

Mr. Tom Hutchings

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

RE: *Discharge Permit Submittal- April 2020 through June 2020*

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

FILE: 15388/75178/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, 2020 to June 30, 2020 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.

- Periodic Report on Continued Compliance, certification
- Periodic Report on Continued Compliance and GSWVR 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 4, 2020.
- Analytical Reports provided by Merit Laboratories, Inc. for samples from the on-Site, PFAS pretreatment system collected on June 23, 2020 and June 25, 2020 during the discharge of the liquids from the on-Site, above ground collection tank through the system.
- Copy of Chain-of-Custody forms.

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

In addition, the PFAS analytical results for the effluent 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 23, 2020, June 24, 2020, and June 25, 2020 during the accumulation tank discharge. The influent sample collected on June 23, 2020 had a detection of 2,600 ng/L for PFOS. The highest detection from the primary GAC drum sample collected on

July 27, 2020

Ramboll
2260 E. Saginaw Street
East Lansing, MI 48823
USA

T 414-837-3607
F 414-837-3608
<https://ramboll.com>

June 24, 2020 was 8.9 ng/L for PFOS. PFOS was detected at a concentration of 2.7 ng/L in the secondary GAC drum on June 24, 2020 and at a concentration of 5.5 ng/L in the primary GAC drum on June 25, 2020. 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



Clifford S. Yantz

Senior 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, 2020 through June 30, 2020

Average Volume of Daily Discharge (during reporting period): 1,791.66 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: Senior Hydrogeologist, O'Brien & Gere Engineers, Inc.
As agent for the RACER Trust

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

Date Signed by Authorized Representative: 7/27/20

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

TABLES

Table 1
Periodic Report on Continued Compliance
City of Flint Sewer User Self-Monitoring Report
Second Quarter - 2020 - 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	2.9	<3	2	7.61	0.01	8
Test Method	4500-NH3 D	10360	1664A	4500-H+ B	4500-PE	2540 D
Test Date	6/7/2020	6/10/2020	6/15/2020	6/4/2020	6/10/2020	6/11/2020
Sample Date	6/4/2020	6/4/2020	6/4/2020	6/4/2020	6/4/2020	6/4/2020
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 - 2020 - 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	0.004	0.059	0.327	<0.0002	0.117	0.033	<0.002
Test Method	200.8	200.8	200.8	245.1	200.8	200.8	1677
Test Date	6/5/2020	6/5/2020	6/5/2020	6/8/2020	6/5/2020	6/5/2020	6/8/2020
Sample Date	6/4/2020	6/4/2020	6/4/2020	6/4/2020	6/4/2020	6/4/2020	6/4/2020
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 2020
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)	
6/23/2020 - 6/24/2020	733,548	738,721	5,173	9:00 AM (6/23/20)	12:20 PM (6/24/20)	3.15	16.9	62.4	6.98
6/25/2020	738,721	738,923	202	8:58	10:10	2.81	22.2	72.0	7.66

Total Discharge Volume (3 Days): 5,375
Average Discharge Volume (3 Days): 1,791.66

NOTES :

TABLE 3
RACER Trust - Coldwater Road
Pre-and Polyfluoroalkyl Substances (PFAS) Sampling Results - June 2020

Coldwater Road - PFAS Pretreatment System Samples

Perfluorinated Compound	Well/Sample ID:	02-PRCC-20-INF (Influent Sample)	02-PRCC-20-PRIM (Primary GAC Drum Sample)	02-PRCC-20-PRIM-115 (Primary GAC Drum Sample after 115 Bed Volumes)	02-PRCC-20-PRIM-119 (Primary GAC Drum Sample after 119 Bed Volumes)	02-PRCC-20-MID-1-115 (Secondary GAC Drum Sample after 115 Bed Volumes)	02-PRCC-20-MID-1-119 (Secondary GAC Drum Sample after 119 Bed Volumes)	02-PRCC-20-MID-2-119 (Tertiary GAC Drum Sample after 119 Bed Volumes)	02-PRCC-20-EFF-119 (Effluent Sample after 119 Bed Volumes)	Field Blank-062320 (Field Blank)	Field Blank-062520 (Field Blank)	EGLE Draft Drinking Water Maximum Contaminant Levels (MCLs)
	Sample Date:	6/23/2020	6/23/2020	6/24/2020	6/25/2020	6/24/2020	6/25/2020	6/25/2020	6/25/2020	6/23/2020	6/25/2020	
Perfluorobutanoic Acid (PFBA)		<20	<9.8	21 U	32 U	<10	18 U	30 U	24 U	<9.8	18	--
Perfluoropentanoic Acid (PFPeA)		<4.1	<3.9	1.8	0.98	<4.1	<4.1	<4.0	<3.8	<3.9	<4.0	--
4:2 Fluorotelomer Sulfonic Acid (4:2 FTSA)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluorohexanoic Acid (PFHxA)		11	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	400,000
Perfluorobutane Sulfonic Acid (PFBS)		19	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	420
Perfluoroheptanoic Acid (PFHpA)		6.1	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluoropentane Sulfonic Acid (PFPeS)		30	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
6:2 Fluorotelomer Sulfonic Acid (6:2 FTSA)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluorooctanoic Acid (PFOA)		20.4	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	8
Perfluorohexane Sulfonic Acid (PFHxS)		100	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	51
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)		84	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)		17	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluorononanoic Acid (PFNA)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	6
8:2 Fluorotelomer Sulfonic Acid (8:2 FTSA)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluoroheptane Sulfonic Acid (PFHpS)		26	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluorodecanoic Acid (PFDA)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
N-methyl Perfluorooctanesulfonamidoacetic Acid (N-MeFOSAA)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
N-Ethyl Perfluorooctane Sulfonamidoacetic Acid (EtFOSAA)		<4.1	<3.9	<3.8	<3.9	<4.1	<4.1	<4.0	<3.8	<3.9	<4.0	--
Perfluorooctane Sulfonic Acid (PFOS)		2,600	<2.0	8.9	5.5	2.7	<2.1	<2.0	<1.9	<2.0	<2.0	16
Perfluorooctane Sulfonic Acid (PFOS-LN)		1,700	<2.0	3.9	2.9	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluorooctane Sulfonic Acid (PFOS-BR)		990	<2.0	3.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluoroundecanoic Acid (PFUnDA)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluorononane Sulfonic Acid (PFNS)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluorododecanoic Acid (PFDDA)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluorodecane Sulfonic Acid (PFDS)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluorotridecanoic Acid (PFTDA)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluorooctane Sulfonamide (FOSA)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Perfluorotetradecanoic Acid (PFTeDA)		<4.1	<3.9	<3.8	<3.9	<4.1	<4.1	<4.0	<3.8	<3.9	<4.0	--
11-chloroicosafuoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9CI-PF3ONS)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
4,8-dioxa-3H-perfluorononanoic acid (ADONA)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Hexafluoropropylene oxide dimer (HFPO-DA)		<2.0	<2.0	<1.9	<2.0	<2.1	<2.1	<2.0	<1.9	<2.0	<2.0	--
Combined PFOA - PFOS		2620.4	0.0	8.9	5.5	2.7	0.0	0.0	0.0	0.0	0.0	--
Total Other Per-and Polyfluoroalkyl Substances		192.1	0.0	22.8	33.0	0.0	18.0	30.0	24.0	0.0	18.0	--

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 Draft Drinking Water Maximum Contaminant Levels (MCLs) 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) The detection of PFBA in Field Blank-062520 was caused from the centrifuge tubes leaching out PFBA during the extraction process. The 5X Rule was applied to PFBA detections. If the sample value(s) is less than 5 times the blank concentration (5X Rule), then positive results are qualified "U," undetected.

ANALYTICAL REPORTS



Analytical Laboratory Report

Report ID: S14549.01(01)+QC01
Generated on 06/16/2020

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
2260 East Saginaw Street
East Lansing, MI 48823

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

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): S14549.01
Project: RACER Coldwater Rd
Collected Date(s): 06/04/2020
Submitted Date/Time: 06/04/2020 15:25
Sampled by: Kevin Schneider
P.O. #: 11900504

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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)

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

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

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
S14549.01	02-PRCC-20	Wastewater	06/04/20 10:20



Analytical Laboratory Report

Lab Sample ID: S14549.01

Sample Tag: 02-PRCC-20

Collected Date/Time: 06/04/2020 10:20

Matrix: Wastewater

COC Reference: 116023

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.8	IR
1	250ml Plastic	H2SO4	Yes	4.8	IR
1	125ml Amber	PbCO3/NaOH	Yes	4.8	IR
1	1L Plastic	None	Yes	4.8	IR
1	32oz Glass	HCL	Yes	4.8	IR
1	500ml Plastic	None	Yes	4.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	06/08/20 10:30	JRH	
TBOD5 - Set*	Completed	HACH 10360	06/05/20 19:10	ASB	
Metal Digestion	Completed	SW3015A	06/05/20 10:20	CCM	

Inorganics

Method: E1664A, Run Date: 06/15/20 22:43, Analyst: PTW

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

Method: HACH 10360, Run Date: 06/10/20 18:38, Analyst: ASB

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

Method: SM2540D, Run Date: 06/11/20 20:45, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	8	3		mg/L	1.24		

Method: SM2550B, Run Date: 06/04/20 10:20, Analyst: KS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Field Temperature*	69	1		oF	1		

Method: SM4500-H+ B, Run Date: 06/04/20 10:20, Analyst: KS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Field pH*	7.61	0.01		STD Units	1		

Method: SM4500-NH3 D, Run Date: 06/07/20 17:07, Analyst: MJC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Ammonia-N (Undistilled)	2.9	0.1	0.015	mg/L	5	7664-41-7	

Method: SM4500-PE, Run Date: 06/10/20 13:59, Analyst: MJC

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

Metals

Method: E200.8, Run Date: 06/05/20 13:24, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.004	0.002		mg/L	5	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S14549.01 (continued)

Sample Tag: 02-PRCC-20

Method: E200.8, Run Date: 06/05/20 13:24, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	0.059	0.005		mg/L	5	7440-47-3	
Copper	0.327	0.005		mg/L	5	7440-50-8	
Nickel	0.117	0.005		mg/L	5	7440-02-0	
Zinc	0.033	0.005		mg/L	5	7440-66-6	

Method: E245.1, Run Date: 06/08/20 14:58, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.00002		mg/L	1	7439-97-6	

Other / Misc.

Method: OIA-1677, Run Date: 06/08/20 11:00, 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: S14549.01(01)+QC01
Generated on 06/16/2020

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
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): S14549.01
Project: RACER Coldwater Rd
Submitted Date/Time: 06/04/2020 15:25
Sampled by: Kevin Schneider
P.O. #: 11900504

QC Report Sections

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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: S14549.01

Sample Tag: 02-PRCC-20

Collected Date/Time: 06/04/2020 10:20

Matrix: Wastewater

COC Reference: 116023

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Ammonia-N (Undistilled)	SM4500-NH3 D	06/07/20 17:07	AMN200607QC	AMN200607QC	No	BLK/LCS/MS/MSD/DU
Oil & Grease n-Hexane Extract.	E1664A	06/15/20 22:43	OGHEX200614W01	OGHEX200614W01	No	BLK/LCS
TBOD5	HACH 10360	06/10/20 18:38	BOD200605	BOD200605	No	BLK/LCS/DUP
Total Phosphorus	SM4500-PE	06/10/20 13:59	PHS200610QC	PHS200610QC	No	BLK/LCS/MS/DUP
Total Suspended Solids	SM2540D	06/11/20 20:45	TSS200611	TSS200611	No	BLK/LCS
Metals						
Arsenic	E200.8	06/05/20 13:24	MT4-20-0605A	MTD-060520-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	06/05/20 13:24	MT4-20-0605A	MTD-060520-1	No	BLK/LCS/MS/MSD
Copper	E200.8	06/05/20 13:24	MT4-20-0605A	MTD-060520-1	No	BLK/LCS/MS/MSD
Mercury	E245.1	06/08/20 14:58	HG2-HG3-20-0608	AHGD-060820-1	No	BLK/LCS/MS/MSD
Nickel	E200.8	06/05/20 13:24	MT4-20-0605A	MTD-060520-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	06/05/20 13:24	MT4-20-0605A	MTD-060520-1	No	BLK/LCS/MS/MSD
Other / Misc.						
Available Cyanide	OIA-1677	06/08/20 11:00	ACN200608-W1	ACN200608-W1	No	BLK/LCS/MS/MSD/DU

QC Report - Prep Batch Summary

Inorganics, Prep Batch ID: AMN200607QC

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S14549.01	Ammonia-N (Undistilled)	SM4500-NH3 D	06/07/20 17:07	AMN200607QC

Inorganics, Prep Batch ID: BOD200605

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S14549.01	TBOD5	HACH 10360	06/10/20 18:38	BOD200605

Inorganics, Prep Batch ID: OGHEX200614W01

Surrogates: No, QC Types: BLK/LCS

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S14549.01	Oil & Grease n-Hexane Extract.	E1664A	06/15/20 22:43	OGHEX200614W01

Inorganics, Prep Batch ID: PHS200610QC

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S14549.01	Total Phosphorus	SM4500-PE	06/10/20 13:59	PHS200610QC

Inorganics, Prep Batch ID: TSS200611

Surrogates: No, QC Types: BLK/LCS

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S14549.01	Total Suspended Solids	SM2540D	06/11/20 20:45	TSS200611

Metals, Prep Batch ID: HGD-060820-1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S14549.01	Mercury	E245.1	06/08/20 14:58	HG2-HG3-20-0608A

