GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219051112	Client Sample ID:	AOI-2-2-SB-2-4-DUP	
Collect Date:	05/09/19 1150	GCAL Sample ID:	21905111254	
Matrix:	Solid	Instrument ID:	PH01	
% Solids:	87.4644	Analyst:	SLL2	
Sample Amt:	NA	Lab File ID:	NA	
Prep Vol.:	NA	Dilution Factor:	1	
Prep Date:	NA	Analysis Date:	05/13/19 1221	
Prep Batch:	NA	Analytical Batch:	659934	
Prep Method:	NA	Analytical Method:	EPA 9045D	

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
pH	8.85	pH UNITS		1.00	1.00	1.00

FORM I - GENCHEM

Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\2190417BCAL\QuantResults\2190422A.batch.bin		
Analysis Time	4/23/2019 5:15 PM	**Analyst Name**	GCAL\lcms
Report Time	4/23/2019 5:17 PM	**Reporter Name**	GCAL\lcms
Last Calib Update	4/18/2019 8:59 AM	**Batch State**	Processed

Calibration Info
Extracted ISTD   *MPFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	78650	20.0000	3932.4965
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	77427	20.0000	3871.3509
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	83198	20.0000	4159.9111
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	79400	20.0000	3970.0062
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	87201	20.0000	4360.0553
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	91406	20.0000	4570.2857
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	90067	20.0000	4503.3354

Target Compound   *PFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	9097	0.5000	4.6265
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	34569	2.0000	4.4648
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	104810	5.0000	5.0390
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	178364	10.0000	4.4928
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	944769	50.0000	4.3337
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	2163311	100.0000	4.7334
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	4870875	200.0000	5.4081
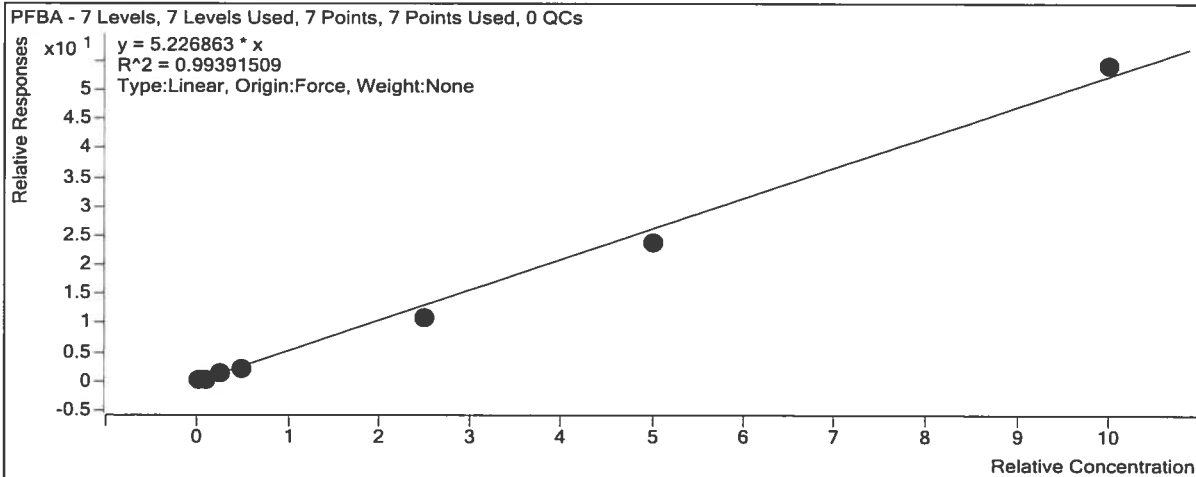
PFBA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 5.226863 * x$
$R^2 = 0.99391509$
Type:Linear, Origin:Force, Weight:None

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	86274	10.0000	4.6975
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	484531	50.0000	4.8427
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	1106482	100.0000	5.3717
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	2377892	200.0000	5.8166
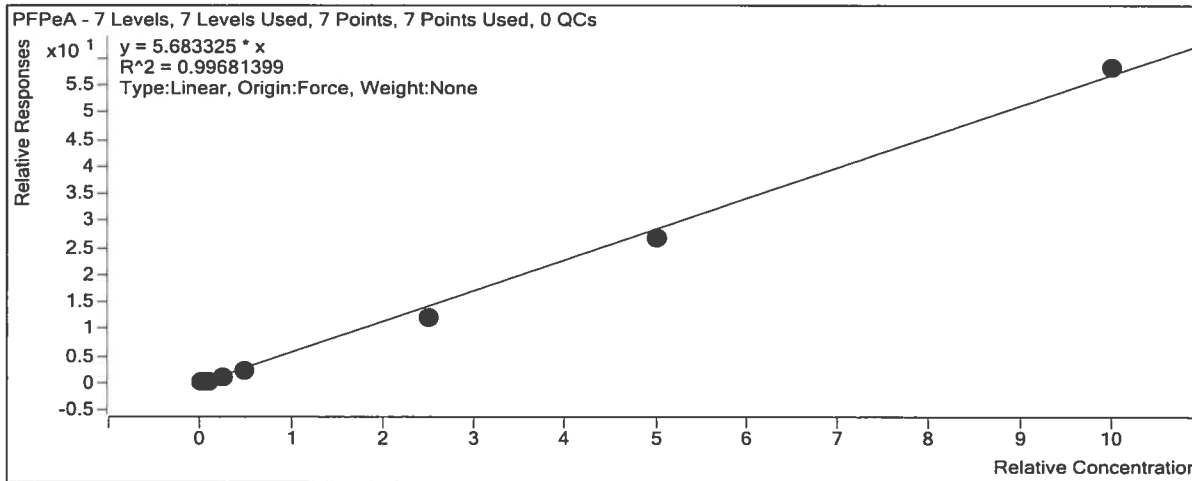
PFPeA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 5.683325 * x$
$R^2 = 0.99681399$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD	M5PFPeA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	36462	20.0000	1823.1162
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	36065	20.0000	1803.2453
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	38297	20.0000	1914.8749
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	36732	20.0000	1836.6228
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	40021	20.0000	2001.0663
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	41196	20.0000	2059.8211
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	40881	20.0000	2044.0398

Target Compound	PFBS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	3317	0.4425	4.5822
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	13074	1.7700	4.5308
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	39454	4.4250	5.1239
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	70107	8.8500	4.7543

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	373613	44.2500	4.6761
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	850096	88.5000	5.0259
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	1912555	177.0000	5.7809
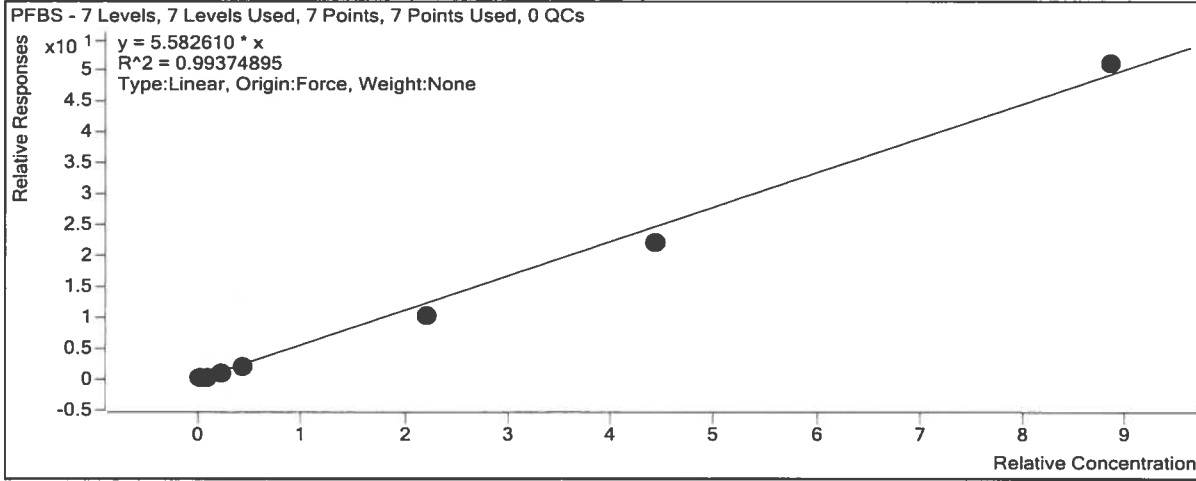
PFBS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

y = 5.582610 * x
R^2 = 0.99374895
Type:Linear, Origin:Force, Weight:None

Relative Responses (y-axis: x10^1, values -0.5 to 5)
Relative Concentration (x-axis: 0 to 9)

Extracted ISTD   M3PFBS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	32714	20.0000	1635.6780
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	32606	20.0000	1630.2910
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	34802	20.0000	1740.1167
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	33324	20.0000	1666.2168
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	36112	20.0000	1805.6083
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	38224	20.0000	1911.2177
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	37383	20.0000	1869.1514

Extracted ISTD   M2 4:2 FTS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	9453	20.0000	472.6336
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	8862	20.0000	443.0866
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	9533	20.0000	476.6309
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	9241	20.0000	462.0563
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	9444	20.0000	472.2024
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	9509	20.0000	475.4648
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	9751	20.0000	487.5317

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	929990	187.0000	10.2008
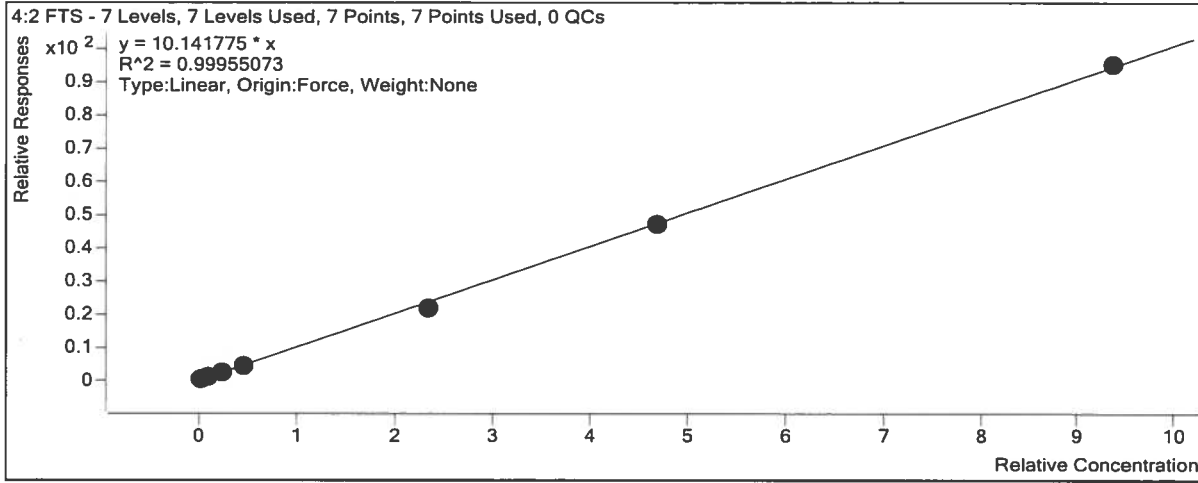
4:2 FTS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs
y = 10.141775 * x
R^2 = 0.99955073
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M5PFHxA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	69913	20.0000	3495.6458
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	69912	20.0000	3495.5896
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	75906	20.0000	3795.3209
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	73114	20.0000	3655.7240
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	79046	20.0000	3952.2795
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	82537	20.0000	4126.8585
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	80975	20.0000	4048.7545

Instrument ISTD   M2PFHxA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	622151	40.0000	15553.7728
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	609757	40.0000	15243.9349
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	698643	40.0000	17466.0673
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	692072	40.0000	17301.8030
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	658813	40.0000	16470.3238
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	677770	40.0000	16944.2597
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	690623	40.0000	17265.5670

Quantitative Analysis Calibration Report
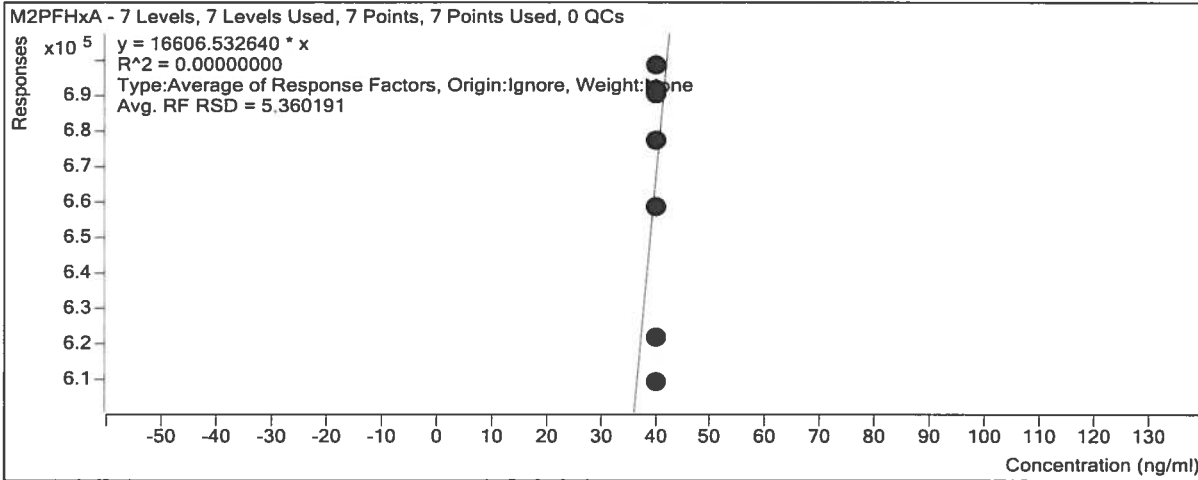
M2PFHxA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs
y = 16606.532640 * x
R^2 = 0.00000000
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 5.360191

Target Compound	PFHxA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	7637	0.5000	4.3693
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	28281	2.0000	4.0452
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	85005	5.0000	4.4794
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	147939	10.0000	4.0468
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	766053	50.0000	3.8765
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	1725894	100.0000	4.1821
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	3850471	200.0000	4.7551

PFHxA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs
y = 4.602981 * x
R^2 = 0.99450323
Type:Linear, Origin:Force, Weight:None

Target Compound	LPFPeS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	2213912	188.0000	2.9086
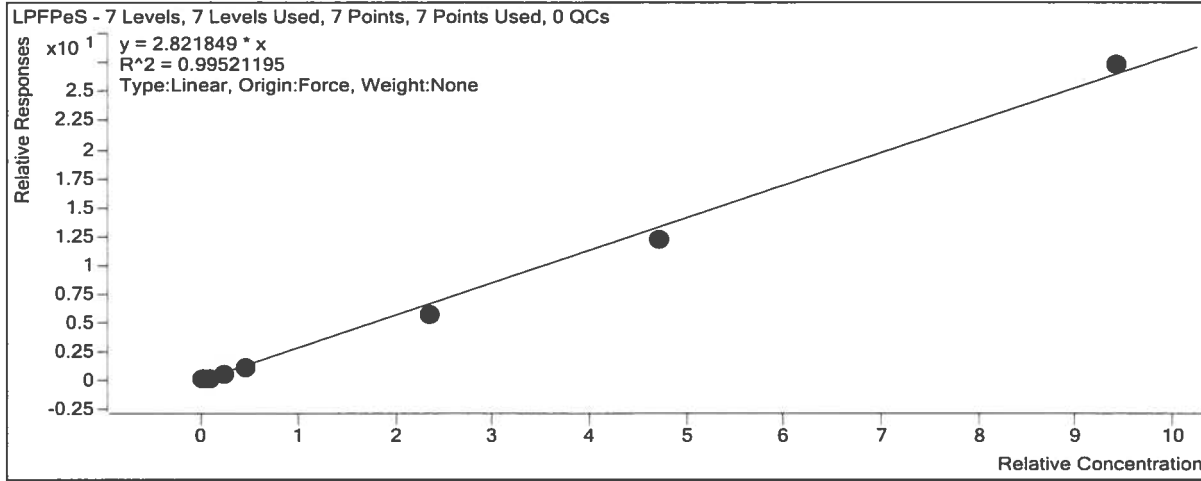
LPFPeS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 2.821849 * x$
$R^2 = 0.99521195$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD M4PFHpA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	63975	20.0000	3198.7323
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	66231	20.0000	3311.5496
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	72094	20.0000	3604.6764
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	67270	20.0000	3363.5209
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	73239	20.0000	3661.9588
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	76156	20.0000	3807.8140
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	75266	20.0000	3763.2933

Target Compound PFHpA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	6446	0.5000	4.0303
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	28501	2.0000	4.3033
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	83044	5.0000	4.6076
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	152255	10.0000	4.5266
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	792365	50.0000	4.3275
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	1816251	100.0000	4.7698
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	4084617	200.0000	5.4269

Quantitative Analysis Calibration Report
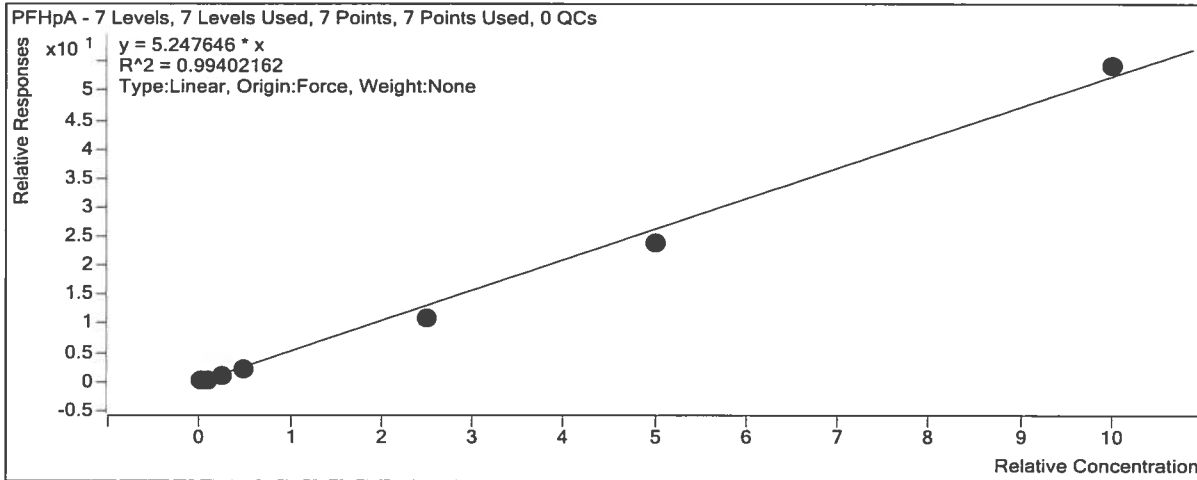
PFHpA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

y = 5.247646 * x
R^2 = 0.99402162
Type:Linear, Origin:Force, Weight:None

Relative Responses (x10 1)

Relative Concentration

Extracted ISTD M3PFHxS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	40309	20.0000	2015.4607
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	40214	20.0000	2010.6818
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	42516	20.0000	2125.7812
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	41591	20.0000	2079.5366
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	45158	20.0000	2257.8804
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	48172	20.0000	2408.5870
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	45717	20.0000	2285.8323

Target Compound PFHxS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	3514	0.4560	3.8231
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	14269	1.8240	3.8908
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	40490	4.5600	4.1770
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	76064	9.1200	4.0107
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	400351	45.6000	3.8884
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	915518	91.2000	4.1678
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	2038012	182.4000	4.8881

Quantitative Analysis Calibration Report
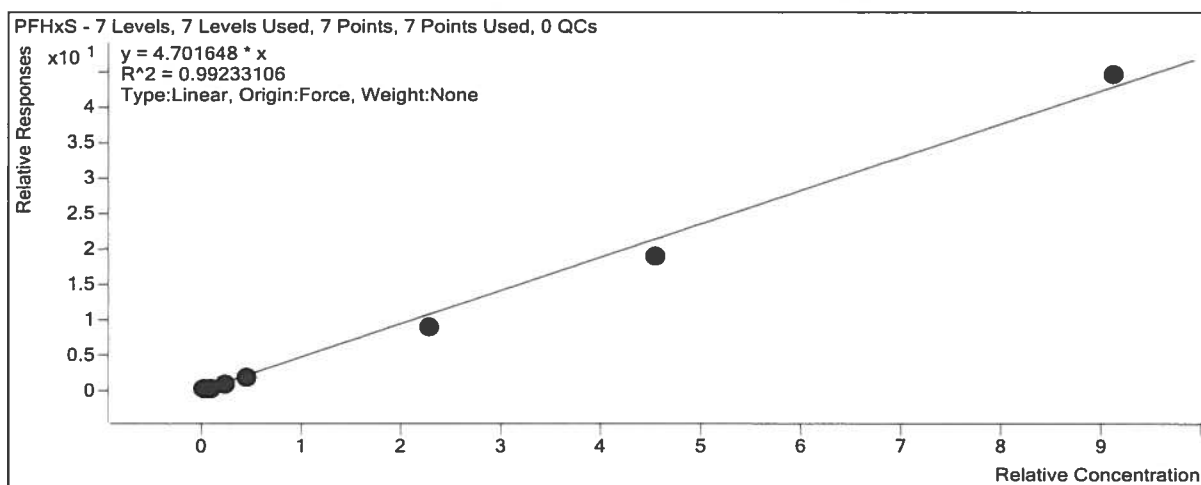
PFHxS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

y = 4.701648 * x
R^2 = 0.99233106
Type:Linear, Origin:Force, Weight:None

Relative Responses (x10 1) vs Relative Concentration

Extracted ISTD   M2 6:2 FTS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	12924	20.0000	646.2217
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	12584	20.0000	629.2248
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	13892	20.0000	694.6173
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	13415	20.0000	670.7430
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	14481	20.0000	724.0481
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	14775	20.0000	738.7395
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	14483	20.0000	724.1640

Target Compound   6:2 FTS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	1675	0.4750	5.4567
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	6984	1.9000	5.8421
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	19248	4.7500	5.8336
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	35884	9.5000	5.6314
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	184534	47.5000	5.3656
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	406649	95.0000	5.7944
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	833754	190.0000	6.0596

Quantitative Analysis Calibration Report
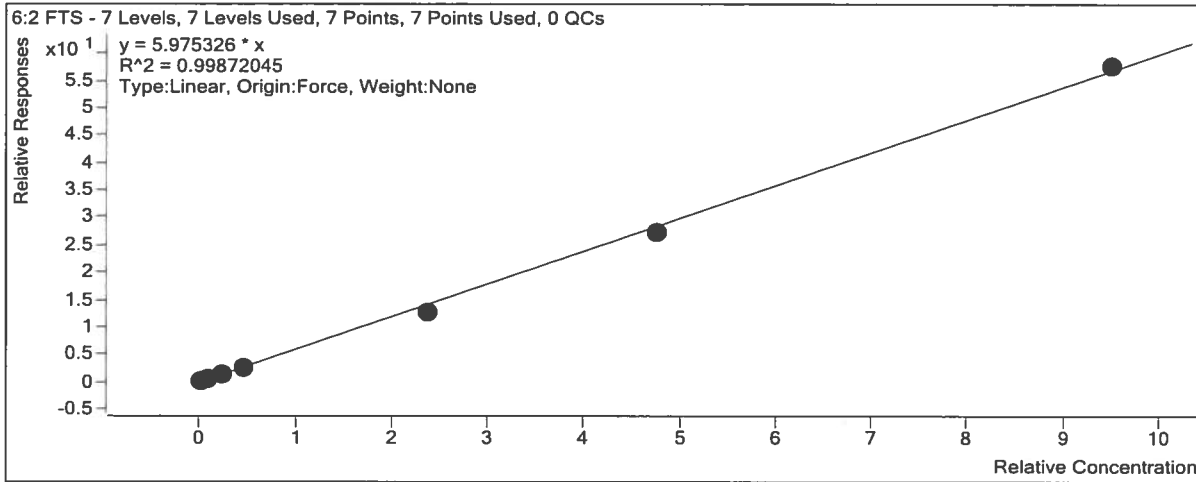
6:2 FTS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

y = 5.975326 * x
R^2 = 0.99872045
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M8PFOA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	44332	20.0000	2216.5778
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	47118	20.0000	2355.8976
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	48186	20.0000	2409.2837
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	45020	20.0000	2251.0018
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	49973	20.0000	2498.6379
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	50742	20.0000	2537.0757
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	51090	20.0000	2554.4856

Instrument ISTD   M2PFOA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	208348	20.0000	10417.3865
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	199725	20.0000	9986.2670
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	233107	20.0000	11655.3620
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	230710	20.0000	11535.4862
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	210001	20.0000	10500.0661
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	223766	20.0000	11188.3249
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	231040	20.0000	11552.0191

Quantitative Analysis Calibration Report
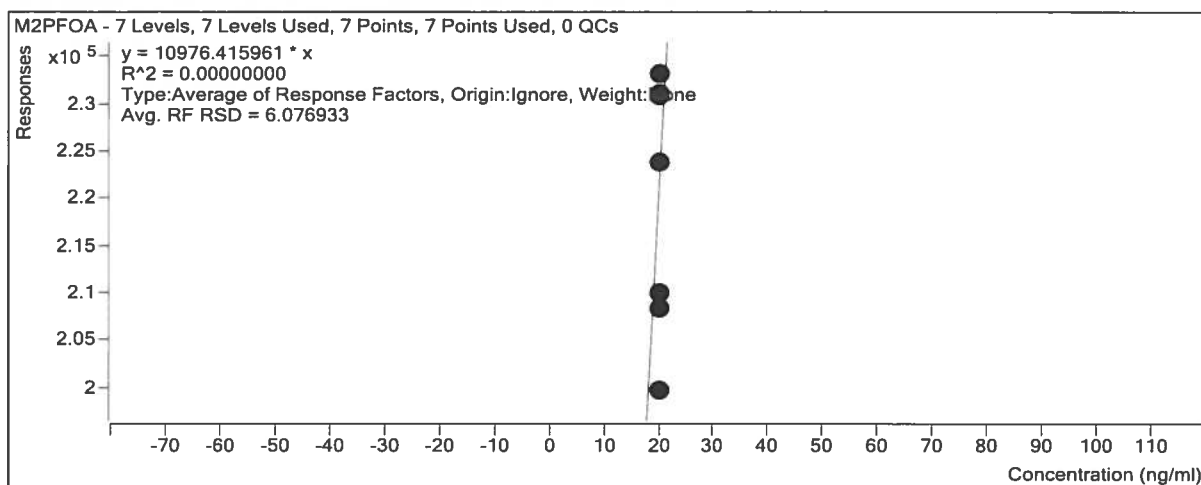
M2PFOA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

y = 10976.415961 * x
R^2 = 0.00000000
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 6.076933

Target Compound		PFOA					

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	5263	0.5000	4.7489
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	20665	2.0000	4.3857
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	62898	5.0000	5.2213
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	109449	10.0000	4.8622
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	575657	50.0000	4.6078
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	1292147	100.0000	5.0931
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	2797019	200.0000	5.4747

PFOA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

y = 5.359648 * x
R^2 = 0.99728348
Type:Linear, Origin:Force, Weight:None

Target Compound		LPFHpS					

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	2507285	190.0000	5.1659
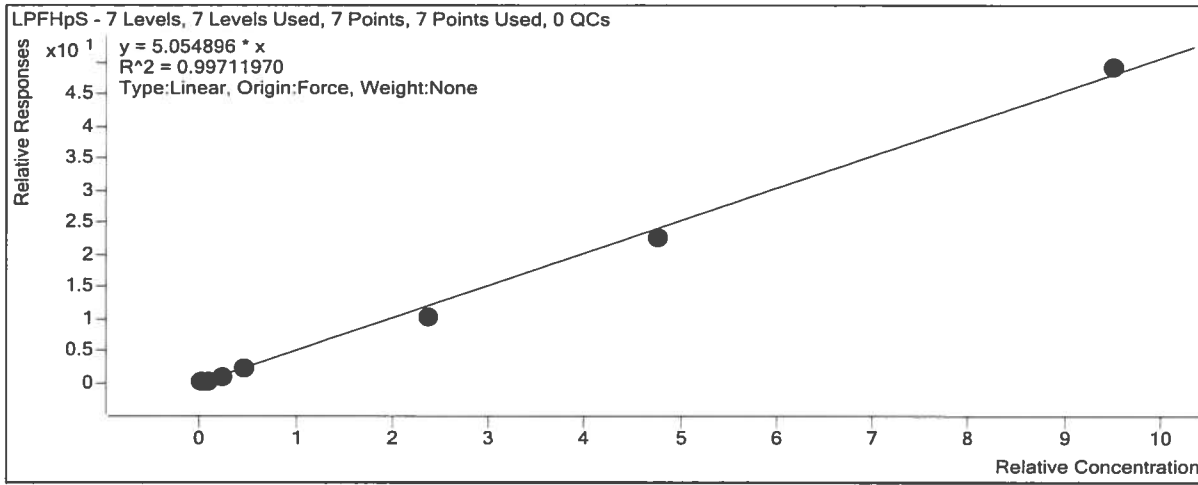
LPFHpS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 5.054896 * x$
$R^2 = 0.99711970$
Type:Linear, Origin:Force, Weight:None

[Plot: Relative Responses (×10^1) vs Relative Concentration]

Extracted ISTD   M9PFNA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	50470	20.0000	2523.5078
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	52502	20.0000	2625.1117
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	55037	20.0000	2751.8671
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	54691	20.0000	2734.5621
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	56297	20.0000	2814.8270
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	58228	20.0000	2911.4016
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	55997	20.0000	2799.8715

Target Compound   PFNA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	4741	0.5000	3.7576
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	19921	2.0000	3.7943
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	59232	5.0000	4.3049
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	107325	10.0000	3.9247
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	560384	50.0000	3.9817
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	1290566	100.0000	4.4328
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	2746243	200.0000	4.9042

Quantitative Analysis Calibration Report
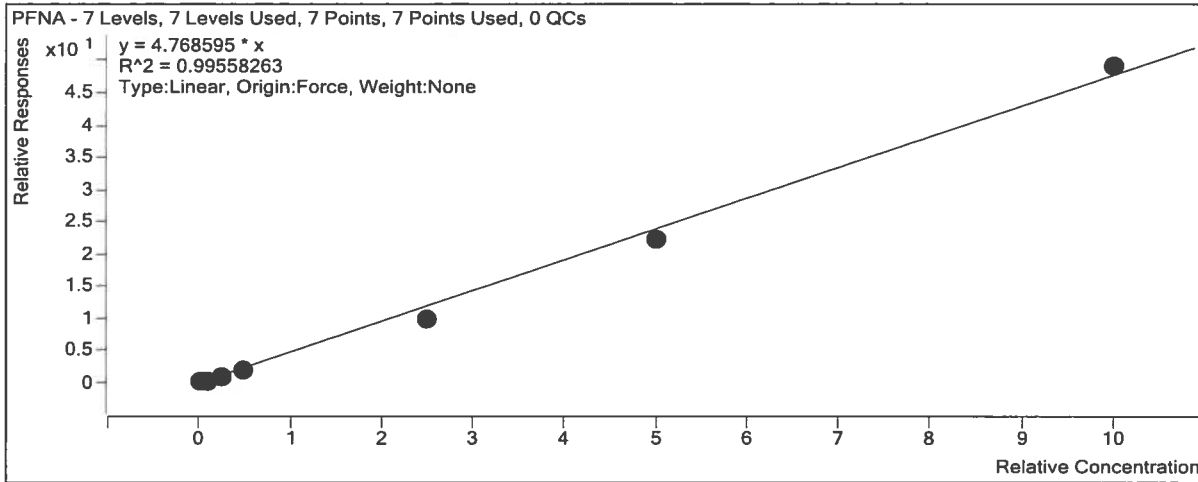
PFNA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 4.768595 * x$
$R^2 = 0.99558263$
Type:Linear, Origin:Force, Weight:None

Instrument ISTD	M4PFOS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	202122	20.0000	10106.0756
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	190273	20.0000	9513.6549
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	214161	20.0000	10708.0620
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	211810	20.0000	10590.4788
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	201963	20.0000	10098.1595
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	210618	20.0000	10530.8910
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	212755	20.0000	10637.7642

M4PFOS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 10312.155156 * x$
$R^2 = 0.00000000$
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 4.178357

Target Compound	PFOS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	1998044	185.1000	5.1512
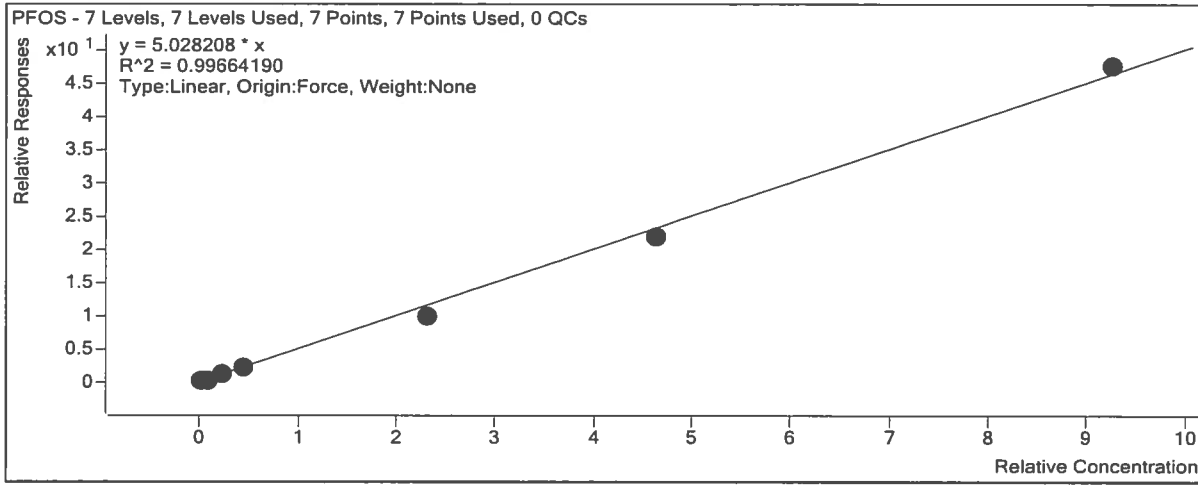
PFOS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

y = 5.028208 * x
R^2 = 0.99664190
Type:Linear, Origin:Force, Weight:None

Extracted ISTD — *M8PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	38778	20.0000	1938.9044
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	37195	20.0000	1859.7274
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	38134	20.0000	1906.7011
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	37416	20.0000	1870.8003
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	40882	20.0000	2044.0893
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	42050	20.0000	2102.5131
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	41910	20.0000	2095.4946

Extracted ISTD — *M2 8:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	14248	20.0000	712.3775
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	13178	20.0000	658.9041
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	14071	20.0000	703.5399
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	13733	20.0000	686.6333
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	14472	20.0000	723.6004
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	14256	20.0000	712.8043
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	15580	20.0000	779.0086

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	40148	9.6000	6.0908
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	198975	48.0000	5.7287
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	423306	96.0000	6.1860
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	831408	192.0000	5.5587
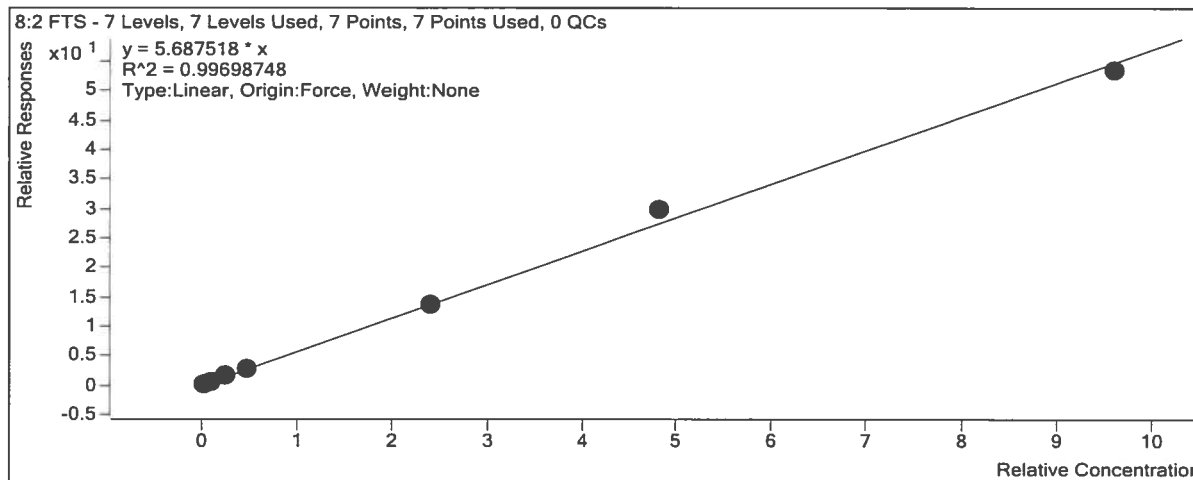
8:2 FTS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 5.687518 * x$
$R^2 = 0.99698748$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   *M6PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	49459	20.0000	2472.9383
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	48284	20.0000	2414.1768
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	51549	20.0000	2577.4589
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	50709	20.0000	2535.4372
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	53567	20.0000	2678.3624
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	53683	20.0000	2684.1472
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	50333	20.0000	2516.6303

Instrument ISTD   *M2PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	217917	20.0000	10895.8719
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	207471	20.0000	10373.5435
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	239486	20.0000	11974.3136
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	236513	20.0000	11825.6381

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	224094	20.0000	11204.6810
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	233596	20.0000	11679.8132
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	235195	20.0000	11759.7271
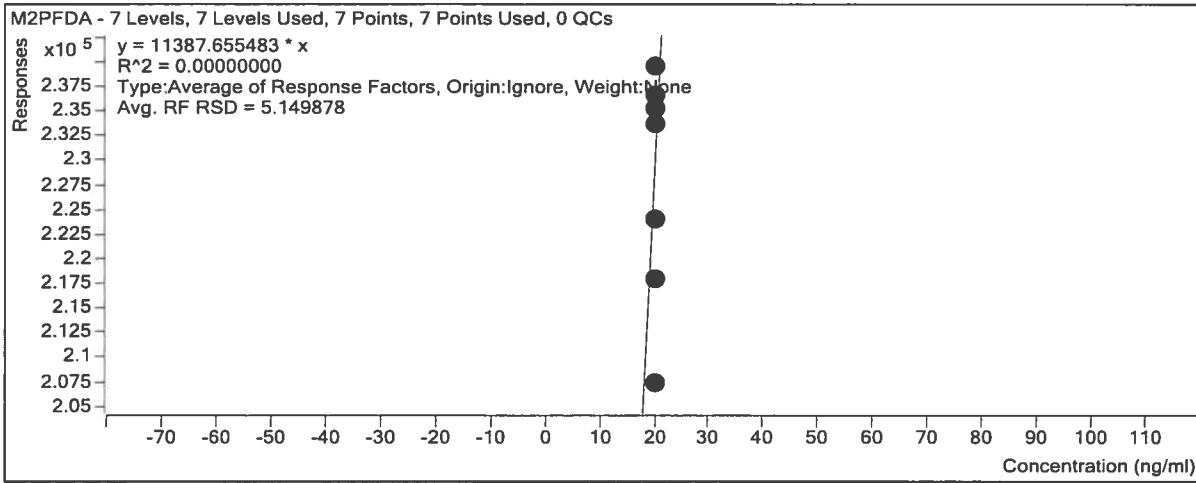
M2PFDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 11387.655483 * x$
$R^2 = 0.00000000$
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 5.149878

Target Compound   PFDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	5491	0.5000	4.4405
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	19475	2.0000	4.0335
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	58526	5.0000	4.5414
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	106767	10.0000	4.2110
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	564746	50.0000	4.2171
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	1227701	100.0000	4.5739
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	2671318	200.0000	5.3073
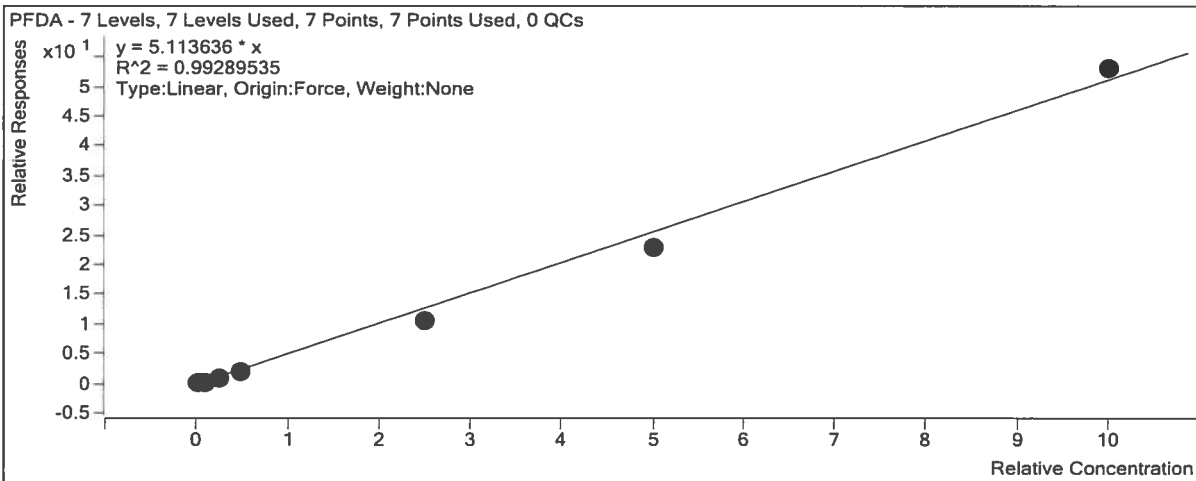
PFDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 5.113636 * x$
$R^2 = 0.99289535$
Type:Linear, Origin:Force, Weight:None

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	2480855	192.0000	4.6149
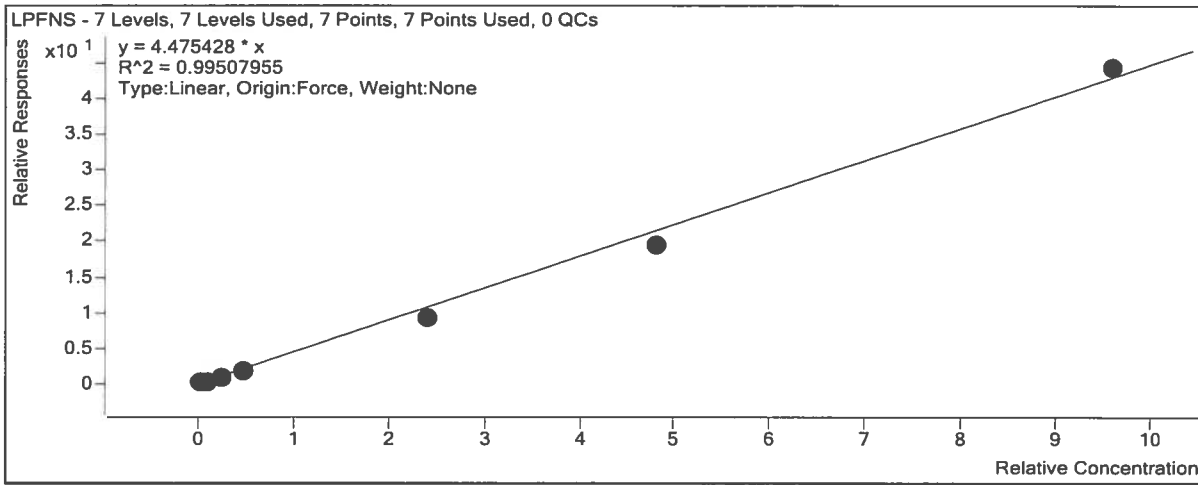
LPFNS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs
y = 4.475428 * x
R^2 = 0.99507955
Type:Linear, Origin:Force, Weight:None

Relative Responses vs *Relative Concentration*

Extracted ISTD d3-NMeFOSAA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	6196	20.0000	309.7755
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	6458	20.0000	322.8968
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	6779	20.0000	338.9389
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	6464	20.0000	323.1938
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	7192	20.0000	359.5879
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	7603	20.0000	380.1429
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	9425	20.0000	471.2268

Target Compound NMeFOSAA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	1787	0.5000	11.5363
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	6201	2.0000	9.6015
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	19131	5.0000	11.2889
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	33455	10.0000	10.3512
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	186138	50.0000	10.3528
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	418243	100.0000	11.0023
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	944787	200.0000	10.0248

Quantitative Analysis Calibration Report
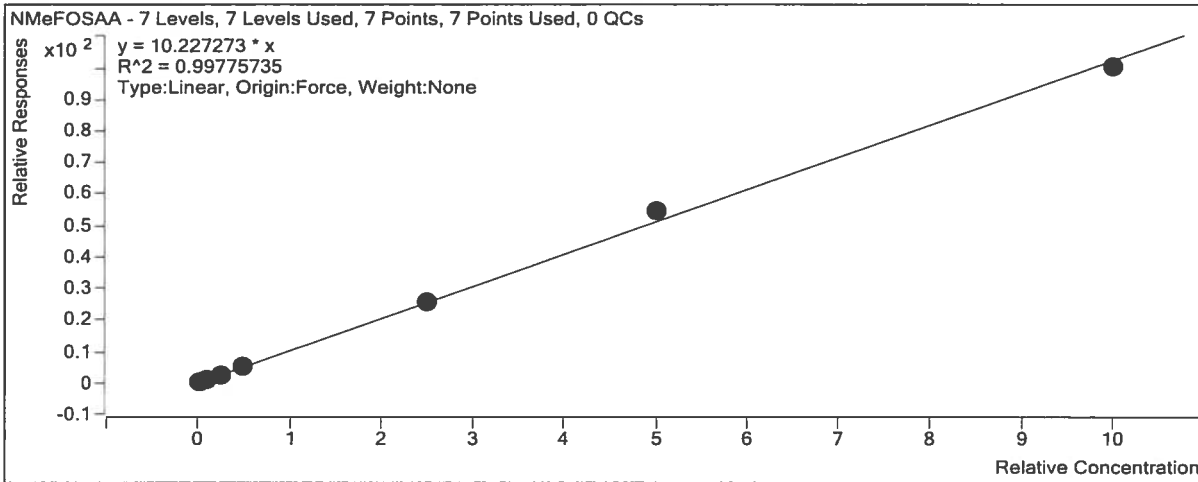
NMeFOSAA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs
y = 10.227273 * x
R^2 = 0.99775735
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M8FOSA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	59626	20.0000	2981.2914
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	59545	20.0000	2977.2289
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	66005	20.0000	3300.2628
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	62963	20.0000	3148.1678
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	66912	20.0000	3345.6185
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	69367	20.0000	3468.3324
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	67831	20.0000	3391.5726

Target Compound   FOSA-I

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	5727	0.5000	3.8419
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	25031	2.0000	4.2038
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	68809	5.0000	4.1699
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	133997	10.0000	4.2563
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	699152	50.0000	4.1795
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	1589435	100.0000	4.5827
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	3592930	200.0000	5.2968

Quantitative Analysis Calibration Report
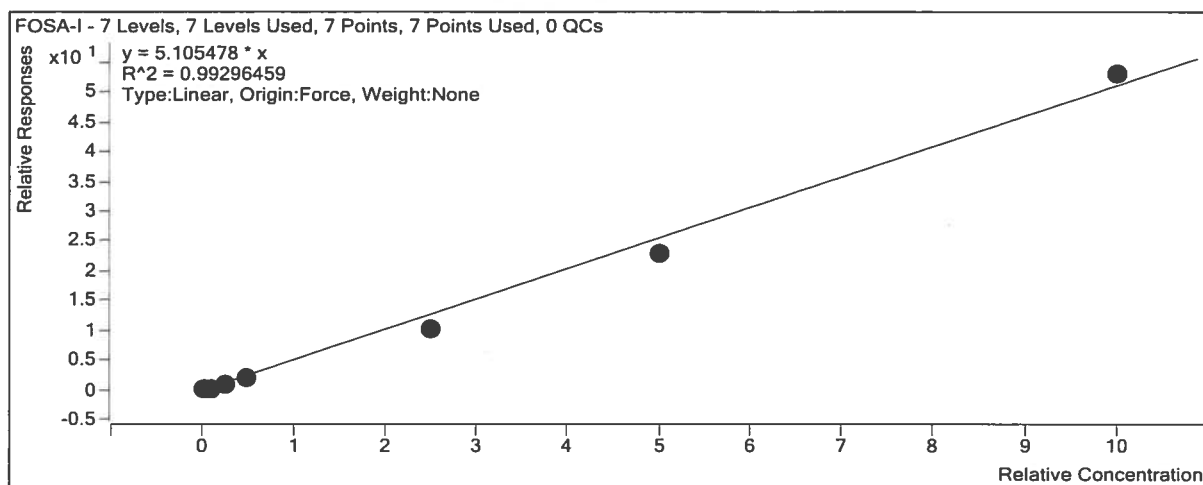
FOSA-I - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

y = 5.105478 * x
R^2 = 0.99296459
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   d5-NEtFOSAA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	11125	20.0000	556.2592
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	10150	20.0000	507.5109
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	11019	20.0000	550.9610
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	10777	20.0000	538.8606
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	10299	20.0000	514.9434
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	12010	20.0000	600.4948
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	10947	20.0000	547.3485

Target Compound   NEtFOSAA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	1437	0.5000	5.1669
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	6719	2.0000	6.6196
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	17159	5.0000	6.2289
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	32624	10.0000	6.0543
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	169968	50.0000	6.6014
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	374292	100.0000	6.2331
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	813282	200.0000	7.4293

Quantitative Analysis Calibration Report
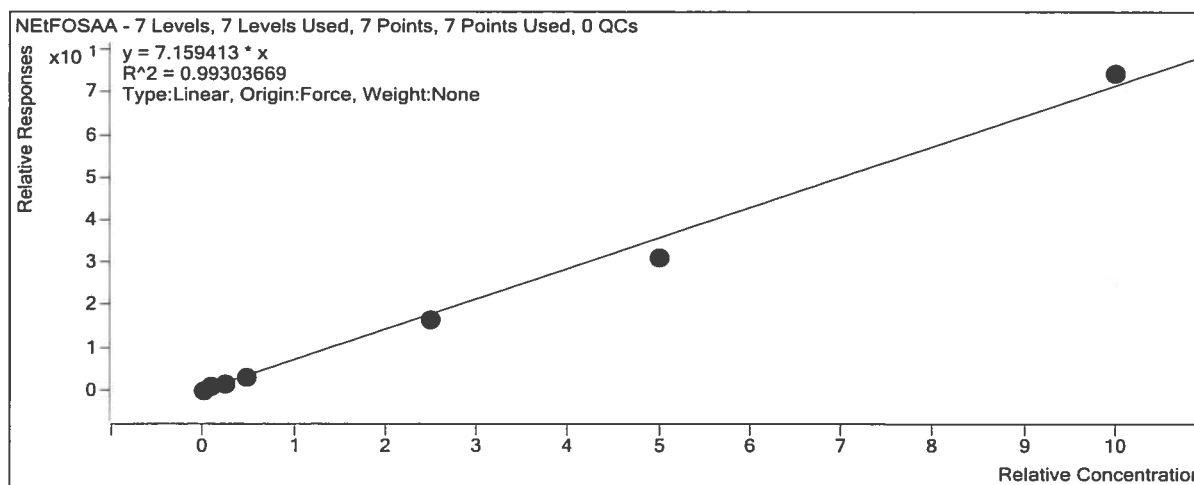
NEtFOSAA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 7.159413 * x$
$R^2 = 0.99303669$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD	M7PFUdA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	41578	20.0000	2078.8944
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	41061	20.0000	2053.0726
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	44025	20.0000	2201.2420
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	40951	20.0000	2047.5399
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	47589	20.0000	2379.4405
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	46883	20.0000	2344.1546
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	45097	20.0000	2254.8721

Target Compound	PFUdA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	4182	0.5000	4.0236
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	16759	2.0000	4.0813
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	50905	5.0000	4.6251
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	92112	10.0000	4.4986
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	472843	50.0000	3.9744
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	1087487	100.0000	4.6391
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	2319593	200.0000	5.1435

Quantitative Analysis Calibration Report
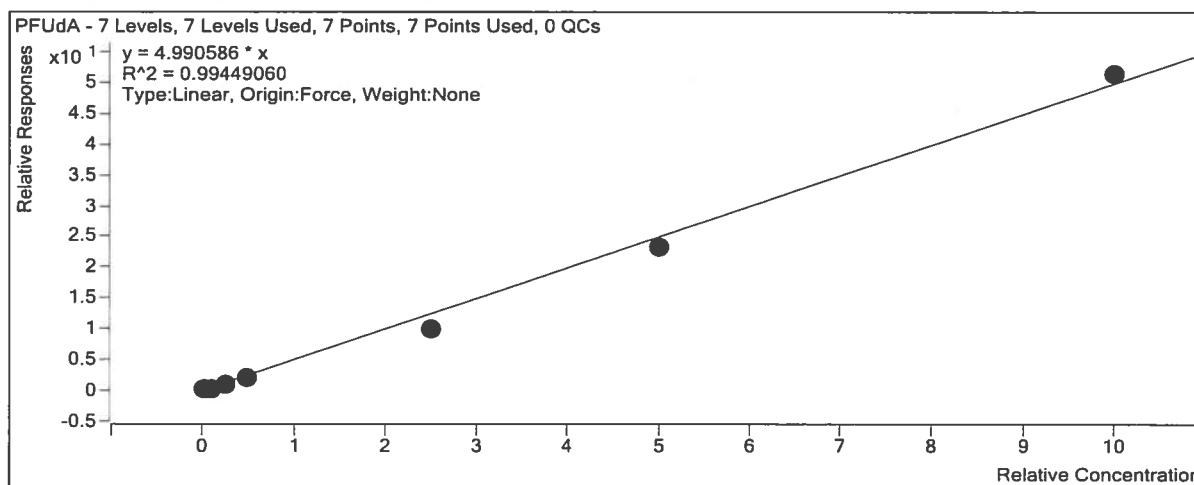
PFUdA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 4.990586 * x$
$R^2 = 0.99449060$
Type:Linear, Origin:Force, Weight:None

Target Compound   *LPFDS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	4814	0.4825	4.0345
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	19592	1.9300	4.2048
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	52279	4.8250	4.2037
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	101509	9.6500	4.1488
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	523345	48.2500	4.0497
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	1160702	96.5000	4.4811
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	2519795	193.0000	5.1879

LPFDS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 4.996989 * x$
$R^2 = 0.99264718$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   *MPFDoA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	34656	20.0000	1732.8010

Target Compound   *PFDoA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	2642	0.5000	3.6152
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	11621	2.0000	3.9618
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	34145	5.0000	4.2067
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	64511	10.0000	4.1888
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	350584	50.0000	4.0905
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	767816	100.0000	4.3606
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	1701521	200.0000	4.9097
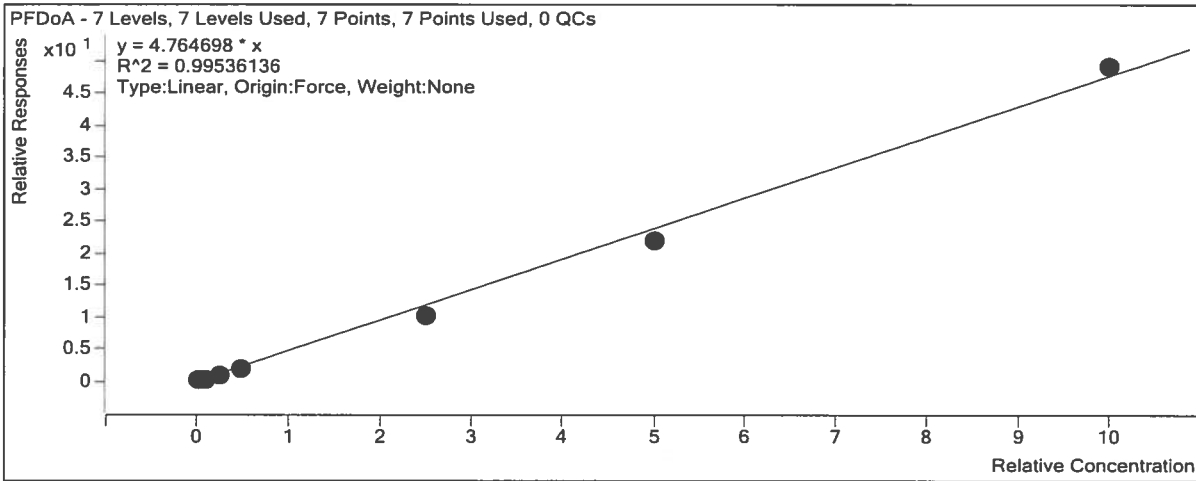
PFDoA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

$y = 4.764698 * x$
$R^2 = 0.99536136$
Type:Linear, Origin:Force, Weight:None

Target Compound   *PFTrDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	2497	0.5000	4.9764
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	9862	2.0000	4.5951
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	26677	5.0000	4.6324
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	50628	10.0000	4.8829
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	269532	50.0000	4.6359
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	619164	100.0000	4.6832
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	1380271	200.0000	4.8471

Quantitative Analysis Calibration Report
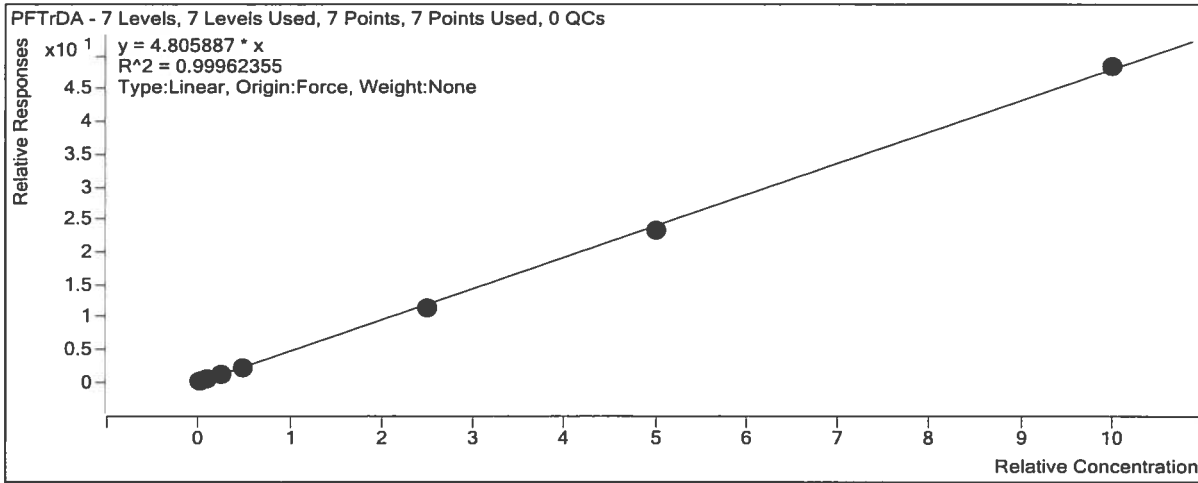
PFTrDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

x10 1

y = 4.805887 * x
R^2 = 0.99962355
Type:Linear, Origin:Force, Weight:None

Relative Responses / Relative Concentration

Extracted ISTD   *M2PFTeDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	20073	20.0000	1003.6545
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	21461	20.0000	1073.0656
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	23035	20.0000	1151.7703
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	20737	20.0000	1036.8305
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	23256	20.0000	1162.7997
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	26442	20.0000	1322.1064
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	28476	20.0000	1423.8031

Target Compound   *PFTeDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190417BCAL\2190417B_01.d	Calibration	1	☑	1794	0.5000	3.5753
D:\MassHunter\Data\2190417BCAL\2190417B_02.d	Calibration	2	☑	8243	2.0000	3.8410
D:\MassHunter\Data\2190417BCAL\2190417B_08.d	Calibration	3	☑	23138	5.0000	4.0178
D:\MassHunter\Data\2190417BCAL\2190417B_04.d	Calibration	4	☑	43446	10.0000	4.1903
D:\MassHunter\Data\2190417BCAL\2190417B_05.d	Calibration	5	☑	223225	50.0000	3.8394
D:\MassHunter\Data\2190417BCAL\2190417B_06.d	Calibration	6	☑	543348	100.0000	4.1097
D:\MassHunter\Data\2190417BCAL\2190417B_07.d	Calibration	7	☑	1181892	200.0000	4.1505

Quantitative Analysis Calibration Report

PFTeDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 0 QCs

y = 4.127943 * x
R^2 = 0.99959416
Type:Linear, Origin:Force, Weight:None

LCMS1 Run Log

Name	Data File	Type	Acq. Date-Time	Dil.
1201	2190417B_01.d	Cal	4/17/2019 16:33	1
1202	2190417B_02.d	Cal	4/17/2019 16:44	1
1204	2190417B_04.d	Cal	4/17/2019 17:06	1
1205	2190417B_05.d	Cal	4/17/2019 17:18	1
1206	2190417B_06.d	Cal	4/17/2019 17:29	1
1207	2190417B_07.d	Cal	4/17/2019 17:41	1
1203	2190417B_08.d	Cal	4/17/2019 18:15	1
1600	2190417B_09.d	QC	4/17/2019 18:26	1
1450	2190417B_10.d	Sample	4/17/2019 18:38	1
1500	2190417B_11.d	Sample	4/17/2019 18:49	1

Analyst:	BMH	Expiration
Batch:	2190418A	Date
Current ICAL Bath:	2190417BCAL	Date
20mM Amm Acetat	008-25-4	4/19/2019
Methanol	2127792	7/31/2023
Calibration Std	008-20-9	9/13/2019
ICV Std	008-3-1	6/3/2019
EIS Mix	008-24-4	10/8/2019

Report No:	219041842		Instrument ID:	QQQ1
Analysis Date:	04/17/2019 18:26		Lab File ID:	2190417B_09.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	658332

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	41500	89	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	39700	84	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	45600	95	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	38200	76	70	130	
NEtFOSAA	ng/L	50000	37500	75	70	130	
NMeFOSAA	ng/L	50000	42100	84	70	130	
Perfluorobutanoic acid	ng/L	50000	55500	111	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	38800	88	70	130	
Perfluorodecanoic acid	ng/L	50000	38500	77	70	130	
Perfluorodecane Sulfonate	ng/L	48300	34700	72	70	130	
Perfluorododecanoic acid	ng/L	50000	40400	81	70	130	
Perfluoroheptanoic acid	ng/L	50000	38700	77	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	37900	80	70	130	
Perfluorohexanoic acid	ng/L	50000	40400	81	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	42300	93	70	130	
Perfluorononanoic acid	ng/L	50000	39400	79	70	130	
PFNS	ng/L	48000	39700	83	70	130	
Perfluorooctanoic acid	ng/L	50000	39200	78	70	130	
Perfluorooctane Sulfonate	ng/L	46300	50800	110	70	130	
Perfluoropentanoic acid	ng/L	50000	51600	103	70	130	
PFPeS	ng/L	47000	38900	83	70	130	
Perfluorotetradecanoic acid	ng/L	50000	44600	89	70	130	
Perfluorotridecanoic acid	ng/L	50000	42300	85	70	130	
Perfluoroundecanoic acid	ng/L	50000	36800	74	70	130	

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ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219041842	Instrument ID:	QQQ1
Analysis Date:	04/17/2019 18:38	Lab File ID:	2190417B_10.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	658332

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	1170	1000	86	70	130	
6:2 Fluorotelomer sulfonate	ng/L	1190	1200	101	70	130	
8:2 Fluorotelomer sulfonate	ng/L	1200	1260	105	70	130	
Perfluorooctane Sulfonamide	ng/L	1250	920	74	70	130	
NEtFOSAA	ng/L	1250	1020	82	70	130	
NMeFOSAA	ng/L	1250	1410	113	70	130	
Perfluorobutanoic acid	ng/L	1250	1010	81	70	130	
Perfluorobutanesulfonic acid	ng/L	1110	874	79	70	130	
Perfluorodecanoic acid	ng/L	1250	955	76	70	130	
Perfluorodecane Sulfonate	ng/L	1210	938	78	70	130	
Perfluorododecanoic acid	ng/L	1250	1010	81	70	130	
Perfluoroheptanoic acid	ng/L	1250	1010	81	70	130	
Perfluoro-1-heptanesulfonate	ng/L	1190	961	81	70	130	
Perfluorohexanoic acid	ng/L	1250	1140	91	70	130	
Perfluorohexanesulfonic acid	ng/L	1140	1070	94	70	130	
Perfluorononanoic acid	ng/L	1250	1020	82	70	130	
PFNS	ng/L	1200	947	79	70	130	
Perfluorooctanoic acid	ng/L	1250	1060	85	70	130	
Perfluorooctane Sulfonate	ng/L	1160	1320	114	70	130	
Perfluoropentanoic acid	ng/L	1250	1010	81	70	130	
PFPeS	ng/L	1180	982	84	70	130	
Perfluorotetradecanoic acid	ng/L	1250	1060	84	70	130	
Perfluorotridecanoic acid	ng/L	1250	1090	87	70	130	
Perfluoroundecanoic acid	ng/L	1250	988	79	70	130	

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ORGANICS INSTRUMENT BLANK

Report No:	219041842		Instrument ID:	QQQ1
Analysis Date:	04/17/2019 18:49		Lab File ID:	2190417B_11.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	658332

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
4:2 FTS	ng/L	4.00	U	1.52	4.00	10.0	
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
PFNS	ng/L	4.00	U	2.11	4.00	10.0	
PFPeS	ng/L	4.00	U	2.07	4.00	10.0	
Perfluoro-1-heptanesulfonate	ng/L	4.00	U	2.01	4.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecane Sulfonate	ng/L	4.00	U	2.17	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonamide	ng/L	4.00	U	2.63	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

