



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Merrimack Village District
2 Greens Pond Road
Merrimack NH 03054

Report Date: June 07, 2019 16:20

Project: PFC Investigation

Account #: 38083
Group Number: 2045719
PO Number: 1531010
State of Sample Origin: NH

Electronic Copy To Merrimack Village District

Attn: Jill Lavoie

Respectfully Submitted,



Thomas S Klitsch
Senior Specialist

(717) 556-4634

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/> . Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
1531010_008 Grab Potable Water	05/23/2019 12:28	1066177
1531010_003 Grab Potable Water	05/23/2019 11:06	1066178
1531010_007 Grab Potable Water	05/23/2019 11:18	1066179
1531010_009 Grab Potable Water	05/23/2019 11:30	1066180
1531010_508 Grab Potable Water	05/23/2019 11:35	1066181

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: 1531010_008 Grab Potable Water
MVD-2(T)

Merrimack Village District
ELLE Sample #: PW 1066177
ELLE Group #: 2045719
Matrix: Potable Water

Project Name: PFC Investigation

Submission Date/Time: 05/24/2019 10:00
Collection Date/Time: 05/23/2019 12:28

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous		EPA 537 Version 1.1 Modified	ng/l	ng/l	ng/l	
14473	10:2Fluorotelomersulfonic acid	120226-60-0	N.D.	0.86	2.6	1
14473	4:2-Fluorotelomersulfonic acid	757124-72-4	N.D.	0.86	2.6	1
14473	6:2-Fluorotelomersulfonic acid	27619-97-2	N.D.	0.86	1.7	1
14473	8:2-Fluorotelomersulfonic acid	39108-34-4	N.D.	1.7	5.2	1
14473	NEtFOSAA	2991-50-6	N.D.	0.86	2.6	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	NEtPFOSA	4151-50-2	N.D.	2.6	7.8	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE	1691-99-2	N.D.	1.0	2.6	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA	2355-31-9	N.D.	0.86	2.6	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA	31506-32-8	N.D.	2.6	7.8	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE	24448-09-7	N.D.	0.86	2.6	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluorobutanesulfonic acid	375-73-5	2.1	0.26	0.86	1
14473	Perfluorobutanoic acid	375-22-4	1.9 J	1.7	5.2	1
14473	Perfluorodecanesulfonic acid	335-77-3	N.D.	0.52	1.7	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.78	1.7	1
14473	Perfluorododecanesulfonic acid	79780-39-5	N.D.	0.26	0.86	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.7	1
14473	Perfluoroheptanesulfonic acid	375-92-8	N.D.	0.35	1.7	1
14473	Perfluoroheptanoic acid	375-85-9	2.0	0.35	0.86	1
14473	Perfluorohexadecanoic acid	67905-19-5	N.D.	0.26	0.86	1
14473	Perfluorohexanesulfonic acid	355-46-4	0.82 J	0.35	1.7	1
14473	Perfluorohexanoic acid	307-24-4	2.2	0.35	1.7	1
14473	Perfluorononanesulfonic acid	68259-12-1	N.D.	0.52	1.7	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.7	1
14473	Perfluorooctadecanoic acid	16517-11-6	N.D.	0.43	1.7	1
14473	Perfluorooctanesulfonamide	754-91-6	N.D.	0.43	2.6	1
14473	Perfluorooctanesulfonic acid	1763-23-1	1.8	0.35	1.7	1
14473	Perfluorooctanoic acid	335-67-1	9.8	0.26	0.86	1
14473	Perfluoropentanesulfonate	2706-91-4	N.D.	0.35	1.7	1
14473	Perfluoropentanoic acid	2706-90-3	N.D.	1.7	5.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.26	0.86	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.35	0.86	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.35	1.7	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_008 Grab Potable Water
MVD-2(T)

Merrimack Village District
ELLE Sample #: PW 1066177
ELLE Group #: 2045719
Matrix: Potable Water

Project Name: PFC Investigation

Submittal Date/Time: 05/24/2019 10:00
Collection Date/Time: 05/23/2019 12:28

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	32 PFAS	EPA 537 Version 1.1 Modified	1	19150015	06/03/2019 22:48	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19150015	05/30/2019 16:30	Isaac Phillips-Cary	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_003 Grab Potable Water
MVD-3(R)