Metals, Prep Batch ID: MTD-060520-1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S14549.01	Arsenic	E200.8	06/05/20 13:24	MT4-20-0605A
S14549.01	Chromium	E200.8	06/05/20 13:24	MT4-20-0605A
S14549.01	Copper	E200.8	06/05/20 13:24	MT4-20-0605A
S14549.01	Nickel	E200.8	06/05/20 13:24	MT4-20-0605A
S14549.01	Zinc	E200.8	06/05/20 13:24	MT4-20-0605A

Other / Misc., Prep Batch ID: ACN200608-W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S14549.01	Available Cyanide	OIA-1677	06/08/20 11:00	ACN200608-W1

QC Report - Batch QC Results

Inorganics, Prep Batch ID: AMN200607QC

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

Blank (BLK)

Lab Sample ID: AMN200607QC.LRB1

Run in Batch: AMN200607QC, Run Date: 06/07/2020 12:31, Prep Date: 06/07/2020, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: AMN200607QC.LCS1

Run in Batch: AMN200607QC, Run Date: 06/07/2020 13:42, Prep Date: 06/07/2020, Matrix: Liquid, Dilution: 1

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

Matrix Spike (MS)

Lab Sample ID: AMN200607QC.MS1, Parent Sample ID: S14529.01

Run in Batch: AMN200607QC, Run Date: 06/07/2020 15:11, Prep Date: 06/07/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		100	80	120

Matrix Spike Duplicate (MSD)

Lab Sample ID: AMN200607QC.MSD1, Parent Sample ID: AMN200607QC.MS1

Run in Batch: AMN200607QC, Run Date: 06/07/2020 15:32, Prep Date: 06/07/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Ammonia-N (Undistilled)		98	80	120	1	15

Duplicate (DUP)

Lab Sample ID: AMN200607QC.DP1, Parent Sample ID: S14529.01

Run in Batch: AMN200607QC, Run Date: 06/07/2020 15:26, Prep Date: 06/07/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Ammonia-N (Undistilled)		0.8	20

QC Report - Batch QC Results

Inorganics, Prep Batch ID: BOD200605

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

Blank (BLK)

Lab Sample ID: BOD200605.LRB1

Run in Batch: BOD200605, Run Date: 06/10/2020 18:38, Prep Date: 06/10/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
TBOD5		ND	3	mg/L

Blank (BLK)

Lab Sample ID: BOD200605.LRB2

Run in Batch: BOD200605, Run Date: 06/10/2020 18:38, Prep Date: 06/10/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
TBOD5		ND	3	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: BOD200605.LCS1

Run in Batch: BOD200605, Run Date: 06/10/2020 18:38, Prep Date: 06/10/2020, Matrix: Liquid, Dilution: 20

Analyte	Flags	% Rec	LCL	UCL
TBOD5		100.6	51	166

Laboratory Control Sample (LCS)

Lab Sample ID: BOD200605.LCS2

Run in Batch: BOD200605, Run Date: 06/10/2020 18:38, Prep Date: 06/10/2020, Matrix: Liquid, Dilution: 20

Analyte	Flags	% Rec	LCL	UCL
TBOD5		103.8	51	166

Duplicate (DUP)

Lab Sample ID: BOD200605.DP1, Parent Sample ID: S14604.01

Run in Batch: BOD200605, Run Date: 06/10/2020 18:38, Prep Date: 06/10/2020, Matrix: Liquid, Dilution: 60

Analyte	Flags	RPD	RPD CL
TBOD5		2.4	20

Duplicate (DUP)

Lab Sample ID: BOD200605.DP2, Parent Sample ID: S14604.02

Run in Batch: BOD200605, Run Date: 06/10/2020 18:38, Prep Date: 06/10/2020, Matrix: Liquid, Dilution: 60

Analyte	Flags	RPD	RPD CL
TBOD5		0.2	20

QC Report - Batch QC Results

Inorganics, Prep Batch ID: OGHEX200614W01

Surrogates: No, QC Types: BLK/LCS

Blank (BLK)

Lab Sample ID: OGHEX200614W01.LRB3

Run in Batch: OGHEX200614W01, Run Date: 06/14/2020 22:44, Prep Date: 06/14/2020, 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: OGHEX200614W01.LCS1

Run in Batch: OGHEX200614W01, Run Date: 06/14/2020 22:44, Prep Date: 06/14/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Oil & Grease n-Hexane Extract.		99	78	114

Laboratory Control Sample (LCS)

Lab Sample ID: OGHEX200614W01.LCS2

Run in Batch: OGHEX200614W01, Run Date: 06/14/2020 22:44, Prep Date: 06/14/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Oil & Grease n-Hexane Extract.		97	78	114

QC Report - Batch QC Results

Inorganics, Prep Batch ID: PHS200610QC

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

Blank (BLK)

Lab Sample ID: PHS200610QC.LRB1

Run in Batch: PHS200610QC, Run Date: 06/10/2020 13:20, Prep Date: 06/10/2020, Matrix: Liquid, Dilution: 1

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

Blank (BLK)

Lab Sample ID: PHS200610QC.LRB2

Run in Batch: PHS200610QC, Run Date: 06/10/2020 13:28, Prep Date: 06/10/2020, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: PHS200610QC.LCS1

Run in Batch: PHS200610QC, Run Date: 06/10/2020 13:37, Prep Date: 06/10/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		91	90	110

Matrix Spike (MS)

Lab Sample ID: PHS200610QC.MS1, Parent Sample ID: S14548.01

Run in Batch: PHS200610QC, Run Date: 06/10/2020 19:11, Prep Date: 06/10/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		91	80	120

Duplicate (DUP)

Lab Sample ID: PHS200610QC.DP1, Parent Sample ID: S14562.03

Run in Batch: PHS200610QC, Run Date: 06/10/2020 19:08, Prep Date: 06/10/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Phosphorus		2.6	20

QC Report - Batch QC Results

Inorganics, Prep Batch ID: TSS200611

Surrogates: No, QC Types: BLK/LCS

Blank (BLK)

Lab Sample ID: TSS200611.LRB1

Run in Batch: TSS200611, Run Date: 06/11/2020 20:45, Prep Date: 06/11/2020, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: TSS200611.LCS1

Run in Batch: TSS200611, Run Date: 06/11/2020 20:45, Prep Date: 06/11/2020, Matrix: Liquid, Dilution: 10.0

Analyte	Flags	% Rec	LCL	UCL
Total Suspended Solids		101.5	81.9	111

Laboratory Control Sample (LCS)

Lab Sample ID: TSS200611.LCS2

Run in Batch: TSS200611, Run Date: 06/11/2020 20:45, Prep Date: 06/11/2020, Matrix: Liquid, Dilution: 10.0

Analyte	Flags	% Rec	LCL	UCL
Total Suspended Solids		92.1	81.9	111

QC Report - Batch QC Results

Metals, Prep Batch ID: HGD-060820-1

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

Blank (BLK)

Lab Sample ID: HG2-HG3-20-0608A.016

Run in Batch: HG2-HG3-20-0608A, Run Date: 06/08/2020 14:15, Prep Date: 06/08/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Mercury		ND	0.03	ug/L

Laboratory Control Sample (LCS)

Lab Sample ID: HG2-HG3-20-0608A.015

Run in Batch: HG2-HG3-20-0608A, Run Date: 06/08/2020 14:13, Prep Date: 06/08/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		113	85	115

Matrix Spike (MS)

Lab Sample ID: HG2-HG3-20-0608A.026, Parent Sample ID: S14493.01

Run in Batch: HG2-HG3-20-0608A, Run Date: 06/08/2020 14:33, Prep Date: 06/08/2020, Matrix: Liquid, Dilution: 2

Analyte	Flags	% Rec	LCL	UCL
Mercury		105	80	120

Matrix Spike (MS)

Lab Sample ID: HG2-HG3-20-0608A.033, Parent Sample ID: S14509.02

Run in Batch: HG2-HG3-20-0608A, Run Date: 06/08/2020 14:46, Prep Date: 06/08/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		95	80	120

Matrix Spike Duplicate (MSD)

Lab Sample ID: HG2-HG3-20-0608A.027, Parent Sample ID: HG2-HG3-20-0608A.026

Run in Batch: HG2-HG3-20-0608A, Run Date: 06/08/2020 14:35, Prep Date: 06/08/2020, Matrix: Liquid, Dilution: 2

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Mercury		93	80	120	13	20

Matrix Spike Duplicate (MSD)

Lab Sample ID: HG2-HG3-20-0608A.034, Parent Sample ID: HG2-HG3-20-0608A.033

Run in Batch: HG2-HG3-20-0608A, Run Date: 06/08/2020 14:48, Prep Date: 06/08/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Mercury		94	80	120	1	20

QC Report - Batch QC Results

Metals, Prep Batch ID: MTD-060520-1

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

Blank (BLK)

Lab Sample ID: MT4-20-0605A.024.LRB

Run in Batch: MT4-20-0605A, Run Date: 06/05/2020 12:08, Prep Date: 06/05/2020, 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: MT4-20-0605A.022.LCS

Run in Batch: MT4-20-0605A, Run Date: 06/05/2020 11:53, Prep Date: 06/05/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Arsenic		99	85	115
Chromium		95	85	115
Copper		99	85	115
Nickel		98	85	115
Zinc		101	85	115

Matrix Spike (MS)

Lab Sample ID: MT4-20-0605A.053.MS, Parent Sample ID: S14429.01

Run in Batch: MT4-20-0605A, Run Date: 06/05/2020 13:02, Prep Date: 06/05/2020, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Arsenic		100	75	125
Chromium		102	75	125
Copper		91	75	125
Nickel		94	75	125
Zinc		97	75	125

Matrix Spike (MS)

Lab Sample ID: MT4-20-0605A.078.MS, Parent Sample ID: S14517.05

Run in Batch: MT4-20-0605A, Run Date: 06/05/2020 13:46, Prep Date: 06/05/2020, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Arsenic		100	75	125
Chromium		103	75	125
Copper		102	75	125
Nickel		99	75	125
Zinc		103	75	125

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-20-0605A.054.MSD, Parent Sample ID: MT4-20-0605A.053.MS

Run in Batch: MT4-20-0605A, Run Date: 06/05/2020 13:03, Prep Date: 06/05/2020, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		102	75	125	2	20
Chromium		100	75	125	2	20
Copper		92	75	125	0	20
Nickel		94	75	125	0	20
Zinc		96	75	125	1	20

QC Report - Batch QC Results

Metals, Prep Batch ID: MTD-060520-1 (continued)

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

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-20-0605A.079.MSD, Parent Sample ID: MT4-20-0605A.078.MS

Run in Batch: MT4-20-0605A, Run Date: 06/05/2020 13:49, Prep Date: 06/05/2020, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		102	75	125	2	20
Chromium		101	75	125	2	20
Copper		99	75	125	2	20
Nickel		98	75	125	1	20
Zinc		103	75	125	0	20

QC Report - Batch QC Results

Other / Misc., Prep Batch ID: ACN200608-W1

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

Blank (BLK)

Lab Sample ID: ACN200608-W1.LRB1

Run in Batch: ACN200608-W1, Run Date: 06/08/2020 10:36, Prep Date: 06/08/2020, Matrix: Liquid, Dilution: 1

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

Blank (BLK)

Lab Sample ID: ACN200608-W1.LRB2

Run in Batch: ACN200608-W1, Run Date: 06/08/2020 11:04, Prep Date: 06/08/2020, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: ACN200608-W1.LCS1

Run in Batch: ACN200608-W1, Run Date: 06/08/2020 10:40, Prep Date: 06/08/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Available Cyanide		95	88	109

Matrix Spike (MS)

Lab Sample ID: ACN200608-W1.MS1, Parent Sample ID: S14517.03

Run in Batch: ACN200608-W1, Run Date: 06/08/2020 10:52, Prep Date: 06/08/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Available Cyanide		86	82	130

Matrix Spike Duplicate (MSD)

Lab Sample ID: ACN200608-W1.MSD1, Parent Sample ID: ACN200608-W1.MS1

Run in Batch: ACN200608-W1, Run Date: 06/08/2020 10:54, Prep Date: 06/08/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Available Cyanide		88	82	130	2	15

Duplicate (DUP)

Lab Sample ID: ACN200608-W1.DP1, Parent Sample ID: S14517.03

Run in Batch: ACN200608-W1, Run Date: 06/08/2020 10:48, Prep Date: 06/08/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Available Cyanide		<1	15

Merit Laboratories Login Checklist

Lab Set ID:S14549

Attention: Clifford Yantz

Address: O'Brien & Gere Engineers, Inc.
2260 East Saginaw Street
East Lansing, MI 48823

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

Project: RACER Coldwater Rd

Submitted: 06/04/2020 15:25 Login User: SRS

Phone: 313-333-0211 FAX:

Email: Clifford.Yantz@obg.com

Selection	Description	Note
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Sample Receiving

- | | | |
|-----|--|--|
| 01. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer # IR 4.8 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |

Chain of Custody

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

Preservation

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

Bottle Conditions

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

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

Client Review By: _____ Date: _____

Merit Laboratories Bottle Preservation Check

Lab Set ID: S14549

Initials: SRS

Attention: Clifford Yantz

Address: O'Brien & Gere Engineers, Inc.
2260 East Saginaw Street
East Lansing, MI 48823

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

Project: RACER Coldwater Rd

Submitted: 06/04/2020 15:25 Login User:

Phone: 313-333-0211 FAX:

Email: Clifford.Yantz@obg.com

Lab ID	125 ml Plastic HNO ₃	250 ml Plastic HNO ₃	1 L Plastic HNO ₃	250 ml Plastic H ₂ SO ₄	125 ml Amber H ₂ SO ₄	32 oz Glass HCl	125 ml Plastic NaOH	125 ml Amber PbCO ₃ NaOH	pH					Notes
									<2	>12	other	ml add	new pH	
S14549.01	X								X					
S14549.01				X					X					
S14549.01						X			X					
S14549.01								X		X				



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

C.O.C. PAGE # 1 OF 1

116023

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME Clifford Yantz
 COMPANY O'Brien + Gore a Ramboll Company
 ADDRESS 2260 East Siginaw
 CITY East Lansing STATE MI ZIP CODE 48823
 PHONE NO. 313-333-0211 FAX NO. _____ P.O. NO. _____
 E-MAIL ADDRESS clifford.yantz@ramboll.com QUOTE NO. _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

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

Containers & Preservatives

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER
	DATE	TIME										
14549.01	6/4/20	1020	02-PRCC-20	WW								
<i>KBS</i>												

Total Metals	Available Cyanide	BOD / TSS	Ammonia - Nitrogen	Total Phosphorus	FOG (Hex-Ext)
X	X	X	X	X	X

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

Metals Are:
 As, Cr, Cu, Hg, Ni, Zn
 Analysis per
 city of Flint
 including QC Report
 Field pH: 7.61
 Field Temp: 20.8°C

RELINQUISHED BY: KLS Sampler DATE 6/4/20 TIME 1040
 RECEIVED BY: [Signature] DATE 6/4/20 TIME 10:40
 RELINQUISHED BY: [Signature] DATE 6/4/20 TIME 15:25
 RECEIVED BY: [Signature] DATE 6/4/20 TIME 15:25

RELINQUISHED BY: _____ DATE _____ TIME _____
 RECEIVED BY: _____ DATE _____ TIME _____
 SEAL NO. SEAL INTACT YES NO INITIALS _____
 SEAL NO. SEAL INTACT YES NO INITIALS _____
 NOTES: TEMP. ON ARRIVAL 4.8

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



Analytical Laboratory Report

Report ID: S15174.01(01)
Generated on 07/16/2020

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
2260 East Saginaw Street
East Lansing, MI 48823

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

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): S15174.01-S15174.05
Project: RACER Coldwater Rd
Collected Date(s): 06/23/2020 - 06/24/2020
Submitted Date/Time: 06/24/2020 16:00
Sampled by: Clifford Yantz / Will Laughner
P.O. #: 12000277

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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)

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

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

Qualifier Descriptions

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

Glossary of Abbreviations

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



Analytical Laboratory Report

Method Summary

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

Parameter Summary

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



Analytical Laboratory Report

Sample Summary (5 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S15174.01	Field Blank-062320	Water	06/23/20 09:35
S15174.02	02-PRCC-20-Inf	Wastewater	06/23/20 09:45
S15174.03	02-PRCC-20-Prim	Wastewater	06/23/20 09:55
S15174.04	02-PRCC-20-Prim-115	Wastewater	06/24/20 13:42
S15174.05	02-PRCC-20-Mid-1-115	Wastewater	06/24/20 13:44



Analytical Laboratory Report

Lab Sample ID: S15174.01

Sample Tag: Field Blank-062320

Collected Date/Time: 06/23/2020 09:35

Matrix: Water

COC Reference: 125015

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.82/6.71/10	ASTMD7979-19M	07/01/20 15:45	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 07/02/20 05:34, 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	2.0	2.0	ng/L	1.96	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.96	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.96	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.96	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.96	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.96	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.96	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.96	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.96	2991-50-6	
PFOS*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.96	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.96	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.96	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.96	335-77-3	
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	2.0	2.0	ng/L	1.96	13252-13-6	



Analytical Laboratory Report

Lab Sample ID: S15174.02

Sample Tag: 02-PRCC-20-Inf

Collected Date/Time: 06/23/2020 09:45

Matrix: Wastewater

COC Reference: 125015

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.18/6.76/11	ASTMD7979-19M	07/01/20 15:45	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 07/02/20 05:53, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	20	10	ng/L	2.03	375-22-4	X
PFPeA*	Not detected	4.1	1.0	ng/L	2.03	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.03	757124-72-4	
PFHxA*	11	2.0	1.4	ng/L	2.03	307-24-4	
PFBS*	19	2.0	1.4	ng/L	2.03	375-73-5	
PFHpA*	6.1	2.0	1.4	ng/L	2.03	375-85-9	
PFPeS*	30	2.0	1.8	ng/L	2.03	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.03	27619-97-2	
PFOA*	20.4	2.0	1.6	ng/L	2.03	335-67-1	
PFHxS*	100	2.0	1.6	ng/L	2.03	355-46-4	
PFHxS-LN*	84	2.0	1.6	ng/L	2.03	355-46-4-LN	
PFHxS-BR*	17	2.0	1.6	ng/L	2.03	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.03	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.03	39108-34-4	
PFHpS*	26	2.0	2.0	ng/L	2.03	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.03	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.03	2355-31-9	
EtFOSAA*	Not detected	4.1	2.0	ng/L	2.03	2991-50-6	
PFOS*	2,600	2.0	2.0	ng/L	2.03	1763-23-1	
PFOS-LN*	1,700	2.0	2.0	ng/L	2.03	1763-23-1-LN	
PFOS-BR*	990	2.0	2.0	ng/L	2.03	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.03	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.03	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	2.03	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.03	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	2.03	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.03	754-91-6	
PFTeDA*	Not detected	4.1	1.8	ng/L	2.03	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.03	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.03	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.03	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	2.03	13252-13-6	

X-Elevated reporting limit due to matrix interference



Analytical Laboratory Report

Lab Sample ID: S15174.03

Sample Tag: 02-PRCC-20-Prim

Collected Date/Time: 06/23/2020 09:55

Matrix: Wastewater

COC Reference: 125015

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.38/6.76/11	ASTMD7979-19M	07/01/20 15:45	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 07/02/20 06:13, 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	2.0	2.0	ng/L	1.96	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.96	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.96	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.96	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.96	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.96	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.96	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.96	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.96	2991-50-6	
PFOS*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.96	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.96	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.96	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.96	335-77-3	
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	2.0	2.0	ng/L	1.96	13252-13-6	



Analytical Laboratory Report

Lab Sample ID: S15174.04

Sample Tag: 02-PRCC-20-Prim-115

Collected Date/Time: 06/24/2020 13:42

Matrix: Wastewater

COC Reference: 125015

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.52/6.78/11	ASTMD7979-19M	07/01/20 15:45	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 07/02/20 21:22, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	21	9.6	9.6	ng/L	1.92	375-22-4	
PFPeA*	1.8	3.8	0.96	ng/L	1.92	2706-90-3	J
4:2 FTSA*	Not detected	1.9	1.5	ng/L	1.92	757124-72-4	
PFHxA*	Not detected	1.9	1.3	ng/L	1.92	307-24-4	
PFBS*	Not detected	1.9	1.3	ng/L	1.92	375-73-5	
PFHpA*	Not detected	1.9	1.3	ng/L	1.92	375-85-9	
PFPeS*	Not detected	1.9	1.7	ng/L	1.92	2706-91-4	
6:2 FTSA*	Not detected	1.9	1.9	ng/L	1.92	27619-97-2	
PFOA*	Not detected	1.9	1.5	ng/L	1.92	335-67-1	
PFHxS*	Not detected	1.9	1.5	ng/L	1.92	355-46-4	
PFHxS-LN*	Not detected	1.9	1.5	ng/L	1.92	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.5	ng/L	1.92	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.92	375-95-1	
8:2 FTSA*	Not detected	1.9	0.96	ng/L	1.92	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.92	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.92	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.92	2355-31-9	
EtFOSAA*	Not detected	3.8	1.9	ng/L	1.92	2991-50-6	
PFOS*	8.9	1.9	1.9	ng/L	1.92	1763-23-1	
PFOS-LN*	3.9	1.9	1.9	ng/L	1.92	1763-23-1-LN	
PFOS-BR*	3.9	1.9	1.9	ng/L	1.92	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.3	ng/L	1.92	2058-94-8	
PFNS*	Not detected	1.9	1.3	ng/L	1.92	68259-12-1	
PFDODA*	Not detected	1.9	1.5	ng/L	1.92	307-55-1	
PFDS*	Not detected	1.9	1.3	ng/L	1.92	335-77-3	
PFTTrDA*	Not detected	1.9	1.2	ng/L	1.92	72629-94-8	
FOSA*	Not detected	1.9	1.7	ng/L	1.92	754-91-6	
PFTeDA*	Not detected	3.8	1.7	ng/L	1.92	376-06-7	
11Cl-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.92	763051-92-9	
9Cl-PF3ONS*	Not detected	1.9	1.3	ng/L	1.92	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.92	919005-14-4	
HFPO-DA*	Not detected	1.9	1.9	ng/L	1.92	13252-13-6	

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



Analytical Laboratory Report

Lab Sample ID: S15174.05

Sample Tag: 02-PRCC-20-Mid-1-115

Collected Date/Time: 06/24/2020 13:44

Matrix: Wastewater

COC Reference: 125015

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.09/6.75/11	ASTMD7979-19M	07/01/20 15:45	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 07/02/20 06:52, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.06	375-22-4	
PFPeA*	Not detected	4.1	1.0	ng/L	2.06	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.6	ng/L	2.06	757124-72-4	
PFHxA*	Not detected	2.1	1.4	ng/L	2.06	307-24-4	
PFBS*	Not detected	2.1	1.4	ng/L	2.06	375-73-5	
PFHpA*	Not detected	2.1	1.4	ng/L	2.06	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.06	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.06	27619-97-2	
PFOA*	Not detected	2.1	1.6	ng/L	2.06	335-67-1	
PFHxS*	Not detected	2.1	1.6	ng/L	2.06	355-46-4	
PFHxS-LN*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.06	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.06	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.06	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.06	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.06	2355-31-9	
EtFOSAA*	Not detected	4.1	2.1	ng/L	2.06	2991-50-6	
PFOS*	2.7	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	2.1	2.1	ng/L	2.06	13252-13-6	

Merit Laboratories Login Checklist

Lab Set ID:S15174

Attention: Clifford Yantz

Address: O'Brien & Gere Engineers, Inc.
2260 East Saginaw Street
East Lansing, MI 48823

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

Project: RACER Coldwater Rd

Submitted:06/24/2020 16:00 Login User: SRS

Phone: 313-333-0211 FAX:

Email: Clifford.Yantz@obg.com

Selection	Description	Note
Sample Receiving		
01.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples are received at 4C +/- 2C Thermometer # IR 3.3
02.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Received on ice/ cooling process begun
03.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples shipped
04.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples left in 24 hr. drop box
05.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC adequately filled out
07.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC signed and relinquished to the lab
08.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sample tag on bottles match COC
09.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Subcontracting needed? Subcontracted to:
Preservation		
10.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Do sample have correct chemical preservation
11.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Completed pH checks on preserved samples? (no VOAs)
12.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	All bottles intact
14.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Appropriate analytical bottles are used
15.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Merit bottles used
16.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sufficient sample volume received
17.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples require laboratory filtration
18.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples submitted within holding time
19.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Do water VOC or TOX bottles contain headspace

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

Client Review By: _____ Date: _____



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

C.O.C. PAGE # 1 OF 1 125015

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Yantz
 COMPANY: O'Brien & Gere / Ramboll
 ADDRESS: 2200 E. Saginaw
 CITY: East Lansing STATE: MI ZIP CODE: 48823
 PHONE NO.: 313 333 0211 FAX NO.: _____ P.O. NO.: _____
 E-MAIL ADDRESS: Clifford.Yantz@ramboll.com QUOTE NO.: _____

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

PROJECT NO./NAME: RACER 61/dwdr Rd SAMPLER(S) - PLEASE PRINT/SIGN NAME: Clifford Yantz / Will Laughlin
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER _____
 DELIVERABLES REQUIRED: STD LEVEL II LEVEL III LEVEL IV EDD OTHER Low Level RLs

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications	
<input type="checkbox"/> OHIO VAP	<input type="checkbox"/> Drinking Water
<input type="checkbox"/> DoD	<input type="checkbox"/> NPDES
Project Locations	
<input type="checkbox"/> Detroit	<input type="checkbox"/> New York
<input type="checkbox"/> Other _____	
Special Instructions	

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

Containers & Preservatives

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER
	DATE	TIME										
15174.01	6/23/20	09:35	Field Blank - 062320	QB	1	X						
.02	6/23/20	09:45	02 - PRCC - 20 - Inf	WW	3	X						
.03	6/23/20	09:55	02 - PRCC - 20 - Prim	WW	3	X						
.04	6/24/20	13:42	02 - PRCC - 20 - Prim - 115	WW	3	X						
.05	6/24/20	13:44	02 - PRCC - 20 - MED - 115	WW	3	X						

ANALYSIS - 7979 Low Level RLs
 PPHS - 7979 Low Level RLs
 X X X X X

RELINQUISHED BY: [Signature] DATE: 6/24/20 TIME: 14:58
 RECEIVED BY: [Signature] DATE: 6/24/20 TIME: 14:25
 RELINQUISHED BY: [Signature] DATE: 6/24/20 TIME: 16:24
 RECEIVED BY: [Signature] DATE: 6/24/20 TIME: 16:00

RELINQUISHED BY: _____ DATE: _____ TIME: _____
 RECEIVED BY: _____ DATE: _____ TIME: _____
 SEAL NO. SEAL INTACT YES NO INITIALS _____
 SEAL NO. SEAL INTACT YES NO INITIALS _____
 NOTES: _____ TEMP. ON ARRIVAL: 3.3