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LCMS1 Run Log

Name	Data File	Type	Acq. Date-Time	Dil.
1201	2190417B_01.d	Cal	4/17/2019 16:33	1
1202	2190417B_02.d	Cal	4/17/2019 16:44	1
1204	2190417B_04.d	Cal	4/17/2019 17:06	1
1205	2190417B_05.d	Cal	4/17/2019 17:18	1
1206	2190417B_06.d	Cal	4/17/2019 17:29	1
1207	2190417B_07.d	Cal	4/17/2019 17:41	1
1203	2190417B_08.d	Cal	4/17/2019 18:15	1
1600	2190417B_09.d	QC	4/17/2019 18:26	1
1450	2190417B_10.d	Sample	4/17/2019 18:38	1
1500	2190417B_11.d	Sample	4/17/2019 18:49	1
1450	2190422A_01.d	Sample	4/22/2019 11:28	1
1500	2190422A_02.d	Sample	4/22/2019 11:39	1
1917384	2190422A_03.d	Sample	4/22/2019 12:54	1
1917385	2190422A_04.d	QC	4/22/2019 13:06	1
1917386	2190422A_05.d	QC	4/22/2019 13:17	1
21904162601	2190422A_06.d	Sample	4/22/2019 13:28	1
21904162602	2190422A_07.d	Sample	4/22/2019 13:40	1
1400	2190422A_08.d	QC	4/22/2019 13:51	1
21904184111	2190422A_10.d	Sample	4/22/2019 14:14	1
21904184202	2190422A_11.d	Sample	4/22/2019 14:25	1
21904184101	2190422A_12.d	Sample	4/22/2019 14:37	1
21904184102	2190422A_13.d	Sample	4/22/2019 14:48	1
21904184103	2190422A_14.d	Sample	4/22/2019 15:00	1
21904184104	2190422A_15.d	Sample	4/22/2019 15:11	1
21904184105	2190422A_16.d	Sample	4/22/2019 15:22	1
21904184106	2190422A_17.d	Sample	4/22/2019 15:34	1
21904184107	2190422A_18.d	Sample	4/22/2019 15:45	1
21904184108	2190422A_19.d	Sample	4/22/2019 15:56	1
1400	2190422A_20.d	QC	4/22/2019 16:08	1
21904184109	2190422A_21.d	Sample	4/22/2019 16:19	1
21904184110	2190422A_22.d	Sample	4/22/2019 16:31	1
21904184112	2190422A_23.d	Sample	4/22/2019 16:42	1
21904184113	2190422A_24.d	Sample	4/22/2019 16:53	1
21904184114	2190422A_25.d	Sample	4/22/2019 17:05	1
21904184115	2190422A_26.d	Sample	4/22/2019 17:16	1
21904184201	2190422A_27.d	Sample	4/22/2019 18:17	1
21904184203	2190422A_28.d	Sample	4/22/2019 18:28	1
1400	2190422A_29.d	QC	4/22/2019 18:39	1

		Expiration
Analyst:	BMH	Expiration
Batch:	2190422A	Date
Current ICAL Bath:	2190417BCAL	Date
20mM Amm Acetat	008-25-5	4/24/2019
Methanol	2127792	7/31/2023
Calibration Std	008-20-9	9/13/2019

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219041842		Instrument ID:	QQQ1
Analysis Date:	04/22/2019 11:28		Lab File ID:	2190422A_01.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	658397

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	1170	1010	86	70	130	
6:2 Fluorotelomer sulfonate	ng/L	1190	1150	97	70	130	
8:2 Fluorotelomer sulfonate	ng/L	1200	1330	111	70	130	
Perfluorooctane Sulfonamide	ng/L	1250	957	77	70	130	
NEtFOSAA	ng/L	1250	909	73	70	130	
NMeFOSAA	ng/L	1250	1360	108	70	130	
Perfluorobutanoic acid	ng/L	1250	968	77	70	130	
Perfluorobutanesulfonic acid	ng/L	1110	856	77	70	130	
Perfluorodecanoic acid	ng/L	1250	964	77	70	130	
Perfluorodecane Sulfonate	ng/L	1210	933	77	70	130	
Perfluorododecanoic acid	ng/L	1250	944	76	70	130	
Perfluoroheptanoic acid	ng/L	1250	965	77	70	130	
Perfluoro-1-heptanesulfonate	ng/L	1190	936	79	70	130	
Perfluorohexanoic acid	ng/L	1250	1120	90	70	130	
Perfluorohexanesulfonic acid	ng/L	1140	1020	90	70	130	
Perfluorononanoic acid	ng/L	1250	938	75	70	130	
PFNS	ng/L	1200	1030	86	70	130	
Perfluorooctanoic acid	ng/L	1250	1010	81	70	130	
Perfluorooctane Sulfonate	ng/L	1160	1030	89	70	130	
Perfluoropentanoic acid	ng/L	1250	879	70	70	130	
PFPeS	ng/L	1180	988	84	70	130	
Perfluorotetradecanoic acid	ng/L	1250	1090	87	70	130	
Perfluorotridecanoic acid	ng/L	1250	1160	93	70	130	
Perfluoroundecanoic acid	ng/L	1250	912	73	70	130	

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Report No:	219041842		Instrument ID:	QQQ1
Analysis Date:	04/22/2019 11:39		Lab File ID:	2190422A_02.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	658397

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
4:2 FTS	ng/L	4.00	U	1.52	4.00	10.0	
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
PFNS	ng/L	4.00	U	2.11	4.00	10.0	
PFPeS	ng/L	4.00	U	2.07	4.00	10.0	
Perfluoro-1-heptanesulfonate	ng/L	4.00	U	2.01	4.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecane Sulfonate	ng/L	4.00	U	2.17	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonamide	ng/L	4.00	U	2.63	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

FORM 4I - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219041842	Instrument ID:	QQQ1
Analysis Date:	04/22/2019 13:51	Lab File ID:	2190422A_08.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	658397

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	44800	96	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	46300	97	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	53200	111	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	44300	89	70	130	
NEtFOSAA	ng/L	50000	41800	84	70	130	
NMeFOSAA	ng/L	50000	49400	99	70	130	
Perfluorobutanoic acid	ng/L	50000	42300	85	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	38000	86	70	130	
Perfluorodecanoic acid	ng/L	50000	40800	82	70	130	
Perfluorodecane Sulfonate	ng/L	48300	40300	84	70	130	
Perfluorododecanoic acid	ng/L	50000	44900	90	70	130	
Perfluoroheptanoic acid	ng/L	50000	41400	83	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	41400	87	70	130	
Perfluorohexanoic acid	ng/L	50000	43000	86	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	45100	99	70	130	
Perfluorononanoic acid	ng/L	50000	41700	83	70	130	
PFNS	ng/L	48000	41100	86	70	130	
Perfluorooctanoic acid	ng/L	50000	44500	89	70	130	
Perfluorooctane Sulfonate	ng/L	46300	45000	97	70	130	
Perfluoropentanoic acid	ng/L	50000	40600	81	70	130	
PFPeS	ng/L	47000	41000	87	70	130	
Perfluorotetradecanoic acid	ng/L	50000	45800	92	70	130	
Perfluorotridecanoic acid	ng/L	50000	47700	95	70	130	
Perfluoroundecanoic acid	ng/L	50000	41600	83	70	130	

FORM 7E - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219041842		Instrument ID:	QQQ1		
Analysis Date:	04/22/2019 16:08		Lab File ID:	2190422A_20.d		
Analytical Method:	EPA 537 Modified		Analytical Batch:	658397		

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	44000	94	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	44600	94	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	52300	109	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	42100	84	70	130	
NEtFOSAA	ng/L	50000	40800	82	70	130	
NMeFOSAA	ng/L	50000	48200	96	70	130	
Perfluorobutanoic acid	ng/L	50000	42000	84	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	37700	85	70	130	
Perfluorodecanoic acid	ng/L	50000	41200	82	70	130	
Perfluorodecane Sulfonate	ng/L	48300	40300	84	70	130	
Perfluorododecanoic acid	ng/L	50000	43400	87	70	130	
Perfluoroheptanoic acid	ng/L	50000	42600	85	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	39500	83	70	130	
Perfluorohexanoic acid	ng/L	50000	42400	85	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	45500	100	70	130	
Perfluorononanoic acid	ng/L	50000	42700	85	70	130	
PFNS	ng/L	48000	42200	88	70	130	
Perfluorooctanoic acid	ng/L	50000	42000	84	70	130	
Perfluorooctane Sulfonate	ng/L	46300	51000	110	70	130	
Perfluoropentanoic acid	ng/L	50000	40600	81	70	130	
PFPeS	ng/L	47000	40400	86	70	130	
Perfluorotetradecanoic acid	ng/L	50000	46100	92	70	130	
Perfluorotridecanoic acid	ng/L	50000	47500	95	70	130	
Perfluoroundecanoic acid	ng/L	50000	41600	83	70	130	

FORM 7E - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219041842		Instrument ID:	QQQ1
Analysis Date:	04/22/2019 18:39		Lab File ID:	2190422A_29.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	658397

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	45600	97	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	44300	93	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	51800	108	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	44200	88	70	130	
NEtFOSAA	ng/L	50000	42700	85	70	130	
NMeFOSAA	ng/L	50000	46000	92	70	130	
Perfluorobutanoic acid	ng/L	50000	42300	85	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	38000	86	70	130	
Perfluorodecanoic acid	ng/L	50000	41800	84	70	130	
Perfluorodecane Sulfonate	ng/L	48300	40400	84	70	130	
Perfluorododecanoic acid	ng/L	50000	44800	90	70	130	
Perfluoroheptanoic acid	ng/L	50000	42400	85	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	41400	87	70	130	
Perfluorohexanoic acid	ng/L	50000	43300	87	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	45600	100	70	130	
Perfluorononanoic acid	ng/L	50000	43100	86	70	130	
PFNS	ng/L	48000	41300	86	70	130	
Perfluorooctanoic acid	ng/L	50000	43900	88	70	130	
Perfluorooctane Sulfonate	ng/L	46300	51500	111	70	130	
Perfluoropentanoic acid	ng/L	50000	42100	84	70	130	
PFPeS	ng/L	47000	40700	87	70	130	
Perfluorotetradecanoic acid	ng/L	50000	48700	97	70	130	
Perfluorotridecanoic acid	ng/L	50000	48700	97	70	130	
Perfluoroundecanoic acid	ng/L	50000	41900	84	70	130	

FORM 7E - ORG

8I

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219041842		Standard ID:	1450 (ISC)
Analyst:	BMH		Instrument ID:	QQQ1
Analysis Date:	04/22/19 11:28		Lab File ID:	2190422A_01.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	658397

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		Area		Area		Area	
STANDARD		265122		837659		276642		270013	

CLIENT SAMPLE ID	GCAL SAMP ID		#		#		#		#
MB1917384	1917384	205131		583908		191486		180310	
LCS1917385	1917385	202362		600835		197052		186930	
LCSD1917386	1917386	208444		603125		198178		183949	
GL-SPIGOT-041619	21904184201	232173		650047		217942		196993	
FRB-041619	21904184203	214189		633597		209272		193912	

AREA UPPER LIMIT = +50% of internal standard area   # Column used to flag values outside QC limits

AREA LOWER LIMIT = -50% of internal standard area   * Value outside QC limits

FORM 8I - ORG

Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\2190510BICAL\QuantResults\2190517A.batch.bin		
Analysis Time	5/20/2019 12:32 PM	**Analyst Name**	GCAL\lcms
Report Time	5/20/2019 12:34 PM	**Reporter Name**	GCAL\lcms
Last Calib Update	5/20/2019 12:32 PM	**Batch State**	Processed

Calibration Info

Extracted ISTD   MPFBA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	69825	20.0000	3491.2272
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	84756	20.0000	4237.7838
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	92208	20.0000	4610.4197
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	86393	20.0000	4319.6650
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	83842	20.0000	4192.0812
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	88275	20.0000	4413.7662
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	83290	20.0000	4164.5161

Target Compound   PFBA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	5789	0.5000	3.3163
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	23416	2.0000	2.7628
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	71248	5.0000	3.0907
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	141079	10.0000	3.2660
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	684239	50.0000	3.2644
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	1610899	100.0000	3.6497
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	3212636	200.0000	3.8572
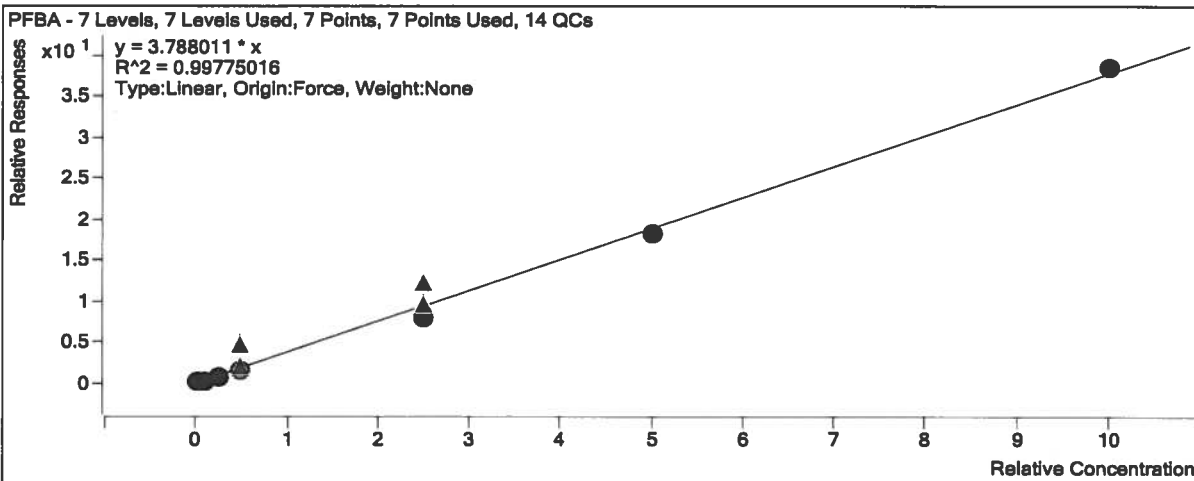
PFBA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

$y = 3.788011 * x$
$R^2 = 0.99775016$
Type:Linear, Origin:Force, Weight:None

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	71538	10.0000	3.4366
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	355194	50.0000	3.5953
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	836197	100.0000	3.9682
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	1640249	200.0000	4.2113
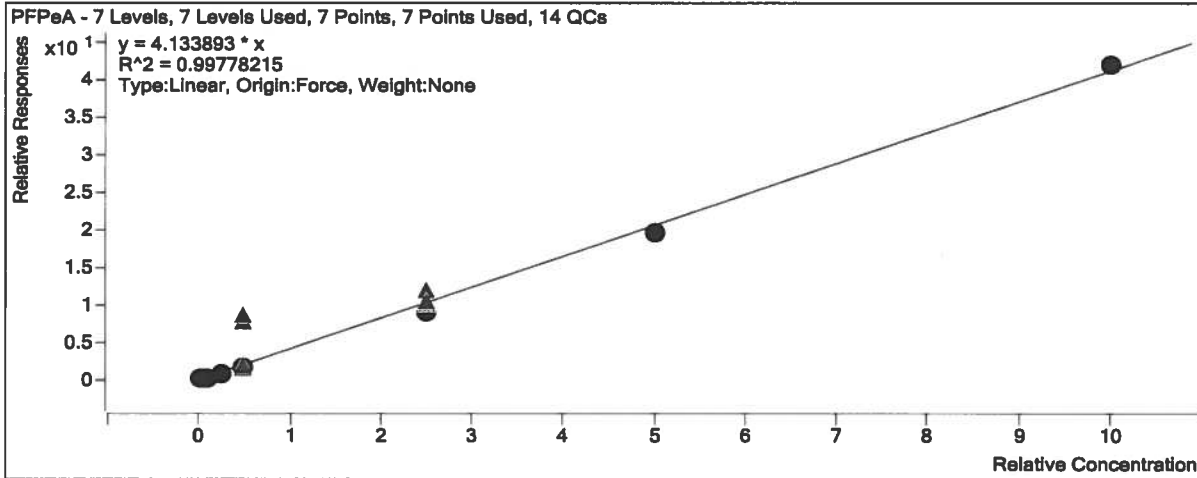
PFPeA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 4.133893 * x
R^2 = 0.99778215
Type:Linear, Origin:Force, Weight:None

Extracted ISTD M5PFPeA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	35240	20.0000	1762.0058
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	40308	20.0000	2015.4214
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	44970	20.0000	2248.5116
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	41634	20.0000	2081.6794
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	39517	20.0000	1975.8598
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	42145	20.0000	2107.2489
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	38949	20.0000	1947.4495

Target Compound PFBS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	2117	0.4425	3.2647
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	9324	1.7700	2.9939
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	27875	4.4250	3.2675
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	55106	8.8500	3.4756

D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	266156	44.2500	3.4630
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	616981	88.5000	3.7989
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	1232371	177.0000	4.0498
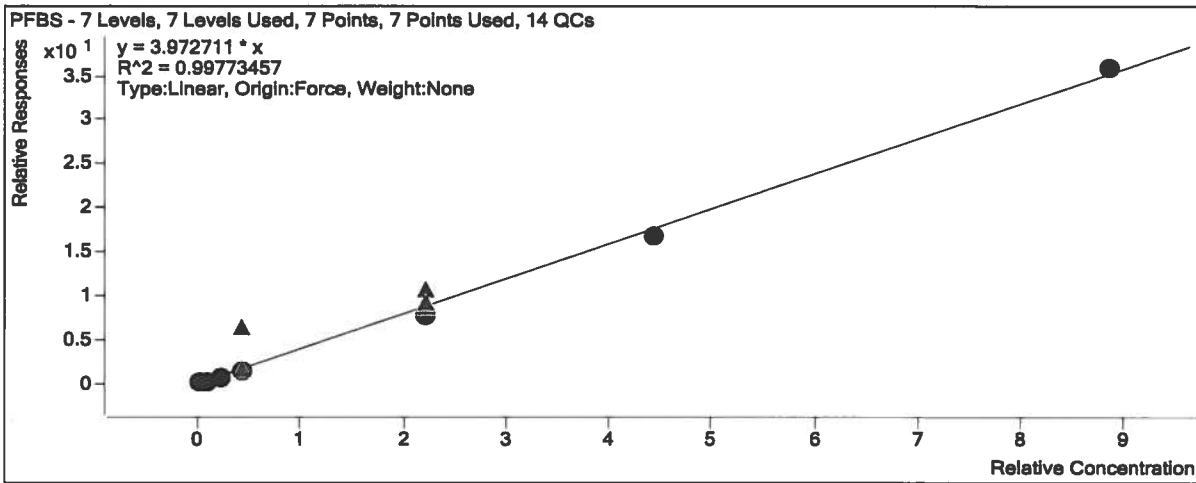
PFBS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

$y = 3.972711 * x$
$R^2 = 0.99773457$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M3PFBS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	29311	20.0000	1465.5637
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	35190	20.0000	1759.5012
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	38558	20.0000	1927.9027
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	35831	20.0000	1791.5385
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	34738	20.0000	1736.8834
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	36703	20.0000	1835.1325
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	34385	20.0000	1719.2323

Extracted ISTD   M2 4:2 FTS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	6575	20.0000	328.7432
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	7484	20.0000	374.1766
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	8262	20.0000	413.1069
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	7665	20.0000	383.2654
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	7215	20.0000	360.7519
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	7734	20.0000	386.7193
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	6891	20.0000	344.5548

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	521830	187.0000	8.0990
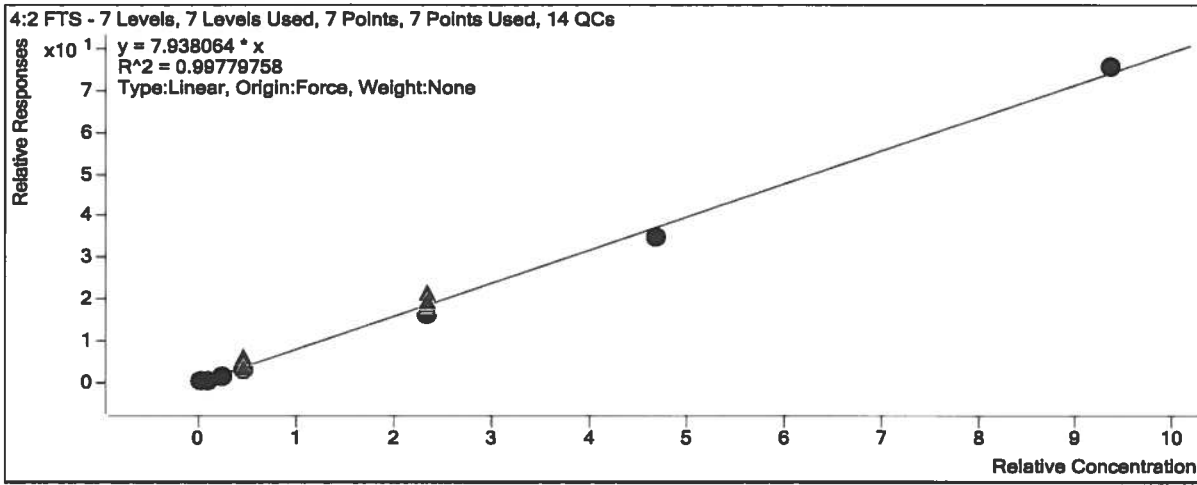
4:2 FTS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 7.938064 * x
R^2 = 0.99779758
Type:Linear, Origin:Force, Weight:None

Extracted ISTD M5PFHxA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	64964	20.0000	3248.1950
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	77037	20.0000	3851.8498
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	82577	20.0000	4128.8378
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	76800	20.0000	3839.9974
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	73806	20.0000	3690.2882
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	77187	20.0000	3859.3401
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	71668	20.0000	3583.3765

Instrument ISTD M2PFHxA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	624186	40.0000	15604.6618
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	692018	40.0000	17300.4591
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	745758	40.0000	18643.9588
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	674598	40.0000	16864.9400
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	665617	40.0000	16640.4354
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	687977	40.0000	17199.4309
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	626213	40.0000	15655.3196

Quantitative Analysis Calibration Report
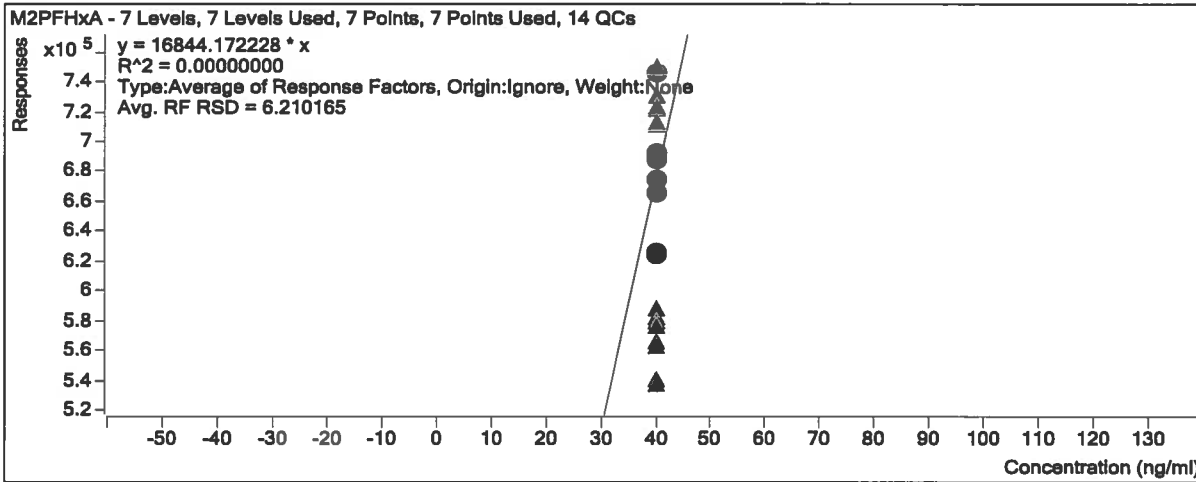
M2PFHxA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 16844.172228 * x
R^2 = 0.00000000
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 6.210165

Target Compound   *PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	5420	0.5000	3.3371
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	20167	2.0000	2.6178
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	58159	5.0000	2.8172
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	110791	10.0000	2.8852
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	529206	50.0000	2.8681
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	1199191	100.0000	3.1072
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	2367860	200.0000	3.3040

PFHxA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 3.244792 * x
R^2 = 0.99805267
Type:Linear, Origin:Force, Weight:None

Target Compound   *LPFPeS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	1411557	188.0000	2.0953
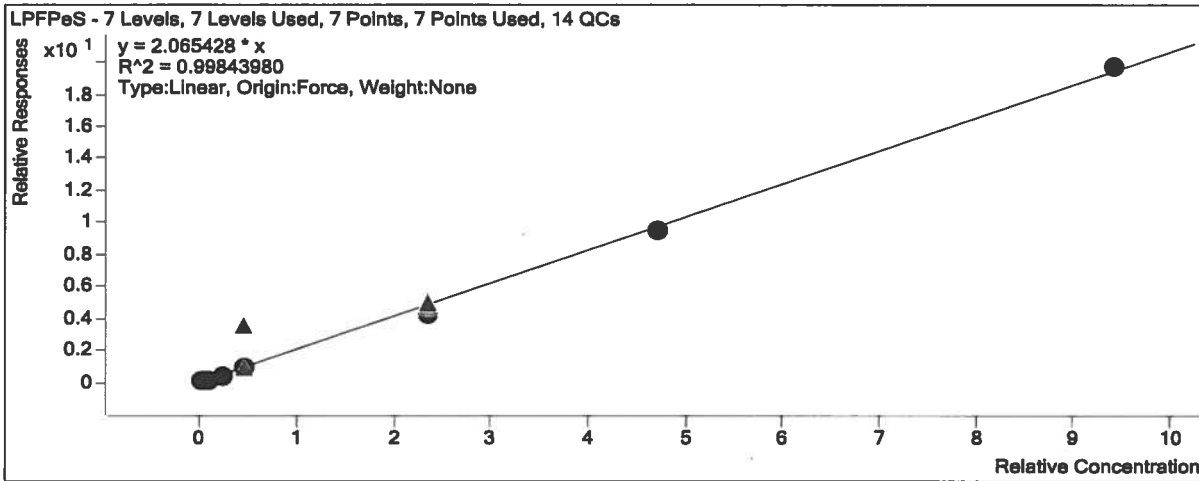
LPFPeS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 2.065428 * x
R^2 = 0.99843980
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   *M4PFHpA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	58345	20.0000	2917.2403
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	68729	20.0000	3436.4276
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	72631	20.0000	3631.5750
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	67558	20.0000	3377.8818
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	64227	20.0000	3211.3654
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	66855	20.0000	3342.7594
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	62418	20.0000	3120.9173

Target Compound   *PFHpA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	4980	0.5000	3.4145
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	18749	2.0000	2.7279
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	56144	5.0000	3.0920
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	110634	10.0000	3.2752
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	523712	50.0000	3.2616
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	1207224	100.0000	3.6115
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	2370864	200.0000	3.7983

Quantitative Analysis Calibration Report
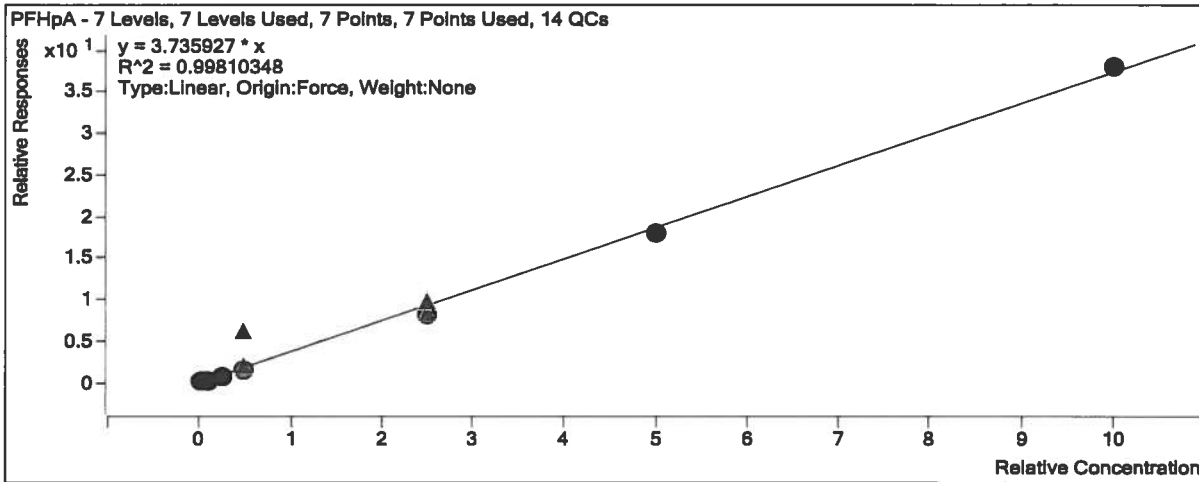
PFHpA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

x10 ^{1} y = 3.735927 * x
R^2 = 0.99810348
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M3PFHxS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	34956	20.0000	1747.8082
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	42000	20.0000	2100.0118
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	45711	20.0000	2285.5415
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	43851	20.0000	2192.5284
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	40912	20.0000	2045.6002
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	43391	20.0000	2169.5320
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	40154	20.0000	2007.6784

Target Compound   PFHxS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	2566	0.4560	3.2190
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	11526	1.8240	3.0090
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	34674	4.5600	3.3269
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	65894	9.1200	3.2954
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	317323	45.6000	3.4019
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	740495	91.2000	3.7425
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	1461508	182.4000	3.9910

Quantitative Analysis Calibration Report
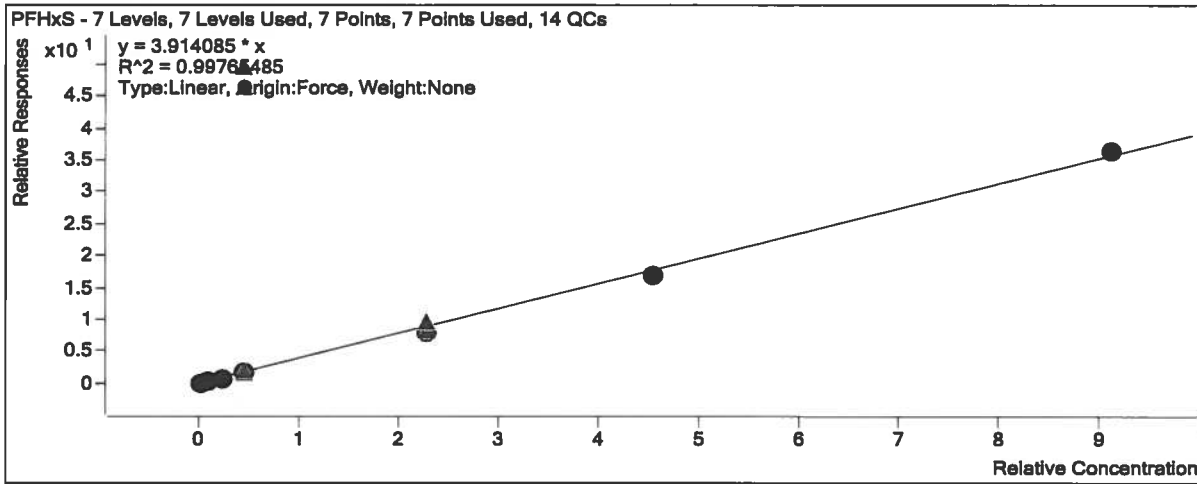
PFHxS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 3.914085 * x
R^2 = 0.99765485
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   *M2 6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	9680	20.0000	484.0218
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	11240	20.0000	562.0001
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	12584	20.0000	629.1807
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	11949	20.0000	597.4627
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	11505	20.0000	575.2692
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	12027	20.0000	601.3441
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	12399	20.0000	619.9366

Target Compound   *6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	1071	0.4750	4.6565
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	3933	1.9000	3.6836
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	12014	4.7500	4.0199
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	24258	9.5000	4.2738
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	116983	47.5000	4.2811
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	258444	95.0000	4.5240
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	490063	190.0000	4.1606

Quantitative Analysis Calibration Report
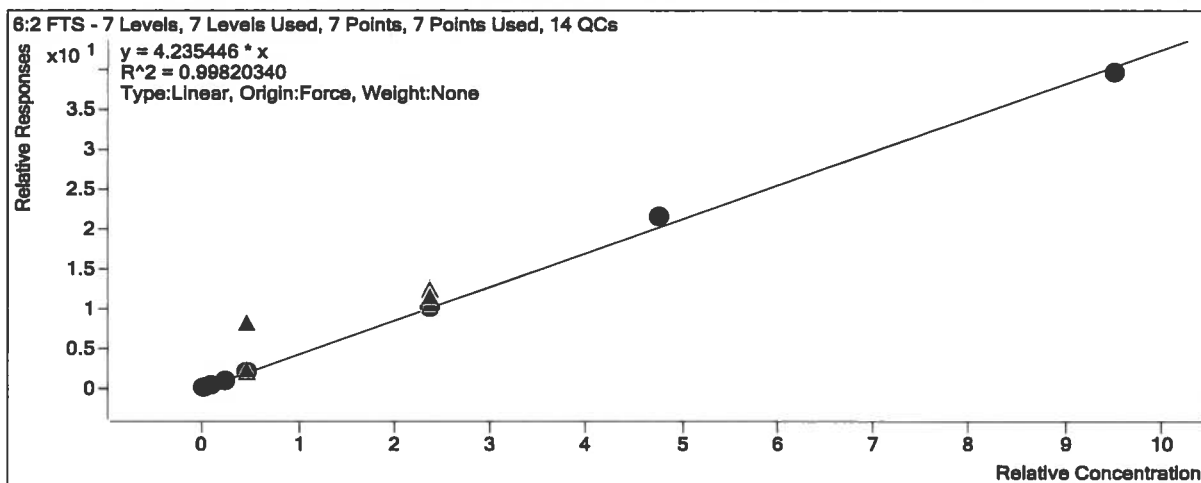
6:2 FTS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

$y = 4.235446 * x$
$R^2 = 0.99820340$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M8PFOA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	39938	20.0000	1996.8763
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	47086	20.0000	2354.3210
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	48838	20.0000	2441.9000
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	47159	20.0000	2357.9707
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	43262	20.0000	2163.1044
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	45050	20.0000	2252.4854
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	42067	20.0000	2103.3617

Instrument ISTD   M2PFOA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	196535	20.0000	9826.7711
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	217937	20.0000	10896.8614
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	231819	20.0000	11590.9652
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	207778	20.0000	10388.9084
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	210365	20.0000	10518.2324
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	211304	20.0000	10565.1888
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	196650	20.0000	9832.4855

Quantitative Analysis Calibration Report
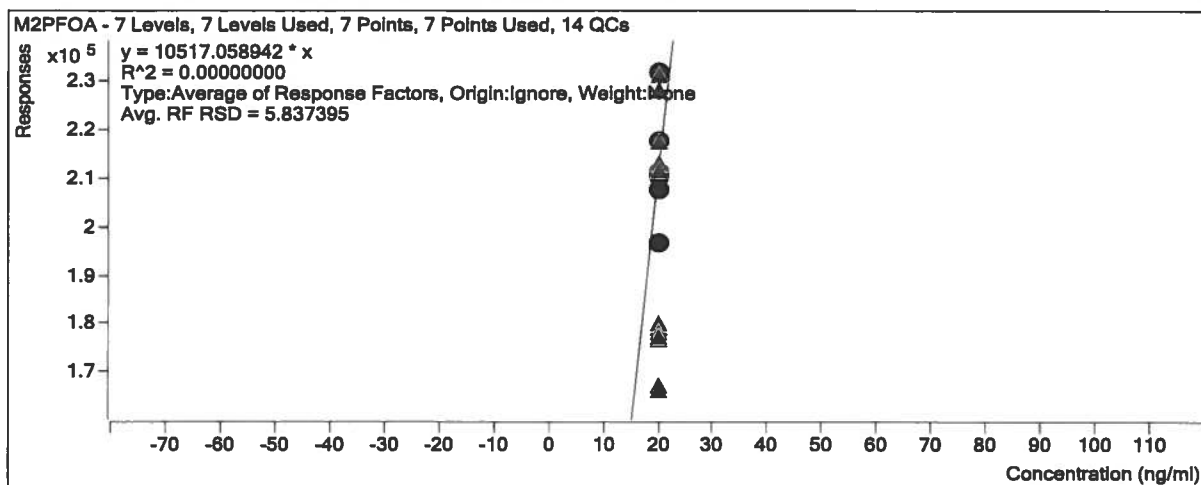
M2PFOA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 10517.058942 * x
R^2 = 0.00000000
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 5.837395

Target Compound PFOA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	3738	0.5000	3.7438
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	13787	2.0000	2.9281
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	39804	5.0000	3.2601
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	76060	10.0000	3.2257
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	368615	50.0000	3.4082
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	840208	100.0000	3.7301
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	1602262	200.0000	3.8088

PFOA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 3.773397 * x
R^2 = 0.99908919
Type:Linear, Origin:Force, Weight:None

Target Compound LPFHpS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	1541269	190.0000	3.8567
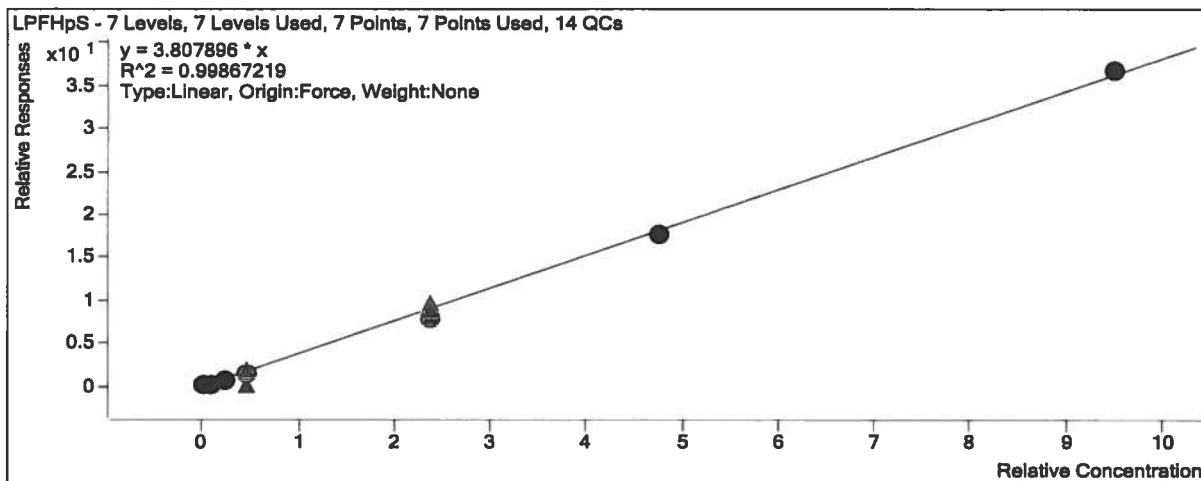
LPFHpS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 3.807896 * x
R^2 = 0.99867219
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M9PFNA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	46442	20.0000	2322.1237
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	54610	20.0000	2730.4976
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	56918	20.0000	2845.9040
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	53898	20.0000	2694.8946
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	50063	20.0000	2503.1403
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	51417	20.0000	2570.8387
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	46544	20.0000	2327.2149

Target Compound   PFNA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	3066	0.5000	2.6404
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	13358	2.0000	2.4461
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	38165	5.0000	2.6821
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	76425	10.0000	2.8359
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	364682	50.0000	2.9138
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	832489	100.0000	3.2382
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	1591399	200.0000	3.4191

Quantitative Analysis Calibration Report
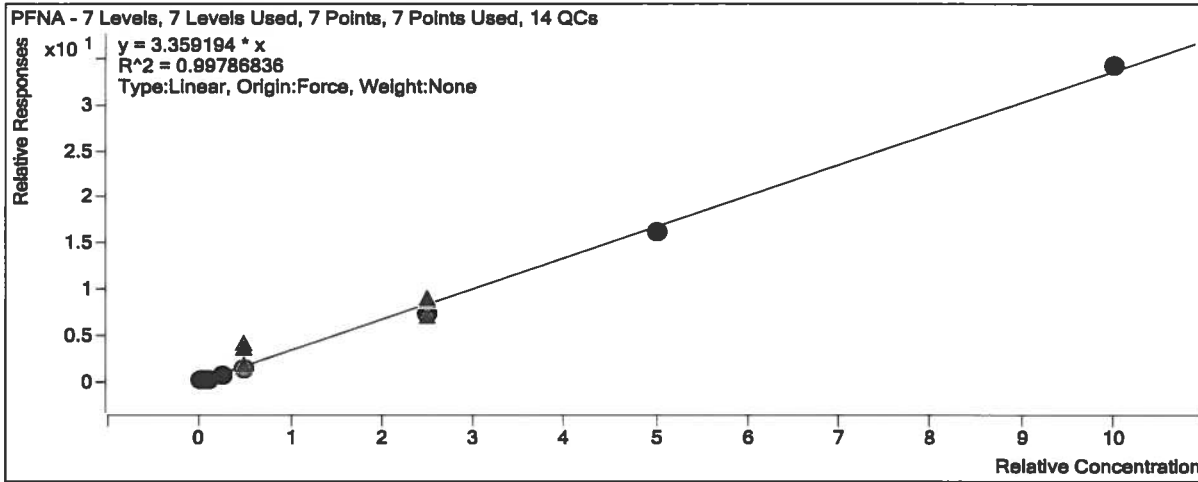
PFNA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 3.359194 * x
R^2 = 0.99786836
Type:Linear, Origin:Force, Weight:None

Instrument ISTD M4PFOS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	181078	20.0000	9053.8786
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	205541	20.0000	10277.0430
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	225547	20.0000	11277.3342
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	199953	20.0000	9997.6314
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	201340	20.0000	10066.9917
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	206693	20.0000	10334.6587
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	187465	20.0000	9373.2373

M4PFOS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 10054.396394 * x
R^2 = 0.00000000
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 7.139938

Target Compound PFOS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	1575861	185.1000	4.4437
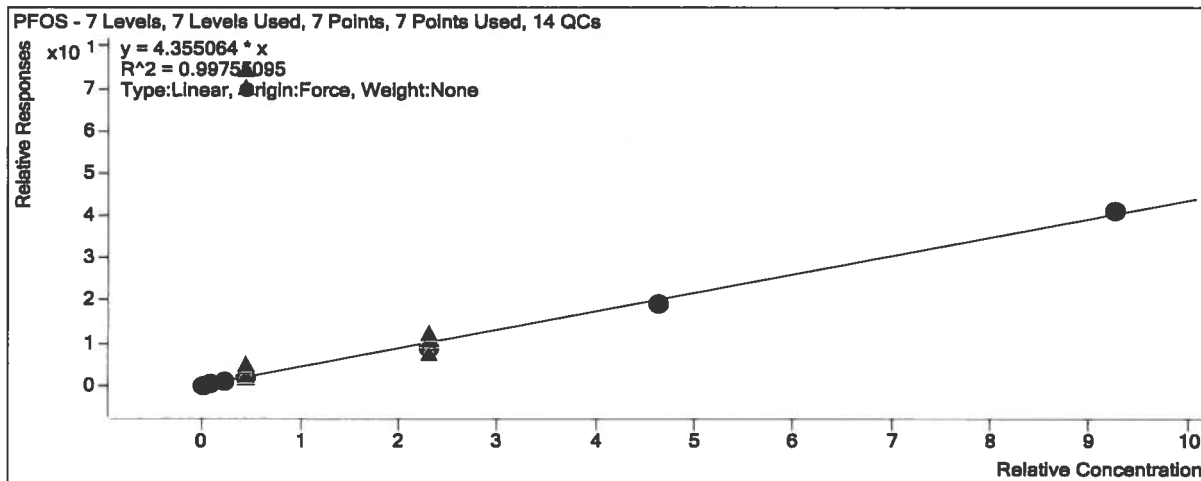
PFOS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

$y = 4.355064 * x$
$R^2 = 0.99755095$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   *M8PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	35448	20.0000	1772.3887
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	42467	20.0000	2123.3256
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	45657	20.0000	2282.8549
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	42402	20.0000	2120.0957
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	39919	20.0000	1995.9256
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	42025	20.0000	2101.2642
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	38317	20.0000	1915.8607

Extracted ISTD   *M2 8:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	10088	20.0000	504.3885
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	12225	20.0000	611.2636
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	13711	20.0000	685.5444
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	12135	20.0000	606.7338
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	11266	20.0000	563.3118
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	11827	20.0000	591.3474
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	11755	20.0000	587.7422

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	28408	9.6000	4.8772
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	127321	48.0000	4.7088
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	281385	96.0000	4.9566
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	520500	192.0000	4.6125
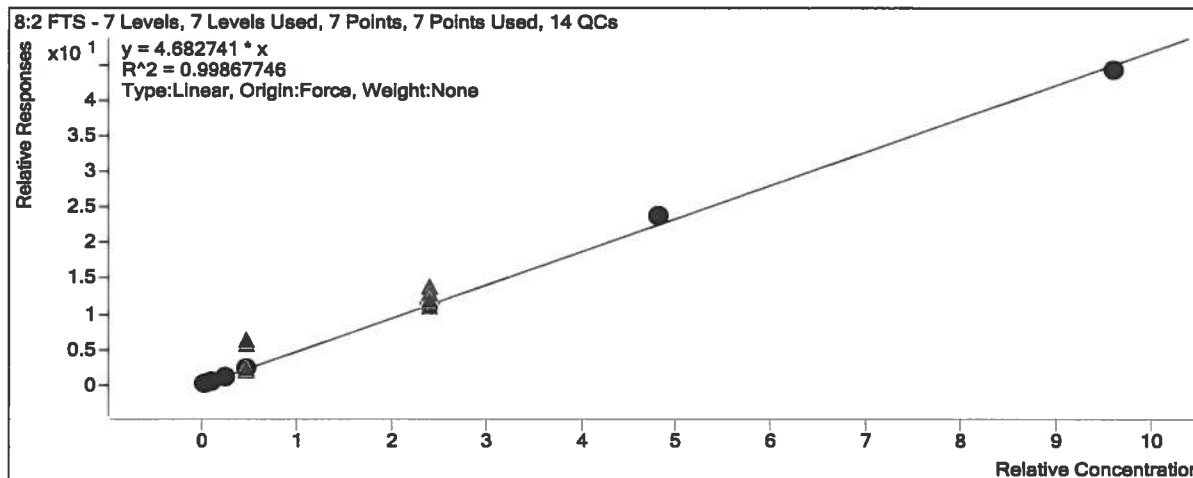
8:2 FTS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
$y = 4.682741 * x$
$R^2 = 0.99867746$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD M6PFDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	44236	20.0000	2211.8099
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	48434	20.0000	2421.6880
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	52747	20.0000	2637.3426
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	49673	20.0000	2483.6292
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	46366	20.0000	2318.2857
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	46562	20.0000	2328.1076
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	41728	20.0000	2086.4195

Instrument ISTD M2PFDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	202828	20.0000	10141.4041
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	226735	20.0000	11336.7635
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	232157	20.0000	11607.8698
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	202828	20.0000	10141.3808

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	209220	20.0000	10460.9802
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	208422	20.0000	10421.0959
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	185176	20.0000	9258.7904
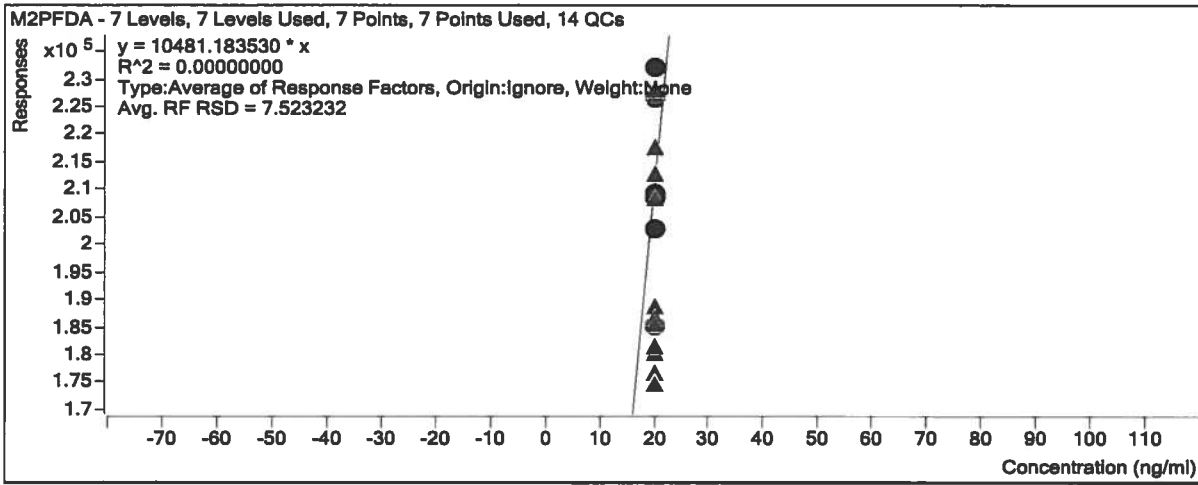
M2PFDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 10481.183530 * x
R^2 = 0.00000000
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 7.523232

Target Compound   PFDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	3522	0.5000	3.1851
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	12517	2.0000	2.5844
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	38272	5.0000	2.9023
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	70105	10.0000	2.8227
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	349308	50.0000	3.0135
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	780173	100.0000	3.3511
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	1480663	200.0000	3.5483
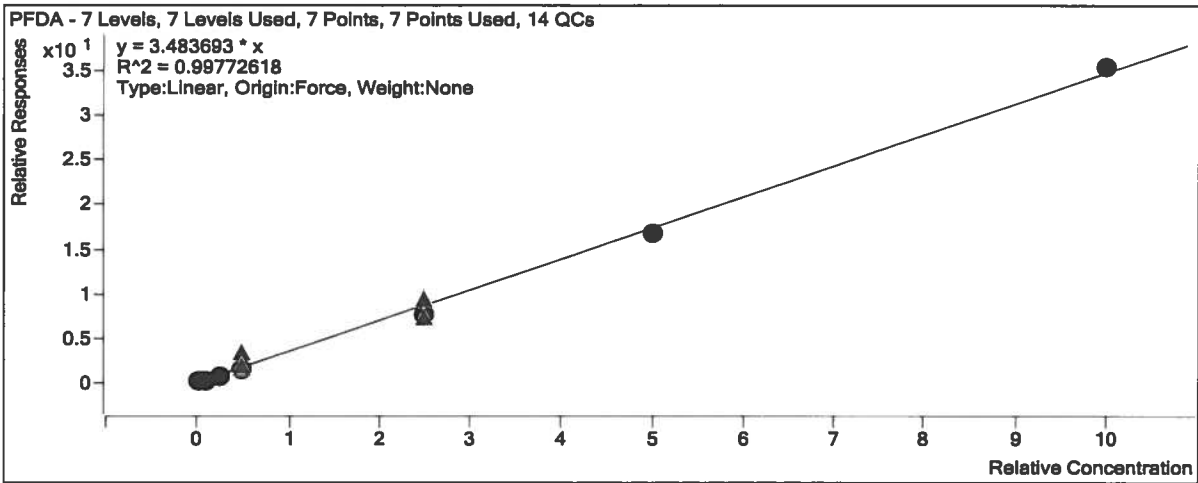
PFDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 3.483693 * x
R^2 = 0.99772618
Type:Linear, Origin:Force, Weight:None

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	1512271	192.0000	3.3845
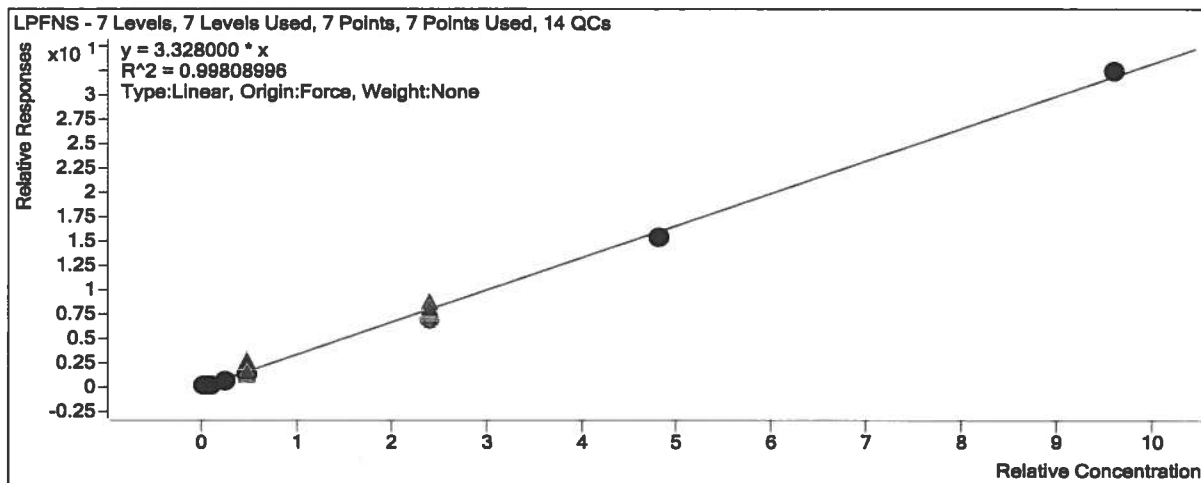
LPFNS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 3.328000 * x
R^2 = 0.99808996
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   d3-NMeFOSAA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	5441	20.0000	272.0698
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	7006	20.0000	350.2917
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	7877	20.0000	393.8400
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	7328	20.0000	366.4075
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	7372	20.0000	368.5928
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	8183	20.0000	409.1738
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	8595	20.0000	429.7328

Target Compound   NMeFOSAA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	1221	0.5000	8.9751
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	4479	2.0000	6.3936
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	13206	5.0000	6.7062
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	27385	10.0000	7.4738
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	132551	50.0000	7.1923
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	300518	100.0000	7.3445
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	612040	200.0000	7.1212

Quantitative Analysis Calibration Report
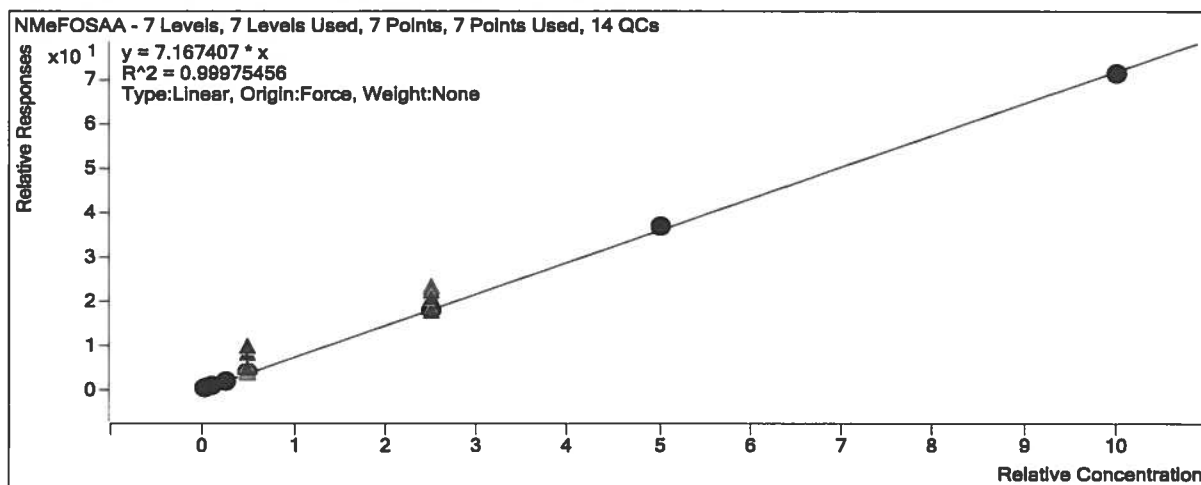
NMeFOSAA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 7.167407 * x
R^2 = 0.99975456
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M8FOSA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	49476	20.0000	2473.8044
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	60616	20.0000	3030.8243
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	66625	20.0000	3331.2674
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	62046	20.0000	3102.2823
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	58893	20.0000	2944.6296
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	63837	20.0000	3191.8649
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	60978	20.0000	3048.9003

Target Compound   FOSA-I

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	4093	0.5000	3.3090
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	17143	2.0000	2.8280
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	50838	5.0000	3.0522
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	100085	10.0000	3.2262
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	478175	50.0000	3.2478
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	1115922	100.0000	3.4961
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	2232231	200.0000	3.6607

Quantitative Analysis Calibration Report
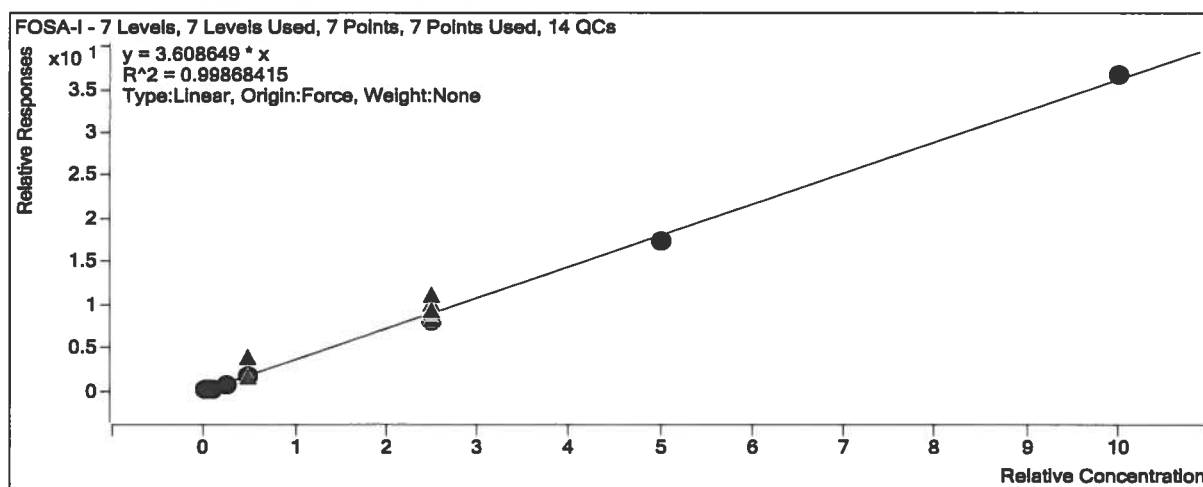
FOSA-I - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 3.608649 * x
R^2 = 0.99868415
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   *d5-NEtFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	9501	20.0000	475.0729
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	10799	20.0000	539.9649
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	12251	20.0000	612.5718
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	11848	20.0000	592.4063
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	10579	20.0000	528.9646
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	10947	20.0000	547.3446
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	10327	20.0000	516.3265

Target Compound   *NEtFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	1009	0.5000	4.2484
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	3871	2.0000	3.5847
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	12366	5.0000	4.0374
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	23956	10.0000	4.0439
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	120298	50.0000	4.5484
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	273479	100.0000	4.9965
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	530729	200.0000	5.1395

Quantitative Analysis Calibration Report
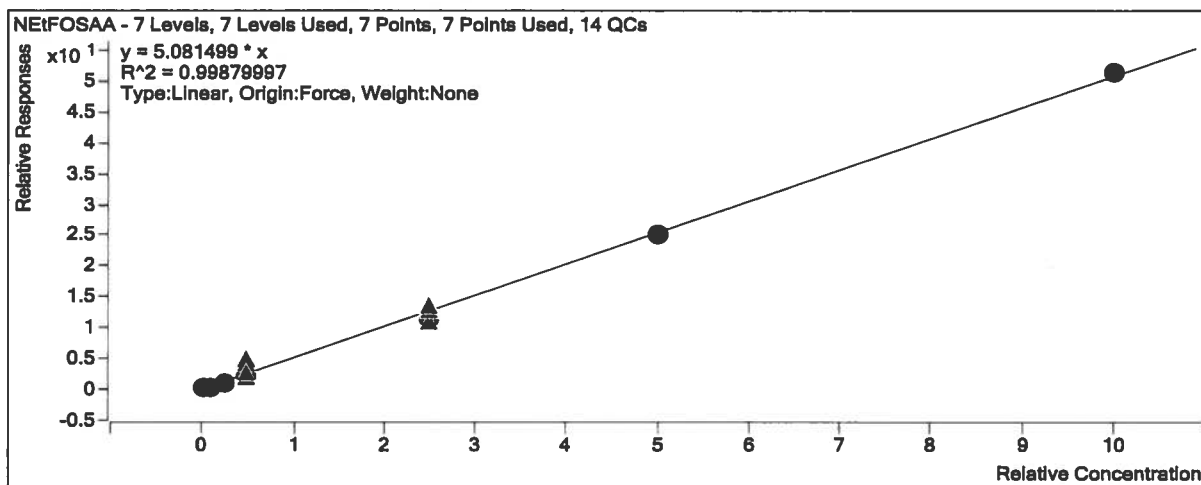
NEtFOSAA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 5.081499 * x
R^2 = 0.99879997
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M7PFUdA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	36196	20.0000	1809.7961
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	40659	20.0000	2032.9680
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	44428	20.0000	2221.3915
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	39406	20.0000	1970.3226
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	36624	20.0000	1831.2096
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	39455	20.0000	1972.7452
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	36014	20.0000	1800.6880

Target Compound   PFUdA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	2583	0.5000	2.8549
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	10548	2.0000	2.5942
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	30740	5.0000	2.7677
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	62806	10.0000	3.1876
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	291049	50.0000	3.1788
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	652471	100.0000	3.3074
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	1262335	200.0000	3.5051

Quantitative Analysis Calibration Report
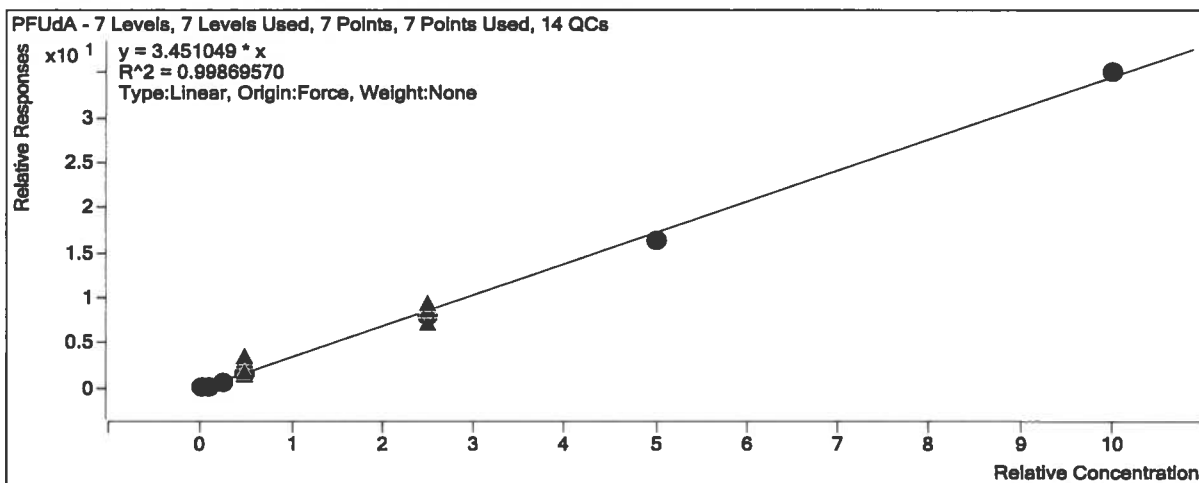
PFUdA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

x10 1

y = 3.451049 * x
R^2 = 0.99869570
Type:Linear, Origin:Force, Weight:None

Relative Responses / Relative Concentration

Target Compound — LPFDS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	3098	0.4825	2.9029
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	13243	1.9300	2.8334
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	38482	4.8250	3.0241
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	75311	9.6500	3.1423
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	355119	48.2500	3.1747
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	811294	96.5000	3.6112
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	1551077	193.0000	3.8519

LPFDS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

x10 1

y = 3.772166 * x
R^2 = 0.99702817
Type:Linear, Origin:Force, Weight:None

Relative Responses / Relative Concentration

Extracted ISTD — MPFDoA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	27660	20.0000	1383.0216

Target Compound *PFDoA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	1982	0.5000	2.8754
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	7668	2.0000	2.4965
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	21734	5.0000	2.9134
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	43001	10.0000	3.1164
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	212217	50.0000	2.9825
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	483547	100.0000	3.2819
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	955512	200.0000	3.4544
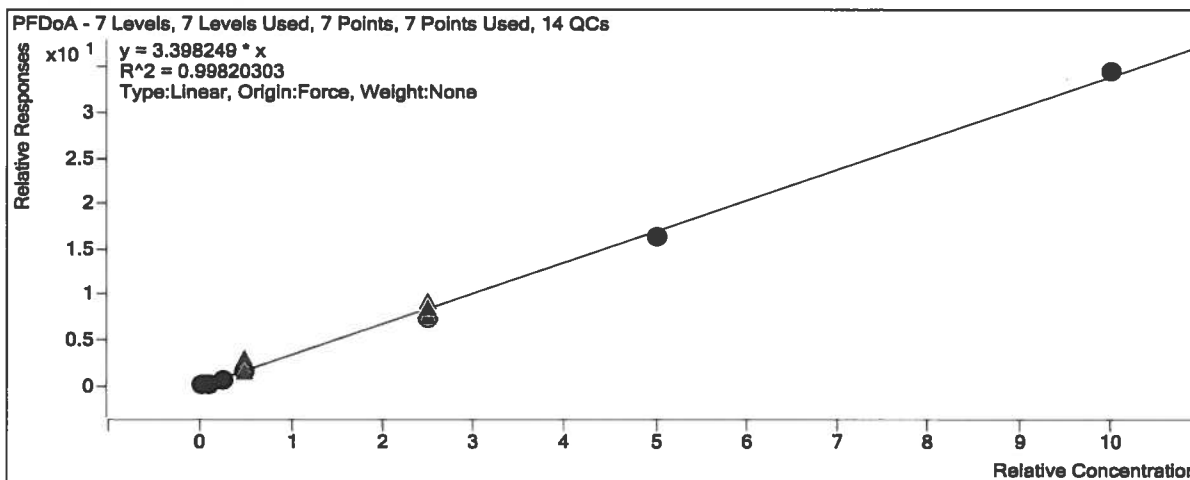
PFDoA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

