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November 01, 2023

ROBERT BATEMAN
CITY OF HALTOM CITY
4200 HOLLIS
Fort Worth, TX 76111
rbateman@haltomcitytx.com

RE: Final Analytical Report Q2341024
Attn: ROBERT BATEMAN

Enclosed are the analytical results for sample(s) received by LCRA Environmental Laboratory Services. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This final report provides results related only to the sample(s) as received for the above referenced work order.

Thank you for selecting ELS for your analytical needs. If you have any questions regarding this report, please contact us at (512) 730-6022 or environmental.lab@lcra.org. We look forward to assisting you again.

Authorized for release by:

Jason Woods
Account Manager
jason.woods@lcra.org



Enclosures:
CC:DAVID CUMMINGS

Workorder: Q2341024
Workorder Description: TX2200014_UCMR5
Client: CITY OF HALTOM CITY
Profile: UCMR5

Report To: ROBERT BATEMAN
CITY OF HALTOM CITY
4200 HOLLIS
Fort Worth, TX 76111

Sampled By: JEFF SHIFLET

Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received	Analytes Reported
Q2341024001	EP001	DW	E200.7, ICP-MS UCMR	09/21/2023 06:25	09/22/2023 08:50	1
Q2341024001	EP001	DW	E533 Perfluor Alkyl Acid	09/21/2023 06:25	09/22/2023 08:50	25
Q2341024001	EP001	DW	E537.1 Perfluorinated UCMR	09/21/2023 06:25	09/22/2023 08:50	4
Q2341024002	EP001 FIELD BLANK	DW	E533 Perfluor Alkyl Acid	09/21/2023 06:25	09/22/2023 08:50	25
Q2341024003	EP002	DW	E200.7, ICP-MS UCMR	09/21/2023 06:15	09/22/2023 08:50	1
Q2341024003	EP002	DW	E533 Perfluor Alkyl Acid	09/21/2023 06:15	09/22/2023 08:50	25
Q2341024003	EP002	DW	E537.1 Perfluorinated UCMR	09/21/2023 06:15	09/22/2023 08:50	4
Q2341024004	EP002 FIELD BLANK	DW	E533 Perfluor Alkyl Acid	09/21/2023 06:15	09/22/2023 08:50	25

Report Definitions

MRL - Minimum Reporting Limit
LOD - Limit of Detection
ML - Maximum Limit - Client Specified
MCL - Maximum Contaminant Level
LOQ - Limit of Quantitation - Client Specified
DF - Dilution Factor
(S) - Surrogate Spike
MDL - Method Detection Limit
RPD - Relative Percent Difference

Qualifier Definitions

J - Analyte detected below quantitation limit
R - RPD outside duplicate precision limit
S - Spike recovery outside limit
B - Analyte detected in method blank
N - Not Accredited
M - Analyte Detected Above Maximum Contaminant Level
SL - Spike Recovery Low
SH - Spike Recovery High
H - Analyzed Past Hold Time
CR - Confirmed Result
CH - Result confirmed by historical data

Workorder Summary

Analytical Results

Client ID: TX2200014	Date Collected: 09/21/2023 06:25	Matrix: Drinking Water
Lab ID: Q2341024001	Date Received: 09/22/2023 08:50	Sample Type: SAMPLE
Sample ID: EP001	Location:	
Project ID: UCMR5	Facility:	
	Sample Point:	

INORGANICS (E200.7, ICP-MS Prep/E200.7, ICP-MS UCMR)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Lithium Total	<9.0	ug/L	9.0	7.0		2.5	10/03/2023 14:09	FM	10/05/2023 13:10	FM	N

Perfluorinated Alkyl Acids (E533 Perfluor Alkyl Acid)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
PFBA (CAS 375-22-4)	0.00641	ug/L	0.00504	0.00504		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFMPA (CAS 377-73-1)	<0.00403	ug/L	0.00403	0.00403		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFPeA (CAS 2706-90-3)	0.00370	ug/L	0.00303	0.00303		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFBS (CAS 375-73-5)	0.00325	ug/L	0.00303	0.00303		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFMBA (CAS 863090-89-5)	<0.00303	ug/L	0.00303	0.00303		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFEESA (CAS 113507-82-7)	<0.00303	ug/L	0.00303	0.00303		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
NFDHA (CAS 151772-58-6)	<0.0202	ug/L	0.0202	0.0202		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
4:2FTS (CAS 757124-72-4)	<0.00303	ug/L	0.00303	0.00303		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFHxA (CAS 307-24-4)	0.00322	ug/L	0.00303	0.00303		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFPeS (CAS 2706-91-4)	<0.00403	ug/L	0.00403	0.00403		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
HFPO-DA (CAS 13252-13-6)	<0.00504	ug/L	0.00504	0.00504		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFHpA (CAS 375-85-9)	<0.00303	ug/L	0.00303	0.00303		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFHxS (CAS 355-46-4)	<0.00303	ug/L	0.00303	0.00303		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
ADONA (CAS 919005-14-4)	<0.00303	ug/L	0.00303	0.00303		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
6:2FTS (CAS 27619-97-2)	<0.00403	ug/L	0.00403	0.00403		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFOA (CAS 335-67-1)	<0.00403	ug/L	0.00403	0.00403		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFHpS (CAS 375-92-8)	<0.00303	ug/L	0.00303	0.00303		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFNA (CAS 375-95-1)	<0.00403	ug/L	0.00403	0.00403		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFOS (CAS 1763-23-1)	<0.00403	ug/L	0.00403	0.00403		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
9Cl-PF3ONS (CAS 756426-58-1)	<0.00202	ug/L	0.00202	0.00202		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
8:2FTS (CAS 39108-34-4)	<0.00504	ug/L	0.00504	0.00504		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFDA (CAS 335-76-2)	<0.00303	ug/L	0.00303	0.00303		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFUnA (CAS 2058-94-8)	<0.00202	ug/L	0.00202	0.00202		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
11Cl-PF3OUdS (CAS 763051-92-9)	<0.00504	ug/L	0.00504	0.00504		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N
PFDoA (CAS 307-55-1)	<0.00303	ug/L	0.00303	0.00303		1	10/10/2023 12:00	MF	10/13/2023 12:57	KRD	N

Analytical Results

Client ID: TX2200014	Date Collected: 09/21/2023 06:25	Matrix: Drinking Water
Lab ID: Q2341024001	Date Received: 09/22/2023 08:50	Sample Type: SAMPLE
Sample ID: EP001	Location:	
Project ID: UCMR5	Facility:	
	Sample Point:	

Perfluorinated Alkyl Acids (E533 Perfluor Alkyl Acid)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Surrogates											
Parameter	Units	%Spike Recovery		Control Limits %		Qualifier					
13C2-4:2FTS (S)	%	91.6		50 - 200							
13C2-6:2FTS (S)	%	102.0		50 - 200							
13C2-8:2FTS (S)	%	104.0		50 - 200							
13C2-PFDoA (S)	%	102.0		50 - 200							
13C3-HFPO-DA (S)	%	104.0		50 - 200							
13C3-PFBS (S)	%	124.0		50 - 200							
13C3-PFHxS (S)	%	110.0		50 - 200							
13C4-PFBA (S)	%	111.0		50 - 200							
13C4-PFHpA (S)	%	108.0		50 - 200							
13C5-PFHxA (S)	%	111.0		50 - 200							
13C5-PFPeA (S)	%	126.0		50 - 200							
13C6-PFDA (S)	%	102.0		50 - 200							
13C7-PFUnA (S)	%	105.0		50 - 200							
13C8-PFOA (S)	%	106.0		50 - 200							
13C8-PFOS (S)	%	107.0		50 - 200							
13C9-PFNA (S)	%	105.0		50 - 200							

Perfluorinated Alkyl Acids (E537 Perfluor Alkyl Acid FULL/E537.1 Perfluorinated UCMR)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
NMeFOSAA (CAS 2355-31-9)	<0.00586	ug/L	0.00586	0.00586		1	10/04/2023 07:35	DTM	10/05/2023 01:59	KRD	N
NEtFOSAA (CAS 2991-50-6)	<0.00488	ug/L	0.00488	0.00488		1	10/04/2023 07:35	DTM	10/05/2023 01:59	KRD	N
PFTTrDa (CAS 72629-94-8)	<0.00683	ug/L	0.00683	0.00683		1	10/04/2023 07:35	DTM	10/05/2023 01:59	KRD	N
PFTTeDA (CAS 376-06-7)	<0.00781	ug/L	0.00781	0.00781		1	10/04/2023 07:35	DTM	10/05/2023 01:59	KRD	N

Surrogates

Parameter	Units	%Spike Recovery	Control Limits %	Qualifier
13C3-HFPO-DA (S)	%	92.9	70 - 130	
13C-PFDA (S)	%	93.0	70 - 130	
13C-PFHxA (S)	%	93.8	70 - 130	
d5-N-EtFOSAA (S)	%	91.6	70 - 130	

Analytical Results

Client ID: TX2200014	Date Collected: 09/21/2023 06:25	Matrix: Drinking Water
Lab ID: Q2341024002	Date Received: 09/22/2023 08:50	Sample Type: FB
Sample ID: EP001 FIELD BLANK	Location:	
Project ID: UCMR5	Facility:	
	Sample Point:	