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



Quality Control Report

Report ID: QC-S15174-01
Generated on 07/20/2020

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
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): S15174.01-S15174.05
Project: RACER Coldwater Rd
Submitted Date/Time: 06/24/2020 16:00
Sampled by: Clifford Yantz / Will Laughner
P.O. #: 12000277

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: S15174.01

Sample Tag: Field Blank-062320

Collected Date/Time: 06/23/2020 09:35

Matrix: Water

COC Reference: 125015

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	07/02/20 05:34	AK200701	PF200701W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S15174.02

Sample Tag: 02-PRCC-20-Inf

Collected Date/Time: 06/23/2020 09:45

Matrix: Wastewater

COC Reference: 125015

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	07/02/20 05:53	AK200701	PF200701W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S15174.03

Sample Tag: 02-PRCC-20-Prim

Collected Date/Time: 06/23/2020 09:55

Matrix: Wastewater

COC Reference: 125015

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	07/02/20 06:13	AK200701	PF200701W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S15174.04

Sample Tag: 02-PRCC-20-Prim-115

Collected Date/Time: 06/24/2020 13:42

Matrix: Wastewater

COC Reference: 125015

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	07/02/20 21:22	AK200701	PF200701W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S15174.05

Sample Tag: 02-PRCC-20-Mid-1-115

Collected Date/Time: 06/24/2020 13:44

Matrix: Wastewater

COC Reference: 125015

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	07/02/20 06:52	AK200701	PF200701W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF200701W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S15174.01	28 PFAs	ASTMD7979-19M	07/02/20 05:34	AK200701
S15174.02	28 PFAs	ASTMD7979-19M	07/02/20 05:53	AK200701
S15174.03	28 PFAs	ASTMD7979-19M	07/02/20 06:13	AK200701
S15174.04	28 PFAs	ASTMD7979-19M	07/02/20 21:22	AK200701
S15174.05	28 PFAs	ASTMD7979-19M	07/02/20 06:52	AK200701

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S15174.01

Sample Tag: Field Blank-062320

Collected Date/Time: 06/23/2020 09:35

Matrix: Water

COC Reference: 125015

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200701, Run Date: 07/02/2020 05:34, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		132.2	50.0	150.0
M2-6:2FTSA		138.5	50.0	150.0
M2-8:2FTSA		128.1	50.0	150.0
M2PFTeDA		98.9	12.0	218.0
M3PFBS		110.3	50.0	150.0
M3PFHxS		109.9	50.0	150.0
M4PFHpA		108.4	50.0	150.0
M5PFHxA		102.9	50.0	150.0
M5PFPeA		104.0	50.0	150.0
M6PFDA		117.5	50.0	150.0
M7PFUnDA		99.0	50.0	150.0
M8FOSA		115.1	50.0	150.0
M8PFOA		110.7	50.0	150.0
M8PFOS		102.7	50.0	150.0
M9-PFNA		103.4	50.0	150.0
MPFBA		103.7	50.0	150.0
MPFDoDA		112.8	50.0	150.0
d3N-MeFOSAA		104.6	50.0	150.0
d5EtFOSAA		107.4	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S15174.02

Sample Tag: 02-PRCC-20-Inf

Collected Date/Time: 06/23/2020 09:45

Matrix: Wastewater

COC Reference: 125015

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200701, Run Date: 07/02/2020 05:53, Matrix: WW, Dilution: 2.03

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		139.1	50.0	150.0
M2-6:2FTSA		140.7	50.0	150.0
M2-8:2FTSA		112.4	50.0	150.0
M2PFTeDA		133.5	12.0	218.0
M3PFBS		114.6	50.0	150.0
M3PFHxS		115.2	50.0	150.0
M4PFHpA		116.6	50.0	150.0
M5PFHxA		116.7	50.0	150.0
M5PFPeA		109.7	50.0	150.0
M6PFDA		115.1	50.0	150.0
M7PFUnDA		107.9	50.0	150.0
M8FOSA		115.9	50.0	150.0
M8PFOA		112.7	50.0	150.0
M8PFOS		107.2	50.0	150.0
M9-PFNA		114.0	50.0	150.0
MPFBA		111.5	50.0	150.0
MPFDoDA		125.2	50.0	150.0
d3N-MeFOSAA		111.7	50.0	150.0
d5EtFOSAA		132.8	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S15174.03

Sample Tag: 02-PRCC-20-Prim

Collected Date/Time: 06/23/2020 09:55

Matrix: Wastewater

COC Reference: 125015

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200701, Run Date: 07/02/2020 06:13, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		135.9	50.0	150.0
M2-6:2FTSA		137.9	50.0	150.0
M2-8:2FTSA		122.0	50.0	150.0
M2PFTeDA		165.6	12.0	218.0
M3PFBS		112.4	50.0	150.0
M3PFHxS		116.0	50.0	150.0
M4PFHpA		106.4	50.0	150.0
M5PFHxA		113.9	50.0	150.0
M5PFPeA		108.9	50.0	150.0
M6PFDA		128.8	50.0	150.0
M7PFUnDA		117.0	50.0	150.0
M8FOSA		119.2	50.0	150.0
M8PFOA		113.2	50.0	150.0
M8PFOS		118.9	50.0	150.0
M9-PFNA		114.4	50.0	150.0
MPFBA		109.5	50.0	150.0
MPFDoDA		125.5	50.0	150.0
d3N-MeFOSAA		113.5	50.0	150.0
d5EtFOSAA		128.4	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S15174.04

Sample Tag: 02-PRCC-20-Prim-115

Collected Date/Time: 06/24/2020 13:42

Matrix: Wastewater

COC Reference: 125015

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200701, Run Date: 07/02/2020 21:22, Matrix: WW, Dilution: 1.92

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		126.4	50.0	150.0
M2-6:2FTSA		124.8	50.0	150.0
M2-8:2FTSA		117.3	50.0	150.0
M2PFTeDA		136.9	12.0	218.0
M3PFBS		100.6	50.0	150.0
M3PFHxS		102.9	50.0	150.0
M4PFHpA		107.2	50.0	150.0
M5PFHxA		102.0	50.0	150.0
M5PFPeA		101.7	50.0	150.0
M6PFDA		111.3	50.0	150.0
M7PFUnDA		98.6	50.0	150.0
M8FOSA		115.3	50.0	150.0
M8PFOA		102.7	50.0	150.0
M8PFOS		98.7	50.0	150.0
M9-PFNA		109.6	50.0	150.0
MPFBA		102.1	50.0	150.0
MPFDoDA		114.6	50.0	150.0
d3N-MeFOSAA		101.2	50.0	150.0
d5EtFOSAA		109.3	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S15174.05

Sample Tag: 02-PRCC-20-Mid-1-115

Collected Date/Time: 06/24/2020 13:44

Matrix: Wastewater

COC Reference: 125015

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200701, Run Date: 07/02/2020 06:52, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		141.5	50.0	150.0
M2-6:2FTSA		148.5	50.0	150.0
M2-8:2FTSA		116.6	50.0	150.0
M2PFTeDA		154.0	12.0	218.0
M3PFBS		115.8	50.0	150.0
M3PFHxS		119.4	50.0	150.0
M4PFHpA		114.9	50.0	150.0
M5PFHxA		111.3	50.0	150.0
M5PFPeA		108.3	50.0	150.0
M6PFDA		121.8	50.0	150.0
M7PFUnDA		110.4	50.0	150.0
M8FOSA		120.3	50.0	150.0
M8PFOA		109.0	50.0	150.0
M8PFOS		115.2	50.0	150.0
M9-PFNA		114.5	50.0	150.0
MPFBA		108.5	50.0	150.0
MPFDoDA		125.4	50.0	150.0
d3N-MeFOSAA		106.9	50.0	150.0
d5EtFOSAA		125.7	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF200701W1

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

Blank (BLK)

Lab Sample ID: AK200701.BLK200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:41, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		141.8	50.0	150.0
M2-6:2FTSA		136.7	50.0	150.0
M2-8:2FTSA		122.5	50.0	150.0
M2PFTeDA		120.2	12.0	218.0
M3PFBS		115.2	50.0	150.0
M3PFHxS		112.0	50.0	150.0
M4PFHpA		114.6	50.0	150.0
M5PFHxA		108.6	50.0	150.0
M5PFPeA		111.1	50.0	150.0
M6PFDA		113.6	50.0	150.0
M7PFUnDA		104.1	50.0	150.0
M8FOSA		120.6	50.0	150.0
M8PFOA		114.8	50.0	150.0
M8PFOS		114.3	50.0	150.0
M9-PFNA		112.0	50.0	150.0
MPFBA		108.7	50.0	150.0
MPFDoDA		109.6	50.0	150.0
d3N-MeFOSAA		100.3	50.0	150.0
d5EtFOSAA		124.3	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK200701.LCS200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:02, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		129.6	50.0	150.0
M2-6:2FTSA		127.9	50.0	150.0
M2-8:2FTSA		121.1	50.0	150.0
M2PFTeDA		133.9	12.0	218.0
M3PFBS		109.1	50.0	150.0
M3PFHxS		112.4	50.0	150.0
M4PFHpA		105.5	50.0	150.0
M5PFHxA		106.8	50.0	150.0
M5PFPeA		107.5	50.0	150.0
M6PFDA		115.4	50.0	150.0
M7PFUnDA		103.1	50.0	150.0
M8FOSA		113.3	50.0	150.0
M8PFOA		111.2	50.0	150.0
M8PFOS		118.2	50.0	150.0
M9-PFNA		108.1	50.0	150.0
MPFBA		104.2	50.0	150.0
MPFDoDA		110.3	50.0	150.0
d3N-MeFOSAA		114.4	50.0	150.0
d5EtFOSAA		112.4	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK200701.LCSD200701, Parent Sample ID: AK200701.LCS200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:22, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		128.4	50.0	150.0
M2-6:2FTSA		126.1	50.0	150.0
M2-8:2FTSA		127.4	50.0	150.0
M2PFTeDA		141.0	12.0	218.0
M3PFBS		105.9	50.0	150.0
M3PFHxS		109.6	50.0	150.0
M4PFHpA		107.9	50.0	150.0
M5PFHxA		105.4	50.0	150.0
M5PFPeA		102.6	50.0	150.0
M6PFDA		105.9	50.0	150.0
M7PFUnDA		106.9	50.0	150.0
M8FOSA		115.0	50.0	150.0
M8PFOA		105.8	50.0	150.0
M8PFOS		110.1	50.0	150.0
M9-PFNA		110.7	50.0	150.0
MPFBA		101.1	50.0	150.0
MPFDoDA		124.4	50.0	150.0
d3N-MeFOSAA		113.8	50.0	150.0
d5EtFOSAA		110.1	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK200701.1517201M, Parent Sample ID: S15172.01

Run in Batch: AK200701, Run Date: 07/02/2020 01:59, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1.93

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		143.7	50.0	150.0
M2-6:2FTSA		142.1	50.0	150.0
M2-8:2FTSA		125.3	50.0	150.0
M2PFTeDA		155.7	12.0	218.0
M3PFBS		110.5	50.0	150.0
M3PFHxS		108.0	50.0	150.0
M4PFHpA		110.4	50.0	150.0
M5PFHxA		111.4	50.0	150.0
M5PFPeA		107.3	50.0	150.0
M6PFDA		116.6	50.0	150.0
M7PFUnDA		114.6	50.0	150.0
M8FOSA		122.2	50.0	150.0
M8PFOA		111.7	50.0	150.0
M8PFOS		108.8	50.0	150.0
M9-PFNA		113.6	50.0	150.0
MPFBA		107.6	50.0	150.0
MPFDoDA		129.3	50.0	150.0
d3N-MeFOSAA		128.8	50.0	150.0
d5EtFOSAA		115.2	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: AK200701.1517202D, Parent Sample ID: S15172.02

Run in Batch: AK200701, Run Date: 07/02/2020 02:38, Prep Date: 07/01/2020, Matrix: WW, Dilution: 2

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		138.8	50.0	150.0
M2-6:2FTSA		137.2	50.0	150.0
M2-8:2FTSA		129.8	50.0	150.0
M2PFTeDA		153.5	12.0	218.0
M3PFBS		112.7	50.0	150.0
M3PFHxS		105.2	50.0	150.0
M4PFHpA		109.6	50.0	150.0
M5PFHxA		107.1	50.0	150.0
M5PFPeA		104.2	50.0	150.0
M6PFDA		117.2	50.0	150.0
M7PFUnDA		104.7	50.0	150.0
M8FOSA		117.2	50.0	150.0
M8PFOA		113.7	50.0	150.0
M8PFOS		109.2	50.0	150.0
M9-PFNA		112.6	50.0	150.0
MPFBA		106.5	50.0	150.0
MPFDoDA		129.0	50.0	150.0
d3N-MeFOSAA		106.9	50.0	150.0
d5EtFOSAA		118.4	50.0	150.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF200701W1

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

Blank (BLK)

