PFPeA		82.8	70.0	130.0	1.2	30.0
PFMBA		92.8	70.0	130.0	0.4	30.0
4:2 FTSA		91.6	70.0	130.0	3.3	30.0
NFDHA		96.4	70.0	130.0	9.9	30.0
PFHxA		81.6	70.0	130.0	5.7	30.0
PFBS		90.8	70.0	130.0	7.8	30.0
HFPO-DA		76.4	70.0	130.0	12.7	30.0
FPePA (5:3 FTCA)		84.2	70.0	130.0	9.1	30.0
PFEESA		99.8	70.0	130.0	7.0	30.0
PFHpA		83.4	70.0	130.0	7.8	30.0
PFPeS		90.2	70.0	130.0	7.4	30.0
ADONA		91.8	70.0	130.0	2.8	30.0
PFBSA		101.8	70.0	130.0	0.8	30.0
6:2 FTSA		88.6	70.0	130.0	4.1	30.0
PFOA		88.4	70.0	130.0	1.3	30.0
PFHxS		83.2	70.0	130.0	6.7	30.0
FHpPA (7:3 FTCA)		74.8	70.0	130.0	3.9	30.0
PFNA		86.4	70.0	130.0	3.3	30.0
8:2 FTSA		95.8	70.0	130.0	5.7	30.0
PFECHS		93.8	70.0	130.0	6.4	30.0
PFHpS		84.2	70.0	130.0	14.8	30.0
N-MeFOSAA		81.8	70.0	130.0	7.1	30.0
PFDA		76.8	70.0	130.0	10.1	30.0
EtFOSAA		79.6	70.0	130.0	7.3	30.0
PFOS		102.2	70.0	130.0	4.4	30.0
PFHxSA		103.6	70.0	130.0	2.7	30.0
PFUnDA		95.4	70.0	130.0	13.4	30.0
9CL-PF3ONS		89.8	70.0	130.0	5.6	30.0
PFNS		90.8	70.0	130.0	0.2	30.0
PFDoDA		82.4	70.0	130.0	0.7	30.0
PFDS		93.2	70.0	130.0	5.3	30.0
FOSA		91.6	70.0	130.0	3.8	30.0
PFTrDA		92.2	70.0	130.0	3.2	30.0
11CL-PF3OUdS		91.0	70.0	130.0	6.8	30.0
PFTeDA		96.4	70.0	130.0	1.4	30.0

Matrix Spike (MS)

Lab Sample ID: DQ220623.3696803M, Parent Sample ID: S36968.03

Run in Batch: DQ220623, Run Date: 06/23/2022 23:27, Prep Date: 06/23/2022, Matrix: WW, Dilution: 2.1

Analyte	Flags	% Rec	LCL	UCL
PFBA		110.5	70.0	130.0
PFPeA		123.8	70.0	130.0
4:2 FTSA		104.8	70.0	130.0
PFHxA		104.8	70.0	130.0

Organics - Volatiles, Prep Batch ID: PF220623W2 (continued)

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

Matrix Spike (MS) (continued)

Lab Sample ID: DQ220623.3696803M, Parent Sample ID: S36968.03

Run in Batch: DQ220623, Run Date: 06/23/2022 23:27, Prep Date: 06/23/2022, Matrix: WW, Dilution: 2.1

Analyte	Flags	% Rec	LCL	UCL
PFBS	*	133.3	70.0	130.0
PFHpA		102.9	70.0	130.0
PFPeS		123.8	70.0	130.0
6:2 FTSA		95.2	70.0	130.0
PFOA		76.2	70.0	130.0
PFHxS	*	381.0	70.0	130.0
PFNA		92.6	70.0	130.0
8:2 FTSA		123.8	70.0	130.0
PFHpS	*	152.4	70.0	130.0
PFDA		104.8	70.0	130.0
N-MeFOSAA		90.5	70.0	130.0
EtFOSAA		95.2	70.0	130.0
PFOS	*	-95.2	70.0	130.0
PFUnDA		104.8	70.0	130.0
PFNS		104.8	70.0	130.0
PFDoDA		80.0	70.0	130.0
PFDS		95.2	70.0	130.0
PFTrDA		93.3	70.0	130.0
FOSA		95.2	70.0	130.0
PFTeDA		104.8	70.0	130.0
11CL-PF3OUdS		114.3	70.0	130.0
9CL-PF3ONS		104.8	70.0	130.0
ADONA		95.2	70.0	130.0
HFPO-DA		95.2	70.0	130.0