Perfluorinated Alkyl Acids (E533 Perfluor Alkyl Acid)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
PFBA (CAS 375-22-4)	<0.00495	ug/L	0.00495	0.00495		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFMPA (CAS 377-73-1)	<0.00396	ug/L	0.00396	0.00396		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFPeA (CAS 2706-90-3)	<0.00297	ug/L	0.00297	0.00297		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFBS (CAS 375-73-5)	<0.00297	ug/L	0.00297	0.00297		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFMBA (CAS 863090-89-5)	<0.00297	ug/L	0.00297	0.00297		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFEESA (CAS 113507-82-7)	<0.00297	ug/L	0.00297	0.00297		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
NFDHA (CAS 151772-58-6)	<0.0198	ug/L	0.0198	0.0198		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
4:2FTS (CAS 757124-72-4)	<0.00297	ug/L	0.00297	0.00297		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFHxA (CAS 307-24-4)	<0.00297	ug/L	0.00297	0.00297		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFPeS (CAS 2706-91-4)	<0.00396	ug/L	0.00396	0.00396		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
HFPO-DA (CAS 13252-13-6)	<0.00495	ug/L	0.00495	0.00495		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFHpA (CAS 375-85-9)	<0.00297	ug/L	0.00297	0.00297		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFHxS (CAS 355-46-4)	<0.00297	ug/L	0.00297	0.00297		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
ADONA (CAS 919005-14-4)	<0.00297	ug/L	0.00297	0.00297		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
6:2FTS (CAS 27619-97-2)	<0.00396	ug/L	0.00396	0.00396		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFOA (CAS 335-67-1)	<0.00396	ug/L	0.00396	0.00396		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFHpS (CAS 375-92-8)	<0.00297	ug/L	0.00297	0.00297		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFNA (CAS 375-95-1)	<0.00396	ug/L	0.00396	0.00396		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFOS (CAS 1763-23-1)	<0.00396	ug/L	0.00396	0.00396		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
9CI-PF3ONS (CAS 756426-58-1)	<0.00198	ug/L	0.00198	0.00198		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
8:2FTS (CAS 39108-34-4)	<0.00495	ug/L	0.00495	0.00495		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFDA (CAS 335-76-2)	<0.00297	ug/L	0.00297	0.00297		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFUnA (CAS 2058-94-8)	<0.00198	ug/L	0.00198	0.00198		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
11CI-PF3OUDS (CAS 763051-92-9)	<0.00495	ug/L	0.00495	0.00495		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N
PFDoA (CAS 307-55-1)	<0.00297	ug/L	0.00297	0.00297		1	10/19/2023 14:15	MF	11/01/2023 01:07	KRD	N

Analytical Results

Client ID: TX2200014	Date Collected: 09/21/2023 06:25	Matrix: Drinking Water
Lab ID: Q2341024002	Date Received: 09/22/2023 08:50	Sample Type: FB
Sample ID: EP001 FIELD BLANK	Location:	
Project ID: UCMR5	Facility:	
	Sample Point:	

Perfluorinated Alkyl Acids (E533 Perfluor Alkyl Acid)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Surrogates											
Parameter	Units		%Spike Recovery		Control Limits %		Qualifier				
13C2-4:2FTS (S)	%		98.9		50 - 200						
13C2-6:2FTS (S)	%		106.0		50 - 200						
13C2-8:2FTS (S)	%		92.8		50 - 200						
13C2-PFDoA (S)	%		84.8		50 - 200						
13C3-HFPO-DA (S)	%		79.0		50 - 200						
13C3-PFBS (S)	%		82.1		50 - 200						
13C3-PFHxS (S)	%		91.4		50 - 200						
13C4-PFBA (S)	%		92.5		50 - 200						
13C4-PFHpA (S)	%		85.5		50 - 200						
13C5-PFHxA (S)	%		85.5		50 - 200						
13C5-PFPeA (S)	%		90.8		50 - 200						
13C6-PFDA (S)	%		87.1		50 - 200						
13C7-PFUnA (S)	%		85.8		50 - 200						
13C8-PFOA (S)	%		87.4		50 - 200						
13C8-PFOS (S)	%		91.8		50 - 200						
13C9-PFNA (S)	%		87.9		50 - 200						

Analytical Results

Client ID: TX2200014	Date Collected: 09/21/2023 06:15	Matrix: Drinking Water
Lab ID: Q2341024003	Date Received: 09/22/2023 08:50	Sample Type: SAMPLE
Sample ID: EP002	Location:	
Project ID: UCMR5	Facility:	
	Sample Point:	

INORGANICS (E200.7, ICP-MS Prep/E200.7, ICP-MS UCMR)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Lithium Total	<9.0	ug/L	9.0	7.0		2.5	10/03/2023 14:09	FM	10/05/2023 13:13	FM	N

Perfluorinated Alkyl Acids (E533 Perfluor Alkyl Acid)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
PFBA (CAS 375-22-4)	0.00972	ug/L	0.00488	0.00488		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFMPA (CAS 377-73-1)	<0.00391	ug/L	0.00391	0.00391		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFPeA (CAS 2706-90-3)	0.00506	ug/L	0.00293	0.00293		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFBS (CAS 375-73-5)	0.00367	ug/L	0.00293	0.00293		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFMBA (CAS 863090-89-5)	<0.00293	ug/L	0.00293	0.00293		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFEESA (CAS 113507-82-7)	<0.00293	ug/L	0.00293	0.00293		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
NFDHA (CAS 151772-58-6)	<0.0195	ug/L	0.0195	0.0195		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
4:2FTS (CAS 757124-72-4)	<0.00293	ug/L	0.00293	0.00293		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFHxA (CAS 307-24-4)	0.00566	ug/L	0.00293	0.00293		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFPeS (CAS 2706-91-4)	<0.00391	ug/L	0.00391	0.00391		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
HFPO-DA (CAS 13252-13-6)	<0.00488	ug/L	0.00488	0.00488		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFHpA (CAS 375-85-9)	<0.00293	ug/L	0.00293	0.00293		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFHxS (CAS 355-46-4)	0.00893	ug/L	0.00293	0.00293		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
ADONA (CAS 919005-14-4)	<0.00293	ug/L	0.00293	0.00293		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
6:2FTS (CAS 27619-97-2)	<0.00391	ug/L	0.00391	0.00391		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFOA (CAS 335-67-1)	0.00393	ug/L	0.00391	0.00391		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFHpS (CAS 375-92-8)	<0.00293	ug/L	0.00293	0.00293		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFNA (CAS 375-95-1)	<0.00391	ug/L	0.00391	0.00391		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFOS (CAS 1763-23-1)	0.00537	ug/L	0.00391	0.00391		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
9CI-PF3ONS (CAS 756426-58-1)	<0.00195	ug/L	0.00195	0.00195		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
8:2FTS (CAS 39108-34-4)	<0.00488	ug/L	0.00488	0.00488		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFDA (CAS 335-76-2)	<0.00293	ug/L	0.00293	0.00293		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFUnA (CAS 2058-94-8)	<0.00195	ug/L	0.00195	0.00195		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
11CI-PF3OUdS (CAS 763051-92-9)	<0.00488	ug/L	0.00488	0.00488		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N
PFDoA (CAS 307-55-1)	<0.00293	ug/L	0.00293	0.00293		1	10/10/2023 12:00	MF	10/13/2023 13:13	KRD	N

Analytical Results

Client ID: TX2200014	Date Collected: 09/21/2023 06:15	Matrix: Drinking Water
Lab ID: Q2341024003	Date Received: 09/22/2023 08:50	Sample Type: SAMPLE
Sample ID: EP002	Location:	
Project ID: UCMR5	Facility:	
	Sample Point:	

Perfluorinated Alkyl Acids (E533 Perfluor Alkyl Acid)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Surrogates											
Parameter	Units	%Spike Recovery		Control Limits %		Qualifier					
13C2-4:2FTS (S)	%	83.7		50 - 200							
13C2-6:2FTS (S)	%	103.0		50 - 200							
13C2-8:2FTS (S)	%	107.0		50 - 200							
13C2-PFDoA (S)	%	101.0		50 - 200							
13C3-HFPO-DA (S)	%	112.0		50 - 200							
13C3-PFBS (S)	%	128.0		50 - 200							
13C3-PFHxS (S)	%	114.0		50 - 200							
13C4-PFBA (S)	%	110.0		50 - 200							
13C4-PFHpA (S)	%	110.0		50 - 200							
13C5-PFHxA (S)	%	117.0		50 - 200							
13C5-PFPeA (S)	%	127.0		50 - 200							
13C6-PFDA (S)	%	99.5		50 - 200							
13C7-PFUnA (S)	%	102.0		50 - 200							
13C8-PFOA (S)	%	108.0		50 - 200							
13C8-PFOS (S)	%	110.0		50 - 200							
13C9-PFNA (S)	%	105.0		50 - 200							

Perfluorinated Alkyl Acids (E537 Perfluor Alkyl Acid FULL/E537.1 Perfluorinated UCMR)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
NMeFOSAA (CAS 2355-31-9)	<0.00597	ug/L	0.00597	0.00597		1	10/04/2023 07:35	DTM	10/05/2023 02:22	KRD	N
NEtFOSAA (CAS 2991-50-6)	<0.00498	ug/L	0.00498	0.00498		1	10/04/2023 07:35	DTM	10/05/2023 02:22	KRD	N
PFTTrDa (CAS 72629-94-8)	<0.00697	ug/L	0.00697	0.00697		1	10/04/2023 07:35	DTM	10/05/2023 02:22	KRD	N
PFTTeDA (CAS 376-06-7)	<0.00796	ug/L	0.00796	0.00796		1	10/04/2023 07:35	DTM	10/05/2023 02:22	KRD	N