Lab Sample ID: AK200701.BLK200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:41, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	20.0	ng/l
PFPeA		ND	10.0	ng/l
4:2 FTSA		ND	10.0	ng/l
PFHxA		ND	10.0	ng/l
PFBS		ND	10.0	ng/l
PFHpA		ND	10.0	ng/l
PFPeS		ND	10.0	ng/l
6:2 FTSA		ND	10.0	ng/l
PFOA		ND	10.0	ng/l
PFHxS		ND	10.0	ng/l
PFHxS-LN		ND	10.0	ng/l
PFHxS-BR		ND	10.0	ng/l
PFNA		ND	10.0	ng/l
8:2 FTSA		ND	10.0	ng/l
PFHpS		ND	10.0	ng/l
PFDA		ND	10.0	ng/l
N-MeFOSAA		ND	10.0	ng/l
EtFOSAA		ND	10.0	ng/l
PFOS		ND	10.0	ng/l
PFOS-LN		ND	10.0	ng/l
PFOS-BR		ND	10.0	ng/l
PFUnDA		ND	10.0	ng/l
PFNS		ND	10.0	ng/l
PFDoDA		ND	10.0	ng/l
PFDS		ND	10.0	ng/l
PFTTrDA		ND	10.0	ng/l
FOSA		ND	10.0	ng/l
PFTeDA		ND	10.0	ng/l
11CL-PF3OUdS		ND	1	ng/l
9CL-PF3ONS		ND	1	ng/l
ADONA		ND	1	ng/l
HFPO-DA		ND	1	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK200701.LCS200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:02, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		90.2	70.0	130.0
PFPeA		94.9	70.0	130.0
4:2 FTSA		111.0	70.0	130.0
PFHxA		97.7	70.0	130.0
PFBS		101.0	70.0	130.0
HFPO-DA		98.8	70.0	130.0
PFHpA		92.5	70.0	130.0
ADONA		103.0	70.0	130.0
PFPeS		103.0	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF200701W1 (continued)

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

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK200701.LCS200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:02, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		96.7	70.0	130.0
PFOA		99.7	70.0	130.0
PFHxS		94.2	70.0	130.0
PFNA		111.0	70.0	130.0
8:2 FTSA		89.1	70.0	130.0
PFHpS		94.7	70.0	130.0
N-MeFOSAA		93.4	70.0	130.0
PFDA		96.1	70.0	130.0
EtFOSAA		103.0	70.0	130.0
PFOS		97.0	70.0	130.0
PFUnDA		102.0	70.0	130.0
9CL-PF3ONS		97.8	70.0	130.0
PFNS		105.0	70.0	130.0
PFDoDA		104.0	70.0	130.0
PFDS		105.0	70.0	130.0
PFTTrDA		116.0	70.0	130.0
FOSA		107.0	70.0	130.0
11CL-PF3OUdS		107.0	70.0	130.0
PFTeDA		96.8	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK200701.LCSD200701, Parent Sample ID: AK200701.LCS200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:22, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		94.2	70.0	130.0	4.3	30.0
PFPeA		100.0	70.0	130.0	5.2	30.0
4:2 FTSA		112.0	70.0	130.0	0.9	30.0
PFHxA		101.0	70.0	130.0	3.3	30.0
PFBS		109.0	70.0	130.0	7.6	30.0
HFPO-DA		104.0	70.0	130.0	5.1	30.0
PFHpA		91.6	70.0	130.0	1.0	30.0
ADONA		109.0	70.0	130.0	5.7	30.0
PFPeS		102.0	70.0	130.0	1.0	30.0
6:2 FTSA		103.0	70.0	130.0	6.3	30.0
PFOA		107.0	70.0	130.0	7.1	30.0
PFHxS		108.0	70.0	130.0	13.6	30.0
PFNA		110.0	70.0	130.0	0.9	30.0
8:2 FTSA		80.1	70.0	130.0	10.6	30.0
PFHpS		102.0	70.0	130.0	7.4	30.0
N-MeFOSAA		104.0	70.0	130.0	10.7	30.0
PFDA		109.0	70.0	130.0	12.6	30.0
EtFOSAA		96.8	70.0	130.0	6.2	30.0
PFOS		104.0	70.0	130.0	7.0	30.0
PFUnDA		94.9	70.0	130.0	7.2	30.0
9CL-PF3ONS		102.0	70.0	130.0	4.2	30.0
PFNS		120.0	70.0	130.0	13.3	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF200701W1 (continued)

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

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK200701.LCSD200701, Parent Sample ID: AK200701.LCS200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:22, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		95.2	70.0	130.0	8.8	30.0
PFDS		118.0	70.0	130.0	11.7	30.0
PFTTrDA		109.0	70.0	130.0	6.2	30.0
FOSA		106.0	70.0	130.0	0.9	30.0
11CL-PF3OUdS		123.0	70.0	130.0	13.9	30.0
PFTeDA		96.9	70.0	130.0	0.1	30.0

Matrix Spike (MS)

Lab Sample ID: AK200701.1517201M, Parent Sample ID: S15172.01

Run in Batch: AK200701, Run Date: 07/02/2020 01:59, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1.93

Analyte	Flags	% Rec	LCL	UCL
PFBA		95.3	70.0	130.0
PFPeA		99.5	70.0	130.0
4:2 FTSA		99.5	70.0	130.0
PFHxA		103.6	70.0	130.0
PFBS		103.6	70.0	130.0
PFHpA		96.4	70.0	130.0
PFPeS		103.6	70.0	130.0
6:2 FTSA		97.4	70.0	130.0
PFOA		114.0	70.0	130.0
PFHxS		103.6	70.0	130.0
PFNA		114.0	70.0	130.0
8:2 FTSA		88.1	70.0	130.0
PFHpS		95.3	70.0	130.0
PFDA		100.5	70.0	130.0
N-MeFOSAA		103.6	70.0	130.0
EtFOSAA		103.6	70.0	130.0
PFOS		103.6	70.0	130.0
PFUnDA		92.2	70.0	130.0
PFNS		124.4	70.0	130.0
PFDoDA		93.3	70.0	130.0
PFDS		124.4	70.0	130.0
PFTTrDA		114.0	70.0	130.0
FOSA		100.5	70.0	130.0
PFTeDA		100.5	70.0	130.0
11CL-PF3OUdS		124.4	70.0	130.0
9CL-PF3ONS		124.4	70.0	130.0
ADONA		114.0	70.0	130.0
HFPO-DA		96.4	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK200701.1517202D, Parent Sample ID: S15172.02

Run in Batch: AK200701, Run Date: 07/02/2020 02:38, Prep Date: 07/01/2020, Matrix: WW, Dilution: 2

Analyte	Flags	RPD	RPD CL
PFBA	*	200.0	30.0
PFPeA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF200701W1 (continued)

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

Duplicate (DUP) (continued)

Lab Sample ID: AK200701.1517202D, Parent Sample ID: S15172.02

Run in Batch: AK200701, Run Date: 07/02/2020 02:38, Prep Date: 07/01/2020, Matrix: WW, Dilution: 2

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
 Phone (517) 332-0167 Fax (517) 332-4034
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1 125015

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Yantz
 COMPANY: O'Brien & Gere / Ramboll
 ADDRESS: 2200 E. Saginaw
 CITY: East Lansing STATE: MI ZIP CODE: 48823
 PHONE NO.: 313 333 0211 FAX NO.: P.O. NO.:
 E-MAIL ADDRESS: Clifford.Yantz@ramboll.com QUOTE NO.:

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

PROJECT NO./NAME: RACER 61/dwdr Rd. SAMPLER(S) - PLEASE PRINT/SIGN NAME: Clifford Yantz / Will Laughlin
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER
 DELIVERABLES REQUIRED: STD LEVEL II LEVEL III LEVEL IV EDD OTHER Low Level RLs

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
 OHIO VAP Drinking Water
 DoD NPDES

Project Locations
 Detroit New York
 Other _____

Special Instructions

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

Containers & Preservatives

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER
	DATE	TIME										
15174.01	6/23/20	09:35	Field Blank - 062320	QB	1	X						
.02	6/23/20	09:45	02 - PRCC - 20 - Inf	WW	3	X						
.03	6/23/20	09:55	02 - PRCC - 20 - Prim	WW	3	X						
.04	6/24/20	13:42	02 - PRCC - 20 - Prim - 115	WW	3	X						
.05	6/24/20	13:44	02 - PRCC - 20 - MED - 115	WW	3	X						

ANALYSIS - 7979 Low Level RLs
 PPHS - 7979 Low Level RLs
 X X X X X

RELINQUISHED BY: [Signature] DATE: 6/24/20 TIME: 14:58
 RECEIVED BY: [Signature] DATE: 6/24/20 TIME: 14:25
 RELINQUISHED BY: [Signature] DATE: 6/24/20 TIME: 16:24
 RECEIVED BY: [Signature] DATE: 6/24/20 TIME: 16:00

RELINQUISHED BY: DATE: TIME:
 RECEIVED BY: DATE: TIME:
 SEAL NO. SEAL INTACT YES NO INITIALS
 SEAL NO. SEAL INTACT YES NO INITIALS
 NOTES: TEMP. ON ARRIVAL: 3.3

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



Analytical Laboratory Report

Report ID: S15208.01(01)
Generated on 07/17/2020

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
2260 East Saginaw Street
East Lansing, MI 48823

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

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): S15208.01-S15208.05
Project: RACER Coldwater Rd
Collected Date(s): 06/25/2020
Submitted Date/Time: 06/25/2020 15:45
Sampled by: Kevin Schneider
P.O. #: 12000277

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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)

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

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

Qualifier Descriptions

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

Glossary of Abbreviations

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



Analytical Laboratory Report

Method Summary

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

Parameter Summary

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



Analytical Laboratory Report

Sample Summary (5 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S15208.01	Field Blank 062520	Water	06/25/20 10:13
S15208.02	02-PRCC-20-EFF-119	Groundwater	06/25/20 10:15
S15208.03	02-PRCC-20-MID-1-119	Groundwater	06/25/20 10:17
S15208.04	02-PRCC-20-MID-2-119	Groundwater	06/25/20 10:19
S15208.05	02-PRCC-20-PRIM-119	Groundwater	06/25/20 10:21



Analytical Laboratory Report

Lab Sample ID: S15208.01

Sample Tag: Field Blank 062520

Collected Date/Time: 06/25/2020 10:13

Matrix: Water

COC Reference: 125016

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.27/6.75/11	ASTMD7979-19M	07/01/20 15:45	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 07/02/20 09:08, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	18	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	2.0	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	2.0	2.0	ng/L	1.99	13252-13-6	



Analytical Laboratory Report

Lab Sample ID: S15208.02

Sample Tag: 02-PRCC-20-EFF-119

Collected Date/Time: 06/25/2020 10:15

Matrix: Groundwater

COC Reference: 125016

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.97/6.67/10	ASTMD7979-19M	07/07/20 11:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 07/08/20 10:20, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	24	9.5	9.5	ng/L	1.89	375-22-4	
PFPeA*	Not detected	3.8	0.95	ng/L	1.89	2706-90-3	
4:2 FTSA*	Not detected	1.9	1.5	ng/L	1.89	757124-72-4	
PFHxA*	Not detected	1.9	1.3	ng/L	1.89	307-24-4	
PFBS*	Not detected	1.9	1.3	ng/L	1.89	375-73-5	
PFHpA*	Not detected	1.9	1.3	ng/L	1.89	375-85-9	
PFPeS*	Not detected	1.9	1.7	ng/L	1.89	2706-91-4	
6:2 FTSA*	Not detected	1.9	1.9	ng/L	1.89	27619-97-2	
PFOA*	Not detected	1.9	1.5	ng/L	1.89	335-67-1	
PFHxS*	Not detected	1.9	1.5	ng/L	1.89	355-46-4	
PFHxS-LN*	Not detected	1.9	1.5	ng/L	1.89	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.5	ng/L	1.89	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.89	375-95-1	
8:2 FTSA*	Not detected	1.9	0.95	ng/L	1.89	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.89	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.89	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.89	2355-31-9	
EtFOSAA*	Not detected	3.8	1.9	ng/L	1.89	2991-50-6	
PFOS*	Not detected	1.9	1.9	ng/L	1.89	1763-23-1	
PFOS-LN*	Not detected	1.9	1.9	ng/L	1.89	1763-23-1-LN	
PFOS-BR*	Not detected	1.9	1.9	ng/L	1.89	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.3	ng/L	1.89	2058-94-8	
PFNS*	Not detected	1.9	1.3	ng/L	1.89	68259-12-1	
PFDODA*	Not detected	1.9	1.5	ng/L	1.89	307-55-1	
PFDS*	Not detected	1.9	1.3	ng/L	1.89	335-77-3	
PFTTrDA*	Not detected	1.9	1.1	ng/L	1.89	72629-94-8	
FOSA*	Not detected	1.9	1.7	ng/L	1.89	754-91-6	
PFTeDA*	Not detected	3.8	1.7	ng/L	1.89	376-06-7	
11Cl-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.89	763051-92-9	
9Cl-PF3ONS*	Not detected	1.9	1.3	ng/L	1.89	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.89	919005-14-4	
HFPO-DA*	Not detected	1.9	1.9	ng/L	1.89	13252-13-6	



Analytical Laboratory Report

Lab Sample ID: S15208.03

Sample Tag: 02-PRCC-20-MID-1-119

Collected Date/Time: 06/25/2020 10:17

Matrix: Groundwater

COC Reference: 125016

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.66/6.81/10	ASTMD7979-19M	07/07/20 11:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 07/08/20 10:59, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	18	10	10	ng/L	2.06	375-22-4	
PFPeA*	Not detected	4.1	1.0	ng/L	2.06	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.6	ng/L	2.06	757124-72-4	
PFHxA*	Not detected	2.1	1.4	ng/L	2.06	307-24-4	
PFBS*	Not detected	2.1	1.4	ng/L	2.06	375-73-5	
PFHpA*	Not detected	2.1	1.4	ng/L	2.06	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.06	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.06	27619-97-2	
PFOA*	Not detected	2.1	1.6	ng/L	2.06	335-67-1	
PFHxS*	Not detected	2.1	1.6	ng/L	2.06	355-46-4	
PFHxS-LN*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.06	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.06	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.06	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.06	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.06	2355-31-9	
EtFOSAA*	Not detected	4.1	2.1	ng/L	2.06	2991-50-6	
PFOS*	Not detected	2.1	2.0	ng/L	2.06	1763-23-1	
PFOS-LN*	Not detected	2.1	2.0	ng/L	2.06	1763-23-1-LN	
PFOS-BR*	Not detected	2.1	2.0	ng/L	2.06	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.4	ng/L	2.06	2058-94-8	
PFNS*	Not detected	2.1	1.4	ng/L	2.06	68259-12-1	
PFDODA*	Not detected	2.1	1.6	ng/L	2.06	307-55-1	
PFDS*	Not detected	2.1	1.4	ng/L	2.06	335-77-3	
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	2.1	2.1	ng/L	2.06	13252-13-6	