Merrimack Village District
ELLE Sample #: PW 1066178
ELLE Group #: 2045719
Matrix: Potable Water

Project Name: PFC Investigation

Submission Date/Time: 05/24/2019 10:00
Collection Date/Time: 05/23/2019 11:06

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
	LC/MS/MS Miscellaneous	EPA 537 Version 1.1 Modified	ng/l	ng/l	ng/l	
14473	10:2Fluorotelomersulfonic acid	120226-60-0	N.D.	0.89	2.7	1
14473	4:2-Fluorotelomersulfonic acid	757124-72-4	N.D.	0.89	2.7	1
14473	6:2-Fluorotelomersulfonic acid	27619-97-2	N.D.	0.89	1.8	1
14473	8:2-Fluorotelomersulfonic acid	39108-34-4	N.D.	1.8	5.4	1
14473	NEtFOSAA	2991-50-6	N.D.	0.89	2.7	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	NEtPFOSA	4151-50-2	N.D.	2.7	8.1	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE	1691-99-2	N.D.	1.1	2.7	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA	2355-31-9	N.D.	0.89	2.7	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA	31506-32-8	N.D.	2.7	8.1	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE	24448-09-7	N.D.	0.89	2.7	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluorobutanesulfonic acid	375-73-5	4.3	0.27	0.89	1
14473	Perfluorobutanoic acid	375-22-4	7.0	1.8	5.4	1
14473	Perfluorodecanesulfonic acid	335-77-3	N.D.	0.54	1.8	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.81	1.8	1
14473	Perfluorododecanesulfonic acid	79780-39-5	N.D.	0.27	0.89	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.8	1
14473	Perfluoroheptanesulfonic acid	375-92-8	N.D.	0.36	1.8	1
14473	Perfluoroheptanoic acid	375-85-9	5.4	0.36	0.89	1
14473	Perfluorohexadecanoic acid	67905-19-5	N.D.	0.27	0.89	1
14473	Perfluorohexanesulfonic acid	355-46-4	0.63 J	0.36	1.8	1
14473	Perfluorohexanoic acid	307-24-4	4.4	0.36	1.8	1
14473	Perfluorononanesulfonic acid	68259-12-1	N.D.	0.54	1.8	1
14473	Perfluorononanoic acid	375-95-1	0.82 J	0.36	1.8	1
14473	Perfluorooctadecanoic acid	16517-11-6	N.D.	0.45	1.8	1
14473	Perfluorooctanesulfonamide	754-91-6	N.D.	0.45	2.7	1
14473	Perfluorooctanesulfonic acid	1763-23-1	2.1	0.36	1.8	1
14473	Perfluorooctanoic acid	335-67-1	27	0.27	0.89	1
14473	Perfluoropentanesulfonate	2706-91-4	N.D.	0.36	1.8	1
14473	Perfluoropentanoic acid	2706-90-3	3.8 J	1.8	5.4	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.27	0.89	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.36	0.89	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.36	1.8	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_003 Grab Potable Water
MVD-3(R)

Merrimack Village District
ELLE Sample #: PW 1066178
ELLE Group #: 2045719
Matrix: Potable Water

Project Name: PFC Investigation

Submittal Date/Time: 05/24/2019 10:00
Collection Date/Time: 05/23/2019 11:06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	32 PFAS	EPA 537 Version 1.1 Modified	1	19150015	06/03/2019 22:58	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19150015	05/30/2019 16:30	Isaac Phillips-Cary	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_007 Grab Potable Water
MVD-7(R)

Merrimack Village District
ELLE Sample #: PW 1066179
ELLE Group #: 2045719
Matrix: Potable Water