Duplicate (DUP)

Lab Sample ID: DQ220623.3696804D, Parent Sample ID: S36968.04

Run in Batch: DQ220623, Run Date: 06/24/2022 00:06, Prep Date: 06/23/2022, Matrix: WW, Dilution: 2.12

Analyte	Flags	RPD	RPD CL
PFBA		5.7	30.0
PFPeA		8.0	30.0
4:2 FTSA		NC	30.0
PFHxA		0.0	30.0
PFBS		16.1	30.0
PFHpA		9.5	30.0
PFPeS		18.4	30.0
6:2 FTSA		10.9	30.0
PFOA		8.2	30.0
PFHxS		13.7	30.0
PFHxS-LN		14.3	30.0
PFHxS-BR		16.2	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		16.9	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0

Organics - Volatiles, Prep Batch ID: PF220623W2 (continued)

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

Duplicate (DUP) (continued)

Lab Sample ID: DQ220623.3696804D, Parent Sample ID: S36968.04

Run in Batch: DQ220623, Run Date: 06/24/2022 00:06, Prep Date: 06/23/2022, Matrix: WW, Dilution: 2.12

Analyte	Flags	RPD	RPD CL
EtFOSAA		NC	30.0
PFOS		5.2	30.0
PFOS-LN		2.8	30.0
PFOS-BR		6.7	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

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

139984

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Clifford Yantz / Kevin Sunseder
COMPANY: Ramboll
ADDRESS: 2090 Commonwealth Blvd
CITY: Ann Arbor STATE: MI ZIP CODE: 48105
PHONE NO.: 313-333-0211 FAX NO.:
P.O. NO.: 1940004462 Task 37
E-MAIL ADDRESS: Kevin.Sunseder@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 Sunseder

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS [X] STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD [X] LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

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

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)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS (1974)
37005.01	6/9/22	1005	02-PRCC-22-INF	L	3	3							X
.02	6/9/22	1015	02-PRCC-22-PRIM	L	3	3							X

Low Level Reporting with estimated values

Please Report Sample ID "Field Blank-060122" from COC # 148231 in same cooler

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
	[X] Sampler	6/10/22	14:15
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME
		6/10/22	14:15
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
		6/10/22	15:20
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME
		6/10/22	1500

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 2.3

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

Rev. 5.18.12

Analytical Laboratory Report

Report ID: S37062.01(01)
Generated on 07/06/2022

Report to

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

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

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): S37062.01-S37062.04
Project: RACER Coldwater Road
Collected Date(s): 06/13/2022
Submitted Date/Time: 06/14/2022 15:30
Sampled by: Kevin Schneider
P.O. #: 1940004462 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

Analytical Laboratory Report

Sample Summary (4 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S37062.01	02-PRCC-22-EFF-190	Wastewater	06/13/22 10:00
S37062.02	02-PRCC-22-MID-2-190	Wastewater	06/13/22 10:02
S37062.03	02-PRCC-22-MID-1-190	Wastewater	06/13/22 10:04
S37062.04	02-PRCC-22-PRIM-190	Wastewater	06/13/22 10:06

Analytical Laboratory Report

Lab Sample ID: S37062.01
Sample Tag: 02-PRCC-22-EFF-190
Collected Date/Time: 06/13/2022 10:00
Matrix: Wastewater
COC Reference: 148227

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.46/6.87/11	ASTMD7979-19M	06/30/22 13:28	JGH	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/30/22 18:47, Analyst: JGH

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

I-Matrix interference with internal standard

Analytical Laboratory Report

Lab Sample ID: S37062.02
Sample Tag: 02-PRCC-22-MID-2-190
Collected Date/Time: 06/13/2022 10:02
Matrix: Wastewater
COC Reference: 148227