Analytical Laboratory Report

Lab Sample ID: S15208.04

Sample Tag: 02-PRCC-20-MID-2-119

Collected Date/Time: 06/25/2020 10:19

Matrix: Groundwater

COC Reference: 125016

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.47/6.91/11	ASTMD7979-19M	07/07/20 11:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 07/08/20 11:38, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	30	9.9	9.9	ng/L	1.98	375-22-4	
PFPeA*	Not detected	4.0	0.99	ng/L	1.98	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.98	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.98	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.98	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.98	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.98	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.98	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.98	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.98	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.98	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.98	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.98	375-95-1	
8:2 FTSA*	Not detected	2.0	0.99	ng/L	1.98	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.98	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.98	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.98	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	1.98	2991-50-6	
PFOS*	Not detected	2.0	1.9	ng/L	1.98	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.98	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.98	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.98	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.98	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.98	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.98	335-77-3	
PFTDA*	Not detected	2.0	1.2	ng/L	1.98	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.98	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	1.98	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.98	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.98	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.98	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	1.98	13252-13-6	



Analytical Laboratory Report

Lab Sample ID: S15208.05

Sample Tag: 02-PRCC-20-PRIM-119

Collected Date/Time: 06/25/2020 10:21

Matrix: Groundwater

COC Reference: 125016

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.94/6.80/10	ASTMD7979-19M	07/07/20 11:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 07/08/20 11:58, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	32	9.8	9.8	ng/L	1.95	375-22-4	
PFPeA*	0.98	3.9	0.98	ng/L	1.95	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.95	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.95	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.95	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.95	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.95	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.95	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.95	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.95	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.95	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.95	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.95	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.95	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.95	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.95	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.95	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.95	2991-50-6	
PFOS*	5.5	2.0	1.9	ng/L	1.95	1763-23-1	
PFOS-LN*	2.9	2.0	1.9	ng/L	1.95	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.95	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.95	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.95	68259-12-1	
PFDODA*	Not detected	2.0	1.6	ng/L	1.95	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.95	335-77-3	
PFTTrDA*	Not detected	2.0	1.2	ng/L	1.95	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.95	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.95	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.95	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.95	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.95	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	1.95	13252-13-6	

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

Merit Laboratories Login Checklist

Lab Set ID:S15208

Attention: Clifford Yantz

Address: O'Brien & Gere Engineers, Inc.
2260 East Saginaw Street
East Lansing, MI 48823

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

Project: RACER Coldwater Rd

Submitted:06/25/2020 15:45 Login User: REJ

Phone: 313-333-0211 FAX:

Email: Clifford.Yantz@obg.com

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

Sample Receiving

- | | | |
|-----|--|--|
| 01. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer # IR 2.8 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |

Chain of Custody

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

Preservation

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

Bottle Conditions

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

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

Client Review By: _____ Date: _____



REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Yant z
 COMPANY: O'Brien & Gere, A Ramboll company
 ADDRESS: 2260 East Saginaw
 CITY: East Lansing STATE: MI ZIP CODE: 48823
 PHONE NO.: 313-333-0211 FAX NO.: _____ P.O. NO.: _____
 E-MAIL ADDRESS: Clifford.Yantz@Ramboll.com QUOTE NO.: _____

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

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

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	# Containers & Preservatives	PFAS (7979)	Certifications <input type="checkbox"/> OHIO VAP <input type="checkbox"/> Drinking Water <input type="checkbox"/> DoD <input type="checkbox"/> NPDES Project Locations <input type="checkbox"/> Detroit <input type="checkbox"/> New York <input type="checkbox"/> Other _____ Special Instructions
	DATE	TIME													
15208.01	6/25/20	1013	Field Blank 062520	QC	1	1								X	ASTM D7979
.02	↓	1015	02-PRCC-20-EFF-119	WW	3	3								X	Low level reporting limit with estimate values
.03	↓	1017	02-PRCC-20-MID-1-119	↓	↓	↓								X	
.04	↓	1019	02-PRCC-20-MID-2-119	↓	↓	↓								X	
.05	↓	1021	02-PRCC-20-PRIM-119	↓	↓	↓								X	
/															

RELINQUISHED BY: Will Loughner WLE Sampler DATE: 6/25/20 TIME: 1545
 RECEIVED BY: Wiley J DATE: 6/25/20 TIME: 1545

RELINQUISHED BY: _____ DATE: _____ TIME: _____
 RECEIVED BY: _____ DATE: _____ TIME: _____
 SEAL NO. SEAL INTACT INITIALS NOTES: TEMP. ON ARRIVAL _____
 YES NO
 SEAL NO. SEAL INTACT INITIALS
 YES NO 2.8

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



Quality Control Report

Report ID: QC-S15208-01
Generated on 07/20/2020

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
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): S15208.01-S15208.05
Project: RACER Coldwater Rd
Submitted Date/Time: 06/25/2020 15:45
Sampled by: Kevin Schneider
P.O. #: 12000277

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 13-18)
- Batch QC Results (Pages 19-26)

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: S15208.01

Sample Tag: Field Blank 062520

Collected Date/Time: 06/25/2020 10:13

Matrix: Water

COC Reference: 125016

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	07/02/20 09:08	AK200701	PF200701W1	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S15208.02

Sample Tag: 02-PRCC-20-EFF-119

Collected Date/Time: 06/25/2020 10:15

Matrix: Groundwater

COC Reference: 125016

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	07/08/20 10:20	AK200707B	PF200707W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S15208.03

Sample Tag: 02-PRCC-20-MID-1-119

Collected Date/Time: 06/25/2020 10:17

Matrix: Groundwater

COC Reference: 125016

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	07/08/20 10:59	AK200707B	PF200707W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S15208.04

Sample Tag: 02-PRCC-20-MID-2-119

Collected Date/Time: 06/25/2020 10:19

Matrix: Groundwater

COC Reference: 125016

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	07/08/20 11:38	AK200707B	PF200707W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Analysis Summary

Lab Sample ID: S15208.05

Sample Tag: 02-PRCC-20-PRIM-119

Collected Date/Time: 06/25/2020 10:21

Matrix: Groundwater

COC Reference: 125016

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	07/08/20 11:58	AK200707B	PF200707W2	Yes	BLK/LCS/LCSD/MS/DU

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF200701W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S15208.01	28 PFAs	ASTMD7979-19M	07/02/20 09:08	AK200701

Organics - Volatiles, Prep Batch ID: PF200707W2

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S15208.02	28 PFAs	ASTMD7979-19M	07/08/20 10:20	AK200707B
S15208.03	28 PFAs	ASTMD7979-19M	07/08/20 10:59	AK200707B
S15208.04	28 PFAs	ASTMD7979-19M	07/08/20 11:38	AK200707B
S15208.05	28 PFAs	ASTMD7979-19M	07/08/20 11:58	AK200707B

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S15208.01

Sample Tag: Field Blank 062520

Collected Date/Time: 06/25/2020 10:13

Matrix: Water

COC Reference: 125016

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200701, Run Date: 07/02/2020 09:08, Matrix: WW, Dilution: 1.99

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		146.4	50.0	150.0
M2-6:2FTSA		142.5	50.0	150.0
M2-8:2FTSA		129.2	50.0	150.0
M2PFTeDA		107.8	12.0	218.0
M3PFBS		117.6	50.0	150.0
M3PFHxS		123.2	50.0	150.0
M4PFHpA		119.2	50.0	150.0
M5PFHxA		115.9	50.0	150.0
M5PFPeA		111.9	50.0	150.0
M6PFDA		121.4	50.0	150.0
M7PFUnDA		112.1	50.0	150.0
M8FOSA		119.7	50.0	150.0
M8PFOA		123.2	50.0	150.0
M8PFOS		115.4	50.0	150.0
M9-PFNA		119.4	50.0	150.0
MPFBA		111.6	50.0	150.0
MPFDoDA		118.9	50.0	150.0
d3N-MeFOSAA		111.8	50.0	150.0
d5EtFOSAA		116.1	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S15208.02

Sample Tag: 02-PRCC-20-EFF-119

Collected Date/Time: 06/25/2020 10:15

Matrix: Groundwater

COC Reference: 125016

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200707B, Run Date: 07/08/2020 10:20, Matrix: WW, Dilution: 1.89

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		111.6	50.0	150.0
M2-6:2FTSA		106.3	50.0	150.0
M2-8:2FTSA		104.3	50.0	150.0
M2PFTeDA		120.0	12.0	218.0
M3PFBS		110.8	50.0	150.0
M3PFHxS		116.5	50.0	150.0
M4PFHpA		117.7	50.0	150.0
M5PFHxA		117.0	50.0	150.0
M5PFPeA		113.6	50.0	150.0
M6PFDA		118.2	50.0	150.0
M7PFUnDA		114.1	50.0	150.0
M8FOSA		118.2	50.0	150.0
M8PFOA		122.4	50.0	150.0
M8PFOS		120.0	50.0	150.0
M9-PFNA		125.6	50.0	150.0
MPFBA		113.6	50.0	150.0
MPFDoDA		127.5	50.0	150.0
d3N-MeFOSAA		113.5	50.0	150.0
d5EtFOSAA		119.6	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S15208.03

Sample Tag: 02-PRCC-20-MID-1-119

Collected Date/Time: 06/25/2020 10:17

Matrix: Groundwater

COC Reference: 125016

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200707B, Run Date: 07/08/2020 10:59, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		105.4	50.0	150.0
M2-6:2FTSA		108.7	50.0	150.0
M2-8:2FTSA		117.3	50.0	150.0
M2PFTeDA		142.7	12.0	218.0
M3PFBS		116.4	50.0	150.0
M3PFHxS		122.3	50.0	150.0
M4PFHpA		119.1	50.0	150.0
M5PFHxA		111.8	50.0	150.0
M5PFPeA		110.9	50.0	150.0
M6PFDA		115.1	50.0	150.0
M7PFUnDA		117.7	50.0	150.0
M8FOSA		111.8	50.0	150.0
M8PFOA		118.0	50.0	150.0
M8PFOS		112.3	50.0	150.0
M9-PFNA		117.1	50.0	150.0
MPFBA		110.4	50.0	150.0
MPFDoDA		119.3	50.0	150.0
d3N-MeFOSAA		107.8	50.0	150.0
d5EtFOSAA		124.4	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S15208.04

Sample Tag: 02-PRCC-20-MID-2-119

Collected Date/Time: 06/25/2020 10:19

Matrix: Groundwater

COC Reference: 125016

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200707B, Run Date: 07/08/2020 11:38, Matrix: WW, Dilution: 1.98

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		112.6	50.0	150.0
M2-6:2FTSA		112.1	50.0	150.0
M2-8:2FTSA		92.1	50.0	150.0
M2PFTeDA		91.3	12.0	218.0
M3PFBS		116.9	50.0	150.0
M3PFHxS		122.6	50.0	150.0
M4PFHpA		125.0	50.0	150.0
M5PFHxA		114.8	50.0	150.0
M5PFPeA		109.9	50.0	150.0
M6PFDA		127.4	50.0	150.0
M7PFUnDA		119.2	50.0	150.0
M8FOSA		111.9	50.0	150.0
M8PFOA		114.3	50.0	150.0
M8PFOS		115.5	50.0	150.0
M9-PFNA		120.6	50.0	150.0
MPFBA		111.6	50.0	150.0
MPFDoDA		110.0	50.0	150.0
d3N-MeFOSAA		113.5	50.0	150.0
d5EtFOSAA		113.3	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S15208.05

Sample Tag: 02-PRCC-20-PRIM-119

Collected Date/Time: 06/25/2020 10:21

Matrix: Groundwater

COC Reference: 125016

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200707B, Run Date: 07/08/2020 11:58, Matrix: WW, Dilution: 1.95

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		106.2	50.0	150.0
M2-6:2FTSA		112.3	50.0	150.0
M2-8:2FTSA		103.7	50.0	150.0
M2PFTeDA		148.1	12.0	218.0
M3PFBS		118.8	50.0	150.0
M3PFHxS		117.8	50.0	150.0
M4PFHpA		116.9	50.0	150.0
M5PFHxA		113.9	50.0	150.0
M5PFPeA		113.3	50.0	150.0
M6PFDA		116.9	50.0	150.0
M7PFUnDA		121.0	50.0	150.0
M8FOSA		119.7	50.0	150.0
M8PFOA		123.8	50.0	150.0
M8PFOS		127.1	50.0	150.0
M9-PFNA		115.1	50.0	150.0
MPFBA		113.4	50.0	150.0
MPFDoDA		122.7	50.0	150.0
d3N-MeFOSAA		121.9	50.0	150.0
d5EtFOSAA		113.1	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF200701W1

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

Blank (BLK)