$y = 3.398249 * x$
$R^2 = 0.99820303$
Type:Linear, Origin:Force, Weight:None

(x-axis: Relative Concentration; y-axis: Relative Responses, ×10^1)

Target Compound *PFTrDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	1473	0.5000	3.0340
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	6095	2.0000	2.8954
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	17918	5.0000	3.3564
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	34532	10.0000	3.1667
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	162874	50.0000	3.0954
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	376976	100.0000	3.6370
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	760511	200.0000	3.7356

Quantitative Analysis Calibration Report
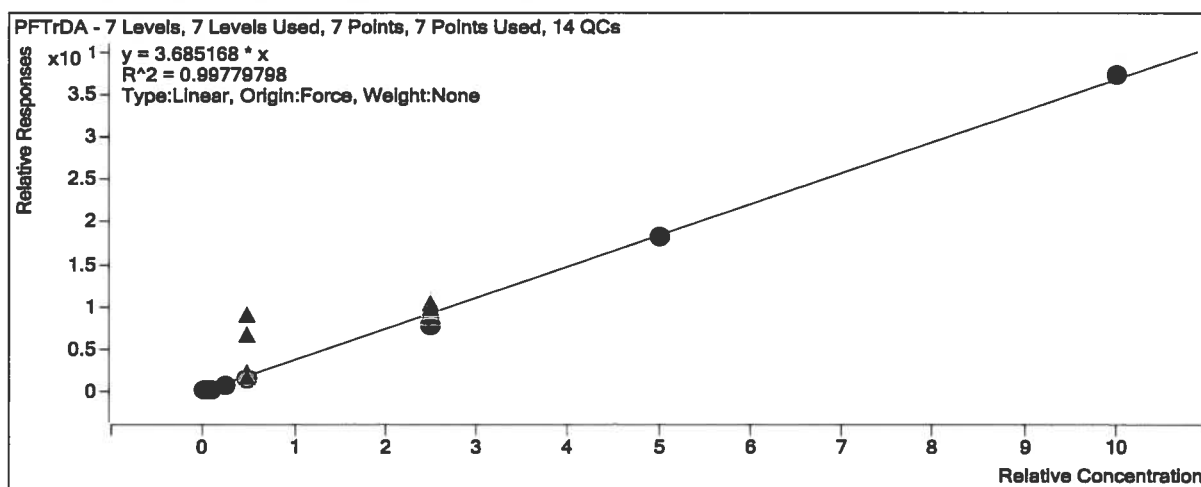
PFTrDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 3.685168 * x
R^2 = 0.99779798
Type:Linear, Origin:Force, Weight:None

Relative Responses (x10 ¹): 0, 0.5, 1, 1.5, 2, 2.5, 3, 3.5
Relative Concentration: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Extracted ISTD · M2PFTeDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	19420	20.0000	971.0237
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	21051	20.0000	1052.5276
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	21354	20.0000	1067.6865
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	21809	20.0000	1090.4734
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	21047	20.0000	1052.3601
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	20730	20.0000	1036.4940
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	20358	20.0000	1017.9100

Target Compound · PFTeDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190510BICAL\2190510B_01.d	Calibration	1	☑	1603	0.5000	3.3011
D:\MassHunter\Data\2190510BICAL\2190510B_02.d	Calibration	2	☑	5226	2.0000	2.4827
D:\MassHunter\Data\2190510BICAL\2190510B_03.d	Calibration	3	☑	14554	5.0000	2.7263
D:\MassHunter\Data\2190510BICAL\2190510B_04.d	Calibration	4	☑	28292	10.0000	2.5945
D:\MassHunter\Data\2190510BICAL\2190510B_05.d	Calibration	5	☑	138258	50.0000	2.6276
D:\MassHunter\Data\2190510BICAL\2190510B_06.d	Calibration	6	☑	325956	100.0000	3.1448
D:\MassHunter\Data\2190510BICAL\2190510B_07.d	Calibration	7	☑	633552	200.0000	3.1120

Quantitative Analysis Calibration Report

PFTeDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 3.094025 * x
R^2 = 0.99812686
Type:Linear, Origin:Force, Weight:None

LCMS1 Run Log

Name	Data File	Type	Acq. Date-Time	Dil.
1201	2190510B_01.d	Cal	5/10/2019 13:12	1
1202	2190510B_02.d	Cal	5/10/2019 13:23	1
1203	2190510B_03.d	Cal	5/10/2019 13:34	1
1204	2190510B_04.d	Cal	5/10/2019 13:46	1
1205	2190510B_05.d	Cal	5/10/2019 13:57	1
1206	2190510B_06.d	Cal	5/10/2019 14:08	1
1207	2190510B_07.d	Cal	5/10/2019 14:20	1
1600	2190510B_09.d	QC	5/10/2019 14:42	1
1450	2190510B_10.d	Sample	5/10/2019 14:54	1
1500	2190510B_11.d	Sample	5/10/2019 15:05	1
21905013526	2190510B_12.d	Sample	5/10/2019 15:17	1
21905013527	2190510B_13.d	Sample	5/10/2019 15:28	1
21905013528	2190510B_14.d	Sample	5/10/2019 15:39	1
21905013529	2190510B_15.d	Sample	5/10/2019 15:51	5
21905013530	2190510B_16.d	Sample	5/10/2019 16:02	1
21905013532	2190510B_18.d	Sample	5/10/2019 16:25	1
21905013535	2190510B_19.d	Sample	5/10/2019 16:36	1
21904300201	2190510B_20.d	Sample	5/10/2019 16:48	1
1400	2190510B_21.d	QC	5/10/2019 16:59	1
21904290102	2190510B_22.d	Sample	5/10/2019 17:10	1
21904290103	2190510B_23.d	Sample	5/10/2019 17:21	1
21904290105	2190510B_24.d	Sample	5/10/2019 17:33	1
21904290110	2190510B_25.d	Sample	5/10/2019 17:44	1
21904290114	2190510B_26.d	Sample	5/10/2019 17:56	1
21904290116	2190510B_27.d	Sample	5/10/2019 18:07	5
21905010701	2190510B_28.d	Sample	5/10/2019 18:18	500
21905010702	2190510B_29.d	Sample	5/10/2019 18:30	500
21905010703	2190510B_30.d	Sample	5/10/2019 18:41	50
21905010704	2190510B_31.d	Sample	5/10/2019 18:53	20
1400	2190510B_32.d	QC	5/10/2019 19:04	1
1922242	2190510B_33.d	Sample	5/10/2019 19:15	1
1922245	2190510B_34.d	Sample	5/10/2019 19:27	1
1923791	2190510B_35.d	Sample	5/10/2019 19:38	1
1922243	2190510B_36.d	QC	5/10/2019 19:49	1
1922244	2190510B_37.d	QC	5/10/2019 20:01	1
1922246	2190510B_38.d	QC	5/10/2019 20:12	1
1922247	2190510B_39.d	QC	5/10/2019 20:24	1
1923792	2190510B_40.d	QC	5/10/2019 20:35	1
1923793	2190510B_41.d	QC	5/10/2019 20:46	1
1400	2190510B_42.d	QC	5/10/2019 20:58	1
21905013531	2190510B_43.d	Sample	5/10/2019 21:09	1
21905013536	2190510B_44.d	Sample	5/10/2019 21:20	1
21905013537	2190510B_45.d	Sample	5/10/2019 21:32	1
21905013538	2190510B_46.d	Sample	5/10/2019 21:43	1
21905013539	2190510B_47.d	Sample	5/10/2019 21:55	1

21905013540	2190510B_48.d	Sample	5/10/2019 22:06	1
21905013541	2190510B_49.d	Sample	5/10/2019 22:17	1
21905013544	2190510B_50.d	Sample	5/10/2019 22:29	1
21905013545	2190510B_51.d	Sample	5/10/2019 22:40	1
21905013546	2190510B_52.d	Sample	5/10/2019 22:52	1
1400	2190510B_53.d	QC	5/10/2019 23:03	1
21905013547	2190510B_54.d	Sample	5/10/2019 23:14	1
21905013548	2190510B_55.d	Sample	5/10/2019 23:26	1
21905013549	2190510B_56.d	Sample	5/10/2019 23:37	1
21905013550	2190510B_57.d	Sample	5/10/2019 23:49	1
21905013551	2190510B_58.d	Sample	5/11/2019 0:00	1
21905013552	2190510B_59.d	Sample	5/11/2019 0:11	1
21905013553	2190510B_60.d	Sample	5/11/2019 0:23	1
21905013554	2190510B_61.d	Sample	5/11/2019 0:34	1
21905013555	2190510B_62.d	Sample	5/11/2019 0:46	1
1400	2190510B_63.d	QC	5/11/2019 0:57	1
21905013556	2190510B_64.d	Sample	5/11/2019 1:08	1
21905013501	2190510B_65.d	Sample	5/11/2019 1:20	1
21905013514	2190510B_67.d	Sample	5/11/2019 1:42	1
21905013515	2190510B_68.d	Sample	5/11/2019 1:54	1
21905013516	2190510B_69.d	Sample	5/11/2019 2:05	1
21905013517	2190510B_70.d	Sample	5/11/2019 2:17	1
21905013518	2190510B_71.d	Sample	5/11/2019 2:28	1
21905013519	2190510B_72.d	Sample	5/11/2019 2:40	1
1400	2190510B_73.d	QC	5/11/2019 2:51	1
21905013520	2190510B_74.d	Sample	5/11/2019 3:02	1
21905013521	2190510B_75.d	Sample	5/11/2019 3:13	1
21905013522	2190510B_76.d	Sample	5/11/2019 3:25	1
21905013523	2190510B_77.d	Sample	5/11/2019 3:36	1
21905013524	2190510B_78.d	Sample	5/11/2019 3:48	1
21905013525	2190510B_79.d	Sample	5/11/2019 3:59	1
21905013533	2190510B_80.d	Sample	5/11/2019 4:11	1
21905013534	2190510B_81.d	Sample	5/11/2019 4:22	1
21905013542	2190510B_82.d	Sample	5/11/2019 4:33	1
1400	2190510B_83.d	QC	5/11/2019 4:44	1
21905013543	2190510B_84.d	Sample	5/11/2019 4:56	1
21905013561	2190510B_85.d	Sample	5/11/2019 5:07	1
21905013562	2190510B_86.d	Sample	5/11/2019 5:18	1
21905013563	2190510B_87.d	Sample	5/11/2019 5:30	1
21905022601	2190510B_88.d	Sample	5/11/2019 5:41	1
21905022602	2190510B_89.d	Sample	5/11/2019 5:52	1
21905022603	2190510B_90.d	QC	5/11/2019 6:04	1
21905022604	2190510B_91.d	QC	5/11/2019 6:15	1
21905022605	2190510B_92.d	Sample	5/11/2019 6:26	1
1400	2190510B_93.d	QC	5/11/2019 6:38	1

Analyst: BMH   Expiration

Report No:	219051112			Instrument ID:	QQQ1		
Analysis Date:	05/10/2019 14:42			Lab File ID:	2190510B_09.d		
Analytical Method:	EPA 537 Modified			Analytical Batch:	659912		

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	46400	99	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	50300	106	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	47500	99	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	46400	93	70	130	
NEtFOSAA	ng/L	50000	44300	89	70	130	
NMeFOSAA	ng/L	50000	50300	101	70	130	
Perfluorobutanoic acid	ng/L	50000	64900	130	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	44200	100	70	130	
Perfluorodecanoic acid	ng/L	50000	42900	86	70	130	
Perfluorodecane Sulfonate	ng/L	48300	39200	81	70	130	
Perfluorododecanoic acid	ng/L	50000	44600	89	70	130	
Perfluoroheptanoic acid	ng/L	50000	45800	92	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	43400	91	70	130	
Perfluorohexanoic acid	ng/L	50000	45900	92	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	48900	107	70	130	
Perfluorononanoic acid	ng/L	50000	43200	86	70	130	
PFNS	ng/L	48000	43600	91	70	130	
Perfluorooctanoic acid	ng/L	50000	45600	91	70	130	
Perfluorooctane Sulfonate	ng/L	46300	44100	95	70	130	
Perfluoropentanoic acid	ng/L	50000	58800	118	70	130	
PFPeS	ng/L	47000	44700	95	70	130	
Perfluorotetradecanoic acid	ng/L	50000	50200	100	70	130	
Perfluorotridecanoic acid	ng/L	50000	47300	95	70	130	
Perfluoroundecanoic acid	ng/L	50000	42500	85	70	130	

FORM 6I - ORG

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	05/10/2019 14:54		Lab File ID:	2190510B_10.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	659912

ANALYTE	UNITS	TRUE	FOUND	% REC ✓	LCL	UCL	Q
4:2 FTS	ng/L	7.80	6.32	81	70	130	
6:2 Fluorotelomer sulfonate	ng/L	7.93	5.86	74	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	7.00	88	70	130	
Perfluorooctane Sulfonamide	ng/L	8.33	6.87	83	70	130	
NEtFOSAA	ng/L	8.33	6.59	79	70	130	
NMeFOSAA	ng/L	8.33	8.67	104	70	130	
Perfluorobutanoic acid	ng/L	8.33	6.73	81	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	5.87	80	70	130	
Perfluorodecanoic acid	ng/L	8.33	6.50	78	70	130	
Perfluorodecane Sulfonate	ng/L	8.07	5.97	74	70	130	
Perfluorododecanoic acid	ng/L	8.33	6.60	79	70	130	
Perfluoroheptanoic acid	ng/L	8.33	6.80	81	70	130	
Perfluoro-1-heptanesulfonate	ng/L	7.93	6.33	80	70	130	
Perfluorohexanoic acid	ng/L	8.33	7.07	85	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	6.73	88	70	130	
Perfluorononanoic acid	ng/L	8.33	6.49	78	70	130	
PFNS	ng/L	8.00	6.63	83	70	130	
Perfluorooctanoic acid	ng/L	8.33	7.00	84	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	8.27	107	70	130	
Perfluoropentanoic acid	ng/L	8.33	5.91	71	70	130	
PFPeS	ng/L	7.87	6.26	80	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	7.40	89	70	130	
Perfluorotridecanoic acid	ng/L	8.33	7.13	86	70	130	
Perfluoroundecanoic acid	ng/L	8.33	6.61	79	70	130	

FORM 7S - ORG

ORGANICS INSTRUMENT BLANK

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	05/10/2019 15:05		Lab File ID:	2190510B_11.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	659912

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
4:2 FTS	ng/L	4.00	U	1.52	4.00	10.0	
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
PFNS	ng/L	4.00	U	2.11	4.00	10.0	
PFPeS	ng/L	4.00	U	2.07	4.00	10.0	
Perfluoro-1-heptanesulfonate	ng/L	4.00	U	2.01	4.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecane Sulfonate	ng/L	4.00	U	2.17	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonamide	ng/L	4.00	U	2.63	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

FORM 4I - ORG

LCMS1 Run Log

Name	Data File	Type	Acq. Date-Time	Dil.
1201	2190510B_01.d	Cal	5/10/2019 13:12	1
1202	2190510B_02.d	Cal	5/10/2019 13:23	1
1203	2190510B_03.d	Cal	5/10/2019 13:34	1
1204	2190510B_04.d	Cal	5/10/2019 13:46	1
1205	2190510B_05.d	Cal	5/10/2019 13:57	1
1206	2190510B_06.d	Cal	5/10/2019 14:08	1
1207	2190510B_07.d	Cal	5/10/2019 14:20	1
1600	2190510B_09.d	QC	5/10/2019 14:42	1
1450	2190510B_10.d	Sample	5/10/2019 14:54	1
1500	2190510B_11.d	Sample	5/10/2019 15:05	1
1500	2190517A_01.d	Sample	5/17/2019 16:44	1
1600	2190517A_02.d	QC	5/17/2019 16:55	1
1450	2190517A_03.d	Sample	5/17/2019 17:07	1
21905022615 (DIL)	2190517A_04.d	Sample	5/17/2019 17:18	5
21905022616 (DIL)	2190517A_05.d	Sample	5/17/2019 17:29	5
21905022617 (DIL)	2190517A_06.d	QC	5/17/2019 17:41	5
21905022618 (DIL)	2190517A_07.d	QC	5/17/2019 17:52	5
21905022619(DIL)	2190517A_08.d	Sample	5/17/2019 18:03	5
1400	2190517A_09.d	QC	5/17/2019 18:15	1
21905097617	2190517A_11.d	Sample	5/17/2019 18:36	1
1926322	2190517A_12.d	Sample	5/17/2019 18:48	1
1926323	2190517A_13.d	QC	5/17/2019 18:59	1
1926324	2190517A_14.d	QC	5/17/2019 19:11	1
21905097601	2190517A_15.d	Sample	5/17/2019 19:22	1
21905097602	2190517A_16.d	Sample	5/17/2019 19:33	1
1400	2190517A_35.d	QC	5/17/2019 20:08	1
1926334	2190517A_37.d	Sample	5/17/2019 20:29	1
1926335	2190517A_38.d	QC	5/17/2019 20:40	1
1926336	2190517A_39.d	QC	5/17/2019 20:52	1
21905111212	2190517A_40.d	Sample	5/17/2019 21:03	1
21905111225	2190517A_41.d	Sample	5/17/2019 21:15	1
21905111226	2190517A_42.d	Sample	5/17/2019 21:26	1
21905111227	2190517A_43.d	Sample	5/17/2019 21:38	1
21905111228	2190517A_44.d	Sample	5/17/2019 21:49	1
1400	2190517A_45.d	QC	5/17/2019 22:00	1
21905111229	2190517A_46.d	Sample	5/17/2019 22:12	1
21905111230	2190517A_47.d	QC	5/17/2019 22:23	1
21905111231	2190517A_48.d	QC	5/17/2019 22:35	1
21905111232	2190517A_49.d	Sample	5/17/2019 22:46	1
21905111233	2190517A_50.d	Sample	5/17/2019 22:57	1
21905111238	2190517A_51.d	Sample	5/17/2019 23:09	1
21905111241	2190517A_52.d	Sample	5/17/2019 23:20	1
21905111242	2190517A_53.d	Sample	5/17/2019 23:31	1
21905111243	2190517A_54.d	Sample	5/17/2019 23:43	1
1400	2190517A_55.d	QC	5/17/2019 23:54	1

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	05/17/2019 16:44		Lab File ID:	2190517A_01.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	660401

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
4:2 FTS	ng/L	4.00	U	1.52	4.00	10.0	
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
PFNS	ng/L	4.00	U	2.11	4.00	10.0	
PFPeS	ng/L	4.00	U	2.07	4.00	10.0	
Perfluoro-1-heptanesulfonate	ng/L	4.00	U	2.01	4.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecane Sulfonate	ng/L	4.00	U	2.17	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonamide	ng/L	4.00	U	2.63	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

FORM 4I - ORG

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219051112	Instrument ID:	QQQ1
Analysis Date:	05/17/2019 17:07	Lab File ID:	2190517A_03.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	660401

ANALYTE	UNITS	TRUE	FOUND	% REC /	LCL	UCL	Q
4:2 FTS	ng/L	7.80	7.93	102	70	130	
6:2 Fluorotelomer sulfonate	ng/L	7.93	9.20	116	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	9.00	113	70	130	
Perfluorooctane Sulfonamide	ng/L	8.33	6.73	81	70	130	
NEtFOSAA	ng/L	8.33	7.47	90	70	130	
NMeFOSAA	ng/L	8.33	9.80	117	70	130	
Perfluorobutanoic acid	ng/L	8.33	8.00	96	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	6.60	89	70	130	
Perfluorodecanoic acid	ng/L	8.33	6.87	83	70	130	
Perfluorodecane Sulfonate	ng/L	8.07	6.80	85	70	130	
Perfluorododecanoic acid	ng/L	8.33	8.07	97	70	130	
Perfluoroheptanoic acid	ng/L	8.33	7.53	90	70	130	
Perfluoro-1-heptanesulfonate	ng/L	7.93	6.59	83	70	130	
Perfluorohexanoic acid	ng/L	8.33	7.73	93	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	6.73	89	70	130	
Perfluorononanoic acid	ng/L	8.33	7.27	87	70	130	
PFNS	ng/L	8.00	5.85	73	70	130	
Perfluorooctanoic acid	ng/L	8.33	7.40	89	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	8.47	110	70	130	
Perfluoropentanoic acid	ng/L	8.33	7.87	94	70	130	
PFPeS	ng/L	7.87	6.73	86	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	8.67	104	70	130	
Perfluorotridecanoic acid	ng/L	8.33	8.20	99	70	130	
Perfluoroundecanoic acid	ng/L	8.33	7.73	93	70	130	

FORM 7S - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112			Instrument ID:	QQQ1		
Analysis Date:	05/17/2019 20:08			Lab File ID:	2190517A_35.d		
Analytical Method:	EPA 537 Modified			Analytical Batch:	660401		

ANALYTE	UNITS	TRUE	FOUND	% REC /	LCL	UCL	Q
4:2 FTS	ng/L	46800	54900	118	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	58800	124	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	55000	115	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	61900	124	70	130	
NEtFOSAA	ng/L	50000	50700	101	70	130	
NMeFOSAA	ng/L	50000	62900	126	70	130	
Perfluorobutanoic acid	ng/L	50000	51400	103	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	54100	122	70	130	
Perfluorodecanoic acid	ng/L	50000	54700	109	70	130	
Perfluorodecane Sulfonate	ng/L	48300	45800	95	70	130	
Perfluorododecanoic acid	ng/L	50000	52000	104	70	130	
Perfluoroheptanoic acid	ng/L	50000	52500	105	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	46900	99	70	130	
Perfluorohexanoic acid	ng/L	50000	54400	109	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	50500	111	70	130	
Perfluorononanoic acid	ng/L	50000	55400	111	70	130	
PFNS	ng/L	48000	53500	111	70	130	
Perfluorooctanoic acid	ng/L	50000	55300	111	70	130	
Perfluorooctane Sulfonate	ng/L	46300	50700	109	70	130	
Perfluoropentanoic acid	ng/L	50000	50300	101	70	130	
PFPeS	ng/L	47000	47100	100	70	130	
Perfluorotetradecanoic acid	ng/L	50000	56200	112	70	130	
Perfluorotridecanoic acid	ng/L	50000	56500	113	70	130	
Perfluoroundecanoic acid	ng/L	50000	54200	108	70	130	

FORM 7E - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112	Instrument ID:	QQQ1
Analysis Date:	05/17/2019 22:00	Lab File ID:	2190517A_45.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	660401

ANALYTE	UNITS	TRUE	FOUND	% REC ✓	LCL	UCL	Q
4:2 FTS	ng/L	46800	48000	103	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	55700	117	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	51100	106	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	50500	101	70	130	
NEtFOSAA	ng/L	50000	50500	101	70	130	
NMeFOSAA	ng/L	50000	58800	118	70	130	
Perfluorobutanoic acid	ng/L	50000	51000	102	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	47000	106	70	130	
Perfluorodecanoic acid	ng/L	50000	53400	107	70	130	
Perfluorodecane Sulfonate	ng/L	48300	45500	94	70	130	
Perfluorododecanoic acid	ng/L	50000	52200	104	70	130	
Perfluoroheptanoic acid	ng/L	50000	52800	106	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	50600	107	70	130	
Perfluorohexanoic acid	ng/L	50000	53700	107	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	50300	110	70	130	
Perfluorononanoic acid	ng/L	50000	53000	106	70	130	
PFNS	ng/L	48000	48000	100	70	130	
Perfluorooctanoic acid	ng/L	50000	56400	113	70	130	
Perfluorooctane Sulfonate	ng/L	46300	56600	122	70	130	
Perfluoropentanoic acid	ng/L	50000	49900	100	70	130	
PFPeS	ng/L	47000	47800	102	70	130	
Perfluorotetradecanoic acid	ng/L	50000	54900	110	70	130	
Perfluorotridecanoic acid	ng/L	50000	53000	106	70	130	
Perfluoroundecanoic acid	ng/L	50000	51400	103	70	130	

FORM 7E - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112	Instrument ID:	QQQ1
Analysis Date:	05/17/2019 23:54	Lab File ID:	2190517A_55.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	660401

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	48600	104	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	54700	115	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	51300	107	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	52300	105	70	130	
NEtFOSAA	ng/L	50000	53300	107	70	130	
NMeFOSAA	ng/L	50000	57800	116	70	130	
Perfluorobutanoic acid	ng/L	50000	51200	102	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	46300	105	70	130	
Perfluorodecanoic acid	ng/L	50000	53700	107	70	130	
Perfluorodecane Sulfonate	ng/L	48300	47600	99	70	130	
Perfluorododecanoic acid	ng/L	50000	51300	103	70	130	
Perfluoroheptanoic acid	ng/L	50000	52400	105	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	47400	100	70	130	
Perfluorohexanoic acid	ng/L	50000	53400	107	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	50000	110	70	130	
Perfluorononanoic acid	ng/L	50000	53600	107	70	130	
PFNS	ng/L	48000	48400	101	70	130	
Perfluorooctanoic acid	ng/L	50000	53800	108	70	130	
Perfluorooctane Sulfonate	ng/L	46300	56600	122	70	130	
Perfluoropentanoic acid	ng/L	50000	51800	104	70	130	
PFPeS	ng/L	47000	47300	101	70	130	
Perfluorotetradecanoic acid	ng/L	50000	52900	106	70	130	
Perfluorotridecanoic acid	ng/L	50000	53700	107	70	130	
Perfluoroundecanoic acid	ng/L	50000	55400	111	70	130	

FORM 7E - ORG

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219051112		Standard ID:	1450 (ISC)
Analyst:	BMH		Instrument ID:	QQQ1
Analysis Date:	05/17/19 17:07		Lab File ID:	2190517A_03.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	660401

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		Area		Area		Area	
STANDARD		177429		581417		176202		168474	
CLIENT SAMPLE ID	**GCAL SAMP ID**	/	#	/	#	/	#	/	#
MB1926322	1926322	213675		741378		221652		214955	
LCS1926323	1926323	208579		712393		213156		211286	
LCSD1926324	1926324	217898		731883		211944		217931	
MB1926334	1926334	174649		539822		173922		169111	
LCS1926335	1926335	180385		565516		176911		174352	
LCSD1926336	1926336	185686		579035		180105		178721	
AOI-1-9-SD-0-1	21905111212	180816		539913		166164		166780	
AOI-1-6-SB-5-7	21905111225	173105		542304		166185		167835	
AOI-1-1-SB-5-7	21905111226	173281		539278		168225		168575	
AOI-1-5-SB-2-4	21905111227	175513		553896		175393		170352	
AOI-1-4-SB-8-10	21905111228	166454		537460		168017		169227	
AOI-1-5-SB-0-2	21905111229	173981		547504		166679		172806	
AOI-1-5-SB-0-2-MS	21905111230	176760		540553		167538		171775	
AOI-1-5-SB-0-2-MSD	21905111231	175128		538201		166567		167716	
AOI-1-4-SB-17-19	21905111232	182777		566704		173531		171044	
AOI-1-4-SB-17-19-DUP	21905111233	184140		565643		174945		175589	
AOI-1-2-SB-0-2	21905111238	174863		548312		170021		170516	
AOI-1-2-SB-2-4	21905111241	170010		537841		168703		170018	
AOI-2-2-SB-0-2	21905111242	166590		522453		158366		164109	
AOI-2-2-SB-2-4	21905111243	169025		544939		165403		162440	

AREA UPPER LIMIT = +50% of internal standard area   # Column used to flag values outside QC limits

AREA LOWER LIMIT = -50% of internal standard area   * Value outside QC limits

FORM 8I - ORG

Name	Data File	Type	Acq. Date-Time	Dil.
1201	2190510B_01.d	Cal	5/10/2019 13:12	1
1202	2190510B_02.d	Cal	5/10/2019 13:23	1
1203	2190510B_03.d	Cal	5/10/2019 13:34	1
1204	2190510B_04.d	Cal	5/10/2019 13:46	1
1205	2190510B_05.d	Cal	5/10/2019 13:57	1
1206	2190510B_06.d	Cal	5/10/2019 14:08	1
1207	2190510B_07.d	Cal	5/10/2019 14:20	1
1600	2190510B_09.d	QC	5/10/2019 14:42	1
1450	2190510B_10.d	Sample	5/10/2019 14:54	1
1500	2190510B_11.d	Sample	5/10/2019 15:05	1
1500	2190518A_01.d	Sample	5/18/2019 11:04	1
1600	2190518A_02.d	QC	5/18/2019 11:16	1
1450	2190518A_03.d	Sample	5/18/2019 11:27	1
21905097603	2190518A_04.d	Sample	5/18/2019 11:38	1
21905097604	2190518A_05.d	Sample	5/18/2019 11:50	1
21905097605	2190518A_06.d	Sample	5/18/2019 12:01	1
21905097606	2190518A_07.d	Sample	5/18/2019 12:12	1
21905097607	2190518A_08.d	Sample	5/18/2019 12:24	1
21905097608	2190518A_09.d	Sample	5/18/2019 12:35	1
21905097609	2190518A_10.d	Sample	5/18/2019 12:46	1
21905097610	2190518A_11.d	Sample	5/18/2019 12:58	1
21905097611	2190518A_12.d	Sample	5/18/2019 13:09	1
21905097612	2190518A_13.d	Sample	5/18/2019 13:21	1
1400	2190518A_14.d	QC	5/18/2019 13:32	1
21905097613	2190518A_15.d	Sample	5/18/2019 13:43	1
21905097614	2190518A_16.d	Sample	5/18/2019 13:55	1
21905097615	2190518A_17.d	Sample	5/18/2019 14:06	1
21905097616	2190518A_18.d	Sample	5/18/2019 14:18	1
21905111203	2190518A_19.d	Sample	5/18/2019 14:29	1
21905111204	2190518A_20.d	QC	5/18/2019 14:40	1
21905111205	2190518A_21.d	QC	5/18/2019 14:52	1
21905111207	2190518A_22.d	Sample	5/18/2019 15:03	10
21905111208	2190518A_23.d	Sample	5/18/2019 15:14	10
21905111209	2190518A_24.d	Sample	5/18/2019 15:26	1
21905111210	2190518A_25.d	QC	5/18/2019 15:37	1
21905111211	2190518A_26.d	QC	5/18/2019 15:48	1
1400	2190518A_27.d	QC	5/18/2019 16:00	1

Analyst:	BMH	Expiration
Batch:	2190518A	Date
Current ICAL Bath:	2190510BCAL	Date
20mM Amm Acetat	008-30-5	5/20/2019
Methanol	2127901	7/31/2023
Calibration Std	008-26-5	10/26/2019
ICV Std	008-3-1	6/3/2019

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	05/18/2019 11:27		Lab File ID:	2190518A_03.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	660460

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	7.80	7.00	89	70	130	
6:2 Fluorotelomer sulfonate	ng/L	7.93	8.20	103	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	8.00	100	70	130	
Perfluorooctane Sulfonamide	ng/L	8.33	6.93	84	70	130	
NEtFOSAA	ng/L	8.33	7.93	96	70	130	
NMeFOSAA	ng/L	8.33	9.73	117	70	130	
Perfluorobutanoic acid	ng/L	8.33	7.07	85	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	6.15	83	70	130	
Perfluorodecanoic acid	ng/L	8.33	7.13	86	70	130	
Perfluorodecane Sulfonate	ng/L	8.07	6.02	75	70	130	
Perfluorododecanoic acid	ng/L	8.33	6.93	83	70	130	
Perfluoroheptanoic acid	ng/L	8.33	6.87	82	70	130	
Perfluoro-1-heptanesulfonate	ng/L	7.93	6.10	77	70	130	
Perfluorohexanoic acid	ng/L	8.33	7.13	85	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	6.66	88	70	130	
Perfluorononanoic acid	ng/L	8.33	6.21	75	70	130	
PFNS	ng/L	8.00	6.45	81	70	130	
Perfluorooctanoic acid	ng/L	8.33	7.80	94	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	6.73	88	70	130	
Perfluoropentanoic acid	ng/L	8.33	6.54	78	70	130	
PFPeS	ng/L	7.87	6.31	81	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	7.40	89	70	130	
Perfluorotridecanoic acid	ng/L	8.33	7.60	91	70	130	
Perfluoroundecanoic acid	ng/L	8.33	6.60	79	70	130	

FORM 7S - ORG

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	05/18/2019 13:32		Lab File ID:	2190518A_14.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	660460

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	50300	108	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	57500	121	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	55100	115	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	51000	102	70	130	
NEtFOSAA	ng/L	50000	50900	102	70	130	
NMeFOSAA	ng/L	50000	60900	122	70	130	
Perfluorobutanoic acid	ng/L	50000	50400	101	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	46600	105	70	130	
Perfluorodecanoic acid	ng/L	50000	51100	102	70	130	
Perfluorodecane Sulfonate	ng/L	48300	46200	96	70	130	
Perfluorododecanoic acid	ng/L	50000	53600	107	70	130	
Perfluoroheptanoic acid	ng/L	50000	52200	104	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	48900	103	70	130	
Perfluorohexanoic acid	ng/L	50000	52600	105	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	49400	108	70	130	
Perfluorononanoic acid	ng/L	50000	51200	102	70	130	
PFNS	ng/L	48000	48700	101	70	130	
Perfluorooctanoic acid	ng/L	50000	54400	109	70	130	
Perfluorooctane Sulfonate	ng/L	46300	53700	116	70	130	
Perfluoropentanoic acid	ng/L	50000	48600	97	70	130	
PFPeS	ng/L	47000	46800	99	70	130	
Perfluorotetradecanoic acid	ng/L	50000	53900	108	70	130	
Perfluorotridecanoic acid	ng/L	50000	53900	108	70	130	
Perfluoroundecanoic acid	ng/L	50000	52300	105	70	130	

FORM 7E - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	05/18/2019 16:00		Lab File ID:	2190518A_27.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	660460

ANALYTE	UNITS	TRUE	FOUND	% REC √	LCL	UCL	Q
4:2 FTS	ng/L	46800	49300	105	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	57000	120	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	54000	112	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	52700	105	70	130	
NEtFOSAA	ng/L	50000	53600	107	70	130	
NMeFOSAA	ng/L	50000	59500	119	70	130	
Perfluorobutanoic acid	ng/L	50000	50000	100	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	46600	105	70	130	
Perfluorodecanoic acid	ng/L	50000	53400	107	70	130	
Perfluorodecane Sulfonate	ng/L	48300	48000	99	70	130	
Perfluorododecanoic acid	ng/L	50000	56200	112	70	130	
Perfluoroheptanoic acid	ng/L	50000	51700	103	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	48100	101	70	130	
Perfluorohexanoic acid	ng/L	50000	53000	106	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	50100	110	70	130	
Perfluorononanoic acid	ng/L	50000	52100	104	70	130	
PFNS	ng/L	48000	48400	101	70	130	
Perfluorooctanoic acid	ng/L	50000	54200	108	70	130	
Perfluorooctane Sulfonate	ng/L	46300	56900	123	70	130	
Perfluoropentanoic acid	ng/L	50000	51600	103	70	130	
PFPeS	ng/L	47000	47300	101	70	130	
Perfluorotetradecanoic acid	ng/L	50000	54700	109	70	130	
Perfluorotridecanoic acid	ng/L	50000	52900	106	70	130	
Perfluoroundecanoic acid	ng/L	50000	56100	112	70	130	

FORM 7E - ORG

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219051112	Standard ID:	1450 (ISC)
Analyst:	BMH	Instrument ID:	QQQ1
Analysis Date:	05/18/19 11:27	Lab File ID:	2190518A_03.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	660460

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		171268		573806		174732		166854	
CLIENT SAMPLE ID	**GCAL SAMP ID**	✓	#	✓	#	✓	#	✓	#
AOI-1-8-SW-0-1	21905111203	186498		737322		206690		206009	
AOI-1-8-SW-0-1-MS	21905111204	185430		739169		203576		199176	
AOI-1-8-SW-0-1-MSD	21905111205	173326		731833		206550		201490	
AOI-1-7-SD-0-1	21905111207	169994		542569		167199		169510	
AOI-1-7-SD-0-1-DUP	21905111208	212758		570047		177428		177740	
AOI-1-8-SD-0-1	21905111209	144703		509370		157940		147020	
AOI-1-8-SD-0-1-MS	21905111210	149991		524093		158224		154739	
AOI-1-8-SD-0-1-MSD	21905111211	161069		537597		165972		154938	

AREA UPPER LIMIT = +50% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

\# Column used to flag values outside QC limits
* Value outside QC limits

FORM 8I - ORG

Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\2190519ACAL\QuantResults\2190519A.batch.bin		
Analysis Time	6/10/2019 3:02 PM	**Analyst Name**	GCAL\lcms
Report Time	6/10/2019 3:03 PM	**Reporter Name**	GCAL\lcms
Last Calib Update	5/27/2019 1:58 PM	**Batch State**	Processed

Calibration Info
Extracted ISTD   MPFBA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	52979	20.0000	2648.9300
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	53564	20.0000	2678.1783
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	57668	20.0000	2883.3829
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	58025	20.0000	2901.2689
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	58393	20.0000	2919.6420
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	60209	20.0000	3010.4701
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	64803	20.0000	3240.1536

Target Compound   PFBA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	3932	0.5000	2.9684
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	14687	2.0000	2.7419
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	45250	5.0000	3.1387
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	100345	10.0000	3.4587
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	593181	50.0000	4.0634
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	1160715	100.0000	3.8556
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	2476547	200.0000	3.8217
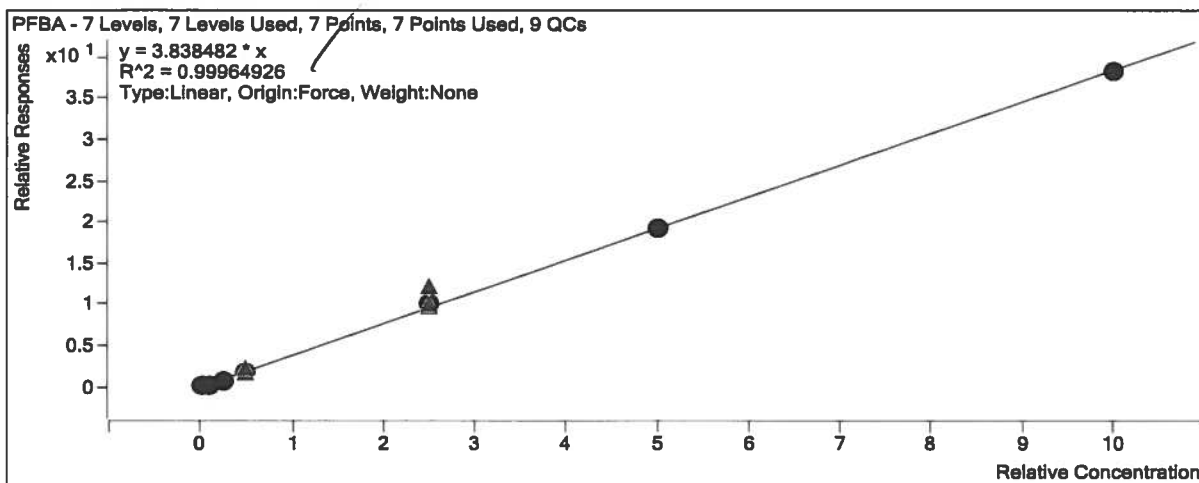
PFBA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

$y = 3.838482 * x$
$R^2 = 0.99964926$
Type:Linear, Origin:Force, Weight:None

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	60179	10.0000	3.6330
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	342504	50.0000	4.1836
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	679567	100.0000	4.0129
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1502034	200.0000	4.1783
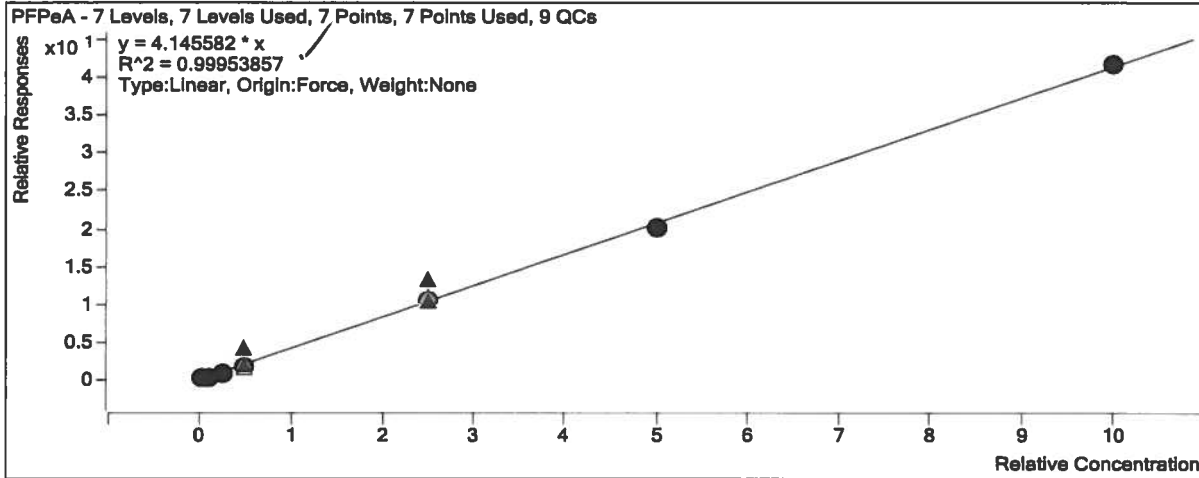
PFPeA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
$y = 4.145582 * x$
$R^2 = 0.99953857$
Type:Linear, Origin:Force, Weight:None

(Relative Responses vs Relative Concentration)

Extracted ISTD M5PFPeA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	31972	20.0000	1598.6039
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	32893	20.0000	1644.6371
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	32858	20.0000	1642.9246
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	33130	20.0000	1656.4838
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	32748	20.0000	1637.3853
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	33869	20.0000	1693.4712
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	35949	20.0000	1797.4415

Target Compound PFBS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	1665	0.4425	3.1116
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	6785	1.7700	3.0132
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	21466	4.4250	3.4809
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	47136	8.8500	3.7970

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	275800	44.2500	4.4240
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	542427	88.5000	4.1165
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1159279	177.0000	4.0505
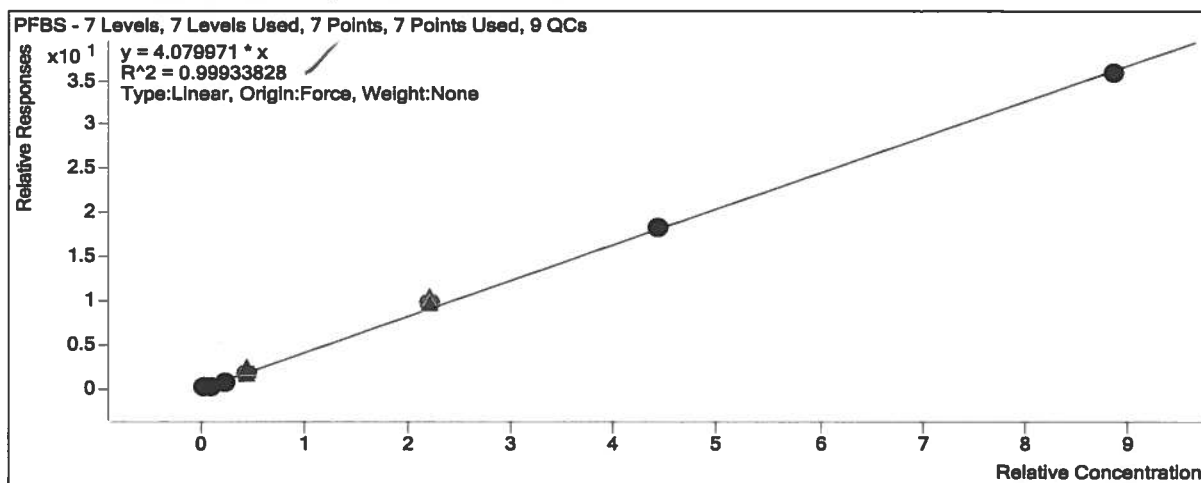
PFBS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
y = 4.079971 * x
R^2 = 0.99933828
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   *M3PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	24179	20.0000	1208.9602
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	25443	20.0000	1272.1340
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	27872	20.0000	1393.6242
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	28054	20.0000	1402.6911
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	28177	20.0000	1408.8596
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	29778	20.0000	1488.9248
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	32339	20.0000	1616.9689

Extracted ISTD   *M2 4:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	6252	20.0000	312.5756
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	6388	20.0000	319.3822
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	7084	20.0000	354.1886
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	7457	20.0000	372.8476
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	7470	20.0000	373.5033
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	7152	20.0000	357.5970
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	7923	20.0000	396.1607

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	593501	187.0000	8.0114
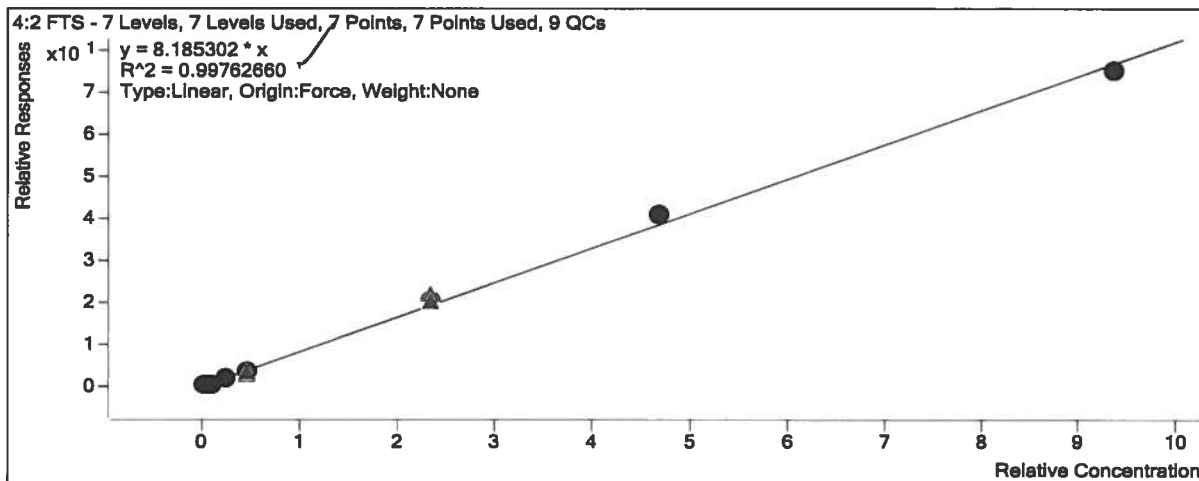
4:2 FTS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
$y = 8.185302 * x$
$R^2 = 0.99762660$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   *M5PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	61082	20.0000	3054.1091
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	62173	20.0000	3108.6634
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	70707	20.0000	3535.3325
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	69757	20.0000	3487.8484
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	69702	20.0000	3485.1056
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	69534	20.0000	3476.7053
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	74575	20.0000	3728.7496

Instrument ISTD   *M2PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	563423	40.0000	14085.5817
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	502649	40.0000	12566.2344
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	512343	40.0000	12808.5722
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	513299	40.0000	12832.4691
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	511945	40.0000	12798.6206
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	519297	40.0000	12982.4130
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	548330	40.0000	13708.2494

Quantitative Analysis Calibration Report
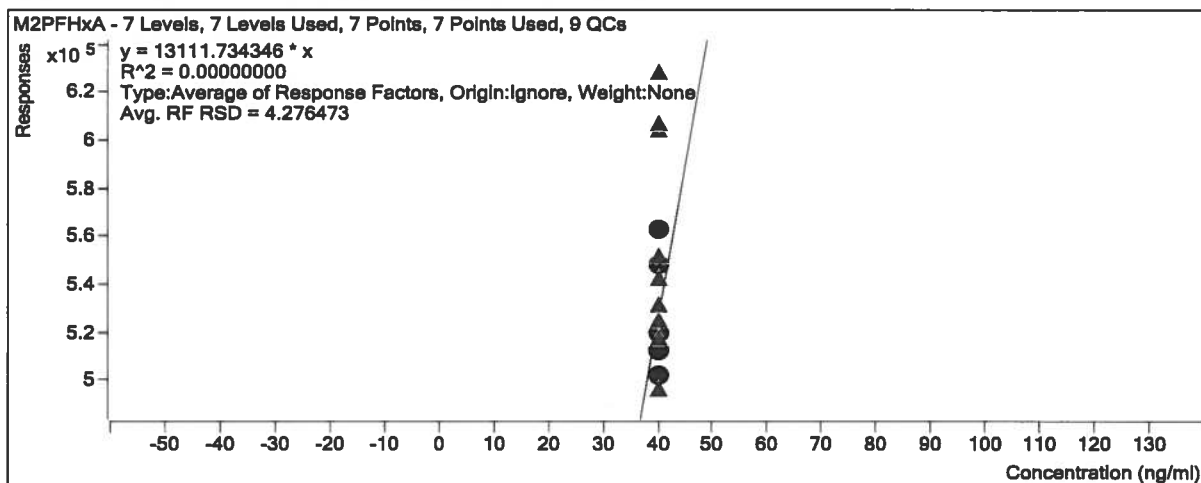
M2PFHxA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

y = 13111.734346 * x
R^2 = 0.00000000
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 4.276473

Target Compound   PFHxA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	5740	0.5000	3.7586
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	17525	2.0000	2.8187
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	51897	5.0000	2.9359
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	111959	10.0000	3.2100
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	631968	50.0000	3.6267
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	1206052	100.0000	3.4689
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	2525626	200.0000	3.3867

PFHxA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

y = 3.413131 * x
R^2 = 0.99952297
Type:Linear, Origin:Force, Weight:None

Target Compound   LPFPeS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1315827	188.0000	1.8771
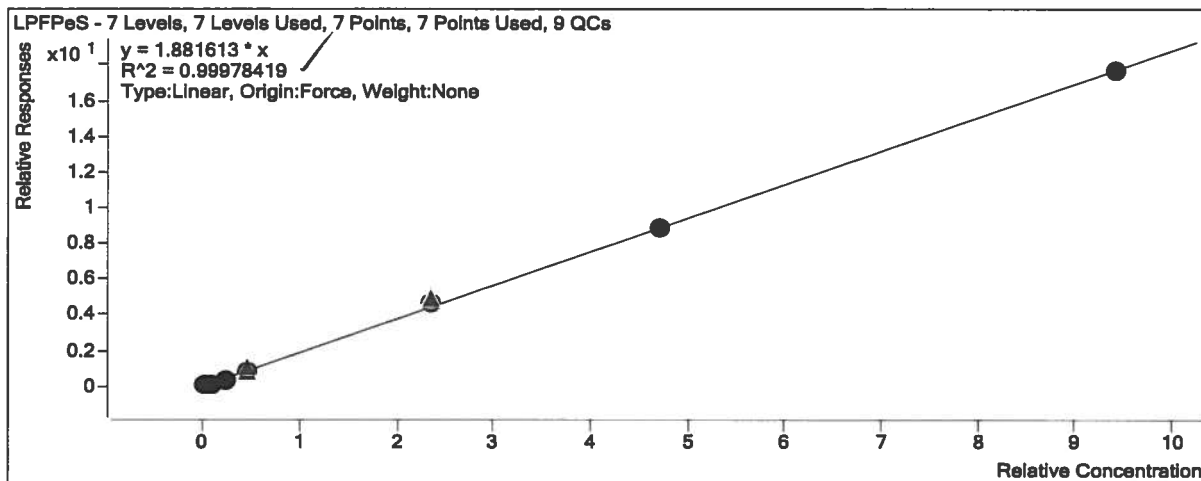
LPFPeS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
y = 1.881613 * x
R^2 = 0.99978419
Type:Linear, Origin:Force, Weight:None

Relative Responses vs *Relative Concentration*

Extracted ISTD   *M4PFHpA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	64828	20.0000	3241.4238
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	61815	20.0000	3090.7325
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	63701	20.0000	3185.0286
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	61267	20.0000	3063.3588
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	61530	20.0000	3076.5221
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	61989	20.0000	3099.4597
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	66180	20.0000	3308.9778

Target Compound   *PFHpA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	4869	0.5000	3.0042
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	17091	2.0000	2.7649
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	52715	5.0000	3.3102
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	108298	10.0000	3.5353
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	630461	50.0000	4.0985
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	1208645	100.0000	3.8995
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	2528491	200.0000	3.8207

Quantitative Analysis Calibration Report
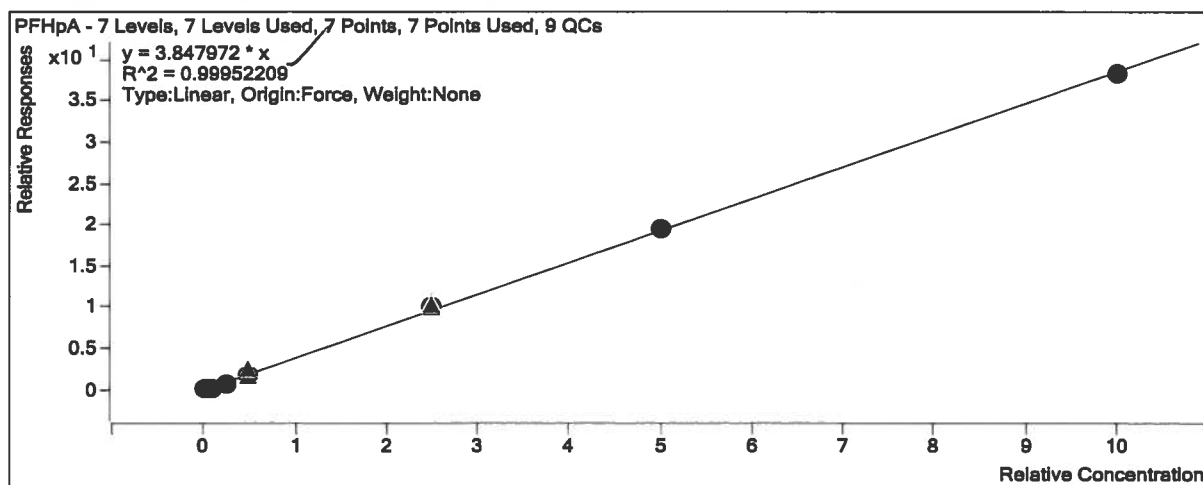
PFHpA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

x10 1

y = 3.847972 * x
R^2 = 0.99952209
Type:Linear, Origin:Force, Weight:None

Extracted ISTD M3PFHxS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	29225	20.0000	1461.2725
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	30506	20.0000	1525.3179
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	33444	20.0000	1672.1964
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	34136	20.0000	1706.7819
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	34247	20.0000	1712.3287
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	35131	20.0000	1756.5749
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	38368	20.0000	1918.3799

Target Compound PFHxS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	2092	0.4560	3.1395
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	8367	1.8240	3.0075
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	25764	4.5600	3.3787
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	57541	9.1200	3.6966
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	339250	45.6000	4.3448
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	657977	91.2000	4.1072
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1413807	182.4000	4.0405

Quantitative Analysis Calibration Report
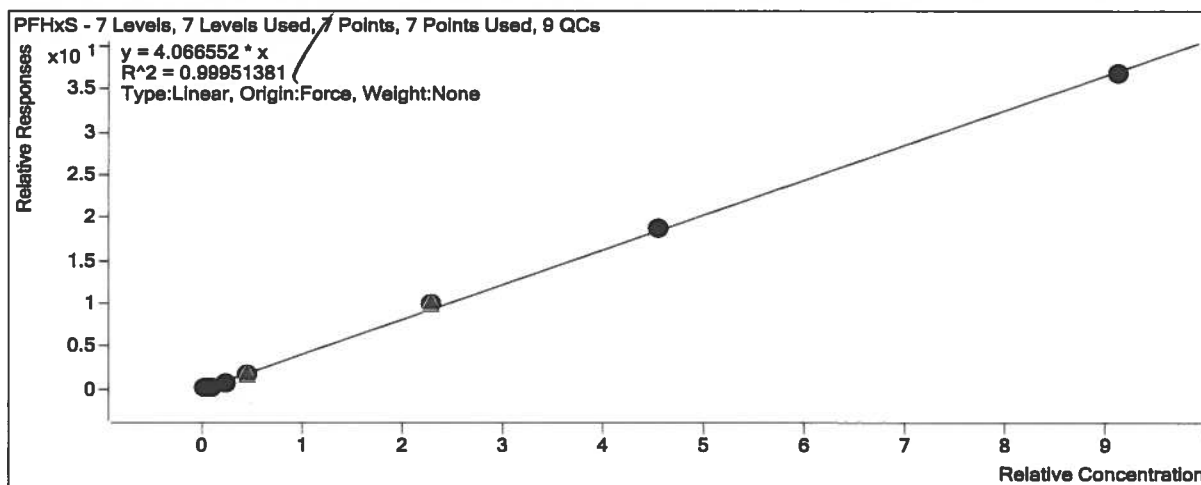
PFHxS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
y = 4.066552 * x
R^2 = 0.99951381
Type:Linear, Origin:Force, Weight:None

Extracted ISTD	*M2 6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	9154	20.0000	457.7028
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	9439	20.0000	471.9352
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	9902	20.0000	495.0910
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	10441	20.0000	522.0654
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	10168	20.0000	508.4023
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	10932	20.0000	546.5952
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	11918	20.0000	595.9199

Target Compound	*6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	1036	0.4750	4.7649
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	3993	1.9000	4.4531
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	11499	4.7500	4.8896
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	24817	9.5000	5.0039
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	140866	47.5000	5.8332
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	262823	95.0000	5.0614
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	530055	190.0000	4.6814

Quantitative Analysis Calibration Report
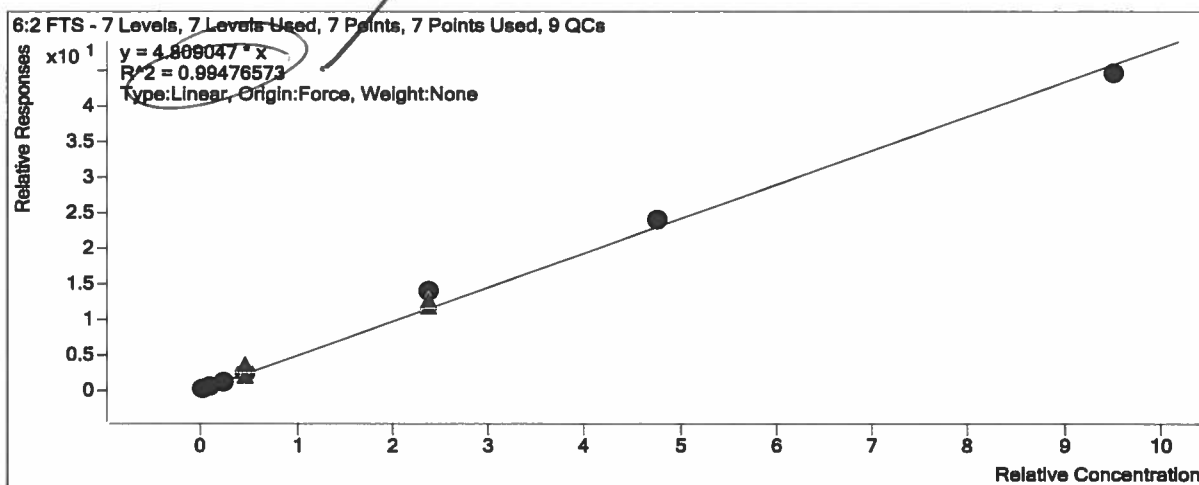
6:2 FTS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

$y = 4.809047 * x$
$R^2 = 0.99476573$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD — M8PFOA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	43139	20.0000	2156.9302
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	39310	20.0000	1965.4783
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	46060	20.0000	2303.0084
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	44227	20.0000	2211.3447
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	42176	20.0000	2108.7926
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	43753	20.0000	2187.6439
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	46244	20.0000	2312.1900

Instrument ISTD — M2PFOA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	200280	20.0000	10013.9830
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	173944	20.0000	8697.1920
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	172249	20.0000	8612.4702
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	168875	20.0000	8443.7292
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	170891	20.0000	8544.5329
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	168602	20.0000	8430.1010
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	179345	20.0000	8967.2497

Quantitative Analysis Calibration Report
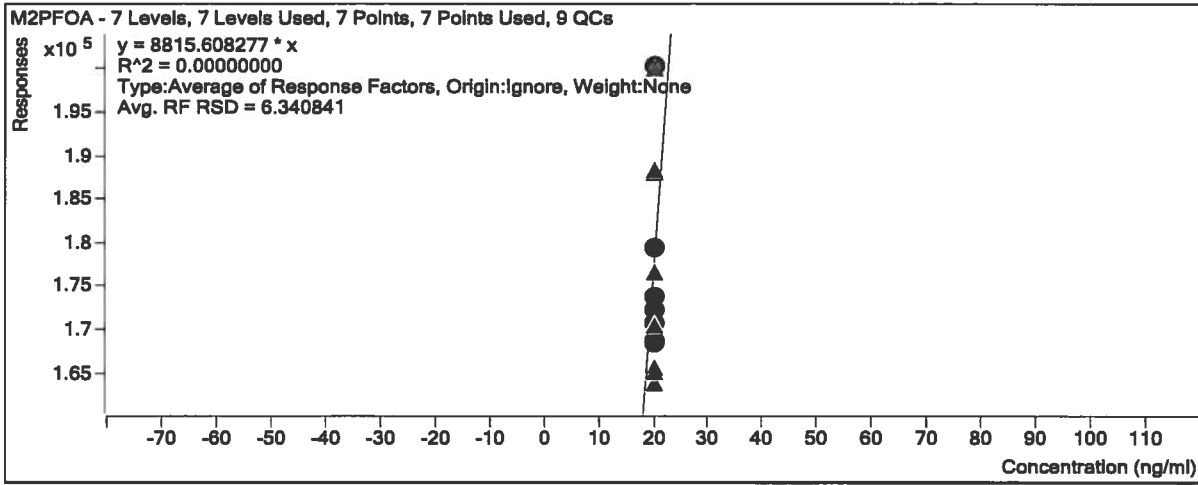
M2PFOA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
y = 8815.608277 * x
R^2 = 0.00000000
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 6.340841

Target Compound	PFOA						

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	3724	0.5000	3.4526
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	13139	2.0000	3.3425
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	38819	5.0000	3.3711
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	82014	10.0000	3.7088
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	455318	50.0000	4.3183
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	860768	100.0000	3.9347
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1799081	200.0000	3.8904

PFOA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
y = 3.918524 * x
R^2 = 0.99912062
Type:Linear, Origin:Force, Weight:None

Target Compound	LPFHpS						

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1436431	190.0000	3.2697
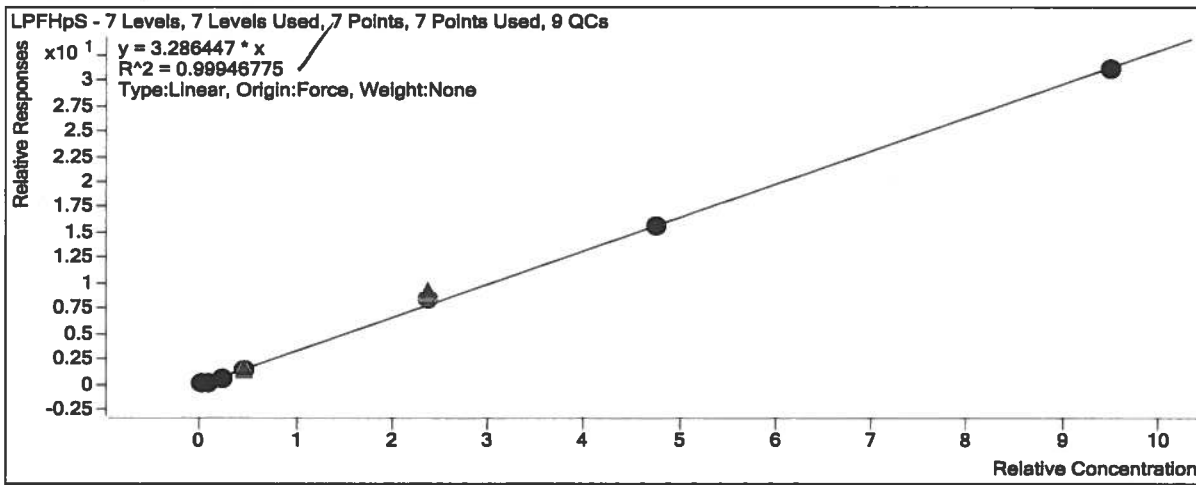
LPFHpS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
y = 3.286447 * x
R^2 = 0.99946775
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M9PFNA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	46940	20.0000	2347.0082
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	47147	20.0000	2357.3740
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	52114	20.0000	2605.7183
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	51029	20.0000	2551.4638
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	50858	20.0000	2542.9136
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	48821	20.0000	2441.0382
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	49463	20.0000	2473.1748

Target Compound   PFNA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	3695	0.5000	3.1488
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	12892	2.0000	2.7345
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	37501	5.0000	2.8784
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	81355	10.0000	3.1886
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	448153	50.0000	3.5247
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	869366	100.0000	3.5615
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1725178	200.0000	3.4878