Surrogates

Parameter	Units	%Spike Recovery	Control Limits %	Qualifier
13C3-HFPO-DA (S)	%	93.8	70 - 130	
13C-PFDA (S)	%	94.6	70 - 130	
13C-PFHxA (S)	%	94.8	70 - 130	
d5-N-EtFOSAA (S)	%	94.5	70 - 130	

Analytical Results

Client ID: TX2200014	Date Collected: 09/21/2023 06:15	Matrix: Drinking Water
Lab ID: Q2341024004	Date Received: 09/22/2023 08:50	Sample Type: FB
Sample ID: EP002 FIELD BLANK	Location:	
Project ID: UCMR5	Facility:	
	Sample Point:	

Perfluorinated Alkyl Acids (E533 Perfluor Alkyl Acid)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
PFBA (CAS 375-22-4)	<0.00473	ug/L	0.00473	0.00473		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFMPA (CAS 377-73-1)	<0.00378	ug/L	0.00378	0.00378		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFPeA (CAS 2706-90-3)	<0.00284	ug/L	0.00284	0.00284		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFBS (CAS 375-73-5)	<0.00284	ug/L	0.00284	0.00284		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFMBA (CAS 863090-89-5)	<0.00284	ug/L	0.00284	0.00284		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFEESA (CAS 113507-82-7)	<0.00284	ug/L	0.00284	0.00284		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
NFDHA (CAS 151772-58-6)	<0.0189	ug/L	0.0189	0.0189		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
4:2FTS (CAS 757124-72-4)	<0.00284	ug/L	0.00284	0.00284		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFHxA (CAS 307-24-4)	<0.00284	ug/L	0.00284	0.00284		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFPeS (CAS 2706-91-4)	<0.00378	ug/L	0.00378	0.00378		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
HFPO-DA (CAS 13252-13-6)	<0.00473	ug/L	0.00473	0.00473		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFHpA (CAS 375-85-9)	<0.00284	ug/L	0.00284	0.00284		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFHxS (CAS 355-46-4)	<0.00284	ug/L	0.00284	0.00284		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
ADONA (CAS 919005-14-4)	<0.00284	ug/L	0.00284	0.00284		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
6:2FTS (CAS 27619-97-2)	<0.00378	ug/L	0.00378	0.00378		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFOA (CAS 335-67-1)	<0.00378	ug/L	0.00378	0.00378		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFHpS (CAS 375-92-8)	<0.00284	ug/L	0.00284	0.00284		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFNA (CAS 375-95-1)	<0.00378	ug/L	0.00378	0.00378		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFOS (CAS 1763-23-1)	<0.00378	ug/L	0.00378	0.00378		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
9CI-PF3ONS (CAS 756426-58-1)	<0.00189	ug/L	0.00189	0.00189		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
8:2FTS (CAS 39108-34-4)	<0.00473	ug/L	0.00473	0.00473		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFDA (CAS 335-76-2)	<0.00284	ug/L	0.00284	0.00284		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFUnA (CAS 2058-94-8)	<0.00189	ug/L	0.00189	0.00189		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
11CI-PF3OUdS (CAS 763051-92-9)	<0.00473	ug/L	0.00473	0.00473		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N
PFDoA (CAS 307-55-1)	<0.00284	ug/L	0.00284	0.00284		1	10/19/2023 14:15	MF	11/01/2023 01:38	KRD	N

Analytical Results

Client ID: TX2200014	Date Collected: 09/21/2023 06:15	Matrix: Drinking Water
Lab ID: Q2341024004	Date Received: 09/22/2023 08:50	Sample Type: FB
Sample ID: EP002 FIELD BLANK	Location:	
Project ID: UCMR5	Facility:	
	Sample Point:	

Perfluorinated Alkyl Acids (E533 Perfluor Alkyl Acid)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Surrogates											
Parameter	Units		%Spike Recovery		Control Limits %		Qualifier				
13C2-4:2FTS (S)	%		97.5		50 - 200						
13C2-6:2FTS (S)	%		104.0		50 - 200						
13C2-8:2FTS (S)	%		91.4		50 - 200						
13C2-PFDoA (S)	%		86.7		50 - 200						
13C3-HFPO-DA (S)	%		75.8		50 - 200						
13C3-PFBS (S)	%		83.1		50 - 200						
13C3-PFHxS (S)	%		89.9		50 - 200						
13C4-PFBA (S)	%		89.8		50 - 200						
13C4-PFHpA (S)	%		81.0		50 - 200						
13C5-PFHxA (S)	%		79.6		50 - 200						
13C5-PFPeA (S)	%		88.0		50 - 200						
13C6-PFDA (S)	%		84.4		50 - 200						
13C7-PFUnA (S)	%		85.2		50 - 200						
13C8-PFOA (S)	%		82.9		50 - 200						
13C8-PFOS (S)	%		90.1		50 - 200						
13C9-PFNA (S)	%		83.4		50 - 200						

Quality Control Results

QC Batch: MET/10027
Preparation Method: E200.7, ICP-MS Prep
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E200.7, ICP-MS UCMR

LFSM-M (1978577); LFSMDM (1978578); Original: Q2340819001

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Lithium Total	ug/L	100.0	105.8	106.0		107.6	108.0	1.87		

Laboratory Reagent Blank(1978575)

Parameter	Units	Results	MRL	LOD	Qualifier
Lithium Total	ug/L	<9.0	9.0	7.0	

Laboratory Fortified Blank (1978576)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Lithium Total	ug/L	7.0	7.6	109.0	50 - 150	

Quality Control Results

QC Batch: MET/10027
Preparation Method: E200.7, ICP-MS UCMR
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E200.7, ICP-MS UCMR

Continuing Calibration Check-M (1979672)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Lithium Total	ug/L	100.0	99.6	99.6	90 - 110	

Continuing Calibration Check-L (1979667)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Lithium Total	ug/L	7.0	6.7	95.5	50 - 150	

Quality Control Results

QC Batch: ORG/12131
Preparation Method: E537 Perfluor Alkyl Acid FULL
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E537.1 Perfluorinated UCMR

Laboratory Fortified Blank Low (1978583)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
NMeFOSAA (CAS 2355-31-9)	ug/L	0.004	0.005	126.0	50 - 150	
NEtFOSAA (CAS 2991-50-6)	ug/L	0.004	0.0046	116.0	50 - 150	
PFTTrDa (CAS 72629-94-8)	ug/L	0.004	0.0046	114.0	50 - 150	
PFTeDA (CAS 376-06-7)	ug/L	0.004	0.0045	113.0	50 - 150	

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C3-HFPO-DA (S)	%	86.20	70 - 130	
13C-PFDA (S)	%	100	70 - 130	
13C-PFHxA (S)	%	82.30	70 - 130	
d5-N-EtFOSAA (S)	%	99	70 - 130	

LFSM-L (1978584); LFSMDL (1978585); Original: Q2340819001

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
NMeFOSAA (CAS 2355-31-9)	ug/L	0.0039	0.0047	121.0		0.0045	119.0	1.7		
NEtFOSAA (CAS 2991-50-6)	ug/L	0.0039	0.0048	124.0		0.0043	113.0	9.3		
PFTTrDa (CAS 72629-94-8)	ug/L	0.0039	0.0043	112.0		0.0042	109.0	2.71		
PFTeDA (CAS 376-06-7)	ug/L	0.0039	0.004	104.0		0.004	105.0	0.95 7		

Laboratory Reagent Blank(1978582)

Parameter	Units	Results	MRL	LOD	Qualifier
NMeFOSAA (CAS 2355-31-9)	ug/L	<0.00600	0.006	0.006	
NEtFOSAA (CAS 2991-50-6)	ug/L	<0.00500	0.005	0.005	
PFTTrDa (CAS 72629-94-8)	ug/L	<0.00700	0.007	0.007	
PFTeDA (CAS 376-06-7)	ug/L	<0.00800	0.008	0.008	

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C3-HFPO-DA (S)	%	80.30	70 - 130	
13C-PFDA (S)	%	95.20	70 - 130	
13C-PFHxA (S)	%	76.70	70 - 130	
d5-N-EtFOSAA (S)	%	90	70 - 130	

Quality Control Results

QC Batch: ORG/12131
Preparation Method: E537.1 Perfluorinated UCMR
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E537.1 Perfluorinated UCMR

Continuing Calibration Check-M (1979407)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
NMeFOSAA (CAS 2355-31-9)	ug/L	7.5	7.56	101.0	70 - 130	
NEtFOSAA (CAS 2991-50-6)	ug/L	7.5	7.64	102.0	70 - 130	
PFTTrDa (CAS 72629-94-8)	ug/L	7.5	7.74	103.0	70 - 130	
PFTeDA (CAS 376-06-7)	ug/L	7.5	7.69	103.0	70 - 130	

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C3-HFPO-DA (S)	%	107	70 - 130	
13C-PFDA (S)	%	105	70 - 130	
13C-PFHxA (S)	%	104	70 - 130	
d5-N-EtFOSAA (S)	%	102	70 - 130	

Continuing Calibration Check-H (1979408)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
NMeFOSAA (CAS 2355-31-9)	ug/L	15.0	14.8	98.8	70 - 130	
NEtFOSAA (CAS 2991-50-6)	ug/L	15.0	14.7	98.0	70 - 130	
PFTTrDa (CAS 72629-94-8)	ug/L	15.0	14.7	98.3	70 - 130	
PFTeDA (CAS 376-06-7)	ug/L	15.0	14.7	97.8	70 - 130	