Lab Sample ID: AK200701.BLK200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:41, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		141.8	50.0	150.0
M2-6:2FTSA		136.7	50.0	150.0
M2-8:2FTSA		122.5	50.0	150.0
M2PFTeDA		120.2	12.0	218.0
M3PFBS		115.2	50.0	150.0
M3PFHxS		112.0	50.0	150.0
M4PFHpA		114.6	50.0	150.0
M5PFHxA		108.6	50.0	150.0
M5PFPeA		111.1	50.0	150.0
M6PFDA		113.6	50.0	150.0
M7PFUnDA		104.1	50.0	150.0
M8FOSA		120.6	50.0	150.0
M8PFOA		114.8	50.0	150.0
M8PFOS		114.3	50.0	150.0
M9-PFNA		112.0	50.0	150.0
MPFBA		108.7	50.0	150.0
MPFDoDA		109.6	50.0	150.0
d3N-MeFOSAA		100.3	50.0	150.0
d5EtFOSAA		124.3	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK200701.LCS200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:02, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		129.6	50.0	150.0
M2-6:2FTSA		127.9	50.0	150.0
M2-8:2FTSA		121.1	50.0	150.0
M2PFTeDA		133.9	12.0	218.0
M3PFBS		109.1	50.0	150.0
M3PFHxS		112.4	50.0	150.0
M4PFHpA		105.5	50.0	150.0
M5PFHxA		106.8	50.0	150.0
M5PFPeA		107.5	50.0	150.0
M6PFDA		115.4	50.0	150.0
M7PFUnDA		103.1	50.0	150.0
M8FOSA		113.3	50.0	150.0
M8PFOA		111.2	50.0	150.0
M8PFOS		118.2	50.0	150.0
M9-PFNA		108.1	50.0	150.0
MPFBA		104.2	50.0	150.0
MPFDoDA		110.3	50.0	150.0
d3N-MeFOSAA		114.4	50.0	150.0
d5EtFOSAA		112.4	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK200701.LCSD200701, Parent Sample ID: AK200701.LCS200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:22, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		128.4	50.0	150.0
M2-6:2FTSA		126.1	50.0	150.0
M2-8:2FTSA		127.4	50.0	150.0
M2PFTeDA		141.0	12.0	218.0
M3PFBS		105.9	50.0	150.0
M3PFHxS		109.6	50.0	150.0
M4PFHpA		107.9	50.0	150.0
M5PFHxA		105.4	50.0	150.0
M5PFPeA		102.6	50.0	150.0
M6PFDA		105.9	50.0	150.0
M7PFUnDA		106.9	50.0	150.0
M8FOSA		115.0	50.0	150.0
M8PFOA		105.8	50.0	150.0
M8PFOS		110.1	50.0	150.0
M9-PFNA		110.7	50.0	150.0
MPFBA		101.1	50.0	150.0
MPFDoDA		124.4	50.0	150.0
d3N-MeFOSAA		113.8	50.0	150.0
d5EtFOSAA		110.1	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK200701.1517201M, Parent Sample ID: S15172.01

Run in Batch: AK200701, Run Date: 07/02/2020 01:59, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1.93

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		143.7	50.0	150.0
M2-6:2FTSA		142.1	50.0	150.0
M2-8:2FTSA		125.3	50.0	150.0
M2PFTeDA		155.7	12.0	218.0
M3PFBS		110.5	50.0	150.0
M3PFHxS		108.0	50.0	150.0
M4PFHpA		110.4	50.0	150.0
M5PFHxA		111.4	50.0	150.0
M5PFPeA		107.3	50.0	150.0
M6PFDA		116.6	50.0	150.0
M7PFUnDA		114.6	50.0	150.0
M8FOSA		122.2	50.0	150.0
M8PFOA		111.7	50.0	150.0
M8PFOS		108.8	50.0	150.0
M9-PFNA		113.6	50.0	150.0
MPFBA		107.6	50.0	150.0
MPFDoDA		129.3	50.0	150.0
d3N-MeFOSAA		128.8	50.0	150.0
d5EtFOSAA		115.2	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: AK200701.1517202D, Parent Sample ID: S15172.02

Run in Batch: AK200701, Run Date: 07/02/2020 02:38, Prep Date: 07/01/2020, Matrix: WW, Dilution: 2

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		138.8	50.0	150.0
M2-6:2FTSA		137.2	50.0	150.0
M2-8:2FTSA		129.8	50.0	150.0
M2PFTeDA		153.5	12.0	218.0
M3PFBS		112.7	50.0	150.0
M3PFHxS		105.2	50.0	150.0
M4PFHpA		109.6	50.0	150.0
M5PFHxA		107.1	50.0	150.0
M5PFPeA		104.2	50.0	150.0
M6PFDA		117.2	50.0	150.0
M7PFUnDA		104.7	50.0	150.0
M8FOSA		117.2	50.0	150.0
M8PFOA		113.7	50.0	150.0
M8PFOS		109.2	50.0	150.0
M9-PFNA		112.6	50.0	150.0
MPFBA		106.5	50.0	150.0
MPFDoDA		129.0	50.0	150.0
d3N-MeFOSAA		106.9	50.0	150.0
d5EtFOSAA		118.4	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF200707W2

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

Blank (BLK)

Lab Sample ID: AK200707B.BLK200707B

Run in Batch: AK200707B, Run Date: 07/08/2020 07:25, Prep Date: 07/07/2020, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		112.2	50.0	150.0
M2-6:2FTSA		112.0	50.0	150.0
M2-8:2FTSA		125.1	50.0	150.0
M2PFTeDA		143.1	12.0	218.0
M3PFBS		115.4	50.0	150.0
M3PFHxS		128.1	50.0	150.0
M4PFHpA		123.6	50.0	150.0
M5PFHxA		111.9	50.0	150.0
M5PFPeA		114.8	50.0	150.0
M6PFDA		123.0	50.0	150.0
M7PFUnDA		116.0	50.0	150.0
M8FOSA		117.9	50.0	150.0
M8PFOA		121.2	50.0	150.0
M8PFOS		131.0	50.0	150.0
M9-PFNA		114.0	50.0	150.0
MPFBA		114.3	50.0	150.0
MPFDoDA		130.2	50.0	150.0
d3N-MeFOSAA		125.3	50.0	150.0
d5EtFOSAA		121.8	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK200707B.LCS200707B

Run in Batch: AK200707B, Run Date: 07/08/2020 06:46, Prep Date: 07/07/2020, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		111.0	50.0	150.0
M2-6:2FTSA		108.7	50.0	150.0
M2-8:2FTSA		104.7	50.0	150.0
M2PFTeDA		135.8	12.0	218.0
M3PFBS		111.7	50.0	150.0
M3PFHxS		118.5	50.0	150.0
M4PFHpA		114.6	50.0	150.0
M5PFHxA		112.6	50.0	150.0
M5PFPeA		112.5	50.0	150.0
M6PFDA		114.7	50.0	150.0
M7PFUnDA		115.9	50.0	150.0
M8FOSA		111.4	50.0	150.0
M8PFOA		118.5	50.0	150.0
M8PFOS		118.1	50.0	150.0
M9-PFNA		123.6	50.0	150.0
MPFBA		110.1	50.0	150.0
MPFDoDA		117.3	50.0	150.0
d3N-MeFOSAA		114.1	50.0	150.0
d5EtFOSAA		122.9	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK200707B.LCSD200707B, Parent Sample ID: AK200707B.LCS200707B

Run in Batch: AK200707B, Run Date: 07/08/2020 07:06, Prep Date: 07/07/2020, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		105.8	50.0	150.0
M2-6:2FTSA		102.2	50.0	150.0
M2-8:2FTSA		112.1	50.0	150.0
M2PFTeDA		129.3	12.0	218.0
M3PFBS		113.6	50.0	150.0
M3PFHxS		112.0	50.0	150.0
M4PFHpA		118.6	50.0	150.0
M5PFHxA		105.1	50.0	150.0
M5PFPeA		109.0	50.0	150.0
M6PFDA		112.1	50.0	150.0
M7PFUnDA		124.3	50.0	150.0
M8FOSA		108.8	50.0	150.0
M8PFOA		121.7	50.0	150.0
M8PFOS		107.4	50.0	150.0
M9-PFNA		122.4	50.0	150.0
MPFBA		108.1	50.0	150.0
MPFDoDA		115.7	50.0	150.0
d3N-MeFOSAA		106.6	50.0	150.0
d5EtFOSAA		113.3	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK200707B.1520802M, Parent Sample ID: S15208.02

Run in Batch: AK200707B, Run Date: 07/08/2020 10:40, Prep Date: 07/07/2020, Matrix: WW, Dilution: 1.89

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		114.8	50.0	150.0
M2-6:2FTSA		113.7	50.0	150.0
M2-8:2FTSA		117.2	50.0	150.0
M2PFTeDA		128.0	12.0	218.0
M3PFBS		122.6	50.0	150.0
M3PFHxS		123.6	50.0	150.0
M4PFHpA		121.0	50.0	150.0
M5PFHxA		121.9	50.0	150.0
M5PFPeA		121.1	50.0	150.0
M6PFDA		113.2	50.0	150.0
M7PFUnDA		123.5	50.0	150.0
M8FOSA		120.3	50.0	150.0
M8PFOA		118.6	50.0	150.0
M8PFOS		119.6	50.0	150.0
M9-PFNA		126.1	50.0	150.0
MPFBA		120.1	50.0	150.0
MPFDoDA		120.7	50.0	150.0
d3N-MeFOSAA		121.1	50.0	150.0
d5EtFOSAA		122.6	50.0	150.0

QC Report - Internal Standards per QC Sample

Duplicate (DUP)

Lab Sample ID: AK200707B.1520803D, Parent Sample ID: S15208.03

Run in Batch: AK200707B, Run Date: 07/08/2020 11:19, Prep Date: 07/07/2020, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		106.8	50.0	150.0
M2-6:2FTSA		105.5	50.0	150.0
M2-8:2FTSA		104.4	50.0	150.0
M2PFTeDA		167.0	12.0	218.0
M3PFBS		116.0	50.0	150.0
M3PFHxS		115.0	50.0	150.0
M4PFHpA		114.5	50.0	150.0
M5PFHxA		117.9	50.0	150.0
M5PFPeA		112.3	50.0	150.0
M6PFDA		122.3	50.0	150.0
M7PFUnDA		123.4	50.0	150.0
M8FOSA		114.3	50.0	150.0
M8PFOA		121.4	50.0	150.0
M8PFOS		119.8	50.0	150.0
M9-PFNA		124.6	50.0	150.0
MPFBA		112.7	50.0	150.0
MPFDoDA		126.6	50.0	150.0
d3N-MeFOSAA		124.3	50.0	150.0
d5EtFOSAA		115.2	50.0	150.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF200701W1

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

Blank (BLK)

Lab Sample ID: AK200701.BLK200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:41, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	20.0	ng/l
PFPeA		ND	10.0	ng/l
4:2 FTSA		ND	10.0	ng/l
PFHxA		ND	10.0	ng/l
PFBS		ND	10.0	ng/l
PFHpA		ND	10.0	ng/l
PFPeS		ND	10.0	ng/l
6:2 FTSA		ND	10.0	ng/l
PFOA		ND	10.0	ng/l
PFHxS		ND	10.0	ng/l
PFHxS-LN		ND	10.0	ng/l
PFHxS-BR		ND	10.0	ng/l
PFNA		ND	10.0	ng/l
8:2 FTSA		ND	10.0	ng/l
PFHpS		ND	10.0	ng/l
PFDA		ND	10.0	ng/l
N-MeFOSAA		ND	10.0	ng/l
EtFOSAA		ND	10.0	ng/l
PFOS		ND	10.0	ng/l
PFOS-LN		ND	10.0	ng/l
PFOS-BR		ND	10.0	ng/l
PFUnDA		ND	10.0	ng/l
PFNS		ND	10.0	ng/l
PFDoDA		ND	10.0	ng/l
PFDS		ND	10.0	ng/l
PFTTrDA		ND	10.0	ng/l
FOSA		ND	10.0	ng/l
PFTeDA		ND	10.0	ng/l
11CL-PF3OUdS		ND	1	ng/l
9CL-PF3ONS		ND	1	ng/l
ADONA		ND	1	ng/l
HFPO-DA		ND	1	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK200701.LCS200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:02, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		90.2	70.0	130.0
PFPeA		94.9	70.0	130.0
4:2 FTSA		111.0	70.0	130.0
PFHxA		97.7	70.0	130.0
PFBS		101.0	70.0	130.0
HFPO-DA		98.8	70.0	130.0
PFHpA		92.5	70.0	130.0
ADONA		103.0	70.0	130.0
PFPeS		103.0	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF200701W1 (continued)