Quantitative Analysis Calibration Report
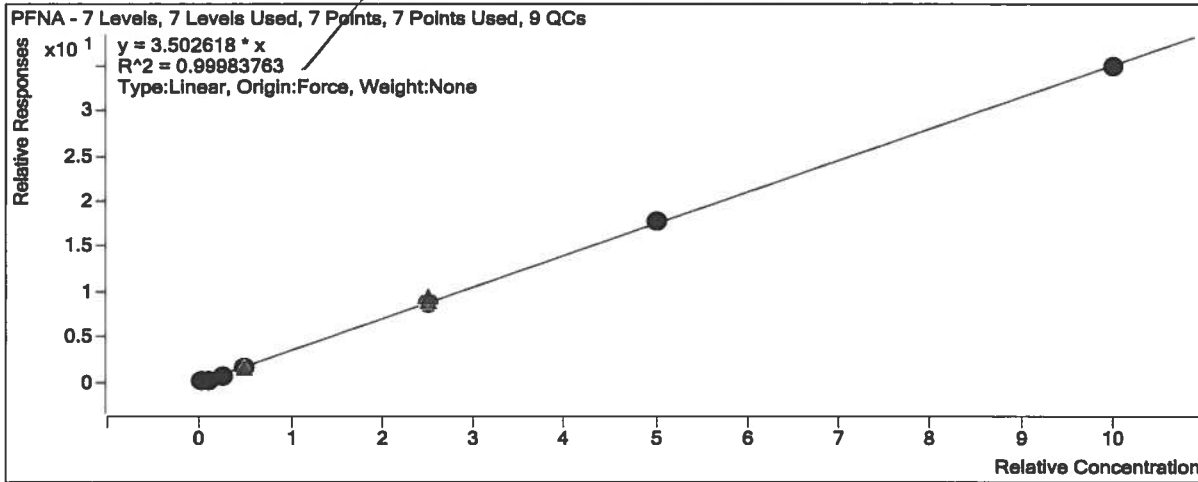
PFNA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

$y = 3.502618 * x$
$R^2 = 0.99983763$
Type:Linear, Origin:Force, Weight:None

Relative Responses ($\times 10^1$) vs Relative Concentration

Instrument ISTD M4PFOS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	129290	20.0000	6464.4977
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	123303	20.0000	6165.1569
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	139659	20.0000	6982.9478
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	139565	20.0000	6978.2687
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	141060	20.0000	7053.0230
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	140410	20.0000	7020.4837
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	152581	20.0000	7629.0511

M4PFOS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

$y = 6899.061256 * x$
$R^2 = 0.00000000$
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 6.778266

Responses ($\times 10^5$) vs Concentration (ng/ml)

Target Compound PFOS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1484096	185.1000	4.6978
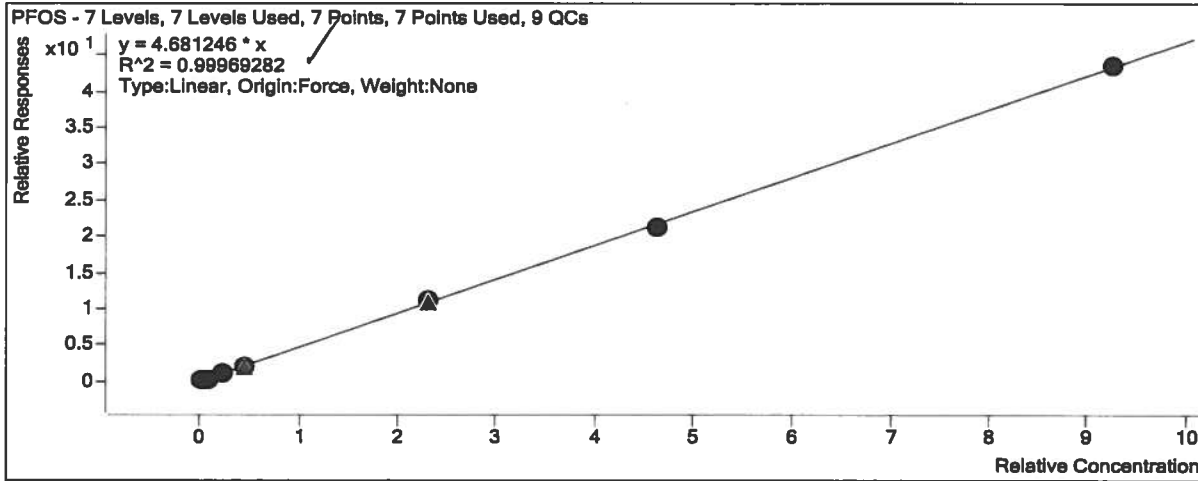
PFOS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

$y = 4.681246 * x$
$R^2 = 0.99969282$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M8PFOS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	28649	20.0000	1432.4699
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	29857	20.0000	1492.8373
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	22298	20.0000	1114.8886
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	30907	20.0000	1545.3602
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	32121	20.0000	1606.0699
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	32971	20.0000	1648.5697
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	34134	20.0000	1706.7166

Extracted ISTD   M2 8:2 FTS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	8523	20.0000	426.1472
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	9319	20.0000	465.9300
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	9695	20.0000	484.7364
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	9690	20.0000	484.4942
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	10296	20.0000	514.7819
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	9654	20.0000	482.6790
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	11480	20.0000	574.0098

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	27060	9.6000	5.8178
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	149352	48.0000	6.0443
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	273267	96.0000	5.8974
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	534731	192.0000	4.8519
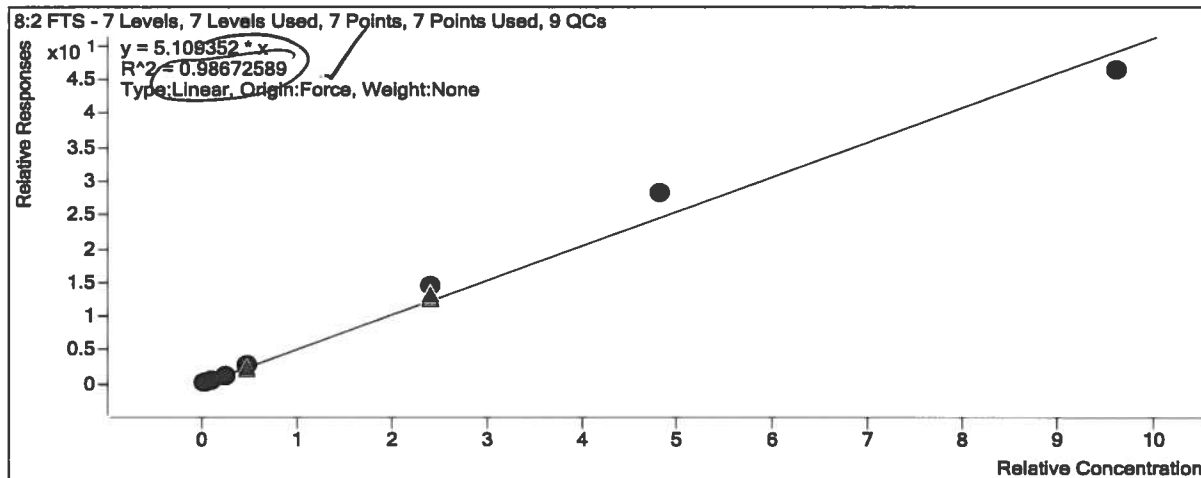
8:2 FTS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
$y = 5.108352 * x$
$R^2 = 0.98672589$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD　　　　M6PFDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	49305	20.0000	2465.2484
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	43369	20.0000	2168.4278
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	51828	20.0000	2591.3978
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	49254	20.0000	2462.6829
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	47711	20.0000	2385.5466
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	47141	20.0000	2357.0267
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	48622	20.0000	2431.0844

Instrument ISTD　　　　M2PFDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	216825	20.0000	10841.2539
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	182914	20.0000	9145.7124
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	183798	20.0000	9189.8981
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	178095	20.0000	8904.7720

D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	176370	20.0000	8818.4931
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	177581	20.0000	8879.0608
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	184006	20.0000	9200.2783
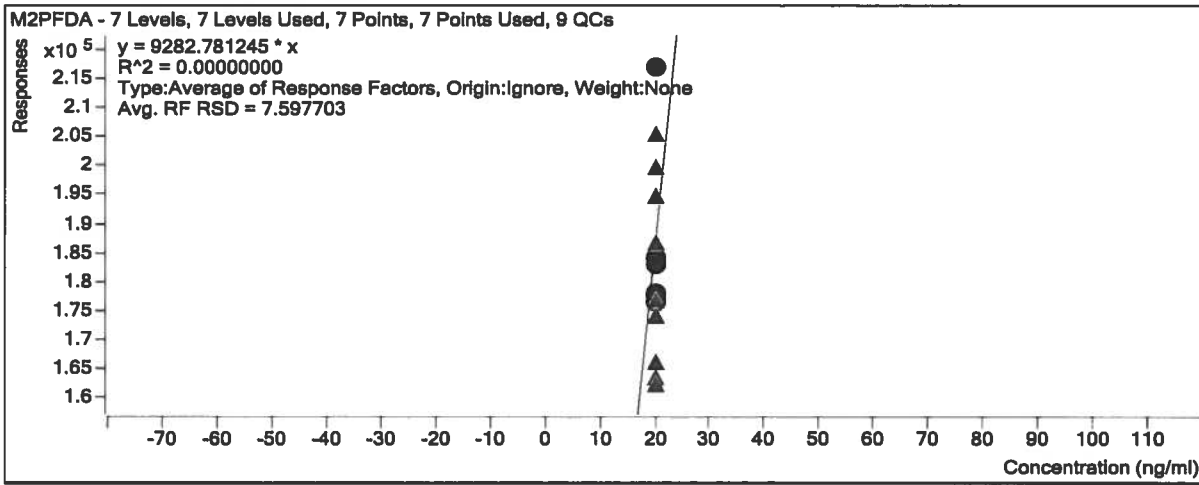
M2PFDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

$y = 9282.781245 * x$
$R^2 = 0.00000000$
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 7.597703

Target Compound   PFDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	4372	0.5000	3.5471
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	13359	2.0000	3.0803
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	39073	5.0000	3.0156
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	78133	10.0000	3.1727
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	444969	50.0000	3.7305
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	820655	100.0000	3.4817
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1722658	200.0000	3.5430
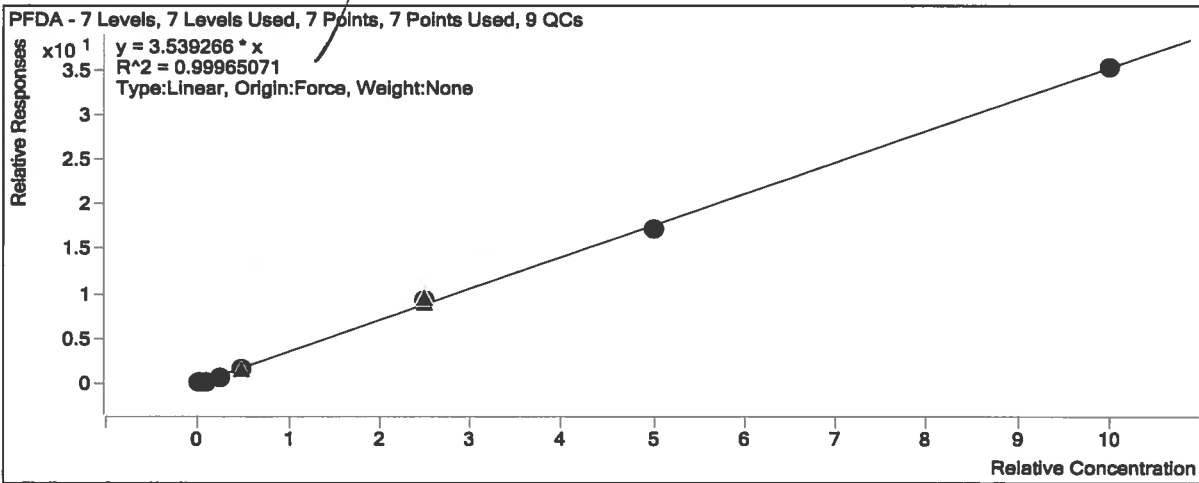
PFDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

$y = 3.539266 * x$
$R^2 = 0.99965071$
Type:Linear, Origin:Force, Weight:None

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1407969	192.0000	2.9651
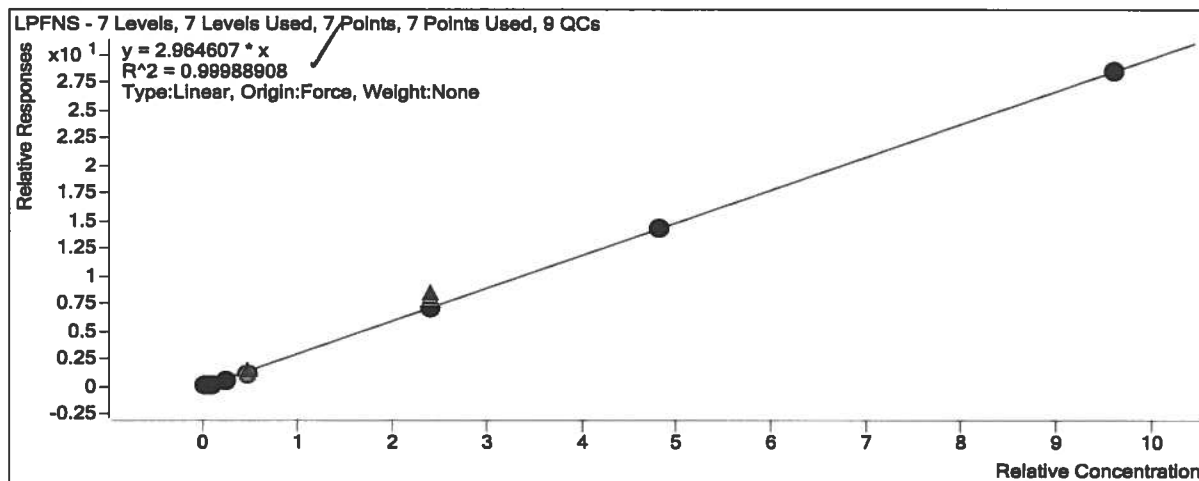
LPFNS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
y = 2.964607 * x
R^2 = 0.99988908
Type:Linear, Origin:Force, Weight:None

Extracted ISTD d3-NMeFOSAA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	5580	20.0000	279.0130
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	4956	20.0000	247.7824
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	5926	20.0000	296.3189
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	5867	20.0000	293.3671
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	5896	20.0000	294.8110
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	5617	20.0000	280.8253
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	7702	20.0000	385.0756

Target Compound NMeFOSAA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	1121	0.5000	8.0379
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	3185	2.0000	6.4271
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	10374	5.0000	7.0018
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	22748	10.0000	7.7542
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	135800	50.0000	9.2127
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	262210	100.0000	9.3371
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	555346	200.0000	7.2109

Quantitative Analysis Calibration Report
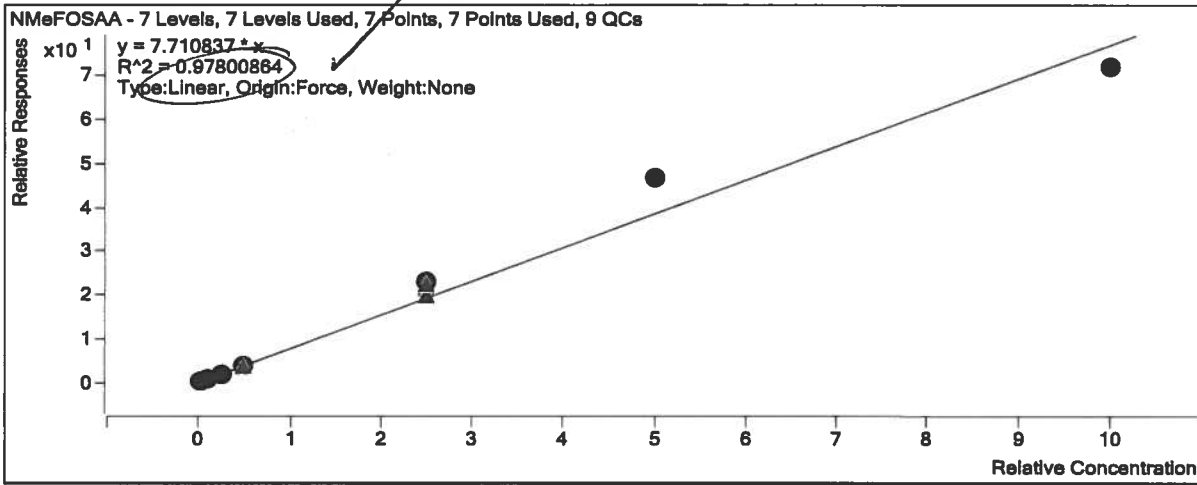
NMeFOSAA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

y = 7.710837 * x
R^2 = 0.97800864
Type:Linear, Origin:Force, Weight:None

Relative Responses x10 1

Relative Concentration

Extracted ISTD   M8FOSA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	37991	20.0000	1899.5335
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	41403	20.0000	2070.1635
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	45066	20.0000	2253.2975
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	45497	20.0000	2274.8295
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	45621	20.0000	2281.0721
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	48515	20.0000	2425.7402
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	52733	20.0000	2636.6627

Target Compound   FOSA-I

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	2625	0.5000	2.7640
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	11611	2.0000	2.8043
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	36409	5.0000	3.2316
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	81601	10.0000	3.5871
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	472195	50.0000	4.1401
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	935027	100.0000	3.8546
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	2011327	200.0000	3.8142

Quantitative Analysis Calibration Report
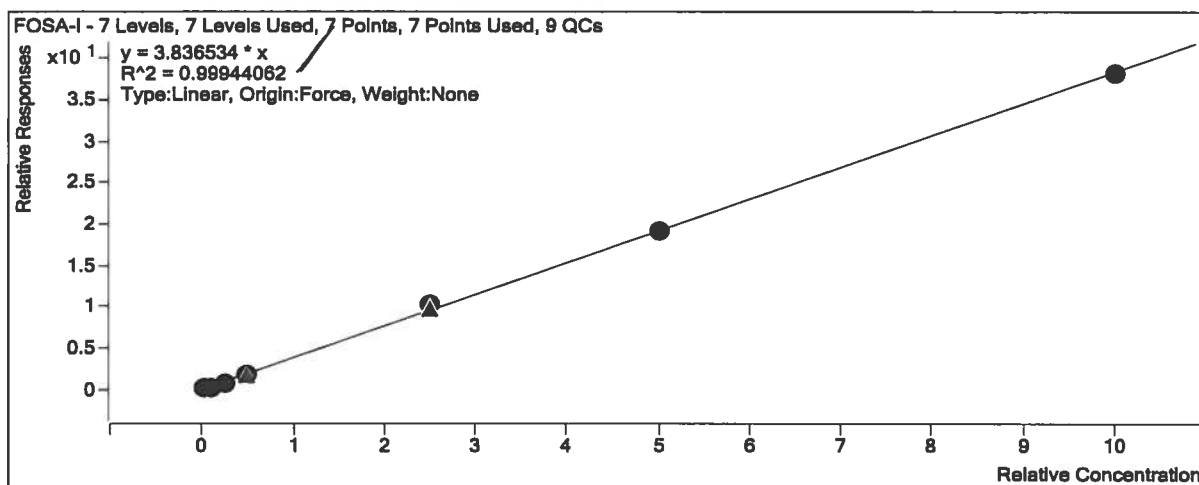
FOSA-I - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
y = 3.836534 * x
R^2 = 0.99944062
Type:Linear, Origin:Force, Weight:None

Relative Responses (x10 1) vs *Relative Concentration*

Extracted ISTD   *d5-NEtFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	8095	20.0000	404.7317
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	8238	20.0000	411.8820
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	8624	20.0000	431.1927
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	9022	20.0000	451.0943
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	7906	20.0000	395.3074
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	9117	20.0000	455.8450
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	9106	20.0000	455.3134

Target Compound   *NEtFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	796	0.5000	3.9312
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	3251	2.0000	3.9461
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	9824	5.0000	4.5568
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	20095	10.0000	4.4548
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	120419	50.0000	6.0924
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	232485	100.0000	5.1001
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	484888	200.0000	5.3248

Quantitative Analysis Calibration Report
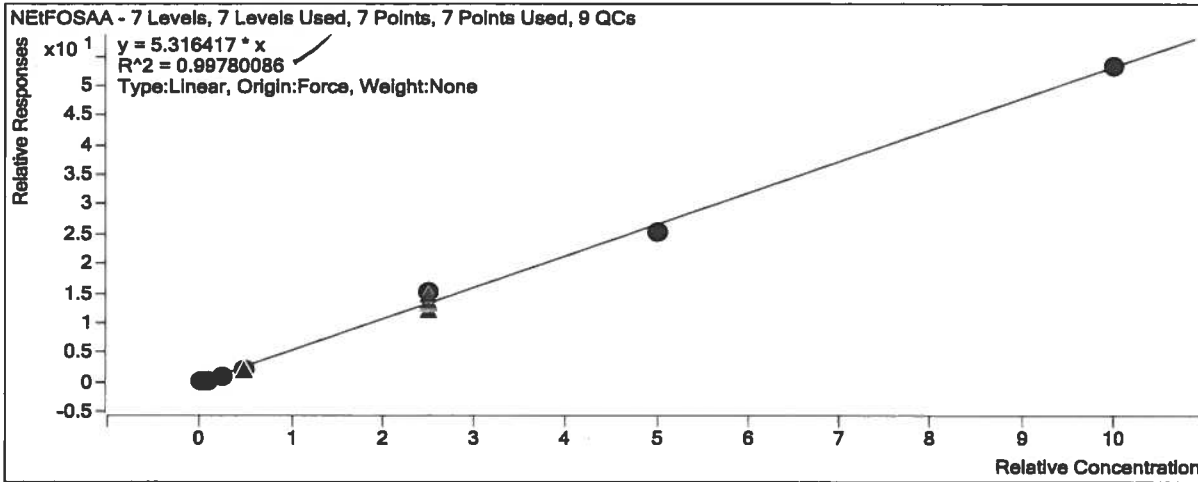
NEtFOSAA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
y = 5.316417 * x
R^2 = 0.99780086
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M7PFUdA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	45497	20.0000	2274.8711
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	40795	20.0000	2039.7393
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	42406	20.0000	2120.2890
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	42075	20.0000	2103.7498
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	39878	20.0000	1993.8978
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	39043	20.0000	1952.1500
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	40606	20.0000	2030.3072

Target Compound   PFUdA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	3185	0.5000	2.8005
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	10744	2.0000	2.6336
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	31921	5.0000	3.0110
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	69126	10.0000	3.2859
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	385522	50.0000	3.8670
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	734826	100.0000	3.7642
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1502209	200.0000	3.6995

Quantitative Analysis Calibration Report
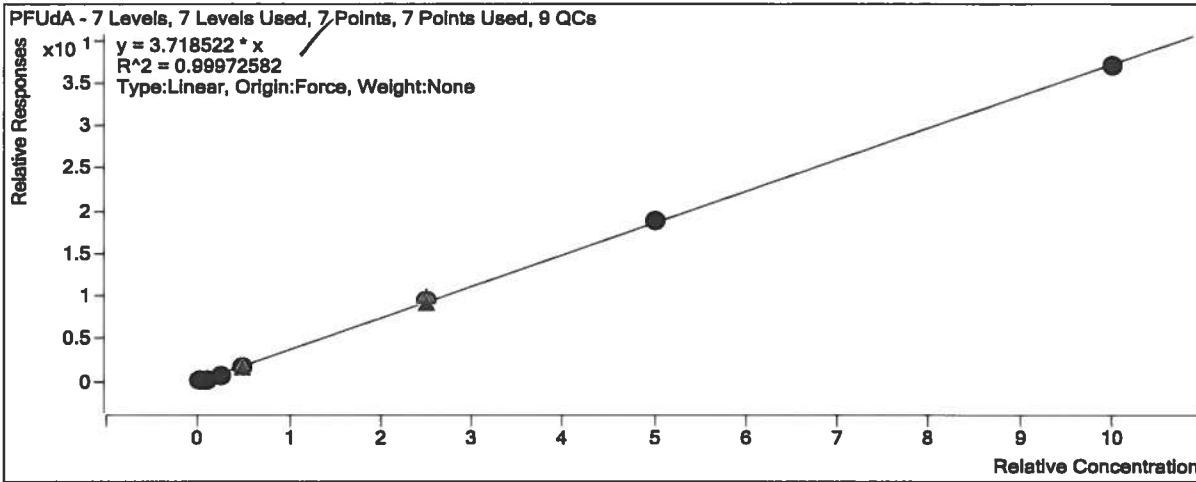
PFUdA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

$y = 3.718522 * x$
$R^2 = 0.99972582$
Type:Linear, Origin:Force, Weight:None

Target Compound   LPFDS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	2603	0.4825	2.1885
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	9190	1.9300	2.1958
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	28573	4.8250	2.2852
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	62134	9.6500	2.6145
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	362612	48.2500	3.1503
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	692751	96.5000	3.0457
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1426792	193.0000	3.0409

LPFDS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

$y = 3.045777 * x$
$R^2 = 0.99979303$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   MPFDoA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	32161	20.0000	1608.0696

Target Compound PFDoA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	2588	0.5000	2.9745
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	7915	2.0000	2.5672
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	23859	5.0000	3.1103
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	48901	10.0000	3.1847
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	278455	50.0000	3.8014
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	516815	100.0000	3.4206
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	1110100	200.0000	3.4517
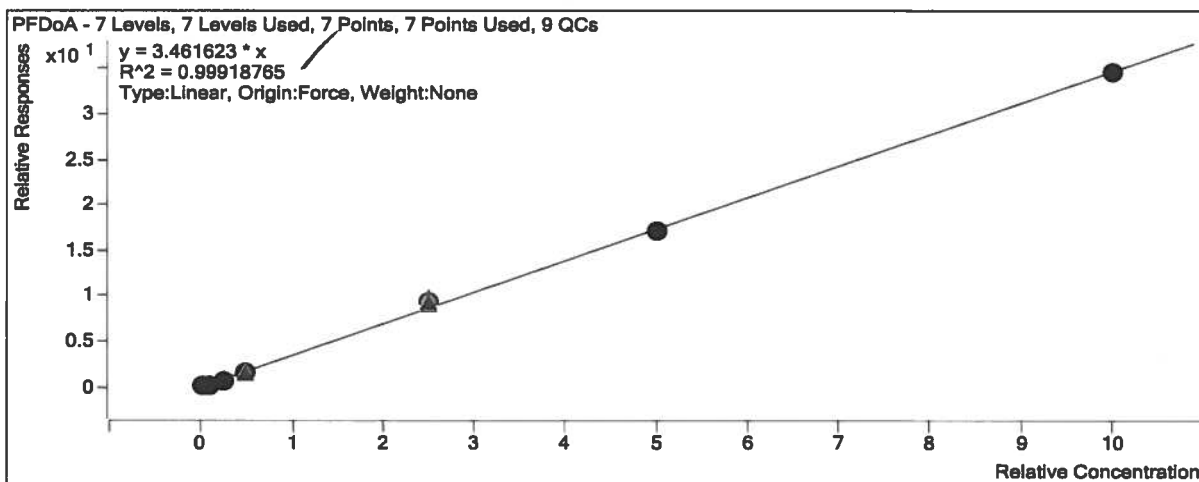
PFDoA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
$y = 3.461623 * x$
$R^2 = 0.99918765$
Type:Linear, Origin:Force, Weight:None

Target Compound PFTrDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	1833	0.5000	3.0597
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	6640	2.0000	2.9575
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	18549	5.0000	3.5010
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	39987	10.0000	3.6105
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	220663	50.0000	4.2824
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	384349	100.0000	3.6644
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	887295	200.0000	3.7479

Quantitative Analysis Calibration Report
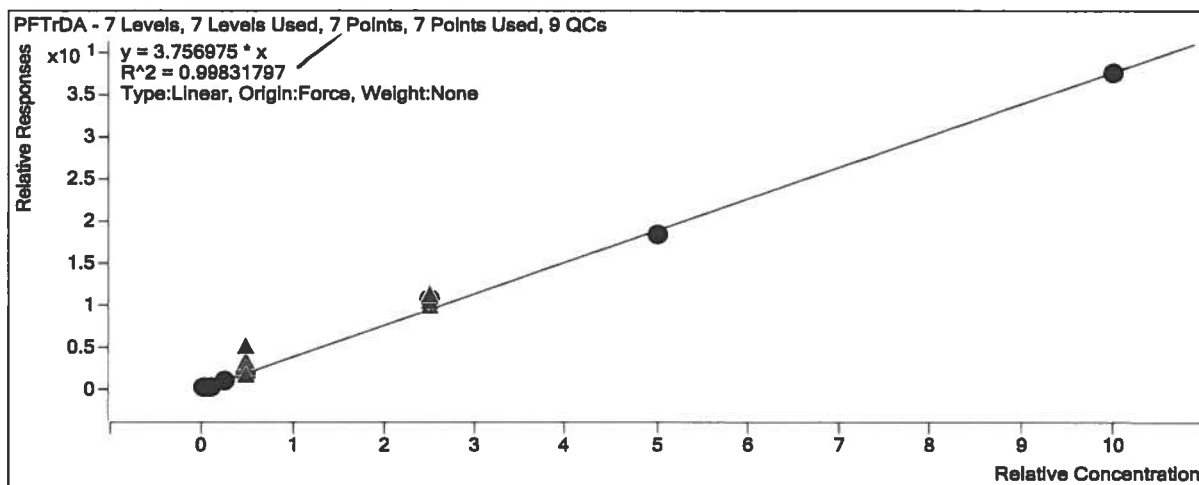
PFTrDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs
y = 3.756975 * x
R^2 = 0.99831797
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M2PFTeDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	23963	20.0000	1198.1313
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	22451	20.0000	1122.5633
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	21193	20.0000	1059.6415
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	22150	20.0000	1107.5235
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	20611	20.0000	1030.5524
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	20978	20.0000	1048.8804
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	23674	20.0000	1183.7247

Target Compound   PFTeDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190519ACAL\2190519A_01.d	Calibration	1	☑	1638	0.5000	2.7341
D:\MassHunter\Data\2190519ACAL\2190519A_02.d	Calibration	2	☑	5842	2.0000	2.6023
D:\MassHunter\Data\2190519ACAL\2190519A_03.d	Calibration	3	☑	15992	5.0000	3.0183
D:\MassHunter\Data\2190519ACAL\2190519A_04.d	Calibration	4	☑	32087	10.0000	2.8972
D:\MassHunter\Data\2190519ACAL\2190519A_05.d	Calibration	5	☑	183412	50.0000	3.5595
D:\MassHunter\Data\2190519ACAL\2190519A_06.d	Calibration	6	☑	347537	100.0000	3.3134
D:\MassHunter\Data\2190519ACAL\2190519A_07.d	Calibration	7	☑	733910	200.0000	3.1000

Quantitative Analysis Calibration Report

PFTeDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 9 QCs

$y = 3.161916 * x$
$R^2 = 0.99760158$
Type:Linear, Origin:Force, Weight:None

LCMS1 Run Log

Name	Data File	Type	Acq. Date-Time	Dil.
1201	2190519A_01.d	Cal	5/19/2019 22:34	1
1202	2190519A_02.d	Cal	5/19/2019 22:46	1
1203	2190519A_03.d	Cal	5/19/2019 22:57	1
1204	2190519A_04.d	Cal	5/19/2019 23:08	1
1205	2190519A_05.d	Cal	5/19/2019 23:20	1
1206	2190519A_06.d	Cal	5/19/2019 23:31	1
1207	2190519A_07.d	Cal	5/19/2019 23:42	1
1600	2190519A_08.d	QC	5/19/2019 23:54	1
1450	2190519A_09.d	Sample	5/20/2019 0:05	1
1500	2190519A_10.d	Sample	5/20/2019 0:16	1
1926788	2190519A_11.d	Sample	5/20/2019 0:27	1
1926789	2190519A_12.d	QC	5/20/2019 0:39	1
1926790	2190519A_13.d	QC	5/20/2019 0:50	1
1400	2190519A_14.d	QC	5/20/2019 1:02	1
21905071106	2190519A_15.d	Sample	5/20/2019 1:13	1
21905111201	2190519A_16.d	Sample	5/20/2019 1:24	1
21905111202	2190519A_17.d	Sample	5/20/2019 1:36	1
21905111206	2190519A_18.d	Sample	5/20/2019 1:47	1
21905111213	2190519A_19.d	Sample	5/20/2019 1:59	1
21905111214	2190519A_20.d	QC	5/20/2019 2:10	1
1400	2190519A_21.d	QC	5/20/2019 2:21	1
21905111215	2190519A_22.d	QC	5/20/2019 2:33	1
21905111216	2190519A_23.d	Sample	5/20/2019 2:44	1
21905111217	2190519A_24.d	Sample	5/20/2019 2:55	1
21905111218	2190519A_25.d	Sample	5/20/2019 3:07	1
21905111219	2190519A_26.d	Sample	5/20/2019 3:18	1
21905111220	2190519A_27.d	Sample	5/20/2019 3:29	1
21905111221	2190519A_28.d	Sample	5/20/2019 3:41	1
21905111222	2190519A_29.d	Sample	5/20/2019 3:52	1
1400	2190519A_30.d	QC	5/20/2019 4:04	1
21905111223	2190519A_31.d	Sample	5/20/2019 4:15	1
21905111224	2190519A_32.d	Sample	5/20/2019 4:26	1
21905111234	2190519A_33.d	Sample	5/20/2019 4:38	1
21905111235	2190519A_34.d	Sample	5/20/2019 4:49	1
21905111236	2190519A_35.d	Sample	5/20/2019 5:00	1
21905111237	2190519A_36.d	Sample	5/20/2019 5:12	1
1400	2190519A_37.d	QC	5/20/2019 5:23	1

Analyst:	BMH	Expiration
Batch:	2190519A	Date
Current ICAL Bath:	2190519ACAL	Date
20mM Amm Acetai	008-30-5	5/20/2019
Methanol	2127901	7/31/2023
Calibration Std	008-26-5	10/26/2019
ICV Std	008-3-1	6/3/2019

Report No: 219051112   Instrument ID: QQQ1

Analysis Date: 05/19/2019 23:54   Lab File ID: 2190519A_08.d

Analytical Method: EPA 537 Modified   Analytical Batch: 660791

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	52800	113	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	52000	110	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	50000	104	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	53200	106	70	130	
NEtFOSAA	ng/L	50000	45600	91	70	130	
NMeFOSAA	ng/L	50000	56200	112	70	130	
Perfluorobutanoic acid	ng/L	50000	64600	129	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	52000	118	70	130	
Perfluorodecanoic acid	ng/L	50000	52300	105	70	130	
Perfluorodecane Sulfonate	ng/L	48300	49000	102	70	130	
Perfluorododecanoic acid	ng/L	50000	52800	106	70	130	
Perfluoroheptanoic acid	ng/L	50000	52600	105	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	52100	110	70	130	
Perfluorohexanoic acid	ng/L	50000	52200	104	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	50000	110	70	130	
Perfluorononanoic acid	ng/L	50000	53900	108	70	130	
PFNS	ng/L	48000	54700	114	70	130	
Perfluorooctanoic acid	ng/L	50000	51500	103	70	130	
Perfluorooctane Sulfonate	ng/L	46300	47100	102	70	130	
Perfluoropentanoic acid	ng/L	50000	65000	130	70	130	
PFPeS	ng/L	47000	51200	109	70	130	
Perfluorotetradecanoic acid	ng/L	50000	55600	111	70	130	
Perfluorotridecanoic acid	ng/L	50000	52700	105	70	130	
Perfluoroundecanoic acid	ng/L	50000	50200	100	70	130	

FORM 6I - ORG

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219051112	Instrument ID:	QQQ1
Analysis Date:	05/20/2019 00:05	Lab File ID:	2190519A_09.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	660791

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	7.80	6.11	78	70	130	
6:2 Fluorotelomer sulfonate	ng/L	7.93	6.73	85	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	7.13	89	70	130	
Perfluorooctane Sulfonamide	ng/L	8.33	6.29	76	70	130	
NEtFOSAA	ng/L	8.33	6.21	75	70	130	
NMeFOSAA	ng/L	8.33	8.33	100	70	130	
Perfluorobutanoic acid	ng/L	8.33	6.33	76	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	5.53	75	70	130	
Perfluorodecanoic acid	ng/L	8.33	8.33	100	70	130	
Perfluorodecane Sulfonate	ng/L	8.07	8.53	106	70	130	
Perfluorododecanoic acid	ng/L	8.33	6.54	79	70	130	
Perfluoroheptanoic acid	ng/L	8.33	6.43	77	70	130	
Perfluoro-1-heptanesulfonate	ng/L	7.93	6.31	80	70	130	
Perfluorohexanoic acid	ng/L	8.33	6.46	78	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	6.05	80	70	130	
Perfluorononanoic acid	ng/L	8.33	6.31	76	70	130	
PFNS	ng/L	8.00	6.43	80	70	130	
Perfluorooctanoic acid	ng/L	8.33	6.63	80	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	5.49	71	70	130	
Perfluoropentanoic acid	ng/L	8.33	6.04	72	70	130	
PFPeS	ng/L	7.87	5.83	74	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	7.27	87	70	130	
Perfluorotridecanoic acid	ng/L	8.33	7.07	85	70	130	
Perfluoroundecanoic acid	ng/L	8.33	6.34	76	70	130	

FORM 7S - ORG

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	05/20/2019 00:16		Lab File ID:	2190519A_10.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	660791

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
4:2 FTS	ng/L	4.00	U	1.52	4.00	10.0	
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
PFNS	ng/L	4.00	U	2.11	4.00	10.0	
PFPeS	ng/L	4.00	U	2.07	4.00	10.0	
Perfluoro-1-heptanesulfonate	ng/L	4.00	U	2.01	4.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecane Sulfonate	ng/L	4.00	U	2.17	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonamide	ng/L	4.00	U	2.63	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

FORM 4I - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112			Instrument ID:	QQQ1		
Analysis Date:	05/20/2019 01:02			Lab File ID:	2190519A_14.d		
Analytical Method:	EPA 537 Modified			Analytical Batch:	660791		

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	50700	108	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	51200	108	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	52000	108	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	52100	104	70	130	
NEtFOSAA	ng/L	50000	50400	101	70	130	
NMeFOSAA	ng/L	50000	56800	114	70	130	
Perfluorobutanoic acid	ng/L	50000	51800	104	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	47800	108	70	130	
Perfluorodecanoic acid	ng/L	50000	55900	112	70	130	
Perfluorodecane Sulfonate	ng/L	48300	55400	115	70	130	
Perfluorododecanoic acid	ng/L	50000	55000	110	70	130	
Perfluoroheptanoic acid	ng/L	50000	53900	108	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	55700	117	70	130	
Perfluorohexanoic acid	ng/L	50000	53900	108	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	49900	109	70	130	
Perfluorononanoic acid	ng/L	50000	51600	103	70	130	
PFNS	ng/L	48000	54600	114	70	130	
Perfluorooctanoic acid	ng/L	50000	55100	110	70	130	
Perfluorooctane Sulfonate	ng/L	46300	47400	102	70	130	
Perfluoropentanoic acid	ng/L	50000	51500	103	70	130	
PFPeS	ng/L	47000	53300	113	70	130	
Perfluorotetradecanoic acid	ng/L	50000	60900	122	70	130	
Perfluorotridecanoic acid	ng/L	50000	60600	121	70	130	
Perfluoroundecanoic acid	ng/L	50000	51200	102	70	130	

FORM 7E - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	05/20/2019 02:21		Lab File ID:	2190519A_21.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	660791

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	53700	115	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	48500	102	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	52900	110	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	51000	102	70	130	
NEtFOSAA	ng/L	50000	52100	104	70	130	
NMeFOSAA	ng/L	50000	57300	115	70	130	
Perfluorobutanoic acid	ng/L	50000	52200	104	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	47300	107	70	130	
Perfluorodecanoic acid	ng/L	50000	52200	104	70	130	
Perfluorodecane Sulfonate	ng/L	48300	52500	109	70	130	
Perfluorododecanoic acid	ng/L	50000	52800	106	70	130	
Perfluoroheptanoic acid	ng/L	50000	52700	105	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	57300	121	70	130	
Perfluorohexanoic acid	ng/L	50000	53900	108	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	49500	109	70	130	
Perfluorononanoic acid	ng/L	50000	52900	106	70	130	
PFNS	ng/L	48000	56800	118	70	130	
Perfluorooctanoic acid	ng/L	50000	56100	112	70	130	
Perfluorooctane Sulfonate	ng/L	46300	46600	101	70	130	
Perfluoropentanoic acid	ng/L	50000	51400	103	70	130	
PFPeS	ng/L	47000	52800	112	70	130	
Perfluorotetradecanoic acid	ng/L	50000	54500	109	70	130	
Perfluorotridecanoic acid	ng/L	50000	56300	113	70	130	
Perfluoroundecanoic acid	ng/L	50000	54400	109	70	130	

FORM 7E - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112	Instrument ID:	QQQ1
Analysis Date:	05/20/2019 04:04	Lab File ID:	2190519A_30.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	660791

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	49900	107	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	52300	110	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	50700	106	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	51300	103	70	130	
NEtFOSAA	ng/L	50000	51800	104	70	130	
NMeFOSAA	ng/L	50000	51700	103	70	130	
Perfluorobutanoic acid	ng/L	50000	52400	105	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	47300	107	70	130	
Perfluorodecanoic acid	ng/L	50000	55300	111	70	130	
Perfluorodecane Sulfonate	ng/L	48300	57800	120	70	130	
Perfluorododecanoic acid	ng/L	50000	56300	113	70	130	
Perfluoroheptanoic acid	ng/L	50000	54900	110	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	56000	118	70	130	
Perfluorohexanoic acid	ng/L	50000	53600	107	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	50400	110	70	130	
Perfluorononanoic acid	ng/L	50000	51300	103	70	130	
PFNS	ng/L	48000	55400	115	70	130	
Perfluorooctanoic acid	ng/L	50000	55000	110	70	130	
Perfluorooctane Sulfonate	ng/L	46300	47200	102	70	130	
Perfluoropentanoic acid	ng/L	50000	53500	107	70	130	
PFPeS	ng/L	47000	51800	110	70	130	
Perfluorotetradecanoic acid	ng/L	50000	59900	120	70	130	
Perfluorotridecanoic acid	ng/L	50000	59400	119	70	130	
Perfluoroundecanoic acid	ng/L	50000	53700	107	70	130	

FORM 7E - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112	
Analysis Date:	05/20/2019 05:23	
Analytical Method:	EPA 537 Modified	

Instrument ID:	QQQ1
Lab File ID:	2190519A_37.d
Analytical Batch:	660791

ANALYTE	UNITS	TRUE	FOUND	% REC ⁄	LCL	UCL	Q
4:2 FTS	ng/L	46800	50300	108	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	52900	111	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	51900	108	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	51200	102	70	130	
NEtFOSAA	ng/L	50000	55600	111	70	130	
NMeFOSAA	ng/L	50000	58500	117	70	130	
Perfluorobutanoic acid	ng/L	50000	52300	105	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	48000	109	70	130	
Perfluorodecanoic acid	ng/L	50000	54100	108	70	130	
Perfluorodecane Sulfonate	ng/L	48300	56300	117	70	130	
Perfluorododecanoic acid	ng/L	50000	54000	108	70	130	
Perfluoroheptanoic acid	ng/L	50000	54200	108	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	57000	120	70	130	
Perfluorohexanoic acid	ng/L	50000	53100	106	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	50100	110	70	130	
Perfluorononanoic acid	ng/L	50000	53500	107	70	130	
PFNS	ng/L	48000	57300	119	70	130	
Perfluorooctanoic acid	ng/L	50000	54700	109	70	130	
Perfluorooctane Sulfonate	ng/L	46300	47100	102	70	130	
Perfluoropentanoic acid	ng/L	50000	51100	102	70	130	
PFPeS	ng/L	47000	52300	111	70	130	
Perfluorotetradecanoic acid	ng/L	50000	57500	115	70	130	
Perfluorotridecanoic acid	ng/L	50000	59300	119	70	130	
Perfluoroundecanoic acid	ng/L	50000	50400	101	70	130	

FORM 7E - ORG

INJECTION INTERNAL STANDARD AREA SUMMARY — *Not used for quantitation*

Report No:	219051112		Standard ID:	1205 (ICAL Midpoint)
Analyst:	BMH		Instrument ID:	QQQ1
Analysis Date:	05/19/19 23:20		Lab File ID:	2190519A_05.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	660791

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		176370		511945		170891		141060	

CLIENT SAMPLE ID	GCAL SAMP ID	Area	#	Area	#	Area	#	Area	#
MB1926788	1926788	164232		496147		162630		142855	
LCS1926789	1926789	163391		517587		165605		145779	
LCSD1926790	1926790	162441		496912		163977		142520	
AOI-1-7-SW-0-1	21905111201	166953		506385		158654		146276	
AOI-1-7-SW-0-1-DUP	21905111202	178088		525532		165634		147184	
AOI-1-9-SW-0-1	21905111206	165253		512940		161866		147358	
AOI-1-4-GW-17-22	21905111213	166150		518912		163768		145665	
AOI-1-4-GW-17-22-MS	21905111214	166144		542661		170846		154740	
AOI-1-4-GW-17-22-MSD	21905111215	176701		525341		165105		158274	
AOI-1-6-GW-15-20	21905111216	174111		524395		165067		155558	
AOI-2-1-GW-5-10	21905111217	183732		527772		165368		153466	
AOI-1-1-GW-7-12	21905111218	162313		510017		152388		149256	
AOI-1-5-GW-5-10	21905111219	163151		519281		157087		154876	
FQC-EB-050919-WL	21905111220	176316		516722		160216		153089	
FQC-EB-050719-ROD	21905111221	174929		524253		163038		153314	
FQC-EB-050719-SS-2	21905111222	165367		505328		158106		148413	
FQC-EB-050719-HA	21905111223	156457		519772		159584		149471	
FQC-EB-050719-SS-1	21905111224	174016		528464		163400		160403	
AOI-1-3-GW-4-9	21905111234	48178	*	137273	*	43750	*	40308	*
AOI-1-3-GW-4-9-DUP	21905111235	172937		536731		169195		160087	
AOI-1-2-GW-5-10	21905111236	164782		518062		160069		148710	
AOI-2-2-GW-5-10	21905111237	170455		532481		163639		158190	

AREA UPPER LIMIT = +50% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits
* Value outside QC limits

FORM 8I - ORG

Name	Data File	Type	Acq. Date-Time	Dil.
1201	2190519A_01.d	Cal	5/19/2019 22:34	1
1202	2190519A_02.d	Cal	5/19/2019 22:46	1
1203	2190519A_03.d	Cal	5/19/2019 22:57	1
1204	2190519A_04.d	Cal	5/19/2019 23:08	1
1205	2190519A_05.d	Cal	5/19/2019 23:20	1
1206	2190519A_06.d	Cal	5/19/2019 23:31	1
1207	2190519A_07.d	Cal	5/19/2019 23:42	1
1600	2190519A_08.d	QC	5/19/2019 23:54	1
1450	2190519A_09.d	Sample	5/20/2019 0:05	1
1500	2190519A_10.d	Sample	5/20/2019 0:16	1
1500	2190527B_01.d	Sample	5/27/2019 17:18	1
1600	2190527B_02.d	QC	5/27/2019 17:30	1
1450	2190527B_03.d	Sample	5/27/2019 17:41	1
1927062	2190527B_04.d	Sample	5/27/2019 17:52	1
1927063	2190527B_07.d	QC	5/27/2019 18:26	1
1927064	2190527B_08.d	QC	5/27/2019 18:38	1
1400	2190527B_13.d	QC	5/27/2019 19:35	1
21905111244	2190527B_14.d	Sample	5/27/2019 19:46	1
21905111245	2190527B_15.d	Sample	5/27/2019 19:57	1
21905111246	2190527B_16.d	Sample	5/27/2019 20:09	1
21905111247	2190527B_17.d	Sample	5/27/2019 20:20	1
21905111248	2190527B_18.d	Sample	5/27/2019 20:32	1
21905111250	2190527B_19.d	Sample	5/27/2019 20:43	1
21905111251	2190527B_20.d	Sample	5/27/2019 20:54	1
21905111252	2190527B_21.d	Sample	5/27/2019 21:06	1
21905111253	2190527B_22.d	Sample	5/27/2019 21:17	1
21905111254	2190527B_23.d	Sample	5/27/2019 21:28	1
1400	2190527B_24.d	QC	5/27/2019 21:40	1
21905111239	2190527B_25.d	QC	5/27/2019 21:51	1
21905111240	2190527B_26.d	QC	5/27/2019 22:02	1
1400	2190527B_35.d	QC	5/27/2019 23:45	1
1927338	2190527B_72.d	Sample	5/28/2019 6:47	1
21905170606	2190527B_73.d	Sample	5/28/2019 6:58	1
21905111255	2190527B_74.d	Sample	5/28/2019 7:10	1
1927339	2190527B_75.d	QC	5/28/2019 7:21	1
1927340	2190527B_76.d	QC	5/28/2019 7:32	1
21905097601	2190527B_77.d	Sample	5/28/2019 7:44	1
21905097618	2190527B_78.d	Sample	5/28/2019 7:55	1
21905170601	2190527B_79.d	Sample	5/28/2019 8:07	1
21905170602	2190527B_80.d	Sample	5/28/2019 8:18	1
21905170603	2190527B_81.d	Sample	5/28/2019 8:30	1
21905170604	2190527B_82.d	Sample	5/28/2019 8:41	1
21905170605	2190527B_83.d	Sample	5/28/2019 8:52	1
1400	2190527B_84.d	QC	5/28/2019 9:03	1
1927067	2190527B_85.d	Sample	5/28/2019 9:15	1

1927068	2190527B_86.d	QC	5/28/2019 9:26	1
1927069	2190527B_87.d	QC	5/28/2019 9:37	1
21905111249	2190527B_88.d	Sample	5/28/2019 9:49	1
21905140301	2190527B_89.d	Sample	5/28/2019 10:00	5
1400	2190527B_90.d	QC	5/28/2019 10:12	1

Analyst:	BMH	Expiration
Batch:	2190527B	Date
Current ICAL Bath:	2190519ACAL	Date
20mM Amm Acetat	008-31-7	5/29/2019
Methanol	2127901	7/31/2023
Calibration Std	008-26-5	10/26/2019
ICV Std	008-3-1	6/3/2019
EIS Mix	008-27-7	11/8/2019

ORGANICS INSTRUMENT BLANK

Report No:	219051112	Instrument ID: QQQ1
Analysis Date:	05/27/2019 17:18	Lab File ID: 2190527B_01.d
Analytical Method:	EPA 537 Modified	Analytical Batch: 660792

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
4:2 FTS	ng/L	4.00	U	1.52	4.00	10.0	
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
PFNS	ng/L	4.00	U	2.11	4.00	10.0	
PFPeS	ng/L	4.00	U	2.07	4.00	10.0	
Perfluoro-1-heptanesulfonate	ng/L	4.00	U	2.01	4.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecane Sulfonate	ng/L	4.00	U	2.17	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonamide	ng/L	4.00	U	2.63	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

FORM 4I - ORG

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219051112	Instrument ID:	QQQ1
Analysis Date:	05/27/2019 17:41	Lab File ID:	2190527B_03.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	660792

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	7.80	8.80	113	70	130	
6:2 Fluorotelomer sulfonate	ng/L	7.93	8.40	106	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	8.80	110	70	130	
Perfluorooctane Sulfonamide	ng/L	8.33	8.87	106	70	130	
NEtFOSAA	ng/L	8.33	8.07	97	70	130	
NMeFOSAA	ng/L	8.33	10.7	129	70	130	
Perfluorobutanoic acid	ng/L	8.33	8.40	101	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	7.73	104	70	130	
Perfluorodecanoic acid	ng/L	8.33	9.33	112	70	130	
Perfluorodecane Sulfonate	ng/L	8.07	9.53	119	70	130	
Perfluorododecanoic acid	ng/L	8.33	8.80	106	70	130	
Perfluoroheptanoic acid	ng/L	8.33	8.67	104	70	130	
Perfluoro-1-heptanesulfonate	ng/L	7.93	8.40	106	70	130	
Perfluorohexanoic acid	ng/L	8.33	9.13	110	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	7.93	105	70	130	
Perfluorononanoic acid	ng/L	8.33	8.53	102	70	130	
PFNS	ng/L	8.00	8.47	106	70	130	
Perfluorooctanoic acid	ng/L	8.33	8.47	102	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	7.93	103	70	130	
Perfluoropentanoic acid	ng/L	8.33	8.60	103	70	130	
PFPeS	ng/L	7.87	8.60	110	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	10.3	124	70	130	
Perfluorotridecanoic acid	ng/L	8.33	9.53	115	70	130	
Perfluoroundecanoic acid	ng/L	8.33	8.27	99	70	130	

FORM 7S - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112	Instrument ID:	QQQ1
Analysis Date:	05/27/2019 19:35	Lab File ID:	2190527B_13.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	660792

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	48800	104	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	49800	105	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	51600	108	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	50900	102	70	130	
NEtFOSAA	ng/L	50000	47700	95	70	130	
NMeFOSAA	ng/L	50000	55800	112	70	130	
Perfluorobutanoic acid	ng/L	50000	50100	100	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	47500	107	70	130	
Perfluorodecanoic acid	ng/L	50000	53800	108	70	130	
Perfluorodecane Sulfonate	ng/L	48300	58800	122	70	130	
Perfluorododecanoic acid	ng/L	50000	52600	105	70	130	
Perfluoroheptanoic acid	ng/L	50000	53300	107	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	57900	122	70	130	
Perfluorohexanoic acid	ng/L	50000	51600	103	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	48500	106	70	130	
Perfluorononanoic acid	ng/L	50000	53300	107	70	130	
PFNS	ng/L	48000	54500	114	70	130	
Perfluorooctanoic acid	ng/L	50000	53900	108	70	130	
Perfluorooctane Sulfonate	ng/L	46300	49000	106	70	130	
Perfluoropentanoic acid	ng/L	50000	50000	100	70	130	
PFPeS	ng/L	47000	51800	110	70	130	
Perfluorotetradecanoic acid	ng/L	50000	55800	112	70	130	
Perfluorotridecanoic acid	ng/L	50000	59100	118	70	130	
Perfluoroundecanoic acid	ng/L	50000	55200	110	70	130	

FORM 7E - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112			Instrument ID:	QQQ1		
Analysis Date:	05/27/2019 21:40			Lab File ID:	2190527B_24.d		
Analytical Method:	EPA 537 Modified			Analytical Batch:	660792		

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	50100	107	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	49500	104	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	50000	104	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	52500	105	70	130	
NEtFOSAA	ng/L	50000	53800	108	70	130	
NMeFOSAA	ng/L	50000	58600	117	70	130	
Perfluorobutanoic acid	ng/L	50000	49700	99	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	47200	107	70	130	
Perfluorodecanoic acid	ng/L	50000	55900	112	70	130	
Perfluorodecane Sulfonate	ng/L	48300	60800	126	70	130	
Perfluorododecanoic acid	ng/L	50000	52300	105	70	130	
Perfluoroheptanoic acid	ng/L	50000	53700	107	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	56600	119	70	130	
Perfluorohexanoic acid	ng/L	50000	54200	108	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	49000	108	70	130	
Perfluorononanoic acid	ng/L	50000	51700	103	70	130	
PFNS	ng/L	48000	53400	111	70	130	
Perfluorooctanoic acid	ng/L	50000	52500	105	70	130	
Perfluorooctane Sulfonate	ng/L	46300	51400	111	70	130	
Perfluoropentanoic acid	ng/L	50000	50000	100	70	130	
PFPeS	ng/L	47000	54100	115	70	130	
Perfluorotetradecanoic acid	ng/L	50000	56900	114	70	130	
Perfluorotridecanoic acid	ng/L	50000	57600	115	70	130	
Perfluoroundecanoic acid	ng/L	50000	51900	104	70	130	

FORM 7E - ORG

Report No:	219051112	Standard ID:	1450 (ISC)
Analyst:	BMH	Instrument ID:	QQQ1
Analysis Date:	05/27/19 17:41	Lab File ID:	2190527B_03.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	660792

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		225401		710931		226995		197970	
CLIENT SAMPLE ID	**GCAL SAMP ID**	✓	**#**	✓	**#**	✓	**#**	✓	**#**
MB1927062	1927062	199660		656663		204585		179839	
LCS1927063	1927063	187576		606816		189470		169717	
LCSD1927064	1927064	197992		633087		195895		178721	
AOI-2-3-SB-0-2	21905111244	192572		626637		190081		176012	
AOI-2-1-SB-0-2	21905111245	182985		618512		187071		172559	
AOI-1-1-SB-0-2	21905111246	179971		584733		178241		166419	
AOI-1-6-SB-0-2	21905111247	189534		604367		190445		173628	
AOI-1-6-SB-2-4	21905111248	189567		617391		190606		176890	
AOI-1-3-SB-0-2	21905111250	181963		613797		193127		171388	
AOI-1-3-SB-2-4	21905111251	179823		586793		181832		168813	
AOI-1-4-SB-0-2	21905111252	183499		616105		185676		172266	
AOI-2-2-SB-2-4-DUP	21905111254	182215		601988		180106		173018	

AREA UPPER LIMIT = +50% of internal standard area   # Column used to flag values outside QC limits

AREA LOWER LIMIT = -50% of internal standard area   * Value outside QC limits

FORM 8I - ORG

Quantitative Analysis Calibration Report

Batch Data Path   D:\MassHunter\Data\2190528ACAL\QuantResults\2190530A.batch.bin

Analysis Time	6/6/2019 12:57 PM	**Analyst Name**	GCAL\lcms
Report Time	6/6/2019 12:59 PM	**Reporter Name**	GCAL\lcms
Last Calib Update	6/6/2019 12:42 PM	**Batch State**	Processed

Calibration Info

Extracted ISTD   MPFBA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	49008	20.0000	2450.4238
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	52173	20.0000	2608.6271
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	51456	20.0000	2572.7859
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	57022	20.0000	2851.1190
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	62903	20.0000	3145.1289
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	61650	20.0000	3082.4951
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	61542	20.0000	3077.0881

Target Compound   PFBA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	4078	0.5000	3.3283
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	18637	2.0000	3.5721
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	45817	5.0000	3.5617
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	111848	10.0000	3.9230
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	623005	50.0000	3.9617
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	1298652	100.0000	4.2130
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	2723377	200.0000	4.4253
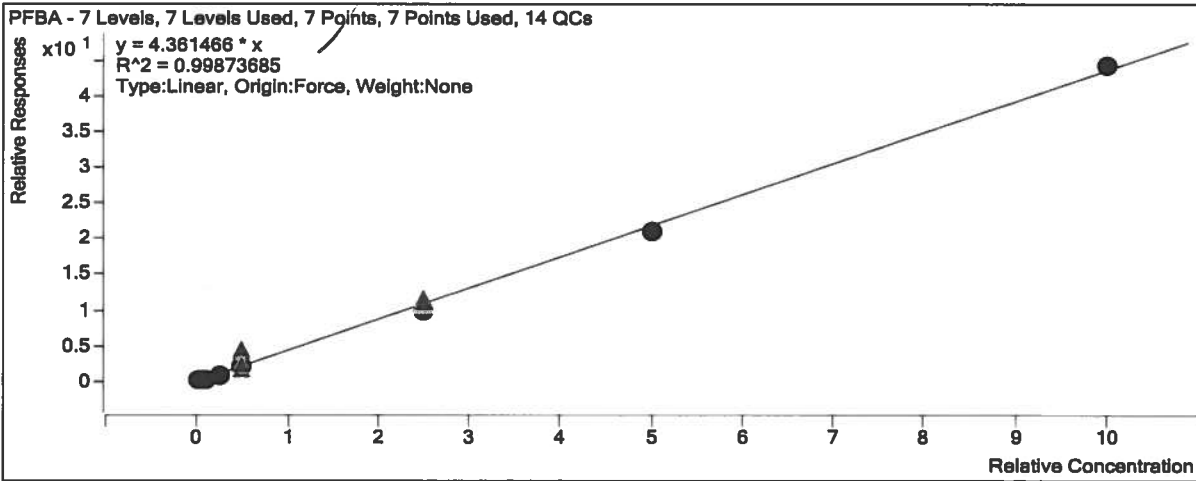
PFBA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

$y = 4.361466 * x$
$R^2 = 0.99873685$
Type:Linear, Origin:Force, Weight:None

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	81767	10.0000	4.1408
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	448261	50.0000	4.4608
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	969834	100.0000	4.6680
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	2054884	200.0000	4.9047
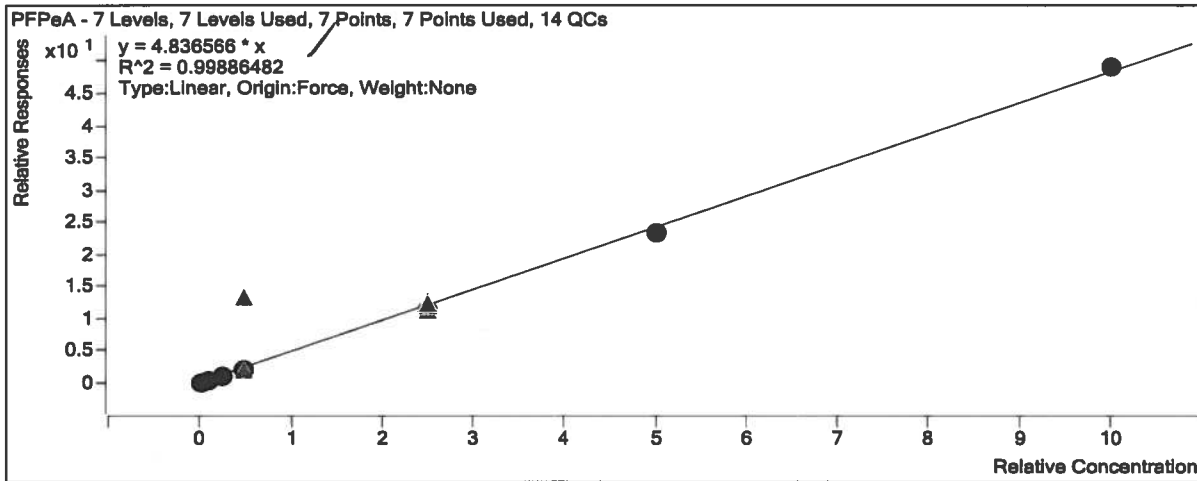
PFPeA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 4.836566 * x
R^2 = 0.99886482
Type:Linear, Origin:Force, Weight:None

Relative Responses (x10^1) vs Relative Concentration

Extracted ISTD M5PFPeA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	32853	20.0000	1642.6324
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	36345	20.0000	1817.2689
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	35560	20.0000	1777.9841
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	39493	20.0000	1974.6725
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	40196	20.0000	2009.7801
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	41553	20.0000	2077.6409
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	41896	20.0000	2094.7922

Target Compound PFBS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	2564	0.4425	3.7847
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	13065	1.7700	4.1187
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	32588	4.4250	4.1180
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	78297	8.8500	4.5652

D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	399005	44.2500	4.4425
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	862981	88.5000	4.7976
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	1797211	177.0000	4.9630
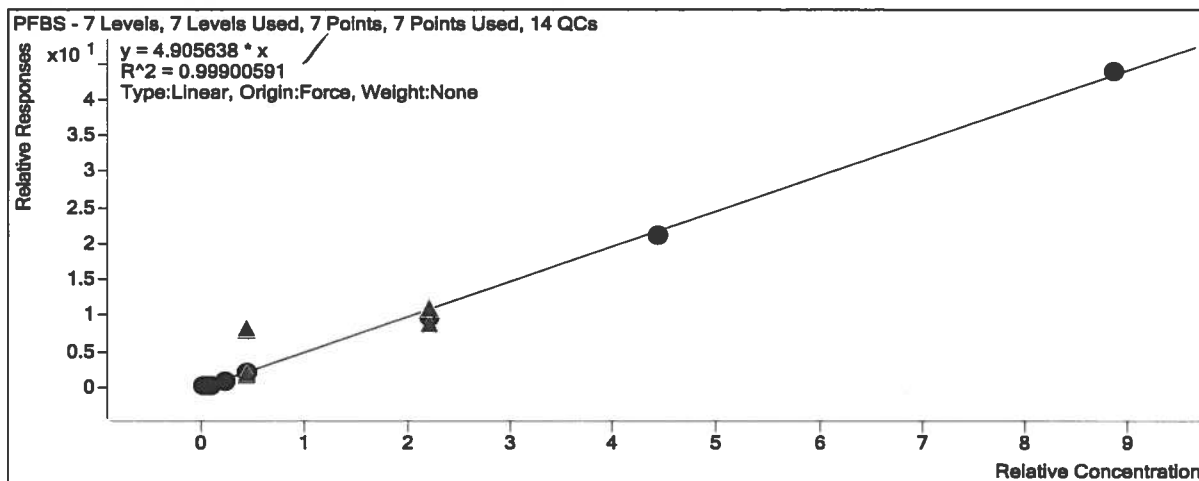
PFBS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

$y = 4.905638 * x$
$R^2 = 0.99900591$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   **M3PFBS**

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	30619	20.0000	1530.9657
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	35842	20.0000	1792.0924
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	35767	20.0000	1788.3573
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	38759	20.0000	1937.9331
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	40594	20.0000	2029.7217
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	40650	20.0000	2032.5105
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	40918	20.0000	2045.8786