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C3-HFPO-DA (S)	%	100	70 - 130	
13C-PFDA (S)	%	97.90	70 - 130	
13C-PFHxA (S)	%	101	70 - 130	
d5-N-EtFOSAA (S)	%	96	70 - 130	

Continuing Calibration Check-L (1979405)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
NMeFOSAA (CAS 2355-31-9)	ug/L	1.0	1.19	119.0	50 - 150	
NEtFOSAA (CAS 2991-50-6)	ug/L	1.0	1.17	117.0	50 - 150	
PFTTrDa (CAS 72629-94-8)	ug/L	1.0	1.09	109.0	50 - 150	
PFTeDA (CAS 376-06-7)	ug/L	1.0	1.12	112.0	50 - 150	

Quality Control Results

QC Batch: ORG/12131
Preparation Method: E537.1 Perfluorinated UCMR
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E537.1 Perfluorinated UCMR

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C3-HFPO-DA (S)	%	112	70 - 130	
13C-PFDA (S)	%	111	70 - 130	
13C-PFHxA (S)	%	109	70 - 130	
d5-N-EtFOSAA (S)	%	109	70 - 130	

Quality Control Results

QC Batch: ORG/12157
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E533 Perfluor Alkyl Acid

Continuing Calibration Check-M (1982648)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFBA (CAS 375-22-4)	ug/L	6.25	6.24	99.8	70 - 130	
PFMPA (CAS 377-73-1)	ug/L	5.0	5.25	105.0	70 - 130	
PFPeA (CAS 2706-90-3)	ug/L	3.75	3.88	104.0	70 - 130	
PFBS (CAS 375-73-5)	ug/L	3.33	3.27	98.1	70 - 130	
PFMBA (CAS 863090-89-5)	ug/L	3.75	3.83	102.0	70 - 130	
PFEESA (CAS 113507-82-7)	ug/L	3.34	3.12	93.4	70 - 130	
NFDHA (CAS 151772-58-6)	ug/L	25.0	24.4	97.7	70 - 130	
4:2FTS (CAS 757124-72-4)	ug/L	3.52	3.52	100.0	70 - 130	
PFHxA (CAS 307-24-4)	ug/L	3.75	3.75	100.0	70 - 130	
PFPeS (CAS 2706-91-4)	ug/L	4.7	4.63	98.5	70 - 130	
HFPO-DA (CAS 13252-13-6)	ug/L	6.25	5.2	83.3	70 - 130	
PFHpA (CAS 375-85-9)	ug/L	3.75	3.68	98.2	70 - 130	
PFHxS (CAS 355-46-4)	ug/L	3.42	3.38	98.8	70 - 130	
ADONA (CAS 919005-14-4)	ug/L	3.54	3.3	93.1	70 - 130	
6:2FTS (CAS 27619-97-2)	ug/L	5.95	5.84	98.1	70 - 130	
PFOA (CAS 335-67-1)	ug/L	5.0	4.73	94.6	70 - 130	
PFHpS (CAS 375-92-8)	ug/L	3.58	3.43	96.0	70 - 130	
PFNA (CAS 375-95-1)	ug/L	5.0	4.77	95.3	70 - 130	
PFOS (CAS 1763-23-1)	ug/L	4.64	4.46	96.1	70 - 130	
9CI-PF3ONS (CAS 756426-58-1)	ug/L	2.34	2.15	92.2	70 - 130	
8:2FTS (CAS 39108-34-4)	ug/L	6.0	6.12	102.0	70 - 130	
PFDA (CAS 335-76-2)	ug/L	3.75	3.59	95.8	70 - 130	
PFUnA (CAS 2058-94-8)	ug/L	2.5	2.28	91.4	70 - 130	
11CI-PF3OUdS (CAS 763051-92-9)	ug/L	5.9	5.66	96.0	70 - 130	
PFDaA (CAS 307-55-1)	ug/L	3.75	3.58	95.5	70 - 130	

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C2-4:2FTS (S)	%	104	70 - 130	
13C2-6:2FTS (S)	%	105	70 - 130	
13C2-8:2FTS (S)	%	104	70 - 130	
13C2-PFDaA (S)	%	99.40	70 - 130	
13C3-HFPO-DA (S)	%	110	70 - 130	
13C3-PFBS (S)	%	103	70 - 130	

Quality Control Results

QC Batch: ORG/12157
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E533 Perfluor Alkyl Acid

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C3-PFHxS (S)	%	104	70 - 130	
13C4-PFBA (S)	%	102	70 - 130	
13C4-PFHpA (S)	%	102	70 - 130	
13C5-PFHxA (S)	%	101	70 - 130	
13C5-PFPeA (S)	%	101	70 - 130	
13C6-PFDA (S)	%	102	70 - 130	
13C7-PFUnA (S)	%	104	70 - 130	
13C8-PFOA (S)	%	103	70 - 130	
13C8-PFOS (S)	%	103	70 - 130	
13C9-PFNA (S)	%	101	70 - 130	

Continuing Calibration Check-H (1982649)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFBA (CAS 375-22-4)	ug/L	31.2	30.4	97.1	70 - 130	
PFMPA (CAS 377-73-1)	ug/L	25.0	24.4	97.4	70 - 130	
PFPeA (CAS 2706-90-3)	ug/L	18.8	18.9	101.0	70 - 130	
PFBS (CAS 375-73-5)	ug/L	16.6	16.6	99.8	70 - 130	
PFMBA (CAS 863090-89-5)	ug/L	18.8	19.3	103.0	70 - 130	
PFEESA (CAS 113507-82-7)	ug/L	16.7	16.6	99.0	70 - 130	
NFDHA (CAS 151772-58-6)	ug/L	125.0	115.0	91.7	70 - 130	
4:2FTS (CAS 757124-72-4)	ug/L	17.6	17.8	101.0	70 - 130	
PFHxA (CAS 307-24-4)	ug/L	18.8	18.8	100.0	70 - 130	
PFPeS (CAS 2706-91-4)	ug/L	23.5	23.3	99.1	70 - 130	
HFPO-DA (CAS 13252-13-6)	ug/L	31.2	31.6	101.0	70 - 130	
PFHpA (CAS 375-85-9)	ug/L	18.8	19.4	103.0	70 - 130	
PFHxS (CAS 355-46-4)	ug/L	17.1	16.8	98.3	70 - 130	
ADONA (CAS 919005-14-4)	ug/L	17.7	16.8	94.6	70 - 130	
6:2FTS (CAS 27619-97-2)	ug/L	29.8	30.2	101.0	70 - 130	
PFOA (CAS 335-67-1)	ug/L	25.0	24.8	99.3	70 - 130	
PFHpS (CAS 375-92-8)	ug/L	17.9	18.4	103.0	70 - 130	
PFNA (CAS 375-95-1)	ug/L	25.0	24.7	98.7	70 - 130	
PFOS (CAS 1763-23-1)	ug/L	23.2	23.1	99.5	70 - 130	
9CI-PF3ONS (CAS 756426-58-1)	ug/L	11.7	11.4	97.6	70 - 130	
8:2FTS (CAS 39108-34-4)	ug/L	30.0	30.6	102.0	70 - 130	
PFDA (CAS 335-76-2)	ug/L	18.8	18.4	98.0	70 - 130	

Quality Control Results

QC Batch: ORG/12157
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E533 Perfluor Alkyl Acid

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFUnA (CAS 2058-94-8)	ug/L	12.5	12.0	96.0	70 - 130	
11CI-PF3OUdS (CAS 763051-92-9)	ug/L	29.5	29.3	99.2	70 - 130	
PFDaA (CAS 307-55-1)	ug/L	18.8	18.6	99.5	70 - 130	

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C2-4:2FTS (S)	%	102	70 - 130	
13C2-6:2FTS (S)	%	103	70 - 130	
13C2-8:2FTS (S)	%	106	70 - 130	
13C2-PFDaA (S)	%	99	70 - 130	
13C3-HFPO-DA (S)	%	95.60	70 - 130	
13C3-PFBS (S)	%	101	70 - 130	
13C3-PFHxS (S)	%	104	70 - 130	
13C4-PFBA (S)	%	105	70 - 130	
13C4-PFHpA (S)	%	103	70 - 130	
13C5-PFHxA (S)	%	102	70 - 130	
13C5-PFPeA (S)	%	97.70	70 - 130	
13C6-PFDA (S)	%	101	70 - 130	
13C7-PFUnA (S)	%	105	70 - 130	
13C8-PFOA (S)	%	102	70 - 130	
13C8-PFOS (S)	%	101	70 - 130	
13C9-PFNA (S)	%	101	70 - 130	

Laboratory Fortified Blank Low (1981163)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFBA (CAS 375-22-4)	ug/L	0.0052	0.0064	124.0	50 - 150	
PFMPA (CAS 377-73-1)	ug/L	0.004	0.0052	129.0	50 - 150	
PFPeA (CAS 2706-90-3)	ug/L	0.003	0.0039	129.0	50 - 150	
PFBS (CAS 375-73-5)	ug/L	0.0027	0.003	113.0	50 - 150	
PFMBA (CAS 863090-89-5)	ug/L	0.003	0.0037	122.0	50 - 150	
PFEESA (CAS 113507-82-7)	ug/L	0.0027	0.0031	117.0	50 - 150	
NFDHA (CAS 151772-58-6)	ug/L	0.02	0.0271	135.0	50 - 150	
4:2FTS (CAS 757124-72-4)	ug/L	0.0028	0.0037	133.0	50 - 150	
PFHxA (CAS 307-24-4)	ug/L	0.003	0.0034	114.0	50 - 150	
PFPeS (CAS 2706-91-4)	ug/L	0.0038	0.0046	122.0	50 - 150	
HFPO-DA (CAS 13252-13-6)	ug/L	0.0052	0.0068	130.0	50 - 150	