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.97/6.88/10	ASTMD7979-19M	06/30/22 13:28	JGH	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/30/22 19:26, Analyst: JGH

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

Analytical Laboratory Report

Lab Sample ID: S37062.03
Sample Tag: 02-PRCC-22-MID-1-190
Collected Date/Time: 06/13/2022 10:04
Matrix: Wastewater
COC Reference: 148227

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	13.11/6.88/12	ASTMD7979-19M	06/30/22 13:28	JGH	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/30/22 20:05, Analyst: JGH

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

I-Matrix interference with internal standard

Analytical Laboratory Report

Lab Sample ID: S37062.04
Sample Tag: 02-PRCC-22-PRIM-190
Collected Date/Time: 06/13/2022 10:06
Matrix: Wastewater
COC Reference: 148227

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.08/6.94/10	ASTMD7979-19M	06/30/22 13:28	JGH	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/30/22 20:25, Analyst: JGH

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*	8.3	2.0	1.9	ng/L	1.95	1763-23-1	
PFOS-LN*	5.9	2.0	1.9	ng/L	1.95	1763-23-1-LN	
PFOS-BR*	2.2	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	9.8	2.0	ng/L	1.95	13252-13-6	

Merit Laboratories Login Checklist

Lab Set ID: S37062
Client: OBG02 (Ramboll Americas)
Project: RACER Coldwater Road
Submitted: 06/14/2022 15:30 Login User: JRM

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 2.0
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

148227

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.: 1940004462 Task 37
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	PFAS (1633)	Special Instructions
37062.01	6/13/22	1000	02-PRCC-22-EFF-190	ww	3	3							X	Low level Reporting with estimated values
.02	6/13/22	1002	02-PRCC-22-MID-2-190	ww	3	3							X	
.03	6/13/22	1004	02-PRCC-22-MID-1-190	ww	3	3							X	
.04	6/13/22	1006	02-PRCC-22-PRIM-190	ww	3	3							X	

RELINQUISHED BY: SIGNATURE/ORGANIZATION: K Schneider / X Sampler	DATE: 6/14/22	TIME: 1430
RECEIVED BY: SIGNATURE/ORGANIZATION: [illegible]	DATE: 6/14/22	TIME: 1430
RELINQUISHED BY: SIGNATURE/ORGANIZATION: [illegible]	DATE: 6/14/22	TIME: 1530
RECEIVED BY: SIGNATURE/ORGANIZATION: [illegible] Miriam	DATE: 6/14/22	TIME: 1530

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 2.0

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

Rev. 1.26.22

Quality Control Report

Report ID: QC-S37062-01
Generated on 07/07/2022

Report to

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

Phone: 313-333-0211 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

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

Report Summary

Lab Sample ID(s): S37062.01-S37062.04
Project: RACER Coldwater Road
Submitted Date/Time: 06/14/2022 15:30
Sampled by: Kevin Schneider
P.O. #: 1940004462 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

QC Report - Analysis Summary

Lab Sample ID: S37062.01
Sample Tag: 02-PRCC-22-EFF-190
Collected Date/Time: 06/13/2022 10:00
Matrix: Wastewater
COC Reference: 148227

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/30/22 18:47	AK220630	PF220630W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S37062.02
Sample Tag: 02-PRCC-22-MID-2-190
Collected Date/Time: 06/13/2022 10:02
Matrix: Wastewater
COC Reference: 148227

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/30/22 19:26	AK220630	PF220630W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S37062.03
Sample Tag: 02-PRCC-22-MID-1-190
Collected Date/Time: 06/13/2022 10:04
Matrix: Wastewater
COC Reference: 148227

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/30/22 20:05	AK220630	PF220630W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S37062.04
Sample Tag: 02-PRCC-22-PRIM-190
Collected Date/Time: 06/13/2022 10:06
Matrix: Wastewater
COC Reference: 148227

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/30/22 20:25	AK220630	PF220630W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF220630W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S37062.01	28 PFAs	ASTMD7979-19M	06/30/22 18:47	AK220630
S37062.02	28 PFAs	ASTMD7979-19M	06/30/22 19:26	AK220630
S37062.03	28 PFAs	ASTMD7979-19M	06/30/22 20:05	AK220630
S37062.04	28 PFAs	ASTMD7979-19M	06/30/22 20:25	AK220630

