

Mr. Tom Hutchings

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

RE: ***Discharge Permit Submittal– April 2021 through June 2021***

Permit No.: 6-08-04-04-GML1

FILE: 15388/1940100783/Docs

Dear **Mr. Hutchings:**

In accordance with requirements of the above referenced discharge permit, we are providing you with the following discharge information for the period April 1, 2021 to June 30, 2021 for the Coldwater Road Landfill facility, located at 6220 Horton Avenue, Flint, 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.

July 26, 2021

- 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 June 8, 2021.
- Analytical Reports provided by Merit Laboratories, Inc. for samples from the on-Site, PFAS pretreatment system collected on June 16, 2021 and June 18, 2021 during the discharge of the liquids from the on-Site, above ground collection tank through the system.
- Copy of Chain-of-Custody forms.

Ramboll
3600 Green Court
Suite 750
Ann Arbor, MI 48105
USA

T 734-761-4000
F 734-761-2050
<https://ramboll.com>

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 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 16, 2021 and June 18, 2021 during the accumulation tank discharge. The influent sample collected on June 16, 2021 had a detection of 1,800 ng/L for PFOS.



PFAS was not detected in the samples collected from the primary GAC drum on June 16, 2021, and the primary, secondary, tertiary, and effluent GAC drums on June 18, 2021. 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.

A handwritten signature in blue ink that reads "Clifford Scott Yantz".

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, 2021 through June 30, 2021

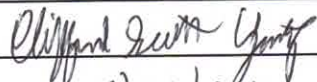
Average Volume of Daily Discharge (during reporting period): 2,273.33 gallons
(Three One Day Events)

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: 

Date Signed by Authorized Representative: 7/26/21

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 - 2021 - 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	3.22	8.3	3	7.18	0.02	16
Test Method	4500-NH3 D	10360	1664A	4500-H+ B	4500-PE	2540 D
Test Date	6/9/2021	6/14/2021	6/10/2021	6/8/2021	6/12/2021	6/9/2021
Sample Date	6/8/2021	6/8/2021	6/8/2021	6/8/2021	6/8/2021	6/8/2021
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 - 2021 - 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	0.007	0.033	0.319	<0.0002	0.115	0.009	<0.002
Test Method	200.8	200.8	200.8	245.1	200.8	200.8	1677
Test Date	6/9/2021	6/9/2021	6/9/2021	6/10/2021	6/9/2021	6/9/2021	6/9/2021
Sample Date	6/8/2021	6/8/2021	6/8/2021	6/8/2021	6/8/2021	6/8/2021	6/8/2021
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 2021
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		pH
							(C)	(F)	
6/16/2021 - 6/17/2021	759,021	762,243	3,222	6:40 PM (6/16/21)	10:00 AM (6/17/21)	3.42	21.1	70.1	9.71
6/17/2021 - 6/18/2021	762,243	765,841	3,598	10:00 AM (6/17/21)	8:40 AM (6/18/21)	2.64	20.0	68.0	7.60

Total Discharge Volume (3 Days): 6,820
Average Discharge Volume (3 Days): 2,273.33

NOTES : During the discharge the flow meter stopped totaling the volume, therefore; the volume discharged was calculated by measuring the water level in the tank with a measuring tape and then calculating the volume off the tank with the volume chart in the Site's Operation and Maintenance Manual. The flow meter will be cleaned and tested prior to the next discharge event.

TABLE 3
RACER Trust - Coldwater Road
Pre-and Polyfluoroalkyl Substances (PFAS) Sampling Results - June 2021

Coldwater Road - PFAS Pretreatment System Samples

Perfluorinated Compound	Well/Sample ID:	EGLE Drinking Water Maximum Contaminant Levels (MCLs)	EGLE Rule 57 Surface Water Quality Values - Non-Drinking Water	02-PRCC-21-INF (Influent Sample)	02-PRCC-21-PRIM (Primary GAC Drum Sample)	02-PRCC-21-PRIM-151 (Primary GAC Drum Sample after 151 Bed Volumes)	02-PRCC-21-MID-1-151 (Secondary GAC Drum Sample after 151 Bed Volumes)	02-PRCC-21-MID-2-151 (Tertiary GAC Drum Sample after 151 Bed Volumes)	02-PRCC-21-EFF-151 (Effluent Sample after 151 Bed Volumes)	FieldBlank-061621 (Field Blank)	FieldBlank-061821 (Field Blank)
	Sample Date:			6/16/2021	6/16/2021	6/18/2021	6/18/2021	6/18/2021	6/18/2021	6/16/2021	6/18/2021
Perfluorobutanoic Acid (PFBA)	--	--	--	<10	<10	<9.8	<9.7	<10.0	<11	<10	<9.8
Perfluoropentanoic Acid (PFPeA)	--	--	--	<6.2 X	<4.1	<3.9	<3.9	<4.0	<4.2	<4.1	<3.9
4:2 Fluorotelomer Sulfonic Acid (4:2 FTSA)	--	--	--	<2.1	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorohexanoic Acid (PFHxA)	400,000	--	--	14	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorobutane Sulfonic Acid (PFBS)	420	--	--	23	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluoroheptanoic Acid (PFHpA)	--	--	--	4.9	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluoropentane Sulfonic Acid (PFPeS)	--	--	--	38	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
6:2 Fluorotelomer Sulfonic Acid (6:2 FTSA)	--	--	--	<4.2	<4.1	<3.9	<3.9	<4.0	<4.2	<4.1	<3.9
Perfluorooctanoic Acid (PFOA)	8	12,000	--	16	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorohexane Sulfonic Acid (PFHxS)	51	--	--	130	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)	--	--	--	100	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)	--	--	--	22	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorononanoic Acid (PFNA)	6	--	--	<2.1	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
8:2 Fluorotelomer Sulfonic Acid (8:2 FTSA)	--	--	--	<2.1	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluoroheptane Sulfonic Acid (PFHpS)	--	--	--	22	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorodecanoic Acid (PFDA)	--	--	--	<2.1	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
N-methyl Perfluorooctanesulfonamidoacetic Acid (N-MeFOSAA)	--	--	--	<2.1	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
N-Ethyl Perfluorooctane Sulfonamidoacetic Acid (EtFOSAA)	--	--	--	2.5 J	<4.1	<3.9	<3.9	<4.0	<4.2	<4.1	<3.9
Perfluorooctane Sulfonic Acid (PFOS)	16	12	--	1,800	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorooctane Sulfonic Acid (PFOS -LN)	--	--	--	1,200	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorooctane Sulfonic Acid (PFOS -BR)	--	--	--	610	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluoroundecanoic Acid (PFUnDA)	--	--	--	<2.1	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorononane Sulfonic Acid (PFNS)	--	--	--	3.0	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorododecanoic Acid (PFDoDA)	--	--	--	<2.1	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorodecane Sulfonic Acid (PFDS)	--	--	--	2.5	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorotridecanoic Acid (PFTrDA)	--	--	--	<2.1	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorooctane Sulfonamide (FOSA)	--	--	--	<2.1	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Perfluorotetradecanoic Acid (PFTeDA)	--	--	--	<4.2	<4.1	<3.9	<3.9	<4.0	<4.2	<4.1	<3.9
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	--	--	--	<2.1	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9Cl-PF3ONS)	--	--	--	<2.1	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	--	--	--	<2.1	<2.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0
Hexafluoropropylene oxide dimer (HFPO-DA)	370	--	--	<10	<10	<9.8	<9.7	<10.0	<11	<10	<9.8
Total Per-and Polyfluoroalkyl Substances	--	--	--	2,055.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Notes

- 1) Detections in **bold**.
- 2) Concentrations in ng/L.
- 3) < = Not detected at specified reporting limit.
- 4) -- = Not analyzed/No criteria.
- 5) Dup = Duplicate sample.
- 6) Concentrations above the EGLE Drinking Water Maximum Contaminant Levels (MCLs) and/or Rule 57 Surface water quality values are highlighted in yellow.
- 7) 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.
- 8) I - Matrix interference with internal standard.
- 9) J - Estimated value less than reporting limit, but greater than MDL.
- 10) X - Elevated reporting limit due to matrix interference.

ANALYTICAL REPORTS



Analytical Laboratory Report

Report ID: S25056.01(01)+QC01
Generated on 06/15/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
2260 East Saginaw Street
East Lansing, MI 48823

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

Additional Contacts: Kevin Schneider

Report produced by

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

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

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

Report Summary

Lab Sample ID(s): S25056.01
Project: RACER Coldwater Road
Collected Date(s): 06/08/2021
Submitted Date/Time: 06/08/2021 15:20
Sampled by: Kevin Schneider
P.O. #: 1940002628 (TASK 1)

Table of Contents

Cover Page (Page 1)
General Report Notes (Page 2)
Report Narrative (Page 2)
Laboratory Certifications (Page 3)
Qualifier Descriptions (Page 3)
Glossary of Abbreviations (Page 3)
Method Summary (Page 4)
Sample Summary (Page 5)
QC Report (Pages 8-19)

Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

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

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

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

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

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

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

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

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

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

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

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

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

Report Narrative

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

Qualifier Descriptions

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

Glossary of Abbreviations

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



Analytical Laboratory Report

Method Summary

Method	Version
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 2011
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
SW3015A	SW 846 Method 3015A Revision 1 February 2007



Analytical Laboratory Report

Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S25056.01	02-PRCC-21	Wastewater	06/08/21 12:10



Analytical Laboratory Report

Lab Sample ID: S25056.01

Sample Tag: 02-PRCC-21

Collected Date/Time: 06/08/2021 12:10

Matrix: Wastewater

COC Reference: 112286

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.1	IR
1	250ml Plastic	H2SO4	Yes	4.1	IR
1	125ml Amber	PbCO3/NaOH	Yes	4.1	IR
1	1L Plastic	None	Yes	4.1	IR
1	32oz Glass	HCL	Yes	4.1	IR
1	500ml Plastic	None	Yes	4.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	06/10/21 11:45	JRH	
TBOD5 - Set*	Completed	HACH 10360	06/09/21 09:15	ASB	
Metal Digestion	Completed	SW3015A	06/09/21 12:45	CCM	

Inorganics

Method: E1664A, Run Date: 06/10/21 11:11, Analyst: PTW

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Oil & Grease n-Hexane Extract.	3	2		mg/L	1		

Method: HACH 10360, Run Date: 06/14/21 10:33, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TBOD5*	8.3	3		mg/L	6		

Method: SM2540D, Run Date: 06/09/21 17:50, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	16	3		mg/L	3.33		