Project Name: PFC Investigation

Submission Date/Time: 05/24/2019 10:00
Collection Date/Time: 05/23/2019 11:18

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous		EPA 537 Version 1.1 Modified	ng/l	ng/l	ng/l	
14473	10:2Fluorotelomersulfonic acid	120226-60-0	N.D.	0.86	2.6	1
14473	4:2-Fluorotelomersulfonic acid	757124-72-4	N.D.	0.86	2.6	1
14473	6:2-Fluorotelomersulfonic acid	27619-97-2	N.D.	0.86	1.7	1
14473	8:2-Fluorotelomersulfonic acid	39108-34-4	N.D.	1.7	5.2	1
14473	NEtFOSAA	2991-50-6	N.D.	0.86	2.6	1
NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.						
14473	NEtPFOSA	4151-50-2	N.D.	2.6	7.8	1
NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide						
14473	NEtPFOSAE	1691-99-2	N.D.	1.0	2.6	1
NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol						
14473	NMeFOSAA	2355-31-9	N.D.	0.86	2.6	1
NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.						
14473	NMePFOSA	31506-32-8	N.D.	2.6	7.8	1
NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide						
14473	NMePFOSAE	24448-09-7	N.D.	0.86	2.6	1
NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol						
14473	Perfluorobutanesulfonic acid	375-73-5	1.7	0.26	0.86	1
14473	Perfluorobutanoic acid	375-22-4	2.0 J	1.7	5.2	1
14473	Perfluorodecanesulfonic acid	335-77-3	N.D.	0.52	1.7	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.78	1.7	1
14473	Perfluorododecanesulfonic acid	79780-39-5	N.D.	0.26	0.86	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.7	1
14473	Perfluoroheptanesulfonic acid	375-92-8	N.D.	0.35	1.7	1
14473	Perfluoroheptanoic acid	375-85-9	2.7	0.35	0.86	1
14473	Perfluorohexadecanoic acid	67905-19-5	N.D.	0.26	0.86	1
14473	Perfluorohexanesulfonic acid	355-46-4	1.4 J	0.35	1.7	1
14473	Perfluorohexanoic acid	307-24-4	2.4	0.35	1.7	1
14473	Perfluorononanesulfonic acid	68259-12-1	N.D.	0.52	1.7	1
14473	Perfluorononanoic acid	375-95-1	0.68 J	0.35	1.7	1
14473	Perfluorooctadecanoic acid	16517-11-6	N.D.	0.43	1.7	1
14473	Perfluorooctanesulfonamide	754-91-6	N.D.	0.43	2.6	1
14473	Perfluorooctanesulfonic acid	1763-23-1	2.8	0.35	1.7	1
14473	Perfluorooctanoic acid	335-67-1	21	0.26	0.86	1
14473	Perfluoropentanesulfonate	2706-91-4	N.D.	0.35	1.7	1
14473	Perfluoropentanoic acid	2706-90-3	1.7 J	1.7	5.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.26	0.86	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.35	0.86	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.35	1.7	1

The recovery for several extraction standards is outside of QC acceptance limits as noted on the QC Summary. The

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_007 Grab Potable Water
MVD-7(R)

Merrimack Village District
ELLE Sample #: PW 1066179
ELLE Group #: 2045719
Matrix: Potable Water

Project Name: PFC Investigation

Submittal Date/Time: 05/24/2019 10:00
Collection Date/Time: 05/23/2019 11:18

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
	following corrective action was taken: This sample was re-extracted within the method holding time and the recovery for several extraction standards is again outside of QC acceptance limits. The data reported is from the initial trial of the sample.					

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	32 PFAS	EPA 537 Version 1.1 Modified	1	19150015	06/03/2019 23:07	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19150015	05/30/2019 16:30	Isaac Phillips-Cary	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_009 Grab Potable Water
MVD-8(R)

Merrimack Village District
ELLE Sample #: PW 1066180
ELLE Group #: 2045719
Matrix: Potable Water