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S37062.01

Sample Tag: 02-PRCC-22-EFF-190

Collected Date/Time: 06/13/2022 10:00

Matrix: Wastewater

COC Reference: 148227

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220630, Run Date: 06/30/2022 18:47, Matrix: WW, Dilution: 1.97

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**89.6**	50.0	150.0
M2-6:2FTSA		**111.1**	50.0	150.0
M2-8:2FTSA	*	**161.8**	50.0	150.0
M2PFTeDA		**111.3**	12.0	218.0
M3PFBS		**90.1**	50.0	150.0
M3PFHxS		**93.2**	50.0	150.0
M4PFHpA		**106.3**	50.0	150.0
M5PFHxA		**105.5**	50.0	150.0
M5PFPeA		**96.2**	50.0	150.0
M6PFDA		**115.5**	50.0	150.0
M7PFUnDA		**107.9**	50.0	150.0
M8FOSA		**106.8**	50.0	150.0
M8PFOA		**105.8**	50.0	150.0
M8PFOS		**100.2**	50.0	150.0
M9-PFNA		**114.7**	50.0	150.0
MPFBA		**117.6**	50.0	150.0
MPFDoDA		**115.1**	50.0	150.0
d3N-MeFOSAA	*	**152.8**	50.0	150.0
d5EtFOSAA		**143.5**	50.0	150.0
MHFPO-DA		**94.7**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S37062.02

Sample Tag: 02-PRCC-22-MID-2-190

Collected Date/Time: 06/13/2022 10:02

Matrix: Wastewater

COC Reference: 148227

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220630, Run Date: 06/30/2022 19:26, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**81.2**	50.0	150.0
M2-6:2FTSA		**108.1**	50.0	150.0
M2-8:2FTSA		**142.5**	50.0	150.0
M2PFTeDA		**89.4**	12.0	218.0
M3PFBS		**82.5**	50.0	150.0
M3PFHxS		**81.5**	50.0	150.0
M4PFHpA		**94.3**	50.0	150.0
M5PFHxA		**106.8**	50.0	150.0
M5PFPeA		**98.6**	50.0	150.0
M6PFDA		**104.1**	50.0	150.0
M7PFUnDA		**99.2**	50.0	150.0
M8FOSA		**99.0**	50.0	150.0
M8PFOA		**96.0**	50.0	150.0
M8PFOS		**90.3**	50.0	150.0
M9-PFNA		**106.0**	50.0	150.0
MPFBA		**113.4**	50.0	150.0
MPFDoDA		**93.0**	50.0	150.0
d3N-MeFOSAA		**139.3**	50.0	150.0
d5EtFOSAA		**133.9**	50.0	150.0
MHFPO-DA		**104.7**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S37062.03

Sample Tag: 02-PRCC-22-MID-1-190

Collected Date/Time: 06/13/2022 10:04

Matrix: Wastewater

COC Reference: 148227

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220630, Run Date: 06/30/2022 20:05, Matrix: WW, Dilution: 1.93

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**80.9**	50.0	150.0
M2-6:2FTSA		**109.2**	50.0	150.0
M2-8:2FTSA		**139.3**	50.0	150.0
M2PFTeDA		**88.9**	12.0	218.0
M3PFBS		**79.4**	50.0	150.0
M3PFHxS		**86.7**	50.0	150.0
M4PFHpA		**97.5**	50.0	150.0
M5PFHxA		**98.6**	50.0	150.0
M5PFPeA		**94.2**	50.0	150.0
M6PFDA		**99.0**	50.0	150.0
M7PFUnDA		**101.1**	50.0	150.0
M8FOSA		**100.6**	50.0	150.0
M8PFOA		**96.0**	50.0	150.0
M8PFOS		**96.0**	50.0	150.0
M9-PFNA		**113.9**	50.0	150.0
MPFBA		**114.0**	50.0	150.0
MPFDoDA		**95.7**	50.0	150.0
d3N-MeFOSAA	*	**165.5**	50.0	150.0
d5EtFOSAA		**132.1**	50.0	150.0
MHFPO-DA		**85.9**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S37062.04