Quality Control Results

QC Batch: ORG/12157
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E533 Perfluor Alkyl Acid

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFHpA (CAS 375-85-9)	ug/L	0.003	0.0039	129.0	50 - 150	
PFHxS (CAS 355-46-4)	ug/L	0.0027	0.0033	121.0	50 - 150	
ADONA (CAS 919005-14-4)	ug/L	0.0028	0.0031	109.0	50 - 150	
6:2FTS (CAS 27619-97-2)	ug/L	0.0048	0.0062	128.0	50 - 150	
PFOA (CAS 335-67-1)	ug/L	0.004	0.0047	118.0	50 - 150	
PFHpS (CAS 375-92-8)	ug/L	0.0029	0.0034	119.0	50 - 150	
PFNA (CAS 375-95-1)	ug/L	0.004	0.0047	117.0	50 - 150	
PFOS (CAS 1763-23-1)	ug/L	0.0037	0.0043	115.0	50 - 150	
9CI-PF3ONS (CAS 756426-58-1)	ug/L	0.0019	0.002	108.0	50 - 150	
8:2FTS (CAS 39108-34-4)	ug/L	0.0048	0.0064	133.0	50 - 150	
PFDA (CAS 335-76-2)	ug/L	0.003	0.0035	118.0	50 - 150	
PFUnA (CAS 2058-94-8)	ug/L	0.002	0.0025	123.0	50 - 150	
11CI-PF3OUdS (CAS 763051-92-9)	ug/L	0.0048	0.0054	113.0	50 - 150	
PFDaA (CAS 307-55-1)	ug/L	0.003	0.0035	115.0	50 - 150	

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C2-4:2FTS (S)	%	102	50 - 200	
13C2-6:2FTS (S)	%	101	50 - 200	
13C2-8:2FTS (S)	%	96.60	50 - 200	
13C2-PFDoA (S)	%	93.30	50 - 200	
13C3-HFPO-DA (S)	%	99.80	50 - 200	
13C3-PFBS (S)	%	101	50 - 200	
13C3-PFHxS (S)	%	100	50 - 200	
13C4-PFBA (S)	%	92.80	50 - 200	
13C4-PFHpA (S)	%	93.20	50 - 200	
13C5-PFHxA (S)	%	92.60	50 - 200	
13C5-PFPeA (S)	%	96.20	50 - 200	
13C6-PFDA (S)	%	91.70	50 - 200	
13C7-PFUnA (S)	%	91.40	50 - 200	
13C8-PFOA (S)	%	94.30	50 - 200	
13C8-PFOS (S)	%	98.90	50 - 200	
13C9-PFNA (S)	%	94.70	50 - 200	

LFSM-M (1981164); LFSMDM (1981165); Original: Q2340815001

Quality Control Results

QC Batch: ORG/12157
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E533 Perfluor Alkyl Acid

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
PFBA (CAS 375-22-4)	ug/L	0.0251	0.0424	119.0		0.0442	121.0	1.67		
PFMPA (CAS 377-73-1)	ug/L	0.0193	0.0152	79.0		0.0161	80.2	1.51		
PFPeA (CAS 2706-90-3)	ug/L	0.0145	0.0204	141.0		0.0213	142.0	0.71		
PFBS (CAS 375-73-5)	ug/L	0.0129	0.0202	132.0		0.0202	127.0	3.86		
PFMBA (CAS 863090-89-5)	ug/L	0.0145	0.0186	128.0		0.0205	137.0	6.79		
PFEESA (CAS 113507-82-7)	ug/L	0.0129	0.0152	118.0		0.0158	118.0	0.0		
NFDHA (CAS 151772-58-6)	ug/L	0.0964	0.141	147.0		0.123	123.0	17.8		
4:2FTS (CAS 757124-72-4)	ug/L	0.0135	0.0185	137.0		0.0177	126.0	8.37		
PFHxA (CAS 307-24-4)	ug/L	0.0145	0.0207	143.0		0.0213	142.0	0.70 2		
PFPeS (CAS 2706-91-4)	ug/L	0.0181	0.0267	147.0		0.0273	145.0	1.37		
HFPO-DA (CAS 13252-13-6)	ug/L	0.0251	0.0272	109.0		0.0311	119.0	8.77		
PFHpA (CAS 375-85-9)	ug/L	0.0145	0.0206	142.0		0.0216	144.0	1.4		
PFHxS (CAS 355-46-4)	ug/L	0.0131	0.0227	132.0		0.0234	132.0	0.0		
ADONA (CAS 919005-14-4)	ug/L	0.0137	0.016	117.0		0.016	112.0	4.37		
6:2FTS (CAS 27619-97-2)	ug/L	0.0231	0.0298	129.0		0.0318	132.0	2.3		
PFOA (CAS 335-67-1)	ug/L	0.0193	0.0259	134.0		0.0265	132.0	1.5		
PFHpS (CAS 375-92-8)	ug/L	0.0139	0.0176	126.0		0.019	131.0	3.89		
PFNA (CAS 375-95-1)	ug/L	0.0193	0.025	130.0		0.0259	129.0	0.77 2		
PFOS (CAS 1763-23-1)	ug/L	0.0179	0.0248	139.0		0.0265	142.0	2.14		
9CI-PF3ONS (CAS 756426-58-1)	ug/L	0.0091	0.0104	115.0		0.0109	116.0	0.86 6		
8:2FTS (CAS 39108-34-4)	ug/L	0.0231	0.0307	133.0		0.0319	133.0	0.0		
PFDA (CAS 335-76-2)	ug/L	0.0145	0.0	0.0		0.0191	127.0	200. 0		
PFUnA (CAS 2058-94-8)	ug/L	0.0096	0.012	124.0		0.0126	126.0	1.6		
11CI-PF3OUdS (CAS 763051-92-9)	ug/L	0.0231	0.0278	120.0		0.0291	121.0	0.83		
PFDaA (CAS 307-55-1)	ug/L	0.0145	0.018	124.0		0.019	127.0	2.39		

Continuing Calibration Check-L (1982646)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFBA (CAS 375-22-4)	ug/L	1.25	1.16	92.6	50 - 150	
PFMPA (CAS 377-73-1)	ug/L	1.0	1.03	103.0	50 - 150	
PFPeA (CAS 2706-90-3)	ug/L	0.75	0.677	90.3	50 - 150	
PFBS (CAS 375-73-5)	ug/L	0.666	0.623	93.5	50 - 150	
PFMBA (CAS 863090-89-5)	ug/L	0.75	0.705	94.0	50 - 150	

Quality Control Results

QC Batch: ORG/12157
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E533 Perfluor Alkyl Acid

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFEESA (CAS 113507-82-7)	ug/L	0.669	0.592	88.5	50 - 150	
NFDHA (CAS 151772-58-6)	ug/L	5.0	5.3	106.0	50 - 150	
4:2FTS (CAS 757124-72-4)	ug/L	0.703	0.681	96.9	50 - 150	
PFHxA (CAS 307-24-4)	ug/L	0.75	0.675	90.0	50 - 150	
PFPeS (CAS 2706-91-4)	ug/L	0.941	0.953	101.0	50 - 150	
HFPO-DA (CAS 13252-13-6)	ug/L	1.25	1.16	92.6	50 - 150	
PFHpA (CAS 375-85-9)	ug/L	0.75	0.721	96.1	50 - 150	
PFHxS (CAS 355-46-4)	ug/L	0.684	0.685	100.0	50 - 150	
ADONA (CAS 919005-14-4)	ug/L	0.709	0.629	88.7	50 - 150	
6:2FTS (CAS 27619-97-2)	ug/L	1.19	1.16	97.3	50 - 150	
PFOA (CAS 335-67-1)	ug/L	1.0	0.89	89.0	50 - 150	
PFHpS (CAS 375-92-8)	ug/L	0.715	0.667	93.3	50 - 150	
PFNA (CAS 375-95-1)	ug/L	1.0	0.934	93.4	50 - 150	
PFOS (CAS 1763-23-1)	ug/L	0.928	0.876	94.4	50 - 150	
9CI-PF3ONS (CAS 756426-58-1)	ug/L	0.467	0.387	82.9	50 - 150	
8:2FTS (CAS 39108-34-4)	ug/L	1.2	1.24	104.0	50 - 150	
PFDA (CAS 335-76-2)	ug/L	0.75	0.679	90.5	50 - 150	
PFUnA (CAS 2058-94-8)	ug/L	0.5	0.474	94.8	50 - 150	
11CI-PF3OUdS (CAS 763051-92-9)	ug/L	1.18	1.04	88.5	50 - 150	
PFDaA (CAS 307-55-1)	ug/L	0.75	0.679	90.5	50 - 150	

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C2-4:2FTS (S)	%	92.20	70 - 130	
13C2-6:2FTS (S)	%	90.50	70 - 130	
13C2-8:2FTS (S)	%	88.90	70 - 130	
13C2-PFDaA (S)	%	90	70 - 130	
13C3-HFPO-DA (S)	%	92.50	70 - 130	
13C3-PFBS (S)	%	89	70 - 130	
13C3-PFHxS (S)	%	89.70	70 - 130	
13C4-PFBA (S)	%	90.80	70 - 130	
13C4-PFHpA (S)	%	88.80	70 - 130	
13C5-PFHxA (S)	%	89.30	70 - 130	
13C5-PFPeA (S)	%	93.60	70 - 130	
13C6-PFDA (S)	%	88.70	70 - 130	

