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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: May 04, 2020 15:53

Project: PFC Investigation

Account #: 38083
Group Number: 2097227
PO Number: 3332
State of Sample Origin: NH

Electronic Copy To Merrimack Village District Attn: Jill Lavoie

Respectfully Submitted,

Mary Kate Izzo
Project Manager

(717) 556-4656

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.

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
1531010_008 Water	04/22/2020 14:32	1303575
1531010_003 Water	04/22/2020 14:21	1303576
1531010_007 Water	04/22/2020 14:00	1303577
1531010_009 Water	04/22/2020 13:55	1303578
1531010_508 Water	04/22/2020 14:05	1303579

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

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

Project Name: **PFC Investigation**

Submittal Date/Time: 04/23/2020 10:35
Collection Date/Time: 04/22/2020 14:32

Merrimack Village District
ELLE Sample #: PW 1303575
ELLE Group #: 2097227
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous	**T-PFAS-WI14355, Revision 12**		**ng/l**	**ng/l**	**ng/l**	
14473	10:2-Fts[1]	120226-60-0	N.D.	0.90	4.5	1
14473	4:2-Fts[1]	757124-72-4	N.D.	0.45	1.8	1
14473	6:2-Fts[1]	27619-97-2	N.D.	1.8	4.5	1
14473	8:2-Fts[1]	39108-34-4	N.D.	0.90	2.7	1
14473	Netfosaa[1]	2991-50-6	N.D.	0.45	2.7	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	Netpfosa[1]	4151-50-2	N.D.	0.90	4.5	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE[1]	1691-99-2	N.D.	0.90	2.7	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA[1]	2355-31-9	N.D.	0.54	1.8	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA[1]	31506-32-8	N.D.	0.90	2.7	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE[1]	24448-09-7	N.D.	0.90	2.7	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluoropentanesulfonate[1]	2706-91-4	N.D.	0.45	1.8	1
14473	PFBA[1]	375-22-4	N.D.	1.8	4.5	1
14473	PFBS[1]	375-73-5	1.9	0.45	1.8	1
14473	PFDA[1]	335-76-2	N.D.	0.45	1.8	1
14473	Pfdoda[1]	307-55-1	N.D.	0.45	1.8	1
14473	Pfdods[1]	79780-39-5	N.D.	0.45	2.7	1
14473	PFDS[1]	335-77-3	N.D.	0.45	1.8	1
14473	Pfhpa[1]	375-85-9	1.7 J	0.45	1.8	1
14473	Pfhps[1]	375-92-8	N.D.	0.45	1.8	1
14473	Pfhxa[1]	307-24-4	2.1	0.45	1.8	1
14473	Pfhxda[1]	67905-19-5	N.D.	0.90	2.7	1
14473	Pfhxs[1]	355-46-4	0.71 J	0.45	1.8	1
14473	PFNA[1]	375-95-1	N.D.	0.45	1.8	1
14473	PFNS[1]	68259-12-1	N.D.	0.45	1.8	1
14473	PFOA[1]	335-67-1	9.1	0.45	1.8	1
14473	Pfoda[1]	16517-11-6	N.D.	0.90	2.7	1
14473	PFOS[1]	1763-23-1	1.7 J	0.45	1.8	1
14473	Pfosa[1]	754-91-6	N.D.	0.45	1.8	1
14473	PFPA[1]	2706-90-3	1.6 J	0.45	1.8	1
14473	Pfteda[1]	376-06-7	N.D.	0.45	1.8	1
14473	Pftrda[1]	72629-94-8	N.D.	0.45	1.8	1
14473	Pfunda[1]	2058-94-8	N.D.	0.45	1.8	1

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

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

Project Name: **PFC Investigation**

Submittal Date/Time: 04/23/2020 10:35
Collection Date/Time: 04/22/2020 14:32

Merrimack Village District
ELLE Sample #: PW 1303575
ELLE Group #: 2097227
Matrix: Water

Sample Comments

[1] = This analyte was not on the laboratory's NH ELAP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	T-PFAS-WI14355, Revision 12	1	20118004	04/28/2020 19:09	Katie Renfro	1
14091	PFAS Water Prep	T-PFAS-WI14355, Revision 12	1	20118004	04/27/2020 06:20	Pamela Rothharpt	1

