



ANALYSIS REPORT

Prepared by:

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

Prepared for:

C. T. Male Associates
50 Century Hill Drive
Latham NY 12110

Report Date: February 18, 2020 14:43

Project: Hoosick Falls WTP

Account #: 37191
Group Number: 2086796
SDG: HOO42
PO Number: 14.4756
State of Sample Origin: NY

Electronic Copy To	C. T. Male Associates	Attn: Kirk Moline
Electronic Copy To	C. T. Male Associates	Attn: Dan Reilly
Electronic Copy To	C. T. Male Associates	Attn: Jeff Marx
Electronic Copy To	Barr Engineering Company	Attn: Lauren Brady
Electronic Copy To	Environmental Standards	Attn: St. Gobain
Electronic Copy To	Barr Engineering Company	Attn: Data Mgt
Electronic Copy To	Barr Engineering Company	Attn: Terri Olson
Electronic Copy To	C. T. Male Associates	Attn: Nancy Garry

Respectfully Submitted,



(717)-556-7376

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>
GAC Influent Grab Drinking Water	02/06/2020 09:35	1255292
GAC Midfluent Grab Drinking Water	02/06/2020 09:38	1255293
GAC Effluent Grab Drinking Water	02/06/2020 09:42	1255294
FTB01-200206 Grab Blank Water	02/06/2020 09:45	1255295
LTB01-200206 Blank Water	02/06/2020	1255296

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

Project Name: Hoosick Falls WTP
ELLE Group #: 2086796

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if 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.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: GAC Influent Grab Drinking Water
Hoosick Falls Water Treatment Plant

C. T. Male Associates
ELLE Sample #: PW 1255292
ELLE Group #: 2086796
Matrix: Drinking Water

Project Name: Hoosick Falls WTP

Submittal Date/Time: 02/07/2020 11:19
Collection Date/Time: 02/06/2020 09:35
SDG#: HOO42-01

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1			ng/l	ng/l	
14070	NEtFOSAA ¹ NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.9 U	1.9	1
14070	NMeFOSAA ¹ NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.9 U	1.9	1
14070	Perfluorobutanesulfonic acid ¹	375-73-5	1.9 U	1.9	1
14070	Perfluorodecanoic acid ¹	335-76-2	1.9 U	1.9	1
14070	Perfluorododecanoic acid ¹	307-55-1	1.9 U	1.9	1
14070	Perfluoroheptanoic acid¹	375-85-9	12	1.9	1
14070	Perfluorohexanesulfonic acid ¹	355-46-4	1.9 U	1.9	1
14070	Perfluorohexanoic acid¹	307-24-4	13	1.9	1
14070	Perfluorononanoic acid ¹	375-95-1	1.9 U	1.9	1
14070	Perfluorooctanesulfonic acid¹	1763-23-1	3.3	1.9	1
14070	Perfluorooctanoic acid¹	335-67-1	390	19	10
14070	Perfluorotetradecanoic acid ¹	376-06-7	1.9 U	1.9	1
14070	Perfluorotridecanoic acid ¹	72629-94-8	1.9 U	1.9	1
14070	Perfluoroundecanoic acid ¹	2058-94-8	1.9 U	1.9	1

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified					ng/l		
14473	6:2-Fluorotelomersulfonic acid ¹	27619-97-2	4.5 U	4.5	1		
14473	8:2-Fluorotelomersulfonic acid ¹	39108-34-4	2.7 U	2.7	1		
14473	Perfluorobutanoic acid ¹	375-22-4	6.3 U	6.3	1		
14473	Perfluorodecanesulfonic acid ¹	335-77-3	1.8 U	1.8	1		
14473	Perfluoroheptanesulfonic acid ¹	375-92-8	1.8 U	1.8	1		
14473	Perfluorooctanesulfonamide¹	754-91-6	4.2	1.8	1		
14473	Perfluoropentanoic acid¹	2706-90-3	5.1	1.8	1		

Sample Comments

¹ = This analyte was not on the laboratory's NYSDOH 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
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	20044020	02/17/2020 19:42	Marissa C Drexinger	1
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	20044020	02/17/2020 23:32	Mark Collare	10
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	20039002	02/10/2020 23:58	Christine E Dolman	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	20044020	02/13/2020 16:30	Isaac Phillips-Cary	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	20039002	02/09/2020 16:00	Eric Hockley	1