Method: SM2550B, Run Date: 06/08/21 12:10, Analyst: KS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Field Temperature*	76	1		oF	1		

Method: SM4500-H+ B, Run Date: 06/08/21 12:10, Analyst: KS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Field pH*	7.18	0.01		STD Units	1		

Method: SM4500-NH3 D, Run Date: 06/09/21 16:18, Analyst: MJC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Ammonia-N (Undistilled)	3.22	0.04	0.006	mg/L	2	7664-41-7	

Method: SM4500-PE, Run Date: 06/12/21 13:11, Analyst: MJC

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

Metals

Method: E200.8, Run Date: 06/09/21 14:04, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.007	0.002		mg/L	5	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S25056.01 (continued)

Sample Tag: 02-PRCC-21

Method: E200.8, Run Date: 06/09/21 14:04, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	0.033	0.005		mg/L	5	7440-47-3	
Copper	0.319	0.005		mg/L	5	7440-50-8	
Nickel	0.115	0.005		mg/L	5	7440-02-0	
Zinc	0.009	0.005		mg/L	5	7440-66-6	

Method: E245.1, Run Date: 06/10/21 15:42, 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: 06/09/21 14:45, Analyst: JDP

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



Quality Control Report

Report ID: S25056.01(01)+QC01
Generated on 06/15/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
2260 East Saginaw Street
East Lansing, MI 48823

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): S25056.01
Project: RACER Coldwater Road
Submitted Date/Time: 06/08/2021 15:20
Sampled by: Kevin Schneider
P.O. #: 1940002628 (TASK 1)

QC Report Sections

Cover Page (Page 8)
Analysis Summary (Page 9)
Prep Batch Summary (Page 10)
Batch QC Results (Pages 11-19)

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: S25056.01

Sample Tag: 02-PRCC-21

Collected Date/Time: 06/08/2021 12:10

Matrix: Wastewater

COC Reference: 112286

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Ammonia-N (Undistilled)	SM4500-NH3 D	06/09/21 16:18	AMN210609QC	AMN210609QC	No	BLK/LCS/MS/DUP
Oil & Grease n-Hexane Extract.	E1664A	06/10/21 11:11	OGHEX210610W1	OGHEX210610W1	No	BLK/LCS
TBOD5	HACH 10360	06/14/21 10:33	BOD210609	BOD210609	No	BLK/LCS/DUP
Total Phosphorus	SM4500-PE	06/12/21 13:11	PHS210612QC	PHS210612QC	No	BLK/LCS/MS/DUP
Total Suspended Solids	SM2540D	06/09/21 17:50	TSS210609	TSS210609	No	BLK/LCS/DUP
Metals						
Arsenic	E200.8	06/09/21 14:04	MT4-21-0609B	MTD-060921-7	No	BLK/LCS/MS/MSD
Chromium	E200.8	06/09/21 14:04	MT4-21-0609B	MTD-060921-7	No	BLK/LCS/MS/MSD
Copper	E200.8	06/09/21 14:04	MT4-21-0609B	MTD-060921-7	No	BLK/LCS/MS/MSD
Mercury	E245.1	06/10/21 15:42	HG2-HG3-21-0610AHGD-061021-2		No	BLK/LCS/MS/MSD
Nickel	E200.8	06/09/21 14:04	MT4-21-0609B	MTD-060921-7	No	BLK/LCS/MS/MSD
Zinc	E200.8	06/09/21 14:04	MT4-21-0609B	MTD-060921-7	No	BLK/LCS/MS/MSD
Other / Misc.						
Available Cyanide	OIA-1677	06/09/21 14:45	ACN210609-W1	ACN210609-W1	No	BLK/LCS/MS/MSD/DU

QC Report - Prep Batch Summary

Inorganics, Prep Batch ID: AMN210609QC

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S25056.01	Ammonia-N (Undistilled)	SM4500-NH3 D	06/09/21 16:18	AMN210609QC

Inorganics, Prep Batch ID: BOD210609

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S25056.01	TBOD5	HACH 10360	06/14/21 10:33	BOD210609

Inorganics, Prep Batch ID: OGHEX210610W1

Surrogates: No, QC Types: BLK/LCS

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S25056.01	Oil & Grease n-Hexane Extract.	E1664A	06/10/21 11:11	OGHEX210610W1

Inorganics, Prep Batch ID: PHS210612QC

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S25056.01	Total Phosphorus	SM4500-PE	06/12/21 13:11	PHS210612QC

Inorganics, Prep Batch ID: TSS210609

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S25056.01	Total Suspended Solids	SM2540D	06/09/21 17:50	TSS210609

Metals, Prep Batch ID: HGD-061021-2

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S25056.01	Mercury	E245.1	06/10/21 15:42	HG2-HG3-21-0610A

Metals, Prep Batch ID: MTD-060921-7

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S25056.01	Arsenic	E200.8	06/09/21 14:04	MT4-21-0609B
S25056.01	Chromium	E200.8	06/09/21 14:04	MT4-21-0609B
S25056.01	Copper	E200.8	06/09/21 14:04	MT4-21-0609B
S25056.01	Nickel	E200.8	06/09/21 14:04	MT4-21-0609B
S25056.01	Zinc	E200.8	06/09/21 14:04	MT4-21-0609B

Other / Misc., Prep Batch ID: ACN210609-W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S25056.01	Available Cyanide	OIA-1677	06/09/21 14:45	ACN210609-W1

QC Report - Batch QC Results

Inorganics, Prep Batch ID: AMN210609QC

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

Blank (BLK)

Lab Sample ID: AMN210609QC.LRB1

Run in Batch: AMN210609QC, Run Date: 06/09/2021 10:05, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: AMN210609QC.LCS1

Run in Batch: AMN210609QC, Run Date: 06/09/2021 11:11, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		102	90	110

Matrix Spike (MS)

Lab Sample ID: AMN210609QC.MS1, Parent Sample ID: S24989.01

Run in Batch: AMN210609QC, Run Date: 06/09/2021 12:17, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		98	80	120

Duplicate (DUP)

Lab Sample ID: AMN210609QC.DP1, Parent Sample ID: S24990.02

Run in Batch: AMN210609QC, Run Date: 06/09/2021 11:57, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Ammonia-N (Undistilled)		0.4	20

QC Report - Batch QC Results

Inorganics, Prep Batch ID: BOD210609

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

Blank (BLK)

Lab Sample ID: BOD210609.LRB1

Run in Batch: BOD210609, Run Date: 06/14/2021 10:33, Prep Date: 06/14/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
TBOD5		ND	3	mg/L

Blank (BLK)

Lab Sample ID: BOD210609.LRB2

Run in Batch: BOD210609, Run Date: 06/14/2021 10:33, Prep Date: 06/14/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
TBOD5		ND	3	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: BOD210609.LCS1

Run in Batch: BOD210609, Run Date: 06/14/2021 10:33, Prep Date: 06/14/2021, Matrix: Liquid, Dilution: 20

Analyte	Flags	% Rec	LCL	UCL
TBOD5		108.0	50.8	166

Laboratory Control Sample (LCS)

Lab Sample ID: BOD210609.LCS2

Run in Batch: BOD210609, Run Date: 06/14/2021 10:33, Prep Date: 06/14/2021, Matrix: Liquid, Dilution: 20

Analyte	Flags	% Rec	LCL	UCL
TBOD5		106.3	50.8	166

Duplicate (DUP)

Lab Sample ID: BOD210609.DP1, Parent Sample ID: S24989.01

Run in Batch: BOD210609, Run Date: 06/14/2021 10:33, Prep Date: 06/14/2021, Matrix: Liquid, Dilution: 100

Analyte	Flags	RPD	RPD CL
TBOD5	*	129.9	20

Duplicate (DUP)

Lab Sample ID: BOD210609.DP2, Parent Sample ID: S25049.02

Run in Batch: BOD210609, Run Date: 06/14/2021 10:33, Prep Date: 06/14/2021, Matrix: Liquid, Dilution: 300

Analyte	Flags	RPD	RPD CL
TBOD5		5.2	20

QC Report - Batch QC Results

Inorganics, Prep Batch ID: OGHEx210610W1

Surrogates: No, QC Types: BLK/LCS

Blank (BLK)

Lab Sample ID: OGHEx210610W1.LRB3

Run in Batch: OGHEx210610W1, Run Date: 06/10/2021 11:11, Prep Date: 06/10/2021, 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: OGHEx210610W1.LCS1

Run in Batch: OGHEx210610W1, Run Date: 06/10/2021 11:11, Prep Date: 06/10/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Oil & Grease n-Hexane Extract.		88	78	114

Laboratory Control Sample (LCS)

Lab Sample ID: OGHEx210610W1.LCS2

Run in Batch: OGHEx210610W1, Run Date: 06/10/2021 11:11, Prep Date: 06/10/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Oil & Grease n-Hexane Extract.		101	78	114

QC Report - Batch QC Results

Inorganics, Prep Batch ID: PHS210612QC

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

Blank (BLK)

Lab Sample ID: PHS210612QC.LRB1

Run in Batch: PHS210612QC, Run Date: 06/12/2021 12:26, Prep Date: 06/12/2021, Matrix: Liquid, Dilution: 1

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

Blank (BLK)

Lab Sample ID: PHS210612QC.LRB2

Run in Batch: PHS210612QC, Run Date: 06/12/2021 12:33, Prep Date: 06/12/2021, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: PHS210612QC.LCS1

Run in Batch: PHS210612QC, Run Date: 06/12/2021 12:43, Prep Date: 06/12/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		99	90	110

Matrix Spike (MS)

Lab Sample ID: PHS210612QC.MS1, Parent Sample ID: S25011.01

Run in Batch: PHS210612QC, Run Date: 06/12/2021 19:40, Prep Date: 06/12/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		96	80	120

Duplicate (DUP)

Lab Sample ID: PHS210612QC.DP1, Parent Sample ID: S25008.01

Run in Batch: PHS210612QC, Run Date: 06/12/2021 19:37, Prep Date: 06/12/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Phosphorus		9.1	20

QC Report - Batch QC Results

Inorganics, Prep Batch ID: TSS210609

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

Blank (BLK)

Lab Sample ID: TSS210609.LRB1

Run in Batch: TSS210609, Run Date: 06/09/2021 17:50, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: TSS210609.LCS1

Run in Batch: TSS210609, Run Date: 06/09/2021 17:50, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 10.0