Project Name: PFC Investigation

Submission Date/Time: 05/24/2019 10:00
Collection Date/Time: 05/23/2019 11:30

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous		EPA 537 Version 1.1 Modified	ng/l	ng/l	ng/l	
14473	10:2Fluorotelomersulfonic acid	120226-60-0	N.D.	0.87	2.6	1
14473	4:2-Fluorotelomersulfonic acid	757124-72-4	N.D.	0.87	2.6	1
14473	6:2-Fluorotelomersulfonic acid	27619-97-2	N.D.	0.87	1.7	1
14473	8:2-Fluorotelomersulfonic acid	39108-34-4	N.D.	1.7	5.2	1
14473	NEtFOSAA	2991-50-6	N.D.	0.87	2.6	1
NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.						
14473	NEtPFOSA	4151-50-2	N.D.	2.6	7.8	1
NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide						
14473	NEtPFOSAE	1691-99-2	N.D.	1.0	2.6	1
NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol						
14473	NMeFOSAA	2355-31-9	N.D.	0.87	2.6	1
NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.						
14473	NMePFOSA	31506-32-8	N.D.	2.6	7.8	1
NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide						
14473	NMePFOSAE	24448-09-7	N.D.	0.87	2.6	1
NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol						
14473	Perfluorobutanesulfonic acid	375-73-5	1.3	0.26	0.87	1
14473	Perfluorobutanoic acid	375-22-4	1.7 J	1.7	5.2	1
14473	Perfluorodecanesulfonic acid	335-77-3	N.D.	0.52	1.7	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.78	1.7	1
14473	Perfluorododecanesulfonic acid	79780-39-5	N.D.	0.26	0.87	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.7	1
14473	Perfluoroheptanesulfonic acid	375-92-8	N.D.	0.35	1.7	1
14473	Perfluoroheptanoic acid	375-85-9	2.3	0.35	0.87	1
14473	Perfluorohexadecanoic acid	67905-19-5	N.D.	0.26	0.87	1
14473	Perfluorohexanesulfonic acid	355-46-4	1.2 J	0.35	1.7	1
14473	Perfluorohexanoic acid	307-24-4	2.2	0.35	1.7	1
14473	Perfluorononanesulfonic acid	68259-12-1	N.D.	0.52	1.7	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.7	1
14473	Perfluorooctadecanoic acid	16517-11-6	N.D.	0.43	1.7	1
14473	Perfluorooctanesulfonamide	754-91-6	N.D.	0.43	2.6	1
14473	Perfluorooctanesulfonic acid	1763-23-1	1.6 J	0.35	1.7	1
14473	Perfluorooctanoic acid	335-67-1	17	0.26	0.87	1
14473	Perfluoropentanesulfonate	2706-91-4	N.D.	0.35	1.7	1
14473	Perfluoropentanoic acid	2706-90-3	N.D.	1.7	5.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.26	0.87	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.35	0.87	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.35	1.7	1

The recovery for several extraction standards is outside of QC acceptance limits as noted on the QC Summary. The

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_009 Grab Potable Water
MVD-8(R)

Merrimack Village District
ELLE Sample #: PW 1066180
ELLE Group #: 2045719
Matrix: Potable Water

Project Name: PFC Investigation

Submittal Date/Time: 05/24/2019 10:00
Collection Date/Time: 05/23/2019 11:30

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
	following corrective action was taken: This sample was re-extracted within the method holding time and the recovery for several extraction standards is again outside of QC acceptance limits. The data reported is from the initial trial of the sample.					

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	32 PFAS	EPA 537 Version 1.1 Modified	1	19150015	06/03/2019 23:16	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19150015	05/30/2019 16:30	Isaac Phillips-Cary	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_508 Grab Potable Water
MVD-TP

Merrimack Village District
ELLE Sample #: PW 1066181
ELLE Group #: 2045719
Matrix: Potable Water

Project Name: PFC Investigation

Submittal Date/Time: 05/24/2019 10:00
Collection Date/Time: 05/23/2019 11:35

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous		EPA 537 Version 1.1 Modified	ng/l	ng/l	ng/l	
14473	10:2Fluorotelomersulfonic acid	120226-60-0	N.D.	0.89	2.7	1
14473	4:2-Fluorotelomersulfonic acid	757124-72-4	N.D.	0.89	2.7	1
14473	6:2-Fluorotelomersulfonic acid	27619-97-2	N.D.	0.89	1.8	1
14473	8:2-Fluorotelomersulfonic acid	39108-34-4	N.D.	1.8	5.4	1
14473	NEtFOSAA	2991-50-6	N.D.	0.89	2.7	1
NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.						
14473	NEtPFOSA	4151-50-2	N.D.	2.7	8.1	1
NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide						
14473	NEtPFOSAE	1691-99-2	N.D.	1.1	2.7	1
NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol						
14473	NMeFOSAA	2355-31-9	N.D.	0.89	2.7	1
NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.						
14473	NMePFOSA	31506-32-8	N.D.	2.7	8.1	1
NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide						
14473	NMePFOSAE	24448-09-7	N.D.	0.89	2.7	1
NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol						
14473	Perfluorobutanesulfonic acid	375-73-5	1.5	0.27	0.89	1
14473	Perfluorobutanoic acid	375-22-4	1.9 J	1.8	5.4	1
14473	Perfluorodecanesulfonic acid	335-77-3	N.D.	0.54	1.8	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.81	1.8	1
14473	Perfluorododecanesulfonic acid	79780-39-5	N.D.	0.27	0.89	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1.8	1
14473	Perfluoroheptanesulfonic acid	375-92-8	N.D.	0.36	1.8	1
14473	Perfluoroheptanoic acid	375-85-9	2.7	0.36	0.89	1
14473	Perfluorohexadecanoic acid	67905-19-5	N.D.	0.27	0.89	1
14473	Perfluorohexanesulfonic acid	355-46-4	1.2 J	0.36	1.8	1
14473	Perfluorohexanoic acid	307-24-4	2.3	0.36	1.8	1
14473	Perfluorononanesulfonic acid	68259-12-1	N.D.	0.54	1.8	1
14473	Perfluorononanoic acid	375-95-1	0.50 J	0.36	1.8	1
14473	Perfluorooctadecanoic acid	16517-11-6	N.D.	0.45	1.8	1
14473	Perfluorooctanesulfonamide	754-91-6	N.D.	0.45	2.7	1
14473	Perfluorooctanesulfonic acid	1763-23-1	2.0	0.36	1.8	1
14473	Perfluorooctanoic acid	335-67-1	19	0.27	0.89	1
14473	Perfluoropentanesulfonate	2706-91-4	0.36 J	0.36	1.8	1
14473	Perfluoropentanoic acid	2706-90-3	N.D.	1.8	5.4	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.27	0.89	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.36	0.89	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.36	1.8	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_508 Grab Potable Water
MVD-TP

Merrimack Village District
ELLE Sample #: PW 1066181
ELLE Group #: 2045719
Matrix: Potable Water

Project Name: PFC Investigation

Submittal Date/Time: 05/24/2019 10:00
Collection Date/Time: 05/23/2019 11:35

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	32 PFAS	EPA 537 Version 1.1 Modified	1	19150015	06/03/2019 23:25	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19150015	05/30/2019 16:30	Isaac Phillips-Cary	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Merrimack Village District
Reported: 06/07/2019 16:20