Extracted ISTD   **M2 4:2 FTS**

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	8074	20.0000	403.6955
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	9671	20.0000	483.5708
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	9630	20.0000	481.5163
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	10011	20.0000	500.5685
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	10806	20.0000	540.3024
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	10410	20.0000	520.5043
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	10296	20.0000	514.8026

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	893186	187.0000	9.2781
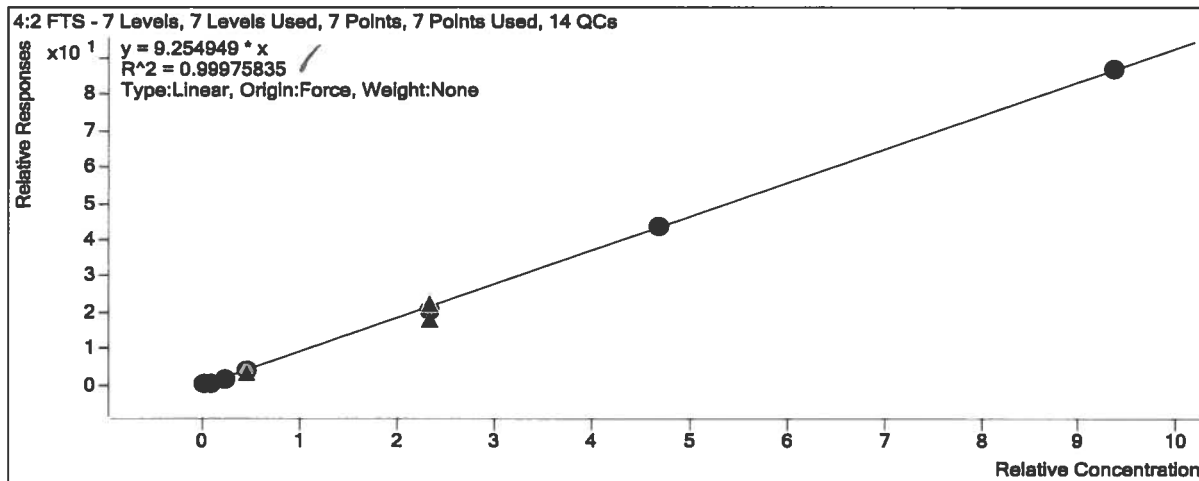
4:2 FTS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
$y = 9.254949 * x$
$R^2 = 0.99975835$
Type:Linear, Origin:Force, Weight:None

(Relative Responses vs Relative Concentration)

Extracted ISTD　　　　　　*M5PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	72032	20.0000	3601.6173
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	79317	20.0000	3965.8435
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	77834	20.0000	3891.7220
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	84524	20.0000	4226.2194
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	87528	20.0000	4376.4066
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	88547	20.0000	4427.3286
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	86189	20.0000	4309.4727

Instrument ISTD　　　　　　*M2PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	564203	40.0000	14105.0649
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	611553	40.0000	15288.8139
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	597811	40.0000	14945.2650
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	647943	40.0000	16198.5785
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	721852	40.0000	18046.3099
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	680487	40.0000	17012.1642
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	678131	40.0000	16953.2845

Quantitative Analysis Calibration Report
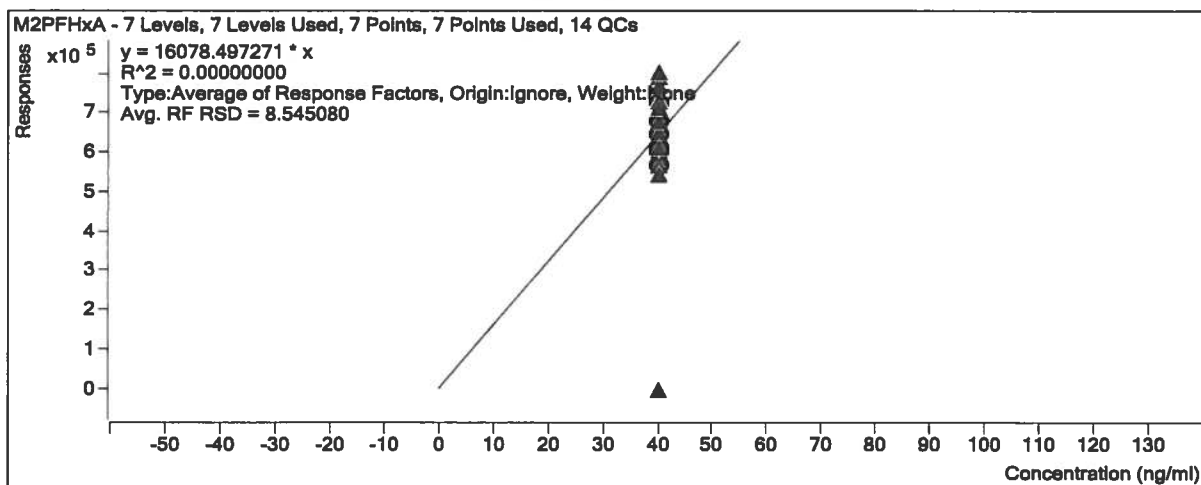
M2PFHxA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 16078.497271 * x
R^2 = 0.00000000
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 8.545080

Target Compound　　　　　　　　　　*PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	6331	0.5000	3.5157
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	28783	2.0000	3.6288
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	66721	5.0000	3.4289
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	161269	10.0000	3.8159
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	799728	50.0000	3.6547
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	1718348	100.0000	3.8812
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	3563753	200.0000	4.1348

PFHxA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 4.062825 * x
R^2 = 0.99828056
Type:Linear, Origin:Force, Weight:None

Target Compound　　　　　　　　　　*LPFPeS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	1984253	188.0000	2.4491
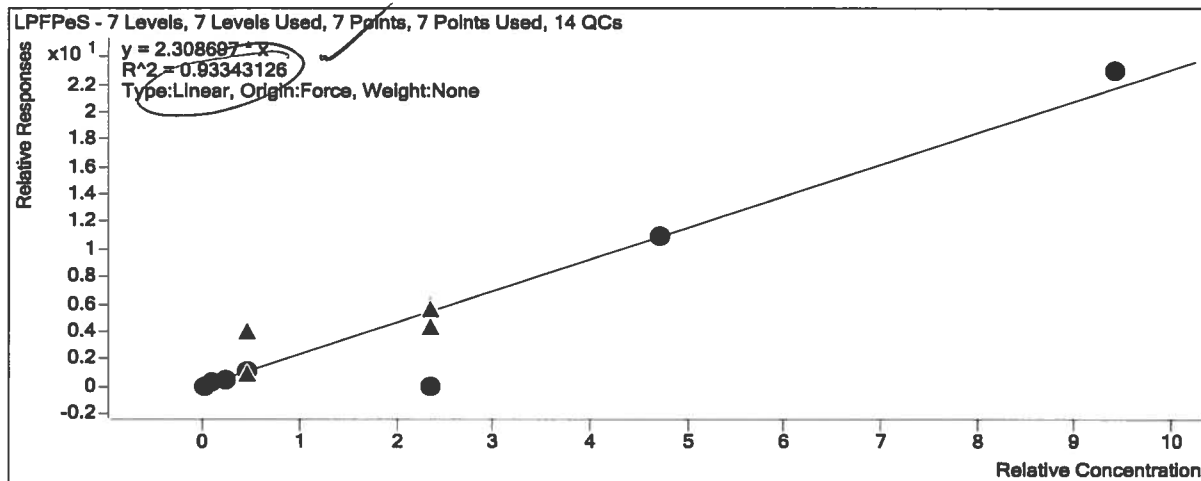
LPFPeS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 2.308697 * x
R^2 = 0.93343126
Type:Linear, Origin:Force, Weight:None

Extracted ISTD M4PFHpA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	65624	20.0000	3281.2055
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	71801	20.0000	3590.0286
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	68110	20.0000	3405.5201
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	71760	20.0000	3588.0182
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	75318	20.0000	3765.8791
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	74799	20.0000	3739.9556
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	73847	20.0000	3692.3530

Target Compound PFHpA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	5575	0.5000	3.3983
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	27739	2.0000	3.8633
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	66626	5.0000	3.9128
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	155615	10.0000	4.3371
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	787450	50.0000	4.1820
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	1650867	100.0000	4.4141
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	3439368	200.0000	4.6574

Quantitative Analysis Calibration Report
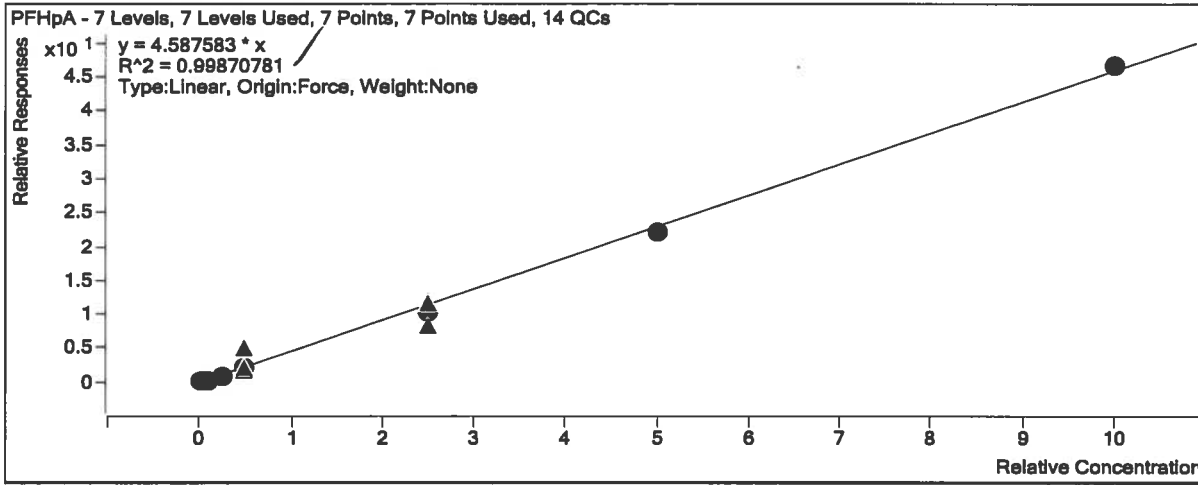
PFHpA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

$y = 4.587583 * x$
$R^2 = 0.99870781$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD　　　　　　　　　　　　M3PFHxS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	38274	20.0000	1913.7203
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	42890	20.0000	2144.5018
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	43480	20.0000	2173.9844
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	46424	20.0000	2321.2093
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	43659	20.0000	2182.9571
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	45875	20.0000	2293.7429
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	46389	20.0000	2319.4713

Target Compound　　　　　　　　　　　PFHxS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	3231	0.4560	3.7020
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	15837	1.8240	4.0488
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	38547	4.5600	3.8884
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	92252	9.1200	4.3578
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	446784	45.6000	4.4884
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	966762	91.2000	4.6215
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	2087555	182.4000	4.9343

Quantitative Analysis Calibration Report
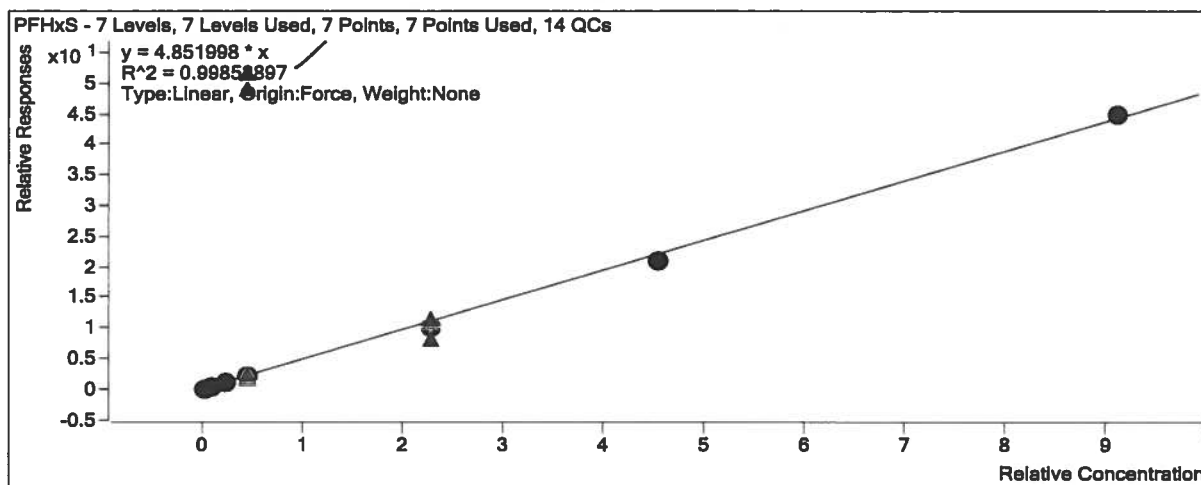
PFHxS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 4.851998 * x
R^2 = 0.99851897
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M2 6:2 FTS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	12052	20.0000	602.5896
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	13995	20.0000	699.7380
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	13540	20.0000	676.9767
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	14582	20.0000	729.0827
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	15450	20.0000	772.4917
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	15339	20.0000	766.9277
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	16096	20.0000	804.8142

Target Compound   6:2 FTS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	1268	0.4750	4.4315
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	5922	1.9000	4.4545
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	14813	4.7500	4.6064
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	36001	9.5000	5.1978
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	181110	47.5000	4.9358
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	373655	95.0000	5.1285
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	751569	190.0000	4.9150

Quantitative Analysis Calibration Report
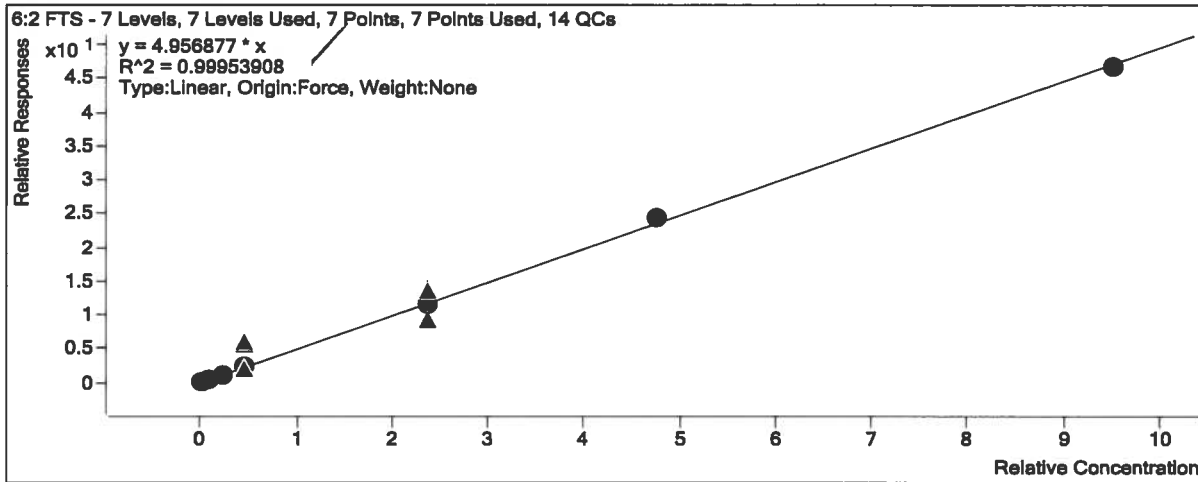
6:2 FTS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 4.956877 * x
R^2 = 0.99953908
Type:Linear, Origin:Force, Weight:None

Extracted ISTD　　　　　　　　　　　M8PFOA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	43990	20.0000	2199.5014
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	49453	20.0000	2472.6448
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	47545	20.0000	2377.2295
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	50571	20.0000	2528.5252
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	49581	20.0000	2479.0253
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	51287	20.0000	2564.3347
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	48731	20.0000	2436.5393

Instrument ISTD　　　　　　　　　　M2PFOA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	183080	20.0000	9154.0056
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	196531	20.0000	9826.5324
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	192336	20.0000	9616.7765
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	200437	20.0000	10021.8588
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	216017	20.0000	10800.8316
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	205721	20.0000	10286.0411
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	203122	20.0000	10156.1158

Quantitative Analysis Calibration Report
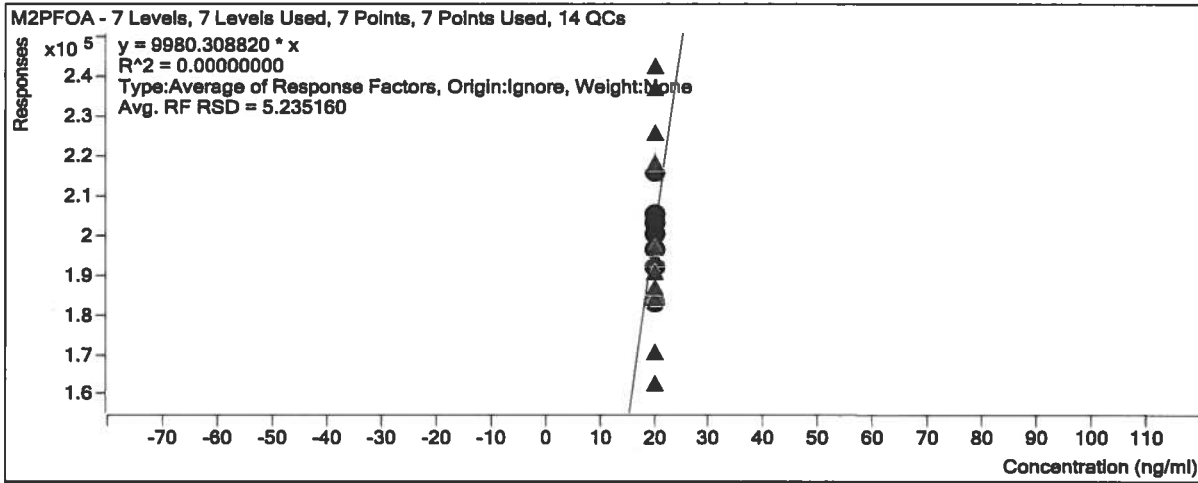
M2PFOA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 9980.308820 * x
R^2 = 0.00000000
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 5.235160

Target Compound		PFOA					

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	4735	0.5000	4.3052
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	20054	2.0000	4.0552
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	45611	5.0000	3.8374
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	107453	10.0000	4.2496
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	537419	50.0000	4.3357
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	1153168	100.0000	4.4969
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	2352935	200.0000	4.8284

PFOA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 4.740414 * x
R^2 = 0.99823379
Type:Linear, Origin:Force, Weight:None

Target Compound		LPFHpS					

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	2131568	190.0000	4.6044
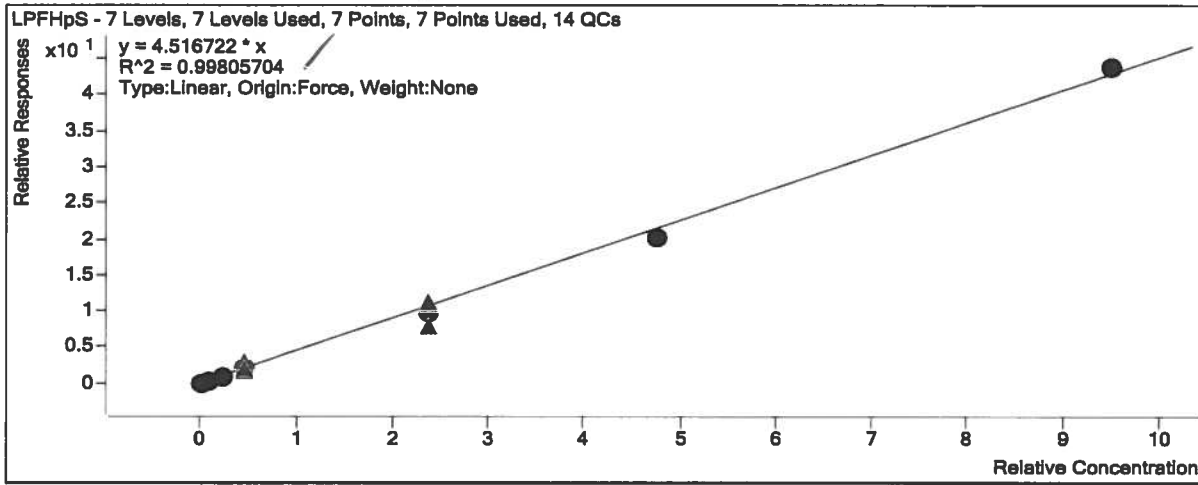
LPFHpS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
$y = 4.516722 * x$
$R^2 = 0.99805704$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD M9PFNA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	55624	20.0000	2781.2137
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	61024	20.0000	3051.2087
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	55166	20.0000	2758.2796
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	59949	20.0000	2997.4552
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	60109	20.0000	3005.4536
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	59289	20.0000	2964.4341
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	59346	20.0000	2967.2783

Target Compound PFNA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	4343	0.5000	3.1232
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	19816	2.0000	3.2472
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	46144	5.0000	3.3458
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	114380	10.0000	3.8159
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	558317	50.0000	3.7154
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	1210385	100.0000	4.0830
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	2474243	200.0000	4.1692
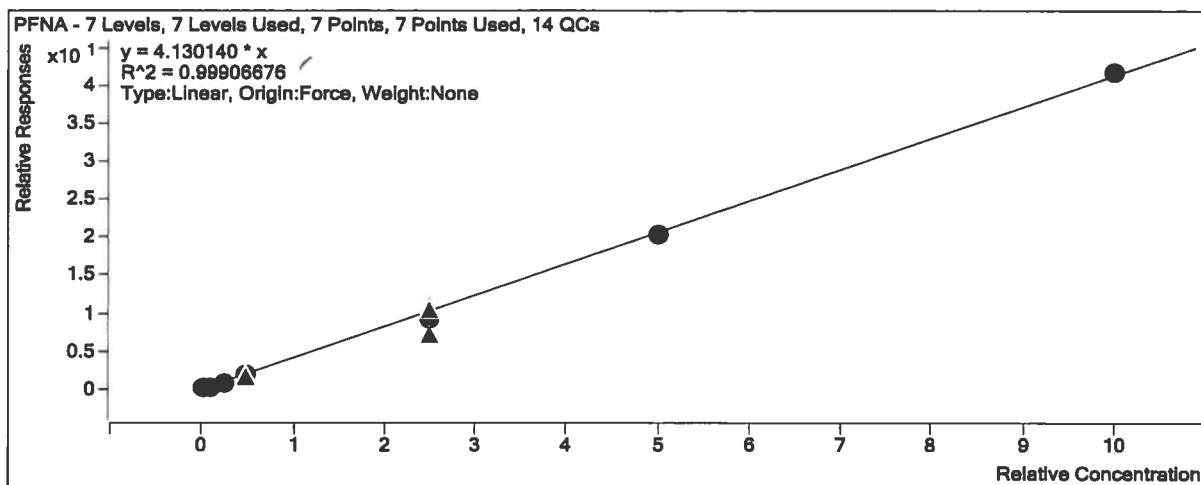
PFNA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 4.130140 * x
R^2 = 0.99906676
Type:Linear, Origin:Force, Weight:None

Instrument ISTD   M4PFOS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	156039	20.0000	7801.9285
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	178977	20.0000	8948.8678
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	176856	20.0000	8842.7889
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	188464	20.0000	9423.1999
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	213753	20.0000	10687.6301
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	193312	20.0000	9665.6220
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	191560	20.0000	9578.0090

M4PFOS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 9278.292336 * x
R^2 = 0.00000000
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 9.564308

Target Compound   PFOS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	2127237	185.1000	5.5891
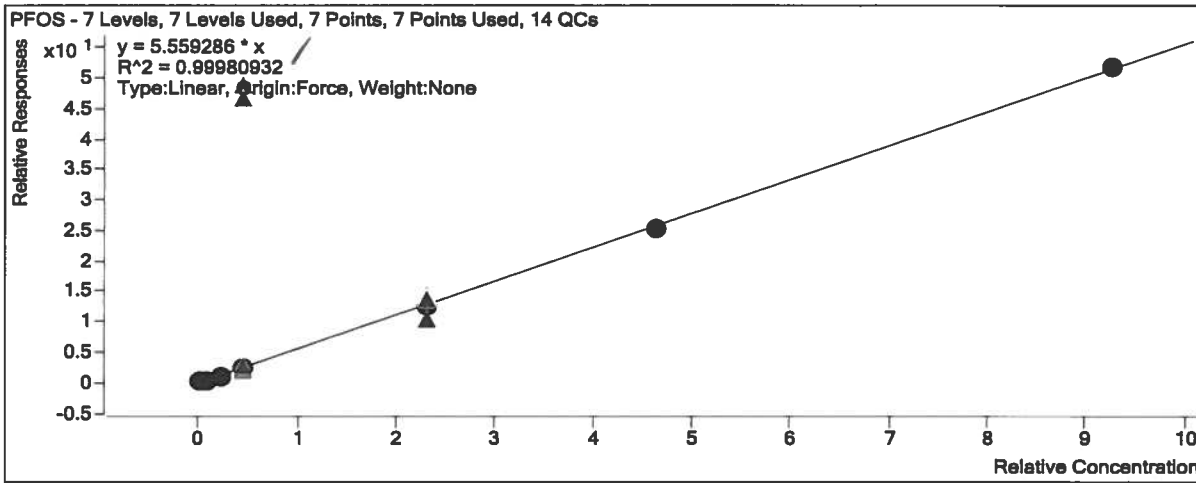
PFOS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
$y = 5.559286 * x$
$R^2 = 0.99980932$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   *M8PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	35824	20.0000	1791.1821
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	40339	20.0000	2016.9533
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	38318	20.0000	1915.9117
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	41083	20.0000	2054.1487
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	39180	20.0000	1958.9912
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	40853	20.0000	2042.6461
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	41125	20.0000	2056.2271

Extracted ISTD   *M2 8:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	12219	20.0000	610.9516
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	14330	20.0000	716.5150
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	13936	20.0000	696.8228
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	14581	20.0000	729.0526
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	14782	20.0000	739.0832
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	14292	20.0000	714.6105
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	14965	20.0000	748.2251

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	40838	9.6000	5.8349
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	203551	48.0000	5.7377
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	391605	96.0000	5.7083
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	753308	192.0000	5.2437
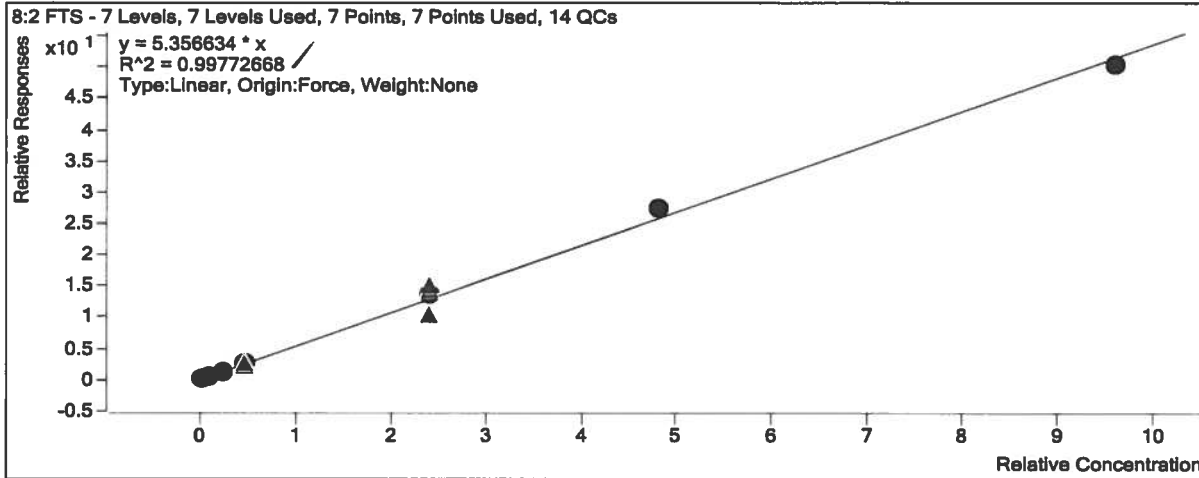
8:2 FTS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

$y = 5.356634 * x$
$R^2 = 0.99772668$
Type:Linear, Origin:Force, Weight:None

Extracted ISTD M6PFDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	49439	20.0000	2471.9567
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	54550	20.0000	2727.4899
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	52635	20.0000	2631.7489
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	51707	20.0000	2585.3593
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	53222	20.0000	2661.0758
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	51684	20.0000	2584.1876
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	49994	20.0000	2499.6780

Instrument ISTD M2PFDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	192165	20.0000	9608.2364
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	199104	20.0000	9955.1866
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	200584	20.0000	10029.2074
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	201181	20.0000	10059.0546

D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	224798	20.0000	11239.9145
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	193635	20.0000	9681.7591
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	199411	20.0000	9970.5596
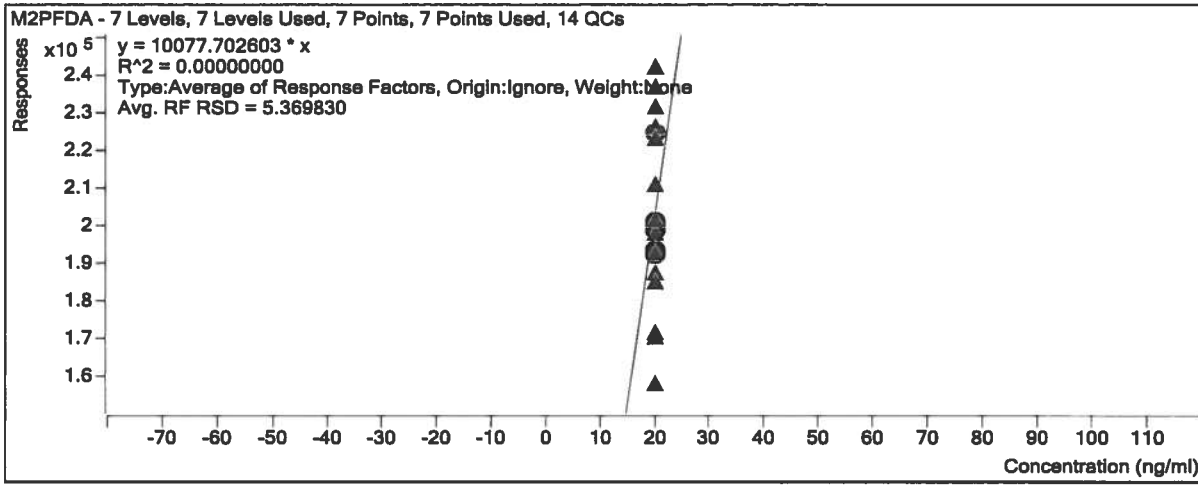
M2PFDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
$y = 10077.702603 * x$
$R^2 = 0.00000000$
Type:Average of Response Factors, Origin:Ignore, Weight:None
Avg. RF RSD = 5.369830

Target Compound	PFDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	4396	0.5000	3.5566
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	19085	2.0000	3.4986
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	44757	5.0000	3.4013
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	103363	10.0000	3.9980
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	522457	50.0000	3.9267
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	1096887	100.0000	4.2446
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	2150189	200.0000	4.3009
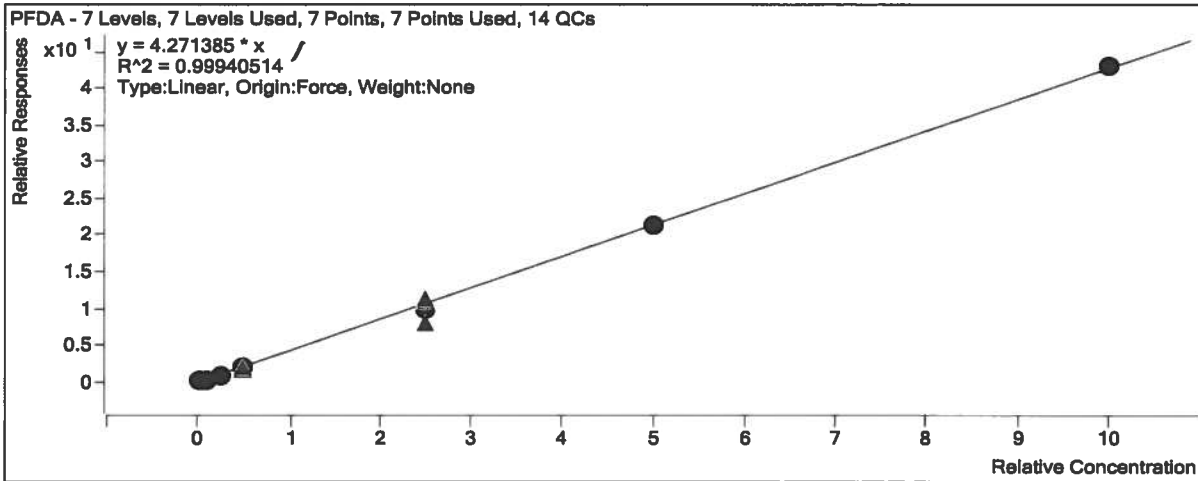
PFDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
$y = 4.271385 * x$
$R^2 = 0.99940514$
Type:Linear, Origin:Force, Weight:None

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	2027213	192.0000	3.5583
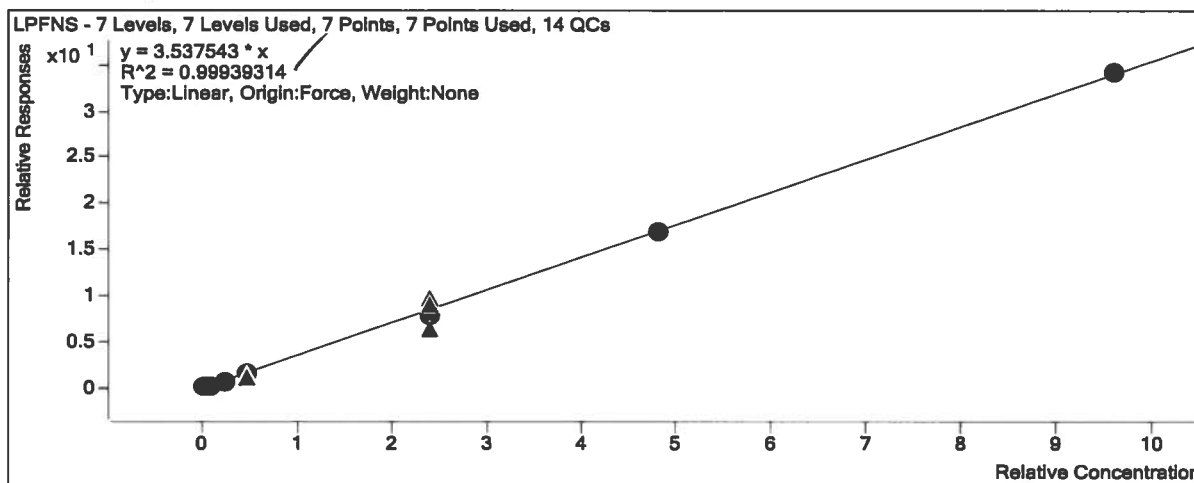
LPFNS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

$y = 3.537543 * x$
$R^2 = 0.99939314$
Type:Linear, Origin:Force, Weight:None

Relative Responses (x10^1) vs Relative Concentration

Extracted ISTD   *d3-NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	5636	20.0000	281.7944
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	6770	20.0000	338.5221
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	5932	20.0000	296.6008
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	6413	20.0000	320.6307
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	7232	20.0000	361.5872
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	8146	20.0000	407.3103
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	9060	20.0000	453.0008

Target Compound   *NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	848	0.5000	6.0172
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	5315	2.0000	7.8504
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	12414	5.0000	8.3710
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	31294	10.0000	9.7603
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	158198	50.0000	8.7502
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	344765	100.0000	8.4644
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	721566	200.0000	7.9643

Quantitative Analysis Calibration Report
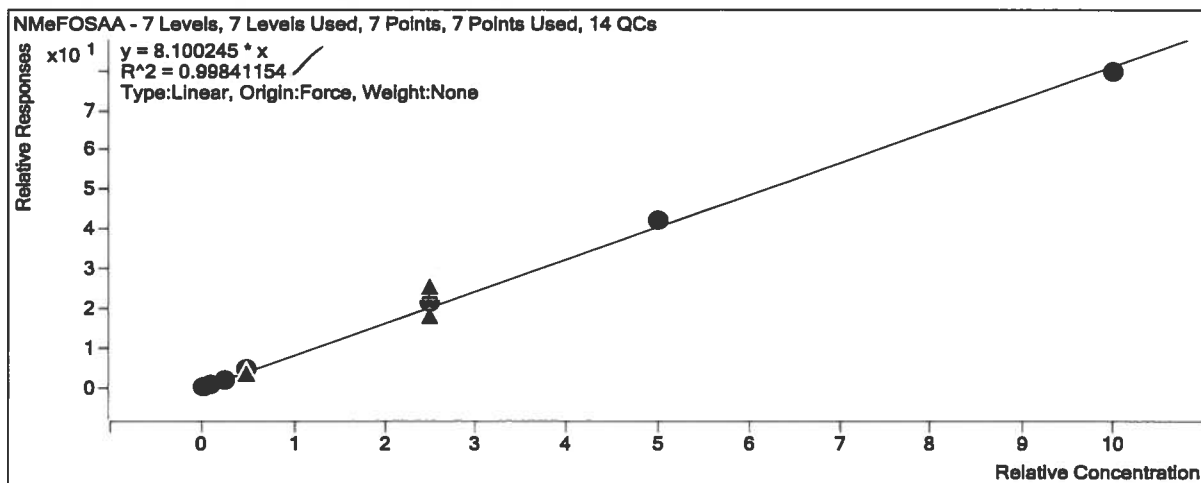
NMeFOSAA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

y = 8.100245 * x
R^2 = 0.99841154
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   M8FOSA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	51145	20.0000	2557.2559
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	60565	20.0000	3028.2424
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	60296	20.0000	3014.7999
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	65961	20.0000	3298.0627
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	61847	20.0000	3092.3325
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	65515	20.0000	3275.7577
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	66569	20.0000	3328.4673

Target Compound   FOSA-I

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	4599	0.5000	3.5967
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	23263	2.0000	3.8410
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	55709	5.0000	3.6957
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	135264	10.0000	4.1013
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	646989	50.0000	4.1845
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	1433209	100.0000	4.3752
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	3046701	200.0000	4.5767

Quantitative Analysis Calibration Report
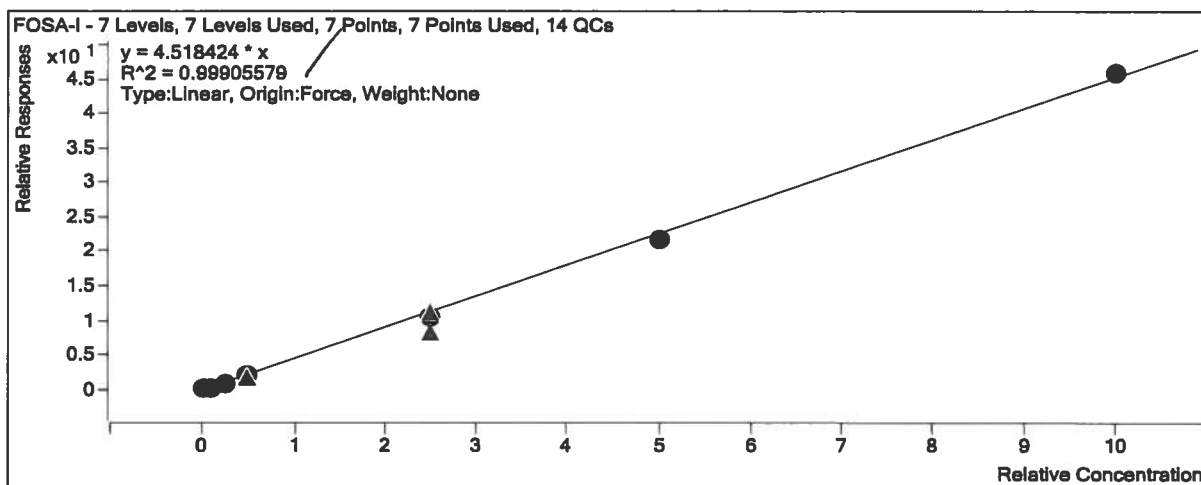
FOSA-I - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 4.518424 * x
R^2 = 0.99905579
Type:Linear, Origin:Force, Weight:None

Extracted ISTD   *d5-NEtFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	7885	20.0000	394.2660
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	8865	20.0000	443.2591
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	9351	20.0000	467.5585
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	9803	20.0000	490.1594
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	10105	20.0000	505.2745
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	10123	20.0000	506.1377
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	9012	20.0000	450.5909

Target Compound   *NEtFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	1300	0.5000	6.5944
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	5293	2.0000	5.9703
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	12757	5.0000	5.4568
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	27216	10.0000	5.5524
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	147345	50.0000	5.8323
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	315152	100.0000	6.2266
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	633786	200.0000	7.0328

Quantitative Analysis Calibration Report
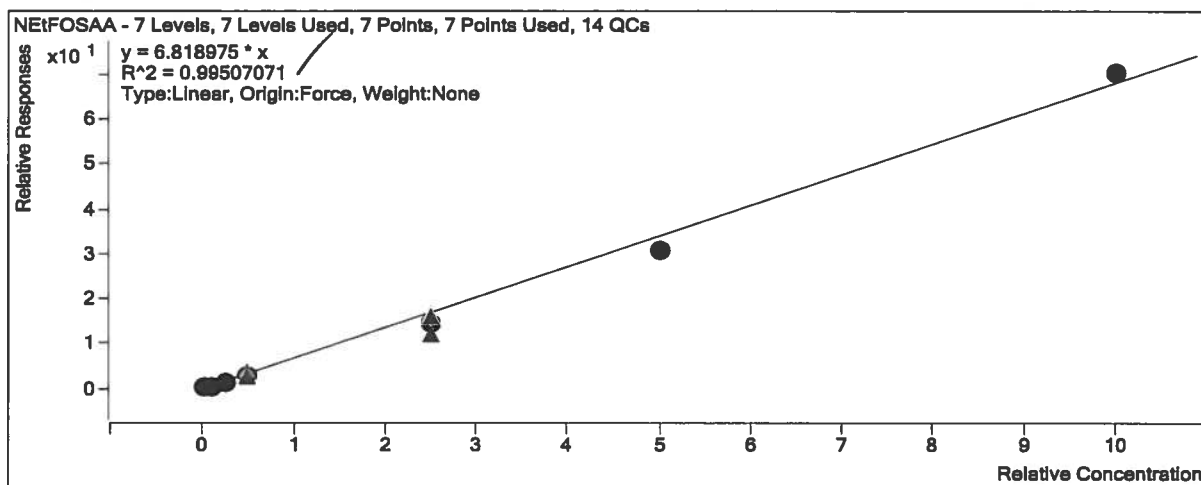
NEtFOSAA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 6.818975 * x
R^2 = 0.99507071
Type:Linear, Origin:Force, Weight:None

Relative Responses (×10¹) vs *Relative Concentration*

Extracted ISTD   M7PFUdA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	41431	20.0000	2071.5688
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	45627	20.0000	2281.3599
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	42146	20.0000	2107.3140
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	42666	20.0000	2133.3085
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	43005	20.0000	2150.2374
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	43837	20.0000	2191.8448
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	40184	20.0000	2009.2130

Target Compound   PFUdA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	3831	0.5000	3.6984
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	15777	2.0000	3.4579
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	37617	5.0000	3.5701
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	89591	10.0000	4.1996
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	447985	50.0000	4.1668
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	924528	100.0000	4.2180
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	1855047	200.0000	4.6164

Quantitative Analysis Calibration Report
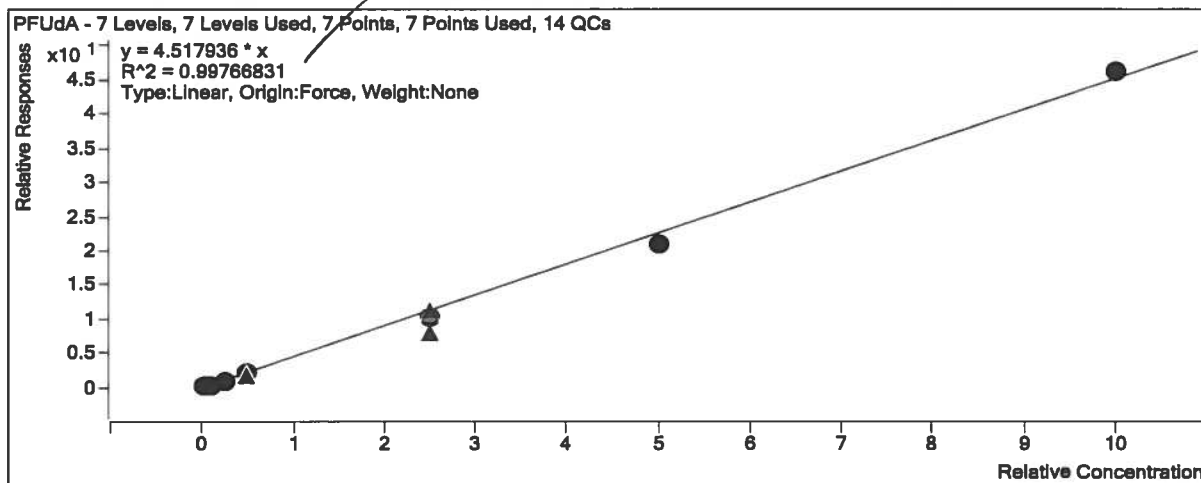
PFUdA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 4.517936 * x
R^2 = 0.99766831
Type:Linear, Origin:Force, Weight:None

Target Compound LPFDS

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	3493	0.4825	2.9288
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	16747	1.9300	3.1813
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	39879	4.8250	3.1405
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	96948	9.6500	3.8859
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	472746	48.2500	3.6819
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	1007437	96.5000	4.0399
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	2007161	193.0000	4.1605

LPFDS - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
y = 4.113724 * x
R^2 = 0.99889003
Type:Linear, Origin:Force, Weight:None

Extracted ISTD MPFDoA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	32549	20.0000	1627.4698

Target Compound   *PFDoA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	2610	0.5000	3.4488
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	11920	2.0000	3.7962
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	26616	5.0000	3.3810
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	60359	10.0000	3.9089
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	310081	50.0000	3.6238
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	686924	100.0000	4.0865
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	1333121	200.0000	4.0957
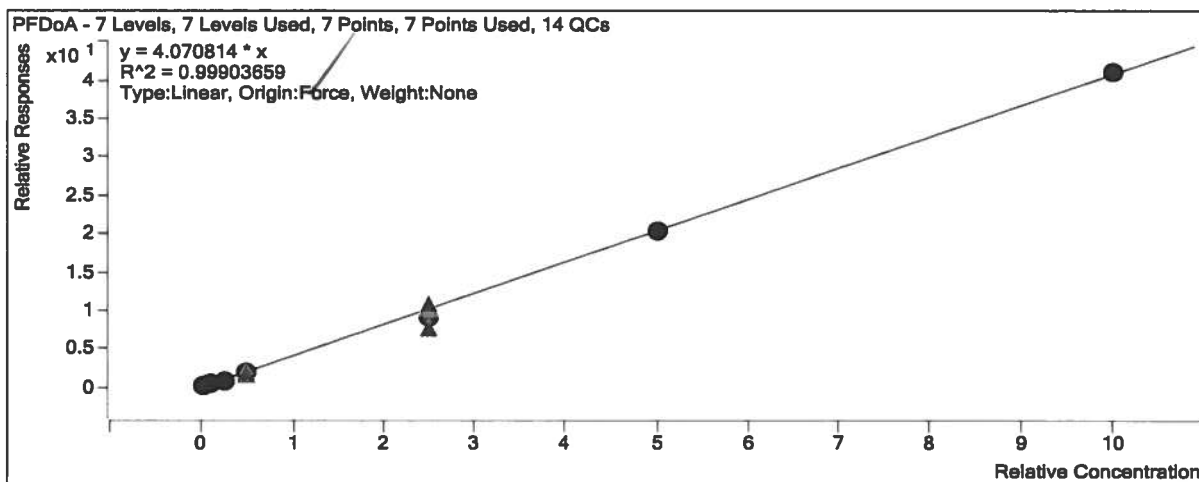
PFDoA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

$y = 4.070814 * x$
$R^2 = 0.99903659$
Type:Linear, Origin:Force, Weight:None

Target Compound   *PFTrDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	2114	0.5000	3.9275
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	8839	2.0000	4.1622
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	20711	5.0000	4.0288
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	46855	10.0000	4.3867
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	248832	50.0000	4.4427
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	504370	100.0000	4.3519
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	1081797	200.0000	4.5703

Quantitative Analysis Calibration Report
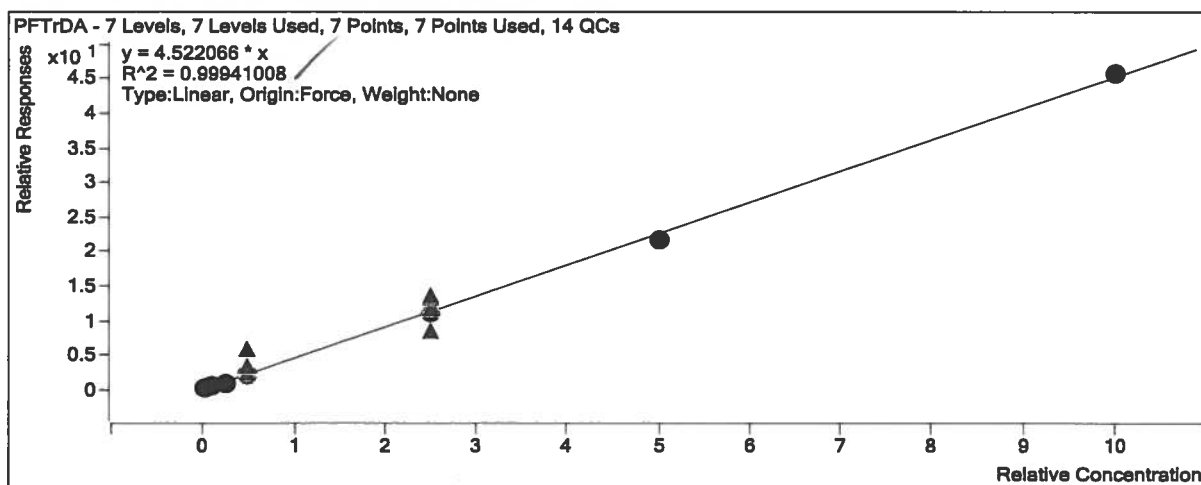
PFTrDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs
$y = 4.522066 * x$
$R^2 = 0.99941008$
Type:Linear, Origin:Force, Weight:None

Relative Responses ($\times 10^1$) vs *Relative Concentration*

Extracted ISTD   M2PFTeDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	21526	20.0000	1076.2790
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	21237	20.0000	1061.8442
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	20563	20.0000	1028.1675
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	21362	20.0000	1068.1239
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	22404	20.0000	1120.1827
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	23180	20.0000	1158.9764
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	23670	20.0000	1183.5167

Target Compound   PFTeDA

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190528ACAL\2190528A_01.d	Calibration	1	☑	1776	0.5000	3.3003
D:\MassHunter\Data\2190528ACAL\2190528A_02.d	Calibration	2	☑	7134	2.0000	3.3594
D:\MassHunter\Data\2190528ACAL\2190528A_03.d	Calibration	3	☑	16930	5.0000	3.2932
D:\MassHunter\Data\2190528ACAL\2190528A_04.d	Calibration	4	☑	39040	10.0000	3.6550
D:\MassHunter\Data\2190528ACAL\2190528A_08.d	Calibration	5	☑	196091	50.0000	3.5011
D:\MassHunter\Data\2190528ACAL\2190528A_09.d	Calibration	6	☑	424505	100.0000	3.6628
D:\MassHunter\Data\2190528ACAL\2190528A_10.d	Calibration	7	☑	902379	200.0000	3.8123

Quantitative Analysis Calibration Report

PFTeDA - 7 Levels, 7 Levels Used, 7 Points, 7 Points Used, 14 QCs

$y = 3.768501 * x$
$R^2 = 0.99922137$
Type:Linear, Origin:Force, Weight:None

LCMS1 Run Log

Name	Data File	Type	Acq. Date-Time	Dil.
1201	2190528A_01.d	Cal	5/28/2019 21:05	1
1202	2190528A_02.d	Cal	5/28/2019 21:17	1
1203	2190528A_03.d	Cal	5/28/2019 21:28	1
1204	2190528A_04.d	Cal	5/28/2019 21:39	1
1205	2190528A_08.d	Cal	5/28/2019 22:42	1
1206	2190528A_09.d	Cal	5/28/2019 22:54	1
1207	2190528A_10.d	Cal	5/28/2019 23:05	1
1600	2190528A_11.d	QC	5/28/2019 23:16	1
1450	2190528A_12.d	Sample	5/28/2019 23:28	1
1500	2190528A_13.d	Sample	5/28/2019 23:39	1
1500	2190530A_01.d	Sample	5/30/2019 12:51	1
1450	2190530A_02.d	Sample	5/30/2019 13:02	1
1927068	2190530A_04.d	QC	5/30/2019 13:18	1
1927069	2190530A_05.d	QC	5/30/2019 13:30	1
1927067	2190530A_06.d	Sample	5/30/2019 13:41	1
21905140301	2190530A_07.d	Sample	5/30/2019 14:29	5
1400	2190530A_09.d	Sample	5/30/2019 14:52	1

		Expiration
Analyst:	BMH	
Batch:	2190530A	Date
Current ICAL Bath:	2190528ACAL	Date
20mM Amm Acetat	008-32-3	6/1/2019
Methanol	2127901	7/31/2023
Calibration Std	008-26-5	10/26/2019
ICV Std	008-3-1	6/3/2019
EIS Mix	008-27-7	11/8/2019

Report No:	219051112			Instrument ID:	QQQ1		
Analysis Date:	05/28/2019 23:16			Lab File ID:	2190528A_11.d		
Analytical Method:	EPA 537 Modified			Analytical Batch:	661053		

ANALYTE	UNITS	TRUE	FOUND	% REC ✓	LCL	UCL	Q
4:2 FTS	ng/L	46800	39500	85	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	38400	81	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	38900	81	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	36300	73	70	130	
NEtFOSAA	ng/L	50000	35700	71	70	130	
NMeFOSAA	ng/L	50000	45500	91	70	130	
Perfluorobutanoic acid	ng/L	50000	54000	108	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	36100	82	70	130	
Perfluorodecanoic acid	ng/L	50000	38200	76	70	130	
Perfluorodecane Sulfonate	ng/L	48300	35700	74	70	130	
Perfluorododecanoic acid	ng/L	50000	37500	75	70	130	
Perfluoroheptanoic acid	ng/L	50000	36100	72	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	35300	74	70	130	
Perfluorohexanoic acid	ng/L	50000	37000	74	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	34400	75	70	130	
Perfluorononanoic acid	ng/L	50000	35200	70	70	130	
PFNS	ng/L	48000	36100	75	70	130	
Perfluorooctanoic acid	ng/L	50000	37300	75	70	130	
Perfluorooctane Sulfonate	ng/L	46300	37600	81	70	130	
Perfluoropentanoic acid	ng/L	50000	46000	92	70	130	
PFPeS	ng/L	47000	35500	76	70	130	
Perfluorotetradecanoic acid	ng/L	50000	39000	78	70	130	
Perfluorotridecanoic acid	ng/L	50000	37500	75	70	130	
Perfluoroundecanoic acid	ng/L	50000	35300	71	70	130	

FORM 6I - ORG

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	05/28/2019 23:28		Lab File ID:	2190528A_12.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	661053

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	7.80	6.80	87	70	130	
6:2 Fluorotelomer sulfonate	ng/L	7.93	7.27	92	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	7.87	98	70	130	
Perfluorooctane Sulfonamide	ng/L	8.33	6.87	82	70	130	
NEtFOSAA	ng/L	8.33	7.67	92	70	130	
NMeFOSAA	ng/L	8.33	8.73	105	70	130	
Perfluorobutanoic acid	ng/L	8.33	6.93	83	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	5.88	80	70	130	
Perfluorodecanoic acid	ng/L	8.33	6.73	81	70	130	
Perfluorodecane Sulfonate	ng/L	8.07	6.58	82	70	130	
Perfluorododecanoic acid	ng/L	8.33	6.87	82	70	130	
Perfluoroheptanoic acid	ng/L	8.33	7.00	84	70	130	
Perfluoro-1-heptanesulfonate	ng/L	7.93	6.73	85	70	130	
Perfluorohexanoic acid	ng/L	8.33	7.33	88	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	6.17	81	70	130	
Perfluorononanoic acid	ng/L	8.33	6.73	81	70	130	
PFNS	ng/L	8.00	6.73	84	70	130	
Perfluorooctanoic acid	ng/L	8.33	6.73	81	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	6.67	86	70	130	
Perfluoropentanoic acid	ng/L	8.33	6.38	77	70	130	
PFPeS	ng/L	7.87	6.31	80	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	7.93	95	70	130	
Perfluorotridecanoic acid	ng/L	8.33	7.27	87	70	130	
Perfluoroundecanoic acid	ng/L	8.33	6.60	79	70	130	

FORM 7S - ORG

Report No:	219051112			Instrument ID:	QQQ1		
Analysis Date:	05/28/2019 23:39			Lab File ID:	2190528A_13.d		
Analytical Method:	EPA 537 Modified			Analytical Batch:	661053		

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
4:2 FTS	ng/L	4.00	U	1.52	4.00	10.0	
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
PFNS	ng/L	4.00	U	2.11	4.00	10.0	
PFPeS	ng/L	4.00	U	2.07	4.00	10.0	
Perfluoro-1-heptanesulfonate	ng/L	4.00	U	2.01	4.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecane Sulfonate	ng/L	4.00	U	2.17	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonamide	ng/L	4.00	U	2.63	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

FORM 4I - ORG

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219051112	Standard ID:	1205 (ICAL Midpoint)
Analyst:	BMH	Instrument ID:	QQQ1
Analysis Date:	05/28/19 22:42	Lab File ID:	2190528A_08.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	661053

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		Area		Area		Area	
STANDARD		224798		721852		216017		213753	
CLIENT SAMPLE ID	**GCAL SAMP ID**		#		#		#		#
MB1927067	1927067	181040		565687		172129		166024	
LCS1927068	1927068	172240		564924		170910		159537	
LCSD1927069	1927069	170796		546404		163207		155370	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

\# Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LCMS1 Run Log

Name	Data File	Type	Acq. Date-Time	Dil.
1201	2190528A_01.d	Cal	5/28/2019 21:05	1
1202	2190528A_02.d	Cal	5/28/2019 21:17	1
1203	2190528A_03.d	Cal	5/28/2019 21:28	1
1204	2190528A_04.d	Cal	5/28/2019 21:39	1
1205	2190528A_08.d	Cal	5/28/2019 22:42	1
1206	2190528A_09.d	Cal	5/28/2019 22:54	1
1207	2190528A_10.d	Cal	5/28/2019 23:05	1
1600	2190528A_11.d	QC	5/28/2019 23:16	1
1450	2190528A_12.d	Sample	5/28/2019 23:28	1
1500	2190528A_13.d	Sample	5/28/2019 23:39	1
1500	2190530A_01.d	Sample	5/30/2019 12:51	1
1450	2190530A_02.d	Sample	5/30/2019 13:02	1
1927068	2190530A_04.d	QC	5/30/2019 13:18	1
1927069	2190530A_05.d	QC	5/30/2019 13:30	1
1927067	2190530A_06.d	Sample	5/30/2019 13:41	1
21905140301	2190530A_07.d	Sample	5/30/2019 14:29	5
1400	2190530A_09.d	Sample	5/30/2019 14:52	1
21905111249	2190530A_10.d	Sample	5/30/2019 15:03	1
21905111301	2190530A_11.d	Sample	5/30/2019 15:15	1
21905111302	2190530A_12.d	Sample	5/30/2019 15:26	1
21905111303	2190530A_13.d	Sample	5/30/2019 15:37	1
21905140501	2190530A_14.d	Sample	5/30/2019 15:49	1
21905140502	2190530A_15.d	Sample	5/30/2019 16:00	1
21905140503	2190530A_16.d	Sample	5/30/2019 16:11	1
21905140504	2190530A_17.d	Sample	5/30/2019 16:23	1
21905140901	2190530A_18.d	Sample	5/30/2019 16:34	1
21905140902	2190530A_19.d	Sample	5/30/2019 16:46	1
21905140903	2190530A_21.d	Sample	5/30/2019 17:08	1
21905140904	2190530A_22.d	Sample	5/30/2019 17:20	1
1400	2190530A_23.d	QC	5/30/2019 17:31	1
1929642	2190530A_34.d	Sample	5/30/2019 20:05	1
1929643	2190530A_35.d	QC	5/30/2019 20:16	1
1929644	2190530A_36.d	QC	5/30/2019 20:28	1
21905097603	2190530A_37.d	Sample	5/30/2019 20:39	1
21905097604	2190530A_38.d	Sample	5/30/2019 20:51	1
21905097605	2190530A_39.d	Sample	5/30/2019 21:02	1
21905097606	2190530A_40.d	Sample	5/30/2019 21:13	1
21905170601	2190530A_41.d	Sample	5/30/2019 21:25	1
21905170602	2190530A_42.d	Sample	5/30/2019 21:36	1
21905170603	2190530A_43.d	Sample	5/30/2019 21:47	1
21905170604	2190530A_44.d	Sample	5/30/2019 21:59	1
21905170605	2190530A_45.d	Sample	5/30/2019 22:10	1
21905170606	2190530A_46.d	Sample	5/30/2019 22:21	1
1400	2190530A_47.d	QC	5/30/2019 22:33	1
21905242527	2190530A_48.d	Sample	5/30/2019 22:44	1

21905242528	2190530A_49.d	Sample	5/30/2019 22:56	1
21905242529	2190530A_50.d	QC	5/30/2019 23:07	1
21905242530	2190530A_51.d	QC	5/30/2019 23:19	1
21905242531	2190530A_52.d	Sample	5/30/2019 23:30	1
21905242532	2190530A_53.d	Sample	5/30/2019 23:41	1
21905242533	2190530A_54.d	Sample	5/30/2019 23:53	1
21905242534	2190530A_55.d	Sample	5/31/2019 0:04	1
21905242535	2190530A_56.d	Sample	5/31/2019 0:16	1
21905242536	2190530A_57.d	Sample	5/31/2019 0:27	1
1400	2190530A_58.d	QC	5/31/2019 0:38	1
1929645	2190530A_59.d	Sample	5/31/2019 0:50	1
1929646	2190530A_60.d	Sample	5/31/2019 1:01	1
1929647	2190530A_61.d	Sample	5/31/2019 1:13	1
21905097607	2190530A_62.d	Sample	5/31/2019 1:24	1
21905097608	2190530A_63.d	Sample	5/31/2019 1:35	1
21905097610	2190530A_64.d	Sample	5/31/2019 1:47	1
21905097611	2190530A_65.d	Sample	5/31/2019 1:58	1
21905097612	2190530A_66.d	Sample	5/31/2019 2:10	1
21905097613	2190530A_67.d	Sample	5/31/2019 2:21	1
21905097614	2190530A_68.d	Sample	5/31/2019 2:32	1
21905097615	2190530A_69.d	Sample	5/31/2019 2:44	1
21905097616	2190530A_70.d	Sample	5/31/2019 2:55	1
21905111201	2190530A_71.d	Sample	5/31/2019 3:07	1
1400	2190530A_72.d	QC	5/31/2019 3:18	1
21905111202	2190530A_73.d	Sample	5/31/2019 3:29	1
21905111203	2190530A_74.d	Sample	5/31/2019 3:41	1
21905111204	2190530A_75.d	QC	5/31/2019 3:52	1
21905111205	2190530A_76.d	QC	5/31/2019 4:04	1
21905111206	2190530A_77.d	Sample	5/31/2019 4:15	1
21905111213	2190530A_78.d	Sample	5/31/2019 4:26	1
21905111216	2190530A_79.d	Sample	5/31/2019 4:38	1
21905111217	2190530A_80.d	Sample	5/31/2019 4:49	1
21905111218	2190530A_81.d	Sample	5/31/2019 5:00	1
21905111219	2190530A_82.d	Sample	5/31/2019 5:12	1
1400	2190530A_83.d	QC	5/31/2019 5:23	1

Analyst:	BMH	Expiration
Batch:	2190530A	Date
Current ICAL Bath:	2190528ACAL	Date
20mM Amm Acetal	008-32-3	6/1/2019
Methanol	2127901	7/31/2023
Calibration Std	008-26-5	10/26/2019
ICV Std	008-3-1	6/3/2019
EIS Mix	008-27-7	11/8/2019

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	05/30/2019 12:51		Lab File ID:	2190530A_01.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	661126

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
4:2 FTS	ng/L	4.00	U	1.52	4.00	10.0	
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
PFNS	ng/L	4.00	U	2.11	4.00	10.0	
PFPeS	ng/L	4.00	U	2.07	4.00	10.0	
Perfluoro-1-heptanesulfonate	ng/L	4.00	U	2.01	4.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecane Sulfonate	ng/L	4.00	U	2.17	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonamide	ng/L	4.00	U	2.63	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

FORM 4I - ORG

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219051112			Instrument ID:	QQQ1	
Analysis Date:	05/30/2019 13:02			Lab File ID:	2190530A_02.d	
Analytical Method:	EPA 537 Modified			Analytical Batch:	661126	