Analyte	Flags	% Rec	LCL	UCL
Total Suspended Solids		93.3	80.9	112

Duplicate (DUP)

Lab Sample ID: TSS210609.DP1, Parent Sample ID: S24947.02

Run in Batch: TSS210609, Run Date: 06/09/2021 17:50, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 25.0

Analyte	Flags	RPD	RPD CL
Total Suspended Solids	*	10.4	5

QC Report - Batch QC Results

Metals, Prep Batch ID: HGD-061021-2

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

Blank (BLK)

Lab Sample ID: HG2-HG3-21-0610A.040

Run in Batch: HG2-HG3-21-0610A, Run Date: 06/10/2021 15:07, Prep Date: 06/10/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Mercury		ND	0.05	ug/L

Laboratory Control Sample (LCS)

Lab Sample ID: HG2-HG3-21-0610A.039

Run in Batch: HG2-HG3-21-0610A, Run Date: 06/10/2021 15:05, Prep Date: 06/10/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		103	85	115

Matrix Spike (MS)

Lab Sample ID: HG2-HG3-21-0610A.046, Parent Sample ID: S24969.05

Run in Batch: HG2-HG3-21-0610A, Run Date: 06/10/2021 15:20, Prep Date: 06/10/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		108	80	120

Matrix Spike (MS)

Lab Sample ID: HG2-HG3-21-0610A.050, Parent Sample ID: S25034.05

Run in Batch: HG2-HG3-21-0610A, Run Date: 06/10/2021 15:28, Prep Date: 06/10/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		106	80	120

Matrix Spike Duplicate (MSD)

Lab Sample ID: HG2-HG3-21-0610A.047, Parent Sample ID: HG2-HG3-21-0610A.046

Run in Batch: HG2-HG3-21-0610A, Run Date: 06/10/2021 15:22, Prep Date: 06/10/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Mercury		109	80	120	2	20

Matrix Spike Duplicate (MSD)

Lab Sample ID: HG2-HG3-21-0610A.051, Parent Sample ID: HG2-HG3-21-0610A.050

Run in Batch: HG2-HG3-21-0610A, Run Date: 06/10/2021 15:29, Prep Date: 06/10/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Mercury		115	80	120	8	20

QC Report - Batch QC Results

Metals, Prep Batch ID: MTD-060921-7

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

Blank (BLK)

Lab Sample ID: MT4-21-0609B.021.LRB

Run in Batch: MT4-21-0609B, Run Date: 06/09/2021 13:41, Prep Date: 06/09/2021, 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: MT4-21-0609B.019.LCS

Run in Batch: MT4-21-0609B, Run Date: 06/09/2021 13:38, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Arsenic		101	85	115
Chromium		98	85	115
Copper		98	85	115
Nickel		97	85	115
Zinc		100	85	115

Matrix Spike (MS)

Lab Sample ID: MT4-21-0609B.040.MS, Parent Sample ID: S25056.01

Run in Batch: MT4-21-0609B, Run Date: 06/09/2021 14:05, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Arsenic		105	75	125
Chromium		100	75	125
Copper		98	75	125
Nickel		100	75	125
Zinc		102	75	125

Matrix Spike (MS)

Lab Sample ID: MT4-21-0609B.064.MS, Parent Sample ID: S25038.10

Run in Batch: MT4-21-0609B, Run Date: 06/09/2021 14:36, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Arsenic		101	75	125
Chromium		98	75	125
Copper		97	75	125
Nickel		97	75	125
Zinc		96	75	125

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-21-0609B.041.MSD, Parent Sample ID: MT4-21-0609B.040.MS

Run in Batch: MT4-21-0609B, Run Date: 06/09/2021 14:07, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		105	75	125	0	20
Chromium		101	75	125	1	20
Copper		100	75	125	1	20
Nickel		100	75	125	0	20
Zinc		101	75	125	1	20

QC Report - Batch QC Results

Metals, Prep Batch ID: MTD-060921-7 (continued)

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

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-21-0609B.065.MSD, Parent Sample ID: MT4-21-0609B.064.MS

Run in Batch: MT4-21-0609B, Run Date: 06/09/2021 14:37, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		104	75	125	3	20
Chromium		104	75	125	5	20
Copper		99	75	125	2	20
Nickel		96	75	125	1	20
Zinc		110	75	125	3	20

QC Report - Batch QC Results

Other / Misc., Prep Batch ID: ACN210609-W1

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

Blank (BLK)

Lab Sample ID: ACN210609-W1.LRB1

Run in Batch: ACN210609-W1, Run Date: 06/09/2021 14:33, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 1

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

Blank (BLK)

Lab Sample ID: ACN210609-W1.LRB2

Run in Batch: ACN210609-W1, Run Date: 06/09/2021 15:19, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: ACN210609-W1.LCS1

Run in Batch: ACN210609-W1, Run Date: 06/09/2021 14:37, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Available Cyanide		100	88	109

Matrix Spike (MS)

Lab Sample ID: ACN210609-W1.MS1, Parent Sample ID: S25056.01

Run in Batch: ACN210609-W1, Run Date: 06/09/2021 14:51, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Available Cyanide		95	82	130

Matrix Spike Duplicate (MSD)

Lab Sample ID: ACN210609-W1.MSD1, Parent Sample ID: ACN210609-W1.MS1

Run in Batch: ACN210609-W1, Run Date: 06/09/2021 14:53, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Available Cyanide		98	82	130	3	15

Duplicate (DUP)

Lab Sample ID: ACN210609-W1.DP1, Parent Sample ID: S25056.01

Run in Batch: ACN210609-W1, Run Date: 06/09/2021 14:47, Prep Date: 06/09/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Available Cyanide		<1	15

Merit Laboratories Login Checklist

Lab Set ID:S25056

Client:OBG02 (O'Brien & Gere Engineers, Inc. - East Lansing, MI)

Project: RACER Coldwater Road

Submitted:06/08/2021 15:20 Login User: SRS

Attention: Clifford Yantz

Address: Ramboll Americas
2260 East Saginaw Street
East Lansing, MI 48823

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

Selection	Description	Note
Sample Receiving		
01.	☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer # IR 4.1
02.	☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun
03.	☐ Yes ☒ No ☐ N/A	Samples shipped
04.	☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box
05.	☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	☒ Yes ☐ No ☐ N/A	COC adequately filled out
07.	☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab
08.	☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC
09.	☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontacted to:
Preservation		
10.	☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation
11.	☒ Yes ☐ No ☐ N/A	Completed pH checks on preserved samples? (no VOAs)
12.	☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	☒ Yes ☐ No ☐ N/A	All bottles intact
14.	☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used
15.	☒ Yes ☐ No ☐ N/A	Merit bottles used
16.	☒ Yes ☐ No ☐ N/A	Sufficient sample volume received
17.	☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration
18.	☒ Yes ☐ No ☐ N/A	Samples submitted within holding time
19.	☐ Yes ☐ No ☒ N/A	Do water VOC or TOX bottles contain headspace

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

Client Review By: _____ Date: _____

Merit Laboratories Bottle Preservation Check

Lab Set ID: S25056 Submitted: 06/08/2021 15:20

Client: OBG02 (O'Brien & Gere Engineers, Inc. - East Lansing, MI)

Project: RACER Coldwater Road

Initial Preservation Check: 06/08/2021 15:31 SRS

Preservation Recheck (E200.8): N/A

Attention: Clifford Yantz

Address: Ramboll Americas
2260 East Saginaw Street
East Lansing, MI 48823

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

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S25056.01	125ml Amber PbCO ₃ /NaOH	>12			
S25056.01	125ml Plastic HNO ₃	<2			
S25056.01	250ml Plastic H ₂ SO ₄	<2			
S25056.01	32oz Glass HCL	<2			



C.O.C. PAGE # 1 OF 1

112286

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Total Metals					Certifications
Available Cyanide					☐ OHIO VAP ☐ Drinking Water
BOD / TSS					☐ DoD ☐ NPDES
Ammonia - Nitrogen					Project Locations
Phosphorus					☐ Detroit ☐ New York
FOG (Hex-Ext)					☐ Other _____
					Special Instructions

Containers & Preservatives

[illegible]

RELINQUISHED BY: SIGNATURE/ORGANIZATION			DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION			DATE	TIME
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL _____ 4.1	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS		

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

Rev. 5.18.12



Analytical Laboratory Report

Report ID: S25385.01(01)
Generated on 07/02/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
3600 Green Court Suite 750
Ann Arbor, MI 48105

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

Additional Contacts: Kevin Schneider

Report produced by

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

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

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

Report Summary

Lab Sample ID(s): S25385.01-S25385.03
Project: RACER Coldwater Road
Collected Date(s): 06/16/2021
Submitted Date/Time: 06/17/2021 15:30
Sampled by: Kevin Schneider
P.O. #: 1940002628 (TASK 37)

Table of Contents

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

Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

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

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

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

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

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

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

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

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

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

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

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

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

Report Narrative

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

Qualifier Descriptions

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

Glossary of Abbreviations

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

Method Summary

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

Parameter Summary

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



Analytical Laboratory Report

Sample Summary (3 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S25385.01	Field Blank - 061621	Water	06/16/21 18:42
S25385.02	02-PRCC-21-INF	Wastewater	06/16/21 18:45
S25385.03	02-PRCC-21-PRIM	Wastewater	06/16/21 18:50



Analytical Laboratory Report

Lab Sample ID: S25385.01

Sample Tag: Field Blank - 061621

Collected Date/Time: 06/16/2021 18:42

Matrix: Water

COC Reference: 142924

Sample Containers

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

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.75/6.89/10	ASTMD7979-19M	06/25/21 11:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/28/21 20:45, 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	4.1	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	
PFTTrDA*	Not detected	2.1	1.2	ng/L	2.06	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.06	754-91-6	
PFTeDA*	Not detected	4.1	1.9	ng/L	2.06	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.06	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.4	ng/L	2.06	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.06	919005-14-4	
HFPO-DA*	Not detected	10	2.1	ng/L	2.06	13252-13-6	



Analytical Laboratory Report

Lab Sample ID: S25385.02

Sample Tag: 02-PRCC-21-INF

Collected Date/Time: 06/16/2021 18:45

Matrix: Wastewater

COC Reference: 142924

Sample Containers

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

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.82/7.04/12	ASTMD7979-19M	06/25/21 11:30	KCV	