Sample Description: GAC Midfluent Grab Drinking Water
Hoosick Falls Water Treatment Plant

C. T. Male Associates
ELLE Sample #: PW 1255293
ELLE Group #: 2086796
Matrix: Drinking Water

Project Name: Hoosick Falls WTP

Submission Date/Time: 02/07/2020 11:19
Collection Date/Time: 02/06/2020 09:38
SDG#: HOO42-02

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1			ng/l	ng/l	
14070	NEtFOSAA ¹ NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.7 U	1.7	1
14070	NMeFOSAA ¹ NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.7 U	1.7	1
14070	Perfluorobutanesulfonic acid ¹	375-73-5	1.7 U	1.7	1
14070	Perfluorodecanoic acid ¹	335-76-2	1.7 U	1.7	1
14070	Perfluorododecanoic acid ¹	307-55-1	1.7 U	1.7	1
14070	Perfluoroheptanoic acid ¹	375-85-9	1.7 U	1.7	1
14070	Perfluorohexanesulfonic acid ¹	355-46-4	1.7 U	1.7	1
14070	Perfluorohexanoic acid ¹	307-24-4	1.7 U	1.7	1
14070	Perfluorononanoic acid ¹	375-95-1	1.7 U	1.7	1
14070	Perfluorooctanesulfonic acid ¹	1763-23-1	1.7 U	1.7	1
14070	Perfluorooctanoic acid ¹	335-67-1	1.7 U	1.7	1
14070	Perfluorotetradecanoic acid ¹	376-06-7	1.7 U	1.7	1
14070	Perfluorotridecanoic acid ¹	72629-94-8	1.7 U	1.7	1
14070	Perfluoroundecanoic acid ¹	2058-94-8	1.7 U	1.7	1

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified			ng/l	ng/l	
14473	6:2-Fluorotelomersulfonic acid ¹	27619-97-2	4.2 U	4.2	1
14473	8:2-Fluorotelomersulfonic acid ¹	39108-34-4	2.5 U	2.5	1
14473	Perfluorobutanoic acid ¹	375-22-4	5.9 U	5.9	1
14473	Perfluorodecanesulfonic acid ¹	335-77-3	1.7 U	1.7	1
14473	Perfluoroheptanesulfonic acid ¹	375-92-8	1.7 U	1.7	1
14473	Perfluorooctanesulfonamide ¹	754-91-6	1.7 U	1.7	1
14473	Perfluoropentanoic acid ¹	2706-90-3	1.7 U	1.7	1

Sample Comments

¹ = This analyte was not on the laboratory's NYSDOH 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
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	20044020	02/17/2020 19:53	Marissa C Drexinger	1
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	20039002	02/11/2020 00:07	Christine E Dolman	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	20044020	02/13/2020 16:30	Isaac Phillips-Cary	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	20039002	02/09/2020 16:00	Eric Hockley	1

Sample Description: GAC Effluent Grab Drinking Water
Hoosick Falls Water Treatment Plant

C. T. Male Associates
ELLE Sample #: PW 1255294
ELLE Group #: 2086796
Matrix: Drinking Water

Project Name: Hoosick Falls WTP

Submittal Date/Time: 02/07/2020 11:19
Collection Date/Time: 02/06/2020 09:42
SDG#: HOO42-03

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1			ng/l	ng/l	
14070	NEtFOSAA ¹ NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.7 U	1.7	1
14070	NMeFOSAA ¹ NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.7 U	1.7	1
14070	Perfluorobutanesulfonic acid ¹	375-73-5	1.7 U	1.7	1
14070	Perfluorodecanoic acid ¹	335-76-2	1.7 U	1.7	1
14070	Perfluorododecanoic acid ¹	307-55-1	1.7 U	1.7	1
14070	Perfluoroheptanoic acid ¹	375-85-9	1.7 U	1.7	1
14070	Perfluorohexanesulfonic acid ¹	355-46-4	1.7 U	1.7	1
14070	Perfluorohexanoic acid ¹	307-24-4	1.7 U	1.7	1
14070	Perfluorononanoic acid ¹	375-95-1	1.7 U	1.7	1
14070	Perfluorooctanesulfonic acid ¹	1763-23-1	1.7 U	1.7	1
14070	Perfluorooctanoic acid ¹	335-67-1	1.7 U	1.7	1
14070	Perfluorotetradecanoic acid ¹	376-06-7	1.7 U	1.7	1
14070	Perfluorotridecanoic acid ¹	72629-94-8	1.7 U	1.7	1
14070	Perfluoroundecanoic acid ¹	2058-94-8	1.7 U	1.7	1