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

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK200701.LCS200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:02, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		96.7	70.0	130.0
PFOA		99.7	70.0	130.0
PFHxS		94.2	70.0	130.0
PFNA		111.0	70.0	130.0
8:2 FTSA		89.1	70.0	130.0
PFHpS		94.7	70.0	130.0
N-MeFOSAA		93.4	70.0	130.0
PFDA		96.1	70.0	130.0
EtFOSAA		103.0	70.0	130.0
PFOS		97.0	70.0	130.0
PFUnDA		102.0	70.0	130.0
9CL-PF3ONS		97.8	70.0	130.0
PFNS		105.0	70.0	130.0
PFDoDA		104.0	70.0	130.0
PFDS		105.0	70.0	130.0
PFTTrDA		116.0	70.0	130.0
FOSA		107.0	70.0	130.0
11CL-PF3OUdS		107.0	70.0	130.0
PFTeDA		96.8	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK200701.LCSD200701, Parent Sample ID: AK200701.LCS200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:22, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		94.2	70.0	130.0	4.3	30.0
PFPeA		100.0	70.0	130.0	5.2	30.0
4:2 FTSA		112.0	70.0	130.0	0.9	30.0
PFHxA		101.0	70.0	130.0	3.3	30.0
PFBS		109.0	70.0	130.0	7.6	30.0
HFPO-DA		104.0	70.0	130.0	5.1	30.0
PFHpA		91.6	70.0	130.0	1.0	30.0
ADONA		109.0	70.0	130.0	5.7	30.0
PFPeS		102.0	70.0	130.0	1.0	30.0
6:2 FTSA		103.0	70.0	130.0	6.3	30.0
PFOA		107.0	70.0	130.0	7.1	30.0
PFHxS		108.0	70.0	130.0	13.6	30.0
PFNA		110.0	70.0	130.0	0.9	30.0
8:2 FTSA		80.1	70.0	130.0	10.6	30.0
PFHpS		102.0	70.0	130.0	7.4	30.0
N-MeFOSAA		104.0	70.0	130.0	10.7	30.0
PFDA		109.0	70.0	130.0	12.6	30.0
EtFOSAA		96.8	70.0	130.0	6.2	30.0
PFOS		104.0	70.0	130.0	7.0	30.0
PFUnDA		94.9	70.0	130.0	7.2	30.0
9CL-PF3ONS		102.0	70.0	130.0	4.2	30.0
PFNS		120.0	70.0	130.0	13.3	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF200701W1 (continued)

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

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK200701.LCSD200701, Parent Sample ID: AK200701.LCS200701

Run in Batch: AK200701, Run Date: 07/02/2020 00:22, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		95.2	70.0	130.0	8.8	30.0
PFDS		118.0	70.0	130.0	11.7	30.0
PFTTrDA		109.0	70.0	130.0	6.2	30.0
FOSA		106.0	70.0	130.0	0.9	30.0
11CL-PF3OUdS		123.0	70.0	130.0	13.9	30.0
PFTeDA		96.9	70.0	130.0	0.1	30.0

Matrix Spike (MS)

Lab Sample ID: AK200701.1517201M, Parent Sample ID: S15172.01

Run in Batch: AK200701, Run Date: 07/02/2020 01:59, Prep Date: 07/01/2020, Matrix: WW, Dilution: 1.93

Analyte	Flags	% Rec	LCL	UCL
PFBA		95.3	70.0	130.0
PFPeA		99.5	70.0	130.0
4:2 FTSA		99.5	70.0	130.0
PFHxA		103.6	70.0	130.0
PFBS		103.6	70.0	130.0
PFHpA		96.4	70.0	130.0
PFPeS		103.6	70.0	130.0
6:2 FTSA		97.4	70.0	130.0
PFOA		114.0	70.0	130.0
PFHxS		103.6	70.0	130.0
PFNA		114.0	70.0	130.0
8:2 FTSA		88.1	70.0	130.0
PFHpS		95.3	70.0	130.0
PFDA		100.5	70.0	130.0
N-MeFOSAA		103.6	70.0	130.0
EtFOSAA		103.6	70.0	130.0
PFOS		103.6	70.0	130.0
PFUnDA		92.2	70.0	130.0
PFNS		124.4	70.0	130.0
PFDoDA		93.3	70.0	130.0
PFDS		124.4	70.0	130.0
PFTTrDA		114.0	70.0	130.0
FOSA		100.5	70.0	130.0
PFTeDA		100.5	70.0	130.0
11CL-PF3OUdS		124.4	70.0	130.0
9CL-PF3ONS		124.4	70.0	130.0
ADONA		114.0	70.0	130.0
HFPO-DA		96.4	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK200701.1517202D, Parent Sample ID: S15172.02

Run in Batch: AK200701, Run Date: 07/02/2020 02:38, Prep Date: 07/01/2020, Matrix: WW, Dilution: 2

Analyte	Flags	RPD	RPD CL
PFBA	*	200.0	30.0
PFPeA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF200701W1 (continued)

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

Duplicate (DUP) (continued)

Lab Sample ID: AK200701.1517202D, Parent Sample ID: S15172.02

Run in Batch: AK200701, Run Date: 07/02/2020 02:38, Prep Date: 07/01/2020, Matrix: WW, Dilution: 2

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

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF200707W2

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

Blank (BLK)

Lab Sample ID: AK200707B.BLK200707B

Run in Batch: AK200707B, Run Date: 07/08/2020 07:25, Prep Date: 07/07/2020, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	20.0	ng/l
PFPeA		ND	10.0	ng/l
4:2 FTSA		ND	10.0	ng/l
PFHxA		ND	10.0	ng/l
PFBS		ND	10.0	ng/l
PFHpA		ND	10.0	ng/l
PFPeS		ND	10.0	ng/l
6:2 FTSA		ND	10.0	ng/l
PFOA		ND	10.0	ng/l
PFHxS		ND	10.0	ng/l
PFHxS-LN		ND	10.0	ng/l
PFHxS-BR		ND	10.0	ng/l
PFNA		ND	10.0	ng/l
8:2 FTSA		ND	10.0	ng/l
PFHpS		ND	10.0	ng/l
PFDA		ND	10.0	ng/l
N-MeFOSAA		ND	10.0	ng/l
EtFOSAA		ND	10.0	ng/l
PFOS		ND	10.0	ng/l
PFOS-LN		ND	10.0	ng/l
PFOS-BR		ND	10.0	ng/l
PFUnDA		ND	10.0	ng/l
PFNS		ND	10.0	ng/l
PFDoDA		ND	10.0	ng/l
PFDS		ND	10.0	ng/l
PFTTrDA		ND	10.0	ng/l
FOSA		ND	10.0	ng/l
PFTeDA		ND	10.0	ng/l
11CL-PF3OUdS		ND	1	ng/l
9CL-PF3ONS		ND	1	ng/l
ADONA		ND	1	ng/l
HFPO-DA		ND	1	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK200707B.LCS200707B

Run in Batch: AK200707B, Run Date: 07/08/2020 06:46, Prep Date: 07/07/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		110.0	70.0	130.0
PFPeA		108.0	70.0	130.0
4:2 FTSA		104.0	70.0	130.0
PFHxA		103.0	70.0	130.0
PFBS		108.0	70.0	130.0
HFPO-DA		99.5	70.0	130.0
PFHpA		101.0	70.0	130.0
PFPeS		112.0	70.0	130.0
ADONA		95.6	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF200707W2 (continued)

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

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK200707B.LCS200707B

Run in Batch: AK200707B, Run Date: 07/08/2020 06:46, Prep Date: 07/07/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		107.0	70.0	130.0
PFOA		101.0	70.0	130.0
PFHxS		93.1	70.0	130.0
PFNA		107.0	70.0	130.0
8:2 FTSA		102.0	70.0	130.0
PFHpS		99.6	70.0	130.0
N-MeFOSAA		108.0	70.0	130.0
PFDA		113.0	70.0	130.0
EtFOSAA		97.3	70.0	130.0
PFOS		107.0	70.0	130.0
PFUnDA		105.0	70.0	130.0
9CL-PF3ONS		107.0	70.0	130.0
PFNS		109.0	70.0	130.0
PFDoDA		104.0	70.0	130.0
PFDS		119.0	70.0	130.0
PFTTrDA		107.0	70.0	130.0
FOSA		113.0	70.0	130.0
11CL-PF3OUdS		111.0	70.0	130.0
PFTeDA		115.0	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK200707B.LCSD200707B, Parent Sample ID: AK200707B.LCS200707B

Run in Batch: AK200707B, Run Date: 07/08/2020 07:06, Prep Date: 07/07/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		110.0	70.0	130.0	0.0	30.0
PFPeA		107.0	70.0	130.0	0.9	30.0
4:2 FTSA		106.0	70.0	130.0	1.9	30.0
PFHxA		109.0	70.0	130.0	5.7	30.0
PFBS		102.0	70.0	130.0	5.7	30.0
HFPO-DA		99.6	70.0	130.0	0.1	30.0
PFHpA		101.0	70.0	130.0	0.0	30.0
PFPeS		112.0	70.0	130.0	0.0	30.0
ADONA		88.3	70.0	130.0	7.9	30.0
6:2 FTSA		111.0	70.0	130.0	3.7	30.0
PFOA		99.1	70.0	130.0	1.9	30.0
PFHxS		101.0	70.0	130.0	8.1	30.0
PFNA		104.0	70.0	130.0	2.8	30.0
8:2 FTSA		91.9	70.0	130.0	10.4	30.0
PFHpS		99.3	70.0	130.0	0.3	30.0
N-MeFOSAA		117.0	70.0	130.0	8.0	30.0
PFDA		118.0	70.0	130.0	4.3	30.0
EtFOSAA		101.0	70.0	130.0	3.7	30.0
PFOS		113.0	70.0	130.0	5.5	30.0
PFUnDA		95.2	70.0	130.0	9.8	30.0
9CL-PF3ONS		120.0	70.0	130.0	11.5	30.0
PFNS		110.0	70.0	130.0	0.9	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF200707W2 (continued)

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

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK200707B.LCSD200707B, Parent Sample ID: AK200707B.LCS200707B

Run in Batch: AK200707B, Run Date: 07/08/2020 07:06, Prep Date: 07/07/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		107.0	70.0	130.0	2.8	30.0
PFDS		113.0	70.0	130.0	5.2	30.0
PFTTrDA		109.0	70.0	130.0	1.9	30.0
FOSA		120.0	70.0	130.0	6.0	30.0
11CL-PF3OUdS		120.0	70.0	130.0	7.8	30.0
PFTeDA		117.0	70.0	130.0	1.7	30.0

Matrix Spike (MS)

Lab Sample ID: AK200707B.1520802M, Parent Sample ID: S15208.02

Run in Batch: AK200707B, Run Date: 07/08/2020 10:40, Prep Date: 07/07/2020, Matrix: WW, Dilution: 1.89

Analyte	Flags	% Rec	LCL	UCL
PFBA		101.6	70.0	130.0
PFPeA		100.5	70.0	130.0
4:2 FTSA		94.2	70.0	130.0
PFHxA		100.5	70.0	130.0
PFBS		101.6	70.0	130.0
PFHpA		103.7	70.0	130.0
PFPeS		104.8	70.0	130.0
6:2 FTSA		103.7	70.0	130.0
PFOA		116.4	70.0	130.0
PFHxS		96.3	70.0	130.0
PFNA		116.4	70.0	130.0
8:2 FTSA		80.4	70.0	130.0
PFHpS		87.8	70.0	130.0
PFDA		116.4	70.0	130.0
N-MeFOSAA		101.6	70.0	130.0
EtFOSAA		94.2	70.0	130.0
PFOS		116.4	70.0	130.0
PFUnDA		100.5	70.0	130.0
PFNS		98.4	70.0	130.0
PFDoDA		116.4	70.0	130.0
PFDS		105.8	70.0	130.0
PFTTrDA		102.6	70.0	130.0
FOSA		105.8	70.0	130.0
PFTeDA		105.8	70.0	130.0
11CL-PF3OUdS		116.4	70.0	130.0
9CL-PF3ONS		116.4	70.0	130.0
ADONA		99.5	70.0	130.0
HFPO-DA		92.1	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK200707B.1520803D, Parent Sample ID: S15208.03

Run in Batch: AK200707B, Run Date: 07/08/2020 11:19, Prep Date: 07/07/2020, Matrix: WW, Dilution: 2.06

Analyte	Flags	RPD	RPD CL
PFBA		10.5	30.0
PFPeA		NC	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: PF200707W2 (continued)

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

Duplicate (DUP) (continued)

Lab Sample ID: AK200707B.1520803D, Parent Sample ID: S15208.03

Run in Batch: AK200707B, Run Date: 07/08/2020 11:19, Prep Date: 07/07/2020, Matrix: WW, Dilution: 2.06

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



REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Yant z
 COMPANY: O'Brien & Gere, A Ramboll company
 ADDRESS: 2260 East Saginaw
 CITY: East Lansing STATE: MI ZIP CODE: 48823
 PHONE NO.: 313-333-0211 FAX NO.: _____ P.O. NO.: _____
 E-MAIL ADDRESS: Clifford.Yantz@Ramboll.com QUOTE NO.: _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

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

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

Containers & Preservatives

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	PFAS (7979)	Certifications <input type="checkbox"/> OHIO VAP <input type="checkbox"/> Drinking Water <input type="checkbox"/> DoD <input type="checkbox"/> NPDES Project Locations <input type="checkbox"/> Detroit <input type="checkbox"/> New York <input type="checkbox"/> Other _____ Special Instructions
	DATE	TIME												
15208.01	6/25/20	1013	Field Blank 062520	QC	1	1							X	ASTM D7979 low level reporting limit with estimate values
.02	↓	1015	02-PRCC-20-EFF-119	WW	3	3							X	
.03	↓	1017	02-PRCC-20-MID-1-119	↓	↓	↓							X	
.04	↓	1019	02-PRCC-20-MID-2-119	↓	↓	↓							X	
.05	↓	1021	02-PRCC-20-PRIM-119	↓	↓	↓							X	

RELINQUISHED BY: Will Loughner WLE Sampler DATE: 6/25/20 TIME: 1545
 RECEIVED BY: Wiley J DATE: 6/25/20 TIME: 1545

RELINQUISHED BY: _____ DATE: _____ TIME: _____
 RECEIVED BY: _____ DATE: _____ TIME: _____
 SEAL NO. SEAL INTACT INITIALS NOTES: TEMP. ON ARRIVAL _____
 YES NO
 SEAL NO. SEAL INTACT INITIALS
 YES NO 2.8

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