Organics

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

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.08	375-22-4	
PFPeA*	Not detected	6.2	1.0	ng/L	2.08	2706-90-3	X
4:2 FTSA*	Not detected	2.1	1.7	ng/L	2.08	757124-72-4	
PFHxA*	14	2.1	1.5	ng/L	2.08	307-24-4	
PFBS*	23	2.1	1.5	ng/L	2.08	375-73-5	
PFHpA*	4.9	2.1	1.5	ng/L	2.08	375-85-9	
PFPeS*	38	2.1	1.9	ng/L	2.08	2706-91-4	
6:2 FTSA*	Not detected	4.2	2.1	ng/L	2.08	27619-97-2	
PFOA*	16	2.1	1.7	ng/L	2.08	335-67-1	
PFHxS*	130	2.1	1.7	ng/L	2.08	355-46-4	
PFHxS-LN*	100	2.1	1.7	ng/L	2.08	355-46-4-LN	
PFHxS-BR*	22	2.1	1.7	ng/L	2.08	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.08	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.08	39108-34-4	
PFHpS*	22	2.1	2.1	ng/L	2.08	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.08	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.08	2355-31-9	
EtFOSAA*	2.5	4.2	2.1	ng/L	2.08	2991-50-6	J
PFOS*	1,800	2.1	2.0	ng/L	2.08	1763-23-1	
PFOS-LN*	1,200	2.1	2.0	ng/L	2.08	1763-23-1-LN	
PFOS-BR*	610	2.1	2.0	ng/L	2.08	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.5	ng/L	2.08	2058-94-8	
PFNS*	3.0	2.1	1.5	ng/L	2.08	68259-12-1	
PfDoDA*	Not detected	2.1	1.7	ng/L	2.08	307-55-1	
PFDS*	2.5	2.1	1.5	ng/L	2.08	335-77-3	
PFTTrDA*	Not detected	2.1	1.2	ng/L	2.08	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.08	754-91-6	
PFTeDA*	Not detected	4.2	1.9	ng/L	2.08	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.08	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.5	ng/L	2.08	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.08	919005-14-4	
HFPO-DA*	Not detected	10	2.1	ng/L	2.08	13252-13-6	

X-Elevated reporting limit due to matrix interference

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



Analytical Laboratory Report

Lab Sample ID: S25385.03

Sample Tag: 02-PRCC-21-PRIM

Collected Date/Time: 06/16/2021 18:50

Matrix: Wastewater

COC Reference: 142924

Sample Containers

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

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.71/6.90/12	ASTMD7979-19M	06/25/21 11:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/28/21 21:43, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.07	375-22-4	
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*	Not detected	2.1	1.4	ng/L	2.07	307-24-4	
PFBS*	Not detected	2.1	1.4	ng/L	2.07	375-73-5	
PFHpA*	Not detected	2.1	1.4	ng/L	2.07	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.07	2706-91-4	
6:2 FTSA*	Not detected	4.1	2.1	ng/L	2.07	27619-97-2	
PFOA*	Not detected	2.1	1.7	ng/L	2.07	335-67-1	
PFHxS*	Not detected	2.1	1.7	ng/L	2.07	355-46-4	
PFHxS-LN*	Not detected	2.1	1.7	ng/L	2.07	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.7	ng/L	2.07	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.07	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.07	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.07	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.07	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.07	2355-31-9	
EtFOSAA*	Not detected	4.1	2.1	ng/L	2.07	2991-50-6	
PFOS*	Not detected	2.1	2.0	ng/L	2.07	1763-23-1	
PFOS-LN*	Not detected	2.1	2.0	ng/L	2.07	1763-23-1-LN	
PFOS-BR*	Not detected	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	
PFTDA*	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	

Merit Laboratories Login Checklist

Lab Set ID:S25385

Client:OBG02 (Ramboll Americas)

Project: RACER Coldwater Road

Submitted:06/17/2021 15:30 Login User: REJ

Attention: Clifford Yantz

Address: Ramboll Americas
3600 Green Court Suite 750
Ann Arbor, MI 48105

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

Selection	Description	Note
Sample Receiving		
01. ☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer #	IR 5.4
02. ☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun	
03. ☐ Yes ☒ No ☐ N/A	Samples shipped	
04. ☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box	
05. ☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody		
06. ☒ Yes ☐ No ☐ N/A	COC adequately filled out	
07. ☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab	
08. ☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC	
09. ☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontacted to:	
Preservation		
10. ☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation	
11. ☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)	
12. ☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions		
13. ☒ Yes ☐ No ☐ N/A	All bottles intact	
14. ☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used	
15. ☒ Yes ☐ No ☐ N/A	Merit bottles used	
16. ☒ Yes ☐ No ☐ N/A	Sufficient sample volume received	
17. ☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration	
18. ☒ Yes ☐ No ☐ N/A	Samples submitted within holding time	
19. ☐ Yes ☐ No ☒ N/A	Do water VOC or TOX bottles contain headspace	

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

Client Review By: _____ Date: _____



142924

INVOICE TO

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

Certifications

☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☐ New York
☐ Other

Special Instructions

Containers & Preservatives[illegible]

RELINQUISHED BY: SIGNATURE/ORGANIZATION			DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION			DATE	TIME
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL <u>5.4</u>	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS		

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



Quality Control Report

Report ID: QC-S25385
Generated on 07/02/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
3600 Green Court Suite 750
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): S25385.01-S25385.03
Project: RACER Coldwater Road
Submitted Date/Time: 06/17/2021 15:30
Sampled by: Kevin Schneider
P.O. #: 1940002628 (TASK 37)

QC Report Sections

Cover Page (Page 1)
Analysis Summary (Pages 2-4)
Prep Batch Summary (Page 5)
Internal Standards per Lab Sample (Pages 6-8)
Internal Standards per QC Sample (Pages 9-11)
Batch QC Results (Pages 12-15)

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: S25385.01

Sample Tag: Field Blank - 061621

Collected Date/Time: 06/16/2021 18:42

Matrix: Water

COC Reference: 142924

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Organics - Volatiles</i>						
28 PFAs	ASTMD7979-19M	06/28/21 20:45	AK210628	PF210625W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S25385.02

Sample Tag: 02-PRCC-21-INF

Collected Date/Time: 06/16/2021 18:45

Matrix: Wastewater

COC Reference: 142924

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/28/21 21:04	AK210628	PF210625W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S25385.03

Sample Tag: 02-PRCC-21-PRIM

Collected Date/Time: 06/16/2021 18:50

Matrix: Wastewater

COC Reference: 142924

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
<i>Organics - Volatiles</i>						
28 PFAs	ASTMD7979-19M	06/28/21 21:43	AK210628	PF210625W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF210625W2

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S25385.01	28 PFAs	ASTMD7979-19M	06/28/21 20:45	AK210628
S25385.02	28 PFAs	ASTMD7979-19M	06/28/21 21:04	AK210628
S25385.03	28 PFAs	ASTMD7979-19M	06/28/21 21:43	AK210628

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S25385.01

Sample Tag: Field Blank - 061621

Collected Date/Time: 06/16/2021 18:42

Matrix: Water

COC Reference: 142924

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210628, Run Date: 06/28/2021 20:45, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		70.1	50.0	150.0
M2-6:2FTSA		73.2	50.0	150.0
M2-8:2FTSA		64.9	50.0	150.0
M2PFTeDA		85.5	12.0	218.0
M3PFBS		100.4	50.0	150.0
M3PFHxS		103.4	50.0	150.0
M4PFHpA		97.6	50.0	150.0
M5PFHxA		93.0	50.0	150.0
M5PFPeA		95.6	50.0	150.0
M6PFDA		94.4	50.0	150.0
M7PFUnDA		88.3	50.0	150.0
M8FOSA		100.1	50.0	150.0
M8PFOA		96.1	50.0	150.0
M8PFOS		99.5	50.0	150.0
M9-PFNA		108.3	50.0	150.0
MPFBA		101.0	50.0	150.0
MPFDoDA		94.8	50.0	150.0
d3N-MeFOSAA		112.0	50.0	150.0
d5EtFOSAA		94.3	50.0	150.0
MHFPO-DA		90.3	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S25385.02

Sample Tag: 02-PRCC-21-INF

Collected Date/Time: 06/16/2021 18:45

Matrix: Wastewater

COC Reference: 142924

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210628, Run Date: 06/28/2021 21:04, Matrix: WW, Dilution: 2.08

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		98.8	50.0	150.0
M2-6:2FTSA		70.7	50.0	150.0
M2-8:2FTSA		60.5	50.0	150.0
M2PFTeDA		97.1	12.0	218.0
M3PFBS		104.7	50.0	150.0
M3PFHxS		107.9	50.0	150.0
M4PFHpA		98.8	50.0	150.0
M5PFHxA		89.1	50.0	150.0
M5PFPeA		96.9	50.0	150.0
M6PFDA		90.9	50.0	150.0
M7PFUnDA		91.8	50.0	150.0
M8FOSA		89.9	50.0	150.0
M8PFOA		97.7	50.0	150.0
M8PFOS		97.2	50.0	150.0
M9-PFNA		101.8	50.0	150.0
MPFBA		96.2	50.0	150.0
MPFDoDA		95.5	50.0	150.0
d3N-MeFOSAA		93.4	50.0	150.0
d5EtFOSAA		103.1	50.0	150.0
MHFPO-DA		92.3	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S25385.03

Sample Tag: 02-PRCC-21-PRIM

Collected Date/Time: 06/16/2021 18:50

Matrix: Wastewater

COC Reference: 142924

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210628, Run Date: 06/28/2021 21:43, Matrix: WW, Dilution: 2.07

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		60.8	50.0	150.0
M2-6:2FTSA		54.8	50.0	150.0
M2-8:2FTSA		52.6	50.0	150.0
M2PFTeDA		83.8	12.0	218.0
M3PFBS		98.6	50.0	150.0
M3PFHxS		101.5	50.0	150.0
M4PFHpA		99.4	50.0	150.0
M5PFHxA		90.3	50.0	150.0
M5PFPeA		94.4	50.0	150.0
M6PFDA		86.2	50.0	150.0
M7PFUnDA		89.6	50.0	150.0
M8FOSA		101.3	50.0	150.0
M8PFOA		89.8	50.0	150.0
M8PFOS		94.1	50.0	150.0
M9-PFNA		97.4	50.0	150.0
MPFBA		95.4	50.0	150.0
MPFDoDA		92.8	50.0	150.0
d3N-MeFOSAA		91.4	50.0	150.0
d5EtFOSAA		93.9	50.0	150.0
MHFPO-DA		86.8	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF210625W2

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

Blank (BLK)