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified			ng/l	ng/l	
14473	6:2-Fluorotelomersulfonic acid ¹	27619-97-2	4.3 U	4.3	1
14473	8:2-Fluorotelomersulfonic acid ¹	39108-34-4	2.6 U	2.6	1
14473	Perfluorobutanoic acid ¹	375-22-4	6.0 U	6.0	1
14473	Perfluorodecanesulfonic acid ¹	335-77-3	1.7 U	1.7	1
14473	Perfluoroheptanesulfonic acid ¹	375-92-8	1.7 U	1.7	1
14473	Perfluorooctanesulfonamide ¹	754-91-6	1.7 U	1.7	1
14473	Perfluoropentanoic acid ¹	2706-90-3	1.7 U	1.7	1

Sample Comments

¹ = This analyte was not on the laboratory's NYSDOH 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
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	20044020	02/17/2020 20:05	Marissa C Drexinger	1
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	20039002	02/11/2020 00:16	Christine E Dolman	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	20044020	02/13/2020 16:30	Isaac Phillips-Cary	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	20039002	02/09/2020 16:00	Eric Hockley	1

Sample Description: FTB01-200206 Grab Blank Water
Hoosick Falls Water Treatment Plant

C. T. Male Associates
ELLE Sample #: PW 1255295
ELLE Group #: 2086796
Matrix: Blank Water

Project Name: Hoosick Falls WTP

Submission Date/Time: 02/07/2020 11:19
Collection Date/Time: 02/06/2020 09:45
SDG#: HOO42-04FB

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1			ng/l	ng/l	
14070	NEtFOSAA ¹ NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.7 U	1.7	1
14070	NMeFOSAA ¹ NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.7 U	1.7	1
14070	Perfluorobutanesulfonic acid ¹	375-73-5	1.7 U	1.7	1
14070	Perfluorodecanoic acid ¹	335-76-2	1.7 U	1.7	1
14070	Perfluorododecanoic acid ¹	307-55-1	1.7 U	1.7	1
14070	Perfluoroheptanoic acid ¹	375-85-9	1.7 U	1.7	1
14070	Perfluorohexanesulfonic acid ¹	355-46-4	1.7 U	1.7	1
14070	Perfluorohexanoic acid ¹	307-24-4	1.7 U	1.7	1
14070	Perfluorononanoic acid ¹	375-95-1	1.7 U	1.7	1
14070	Perfluorooctanesulfonic acid ¹	1763-23-1	1.7 U	1.7	1
14070	Perfluorooctanoic acid ¹	335-67-1	1.7 U	1.7	1
14070	Perfluorotetradecanoic acid ¹	376-06-7	1.7 U	1.7	1
14070	Perfluorotridecanoic acid ¹	72629-94-8	1.7 U	1.7	1
14070	Perfluoroundecanoic acid ¹	2058-94-8	1.7 U	1.7	1

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified			ng/l	ng/l	
14473	6:2-Fluorotelomersulfonic acid ¹	27619-97-2	4.3 U	4.3	1
14473	8:2-Fluorotelomersulfonic acid ¹	39108-34-4	2.6 U	2.6	1
14473	Perfluorobutanoic acid ¹	375-22-4	6.0 U	6.0	1
14473	Perfluorodecanesulfonic acid ¹	335-77-3	1.7 U	1.7	1
14473	Perfluoroheptanesulfonic acid ¹	375-92-8	1.7 U	1.7	1
14473	Perfluorooctanesulfonamide ¹	754-91-6	1.7 U	1.7	1
14473	Perfluoropentanoic acid ¹	2706-90-3	1.7 U	1.7	1

Sample Comments

¹ = This analyte was not on the laboratory's NYSDOH 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
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	20044020	02/17/2020 20:16	Marissa C Drexinger	1
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	20039002	02/11/2020 00:34	Christine E Dolman	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	20044020	02/13/2020 16:30	Isaac Phillips-Cary	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	20039002	02/09/2020 16:00	Eric Hockley	1

Sample Description: LTB01-200206 Blank Water
Hoosick Falls Water Treatment Plant

C. T. Male Associates
ELLE Sample #: PW 1255296
ELLE Group #: 2086796
Matrix: Blank Water

Project Name: Hoosick Falls WTP

Submittal Date/Time: 02/07/2020 11:19
Collection Date/Time: 02/06/2020
SDG#: HOO42-05TB

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1			ng/l	ng/l	
14070	NEtFOSAA ¹ NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.8 U	1.8	1
14070	NMeFOSAA ¹ NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.8 U	1.8	1
14070	Perfluorobutanesulfonic acid ¹	375-73-5	1.8 U	1.8	1
14070	Perfluorodecanoic acid ¹	335-76-2	1.8 U	1.8	1
14070	Perfluorododecanoic acid ¹	307-55-1	1.8 U	1.8	1
14070	Perfluoroheptanoic acid ¹	375-85-9	1.8 U	1.8	1
14070	Perfluorohexanesulfonic acid ¹	355-46-4	1.8 U	1.8	1
14070	Perfluorohexanoic acid ¹	307-24-4	1.8 U	1.8	1
14070	Perfluorononanoic acid ¹	375-95-1	1.8 U	1.8	1
14070	Perfluorooctanesulfonic acid ¹	1763-23-1	1.8 U	1.8	1
14070	Perfluorooctanoic acid ¹	335-67-1	1.8 U	1.8	1
14070	Perfluorotetradecanoic acid ¹	376-06-7	1.8 U	1.8	1
14070	Perfluorotridecanoic acid ¹	72629-94-8	1.8 U	1.8	1
14070	Perfluoroundecanoic acid ¹	2058-94-8	1.8 U	1.8	1

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified			ng/l	ng/l	
14473	6:2-Fluorotelomersulfonic acid ¹	27619-97-2	4.3 U	4.3	1
14473	8:2-Fluorotelomersulfonic acid ¹	39108-34-4	2.6 U	2.6	1
14473	Perfluorobutanoic acid ¹	375-22-4	6.0 U	6.0	1
14473	Perfluorodecanesulfonic acid ¹	335-77-3	1.7 U	1.7	1
14473	Perfluoroheptanesulfonic acid ¹	375-92-8	1.7 U	1.7	1
14473	Perfluorooctanesulfonamide ¹	754-91-6	1.7 U	1.7	1
14473	Perfluoropentanoic acid ¹	2706-90-3	1.7 U	1.7	1

Sample Comments

¹ = This analyte was not on the laboratory's NYSDOH 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
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	20044020	02/17/2020 20:28	Marissa C Drexinger	1
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	20039002	02/11/2020 00:43	Christine E Dolman	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	20044020	02/13/2020 16:30	Isaac Phillips-Cary	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	20039002	02/09/2020 16:00	Eric Hockley	1

Quality Control Summary

Client Name: C. T. Male Associates
Reported: 02/18/2020 14:43

Group Number: 2086796

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	LOQ
	ng/l	ng/l
Batch number: 20039002	Sample number(s): 1255292-1255296	
6:2-Fluorotelomersulfonic acid	5.0 U	5.0
8:2-Fluorotelomersulfonic acid	3.0 U	3.0
Perfluorobutanoic acid	5.0 U	5.0
Perfluorodecanesulfonic acid	2.0 U	2.0
Perfluoroheptanesulfonic acid	2.0 U	2.0
Perfluorooctanesulfonamide	2.0 U	2.0
Perfluoropentanoic acid	2.0 U	2.0
Batch number: 20044020	Sample number(s): 1255292-1255296	
NETFOSAA	2.0 U	2.0
NMeFOSAA	2.0 U	2.0
Perfluorobutanesulfonic acid	2.0 U	2.0
Perfluorodecanoic acid	2.0 U	2.0
Perfluorododecanoic acid	2.0 U	2.0
Perfluoroheptanoic acid	2.0 U	2.0
Perfluorohexanesulfonic acid	2.0 U	2.0
Perfluorohexanoic acid	2.0 U	2.0
Perfluorononanoic acid	2.0 U	2.0
Perfluorooctanesulfonic acid	2.0 U	2.0
Perfluorooctanoic acid	2.0 U	2.0
Perfluorotetradecanoic acid	2.0 U	2.0
Perfluorotridecanoic acid	2.0 U	2.0
Perfluoroundecanoic acid	2.0 U	2.0

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ng/l	ng/l	ng/l	ng/l					
Batch number: 20039002	Sample number(s): 1255292-1255296								
6:2-Fluorotelomersulfonic acid	24.28	28.14	24.28	30.4	116	125	56-140	8	30
8:2-Fluorotelomersulfonic acid	24.52	29.35	24.52	32.24	120	131	58-143	9	30
Perfluorobutanoic acid	25.6	28.85	25.6	30.09	113	118	63-160	4	30
Perfluorodecanesulfonic acid	24.64	28.37	24.64	27.73	115	113	62-135	2	30
Perfluoroheptanesulfonic acid	24.36	29.55	24.36	30.82	121	127	67-138	4	30
Perfluorooctanesulfonamide	25.6	29.54	25.6	30.09	115	118	67-126	2	30

*- Outside of specification

(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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: C. T. Male Associates
Reported: 02/18/2020 14:43

Group Number: 2086796

LCS/LCSD (continued)

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
Perfluoropentanoic acid	25.6	30.07	25.6	31.48	117	123	73-135	5	30
Batch number: 20044020	Sample number(s): 1255292-1255296								
NEtFOSAA	20.48	17.37	20.48	18.9	85	92	70-130	8	30
NMeFOSAA	20.48	17.08	20.48	17.76	83	87	70-130	4	30
Perfluorobutanesulfonic acid	18.12	15.2	18.12	16.03	84	88	70-130	5	30
Perfluorodecanoic acid	20.48	17.65	20.48	18.62	86	91	70-130	5	30
Perfluorododecanoic acid	20.48	18.45	20.48	20.58	90	100	70-130	11	30
Perfluoroheptanoic acid	20.48	18.02	20.48	17.73	88	87	70-130	2	30
Perfluorohexanesulfonic acid	18.68	16.08	18.68	15.63	86	84	70-130	3	30
Perfluorohexanoic acid	20.48	17.77	20.48	18.55	87	91	70-130	4	30
Perfluorononanoic acid	20.48	18.47	20.48	18.89	90	92	70-130	2	30
Perfluorooctanesulfonic acid	18.96	16.27	18.96	17.39	86	92	70-130	7	30
Perfluorooctanoic acid	20.48	17.55	20.48	18.47	86	90	70-130	5	30
Perfluorotetradecanoic acid	20.48	17.47	20.48	18.55	85	91	70-130	6	30
Perfluorotridecanoic acid	20.48	18.42	20.48	20.01	90	98	70-130	8	30
Perfluoroundecanoic acid	20.48	18.37	20.48	19.14	90	93	70-130	4	30

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: 7 PFAS Compounds
Batch number: 20039002

	13C4-PFBA	13C5-PFPeA	13C3-PFHxS	13C2-6:2-FTS	13C8-PFOS	13C2-8:2-FTS
1255292	105	119	131	118	105	98
1255293	109	111	119	123	115	118
1255294	103	102	112	125	119	110
1255295	107	106	108	109	102	106
1255296	105	110	109	121	109	114
Blank	112	117	123	149	114	134
LCS	112	117	114	127	114	115
LCSD	99	102	97	109	97	106
Limits:	43-130	38-150	35-143	29-182	52-121	37-169
	13C8-PFOSA					
1255292	66					
1255293	87					
1255294	80					
1255295	92					

*- Outside of specification

- (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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: C. T. Male Associates
Reported: 02/18/2020 14:43

Group Number: 2086796

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: 7 PFAS Compounds
Batch number: 20039002

	13C8-PFOSA
1255296	102
Blank	96
LCS	95
LCSD	85

Limits: 10-134

Analysis Name: 14 PFAS Drinking Water List
Batch number: 20044020

	13C2-PFHxA	13C2-PFDA	D5-NetFOSAA
1255292	109	104	100
1255293	91	91	89
1255294	98	95	98
1255295	97	96	93
1255296	94	93	95
Blank	89	91	93
LCS	99	99	95
LCSD	96	100	97

Limits: 70-130 70-130 70-130

*- Outside of specification

(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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.



Client: C.T. MALE ASSOCIATES

Delivery and Receipt Information

Delivery Method: Fed Ex Arrival Date: 02/07/2020
 Number of Packages: 1 Number of Projects: 2
 State/Province of Origin: NY

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:	4
Samples Chilled:	Yes	Trip Blank Type:	See Below
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Trip Blank Type(s): 2 UNP/ 2 TRIZMA

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	DT42-03	0.9	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.

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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.

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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 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.