



Analytical Laboratory Report

Report ID: S93427.01(01)
Generated on 09/13/2018

Report to

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Report Summary

Lab Sample ID(s): S93427.01-S93427.03
Project: Chemours Montague
Collected Date: 08/22/2018
Submitted Date/Time: 08/22/2018 16:15
Sampled by: Dale Bridgford
P.O. #:

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Maya Murshak
Technical Director



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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



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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



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Method Summary

Method	Version
ASTMD7979-17M	ASTM Method D7979 - 17 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	474511-07-4
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



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Sample Summary (3 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S93427.01	Outfall	Groundwater	08/22/18 11:10
S93427.02	MW-213-63	Groundwater	08/22/18 13:25
S93427.03	F.B.	Water	08/22/18 13:30



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Lab Sample ID: S93427.01

Sample Tag: Outfall

Collected Date/Time: 08/22/2018 11:10

Matrix: Groundwater

COC Reference: 106807

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.8	IR

Organics

24 PFAs, Method: ASTMD7979-17M, Run Date: 08/24/18 00:39, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	20		ng/L	2.0619	375-22-4	
PFPeA*	Not detected	10		ng/L	2.0619	2706-90-3	
4:2 FTSA*	Not detected	10		ng/L	2.0619	757124-72-4	
PFHxA*	Not detected	10		ng/L	2.0619	307-24-4	
PFBS*	Not detected	10		ng/L	2.0619	375-73-5	
PFHpA*	Not detected	10		ng/L	2.0619	375-85-9	
PFPeS*	Not detected	10		ng/L	2.0619	2706-91-4	
6:2 FTSA*	Not detected	10		ng/L	2.0619	27619-97-2	
PFOA*	Not detected	10		ng/L	2.0619	335-67-1	
PFHxS*	Not detected	10		ng/L	2.0619	355-46-4	
PFHxS-LN*	Not detected	10		ng/L	2.0619	355-46-4-LN	
PFHxS-BR*	Not detected	10		ng/L	2.0619	355-46-4-BR	
PFNA*	Not detected	10		ng/L	2.0619	375-95-1	
8:2 FTSA*	Not detected	10		ng/L	2.0619	39108-34-4	
PFHpS*	Not detected	10		ng/L	2.0619	375-92-8	
PFDA*	Not detected	10		ng/L	2.0619	335-76-2	
N-MeFOSAA*	Not detected	10		ng/L	2.0619	2355-31-9	
EtFOSAA*	Not detected	10		ng/L	2.0619	2991-50-6	
PFOS*	Not detected	10		ng/L	2.0619	1763-23-1	
PFOS-LN*	Not detected	10		ng/L	2.0619	1763-23-1-LN	
PFOS-BR*	Not detected	10		ng/L	2.0619	1763-23-1-BR	
PFUnDA*	Not detected	10		ng/L	2.0619	2058-94-8	
PFNS*	Not detected	10		ng/L	2.0619	474511-07-4	
PFDODA*	Not detected	10		ng/L	2.0619	307-55-1	
PFDS*	Not detected	10		ng/L	2.0619	335-77-3	
PFTTrDA*	Not detected	10		ng/L	2.0619	72629-94-8	
FOSA*	Not detected	10		ng/L	2.0619	754-91-6	
PFTeDA*	Not detected	10		ng/L	2.0619	376-06-7	