Lab Sample ID: AK210628.BLK210625A

Run in Batch: AK210628, Run Date: 06/29/2021 05:12, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		79.4	50.0	150.0
M2-6:2FTSA		75.2	50.0	150.0
M2-8:2FTSA		79.2	50.0	150.0
M2PFTeDA		74.5	12.0	218.0
M3PFBS		121.5	50.0	150.0
M3PFHxS		125.2	50.0	150.0
M4PFHpA		108.9	50.0	150.0
M5PFHxA		108.6	50.0	150.0
M5PFPeA		107.4	50.0	150.0
M6PFDA		103.4	50.0	150.0
M7PFUnDA		106.8	50.0	150.0
M8FOSA		110.9	50.0	150.0
M8PFOA		111.3	50.0	150.0
M8PFOS		111.3	50.0	150.0
M9-PFNA		118.2	50.0	150.0
MPFBA		112.1	50.0	150.0
MPFDoDA		96.6	50.0	150.0
d3N-MeFOSAA		117.0	50.0	150.0
d5EtFOSAA		116.1	50.0	150.0
MHFPO-DA		94.2	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK210628.LCS210625B

Run in Batch: AK210628, Run Date: 06/28/2021 18:48, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		75.2	50.0	150.0
M2-6:2FTSA		73.0	50.0	150.0
M2-8:2FTSA		69.6	50.0	150.0
M2PFTeDA		78.5	12.0	218.0
M3PFBS		98.8	50.0	150.0
M3PFHxS		110.6	50.0	150.0
M4PFHpA		97.0	50.0	150.0
M5PFHxA		89.7	50.0	150.0
M5PFPeA		98.6	50.0	150.0
M6PFDA		94.5	50.0	150.0
M7PFUnDA		79.4	50.0	150.0
M8FOSA		100.6	50.0	150.0
M8PFOA		87.1	50.0	150.0
M8PFOS		104.3	50.0	150.0
M9-PFNA		107.0	50.0	150.0
MPFBA		100.8	50.0	150.0
MPFDoDA		85.8	50.0	150.0
d3N-MeFOSAA		95.8	50.0	150.0
d5EtFOSAA		101.6	50.0	150.0
MHFPO-DA		89.5	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK210628.LCSD210625B, Parent Sample ID: AK210628.LCS210625B

Run in Batch: AK210628, Run Date: 06/28/2021 19:07, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		75.2	50.0	150.0
M2-6:2FTSA		76.1	50.0	150.0
M2-8:2FTSA		67.2	50.0	150.0
M2PFTeDA		79.9	12.0	218.0
M3PFBS		106.0	50.0	150.0
M3PFHxS		113.2	50.0	150.0
M4PFHpA		102.0	50.0	150.0
M5PFHxA		92.2	50.0	150.0
M5PFPeA		97.4	50.0	150.0
M6PFDA		93.9	50.0	150.0
M7PFUnDA		85.8	50.0	150.0
M8FOSA		95.5	50.0	150.0
M8PFOA		90.3	50.0	150.0
M8PFOS		92.5	50.0	150.0
M9-PFNA		107.2	50.0	150.0
MPFBA		101.0	50.0	150.0
MPFDoDA		88.4	50.0	150.0
d3N-MeFOSAA		103.4	50.0	150.0
d5EtFOSAA		100.1	50.0	150.0
MHFPO-DA		93.9	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK210628.2538502M, Parent Sample ID: S25385.02

Run in Batch: AK210628, Run Date: 06/28/2021 21:24, Prep Date: 06/25/2021, Matrix: WW, Dilution: 2.08

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	153.8	50.0	150.0
M2-6:2FTSA		78.5	50.0	150.0
M2-8:2FTSA		61.5	50.0	150.0
M2PFTeDA		95.7	12.0	218.0
M3PFBS		99.5	50.0	150.0
M3PFHxS		109.0	50.0	150.0
M4PFHpA		106.9	50.0	150.0
M5PFHxA		100.1	50.0	150.0
M5PFPeA		92.6	50.0	150.0
M6PFDA		100.8	50.0	150.0
M7PFUnDA		98.8	50.0	150.0
M8FOSA		100.3	50.0	150.0
M8PFOA		99.2	50.0	150.0
M8PFOS		100.7	50.0	150.0
M9-PFNA		117.6	50.0	150.0
MPFBA		72.9	50.0	150.0
MPFDoDA		95.3	50.0	150.0
d3N-MeFOSAA		100.4	50.0	150.0
d5EtFOSAA		119.4	50.0	150.0
MHFPO-DA		79.8	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: AK210628.2538503D, Parent Sample ID: S25385.03

Run in Batch: AK210628, Run Date: 06/28/2021 22:03, Prep Date: 06/25/2021, Matrix: WW, Dilution: 2.07

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		58.6	50.0	150.0
M2-6:2FTSA		57.2	50.0	150.0
M2-8:2FTSA		64.7	50.0	150.0
M2PFTeDA		83.9	12.0	218.0
M3PFBS		102.2	50.0	150.0
M3PFHxS		109.3	50.0	150.0
M4PFHpA		99.6	50.0	150.0
M5PFHxA		91.2	50.0	150.0
M5PFPeA		92.1	50.0	150.0
M6PFDA		94.8	50.0	150.0
M7PFUnDA		96.0	50.0	150.0
M8FOSA		98.5	50.0	150.0
M8PFOA		95.7	50.0	150.0
M8PFOS		97.1	50.0	150.0
M9-PFNA		108.3	50.0	150.0
MPFBA		97.4	50.0	150.0
MPFDoDA		98.9	50.0	150.0
d3N-MeFOSAA		88.6	50.0	150.0
d5EtFOSAA		99.9	50.0	150.0
MHFPO-DA		89.8	50.0	150.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210625W2

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

Blank (BLK)

Lab Sample ID: AK210628.BLK210625A

Run in Batch: AK210628, Run Date: 06/29/2021 05:12, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: AK210628.LCS210625B

Run in Batch: AK210628, Run Date: 06/28/2021 18:48, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		106.0	70.0	130.0
PFPeA		94.1	70.0	130.0
4:2 FTSA		112.0	70.0	130.0
PFHxA		104.0	70.0	130.0
PFBS		107.0	70.0	130.0
HFPO-DA		116.0	70.0	130.0
PFFHpA		113.0	70.0	130.0
PFPeS		99.6	70.0	130.0
ADONA		120.0	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210625W2 (continued)

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

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK210628.LCS210625B

Run in Batch: AK210628, Run Date: 06/28/2021 18:48, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		106.0	70.0	130.0
PFOA		109.0	70.0	130.0
PFHxS		104.0	70.0	130.0
PFNA		91.7	70.0	130.0
8:2 FTSA		102.0	70.0	130.0
PFHpS		78.8	70.0	130.0
N-MeFOSAA		103.0	70.0	130.0
PFDA		107.0	70.0	130.0
PFOS		82.2	70.0	130.0
EtFOSAA		106.0	70.0	130.0
PFUnDA		122.0	70.0	130.0
9CL-PF3ONS		90.4	70.0	130.0
PFNS		85.5	70.0	130.0
PFDODA		105.0	70.0	130.0
PFDS		86.5	70.0	130.0
PFTTrDA		99.9	70.0	130.0
11CL-PF3OUdS		98.9	70.0	130.0
FOSA		105.0	70.0	130.0
PFTeDA		86.5	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK210628.LCSD210625B, Parent Sample ID: AK210628.LCS210625B

Run in Batch: AK210628, Run Date: 06/28/2021 19:07, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		105.0	70.0	130.0	0.9	30.0
PFPeA		94.8	70.0	130.0	0.7	30.0
4:2 FTSA		115.0	70.0	130.0	2.6	30.0
PFHxA		102.0	70.0	130.0	1.9	30.0
PFBS		108.0	70.0	130.0	0.9	30.0
HFPO-DA		100.0	70.0	130.0	14.8	30.0
PFHpA		97.7	70.0	130.0	14.5	30.0
PFPeS		87.5	70.0	130.0	12.9	30.0
ADONA		105.0	70.0	130.0	13.3	30.0
6:2 FTSA		101.0	70.0	130.0	4.8	30.0
PFOA		97.8	70.0	130.0	10.8	30.0
PFHxS		99.1	70.0	130.0	4.8	30.0
PFNA		97.1	70.0	130.0	5.7	30.0
8:2 FTSA		120.0	70.0	130.0	16.2	30.0
PFHpS		92.8	70.0	130.0	16.3	30.0
N-MeFOSAA		93.8	70.0	130.0	9.3	30.0
PFDA		114.0	70.0	130.0	6.3	30.0
PFOS		100.0	70.0	130.0	19.5	30.0
EtFOSAA		111.0	70.0	130.0	4.6	30.0
PFUnDA		108.0	70.0	130.0	12.2	30.0
9CL-PF3ONS		109.0	70.0	130.0	18.7	30.0
PFNS		102.0	70.0	130.0	17.6	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210625W2 (continued)

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

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK210628.LCSD210625B, Parent Sample ID: AK210628.LCS210625B

Run in Batch: AK210628, Run Date: 06/28/2021 19:07, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PfDoDA		111.0	70.0	130.0	5.6	30.0
PFDS		96.5	70.0	130.0	10.9	30.0
PfTrDA		109.0	70.0	130.0	8.7	30.0
11CL-PF3OUdS		116.0	70.0	130.0	15.9	30.0
FOSA		99.9	70.0	130.0	5.0	30.0
PFTeDA		99.8	70.0	130.0	14.3	30.0

Matrix Spike (MS)

Lab Sample ID: AK210628.2538502M, Parent Sample ID: S25385.02

Run in Batch: AK210628, Run Date: 06/28/2021 21:24, Prep Date: 06/25/2021, Matrix: WW, Dilution: 2.08

Analyte	Flags	% Rec	LCL	UCL
PFBA		125.0	70.0	130.0
PFPeA		125.0	70.0	130.0
4:2 FTSA		115.4	70.0	130.0
PFHxA		121.2	70.0	130.0
PFBS	*	141.3	70.0	130.0
PfHpA		110.7	70.0	130.0
PFPeS	*	165.4	70.0	130.0
6:2 FTSA		96.2	70.0	130.0
PFOA		119.2	70.0	130.0
PFHxS	*	230.8	70.0	130.0
PFNA		78.8	70.0	130.0
8:2 FTSA		96.2	70.0	130.0
PfHpS		103.8	70.0	130.0
PFDA		96.2	70.0	130.0
N-MeFOSAA		105.8	70.0	130.0
EtFOSAA		86.1	70.0	130.0
PFOS	*	1538.5	70.0	130.0
PFUnDA		96.2	70.0	130.0
PFNS		85.6	70.0	130.0
PfDoDA		105.8	70.0	130.0
PFDS		86.1	70.0	130.0
PfTrDA		105.8	70.0	130.0
FOSA		96.2	70.0	130.0
PFTeDA		94.2	70.0	130.0
11CL-PF3OUdS		105.8	70.0	130.0
9CL-PF3ONS		92.3	70.0	130.0
ADONA		96.2	70.0	130.0
HFPO-DA		115.4	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK210628.2538503D, Parent Sample ID: S25385.03