Quality Control Results

QC Batch: ORG/12157
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E533 Perfluor Alkyl Acid

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C7-PFUnA (S)	%	88.80	70 - 130	
13C8-PFOA (S)	%	90.30	70 - 130	
13C8-PFOS (S)	%	89.50	70 - 130	
13C9-PFNA (S)	%	90.70	70 - 130	

Laboratory Reagent Blank(1981162)

Parameter	Units	Results	MRL	LOD	Qualifier
PFBA (CAS 375-22-4)	ug/L	<0.00500	0.005	0.005	
PFMPA (CAS 377-73-1)	ug/L	<0.00400	0.004	0.004	
PFPeA (CAS 2706-90-3)	ug/L	<0.00300	0.003	0.003	
PFBS (CAS 375-73-5)	ug/L	<0.00300	0.003	0.003	
PFMBA (CAS 863090-89-5)	ug/L	<0.00300	0.003	0.003	
PFEESA (CAS 113507-82-7)	ug/L	<0.00300	0.003	0.003	
NFDHA (CAS 151772-58-6)	ug/L	<0.0200	0.02	0.02	
4:2FTS (CAS 757124-72-4)	ug/L	<0.00300	0.003	0.003	
PFHxA (CAS 307-24-4)	ug/L	<0.00300	0.003	0.003	
PFPeS (CAS 2706-91-4)	ug/L	<0.00400	0.004	0.004	
HFPO-DA (CAS 13252-13-6)	ug/L	<0.00500	0.005	0.005	
PFHpA (CAS 375-85-9)	ug/L	<0.00300	0.003	0.003	
PFHxS (CAS 355-46-4)	ug/L	<0.00300	0.003	0.003	
ADONA (CAS 919005-14-4)	ug/L	<0.00300	0.003	0.003	
6:2FTS (CAS 27619-97-2)	ug/L	<0.00400	0.004	0.004	
PFOA (CAS 335-67-1)	ug/L	<0.00400	0.004	0.004	
PFHpS (CAS 375-92-8)	ug/L	<0.00300	0.003	0.003	
PFNA (CAS 375-95-1)	ug/L	<0.00400	0.004	0.004	
PFOS (CAS 1763-23-1)	ug/L	<0.00400	0.004	0.004	
9CI-PF3ONS (CAS 756426-58-1)	ug/L	<0.00200	0.002	0.002	
8:2FTS (CAS 39108-34-4)	ug/L	<0.00500	0.005	0.005	
PFDA (CAS 335-76-2)	ug/L	<0.00300	0.003	0.003	
PFUnA (CAS 2058-94-8)	ug/L	<0.00200	0.002	0.002	
11CI-PF3OUdS (CAS 763051-92-9)	ug/L	<0.00500	0.005	0.005	
PFDoA (CAS 307-55-1)	ug/L	<0.00300	0.003	0.003	

Quality Control Results

QC Batch: ORG/12157
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024001, Q2341024003

Analysis Method: E533 Perfluor Alkyl Acid

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C2-4:2FTS (S)	%	113	50 - 200	
13C2-6:2FTS (S)	%	112	50 - 200	
13C2-8:2FTS (S)	%	108	50 - 200	
13C2-PFDoA (S)	%	106	50 - 200	
13C3-HFPO-DA (S)	%	108	50 - 200	
13C3-PFBS (S)	%	111	50 - 200	
13C3-PFHxS (S)	%	110	50 - 200	
13C4-PFBA (S)	%	104	50 - 200	
13C4-PFHpA (S)	%	105	50 - 200	
13C5-PFHxA (S)	%	105	50 - 200	
13C5-PFPeA (S)	%	105	50 - 200	
13C6-PFDA (S)	%	108	50 - 200	
13C7-PFUnA (S)	%	110	50 - 200	
13C8-PFOA (S)	%	109	50 - 200	
13C8-PFOS (S)	%	111	50 - 200	
13C9-PFNA (S)	%	110	50 - 200	

Quality Control Results

QC Batch: ORG/12184
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024002, Q2341024004

Analysis Method: E533 Perfluor Alkyl Acid

Laboratory Fortified Blank Low (1985907)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFBA (CAS 375-22-4)	ug/L	0.0052	0.0046	87.7	50 - 150	
PFMPA (CAS 377-73-1)	ug/L	0.004	0.0038	93.8	50 - 150	
PFPeA (CAS 2706-90-3)	ug/L	0.003	0.0029	96.4	50 - 150	
PFBS (CAS 375-73-5)	ug/L	0.0027	0.0028	104.0	50 - 150	
PFMBA (CAS 863090-89-5)	ug/L	0.003	0.0029	97.7	50 - 150	
PFEESA (CAS 113507-82-7)	ug/L	0.0027	0.0029	106.0	50 - 150	
NFDHA (CAS 151772-58-6)	ug/L	0.02	0.0184	91.9	50 - 150	
4:2FTS (CAS 757124-72-4)	ug/L	0.0028	0.0026	94.0	50 - 150	
PFHxA (CAS 307-24-4)	ug/L	0.003	0.0029	97.4	50 - 150	
PFPeS (CAS 2706-91-4)	ug/L	0.0038	0.0036	94.9	50 - 150	
HFPO-DA (CAS 13252-13-6)	ug/L	0.0052	0.0052	99.2	50 - 150	
PFHpA (CAS 375-85-9)	ug/L	0.003	0.003	98.5	50 - 150	
PFHxS (CAS 355-46-4)	ug/L	0.0027	0.0026	96.6	50 - 150	
ADONA (CAS 919005-14-4)	ug/L	0.0028	0.0027	95.9	50 - 150	
6:2FTS (CAS 27619-97-2)	ug/L	0.0048	0.0046	95.5	50 - 150	
PFOA (CAS 335-67-1)	ug/L	0.004	0.004	100.0	50 - 150	
PFHpS (CAS 375-92-8)	ug/L	0.0029	0.0029	100.0	50 - 150	
PFNA (CAS 375-95-1)	ug/L	0.004	0.0039	97.1	50 - 150	
PFOS (CAS 1763-23-1)	ug/L	0.0037	0.0039	104.0	50 - 150	
9CI-PF3ONS (CAS 756426-58-1)	ug/L	0.0019	0.0019	99.6	50 - 150	
8:2FTS (CAS 39108-34-4)	ug/L	0.0048	0.0046	96.1	50 - 150	
PFDA (CAS 335-76-2)	ug/L	0.003	0.0029	96.3	50 - 150	
PFUnA (CAS 2058-94-8)	ug/L	0.002	0.002	97.4	50 - 150	
11CI-PF3OUdS (CAS 763051-92-9)	ug/L	0.0048	0.0039	80.6	50 - 150	
PFDaA (CAS 307-55-1)	ug/L	0.003	0.0029	96.5	50 - 150	

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C2-4:2FTS (S)	%	119	50 - 200	
13C2-6:2FTS (S)	%	123	50 - 200	
13C2-8:2FTS (S)	%	110	50 - 200	
13C2-PFDaA (S)	%	107	50 - 200	
13C3-HFPO-DA (S)	%	107	50 - 200	
13C3-PFBS (S)	%	109	50 - 200	

Quality Control Results

QC Batch: ORG/12184
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024002, Q2341024004

Analysis Method: E533 Perfluor Alkyl Acid

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C3-PFHxS (S)	%	113	50 - 200	
13C4-PFBA (S)	%	105	50 - 200	
13C4-PFHpA (S)	%	107	50 - 200	
13C5-PFHxA (S)	%	108	50 - 200	
13C5-PFPeA (S)	%	104	50 - 200	
13C6-PFDA (S)	%	109	50 - 200	
13C7-PFUnA (S)	%	108	50 - 200	
13C8-PFOA (S)	%	109	50 - 200	
13C8-PFOS (S)	%	115	50 - 200	
13C9-PFNA (S)	%	109	50 - 200	