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Lab Sample ID: S93427.02

Sample Tag: MW-213-63

Collected Date/Time: 08/22/2018 13:25

Matrix: Groundwater

COC Reference: 106807

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.8	IR

Organics

24 PFAs, Method: ASTM D7979-17M, Run Date: 08/24/18 01:18, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	20		ng/L	2.0202	375-22-4	
PFPeA*	Not detected	10		ng/L	2.0202	2706-90-3	
4:2 FTSA*	Not detected	10		ng/L	2.0202	757124-72-4	
PFHxA*	Not detected	10		ng/L	2.0202	307-24-4	
PFBS*	Not detected	10		ng/L	2.0202	375-73-5	
PFHpA*	Not detected	10		ng/L	2.0202	375-85-9	
PFPeS*	Not detected	10		ng/L	2.0202	2706-91-4	
6:2 FTSA*	Not detected	10		ng/L	2.0202	27619-97-2	
PFOA*	Not detected	10		ng/L	2.0202	335-67-1	
PFHxS*	Not detected	10		ng/L	2.0202	355-46-4	
PFHxS-LN*	Not detected	10		ng/L	2.0202	355-46-4-LN	
PFHxS-BR*	Not detected	10		ng/L	2.0202	355-46-4-BR	
PFNA*	Not detected	10		ng/L	2.0202	375-95-1	
8:2 FTSA*	Not detected	10		ng/L	2.0202	39108-34-4	
PFHpS*	Not detected	10		ng/L	2.0202	375-92-8	
PFDA*	Not detected	10		ng/L	2.0202	335-76-2	
N-MeFOSAA*	Not detected	10		ng/L	2.0202	2355-31-9	
EtFOSAA*	Not detected	10		ng/L	2.0202	2991-50-6	
PFOS*	Not detected	10		ng/L	2.0202	1763-23-1	
PFOS-LN*	Not detected	10		ng/L	2.0202	1763-23-1-LN	
PFOS-BR*	Not detected	10		ng/L	2.0202	1763-23-1-BR	
PFUnDA*	Not detected	10		ng/L	2.0202	2058-94-8	
PFNS*	Not detected	10		ng/L	2.0202	474511-07-4	
PFDODA*	Not detected	10		ng/L	2.0202	307-55-1	
PFDS*	Not detected	10		ng/L	2.0202	335-77-3	
PFTTrDA*	Not detected	10		ng/L	2.0202	72629-94-8	
FOSA*	Not detected	10		ng/L	2.0202	754-91-6	
PFTeDA*	Not detected	10		ng/L	2.0202	376-06-7	



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Lab Sample ID: S93427.03

Sample Tag: F.B.

Collected Date/Time: 08/22/2018 13:30

Matrix: Water

COC Reference: 106807

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.8	IR

Organics

24 PFAs, Method: ASTMD7979-17M, Run Date: 08/24/18 01:57, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	20		ng/L	2.008	375-22-4	
PFPeA*	Not detected	10		ng/L	2.008	2706-90-3	
4:2 FTSA*	Not detected	10		ng/L	2.008	757124-72-4	
PFHxA*	Not detected	10		ng/L	2.008	307-24-4	
PFBS*	Not detected	10		ng/L	2.008	375-73-5	
PFHpA*	Not detected	10		ng/L	2.008	375-85-9	
PFPeS*	Not detected	10		ng/L	2.008	2706-91-4	
6:2 FTSA*	Not detected	10		ng/L	2.008	27619-97-2	
PFOA*	Not detected	10		ng/L	2.008	335-67-1	
PFHxS*	Not detected	10		ng/L	2.008	355-46-4	
PFHxS-LN*	Not detected	10		ng/L	2.008	355-46-4-LN	
PFHxS-BR*	Not detected	10		ng/L	2.008	355-46-4-BR	
PFNA*	Not detected	10		ng/L	2.008	375-95-1	
8:2 FTSA*	Not detected	10		ng/L	2.008	39108-34-4	
PFHpS*	Not detected	10		ng/L	2.008	375-92-8	
PFDA*	Not detected	10		ng/L	2.008	335-76-2	
N-MeFOSAA*	Not detected	10		ng/L	2.008	2355-31-9	
EtFOSAA*	Not detected	10		ng/L	2.008	2991-50-6	
PFOS*	Not detected	10		ng/L	2.008	1763-23-1	
PFOS-LN*	Not detected	10		ng/L	2.008	1763-23-1-LN	
PFOS-BR*	Not detected	10		ng/L	2.008	1763-23-1-BR	
PFUnDA*	Not detected	10		ng/L	2.008	2058-94-8	
PFNS*	Not detected	10		ng/L	2.008	474511-07-4	
PFDODA*	Not detected	10		ng/L	2.008	307-55-1	
PFDS*	Not detected	10		ng/L	2.008	335-77-3	
PFTTrDA*	Not detected	10		ng/L	2.008	72629-94-8	
FOSA*	Not detected	10		ng/L	2.008	754-91-6	
PFTeDA*	Not detected	10		ng/L	2.008	376-06-7	

Merit Laboratories Login Checklist

Lab Set ID:S93427

Client:MIDEQ (MI Dept. of Natural Resources and Environment)

Project: Chemours Montague

Submitted:08/22/2018 16:15 Login User: SRS

Attention: Dale Bridgford

Address: MDEQ - WMRPD
525 West Allegan St.
P.O. Box 30241
Lansing, MI 48909

Phone: 517-582-3050

FAX:517-241-3571

Email:bridgfordd@michigan.gov

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 5.8 |
| 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 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: _____