Run in Batch: AK210628, Run Date: 06/28/2021 22:03, Prep Date: 06/25/2021, Matrix: WW, Dilution: 2.07

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210625W2 (continued)

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

Duplicate (DUP) (continued)

Lab Sample ID: AK210628.2538503D, Parent Sample ID: S25385.03

Run in Batch: AK210628, Run Date: 06/28/2021 22:03, Prep Date: 06/25/2021, Matrix: WW, Dilution: 2.07

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		NC	30.0
PFOS-LN		NC	30.0
PFOS-BR		NC	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDODA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
PFTeDA		NC	30.0
11CL-PF3OUdS		NC	30.0
9CL-PF3ONS		NC	30.0
ADONA		NC	30.0
HFPO-DA		NC	30.0



2680 East Lansing Dr., East Lansing, MI 48823
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C.O.C. PAGE #

OR

142924

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME				Clifford Yantz / Kevin Schneider			
COMPANY				Ramboll			
ADDRESS				3600 Green Court Ste 750			
CITY				STATE		ZIP CODE	
Ann Arbor				MI		48105	
PHONE NO.		FAX NO.		P.O. NO.			
313-333-0215				1940002428 (task 37)			
E-MAIL ADDRESS				QUOTE NO.			
Clifford.Yantz@Ramboll.com / Kevin.Schneider@Ramboll.com							

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME RACER Coldwater Road	SAMPLER(S) - PLEASE PRINT/SIGN NAME Karin Schneider <i>[Signature]</i>
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____	
DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____	

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

Containers & Preservatives[illegible]

RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>	☒ Sampler	DATE 6/17/21	TIME 11:40
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>		DATE 6/17/21	TIME 11:40
RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>		DATE 6/17/21	TIME 13:30
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>		DATE 6/17/21	TIME 15:20

RELINQUISHED BY: SIGNATURE/ORGANIZATION			DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION			DATE	TIME
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL <u>5.4</u>	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS		

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

Rev. 5.18.12



Analytical Laboratory Report

Report ID: S25420.01(01)
Generated on 07/08/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
3600 Green Court Ste 750
Ann Arbor, MI 48105

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

Additional Contacts: Kevin Schneider

Report produced by

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

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

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

Report Summary

Lab Sample ID(s): S25420.01-S25420.05
Project: RACER Coldwater Road
Collected Date(s): 06/18/2021
Submitted Date/Time: 06/18/2021 11:20
Sampled by: Kevin Schneider
P.O. #: 1940002628 (TASK 37)

Table of Contents

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

Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

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

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

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

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

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

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

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

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

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

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

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

Report Narrative

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

Qualifier Descriptions

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

Glossary of Abbreviations

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

Method Summary

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

Parameter Summary

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



Analytical Laboratory Report

Sample Summary (5 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S25420.01	Field Blank - 061821	Water	06/18/21 09:06
S25420.02	02-PRCC-21-EFF-151	Wastewater	06/18/21 09:08
S25420.03	02-PRCC-21-MID-2-151	Wastewater	06/18/21 09:10
S25420.04	02-PRCC-21-MID-1-151	Wastewater	06/18/21 09:12
S25420.05	02-PRCC-21-PRIM-151	Wastewater	06/18/21 09:14



Analytical Laboratory Report

Lab Sample ID: S25420.01

Sample Tag: Field Blank - 061821

Collected Date/Time: 06/18/2021 09:06

Matrix: Water

COC Reference: 107567

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.09/7.00/10	ASTMD7979-19M	06/25/21 11:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/28/21 22:22, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.96	375-22-4	
PFPeA*	Not detected	3.9	0.98	ng/L	1.96	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.96	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.96	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.96	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.96	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.96	2706-91-4	
6:2 FTSA*	Not detected	3.9	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	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.96	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.96	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.96	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.96	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.96	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.96	919005-14-4	
HFPO-DA*	Not detected	9.8	2.0	ng/L	1.96	13252-13-6	



Analytical Laboratory Report

Lab Sample ID: S25420.02

Sample Tag: 02-PRCC-21-EFF-151

Collected Date/Time: 06/18/2021 09:08

Matrix: Wastewater

COC Reference: 107567

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.22/7.01/11	ASTMD7979-19M	06/25/21 11:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/28/21 22:42, Analyst: KCV

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



Analytical Laboratory Report

Lab Sample ID: S25420.03

Sample Tag: 02-PRCC-21-MID-2-151

Collected Date/Time: 06/18/2021 09:10

Matrix: Wastewater

COC Reference: 107567

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.04/7.02/10	ASTMD7979-19M	06/25/21 11:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/28/21 23:01, Analyst: KCV

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



Analytical Laboratory Report

Lab Sample ID: S25420.04

Sample Tag: 02-PRCC-21-MID-1-151

Collected Date/Time: 06/18/2021 09:12

Matrix: Wastewater

COC Reference: 107567

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.70/7.03/11	ASTMD7979-19M	06/25/21 11:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/28/21 23:21, Analyst: KCV

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



Analytical Laboratory Report

Lab Sample ID: S25420.05

Sample Tag: 02-PRCC-21-PRIM-151

Collected Date/Time: 06/18/2021 09:14

Matrix: Wastewater

COC Reference: 107567

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.60/6.98/11	ASTMD7979-19M	06/25/21 11:30	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 06/28/21 23:40, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.96	375-22-4	
PFPeA*	Not detected	3.9	0.98	ng/L	1.96	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.96	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.96	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.96	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.96	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.96	2706-91-4	
6:2 FTSA*	Not detected	3.9	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	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.96	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.96	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.96	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.96	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.96	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.96	919005-14-4	
HFPO-DA*	Not detected	9.8	2.0	ng/L	1.96	13252-13-6	

Merit Laboratories Login Checklist

Lab Set ID:S25420

Client:OBG02 (Ramboll Americas)

Project: RACER Coldwater Road

Submitted:06/18/2021 11:20 Login User: MMC

Attention: Clifford Yantz

Address: Ramboll Americas
3600 Green Court Ste 750
Ann Arbor, MI 48105

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

Selection	Description	Note
Sample Receiving		
01. ☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C	Thermometer # IR 3.9
02. ☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun	
03. ☐ Yes ☒ No ☐ N/A	Samples shipped	
04. ☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box	
05. ☐ Yes ☐ No ☒ N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody		
06. ☒ Yes ☐ No ☐ N/A	COC adequately filled out	
07. ☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab	
08. ☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC	
09. ☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontacted to:	
Preservation		
10. ☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation	
11. ☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)	
12. ☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions		
13. ☒ Yes ☐ No ☐ N/A	All bottles intact	
14. ☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used	
15. ☒ Yes ☐ No ☐ N/A	Merit bottles used	
16. ☒ Yes ☐ No ☐ N/A	Sufficient sample volume received	
17. ☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration	
18. ☒ Yes ☐ No ☐ N/A	Samples submitted within holding time	
19. ☐ Yes ☐ No ☒ N/A	Do water VOC or TOX bottles contain headspace	

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

Client Review By: _____ Date: _____



C.O.C. PAGE # 1 OF 1

107567

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME			
Clifford Vantz / Kevin Schneider			
COMPANY			
Ramboll			
ADDRESS			
3600 Green Court Ste 750			
CITY			STATE
Ann Arbor			MI
PHONE NO.			ZIP CODE
733-333-0211			48105
FAX NO.		P.O. NO.	
		1940002628 (task 37)	
E-MAIL ADDRESS		QUOTE NO.	
Kevin.Schneider@ramboll.com clifford.vantz@ramboll.com			

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME RACER Coldwater Road	SAMPLER(S) - PLEASE PRINT/SIGN NAME Kevin Schneider <i>KS</i>
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____	
DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____	

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

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	PFA	☐ Other _____ Special Instructions
	DATE	TIME												
25420.01	6/18/21	906	Field Blank - 061821	QC	1	1							X	low level reporting limit with estimated values
.02	↓	908	02-PRCC-21-EFF-151	WH	3	3							X	
.03	↓	910	02-PRCC-21-MID-2-151	↓	↓	↓							X	
.04	↓	912	02-PRCC-21-MID-1-151	↓	↓	↓							X	
.05	↓	914	02-PRCC-21-PRIM-151	↓	↓	↓							X	
(3)														

RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>	☒ Sampler	DATE 6/18/21	TIME 1020
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>		DATE 6/18/21	TIME 10:20
RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>		DATE 6/18/21	TIME 11:20
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>[Signature]</i>		DATE 6/18/21	TIME 1120

RELINQUISHED BY: SIGNATURE/ORGANIZATION			DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION			DATE	TIME
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL <u>3.9</u>	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS		

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

Rev. 5.18.12



Quality Control Report

Report ID: QC-S25420-01
Generated on 07/08/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
3600 Green Court Ste 750
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): S25420.01-S25420.05
Project: RACER Coldwater Road
Submitted Date/Time: 06/18/2021 11:20
Sampled by: Kevin Schneider
P.O. #: 1940002628 (TASK 37)

QC Report Sections

Cover Page (Page 1)
Analysis Summary (Pages 2-6)
Prep Batch Summary (Page 7)
Internal Standards per Lab Sample (Pages 8-12)
Internal Standards per QC Sample (Pages 13-15)
Batch QC Results (Pages 16-19)

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: S25420.01

Sample Tag: Field Blank - 061821

Collected Date/Time: 06/18/2021 09:06

Matrix: Water

COC Reference: 107567

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/28/21 22:22	AK210628	PF210625W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S25420.02

Sample Tag: 02-PRCC-21-EFF-151

Collected Date/Time: 06/18/2021 09:08

Matrix: Wastewater

COC Reference: 107567

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/28/21 22:42	AK210628	PF210625W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S25420.03