ANALYTE	UNITS	TRUE	FOUND	% REC ✓	LCL	UCL	Q
4:2 FTS	ng/L	7.80	7.33	94	70	130	
6:2 Fluorotelomer sulfonate	ng/L	7.93	7.67	97	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	8.47	106	70	130	
Perfluorooctane Sulfonamide	ng/L	8.33	7.40	89	70	130	
NEtFOSAA	ng/L	8.33	5.91	71	70	130	
NMeFOSAA	ng/L	8.33	8.40	101	70	130	
Perfluorobutanoic acid	ng/L	8.33	7.00	84	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	6.56	89	70	130	
Perfluorodecanoic acid	ng/L	8.33	7.33	88	70	130	
Perfluorodecane Sulfonate	ng/L	8.07	7.07	88	70	130	
Perfluorododecanoic acid	ng/L	8.33	7.47	90	70	130	
Perfluoroheptanoic acid	ng/L	8.33	7.13	86	70	130	
Perfluoro-1-heptanesulfonate	ng/L	7.93	6.87	87	70	130	
Perfluorohexanoic acid	ng/L	8.33	7.93	95	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	6.50	86	70	130	
Perfluorononanoic acid	ng/L	8.33	7.60	91	70	130	
PFNS	ng/L	8.00	7.13	89	70	130	
Perfluorooctanoic acid	ng/L	8.33	7.47	90	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	7.07	92	70	130	
Perfluoropentanoic acid	ng/L	8.33	6.62	79	70	130	
PFPeS	ng/L	7.87	6.66	85	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	7.87	94	70	130	
Perfluorotridecanoic acid	ng/L	8.33	7.93	95	70	130	
Perfluoroundecanoic acid	ng/L	8.33	7.07	85	70	130	

FORM 7S - ORG

Report No:	219051112	Instrument ID:	QQQ1
Analysis Date:	05/30/2019 14:52	Lab File ID:	2190530A_09.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	661126

ANALYTE	UNITS	TRUE	FOUND	% REC ✓	LCL	UCL	Q
4:2 FTS	ng/L	46800	50300	108	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	55600	117	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	53700	112	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	49800	100	70	130	
NEtFOSAA	ng/L	50000	46600	93	70	130	
NMeFOSAA	ng/L	50000	58500	117	70	130	
Perfluorobutanoic acid	ng/L	50000	50200	100	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	45600	103	70	130	
Perfluorodecanoic acid	ng/L	50000	53200	106	70	130	
Perfluorodecane Sulfonate	ng/L	48300	50900	106	70	130	
Perfluorododecanoic acid	ng/L	50000	50700	101	70	130	
Perfluoroheptanoic acid	ng/L	50000	51600	103	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	48500	102	70	130	
Perfluorohexanoic acid	ng/L	50000	50900	102	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	46700	102	70	130	
Perfluorononanoic acid	ng/L	50000	50300	101	70	130	
PFNS	ng/L	48000	50600	105	70	130	
Perfluorooctanoic acid	ng/L	50000	51400	103	70	130	
Perfluorooctane Sulfonate	ng/L	46300	50300	109	70	130	
Perfluoropentanoic acid	ng/L	50000	51400	103	70	130	
PFPeS	ng/L	47000	46900	100	70	130	
Perfluorotetradecanoic acid	ng/L	50000	51200	102	70	130	
Perfluorotridecanoic acid	ng/L	50000	55600	111	70	130	
Perfluoroundecanoic acid	ng/L	50000	49600	99	70	130	

FORM 7E - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112	Instrument ID:	QQQ1
Analysis Date:	05/30/2019 17:31	Lab File ID:	2190530A_23.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	661126

ANALYTE	UNITS	TRUE	FOUND	% REC √	LCL	UCL	Q
4:2 FTS	ng/L	46800	50100	107	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	55100	116	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	54000	113	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	50200	100	70	130	
NEtFOSAA	ng/L	50000	47800	96	70	130	
NMeFOSAA	ng/L	50000	64500	129	70	130	
Perfluorobutanoic acid	ng/L	50000	50700	101	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	45700	103	70	130	
Perfluorodecanoic acid	ng/L	50000	51300	103	70	130	
Perfluorodecane Sulfonate	ng/L	48300	51000	106	70	130	
Perfluorododecanoic acid	ng/L	50000	51100	102	70	130	
Perfluoroheptanoic acid	ng/L	50000	51700	103	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	48900	103	70	130	
Perfluorohexanoic acid	ng/L	50000	50300	101	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	47600	104	70	130	
Perfluorononanoic acid	ng/L	50000	53700	107	70	130	
PFNS	ng/L	48000	55200	115	70	130	
Perfluorooctanoic acid	ng/L	50000	51400	103	70	130	
Perfluorooctane Sulfonate	ng/L	46300	49800	108	70	130	
Perfluoropentanoic acid	ng/L	50000	51600	103	70	130	
PFPeS	ng/L	47000	47600	101	70	130	
Perfluorotetradecanoic acid	ng/L	50000	53400	107	70	130	
Perfluorotridecanoic acid	ng/L	50000	55800	112	70	130	
Perfluoroundecanoic acid	ng/L	50000	50500	101	70	130	

FORM 7E - ORG

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219051112		Standard ID:	1450 (ISC)
Analyst:	BMH		Instrument ID:	QQQ1
Analysis Date:	05/30/19 13:02		Lab File ID:	2190530A_02.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	661126

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		Area		Area		Area	
STANDARD		232717		742164		226396		209826	
CLIENT SAMPLE ID	**GCAL SAMP ID**		#		#		#		#
AOI-2-3-GW-5-10	21905111249	178794		572804		172722		166828	

AREA UPPER LIMIT = +50% of internal standard area   # Column used to flag values outside QC limits

AREA LOWER LIMIT = -50% of internal standard area   * Value outside QC limits

FORM 8I - ORG

LCMS1 Run Log

Name	Data File	Type	Acq. Date-Time	Dil.
1201	2190528A_01.d	Cal	5/28/2019 21:05	1
1202	2190528A_02.d	Cal	5/28/2019 21:17	1
1203	2190528A_03.d	Cal	5/28/2019 21:28	1
1204	2190528A_04.d	Cal	5/28/2019 21:39	1
1205	2190528A_08.d	Cal	5/28/2019 22:42	1
1206	2190528A_09.d	Cal	5/28/2019 22:54	1
1207	2190528A_10.d	Cal	5/28/2019 23:05	1
1600	2190528A_11.d	QC	5/28/2019 23:16	1
1450	2190528A_12.d	Sample	5/28/2019 23:28	1
1500	2190528A_13.d	Sample	5/28/2019 23:39	1
1500	2190531A_01.d	Sample	5/31/2019 17:03	1
1450	2190531A_02.d	Sample	5/31/2019 17:15	1
1930400	2190531A_03.d	Sample	5/31/2019 19:12	1
1930401	2190531A_04.d	QC	5/31/2019 19:23	1
1930402	2190531A_05.d	QC	5/31/2019 19:35	1
21905111207	2190531A_06.d	Sample	5/31/2019 19:46	1
21905111256	2190531A_07.d	Sample	5/31/2019 19:58	5
21905111257	2190531A_08.d	Sample	5/31/2019 20:09	1
21905111210	2190531A_09.d	QC	5/31/2019 20:20	1
21905111211	2190531A_10.d	QC	5/31/2019 20:32	1
21905280201	2190531A_11.d	Sample	5/31/2019 20:43	1
21905280202	2190531A_12.d	Sample	5/31/2019 20:55	1
21905280203	2190531A_13.d	Sample	5/31/2019 21:06	1
21905280204	2190531A_14.d	Sample	5/31/2019 21:17	1
21905280205	2190531A_15.d	Sample	5/31/2019 21:29	1
1400	2190531A_16.d	QC	5/31/2019 21:40	1
21905280208	2190531A_17.d	Sample	5/31/2019 21:52	1
21905280207	2190531A_18.d	QC	5/31/2019 22:03	1
21905280206	2190531A_19.d	QC	5/31/2019 22:14	1
21905280209	2190531A_20.d	Sample	5/31/2019 22:26	1
21905280213	2190531A_21.d	Sample	5/31/2019 22:37	1
21905280214	2190531A_22.d	Sample	5/31/2019 22:49	1
21905280215	2190531A_23.d	Sample	5/31/2019 23:00	1
21905280216	2190531A_24.d	Sample	5/31/2019 23:11	1
21905280217	2190531A_25.d	Sample	5/31/2019 23:22	1
21905280218	2190531A_26.d	Sample	5/31/2019 23:34	1
1400	2190531A_27.d	QC	5/31/2019 23:45	1

Analyst:	BMH	Expiration	
Batch:	2190531A	Date	
Current ICAL Bath:	2190528ACAL	Date	
20mM Amm Acetat	008-32-3	6/1/2019	
Methanol	2127901	7/31/2023	
Calibration Std	008-26-5	10/26/2019	
ICV Std	008-3-1	6/3/2019	

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	05/31/2019 17:03		Lab File ID:	2190531A_01.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	661151

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
4:2 FTS	ng/L	4.00	U	1.52	4.00	10.0	
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
PFNS	ng/L	4.00	U	2.11	4.00	10.0	
PFPeS	ng/L	4.00	U	2.07	4.00	10.0	
Perfluoro-1-heptanesulfonate	ng/L	4.00	U	2.01	4.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecane Sulfonate	ng/L	4.00	U	2.17	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonamide	ng/L	4.00	U	2.63	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

FORM 4I - ORG

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	05/31/2019 17:15		Lab File ID:	2190531A_02.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	661151

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	7.80	7.27	94	70	130	
6:2 Fluorotelomer sulfonate	ng/L	7.93	9.20	117	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	8.67	108	70	130	
Perfluorooctane Sulfonamide	ng/L	8.33	7.80	94	70	130	
NEtFOSAA	ng/L	8.33	6.23	75	70	130	
NMeFOSAA	ng/L	8.33	10.1	121	70	130	
Perfluorobutanoic acid	ng/L	8.33	7.07	85	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	6.47	88	70	130	
Perfluorodecanoic acid	ng/L	8.33	7.80	93	70	130	
Perfluorodecane Sulfonate	ng/L	8.07	6.03	75	70	130	
Perfluorododecanoic acid	ng/L	8.33	7.33	88	70	130	
Perfluoroheptanoic acid	ng/L	8.33	7.27	87	70	130	
Perfluoro-1-heptanesulfonate	ng/L	7.93	6.18	78	70	130	
Perfluorohexanoic acid	ng/L	8.33	8.20	98	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	6.59	87	70	130	
Perfluorononanoic acid	ng/L	8.33	7.67	92	70	130	
PFNS	ng/L	8.00	6.61	83	70	130	
Perfluorooctanoic acid	ng/L	8.33	7.33	88	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	6.73	87	70	130	
Perfluoropentanoic acid	ng/L	8.33	6.93	83	70	130	
PFPeS	ng/L	7.87	6.45	82	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	7.73	93	70	130	
Perfluorotridecanoic acid	ng/L	8.33	7.40	89	70	130	
Perfluoroundecanoic acid	ng/L	8.33	7.00	84	70	130	

FORM 7S - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112	Instrument ID:	QQQ1
Analysis Date:	05/31/2019 21:40	Lab File ID:	2190531A_16.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	661151

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	47100	101	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	47600	100	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	50900	106	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	48900	98	70	130	
NEtFOSAA	ng/L	50000	46300	93	70	130	
NMeFOSAA	ng/L	50000	60300	121	70	130	
Perfluorobutanoic acid	ng/L	50000	47700	95	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	42700	97	70	130	
Perfluorodecanoic acid	ng/L	50000	49500	99	70	130	
Perfluorodecane Sulfonate	ng/L	48300	48400	100	70	130	
Perfluorododecanoic acid	ng/L	50000	47900	96	70	130	
Perfluoroheptanoic acid	ng/L	50000	48500	97	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	47300	100	70	130	
Perfluorohexanoic acid	ng/L	50000	49000	98	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	45000	99	70	130	
Perfluorononanoic acid	ng/L	50000	49600	99	70	130	
PFNS	ng/L	48000	52400	109	70	130	
Perfluorooctanoic acid	ng/L	50000	48900	98	70	130	
Perfluorooctane Sulfonate	ng/L	46300	48600	105	70	130	
Perfluoropentanoic acid	ng/L	50000	48600	97	70	130	
PFPeS	ng/L	47000	46500	99	70	130	
Perfluorotetradecanoic acid	ng/L	50000	50200	100	70	130	
Perfluorotridecanoic acid	ng/L	50000	53400	107	70	130	
Perfluoroundecanoic acid	ng/L	50000	44800	90	70	130	

FORM 7E - ORG

8I

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219051112	Standard ID:	1450 (ISC)
Analyst:	BMH	Instrument ID:	QQQ1
Analysis Date:	05/31/19 17:15	Lab File ID:	2190531A_02.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	661151

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		248041		721417		239904		191930	
CLIENT SAMPLE ID	**GCAL SAMP ID**	✓	#	/	#	/	#	/	#
MB1930400	1930400	185921		587397		184761		179852	
LCS1930401	1930401	197597		628726		193180		195483	
LCSD1930402	1930402	201207		630871		201067		197294	
AOI-1-7-SD-0-1-DUP (RE)	21905111256	201979		638274		196957		193206	
AOI-1-8-SD-0-1 (RE)	21905111257	205090		633389		192576		194947	

AREA UPPER LIMIT = +50% of internal standard area   # Column used to flag values outside QC limits

AREA LOWER LIMIT = -50% of internal standard area   * Value outside QC limits

FORM 8I - ORG

LCMS1 Run Log

Name	Data File	Type	Acq. Date-Time	Dil.
1201	2190528A_01.d	Cal	5/28/2019 21:05	1
1202	2190528A_02.d	Cal	5/28/2019 21:17	1
1203	2190528A_03.d	Cal	5/28/2019 21:28	1
1204	2190528A_04.d	Cal	5/28/2019 21:39	1
1205	2190528A_08.d	Cal	5/28/2019 22:42	1
1206	2190528A_09.d	Cal	5/28/2019 22:54	1
1207	2190528A_10.d	Cal	5/28/2019 23:05	1
1600	2190528A_11.d	QC	5/28/2019 23:16	1
1450	2190528A_12.d	Sample	5/28/2019 23:28	1
1500	2190528A_13.d	Sample	5/28/2019 23:39	1
1500	2190602A_01.d	Sample	6/2/2019 20:08	1
1450	2190602A_02.d	Sample	6/2/2019 20:19	1
1930410	2190602A_03.d	Sample	6/2/2019 21:08	1
1930411	2190602A_04.d	QC	6/2/2019 21:19	1
1930412	2190602A_05.d	QC	6/2/2019 21:30	1
21905111214	2190602A_06.d	QC	6/2/2019 21:42	1
21905111215	2190602A_07.d	QC	6/2/2019 21:53	1
1400	2190602A_08.d	QC	6/2/2019 22:04	1
21905111220	2190602A_09.d	Sample	6/2/2019 23:09	1
21905111259	2190602A_10.d	Sample	6/2/2019 23:20	1
21905111260	2190602A_11.d	Sample	6/2/2019 23:32	1
21905111261	2190602A_12.d	Sample	6/2/2019 23:43	1
21905111224	2190602A_13.d	Sample	6/2/2019 23:55	1
21905111262	2190602A_14.d	Sample	6/3/2019 0:06	1
21905111263	2190602A_15.d	Sample	6/3/2019 0:17	1
21905111264	2190602A_16.d	Sample	6/3/2019 0:29	1
21905111237	2190602A_17.d	Sample	6/3/2019 0:40	1
21905242517	2190602A_18.d	Sample	6/3/2019 0:51	1
1400	2190602A_19.d	QC	6/3/2019 1:03	1
21905242518	2190602A_20.d	Sample	6/3/2019 1:14	1
21905242519	2190602A_21.d	Sample	6/3/2019 1:26	1
21905242520	2190602A_22.d	Sample	6/3/2019 1:37	1
21905242521	2190602A_23.d	Sample	6/3/2019 1:48	1
21905242523	2190602A_24.d	Sample	6/3/2019 1:59	1
21905242524	2190602A_25.d	Sample	6/3/2019 2:11	1
21905242537	2190602A_26.d	Sample	6/3/2019 2:22	1
21905242538	2190602A_27.d	Sample	6/3/2019 2:34	1
1400	2190602A_28.d	QC	6/3/2019 2:45	1
1930513	2190602A_29.d	Sample	6/3/2019 2:56	1
1930514	2190602A_30.d	Sample	6/3/2019 3:08	1
1930515	2190602A_31.d	Sample	6/3/2019 3:19	1
21905242539	2190602A_32.d	Sample	6/3/2019 3:31	1
21905242901	2190602A_33.d	Sample	6/3/2019 3:42	1
21905242902	2190602A_34.d	Sample	6/3/2019 3:53	1
21905242540	2190602A_35.d	Sample	6/3/2019 4:05	1

21905280210	2190602A_36.d	Sample	6/3/2019 4:16	1
21905280211	2190602A_37.d	Sample	6/3/2019 4:27	1
21905280212	2190602A_38.d	Sample	6/3/2019 4:39	1
21905290301	2190602A_39.d	Sample	6/3/2019 4:50	1
21905301801	2190602A_40.d	Sample	6/3/2019 5:02	1
1400	2190602A_41.d	QC	6/3/2019 5:13	1
21905301802	2190602A_42.d	Sample	6/3/2019 5:24	1
21905301803	2190602A_43.d	Sample	6/3/2019 5:36	1
21905301804	2190602A_44.d	Sample	6/3/2019 5:47	1
21905301805	2190602A_45.d	Sample	6/3/2019 5:58	1
21905301806	2190602A_46.d	Sample	6/3/2019 6:10	1
21905301807	2190602A_47.d	Sample	6/3/2019 6:21	1
21905301808	2190602A_48.d	Sample	6/3/2019 6:33	1
21905301809	2190602A_49.d	Sample	6/3/2019 6:44	1
21905301810	2190602A_50.d	Sample	6/3/2019 6:55	1
21905301811	2190602A_51.d	QC	6/3/2019 7:07	1
21905301812	2190602A_52.d	QC	6/3/2019 7:18	1
1400	2190602A_53.d	QC	6/3/2019 7:30	1
1929268	2190602A_54.d	Sample	6/3/2019 7:41	1
1929269	2190602A_55.d	QC	6/3/2019 7:52	1
1929270	2190602A_56.d	QC	6/3/2019 8:04	1
21905235001	2190602A_57.d	Sample	6/3/2019 8:15	1
1400	2190602A_58.d	QC	6/3/2019 8:27	1

Analyst:	BMH	Expiration
Batch:	2190602A	Date
Current ICAL Bath:	2190528ACAL	Date
20mM Amm Acetat	008-32-6	6/4/2019
Methanol	2127901	7/31/2023
Calibration Std	008-26-5	10/26/2019
ICV Std	008-3-1	9/3/2019
EIS Mix	008-27-7	11/8/2019

ORGANICS INSTRUMENT BLANK

Report No:	219051112	Instrument ID: QQQ1
Analysis Date:	06/02/2019 20:08	Lab File ID: 2190602A_01.d
Analytical Method:	EPA 537 Modified	Analytical Batch: 661232

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
4:2 FTS	ng/L	4.00	U	1.52	4.00	10.0	
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
PFNS	ng/L	4.00	U	2.11	4.00	10.0	
PFPeS	ng/L	4.00	U	2.07	4.00	10.0	
Perfluoro-1-heptanesulfonate	ng/L	4.00	U	2.01	4.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecane Sulfonate	ng/L	4.00	U	2.17	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonamide	ng/L	4.00	U	2.63	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

FORM 4I - ORG

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219051112	Instrument ID:	QQQ1	
Analysis Date:	06/02/2019 20:19	Lab File ID:	2190602A_02.d	
Analytical Method:	EPA 537 Modified	Analytical Batch:	661232	

ANALYTE	UNITS	TRUE	FOUND	% REC ✓	LCL	UCL	Q
4:2 FTS	ng/L	7.80	7.27	93	70	130	
6:2 Fluorotelomer sulfonate	ng/L	7.93	8.73	110	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	8.40	105	70	130	
Perfluorooctane Sulfonamide	ng/L	8.33	7.60	91	70	130	
NEtFOSAA	ng/L	8.33	6.63	80	70	130	
NMeFOSAA	ng/L	8.33	9.80	117	70	130	
Perfluorobutanoic acid	ng/L	8.33	6.73	81	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	6.36	86	70	130	
Perfluorodecanoic acid	ng/L	8.33	7.53	90	70	130	
Perfluorodecane Sulfonate	ng/L	8.07	6.87	85	70	130	
Perfluorododecanoic acid	ng/L	8.33	6.73	81	70	130	
Perfluoroheptanoic acid	ng/L	8.33	7.07	84	70	130	
Perfluoro-1-heptanesulfonate	ng/L	7.93	6.41	81	70	130	
Perfluorohexanoic acid	ng/L	8.33	7.60	91	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	6.48	85	70	130	
Perfluorononanoic acid	ng/L	8.33	6.44	77	70	130	
PFNS	ng/L	8.00	7.33	91	70	130	
Perfluorooctanoic acid	ng/L	8.33	7.20	87	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	6.73	87	70	130	
Perfluoropentanoic acid	ng/L	8.33	5.91	71	70	130	
PFPeS	ng/L	7.87	7.00	90	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	8.20	98	70	130	
Perfluorotridecanoic acid	ng/L	8.33	8.33	100	70	130	
Perfluoroundecanoic acid	ng/L	8.33	6.87	82	70	130	

FORM 7S - ORG

ORGANICS CALIBRATION VERIFICATION

Report No:	219051112		Instrument ID:	QQQ1
Analysis Date:	06/02/2019 22:04		Lab File ID:	2190602A_08.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	661232

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	45100	96	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	52000	109	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	52900	110	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	51800	104	70	130	
NEtFOSAA	ng/L	50000	50000	100	70	130	
NMeFOSAA	ng/L	50000	53900	108	70	130	
Perfluorobutanoic acid	ng/L	50000	46000	92	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	42200	95	70	130	
Perfluorodecanoic acid	ng/L	50000	49500	99	70	130	
Perfluorodecane Sulfonate	ng/L	48300	48600	101	70	130	
Perfluorododecanoic acid	ng/L	50000	48300	97	70	130	
Perfluoroheptanoic acid	ng/L	50000	47200	94	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	47100	99	70	130	
Perfluorohexanoic acid	ng/L	50000	48000	96	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	43200	95	70	130	
Perfluorononanoic acid	ng/L	50000	48300	97	70	130	
PFNS	ng/L	48000	47600	99	70	130	
Perfluorooctanoic acid	ng/L	50000	47900	96	70	130	
Perfluorooctane Sulfonate	ng/L	46300	44900	97	70	130	
Perfluoropentanoic acid	ng/L	50000	47800	96	70	130	
PFPeS	ng/L	47000	46900	100	70	130	
Perfluorotetradecanoic acid	ng/L	50000	51200	102	70	130	
Perfluorotridecanoic acid	ng/L	50000	53400	107	70	130	
Perfluoroundecanoic acid	ng/L	50000	47600	95	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No: 219051112

Analysis Date: 06/03/2019 01:03

Analytical Method: EPA 537 Modified

Instrument ID: QQQ1

Lab File ID: 2190602A_19.d

Analytical Batch: 661232

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
4:2 FTS	ng/L	46800	45400	97	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	51900	109	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	51400	107	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	49000	98	70	130	
NEtFOSAA	ng/L	50000	46400	93	70	130	
NMeFOSAA	ng/L	50000	53300	107	70	130	
Perfluorobutanoic acid	ng/L	50000	46900	94	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	42100	95	70	130	
Perfluorodecanoic acid	ng/L	50000	47900	96	70	130	
Perfluorodecane Sulfonate	ng/L	48300	47200	98	70	130	
Perfluorododecanoic acid	ng/L	50000	48900	98	70	130	
Perfluoroheptanoic acid	ng/L	50000	47400	95	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	45700	96	70	130	
Perfluorohexanoic acid	ng/L	50000	47600	95	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	42700	94	70	130	
Perfluorononanoic acid	ng/L	50000	46100	92	70	130	
PFNS	ng/L	48000	47500	99	70	130	
Perfluorooctanoic acid	ng/L	50000	47300	95	70	130	
Perfluorooctane Sulfonate	ng/L	46300	45900	99	70	130	
Perfluoropentanoic acid	ng/L	50000	46300	93	70	130	
PFPeS	ng/L	47000	45900	98	70	130	
Perfluorotetradecanoic acid	ng/L	50000	50300	101	70	130	
Perfluorotridecanoic acid	ng/L	50000	52600	105	70	130	
Perfluoroundecanoic acid	ng/L	50000	44300	89	70	130	

FORM 7E - ORG

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219051112		Standard ID:	1450 (ISC)
Analyst:	BMH		Instrument ID:	QQQ1
Analysis Date:	06/02/19 20:19		Lab File ID:	2190602A_02.d
Analytical Method:	EPA 537 Modified		Analytical Batch:	661232

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		Area		Area		Area	
STANDARD		235978		718887		229951		216797	

CLIENT SAMPLE ID	GCAL SAMP ID		#		#		#		#
MB1930410	1930410	198181		626585		189658		181618	
LCS1930411	1930411	203882		650973		199726		194391	
LCSD1930412	1930412	206172		654814		204790		196316	
FQC-EB-050719-ROD (RE)	21905111259	225903		710368		214322		200794	
FQC-EB-050719-SS-2 (RE)	21905111260	206393		644589		197458		197179	
FQC-EB-050719-HA (RE)	21905111261	213761		672245		203204		212290	
AOI-1-3-GW-4-9 (RE)	21905111262	208652		655027		202597		208773	
AOI-1-3-GW-4-9-DUP (RE)	21905111263	205887		656531		210268		211461	
AOI-1-2-GW-5-10 (RE)	21905111264	198908		615703		188682		196844	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219041842   Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
GL-SPIGOT-041619	21904184201	125		104		97		112		107		104		107	
FRB-041619	21904184203	100		99		92		84		96		94		99	
MB1917384	1917384	101		95		94		87		93		92		92	
LCS1917385	1917385	97		93		86		86		91		91		89	
LCSD1917386	1917386	100		98		93		88		96		95		95	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
GL-SPIGOT-041619	21904184201	109		103		103		102		96		107		100	
FRB-041619	21904184203	97		95		97		98		84		98		92	
MB1917384	1917384	93		100		92		87		72		92		102	
LCS1917385	1917385	90		97		92		90		70		92		96	
LCSD1917386	1917386	97		101		96		96		81		97		102	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
GL-SPIGOT-041619	21904184201	105		101		99		102		102	
FRB-041619	21904184203	97		100		87		91		92	
MB1917384	1917384	93		98		89		89		90	
LCS1917385	1917385	90		97		86		84		93	
LCSD1917386	1917386	95		102		95		99		89	

EIS1: M2 4:2 FTS   EIS2: M2 6:2 FTS   EIS3: M2 8:2 FTS   EIS4: M2PFTeDA

EIS5: M3PFBS   EIS6: M3PFHxS   EIS7: M4PFHpA   EIS8: M5PFHxA

EIS9: M5PFPeA   EIS10: M6PFDA   EIS11: M7PFUdA   EIS12: M8FOSA

EIS13: M8PFOA   EIS14: M8PFOS   EIS15: M9PFNA   EIS16: MPFBA

EIS17: MPFDoA   EIS18: d3-NMeFOSAA   EIS19: d5-NEtFOSAA

FORM 8E - ORG

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219051112   Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
AOI-1-7-SW-0-1	21905111201	122		109		107		12	*	106		97		90	
AOI-1-7-SW-0-1-DUP	21905111202	127		113		104		50		108		101		92	
AOI-1-8-SW-0-1	21905111203	149		103		90		5	*	95		85		87	
AOI-1-8-SW-0-1-MS	21905111204	148		100		87		5	*	98		85		89	
AOI-1-8-SW-0-1-MSD	21905111205	157	*	108		88		0.50	*	99		89		91	
AOI-1-9-SW-0-1	21905111206	113		111		111		51		105		100		93	
AOI-1-7-SD-0-1	21905111207	95		95		77		32	*	79		69		67	
AOI-1-7-SD-0-1-DUP	21905111208	13	*	11	*	17	*	6	*	8	*	8	*	8	*
AOI-1-8-SD-0-1	21905111209	116		94		91		33	*	85		77		81	
AOI-1-8-SD-0-1-MS	21905111210	91		74		74		25	*	67		62		64	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
AOI-1-7-SW-0-1	21905111201	96		93		86		74		91		91		94	
AOI-1-7-SW-0-1-DUP	21905111202	96		94		83		83		87		89		96	
AOI-1-8-SW-0-1	21905111203	97		92		77		52		71		87		68	
AOI-1-8-SW-0-1-MS	21905111204	95		93		74		55		61		89		69	
AOI-1-8-SW-0-1-MSD	21905111205	99		94		73		40	*	54		89		74	
AOI-1-9-SW-0-1	21905111206	99		94		89		80		106		90		96	
AOI-1-7-SD-0-1	21905111207	74		73		67		48	*	15	*	69		65	
AOI-1-7-SD-0-1-DUP	21905111208	8	*	8	*	10	*	8	*	5	*	8	*	9	*
AOI-1-8-SD-0-1	21905111209	87		80		75		65		12	*	80		64	
AOI-1-8-SD-0-1-MS	21905111210	67		62		56		51		1	*	63		51	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#				
AOI-1-7-SW-0-1	21905111201	88		96		51		87		86					
AOI-1-7-SW-0-1-DUP	21905111202	90		97		69		78		96					
AOI-1-8-SW-0-1	21905111203	80		69		24	*	52		54					
AOI-1-8-SW-0-1-MS	21905111204	84		69		35	*	56		55					
AOI-1-8-SW-0-1-MSD	21905111205	85		72		11	*	46	*	36	*				
AOI-1-9-SW-0-1	21905111206	90		18	*	64		82		93					
AOI-1-7-SD-0-1	21905111207	72		62		44	*	59		65					
AOI-1-7-SD-0-1-DUP	21905111208	8	*	6	*	10	*	8	*	11	*				
AOI-1-8-SD-0-1	21905111209	79		64		51		65		52					
AOI-1-8-SD-0-1-MS	21905111210	59		50		41	*	50		44	*				

EIS1: M2 4:2 FTS   EIS2: M2 6:2 FTS   EIS3: M2 8:2 FTS   EIS4: M2PFTeDA

EIS5: M3PFBS   EIS6: M3PFHxS   EIS7: M4PFHpA   EIS8: M5PFHxA

EIS9: M5PFPeA   EIS10: M6PFDA   EIS11: M7PFUdA   EIS12: M8FOSA

EIS13: M8PFOA   EIS14: M8PFOS   EIS15: M9PFNA   EIS16: MPFBA

EIS17: MPFDoA   EIS18: d3-NMeFOSAA   EIS19: d5-NEtFOSAA

FORM 8E - ORG

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219051112   Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
AOI-1-8-SD-0-1-MSD	21905111211	89		64		62		23	*	57		55		55	
AOI-1-9-SD-0-1	21905111212	123		112		115		87		94		86		90	
AOI-1-4-GW-17-22	21905111213	119		107		105		17	*	110		101		92	
AOI-1-4-GW-17-22-MS	21905111214	127		105		113		9	*	114		105		94	
AOI-1-4-GW-17-22-MSD	21905111215	133		107		118		68		114		108		95	
AOI-1-6-GW-15-20	21905111216	119		103		109		50		113		103		94	
AOI-2-1-GW-5-10	21905111217	139		115		117		62		115		107		97	
AOI-1-1-GW-7-12	21905111218	146		105		110		36	*	108		98		90	
AOI-1-5-GW-5-10	21905111219	117		105		113		24	*	108		102		89	
FQC-EB-050919-WL	21905111220	108		112		111		82		110		103		95	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
AOI-1-8-SD-0-1-MSD	21905111211	57		52		50		47	*	8	*	51		44	*
AOI-1-9-SD-0-1	21905111212	96		88		96		95		90		92		74	
AOI-1-4-GW-17-22	21905111213	101		99		89		76		88		91		96	
AOI-1-4-GW-17-22-MS	21905111214	102		100		91		73		80		94		101	
AOI-1-4-GW-17-22-MSD	21905111215	104		101		98		88		92		98		107	
AOI-1-6-GW-15-20	21905111216	103		103		91		85		102		95		102	
AOI-2-1-GW-5-10	21905111217	105		106		96		93		107		94		105	
AOI-1-1-GW-7-12	21905111218	99		100		90		80		90		87		95	
AOI-1-5-GW-5-10	21905111219	100		97		80		72		93		87		94	
FQC-EB-050919-WL	21905111220	104		103		95		95		102		94		99	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
AOI-1-8-SD-0-1-MSD	21905111211	53		42	*	44	*	43	*	41	*
AOI-1-9-SD-0-1	21905111212	93		70		91		83		82	
AOI-1-4-GW-17-22	21905111213	93		92		60		80		92	
AOI-1-4-GW-17-22-MS	21905111214	92		97		55		79		86	
AOI-1-4-GW-17-22-MSD	21905111215	95		108		80		92		105	
AOI-1-6-GW-15-20	21905111216	94		96		79		95		94	
AOI-2-1-GW-5-10	21905111217	98		107		80		84		99	
AOI-1-1-GW-7-12	21905111218	87		92		65		92		92	
AOI-1-5-GW-5-10	21905111219	86		98		58		91		86	
FQC-EB-050919-WL	21905111220	90		102		84		97		100	

EIS1: M2 4:2 FTS   EIS2: M2 6:2 FTS   EIS3: M2 8:2 FTS   EIS4: M2PFTeDA

EIS5: M3PFBS   EIS6: M3PFHxS   EIS7: M4PFHpA   EIS8: M5PFHxA

EIS9: M5PFPeA   EIS10: M6PFDA   EIS11: M7PFUdA   EIS12: M8FOSA

EIS13: M8PFOA   EIS14: M8PFOS   EIS15: M9PFNA   EIS16: MPFBA

EIS17: MPFDoA   EIS18: d3-NMeFOSAA   EIS19: d5-NEtFOSAA

8E
EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219051112   Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
FQC-EB-050719-ROD	21905111221	119		108		115		25	*	113		105		97	
FQC-EB-050719-SS-2	21905111222	107		111		113		33	*	113		105		97	
FQC-EB-050719-HA	21905111223	110		112		106		5	*	115		108		99	
FQC-EB-050719-SS-1	21905111224	102		100		112		30	*	108		103		93	
AOI-1-6-SB-5-7	21905111225	117		108		113		84		93		87		85	
AOI-1-1-SB-5-7	21905111226	109		100		105		80		90		81		83	
AOI-1-5-SB-2-4	21905111227	108		99		103		79		88		82		84	
AOI-1-4-SB-8-10	21905111228	109		99		101		82		89		82		84	
AOI-1-5-SB-0-2	21905111229	105		100		107		82		88		84		86	
AOI-1-5-SB-0-2-MS	21905111230	115		114		120		89		98		92		91	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
FQC-EB-050719-ROD	21905111221	106		104		89		81		110		97		101	
FQC-EB-050719-SS-2	21905111222	105		104		92		76		107		97		106	
FQC-EB-050719-HA	21905111223	106		108		85		58		104		95		100	
FQC-EB-050719-SS-1	21905111224	102		100		96		85		106		90		100	
AOI-1-6-SB-5-7	21905111225	95		88		89		94		89		89		74	
AOI-1-1-SB-5-7	21905111226	89		81		91		90		77		84		70	
AOI-1-5-SB-2-4	21905111227	89		86		84		84		83		84		70	
AOI-1-4-SB-8-10	21905111228	90		83		90		88		84		86		72	
AOI-1-5-SB-0-2	21905111229	89		83		92		91		86		88		72	
AOI-1-5-SB-0-2-MS	21905111230	97		91		95		96		95		96		80	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
FQC-EB-050719-ROD	21905111221	96		105		62		85		96	
FQC-EB-050719-SS-2	21905111222	92		105		51		84		75	
FQC-EB-050719-HA	21905111223	92		108		29	*	71		76	
FQC-EB-050719-SS-1	21905111224	89		101		73		88		92	
AOI-1-6-SB-5-7	21905111225	93		71		89		72		85	
AOI-1-1-SB-5-7	21905111226	84		64		86		63		62	
AOI-1-5-SB-2-4	21905111227	84		67		85		62		67	
AOI-1-4-SB-8-10	21905111228	84		66		88		59		71	
AOI-1-5-SB-0-2	21905111229	87		68		81		62		69	
AOI-1-5-SB-0-2-MS	21905111230	91		74		97		76		75	

EIS1: M2 4:2 FTS   EIS2: M2 6:2 FTS   EIS3: M2 8:2 FTS   EIS4: M2PFTeDA

EIS5: M3PFBS   EIS6: M3PFHxS   EIS7: M4PFHpA   EIS8: M5PFHxA

EIS9: M5PFPeA   EIS10: M6PFDA   EIS11: M7PFUdA   EIS12: M8FOSA

EIS13: M8PFOA   EIS14: M8PFOS   EIS15: M9PFNA   EIS16: MPFBA

EIS17: MPFDoA   EIS18: d3-NMeFOSAA   EIS19: d5-NEtFOSAA

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EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219051112   Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
AOI-1-5-SB-0-2-MSD	21905111231	115		110		112		92		94		89		91	
AOI-1-4-SB-17-19	21905111232	116		108		109		87		94		87		90	
AOI-1-4-SB-17-19-DUP	21905111233	112		113		122		85		93		86		88	
AOI-1-3-GW-4-9	21905111234	31	*	30	*	34	*	7	*	30	*	28	*	23	*
AOI-1-3-GW-4-9-DUP	21905111235	107		107		106		36	*	116		107		96	
AOI-1-2-GW-5-10	21905111236	93		82		83		12	*	111		101		91	
AOI-2-2-GW-5-10	21905111237	133		108		116		28	*	112		106		92	
AOI-1-2-SB-0-2	21905111238	109		96		108		80		87		81		61	
AOI-1-2-SB-2-4	21905111241	110		101		110		84		91		85		86	
AOI-2-2-SB-0-2	21905111242	97		94		98		79		86		80		80	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
AOI-1-5-SB-0-2-MSD	21905111231	97		88		92		93		91		90		75	
AOI-1-4-SB-17-19	21905111232	86		87		95		97		91		92		72	
AOI-1-4-SB-17-19-DUP	21905111233	89		81		94		94		70		89		74	
AOI-1-3-GW-4-9	21905111234	27	*	28	*	23	*	21	*	20	*	24	*	25	*
AOI-1-3-GW-4-9-DUP	21905111235	108		106		85		73		34	*	97		93	
AOI-1-2-GW-5-10	21905111236	100		89		84		71		89		88		96	
AOI-2-2-GW-5-10	21905111237	103		101		92		75		100		90		103	
AOI-1-2-SB-0-2	21905111238	86		80		87		87		80		85		68	
AOI-1-2-SB-2-4	21905111241	91		84		93		94		89		85		73	
AOI-2-2-SB-0-2	21905111242	87		80		87		88		82		84		68	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
AOI-1-5-SB-0-2-MSD	21905111231	91		72		93		75		72		
AOI-1-4-SB-17-19	21905111232	92		69		91		78		77		
AOI-1-4-SB-17-19-DUP	21905111233	91		62		89		74		77		
AOI-1-3-GW-4-9	21905111234	25	*	27	*	14	*	20	*	31	*
AOI-1-3-GW-4-9-DUP	21905111235	91		100		58		74		88		
AOI-1-2-GW-5-10	21905111236	88		68		50		78		83		
AOI-2-2-GW-5-10	21905111237	88		96		63		91		101		
AOI-1-2-SB-0-2	21905111238	85		65		85		70		69		
AOI-1-2-SB-2-4	21905111241	90		68		86		69		78		
AOI-2-2-SB-0-2	21905111242	83		62		84		72		67		

EIS1: M2 4:2 FTS	EIS2: M2 6:2 FTS	EIS3: M2 8:2 FTS	EIS4: M2PFTeDA
EIS5: M3PFBS	EIS6: M3PFHxS	EIS7: M4PFHpA	EIS8: M5PFHxA
EIS9: M5PFPeA	EIS10: M6PFDA	EIS11: M7PFUdA	EIS12: M8FOSA
EIS13: M8PFOA	EIS14: M8PFOS	EIS15: M9PFNA	EIS16: MPFBA

EIS17: MPFDoA   EIS18: d3-NMeFOSAA   EIS19: d5-NEtFOSAA

FORM 8E - ORG

8E
EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219051112   Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
AOI-2-2-SB-2-4	21905111243	108		101		107		83		94		87		89	
AOI-2-3-SB-0-2	21905111244	136		107		124		79		128		121		105	
AOI-2-1-SB-0-2	21905111245	107		107		112		74		124		118		101	
AOI-1-1-SB-0-2	21905111246	97		102		105		76		120		114		96	
AOI-1-6-SB-0-2	21905111247	118		118		117		74		125		120		101	
AOI-1-6-SB-2-4	21905111248	104		105		112		80		121		118		99	
AOI-2-3-GW-5-10	21905111249	103		82		84		51		92		86		84	
AOI-1-3-SB-0-2	21905111250	118		113		118		81		123		116		101	
AOI-1-3-SB-2-4	21905111251	108		105		121		75		120		115		96	
AOI-1-4-SB-0-2	21905111252	88		80		90		75		84		77		69	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
AOI-2-2-SB-2-4	21905111243	93		90		88		90		89		92		75	
AOI-2-3-SB-0-2	21905111244	114		116		91		91		121		101		118	
AOI-2-1-SB-0-2	21905111245	113		111		93		92		122		101		112	
AOI-1-1-SB-0-2	21905111246	106		104		89		86		117		97		113	
AOI-1-6-SB-0-2	21905111247	109		112		90		90		125		100		117	
AOI-1-6-SB-2-4	21905111248	109		109		92		90		122		100		113	
AOI-2-3-GW-5-10	21905111249	89		89		80		83		72		84		68	
AOI-1-3-SB-0-2	21905111250	109		111		92		87		124		101		114	
AOI-1-3-SB-2-4	21905111251	106		109		87		90		117		95		109	
AOI-1-4-SB-0-2	21905111252	76		77		62		63		85		66		78	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#				
AOI-2-2-SB-2-4	21905111243	76		71		95		67		72					
AOI-2-3-SB-0-2	21905111244	108		96		86		107		112					
AOI-2-1-SB-0-2	21905111245	102		92		83		93		106					
AOI-1-1-SB-0-2	21905111246	98		83		83		92		102					
AOI-1-6-SB-0-2	21905111247	105		94		80		101		100					
AOI-1-6-SB-2-4	21905111248	99		91		83		98		94					
AOI-2-3-GW-5-10	21905111249	78		87		77		75		92					
AOI-1-3-SB-0-2	21905111250	101		95		83		102		100					
AOI-1-3-SB-2-4	21905111251	98		91		76		87		98					
AOI-1-4-SB-0-2	21905111252	67		63		61		79		86					

EIS1: M2 4:2 FTS   EIS2: M2 6:2 FTS   EIS3: M2 8:2 FTS   EIS4: M2PFTeDA

EIS5: M3PFBS   EIS6: M3PFHxS   EIS7: M4PFHpA   EIS8: M5PFHxA

EIS9: M5PFPeA   EIS10: M6PFDA   EIS11: M7PFUdA   EIS12: M8FOSA

EIS13: M8PFOA   EIS14: M8PFOS   EIS15: M9PFNA   EIS16: MPFBA

FORM 8E - ORG

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219051112   Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
AOI-2-2-SB-2-4-DUP	21905111254	119		118		116		71		127		119		100	
AOI-1-7-SD-0-1-DUP (RE)	21905111256	95		83		77		55		88		86		78	
AOI-1-8-SD-0-1 (RE)	21905111257							59							
FQC-EB-050719-ROD (RE)	21905111259							70							
FQC-EB-050719-SS-2 (RE)	21905111260							64							
FQC-EB-050719-HA (RE)	21905111261							69							
AOI-1-3-GW-4-9 (RE)	21905111262	74		74		78		60		91		82		79	
AOI-1-3-GW-4-9-DUP (RE)	21905111263							64							
AOI-1-2-GW-5-10 (RE)	21905111264							54							
MB1926322	1926322	116		108		110		88		97		85		94	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
AOI-2-2-SB-2-4-DUP	21905111254	111		115		97		87		127		100		112	
AOI-1-7-SD-0-1-DUP (RE)	21905111256	82		83		82		86		30	*	80		86	
AOI-1-8-SD-0-1 (RE)	21905111257														
FQC-EB-050719-ROD (RE)	21905111259														
FQC-EB-050719-SS-2 (RE)	21905111260														
FQC-EB-050719-HA (RE)	21905111261														
AOI-1-3-GW-4-9 (RE)	21905111262	82		80		81		86		78		85		83	
AOI-1-3-GW-4-9-DUP (RE)	21905111263														
AOI-1-2-GW-5-10 (RE)	21905111264														
MB1926322	1926322	97		88		98		94		79		93		76	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
AOI-2-2-SB-2-4-DUP	21905111254	102		95		82		88		100	
AOI-1-7-SD-0-1-DUP (RE)	21905111256	78		73		80		71		86	
AOI-1-8-SD-0-1 (RE)	21905111257										
FQC-EB-050719-ROD (RE)	21905111259										
FQC-EB-050719-SS-2 (RE)	21905111260										
FQC-EB-050719-HA (RE)	21905111261					78					
AOI-1-3-GW-4-9 (RE)	21905111262	79		70		73		74		81	
AOI-1-3-GW-4-9-DUP (RE)	21905111263										
AOI-1-2-GW-5-10 (RE)	21905111264										
MB1926322	1926322	94		73		94		75		88	

EIS1: M2 4:2 FTS   EIS2: M2 6:2 FTS   EIS3: M2 8:2 FTS   EIS4: M2PFTeDA

EIS5: M3PFBS   EIS6: M3PFHxS   EIS7: M4PFHpA   EIS8: M5PFHxA

EIS9: M5PFPeA   EIS10: M6PFDA   EIS11: M7PFUdA   EIS12: M8FOSA

FORM 8E - ORG

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219051112   Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
LCS1926323	1926323	118		106		112		57		97		89		94	
LCSD1926324	1926324	122		110		110		57		101		94		96	
MB1926334	1926334	120		111		119		90		95		87		92	
LCS1926335	1926335	127		110		124		94		100		93		93	
LCSD1926336	1926336	125		121		118		99		102		94		100	
MB1926788	1926788	102		102		99		52		102		93		93	
LCS1926789	1926789	108		104		96		16	*	108		104		96	
LCSD1926790	1926790	104		104		105		30	*	103		102		92	
MB1927062	1927062	114		117		113		51		120		116		100	
LCS1927063	1927063	126		123		132		84		129		126		111	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
LCS1926323	1926323	99		90		98		96		85		93		80	
LCSD1926324	1926324	100		92		94		96		88		98		76	
MB1926334	1926334	94		86		94		97		84		91		79	
LCS1926335	1926335	102		90		99		102		85		100		80	
LCSD1926336	1926336	104		97		99		104		87		97		78	
MB1926788	1926788	97		97		87		87		86		92		96	
LCS1926789	1926789	103		100		86		75		90		94		102	
LCSD1926790	1926790	98		96		85		83		89		91		99	
MB1927062	1927062	109		108		92		84		104		102		118	
LCS1927063	1927063	119		117		98		96		124		103		121	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#				
LCS1926323	1926323	94		74		88		79		78					
LCSD1926324	1926324	97		79		89		72		79					
MB1926334	1926334	93		69		91		78		85					
LCS1926335	1926335	95		74		96		90		93					
LCSD1926336	1926336	102		76		100		83		94					
MB1926788	1926788	89		98		67		84		84					
LCS1926789	1926789	89		102		53		83		88					
LCSD1926790	1926790	86		96		63		82		91					
MB1927062	1927062	103		86		75		95		103					
LCS1927063	1927063	108		98		94		118		116					

EIS1: M2 4:2 FTS   EIS2: M2 6:2 FTS   EIS3: M2 8:2 FTS   EIS4: M2PFTeDA

EIS5: M3PFBS   EIS6: M3PFHxS   EIS7: M4PFHpA   EIS8: M5PFHxA

EIS9: M5PFPeA   EIS10: M6PFDA   EIS11: M7PFUdA   EIS12: M8FOSA

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EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219051112   Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
LCSD1927064	1927064	127		122		132		92		135		126		112	
MB1927067	1927067	93		79		79		58		91		82		84	
LCS1927068	1927068	91		80		85		50		90		83		88	
LCSD1927069	1927069	89		83		80		50		88		83		83	
MB1930400	1930400	91		87		87		79		93		92		87	
LCS1930401	1930401	92		94		96		87		101		101		95	
LCSD1930402	1930402	98		89		92		84		100		100		90	
MB1930410	1930410	75		72		76		66		84		80		79	
LCS1930411	1930411	85		79		81		68		88		84		81	
LCSD1930412	1930412	91		81		83		70		88		83		79	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
LCSD1927064	1927064	121		123		103		100		131		112		126	
MB1927067	1927067	87		89		82		76		79		83		80	
LCS1927068	1927068	89		88		82		76		70		84		81	
LCSD1927069	1927069	86		88		80		75		73		84		80	
MB1930400	1930400	86		91		84		85		86		88		95	
LCS1930401	1930401	95		95		96		92		93		95		98	
LCSD1930402	1930402	93		95		97		92		82		91		97	
MB1930410	1930410	81		79		84		80		62		81		85	
LCS1930411	1930411	82		80		85		81		68		83		85	
LCSD1930412	1930412	84		81		83		84		68		83		84	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
LCSD1927064	1927064	113		104		96		116		116	
MB1927067	1927067	78		88		73		73		84	
LCS1927068	1927068	81		91		72		83		80	
LCSD1927069	1927069	82		87		72		79		84	
MB1930400	1930400	80		88		85		87		103	
LCS1930401	1930401	88		88		90		97		101	
LCSD1930402	1930402	93		87		93		77		102	
MB1930410	1930410	77		74		74		77		82	
LCS1930411	1930411	84		73		78		82		87	
LCSD1930412	1930412	84		76		82		75		92	

EIS1: M2 4:2 FTS   EIS2: M2 6:2 FTS   EIS3: M2 8:2 FTS   EIS4: M2PFTeDA

EIS5: M3PFBS   EIS6: M3PFHxS   EIS7: M4PFHpA   EIS8: M5PFHxA

SEMIVOLATILE METHOD BLANK SUMMARY

Report No: 219041842	Method Blank ID: 1917384
Matrix: Water	Instrument ID: QQQ1
Sample Amt: 125 mL	Lab File ID: 2190422A_03.d
Injection Vol.: 1.0 (µL)	GC Column: ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.: 1000 (µL)	Dilution Factor: 1 Analyst: BMH
Prep Date: 04/21/19	Analysis Date: 04/22/19 Time: 1254
Prep Batch: 658333	Analytical Batch: 658397
Prep Method: EPA 537 Mod Prep	Analytical Method: EPA 537 Modified

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS1917385	1917385	2190422A_04.d	04/22/19	1306
2.	LCSD1917386	1917386	2190422A_05.d	04/22/19	1317
3.	GL-SPIGOT-041619	21904184201	2190422A_27.d	04/22/19	1817
4.	FRB-041619	21904184203	2190422A_28.d	04/22/19	1828

FORM IV SV

Revision 1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219041842	Client Sample ID:	MB1917384
Collect Date:	NA Time: NA	GCAL Sample ID:	1917384
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2190422A_03.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	04/21/19	Analysis Date:	04/22/19 Time: 1254
Prep Batch:	658333	Analytical Batch:	658397
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

Revision 1

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219041842

Prep Method: EPA 537 Mod Prep Prep Batch: 658333

Analytical Method: EPA 537 Modified Analytical Batch: 658397

GCAL QC ID: 1917385

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	LCS RESULT	LCS % REC	#	QC LIMITS		
6:2 Fluorotelomer sulfonate	ng/L	76	0	74.3	98		70	-	130
8:2 Fluorotelomer sulfonate	ng/L	76.8	0	90.2	117		70	-	130
NEtFOSAA	ng/L	80	0	66.4	83		70	-	130
NMeFOSAA	ng/L	80	0	83.3	104		70	-	130
Perfluorobutanesulfonic acid	ng/L	70.8	0	62.6	88		70	-	130
Perfluorobutanoic acid	ng/L	80	0	71.1	89		70	-	130
Perfluorodecanoic acid	ng/L	80	0	67.5	84		70	-	130
Perfluorododecanoic acid	ng/L	80	0	72.8	91		70	-	130
Perfluoroheptanoic acid	ng/L	80	0	72.2	90		70	-	130
Perfluorohexanesulfonic acid	ng/L	73	0	74.9	103		70	-	130
Perfluorohexanoic acid	ng/L	80	0	73.7	92		70	-	130
Perfluorononanoic acid	ng/L	80	0	71.1	89		70	-	130
Perfluorooctane Sulfonate	ng/L	74	0	79.2	107		70	-	130
Perfluorooctanoic acid	ng/L	80	0	71.7	90		70	-	130
Perfluoropentanoic acid	ng/L	80	0	65.4	82		70	-	130
Perfluorotetradecanoic acid	ng/L	80	0	76.8	96		70	-	130
Perfluorotridecanoic acid	ng/L	80	0	81	101		70	-	130
Perfluoroundecanoic acid	ng/L	80	0	70.2	88		70	-	130

RPD :   0   out of   18   outside limits

Spike Recovery: 0   out of   36   outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

Revision 1

Report No: 219041842

Prep Method: EPA 537 Mod Prep

Analytical Method: EPA 537 Modified

Prep Batch: 658333

Analytical Batch: 658397

GCAL QC ID: 1917386

ANALYTE	UNITS	SPIKE ADDED	LCSD RESULT	LCSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
6:2 Fluorotelomer sulfonate	ng/L	76	72.1	95		3		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ng/L	76.8	80.8	105		11		70 - 130	0 - 30
NEtFOSAA	ng/L	80	72.7	91		9		70 - 130	0 - 30
NMeFOSAA	ng/L	80	74.3	93		11		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ng/L	70.8	59.4	84		5		70 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	67.8	85		5		70 - 130	0 - 30
Perfluorodecanoic acid	ng/L	80	66.2	83		2		70 - 130	0 - 30
Perfluorododecanoic acid	ng/L	80	67.6	84		7		70 - 130	0 - 30
Perfluoroheptanoic acid	ng/L	80	67.3	84		7		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73	71.1	97		5		70 - 130	0 - 30
Perfluorohexanoic acid	ng/L	80	67.8	85		8		70 - 130	0 - 30
Perfluorononanoic acid	ng/L	80	67.7	85		5		70 - 130	0 - 30
Perfluorooctane Sulfonate	ng/L	74	75.9	103		4		70 - 130	0 - 30
Perfluorooctanoic acid	ng/L	80	68.2	85		5		70 - 130	0 - 30
Perfluoropentanoic acid	ng/L	80	67.2	84		3		70 - 130	0 - 30
Perfluorotetradecanoic acid	ng/L	80	74.7	93		3		70 - 130	0 - 30
Perfluorotridecanoic acid	ng/L	80	78.6	98		3		70 - 130	0 - 30
Perfluoroundecanoic acid	ng/L	80	66	82		6		70 - 130	0 - 30

RPD: 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

\# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

Revision 1

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	219051112		Method Blank ID:	1926322
Matrix:	Water		Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2190517A_12.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	05/15/19		Analysis Date:	05/17/19 Time: 1848
Prep Batch:	660234		Analytical Batch:	660401
Prep Method:	EPA 537 Mod Prep		Analytical Method:	EPA 537 Modified

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS1926323	1926323	2190517A_13.d	05/17/19	1859
2.	LCSD1926324	1926324	2190517A_14.d	05/17/19	1911
3.	AOI-1-8-SW-0-1	21905111203	2190518A_19.d	05/18/19	1429
4.	AOI-1-8-SW-0-1-MS	21905111204	2190518A_20.d	05/18/19	1440
5.	AOI-1-8-SW-0-1-MSD	21905111205	2190518A_21.d	05/18/19	1452

FORM IV SV

Revision 1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219051112		Client Sample ID:	MB1926322
Collect Date:	NA Time: NA		GCAL Sample ID:	1926322
Matrix:	Water % Moisture: NA		Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2190517A_12.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	05/15/19		Analysis Date:	05/17/19 Time: 1848
Prep Batch:	660234		Analytical Batch:	660401
Prep Method:	EPA 537 Mod Prep		Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q ✓	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

Revision 1

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No:	219051112			
Prep Method:	EPA 537 Mod Prep	Prep Batch:	660234	
Analytical Method:	EPA 537 Modified	Analytical Batch:	660401	

GCAL QC ID: 1926323

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	LCS RESULT	LCS % REC	#	QC LIMITS		
6:2 Fluorotelomer sulfonate	ng/L	76	0	85.4	112		70	-	130
8:2 Fluorotelomer sulfonate	ng/L	76.8	0	77.6	101		70	-	130
NEtFOSAA	ng/L	80	0	76.5	96		70	-	130
NMeFOSAA	ng/L	80	0	87.3	109		70	-	130
Perfluorobutanesulfonic acid	ng/L	70.8	0	67.7	96		70	-	130
Perfluorobutanoic acid	ng/L	80	0	72	90		70	-	130
Perfluorodecanoic acid	ng/L	80	0	74.6	93		70	-	130
Perfluorododecanoic acid	ng/L	80	0	75.7	95		70	-	130
Perfluoroheptanoic acid	ng/L	80	0	77.4	97		70	-	130
Perfluorohexanesulfonic acid	ng/L	73	0	75.3	103		70	-	130
Perfluorohexanoic acid	ng/L	80	0	78.5	98		70	-	130
Perfluorononanoic acid	ng/L	80	0	79.1	99		70	-	130
Perfluorooctane Sulfonate	ng/L	74	0	79.7	108		70	-	130
Perfluorooctanoic acid	ng/L	80	0	84.4	106		70	-	130
Perfluoropentanoic acid	ng/L	80	0	68.4	85		70	-	130
Perfluorotetradecanoic acid	ng/L	80	0	78.4	98		70	-	130
Perfluorotridecanoic acid	ng/L	80	0	103	129		70	-	130
Perfluoroundecanoic acid	ng/L	80	0	75.4	94		70	-	130

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

\# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

Revision 1

Report No: 219051112

Prep Method: EPA 537 Mod Prep

Analytical Method: EPA 537 Modified

Prep Batch: 660234

Analytical Batch: 660401

GCAL QC ID: 1926324

ANALYTE	UNITS	SPIKE ADDED	LCSD RESULT	LCSD % REC / #		% RPD ✓	#	QC LIMITS REC			RPD		
6:2 Fluorotelomer sulfonate	ng/L	76	83.2	110		3		70	-	130	0	-	30
8:2 Fluorotelomer sulfonate	ng/L	76.8	81.1	106		4		70	-	130	0	-	30
NEtFOSAA	ng/L	80	76.1	95		.6		70	-	130	0	-	30
NMeFOSAA	ng/L	80	101	126		15		70	-	130	0	-	30
Perfluorobutanesulfonic acid	ng/L	70.8	66.6	94		2		70	-	130	0	-	30
Perfluorobutanoic acid	ng/L	80	73.1	91		1		70	-	130	0	-	30
Perfluorodecanoic acid	ng/L	80	76.5	96		2		70	-	130	0	-	30
Perfluorododecanoic acid	ng/L	80	76	95		.4		70	-	130	0	-	30
Perfluoroheptanoic acid	ng/L	80	76.5	96		1		70	-	130	0	-	30
Perfluorohexanesulfonic acid	ng/L	73	71.6	98		5		70	-	130	0	-	30
Perfluorohexanoic acid	ng/L	80	80.5	101		3		70	-	130	0	-	30
Perfluorononanoic acid	ng/L	80	77.9	97		2		70	-	130	0	-	30
Perfluorooctane Sulfonate	ng/L	74	85.6	116		7		70	-	130	0	-	30
Perfluorooctanoic acid	ng/L	80	79.1	99		7		70	-	130	0	-	30
Perfluoropentanoic acid	ng/L	80	69.8	87		2		70	-	130	0	-	30
Perfluorotetradecanoic acid	ng/L	80	77.4	97		1		70	-	130	0	-	30
Perfluorotridecanoic acid	ng/L	80	103	129		.2		70	-	130	0	-	30
Perfluoroundecanoic acid	ng/L	80	79.1	99		5		70	-	130	0	-	30

RPD :   0   out of   18   outside limits

Spike Recovery: 0   out of   36   outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

Revision 1

WATER SEMIVOLATILE MS/MSD RECOVERY

Report No:	219051112	Parent Sample ID:	AOI-1-8-SW-0-1
Prep Method:	EPA 537 Mod Prep	Prep Batch:	660234
Analytical Method:	EPA 537 Modified	Analytical Batch:	660460

GCAL QC ID: *21905111204*

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	MS RESULT	MS % REC	#	QC LIMITS		
6:2 Fluorotelomer sulfonate	ng/L	63.3	0	72.2	114		70	-	130
8:2 Fluorotelomer sulfonate	ng/L	64	.373	61.5	96		70	-	130
NEtFOSAA	ng/L	66.7	0	58.4	88		70	-	130
NMeFOSAA	ng/L	66.7	0	73.4	110		70	-	130
Perfluorobutanesulfonic acid	ng/L	59	6.66	64.2	98		70	-	130
Perfluorobutanoic acid	ng/L	66.7	19.8	84.2	97		70	-	130
Perfluorodecanoic acid	ng/L	66.7	0	66.7	100		70	-	130
Perfluorododecanoic acid	ng/L	66.7	0	61.8	93		70	-	130
Perfluoroheptanoic acid	ng/L	66.7	0	67.7	101		70	-	130
Perfluorohexanesulfonic acid	ng/L	60.8	12.6	76.3	105		70	-	130
Perfluorohexanoic acid	ng/L	66.7	7.34	76.6	104		70	-	130
Perfluorononanoic acid	ng/L	66.7	0	62.8	94		70	-	130
Perfluorooctane Sulfonate	ng/L	61.7	4.66	70.7	107		70	-	130
Perfluorooctanoic acid	ng/L	66.7	1.64	64.3	94		70	-	130
Perfluoropentanoic acid	ng/L	66.7	4.05	59.7	83		70	-	130
Perfluorotetradecanoic acid	ng/L	66.7	0	63	94		70	-	130
Perfluorotridecanoic acid	ng/L	66.7	0	202	302	*	70	-	130
Perfluoroundecanoic acid	ng/L	66.7	0	70.7	106		70	-	130

RPD : __1__ out of __18__ outside limits

Spike Recovery: __2__ out of __36__ outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

Revision 1

WATER SEMIVOLATILE MS/MSD RECOVERY

Report No:	219051112	Parent Sample ID:	AOI-1-8-SW-0-1
Prep Method:	EPA 537 Mod Prep	Prep Batch:	660234
Analytical Method:	EPA 537 Modified	Analytical Batch:	660460

GCAL QC ID: **21905111205**

ANALYTE	UNITS	SPIKE ADDED	MSD RESULT	MSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
6:2 Fluorotelomer sulfonate	ng/L	63.3	68.8	109		5		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ng/L	64	64.5	100		5		70 - 130	0 - 30
NEtFOSAA	ng/L	66.7	70.1	105		18		70 - 130	0 - 30
NMeFOSAA	ng/L	66.7	65	98		12		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ng/L	59	64.9	99		1		70 - 130	0 - 30
Perfluorobutanoic acid	ng/L	66.7	82.7	94		2		70 - 130	0 - 30
Perfluorodecanoic acid	ng/L	66.7	65.1	98		2		70 - 130	0 - 30
Perfluorododecanoic acid	ng/L	66.7	71.6	107		15		70 - 130	0 - 30
Perfluoroheptanoic acid	ng/L	66.7	67	101		.9		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	60.8	75.8	104		.6		70 - 130	0 - 30
Perfluorohexanoic acid	ng/L	66.7	74.9	101		2		70 - 130	0 - 30
Perfluorononanoic acid	ng/L	66.7	65.7	99		5		70 - 130	0 - 30
Perfluorooctane Sulfonate	ng/L	61.7	71.7	109		1		70 - 130	0 - 30
Perfluorooctanoic acid	ng/L	66.7	68.2	100		6		70 - 130	0 - 30
Perfluoropentanoic acid	ng/L	66.7	61.3	86		3		70 - 130	0 - 30
Perfluorotetradecanoic acid	ng/L	66.7	73.4	110		15		70 - 130	0 - 30
Perfluorotridecanoic acid	ng/L	66.7	381	571	*	62	*	70 - 130	0 - 30
Perfluoroundecanoic acid	ng/L	66.7	65.1	98		8		70 - 130	0 - 30

RPD :   1   out of   18   outside limits

Spike Recovery: 2   out of   36   outside limits

\# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

Revision 1

SEMIVOLATILE METHOD BLANK SUMMARY

Report No: 219051112	Method Blank ID: 1926334
Matrix: Solid	Instrument ID: QQQ1
Sample Amt: 5 g	Lab File ID: 2190517A_37.d
Injection Vol.: 1.0 (µL)	GC Column: ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.: 1000 (µL)	Dilution Factor: 1 Analyst: BMH
Prep Date: 05/16/19	Analysis Date: 05/17/19 Time: 2029
Prep Batch: 660235	Analytical Batch: 660401
Prep Method: EPA 537 Mod Prep	Analytical Method: EPA 537 Modified