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

Sample Description: **1531010_003 Water MVD-3(T)**

Project Name: **PFC Investigation**

Submittal Date/Time: 04/23/2020 10:35
Collection Date/Time: 04/22/2020 14:21

Merrimack Village District
ELLE Sample #: PW 1303576
ELLE Group #: 2097227
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous	**T-PFAS-WI14355, Revision 12**		**ng/l**	**ng/l**	**ng/l**	
14473	10:2-Fts[1]	120226-60-0	N.D.	0.86	4.3	1
14473	4:2-Fts[1]	757124-72-4	N.D.	0.43	1.7	1
14473	6:2-Fts[1]	27619-97-2	N.D.	1.7	4.3	1
14473	8:2-Fts[1]	39108-34-4	N.D.	0.86	2.6	1
14473	Netfosaa[1]	2991-50-6	N.D.	0.43	2.6	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	Netpfosa[1]	4151-50-2	N.D.	0.86	4.3	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE[1]	1691-99-2	N.D.	0.86	2.6	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA[1]	2355-31-9	N.D.	0.51	1.7	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA[1]	31506-32-8	N.D.	0.86	2.6	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE[1]	24448-09-7	N.D.	0.86	2.6	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluoropentanesulfonate[1]	2706-91-4	N.D.	0.43	1.7	1
14473	PFBA[1]	375-22-4	4.6	1.7	4.3	1
14473	PFBS[1]	375-73-5	5.4	0.43	1.7	1
14473	PFDA[1]	335-76-2	N.D.	0.43	1.7	1
14473	Pfdoda[1]	307-55-1	N.D.	0.43	1.7	1
14473	Pfdods[1]	79780-39-5	N.D.	0.43	2.6	1
14473	PFDS[1]	335-77-3	N.D.	0.43	1.7	1
14473	Pfhpa[1]	375-85-9	5.2	0.43	1.7	1
14473	Pfhps[1]	375-92-8	N.D.	0.43	1.7	1
14473	Pfhxa[1]	307-24-4	7.9	0.43	1.7	1
14473	Pfhxda[1]	67905-19-5	N.D.	0.86	2.6	1
14473	Pfhxs[1]	355-46-4	0.64 J	0.43	1.7	1
14473	PFNA[1]	375-95-1	0.76 J	0.43	1.7	1
14473	PFNS[1]	68259-12-1	N.D.	0.43	1.7	1
14473	PFOA[1]	335-67-1	20	0.43	1.7	1
14473	Pfoda[1]	16517-11-6	N.D.	0.86	2.6	1
14473	PFOS[1]	1763-23-1	1.9	0.43	1.7	1
14473	Pfosa[1]	754-91-6	N.D.	0.43	1.7	1
14473	PFPA[1]	2706-90-3	6.2	0.43	1.7	1
14473	Pfteda[1]	376-06-7	N.D.	0.43	1.7	1
14473	Pftrda[1]	72629-94-8	N.D.	0.43	1.7	1
14473	Pfunda[1]	2058-94-8	N.D.	0.43	1.7	1

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

Sample Description: **1531010_003 Water MVD-3(T)**

Project Name: **PFC Investigation**

Submittal Date/Time: 04/23/2020 10:35
Collection Date/Time: 04/22/2020 14:21

Merrimack Village District
ELLE Sample #: PW 1303576
ELLE Group #: 2097227
Matrix: Water

Sample Comments

[1] = This analyte was not on the laboratory's NH ELAP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	T-PFAS-WI14355, Revision 12	1	20118004	04/28/2020 19:18	Katie Renfro	1
14091	PFAS Water Prep	T-PFAS-WI14355, Revision 12	1	20118004	04/27/2020 06:20	Pamela Rothharpt	1