Sample Tag: 02-PRCC-21-MID-2-151

Collected Date/Time: 06/18/2021 09:10

Matrix: Wastewater

COC Reference: 107567

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/28/21 23:01	AK210628	PF210625W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S25420.04

Sample Tag: 02-PRCC-21-MID-1-151

Collected Date/Time: 06/18/2021 09:12

Matrix: Wastewater

COC Reference: 107567

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/28/21 23:21	AK210628	PF210625W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S25420.05

Sample Tag: 02-PRCC-21-PRIM-151

Collected Date/Time: 06/18/2021 09:14

Matrix: Wastewater

COC Reference: 107567

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	06/28/21 23:40	AK210628	PF210625W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF210625W2

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S25420.01	28 PFAs	ASTMD7979-19M	06/28/21 22:22	AK210628
S25420.02	28 PFAs	ASTMD7979-19M	06/28/21 22:42	AK210628
S25420.03	28 PFAs	ASTMD7979-19M	06/28/21 23:01	AK210628
S25420.04	28 PFAs	ASTMD7979-19M	06/28/21 23:21	AK210628
S25420.05	28 PFAs	ASTMD7979-19M	06/28/21 23:40	AK210628

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S25420.01

Sample Tag: Field Blank - 061821

Collected Date/Time: 06/18/2021 09:06

Matrix: Water

COC Reference: 107567

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210628, Run Date: 06/28/2021 22:22, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		61.3	50.0	150.0
M2-6:2FTSA		58.9	50.0	150.0
M2-8:2FTSA		59.1	50.0	150.0
M2PFTeDA		83.0	12.0	218.0
M3PFBS		94.5	50.0	150.0
M3PFHxS		103.0	50.0	150.0
M4PFHpA		94.2	50.0	150.0
M5PFHxA		86.0	50.0	150.0
M5PFPeA		90.2	50.0	150.0
M6PFDA		87.4	50.0	150.0
M7PFUnDA		87.5	50.0	150.0
M8FOSA		94.7	50.0	150.0
M8PFOA		85.9	50.0	150.0
M8PFOS		94.5	50.0	150.0
M9-PFNA		102.3	50.0	150.0
MPFBA		94.3	50.0	150.0
MPFDoDA		91.2	50.0	150.0
d3N-MeFOSAA		89.8	50.0	150.0
d5EtFOSAA		97.6	50.0	150.0
MHFPO-DA		99.0	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S25420.02

Sample Tag: 02-PRCC-21-EFF-151

Collected Date/Time: 06/18/2021 09:08

Matrix: Wastewater

COC Reference: 107567

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210628, Run Date: 06/28/2021 22:42, Matrix: WW, Dilution: 2.11

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		64.6	50.0	150.0
M2-6:2FTSA		62.3	50.0	150.0
M2-8:2FTSA		55.9	50.0	150.0
M2PFTeDA		74.2	12.0	218.0
M3PFBS		97.9	50.0	150.0
M3PFHxS		107.8	50.0	150.0
M4PFHpA		100.9	50.0	150.0
M5PFHxA		93.7	50.0	150.0
M5PFPeA		97.2	50.0	150.0
M6PFDA		100.5	50.0	150.0
M7PFUnDA		88.7	50.0	150.0
M8FOSA		98.2	50.0	150.0
M8PFOA		93.0	50.0	150.0
M8PFOS		93.2	50.0	150.0
M9-PFNA		106.5	50.0	150.0
MPFBA		99.1	50.0	150.0
MPFDoDA		90.3	50.0	150.0
d3N-MeFOSAA		93.2	50.0	150.0
d5EtFOSAA		97.2	50.0	150.0
MHFPO-DA		89.0	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S25420.03

Sample Tag: 02-PRCC-21-MID-2-151

Collected Date/Time: 06/18/2021 09:10

Matrix: Wastewater

COC Reference: 107567

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210628, Run Date: 06/28/2021 23:01, Matrix: WW, Dilution: 1.99

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		57.1	50.0	150.0
M2-6:2FTSA		59.4	50.0	150.0
M2-8:2FTSA		59.0	50.0	150.0
M2PFTeDA		88.3	12.0	218.0
M3PFBS		100.0	50.0	150.0
M3PFHxS		101.8	50.0	150.0
M4PFHpA		106.5	50.0	150.0
M5PFHxA		92.2	50.0	150.0
M5PFPeA		96.8	50.0	150.0
M6PFDA		93.7	50.0	150.0
M7PFUnDA		84.2	50.0	150.0
M8FOSA		102.1	50.0	150.0
M8PFOA		97.9	50.0	150.0
M8PFOS		105.1	50.0	150.0
M9-PFNA		110.0	50.0	150.0
MPFBA		97.3	50.0	150.0
MPFDODA		97.5	50.0	150.0
d3N-MeFOSAA		96.5	50.0	150.0
d5EtFOSAA		96.3	50.0	150.0
MHFPO-DA		86.8	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S25420.04

Sample Tag: 02-PRCC-21-MID-1-151

Collected Date/Time: 06/18/2021 09:12

Matrix: Wastewater

COC Reference: 107567

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210628, Run Date: 06/28/2021 23:21, Matrix: WW, Dilution: 1.94

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		63.2	50.0	150.0
M2-6:2FTSA		65.3	50.0	150.0
M2-8:2FTSA		57.8	50.0	150.0
M2PFTeDA		89.8	12.0	218.0
M3PFBS		106.0	50.0	150.0
M3PFHxS		124.1	50.0	150.0
M4PFHpA		113.6	50.0	150.0
M5PFHxA		97.7	50.0	150.0
M5PFPeA		95.7	50.0	150.0
M6PFDA		103.9	50.0	150.0
M7PFUnDA		95.0	50.0	150.0
M8FOSA		99.5	50.0	150.0
M8PFOA		94.6	50.0	150.0
M8PFOS		108.9	50.0	150.0
M9-PFNA		114.6	50.0	150.0
MPFBA		101.1	50.0	150.0
MPFDoDA		96.1	50.0	150.0
d3N-MeFOSAA		93.8	50.0	150.0
d5EtFOSAA		109.0	50.0	150.0
MHFPO-DA		93.1	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S25420.05

Sample Tag: 02-PRCC-21-PRIM-151

Collected Date/Time: 06/18/2021 09:14

Matrix: Wastewater

COC Reference: 107567

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210628, Run Date: 06/28/2021 23:40, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		59.7	50.0	150.0
M2-6:2FTSA		61.0	50.0	150.0
M2-8:2FTSA		65.5	50.0	150.0
M2PFTeDA		83.6	12.0	218.0
M3PFBS		97.0	50.0	150.0
M3PFHxS		113.2	50.0	150.0
M4PFHpA		103.4	50.0	150.0
M5PFHxA		97.3	50.0	150.0
M5PFPeA		95.9	50.0	150.0
M6PFDA		98.6	50.0	150.0
M7PFUnDA		93.2	50.0	150.0
M8FOSA		106.1	50.0	150.0
M8PFOA		98.0	50.0	150.0
M8PFOS		99.6	50.0	150.0
M9-PFNA		97.7	50.0	150.0
MPFBA		102.3	50.0	150.0
MPFDoDA		98.1	50.0	150.0
d3N-MeFOSAA		97.6	50.0	150.0
d5EtFOSAA		101.6	50.0	150.0
MHFPO-DA		95.5	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF210625W2

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

Blank (BLK)

Lab Sample ID: AK210628.BLK210625A

Run in Batch: AK210628, Run Date: 06/29/2021 05:12, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		79.4	50.0	150.0
M2-6:2FTSA		75.2	50.0	150.0
M2-8:2FTSA		79.2	50.0	150.0
M2PFTeDA		74.5	12.0	218.0
M3PFBS		121.5	50.0	150.0
M3PFHxS		125.2	50.0	150.0
M4PFHpA		108.9	50.0	150.0
M5PFHxA		108.6	50.0	150.0
M5PFPeA		107.4	50.0	150.0
M6PFDA		103.4	50.0	150.0
M7PFUnDA		106.8	50.0	150.0
M8FOSA		110.9	50.0	150.0
M8PFOA		111.3	50.0	150.0
M8PFOS		111.3	50.0	150.0
M9-PFNA		118.2	50.0	150.0
MPFBA		112.1	50.0	150.0
MPFDoDA		96.6	50.0	150.0
d3N-MeFOSAA		117.0	50.0	150.0
d5EtFOSAA		116.1	50.0	150.0
MHFPO-DA		94.2	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK210628.LCS210625B

Run in Batch: AK210628, Run Date: 06/28/2021 18:48, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		75.2	50.0	150.0
M2-6:2FTSA		73.0	50.0	150.0
M2-8:2FTSA		69.6	50.0	150.0
M2PFTeDA		78.5	12.0	218.0
M3PFBS		98.8	50.0	150.0
M3PFHxS		110.6	50.0	150.0
M4PFHpA		97.0	50.0	150.0
M5PFHxA		89.7	50.0	150.0
M5PFPeA		98.6	50.0	150.0
M6PFDA		94.5	50.0	150.0
M7PFUnDA		79.4	50.0	150.0
M8FOSA		100.6	50.0	150.0
M8PFOA		87.1	50.0	150.0
M8PFOS		104.3	50.0	150.0
M9-PFNA		107.0	50.0	150.0
MPFBA		100.8	50.0	150.0
MPFDoDA		85.8	50.0	150.0
d3N-MeFOSAA		95.8	50.0	150.0
d5EtFOSAA		101.6	50.0	150.0
MHFPO-DA		89.5	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK210628.LCSD210625B, Parent Sample ID: AK210628.LCS210625B

Run in Batch: AK210628, Run Date: 06/28/2021 19:07, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		75.2	50.0	150.0
M2-6:2FTSA		76.1	50.0	150.0
M2-8:2FTSA		67.2	50.0	150.0
M2PFTeDA		79.9	12.0	218.0
M3PFBS		106.0	50.0	150.0
M3PFHxS		113.2	50.0	150.0
M4PFHpA		102.0	50.0	150.0
M5PFHxA		92.2	50.0	150.0
M5PFPeA		97.4	50.0	150.0
M6PFDA		93.9	50.0	150.0
M7PFUnDA		85.8	50.0	150.0
M8FOSA		95.5	50.0	150.0
M8PFOA		90.3	50.0	150.0
M8PFOS		92.5	50.0	150.0
M9-PFNA		107.2	50.0	150.0
MPFBA		101.0	50.0	150.0
MPFDoDA		88.4	50.0	150.0
d3N-MeFOSAA		103.4	50.0	150.0
d5EtFOSAA		100.1	50.0	150.0
MHFPO-DA		93.9	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK210628.2538502M, Parent Sample ID: S25385.02