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS1926335	1926335	2190517A_38.d	05/17/19	2040
2.	LCSD1926336	1926336	2190517A_39.d	05/17/19	2052
3.	AOI-1-9-SD-0-1	21905111212	2190517A_40.d	05/17/19	2103
4.	AOI-1-6-SB-5-7	21905111225	2190517A_41.d	05/17/19	2115
5.	AOI-1-1-SB-5-7	21905111226	2190517A_42.d	05/17/19	2126
6.	AOI-1-5-SB-2-4	21905111227	2190517A_43.d	05/17/19	2138
7.	AOI-1-4-SB-8-10	21905111228	2190517A_44.d	05/17/19	2149
8.	AOI-1-5-SB-0-2	21905111229	2190517A_46.d	05/17/19	2212
9.	AOI-1-5-SB-0-2-MS	21905111230	2190517A_47.d	05/17/19	2223
10.	AOI-1-5-SB-0-2-MSD	21905111231	2190517A_48.d	05/17/19	2235
11.	AOI-1-4-SB-17-19	21905111232	2190517A_49.d	05/17/19	2246
12.	AOI-1-4-SB-17-19-DUP	21905111233	2190517A_50.d	05/17/19	2257
13.	AOI-1-2-SB-0-2	21905111238	2190517A_51.d	05/17/19	2309
14.	AOI-1-2-SB-2-4	21905111241	2190517A_52.d	05/17/19	2320
15.	AOI-2-2-SB-0-2	21905111242	2190517A_53.d	05/17/19	2331
16.	AOI-2-2-SB-2-4	21905111243	2190517A_54.d	05/17/19	2343
17.	AOI-1-7-SD-0-1	21905111207	2190518A_22.d	05/18/19	1503
18.	AOI-1-7-SD-0-1-DUP	21905111208	2190518A_23.d	05/18/19	1514
19.	AOI-1-8-SD-0-1	21905111209	2190518A_24.d	05/18/19	1526
20.	AOI-1-8-SD-0-1-MS	21905111210	2190518A_25.d	05/18/19	1537
21.	AOI-1-8-SD-0-1-MSD	21905111211	2190518A_26.d	05/18/19	1548

FORM IV SV

Revision 1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219051112	Client Sample ID:	MB1926334
Collect Date:	NA Time: NA	GCAL Sample ID:	1926334
Matrix:	Solid % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	5 g	Lab File ID:	2190517A_37.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	05/16/19	Analysis Date:	05/17/19 Time: 2029
Prep Batch:	660235	Analytical Batch:	660401
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.400	U	0.00179	0.400	1.00
39108-34-4	8:2 Fluorotelomer sulfonate	0.400	U	0.00163	0.400	1.00
2991-50-6	NEtFOSAA	0.400	U	0.00538	0.400	1.00
2355-31-9	NMeFOSAA	0.400	U	0.00460	0.400	1.00
375-73-5	Perfluorobutanesulfonic acid	0.400	U	0.00147	0.400	1.00
375-22-4	Perfluorobutanoic acid	0.024	J	0.00213	0.400	1.00
335-76-2	Perfluorodecanoic acid	0.400	U	0.00165	0.400	1.00
307-55-1	Perfluorododecanoic acid	0.00841	J	0.00245	0.400	1.00
375-85-9	Perfluoroheptanoic acid	0.400	U	0.00185	0.400	1.00
355-46-4	Perfluorohexanesulfonic acid	0.400	U	0.00164	0.400	1.00
307-24-4	Perfluorohexanoic acid	0.026	J	0.00194	0.400	1.00
375-95-1	Perfluorononanoic acid	0.400	U	0.00168	0.400	1.00
1763-23-1	Perfluorooctane Sulfonate	0.011	J	0.00170	0.400	1.00
335-67-1	Perfluorooctanoic acid	0.400	U	0.00180	0.400	1.00
2706-90-3	Perfluoropentanoic acid	0.400	U	0.00235	0.400	1.00
376-06-7	Perfluorotetradecanoic acid	0.400	U	0.00276	0.400	1.00
72629-94-8	Perfluorotridecanoic acid	0.400	U	0.00256	0.400	1.00
2058-94-8	Perfluoroundecanoic acid	0.400	U	0.00186	0.400	1.00

FORM I SV-1

Revision 1

Report No: 219051112

Prep Method: EPA 537 Mod Prep

Prep Batch: 660235

Analytical Method: EPA 537 Modified

Analytical Batch: 660401

GCAL QC ID: 1926335

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	LCS RESULT	LCS % REC /	#	QC LIMITS		
6:2 Fluorotelomer sulfonate	ug/kg	1.9	0	2.05	108		70	-	130
8:2 Fluorotelomer sulfonate	ug/kg	1.92	0	1.92	100		70	-	130
NEtFOSAA	ug/kg	2	0	1.71	86		70	-	130
NMeFOSAA	ug/kg	2	0	2.1	105		70	-	130
Perfluorobutanesulfonic acid	ug/kg	1.77	0	1.65	93		70	-	130
Perfluorobutanoic acid	ug/kg	2	0	1.82	91		70	-	130
Perfluorodecanoic acid	ug/kg	2	0	1.86	93		70	-	130
Perfluorododecanoic acid	ug/kg	2	0	1.94	97		70	-	130
Perfluoroheptanoic acid	ug/kg	2	0	1.93	96		70	-	130
Perfluorohexanesulfonic acid	ug/kg	1.82	0	1.81	99		70	-	130
Perfluorohexanoic acid	ug/kg	2	0	1.91	96		70	-	130
Perfluorononanoic acid	ug/kg	2	0	1.91	96		70	-	130
Perfluorooctane Sulfonate	ug/kg	1.85	0	1.99	107		70	-	130
Perfluorooctanoic acid	ug/kg	2	0	1.89	94		70	-	130
Perfluoropentanoic acid	ug/kg	2	0	1.73	87		70	-	130
Perfluorotetradecanoic acid	ug/kg	2	0	1.99	99		70	-	130
Perfluorotridecanoic acid	ug/kg	2	0	2.01	100		70	-	130
Perfluoroundecanoic acid	ug/kg	2	0	1.86	93		70	-	130

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

\# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

Revision 1

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No:	219051112	
Prep Method:	EPA 537 Mod Prep	Prep Batch: 660235
Analytical Method:	EPA 537 Modified	Analytical Batch: 660401

GCAL QC ID: 1926336

ANALYTE	UNITS	SPIKE ADDED	LCSD RESULT	LCSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
6:2 Fluorotelomer sulfonate	ug/kg	1.9	1.93	101		6		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ug/kg	1.92	1.94	101		1		70 - 130	0 - 30
NEtFOSAA	ug/kg	2	1.73	86		.9		70 - 130	0 - 30
NMeFOSAA	ug/kg	2	2.13	106		1		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ug/kg	1.77	1.65	93		.09		70 - 130	0 - 30
Perfluorobutanoic acid	ug/kg	2	1.83	91		.3		70 - 130	0 - 30
Perfluorodecanoic acid	ug/kg	2	1.91	96		3		70 - 130	0 - 30
Perfluorododecanoic acid	ug/kg	2	1.89	95		3		70 - 130	0 - 30
Perfluoroheptanoic acid	ug/kg	2	1.84	92		5		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ug/kg	1.82	1.79	98		1		70 - 130	0 - 30
Perfluorohexanoic acid	ug/kg	2	1.92	96		.3		70 - 130	0 - 30
Perfluorononanoic acid	ug/kg	2	1.91	95		.3		70 - 130	0 - 30
Perfluorooctane Sulfonate	ug/kg	1.85	2.1	113		5		70 - 130	0 - 30
Perfluorooctanoic acid	ug/kg	2	1.93	96		2		70 - 130	0 - 30
Perfluoropentanoic acid	ug/kg	2	1.63	82		6		70 - 130	0 - 30
Perfluorotetradecanoic acid	ug/kg	2	1.98	99		.2		70 - 130	0 - 30
Perfluorotridecanoic acid	ug/kg	2	1.88	94		6		70 - 130	0 - 30
Perfluoroundecanoic acid	ug/kg	2	1.85	92		.7		70 - 130	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

Revision 1

3D
SOIL SEMIVOLATILE MS/MSD RECOVERY

Report No:	219051112	Parent Sample ID:	AOI-1-5-SB-0-2
Prep Method:	EPA 537 Mod Prep	Prep Batch:	660235
Analytical Method:	EPA 537 Modified	Analytical Batch:	660401

GCAL QC ID: 21905111230

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	MS RESULT	MS % REC	#	QC LIMITS		
6:2 Fluorotelomer sulfonate	ug/kg	2.12	0	2.35	110		70	-	130
8:2 Fluorotelomer sulfonate	ug/kg	2.15	0	2.11	99		70	-	130
NEtFOSAA	ug/kg	2.24	.03	2.36	104		70	-	130
NMeFOSAA	ug/kg	2.24	.028	2.76	122		70	-	130
Perfluorobutanesulfonic acid	ug/kg	1.98	0	1.95	98		70	-	130
Perfluorobutanoic acid	ug/kg	2.24	.097	2.2	94		70	-	130
Perfluorodecanoic acid	ug/kg	2.24	0	2.21	99		70	-	130
Perfluorododecanoic acid	ug/kg	2.24	0	2.17	97		70	-	130
Perfluoroheptanoic acid	ug/kg	2.24	.057	2.29	100		70	-	130
Perfluorohexanesulfonic acid	ug/kg	2.03	.029	2.09	101		70	-	130
Perfluorohexanoic acid	ug/kg	2.24	.078	2.38	103		70	-	130
Perfluorononanoic acid	ug/kg	2.24	.152	2.47	104		70	-	130
Perfluorooctane Sulfonate	ug/kg	2.07	2.23	4.45	108		70	-	130
Perfluorooctanoic acid	ug/kg	2.24	.171	2.47	103		70	-	130
Perfluoropentanoic acid	ug/kg	2.24	0	2.09	93		70	-	130
Perfluorotetradecanoic acid	ug/kg	2.24	0	2.29	103		70	-	130
Perfluorotridecanoic acid	ug/kg	2.24	0	2.24	100		70	-	130
Perfluoroundecanoic acid	ug/kg	2.24	.011	2.23	99		70	-	130

RPD : 0 out of 18 outside limits

Spike Recovery: 1 out of 36 outside limits

\# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

Revision 1

SOIL SEMIVOLATILE MS/MSD RECOVERY

Report No:	219051112		Parent Sample ID:	AOI-1-5-SB-0-2
Prep Method:	EPA 537 Mod Prep		Prep Batch:	660235
Analytical Method:	EPA 537 Modified		Analytical Batch:	660401

GCAL QC ID: 21905111231

ANALYTE	UNITS	SPIKE ADDED	MSD RESULT	MSD % REC	/ #	% RPD	/ #	QC LIMITS REC			RPD		
6:2 Fluorotelomer sulfonate	ug/kg	2.03	2.34	115		.2		70	-	130	0	-	30
8:2 Fluorotelomer sulfonate	ug/kg	2.06	2.27	111		7		70	-	130	0	-	30
NEtFOSAA	ug/kg	2.14	2.44	113		3		70	-	130	0	-	30
NMeFOSAA	ug/kg	2.14	2.77	128		.3		70	-	130	0	-	30
Perfluorobutanesulfonic acid	ug/kg	1.89	1.95	103		.07		70	-	130	0	-	30
Perfluorobutanoic acid	ug/kg	2.14	2.23	99		1		70	-	130	0	-	30
Perfluorodecanoic acid	ug/kg	2.14	2.25	105		2		70	-	130	0	-	30
Perfluorododecanoic acid	ug/kg	2.14	2.21	103		2		70	-	130	0	-	30
Perfluoroheptanoic acid	ug/kg	2.14	2.26	103		1		70	-	130	0	-	30
Perfluorohexanesulfonic acid	ug/kg	1.96	2.12	107		2		70	-	130	0	-	30
Perfluorohexanoic acid	ug/kg	2.14	2.34	105		2		70	-	130	0	-	30
Perfluorononanoic acid	ug/kg	2.14	2.38	104		4		70	-	130	0	-	30
Perfluorooctane Sulfonate	ug/kg	1.98	4.92	136	*	10		70	-	130	0	-	30
Perfluorooctanoic acid	ug/kg	2.14	2.58	113		5		70	-	130	0	-	30
Perfluoropentanoic acid	ug/kg	2.14	2.19	102		5		70	-	130	0	-	30
Perfluorotetradecanoic acid	ug/kg	2.14	2.25	105		2		70	-	130	0	-	30
Perfluorotridecanoic acid	ug/kg	2.14	2.19	102		2		70	-	130	0	-	30
Perfluoroundecanoic acid	ug/kg	2.14	2.28	106		2		70	-	130	0	-	30

RPD :   0   out of   18   outside limits

Spike Recovery: 1   out of   36   outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

Revision 1

Report No:	219051112	Parent Sample ID:	AOI-1-8-SD-0-1
Prep Method:	EPA 537 Mod Prep	Prep Batch:	660235
Analytical Method:	EPA 537 Modified	Analytical Batch:	660460

GCAL QC ID: *21905111210*

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	MS RESULT	MS % REC	#	QC LIMITS		
6:2 Fluorotelomer sulfonate	ug/kg	7.24	.153	8.69	118		70	-	130
8:2 Fluorotelomer sulfonate	ug/kg	7.32	.181	7.76	103		70	-	130
NEtFOSAA	ug/kg	7.64	0	7.96	104		70	-	130
NMeFOSAA	ug/kg	7.64	0	7.88	103		70	-	130
Perfluorobutanesulfonic acid	ug/kg	6.76	.225	7.4	107		70	-	130
Perfluorobutanoic acid	ug/kg	7.64	.221	7.56	96		70	-	130
Perfluorodecanoic acid	ug/kg	7.64	.165	8.61	111		70	-	130
Perfluorododecanoic acid	ug/kg	7.64	0	8.32	109		70	-	130
Perfluoroheptanoic acid	ug/kg	7.64	0	7.88	104		70	-	130
Perfluorohexanesulfonic acid	ug/kg	6.96	1.91	9.81	114		70	-	130
Perfluorohexanoic acid	ug/kg	7.64	.314	8.61	109		70	-	130
Perfluorononanoic acid	ug/kg	7.64	0	8.04	106		70	-	130
Perfluorooctane Sulfonate	ug/kg	7.04	5.31	14.8	(134)	*	70	-	130
Perfluorooctanoic acid	ug/kg	7.64	.265	8.49	108		70	-	130
Perfluoropentanoic acid	ug/kg	7.64	0	7.24	95		70	-	130
Perfluorotetradecanoic acid	ug/kg	7.64	0	7.92	104		70	-	130
Perfluorotridecanoic acid	ug/kg	7.64	0	9.77	128		70	-	130
Perfluoroundecanoic acid	ug/kg	7.64	0	8.49	111		70	-	130

RPD :   0   out of   18   outside limits

Spike Recovery: 3   out of   36   outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM   III   SV-2

Revision 1

Report No:	219051112		Parent Sample ID:	AOI-1-8-SD-0-1
Prep Method:	EPA 537 Mod Prep		Prep Batch:	660235
Analytical Method:	EPA 537 Modified		Analytical Batch:	660460

GCAL QC ID: 21905111211

ANALYTE	UNITS	SPIKE ADDED	MSD RESULT	MSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
6:2 Fluorotelomer sulfonate	ug/kg	7.64	8.28	106		5		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ug/kg	7.72	8.08	102		4		70 - 130	0 - 30
NEtFOSAA	ug/kg	8.04	7.8	97		2		70 - 130	0 - 30
NMeFOSAA	ug/kg	8.04	8.53	106		8		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ug/kg	7.12	6.92	94		7		70 - 130	0 - 30
Perfluorobutanoic acid	ug/kg	8.04	7.36	89		2		70 - 130	0 - 30
Perfluorodecanoic acid	ug/kg	8.04	7.92	96		8		70 - 130	0 - 30
Perfluorododecanoic acid	ug/kg	8.04	7.92	98		5		70 - 130	0 - 30
Perfluoroheptanoic acid	ug/kg	8.04	7.64	95		3		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ug/kg	7.36	9.65	106		1		70 - 130	0 - 30
Perfluorohexanoic acid	ug/kg	8.04	8.2	98		5		70 - 130	0 - 30
Perfluorononanoic acid	ug/kg	8.04	7.76	96		4		70 - 130	0 - 30
Perfluorooctane Sulfonate	ug/kg	7.48	18.3	(174)	*	21		70 - 130	0 - 30
Perfluorooctanoic acid	ug/kg	8.04	8.69	105		2		70 - 130	0 - 30
Perfluoropentanoic acid	ug/kg	8.04	6.96	86		4		70 - 130	0 - 30
Perfluorotetradecanoic acid	ug/kg	8.04	7.76	96		2		70 - 130	0 - 30
Perfluorotridecanoic acid	ug/kg	8.04	11.9	(147)	*	20		70 - 130	0 - 30
Perfluoroundecanoic acid	ug/kg	8.04	8.08	100		5		70 - 130	0 - 30

RPD :   0   out of   18   outside limits

Spike Recovery: 3   out of   36   outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

Revision 1

SEMIVOLATILE METHOD BLANK SUMMARY

Report No: 219051112	Method Blank ID: 1926788
Matrix: Water	Instrument ID: QQQ1
Sample Amt: 125 mL	Lab File ID: 2190519A_11.d
Injection Vol.: 1.0 (µL)	GC Column: ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.: 1000 (µL)	Dilution Factor: 1 Analyst: BMH
Prep Date: 05/17/19	Analysis Date: 05/20/19 Time: 0027
Prep Batch: 660319	Analytical Batch: 660791
Prep Method: EPA 537 Mod Prep	Analytical Method: EPA 537 Modified

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS1926789	1926789	2190519A_12.d	05/20/19	0039
2.	LCSD1926790	1926790	2190519A_13.d	05/20/19	0050
3.	AOI-1-7-SW-0-1	21905111201	2190519A_16.d	05/20/19	0124
4.	AOI-1-7-SW-0-1-DUP	21905111202	2190519A_17.d	05/20/19	0136
5.	AOI-1-9-SW-0-1	21905111206	2190519A_18.d	05/20/19	0147
6.	AOI-1-4-GW-17-22	21905111213	2190519A_19.d	05/20/19	0159
7.	AOI-1-4-GW-17-22-MS	21905111214	2190519A_20.d	05/20/19	0210
8.	AOI-1-4-GW-17-22-MSD	21905111215	2190519A_22.d	05/20/19	0233
9.	AOI-1-6-GW-15-20	21905111216	2190519A_23.d	05/20/19	0244
10.	AOI-2-1-GW-5-10	21905111217	2190519A_24.d	05/20/19	0255
11.	AOI-1-1-GW-7-12	21905111218	2190519A_25.d	05/20/19	0307
12.	AOI-1-5-GW-5-10	21905111219	2190519A_26.d	05/20/19	0318
13.	FQC-EB-050919-WL	21905111220	2190519A_27.d	05/20/19	0329
14.	FQC-EB-050719-ROD	21905111221	2190519A_28.d	05/20/19	0341
15.	FQC-EB-050719-SS-2	21905111222	2190519A_29.d	05/20/19	0352
16.	FQC-EB-050719-HA	21905111223	2190519A_31.d	05/20/19	0415
17.	FQC-EB-050719-SS-1	21905111224	2190519A_32.d	05/20/19	0426
18.	AOI-1-3-GW-4-9	21905111234	2190519A_33.d	05/20/19	0438
19.	AOI-1-3-GW-4-9-DUP	21905111235	2190519A_34.d	05/20/19	0449
20.	AOI-1-2-GW-5-10	21905111236	2190519A_35.d	05/20/19	0500
21.	AOI-2-2-GW-5-10	21905111237	2190519A_36.d	05/20/19	0512

FORM IV SV

Revision 1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219051112		Client Sample ID:	MB1926788
Collect Date:	NA	Time: NA	GCAL Sample ID:	1926788
Matrix:	Water	% Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2190519A_11.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	05/17/19		Analysis Date:	05/20/19 Time: 0027
Prep Batch:	660319		Analytical Batch:	660791
Prep Method:	EPA 537 Mod Prep		Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

Revision 1

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219051112

Prep Method:	EPA 537 Mod Prep	Prep Batch:	660319
Analytical Method:	EPA 537 Modified	Analytical Batch:	660791

GCAL QC ID: 1926789

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	LCS RESULT	LCS % REC	#	QC LIMITS		
6:2 Fluorotelomer sulfonate	ng/L	76	0	74.6	98		70	-	130
8:2 Fluorotelomer sulfonate	ng/L	76.8	0	80.1	104		70	-	130
NEtFOSAA	ng/L	80	0	68.8	86		70	-	130
NMeFOSAA	ng/L	80	0	77.8	97		70	-	130
Perfluorobutanesulfonic acid	ng/L	70.8	0	65.6	93		70	-	130
Perfluorobutanoic acid	ng/L	80	0	70.8	89		70	-	130
Perfluorodecanoic acid	ng/L	80	0	75.5	94		70	-	130
Perfluorododecanoic acid	ng/L	80	0	70.4	88		70	-	130
Perfluoroheptanoic acid	ng/L	80	0	74.2	93		70	-	130
Perfluorohexanesulfonic acid	ng/L	73	0	67.7	93		70	-	130
Perfluorohexanoic acid	ng/L	80	0	75.3	94		70	-	130
Perfluorononanoic acid	ng/L	80	0	74.4	93		70	-	130
Perfluorooctane Sulfonate	ng/L	74	0	67.6	91		70	-	130
Perfluorooctanoic acid	ng/L	80	0	76.6	96		70	-	130
Perfluoropentanoic acid	ng/L	80	0	70.4	88		70	-	130
Perfluorotetradecanoic acid	ng/L	80	0	87.8	110		70	-	130
Perfluorotridecanoic acid	ng/L	80	0	145	181	*	70	-	130
Perfluoroundecanoic acid	ng/L	80	0	70.1	88		70	-	130

RPD :   0   out of   18   outside limits

Spike Recovery: 2   out of   36   outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM   III SV-1

Revision 1

Report No: 219051112

Prep Method: EPA 537 Mod Prep

Analytical Method: EPA 537 Modified

Prep Batch: 660319

Analytical Batch: 660791

GCAL QC ID: 1926790

ANALYTE	UNITS	SPIKE ADDED	LCSD RESULT	LCSD % REC	/#	% RPD	/#	QC LIMITS REC		QC LIMITS RPD	
6:2 Fluorotelomer sulfonate	ng/L	76	73.7	97		1		70 - 130		0 - 30	
8:2 Fluorotelomer sulfonate	ng/L	76.8	76.6	100		5		70 - 130		0 - 30	
NEtFOSAA	ng/L	80	67	84		3		70 - 130		0 - 30	
NMeFOSAA	ng/L	80	84.1	105		8		70 - 130		0 - 30	
Perfluorobutanesulfonic acid	ng/L	70.8	66	93		.6		70 - 130		0 - 30	
Perfluorobutanoic acid	ng/L	80	69.9	87		1		70 - 130		0 - 30	
Perfluorodecanoic acid	ng/L	80	78.3	98		4		70 - 130		0 - 30	
Perfluorododecanoic acid	ng/L	80	76.5	96		8		70 - 130		0 - 30	
Perfluoroheptanoic acid	ng/L	80	74.8	93		.8		70 - 130		0 - 30	
Perfluorohexanesulfonic acid	ng/L	73	68.3	94		.9		70 - 130		0 - 30	
Perfluorohexanoic acid	ng/L	80	75.7	95		.5		70 - 130		0 - 30	
Perfluorononanoic acid	ng/L	80	75.5	94		1		70 - 130		0 - 30	
Perfluorooctane Sulfonate	ng/L	74	70	95		3		70 - 130		0 - 30	
Perfluorooctanoic acid	ng/L	80	75	94		2		70 - 130		0 - 30	
Perfluoropentanoic acid	ng/L	80	67.6	84		4		70 - 130		0 - 30	
Perfluorotetradecanoic acid	ng/L	80	79.6	99		10		70 - 130		0 - 30	
Perfluorotridecanoic acid	ng/L	80	110	137	*	27		70 - 130		0 - 30	
Perfluoroundecanoic acid	ng/L	80	71.4	89		2		70 - 130		0 - 30	

RPD :   0   out of   18   outside limits

Spike Recovery: 2   out of   36   outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

Revision 1

WATER SEMIVOLATILE MS/MSD RECOVERY

Report No:	219051112	
Prep Method:	EPA 537 Mod Prep	
Analytical Method:	EPA 537 Modified	

Parent Sample ID:	AOI-1-4-GW-17-22	
Prep Batch:	660319	
Analytical Batch:	660791	

GCAL QC ID: *21905111214*

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	MS RESULT	MS % REC	#	QC LIMITS		
6:2 Fluorotelomer sulfonate	ng/L	63.3	0	62.4	99		70	-	130
8:2 Fluorotelomer sulfonate	ng/L	64	0	60.3	94		70	-	130
NEtFOSAA	ng/L	66.7	0	60.4	91		70	-	130
NMeFOSAA	ng/L	66.7	0	67.5	101		70	-	130
Perfluorobutanesulfonic acid	ng/L	59	2.66	57.4	93		70	-	130
Perfluorobutanoic acid	ng/L	66.7	3.26	65.2	93		70	-	130
Perfluorodecanoic acid	ng/L	66.7	0	60.2	90		70	-	130
Perfluorododecanoic acid	ng/L	66.7	0	60.3	90		70	-	130
Perfluoroheptanoic acid	ng/L	66.7	.797	62.4	92		70	-	130
Perfluorohexanesulfonic acid	ng/L	60.8	4.47	62	95		70	-	130
Perfluorohexanoic acid	ng/L	66.7	0	65.6	98		70	-	130
Perfluorononanoic acid	ng/L	66.7	0	59.8	90		70	-	130
Perfluorooctane Sulfonate	ng/L	61.7	.687	59.8	96		70	-	130
Perfluorooctanoic acid	ng/L	66.7	1.1	63.6	94		70	-	130
Perfluoropentanoic acid	ng/L	66.7	0	59.3	89		70	-	130
Perfluorotetradecanoic acid	ng/L	66.7	0	67.9	102		70	-	130
Perfluorotridecanoic acid	ng/L	66.7	0	188	282	*	70	-	130
Perfluoroundecanoic acid	ng/L	66.7	0	63.9	96		70	-	130

RPD : __5__ out of __18__ outside limits

Spike Recovery: __5__ out of __36__ outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

Revision 1

WATER SEMIVOLATILE MS/MSD RECOVERY

Report No:	219051112	

Parent Sample ID:	AOI-1-4-GW-17-22

Prep Method:	EPA 537 Mod Prep
Analytical Method:	EPA 537 Modified

Prep Batch:	660319
Analytical Batch:	660791

GCAL QC ID: *21905111215*

ANALYTE	UNITS	SPIKE ADDED	MSD RESULT	MSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
6:2 Fluorotelomer sulfonate	ng/L	63.3	101	160	*	47	*	70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ng/L	64	64.8	101		7		70 - 130	0 - 30
NEtFOSAA	ng/L	66.7	56.1	84		7		70 - 130	0 - 30
NMeFOSAA	ng/L	66.7	70.5	106		4		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ng/L	59	76.6	125		29		70 - 130	0 - 30
Perfluorobutanoic acid	ng/L	66.7	79.9	115		20		70 - 130	0 - 30
Perfluorodecanoic acid	ng/L	66.7	60	90		.5		70 - 130	0 - 30
Perfluorododecanoic acid	ng/L	66.7	66.9	100		10		70 - 130	0 - 30
Perfluoroheptanoic acid	ng/L	66.7	89.9	134	*	36	*	70 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	60.8	65.4	100		5		70 - 130	0 - 30
Perfluorohexanoic acid	ng/L	66.7	132	197	*	67	*	70 - 130	0 - 30
Perfluorononanoic acid	ng/L	66.7	63.1	95		5		70 - 130	0 - 30
Perfluorooctane Sulfonate	ng/L	61.7	60.8	98		2		70 - 130	0 - 30
Perfluorooctanoic acid	ng/L	66.7	64	94		.6		70 - 130	0 - 30
Perfluoropentanoic acid	ng/L	66.7	137	206	*	79	*	70 - 130	0 - 30
Perfluorotetradecanoic acid	ng/L	66.7	64.6	97		5		70 - 130	0 - 30
Perfluorotridecanoic acid	ng/L	66.7	67	100		95	*	70 - 130	0 - 30
Perfluoroundecanoic acid	ng/L	66.7	61.9	93		3		70 - 130	0 - 30

RPD : 5 out of 18 outside limits

Spike Recovery: 5 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

Revision 1

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	219051112	Method Blank ID:	1927062
Matrix:	Solid	Instrument ID:	QQQ1
Sample Amt:	5 g	Lab File ID:	2190527B_04.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	05/20/19	Analysis Date:	05/27/19 Time: 1752
Prep Batch:	660349	Analytical Batch:	660792
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS1927063	1927063	2190527B_07.d	05/27/19	1826
2.	LCSD1927064	1927064	2190527B_08.d	05/27/19	1838
3.	AOI-2-3-SB-0-2	21905111244	2190527B_14.d	05/27/19	1946
4.	AOI-2-1-SB-0-2	21905111245	2190527B_15.d	05/27/19	1957
5.	AOI-1-1-SB-0-2	21905111246	2190527B_16.d	05/27/19	2009
6.	AOI-1-6-SB-0-2	21905111247	2190527B_17.d	05/27/19	2020
7.	AOI-1-6-SB-2-4	21905111248	2190527B_18.d	05/27/19	2032
8.	AOI-1-3-SB-0-2	21905111250	2190527B_19.d	05/27/19	2043
9.	AOI-1-3-SB-2-4	21905111251	2190527B_20.d	05/27/19	2054
10.	AOI-1-4-SB-0-2	21905111252	2190527B_21.d	05/27/19	2106
11.	AOI-2-2-SB-2-4-DUP	21905111254	2190527B_23.d	05/27/19	2128

FORM IV SV

Revision 1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219051112		Client Sample ID:	MB1927062
Collect Date:	NA	Time: NA	GCAL Sample ID:	1927062
Matrix:	Solid	% Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	5 g		Lab File ID:	2190527B_04.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	05/20/19		Analysis Date:	05/27/19 Time: 1752
Prep Batch:	660349		Analytical Batch:	660792
Prep Method:	EPA 537 Mod Prep		Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.014	J	0.00179	0.400	1.00
39108-34-4	8:2 Fluorotelomer sulfonate	0.400	U	0.00163	0.400	1.00
2991-50-6	NEtFOSAA	0.400	U	0.00538	0.400	1.00
2355-31-9	NMeFOSAA	0.400	U	0.00460	0.400	1.00
375-73-5	Perfluorobutanesulfonic acid	0.400	U	0.00147	0.400	1.00
375-22-4	Perfluorobutanoic acid	0.400	U	0.00213	0.400	1.00
335-76-2	Perfluorodecanoic acid	0.400	U	0.00165	0.400	1.00
307-55-1	Perfluorododecanoic acid	0.400	U	0.00245	0.400	1.00
375-85-9	Perfluoroheptanoic acid	0.400	U	0.00185	0.400	1.00
355-46-4	Perfluorohexanesulfonic acid	0.400	U	0.00164	0.400	1.00
307-24-4	Perfluorohexanoic acid	0.400	U	0.00194	0.400	1.00
375-95-1	Perfluorononanoic acid	0.400	U	0.00168	0.400	1.00
1763-23-1	Perfluorooctane Sulfonate	0.400	U	0.00170	0.400	1.00
335-67-1	Perfluorooctanoic acid	0.400	U	0.00180	0.400	1.00
2706-90-3	Perfluoropentanoic acid	0.400	U	0.00235	0.400	1.00
376-06-7	Perfluorotetradecanoic acid	0.400	U	0.00276	0.400	1.00
72629-94-8	Perfluorotridecanoic acid	0.400	U	0.00256	0.400	1.00
2058-94-8	Perfluoroundecanoic acid	0.400	U	0.00186	0.400	1.00

FORM I SV-1

Revision 1

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No:	219051112	
Prep Method:	EPA 537 Mod Prep	Prep Batch: 660349
Analytical Method:	EPA 537 Modified	Analytical Batch: 660792

GCAL QC ID: 1927063

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	LCS RESULT	LCS % REC	#	QC LIMITS		
6:2 Fluorotelomer sulfonate	ug/kg	1.9	0	1.91	101		70	-	130
8:2 Fluorotelomer sulfonate	ug/kg	1.92	0	1.85	96		70	-	130
NEtFOSAA	ug/kg	2	0	1.8	90		70	-	130
NMeFOSAA	ug/kg	2	0	1.89	94		70	-	130
Perfluorobutanesulfonic acid	ug/kg	1.77	0	1.69	96		70	-	130
Perfluorobutanoic acid	ug/kg	2	0	1.8	90		70	-	130
Perfluorodecanoic acid	ug/kg	2	0	1.89	94		70	-	130
Perfluorododecanoic acid	ug/kg	2	0	1.93	96		70	-	130
Perfluoroheptanoic acid	ug/kg	2	0	1.87	93		70	-	130
Perfluorohexanesulfonic acid	ug/kg	1.82	0	1.73	95		70	-	130
Perfluorohexanoic acid	ug/kg	2	0	1.91	95		70	-	130
Perfluorononanoic acid	ug/kg	2	0	1.89	95		70	-	130
Perfluorooctane Sulfonate	ug/kg	1.85	0	1.8	97		70	-	130
Perfluorooctanoic acid	ug/kg	2	0	1.98	99		70	-	130
Perfluoropentanoic acid	ug/kg	2	0	1.72	86		70	-	130
Perfluorotetradecanoic acid	ug/kg	2	0	2	100		70	-	130
Perfluorotridecanoic acid	ug/kg	2	0	2.08	104		70	-	130
Perfluoroundecanoic acid	ug/kg	2	0	1.82	91		70	-	130

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

Revision 1

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No:	219051112			
Prep Method:	EPA 537 Mod Prep		Prep Batch:	660349
Analytical Method:	EPA 537 Modified		Analytical Batch:	660792

GCAL QC ID: 1927064

ANALYTE	UNITS	SPIKE ADDED	LCSD RESULT	LCSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
6:2 Fluorotelomer sulfonate	ug/kg	1.9	1.95	103		2		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ug/kg	1.92	1.99	104		7		70 - 130	0 - 30
NEtFOSAA	ug/kg	2	1.94	97		7		70 - 130	0 - 30
NMeFOSAA	ug/kg	2	2.15	107		13		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ug/kg	1.77	1.75	99		3		70 - 130	0 - 30
Perfluorobutanoic acid	ug/kg	2	1.86	93		3		70 - 130	0 - 30
Perfluorodecanoic acid	ug/kg	2	2.02	101		7		70 - 130	0 - 30
Perfluorododecanoic acid	ug/kg	2	1.98	99		3		70 - 130	0 - 30
Perfluoroheptanoic acid	ug/kg	2	1.99	99		6		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ug/kg	1.82	1.85	102		7		70 - 130	0 - 30
Perfluorohexanoic acid	ug/kg	2	1.99	99		4		70 - 130	0 - 30
Perfluorononanoic acid	ug/kg	2	1.96	98		4		70 - 130	0 - 30
Perfluorooctane Sulfonate	ug/kg	1.85	1.88	101		4		70 - 130	0 - 30
Perfluorooctanoic acid	ug/kg	2	1.93	97		3		70 - 130	0 - 30
Perfluoropentanoic acid	ug/kg	2	1.75	87		2		70 - 130	0 - 30
Perfluorotetradecanoic acid	ug/kg	2	1.98	99		1		70 - 130	0 - 30
Perfluorotridecanoic acid	ug/kg	2	2.07	103		.5		70 - 130	0 - 30
Perfluoroundecanoic acid	ug/kg	2	1.88	94		3		70 - 130	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

\# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

Revision 1

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	219051112	Method Blank ID:	1927067	
Matrix:	Water	Instrument ID:	QQQ1	
Sample Amt:	125 mL	Lab File ID:	2190530A_06.d	
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)	
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH	
Prep Date:	05/19/19	Analysis Date:	05/30/19 Time: 1341	
Prep Batch:	660350	Analytical Batch:	661053	
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified	

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS1927068	1927068	2190530A_04.d	05/30/19	1318
2.	LCSD1927069	1927069	2190530A_05.d	05/30/19	1330
3.	AOI-2-3-GW-5-10	21905111249	2190530A_10.d	05/30/19	1503

FORM IV SV

Revision 1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219051112		Client Sample ID:	MB1927067
Collect Date:	NA	Time: NA	GCAL Sample ID:	1927067
Matrix:	Water	% Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2190530A_06.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	05/19/19		Analysis Date:	05/30/19 Time: 1341
Prep Batch:	660350		Analytical Batch:	661053
Prep Method:	EPA 537 Mod Prep		Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

Revision 1

3C
WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219051112

Prep Method: EPA 537 Mod Prep   Prep Batch: 660350

Analytical Method: EPA 537 Modified   Analytical Batch: 661053

GCAL QC ID: 1927068

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	LCS RESULT	LCS % REC	#	QC LIMITS		
6:2 Fluorotelomer sulfonate	ng/L	76	0	73.2	96		70	-	130
8:2 Fluorotelomer sulfonate	ng/L	76.8	0	71.6	93		70	-	130
NEtFOSAA	ng/L	80	0	66.2	83		70	-	130
NMeFOSAA	ng/L	80	0	74.6	93		70	-	130
Perfluorobutanesulfonic acid	ng/L	70.8	0	56.5	80		70	-	130
Perfluorobutanoic acid	ng/L	80	0	63.5	79		70	-	130
Perfluorodecanoic acid	ng/L	80	0	67	84		70	-	130
Perfluorododecanoic acid	ng/L	80	0	67.9	85		70	-	130
Perfluoroheptanoic acid	ng/L	80	0	63.8	80		70	-	130
Perfluorohexanesulfonic acid	ng/L	73	0	59.1	81		70	-	130
Perfluorohexanoic acid	ng/L	80	0	66	83		70	-	130
Perfluorononanoic acid	ng/L	80	0	64	80		70	-	130
Perfluorooctane Sulfonate	ng/L	74	0	62.8	85		70	-	130
Perfluorooctanoic acid	ng/L	80	0	64.7	81		70	-	130
Perfluoropentanoic acid	ng/L	80	0	64.1	80		70	-	130
Perfluorotetradecanoic acid	ng/L	80	0	64.8	81		70	-	130
Perfluorotridecanoic acid	ng/L	80	0	86.2	108		70	-	130
Perfluoroundecanoic acid	ng/L	80	0	65.1	81		70	-	130

RPD :   0   out of   18   outside limits

Spike Recovery: 0   out of   36   outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

Revision 1

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No:	219051112		
Prep Method:	EPA 537 Mod Prep	Prep Batch:	660350
Analytical Method:	EPA 537 Modified	Analytical Batch:	661053

GCAL QC ID: 1927069

ANALYTE	UNITS	SPIKE ADDED	LCSD RESULT	LCSD % REC	/#	% RPD	#	QC LIMITS REC			QC LIMITS RPD		
6:2 Fluorotelomer sulfonate	ng/L	76	70.9	93		3		70	-	130	0	-	30
8:2 Fluorotelomer sulfonate	ng/L	76.8	71.5	93		.2		70	-	130	0	-	30
NEtFOSAA	ng/L	80	63.5	79		4		70	-	130	0	-	30
NMeFOSAA	ng/L	80	81.6	102		9		70	-	130	0	-	30
Perfluorobutanesulfonic acid	ng/L	70.8	57.3	81		1		70	-	130	0	-	30
Perfluorobutanoic acid	ng/L	80	62.3	78		2		70	-	130	0	-	30
Perfluorodecanoic acid	ng/L	80	65.5	82		2		70	-	130	0	-	30
Perfluorododecanoic acid	ng/L	80	64.3	80		5		70	-	130	0	-	30
Perfluoroheptanoic acid	ng/L	80	63.9	80		.1		70	-	130	0	-	30
Perfluorohexanesulfonic acid	ng/L	73	60.4	83		2		70	-	130	0	-	30
Perfluorohexanoic acid	ng/L	80	67.5	84		2		70	-	130	0	-	30
Perfluorononanoic acid	ng/L	80	62.3	78		3		70	-	130	0	-	30
Perfluorooctane Sulfonate	ng/L	74	61.5	83		2		70	-	130	0	-	30
Perfluorooctanoic acid	ng/L	80	63.5	79		2		70	-	130	0	-	30
Perfluoropentanoic acid	ng/L	80	60	75		7		70	-	130	0	-	30
Perfluorotetradecanoic acid	ng/L	80	65.1	81		.4		70	-	130	0	-	30
Perfluorotridecanoic acid	ng/L	80	88.9	111		3		70	-	130	0	-	30
Perfluoroundecanoic acid	ng/L	80	62.8	78		4		70	-	130	0	-	30

RPD :   0   out of   18   outside limits

Spike Recovery: 0   out of   36   outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM   III SV-1

Revision 1

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	219051112
Matrix:	Solid
Sample Amt:	5 g
Injection Vol.:	1.0 (µL)
Prep Final Vol.:	1000 (µL)
Prep Date:	05/30/19
Prep Batch:	661059
Prep Method:	EPA 537 Mod Prep

Method Blank ID:	1930400
Instrument ID:	QQQ1
Lab File ID:	2190531A_03.d
GC Column:	ACC-C18-30M ID 2.1 (mm)
Dilution Factor:	1 Analyst: BMH
Analysis Date:	05/31/19 Time: 1912
Analytical Batch:	661151
Analytical Method:	EPA 537 Modified

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS1930401	1930401	2190531A_04.d	05/31/19	1923
2.	LCSD1930402	1930402	2190531A_05.d	05/31/19	1935
3.	AOI-1-7-SD-0-1-DUP (RE)	21905111256	2190531A_07.d	05/31/19	1958
4.	AOI-1-8-SD-0-1 (RE)	21905111257	2190531A_08.d	05/31/19	2009

FORM IV SV

Revision 1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219051112		Client Sample ID:	MB1930400
Collect Date:	NA	Time: NA	GCAL Sample ID:	1930400
Matrix:	Solid	% Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	5 g		Lab File ID:	2190531A_03.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	05/30/19		Analysis Date:	05/31/19 Time: 1912
Prep Batch:	661059		Analytical Batch:	661151
Prep Method:	EPA 537 Mod Prep		Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.400	U	0.00179	0.400	1.00
39108-34-4	8:2 Fluorotelomer sulfonate	0.400	U	0.00163	0.400	1.00
2991-50-6	NEtFOSAA	0.400	U	0.00538	0.400	1.00
2355-31-9	NMeFOSAA	0.400	U	0.00460	0.400	1.00
375-73-5	Perfluorobutanesulfonic acid	0.400	U	0.00147	0.400	1.00
375-22-4	Perfluorobutanoic acid	0.00972	J	0.00213	0.400	1.00
335-76-2	Perfluorodecanoic acid	0.400	U	0.00165	0.400	1.00
307-55-1	Perfluorododecanoic acid	0.400	U	0.00245	0.400	1.00
375-85-9	Perfluoroheptanoic acid	0.400	U	0.00185	0.400	1.00
355-46-4	Perfluorohexanesulfonic acid	0.400	U	0.00164	0.400	1.00
307-24-4	Perfluorohexanoic acid	0.021	J	0.00194	0.400	1.00
375-95-1	Perfluorononanoic acid	0.400	U	0.00168	0.400	1.00
1763-23-1	Perfluorooctane Sulfonate	0.00543	J	0.00170	0.400	1.00
335-67-1	Perfluorooctanoic acid	0.00819	J	0.00180	0.400	1.00
2706-90-3	Perfluoropentanoic acid	0.400	U	0.00235	0.400	1.00
376-06-7	Perfluorotetradecanoic acid	0.400	U	0.00276	0.400	1.00
72629-94-8	Perfluorotridecanoic acid	0.400	U	0.00256	0.400	1.00
2058-94-8	Perfluoroundecanoic acid	0.400	U	0.00186	0.400	1.00

FORM I SV-1

Revision 1

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219051112

Prep Method: EPA 537 Mod Prep   Prep Batch: 661059

Analytical Method: EPA 537 Modified   Analytical Batch: 661151

GCAL QC ID: **1930401**

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	LCS RESULT	LCS % REC	#	QC LIMITS		
6:2 Fluorotelomer sulfonate	ug/kg	1.9	0	1.87	99		70	-	130
8:2 Fluorotelomer sulfonate	ug/kg	1.92	0	1.92	100		70	-	130
NEtFOSAA	ug/kg	2	0	1.59	79		70	-	130
NMeFOSAA	ug/kg	2	0	1.89	95		70	-	130
Perfluorobutanesulfonic acid	ug/kg	1.77	0	1.45	82		70	-	130
Perfluorobutanoic acid	ug/kg	2	0	1.61	80		70	-	130
Perfluorodecanoic acid	ug/kg	2	0	1.6	80		70	-	130
Perfluorododecanoic acid	ug/kg	2	0	1.72	86		70	-	130
Perfluoroheptanoic acid	ug/kg	2	0	1.63	81		70	-	130
Perfluorohexanesulfonic acid	ug/kg	1.82	0	1.51	83		70	-	130
Perfluorohexanoic acid	ug/kg	2	0	1.68	84		70	-	130
Perfluorononanoic acid	ug/kg	2	0	1.71	85		70	-	130
Perfluorooctane Sulfonate	ug/kg	1.85	0	1.68	91		70	-	130
Perfluorooctanoic acid	ug/kg	2	0	1.6	80		70	-	130
Perfluoropentanoic acid	ug/kg	2	0	1.51	76		70	-	130
Perfluorotetradecanoic acid	ug/kg	2	0	1.65	83		70	-	130
Perfluorotridecanoic acid	ug/kg	2	0	1.8	90		70	-	130
Perfluoroundecanoic acid	ug/kg	2	0	1.63	82		70	-	130

RPD :   0   out of   18   outside limits

Spike Recovery: 0   out of   36   outside limits

\# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

Revision 1

Report No: 219051112

Prep Method: EPA 537 Mod Prep   Prep Batch: 661059

Analytical Method: EPA 537 Modified   Analytical Batch: 661151

GCAL QC ID: 1930402

ANALYTE	UNITS	SPIKE ADDED	LCSD RESULT	LCSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
6:2 Fluorotelomer sulfonate	ug/kg	1.9	1.94	102		4		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ug/kg	1.92	1.99	103		3		70 - 130	0 - 30
NEtFOSAA	ug/kg	2	1.63	81		2		70 - 130	0 - 30
NMeFOSAA	ug/kg	2	2.46	123		26		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ug/kg	1.77	1.56	88		7		70 - 130	0 - 30
Perfluorobutanoic acid	ug/kg	2	1.71	86		6		70 - 130	0 - 30
Perfluorodecanoic acid	ug/kg	2	1.75	87		9		70 - 130	0 - 30
Perfluorododecanoic acid	ug/kg	2	1.71	85		1		70 - 130	0 - 30
Perfluoroheptanoic acid	ug/kg	2	1.78	89		9		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ug/kg	1.82	1.61	88		7		70 - 130	0 - 30
Perfluorohexanoic acid	ug/kg	2	1.82	91		8		70 - 130	0 - 30
Perfluorononanoic acid	ug/kg	2	1.71	85		.3		70 - 130	0 - 30
Perfluorooctane Sulfonate	ug/kg	1.85	1.74	94		4		70 - 130	0 - 30
Perfluorooctanoic acid	ug/kg	2	1.82	91		13		70 - 130	0 - 30
Perfluoropentanoic acid	ug/kg	2	1.77	88		16		70 - 130	0 - 30
Perfluorotetradecanoic acid	ug/kg	2	1.9	95		14		70 - 130	0 - 30
Perfluorotridecanoic acid	ug/kg	2	1.98	99		9		70 - 130	0 - 30
Perfluoroundecanoic acid	ug/kg	2	1.75	87		7		70 - 130	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

Revision 1

SEMIVOLATILE METHOD BLANK SUMMARY

Report No: 219051112	Method Blank ID: 1930410
Matrix: Water	Instrument ID: QQQ1
Sample Amt: 125 mL	Lab File ID: 2190602A_03.d
Injection Vol.: 1.0 (µL)	GC Column: ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.: 1000 (µL)	Dilution Factor: 1 Analyst: BMH
Prep Date: 05/30/19	Analysis Date: 06/02/19 Time: 2108
Prep Batch: 661062	Analytical Batch: 661232
Prep Method: EPA 537 Mod Prep	Analytical Method: EPA 537 Modified

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS1930411	1930411	2190602A_04.d	06/02/19	2119
2.	LCSD1930412	1930412	2190602A_05.d	06/02/19	2130
3.	FQC-EB-050719-ROD (RE)	21905111259	2190602A_10.d	06/02/19	2320
4.	FQC-EB-050719-SS-2 (RE)	21905111260	2190602A_11.d	06/02/19	2332
5.	FQC-EB-050719-HA (RE)	21905111261	2190602A_12.d	06/02/19	2343
6.	AOI-1-3-GW-4-9 (RE)	21905111262	2190602A_14.d	06/03/19	0006
7.	AOI-1-3-GW-4-9-DUP (RE)	21905111263	2190602A_15.d	06/03/19	0017
8.	AOI-1-2-GW-5-10 (RE)	21905111264	2190602A_16.d	06/03/19	0029

FORM IV SV

Revision 1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219051112		Client Sample ID:	MB1930410
Collect Date:	NA	Time: NA	GCAL Sample ID:	1930410
Matrix:	Water	% Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2190602A_03.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	05/30/19		Analysis Date:	06/02/19 Time: 2108
Prep Batch:	661062		Analytical Batch:	661232
Prep Method:	EPA 537 Mod Prep		Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

Revision 1

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No:	219051112		
Prep Method:	EPA 537 Mod Prep	Prep Batch:	661062
Analytical Method:	EPA 537 Modified	Analytical Batch:	661232

GCAL QC ID: 1930411

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	LCS RESULT	LCS % REC	#	QC LIMITS		
6:2 Fluorotelomer sulfonate	ng/L	76	0	77.2	102		70	-	130
8:2 Fluorotelomer sulfonate	ng/L	76.8	0	79.5	103		70	-	130
NEtFOSAA	ng/L	80	0	61.8	77		70	-	130
NMeFOSAA	ng/L	80	0	79.1	99		70	-	130
Perfluorobutanesulfonic acid	ng/L	70.8	0	61.2	86		70	-	130
Perfluorobutanoic acid	ng/L	80	0	67.2	84		70	-	130
Perfluorodecanoic acid	ng/L	80	0	69.5	87		70	-	130
Perfluorododecanoic acid	ng/L	80	0	71.8	90		70	-	130
Perfluoroheptanoic acid	ng/L	80	0	69.9	87		70	-	130
Perfluorohexanesulfonic acid	ng/L	73	0	61.4	84		70	-	130
Perfluorohexanoic acid	ng/L	80	0	71.8	90		70	-	130
Perfluorononanoic acid	ng/L	80	0	66.2	83		70	-	130
Perfluorooctane Sulfonate	ng/L	74	0	64.2	87		70	-	130
Perfluorooctanoic acid	ng/L	80	0	66.9	84		70	-	130
Perfluoropentanoic acid	ng/L	80	0	61.9	77		70	-	130
Perfluorotetradecanoic acid	ng/L	80	0	72	90		70	-	130
Perfluorotridecanoic acid	ng/L	80	0	76.9	96		70	-	130
Perfluoroundecanoic acid	ng/L	80	0	68.8	86		70	-	130

RPD :   0   out of   18   outside limits

Spike Recovery: 0   out of   36   outside limits

\# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

Revision 1

Report No: 219051112

Prep Method: EPA 537 Mod Prep   Prep Batch: 661062

Analytical Method: EPA 537 Modified   Analytical Batch: 661232

GCAL QC ID: 1930412

ANALYTE	UNITS	SPIKE ADDED	LCSD RESULT	LCSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
6:2 Fluorotelomer sulfonate	ng/L	76	80.2	105		4		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ng/L	76.8	88.1	115		10		70 - 130	0 - 30
NEtFOSAA	ng/L	80	59.9	75		3		70 - 130	0 - 30
NMeFOSAA	ng/L	80	93	116		16		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ng/L	70.8	65.4	92		7		70 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	69.2	87		3		70 - 130	0 - 30
Perfluorodecanoic acid	ng/L	80	76.1	95		9		70 - 130	0 - 30
Perfluorododecanoic acid	ng/L	80	71.8	90		.03		70 - 130	0 - 30
Perfluoroheptanoic acid	ng/L	80	75.6	94		8		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73	66.7	91		8		70 - 130	0 - 30
Perfluorohexanoic acid	ng/L	80	73.5	92		2		70 - 130	0 - 30
Perfluorononanoic acid	ng/L	80	72.5	91		9		70 - 130	0 - 30
Perfluorooctane Sulfonate	ng/L	74	71.2	96		10		70 - 130	0 - 30
Perfluorooctanoic acid	ng/L	80	73	91		9		70 - 130	0 - 30
Perfluoropentanoic acid	ng/L	80	65.5	82		6		70 - 130	0 - 30
Perfluorotetradecanoic acid	ng/L	80	78.1	98		8		70 - 130	0 - 30
Perfluorotridecanoic acid	ng/L	80	82.8	104		7		70 - 130	0 - 30
Perfluoroundecanoic acid	ng/L	80	68.4	85		.6		70 - 130	0 - 30

RPD :   0   out of   18   outside limits

Spike Recovery: 0   out of   36   outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM   III SV-1

Revision 1

No.	Area	CNV	Abs C	Weight	Rem.	Ex.	Date / Time
1	4482	4482	30000ug	1000mg	*H*****		5/8/2019 1:00:25 PM

Mean Area   4482
Mean CNV   4482
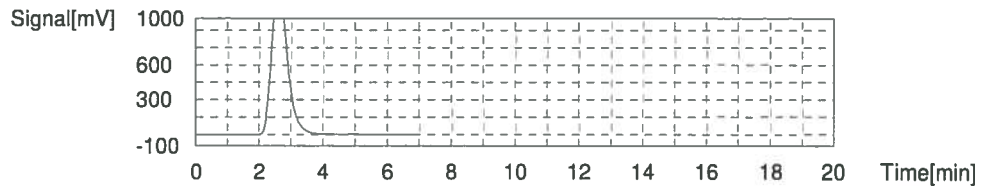
Slope: 0.1487
Intercept   -0.4483
r^2   0.9998
r   0.9999
Zero Shift   No

3/8
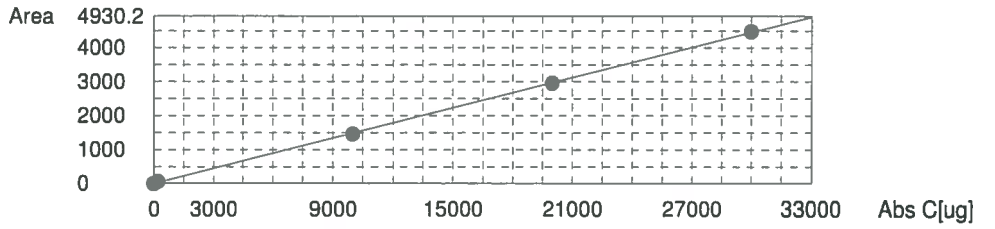
Report No: 219051112   Analytical Batch: 660202   Start Date: 05/16/19

Instrument ID: TOC6   Analytical Method: EPA 9060A   End Date: 05/16/19

CLIENT SAMPLE ID	GCAL SAMPLE ID	DILUTION	TIME	ANALYTES TOC
CCV	1800	1	1351	X
MB1926164	1926164	1	1404	X
LCS1926165	1926165	1	1419	X
AOI-1-6-SB-5-7	21905111225	1	1522	X
AOI-1-6-SB-5-7DUP	1926166	1	1540	X
AOI-1-6-SB-5-7DUP	1926168	1	1613	X
AOI-1-1-SB-5-7	21905111226	1	1628	X
AOI-1-5-SB-2-4	21905111227	1	1642	X
CCV	1800	1	1655	X
CCB	1900	1	1706	X

FORM XIV - GENCHEM

CONTINUING CALIBRATION VERIFICATION

Report No:	219051112	Instrument ID:	TOC6
Analysis Date:	05/16/19 1351	Lab File ID:	7810
Analytical Method:	EPA 9060A	Analytical Batch:	660202

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	10200	102	90	110	

FORM II - GENCHEM

III
METHOD BLANK

Report No: 219051112   Blank ID: MB1926164

Matrix: Solid   Instrument ID: TOC6

Analysis Date: 05/16/19 1404   Lab File ID: 7810

Analytical Method: EPA 9060A   Analytical Batch: 660202

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

VII
LABORATORY CONTROL SPIKE

Report No:	219051112	GCAL ID:	LCS1926165
Matrix:	Solid	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	7810
Prep Date:	NA	Analysis Date:	05/16/19 1419
Prep Batch:	NA	Analytical Batch:	660202
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	UNITS	TRUE	FOUND	%REC	/Q	% REC LIMITS
Total Organic Carbon	mg/kg	2000	2140	107		69 - 128

FORM VII - GENCHEM

Report No:	219051112		Parent Sample ID:	AOI-1-6-SB-5-7
Prep Method:	NA		Parent GCAL ID:	21905111225
Prep Date:	NA		Prep Batch:	NA
Analytical Method:	EPA 9060A		Analytical Batch:	660202

GCAL QC ID:	1926166 DUP	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	NA
Analysis Date:	05/16/19 1540	Dilution:	1

ANALYTE	UNITS	SAMPLE RESULT	Q	DUP RESULT	Q	RPD	#	RPD LIMITS
Total Organic Carbon	mg/kg	14500		12700		13		0 - 25

FORM VI - GENCHEM

VI
DUPLICATES

Report No:	219051112		Parent Sample ID:	AOI-1-6-SB-5-7
Prep Method:	NA		Parent GCAL ID:	21905111225
Prep Date:	NA		Prep Batch:	NA
Analytical Method:	EPA 9060A		Analytical Batch:	660202

GCAL QC ID:	1926168 DUP	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	NA
Analysis Date:	05/16/19 1613	Dilution:	1

ANALYTE	UNITS	SAMPLE RESULT	Q	DUP RESULT	Q	RPD	#	RPD LIMITS
Total Organic Carbon	mg/kg	14500		14700		2		0 - 25

FORM VI - GENCHEM

II
CONTINUING CALIBRATION VERIFICATION

Report No:	219051112		Instrument ID:	TOC6
Analysis Date:	05/16/19 1655		Lab File ID:	7810
Analytical Method:	EPA 9060A		Analytical Batch:	660202

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	10200	102	90	110	

FORM II - GENCHEM

Report No:	219051112	Blank ID:	CCB for HBN 660202
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	05/16/19 1706	Lab File ID:	7810
Analytical Method:	EPA 9060A	Analytical Batch:	660202

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

Report No: 219051112   Analytical Batch: 660482   Start Date: 05/21/19

Instrument ID: TOC6   Analytical Method: EPA 9060A   End Date: 05/22/19

CLIENT SAMPLE ID	GCAL SAMPLE ID	DILUTION	TIME	ANALYTES TOC
CCV	1800	1	1357	X
MB1927630	1927630	1	1407	X
LCS1927631	1927631	1	1433	X
AOI-1-4-SB-8-10	21905111228	1	1507	X
AOI-1-4-SB-8-10DUP	1927632	1	1524	X
AOI-1-4-SB-8-10DUP	1927634	1	1555	X
AOI-1-4-SB-17-19	21905111232	1	1611	X
AOI-1-4-SB-17-19-DUP	21905111233	1	1626	X
CCV	1800	1	1637	X
CCB	1900	1	1646	X
AOI-1-2-SB-2-4	21905111241	1	1128	X
AOI-2-2-SB-0-2	21905111242	1	1143	X
AOI-2-2-SB-2-4	21905111243	1	1156	X
AOI-2-3-SB-0-2	21905111244	1	1210	X
CCV	1800	1	1417	X
CCB	1900	1	1427	X

FORM XIV - GENCHEM

Report No:	219051112	Analytical Batch:	660606	Start Date:	05/22/19
Instrument ID:	TOC6	Analytical Method:	EPA 9060A	End Date:	05/23/19

CLIENT SAMPLE ID	GCAL SAMPLE ID	DILUTION	TIME	ANALYTES TOC
CCV	1800	1	1417	X
MB1928335	1928335	1	1427	X
LCS1928336	1928336	1	1437	X
AOI-2-1-SB-0-2	21905111245	1	1453	X
AOI-1-6-SB-0-2	21905111247	1	1536	X
AOI-1-1-SB-0-2	21905111246	1	1549	X
AOI-1-1-SB-0-2DUP	1928337	1	1602	X
AOI-1-1-SB-0-2DUP	1928338	1	1614	X
AOI-1-6-SB-2-4	21905111248	1	1643	X
AOI-1-3-SB-0-2	21905111250	1	1654	X
AOI-1-3-SB-2-4	21905111251	1	1709	X
AOI-1-4-SB-0-2	21905111252	1	1722	X
CCV	1800	1	1732	X
CCB	1900	1	1741	X
AOI-1-2-SB-0-2	21905111238	1	1755	X
AOI-1-1-SB-0-2DUP	1928339	1	1833	X
CCV	1800	1	1843	X
CCB	1900	1	1851	X
AOI-2-2-SB-2-4-DUP	21905111254	1	1102	X
CCV	1800	1	1114	X
CCB	1900	1	1129	X

FORM XIV - GENCHEM

CONTINUING CALIBRATION VERIFICATION

Report No:	219051112	Instrument ID:	TOC6	
Analysis Date:	05/21/19 1357	Lab File ID:	7817	
Analytical Method:	EPA 9060A	Analytical Batch:	660482	

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	10200	102	90	110	

FORM II - GENCHEM

METHOD BLANK

Report No:	219051112	Blank ID:	MB1927630
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	05/21/19 1407	Lab File ID:	7817
Analytical Method:	EPA 9060A	Analytical Batch:	660482

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

Report No:	219051112		Instrument ID:	TOC6
Analysis Date:	05/22/19 1417		Lab File ID:	7817
Analytical Method:	EPA 9060A		Analytical Batch:	660482

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	10400	104	90	110	

FORM II - GENCHEM

CONTINUING CALIBRATION BLANK

Report No:	219051112	Blank ID:	CCB for HBN 660482
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	05/22/19 1427	Lab File ID:	7817
Analytical Method:	EPA 9060A	Analytical Batch:	660482

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

III
METHOD BLANK

Report No: 219051112   Blank ID: MB1928335

Matrix: Solid   Instrument ID: TOC6

Analysis Date: 05/22/19 1427   Lab File ID: 7820

Analytical Method: EPA 9060A   Analytical Batch: 660606

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

VII
LABORATORY CONTROL SPIKE

Report No:	219051112		GCAL ID:	LCS1927631
Matrix:	Solid		Instrument ID:	TOC6
Analyst:	PLH		Lab File ID:	7817
Prep Date:	NA		Analysis Date:	05/21/19 1433
Prep Batch:	NA		Analytical Batch:	660482
Prep Method:	NA		Analytical Method:	EPA 9060A

ANALYTE	UNITS	TRUE	FOUND	%REC	Q	% REC LIMITS
Total Organic Carbon	mg/kg	2000	2030	102		69 - 128

FORM VII - GENCHEM

LABORATORY CONTROL SPIKE

Report No:	219051112	GCAL ID:	LCS1928336
Matrix:	Solid	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	7820
Prep Date:	NA	Analysis Date:	05/22/19 1437
Prep Batch:	NA	Analytical Batch:	660606
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	UNITS	TRUE	FOUND	%REC	Q	% REC LIMITS
Total Organic Carbon	mg/kg	2000	2070	104		69 - 128

FORM VII - GENCHEM

VI
DUPLICATES

Report No:	219051112	Parent Sample ID:	AOI-1-4-SB-8-10
Prep Method:	NA	Parent GCAL ID:	21905111228
Prep Date:	NA	Prep Batch:	NA
Analytical Method:	EPA 9060A	Analytical Batch:	660482

GCAL QC ID:	1927632 DUP	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	NA
Analysis Date:	05/21/19 1524	Dilution:	1

ANALYTE	UNITS	SAMPLE RESULT	Q	DUP RESULT	Q	RPD / #	RPD LIMITS
Total Organic Carbon	mg/kg	11500		13200		14	0 - 25

FORM VI - GENCHEM

Report No:	219051112	Parent Sample ID:	AOI-1-4-SB-8-10	
Prep Method:	NA	Parent GCAL ID:	21905111228	
Prep Date:	NA	Prep Batch:	NA	
Analytical Method:	EPA 9060A	Analytical Batch:	660482	

GCAL QC ID:	1927634 DUP	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	NA
Analysis Date:	05/21/19 1555	Dilution:	1

ANALYTE	UNITS	SAMPLE RESULT	Q	DUP RESULT	Q	RPD	/ #	RPD LIMITS
Total Organic Carbon	mg/kg	11500		11900		4		0 - 25

FORM VI - GENCHEM

Report No:	219051112	Parent Sample ID:	AOI-1-1-SB-0-2
Prep Method:	NA	Parent GCAL ID:	21905111246
Prep Date:	NA	Prep Batch:	NA
Analytical Method:	EPA 9060A	Analytical Batch:	660606

GCAL QC ID:	1928337 DUP	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	NA
Analysis Date:	05/22/19 1602	Dilution:	1

ANALYTE	UNITS	SAMPLE RESULT	Q	DUP RESULT	Q	RPD / #		RPD LIMITS
Total Organic Carbon	mg/kg	1600		1900		17		0 - 25

FORM VI - GENCHEM

Report No:	219051112	Parent Sample ID:	AOI-1-1-SB-0-2
Prep Method:	NA	Parent GCAL ID:	21905111246
Prep Date:	NA	Prep Batch:	NA
Analytical Method:	EPA 9060A	Analytical Batch:	660606

GCAL QC ID:	1928338 DUP	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	NA
Analysis Date:	05/22/19 1614	Dilution:	1

ANALYTE	UNITS	SAMPLE RESULT	Q	DUP RESULT	Q	RPD	#	RPD LIMITS
Total Organic Carbon	mg/kg	1600		1740		9		0 - 25

FORM VI - GENCHEM

Report No:	219051112		Instrument ID:	TOC6
Analysis Date:	05/21/19 1637		Lab File ID:	7817
Analytical Method:	EPA 9060A		Analytical Batch:	660482