Group Number: 2045719

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ng/l	ng/l	ng/l
Batch number: 19150015	Sample number(s): 1066177-1066181		
10:2-Fluorotelomersulfonic acid	N.D.	1.0	3.0
4:2-Fluorotelomersulfonic acid	N.D.	1.0	3.0
6:2-Fluorotelomersulfonic acid	N.D.	1.0	2.0
8:2-Fluorotelomersulfonic acid	N.D.	2.0	6.0
NEtFOSAA	N.D.	1.0	3.0
NEtPFOSA	N.D.	3.0	9.0
NEtPFOSAE	N.D.	1.2	3.0
NMeFOSAA	N.D.	1.0	3.0
NMePFOSA	N.D.	3.0	9.0
NMePFOSAE	N.D.	1.0	3.0
Perfluorobutanesulfonic acid	N.D.	0.30	1.0
Perfluorobutanoic acid	N.D.	2.0	6.0
Perfluorodecanesulfonic acid	N.D.	0.60	2.0
Perfluorodecanoic acid	N.D.	0.90	2.0
Perfluorododecanesulfonic acid	N.D.	0.30	1.0
Perfluorododecanoic acid	N.D.	0.50	2.0
Perfluoroheptanesulfonic acid	N.D.	0.40	2.0
Perfluoroheptanoic acid	N.D.	0.40	1.0
Perfluorohexadecanoic acid	N.D.	0.30	1.0
Perfluorohexanesulfonic acid	N.D.	0.40	2.0
Perfluorohexanoic acid	N.D.	0.40	2.0
Perfluorononanesulfonic acid	N.D.	0.60	2.0
Perfluorononanoic acid	N.D.	0.40	2.0
Perfluorooctadecanoic acid	N.D.	0.50	2.0
Perfluorooctanesulfonamide	N.D.	0.50	3.0
Perfluorooctanesulfonic acid	N.D.	0.40	2.0
Perfluorooctanoic acid	N.D.	0.30	1.0
Perfluoropentanesulfonate	N.D.	0.40	2.0
Perfluoropentanoic acid	N.D.	2.0	6.0
Perfluorotetradecanoic acid	N.D.	0.30	1.0
Perfluorotridecanoic acid	N.D.	0.40	1.0
Perfluoroundecanoic acid	N.D.	0.40	2.0

LCS/LCSD

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Merrimack Village District
Reported: 06/07/2019 16:20

Group Number: 2045719

LCS/LCSD

Analysis Name	LCS Spike Added ng/l	LCS Conc ng/l	LCSD Spike Added ng/l	LCSD Conc ng/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 19150015	Sample number(s): 1066177-1066181								
10:2Fluorotelomersulfonic acid	15.42	16.79	15.42	16.61	109	108	49-186	1	30
4:2-Fluorotelomersulfonic acid	14.94	14.54	14.94	15.04	97	101	82-152	3	30
6:2-Fluorotelomersulfonic acid	15.17	16.25	15.17	16.56	107	109	66-155	2	30
8:2-Fluorotelomersulfonic acid	15.33	17.61	15.33	15.74	115	103	66-148	11	30
NEtFOSAA	5.44	5.85	5.44	5.35	108	98	55-169	9	30
NEtPFOSA	5.44	5.34	5.44	5.16	98	95	70-130	4	30
NEtPFOSAE	5.44	6.66	5.44	6.73	122	124	70-130	1	30
NMeFOSAA	5.44	5.01	5.44	5.53	92	102	44-147	10	30
NMePFOSA	5.44	4.77	5.44	4.68	88	86	70-130	2	30
NMePFOSAE	5.44	5.34	5.44	5.39	98	99	70-130	1	30
Perfluorobutanesulfonic acid	4.81	5.16	4.81	5.21	107	108	73-128	1	30
Perfluorobutanoic acid	5.44	7.03	5.44	7.18	129	132	74-142	2	30
Perfluorodecanesulfonic acid	5.24	5.47	5.24	5.93	104	113	60-135	8	30
Perfluorodecanoic acid	5.44	6.34	5.44	6.56	116	121	69-148	3	30
Perfluorododecanesulfonic acid	5.28	5.50	5.28	6.20	104	117	70-130	12	30
Perfluorododecanoic acid	5.44	6.38	5.44	6.47	117	119	75-136	1	30
Perfluoroheptanesulfonic acid	5.18	5.86	5.18	5.85	113	113	64-135	0	30
Perfluoroheptanoic acid	5.44	7.38	5.44	6.76	136	124	76-140	9	30
Perfluorohexadecanoic acid	5.44	6.25	5.44	6.61	115	121	21-151	6	30
Perfluorohexanesulfonic acid	5.14	5.99	5.14	5.70	116	111	71-131	5	30
Perfluorohexanoic acid	5.44	6.91	5.44	6.83	127	126	75-135	1	30
Perfluorononanesulfonic acid	5.22	5.51	5.22	6.28	106	120	66-133	13	30
Perfluorononanoic acid	5.44	6.34	5.44	6.89	117	127	72-148	8	30
Perfluorooctadecanoic acid	5.44	6.28	5.44	6.56	115	121	70-130	4	30
Perfluorooctanesulfonamide	5.44	5.12	5.44	5.47	94	101	65-164	7	30
Perfluorooctanesulfonic acid	5.20	5.44	5.20	5.41	105	104	67-138	1	30
Perfluorooctanoic acid	5.44	6.73	5.44	6.35	124	117	72-138	6	30
Perfluoropentanesulfonate	5.10	5.45	5.10	5.30	107	104	76-127	3	30
Perfluoropentanoic acid	5.44	6.27	5.44	6.26	115	115	74-134	0	30
Perfluorotetradecanoic acid	5.44	5.96	5.44	6.36	110	117	74-135	6	30
Perfluorotridecanoic acid	5.44	6.25	5.44	6.16	115	113	61-145	2	30
Perfluoroundecanoic acid	5.44	6.46	5.44	6.14	119	113	75-146	5	30

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Merrimack Village District
Reported: 06/07/2019 16:20

Group Number: 2045719

Labeled Isotope Quality Control

Labeled isotope recoveries which are outside of the QC window are confirmed unless otherwise noted on the analysis report.

Analysis Name: 32 PFAS
Batch number: 19150015

	13C4-PFBA	13C5-PFPeA	13C3-PFBs	13C2-4:2-FTS	13C5-PFHxA	13C3-PFHxS
1066177	91	99	107	95	93	83
1066178	93	99	108	101	90	82
1066179	105	116	120	113	103	95
1066180	95	104	110	107	98	82
1066181	92	99	104	93	84	81
Blank	101	98	98	105	97	94
LCS	100	99	99	107	102	95
LCSD	100	104	103	106	97	98
Limits:	33-123	31-157	26-148	21-182	35-138	34-126

	13C4-PFHpA	13C2-6:2-FTS	13C8-PFOA	13C8-PFOS	13C9-PFNA	13C6-PFDA
1066177	72	97	94	90	91	90
1066178	74	99	98	89	92	83
1066179	83	108	103	105	103	101
1066180	74	104	90	69	94	62
1066181	69	94	88	91	85	84
Blank	93	105	101	101	97	97
LCS	96	99	96	104	107	102
LCSD	100	98	101	96	97	98
Limits:	35-126	32-170	48-122	50-121	41-144	47-125

	13C2-8:2-FTS	d3-NMeFOSAA	13C7-PFUnDA	d5-NEIFOSAA	13C2-PFDoDA	13C2-PFTeDA
1066177	101	102	93	96	90	90
1066178	92	95	83	90	83	76
1066179	110	106	102	116	89	49
1066180	74	63	20*	42	3*	0*
1066181	101	93	96	102	87	79
Blank	104	121	97	108	102	99
LCS	102	128*	104	118	105	110
LCSD	105	123	105	119	104	104
Limits:	27-164	30-127	30-128	30-142	39-130	26-119

	13C8-PFOA	d7-NMePFOSAE	d3-NMePFOSA	d9-NEIPFOSAE	d5-NEIPFOSA
1066177	81	53	19	50	21
1066178	72	43	19	40	20
1066179	66	23	6*	23	6*
1066180	68	3*	0*	1*	0*
1066181	77	45	16	43	18

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Merrimack Village District
Reported: 06/07/2019 16:20

Group Number: 2045719

Labeled Isotope Quality Control (continued)

Labeled isotope recoveries which are outside of the QC window are confirmed unless otherwise noted on the analysis report.

Analysis Name: 32 PFAS

Batch number: 19150015

	13C8-PFOSA	d7-NMePFOSAE	d3-NMePFOSA	d9-NEtPFOSAE	d5-NEtPFOSA
Blank	111	104	98	104	101
LCS	115	117	96	104	108*
LCSD	110	102	97	101	100
Limits:	11-127	10-128	10-104	10-121	10-106

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.



Client: Merrimack Village District

PFC Investigation

Delivery and Receipt Information

Delivery Method:	<u>Fed Ex</u>	Arrival Timestamp:	<u>05/24/2019 10:00</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>NH</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace \geq 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Nicole Reiff (25684) at 13:50 on 05/24/2019

Samples Chilled Details: PFC Investigation

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	1.5	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.