LFSM-M (1985908); LFSMDM (1985909); Original: Q2343938003

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
PFBA (CAS 375-22-4)	ug/L	0.0239	0.0441	184.0		0.0431	178.0	3.31		
PFMPA (CAS 377-73-1)	ug/L	0.0184	0.0291	158.0		0.0289	155.0	1.92		
PFPeA (CAS 2706-90-3)	ug/L	0.0138	0.0245	156.0		0.0237	149.0	4.6		
PFBS (CAS 375-73-5)	ug/L	0.0123	0.0225	182.0		0.0202	162.0	11.6		
PFMBA (CAS 863090-89-5)	ug/L	0.0138	0.0237	172.0		0.0233	167.0	2.95		
PFEESA (CAS 113507-82-7)	ug/L	0.0123	0.02	162.0		0.0184	147.0	9.71		
NFDHA (CAS 151772-58-6)	ug/L	0.092	0.144	156.0		0.14	150.0	3.92		
4:2FTS (CAS 757124-72-4)	ug/L	0.0129	0.0196	152.0		0.0191	147.0	3.34		
PFHxA (CAS 307-24-4)	ug/L	0.0138	0.0249	159.0		0.0242	152.0	4.5		
PFPeS (CAS 2706-91-4)	ug/L	0.0173	0.0272	157.0		0.0271	155.0	1.28		
HFPO-DA (CAS 13252-13-6)	ug/L	0.0239	0.0357	149.0		0.034	140.0	6.23		
PFHpA (CAS 375-85-9)	ug/L	0.0138	0.0235	170.0		0.0232	166.0	2.38		
PFHxS (CAS 355-46-4)	ug/L	0.0125	0.0206	165.0		0.0197	156.0	5.61		
ADONA (CAS 919005-14-4)	ug/L	0.0131	0.0201	154.0		0.02	151.0	1.97		
6:2FTS (CAS 27619-97-2)	ug/L	0.0221	0.035	158.0		0.0337	151.0	4.53		
PFOA (CAS 335-67-1)	ug/L	0.0184	0.0309	168.0		0.03	161.0	4.26		
PFHpS (CAS 375-92-8)	ug/L	0.0133	0.0202	153.0		0.0196	146.0	4.68		
PFNA (CAS 375-95-1)	ug/L	0.0184	0.03	163.0		0.03	161.0	1.23		
PFOS (CAS 1763-23-1)	ug/L	0.0171	0.0269	157.0		0.0268	155.0	1.28		
9CI-PF3ONS (CAS 756426-58-1)	ug/L	0.0087	0.0134	155.0		0.0133	152.0	1.95		
8:2FTS (CAS 39108-34-4)	ug/L	0.0221	0.0355	161.0		0.0336	150.0	7.07		

Quality Control Results

QC Batch: ORG/12184
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024002, Q2341024004

Analysis Method: E533 Perfluor Alkyl Acid

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
PFDA (CAS 335-76-2)	ug/L	0.0138	0.0218	158.0		0.0216	154.0	2.56		
PFUnA (CAS 2058-94-8)	ug/L	0.0092	0.0145	157.0		0.0146	157.0	0.0		
11CI-PF3OUdS (CAS 763051-92-9)	ug/L	0.0221	0.0316	143.0		0.0304	136.0	5.02		
PFDaA (CAS 307-55-1)	ug/L	0.0138	0.0217	157.0		0.0221	158.0	0.63 5		

Laboratory Reagent Blank(1985906)

Parameter	Units	Results	MRL	LOD	Qualifier
PFBA (CAS 375-22-4)	ug/L	<0.00500	0.005	0.005	
PFMPA (CAS 377-73-1)	ug/L	<0.00400	0.004	0.004	
PFPeA (CAS 2706-90-3)	ug/L	<0.00300	0.003	0.003	
PFBS (CAS 375-73-5)	ug/L	<0.00300	0.003	0.003	
PFMBA (CAS 863090-89-5)	ug/L	<0.00300	0.003	0.003	
PFEESA (CAS 113507-82-7)	ug/L	<0.00300	0.003	0.003	
NFDHA (CAS 151772-58-6)	ug/L	<0.0200	0.02	0.02	
4:2FTS (CAS 757124-72-4)	ug/L	<0.00300	0.003	0.003	
PFHxA (CAS 307-24-4)	ug/L	<0.00300	0.003	0.003	
PFPeS (CAS 2706-91-4)	ug/L	<0.00400	0.004	0.004	
HFPO-DA (CAS 13252-13-6)	ug/L	<0.00500	0.005	0.005	
PFHpA (CAS 375-85-9)	ug/L	<0.00300	0.003	0.003	
PFHxS (CAS 355-46-4)	ug/L	<0.00300	0.003	0.003	
ADONA (CAS 919005-14-4)	ug/L	<0.00300	0.003	0.003	
6:2FTS (CAS 27619-97-2)	ug/L	<0.00400	0.004	0.004	
PFOA (CAS 335-67-1)	ug/L	<0.00400	0.004	0.004	
PFHpS (CAS 375-92-8)	ug/L	<0.00300	0.003	0.003	
PFNA (CAS 375-95-1)	ug/L	<0.00400	0.004	0.004	
PFOS (CAS 1763-23-1)	ug/L	<0.00400	0.004	0.004	
9CI-PF3ONS (CAS 756426-58-1)	ug/L	<0.00200	0.002	0.002	
8:2FTS (CAS 39108-34-4)	ug/L	<0.00500	0.005	0.005	
PFDA (CAS 335-76-2)	ug/L	<0.00300	0.003	0.003	
PFUnA (CAS 2058-94-8)	ug/L	<0.00200	0.002	0.002	
11CI-PF3OUdS (CAS 763051-92-9)	ug/L	<0.00500	0.005	0.005	
PFDaA (CAS 307-55-1)	ug/L	<0.00300	0.003	0.003	

Quality Control Results

QC Batch: ORG/12184
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024002, Q2341024004

Analysis Method: E533 Perfluor Alkyl Acid

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C2-4:2FTS (S)	%	131	50 - 200	
13C2-6:2FTS (S)	%	140	50 - 200	
13C2-8:2FTS (S)	%	122	50 - 200	
13C2-PFDoA (S)	%	88.70	50 - 200	
13C3-HFPO-DA (S)	%	81.90	50 - 200	
13C3-PFBS (S)	%	99.50	50 - 200	
13C3-PFHxS (S)	%	115	50 - 200	
13C4-PFBA (S)	%	91	50 - 200	
13C4-PFHpA (S)	%	86.30	50 - 200	
13C5-PFHxA (S)	%	84.30	50 - 200	
13C5-PFPeA (S)	%	89.60	50 - 200	
13C6-PFDA (S)	%	89	50 - 200	
13C7-PFUnA (S)	%	88.10	50 - 200	
13C8-PFOA (S)	%	88.50	50 - 200	
13C8-PFOS (S)	%	94.10	50 - 200	
13C9-PFNA (S)	%	88.90	50 - 200	

Continuing Calibration Check-M (1986575)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFBA (CAS 375-22-4)	ug/L	6.25	5.64	90.2	70 - 130	
PFMPA (CAS 377-73-1)	ug/L	5.0	4.79	95.8	70 - 130	
PFPeA (CAS 2706-90-3)	ug/L	3.75	3.7	98.6	70 - 130	
PFBS (CAS 375-73-5)	ug/L	3.33	3.05	91.5	70 - 130	
PFMBA (CAS 863090-89-5)	ug/L	3.75	3.69	98.4	70 - 130	
PFEESA (CAS 113507-82-7)	ug/L	3.34	3.34	99.7	70 - 130	
NFDHA (CAS 151772-58-6)	ug/L	25.0	25.6	102.0	70 - 130	
4:2FTS (CAS 757124-72-4)	ug/L	3.52	3.3	93.7	70 - 130	
PFHxA (CAS 307-24-4)	ug/L	3.75	3.68	98.1	70 - 130	
PFPeS (CAS 2706-91-4)	ug/L	4.7	4.57	97.1	70 - 130	
HFPO-DA (CAS 13252-13-6)	ug/L	6.25	6.25	99.9	70 - 130	
PFHpA (CAS 375-85-9)	ug/L	3.75	3.71	99.0	70 - 130	
PFHxS (CAS 355-46-4)	ug/L	3.42	3.42	100.0	70 - 130	
ADONA (CAS 919005-14-4)	ug/L	3.54	3.5	98.6	70 - 130	
6:2FTS (CAS 27619-97-2)	ug/L	5.95	5.85	98.3	70 - 130	
PFOA (CAS 335-67-1)	ug/L	5.0	5.02	100.0	70 - 130	

Quality Control Results

QC Batch: ORG/12184
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024002, Q2341024004

Analysis Method: E533 Perfluor Alkyl Acid

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFHpS (CAS 375-92-8)	ug/L	3.58	3.59	100.0	70 - 130	
PFNA (CAS 375-95-1)	ug/L	5.0	4.97	99.4	70 - 130	
PFOS (CAS 1763-23-1)	ug/L	4.64	4.97	107.0	70 - 130	
9CI-PF3ONS (CAS 756426-58-1)	ug/L	2.34	2.52	108.0	70 - 130	
8:2FTS (CAS 39108-34-4)	ug/L	6.0	5.86	97.6	70 - 130	
PFDA (CAS 335-76-2)	ug/L	3.75	3.74	99.7	70 - 130	
PFUnA (CAS 2058-94-8)	ug/L	2.5	2.5	99.8	70 - 130	
11CI-PF3OUdS (CAS 763051-92-9)	ug/L	5.9	5.7	96.5	70 - 130	
PFDaA (CAS 307-55-1)	ug/L	3.75	3.76	100.0	70 - 130	

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C2-4:2FTS (S)	%	98.90	70 - 130	
13C2-6:2FTS (S)	%	104	70 - 130	
13C2-8:2FTS (S)	%	91	70 - 130	
13C2-PFDoA (S)	%	99.40	70 - 130	
13C3-HFPO-DA (S)	%	95.40	70 - 130	
13C3-PFBS (S)	%	103	70 - 130	
13C3-PFHxS (S)	%	93.70	70 - 130	
13C4-PFBA (S)	%	101	70 - 130	
13C4-PFHpA (S)	%	98.50	70 - 130	
13C5-PFHxA (S)	%	98.90	70 - 130	
13C5-PFPeA (S)	%	100	70 - 130	
13C6-PFDA (S)	%	96.80	70 - 130	
13C7-PFUnA (S)	%	98.30	70 - 130	
13C8-PFOA (S)	%	98.90	70 - 130	
13C8-PFOS (S)	%	96.10	70 - 130	
13C9-PFNA (S)	%	98.80	70 - 130	