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

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

Project Name: **PFC Investigation**

Submittal Date/Time: 04/23/2020 10:35
Collection Date/Time: 04/22/2020 14:00

Merrimack Village District
ELLE Sample #: PW 1303577
ELLE Group #: 2097227
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous	**T-PFAS-WI14355, Revision 12**		**ng/l**	**ng/l**	**ng/l**	
14473	10:2-Fts[1]	120226-60-0	N.D.	0.84	4.2	1
14473	4:2-Fts[1]	757124-72-4	N.D.	0.42	1.7	1
14473	6:2-Fts[1]	27619-97-2	N.D.	1.7	4.2	1
14473	8:2-Fts[1]	39108-34-4	N.D.	0.84	2.5	1
14473	Netfosaa[1]	2991-50-6	N.D.	0.42	2.5	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	Netpfosa[1]	4151-50-2	N.D.	0.84	4.2	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE[1]	1691-99-2	N.D.	0.84	2.5	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA[1]	2355-31-9	N.D.	0.50	1.7	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA[1]	31506-32-8	N.D.	0.84	2.5	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE[1]	24448-09-7	N.D.	0.84	2.5	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluoropentanesulfonate[1]	2706-91-4	N.D.	0.42	1.7	1
14473	PFBA[1]	375-22-4	1.9 J	1.7	4.2	1
14473	PFBS[1]	375-73-5	1.7	0.42	1.7	1
14473	PFDA[1]	335-76-2	N.D.	0.42	1.7	1
14473	Pfdoda[1]	307-55-1	N.D.	0.42	1.7	1
14473	Pfdods[1]	79780-39-5	N.D.	0.42	2.5	1
14473	PFDS[1]	335-77-3	N.D.	0.42	1.7	1
14473	Pfhpa[1]	375-85-9	2.6	0.42	1.7	1
14473	Pfhps[1]	375-92-8	N.D.	0.42	1.7	1
14473	Pfhxa[1]	307-24-4	2.3	0.42	1.7	1
14473	Pfhxda[1]	67905-19-5	N.D.	0.84	2.5	1
14473	Pfhxs[1]	355-46-4	1.3 J	0.42	1.7	1
14473	PFNA[1]	375-95-1	0.51 J	0.42	1.7	1
14473	PFNS[1]	68259-12-1	N.D.	0.42	1.7	1
14473	PFOA[1]	335-67-1	19	0.42	1.7	1
14473	Pfoda[1]	16517-11-6	N.D.	0.84	2.5	1
14473	PFOS[1]	1763-23-1	2.6	0.42	1.7	1
14473	Pfosa[1]	754-91-6	N.D.	0.42	1.7	1
14473	PFPA[1]	2706-90-3	1.6 J	0.42	1.7	1
14473	Pfteda[1]	376-06-7	N.D.	0.42	1.7	1
14473	Pftrda[1]	72629-94-8	N.D.	0.42	1.7	1
14473	Pfunda[1]	2058-94-8	N.D.	0.42	1.7	1

The recovery for the labeled compound used as extraction standards is outside the 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 Water MVD-7(R)**

Project Name: **PFC Investigation**

Submittal Date/Time: 04/23/2020 10:35
Collection Date/Time: 04/22/2020 14:00

Merrimack Village District
ELLE Sample #: PW 1303577
ELLE Group #: 2097227
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor

following action was taken: The sample was reextracted within holding time. The data reported is from the initial trial of the sample and both sets of data are included in the data package.

Sample Comments

[1] = This analyte was not on the laboratory's NH ELAP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	T-PFAS-WI14355, Revision 12	1	20118004	04/28/2020 19:27	Christine E Dolman	1
14091	PFAS Water Prep	T-PFAS-WI14355, Revision 12	1	20118004	04/27/2020 06:20	Pamela Rothharpt	1