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	10200	102	90	110	

FORM II - GENCHEM

CONTINUING CALIBRATION BLANK

Report No:	219051112		Blank ID:	CCB for HBN 660482
Matrix:	Solid		Instrument ID:	TOC6
Analysis Date:	05/21/19 1646		Lab File ID:	7817
Analytical Method:	EPA 9060A		Analytical Batch:	660482

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

CONTINUING CALIBRATION VERIFICATION

Report No:	219051112	
Analysis Date:	05/22/19 1732	
Analytical Method:	EPA 9060A	

Instrument ID:	TOC6	
Lab File ID:	7820	
Analytical Batch:	660606	

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	10400	104	90	110	

FORM II - GENCHEM

CONTINUING CALIBRATION BLANK

Report No:	219051112		Blank ID:	CCB for HBN 660606
Matrix:	Solid		Instrument ID:	TOC6
Analysis Date:	05/22/19 1741		Lab File ID:	7820
Analytical Method:	EPA 9060A		Analytical Batch:	660606

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

Report No:	219051112	Parent Sample ID:	AOI-1-1-SB-0-2
Prep Method:	NA	Parent GCAL ID:	21905111246
Prep Date:	NA	Prep Batch:	NA
Analytical Method:	EPA 9060A	Analytical Batch:	660606

GCAL QC ID:	1928339 DUP	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	NA
Analysis Date:	05/22/19 1833	Dilution:	1

ANALYTE	UNITS	SAMPLE RESULT	Q	DUP RESULT	Q	RPD	#	RPD LIMITS
Total Organic Carbon	mg/kg	1600		1960		20		0 - 25

FORM VI - GENCHEM

II
CONTINUING CALIBRATION VERIFICATION

Report No:	219051112		Instrument ID:	TOC6
Analysis Date:	05/22/19 1843		Lab File ID:	7820
Analytical Method:	EPA 9060A		Analytical Batch:	660606

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	10300	103	90	110	

FORM II - GENCHEM

CONTINUING CALIBRATION BLANK

Report No:	219051112	Blank ID:	CCB for HBN 660606
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	05/22/19 1851	Lab File ID:	7820
Analytical Method:	EPA 9060A	Analytical Batch:	660606

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

II
CONTINUING CALIBRATION VERIFICATION

Report No:	219051112		Instrument ID:	TOC6
Analysis Date:	05/23/19 1114		Lab File ID:	7820
Analytical Method:	EPA 9060A		Analytical Batch:	660606

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	9910	99	90	110	

FORM II - GENCHEM

III
CONTINUING CALIBRATION BLANK

Report No:	219051112	Blank ID:	CCB for HBN 660606
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	05/23/19 1129	Lab File ID:	7820
Analytical Method:	EPA 9060A	Analytical Batch:	660606

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

ANALYSIS RUN LOG

Report No:	219051112	Analytical Batch:	660828	Start Date:	05/28/19
Instrument ID:	TOC6	Analytical Method:	EPA 9060A	End Date:	05/28/19

CLIENT SAMPLE ID	GCAL SAMPLE ID	DILUTION	TIME	ANALYTES TOC
CCV	1800	1	1031	X
MB1929380	1929380	1	1041	X
LCS1929381	1929381	1	1057	X
AOI-1-5-SB-0-2DUP	1929383	1	1203	X
AOI-1-5-SB-0-2	21905111229	1	1221	X
AOI-1-5-SB-0-2DUP	1929384	1	1239	X
AOI-1-5-SB-0-2-MS	21905111230	1	1256	X
AOI-1-5-SB-0-2-MSD	21905111231	1	1313	X
CCV	1800	1	1325	X
CCB	1900	1	1337	X

FORM XIV - GENCHEM

II

CONTINUING CALIBRATION VERIFICATION

Report No: 219051112   Instrument ID: TOC6

Analysis Date: 05/28/19 1031   Lab File ID: 7828

Analytical Method: EPA 9060A   Analytical Batch: 660828

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	9850	98	90	110	

FORM II - GENCHEM

METHOD BLANK

Report No:	219051112	Blank ID:	MB1929380
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	05/28/19 1041	Lab File ID:	7828
Analytical Method:	EPA 9060A	Analytical Batch:	660828

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

VII
LABORATORY CONTROL SPIKE

Report No:	219051112	GCAL ID:	LCS1929381	
Matrix:	Solid	Instrument ID:	TOC6	
Analyst:	PLH	Lab File ID:	7828	
Prep Date:	NA	Analysis Date:	05/28/19 1057	
Prep Batch:	NA	Analytical Batch:	660828	
Prep Method:	NA	Analytical Method:	EPA 9060A	

ANALYTE	UNITS	TRUE	FOUND	%REC	Q	% REC LIMITS
Total Organic Carbon	mg/kg	2000	1950	97		69 - 128

FORM VII - GENCHEM

Report No:	219051112		Parent Sample ID:	AOI-1-5-SB-0-2
Prep Method:	NA		Parent GCAL ID:	21905111229
Prep Date:	NA		Prep Batch:	NA
Analytical Method:	EPA 9060A		Analytical Batch:	660828

GCAL QC ID:	1929384 DUP	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	NA
Analysis Date:	05/28/19 1239	Dilution:	1

ANALYTE	UNITS	SAMPLE RESULT	Q	DUP RESULT	Q	RPD / #		RPD LIMITS
Total Organic Carbon	mg/kg	25500		24300		5		0 - 25

FORM VI - GENCHEM

Report No:	219051112	Parent Sample ID:	AOI-1-5-SB-0-2
Prep Date:	NA	Parent GCAL ID:	21905111229
Prep Batch:	NA	Analytical Batch:	660828
Prep Method:	NA	Analytical Method:	EPA 9060A

GCAL QC ID:	21905111230 MS	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	7828
Analysis Date:	05/28/19 1256	Dilution:	1

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	MS RESULT	MS % REC	#	QC LIMITS
Total Organic Carbon	mg/kg	22400	28500	43800	91		69 - 128

GCAL QC ID:	21905111231 MSD	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	7828
Analysis Date:	05/28/19 1313	Dilution:	1

ANALYTE	UNITS	SPIKE ADDED	MSD RESULT	MSD % REC	#	% RPD	#	%REC LIMITS	RPD LIMITS
Total Organic Carbon	mg/kg	22400	45200	98		3		69 - 128	0 - 20

FORM V - GENCHEM

II
CONTINUING CALIBRATION VERIFICATION

Report No:	219051112	Instrument ID:	TOC6
Analysis Date:	05/28/19 1325	Lab File ID:	7828
Analytical Method:	EPA 9060A	Analytical Batch:	660828

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	9590	96	90	110	

FORM II - GENCHEM

III
CONTINUING CALIBRATION BLANK

Report No:	219051112	Blank ID:	CCB for HBN 660828	
Matrix:	Solid	Instrument ID:	TOC6	
Analysis Date:	05/28/19 1337	Lab File ID:	7828	
Analytical Method:	EPA 9060A	Analytical Batch:	660828	

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

Report No: 219051112 Analytical Batch: 659933 Start Date: 05/13/19

Instrument ID: PH METER WATERS Analytical Method: EPA 9045D End Date: 05/13/19

CLIENT SAMPLE ID	GCAL SAMPLE ID	DILUTION	TIME	ANALYTES pH
ICV	1600	1	1007	X
AOI-1-6-SB-5-7	21905111225	1	1030	X
AOI-1-1-SB-5-7	21905111226	1	1034	X
AOI-1-5-SB-2-4	21905111227	1	1038	X
AOI-1-4-SB-8-10	21905111228	1	1040	X
CCV	1800	1	1042	X
AOI-1-5-SB-0-2	21905111229	1	1044	X
AOI-1-5-SB-0-2-MS	21905111230	1	1048	X
AOI-1-5-SB-0-2-MSD	21905111231	1	1055	X
AOI-1-4-SB-17-19	21905111232	1	1058	X
AOI-1-4-SB-17-19-DUP	21905111233	1	1101	X
AOI-1-2-SB-0-2	21905111238	1	1103	X
AOI-1-2-SB-2-4	21905111241	1	1120	X
AOI-2-2-SB-0-2	21905111242	1	1124	X
AOI-2-2-SB-2-4	21905111243	1	1126	X
CCV	1800	1	1129	

FORM XIV - GENCHEM

Report No: 219051112   Analytical Batch: 659934   Start Date: 05/13/19

Instrument ID: PH METER WATERS   Analytical Method: EPA 9045D   End Date: 05/13/19

CLIENT SAMPLE ID	GCAL SAMPLE ID	DILUTION	TIME	ANALYTES pH
ICV	1600	1	1149	X
AOI-2-3-SB-0-2	21905111244	1	1153	X
AOI-2-3-SB-0-2DUP	1925018	1	1154	X
AOI-2-1-SB-0-2	21905111245	1	1156	X
AOI-1-1-SB-0-2	21905111246	1	1158	X
AOI-1-6-SB-0-2	21905111247	1	1201	X
AOI-1-6-SB-2-4	21905111248	1	1205	X
AOI-1-3-SB-0-2	21905111250	1	1207	X
AOI-1-3-SB-2-4	21905111251	1	1209	X
AOI-1-4-SB-0-2	21905111252	1	1211	X
CCV	1800	1	1218	X
AOI-2-2-SB-2-4-DUP	21905111254	1	1221	X
CCV	1800	1	1224	X

FORM XIV - GENCHEM

PH Analysis Soil

ANALYST/TECH	SLL2	START DATE/TIME	5/13/2019 08:30	END DATE/TIME		5/13/2019 11:30	BATCH	659933

#	CLIENT	TYPE	GCAL ID	Weight (20±0.1g)	DI Volume (20 mL)	Shaking Start	Shaking End	Settling Start	Settling End	Result (pH units)	Sample Temp (°C)	Result Time	STANDARDS\REAGENTS
1	QC	ICV	1600	20.0	20	8:39	8:44	8:44	9:44	7.99	19.3	10:07	Buffer 1 Lot
2	4747	SAMP	21905104201	19.9	20	8:39	8:44	8:44	9:44	7.22	20.7	10:12	2127470
3	QC	DUP	1925017	19.9	20	8:39	8:44	8:44	9:44	7.23	20.5	10:13	Buffer 1 Exp
4	4747	SAMP	21905104202	19.9	20	8:39	8:44	8:44	9:44	7.31	20.8	10:15	9/30/19
5	4747	SAMP	21905104204	19.9	20	8:39	8:44	8:44	9:44	6.12	20.8	10:18	Buffer 4 Lot
6	4183	SAMP	21905105301	20.1	20	8:39	8:44	8:44	9:44	9.17	20.8	10:20	2127611
7	4183	SAMP	21905105601	20.1	20	8:39	8:44	8:44	9:44	7.10	21.2	10:24	Buffer 4 Exp
8	4859	SAMP	21905111225	20.1	20	8:39	8:44	8:44	9:44	8.45	21.2	10:30	01/30/21
9	4859	SAMP	21905111226	20.0	20	8:39	8:44	8:44	9:44	8.28	21.1	10:34	Buffer 7 Lot
10	4859	SAMP	21905111227	19.9	20	8:39	8:44	8:44	9:44	8.15	21.4	10:38	2127215
11	4859	SAMP	21905111228	20.1	20	8:39	8:44	8:44	9:44	8.21	23.0	10:40	Buffer 7 Exp
12	QC	CCV	1800	20.0	20	8:39	8:44	8:44	9:44	8.00	19.4	10:42	8/28/19
13	4859	SAMP	21905111229	20.0	20	8:39	8:44	8:44	9:44	7.80	21.0	10:44	Buffer 10 Lot
14	4859	MS	21905111230	20.0	20	8:39	8:44	8:44	9:44	8.19	21.6	10:48	2127221
15	4859	MSD	21905111231	20.0	20	8:39	8:44	8:44	9:44	8.18	22.3	10:55	Buffer 10 Exp
16	4859	SAMP	21905111232	20.1	20	8:39	8:44	8:44	9:44	8.17	20.7	10:58	7/30/20
17	4859	FD	21905111233	20.1	20	8:39	8:44	8:44	9:44	8.37	21.8	11:01	Buffer 13 Lot
18	4859	SAMP	21905111238	20.0	20	8:39	8:44	8:44	9:44	8.09	22.1	11:03	2127419
19	4859	MS	21905111239	20.0	20	8:39	8:44	8:44	9:44	8.13	21.1	11:07	Buffer 13 Exp
20	4859	MSD	21905111240	20.1	20	8:39	8:44	8:44	9:44	8.14	21.4	11:14	9/30/19
21	4859	SAMP	21905111241	20.0	20	8:39	8:44	8:44	9:44	8.03	21.2	11:20	Buffer 8 (QC) Lot
22	4859	SAMP	21905111242	20.1	20	8:39	8:44	8:44	9:44	11.01	21.1	11:24	2127389
23	4859	SAMP	21905111243	20.1	20	8:39	8:44	8:44	9:44	8.36	21.9	11:26	Buffer 8 (QC) Exp
24	QC	CCV	1800	20.0	20	8:39	8:44	8:44	9:44	8.00	19.3	11:29	02/29/20
25													
26													
27													
28													
29													
30													

EQUIPMENT\CONDITIONS

pH Meter ID		Calibration Slope		Balance ID	
	PH01		96.2		BAL11

NOTES

PH Analysis Soil

||||||| *659934*

ANALYST/TECH	SLL2	START DATE/TIME	5/13/2019 10:00	END DATE/TIME	5/13/2019 12:30	BATCH	659934

#	CLIENT	TYPE	GCAL ID	Weight (20±0.1g)	DI Volume (20 mL)	Shaking Start	Shaking End	Settling Start	Settling End	Result (pH units)	Sample Temp (°C)	Result Time	STANDARDS\REAGENTS
1	QC	ICV	1600	20.0	20	10:08	10:13	10:13	11:13	7.99	19.5	11:49	Buffer 1 Lot
2	4859	SAMP	21905111244	20.0	20	10:08	10:13	10:13	11:13	7.00	22.3	11:53	2127470
3	QC	DUP	1925018	20.0	20	10:08	10:13	10:13	11:13	7.01	22.2	11:54	Buffer 1 Exp
4	4859	SAMP	21905111245	20.1	20	10:08	10:13	10:13	11:13	7.88	21.5	11:56	9/30/19
5	4859	SAMP	21905111246	20.1	20	10:08	10:13	10:13	11:13	8.09	21.9	11:58	Buffer 4 Lot
6	4859	SAMP	21905111247	20.0	20	10:08	10:13	10:13	11:13	8.18	22.6	12:01	2127611
7	4859	SAMP	21905111248	19.9	20	10:08	10:13	10:13	11:13	8.35	21.2	12:05	Buffer 4 Exp
8	4859	SAMP	21905111250	20.1	20	10:08	10:13	10:13	11:13	8.02	22.0	12:07	01/30/21
9	4859	SAMP	21905111251	20.0	20	10:08	10:13	10:13	11:13	7.92	23.6	12:09	Buffer 7 Lot
10	4859	SAMP	21905111252	20.0	20	10:08	10:13	10:13	11:13	8.04	21.6	12:11	2127215
11	4859	FD	21905111253	19.9	20	10:08	10:13	10:13	11:13	7.97	22.0	12:14	Buffer 7 Exp
12	QC	CCV	1800	20.0	20	10:08	10:13	10:13	11:13	7.99	19.5	12:18	8/28/19
13	4859	FD	21905111254	20.1	20	10:08	10:13	10:13	11:13	8.85	22.7	12:21	Buffer 10 Lot
14	QC	CCV	1800	20.0	20	10:08	10:13	10:13	11:13	8.00	19.6	12:24	2127221
15													Buffer 10 Exp
16													7/30/20
17													Buffer 13 Lot
18													2127419
19													Buffer 13 Exp
20													9/30/19
21													Buffer 8 (QC) Lot
22													2127389
23													Buffer 8 (QC) Exp
24													02/29/20
25													
26													
27													
28													
29													
30													

EQUIPMENT\CONDITIONS

pH Meter ID		Calibration Slope		Balance ID	
	PH01		96.2		BAL11

NOTES

Report No:	219051112		Parent Sample ID:	AOI-2-3-SB-0-2
Prep Method:	NA		Parent GCAL ID:	21905111244
Prep Date:	NA		Prep Batch:	NA
Analytical Method:	EPA 9045D		Analytical Batch:	659934

GCAL QC ID:	1925018 DUP	Instrument ID:	PH01
Analyst:	SLL2	Lab File ID:	NA
Analysis Date:	05/13/19 1154	Dilution:	1

ANALYTE	UNITS	SAMPLE RESULT	Q	DUP RESULT	Q	RPD	#	RPD LIMITS
pH	pH UNITS	7		7.01		0		0 - 6

FORM VI - GENCHEM

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21904184201	GL-SPIGOT-041619	Water	04/16/2019 13:30	04/18/2019 09:40
21904184203	FRB-041619	Water	04/16/2019 13:40	04/18/2019 09:40

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21905111201	AOI-1-7-SW-0-1	Water	05/07/2019 11:20	05/11/2019 10:50
21905111202	AOI-1-7-SW-0-1-DUP	Water	05/07/2019 11:20	05/11/2019 10:50
21905111203	AOI-1-8-SW-0-1	Water	05/07/2019 12:45	05/11/2019 10:50
21905111204	AOI-1-8-SW-0-1-MS	Water	05/07/2019 12:45	05/11/2019 10:50
21905111205	AOI-1-8-SW-0-1-MSD	Water	05/07/2019 12:45	05/11/2019 10:50
21905111206	AOI-1-9-SW-0-1	Water	05/07/2019 13:50	05/11/2019 10:50
21905111207	AOI-1-7-SD-0-1	Solid	05/07/2019 11:30	05/11/2019 10:50
21905111208	AOI-1-7-SD-0-1-DUP	Solid	05/07/2019 11:30	05/11/2019 10:50
21905111209	AOI-1-8-SD-0-1	Solid	05/07/2019 13:20	05/11/2019 10:50
21905111210	AOI-1-8-SD-0-1-MS	Solid	05/07/2019 13:20	05/11/2019 10:50
21905111211	AOI-1-8-SD-0-1-MSD	Solid	05/07/2019 13:20	05/11/2019 10:50
21905111212	AOI-1-9-SD-0-1	Solid	05/07/2019 14:05	05/11/2019 10:50
21905111213	AOI-1-4-GW-17-22	Water	05/08/2019 10:00	05/11/2019 10:50
21905111214	AOI-1-4-GW-17-22-MS	Water	05/08/2019 10:00	05/11/2019 10:50
21905111215	AOI-1-4-GW-17-22-MSD	Water	05/08/2019 10:00	05/11/2019 10:50
21905111216	AOI-1-6-GW-15-20	Water	05/08/2019 16:20	05/11/2019 10:50
21905111217	AOI-2-1-GW-5-10	Water	05/09/2019 12:30	05/11/2019 10:50
21905111218	AOI-1-1-GW-7-12	Water	05/09/2019 15:05	05/11/2019 10:50
21905111219	AOI-1-5-GW-5-10	Water	05/09/2019 16:50	05/11/2019 10:50
21905111220	FQC-EB-050919-WL	Water	05/09/2019 17:05	05/11/2019 10:50
21905111221	FQC-EB-050719-ROD	Water	05/07/2019 09:30	05/11/2019 10:50
21905111222	FQC-EB-050719-SS-2	Water	05/07/2019 17:00	05/11/2019 10:50
21905111223	FQC-EB-050719-HA	Water	05/07/2019 16:50	05/11/2019 10:50
21905111224	FQC-EB-050719-SS-1	Water	05/07/2019 13:45	05/11/2019 10:50
21905111225	AOI-1-6-SB-5-7	Solid	05/08/2019 12:30	05/11/2019 10:50
21905111226	AOI-1-1-SB-5-7	Solid	05/08/2019 10:00	05/11/2019 10:50
21905111227	AOI-1-5-SB-2-4	Solid	05/08/2019 16:30	05/11/2019 10:50
21905111228	AOI-1-4-SB-8-10	Solid	05/07/2019 11:45	05/11/2019 10:50
21905111229	AOI-1-5-SB-0-2	Solid	05/08/2019 15:45	05/11/2019 10:50
21905111230	AOI-1-5-SB-0-2-MS	Solid	05/08/2019 15:45	05/11/2019 10:50
21905111231	AOI-1-5-SB-0-2-MSD	Solid	05/08/2019 15:45	05/11/2019 10:50
21905111232	AOI-1-4-SB-17-19	Solid	05/07/2019 11:30	05/11/2019 10:50
21905111233	AOI-1-4-SB-17-19-DUP	Solid	05/07/2019 11:30	05/11/2019 10:50
21905111234	AOI-1-3-GW-4-9	Water	05/08/2019 11:35	05/11/2019 10:50
21905111235	AOI-1-3-GW-4-9-DUP	Water	05/08/2019 11:35	05/11/2019 10:50
21905111236	AOI-1-2-GW-5-10	Water	05/08/2019 13:20	05/11/2019 10:50
21905111237	AOI-2-2-GW-5-10	Water	05/09/2019 10:10	05/11/2019 10:50
21905111238	AOI-1-2-SB-0-2	Solid	05/09/2019 08:45	05/11/2019 10:50
21905111241	AOI-1-2-SB-2-4	Solid	05/09/2019 09:30	05/11/2019 10:50
21905111242	AOI-2-2-SB-0-2	Solid	05/09/2019 11:30	05/11/2019 10:50
21905111243	AOI-2-2-SB-2-4	Solid	05/09/2019 11:50	05/11/2019 10:50
21905111244	AOI-2-3-SB-0-2	Solid	05/09/2019 12:30	05/11/2019 10:50
21905111245	AOI-2-1-SB-0-2	Solid	05/09/2019 13:30	05/11/2019 10:50
21905111246	AOI-1-1-SB-0-2	Solid	05/09/2019 15:15	05/11/2019 10:50
21905111247	AOI-1-6-SB-0-2	Solid	05/09/2019 16:15	05/11/2019 10:50
21905111248	AOI-1-6-SB-2-4	Solid	05/09/2019 16:45	05/11/2019 10:50
21905111249	AOI-2-3-GW-5-10	Water	05/10/2019 09:40	05/11/2019 10:50
21905111250	AOI-1-3-SB-0-2	Solid	05/10/2019 10:15	05/11/2019 10:50
21905111251	AOI-1-3-SB-2-4	Solid	05/10/2019 10:45	05/11/2019 10:50
21905111252	AOI-1-4-SB-0-2	Solid	05/10/2019 09:30	05/11/2019 10:50

Sample Summary (Continued)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21905111254	AOI-2-2-SB-2-4-DUP	Solid	05/09/2019 11:50	05/11/2019 10:50
21905111256	AOI-1-7-SD-0-1-DUP (RE)	Solid	05/07/2019 11:30	05/11/2019 10:50
21905111257	AOI-1-8-SD-0-1 (RE)	Solid	05/07/2019 13:20	05/11/2019 10:50
21905111259	FQC-EB-050719-ROD (RE)	Water	05/07/2019 09:30	05/11/2019 10:50
21905111260	FQC-EB-050719-SS-2 (RE)	Water	05/07/2019 17:00	05/11/2019 10:50
21905111261	FQC-EB-050719-HA (RE)	Water	05/07/2019 16:50	05/11/2019 10:50
21905111262	AOI-1-3-GW-4-9 (RE)	Water	05/08/2019 11:35	05/11/2019 10:50
21905111263	AOI-1-3-GW-4-9-DUP (RE)	Water	05/08/2019 11:35	05/11/2019 10:50
21905111264	AOI-1-2-GW-5-10 (RE)	Water	05/08/2019 13:20	05/11/2019 10:50

Case Narrative

Client: AECOM-East   **Report:** 219041842

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed
on the Report Sample Summary page of this report. Receipt of the sample(s) is documented
by the attached chain of custody. This applies only to the sample(s) listed in this report.
No sample integrity or quality control exceptions were identified unless noted below.

This report was completed in accordance with DOD QSM 5.1 as specified in the contract.

PROJECT MANAGER COMMENTS

Per Claire Mitchell's email on 4/25/19, the sample on hold does not need to be analyzed. (Amanda Cox 04/25/2019 09:44)

MISCELLANEOUS

PFOS Abbreviations
6:2 FTS - 6:2 Fluorotelomer sulfonate
8:2 FTS - 8:2 Fluorotelomer sulfonate
FOSA - Perfluorooctane Sulfonamide
PFBA - Perfluorobutanoic acid
PFBS - Perfluorobutanesulfonic acid
PFDA - Perfluorodecanoic acid
PFDS - Perfluorodecane Sulfonate
PFDoA - Perfluorododecanoic acid
PFHpA - Perfluoroheptanoic acid
PFHpS - Perfluoro-1-heptanesulfonate
PFHxA - Perfluorohexanoic acid
PFHxS - Perfluorohexanesulfonic acid
PFNA - Perfluorononanoic acid
PFOA - Perfluorooctanoic acid
PFOS - Perfluorooctane Sulfonate
PFOS - Perfluorooctanesulfonic acid
PFPeA - Perfluoropentanoic acid
PFTeDA - Perfluorotetradecanoic acid
PFTrDA - Perfluorotridecanoic acid
PFUdA - Perfluoroundecanoic acid

Case Narrative

Client: AECOM-East   **Report:** 219051112

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed
on the Report Sample Summary page of this report. Receipt of the sample(s) is documented
by the attached chain of custody. This applies only to the sample(s) listed in this report.
No sample integrity or quality control exceptions were identified unless noted below.

This report was completed in accordance with DOD QSM 5.1 as specified in the contract.

PROJECT MANAGER COMMENTS

Per Claire Mitchell's email on 5/14/19, samples AOI-1-2-SB-0-2-MS (21905111239), AOI-1-2-SB-0-2-MSD (21905111240), and FQC-EB-051019-HA (21905111255) placed on hold. (Amanda Cox 05/23/2019 09:33)

Per Claire Mitchell's email on 6/3/19, do not analyze samples AOI-1-2-SB-0-2-MS (21905111239), AOI-1-2-SB-0-2-MSD (21905111240), AOI 1-2-SB-2-4 DUP (21905111253) and FQC-EB-051019-HA (21905111255). (Amanda Cox 06/03/2019 14:40)

Per Claire Mitchell's email on 6/3/19, do analyze sample AOI-2-2-SB-2-4-DUP (21905111254). (Amanda Cox 06/03/2019 14:45)

SEMI-VOLATILES MASS SPECTROMETRY

In the EPA 537 Modified analysis for prep batch 660234, the MS/MSD exhibited recovery and RPD failures. All LCS/LCSD recoveries and RPDs are acceptable.

In the EPA 537 Modified analysis for prep batch 660319, the MS/MSD exhibited recovery and RPD failures. The MS/MSD and LCS recoveries are above the upper control limit for Perfluorotridecanoic acid. This analyte was not detected in the associated samples. The recovery for the EIS, M2PFTeDA is outside control limits for the LCS/LCSD. No target analytes associated with this EIS were detected in the associated samples.

In the EPA 537 Modified analysis for prep batch 660235, the MS and/or MSD (both pairs) exhibited recovery failures. All LCS/LCSD recoveries are acceptable.

In the EPA 537 Modified analysis, the recoveries for extracted internal standards are outside control limits for many samples. These samples were re-extracted outside holding time and analyzed with similar recoveries for the affected EIS. Those amples with recoveries that differed in the two extracts are addressed in separate statements.

In the EPA 537 Modified analysis, the recoveries for the two extracted internal standards are outside control limits for sample 21905111203 (AOI-1-8-SW-0-1). The sample was re-extracted outside holding time and analyzed with similar recoveries for these EIS. The associated MS/MSD (samples 21905111204 (AOI-1-8-SW-0-1-MS) and 21905111205 (AOI-1-8-SW-0-1-MSD)) also exhibited failures for these EIS as well as several others. All EIS recoveries were similar for both extracts for these samples.

In the EPA 537 Modified analysis, all extracted internal standards are outside control limits for sample 21905111208 (AOI-1-7-SD-0-1-DUP). The sample was re-extracted outside holding time and analyzed with acceptable recoveries for all EIS with the exception of M8FOSA. The data for the second extract is reported as sample 21905111256 (AOI-1-7-SD-0-1-DUP (RE)).

In the EPA 537 Modified analysis, the recovery for the extracted internal standards, M2PFTeDA and M8FOSA are outside control limits for sample 21905111209 (AOI-1-8-SD-0-1). The sample was re-extracted outside holding time and analyzed with a similar recovery for M8FOSA and an acceptable recovery for M2PFTeDA. The data for analytes associated with M2PFTeDA for the second extract is reported as sample 21905111257 (AOI-1-8-SD-0-1 (RE)). There are also EIS failures for the associated MS/MSD (samples 21905111210 (AOI-1-8-SD-0-1-MS) and 21905111211 (AOI-1-8-SD-0-1-MSD)). All EIS recoveries were similar in both extracts for the MS/MSD>

In the EPA 537 Modified analysis, the recovery for the extracted internal standard, M2PFTeDA is outside control limits for samples 21905111221 (FQC-EB-050719-ROD) and 21905111222 (FQC-EB-050719-SS-2), and the recoveries for the extracted internal standards, M2PFTeDA and MPFDoA are outside control limits for sample 21905111223 (FQC-EB-050719-HA). The samples were re-extracted outside holding time and analyzed with acceptable recoveries for all EIS. The data for analytes associated with these EIS for the second extracts is reported as samples 21905111259 (FQC-EB-050719-ROD (RE)), 21905111260 (FQC-EB-050719-SS-2 (RE)), and 21905111261 (FQC-EB-050719-HA (RE)).

In the EPA 537 Modified analysis, all extracted internal standards are outside control limits for sample 21905111234 (AOI-1-3-GW-4-9). The recoveries for all injection internal standards are outside control limits for this sample. The sample was re-extracted

outside holding time and analyzed with acceptable recoveries for all EIS and IIS. The data for the second extract is reported as sample 21905111262 (AOI-1-3-GW-4-9 (RE)).

In the EPA 537 Modified analysis, the recovery for the extracted internal standard, M2PFTeDA is outside control limits for sample 21905111235 (AOI-1-3-GW-4-9-DUP) and 21905111236 (AOI-1-2-GW-5-10).   The samples were re-extracted outside holding time and analyzed with acceptable recoveries for this EIS. The data for analytes associated with this EIS for the second extract is reported as samples 21905111263 (AOI-1-3-GW-4-9-DUP (RE)) and 21905111264 (AOI-1-2-GW-5-10 (RE)).

MISCELLANEOUS

PFOS Abbreviations
6:2 FTS - 6:2 Fluorotelomer sulfonate
8:2 FTS - 8:2 Fluorotelomer sulfonate
FOSA - Perfluorooctane Sulfonamide
PFBA - Perfluorobutanoic acid
PFBS - Perfluorobutanesulfonic acid
PFDA - Perfluorodecanoic acid
PFDS - Perfluorodecane Sulfonate
PFDoA - Perfluorododecanoic acid
PFHpA - Perfluoroheptanoic acid
PFHpS - Perfluoro-1-heptanesulfonate
PFHxA - Perfluorohexanoic acid
PFHxS - Perfluorohexanesulfonic acid
PFNA - Perfluorononanoic acid
PFOA - Perfluorooctanoic acid
PFOS - Perfluorooctane Sulfonate
PFOS - Perfluorooctanesulfonic acid
PFPeA - Perfluoropentanoic acid
PFTeDA - Perfluorotetradecanoic acid
PFTrDA - Perfluorotridecanoic acid
PFUdA - Perfluoroundecanoic acid

SAMPLE RECEIVING CHECKLIST

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*2 1 9 0 4 1 8 4 2 *

SAMPLE DELIVERY GROUP 219041842

Client PM AEC 4859 - AECOM-East	**Transport Method** FEDEX
Profile Number 279946	**Received By** McCune, Dodie N.
Line Item(s) 1 - Ground Water-537 Mod.	**Receive Date(s)** 04/18/19

CHECKLIST

	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☑	☐

COOLERS

Airbill	Thermometer ID: E26	Temp °C
8138647501145		0.7

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

![GCAL ANALYTICAL LABORATORIES, LL]

||||||| *219051112* |||||||

SAMPLE RECEIVING CHECKLIST

SAMPLE DELIVERY GROUP 219051112

Client PM AEC 4859 - AECOM-East	**Transport Method** FEDEX
Profile Number 279946	**Received By** McCune, Dodie N.
Line Item(s) 1 - Ground Water-537 Mod. 2 - Soil	**Receive Date(s)** 05/11/19

CHECKLIST

	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☑	☐

COOLERS

Airbill	Thermometer ID: E26	Temp °C
813941129730		0.6
813941129741		1.2
813941129752		0.6

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

CHAIN OF CUSTODY RECORD

GCAL — ANALYTICAL LABORATORIES. LLC
7979 Innovation Park Drive | Baton Rouge, LA 70820-7402
225.769.4900 | www.gcal.com

Client ID: 4859 - AECOM-East
SDG: 219051112
PM: AEC

Report To:	**Bill To:**
Client: AECOM	Client: SAME
Address: 12420 Milestone Center Dr.	Address: SAME
Germantown, MD 20876	
Contact: Naoum Tavantzis	Contact: SAME
Phone: 919-461-1178	Phone: SAME
Email: naoum.tavantzis@aecom.com	Email: SAME

P.O. Number	Project Name/Number
104397	60552172 - ARNG - Grand Ledge

Sampled By: Scott Kalemba / Michael Glinski

Custody Seal:
Used: Yes ☒ No
Intact: Yes ☒ No
Temperature: 0.6, 1.2, 0.6 (handwritten)
45.34, 44.34am

Dissolved Analysis Requested
Field Filtered
Lab Filtered

← Preservative / Notes ↓

Matrix	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	PFAS- Method 537 Modified	None	TOC- Method 9060A	pH- Method 9045D	GCAL ID
W	05/07/19	1120		X	AOI 1-7-SW-0-1	2	X				1
W	05/07/19	1120		X	AOI 1-7-SW-0-1 DUP	2	X				2
W	05/07/19	1245		X	AOI 1-8-SW-0-1	2	X				3
W	05/07/19	1245		X	AOI 1-8-SW-0-1 MS/MSD	4	X				45
W	05/07/19	1350		X	AOI 1-9-SW-0-1	2	X				6
S	05/07/19	1130		X	AOI 1-7-SD-0-1	1	X				7
S	05/07/19	113ᴿ		X	AOI 1-7-SD-0-1 DUP	1	X				8
S	05/07/19	1320		X	AOI 1-8-SD-0-1	1	X				9
S	05/07/19	1320		X	AOI 1-8-SD-0-1 MS/MSD	2	X				10,11
S	05/07/19	1405		X	AOI 1-9-SD-0-1	1	X				N2
W	05/08/19	1000		X	AOI 1-4-GW-17-22	2	X				12,13
W	05/08/19	1000		X	AOI 1-4-GW-17-22 MS/MSD	4	X				13,14,14,15

Airbill Number: 8193 4110 9730, 8193 4110 9744, 8193 4110 9785
DNM

Turn Around Time(Business Days): Standard

Relinquished by: (Signature)	Date/Time: 5/10/2019	Received by: (Signature)	Date/Time:
FDEX 5-11-19 10.50	Date/Time: 5-11-19 10.50	Dan McCune FedEx	Date/Time: 5-11-19 10.50
Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:

Notes:

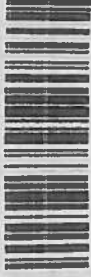1 Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.

*: Requires prior approval. Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager

GCAL

ANALYTICAL LABORATORIES, LLC

7979 Innovation Park Drive | Baton Rouge, LA 70820-7402

225.769.4900 | www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4859 - AECOM-East

SDG: 219041842

PM: AEC

Report To:

Client:	AECOM
Address:	12420 Milestone Center Dr.
	Germantown, MD 20876
Contact:	Naoum Tavantzis
Phone:	919-461-1178
Email:	naoum.tavantzis@aecom.com

Bill To:

Client:	SAME
Address:	SAME
Contact:	SAME
Phone:	SAME
Email:	SAME

P.O. Number: 104397

Project Name/Number: 60552172 - ARNG - Grand Ledge

Sampled By: Scott Kalemba

Analytical Requests & Method

Custody Seal:
Used: ☑ Yes ☐ No
Intact: ☑ Yes ☐ No
Temperature: 0.7 ea / 1.0 °C

Dissolved Analysis Requested
☐ Field Filtered
☐ Lab Filtered

← Preservative / Notes ↓

Matrix[1]	Date	Time (2400)	Comp	Grab		Sample Description	No. of Containers	None	PFAS via EPA Method 537	GCAL ID
W	04/16/19	1330		X	X	GL - Spigot - 041619	2	X		1
W	04/16/19	1330		X	X	GL - Spigot - 041619 DUP *	2	X		2
W	04/16/19	1340		X	X	FRB - 041619	2	X		3

Airbill Number: 8138 6475 0145

Turn Around Time(Business Days): ☐ RUSH* ____ Days   ☑ Standard (per contract/quote)   FedEx

Relinquished by: (Signature)	Date/Time: 04/17/2019 1630	Received by: (Signature)	Date/Time:
Relinquished by: (Signature) FedEx	Date/Time: 4-18-19 9:40	Received by: (Signature) DocuMoun	Date/Time: 4-18-19 9:40
Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:

Notes: **Hold Sample** GL - Spigot - 041619 DUP

*- Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager

[1] Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.

CHAIN OF CUSTODY RECORD

GCAL
ANALYTICAL LABORATORIES LLC
7979 Innovation Park Drive | Baton Rouge, LA 70820-7402
225.769.4900 | www.gcal.com

Client ID: 4859 - AECOM-East
SDG: 219051112
PM: AEC

Report To:
Client: AECOM
Address: 12420 Milestone Center Dr.
Germantown, MD 20876
Contact: Naoum Tavantzis
Phone: 919-461-1178
Email: naoum.tavantzis@aecom.com

Bill To:
Client: SAME
Address: SAME
SAME
Contact: SAME
Phone: SAME
Email: SAME

Custody Seal:
Used: Yes ☑ No
Intact: Yes ☐ No

Temperature: Dwld Dweeu
US 39.42-CM

P.O. Number: 104397

Project Name/Number: 60552172 - ARNG - Grand Ledge

Sampled By: Scott Kalemba / Mike Glinski

Dissolved Analysis Requested
Field Filtered
Lab Filtered

← Preservative / Notes ↓

Matrix	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	PFAS- Method 537 Modified	TOC- Method 9060A	pH- Method 9045D	GCAL ID
W	05/08/19	1620		X	AOI 1-6-GW-15-20	2	X			16
W	05/09/19	1230		X	AOI 2-1-GW-5-10	2	X			17
W	05/09/19	1505		X	AOI 1-1-GW-7-12	2	X			18
W	05/09/19	1650		X	AOI 1-5-GW-5-10	2	X			19
W	05/09/19	1705		X	FQC-EB-050919-WL	2	X			20
W	05/07/19	930		X	FQC-EB-050719-ROD	2	X			21
W	05/07/19	1700		X	FQC-EB-050719-SS-2	2	X			22
W	05/07/19	1650		X	FQC-EB-050719-HA	2	X			23
W	05/07/19	1345		X	FQC-EB-050719-SS-1	2	X			24
S	05/08/19	1230		X	AOI 1-6-SB-5-7	2	X	X	X	25
S	05/08/19	1000		X	AOI 1-1-SB-5-7	2	X	X	X	26
S	05/08/19	1630		X	AOI 1-5-SB-2-4	2	X	X	X	27

Airbill Number: 8139411001730, 8139411001741, 8139411001752

Turn Around Time(Business Days): Standard

Relinquished by: (Signature) [signature] **Date/Time:** 5/10/2019
Relinquished by: (Signature) FedEx **Date/Time:** 5/11/9 10:60
Relinquished by: (Signature) **Date/Time:**

Received by: (Signature) **Date/Time:**
Received by: (Signature) Doug McClure 5-11-19 10:60 **Date/Time:**
Received by: (Signature) **Date/Time:**

FedEx

Notes:

Matrix: W = Water, S=Solid, L=Liquid, T Tissue.   * Requires prior approval. Rush charges may apply.   We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.
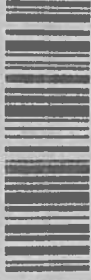
GCAL
ANALYTICAL LABORATORIES. LLC
7979 Innovation Park Drive | Baton Rouge, LA 70820-7402
225.769.4900 | www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4859 - AECOM-East
SDG: 219051112
PM: AEC

Report To:

Client:	AECOM
Address:	12420 Milestone Center Dr.
	Germantown, MD 20876
Contact:	Naoum Tavantzis
Phone:	919-461-1178
Email:	naoum.tavantzis@aecom.com

Bill To:

Client:	SAME
Address:	SAME
	SAME
Contact:	SAME
Phone:	SAME
Email:	SAME

Custody Seal:

	Yes	No
Used:	Yes	No
Intact:	Yes	No

Temperature: 0.6,2.0,0 Edo / 0.8,39,0 0 cm

Dissolved Analysis Requested
Field Filtered
Lab Filtered

P.O. Number 104397

Project Name/Number 60552172 - ARNG - Grand Ledge

Sampled By: Scott Kalemba / Mike Glinski

Matrix	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	PFAS- Method 537 Modified	TOC- Method 9060A	pH- Method 9045D	Preservative / Notes	GCAL ID
S	05/07/19	1145		X	AOI 1-4-SB-8-10	2	X	X	X		28
S	05/08/19	1545		X	AOI 1-5-SB-0-2	2	X	X	X		49
S	05/08/19	1545		X	AOI 1-5-SB-0-2 MS/MSD	4	X	X	X	30,31	-
S	05/07/19	1130		X	AOI 1-4-SB-17-19	2	X	X	X		32
S	05/07/19	1130		X	AOI 1-4-SB-17-19 DUP	2	X	X	X		33
W	05/08/19	1135		X	AOI 1-3-GW-4-9	2	X	X			34
W	05/08/19	1135		X	AOI 1-3-GW-4-9 DUP	2	X	X			35
W	05/08/19	1320		X	AOI 1-2-GW-5-10	2	X	X			36
W	05/09/19	1010		X	AOI 2-2-GW-5-10	2	X	X			37
S	05/09/19	845		X	AOI 1-2-SB-0-2	2	X	X	X		38
S	05/09/19	845		X	AOI 1-2-SB-0-2 MS/MSD	4	X	X	X	39,40	-
S	05/09/19	930		X	AOI 1-2-SB-2-4	2	X	X	X		41

Airbill Number: 8/23411431818, 0/23011431818, 079011431818, 0801/143859

Turn Around Time(Business Days): Standard

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:	Notes:
FedEx 5/11/19	5/10/2019 10:50	Dave McCun 5-11-19 10:50	FedEx	
Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:	
Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:	

*- Requires prior approval. Rush charges may apply.   We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.

CHAIN OF CUSTODY RECORD

GCAL
ANALYTICAL LABORATORIES, LLC
7979 Innovation Park Drive | Baton Rouge, LA 70820-7402
225.769.4900 | www.gcal.com

Client ID: 4859 - AECOM-East
SDG: 219051112
PM: AEC

Report To:
- Client: AECOM
- Address: 12420 Milestone Center Dr.
- Germantown, MD 20876
- Contact: Naoum Tavantzis
- Phone: 919-461-1178
- Email: naoum.tavantzis@aecom.com

Bill To:
- Client: SAME
- Address: SAME
- Contact: SAME
- Phone: SAME
- Email: SAME

Custody Seal:
- Used: Yes ☑ No
- Intact: Yes ☑ No
- Temperature: 2.6/2.0℃ Ed · 1.8.3℃ 4.0PM

P.O. Number: 104397
Project Name/Number: 60552172 - ARNG - Grand Ledge
Sampled By: Scott Kalemba / Mike Glinski

Matrix	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	None	PFAS- Method 537 Modified	TOC- Method 9060A	pH- Method 9045D	GCAL ID
S	05/09/19	1130		X	AOI 2-2-SB-0-2	2		X	X	X	42
S	05/09/19	1150		X	AOI 2-2-SB-2-4	2		X	X	X	43
S	05/09/19	1230		X	AOI 2-3-SB-0-2	2		X	X	X	44
S	05/09/19	1330		X	AOI 2-1-SB-0-2	2		X	X	X	45
S	05/09/19	1515		X	AOI 1-1-SB-0-2	2		X	X	X	46
S	05/09/19	1615		X	AOI 1-6-SB-0-2	2		X	X	X	47
S	05/09/19	1645		X	AOI 1-6-SB-2-4	2		X	X	X	48
W	05/10/19	940		X	AOI 2-3-GW-5-10	2		X	X		49
S	05/10/19	1015		X	AOI 1-3-SB-0-2	2		X	X	X	50
S	05/10/19	1045		X	AOI 1-3-SB-2-4	2		X	X	X	51
S	05/10/19	930		X	AOI 1-4-SB-0-2	2		X	X	X	52
S	05/09/19	930		X	AOI 1-2-SB-2-4 DUP	2		X	X	X	53

Analytical Requests & Method

Dissolved Analysis Requested
- Field Filtered
- Lab Filtered

← Preservative / Notes ↓

Notes: Hold AOI 1-2-SB-2-4 DUP

Airbill Number: 813941007130, 813941007141 813941007150

Turn Around Time(Business Days): Standard

Relinquished by: (Signature)	Date/Time: 5/10/2019	Received by: (Signature)	Date/Time:
Relinquished by: (Signature) FedEx	Date/Time: 5-14-19 10:30	Received by: (Signature) Dracu McCun	Date/Time: 5-14-19 10:30
Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:

FedEx

* Requires prior approval. Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

1 Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.
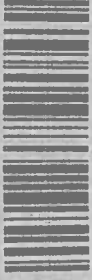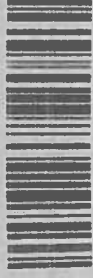
GCAL
ANALYTICAL LABORATORIES LL
7979 Innovation Park Drive | Baton Rouge, LA 70820-7402
225.769.4900 | www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4859 - AECOM-East
SDG: 219051112
PM: AEC

Report To:		Bill To:	
Client:	AECOM	Client:	SAME
Address:	12420 Milestone Center Dr.	Address:	SAME
	Germantown, MD 20876		
Contact:	Naoum Tavantzis	Contact:	SAME
Phone:	919-461-1178	Phone:	SAME
Email:	naoum.tavantzis@aecom.com	Email:	SAME

Custody Seal:
Used: Yes ☑ No ☐
Intact: Yes ☑ No ☐

Temperature: 06130.4600
US 30.4600

P.O. Number: **104397**

Project Name/Number: **60552172 - ARNG - Grand Ledge**

Sampled By: Scott Kalemba / Mike Glinski

Analytical Requests & Method

Dissolved Analysis Requested
Field Filtered
Lab Filtered

Matrix	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	PFAS- Method 537 Modified	None	TOC- Method 9060A	pH- Method 9045D						Preservative / Notes ↓	GCAL ID
S	05/09/19	1150		X	AOI 2-2-SB-2-4 DUP	2	X		X	X							54
W	05/09/1300			X	AQ FQC-EB-051019-HA	2 X	X		X	X							55

Notes: **Hold AOI 2-2-SB-2-4 DUP**

Airbill Number: 893 4110-0730, 8139 41137141, 8139413076Cl

Turn Around Time(Business Days): Standard

Relinquished by: (Signature)	Date/Time: 5/10/2019	Received by: (Signature) FedEx	Date/Time:
Relinquished by: FedEx 5/11/19 10	Date/Time:	Received by: (Signature) Dodie McClure 5/14/19 10:00	Date/Time: 10:00
Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:

Matrix: W - Water

<div align="center">

DATA VALIDATION REPORT – Stage 2b Review

</div>

SDG No.:	**220012412**	**Analysis:**	**Per- and Polyfluorinated Alkyl Substances**
Laboratory:	**GCAL**	**Project:**	**Grand Ledge**
Reviewer:	**Naoum Tavantzis**	**Date:**	**February 17, 2020**

This report presents the findings of a review of the referenced data. The report consists of this summary, a listing of the samples included in the review, copies of data reports with data qualifying flags applied, data review worksheets, supporting documentation, and an explanation of the data qualifying flags employed. The review performed is based on the specifics of the analytical method referenced and provisions of the approved project-specific work plan; and, qualified according to the *Contract Laboratory Program National Functional Guidelines* (NFG) *for Superfund Organic Methods Data Review*, EPA-540-R-2017-002, January 2017, Modifications reflect the level of review requested, the specifications of the project-specific QAPP, and the specifics of the analytical methods employed.

Major Anomalies: None.

Minor Anomalies: The initial calibration verification analyzed on 01/28/20 at 22:28 displayed a percent recovery greater than the QC limit of 130% for PFNA at 131%. The associated field sample results were non-detect; no data qualifying action was required. The laboratory control spike duplicate prepared in QC batch 676188 displayed a percent recovery greater than the upper QC limit of 130% for PFNA at 140%. The associated field sample results were non-detect; no data qualifying action was required. The following matrix spike pairs (MS/MSD) performed on parent sample Potable-05 displayed percent recoveries outside the quality control (QC) limits of 70%-130% and/or relative percent differences (RPD) greater than 30%:

QC Batch	Analyte	MS Recovery (%)	MSD Recovery (%)	RPD (%)
676188	PFTrDA	**63**	74	16
	NEtFOSAA	**62**	**70**	12
676405	NMeFOSAA	**73**	**77**	6
	PFTeDA	**33**	**14**	81

The parent sample results associated with the percent recoveries less than the lower QC limits were non-detect and were qualified UJ,m. The parent sample result associated with the RPD anomaly was non-detect; no data qualifying action was taken. The following field samples displayed surrogate percent recoveries less than the lower QC limit of 70%:

Analyte	d$_5$-NEtFOSAA Initial Recovery (%)	d$_5$-NEtFOSAA Re-extraction Recovery (%)
Potable-01	**69**	**66**
Potable-02	77	**69**
Potable-03	**69**	**68**
Potable-04	**63**	**63**
Potable-05	**64**	**66**
Potable-05 MS	75	**60**
Potable-05 MSD	73	**69**
Potable-06	71	**58**
Potable-07	**60**	73
Potable-08	**56**	**65**
Potable-09	72	**39**
Potable-10	78	**66**

Analyte	d_5-NEtFOSAA Initial Recovery (%)	d_5-NEtFOSAA Re-extraction Recovery (%)
Potable-11	**63**	76
FRB-012220	76	**68**
LCS2005452	**68**	**-**

The associated field sample results were non-detect and were qualified UJ,i unless previously qualified due to a matrix spike percent recovery anomaly. In addition, the re-extraction of field samples Potable-05, Potable-08, and Potable-09 also displayed percent recoveries less than the lower QC limit of 70% for M_6PFDA at 69%, 68%, and 67%, respectively. The associated field sample results were non-detect and were qualified UJ,i. The matrix spike duplicate (MSD) performed on field sample Potable-05 displayed an injected internal standard greater than the upper QC limit of 150% for M_4PFOS at 164.5%. The associated field sample results were non-detect; no data qualifying action was required.

Correctable Anomalies: None.
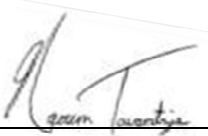
Comments: On the basis of this evaluation, the laboratory appears to have followed the specified method, with the exception of anomalies discussed previously. If a given fraction was not discussed, all quality control criteria reviewed were within acceptable limits. All data are usable, as qualified, for their intended purpose based on the data reviewed.

Signed:

Naoum Tavantzis

Summary of Qualified Results

Field Sample	Analyte	Result Value	Lab Qualifier	Final DV Flag	Reason Code
POTABLE-01	NMeFOSAA	8.00	U	UJ	i
	NEtFOSAA	8.00	U	UJ	i
POTABLE-02	NMeFOSAA	8.00	U	UJ	i
	NEtFOSAA	8.00	U	UJ	i
POTABLE-03	NMeFOSAA	8.00	U	UJ	i
	NEtFOSAA	8.00	U	UJ	i
POTABLE-04	NMeFOSAA	8.00	U	UJ	i
	NEtFOSAA	8.00	U	UJ	i
POTABLE-05	NMeFOSAA	8.00	UJ	UJ	m
	NEtFOSAA	8.00	UJ	UJ	m
	PFTrDA	4.00	U	UJ	m
	PFTeDA	4.00	UJ	UJ	m
POTABLE-06	NMeFOSAA	8.00	U	UJ	i
	NEtFOSAA	8.00	U	UJ	i
POTABLE-08	NMeFOSAA	8.00	U	UJ	i
	NEtFOSAA	8.00	U	UJ	i
	PFTeDA	4.00	U	UJ	i
POTABLE-09	NMeFOSAA	8.00	U	UJ	i
	NEtFOSAA	8.00	U	UJ	i
	PFTeDA	4.00	U	UJ	i
POTABLE-10	NMeFOSAA	8.00	U	UJ	i
	NEtFOSAA	8.00	U	UJ	i

Grand Ledge

Laboratory: Pace Gulf Coast

Job: 60552172   SDG#:   220012412

Sample ID	Client ID	Sample Type	Sample Date	Matrix	PFAS - Method 537M
22001241201	Potable-01	Field Sample	1/22/2020	Aqueous	X
22001241202	Potable-02	Field Sample	1/22/2020	Aqueous	X
22001241203	Potable-03	Field Sample	1/22/2020	Aqueous	X
22001241204	Potable-04	Field Sample	1/22/2020	Aqueous	X
22001241205	Potable-04-FD	Field Duplicate	1/22/2020	Aqueous	X

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412	Client Sample ID:	Potable-01
Collect Date:	01/22/20 Time: 0835	GCAL Sample ID:	22001241201
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200128B_16.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	01/27/20	Analysis Date:	01/28/20 Time: 2347
Prep Batch:	676188	Analytical Batch:	676395
Prep Method:	EPA 537 Rev. 1.1	Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412	Client Sample ID:	Potable-01RE
Collect Date:	01/22/20 Time: 0835	GCAL Sample ID:	22001241201RE
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200205B_23.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	01/30/20	Analysis Date:	02/05/20 Time: 1802
Prep Batch:	676405	Analytical Batch:	676962
Prep Method:	EPA 537 Rev. 1.1	Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412	Client Sample ID:	Potable-02
Collect Date:	01/22/20 Time: 0920	GCAL Sample ID:	22001241202
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200128B_17.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	01/27/20	Analysis Date:	01/28/20 Time: 2359
Prep Batch:	676188	Analytical Batch:	676395
Prep Method:	EPA 537 Rev. 1.1	Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-02RE
Collect Date:	01/22/20	Time: 0920	GCAL Sample ID:	22001241202RE
Matrix:	Water	% Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200205B_24.d
Injection Vol.:	1.0	(μL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000	(μL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	01/30/20		Analysis Date:	02/05/20 Time: 1813
Prep Batch:	676405		Analytical Batch:	676962
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA US,i	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA US,i	8.00	U	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-03
Collect Date:	01/22/20 Time: 0955		GCAL Sample ID:	22001241203
Matrix:	Water % Moisture: NA		Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200128B_18.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	01/27/20		Analysis Date:	01/29/20 Time: 0010
Prep Batch:	676188		Analytical Batch:	676395
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-03RE	
Collect Date:	01/22/20	Time: 0955	GCAL Sample ID:	22001241203RE	
Matrix:	Water	% Moisture: NA	Instrument ID:	QQQ1	
Sample Amt:	125 mL		Lab File ID:	2200205B_25.d	
Injection Vol.:	1.0	(µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)	
Prep Final Vol.:	1000	(µL)	Dilution Factor:	1 Analyst: BMH	
Prep Date:	01/30/20		Analysis Date:	02/05/20 Time: 1824	
Prep Batch:	676405		Analytical Batch:	676962	
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1	

CONCENTRATION UNITS: ng/L

CAS	ANALYTE		RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA	US,i	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	US,i	8.00	U	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid		4.00	U	2.76	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-04
Collect Date:	01/22/20	Time: 1020	GCAL Sample ID:	22001241204
Matrix:	Water	% Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200128B_19.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	01/27/20		Analysis Date:	01/29/20 Time: 0022
Prep Batch:	676188		Analytical Batch:	676395
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-04RE
Collect Date:	01/22/20 Time: 1020		GCAL Sample ID:	22001241204RE
Matrix:	Water % Moisture: NA		Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200205B_26.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	01/30/20		Analysis Date:	02/05/20 Time: 1836
Prep Batch:	676405		Analytical Batch:	676962
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE		RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA	UJ,i	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	UJ,i	8.00	U	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid		4.00	U	2.76	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-04-FD
Collect Date:	01/22/20 Time: 1020		GCAL Sample ID:	22001241205
Matrix:	Water % Moisture: NA		Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200128B_20.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	01/27/20		Analysis Date:	01/29/20 Time: 0033
Prep Batch:	676188		Analytical Batch:	676395
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-04-FDRE
Collect Date:	01/22/20 Time: 1020		GCAL Sample ID:	22001241205RE
Matrix:	Water % Moisture: NA		Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200205B_27.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	01/30/20		Analysis Date:	02/05/20 Time: 1847
Prep Batch:	676405		Analytical Batch:	676962
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-05
Collect Date:	01/22/20 Time: 1045		GCAL Sample ID:	22001241206
Matrix:	Water % Moisture: NA		Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200128B_21.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	01/27/20		Analysis Date:	01/29/20 Time: 0044
Prep Batch:	676188		Analytical Batch:	676395
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid UJ,m	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412	Client Sample ID:	Potable-05RE
Collect Date:	01/22/20 Time: 1045	GCAL Sample ID:	22001241206RE
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200205B_28.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	01/30/20	Analysis Date:	02/05/20 Time: 1858
Prep Batch:	676405	Analytical Batch:	676962
Prep Method:	EPA 537 Rev. 1.1	Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA	8.00	UJ	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	UJ	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	UJ	2.76	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412	Client Sample ID:	Potable-06
Collect Date:	01/22/20 Time: 1140	GCAL Sample ID:	22001241209
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200128B_24.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	01/27/20	Analysis Date:	01/29/20 Time: 0118
Prep Batch:	676188	Analytical Batch:	676395
Prep Method:	EPA 537 Rev. 1.1	Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-06RE
Collect Date:	01/22/20	Time: 1140	GCAL Sample ID:	22001241209RE
Matrix:	Water	% Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200205B_31.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	01/30/20		Analysis Date:	02/05/20 Time: 1932
Prep Batch:	676405		Analytical Batch:	676962
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE		RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA	US.i	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	US.i	8.00	U	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid		4.00	U	2.76	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-07
Collect Date:	01/22/20	Time: 1310	GCAL Sample ID:	22001241210
Matrix:	Water	% Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200128B_25.d
Injection Vol.:	1.0	(μL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000	(μL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	01/27/20		Analysis Date:	01/29/20 Time: 0129
Prep Batch:	676188		Analytical Batch:	676395
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-07RE
Collect Date:	01/22/20 Time: 1310		GCAL Sample ID:	22001241210RE
Matrix:	Water % Moisture: NA		Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200205B_33.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	01/30/20		Analysis Date:	02/05/20 Time: 1955
Prep Batch:	676405		Analytical Batch:	676962
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-08
Collect Date:	01/22/20 Time: 1340		GCAL Sample ID:	22001241211
Matrix:	Water % Moisture: NA		Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200128B_26.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	01/27/20		Analysis Date:	01/29/20 Time: 0141
Prep Batch:	676188		Analytical Batch:	676395
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412			Client Sample ID:	Potable-08RE	
Collect Date:	01/22/20	Time:	1340	GCAL Sample ID:	22001241211RE	
Matrix:	Water	% Moisture:	NA	Instrument ID:	QQQ1	
Sample Amt:	125	mL		Lab File ID:	2200205B_34.d	
Injection Vol.:	1.0		(μL)	GC Column:	ACC-C18-30M ID 2.1 (mm)	
Prep Final Vol.:	1000		(μL)	Dilution Factor:	1 Analyst: BMH	
Prep Date:	01/30/20			Analysis Date:	02/05/20 Time: 2006	
Prep Batch:	676405			Analytical Batch:	676962	
Prep Method:	EPA 537 Rev. 1.1			Analytical Method:	EPA 537 Rev. 1.1	

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-09
Collect Date:	01/22/20	Time: 1400	GCAL Sample ID:	22001241212
Matrix:	Water	% Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200128B_28.d
Injection Vol.:	1.0	(µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000	(µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	01/27/20		Analysis Date:	01/29/20 Time: 0204
Prep Batch:	676188		Analytical Batch:	676395
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM   I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-09RE
Collect Date:	01/22/20	Time: 1400	GCAL Sample ID:	22001241212RE
Matrix:	Water	% Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200205B_35.d
Injection Vol.:	1.0	(µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000	(µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	01/30/20		Analysis Date:	02/05/20 Time: 2018
Prep Batch:	676405		Analytical Batch:	676962
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0

FORM I SV-1

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-10

Report No: 220012412   Client Sample ID: Potable-10
Collect Date: 01/23/20 Time: 0845   GCAL Sample ID: 22001241213
Matrix: Water % Moisture: NA   Instrument ID: QQQ1
Sample Amt: 125 mL   Lab File ID: 2200128B_29.d
Injection Vol.: 1.0 (µL)   GC Column: ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.: 1000 (µL)   Dilution Factor: 1 Analyst: BMH
Prep Date: 01/27/20   Analysis Date: 01/29/20 Time: 0215
Prep Batch: 676188   Analytical Batch: 676395
Prep Method: EPA 537 Rev. 1.1   Analytical Method: EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412	Client Sample ID:	Potable-10RE
Collect Date:	01/23/20 Time: 0845	GCAL Sample ID:	22001241213RE
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200205B_36.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	01/30/20	Analysis Date:	02/05/20 Time: 2029
Prep Batch:	676405	Analytical Batch:	676962
Prep Method:	EPA 537 Rev. 1.1	Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-11
Collect Date:	01/23/20	Time: 0920	GCAL Sample ID:	22001241214
Matrix:	Water	% Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200128B_30.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	01/27/20		Analysis Date:	01/29/20 Time: 0227
Prep Batch:	676188		Analytical Batch:	676395
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	3.38	J	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	Potable-11RE
Collect Date:	01/23/20 Time: 0920		GCAL Sample ID:	22001241214RE
Matrix:	Water % Moisture: NA		Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200205B_37.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	01/30/20		Analysis Date:	02/05/20 Time: 2040
Prep Batch:	676405		Analytical Batch:	676962
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412	
Collect Date:	01/22/20 Time: 1500	
Matrix:	Water % Moisture: NA	
Sample Amt:	125 mL	
Injection Vol.:	1.0 (µL)	
Prep Final Vol.:	1000 (µL)	
Prep Date:	01/27/20	
Prep Batch:	676188	
Prep Method:	EPA 537 Rev. 1.1	

Client Sample ID:	FRB-012220
GCAL Sample ID:	22001241215
Instrument ID:	QQQ1
Lab File ID:	2200128B_31.d
GC Column:	ACC-C18-30M ID 2.1 (mm)
Dilution Factor:	1 Analyst: BMH
Analysis Date:	01/29/20 Time: 0238
Analytical Batch:	676395
Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	UQ	1.68	4.00	10.0
1763-23-1	Perfluorooctanesulfonic acid	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	220012412		Client Sample ID:	FRB-012220RE
Collect Date:	01/22/20 Time: 1500		GCAL Sample ID:	22001241215RE
Matrix:	Water % Moisture: NA		Instrument ID:	QQQ1
Sample Amt:	125 mL		Lab File ID:	2200205B_22.d
Injection Vol.:	1.0 (µL)		GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)		Dilution Factor:	1 Analyst: BMH
Prep Date:	01/30/20		Analysis Date:	02/05/20 Time: 1750
Prep Batch:	676405		Analytical Batch:	676962
Prep Method:	EPA 537 Rev. 1.1		Analytical Method:	EPA 537 Rev. 1.1

CONCENTRATION UNITS: ng/L

CAS	ANALYTE		RESULT	Q	DL	LOD	LOQ
2991-50-6	NEtFOSAA	UJ,i	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	UJ,i	8.00	U	4.60	8.00	10.0
376-06-7	Perfluorotetradecanoic acid		4.00	U	2.76	4.00	10.0

FORM I SV-1

Reviewer: Naoum Tavantzis	**Project Name:** Fort WHH
Date: 2/17/2020	**Project Number:** 60552172
DV Level: II **III** IV	**Laboratory:** Pace Gulf Coast
Review Document:	**SDG No.:** 220012412
__X__ National Functional Guidelines for Organic Data Review	**Test Name:** PFAS
____ DOD QSM 5.1, Table B-15	
__X__ Method 537 Rev. 1.1	

1.0 Laboratory Deliverables			Yes	No	NA
1.1	Do Chain-of-Custody forms list all samples that were analyzed?		X		
1.2	Are all Chain-of-Custody forms signed, indicating sample chain-of-custody was maintained?		X		
1.3	Do sample preservation, collection and storage condition meet method requirement? 4±2°C If samples were received with the cooler temperature exceeding 6°C, then flag J(+)/UJ(-). If >20°C, J(+)/X(-)		X		
1.4	Do the traffic Reports, chain-of-custody, and lab narrative indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data?			X	

Notes:

2.0 Holding Times		Yes	No	NA
2.1	Have any technical holding times, determined from date of sampling to date of analysis, been exceeded? If yes, J(+)/UJ(-). Extraction: 14 days; Analysis: 40 days.		X	
2.2	Have any technical holding time grossly (twice the holding time) been exceeded? If yes, J(+)/X(-) .		X	

Notes:

3.0 Blanks (Laboratory and Field)		Yes	No	NA
3.1	Were method blanks (MB) prepared at the appropriate frequency (one per 20 samples, per batch per matrix?)	X		
3.2	Do any instrument/method blanks have positive results?		X	
3.3	Do any field equipment blanks/trip blanks have positive results?		X	

Notes: