Analytical Laboratory Report

Report ID: S94963.01(01)+QC01
Generated on 10/30/2018

Report to

Attention: Mike Jury
MDEQ
Saginaw Bay District Office
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Bay City, MI 48708

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Report Summary

Lab Sample ID(s): S94963.01-S94963.04
Project: MDEQ State Municipal Sampling
Collected Date: 09/25/2018
Submitted Date/Time: 10/01/2018 13:45
Sampled by: Kelly Richart
P.O. #: 60570309

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Maya Murshak
Technical Director

General Report Notes

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

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

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

Method Summary

Method	Version
E537	EPA Method 537 Version 1.1 September 2009

Parameter Summary

Parameter	Synonym	Cas #
PFHxA	Perfluorohexanoic Acid	307-24-4
PFBS	Perfluorobutane sulfonic Acid	375-73-5
PFHpA	Perfluoroheptanoic Acid	375-85-9
PFOA	Perfluorooctanoic Acid	335-67-1
PFHxS	Perfluorohexane Sulfonic Acid	355-46-4
PFNA	Perfluorononanoic Acid	375-95-1
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
PFUnDA	Perfluoroundecanoic Acid	2058-94-8
PFDoDA	Perfluorododecanoic Acid	307-55-1
PFTrDA	Perfluorotridecanoic Acid	72629-94-8
PFTeDA	Perfluorotetradecanoic Acid	376-06-7

Sample Summary (4 samples)

Sample ID	Sample Tag	Location	Matrix	Collected Date/Time
S94963.01	GWNT1809251245KER	PORTLAND05530TP105	Drinking Water	09/25/18 12:45
S94963.02	GWEF1809251300KER	PORTLAND05530TP106	Drinking Water	09/25/18 13:00
S94963.03	GWEF1809251320KER	PORTLAND05530TP104	Drinking Water	09/25/18 13:20
S94963.04	GWEF1809251340KER	PORTLAND05530TP107	Drinking Water	09/25/18 13:40

Lab Sample ID: S94963.01
Sample Tag: GWNT1809251245KER
Location: PORTLAND05530TP105
Collected Date/Time: 09/25/2018 12:45
Matrix: Drinking Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	250ml Plastic	Trizma	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Sample Amount*	286.83 ml	E537	10/03/18 16:00	JGH	

Organics

PFAs Drinking Water, Method: E537, Run Date: 10/10/18 19:33, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxA*	Not detected	2		ng/L	1	307-24-4	S
PFBS*	Not detected	2		ng/L	1	375-73-5	S
PFHpA*	Not detected	2		ng/L	1	375-85-9	S
PFOA*	Not detected	2		ng/L	1	335-67-1	S
PFHxS*	Not detected	2		ng/L	1	355-46-4	S
PFNA*	Not detected	2		ng/L	1	375-95-1	S
PFDA*	Not detected	2		ng/L	1	335-76-2	S
N-MeFOSAA*	Not detected	2		ng/L	1	2355-31-9	S
EtFOSAA*	Not detected	2		ng/L	1	2991-50-6	S
PFOS*	4	2		ng/L	1	1763-23-1	S
PFUnDA*	Not detected	2		ng/L	1	2058-94-8	S
PFDoDA*	Not detected	2		ng/L	1	307-55-1	S
PFTrDA*	Not detected	2		ng/L	1	72629-94-8	S
PFTeDA*	Not detected	2		ng/L	1	376-06-7	S

S-Surrogate recovery outside of control limits

Lab Sample ID: S94963.02
Sample Tag: GWEF1809251300KER
Location: PORTLAND05530TP106
Collected Date/Time: 09/25/2018 13:00
Matrix: Drinking Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	250ml Plastic	Trizma	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Sample Amount*	283.06 ml	E537	10/03/18 16:00	JGH	

Organics

PFAs Drinking Water, Method: E537, Run Date: 10/10/18 19:48, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxA*	Not detected	2		ng/L	1	307-24-4	
PFBS*	Not detected	2		ng/L	1	375-73-5	
PFHpA*	Not detected	2		ng/L	1	375-85-9	
PFOA*	Not detected	2		ng/L	1	335-67-1	
PFHxS*	Not detected	2		ng/L	1	355-46-4	
PFNA*	Not detected	2		ng/L	1	375-95-1	
PFDA*	Not detected	2		ng/L	1	335-76-2	
N-MeFOSAA*	Not detected	2		ng/L	1	2355-31-9	
EtFOSAA*	Not detected	2		ng/L	1	2991-50-6	
PFOS*	Not detected	2		ng/L	1	1763-23-1	
PFUnDA*	Not detected	2		ng/L	1	2058-94-8	
PFDoDA*	Not detected	2		ng/L	1	307-55-1	
PFTrDA*	Not detected	2		ng/L	1	72629-94-8	
PFTeDA*	Not detected	2		ng/L	1	376-06-7	

Lab Sample ID: S94963.03
Sample Tag: GWEF1809251320KER
Location: PORTLAND05530TP104
Collected Date/Time: 09/25/2018 13:20
Matrix: Drinking Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	250ml Plastic	Trizma	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Sample Amount*	290.84 ml	E537	10/03/18 16:00	JGH	

Organics

PFAs Drinking Water, Method: E537, Run Date: 10/10/18 20:04, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxA*	Not detected	2		ng/L	1	307-24-4	
PFBS*	Not detected	2		ng/L	1	375-73-5	
PFHpA*	Not detected	2		ng/L	1	375-85-9	
PFOA*	Not detected	2		ng/L	1	335-67-1	
PFHxS*	Not detected	2		ng/L	1	355-46-4	
PFNA*	Not detected	2		ng/L	1	375-95-1	
PFDA*	Not detected	2		ng/L	1	335-76-2	
N-MeFOSAA*	Not detected	2		ng/L	1	2355-31-9	
EtFOSAA*	Not detected	2		ng/L	1	2991-50-6	
PFOS*	Not detected	2		ng/L	1	1763-23-1	
PFUnDA*	Not detected	2		ng/L	1	2058-94-8	
PFDoDA*	Not detected	2		ng/L	1	307-55-1	
PFTrDA*	Not detected	2		ng/L	1	72629-94-8	
PFTeDA*	Not detected	2		ng/L	1	376-06-7	

Lab Sample ID: S94963.04
Sample Tag: GWEF1809251340KER
Location: PORTLAND05530TP107
Collected Date/Time: 09/25/2018 13:40
Matrix: Drinking Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	250ml Plastic	Trizma	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Sample Amount*	294.40 ml	E537	10/03/18 16:00	JGH	

Organics

PFAs Drinking Water, Method: E537, Run Date: 10/10/18 20:20, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxA*	Not detected	2		ng/L	1	307-24-4	
PFBS*	Not detected	2		ng/L	1	375-73-5	
PFHpA*	Not detected	2		ng/L	1	375-85-9	
PFOA*	Not detected	2		ng/L	1	335-67-1	
PFHxS*	Not detected	2		ng/L	1	355-46-4	
PFNA*	Not detected	2		ng/L	1	375-95-1	
PFDA*	Not detected	2		ng/L	1	335-76-2	
N-MeFOSAA*	Not detected	2		ng/L	1	2355-31-9	
EtFOSAA*	Not detected	2		ng/L	1	2991-50-6	
PFOS*	Not detected	2		ng/L	1	1763-23-1	
PFUnDA*	Not detected	2		ng/L	1	2058-94-8	
PFDoDA*	Not detected	2		ng/L	1	307-55-1	
PFTrDA*	Not detected	2		ng/L	1	72629-94-8	
PFTeDA*	Not detected	2		ng/L	1	376-06-7	

Quality Control Report

Report ID: S94963.01(01)+QC01
Generated on 10/31/2018

Report to

Attention: Mike Jury
MDEQ
Saginaw Bay District Office
401 Ketchum St.
Bay City, MI 48708

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Report Produced by

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Report Summary

Lab Sample ID(s): S94963.01-S94963.04
Project: MDEQ State Municipal Sampling
Submitted Date/Time: 10/01/2018 13:45
Sampled by: Kelly Richart
P.O. #: 60570309

QC Report Sections

Report Flag Descriptions

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

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

Barbara Ball

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S94963.01
Sample Tag: GWNT1809251245KER
Collected Date/Time: 09/25/2018 12:45
Matrix: Drinking Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
PFAs Drinking Water	E537	10/10/18 19:33	DQ181010	PD181003W1	Yes	LCS/BLK/LCSD

Lab Sample ID: S94963.02
Sample Tag: GWEF1809251300KER
Collected Date/Time: 09/25/2018 13:00
Matrix: Drinking Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
PFAs Drinking Water	E537	10/10/18 19:48	DQ181010	PD181003W1	Yes	LCS/BLK/LCSD

Lab Sample ID: S94963.03

Sample Tag: GWEF1809251320KER

Collected Date/Time: 09/25/2018 13:20

Matrix: Drinking Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
PFAs Drinking Water	E537	10/10/18 20:04	DQ181010	PD181003W1	Yes	LCS/BLK/LCSD

Lab Sample ID: S94963.04
Sample Tag: GWEF1809251340KER
Collected Date/Time: 09/25/2018 13:40
Matrix: Drinking Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
PFAs Drinking Water	E537	10/10/18 20:20	DQ181010	PD181003W1	Yes	LCS/BLK/LCSD

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PD181003W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S94963.01	PFAs Drinking Water	E537	10/10/18 19:33	DQ181010
S94963.02	PFAs Drinking Water	E537	10/10/18 19:48	DQ181010
S94963.03	PFAs Drinking Water	E537	10/10/18 20:04	DQ181010
S94963.04	PFAs Drinking Water	E537	10/10/18 20:20	DQ181010

QC Report - Surrogates per Lab Sample

Lab Sample ID: S94963.01

Sample Tag: GWNT1809251245KER

Collected Date/Time: 09/25/2018 12:45

Matrix: Drinking Water

COC Reference:

Organics - Volatiles, Analysis: PFAs Drinking Water

Run in Batch: DQ181010, Run Date: 10/10/2018 19:33, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
C13PFDA		**91.0**	70.0	130.0
C13PFHxA		**113.7**	70.0	130.0
d5NEtFOSAA	*	**52.1**	70.0	130.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S94963.02

Sample Tag: GWEF1809251300KER

Collected Date/Time: 09/25/2018 13:00

Matrix: Drinking Water

COC Reference:

Organics - Volatiles, Analysis: PFAs Drinking Water

Run in Batch: DQ181010, Run Date: 10/10/2018 19:48, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
C13PFDA		**104.5**	70.0	130.0
C13PFHxA		**106.9**	70.0	130.0
d5NEtFOSAA		**86.1**	70.0	130.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S94963.03

Sample Tag: GWEF1809251320KER

Collected Date/Time: 09/25/2018 13:20

Matrix: Drinking Water

COC Reference:

Organics - Volatiles, Analysis: PFAs Drinking Water

Run in Batch: DQ181010, Run Date: 10/10/2018 20:04, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
C13PFDA		**105.0**	70.0	130.0
C13PFHxA		**103.6**	70.0	130.0
d5NEtFOSAA		**85.2**	70.0	130.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S94963.04

Sample Tag: GWEF1809251340KER

Collected Date/Time: 09/25/2018 13:40

Matrix: Drinking Water

COC Reference:

Organics - Volatiles, Analysis: PFAs Drinking Water

Run in Batch: DQ181010, Run Date: 10/10/2018 20:20, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
C13PFDA		**108.0**	70.0	130.0
C13PFHxA		**111.6**	70.0	130.0
d5NEtFOSAA		**92.0**	70.0	130.0

Organics - Volatiles, Prep Batch ID: PD181003W1

QC Types: LCS/BLK/LCSD

Laboratory Control Sample (LCS)

Lab Sample ID: DQ181010.LFB1810031

Run in Batch: DQ181010, Run Date: 10/10/2018 13:37, Prep Date: 10/03/2018, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
C13PFDA		**103.7**	70.0	130.0
C13PFHxA		**109.2**	70.0	130.0
d5NEtFOSAA		**96.8**	70.0	130.0

Blank (BLK)

Lab Sample ID: DQ181010.LRB1810031

Run in Batch: DQ181010, Run Date: 10/10/2018 14:07, Prep Date: 10/03/2018, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
C13PFDA		**99.2**	70.0	130.0
C13PFHxA		**112.5**	70.0	130.0
d5NEtFOSAA		**94.7**	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ181010.LFBD181031, Parent Sample ID: DQ181010.LFB1810031

Run in Batch: DQ181010, Run Date: 10/10/2018 13:52, Prep Date: 10/03/2018, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
C13PFDA		**105.8**	70.0	130.0
C13PFHxA		**112.3**	70.0	130.0
d5NEtFOSAA		**99.6**	70.0	130.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S94963.01

Sample Tag: GWNT1809251245KER

Collected Date/Time: 09/25/2018 12:45

Matrix: Drinking Water

COC Reference:

Organics - Volatiles, Analysis: PFAs Drinking Water

Run in Batch: DQ181010, Run Date: 10/10/2018 19:33, Matrix: WW, Dilution: 1

Internal Standard	Flags	**%Rec**	LCL	UCL
C13PFOA		**86.9**	50.0	150.0
C13PFOS		**89.6**	50.0	150.0
d3NMeFOSAA		**89.1**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S94963.02

Sample Tag: GWEF1809251300KER

Collected Date/Time: 09/25/2018 13:00

Matrix: Drinking Water

COC Reference:

Organics - Volatiles, Analysis: PFAs Drinking Water

Run in Batch: DQ181010, Run Date: 10/10/2018 19:48, Matrix: WW, Dilution: 1

Internal Standard	Flags	**%Rec**	LCL	UCL
C13PFOA		**93.2**	50.0	150.0
C13PFOS		**93.0**	50.0	150.0
d3NMeFOSAA		**99.1**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S94963.03

Sample Tag: GWEF1809251320KER

Collected Date/Time: 09/25/2018 13:20

Matrix: Drinking Water

COC Reference:

Organics - Volatiles, Analysis: PFAs Drinking Water

Run in Batch: DQ181010, Run Date: 10/10/2018 20:04, Matrix: WW, Dilution: 1

Internal Standard	Flags	**%Rec**	LCL	UCL
C13PFOA		**93.5**	50.0	150.0
C13PFOS		**90.6**	50.0	150.0
d3NMeFOSAA		**97.0**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S94963.04

Sample Tag: GWEF1809251340KER

Collected Date/Time: 09/25/2018 13:40

Matrix: Drinking Water

COC Reference:

Organics - Volatiles, Analysis: PFAs Drinking Water

Run in Batch: DQ181010, Run Date: 10/10/2018 20:20, Matrix: WW, Dilution: 1

Internal Standard	Flags	**%Rec**	LCL	UCL
C13PFOA		**90.4**	50.0	150.0
C13PFOS		**94.7**	50.0	150.0
d3NMeFOSAA		**98.5**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PD181003W1

QC Types: LCS/BLK/LCSD

Laboratory Control Sample (LCS)

Lab Sample ID: DQ181010.LFB1810031

Run in Batch: DQ181010, Run Date: 10/10/2018 13:37, Prep Date: 10/03/2018, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
C13PFOA		**91.3**	50.0	150.0
C13PFOS		**92.1**	50.0	150.0
d3NMeFOSAA		**92.0**	50.0	150.0

Blank (BLK)

Lab Sample ID: DQ181010.LRB1810031

Run in Batch: DQ181010, Run Date: 10/10/2018 14:07, Prep Date: 10/03/2018, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
C13PFOA		**87.0**	50.0	150.0
C13PFOS		**89.5**	50.0	150.0
d3NMeFOSAA		**91.7**	50.0	150.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ181010.LFBD181031, Parent Sample ID: DQ181010.LFB1810031

Run in Batch: DQ181010, Run Date: 10/10/2018 13:52, Prep Date: 10/03/2018, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
C13PFOA		**87.4**	50.0	150.0
C13PFOS		**90.3**	50.0	150.0
d3NMeFOSAA		**93.3**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PD181003W1

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

Laboratory Control Sample (LCS)

Lab Sample ID: DQ181010.LFB1810031

Run in Batch: DQ181010, Run Date: 10/10/2018 13:37, Prep Date: 10/03/2018, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFHxA		96.5	70.0	130.0
PFBS		94.5	70.0	130.0
PFHpA		99.5	70.0	130.0
PFOA		97.0	70.0	130.0
PFHxS		90.3	70.0	130.0
PFNA	*	131.8	70.0	130.0
PFDA		95.0	70.0	130.0
N-MeFOSAA		86.8	70.0	130.0
EtFOSAA		92.0	70.0	130.0
PFOS		87.5	70.0	130.0
PFUnDA		96.0	70.0	130.0
PFDoDA		79.0	70.0	130.0
PFTrDA		83.5	70.0	130.0
PFTeDA		74.5	70.0	130.0

Blank (BLK)

Lab Sample ID: DQ181010.LRB1810031

Run in Batch: DQ181010, Run Date: 10/10/2018 14:07, Prep Date: 10/03/2018, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFHxA		ND	2	ng/l
PFBS		ND	2	ng/l
PFHpA		ND	2	ng/l
PFOA		ND	2	ng/l
PFHxS		ND	2	ng/l
PFNA		ND	2	ng/l
PFDA		ND	2	ng/l
N-MeFOSAA		ND	2	ng/l
EtFOSAA		ND	2	ng/l
PFOS		ND	2	ng/l
PFUnDA		ND	2	ng/l
PFDoDA		ND	2	ng/l
PFTrDA		ND	2	ng/l
PFTeDA		ND	2	ng/l

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: DQ181010.LFBD181031, Parent Sample ID: DQ181010.LFB1810031