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

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

Project Name: **PFC Investigation**

Submittal Date/Time: 04/23/2020 10:35
Collection Date/Time: 04/22/2020 13:55

Merrimack Village District
ELLE Sample #: PW 1303578
ELLE Group #: 2097227
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous	**T-PFAS-WI14355, Revision 12**		**ng/l**	**ng/l**	**ng/l**	
14473	10:2-Fts[1]	120226-60-0	N.D.	0.88	4.4	1
14473	4:2-Fts[1]	757124-72-4	N.D.	0.44	1.8	1
14473	6:2-Fts[1]	27619-97-2	N.D.	1.8	4.4	1
14473	8:2-Fts[1]	39108-34-4	N.D.	0.88	2.6	1
14473	Netfosaa[1]	2991-50-6	N.D.	0.44	2.6	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	Netpfosa[1]	4151-50-2	N.D.	0.88	4.4	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE[1]	1691-99-2	N.D.	0.88	2.6	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA[1]	2355-31-9	N.D.	0.53	1.8	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA[1]	31506-32-8	N.D.	0.88	2.6	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE[1]	24448-09-7	N.D.	0.88	2.6	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluoropentanesulfonate[1]	2706-91-4	N.D.	0.44	1.8	1
14473	PFBA[1]	375-22-4	1.8 J	1.8	4.4	1
14473	PFBS[1]	375-73-5	1.5 J	0.44	1.8	1
14473	PFDA[1]	335-76-2	N.D.	0.44	1.8	1
14473	Pfdoda[1]	307-55-1	N.D.	0.44	1.8	1
14473	Pfdods[1]	79780-39-5	N.D.	0.44	2.6	1
14473	PFDS[1]	335-77-3	N.D.	0.44	1.8	1
14473	Pfhpa[1]	375-85-9	2.3	0.44	1.8	1
14473	Pfhps[1]	375-92-8	N.D.	0.44	1.8	1
14473	Pfhxa[1]	307-24-4	2.1	0.44	1.8	1
14473	Pfhxda[1]	67905-19-5	N.D.	0.88	2.6	1
14473	Pfhxs[1]	355-46-4	1.3 J	0.44	1.8	1
14473	PFNA[1]	375-95-1	N.D.	0.44	1.8	1
14473	PFNS[1]	68259-12-1	N.D.	0.44	1.8	1
14473	PFOA[1]	335-67-1	16	0.44	1.8	1
14473	Pfoda[1]	16517-11-6	N.D.	0.88	2.6	1
14473	PFOS[1]	1763-23-1	1.5 J	0.44	1.8	1
14473	Pfosa[1]	754-91-6	N.D.	0.44	1.8	1
14473	PFPA[1]	2706-90-3	1.5 J	0.44	1.8	1
14473	Pfteda[1]	376-06-7	N.D.	0.44	1.8	1
14473	Pftrda[1]	72629-94-8	N.D.	0.44	1.8	1
14473	Pfunda[1]	2058-94-8	N.D.	0.44	1.8	1

The recovery for the labeled compound used as extraction standards is outside the 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 Water MVD-8(R)**

Project Name: **PFC Investigation**

Submittal Date/Time: 04/23/2020 10:35
Collection Date/Time: 04/22/2020 13:55

Merrimack Village District
ELLE Sample #: PW 1303578
ELLE Group #: 2097227
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor

following action was taken: The sample was reextracted within holding time. The data reported is from the initial trial of the sample and both sets of data are included in the data package.

Sample Comments

[1] = This analyte was not on the laboratory's NH ELAP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	T-PFAS-WI14355, Revision 12	1	20118004	04/28/2020 19:36	Christine E Dolman	1
14091	PFAS Water Prep	T-PFAS-WI14355, Revision 12	1	20118004	04/27/2020 06:20	Pamela Rothharpt	1

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

Sample Description: **1531010_508 Water MVD-TP**

Project Name: **PFC Investigation**

Submittal Date/Time: 04/23/2020 10:35
Collection Date/Time: 04/22/2020 14:05

Merrimack Village District
ELLE Sample #: PW 1303579
ELLE Group #: 2097227
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous	**T-PFAS-WI14355, Revision 12**		**ng/l**	**ng/l**	**ng/l**	
14473	10:2-Fts[1]	120226-60-0	N.D.	0.86	4.3	1
14473	4:2-Fts[1]	757124-72-4	N.D.	0.43	1.7	1
14473	6:2-Fts[1]	27619-97-2	N.D.	1.7	4.3	1
14473	8:2-Fts[1]	39108-34-4	N.D.	0.86	2.6	1
14473	Netfosaa[1]	2991-50-6	N.D.	0.43	2.6	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	Netpfosa[1]	4151-50-2	N.D.	0.86	4.3	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE[1]	1691-99-2	N.D.	0.86	2.6	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA[1]	2355-31-9	N.D.	0.51	1.7	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA[1]	31506-32-8	N.D.	0.86	2.6	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE[1]	24448-09-7	N.D.	0.86	2.6	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluoropentanesulfonate[1]	2706-91-4	N.D.	0.43	1.7	1
14473	PFBA[1]	375-22-4	1.9 J	1.7	4.3	1
14473	PFBS[1]	375-73-5	1.6 J	0.43	1.7	1
14473	PFDA[1]	335-76-2	N.D.	0.43	1.7	1
14473	Pfdoda[1]	307-55-1	N.D.	0.43	1.7	1
14473	Pfdods[1]	79780-39-5	N.D.	0.43	2.6	1
14473	PFDS[1]	335-77-3	N.D.	0.43	1.7	1
14473	Pfhpa[1]	375-85-9	2.4	0.43	1.7	1
14473	Pfhps[1]	375-92-8	N.D.	0.43	1.7	1
14473	Pfhxa[1]	307-24-4	2.3	0.43	1.7	1
14473	Pfhxda[1]	67905-19-5	N.D.	0.86	2.6	1
14473	Pfhxs[1]	355-46-4	1.2 J	0.43	1.7	1
14473	PFNA[1]	375-95-1	N.D.	0.43	1.7	1
14473	PFNS[1]	68259-12-1	N.D.	0.43	1.7	1
14473	PFOA[1]	335-67-1	18	0.43	1.7	1
14473	Pfoda[1]	16517-11-6	N.D.	0.86	2.6	1
14473	PFOS[1]	1763-23-1	2.0	0.43	1.7	1
14473	Pfosa[1]	754-91-6	N.D.	0.43	1.7	1
14473	PFPA[1]	2706-90-3	1.6 J	0.43	1.7	1
14473	Pfteda[1]	376-06-7	N.D.	0.43	1.7	1
14473	Pftrda[1]	72629-94-8	N.D.	0.43	1.7	1
14473	Pfunda[1]	2058-94-8	N.D.	0.43	1.7	1

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

Sample Description: **1531010_508 Water MVD-TP**

Project Name: **PFC Investigation**

Submittal Date/Time: 04/23/2020 10:35
Collection Date/Time: 04/22/2020 14:05

Merrimack Village District
ELLE Sample #: PW 1303579
ELLE Group #: 2097227
Matrix: Water

Sample Comments

[1] = This analyte was not on the laboratory's NH ELAP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	T-PFAS-WI14355, Revision 12	1	20118004	04/28/2020 19:45	Katie Renfro	1
14091	PFAS Water Prep	T-PFAS-WI14355, Revision 12	1	20118004	04/27/2020 06:20	Pamela Rothharpt	1

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

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Quality Control Summary

Client Name: Merrimack Village District Group Number: 2097227
Reported: 05/04/2020 15:53

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: 20118004	Sample number(s): 1303575-1303579		
10:2-Fts	N.D.	1.0	5.0
4:2-Fts	N.D.	0.50	2.0
6:2-Fts	N.D.	2.0	5.0
8:2-Fts	N.D.	1.0	3.0
Netfosaa	N.D.	0.50	3.0
Netpfosa	N.D.	1.0	5.0
NEtPFOSAE	N.D.	1.0	3.0
NMeFOSAA	N.D.	0.60	2.0
NMePFOSA	N.D.	1.0	3.0
NMePFOSAE	N.D.	1.0	3.0
Perfluoropentanesulfonate	N.D.	0.50	2.0
PFBA	N.D.	2.0	5.0
PFBS	N.D.	0.50	2.0
PFDA	N.D.	0.50	2.0
Pfdoda	N.D.	0.50	2.0
Pfdods	N.D.	0.50	3.0
PFDS	N.D.	0.50	2.0
Pfhpa	N.D.	0.50	2.0
Pfhps	N.D.	0.50	2.0
Pfhxa	N.D.	0.50	2.0
Pfhxda	N.D.	1.0	3.0
Pfhxs	N.D.	0.50	2.0
PFNA	N.D.	0.50	2.0
PFNS	N.D.	0.50	2.0
PFOA	N.D.	0.50	2.0
Pfoda	N.D.	1.0	3.0
PFOS	N.D.	0.50	2.0
Pfosa	N.D.	0.50	2.0
PFPA	N.D.	0.50	2.0
Pfteda	N.D.	0.50	2.0
Pftrda	N.D.	0.50	2.0
Pfunda	N.D.	0.50	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.