Run in Batch: AK210628, Run Date: 06/28/2021 21:24, Prep Date: 06/25/2021, Matrix: WW, Dilution: 2.08

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	153.8	50.0	150.0
M2-6:2FTSA		78.5	50.0	150.0
M2-8:2FTSA		61.5	50.0	150.0
M2PFTeDA		95.7	12.0	218.0
M3PFBS		99.5	50.0	150.0
M3PFHxS		109.0	50.0	150.0
M4PFHpA		106.9	50.0	150.0
M5PFHxA		100.1	50.0	150.0
M5PFPeA		92.6	50.0	150.0
M6PFDA		100.8	50.0	150.0
M7PFUnDA		98.8	50.0	150.0
M8FOSA		100.3	50.0	150.0
M8PFOA		99.2	50.0	150.0
M8PFOS		100.7	50.0	150.0
M9-PFNA		117.6	50.0	150.0
MPFBA		72.9	50.0	150.0
MPFDoDA		95.3	50.0	150.0
d3N-MeFOSAA		100.4	50.0	150.0
d5EtFOSAA		119.4	50.0	150.0
MHFPO-DA		79.8	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: AK210628.2538503D, Parent Sample ID: S25385.03

Run in Batch: AK210628, Run Date: 06/28/2021 22:03, Prep Date: 06/25/2021, Matrix: WW, Dilution: 2.07

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		58.6	50.0	150.0
M2-6:2FTSA		57.2	50.0	150.0
M2-8:2FTSA		64.7	50.0	150.0
M2PFTeDA		83.9	12.0	218.0
M3PFBS		102.2	50.0	150.0
M3PFHxS		109.3	50.0	150.0
M4PFHpA		99.6	50.0	150.0
M5PFHxA		91.2	50.0	150.0
M5PFPeA		92.1	50.0	150.0
M6PFDA		94.8	50.0	150.0
M7PFUnDA		96.0	50.0	150.0
M8FOSA		98.5	50.0	150.0
M8PFOA		95.7	50.0	150.0
M8PFOS		97.1	50.0	150.0
M9-PFNA		108.3	50.0	150.0
MPFBA		97.4	50.0	150.0
MPFDoDA		98.9	50.0	150.0
d3N-MeFOSAA		88.6	50.0	150.0
d5EtFOSAA		99.9	50.0	150.0
MHFPO-DA		89.8	50.0	150.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210625W2

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

Blank (BLK)

Lab Sample ID: AK210628.BLK210625A

Run in Batch: AK210628, Run Date: 06/29/2021 05:12, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: AK210628.LCS210625B

Run in Batch: AK210628, Run Date: 06/28/2021 18:48, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		106.0	70.0	130.0
PFPeA		94.1	70.0	130.0
4:2 FTSA		112.0	70.0	130.0
PFHxA		104.0	70.0	130.0
PFBS		107.0	70.0	130.0
HFPO-DA		116.0	70.0	130.0
PFFHpA		113.0	70.0	130.0
PFPeS		99.6	70.0	130.0
ADONA		120.0	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210625W2 (continued)

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

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK210628.LCS210625B

Run in Batch: AK210628, Run Date: 06/28/2021 18:48, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		106.0	70.0	130.0
PFOA		109.0	70.0	130.0
PFHxS		104.0	70.0	130.0
PFNA		91.7	70.0	130.0
8:2 FTSA		102.0	70.0	130.0
PFHpS		78.8	70.0	130.0
N-MeFOSAA		103.0	70.0	130.0
PFDA		107.0	70.0	130.0
PFOS		82.2	70.0	130.0
EtFOSAA		106.0	70.0	130.0
PFUnDA		122.0	70.0	130.0
9CL-PF3ONS		90.4	70.0	130.0
PFNS		85.5	70.0	130.0
PFDODA		105.0	70.0	130.0
PFDS		86.5	70.0	130.0
PFTTrDA		99.9	70.0	130.0
11CL-PF3OUdS		98.9	70.0	130.0
FOSA		105.0	70.0	130.0
PFTeDA		86.5	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK210628.LCSD210625B, Parent Sample ID: AK210628.LCS210625B

Run in Batch: AK210628, Run Date: 06/28/2021 19:07, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		105.0	70.0	130.0	0.9	30.0
PFPeA		94.8	70.0	130.0	0.7	30.0
4:2 FTSA		115.0	70.0	130.0	2.6	30.0
PFHxA		102.0	70.0	130.0	1.9	30.0
PFBS		108.0	70.0	130.0	0.9	30.0
HFPO-DA		100.0	70.0	130.0	14.8	30.0
PFHpA		97.7	70.0	130.0	14.5	30.0
PFPeS		87.5	70.0	130.0	12.9	30.0
ADONA		105.0	70.0	130.0	13.3	30.0
6:2 FTSA		101.0	70.0	130.0	4.8	30.0
PFOA		97.8	70.0	130.0	10.8	30.0
PFHxS		99.1	70.0	130.0	4.8	30.0
PFNA		97.1	70.0	130.0	5.7	30.0
8:2 FTSA		120.0	70.0	130.0	16.2	30.0
PFHpS		92.8	70.0	130.0	16.3	30.0
N-MeFOSAA		93.8	70.0	130.0	9.3	30.0
PFDA		114.0	70.0	130.0	6.3	30.0
PFOS		100.0	70.0	130.0	19.5	30.0
EtFOSAA		111.0	70.0	130.0	4.6	30.0
PFUnDA		108.0	70.0	130.0	12.2	30.0
9CL-PF3ONS		109.0	70.0	130.0	18.7	30.0
PFNS		102.0	70.0	130.0	17.6	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210625W2 (continued)

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

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK210628.LCSD210625B, Parent Sample ID: AK210628.LCS210625B

Run in Batch: AK210628, Run Date: 06/28/2021 19:07, Prep Date: 06/25/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDODA		111.0	70.0	130.0	5.6	30.0
PFDS		96.5	70.0	130.0	10.9	30.0
PFTTrDA		109.0	70.0	130.0	8.7	30.0
11CL-PF3OUdS		116.0	70.0	130.0	15.9	30.0
FOSA		99.9	70.0	130.0	5.0	30.0
PFTeDA		99.8	70.0	130.0	14.3	30.0

Matrix Spike (MS)

Lab Sample ID: AK210628.2538502M, Parent Sample ID: S25385.02

Run in Batch: AK210628, Run Date: 06/28/2021 21:24, Prep Date: 06/25/2021, Matrix: WW, Dilution: 2.08

Analyte	Flags	% Rec	LCL	UCL
PFBA		125.0	70.0	130.0
PFPeA		125.0	70.0	130.0
4:2 FTSA		115.4	70.0	130.0
PFHxA		121.2	70.0	130.0
PFBS	*	141.3	70.0	130.0
PFHpA		110.7	70.0	130.0
PFPeS	*	165.4	70.0	130.0
6:2 FTSA		96.2	70.0	130.0
PFOA		119.2	70.0	130.0
PFHxS	*	230.8	70.0	130.0
PFNA		78.8	70.0	130.0
8:2 FTSA		96.2	70.0	130.0
PFHpS		103.8	70.0	130.0
PFDA		96.2	70.0	130.0
N-MeFOSAA		105.8	70.0	130.0
EtFOSAA		86.1	70.0	130.0
PFOS	*	1538.5	70.0	130.0
PFUnDA		96.2	70.0	130.0
PFNS		85.6	70.0	130.0
PFDODA		105.8	70.0	130.0
PFDS		86.1	70.0	130.0
PFTTrDA		105.8	70.0	130.0
FOSA		96.2	70.0	130.0
PFTeDA		94.2	70.0	130.0
11CL-PF3OUdS		105.8	70.0	130.0
9CL-PF3ONS		92.3	70.0	130.0
ADONA		96.2	70.0	130.0
HFPO-DA		115.4	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK210628.2538503D, Parent Sample ID: S25385.03

Run in Batch: AK210628, Run Date: 06/28/2021 22:03, Prep Date: 06/25/2021, Matrix: WW, Dilution: 2.07

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF210625W2 (continued)

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

Duplicate (DUP) (continued)

Lab Sample ID: AK210628.2538503D, Parent Sample ID: S25385.03

Run in Batch: AK210628, Run Date: 06/28/2021 22:03, Prep Date: 06/25/2021, Matrix: WW, Dilution: 2.07

Analyte	Flags	RPD	RPD CL
4:2 FTSA		NC	30.0
PFHxA		NC	30.0
PFBS		NC	30.0
PFHpA		NC	30.0
PFPeS		NC	30.0
6:2 FTSA		NC	30.0
PFOA		NC	30.0
PFHxS		NC	30.0
PFHxS-LN		NC	30.0
PFHxS-BR		NC	30.0
PFNA		NC	30.0
8:2 FTSA		NC	30.0
PFHpS		NC	30.0
PFDA		NC	30.0
N-MeFOSAA		NC	30.0
EtFOSAA		NC	30.0
PFOS		NC	30.0
PFOS-LN		NC	30.0
PFOS-BR		NC	30.0
PFUnDA		NC	30.0
PFNS		NC	30.0
PFDODA		NC	30.0
PFDS		NC	30.0
PFTTrDA		NC	30.0
FOSA		NC	30.0
PFTeDA		NC	30.0
11CL-PF3OUdS		NC	30.0
9CL-PF3ONS		NC	30.0
ADONA		NC	30.0
HFPO-DA		NC	30.0



C.O.C. PAGE # 1 OF 1

107567

CHAIN OF CUSTODY RECORD

INVOICE TO

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications

☐ OHIO VAP ☐ Drinking Water

☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☐ New York

☐ Other _____

Special Instructions

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	PFA	☐ Other _____ Special Instructions
	DATE	TIME												
25420.01	6/18/21	906	Field Blank - 061821	QC	1	1							X	low level Reporting limit with estimated values
.02	↓	908	02-PRCC-21-EFF-151	WH	3	3							X	
.03	↓	910	02-PRCC-21-MID-2-151	↓	↓	↓							X	
.04	↓	912	02-PRCC-21-MID-1-151	↓	↓	↓							X	
.05	↓	914	02-PRCC-21-PRIM-151	↓	↓	↓							X	
(3)														

RELINQUISHED BY: SIGNATURE/ORGANIZATION			DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION			DATE	TIME
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL <u>3.9</u>	
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS		

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

Rev. 5.18.12