Continuing Calibration Check-H (1986576)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFBA (CAS 375-22-4)	ug/L	31.2	30.9	98.9	70 - 130	
PFMPA (CAS 377-73-1)	ug/L	25.0	25.2	101.0	70 - 130	
PFPeA (CAS 2706-90-3)	ug/L	18.8	18.6	98.9	70 - 130	
PFBS (CAS 375-73-5)	ug/L	16.6	16.1	96.4	70 - 130	
PFMBA (CAS 863090-89-5)	ug/L	18.8	18.7	99.7	70 - 130	

Quality Control Results

QC Batch: ORG/12184
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024002, Q2341024004

Analysis Method: E533 Perfluor Alkyl Acid

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFEESA (CAS 113507-82-7)	ug/L	16.7	16.8	100.0	70 - 130	
NFDHA (CAS 151772-58-6)	ug/L	125.0	128.0	103.0	70 - 130	
4:2FTS (CAS 757124-72-4)	ug/L	17.6	17.3	98.3	70 - 130	
PFHxA (CAS 307-24-4)	ug/L	18.8	18.5	98.4	70 - 130	
PFPeS (CAS 2706-91-4)	ug/L	23.5	23.6	100.0	70 - 130	
HFPO-DA (CAS 13252-13-6)	ug/L	31.2	30.4	97.4	70 - 130	
PFHpA (CAS 375-85-9)	ug/L	18.8	18.8	100.0	70 - 130	
PFHxS (CAS 355-46-4)	ug/L	17.1	16.3	95.1	70 - 130	
ADONA (CAS 919005-14-4)	ug/L	17.7	17.9	101.0	70 - 130	
6:2FTS (CAS 27619-97-2)	ug/L	29.8	29.1	97.8	70 - 130	
PFOA (CAS 335-67-1)	ug/L	25.0	25.1	100.0	70 - 130	
PFHpS (CAS 375-92-8)	ug/L	17.9	16.4	91.9	70 - 130	
PFNA (CAS 375-95-1)	ug/L	25.0	25.0	100.0	70 - 130	
PFOS (CAS 1763-23-1)	ug/L	23.2	22.6	97.6	70 - 130	
9CI-PF3ONS (CAS 756426-58-1)	ug/L	11.7	11.1	94.7	70 - 130	
8:2FTS (CAS 39108-34-4)	ug/L	30.0	29.7	98.9	70 - 130	
PFDA (CAS 335-76-2)	ug/L	18.8	18.7	99.7	70 - 130	
PFUnA (CAS 2058-94-8)	ug/L	12.5	12.5	99.6	70 - 130	
11CI-PF3OUdS (CAS 763051-92-9)	ug/L	29.5	28.1	95.4	70 - 130	
PFDaA (CAS 307-55-1)	ug/L	18.8	18.9	101.0	70 - 130	

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C2-4:2FTS (S)	%	94.90	70 - 130	
13C2-6:2FTS (S)	%	90.40	70 - 130	
13C2-8:2FTS (S)	%	104	70 - 130	
13C2-PFDaA (S)	%	98.40	70 - 130	
13C3-HFPO-DA (S)	%	101	70 - 130	
13C3-PFBS (S)	%	103	70 - 130	
13C3-PFHxS (S)	%	110	70 - 130	
13C4-PFBA (S)	%	101	70 - 130	
13C4-PFHpA (S)	%	96.70	70 - 130	
13C5-PFHxA (S)	%	99.40	70 - 130	
13C5-PFPeA (S)	%	105	70 - 130	
13C6-PFDA (S)	%	97.50	70 - 130	

Quality Control Results

QC Batch: ORG/12184
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024002, Q2341024004

Analysis Method: E533 Perfluor Alkyl Acid

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C7-PFUnA (S)	%	98.60	70 - 130	
13C8-PFOA (S)	%	97.30	70 - 130	
13C8-PFOS (S)	%	106	70 - 130	
13C9-PFNA (S)	%	97.70	70 - 130	

Continuing Calibration Check-L (1986573)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
PFBA (CAS 375-22-4)	ug/L	1.25	1.14	91.2	50 - 150	
PFMPA (CAS 377-73-1)	ug/L	1.0	0.949	94.9	50 - 150	
PFPeA (CAS 2706-90-3)	ug/L	0.75	0.721	96.1	50 - 150	
PFBS (CAS 375-73-5)	ug/L	0.666	0.643	96.5	50 - 150	
PFMBA (CAS 863090-89-5)	ug/L	0.75	0.707	94.3	50 - 150	
PFEESA (CAS 113507-82-7)	ug/L	0.669	0.682	102.0	50 - 150	
NFDHA (CAS 151772-58-6)	ug/L	5.0	5.18	104.0	50 - 150	
4:2FTS (CAS 757124-72-4)	ug/L	0.703	0.625	89.0	50 - 150	
PFHxA (CAS 307-24-4)	ug/L	0.75	0.748	99.8	50 - 150	
PFPeS (CAS 2706-91-4)	ug/L	0.941	0.884	93.9	50 - 150	
HFPO-DA (CAS 13252-13-6)	ug/L	1.25	1.28	102.0	50 - 150	
PFHpA (CAS 375-85-9)	ug/L	0.75	0.724	96.5	50 - 150	
PFHxS (CAS 355-46-4)	ug/L	0.684	0.701	102.0	50 - 150	
ADONA (CAS 919005-14-4)	ug/L	0.709	0.675	95.2	50 - 150	
6:2FTS (CAS 27619-97-2)	ug/L	1.19	1.14	96.2	50 - 150	
PFOA (CAS 335-67-1)	ug/L	1.0	1.0	100.0	50 - 150	
PFHpS (CAS 375-92-8)	ug/L	0.715	0.706	98.8	50 - 150	
PFNA (CAS 375-95-1)	ug/L	1.0	0.976	97.6	50 - 150	
PFOS (CAS 1763-23-1)	ug/L	0.928	0.873	94.1	50 - 150	
9CI-PF3ONS (CAS 756426-58-1)	ug/L	0.467	0.484	104.0	50 - 150	
8:2FTS (CAS 39108-34-4)	ug/L	1.2	1.17	97.2	50 - 150	
PFDA (CAS 335-76-2)	ug/L	0.75	0.728	97.1	50 - 150	
PFUnA (CAS 2058-94-8)	ug/L	0.5	0.477	95.4	50 - 150	
11CI-PF3OUdS (CAS 763051-92-9)	ug/L	1.18	0.991	84.0	50 - 150	
PFD0A (CAS 307-55-1)	ug/L	0.75	0.721	96.1	50 - 150	

Quality Control Results

QC Batch: ORG/12184
Preparation Method: E533 Perfluor Alkyl Acid
Associated Lab IDs: Q2341024002, Q2341024004

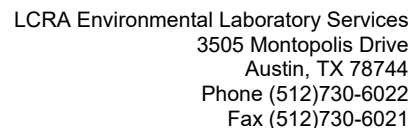
Analysis Method: E533 Perfluor Alkyl Acid

Surrogates

Parameter	Units	Spike Recovery%	Control Limits %	Qualifier
13C2-4:2FTS (S)	%	123	70 - 130	
13C2-6:2FTS (S)	%	129	70 - 130	
13C2-8:2FTS (S)	%	115	70 - 130	
13C2-PFDoA (S)	%	106	70 - 130	
13C3-HFPO-DA (S)	%	104	70 - 130	
13C3-PFBS (S)	%	120	70 - 130	
13C3-PFHxS (S)	%	116	70 - 130	
13C4-PFBA (S)	%	105	70 - 130	
13C4-PFHpA (S)	%	109	70 - 130	
13C5-PFHxA (S)	%	108	70 - 130	
13C5-PFPeA (S)	%	103	70 - 130	
13C6-PFDA (S)	%	109	70 - 130	
13C7-PFUnA (S)	%	107	70 - 130	
13C8-PFOA (S)	%	110	70 - 130	
13C8-PFOS (S)	%	118	70 - 130	
13C9-PFNA (S)	%	109	70 - 130	

QC Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method
<i>MET/10027 - E200.7, ICP-MS UCMR</i>			
Q2341024001	EP001	MEP/13136	E200.7, ICP-MS Prep
Q2341024003	EP002	MEP/13136	E200.7, ICP-MS Prep
<i>ORG/12131 - E537.1 Perfluorinated UCMR</i>			
Q2341024001	EP001	OEXT/10458	E537 Perfluor Alkyl Acid FULL
Q2341024003	EP002	OEXT/10458	E537 Perfluor Alkyl Acid FULL
<i>ORG/12157 - E533 Perfluor Alkyl Acid</i>			
Q2341024001	EP001	OEXT/10481	E533 Perfluor Alkyl Acid
Q2341024003	EP002	OEXT/10481	E533 Perfluor Alkyl Acid
<i>ORG/12184 - E533 Perfluor Alkyl Acid</i>			
Q2341024002	EP001 FIELD BLANK	OEXT/10523	E533 Perfluor Alkyl Acid
Q2341024004	EP002 FIELD BLANK	OEXT/10523	E533 Perfluor Alkyl Acid



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Transfers	Relinquished By	Date/Time	Received By	Date/Time	Cooler Temp:				Client Special Instructions:
					T#	Obs	CF	Corr	
1	<i>[Signature]</i>	9-21-23 / 0820							 02341824 610219
2					121	22	0.1	23	
3			<i>[Signature]</i>	9/22/23 9:50					

Note: Relinquishing sample(s) and signing the COC, client agrees to accept and is bound by the ELS Standard Terms and Conditions. All fields with an asterisk (*) are required to be completed.

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