Sample Tag: 02-PRCC-22-PRIM-190

Collected Date/Time: 06/13/2022 10:06

Matrix: Wastewater

COC Reference: 148227

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220630, Run Date: 06/30/2022 20:25, Matrix: WW, Dilution: 1.95

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**76.4**	50.0	150.0
M2-6:2FTSA		**109.4**	50.0	150.0
M2-8:2FTSA		**135.2**	50.0	150.0
M2PFTeDA		**93.1**	12.0	218.0
M3PFBS		**78.9**	50.0	150.0
M3PFHxS		**91.4**	50.0	150.0
M4PFHpA		**91.8**	50.0	150.0
M5PFHxA		**86.4**	50.0	150.0
M5PFPeA		**98.5**	50.0	150.0
M6PFDA		**100.5**	50.0	150.0
M7PFUnDA		**92.6**	50.0	150.0
M8FOSA		**102.5**	50.0	150.0
M8PFOA		**100.9**	50.0	150.0
M8PFOS		**98.8**	50.0	150.0
M9-PFNA		**94.1**	50.0	150.0
MPFBA		**116.0**	50.0	150.0
MPFDoDA		**98.3**	50.0	150.0
d3N-MeFOSAA		**144.6**	50.0	150.0
d5EtFOSAA		**120.0**	50.0	150.0
MHFPO-DA		**87.5**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF220630W1

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

Blank (BLK)

Lab Sample ID: AK220630.BLK220630A

Run in Batch: AK220630, Run Date: 06/30/2022 18:08, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**94.9**	50.0	150.0
M2-6:2FTSA		**112.0**	50.0	150.0
M2-8:2FTSA	*	**174.6**	50.0	150.0
M2PFTeDA		**84.6**	12.0	218.0
M3PFBS		**82.0**	50.0	150.0
M3PFHxS		**93.9**	50.0	150.0
M4PFHpA		**109.1**	50.0	150.0
M5PFHxA		**107.0**	50.0	150.0
M5PFPeA		**96.1**	50.0	150.0
M6PFDA		**111.0**	50.0	150.0
M7PFUnDA		**102.7**	50.0	150.0
M8FOSA		**106.6**	50.0	150.0
M8PFOA		**100.8**	50.0	150.0
M8PFOS		**95.0**	50.0	150.0
M9-PFNA		**101.4**	50.0	150.0
MPFBA		**105.4**	50.0	150.0
MPFDoDA		**97.9**	50.0	150.0
d3N-MeFOSAA	*	**166.3**	50.0	150.0
d5EtFOSAA		**142.4**	50.0	150.0
MHFPO-DA		**103.2**	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK220630.LCS220630A

Run in Batch: AK220630, Run Date: 06/30/2022 17:29, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**98.4**	50.0	150.0
M2-6:2FTSA		**121.8**	50.0	150.0
M2-8:2FTSA	*	**176.9**	50.0	150.0
M2PFTeDA		**111.9**	12.0	218.0
M3PFBS		**93.0**	50.0	150.0
M3PFHxS		**99.2**	50.0	150.0
M4PFHpA		**96.6**	50.0	150.0
M5PFHxA		**104.0**	50.0	150.0
M5PFPeA		**95.7**	50.0	150.0
M6PFDA		**111.0**	50.0	150.0
M7PFUnDA		**105.7**	50.0	150.0
M8FOSA		**102.5**	50.0	150.0
M8PFOA		**108.5**	50.0	150.0
M8PFOS		**103.3**	50.0	150.0
M9-PFNA		**102.6**	50.0	150.0
MPFBA		**106.2**	50.0	150.0
MPFDoDA		**106.3**	50.0	150.0
d3N-MeFOSAA		**148.3**	50.0	150.0
d5EtFOSAA		**145.8**	50.0	150.0
MHFPO-DA		**105.7**	50.0	150.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK220630.LCSD220630A, Parent Sample ID: AK220630.LCS220630A