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Quality Control Summary

Client Name: Merrimack Village District
Reported: 05/04/2020 15:53

Group Number: 2097227

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: 20118004	Sample number(s): 1303575-1303579								
10:2-Fts	24.68	22.46	24.68	23.43	91	95	45-143	4	30
4:2-Fts	23.92	25.62	23.92	26.73	107	112	61-131	4	30
6:2-Fts	24.28	25.75	24.28	27.5	106	113	56-140	7	30
8:2-Fts	24.52	24.77	24.52	24.85	101	101	58-143	0	30
Netfosaa	25.6	29.95	25.6	30.6	117	120	53-140	2	30
Netpfosa	25.6	29.04	25.6	28.53	113	111	56-136	2	30
NEtPFOSAE	25.6	27.72	25.6	28.72	108	112	56-130	4	30
NMeFOSAA	25.6	36.14	25.6	36.02	141	141	59-141	0	30
NMePFOSA	25.6	29.93	25.6	30.52	117	119	49-134	2	30
NMePFOSAE	25.6	29.1	25.6	28.62	114	112	61-133	2	30
Perfluoropentanesulfonate	24	25.61	24	26.37	107	110	73-134	3	30
PFBA	25.6	26.15	25.6	26.42	102	103	63-160	1	30
PFBS	22.64	25.24	22.64	26.34	111	116	67-135	4	30
PFDA	25.6	28.71	25.6	28.54	112	111	66-141	1	30
Pfdoda	25.6	31.62	25.6	30.91	123	121	65-143	2	30
Pfdods	24.8	25.66	24.8	25.1	103	101	57-134	2	30
PFDS	24.64	25.79	24.64	24.76	105	100	62-135	4	30
Pfhpa	25.6	29.28	25.6	31.59	114	123	69-144	8	30
Pfhps	24.36	25.75	24.36	26.83	106	110	67-138	4	30
Pfhxa	25.6	28.03	25.6	27.16	109	106	69-139	3	30
Pfhxda	25.6	25.39	25.6	28.19	99	110	60-148	10	30
Pfhxs	24.2	26.19	24.2	28.09	108	116	63-132	7	30
PFNA	25.6	30.32	25.6	29.14	118	114	66-144	4	30
PFNS	24.56	27.93	24.56	25.85	114	105	70-137	8	30
PFOA	25.6	28.65	25.6	27.69	112	108	67-139	3	30
Pfoda	25.6	25.45	25.6	28.36	99	111	47-159	11	30
PFOS	24.48	24.94	24.48	23.42	102	96	53-129	6	30
Pfosa	25.6	29.91	25.6	29.51	117	115	67-126	1	30
PFPA	25.6	26.97	25.6	27.64	105	108	73-135	2	30
Pfteda	25.6	30.11	25.6	29.84	118	117	69-141	1	30
Pftrda	25.6	30.83	25.6	29.8	120	116	66-146	3	30
Pfunda	25.6	27.76	25.6	29.33	108	115	66-140	6	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: 05/04/2020 15:53

Group Number: 2097227

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: PFAS in Water by LC/MS/MS
Batch number: 20118004

	13C4-PFBA	13C5-PFPeA	13C3-PFBS	13C2-4:2-FTS	13C5-PFHxA	13C3-PFHxS
1303575	90	93	95	106	84	83
1303576	89	95	99	109	87	83
1303577	79	87	87	103	78	75
1303578	86	90	92	105	78	74
1303579	86	91	93	102	82	78
Blank	92	91	88	87	90	88
LCS	89	92	90	84	86	86
LCSD	88	89	88	84	88	83
Limits:	43-130	38-150	23-175	22-169	36-137	35-143

	13C4-PFHpA	13C2-6:2-FTS	13C8-PFOA	13C8-PFOS	13C9-PFNA	13C6-PFDA
1303575	85	95	87	92	91	90
1303576	84	101	86	85	85	87
1303577	76	88	78	78	84	79
1303578	74	88	80	87	88	87
1303579	80	92	83	86	88	82
Blank	89	97	95	91	93	93
LCS	84	92	86	85	87	97
LCSD	82	90	88	89	85	89
Limits:	33-140	29-182	52-124	52-121	48-130	50-124

	13C2-8:2-FTS	d3-NMeFOSAA	13C7-PFUnDA	d5-NEtFOSAA	13C2-PFDoDA	13C2-PFTeDA
1303575	99	82	91	90	85	81
1303576	95	83	92	89	88	80
1303577	89	77	72	80	54	10*
1303578	92	76	91	86	87	77
1303579	95	76	84	88	87	80
Blank	103	89	98	96	93	87
LCS	104	86	105	99	92	88
LCSD	98	84	94	94	88	81
Limits:	37-169	36-143	44-128	42-149	36-127	21-134