Run in Batch: DQ181010, Run Date: 10/10/2018 13:52, Prep Date: 10/03/2018, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFHxA		101.0	70.0	130.0	4.6	30.0
PFBS		98.5	70.0	130.0	4.1	30.0
PFHpA		104.5	70.0	130.0	4.9	30.0
PFOA		96.5	70.0	130.0	0.5	30.0
PFHxS		94.8	70.0	130.0	4.9	30.0
PFNA		127.8	70.0	130.0	3.1	30.0
PFDA		95.0	70.0	130.0	0.0	30.0
N-MeFOSAA		86.8	70.0	130.0	0.0	30.0

Organics - Volatiles, Prep Batch ID: PD181003W1 (continued)

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

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: DQ181010.LFBD181031, Parent Sample ID: DQ181010.LFB1810031

Run in Batch: DQ181010, Run Date: 10/10/2018 13:52, Prep Date: 10/03/2018, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
EtFOSAA		87.3	70.0	130.0	5.3	30.0
PFOS		92.0	70.0	130.0	5.0	30.0
PFUnDA		98.5	70.0	130.0	2.6	30.0
PFDoDA		85.3	70.0	130.0	7.6	30.0
PFTrDA		80.3	70.0	130.0	4.0	30.0
PFTeDA		80.7	70.0	130.0	8.1	30.0

Merit Laboratories Login Checklist

Lab Set ID: S94963
Client: MDEQ2 (Michigan Department of Environmental Quality)
Project: MDEQ State Municipal Sampling
Submitted: 10/01/2018 13:45 Login User: SRS

Attention: Mike Jury
Address: MDEQ
Saginaw Bay District Office
401 Ketchum St.
Bay City, MI 48708

Phone: 989-894-6255 FAX:
Email: jurym1@michigan.gov

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 3.4
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[ ] Yes	[ ] No	[X] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

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

Client Review By: _____ Date: _____

MERIT LABORATORIES, INC.
2680 East Lansing Drive East Lansing MI 48823
Phone: (517) 332-0167 Fax: (517) 332-6333
www.meritlabs.com

COC PAGE # 5 OF 5

CHAIN OF CUSTODY RECORD

REPORT TO		INVOICE TO	☐ SAME
Contact Name	MIKE JURY	Contact Name	MIKE JURY
Company	MDEQ	Company	MDEQ
Address	401 KETCHUM ST, SUITE B	Address	401 KETCHUM ST, SUITE B
City / State / Zip Code	BAY CITY / MI / 48708	City / State / Zip Code	BAY CITY / MI / 48708
Phone # / PO #	989-894-6255 / 60570309	Phone #	989-894-6255
Email Address	dorin.bogdan@aecom.com	Email Address	dorin.bogdan@aecom.com

Project #/Name 60570309 Sampler Name KELLY RICHART

TAT Time Requested: ☐ 1 day ☐ 2 day ☐ 3 day ☐ 5 day ☑ STANDARD ☐ OTHER ________

Deliverables Requested: ☐ STANDARD ☑ LEVEL II ☐ LEVEL III ☑ LEVEL IV ☑ EDD

MATRIX CODE: GW: GROUNDWATER WW: WASTEWATER DW: DRINKING WATER
S: SOIL L: LIQUID SD: SOLID SL: SLUDGE O: OIL W: WASTE M: MISC

ANALYSIS

MERIT LAB ID	DATE	TIME	SAMPLE TAG	LOCATION	MATRIX	# BOTTLES	NONE	TRIZMA	Other		EPA 537 - 14 PFCs	ASTM D7979 - 24 PFCs		Special Instructions
94963.01	9/25/2018	1245	GWNT1809251245KER	PORTLAND05530TP105	DW	2	☐	☑	☐	☐	☑	☐	☐	Well 5
.02	9/25/2018	1300	GWEF1809251300KER	PORTLAND05530TP106	DW	2	☐	☑	☐	☐	☑	☐	☐	Well 6
.03	9/25/2018	1320	GWEF1809251320KER	PORTLAND05530TP104	DW	2	☐	☑	☐	☐	☑	☐	☐	Well 4
.04	9/25/2018	1340	GWEF1809251340KER	PORTLAND05530TP107	DW	2	☐	☑	☐	☐	☑	☐	☐	Well 7

	Signature/Organization	Date	Time
Relinquished By: KELLY RICHART	[signature] AECOM	9-28-18	1700
Received By:	AECOM Storage	10/1/18	10:45
Relinquished By:	[signature]	10/1/18	13:45
Received By:	[signature]	10/1/18	1345
Relinquished By:	AECOM Storage	9/28/18	17:00
Received By:	[signature]	10/1/18	10:45

Notes:

Temp on Arrival 3.4