Run in Batch: AK220630, Run Date: 06/30/2022 17:48, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**101.1**	50.0	150.0
M2-6:2FTSA		**129.3**	50.0	150.0
M2-8:2FTSA	*	**175.1**	50.0	150.0
M2PFTeDA		**111.6**	12.0	218.0
M3PFBS		**87.1**	50.0	150.0
M3PFHxS		**102.2**	50.0	150.0
M4PFHpA		**100.0**	50.0	150.0
M5PFHxA		**104.2**	50.0	150.0
M5PFPeA		**96.5**	50.0	150.0
M6PFDA		**113.3**	50.0	150.0
M7PFUnDA		**99.6**	50.0	150.0
M8FOSA		**102.0**	50.0	150.0
M8PFOA		**93.5**	50.0	150.0
M8PFOS		**97.4**	50.0	150.0
M9-PFNA		**102.6**	50.0	150.0
MPFBA		**105.2**	50.0	150.0
MPFDoDA		**107.1**	50.0	150.0
d3N-MeFOSAA	*	**159.7**	50.0	150.0
d5EtFOSAA		**123.3**	50.0	150.0
MHFPO-DA		**95.6**	50.0	150.0

QC Report - Internal Standards per QC Sample

Matrix Spike (MS)

Lab Sample ID: AK220630.3706202M, Parent Sample ID: S37062.02

Run in Batch: AK220630, Run Date: 06/30/2022 19:46, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**78.1**	50.0	150.0
M2-6:2FTSA		**110.1**	50.0	150.0
M2-8:2FTSA		**142.6**	50.0	150.0
M2PFTeDA		**107.9**	12.0	218.0
M3PFBS		**79.8**	50.0	150.0
M3PFHxS		**84.5**	50.0	150.0
M4PFHpA		**95.3**	50.0	150.0
M5PFHxA		**93.6**	50.0	150.0
M5PFPeA		**91.3**	50.0	150.0
M6PFDA		**98.5**	50.0	150.0
M7PFUnDA		**95.0**	50.0	150.0
M8FOSA		**97.3**	50.0	150.0
M8PFOA		**86.6**	50.0	150.0
M8PFOS		**83.6**	50.0	150.0
M9-PFNA		**95.7**	50.0	150.0
MPFBA		**109.8**	50.0	150.0
MPFDoDA		**95.6**	50.0	150.0
d3N-MeFOSAA		**135.3**	50.0	150.0
d5EtFOSAA		**128.5**	50.0	150.0
MHFPO-DA		**93.4**	50.0	150.0

Duplicate (DUP)

Lab Sample ID: AK220630.3706201D, Parent Sample ID: S37062.01

Run in Batch: AK220630, Run Date: 06/30/2022 19:07, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1.97

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**73.7**	50.0	150.0
M2-6:2FTSA		**101.4**	50.0	150.0
M2-8:2FTSA		**135.2**	50.0	150.0
M2PFTeDA		**98.8**	12.0	218.0
M3PFBS		**76.8**	50.0	150.0
M3PFHxS		**84.4**	50.0	150.0
M4PFHpA		**79.4**	50.0	150.0
M5PFHxA		**100.0**	50.0	150.0
M5PFPeA		**92.2**	50.0	150.0
M6PFDA		**95.4**	50.0	150.0
M7PFUnDA		**91.0**	50.0	150.0
M8FOSA		**94.8**	50.0	150.0
M8PFOA		**84.8**	50.0	150.0
M8PFOS		**89.6**	50.0	150.0
M9-PFNA		**102.5**	50.0	150.0
MPFBA		**100.6**	50.0	150.0
MPFDoDA		**94.2**	50.0	150.0
d3N-MeFOSAA		**135.7**	50.0	150.0
d5EtFOSAA		**120.6**	50.0	150.0
MHFPO-DA		**84.6**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF220630W1

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

Blank (BLK)

Lab Sample ID: AK220630.BLK220630A

Run in Batch: AK220630, Run Date: 06/30/2022 18:08, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	5	ng/l
PFPeA		ND	2	ng/l
4:2 FTSA		ND	1	ng/l
PFHxA		ND	1	ng/l
PFBS		ND	1	ng/l
PFHpA		ND	1	ng/l
PFPeS		ND	1	ng/l
6:2 FTSA		ND	1	ng/l
PFOA		ND	1	ng/l
PFHxS		ND	1	ng/l
PFHxS-LN		ND	1	ng/l
PFHxS-BR		ND	1	ng/l
PFNA		ND	1	ng/l
8:2 FTSA		ND	1	ng/l
PFHpS		ND	1	ng/l
PFDA		ND	1	ng/l
N-MeFOSAA		ND	1	ng/l
EtFOSAA		ND	2	ng/l
PFOS		ND	1	ng/l
PFOS-LN		ND	1	ng/l
PFOS-BR		ND	1	ng/l
PFUnDA		ND	1	ng/l
PFNS		ND	1	ng/l
PFDoDA		ND	1	ng/l
PFDS		ND	1	ng/l
PFTrDA		ND	1	ng/l
FOSA		ND	1	ng/l
PFTeDA		ND	2	ng/l
11CL-PF3OUdS		ND	1	ng/l
9CL-PF3ONS		ND	1	ng/l
ADONA		ND	1	ng/l
HFPO-DA		ND	5	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK220630.LCS220630A

Run in Batch: AK220630, Run Date: 06/30/2022 17:29, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		92.4	70.0	130.0
PFPeA		101.8	70.0	130.0
4:2 FTSA		117.8	70.0	130.0
PFBS		107.2	70.0	130.0
PFHxA		109.0	70.0	130.0
HFPO-DA		84.6	70.0	130.0
PFHpA		107.2	70.0	130.0
PFPeS		111.8	70.0	130.0
ADONA		96.2	70.0	130.0

Organics - Volatiles, Prep Batch ID: PF220630W1 (continued)

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

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK220630.LCS220630A

Run in Batch: AK220630, Run Date: 06/30/2022 17:29, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		117.0	70.0	130.0
PFOA		96.2	70.0	130.0
PFHxS		103.6	70.0	130.0
PFNA		118.4	70.0	130.0
PFHpS		82.6	70.0	130.0
8:2 FTSA		105.0	70.0	130.0
PFOS		106.6	70.0	130.0
PFDA		104.4	70.0	130.0
N-MeFOSAA		111.6	70.0	130.0
EtFOSAA		110.8	70.0	130.0
PFUnDA		101.0	70.0	130.0
9CL-PF3ONS		96.2	70.0	130.0
PFNS		87.0	70.0	130.0
PFDoDA		110.0	70.0	130.0
PFDS		107.4	70.0	130.0
PFTrDA		122.0	70.0	130.0
11CL-PF3OUdS		102.4	70.0	130.0
PFTeDA		110.0	70.0	130.0
FOSA		105.6	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK220630.LCSD220630A, Parent Sample ID: AK220630.LCS220630A

Run in Batch: AK220630, Run Date: 06/30/2022 17:48, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		103.4	70.0	130.0	11.2	30.0
PFPeA		100.6	70.0	130.0	1.2	30.0
4:2 FTSA		101.0	70.0	130.0	15.4	30.0
PFBS		107.2	70.0	130.0	0.0	30.0
PFHxA		105.0	70.0	130.0	3.7	30.0
HFPO-DA		104.0	70.0	130.0	20.6	30.0
PFHpA		98.0	70.0	130.0	9.0	30.0
PFPeS		111.4	70.0	130.0	0.4	30.0
ADONA		111.4	70.0	130.0	14.6	30.0
6:2 FTSA		112.0	70.0	130.0	4.4	30.0
PFOA		122.0	70.0	130.0	23.6	30.0
PFHxS		108.6	70.0	130.0	4.7	30.0
PFNA		118.2	70.0	130.0	0.2	30.0
PFHpS		77.0	70.0	130.0	7.0	30.0
8:2 FTSA		101.6	70.0	130.0	3.3	30.0
PFOS		112.0	70.0	130.0	4.9	30.0
PFDA		90.8	70.0	130.0	13.9	30.0
N-MeFOSAA		95.4	70.0	130.0	15.7	30.0
EtFOSAA		127.2	70.0	130.0	13.8	30.0
PFUnDA		89.2	70.0	130.0	12.4	30.0
9CL-PF3ONS		104.4	70.0	130.0	8.2	30.0
PFNS		90.2	70.0	130.0	3.6	30.0

Organics - Volatiles, Prep Batch ID: PF220630W1 (continued)

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

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK220630.LCSD220630A, Parent Sample ID: AK220630.LCS220630A

Run in Batch: AK220630, Run Date: 06/30/2022 17:48, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		96.4	70.0	130.0	13.2	30.0
PFDS		122.4	70.0	130.0	13.1	30.0
PFTrDA		104.8	70.0	130.0	15.2	30.0
11CL-PF3OUdS		108.8	70.0	130.0	6.1	30.0
PFTeDA		98.4	70.0	130.0	11.1	30.0
FOSA		94.6	70.0	130.0	11.0	30.0

Matrix Spike (MS)

Lab Sample ID: AK220630.3706202M, Parent Sample ID: S37062.02

Run in Batch: AK220630, Run Date: 06/30/2022 19:46, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1.96

Analyte	Flags	% Rec	LCL	UCL
PFBA		122.4	70.0	130.0
PFPeA		112.2	70.0	130.0
4:2 FTSA		112.2	70.0	130.0
PFHxA		122.4	70.0	130.0
PFBS		122.4	70.0	130.0
PFHpA		112.2	70.0	130.0
PFPeS		122.4	70.0	130.0
6:2 FTSA		122.4	70.0	130.0
PFOA		122.4	70.0	130.0
PFHxS		112.2	70.0	130.0
PFNA	*	142.9	70.0	130.0
8:2 FTSA		102.0	70.0	130.0
PFHpS		112.2	70.0	130.0
PFDA		112.2	70.0	130.0
N-MeFOSAA		122.4	70.0	130.0
EtFOSAA	*	132.7	70.0	130.0
PFOS	*	142.9	70.0	130.0
PFUnDA		112.2	70.0	130.0
PFNS		112.2	70.0	130.0
PFDoDA		122.4	70.0	130.0
PFDS	*	142.9	70.0	130.0
PFTrDA	*	142.9	70.0	130.0
FOSA		112.2	70.0	130.0
PFTeDA		112.2	70.0	130.0
11CL-PF3OUdS	*	142.9	70.0	130.0
9CL-PF3ONS		122.4	70.0	130.0
ADONA		122.4	70.0	130.0
HFPO-DA		98.0	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK220630.3706201D, Parent Sample ID: S37062.01

Run in Batch: AK220630, Run Date: 06/30/2022 19:07, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1.97

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		NC	30.0

Organics - Volatiles, Prep Batch ID: PF220630W1 (continued)

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

Duplicate (DUP) (continued)

Lab Sample ID: AK220630.3706201D, Parent Sample ID: S37062.01

Run in Batch: AK220630, Run Date: 06/30/2022 19:07, Prep Date: 06/30/2022, Matrix: WW, Dilution: 1.97

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		NC	30.0
PFOS-LN		NC	30.0
PFOS-BR		NC	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDoDA		NC	30.0
PFDS	J*	40.0	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

Merit Laboratories, Inc.

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C.O.C. PAGE # 1 OF 1

148227

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.: 1940004462 Task 37
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	PFAS (1633)	Special Instructions
37062.01	6/13/22	1000	02-PRCC-22-EFF-190	ww	3	3							X	Low level Reporting with estimated values
.02	6/13/22	1002	02-PRCC-22-MID-2-190	ww	3	3							X	
.03	6/13/22	1004	02-PRCC-22-MID-1-190	ww	3	3							X	
.04	6/13/22	1006	02-PRCC-22-PRIM-190	ww	3	3							X	

RELINQUISHED BY: SIGNATURE/ORGANIZATION: K Schneider / X Sampler	DATE: 6/14/22	TIME: 1430
RECEIVED BY: SIGNATURE/ORGANIZATION: [illegible]	DATE: 6/14/22	TIME: 1430
RELINQUISHED BY: SIGNATURE/ORGANIZATION: [illegible]	DATE: 6/14/22	TIME: 1530
RECEIVED BY: SIGNATURE/ORGANIZATION: [illegible] Miriam	DATE: 6/14/22	TIME: 1530

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 2.0

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

Rev. 1.26.22