	13C8-PFOSA	d7-NMePFOSAE	d3-NMePFOSA	d9-NEtPFOSAE	d5-NEtPFOSA
1303575	81	73	34	74	33
1303576	80	74	32	74	30
1303577	59	10	1*	8*	1*
1303578	54	12	1*	10	1*
1303579	76	70	40	71	38

*- 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: 05/04/2020 15:53

Group Number: 2097227

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: PFAS in Water by LC/MS/MS
Batch number: 20118004

	13C8-PFOSA	d7-NMePFOSAE	d3-NMePFOSA	d9-NEtPFOSAE	d5-NEtPFOSA
Blank	85	89	50	81	52
LCS	87	83	57	84	58
LCSD	83	76	52	77	54
Limits:	10-134	10-137	10-107	10-135	10-107

*- 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.

A-38083 G-2097227 S-1303575-79

NHDES

Drinking Water and Groundwater Bureau

October 14, 2019

GENERAL SYSTEM EVALUATION SAMPLES ONLY ***

Questions: (603) 271-2513

PWS ID: 1531010 **Collected By:** Ronald Miner (Print Name)

System Name: MERRIMACK VILLAGE DIST **Signature:** Ronald Miner

I certify that all samples taken are from the site(s) listed below and all information provided on this form to the lab is valid.

PWS Town: MERRIMACK **Phone Number:** (603) 424-9341 x107

Sample Type: Treatment Evaluation ☐ Other ☒ **If sample is chlorinated, please fill in Chlorine Residual (mg/L) column.**

Sample Purpose/Comments:

Analysis Requested

Sample Site Location	Date & Time Sample Collected	Lab Sample ID	# of Containers	Parameters Requested	Free/Total (circle one) Chlorine Residual (mg/L)
MVD-2(G)/1531010_008	4/22/20 1432			PFAS by Isotope dilution 32 Compounds	
MVD-3(G)/1531010_003	4/22/20 1421				
MVD-7(R)/1531010_007	4/22/20 1400				
MVD-8(R)/1531010_009	4/22/20 1355				
MVD-TP/1531010_508	4/22/20 1405				

NOTE: Samples collected for NITRATE/NITRITE analysis NEED to be collected prior to chlorination. Check with Lab.
CYANIDE samples NEED to be collected prior to chlorination. Check with Lab.

*** Samples that are representative of water being consumed, and indicate the presence of acute contaminants exceeding the MCL, shall be used for compliance purposes.

FOR LAB USE: Temp C (upon receipt): 2.3 On Ice? Y / N Batch ID (if different than sample ID prefix): _____ List QUALIFIERS (if any): _____

Relinquished by: Ronald Miner 4/22/20 **Received by:** _____ **Date/Time:** _____

Relinquished by: _____ **Received at Lab by:** CM Wells **Date/Time:** 4/23/20 10:35

Lab Conducting Analysis: _____ **Signature:** _____ **Lab Accred. ID:** _____ **Phone:** _____

Reporting Lab (if different): _____ **Signature:** _____ **Lab Accred. ID:** _____ **Phone:** _____

NOTE: If acute contaminants are present/exceeded, results must be reported to DES within 24 hours.

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Sample Administration Receipt Documentation Log

Doc Log ID: 282641

Group Number(s): 2097227

Client: NHDES

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Date:	04/23/2020
Number of Packages:	1	Number of Projects:	1

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	Total Trip Blank Qty:	0
Samples Chilled:	Yes	Air Quality Samples Present:	No
Paperwork Enclosed:	Yes		
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Julissa Rivera-Santa

Samples Chilled Details

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	46730061WS	2.3	IR	Wet	Y	Bagged	N

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Lancaster, PA 17605-2425
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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.

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.

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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 less than the LOQ
K2	Continuing Calibration Blank is above the QC limit and the sample result is less than the LOQ
K3	Initial Calibration Verification is above the QC limit and the sample result is less than the LOQ
K4	Continuing Calibration Verification is above the QC limit and the sample result is less than the LOQ
J (or G, I, X)	Estimated value >= 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.