



**Groundwater Sample Results,
Level 2 Laboratory Report, Level 4 Laboratory Report,
Electronic Data Deliverable, and Data Validation Report,
SDG 1700268**

*Naval Air Station Whidbey Island
Oak Harbor, Washington*

June 2019



March 07, 2017

Vista Work Order No. 1700268

Ms. Tiffany Hill
CH2M Hill
1100 NE Circle Blvd. Suite 300
Corvallis, OR 97330

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on February 28, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'Navy Clean CTO-0008 OLF Coupeville'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

A handwritten signature in cursive script that reads "Karen Lopez" followed by a small "for" in a smaller font.

Martha Maier
Laboratory Director



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 1700268

Case Narrative

Sample Condition on Receipt:

Eight groundwater samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

Samples "WI-CV-GW05M-0217", "WI-CV-GW05S-0217", "WI-CV-GW11M-0217" and "WI-CV-GW11S-0217" contained particulate and were centrifuged prior to extraction. Due to clogging of cartridges, only half of the sample volume was used for samples "WI-CV-GW05M-0217" and "WI-CV-GW11M-0217". One sample bottle was provided for sample "WI-CV-GW13S-0217" (sample 06). As requested by the client on March 6, 2017, back-up samples will be provided at a later date and will be reported in a separate Work Order.

Modified EPA Method 537

The aqueous samples were extracted and analyzed for PFBS, PFOA, and PFOS using Modified EPA Method 537.

Holding Times

The samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the LOQ. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1700268-01	WI-CV-GW09M-0217	23-Feb-17 16:55	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1700268-02	WI-CV-GW05M-0217	23-Feb-17 15:45	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1700268-03	WI-CV-GW05S-0217	24-Feb-17 17:30	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1700268-04	WI-CV-GW11M-0217	26-Feb-17 14:35	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1700268-05	WI-CV-GW11S-0217	26-Feb-17 16:30	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1700268-06	WI-CV-GW13S-0217	24-Feb-17 10:55	28-Feb-17 07:28	HDPE Bottle, 125 mL
1700268-07	WI-CV-EB06-022617	26-Feb-17 17:45	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1700268-08	WI-CV-EB05-022417	24-Feb-17 11:35	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank						Modified EPA Method 537			
Matrix: Aqueous Sample Size: 0.125 L		QC Batch: B7C0003 Date Extracted: 01-Mar-2017 8:54				Lab Sample: B7C0003-BLK1 Date Analyzed: 06-Mar-17 16:52 Column: BEH C18			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.79	4.00	8.00		IS 13C3-PFBS	112	60 - 150	
PFOA	ND	0.651	2.00	8.00		IS 13C2-PFOA	86.5	60 - 150	
PFOS	ND	0.807	0.900	8.00		IS 13C8-PFOS	93.1	60 - 150	

DL - Detection limit
RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to DL.
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: OPR					Modified EPA Method 537			
Matrix: Aqueous Sample Size: 0.125 L		QC Batch: B7C0003 Date Extracted: 01-Mar-2017 8:54			Lab Sample: B7C0003-BS1 Date Analyzed: 06-Mar-17 16:02 Column: BEH C18			
Analyte	Amt Found (ng/L)	Spike Amt	%R	Limits	Labeled Standard		%R	LCL-UCL
PFBS	81.0	80.0	101	60 - 130	IS	13C3-PFBS	111	60 - 150
PFOA	89.0	80.0	111	70 - 130	IS	13C2-PFOA	85.5	60 - 150
PFOS	75.3	80.0	94.1	70 - 130	IS	13C8-PFOS	93.9	60 - 150

LCL-UCL - Lower control limit - upper control limit

Sample ID: Method Blank						Modified EPA Method 537				
Matrix: Aqueous Sample Size: 0.125 L		QC Batch: B7C0012 Date Extracted: 03-Mar-2017 8:25				Lab Sample: B7C0012-BLK1 Date Analyzed: 05-Mar-17 15:42 Column: BEH C18				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	ND	1.79	4.00	8.00		IS	13C3-PFBS	104	60 - 150	
PFOA	ND	0.651	2.00	8.00		IS	13C2-PFOA	87.6	60 - 150	
PFOS	ND	0.807	0.900	8.00		IS	13C8-PFOS	88.7	60 - 150	

DL - Detection limit
RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to DL.
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: OPR					Modified EPA Method 537			
Matrix: Aqueous Sample Size: 0.125 L		QC Batch: B7C0012 Date Extracted: 03-Mar-2017 8:25			Lab Sample: B7C0012-BS1 Date Analyzed: 05-Mar-17 15:04 Column: BEH C18			
Analyte	Amt Found (ng/L)	Spike Amt	%R	Limits	Labeled Standard		%R	LCL-UCL
PFBS	89.8	80.0	112	60 - 130	IS	13C3-PFBS	105	60 - 150
PFOA	93.8	80.0	117	70 - 130	IS	13C2-PFOA	89.4	60 - 150
PFOS	81.1	80.0	101	70 - 130	IS	13C8-PFOS	92.3	60 - 150

LCL-UCL - Lower control limit - upper control limit

Sample ID: WI-CV-GW09M-0217						Modified EPA Method 537				
Client Data Name: CH2M Hill Project: Navy Clean CTO-0008 OLF Coupeville Date Collected: 23-Feb-2017 16:55 Location: MW09M			Sample Data Matrix: Groundwater Sample Size: 0.123 L			Laboratory Data Lab Sample: 1700268-01 Date Received: 28-Feb-2017 7:28 QC Batch: B7C0003 Date Extracted: 01-Mar-2017 8:54 Date Analyzed: 06-Mar-17 17:30 Column: BEH C18				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	11.2	1.82	4.07	8.12		IS	13C3-PFBS	95.8	60 - 150	
PFOA	ND	0.661	2.03	8.12		IS	13C2-PFOA	86.1	60 - 150	
PFOS	ND	0.819	0.915	8.12		IS	13C8-PFOS	93.9	60 - 150	

DL - Detection limit
RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to DL.
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW05M-0217						Modified EPA Method 537				
Client Data			Sample Data			Laboratory Data				
Name: CH2M Hill			Matrix: Groundwater			Lab Sample: 1700268-02		Date Received: 28-Feb-2017 7:28		
Project: Navy Clean CTO-0008 OLF Coupeville			Sample Size: 0.0655 L			QC Batch: B7C0012		Date Extracted: 01-Mar-2017 8:54		
Date Collected: 23-Feb-2017 15:45						Date Analyzed: 05-Mar-17 16:07 Column: BEH C18				
Location: MW05M										
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	473	3.42	7.63	15.3		IS	13C3-PFBS	103	60 - 150	
PFOA	1190	1.24	3.82	15.3		IS	13C2-PFOA	84.9	60 - 150	
PFOS	3.26	1.54	1.72	15.3	J	IS	13C8-PFOS	98.7	60 - 150	

DL - Detection limit
RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to DL.
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW05S-0217						Modified EPA Method 537				
Client Data			Sample Data			Laboratory Data				
Name:	CH2M Hill		Matrix:	Groundwater		Lab Sample:	1700268-03	Date Received:	28-Feb-2017 7:28	
Project:	Navy Clean CTO-0008 OLF Coupeville		Sample Size:	0.122 L		QC Batch:	B7C0003	Date Extracted:	01-Mar-2017 8:54	
Date Collected:	24-Feb-2017 17:30					Date Analyzed:	06-Mar-17 17:43	Column: BEH C18		
Location:	MW05S									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	12.9	1.83	4.10	8.17		IS	13C3-PFBS	75.3	60 - 150	
PFOA	9.87	0.665	2.05	8.17		IS	13C2-PFOA	75.9	60 - 150	
PFOS	ND	0.824	0.922	8.17		IS	13C8-PFOS	78.8	60 - 150	

DL - Detection limit
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
 Results reported to DL.
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
 Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW11M-0217						Modified EPA Method 537				
Client Data			Sample Data			Laboratory Data				
Name: CH2M Hill			Matrix: Groundwater			Lab Sample: 1700268-04		Date Received: 28-Feb-2017 7:28		
Project: Navy Clean CTO-0008 OLF Coupeville			Sample Size: 0.0653 L			QC Batch: B7C0012		Date Extracted: 01-Mar-2017 8:54		
Date Collected: 26-Feb-2017 14:35						Date Analyzed: 05-Mar-17 16:20 Column: BEH C18				
Location: MW11M										
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	ND	3.43	7.66	15.3		IS	13C3-PFBS	90.6	60 - 150	
PFOA	ND	1.25	3.83	15.3		IS	13C2-PFOA	87.4	60 - 150	
PFOS	ND	1.55	1.72	15.3		IS	13C8-PFOS	86.1	60 - 150	

DL - Detection limit
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
 Results reported to DL.
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
 Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW11S-0217						Modified EPA Method 537				
Client Data			Sample Data			Laboratory Data				
Name:	CH2M Hill		Matrix:	Groundwater		Lab Sample:	1700268-05	Date Received:	28-Feb-2017 7:28	
Project:	Navy Clean CTO-0008 OLF Coupeville		Sample Size:	0.128 L		QC Batch:	B7C0003	Date Extracted:	01-Mar-2017 8:54	
Date Collected:	26-Feb-2017 16:30					Date Analyzed:	06-Mar-17 17:55 Column: BEH C18			
Location:	MW11S									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	ND	1.75	3.91	7.83		IS	13C3-PFBS	79.6	60 - 150	
PFOA	ND	0.637	1.95	7.83		IS	13C2-PFOA	93.0	60 - 150	
PFOS	1.00	0.790	0.879	7.83	J	IS	13C8-PFOS	89.8	60 - 150	

DL - Detection limit
RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to DL.
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-EB06-022617						Modified EPA Method 537				
Client Data			Sample Data			Laboratory Data				
Name:	CH2M Hill		Matrix:	Groundwater		Lab Sample:	1700268-07	Date Received:	28-Feb-2017 7:28	
Project:	Navy Clean CTO-0008 OLF Coupeville		Sample Size:	0.106 L		QC Batch:	B7C0003	Date Extracted:	01-Mar-2017 8:54	
Date Collected:	26-Feb-2017 17:45					Date Analyzed: 06-Mar-17 18:08 Column: BEH C18				
Location:	Eq. Blank									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	ND	2.10	4.72	9.40		IS	13C3-PFBS	86.8	60 - 150	
PFOA	ND	0.765	2.36	9.40		IS	13C2-PFOA	84.2	60 - 150	
PFOS	1.12	0.948	1.06	9.40	J	IS	13C8-PFOS	91.9	60 - 150	

DL - Detection limit
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
 Results reported to DL.
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
 Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-EB05-022417							Modified EPA Method 537			
Client Data			Sample Data			Laboratory Data				
Name:	CH2M Hill		Matrix:	Groundwater		Lab Sample:	1700268-08	Date Received:	28-Feb-2017 7:28	
Project:	Navy Clean CTO-0008 OLF Coupeville		Sample Size:	0.127 L		QC Batch:	B7C0003	Date Extracted:	01-Mar-2017 8:54	
Date Collected:	24-Feb-2017 11:35					Date Analyzed: 06-Mar-17 18:20 Column: BEH C18				
Location:	Eq. Blank									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	ND	1.77	3.94	7.90		IS	13C3-PFBS	97.9	60 - 150	
PFOA	ND	0.643	1.97	7.90		IS	13C2-PFOA	88.7	60 - 150	
PFOS	ND	0.797	0.886	7.90		IS	13C8-PFOS	99.8	60 - 150	

DL - Detection limit
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
 Results reported to DL.
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
 Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	Dilution
E	The associated compound concentration exceeded the calibration range of the instrument.
H	Recovery and/or RPD was outside laboratory acceptance limits.
I	Chemical Interference
J	The amount detected is below the Reporting Limit/LOQ.
M	Estimated Maximum Possible Concentration. (CA Region 2 projects only)
*	See Cover Letter
Conc.	Concentration
NA	Not applicable
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-004
Pennsylvania Department of Environmental Protection	012
South Carolina Department of Health	87002001
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	7923
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

MATRIX: Non-Potable Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A



CHAIN OF CUSTODY

PN: 679580.06.FL.WS
10006-7-106051

Mark Endo
Erin Bilyeu
Collin Hall

For Laboratory Use Only

Laboratory Project ID: 1700268 Temp: 1.3 °C
Storage ID: WR-2 FS Storage Secured: Yes ☒ No ☐

TAT (check one): Standard: ☐ 21 days
☐ 14 days ☒ 7 days Rush (surcharge may apply) Specify: _____

Project ID: Mary clean CTO 7 OLF carbide

Sampler: Collin Hall (name)

Invoice to: Name Company Address City State Ph# Fax#

Katie Tippin CH2M

Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

Collin Hall J [Signature] 2/27/17 1400

[Signature] 2/28/17 07:28

Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Sample Receiving

Method of Shipment:

CEDEX OVERNIGHT

Tracking No.:

Add Analysis(es) Requested

Container(s)

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	2378-TCDD	2378-TCDD/TCDF	PCDD/PCDF	2378-TCDD	2378-TCDD/TCDF	PCDD/PCDF	2378-TCDD	2378-TCDD/TCDF	PCDD/PCDF	TOTALS	COPLANAR PCBs	209 CONGENERS	PBDE	PAH	WHO-29	Mod. EPA 537	Comments
WR-CV-GW09M-0217	2/23	1655	MW09M	2	G	GW																	
WR-CV-GW05M-0217	2/23	1545	MW05M	2	O	GW																	
WR-CV-GW05S-0217	2/24	1730	MW05S	2	O	GW																	
WR-CV-GW11M-0217	2/26	1435	MW11M	2	O	GW																	
WR-CV-GW11S-0217	2/26	1630	MW11S	2	O	GW																	
WR-CV-GW13S-0217	2/24	1055	MW13S	1	O	GW																	
WR-CV-EB06-022617	2/26	1745	Eg. Blank	2	O	GW																	
WR-CV-EB05-022417	2/24	1135	Eg. Blank	2	O	GW																	

Special instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill
Company: CH2M Hill
Address: 1100 NE Circle Blvd
City: Corvallis State: OR Zip: 97330
Phone: Fax: Email: tiffany.hill@ch2m.com

Container Types: A = 1 Liter Amber, G = Glass Jar

Bottle Preservation Type: T = Thiosulfate,

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment,

P = PUF, T = MM5, O = Other: 125 ml HDPE

O = Other: 56°C

SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Work Order 1700268

SAMPLE LOG-IN CHECKLIST



Vista Project #: 1700268 TAT 7

Samples Arrival:	Date/Time 02/28/17 07:28		Initials: ←		Location: WR-2	
					Shelf/Rack:	
Logged In:	Date/Time 2/28/17 0852		Initials: SR		Location: WR-2	
					Shelf/Rack: FS	
Delivered By:	☒ FedEx	☐ UPS	☐ On Trac	☐ DHL	☐ Hand Delivered	☐ Other
Preservation:	☒ Ice	☐ Blue Ice	☐ Dry Ice	☐ None		
Temp °C: 1.6 (uncorrected)	Time: 07:30		Thermometer ID: IR-2			
Temp °C: 1.3 (corrected)	Probe used: Yes ☐ No ☒					

		YES	NO	NA
Adequate Sample Volume Received?		☒		
Holding Time Acceptable?		☒		
Shipping Container(s) Intact?		☒		
Shipping Custody Seals Intact?		☒		
Shipping Documentation Present?		☒		
Airbill	Trk # 8088 6796 1056	☒		
Sample Container Intact?		☒		
Sample Custody Seals Intact?				☒
Chain of Custody / Sample Documentation Present?		☒		
COC Anomaly/Sample Acceptance Form completed?			☒	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?				☒
Preservation Documented:	Na ₂ S ₂ O ₃ Trizma	Yes	☒ No	NA
Shipping Container	Vista ☒ Client	Retain	☒ Return	Dispose

Comments:



March 07, 2017

Vista Work Order No. 1700268

Ms. Tiffany Hill
CH2M Hill
1100 NE Circle Blvd. Suite 300
Corvallis, OR 97330

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on February 28, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'Navy Clean CTO-0008 OLF Coupeville'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

A handwritten signature in cursive script that reads "Karen Lopez" followed by a small "for" in print.

Martha Maier
Laboratory Director



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 1700268**Case Narrative****Sample Condition on Receipt:**

Eight groundwater samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

Samples "WI-CV-GW05M-0217", "WI-CV-GW05S-0217", "WI-CV-GW11M-0217" and "WI-CV-GW11S-0217" contained particulate and were centrifuged prior to extraction. Due to clogging of cartridges, only half of the sample volume was used for samples "WI-CV-GW05M-0217" and "WI-CV-GW11M-0217". One sample bottle was provided for sample "WI-CV-GW13S-0217" (sample 06). As requested by the client on March 6, 2017, back-up samples will be provided at a later date and will be reported in a separate Work Order.

Modified EPA Method 537

The aqueous samples were extracted and analyzed for PFBS, PFOA, and PFOS using Modified EPA Method 537.

Holding Times

The samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the LOQ. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1700268-01	WI-CV-GW09M-0217	23-Feb-17 16:55	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1700268-02	WI-CV-GW05M-0217	23-Feb-17 15:45	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1700268-03	WI-CV-GW05S-0217	24-Feb-17 17:30	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1700268-04	WI-CV-GW11M-0217	26-Feb-17 14:35	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1700268-05	WI-CV-GW11S-0217	26-Feb-17 16:30	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1700268-06	WI-CV-GW13S-0217	24-Feb-17 10:55	28-Feb-17 07:28	HDPE Bottle, 125 mL
1700268-07	WI-CV-EB06-022617	26-Feb-17 17:45	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1700268-08	WI-CV-EB05-022417	24-Feb-17 11:35	28-Feb-17 07:28	HDPE Bottle, 125 mL HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank						Modified EPA Method 537			
Matrix: Aqueous Sample Size: 0.125 L		QC Batch: B7C0003 Date Extracted: 01-Mar-2017 8:54				Lab Sample: B7C0003-BLK1 Date Analyzed: 06-Mar-17 16:52 Column: BEH C18			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.79	4.00	8.00		IS 13C3-PFBS	112	60 - 150	
PFOA	ND	0.651	2.00	8.00		IS 13C2-PFOA	86.5	60 - 150	
PFOS	ND	0.807	0.900	8.00		IS 13C8-PFOS	93.1	60 - 150	

DL - Detection limit
RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to DL.
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: OPR					Modified EPA Method 537			
Matrix: Aqueous Sample Size: 0.125 L		QC Batch: B7C0003 Date Extracted: 01-Mar-2017 8:54			Lab Sample: B7C0003-BS1 Date Analyzed: 06-Mar-17 16:02 Column: BEH C18			
Analyte	Amt Found (ng/L)	Spike Amt	%R	Limits	Labeled Standard		%R	LCL-UCL
PFBS	81.0	80.0	101	60 - 130	IS	13C3-PFBS	111	60 - 150
PFOA	89.0	80.0	111	70 - 130	IS	13C2-PFOA	85.5	60 - 150
PFOS	75.3	80.0	94.1	70 - 130	IS	13C8-PFOS	93.9	60 - 150

LCL-UCL - Lower control limit - upper control limit

Sample ID: Method Blank						Modified EPA Method 537			
Matrix: Aqueous Sample Size: 0.125 L		QC Batch: B7C0012 Date Extracted: 03-Mar-2017 8:25				Lab Sample: B7C0012-BLK1 Date Analyzed: 05-Mar-17 15:42 Column: BEH C18			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.79	4.00	8.00		IS 13C3-PFBS	104	60 - 150	
PFOA	ND	0.651	2.00	8.00		IS 13C2-PFOA	87.6	60 - 150	
PFOS	ND	0.807	0.900	8.00		IS 13C8-PFOS	88.7	60 - 150	

DL - Detection limit
RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to DL.
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: OPR					Modified EPA Method 537			
Matrix: Aqueous Sample Size: 0.125 L		QC Batch: B7C0012 Date Extracted: 03-Mar-2017 8:25			Lab Sample: B7C0012-BS1 Date Analyzed: 05-Mar-17 15:04 Column: BEH C18			
Analyte	Amt Found (ng/L)	Spike Amt	%R	Limits	Labeled Standard		%R	LCL-UCL
PFBS	89.8	80.0	112	60 - 130	IS	13C3-PFBS	105	60 - 150
PFOA	93.8	80.0	117	70 - 130	IS	13C2-PFOA	89.4	60 - 150
PFOS	81.1	80.0	101	70 - 130	IS	13C8-PFOS	92.3	60 - 150

LCL-UCL - Lower control limit - upper control limit

Sample ID: WI-CV-GW09M-0217							Modified EPA Method 537			
Client Data			Sample Data			Laboratory Data				
Name: CH2M Hill			Matrix: Groundwater			Lab Sample: 1700268-01		Date Received: 28-Feb-2017 7:28		
Project: Navy Clean CTO-0008 OLF Coupeville			Sample Size: 0.123 L			QC Batch: B7C0003		Date Extracted: 01-Mar-2017 8:54		
Date Collected: 23-Feb-2017 16:55						Date Analyzed: 06-Mar-17 17:30 Column: BEH C18				
Location: MW09M										
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	11.2	1.82	4.07	8.12		IS	13C3-PFBS	95.8	60 - 150	
PFOA	ND	0.661	2.03	8.12		IS	13C2-PFOA	86.1	60 - 150	
PFOS	ND	0.819	0.915	8.12		IS	13C8-PFOS	93.9	60 - 150	

DL - Detection limit
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
 Results reported to DL.
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
 Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW05M-0217							Modified EPA Method 537			
Client Data			Sample Data			Laboratory Data				
Name:	CH2M Hill		Matrix:	Groundwater		Lab Sample:	1700268-02	Date Received:	28-Feb-2017	7:28
Project:	Navy Clean CTO-0008 OLF Coupeville		Sample Size:	0.0655 L		QC Batch:	B7C0012	Date Extracted:	01-Mar-2017	8:54
Date Collected:	23-Feb-2017 15:45					Date Analyzed: 05-Mar-17 16:07 Column: BEH C18				
Location:	MW05M									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	473	3.42	7.63	15.3		IS	13C3-PFBS	103	60 - 150	
PFOA	1190	1.24	3.82	15.3		IS	13C2-PFOA	84.9	60 - 150	
PFOS	3.26	1.54	1.72	15.3	J	IS	13C8-PFOS	98.7	60 - 150	

DL - Detection limit
RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to DL.
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW05S-0217						Modified EPA Method 537				
Client Data			Sample Data			Laboratory Data				
Name: CH2M Hill			Matrix: Groundwater			Lab Sample: 1700268-03		Date Received: 28-Feb-2017 7:28		
Project: Navy Clean CTO-0008 OLF Coupeville			Sample Size: 0.122 L			QC Batch: B7C0003		Date Extracted: 01-Mar-2017 8:54		
Date Collected: 24-Feb-2017 17:30						Date Analyzed: 06-Mar-17 17:43 Column: BEH C18				
Location: MW05S										
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	12.9	1.83	4.10	8.17		IS	13C3-PFBS	75.3	60 - 150	
PFOA	9.87	0.665	2.05	8.17		IS	13C2-PFOA	75.9	60 - 150	
PFOS	ND	0.824	0.922	8.17		IS	13C8-PFOS	78.8	60 - 150	

DL - Detection limit
RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to DL.
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW11M-0217							Modified EPA Method 537			
Client Data			Sample Data			Laboratory Data				
Name:	CH2M Hill		Matrix:	Groundwater		Lab Sample:	1700268-04	Date Received:	28-Feb-2017	7:28
Project:	Navy Clean CTO-0008 OLF Coupeville		Sample Size:	0.0653 L		QC Batch:	B7C0012	Date Extracted:	01-Mar-2017	8:54
Date Collected:	26-Feb-2017 14:35					Date Analyzed: 05-Mar-17 16:20 Column: BEH C18				
Location:	MW11M									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	ND	3.43	7.66	15.3		IS	13C3-PFBS	90.6	60 - 150	
PFOA	ND	1.25	3.83	15.3		IS	13C2-PFOA	87.4	60 - 150	
PFOS	ND	1.55	1.72	15.3		IS	13C8-PFOS	86.1	60 - 150	

DL - Detection limit
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
 Results reported to DL.
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
 Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW11S-0217						Modified EPA Method 537				
Client Data			Sample Data			Laboratory Data				
Name: CH2M Hill			Matrix: Groundwater			Lab Sample: 1700268-05		Date Received: 28-Feb-2017 7:28		
Project: Navy Clean CTO-0008 OLF Coupeville			Sample Size: 0.128 L			QC Batch: B7C0003		Date Extracted: 01-Mar-2017 8:54		
Date Collected: 26-Feb-2017 16:30						Date Analyzed: 06-Mar-17 17:55 Column: BEH C18				
Location: MW11S										
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	ND	1.75	3.91	7.83		IS	13C3-PFBS	79.6	60 - 150	
PFOA	ND	0.637	1.95	7.83		IS	13C2-PFOA	93.0	60 - 150	
PFOS	1.00	0.790	0.879	7.83	J	IS	13C8-PFOS	89.8	60 - 150	

DL - Detection limit
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
 Results reported to DL.
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
 Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-EB06-022617						Modified EPA Method 537				
Client Data			Sample Data			Laboratory Data				
Name: CH2M Hill			Matrix: Groundwater			Lab Sample: 1700268-07		Date Received: 28-Feb-2017 7:28		
Project: Navy Clean CTO-0008 OLF Coupeville			Sample Size: 0.106 L			QC Batch: B7C0003		Date Extracted: 01-Mar-2017 8:54		
Date Collected: 26-Feb-2017 17:45						Date Analyzed: 06-Mar-17 18:08 Column: BEH C18				
Location: Eq. Blank										
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	ND	2.10	4.72	9.40		IS	13C3-PFBS	86.8	60 - 150	
PFOA	ND	0.765	2.36	9.40		IS	13C2-PFOA	84.2	60 - 150	
PFOS	1.12	0.948	1.06	9.40	J	IS	13C8-PFOS	91.9	60 - 150	

DL - Detection limit
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
 Results reported to DL.
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
 Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-EB05-022417						Modified EPA Method 537				
Client Data			Sample Data			Laboratory Data				
Name:	CH2M Hill		Matrix:	Groundwater		Lab Sample:	1700268-08	Date Received:	28-Feb-2017 7:28	
Project:	Navy Clean CTO-0008 OLF Coupeville		Sample Size:	0.127 L		QC Batch:	B7C0003	Date Extracted:	01-Mar-2017 8:54	
Date Collected:	24-Feb-2017 11:35					Date Analyzed:	06-Mar-17 18:20	Column: BEH C18		
Location:	Eq. Blank									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
PFBS	ND	1.77	3.94	7.90		IS	13C3-PFBS	97.9	60 - 150	
PFOA	ND	0.643	1.97	7.90		IS	13C2-PFOA	88.7	60 - 150	
PFOS	ND	0.797	0.886	7.90		IS	13C8-PFOS	99.8	60 - 150	

DL - Detection limit
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
 Results reported to DL.
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
 Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	Dilution
E	The associated compound concentration exceeded the calibration range of the instrument.
H	Recovery and/or RPD was outside laboratory acceptance limits.
I	Chemical Interference
J	The amount detected is below the Reporting Limit/LOQ.
M	Estimated Maximum Possible Concentration. (CA Region 2 projects only)
*	See Cover Letter
Conc.	Concentration
NA	Not applicable
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-004
Pennsylvania Department of Environmental Protection	012
South Carolina Department of Health	87002001
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	7923
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

MATRIX: Non-Potable Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A



CHAIN OF CUSTODY

PN: 679580.06.FL.WS
10006-7-106051

Mark Endo
Erin Bilyeu
Collin Hall

For Laboratory Use Only

Laboratory Project ID: 1700268 Temp: 1.3 °C
Storage ID: WR-2 FS Storage Secured: Yes ☒ No ☐

TAT (check one): Standard: ☐ 21 days
☐ Rush (surcharge may apply)
☐ 14 days ☒ 7 days Specify: _____

Project ID: Mary clean CTO 7 OLF carbide

Sampler: Collin Hall (name)

Invoice to: Name Company Address City State Ph# Fax#

Katie Tippin CH2M

Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

Collin Hall J [Signature] 2/27/17 1400

[Signature] 2/28/17 07:28

Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Sample Receiving

Method of Shipment:

CEDEX OVERNIGHT

Tracking No.:

Add Analysis(es) Requested

Container(s)

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	2378-TCDD	2378-TCDD/TCDF	PCDD/PCDF	2378-TCDD	2378-TCDD/TCDF	PCDD/PCDF	2378-TCDD	2378-TCDD/TCDF	PCDD/PCDF	TOTALS	COPLANAR PCBs	209 CONGENERS	PBDE	PAH	WHO-29	Mod. EPA 537	Comments
WR-CV-GW09M-0217	2/23	1655	MW09M	2	G	GW																	
WR-CV-GW05M-0217	2/23	1545	MW05M	2	O	GW																	
WR-CV-GW05S-0217	2/24	1730	MW05S	2	O	GW																	
WR-CV-GW11M-0217	2/26	1435	MW11M	2	O	GW																	
WR-CV-GW11S-0217	2/26	1630	MW11S	2	O	GW																	
WR-CV-GW13S-0217	2/24	1055	MW13S	1	O	GW																	
WR-CV-EB06-022617	2/26	1745	Eg. Blank	2	O	GW																	
WR-CV-EB05-022417	2/24	1135	Eg. Blank	2	O	GW																	

Special instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill
Company: CH2M Hill
Address: 1100 NE Circle Blvd
City: Corvallis State: OR Zip: 97330
Phone: _____ Fax: _____
Email: tiffany.hill@ch2m.com

Container Types: A = 1 Liter Amber, G = Glass Jar

Bottle Preservation Type: T = Thiosulfate,

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment,

P = PUF, T = MM5, O = Other: 125 ml HDPE

O = Other: 56°C

SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Work Order 1700268

SAMPLE LOG-IN CHECKLIST



Vista Project #: 1700268 TAT 7

Samples Arrival:	Date/Time 02/28/17 07:28		Initials: ←		Location: WR-2	
					Shelf/Rack:	
Logged In:	Date/Time 2/28/17 0852		Initials: SR		Location: WR-2	
					Shelf/Rack: FS	
Delivered By:	☒ FedEx	☐ UPS	☐ On Trac	☐ DHL	☐ Hand Delivered	☐ Other
Preservation:	☒ Ice	☐ Blue Ice	☐ Dry Ice	☐ None		
Temp °C: 1.6 (uncorrected)	Time: 07:30		Thermometer ID: IR-2			
Temp °C: 1.3 (corrected)	Probe used: Yes ☐ No ☒					

		YES	NO	NA
Adequate Sample Volume Received?		☒		
Holding Time Acceptable?		☒		
Shipping Container(s) Intact?		☒		
Shipping Custody Seals Intact?		☒		
Shipping Documentation Present?		☒		
Airbill	Trk # 8088 6796 1056	☒		
Sample Container Intact?		☒		
Sample Custody Seals Intact?				☒
Chain of Custody / Sample Documentation Present?		☒		
COC Anomaly/Sample Acceptance Form completed?			☒	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?				☒
Preservation Documented:	Na ₂ S ₂ O ₃ Trizma	Yes	☒ No	NA
Shipping Container	Vista ☒ Client ☐ Retain ☒ Return ☐ Dispose			

Comments:

EXTRACTION INFORMATION

Process Sheet
Workorder: 1700268



Prep Expiration: 2017-Mar-09
Client: CH2M Hill

Workorder Due: 07-Mar-17 00:00
TAT: 7

Method: 537 PFAS DOD (LOQ as mRL)
Matrix: Aqueous

Prep Batch: B7C0005

Prep Data Entered: BP 3.2.17
Date and Initials

Version: PFOA, PFOS, PFBS

Initial Sequence: S7C0013

LabSampleID	Recon	ClientSampleID	Date Received	Location	Comments
1700268-01	☒	WI-CV-GW09M-0217	28-Feb-17 07:28	WR-2 F-5	
1700268-02	☒	WI-CV-GW05M-0217	28-Feb-17 07:28	WR-2 F-5	
1700268-03	☒	WI-CV-GW05S-0217	28-Feb-17 07:28	WR-2 F-5	
1700268-04	☒	WI-CV-GW11M-0217	28-Feb-17 07:28	WR-2 F-5	
1700268-05	☒	WI-CV-GW11S-0217	28-Feb-17 07:28	WR-2 F-5	
1700268-06	☒	WI-CV-GW13S-0217	28-Feb-17 07:28	WR-2 F-5	
1700268-07	☒	WI-CV-EB06-022617	28-Feb-17 07:28	WR-2 F-5	
1700268-08	☒	WI-CV-EB05-022417	28-Feb-17 07:28	WR-2 F-5	

Vista PM: Martha Maier

Vial Box ID: Bodge

Sample Reconciled By: B. Parker 3/1/17

Page 1 of 1

Balance ID: NA

[illegible]

PREPARATION BENCH SHEET

Matrix: Aqueous

Method: 537 PFAS DOD (LOO as mRL)

B7C0003

Chemist: G. Mendelsohn

Prep Date/Time: 01-Mar-17 08:54

Prepared using: LCMS - SPE Extraction-LCMS

B7C0003							
C	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	IS/NS CHEM/WIT DATE	SPE	RS CHEM/WIT DATE
☐	B7C0003-BLK1	NA	NA	(0.125)	an BP 3-1-17	BP 3-1-17	BP 3-1-17
☐	B7C0003-BS1	↓	↓	↓			↓
☐	1700268-01	150.20	27.03	0.12317			↓
☐	1700268-02 (D)	149.59	NA	NA			NA
☐	1700268-03 (A)(C)	140.61	27.13	0.12246			BP 3-1-17
☐	1700268-04 (B)	152.36	NA	NA			NA
☐	1700268-05 (A)	154.83	27.10	0.12773			BP 3-1-17
☐	1700268-06 (D)	150.87	NA	NA			NA
☐	1700268-07 (E)	133.45	27.07	0.10638			BP 3-1-17
☐	1700268-08 (B) 3-1-17	153.69	27.12	0.12657			↓

- (A) Sample contained particulate; centrifuged to remove BP 3-1-17
- (B) Cartridge clogged after ~10 mL; sample discarded
- (C) Cartridge clogged after ~80 mL; eluted from 2 cartridges
- (D) Cartridge clogged after ~40 mL; second cartridge clogged after another ~40 mL; samples discarded BP 3-1-17
- (E) Cartridge clogged, but was able to elute using 1 cartridge

IS Name <u>V3</u> 1611420, 10 mL	NS Name <u>V1</u> 1612905, 10 mL	RS Name <u>V4</u> 1711201, 10 mL	SPE Chem: <u>Strata-X-10 33um 250mg/6mL</u> Ele SOLV: <u>0.5% MeOH in MeOH</u> Final Volume(s) <u>1 mL</u>	Check Out: Chemist/Date: <u>BP 3-1-17</u> Check In: Chemist/Date: <u>NA</u> Balance ID: <u>HAMS-8</u>
--	--	--	--	---

Comments: Assume 1 g = 1 mL

RX

Process Sheet
Workorder: 1700268

Prep Expiration: 2017-Mar-09
Client: CH2M Hill

Workorder Due: 07-Mar-17 00:00

TAT: 7

Method: 537 PFAS DOD (LOQ as mRL)
Matrix: Aqueous
Client Matrix: Groundwater

Prep Batch: B7C0012

Prep Data Entered: BP 3-6-17
Date and Initials

Version: PFOA, PFOS, PFBS

Initial Sequence: _____

LabSampleID	Recon	ClientSampleID	Date Received	Location	Comments
1700268-01	☐	WI-CV-GW00M-0217	28-Feb-17 07:28	WR-2 F-5	
* 1700268-02 "B"	☒	WI-CV-GW05M-0217	28-Feb-17 07:28	WR-2 F-5	
1700268-03	☐	WI-CV-GW05S-0217	28-Feb-17 07:28	WR-2 F-5	
* 1700268-04 "B"	☒	WI-CV-GW11M-0217	28-Feb-17 07:28	WR-2 F-5	
1700268-05	☐	WI-CV-GW11S-0217	28-Feb-17 07:28	WR-2 F-5	
* 1700268-06	☐	WI-CV-GW13S-0217	28-Feb-17 07:28	WR-2 F-5	
1700268-07	☐	WI-CV-EB06-022617	28-Feb-17 07:28	WR-2 F-5	
1700268-08	☐	WI-CV-EB05-022417	28-Feb-17 07:28	WR-2 F-5	

60mLS

Vista PM: Martha Maier

Vial Box ID: The Duke

Sample Reconciled By: B. Parker 3/3/17

Balance ID: HRMS-9

Procedure: ▪ Tare the balance. ▪ Record Boat Weight. ▪ Add 2 - 10 g of sample. ▪ Record Wet Wt. + Boat Wt. ▪ Dry in oven overnight at 107°C. ▪ Tare the balance. ▪ Record Residue + Boat Wt.	Notes: Ⓐ Added 2 drops HCl to adjust pH to 2 Ⓑ Added 3 drops HCl to adjust pH to 2 BP 3.3-17 Ⓒ Added 3 4 drops HCl to adjust pH to 2 BP 3.3-17 • Methods 8280, 613, 1613, 8290, 1614 - pH < 9 • Methods 1668/PCN - pH 2-3 • NCASI 551 - pH 1
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PREPARATION BENCH SHEET

Matrix: Aqueous

Method: 537 PFAS DOD (LOO as mL)

B7C0012

Chemist: G. Mendola

Prep Date/Time: 03-Mar-17 08:25

Prepared using: LCMS - SPE Extraction-LCMS

C	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	IS/NS CHEM/WIT DATE	SPE	RS CHEM/WIT DATE
☐	B7C0012-BLK1	NA	NA	(0.125)	On BP 3/3/17	BP 3.3.17	On BP 3/3/17
☐	B7C0012-BS1	↓	↓	(0.125)			
☐	1700268-02RE1 ①	92.03	26.57	0.06546			
☐	1700268-04RE1 ①	91.85	26.59	0.06526			
☐	1700280-01 ①	155.98	27.06	0.12892			
☐	1700280-02 ②	155.24	27.19	0.12805			
☐	1700280-03 ②	142.21	27.20	0.11501			
☐	1700280-04 ②	151.19	27.15	0.12404			
☐	1700280-05 ③	154.04	27.13	0.12691			
☐	1700280-06 ③	136.76	27.16	0.10960			
☐	1700280-07 ✓③	152.16	27.18	0.12498			

① Centrifuged to remove gelatinous substance BP 3.3.17

② Contained very little gel (<1g) BP 3.3.17

③ Contained medium amounts of gel (~1-2g) BP 3.3.17

④ Contained ~2g of gel BP 3.3.17

IS Name <u>1611910, 10u</u> ③	NS Name <u>1612905, 10u</u> ③	RS Name <u>174120, 10u</u> ④	SPE Chem: <u>Strata X-AW 33um 200mg/bml</u>	Check Out: <u>BP 3.3.17</u>
			Ele SOLV: <u>0.5% NH₄OH in MeOH/H₂O</u>	Check In: <u>BP 3.3.17</u>
			Final Volume(s) <u>1uL</u>	Balance ID: <u>HBWS-8</u>

Comments: Assume 1 g = 1 mL

SAMPLE DATA – MODIFIED EPA METHOD 537

Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-8.qld

Last Altered: Tuesday, March 07, 2017 10:04:16 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 10:04:37 AM Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2_NEW.mdb 07 Mar 2017 09:58:54

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0003-BLK1 Method Blank 0.125, Description: Method Blank, Name: 170306G1_8, Date: 06-Mar-2017, Time: 16:52:50

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7		5.238e3		0.125			
2	4 PFOA	413 > 368.7	1.392e2	2.294e4		0.125	4.29		
3	6 PFOS	499 > 79.9		5.496e3		0.125			
4	7 13C3-PFBS	302.0 > 98.8	5.238e3	1.141e4	0.410	0.125	3.02	112	112
5	8 13C4-PFHxA	367.2 > 321.8	1.247e4	1.141e4	1.098	0.125	3.89	99.5	99.5
6	9 18O2-PFHxS	403 > 102.6	4.653e3	1.141e4	0.434	0.125	4.01	93.9	93.9
7	10 13C2-PFOA	414.9 > 369.7	2.294e4	5.756e3	4.608	0.125	4.29	86.5	86.5
8	11 13C5-PFNA	468.2 > 422.9	5.460e3	7.482e3	0.867	0.125	4.62	84.2	84.2
9	12 13C8-PFOS	507.0 > 79.9	5.496e3	6.158e3	0.958	0.125	4.68	93.1	93.1
10	13 13C5-PFHxA	318>272.9	2.460e4	2.460e4	1.000	0.125	3.40	100	100
11	14 13C3-PFHxS	401.9 > 79.9	1.141e4	1.141e4	1.000	0.125	4.01	100	100
12	15 13C8-PFOA	421.3 > 376	5.756e3	5.756e3	1.000	0.125	4.29	100	100
13	16 13C9-PFNA	472.2 > 426.9	7.482e3	7.482e3	1.000	0.125	4.62	100	100
14	17 13C4-PFOS	503.0 > 79.9	6.158e3	6.158e3	1.000	0.125	4.68	100	100
15	18 Total PFBS	299 > 79.7		4.653e3		0.125			
16	20 Total PFOA	413 > 368.7		2.294e4		0.125			
17	21 Total PFOS	499 > 79.9		5.496e3		0.125			

Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-8.qld

Last Altered: Tuesday, March 07, 2017 10:04:16 AM Pacific Standard Time

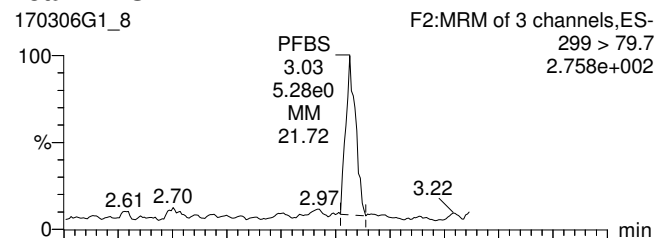
Printed: Tuesday, March 07, 2017 10:04:37 AM Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2_NEW.mdb 07 Mar 2017 09:58:54

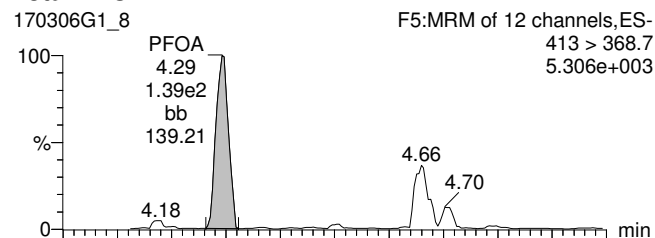
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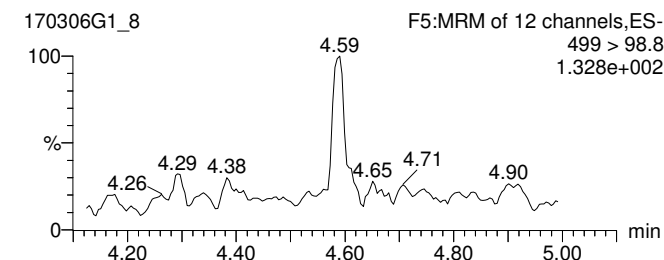
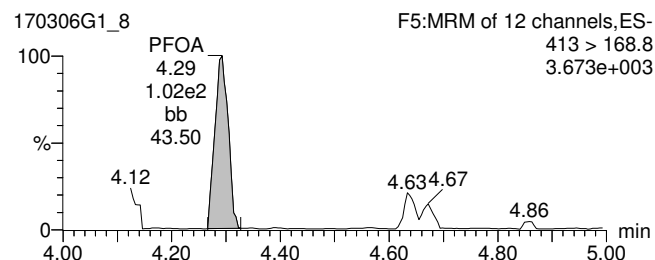
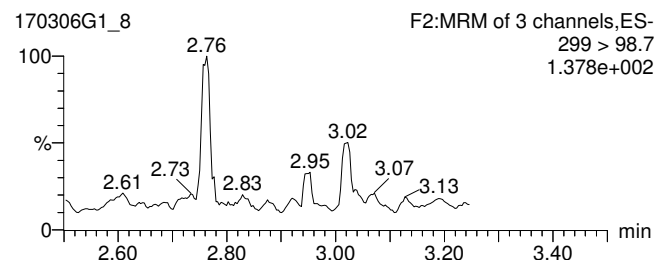
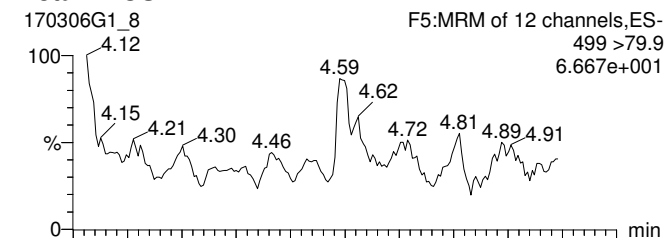
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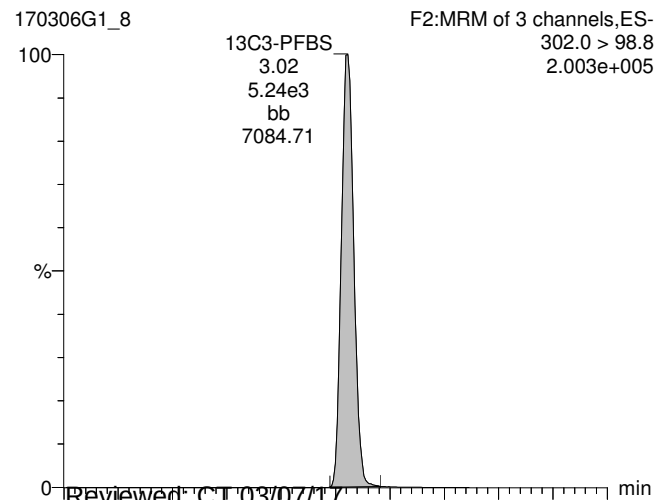
Total PFOA



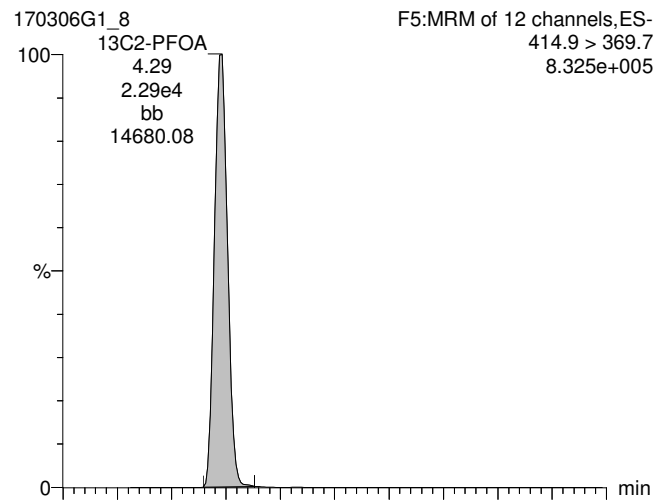
Total PFOS



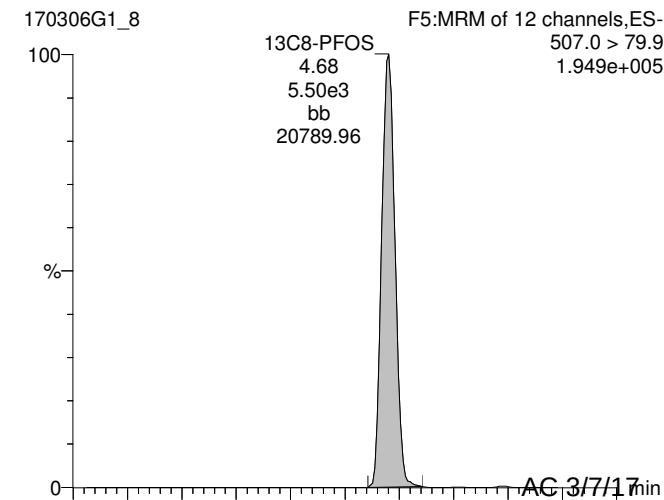
13C3-PFBS



13C2-PFOA



13C8-PFOS



Reviewed: C:\03\07\17

AC 3/7/17

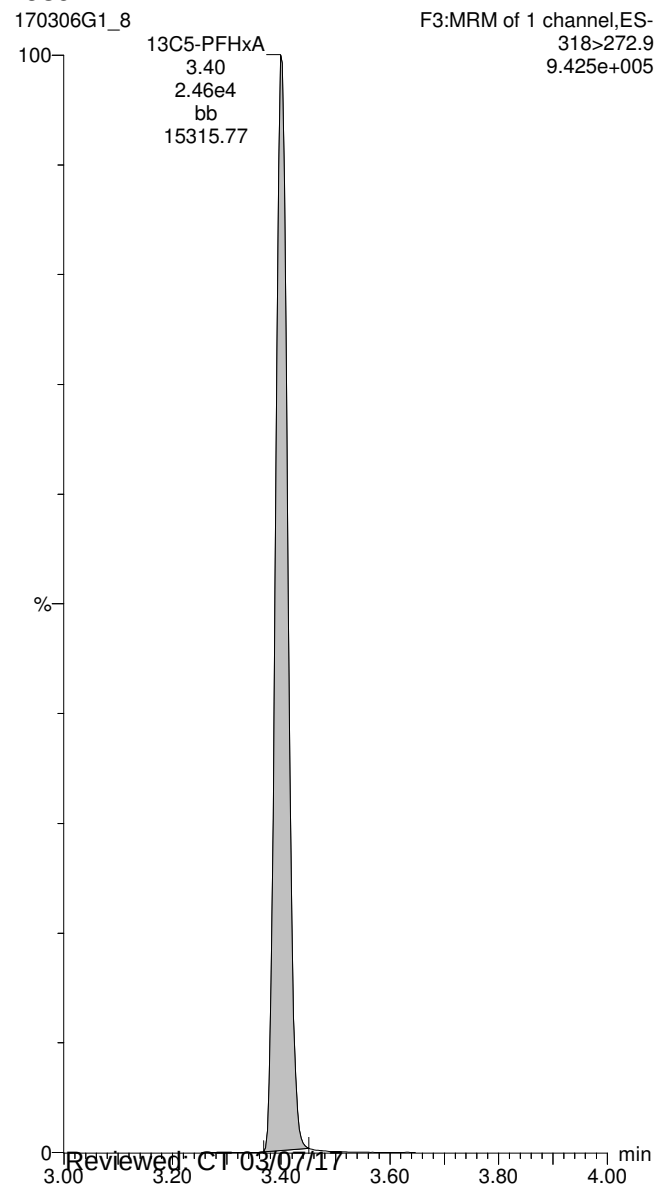
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Printed: Tuesday, March 07, 2017 10:04:37 AM Pacific Standard Time

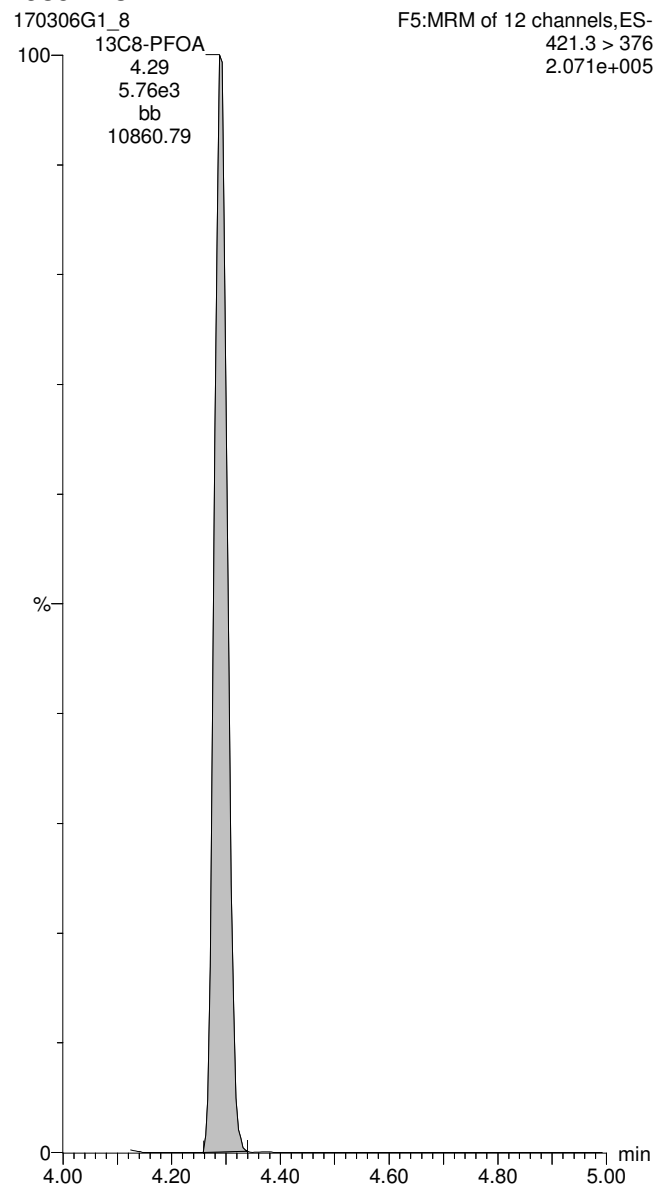
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13C5-PFHxA

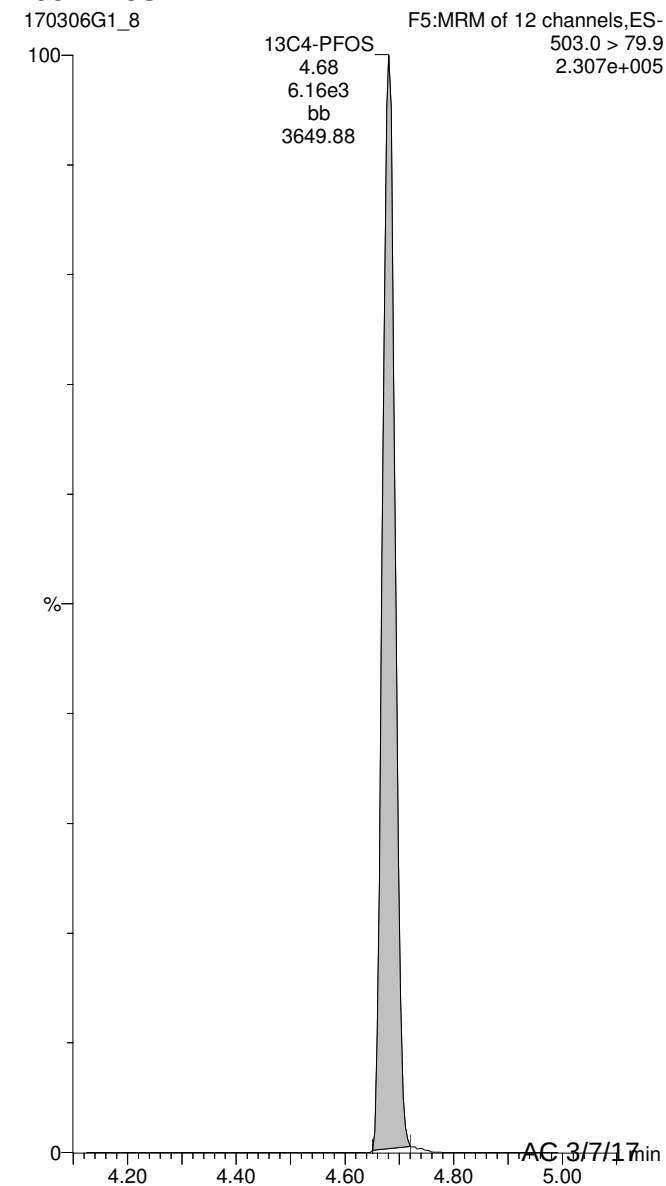


Work Order 1700268

13C8-PFOA



13C4-PFOS



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Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-4.qld

Last Altered: Tuesday, March 07, 2017 10:00:04 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 10:02:24 AM Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0003-BS1 OPR 0.125, Description: OPR, Name: 170306G1_4, Date: 06-Mar-2017, Time: 16:02:38

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.042e4	5.392e3		0.125	3.05	81.0	101
2	4 PFOA	413 > 368.7	1.757e4	2.436e4		0.125	4.32	89.0	111
3	6 PFOS	499 > 79.9	2.472e3	6.160e3		0.125	4.70	75.3	94.1
4	7 13C3-PFBS	302.0 > 98.8	5.392e3	1.182e4	0.410	0.125	3.05	111	111
5	8 13C4-PFHxA	367.2 > 321.8	1.375e4	1.182e4	1.098	0.125	3.92	106	106
6	9 18O2-PFHxS	403 > 102.6	5.036e3	1.182e4	0.434	0.125	4.03	98.1	98.1
7	10 13C2-PFOA	414.9 > 369.7	2.436e4	6.180e3	4.608	0.125	4.32	85.5	85.5
8	11 13C5-PFNA	468.2 > 422.9	6.403e3	8.148e3	0.867	0.125	4.64	90.6	90.6
9	12 13C8-PFOS	507.0 > 79.9	6.160e3	6.843e3	0.958	0.125	4.70	93.9	93.9
10	13 13C5-PFHxA	318>272.9	2.462e4	2.462e4	1.000	0.125	3.43	100	100
11	14 13C3-PFHxS	401.9 > 79.9	1.182e4	1.182e4	1.000	0.125	4.03	100	100
12	15 13C8-PFOA	421.3 > 376	6.180e3	6.180e3	1.000	0.125	4.32	100	100
13	16 13C9-PFNA	472.2 > 426.9	8.148e3	8.148e3	1.000	0.125	4.65	100	100
14	17 13C4-PFOS	503.0 > 79.9	6.843e3	6.843e3	1.000	0.125	4.70	100	100
15	18 Total PFBS	299 > 79.7		5.036e3		0.125		81.0	
16	20 Total PFOA	413 > 368.7		2.436e4		0.125		89.0	
17	21 Total PFOS	499 > 79.9		6.160e3		0.125		75.3	

Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-4.qld

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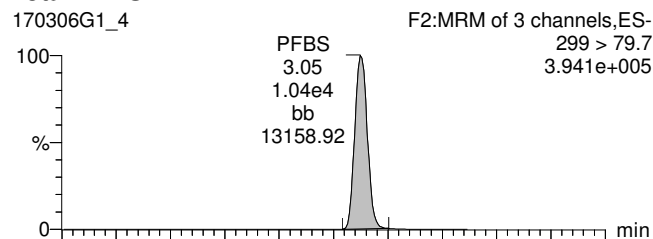
Printed: Tuesday, March 07, 2017 10:02:24 AM Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2_NEW.mdb 07 Mar 2017 09:58:54

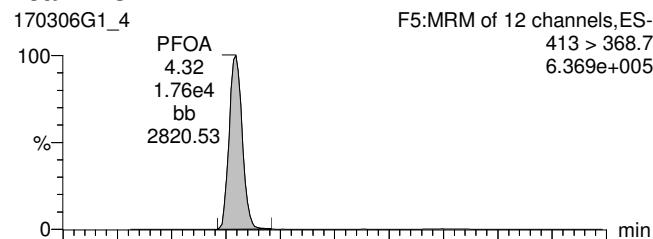
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ID: B7C0003-BS1 OPR 0.125, Description: OPR, Name: 170306G1_4, Date: 06-Mar-2017, Time: 16:02:38, Instrument: , Lab: , User:

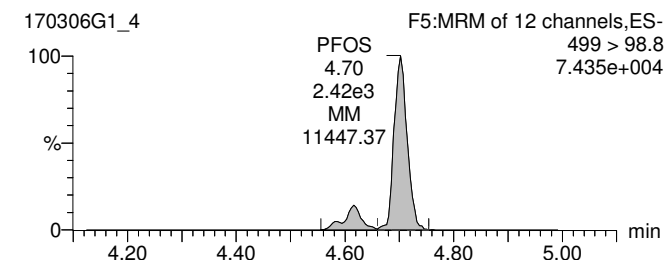
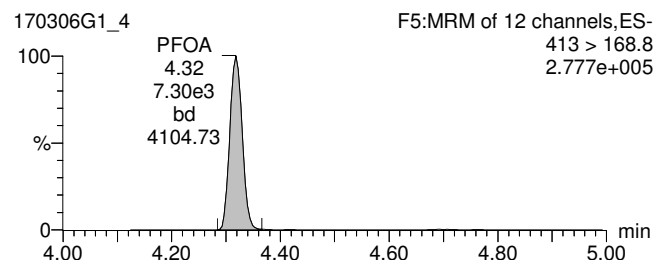
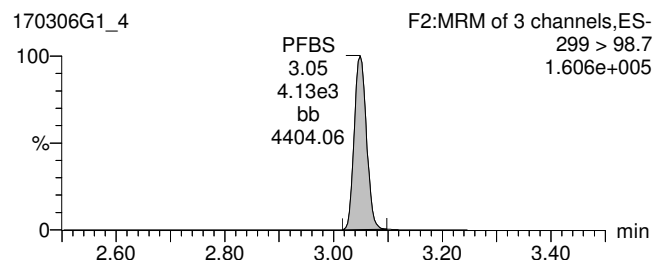
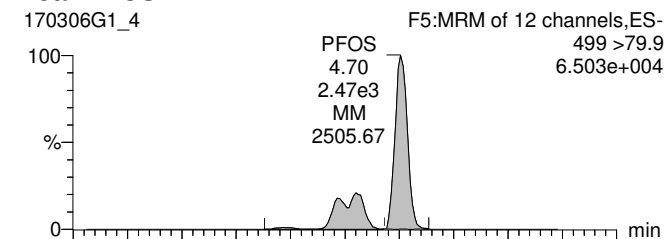
Total PFBS



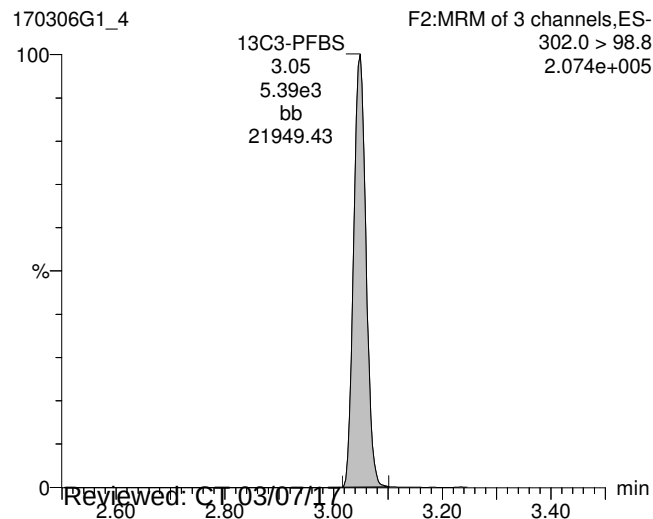
Total PFOA



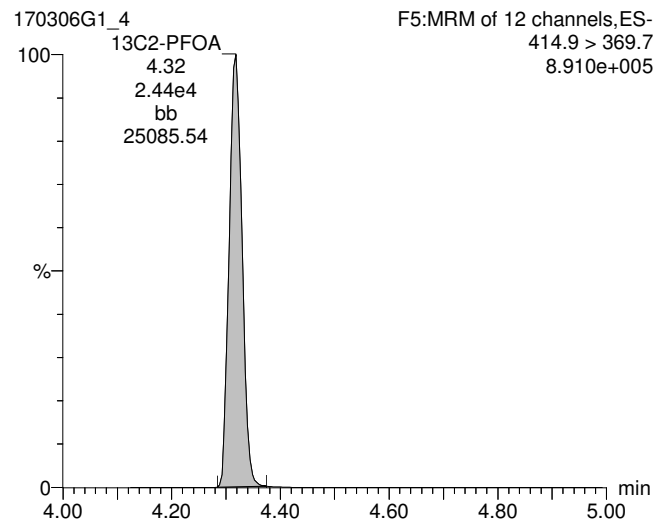
Total PFOS



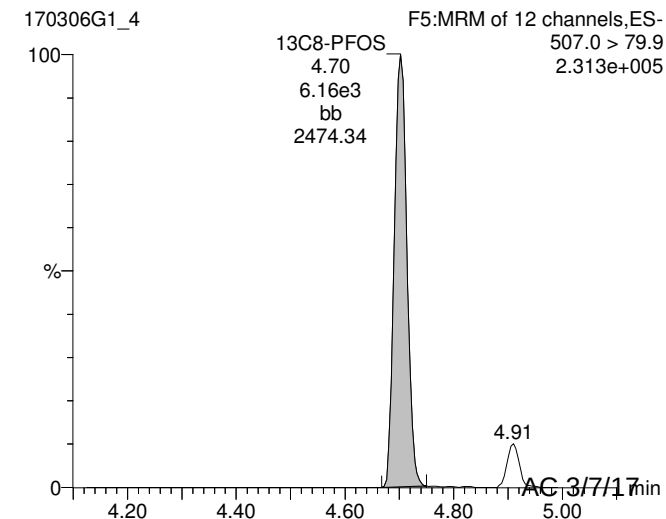
13C3-PFBS



13C2-PFOA



13C8-PFOS



Reviewed: C:\03\07\17

Work Order 1700268

4.91

AC 3/7/17

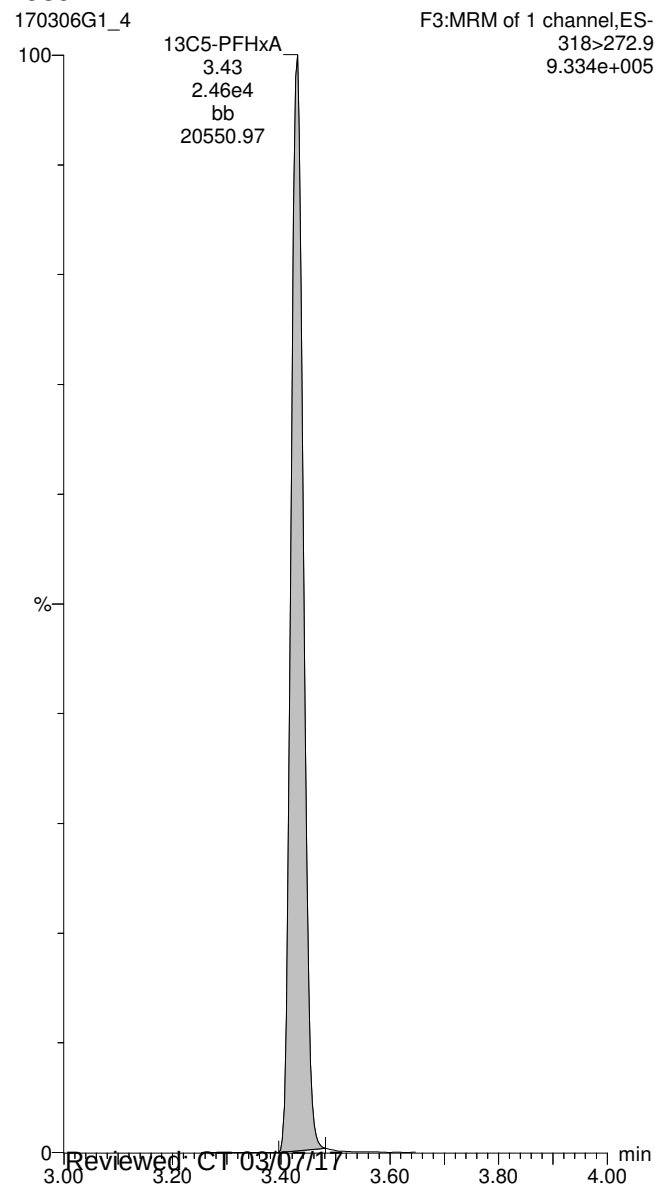
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Printed: Tuesday, March 07, 2017 10:02:24 AM Pacific Standard Time

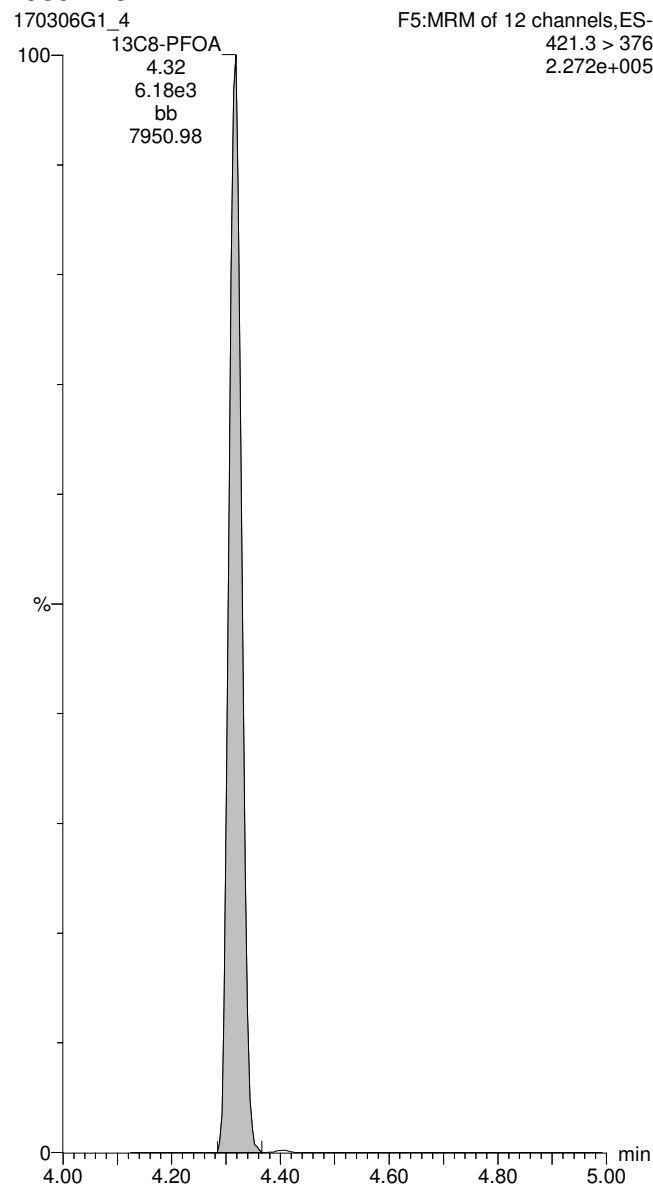
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13C5-PFHxA

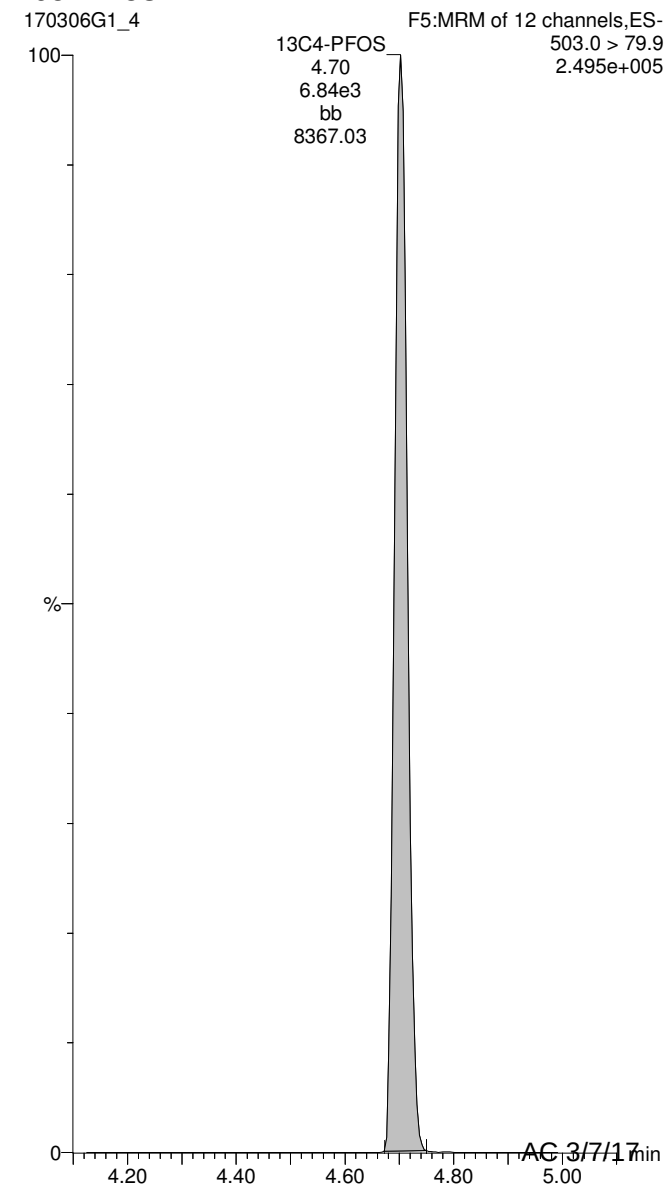


Work Order 1700268

13C8-PFOA



13C4-PFOS



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Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-16.qld

Last Altered: Monday, March 06, 2017 10:32:37 Pacific Standard Time

Printed: Monday, March 06, 2017 10:34:33 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0012-BLK1 Method Blank 0.125, Description: Method Blank, Name: 170305G1_16, Date: 05-Mar-2017, Time: 15:42:23

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7		5.809e3		0.125			
2	4 PFOA	413 > 368.7	1.839e2	2.727e4		0.125	4.31		
3	6 PFOS	499 > 79.9		6.667e3		0.125			
4	7 13C3-PFBS	302.0 > 98.8	5.809e3	1.363e4	0.410	0.125	3.03	104	104
5	10 13C2-PFOA	414.9 > 369.7	2.727e4	6.759e3	4.608	0.125	4.31	87.6	87.6
6	12 13C8-PFOS	507.0 > 79.9	6.667e3	7.841e3	0.958	0.125	4.69	88.7	88.7
7	14 13C3-PFHxS	401.9 > 79.9	1.363e4	1.363e4	1.000	0.125	4.03	100	100
8	15 13C8-PFOA	421.3 > 376	6.759e3	6.759e3	1.000	0.125	4.31	100	100
9	17 13C4-PFOS	503.0 > 79.9	7.841e3	7.841e3	1.000	0.125	4.70	100	100

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-16.qld

Last Altered: Monday, March 06, 2017 10:32:37 Pacific Standard Time

Printed: Monday, March 06, 2017 10:35:06 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0012-BLK1 Method Blank 0.125, Description: Method Blank, Name: 170305G1_16, Date: 05-Mar-2017, Time: 15:42:23

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18 Total PFBS	299 > 79.7		5.664e3		0.125			
2	20 Total PFOA	413 > 368.7		2.727e4		0.125			
3	21 Total PFOS	499 > 79.9		6.667e3		0.125			

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-16.qld

Last Altered: Monday, March 06, 2017 10:32:37 Pacific Standard Time

Printed: Monday, March 06, 2017 10:34:33 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0012-BLK1 Method Blank 0.125, Description: Method Blank, Name: 170305G1_16, Date: 05-Mar-2017, Time: 15:42:23

Total PFBS

	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	299 > 79.7			5808.713	

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	398.9 > 79.6	4.03	40.616	5663.959	

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	413 > 368.7	4.31	183.924	27271.393	

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1						

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-16.qld

Last Altered: Monday, March 06, 2017 10:32:37 Pacific Standard Time

Printed: Monday, March 06, 2017 10:34:33 Pacific Standard Time

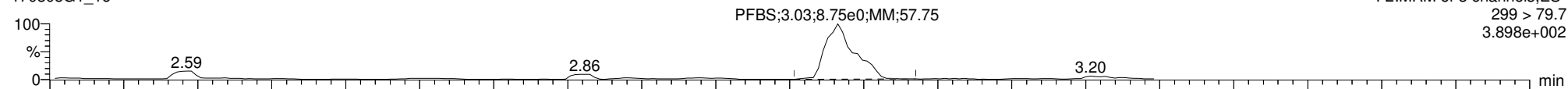
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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

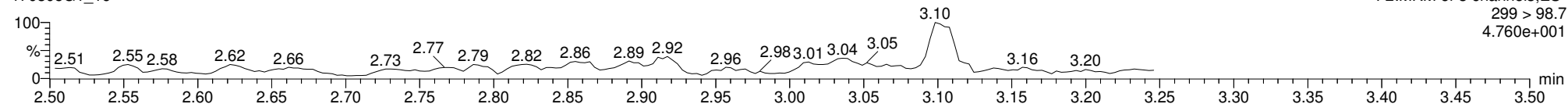
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PFBS

170305G1_16

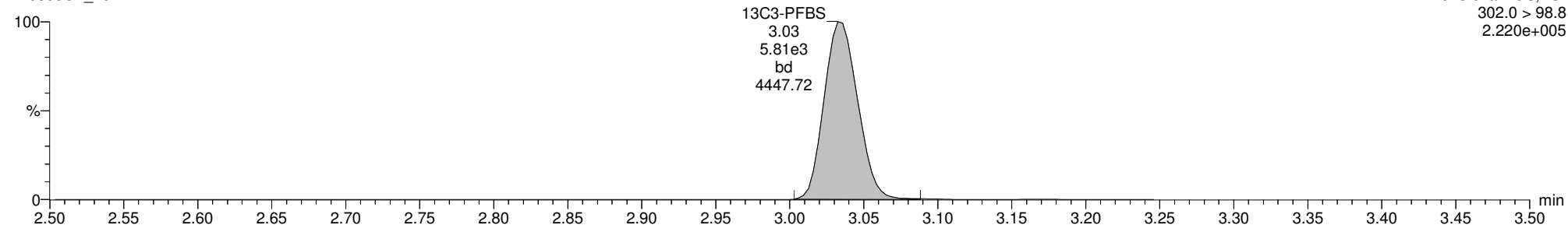


170305G1_16



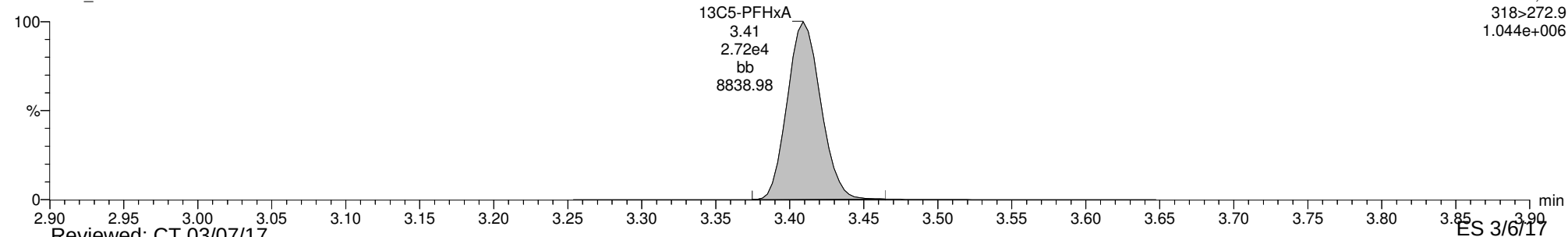
13C3-PFBS

170305G1_16



13C5-PFHxA

170305G1_16



Reviewed: CT 03/07/17

ES 3/6/17

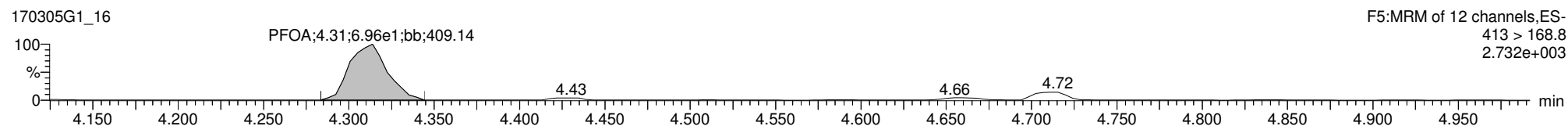
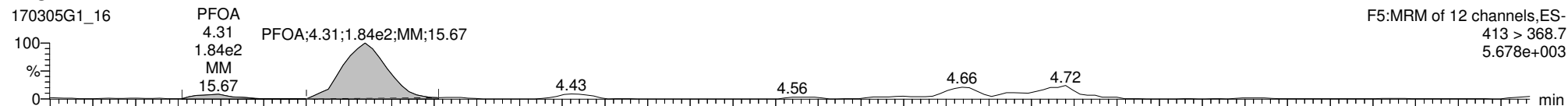
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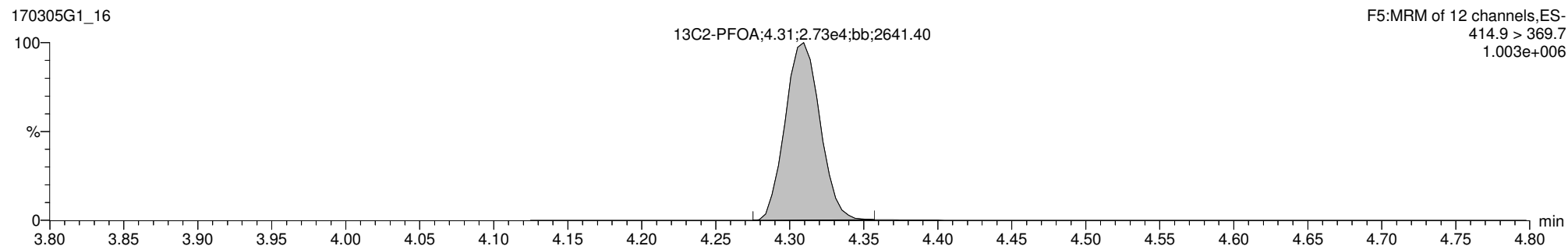
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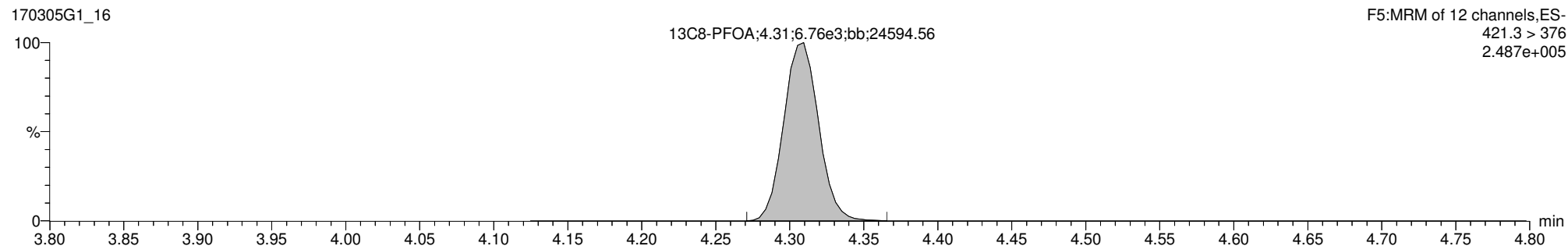
PFOA



13C2-PFOA



13C8-PFOA



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-16.qld

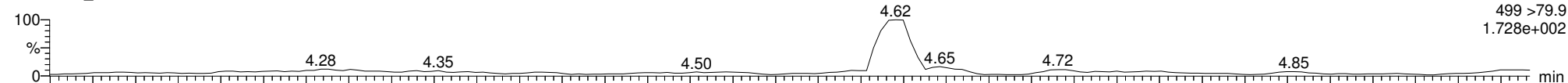
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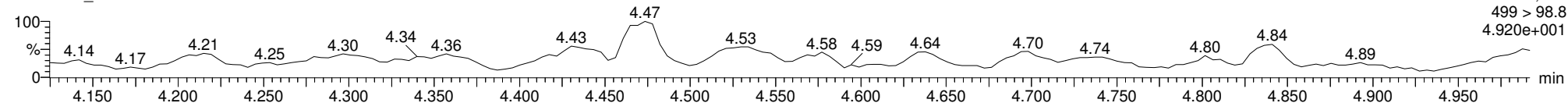
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PFOS

170305G1_16

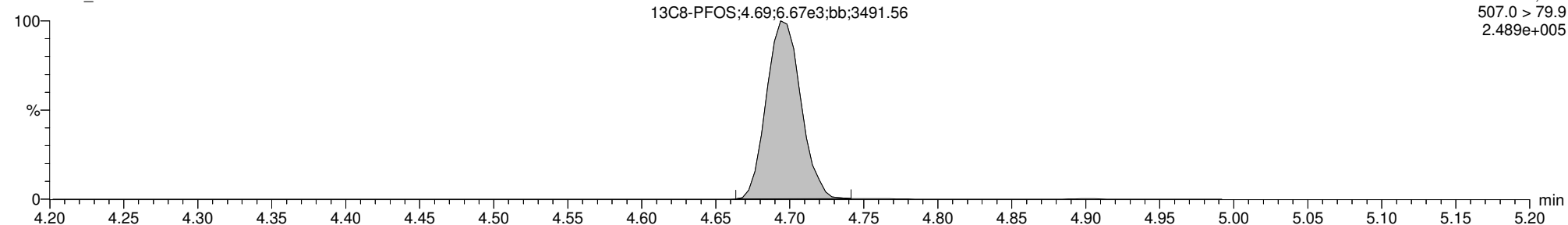


170305G1_16



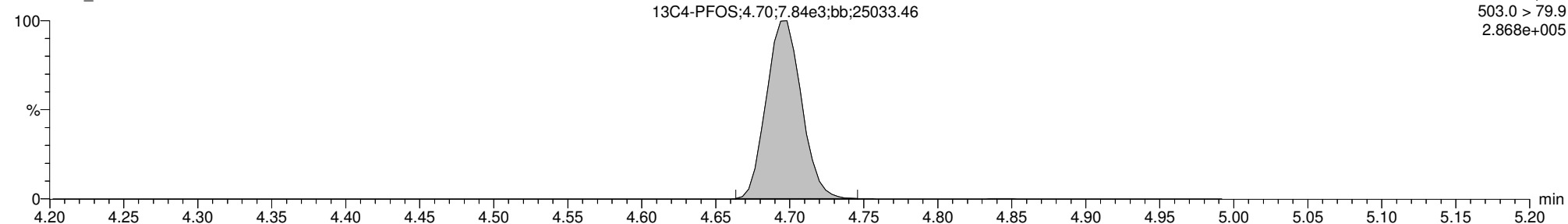
13C8-PFOS

170305G1_16



13C4-PFOS

170305G1_16



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-13.qld

Last Altered: Monday, March 06, 2017 10:17:53 Pacific Standard Time

Printed: Monday, March 06, 2017 10:20:09 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0012-BS1 OPR 0.125, Description: OPR, Name: 170305G1_13, Date: 05-Mar-2017, Time: 15:04:45

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.163e4	5.427e3		0.125	3.04	89.8	112
2	4 PFOA	413 > 368.7	1.828e4	2.406e4		0.125	4.31	93.8	117
3	6 PFOS	499 > 79.9	2.607e3	6.027e3		0.125	4.69	81.1	101
4	7 13C3-PFBS	302.0 > 98.8	5.427e3	1.265e4	0.410	0.125	3.03	105	105
5	10 13C2-PFOA	414.9 > 369.7	2.406e4	5.841e3	4.608	0.125	4.31	89.4	89.4
6	12 13C8-PFOS	507.0 > 79.9	6.027e3	6.816e3	0.958	0.125	4.69	92.3	92.3
7	14 13C3-PFHxS	401.9 > 79.9	1.265e4	1.265e4	1.000	0.125	4.03	100	100
8	15 13C8-PFOA	421.3 > 376	5.841e3	5.841e3	1.000	0.125	4.31	100	100
9	17 13C4-PFOS	503.0 > 79.9	6.816e3	6.816e3	1.000	0.125	4.69	100	100

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-13.qld

Last Altered: Monday, March 06, 2017 10:17:53 Pacific Standard Time

Printed: Monday, March 06, 2017 10:20:31 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0012-BS1 OPR 0.125, Description: OPR, Name: 170305G1_13, Date: 05-Mar-2017, Time: 15:04:45

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18 Total PFBS	299 > 79.7		5.115e3		0.125		89.8	
2	20 Total PFOA	413 > 368.7		2.406e4		0.125		93.8	
3	21 Total PFOS	499 > 79.9		6.027e3		0.125		81.1	

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-13.qld

Last Altered: Monday, March 06, 2017 10:17:53 Pacific Standard Time

Printed: Monday, March 06, 2017 10:20:09 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0012-BS1 OPR 0.125, Description: OPR, Name: 170305G1_13, Date: 05-Mar-2017, Time: 15:04:45

Total PFBS

	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	299 > 79.7	3.04	11629.240	5426.664	89.8

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	398.9 > 79.6	4.03	6732.899	5114.757	72.1
2	19 Total PFHxS	398.9 > 79.6	3.93	1269.312	5114.757	13.2
3	19 Total PFHxS	398.9 > 79.6	3.90	477.182	5114.757	4.7

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	413 > 368.7	4.31	18275.373	24060.582	93.8

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1	6 PFOS	499 > 79.9	4.69	2607.217	6026.942	81.1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-13.qld

Last Altered: Monday, March 06, 2017 10:17:53 Pacific Standard Time

Printed: Monday, March 06, 2017 10:20:09 Pacific Standard Time

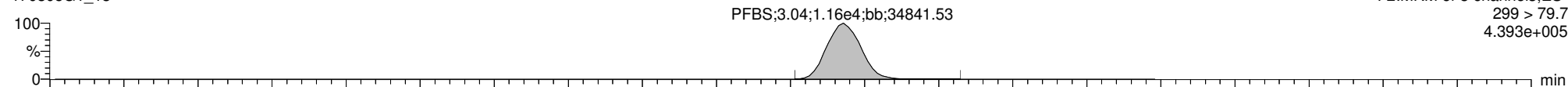
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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

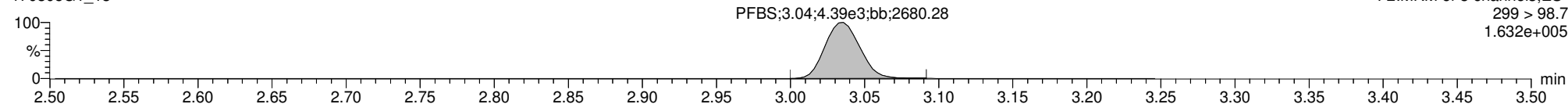
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PFBS

170305G1_13

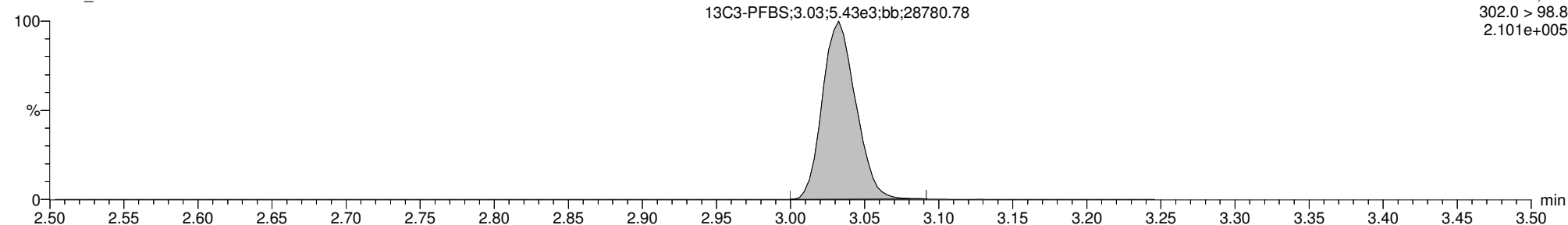


170305G1_13



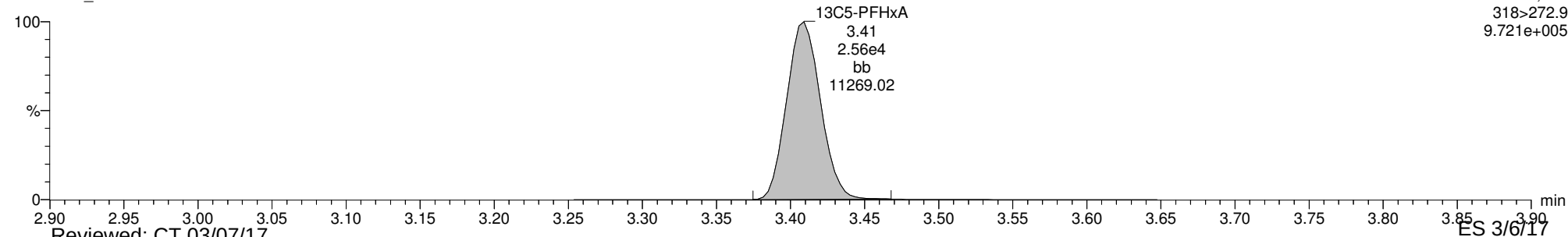
13C3-PFBS

170305G1_13



13C5-PFHxA

170305G1_13



Reviewed: CT 03/07/17

ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-13.qld

Last Altered: Monday, March 06, 2017 10:17:53 Pacific Standard Time

Printed: Monday, March 06, 2017 10:20:09 Pacific Standard Time

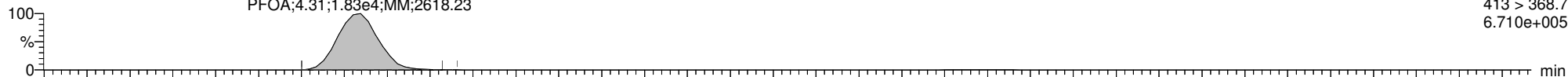
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PFOA

170305G1_13

PFOA;4.31;1.83e4;MM;2618.23

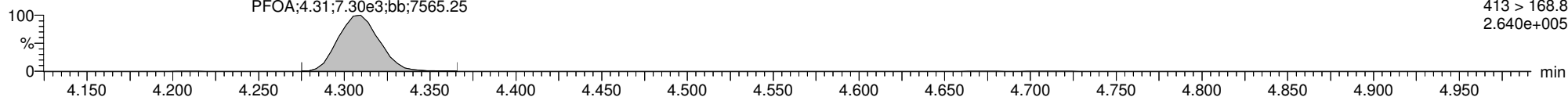
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413 > 368.7
6.710e+005



170305G1_13

PFOA;4.31;7.30e3;bb;7565.25

F5:MRM of 12 channels,ES-
413 > 168.8
2.640e+005

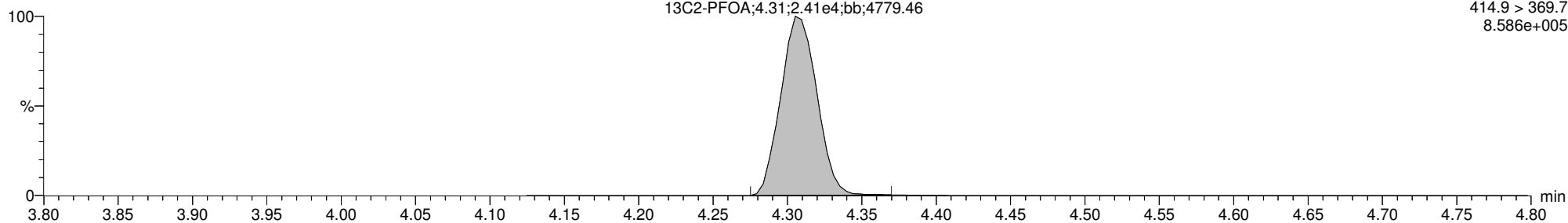


13C2-PFOA

170305G1_13

13C2-PFOA;4.31;2.41e4;bb;4779.46

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8.586e+005

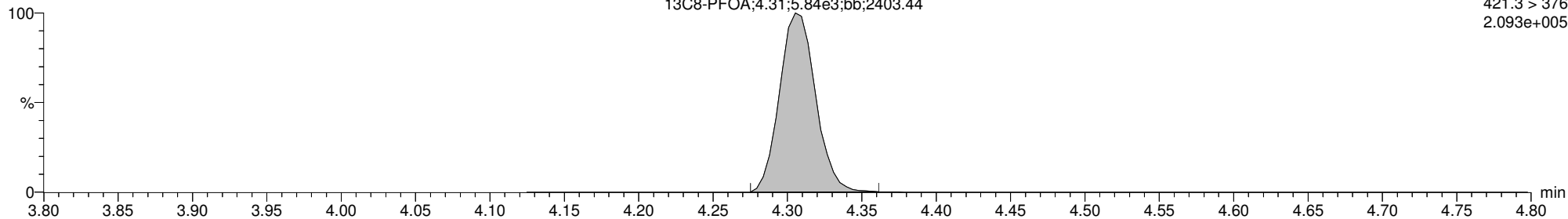


13C8-PFOA

170305G1_13

13C8-PFOA;4.31;5.84e3;bb;2403.44

F5:MRM of 12 channels,ES-
421.3 > 376
2.093e+005



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-13.qld

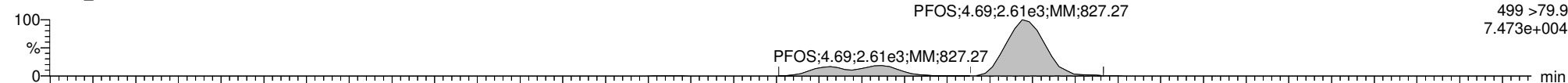
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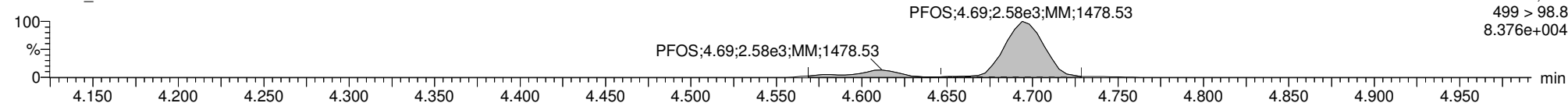
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PFOS

170305G1_13

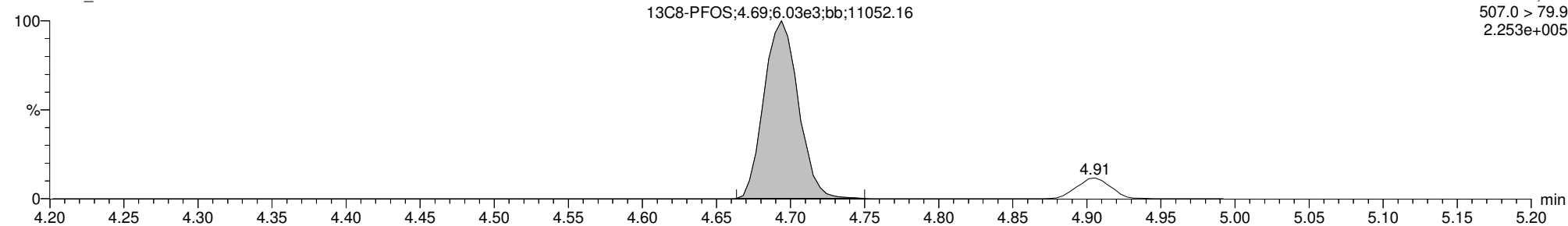


170305G1_13



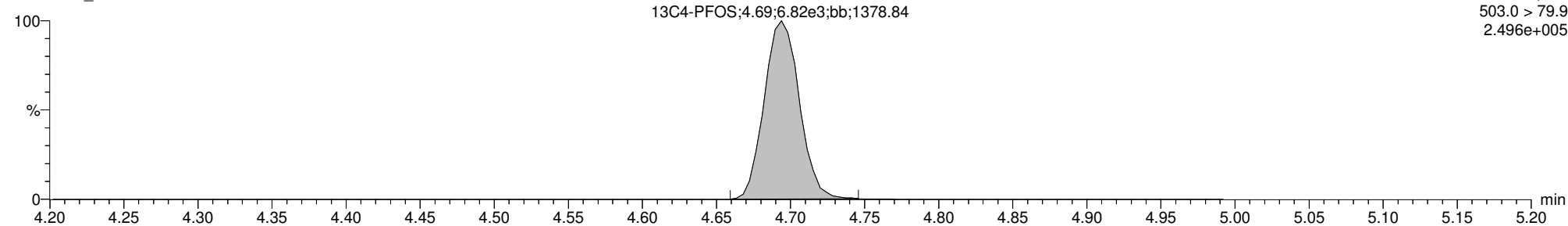
13C8-PFOS

170305G1_13



13C4-PFOS

170305G1_13



Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-11.qld

Last Altered: Tuesday, March 07, 2017 10:07:24 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 10:08:40 AM Pacific Standard Time

Method: Untitled 07 Mar 2017 09:58:54

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700268-01 WI-CV-GW09M-0217 0.12317, Description: WI-CV-GW09M-0217, Name: 170306G1_11, Date: 06-Mar-2017, Time: 17:30:29

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.558e3	5.903e3		0.123	2.98	11.0	
2	4 PFOA	413 > 368.7	3.070e2	2.769e4		0.123	4.27		
3	6 PFOS	499 > 79.9		8.381e3		0.123			
4	7 13C3-PFBS	302.0 > 98.8	5.903e3	1.504e4	0.410	0.123	2.97	97.2	95.8
5	8 13C4-PFHxA	367.2 > 321.8	1.520e4	1.504e4	1.098	0.123	3.87	93.4	92.0
6	9 18O2-PFHxS	403 > 102.6	6.337e3	1.504e4	0.434	0.123	3.99	98.5	97.0
7	10 13C2-PFOA	414.9 > 369.7	2.769e4	6.976e3	4.608	0.123	4.27	87.4	86.1
8	11 13C5-PFNA	468.2 > 422.9	6.921e3	8.632e3	0.867	0.123	4.60	93.8	92.5
9	12 13C8-PFOS	507.0 > 79.9	8.381e3	9.314e3	0.958	0.123	4.66	95.3	93.9
10	13 13C5-PFHxA	318>272.9	2.608e4	2.608e4	1.000	0.123	3.35	101	100
11	14 13C3-PFHxS	401.9 > 79.9	1.504e4	1.504e4	1.000	0.123	3.99	101	100
12	15 13C8-PFOA	421.3 > 376	6.976e3	6.976e3	1.000	0.123	4.27	101	100
13	16 13C9-PFNA	472.2 > 426.9	8.632e3	8.632e3	1.000	0.123	4.60	101	100
14	17 13C4-PFOS	503.0 > 79.9	9.314e3	9.314e3	1.000	0.123	4.67	101	100
15	18 Total PFBS	299 > 79.7		6.337e3		0.123		11.2	
16	20 Total PFOA	413 > 368.7		2.769e4		0.123			
17	21 Total PFOS	499 > 79.9		8.381e3		0.123			

Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-11.qld

Last Altered: Tuesday, March 07, 2017 10:07:24 AM Pacific Standard Time

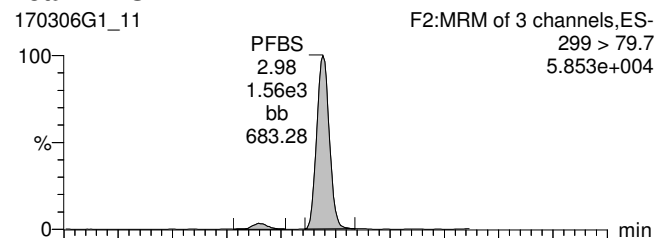
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Method: Untitled 07 Mar 2017 09:58:54

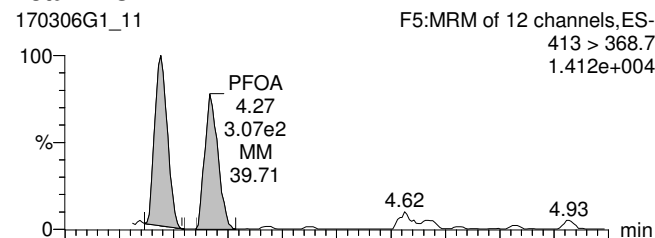
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ID: 1700268-01 WI-CV-GW09M-0217 0.12317, Description: WI-CV-GW09M-0217, Name: 170306G1_11, Date: 06-Mar-2017, Time: 17:30:29, Instrument: , Lab: , User:

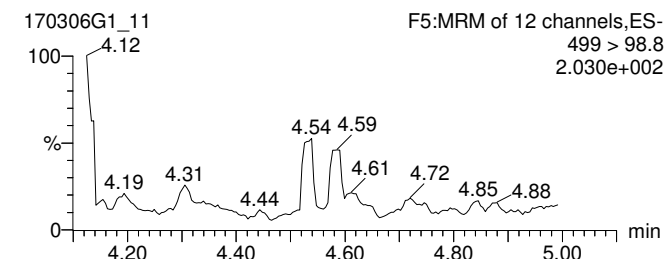
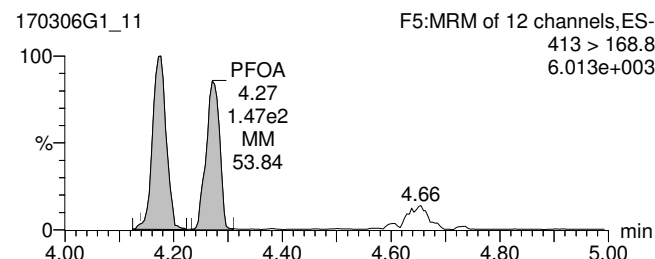
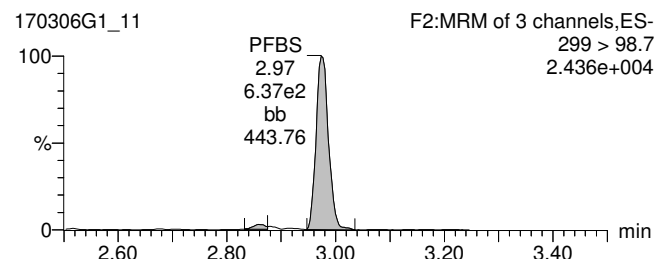
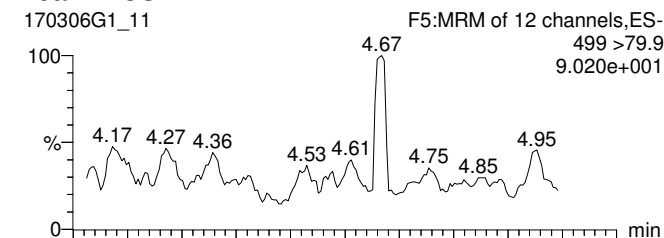
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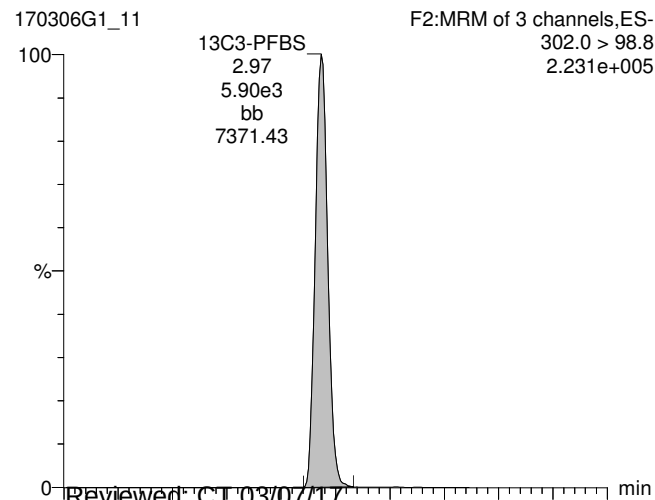
Total PFOA



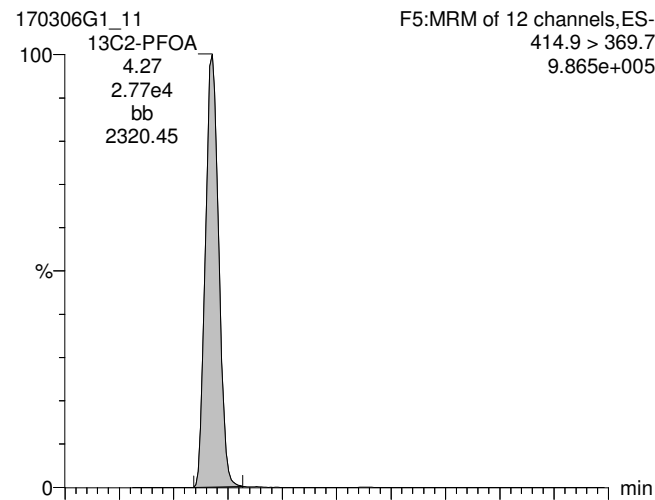
Total PFOS



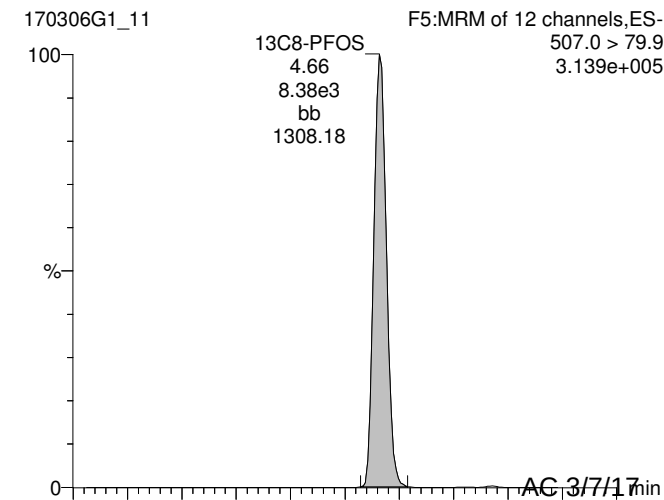
13C3-PFBS



13C2-PFOA



13C8-PFOS



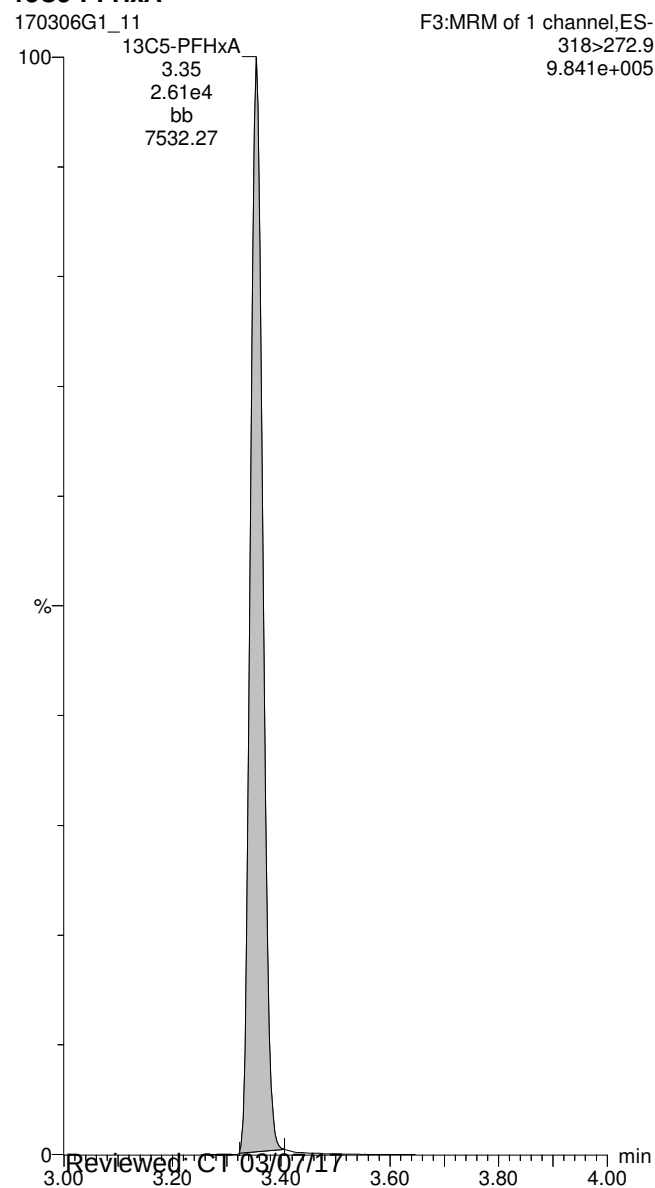
Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-11.qld

Last Altered: Tuesday, March 07, 2017 10:07:24 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 10:08:40 AM Pacific Standard Time

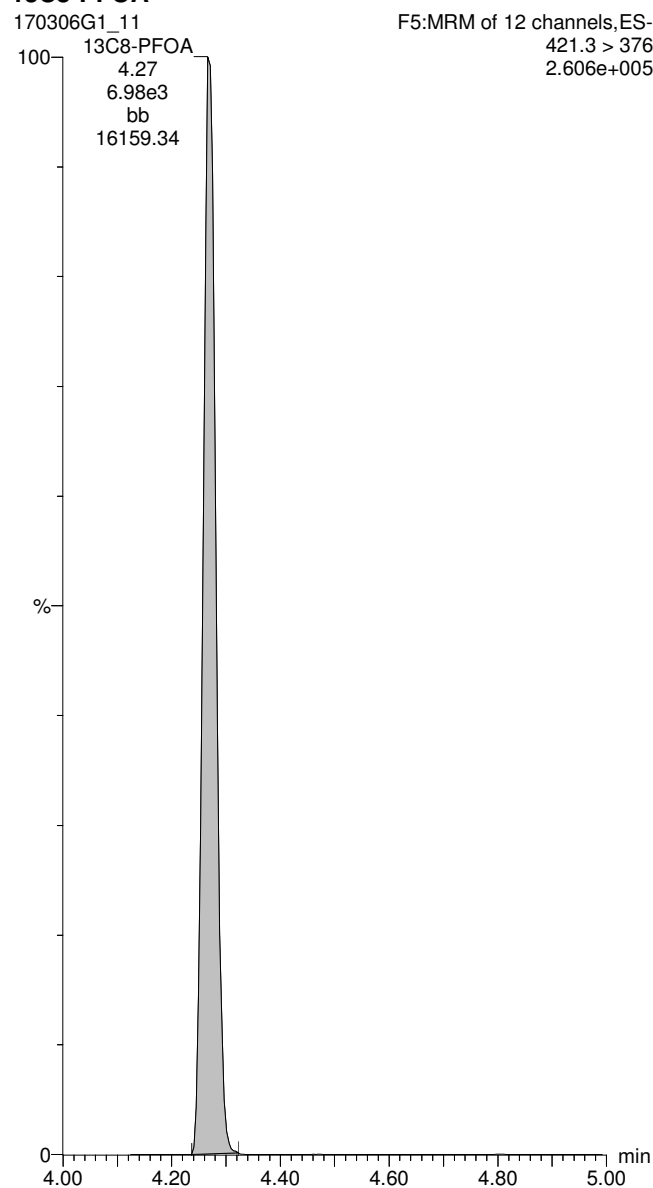
ID: 1700268-01 WI-CV-GW09M-0217 0.12317, Description: WI-CV-GW09M-0217, Name: 170306G1_11, Date: 06-Mar-2017, Time: 17:30:29, Instrument: , Lab: , User:

13C5-PFHxA

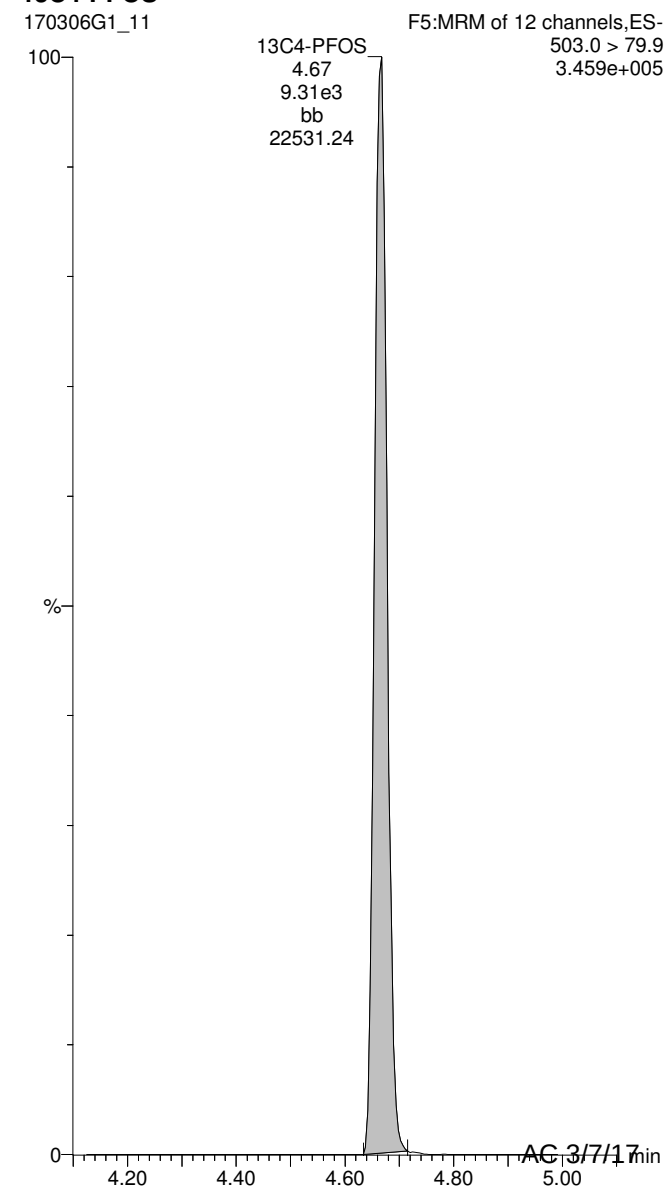


Work Order 1700268

13C8-PFOA



13C4-PFOS



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Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-18.qld

Last Altered: Monday, March 06, 2017 12:24:51 Pacific Standard Time

Printed: Monday, March 06, 2017 12:25:04 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700268-02RE1 WI-CV-GW05M-0217 0.125, Description: WI-CV-GW05M-0217, Name: 170305G1_18, Date: 05-Mar-2017, Time: 16:07:28

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7	3.078e4	5.212e3		0.0655	3.04	473	
2	4 PFOA	413 > 368.7	8.839e4	2.299e4		0.0655	4.31	921	
3	6 PFOS	499 > 79.9	3.633e1	7.227e3		0.0655	4.69	3.26	
4	7 13C3-PFBS	302.0 > 98.8	5.212e3	1.241e4	0.410	0.0655	3.04	196	102
5	10 13C2-PFOA	414.9 > 369.7	2.299e4	5.874e3	4.608	0.0655	4.31	162	84.9
6	12 13C8-PFOS	507.0 > 79.9	7.227e3	7.639e3	0.958	0.0655	4.70	189	98.7
7	14 13C3-PFHxS	401.9 > 79.9	1.241e4	1.241e4	1.000	0.0655	4.03	191	100
8	15 13C8-PFOA	421.3 > 376	5.874e3	5.874e3	1.000	0.0655	4.31	191	100
9	17 13C4-PFOS	503.0 > 79.9	7.639e3	7.639e3	1.000	0.0655	4.70	191	100

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-18.qld

Last Altered: Monday, March 06, 2017 12:24:51 Pacific Standard Time

Printed: Monday, March 06, 2017 12:25:23 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700268-02RE1 WI-CV-GW05M-0217 0.125, Description: WI-CV-GW05M-0217, Name: 170305G1_18, Date: 05-Mar-2017, Time: 16:07:28

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18 Total PFBS	299 > 79.7		4.778e3		0.0655		473	
2	20 Total PFOA	413 > 368.7		2.299e4		0.0655		1190	
3	21 Total PFOS	499 > 79.9		7.227e3		0.0655		3.26	

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-18.qld

Last Altered: Monday, March 06, 2017 12:24:51 Pacific Standard Time

Printed: Monday, March 06, 2017 12:25:04 Pacific Standard Time

Method: U:\G1.PRO\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700268-02RE1 WI-CV-GW05M-0217 0.125, Description: WI-CV-GW05M-0217, Name: 170305G1_18, Date: 05-Mar-2017, Time: 16:07:28

Total PFBS

	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	299 > 79.7	3.04	30777.482	5211.732	473.2

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	398.9 > 79.6	4.03	24688.721	4778.333	543.2
2	19 Total PFHxS	398.9 > 79.6	3.93	8736.571	4778.333	191.7
3	19 Total PFHxS	398.9 > 79.6	3.91	4008.230	4778.333	87.5
4	19 Total PFHxS	398.9 > 79.6	3.82	156.679	4778.333	2.6
5	19 Total PFHxS	398.9 > 79.6	3.78	7.470	4778.333	

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	413 > 368.7	4.31	88389.422	22992.320	920.6
2	20 Total PFOA	413 > 368.7	4.21	25656.943	22992.320	264.8

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1	6 PFOS	499 > 79.9	4.69	36.328	7226.970	3.3

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-18.qld

Last Altered: Monday, March 06, 2017 12:24:51 Pacific Standard Time

Printed: Monday, March 06, 2017 12:25:04 Pacific Standard Time

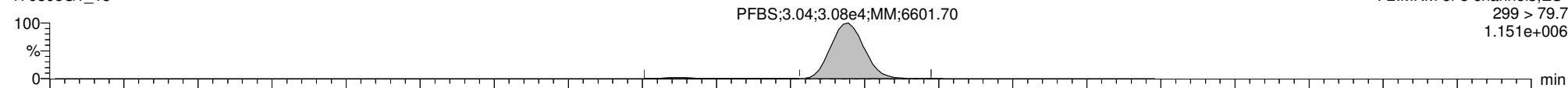
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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

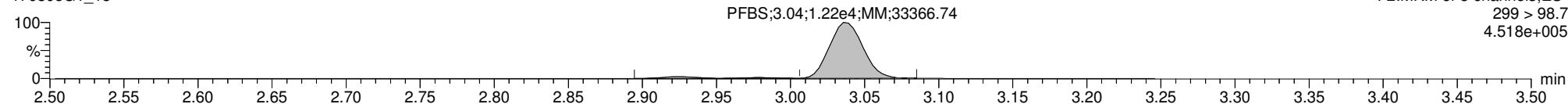
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PFBS

170305G1_18

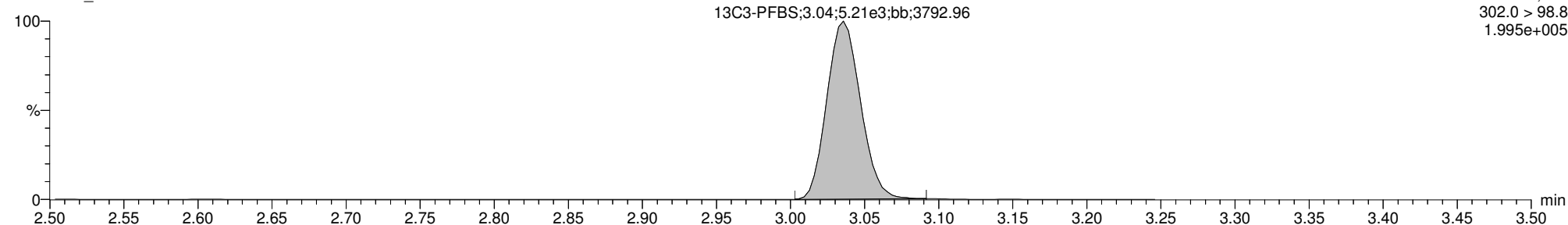


170305G1_18



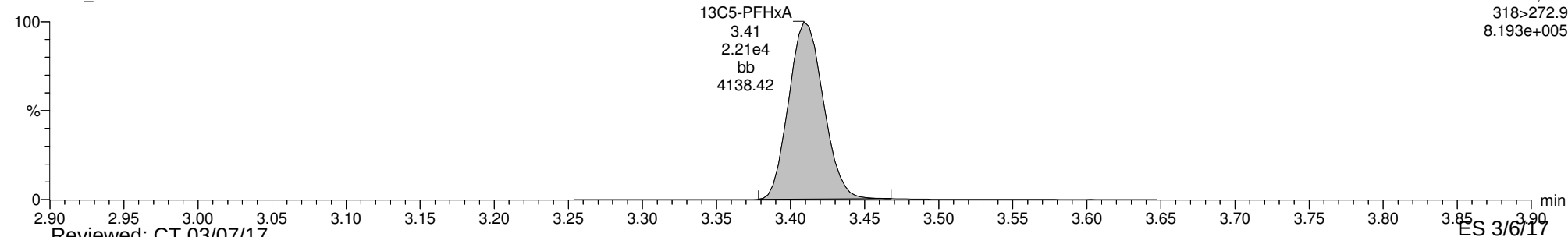
13C3-PFBS

170305G1_18



13C5-PFHxA

170305G1_18



Reviewed: CT 03/07/17

ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-18.qld

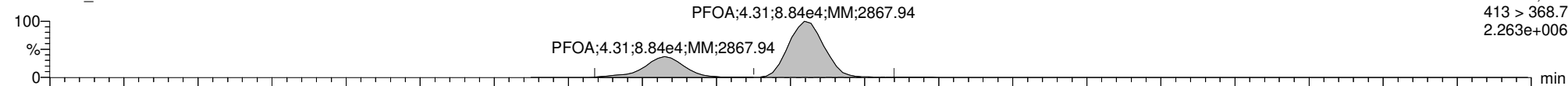
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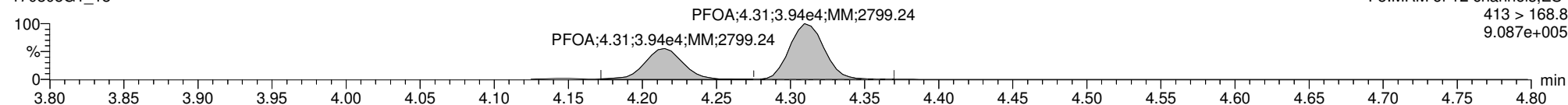
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PFOA

170305G1_18

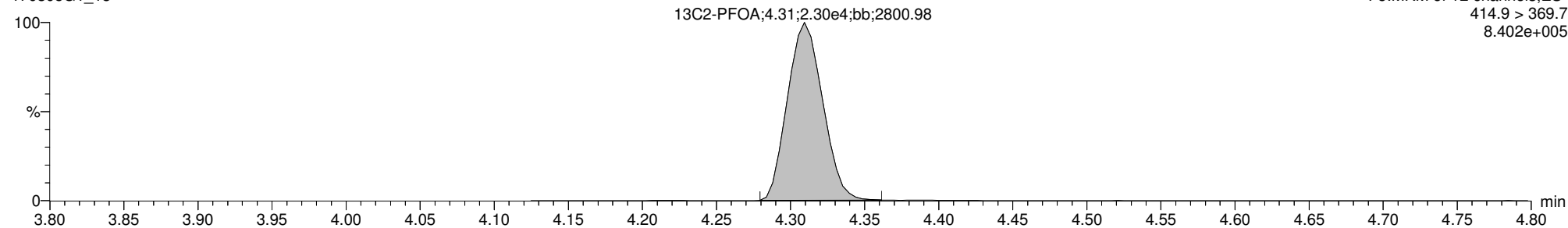


170305G1_18



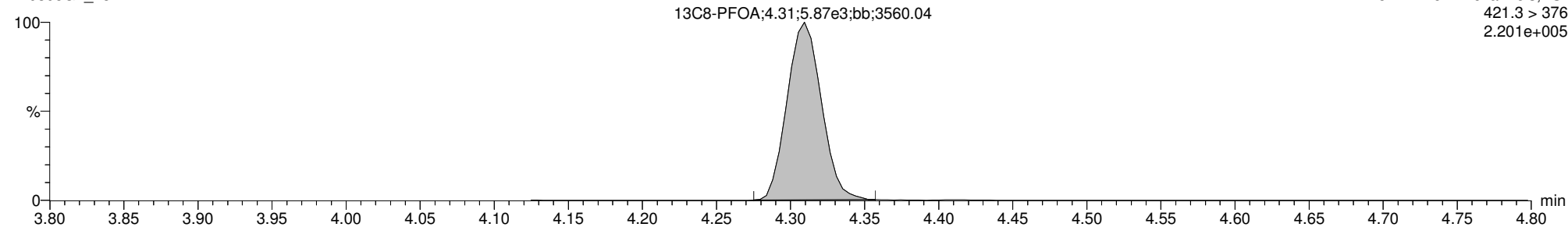
13C2-PFOA

170305G1_18



13C8-PFOA

170305G1_18



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-18.qld

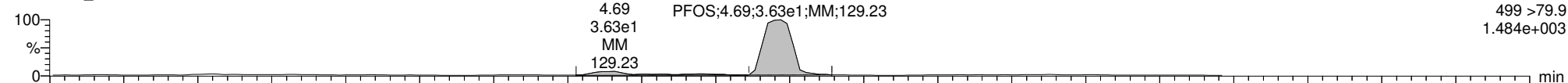
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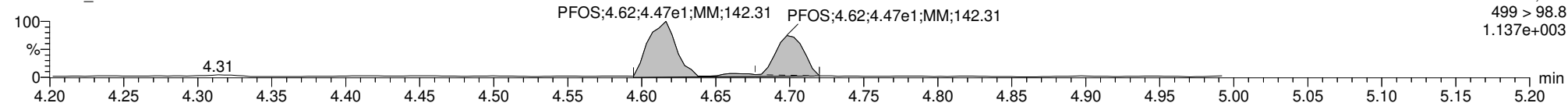
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PFOS

170305G1_18

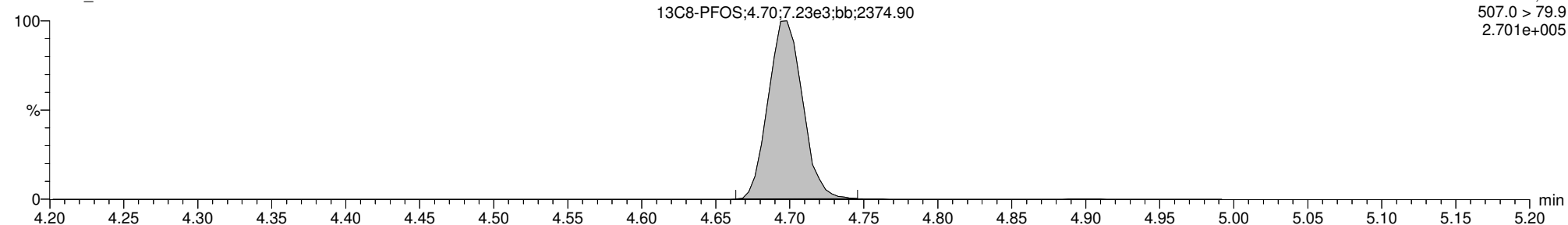


170305G1_18



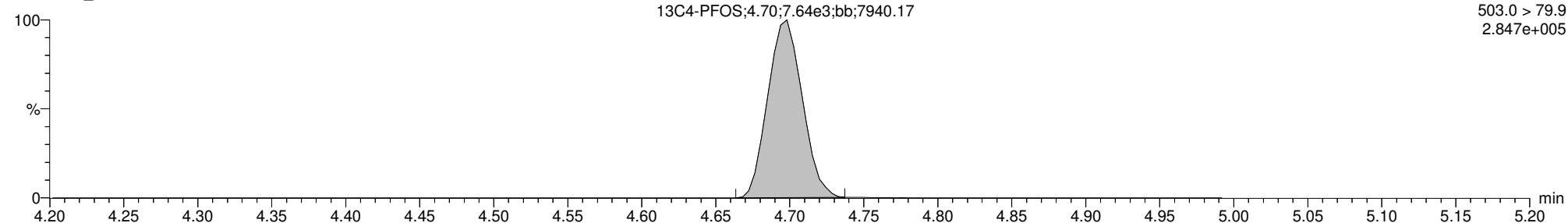
13C8-PFOS

170305G1_18



13C4-PFOS

170305G1_18



Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-12.qld

Last Altered: Tuesday, March 07, 2017 10:11:18 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 10:11:43 AM Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2_NEW.mdb 07 Mar 2017 09:58:54

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700268-03 WI-CV-GW05S-0217 0.12246, Description: WI-CV-GW05S-0217, Name: 170306G1_12, Date: 06-Mar-2017, Time: 17:43:02

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.695e3	5.521e3		0.122	2.97	12.9	
2	4 PFOA	413 > 368.7	2.240e3	2.778e4		0.122	4.27	8.52	
3	6 PFOS	499 > 79.9		1.065e4		0.122			
4	7 13C3-PFBS	302.0 > 98.8	5.521e3	1.789e4	0.410	0.122	2.96	76.9	75.3
5	8 13C4-PFHxA	367.2 > 321.8	1.259e4	1.789e4	1.098	0.122	3.86	65.4	64.1
6	9 18O2-PFHxS	403 > 102.6	6.769e3	1.789e4	0.434	0.122	3.98	88.9	87.1
7	10 13C2-PFOA	414.9 > 369.7	2.778e4	7.945e3	4.608	0.122	4.27	77.4	75.9
8	11 13C5-PFNA	468.2 > 422.9	8.267e3	1.254e4	0.867	0.122	4.60	77.6	76.0
9	12 13C8-PFOS	507.0 > 79.9	1.065e4	1.411e4	0.958	0.122	4.66	80.4	78.8
10	13 13C5-PFHxA	318>272.9	2.245e4	2.245e4	1.000	0.122	3.35	102	100
11	14 13C3-PFHxS	401.9 > 79.9	1.789e4	1.789e4	1.000	0.122	3.98	102	100
12	15 13C8-PFOA	421.3 > 376	7.945e3	7.945e3	1.000	0.122	4.27	102	100
13	16 13C9-PFNA	472.2 > 426.9	1.254e4	1.254e4	1.000	0.122	4.60	102	100
14	17 13C4-PFOS	503.0 > 79.9	1.411e4	1.411e4	1.000	0.122	4.66	102	100
15	18 Total PFBS	299 > 79.7		6.769e3		0.122		12.9	
16	20 Total PFOA	413 > 368.7		2.778e4		0.122		9.87	
17	21 Total PFOS	499 > 79.9		1.065e4		0.122			

Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-12.qld

Last Altered: Tuesday, March 07, 2017 10:11:18 AM Pacific Standard Time

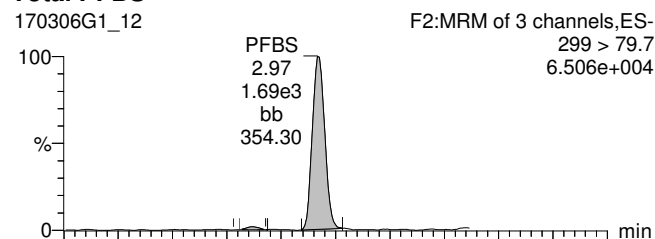
Printed: Tuesday, March 07, 2017 10:11:43 AM Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2_NEW.mdb 07 Mar 2017 09:58:54

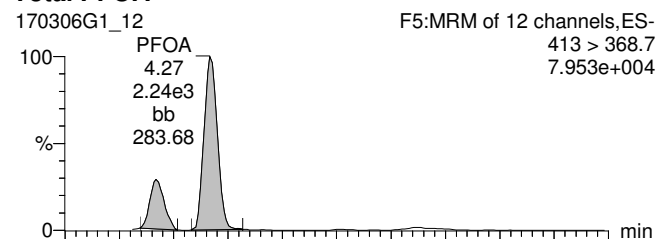
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ID: 1700268-03 WI-CV-GW05S-0217 0.12246, Description: WI-CV-GW05S-0217, Name: 170306G1_12, Date: 06-Mar-2017, Time: 17:43:02, Instrument: , Lab: , User:

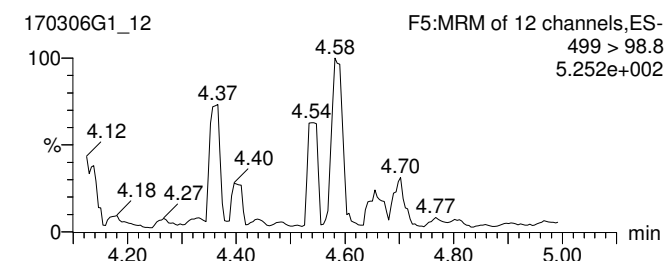
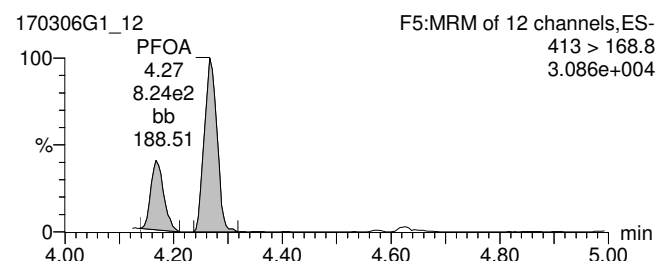
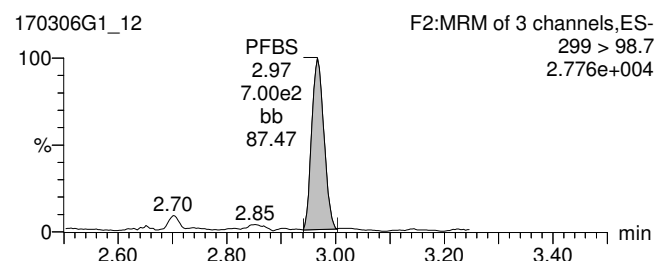
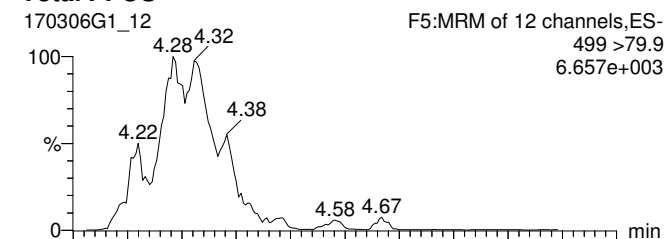
Total PFBS



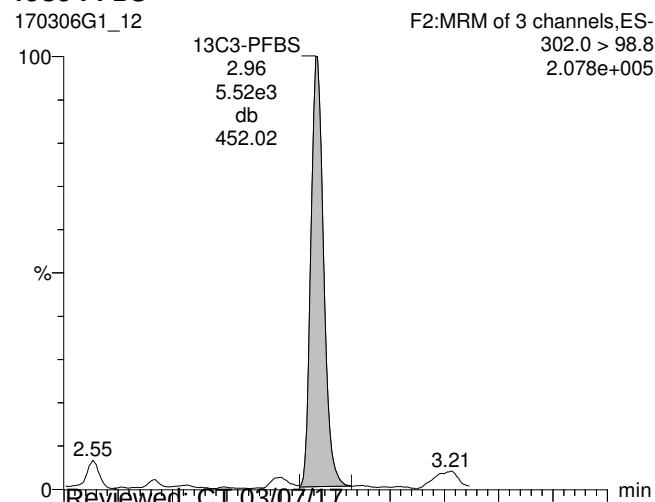
Total PFOA



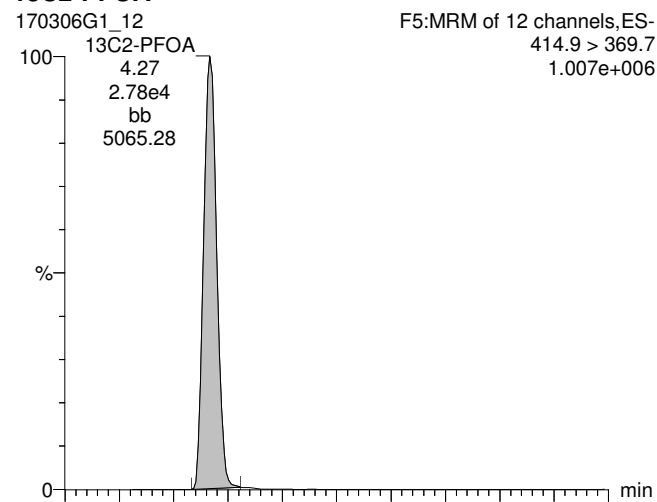
Total PFOS



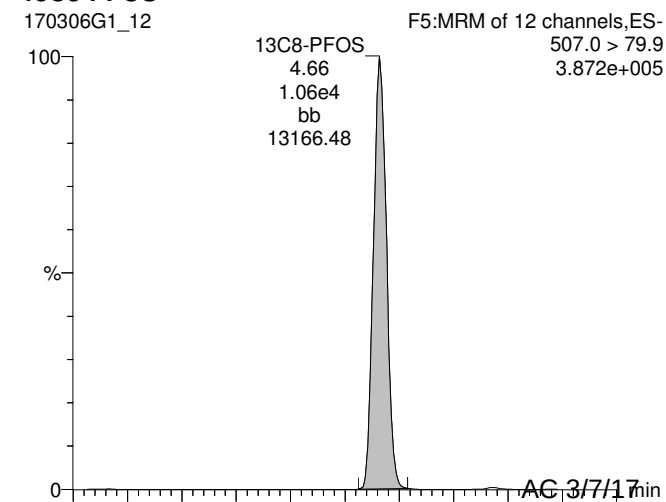
13C3-PFBS



13C2-PFOA



13C8-PFOS



Reviewed: C:\03\07\17

AC 3/7/17

Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-12.qld

Last Altered: Tuesday, March 07, 2017 10:11:18 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 10:11:43 AM Pacific Standard Time

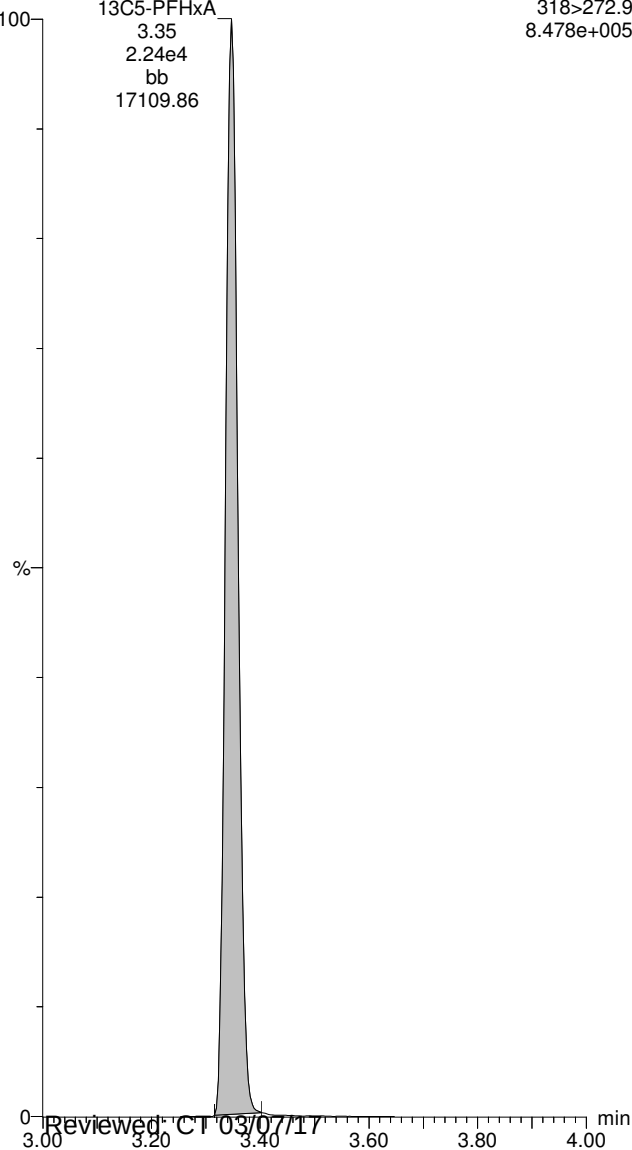
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13C5-PFHxA

170306G1_12

13C5-PFHxA
3.35
2.24e4
bb
17109.86

F3:MRM of 1 channel,ES-
318>272.9
8.478e+005

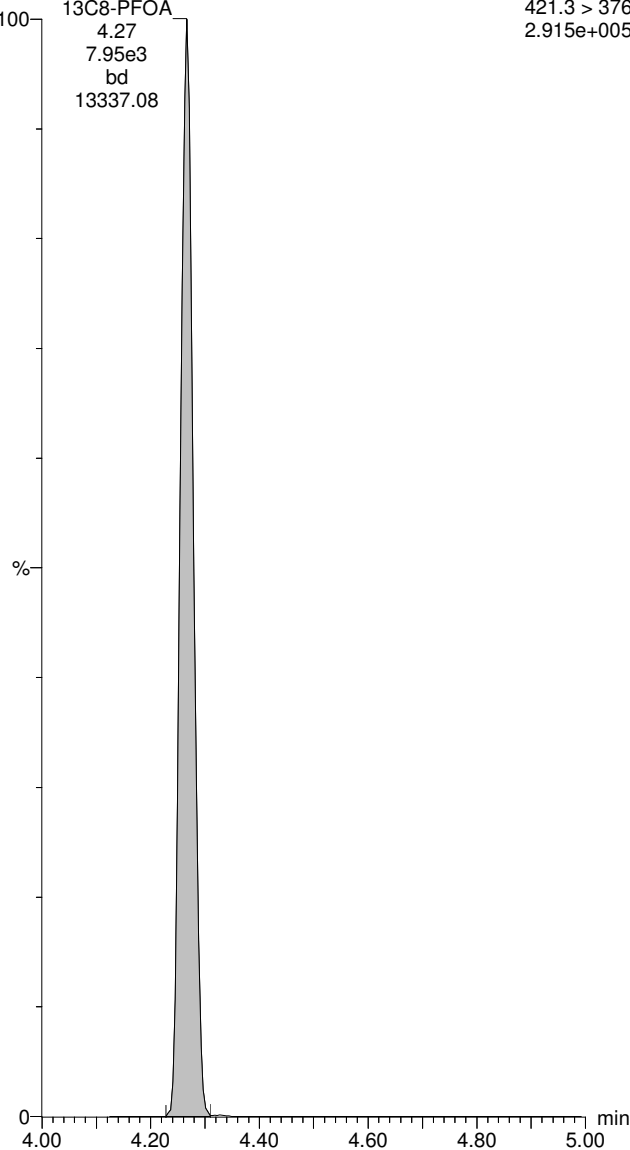


13C8-PFOA

170306G1_12

13C8-PFOA
4.27
7.95e3
bd
13337.08

F5:MRM of 12 channels,ES-
421.3 > 376
2.915e+005

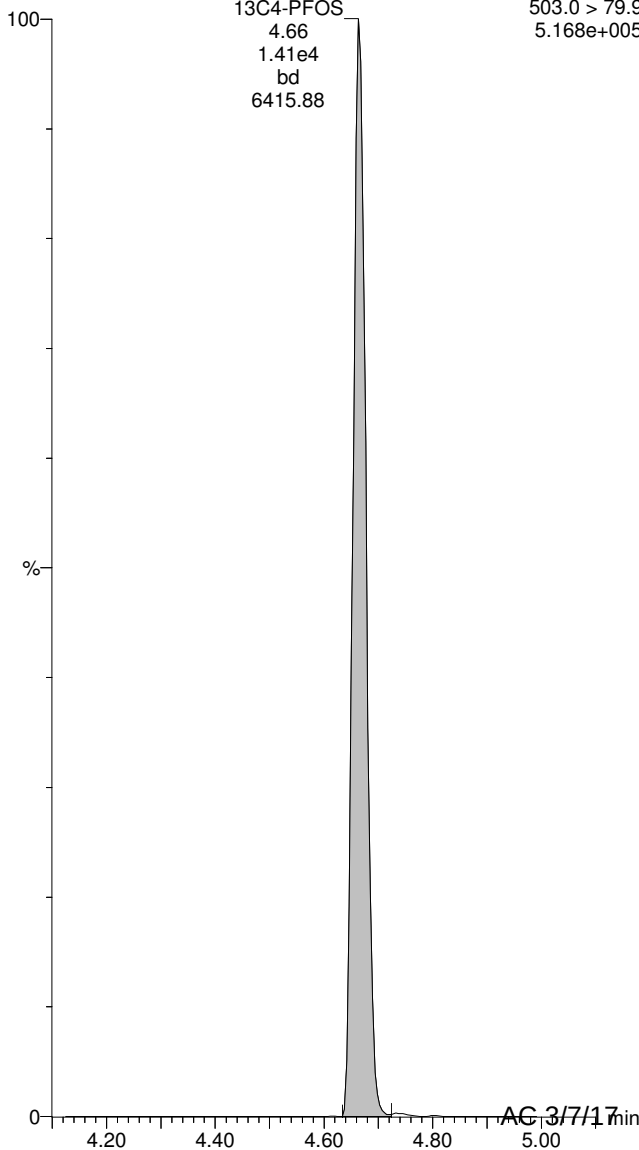


13C4-PFOS

170306G1_12

13C4-PFOS
4.66
1.41e4
bd
6415.88

F5:MRM of 12 channels,ES-
503.0 > 79.9
5.168e+005



Reviewed: 03/07/17

Work Order 1700268

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Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-19.qld

Last Altered: Monday, March 06, 2017 12:29:05 Pacific Standard Time

Printed: Monday, March 06, 2017 12:30:37 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700268-04RE1 WI-CV-GW11M-0217 0.125, Description: WI-CV-GW11M-0217, Name: 170305G1_19, Date: 05-Mar-2017, Time: 16:20:00

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7		6.074e3		0.0653			
2	4 PFOA	413 > 368.7	2.160e2	3.191e4		0.0653	4.31		
3	6 PFOS	499 > 79.9		7.406e3		0.0653			
4	7 13C3-PFBS	302.0 > 98.8	6.074e3	1.635e4	0.410	0.0653	3.04	174	90.6
5	10 13C2-PFOA	414.9 > 369.7	3.191e4	7.918e3	4.608	0.0653	4.31	167	87.4
6	12 13C8-PFOS	507.0 > 79.9	7.406e3	8.974e3	0.958	0.0653	4.70	165	86.1
7	14 13C3-PFHxS	401.9 > 79.9	1.635e4	1.635e4	1.000	0.0653	4.03	192	100
8	15 13C8-PFOA	421.3 > 376	7.918e3	7.918e3	1.000	0.0653	4.31	192	100
9	17 13C4-PFOS	503.0 > 79.9	8.974e3	8.974e3	1.000	0.0653	4.70	192	100

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-19.qld

Last Altered: Monday, March 06, 2017 12:29:05 Pacific Standard Time

Printed: Monday, March 06, 2017 12:33:03 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700268-04RE1 WI-CV-GW11M-0217 0.125, Description: WI-CV-GW11M-0217, Name: 170305G1_19, Date: 05-Mar-2017, Time: 16:20:00

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18 Total PFBS	299 > 79.7		5.850e3		0.0653			
2	20 Total PFOA	413 > 368.7		3.191e4		0.0653			
3	21 Total PFOS	499 > 79.9		7.406e3		0.0653			

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-19.qld

Last Altered: Monday, March 06, 2017 12:29:05 Pacific Standard Time

Printed: Monday, March 06, 2017 12:30:37 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700268-04RE1 WI-CV-GW11M-0217 0.125, Description: WI-CV-GW11M-0217, Name: 170305G1_19, Date: 05-Mar-2017, Time: 16:20:00

Total PFBS

	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	299 > 79.7			6073.773	

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	19 Total PFHxS	398.9 > 79.6	4.03	18.954	5849.952	
2	3 PFHxS	398.9 > 79.6	4.03	19.955	5849.952	

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	413 > 368.7	4.31	215.977	31905.305	

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1						

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-19.qld

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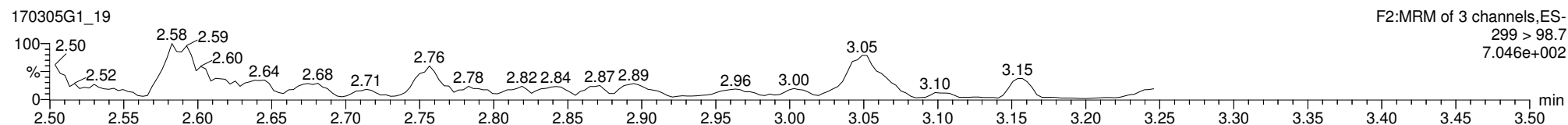
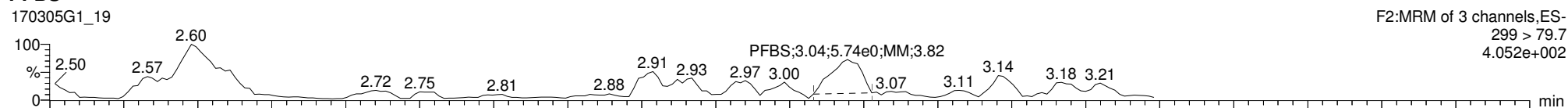
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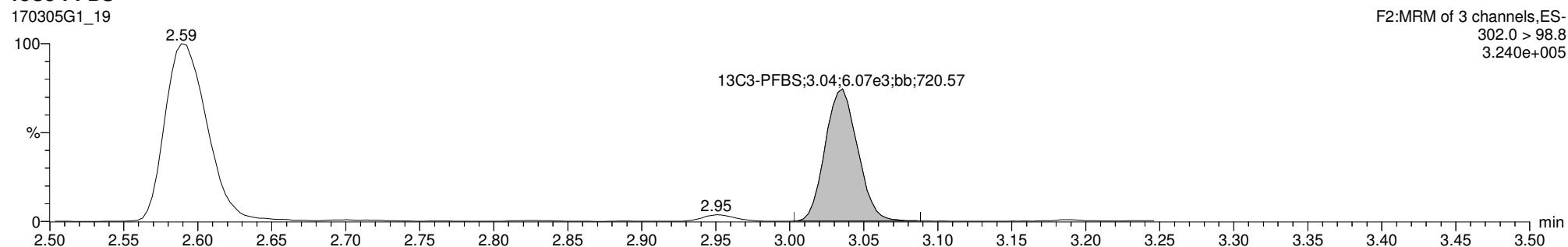
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ID: 1700268-04RE1 WI-CV-GW11M-0217 0.125, Description: WI-CV-GW11M-0217, Name: 170305G1_19, Date: 05-Mar-2017, Time: 16:20:00, Instrument: , Lab: , User:

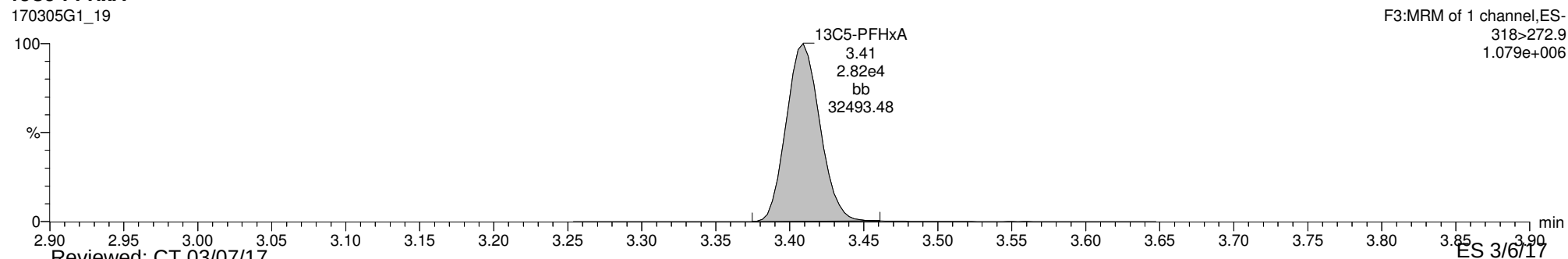
PFBS



13C3-PFBS



13C5-PFHxA



Reviewed: CT 03/07/17

ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-19.qld

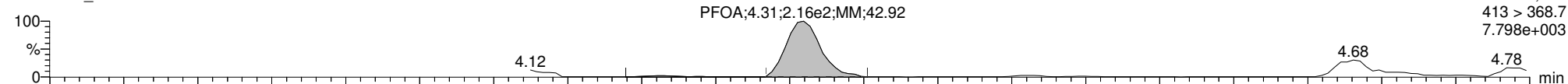
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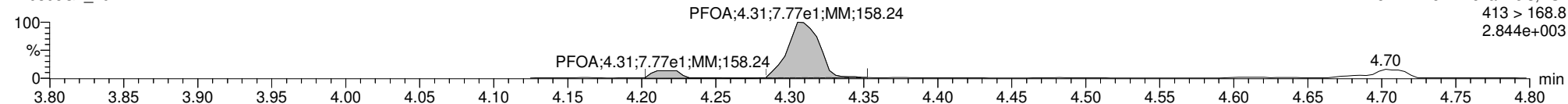
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PFOA

170305G1_19

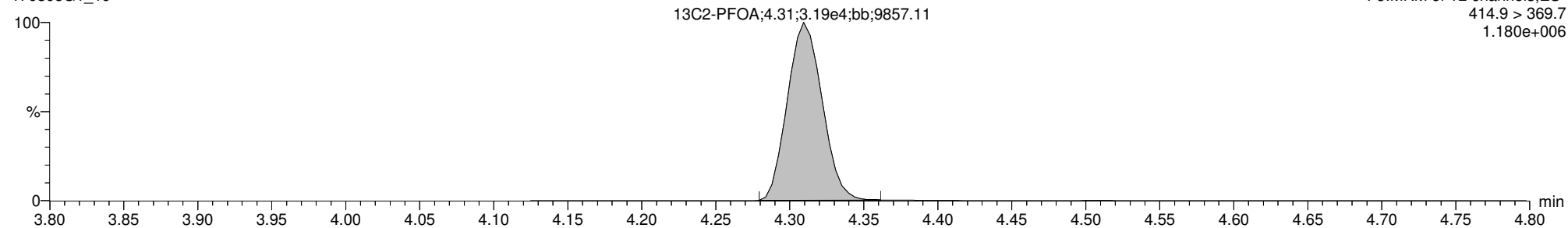


170305G1_19



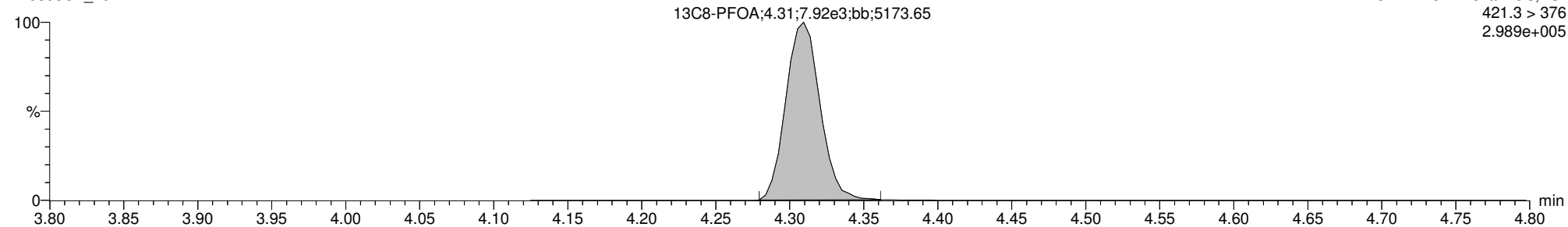
13C2-PFOA

170305G1_19



13C8-PFOA

170305G1_19



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-19.qld

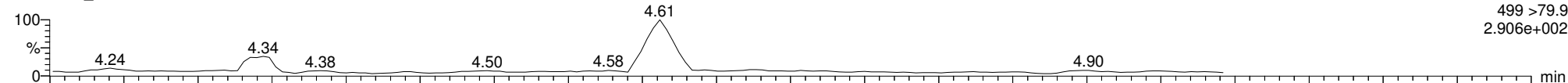
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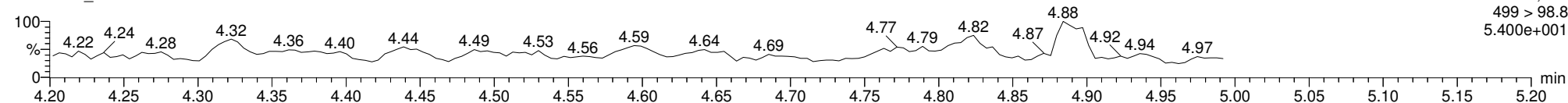
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PFOS

170305G1_19

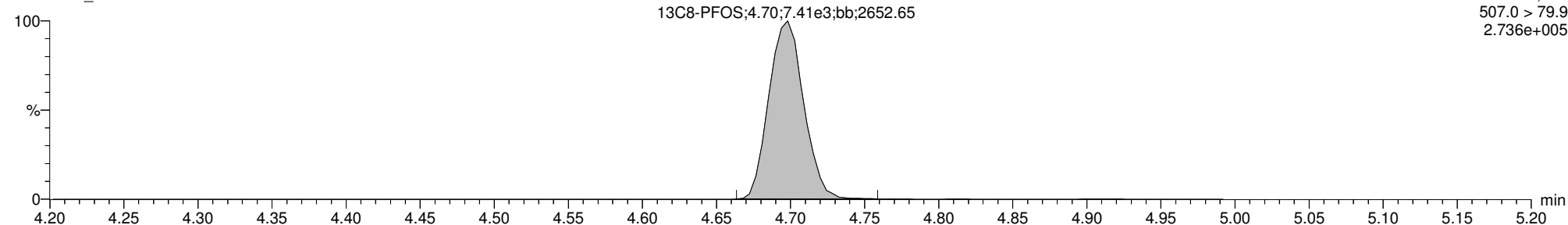


170305G1_19



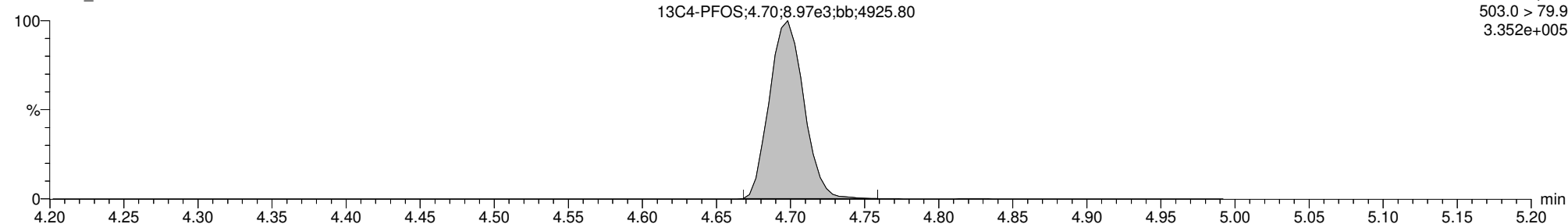
13C8-PFOS

170305G1_19



13C4-PFOS

170305G1_19



Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-13.qld

Last Altered: Tuesday, March 07, 2017 10:13:22 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 10:13:47 AM Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2_NEW.mdb 07 Mar 2017 09:58:54

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700268-05 WI-CV-GW11S-0217 0.12773, Description: WI-CV-GW11S-0217, Name: 170306G1_13, Date: 06-Mar-2017, Time: 17:55:31

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7		6.062e3		0.128			
2	4 PFOA	413 > 368.7	2.749e2	3.232e4		0.128	4.27		
3	6 PFOS	499 > 79.9	1.415e1	1.063e4		0.128	4.59	1.00	
4	7 13C3-PFBS	302.0 > 98.8	6.062e3	1.859e4	0.410	0.128	2.97	77.9	79.6
5	8 13C4-PFHxA	367.2 > 321.8	1.437e4	1.859e4	1.098	0.128	3.86	68.9	70.4
6	9 18O2-PFHxS	403 > 102.6	7.150e3	1.859e4	0.434	0.128	3.99	86.7	88.6
7	10 13C2-PFOA	414.9 > 369.7	3.232e4	7.544e3	4.608	0.128	4.27	91.0	93.0
8	11 13C5-PFNA	468.2 > 422.9	8.704e3	1.134e4	0.867	0.128	4.60	86.7	88.5
9	12 13C8-PFOS	507.0 > 79.9	1.063e4	1.236e4	0.958	0.128	4.66	87.8	89.8
10	13 13C5-PFHxA	318 > 272.9	2.487e4	2.487e4	1.000	0.128	3.35	97.9	100
11	14 13C3-PFHxS	401.9 > 79.9	1.859e4	1.859e4	1.000	0.128	3.98	97.9	100
12	15 13C8-PFOA	421.3 > 376	7.544e3	7.544e3	1.000	0.128	4.27	97.9	100
13	16 13C9-PFNA	472.2 > 426.9	1.134e4	1.134e4	1.000	0.128	4.60	97.9	100
14	17 13C4-PFOS	503.0 > 79.9	1.236e4	1.236e4	1.000	0.128	4.66	97.9	100
15	18 Total PFBS	299 > 79.7		7.150e3		0.128			
16	20 Total PFOA	413 > 368.7		3.232e4		0.128			
17	21 Total PFOS	499 > 79.9		1.063e4		0.128		1.00	

Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-13.qld

Last Altered: Tuesday, March 07, 2017 10:13:22 AM Pacific Standard Time

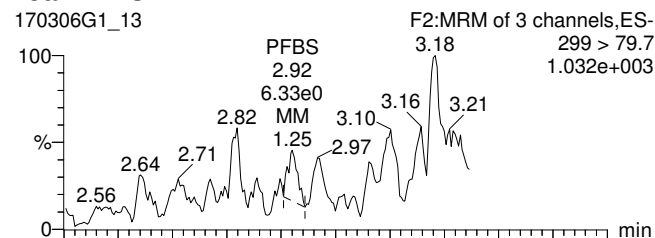
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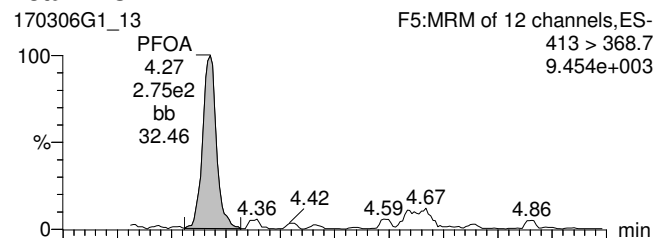
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ID: 1700268-05 WI-CV-GW11S-0217 0.12773, Description: WI-CV-GW11S-0217, Name: 170306G1_13, Date: 06-Mar-2017, Time: 17:55:31, Instrument: , Lab: , User:

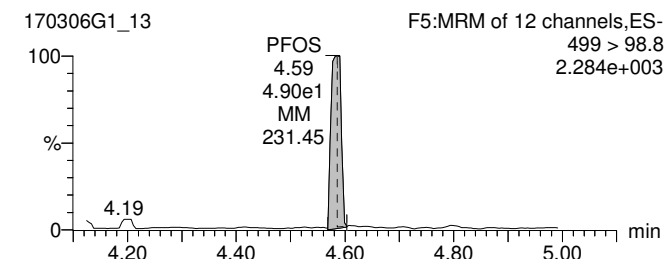
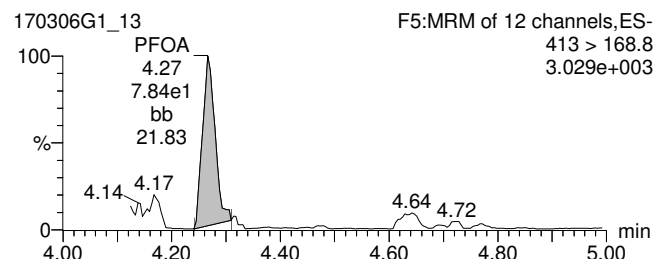
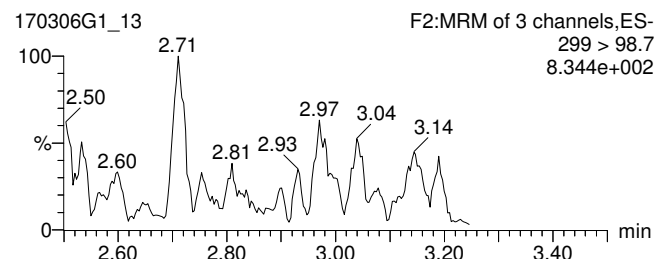
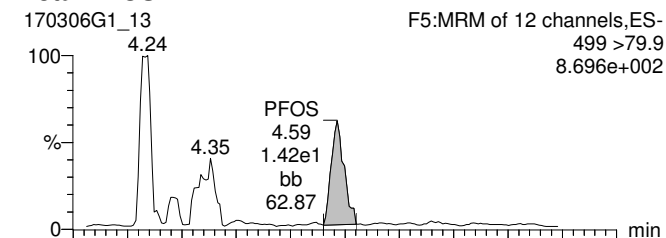
Total PFBS



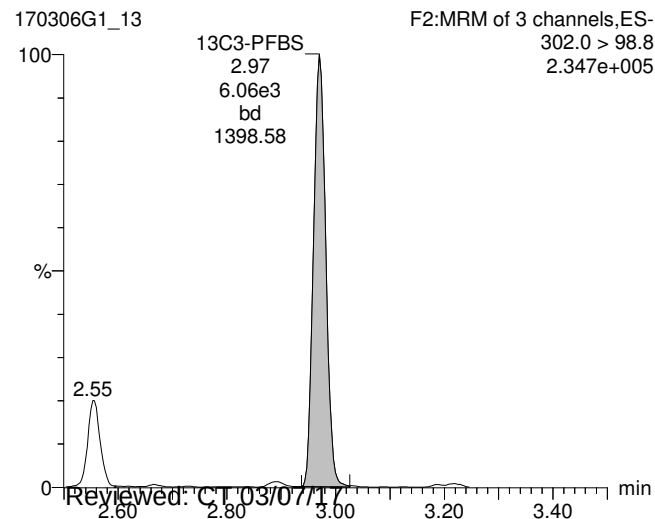
Total PFOA



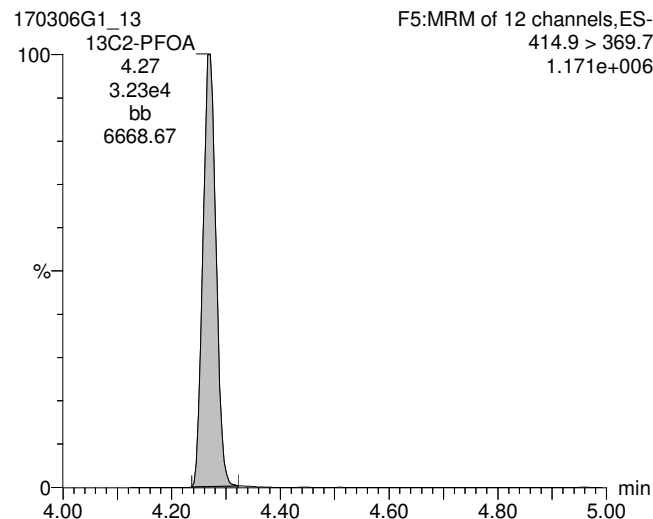
Total PFOS



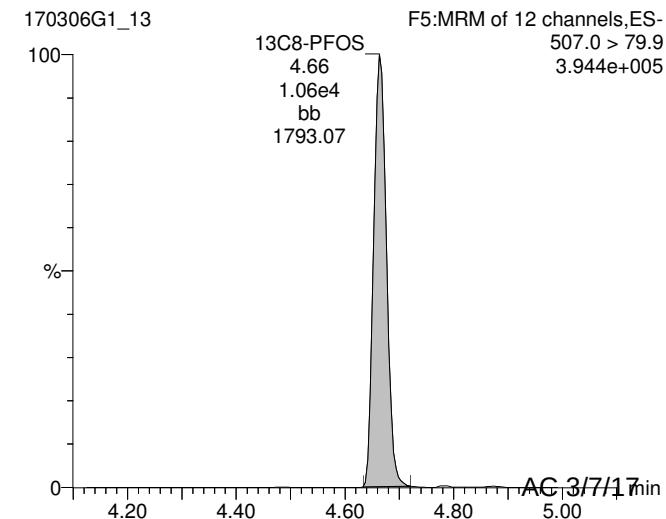
13C3-PFBS



13C2-PFOA



13C8-PFOS



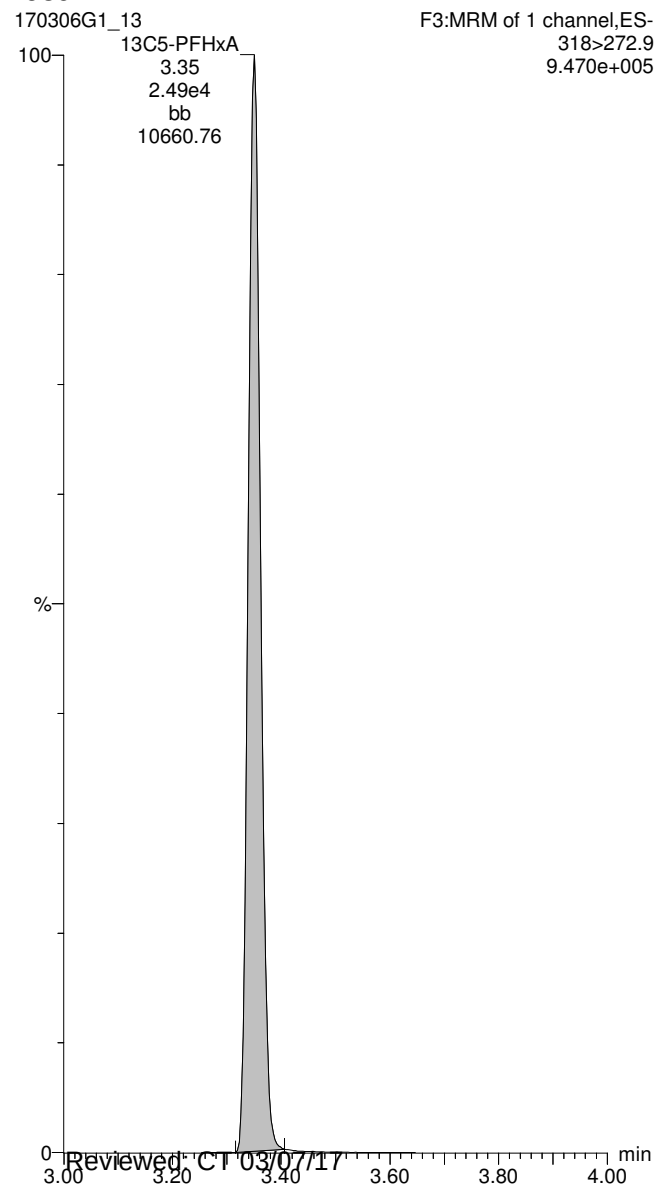
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Last Altered: Tuesday, March 07, 2017 10:13:22 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 10:13:47 AM Pacific Standard Time

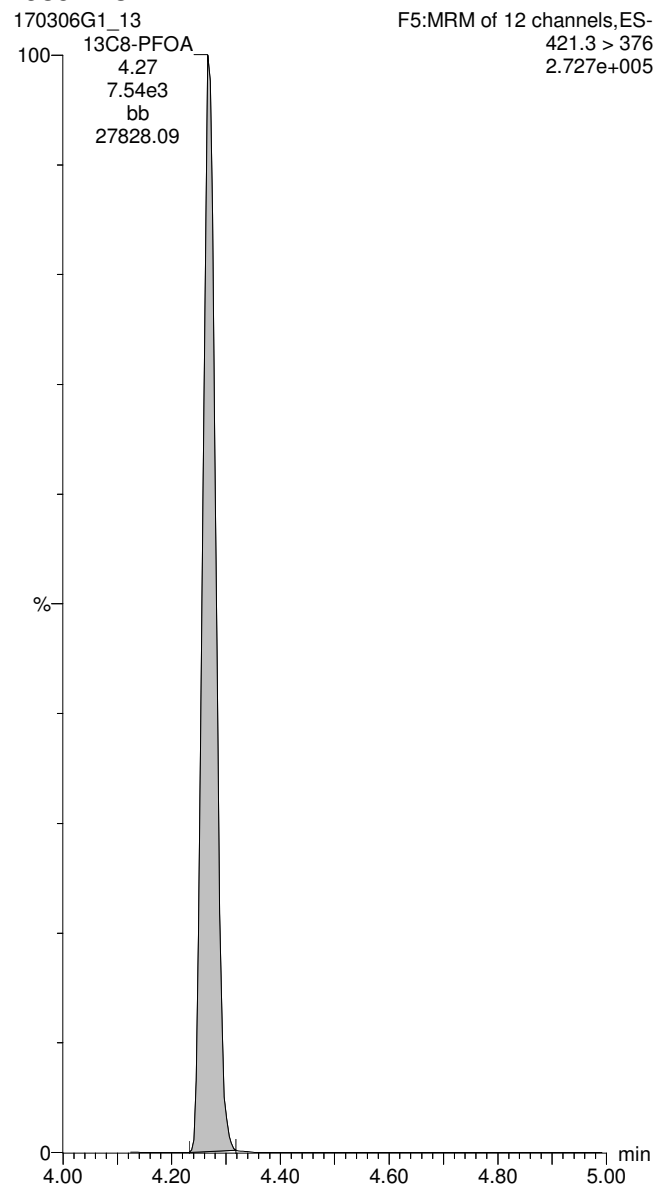
ID: 1700268-05 WI-CV-GW11S-0217 0.12773, Description: WI-CV-GW11S-0217, Name: 170306G1_13, Date: 06-Mar-2017, Time: 17:55:31, Instrument: , Lab: , User:

13C5-PFHxA

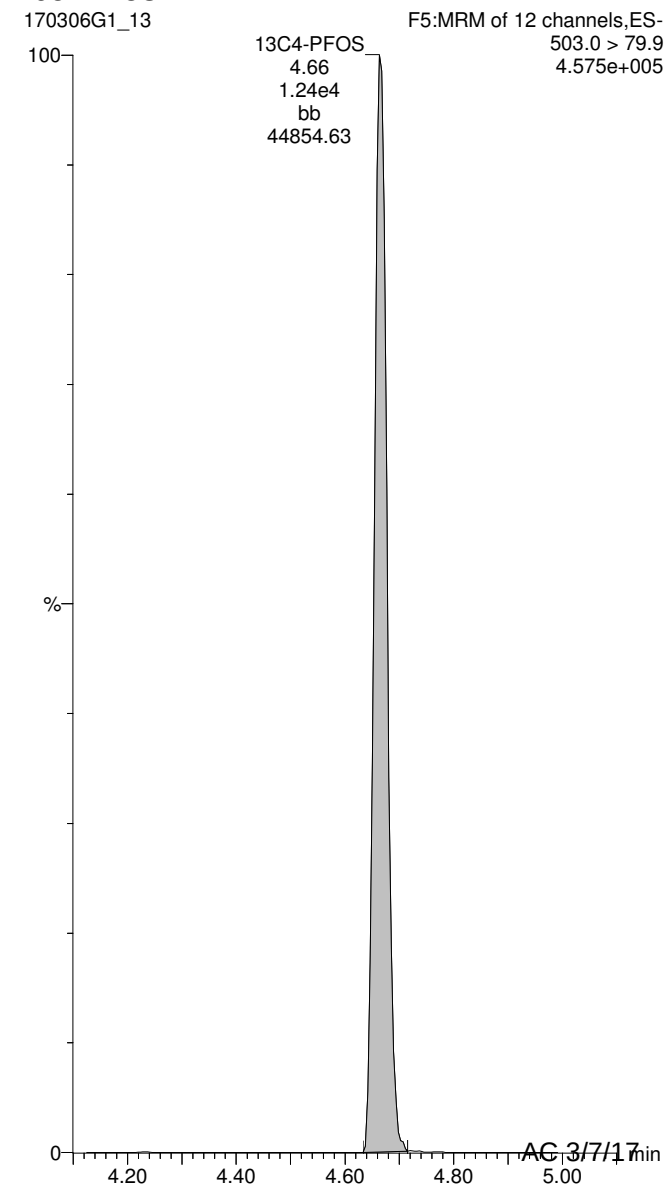


Work Order 1700268

13C8-PFOA



13C4-PFOS



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Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-14.qld

Last Altered: Tuesday, March 07, 2017 10:15:13 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 10:15:33 AM Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2_NEW.mdb 07 Mar 2017 09:58:54

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700268-07 WI-CV-EB06-022617 0.10638, Description: WI-CV-EB06-022617, Name: 170306G1_14, Date: 06-Mar-2017, Time: 18:08:03

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7		5.775e3		0.106			
2	4 PFOA	413 > 368.7	2.771e2	3.073e4		0.106	4.27		
3	6 PFOS	499 > 79.9	1.150e1	1.189e4		0.106	4.59	1.12	
4	7 13C3-PFBS	302.0 > 98.8	5.775e3	1.623e4	0.410	0.106	2.97	102	86.8
5	8 13C4-PFHxA	367.2 > 321.8	1.489e4	1.623e4	1.098	0.106	3.87	98.2	83.5
6	9 18O2-PFHxS	403 > 102.6	6.650e3	1.623e4	0.434	0.106	3.99	111	94.4
7	10 13C2-PFOA	414.9 > 369.7	3.073e4	7.924e3	4.608	0.106	4.27	98.9	84.2
8	11 13C5-PFNA	468.2 > 422.9	8.176e3	1.146e4	0.867	0.106	4.60	96.7	82.3
9	12 13C8-PFOS	507.0 > 79.9	1.189e4	1.350e4	0.958	0.106	4.66	108	91.9
10	13 13C5-PFHxA	318>272.9	2.647e4	2.647e4	1.000	0.106	3.35	118	100
11	14 13C3-PFHxS	401.9 > 79.9	1.623e4	1.623e4	1.000	0.106	3.99	118	100
12	15 13C8-PFOA	421.3 > 376	7.924e3	7.924e3	1.000	0.106	4.27	118	100
13	16 13C9-PFNA	472.2 > 426.9	1.146e4	1.146e4	1.000	0.106	4.60	118	100
14	17 13C4-PFOS	503.0 > 79.9	1.350e4	1.350e4	1.000	0.106	4.66	118	100
15	18 Total PFBS	299 > 79.7		6.650e3		0.106			
16	20 Total PFOA	413 > 368.7		3.073e4		0.106			
17	21 Total PFOS	499 > 79.9		1.189e4		0.106		1.12	

Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-14.qld

Last Altered: Tuesday, March 07, 2017 10:15:13 AM Pacific Standard Time

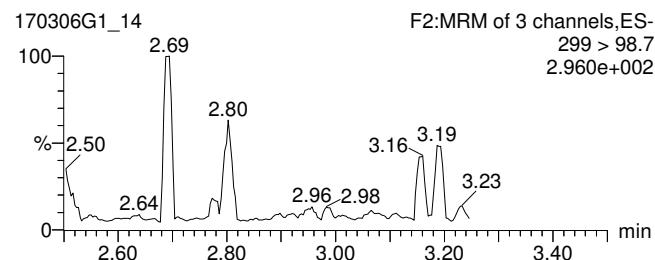
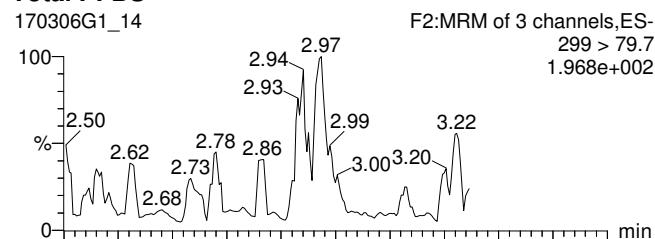
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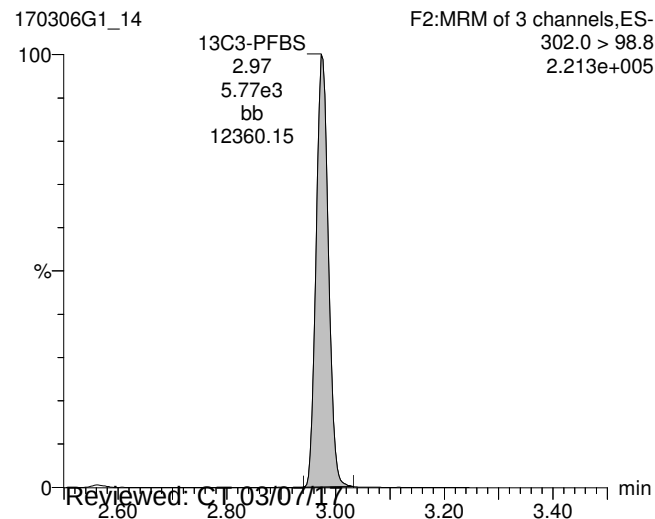
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ID: 1700268-07 WI-CV-EB06-022617 0.10638, Description: WI-CV-EB06-022617, Name: 170306G1_14, Date: 06-Mar-2017, Time: 18:08:03, Instrument: , Lab: , User:

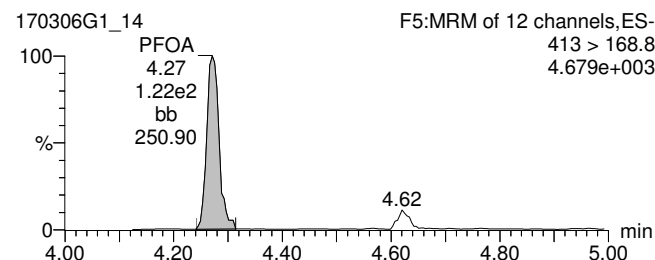
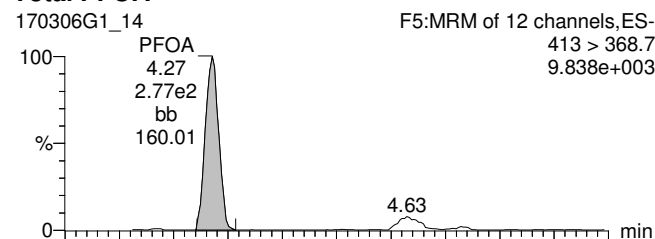
Total PFBS



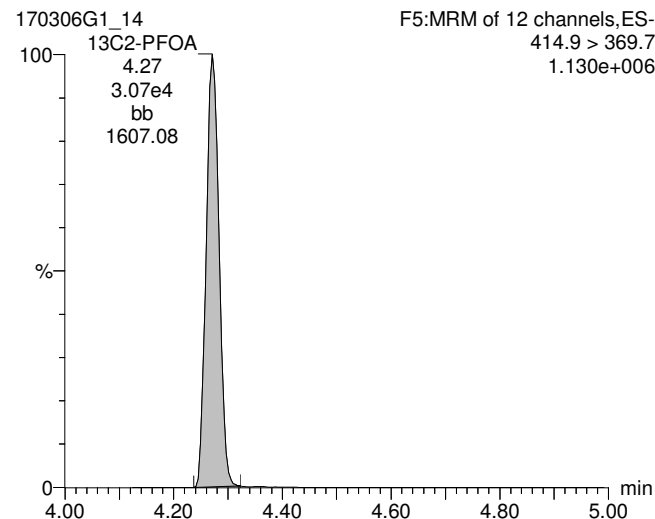
13C3-PFBS



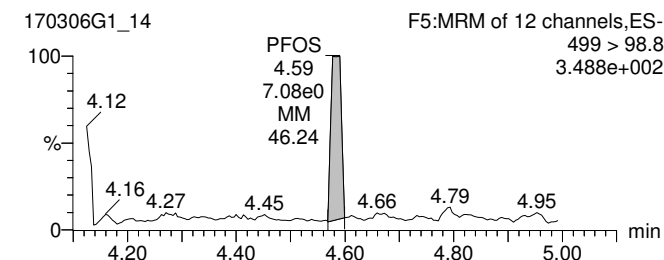
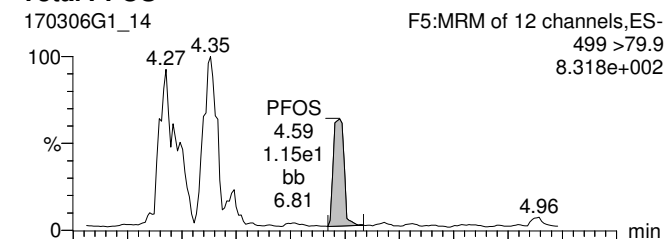
Total PFOA



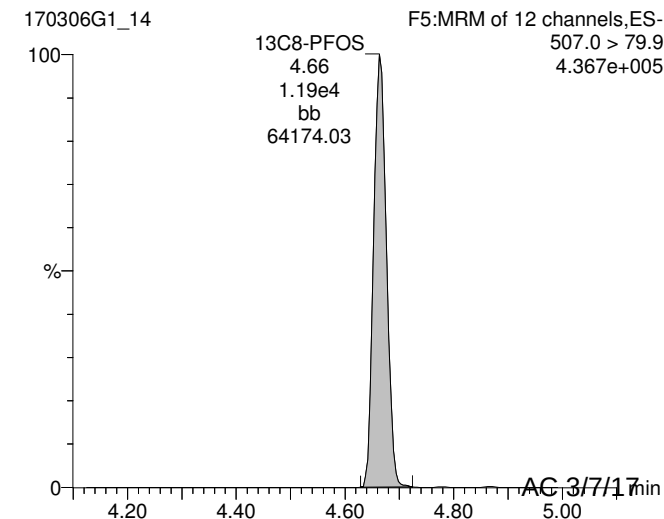
13C2-PFOA



Total PFOS



13C8-PFOS



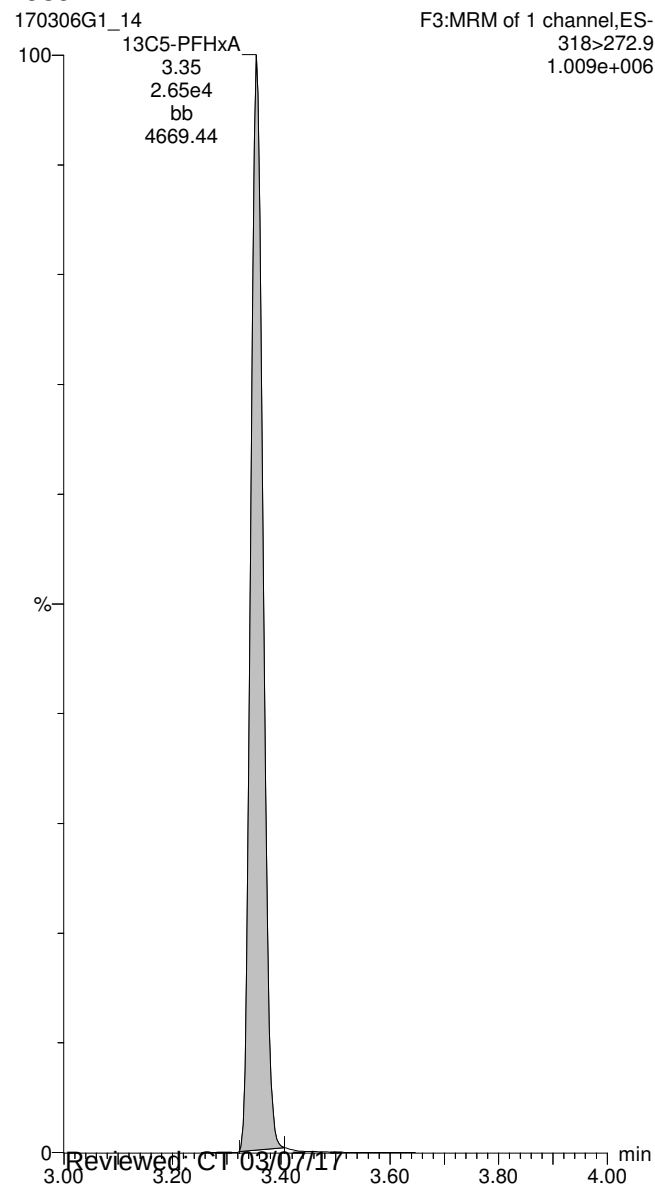
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Last Altered: Tuesday, March 07, 2017 10:15:13 AM Pacific Standard Time

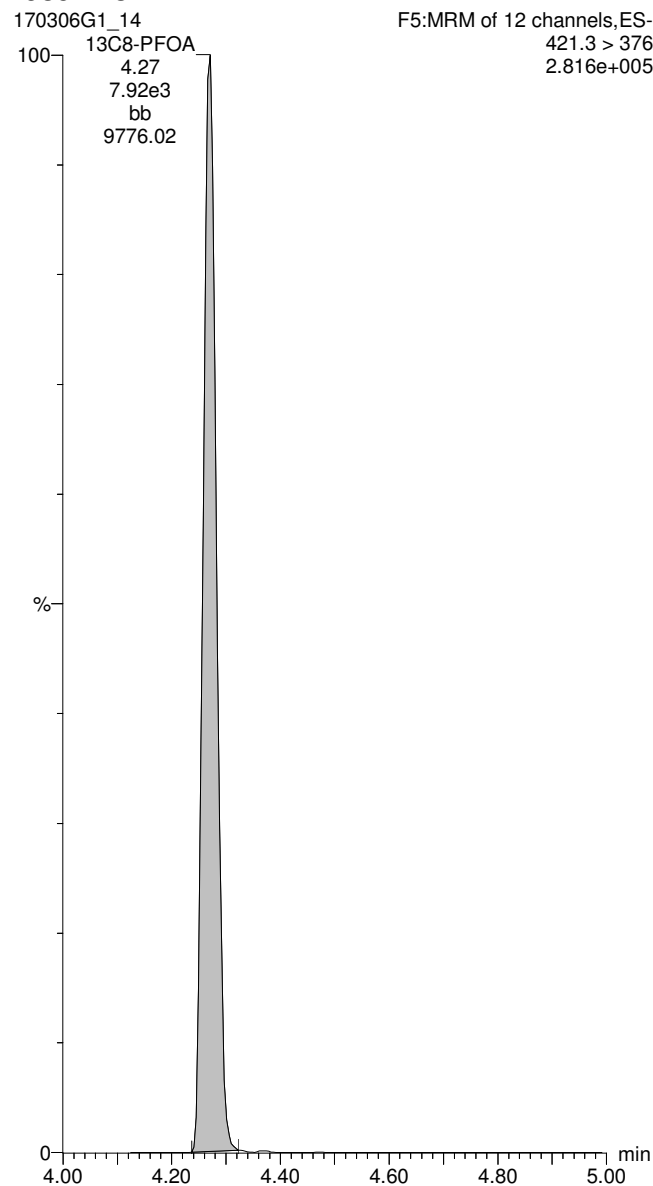
Printed: Tuesday, March 07, 2017 10:15:33 AM Pacific Standard Time

ID: 1700268-07 WI-CV-EB06-022617 0.10638, Description: WI-CV-EB06-022617, Name: 170306G1_14, Date: 06-Mar-2017, Time: 18:08:03, Instrument: , Lab: , User:

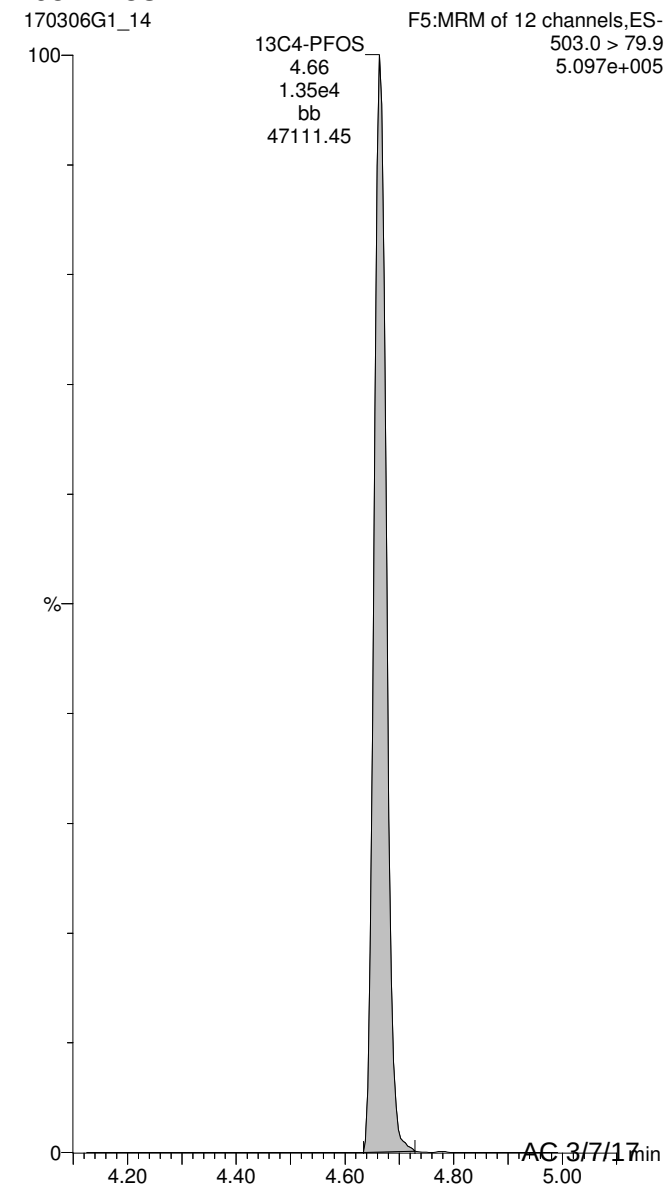
13C5-PFHxA



13C8-PFOA



13C4-PFOS



Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-15.qld

Last Altered: Tuesday, March 07, 2017 10:23:02 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 10:24:17 AM Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700268-08 WI-CV-EB05-022417 0.12657, Description: WI-CV-EB05-022417, Name: 170306G1_15, Date: 06-Mar-2017, Time: 18:20:37

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7		6.009e3		0.127			
2	4 PFOA	413 > 368.7	2.492e2	3.250e4		0.127	4.27		
3	6 PFOS	499 > 79.9		1.088e4		0.127			
4	7 13C3-PFBS	302.0 > 98.8	6.009e3	1.497e4	0.410	0.127	2.98	96.7	97.9
5	8 13C4-PFHxA	367.2 > 321.8	1.501e4	1.497e4	1.098	0.127	3.87	90.2	91.3
6	9 18O2-PFHxS	403 > 102.6	6.721e3	1.497e4	0.434	0.127	3.99	102	103
7	10 13C2-PFOA	414.9 > 369.7	3.250e4	7.949e3	4.608	0.127	4.27	87.6	88.7
8	11 13C5-PFNA	468.2 > 422.9	8.907e3	1.091e4	0.867	0.127	4.61	93.0	94.1
9	12 13C8-PFOS	507.0 > 79.9	1.088e4	1.138e4	0.958	0.127	4.66	98.5	99.8
10	13 13C5-PFHxA	318>272.9	2.650e4	2.650e4	1.000	0.127	3.35	98.8	100
11	14 13C3-PFHxS	401.9 > 79.9	1.497e4	1.497e4	1.000	0.127	3.99	98.8	100
12	15 13C8-PFOA	421.3 > 376	7.949e3	7.949e3	1.000	0.127	4.27	98.8	100
13	16 13C9-PFNA	472.2 > 426.9	1.091e4	1.091e4	1.000	0.127	4.60	98.8	100
14	17 13C4-PFOS	503.0 > 79.9	1.138e4	1.138e4	1.000	0.127	4.66	98.8	100
15	18 Total PFBS	299 > 79.7		6.721e3		0.127			
16	20 Total PFOA	413 > 368.7		3.250e4		0.127			
17	21 Total PFOS	499 > 79.9		1.088e4		0.127			

Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-15.qld

Last Altered: Tuesday, March 07, 2017 10:23:02 AM Pacific Standard Time

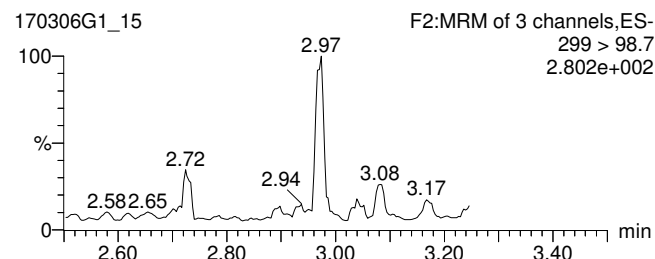
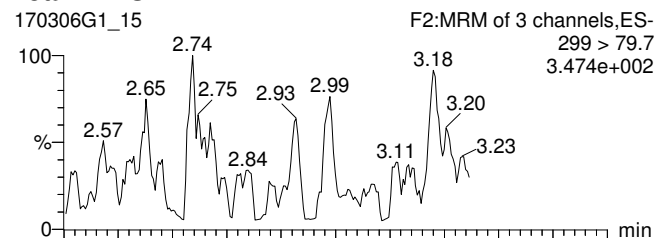
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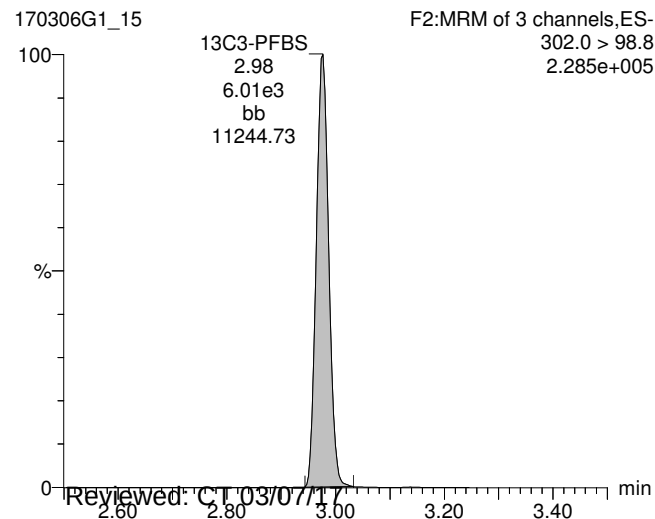
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ID: 1700268-08 WI-CV-EB05-022417 0.12657, Description: WI-CV-EB05-022417, Name: 170306G1_15, Date: 06-Mar-2017, Time: 18:20:37, Instrument: , Lab: , User:

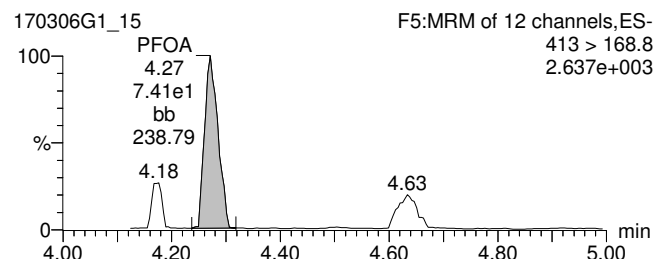
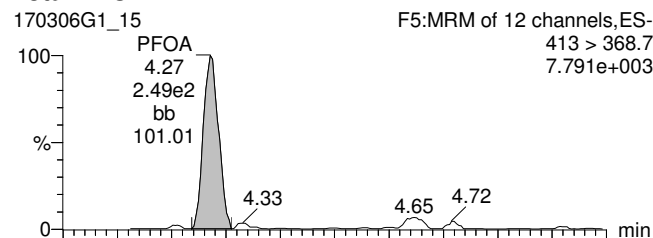
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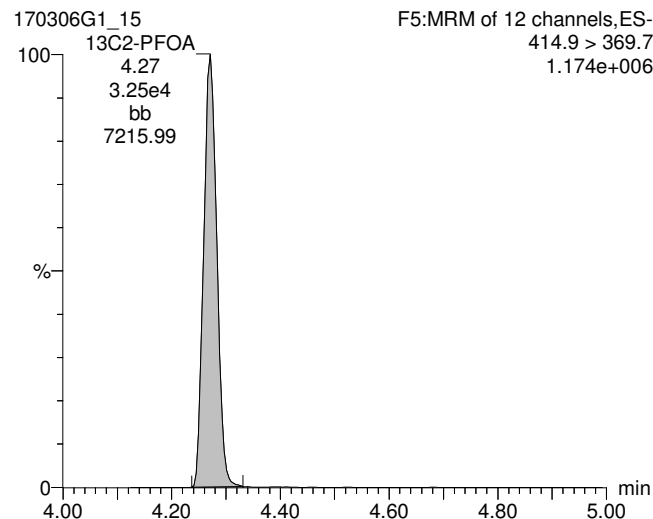
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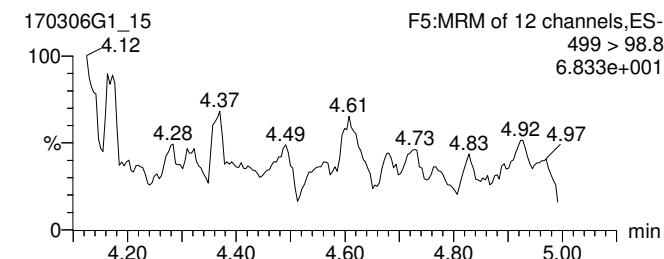
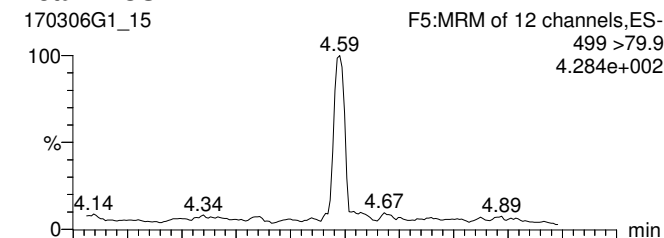
Total PFOA



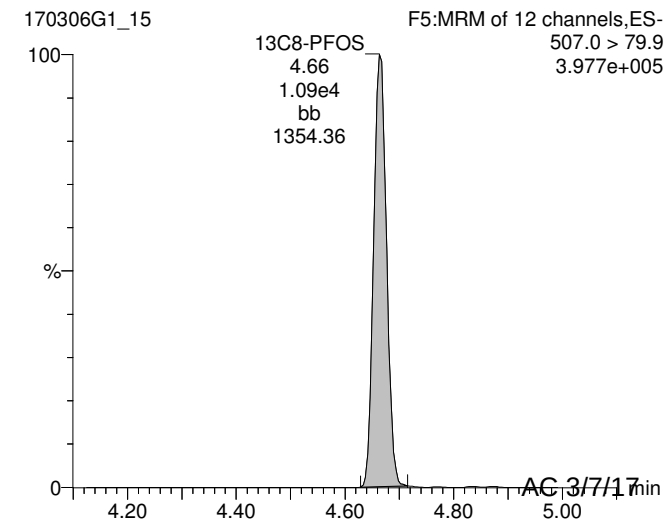
13C2-PFOA



Total PFOS



13C8-PFOS



Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-15.qld

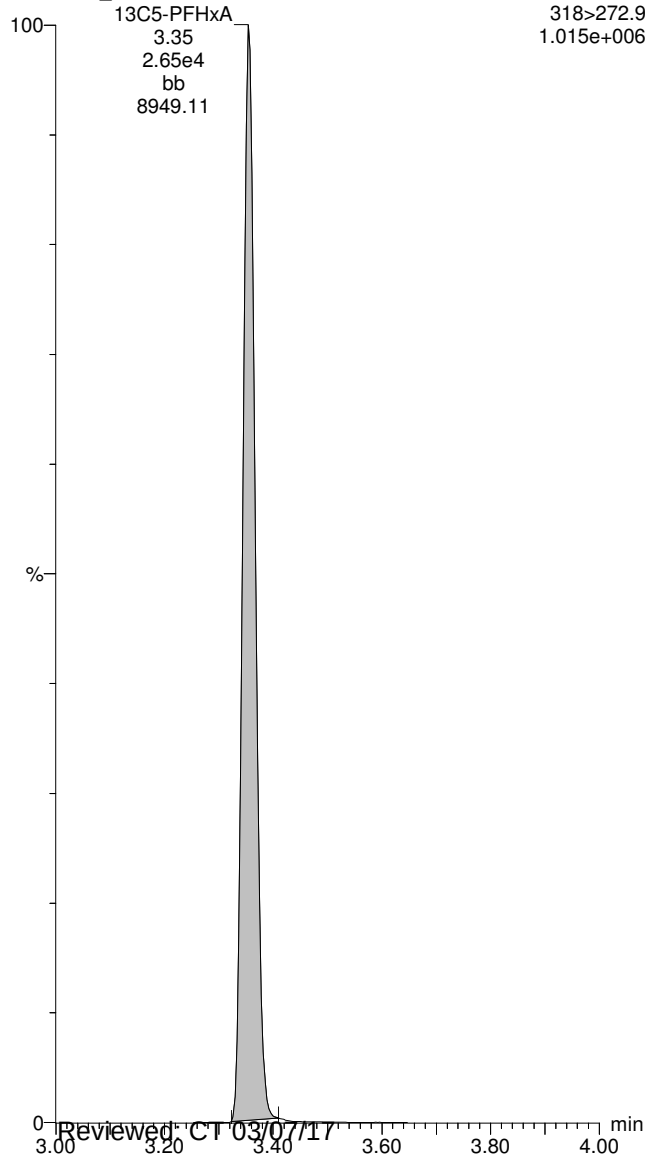
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ID: 1700268-08 WI-CV-EB05-022417 0.12657, Description: WI-CV-EB05-022417, Name: 170306G1_15, Date: 06-Mar-2017, Time: 18:20:37, Instrument: , Lab: , User:

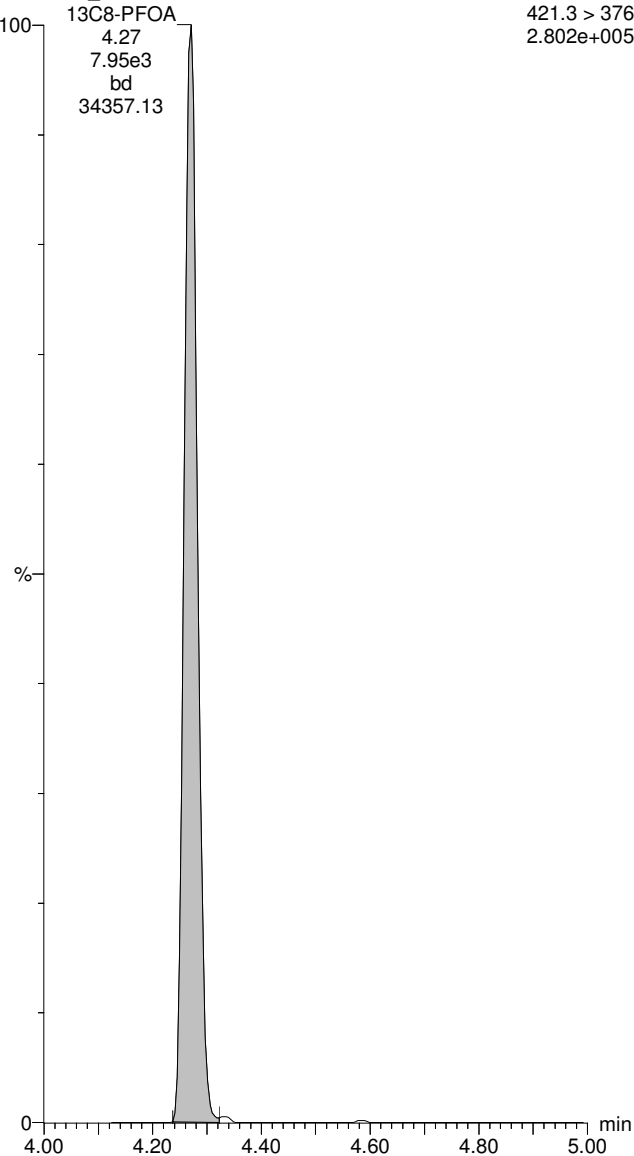
13C5-PFHxA

170306G1_15
F3:MRM of 1 channel,ES-
318>272.9
1.015e+006



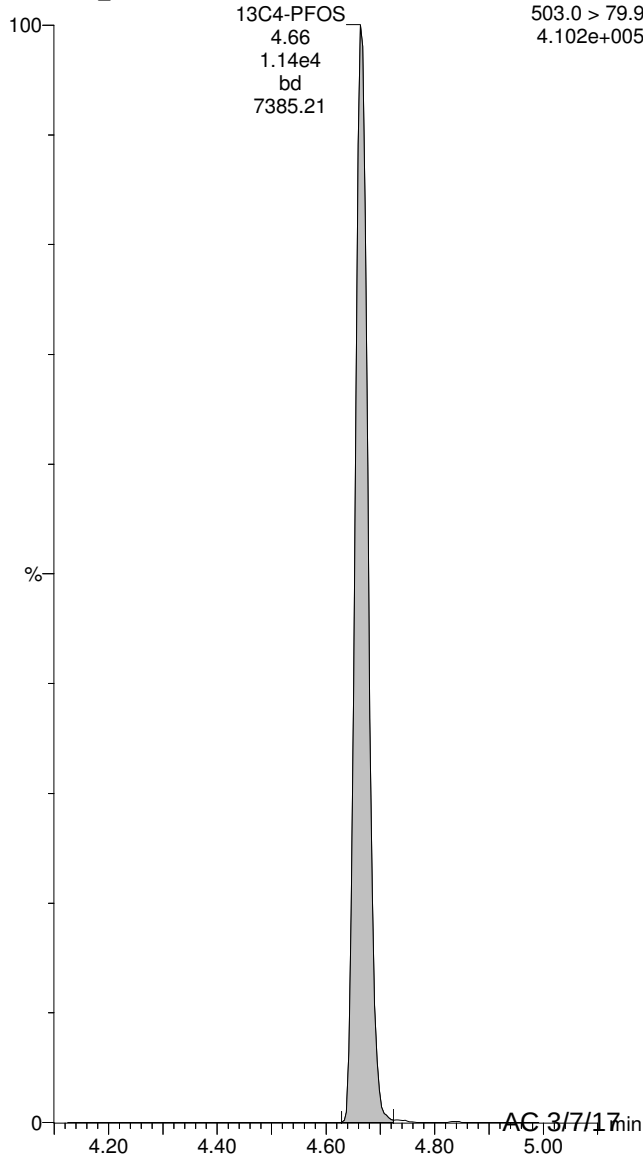
13C8-PFOA

170306G1_15
F5:MRM of 12 channels,ES-
421.3 > 376
2.802e+005



13C4-PFOS

170306G1_15
F5:MRM of 12 channels,ES-
503.0 > 79.9
4.102e+005



CONTINUING CALIBRATION

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-29.qld

Last Altered: Monday, March 06, 2017 09:19:31 Pacific Standard Time

Printed: Monday, March 06, 2017 09:21:39 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Name: 170305G1_29, Date: 05-Mar-2017, Time: 18:25:28, ID: ST170305G1-9 PFC CS3 17C0506, Description: PFC CS3 17C0506 A

	# Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.28e4	6.48e3		1.000	3.04	10.3	103.5
2	2 PFHpA	363 > 318.9	2.87e4	1.84e4		1.000	3.92	10.8	107.8
3	3 PFHxS	398.9 > 79.6	1.13e4	6.93e3		1.000	4.03	11.2	111.7
4	4 PFOA	413 > 368.7	2.58e4	3.78e4		1.000	4.31	10.5	105.0
5	5 PFNA	463 > 418.8	1.43e4	5.76e3		1.000	4.64	11.3	112.9
6	6 PFOS	499 > 79.9	1.66e3	3.19e3		1.000	4.70	12.2	121.5
7	7 13C3-PFBS	302.0 > 98.8	6.48e3	1.60e4	0.410	1.000	3.04	12.3	98.6
8	8 13C4-PFHpA	367.2 > 321.8	1.84e4	1.60e4	1.098	1.000	3.92	13.0	104.4
9	9 18O2-PFHxS	403 > 102.6	6.93e3	1.60e4	0.434	1.000	4.03	12.4	99.5
10	10 13C2-PFOA	414.9 > 369.7	3.78e4	8.73e3	4.608	1.000	4.31	11.7	94.0
11	11 13C5-PFNA	468.2 > 422.9	5.76e3	6.97e3	0.867	1.000	4.64	11.9	95.3
12	12 13C8-PFOS	507.0 > 79.9	3.19e3	3.51e3	0.958	1.000	4.70	11.9	94.8
13	13 13C5-PFHxA	318 > 272.9	2.93e4	2.93e4	1.000	1.000	3.41	12.5	100.0
14	14 13C3-PFHxS	401.9 > 79.9	1.60e4	1.60e4	1.000	1.000	4.03	12.5	100.0
15	15 13C8-PFOA	421.3 > 376	8.73e3	8.73e3	1.000	1.000	4.31	12.5	100.0
16	16 13C9-PFNA	472.2 > 426.9	6.97e3	6.97e3	1.000	1.000	4.64	12.5	100.0
17	17 13C4-PFOS	503.0 > 79.9	3.51e3	3.51e3	1.000	1.000	4.70	12.5	100.0

75-125
↓
60-150
↓
50-150
60-150

ES 3/6/17

✓ AC 3/6/17

Dataset: Untitled

Last Altered: Monday, March 06, 2017 09:13:54 Pacific Standard Time

Printed: Monday, March 06, 2017 09:14:12 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	170305G1_1	IPA	05-Mar-17	12:34:35
2	170305G1_2	ST170305G1-1 PFC CS-2 17C0501	05-Mar-17	12:46:48
3	170305G1_3	ST170305G1-2 PFC CS-1 17C0502	05-Mar-17	12:59:15
4	170305G1_4	ST170305G1-3 PFC CS0 17C0503	05-Mar-17	13:11:49
5	170305G1_5	ST170305G1-4 PFC CS1 17C0504	05-Mar-17	13:24:21
6	170305G1_6	ST170305G1-5 PFC CS2 17C0505	05-Mar-17	13:36:55
7	170305G1_7	ST170305G1-6 PFC CS3 17C0506	05-Mar-17	13:49:29
8	170305G1_8	ST170305G1-7 PFC CS4 17C0507	05-Mar-17	14:02:00
9	170305G1_9	ST170305G1-8 PFC CS5 17C0508	05-Mar-17	14:14:34
10	170305G1_10	IPA	05-Mar-17	14:27:08
11	170305G1_11	SS170305G1-1 PFC SSS 17C0509	05-Mar-17	14:39:40
12	170305G1_12	IPA	05-Mar-17	14:52:09
13	170305G1_13	B7C0012-BS1 OPR 0.125	05-Mar-17	15:04:45
14	170305G1_14	B7C0010-BS1 OPR 0.125	05-Mar-17	15:17:15
15	170305G1_15	IPA	05-Mar-17	15:29:48
16	170305G1_16	B7C0012-BLK1 Method Blank 0.125	05-Mar-17	15:42:23
17	170305G1_17	B7C0010-BLK1 Method Blank 0.125	05-Mar-17	15:54:54
18	170305G1_18	1700268-02RE1 WI-CV-GW05M-0217 0.125	05-Mar-17	16:07:28
19	170305G1_19	1700268-04RE1 WI-CV-GW11M-0217 0.125	05-Mar-17	16:20:00
20	170305G1_20	1700280-01 WI-CV-GW03M-0217 0.125	05-Mar-17	16:32:34
21	170305G1_21	1700280-02 WI-CV-GW03D-0217 0.125	05-Mar-17	16:45:07
22	170305G1_22	1700280-03 WI-CV-EB07-022717 0.125	05-Mar-17	16:57:36
23	170305G1_23	1700280-04 WI-CV-GW04M-0217 0.125	05-Mar-17	17:10:09
24	170305G1_24	1700280-05 WI-CV-GW01M-0217 0.125	05-Mar-17	17:22:42
25	170305G1_25	1700280-06 WI-CV-EB08-022817 0.125	05-Mar-17	17:35:16
26	170305G1_26	1700280-07 WI-CV-GW01D-0217 0.125	05-Mar-17	17:47:49
27	170305G1_27	1700277-01 MILK-022717 0.005	05-Mar-17	18:00:22
28	170305G1_28	IPA	05-Mar-17	18:12:56
29	170305G1_29	ST170305G1-9 PFC CS3 17C0506	05-Mar-17	18:25:28
30	170305G1_30	IPA	05-Mar-17	18:38:01

LC Calibration Standards Review Checklist Q1

Calibration ID:		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
5T17030561-9	<u>L M H</u>	☒	☒	☒	☒	☒	☒	<u>MA</u> ☒
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 12/6/17

Run Log Present: ☒

of Samples per Sequence Checked: ☒

Reviewed By: AC 3/6/17
Initials/Date

Comments:

L6, 2-Trans

Dataset: Untitled

Last Altered: Monday, March 06, 2017 09:16:05 Pacific Standard Time

Printed: Monday, March 06, 2017 09:18:07 Pacific Standard Time

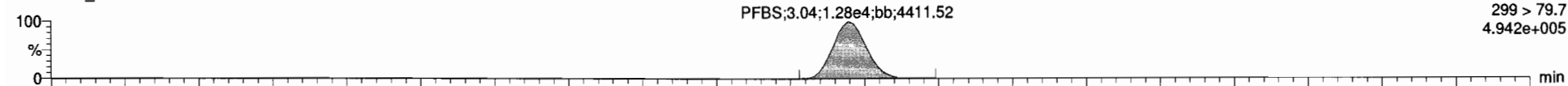
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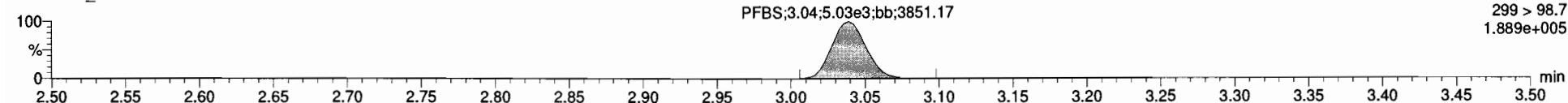
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PFBS

170305G1_29

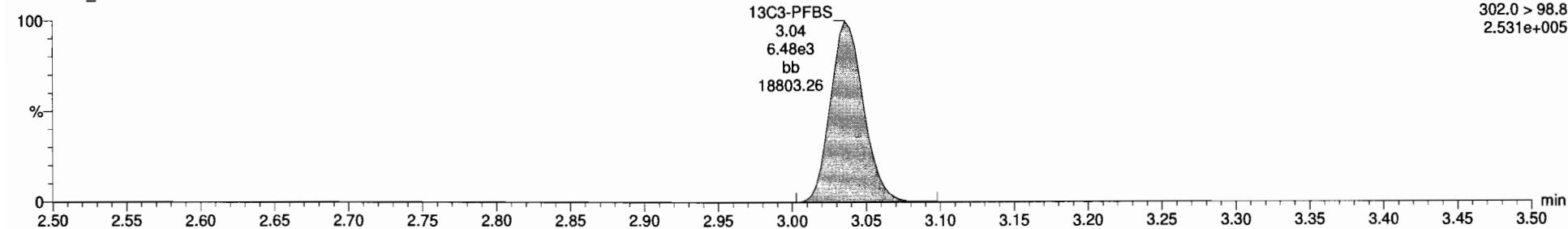


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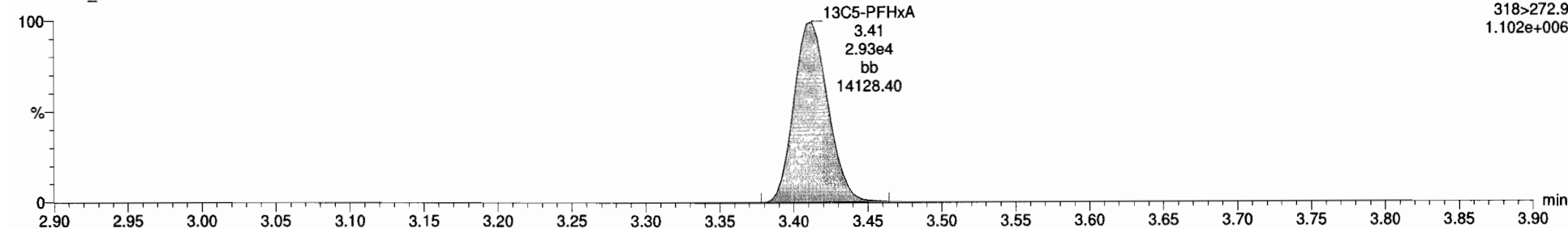
13C3-PFBS

170305G1_29



13C5-PFHxA

170305G1_29



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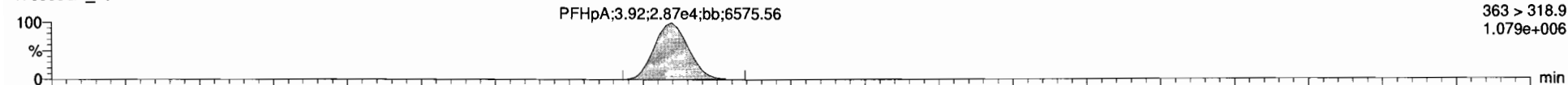
Last Altered: Monday, March 06, 2017 09:16:05 Pacific Standard Time

Printed: Monday, March 06, 2017 09:18:07 Pacific Standard Time

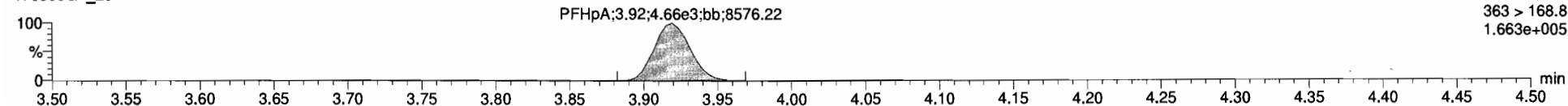
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PFHpA

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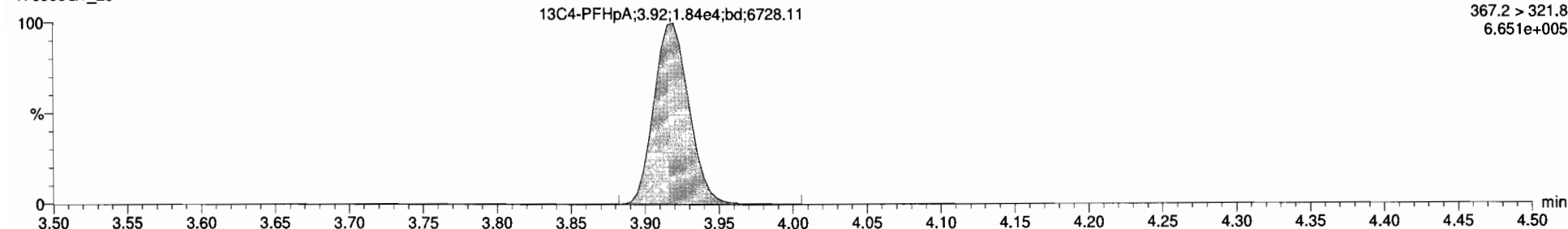


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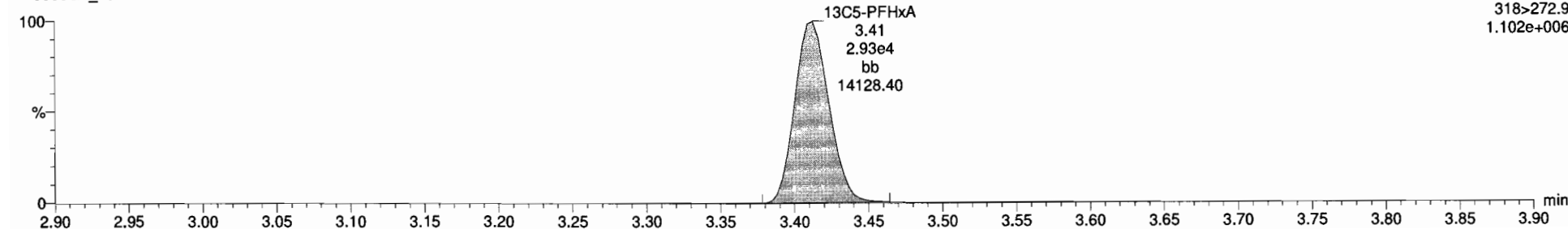
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170305G1_29



13C5-PFHxA

170305G1_29



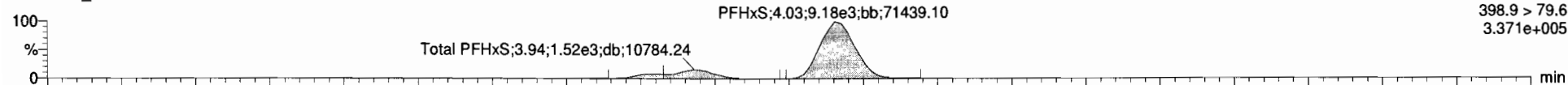
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Printed: Monday, March 06, 2017 09:18:07 Pacific Standard Time

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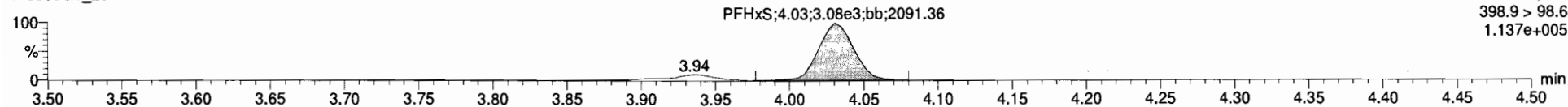
Total PFHxS

170305G1_29



F4:MRM of 7 channels,ES-
398.9 > 79.6
3.371e+005

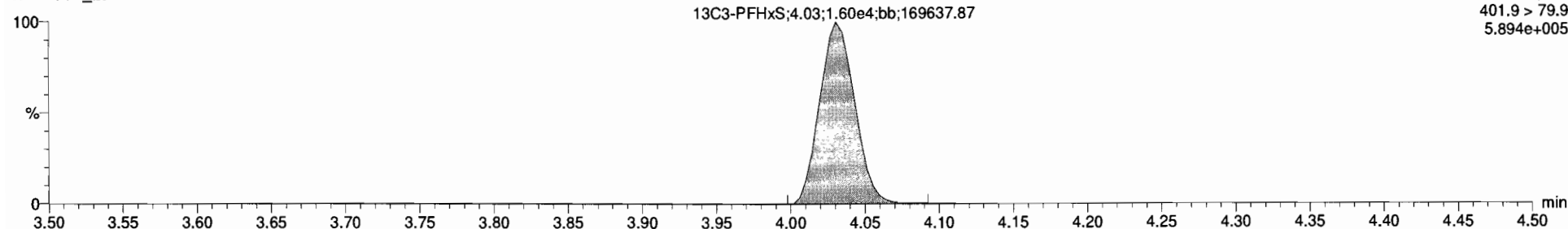
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398.9 > 98.6
1.137e+005

13C3-PFHxS

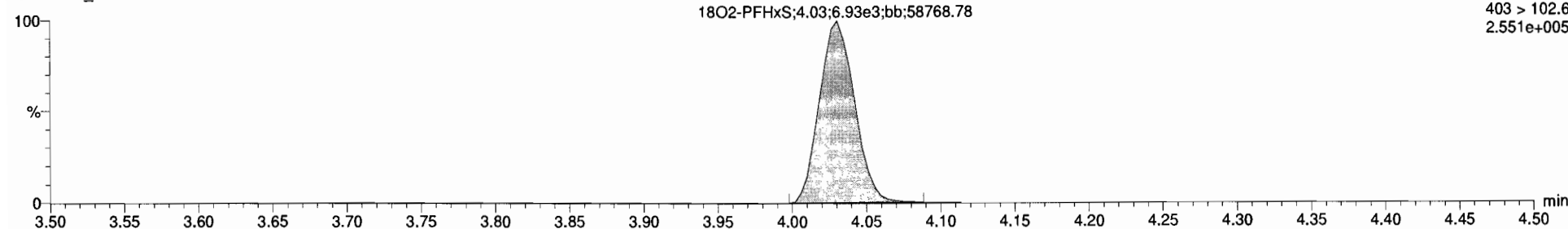
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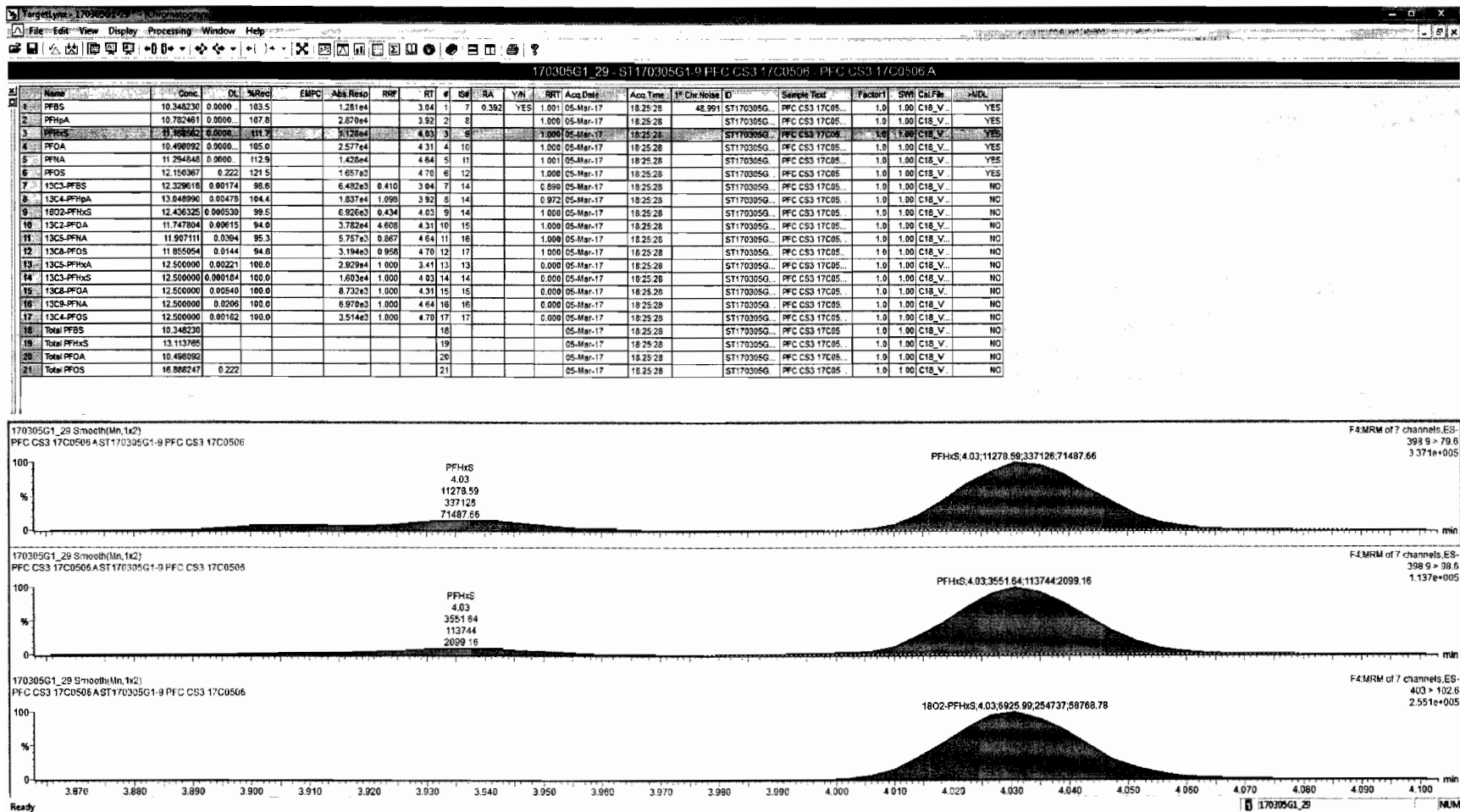
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401.9 > 79.9
5.894e+005

18O2-PFHxS

170305G1_29



F4:MRM of 7 channels,ES-
403 > 102.6
2.551e+005



Dataset: Untitled

Last Altered: Monday, March 06, 2017 09:16:05 Pacific Standard Time
Printed: Monday, March 06, 2017 09:18:07 Pacific Standard Time

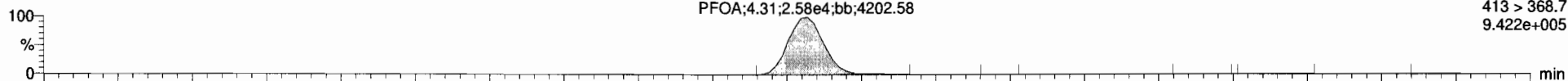
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Total PFOA

170305G1_29

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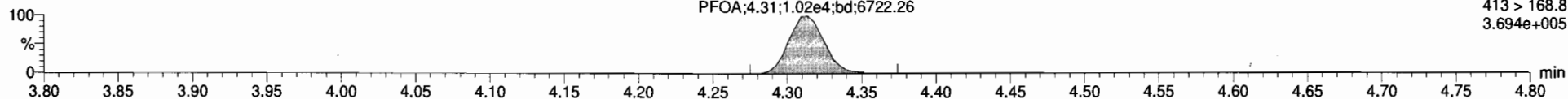
F5:MRM of 12 channels,ES-
413 > 368.7
9.422e+005



170305G1_29

PFOA;4.31;1.02e4;bd;6722.26

F5:MRM of 12 channels,ES-
413 > 168.8
3.694e+005

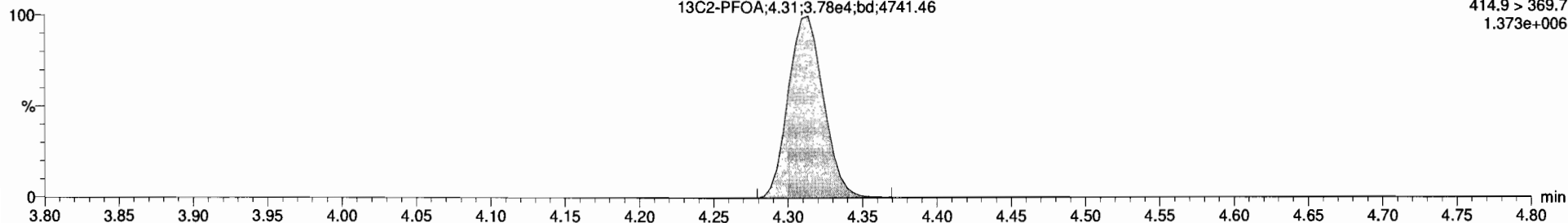


13C2-PFOA

170305G1_29

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F5:MRM of 12 channels,ES-
414.9 > 369.7
1.373e+006

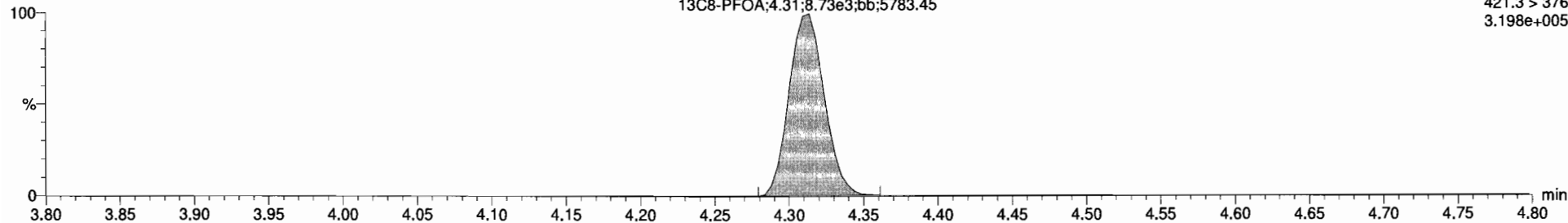


13C8-PFOA

170305G1_29

13C8-PFOA;4.31;8.73e3;bb;5783.45

F5:MRM of 12 channels,ES-
421.3 > 376
3.198e+005



Dataset: Untitled

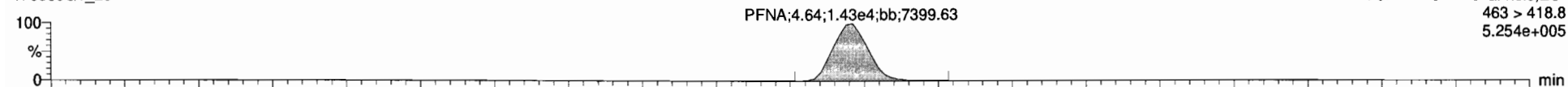
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Printed: Monday, March 06, 2017 09:18:07 Pacific Standard Time

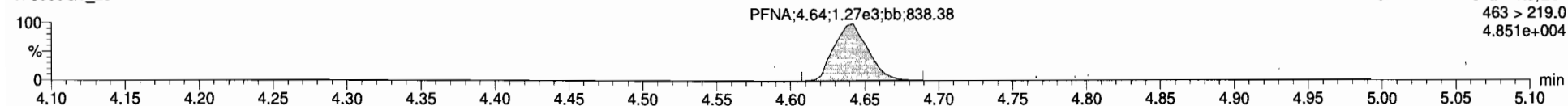
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PFNA

170305G1_29

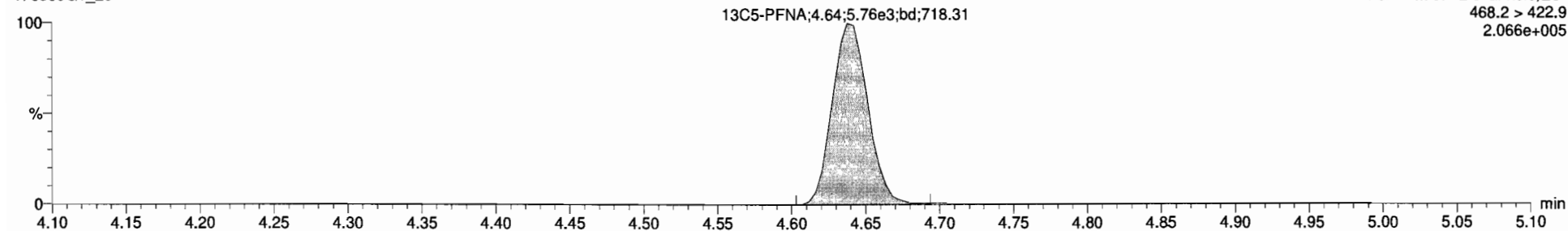


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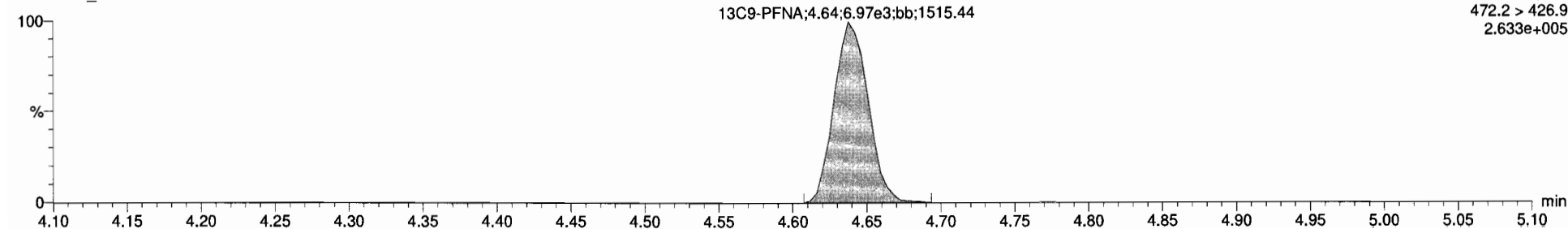
13C5-PFNA

170305G1_29



13C9-PFNA

170305G1_29



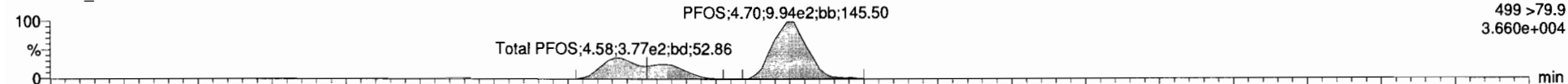
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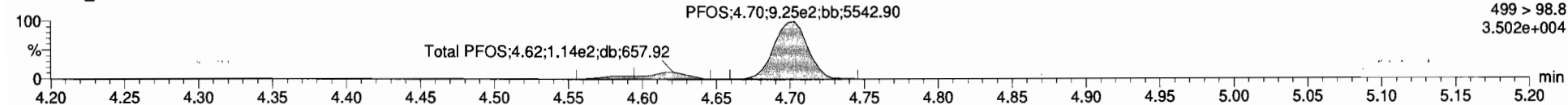
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Total PFOS

170305G1_29

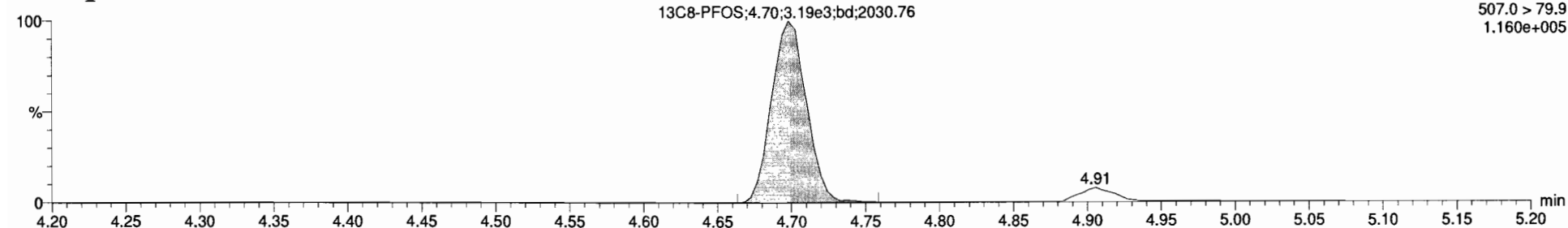


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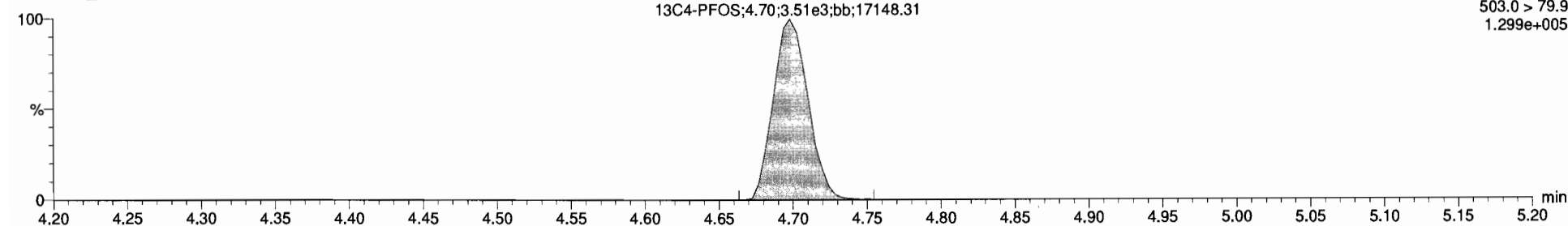
13C8-PFOS

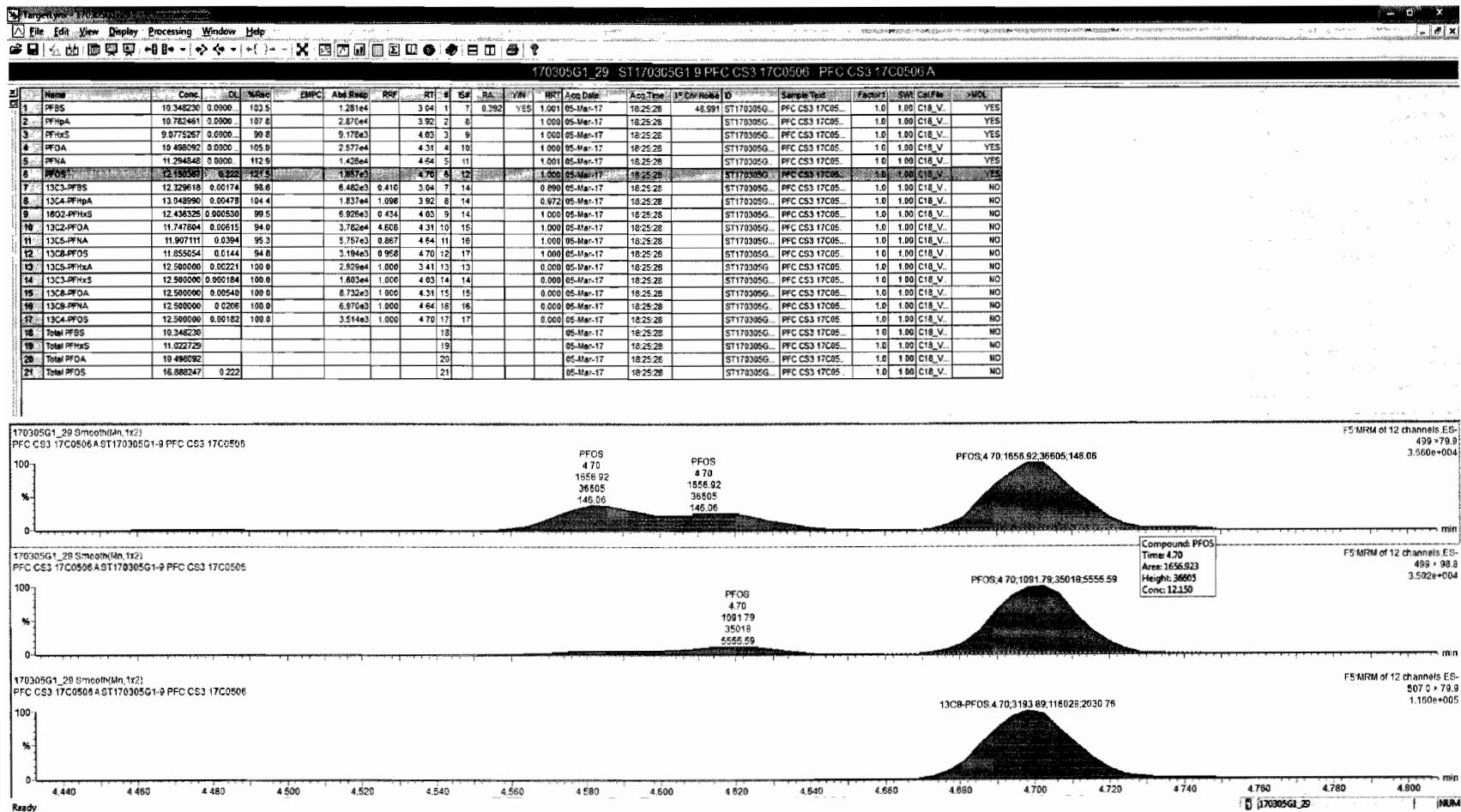
170305G1_29



13C4-PFOS

170305G1_29





Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-2.qld

Last Altered: Tuesday, March 07, 2017 09:06:49 Pacific Standard Time

Printed: Tuesday, March 07, 2017 09:09:59 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Name: 170306G1_2, Date: 06-Mar-2017, Time: 15:37:57, ID: ST170306G1-1 PFC CS3 17C0612, Description: PFC CS3 17C0612 A

	#	Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.26e4	6.88e3		1.000	3.05	9.60	96.0
2	2	PFHpA	363 > 318.9	2.81e4	1.84e4		1.000	3.94	10.6	105.7
3	3	PFHxS	398.9 > 79.6	1.15e4	7.26e3		1.000	4.05	10.9	109.0
4	4	PFOA	413 > 368.7	2.77e4	3.55e4		1.000	4.33	12.1	120.5
5	5	PFNA	463 > 418.8	2.11e4	9.36e3		1.000	4.66	10.3	102.8
6	6	PFOS	499 > 79.9	3.60e3	8.36e3		1.000	4.72	10.1	101.0
7	7	13C3-PFBS	302.0 > 98.8	6.88e3	1.78e4	0.410	1.000	3.05	11.8	94.3
8	8	13C4-PFHpA	367.2 > 321.8	1.84e4	1.78e4	1.098	1.000	3.94	11.8	94.0
9	9	18O2-PFHxS	403 > 102.6	7.26e3	1.78e4	0.434	1.000	4.05	11.7	93.9
10	10	13C2-PFOA	414.9 > 369.7	3.55e4	9.87e3	4.608	1.000	4.33	9.77	78.1
11	11	13C5-PFNA	468.2 > 422.9	9.36e3	1.07e4	0.867	1.000	4.66	12.6	101.0
12	12	13C8-PFOS	507.0 > 79.9	8.36e3	9.12e3	0.958	1.000	4.72	12.0	95.7
13	13	13C5-PFHxA	318 > 272.9	3.02e4	3.02e4	1.000	1.000	3.44	12.5	100.0
14	14	13C3-PFHxS	401.9 > 79.9	1.78e4	1.78e4	1.000	1.000	4.05	12.5	100.0
15	15	13C8-PFOA	421.3 > 376	9.87e3	9.87e3	1.000	1.000	4.33	12.5	100.0
16	16	13C9-PFNA	472.2 > 426.9	1.07e4	1.07e4	1.000	1.000	4.66	12.5	100.0
17	17	13C4-PFOS	503.0 > 79.9	9.12e3	9.12e3	1.000	1.000	4.72	12.5	100.0

15-125

60-150

50-150

60-150

AC
3/7/17

✓ 8 3/7/17

Dataset: Untitled

Last Altered: Tuesday, March 07, 2017 9:31:27 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 9:32:15 AM Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
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2	170306G1_2	ST170306G1-1 PFC CS3 17C0612	06-Mar-17	15:37:57
3	170306G1_3	IPA	06-Mar-17	15:50:07
4	170306G1_4	B7C0003-BS1 OPR 0.125	06-Mar-17	16:02:38
5	170306G1_5	B7C0015-BS1 OPR 0.125	06-Mar-17	16:15:10
6	170306G1_6	B7C0017-BS1 OPR 0.125	06-Mar-17	16:27:44
7	170306G1_7	IPA	06-Mar-17	16:40:16
8	170306G1_8	B7C0003-BLK1 Method Blank 0.125	06-Mar-17	16:52:50
9	170306G1_9	B7C0015-BLK1 Method Blank 0.125	06-Mar-17	17:05:23
10	170306G1_10	B7C0017-BLK1 Method Blank 0.125	06-Mar-17	17:17:56
11	170306G1_11	1700268-01 WI-CV-GW09M-0217 0.12317	06-Mar-17	17:30:29
12	170306G1_12	1700268-03 WI-CV-GW05S-0217 0.12246	06-Mar-17	17:43:02
13	170306G1_13	1700268-05 WI-CV-GW11S-0217 0.12773	06-Mar-17	17:55:31
14	170306G1_14	1700268-07 WI-CV-EB06-022617 0.10638	06-Mar-17	18:08:03
15	170306G1_15	1700268-08 WI-CV-EB05-022417 0.12657	06-Mar-17	18:20:37
16	170306G1_16	1700263-04RE1 OW2C-MW25-0217 0.12534	06-Mar-17	18:33:10
17	170306G1_17	1700293-01 WI-CV-GW02S-0317 0.125	06-Mar-17	18:45:44
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20	170306G1_20	1700293-04 WI-CV-GW04S/SP-0317 0.125	06-Mar-17	19:23:25
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22	170306G1_22	ST170306G1-2 PFC CS3 17C0612	06-Mar-17	19:48:29
23	170306G1_23	IPA	06-Mar-17	20:00:59
24	170306G1_24	1700293-05 WI-CV-GW02M-0317 0.125	06-Mar-17	20:13:35
25	170306G1_25	1700293-06 WI-CV-GW12D-0317 0.125	06-Mar-17	20:26:04
26	170306G1_26	1700293-07 WI-CV-EB09-030117 0.125	06-Mar-17	20:38:37
27	170306G1_27	1700293-08 WI-CV-GW08S-0317 0.125	06-Mar-17	20:51:11
28	170306G1_28	1700293-09 WI-CV-FB01-030217 0.125	06-Mar-17	21:03:44
29	170306G1_29	1700293-10 WI-CV-EB10-030217 0.125	06-Mar-17	21:16:17
30	170306G1_30	1700293-11 WI-CV-EB11-030217 0.125	06-Mar-17	21:28:51
31	170306G1_31	B7C0017-MS1 Matrix Spike 0.125	06-Mar-17	21:41:24

Dataset: Untitled

Last Altered: Tuesday, March 07, 2017 9:31:27 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 9:32:15 AM Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	170306G1_32	B7C0017-MSD1 Matrix Spike Dup 0.125	06-Mar-17	21:53:53
33	170306G1_33	IPA	06-Mar-17	22:06:26
34	170306G1_34	ST170306G1-3 PFC CS3 17C0612	06-Mar-17	22:19:02
35	170306G1_35	IPA	06-Mar-17	22:31:42

LC Calibration Standards Review Checklist

Q1

Calibration ID:		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	N/A
ST17030661-1	LMH	N/A	☒	☒	☒	☒	☒	☐
↓ -2	LMH	☐	☒	☒	☒	☒	☒	☐
↓ -3	LMH	☒	☒	☒	☒	☒	☒	☒
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 12/7/16

Run Log Present: ☒

of Samples per Sequence Checked: ☒

Reviewed By:

28 3/7/17

Initials/Date

Comments:

List of 6

Dataset: Untitled

Last Altered: Tuesday, March 07, 2017 09:00:41 Pacific Standard Time

Printed: Tuesday, March 07, 2017 09:00:55 Pacific Standard Time

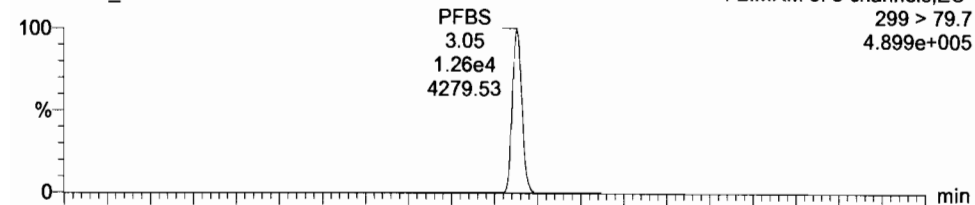
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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Name: 170306G1_2, Date: 06-Mar-2017, Time: 15:37:57, ID: ST170306G1-1 PFC CS3 17C0612, Description: PFC CS3 17C0612 A

PFBS

170306G1_2

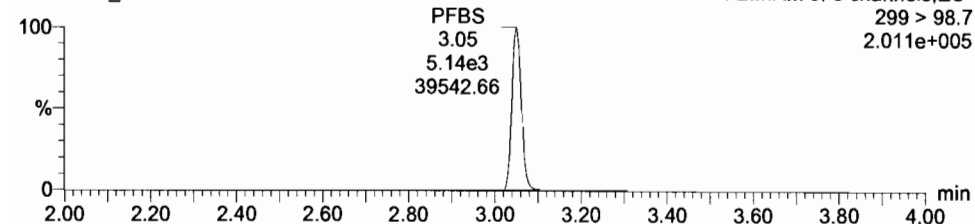


PFHpA

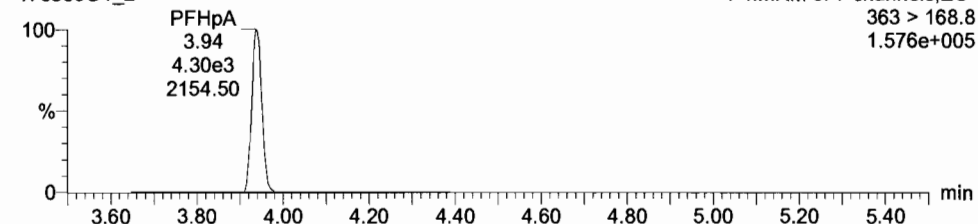
170306G1_2



170306G1_2

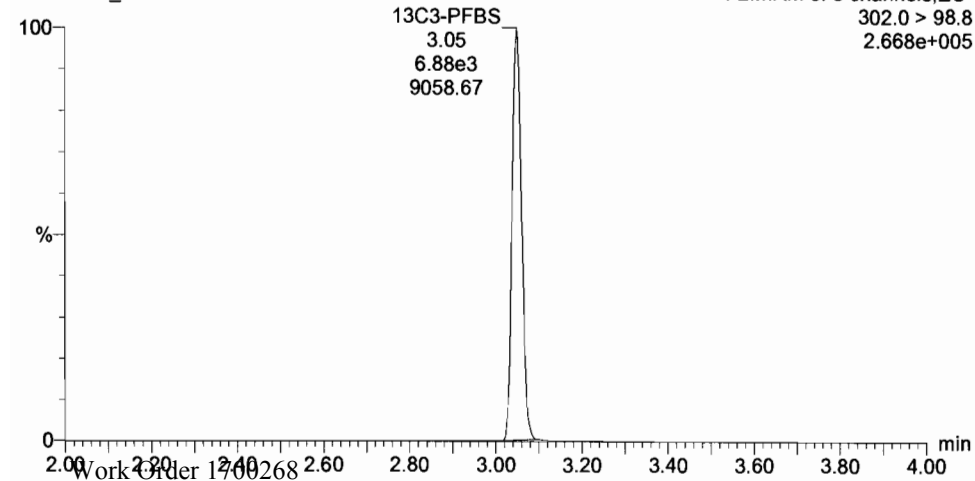


170306G1_2



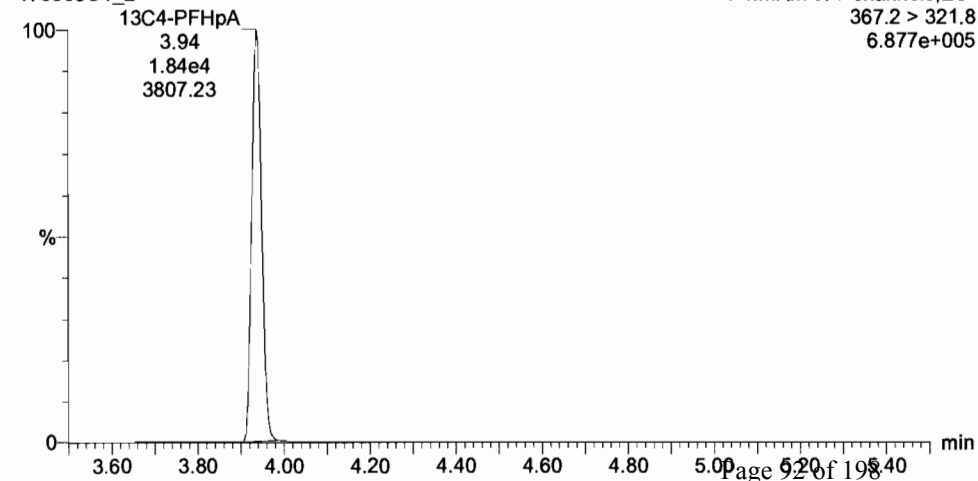
13C3-PFBS

170306G1_2



13C4-PFHpa

170306G1_2



Dataset: Untitled

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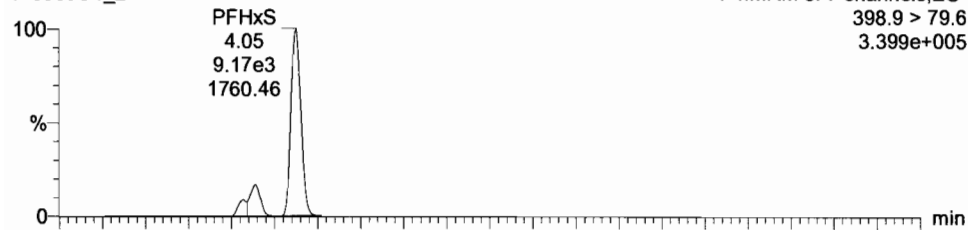
Printed: Tuesday, March 07, 2017 09:00:55 Pacific Standard Time

Name: 170306G1_2, Date: 06-Mar-2017, Time: 15:37:57, ID: ST170306G1-1 PFC CS3 17C0612, Description: PFC CS3 17C0612 A

PFHxS

170306G1_2

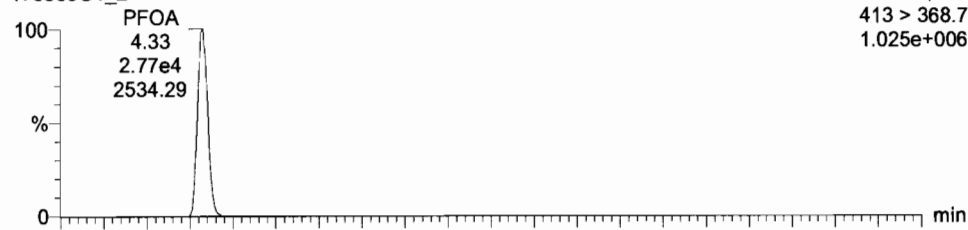
F4:MRM of 7 channels,ES-
398.9 > 79.6
3.399e+005



PFOA

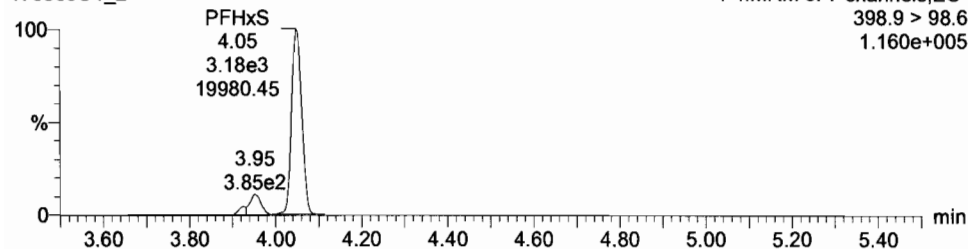
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F5:MRM of 12 channels,ES-
413 > 368.7
1.025e+006



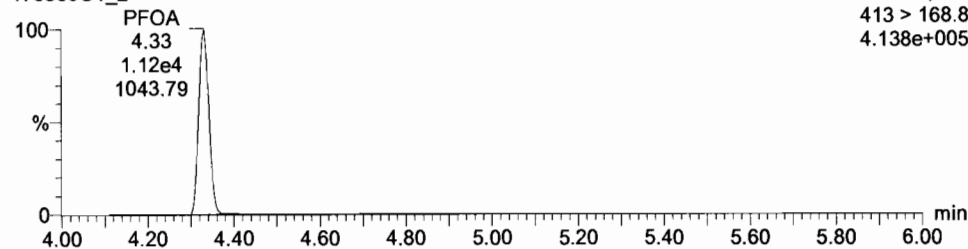
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1.160e+005



170306G1_2

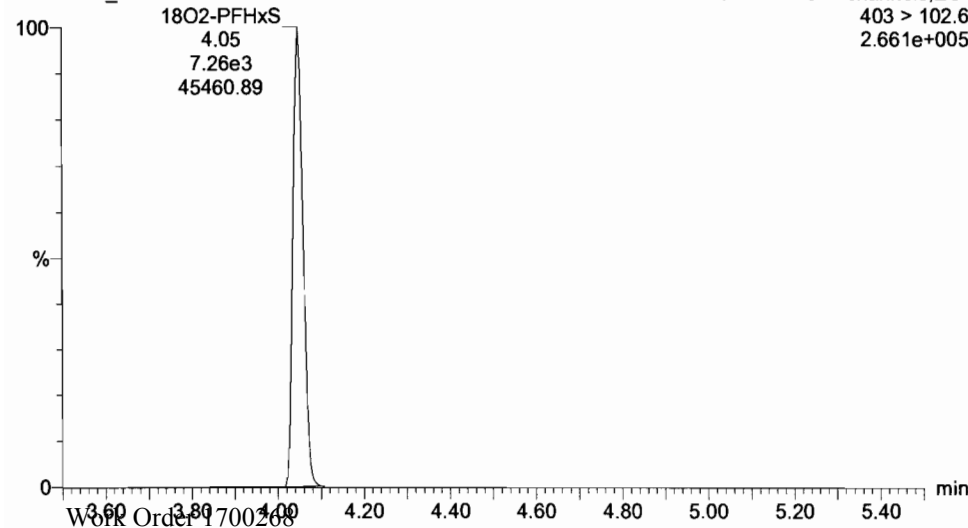
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4.138e+005



18O2-PFHxS

170306G1_2

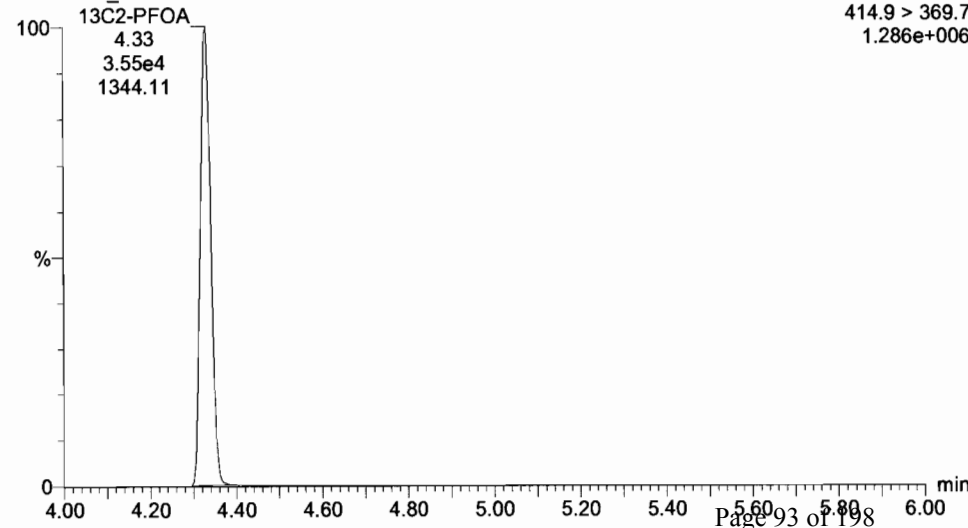
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2.661e+005

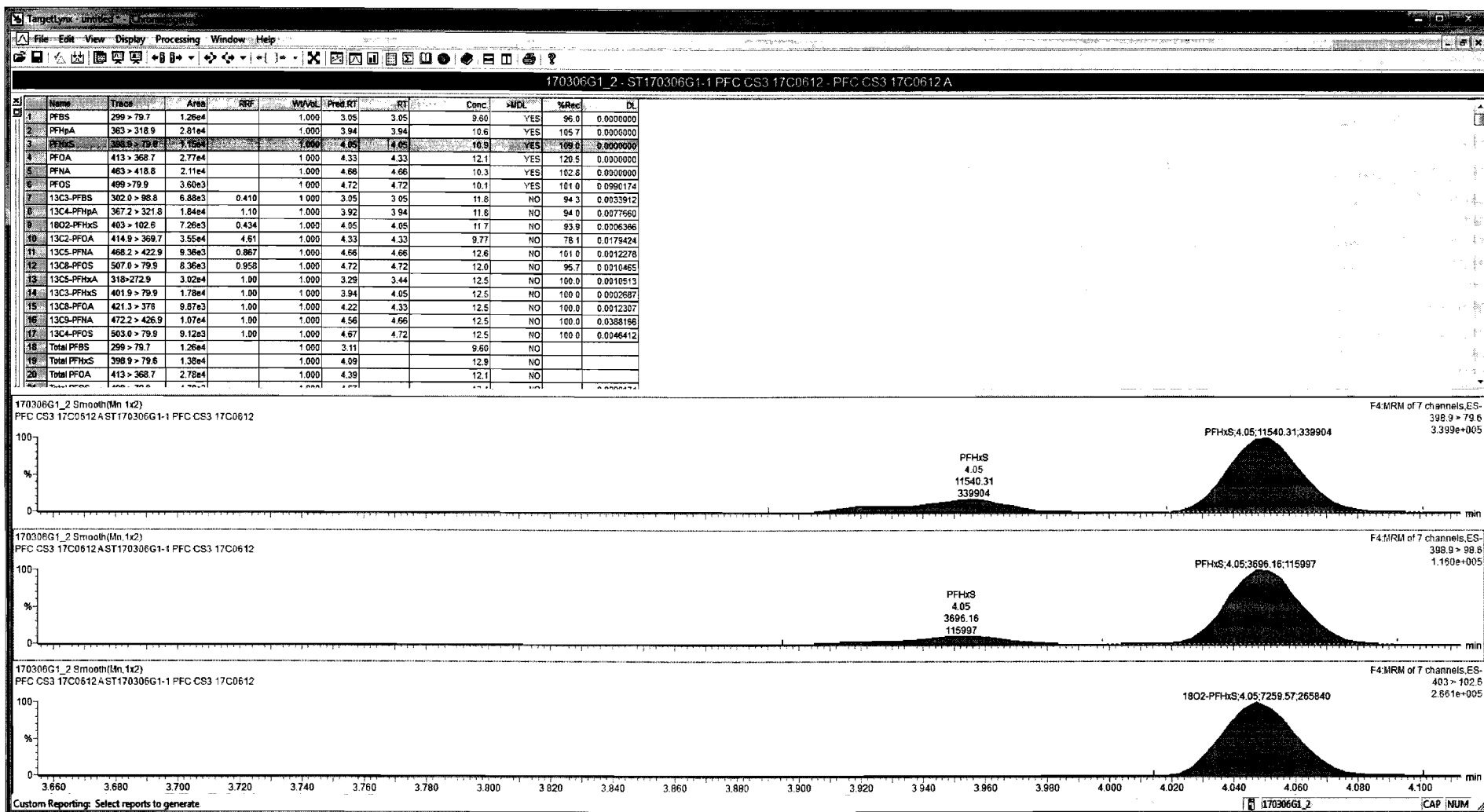


13C2-PFOA

170306G1_2

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1.286e+006





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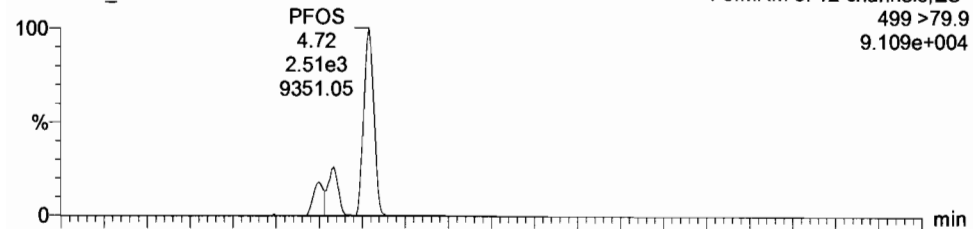
Last Altered: Tuesday, March 07, 2017 09:00:41 Pacific Standard Time

Printed: Tuesday, March 07, 2017 09:00:55 Pacific Standard Time

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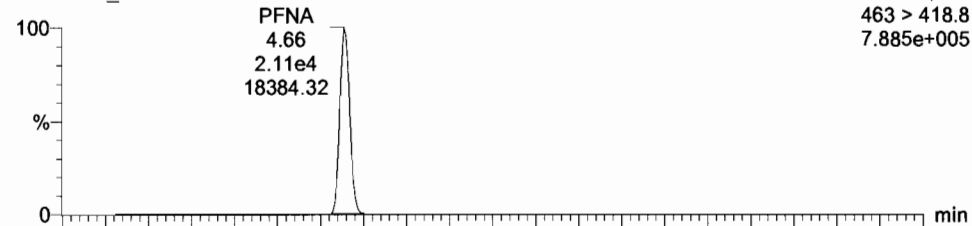
PFOS

170306G1_2

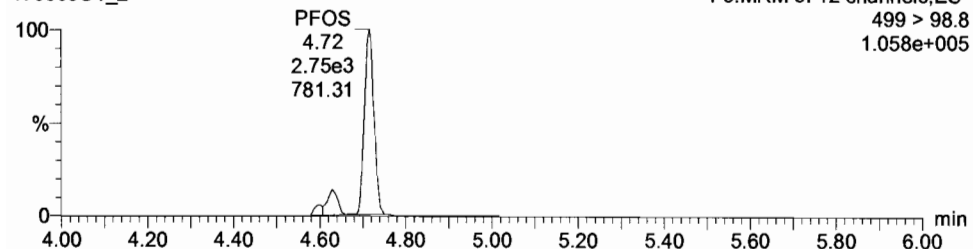


PFNA

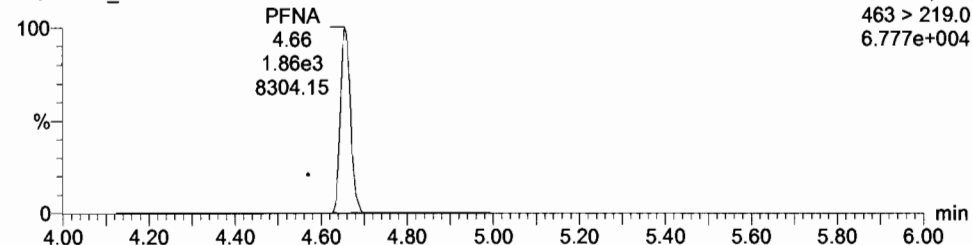
170306G1_2



170306G1_2

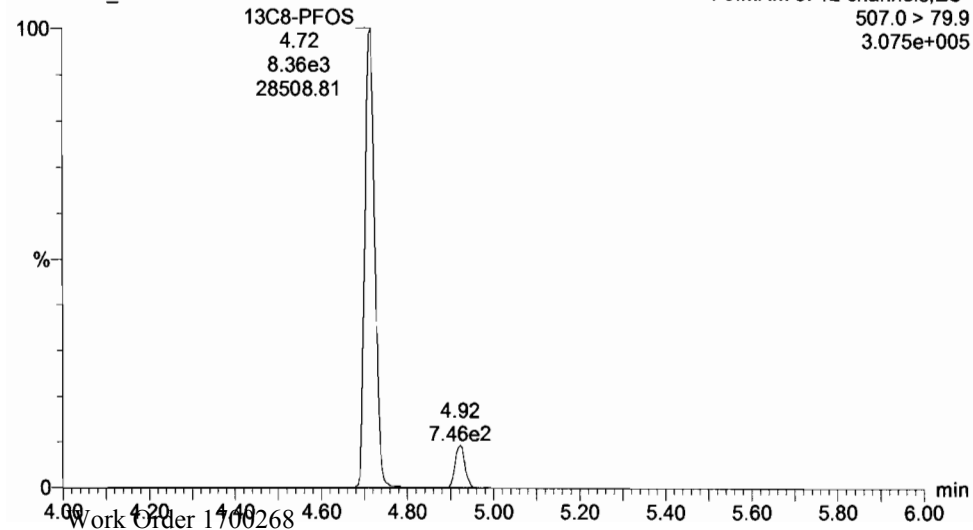


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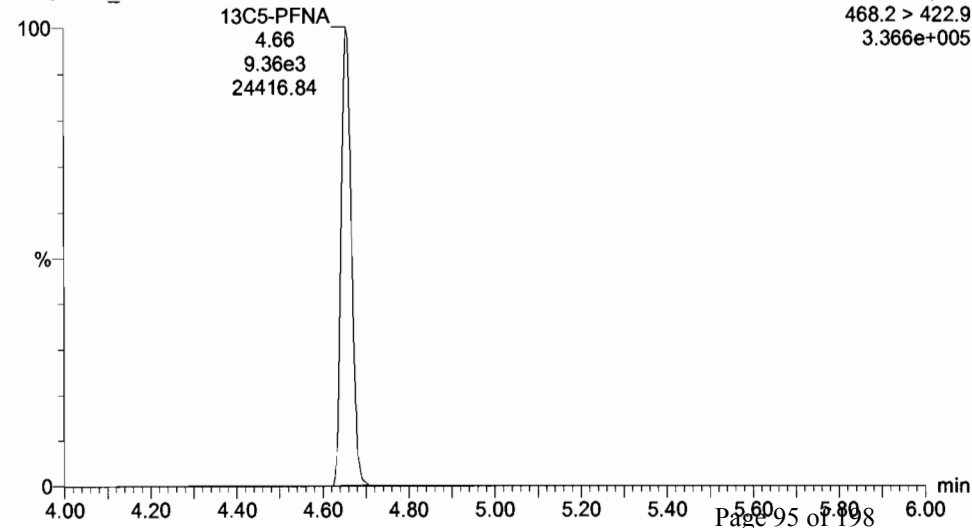
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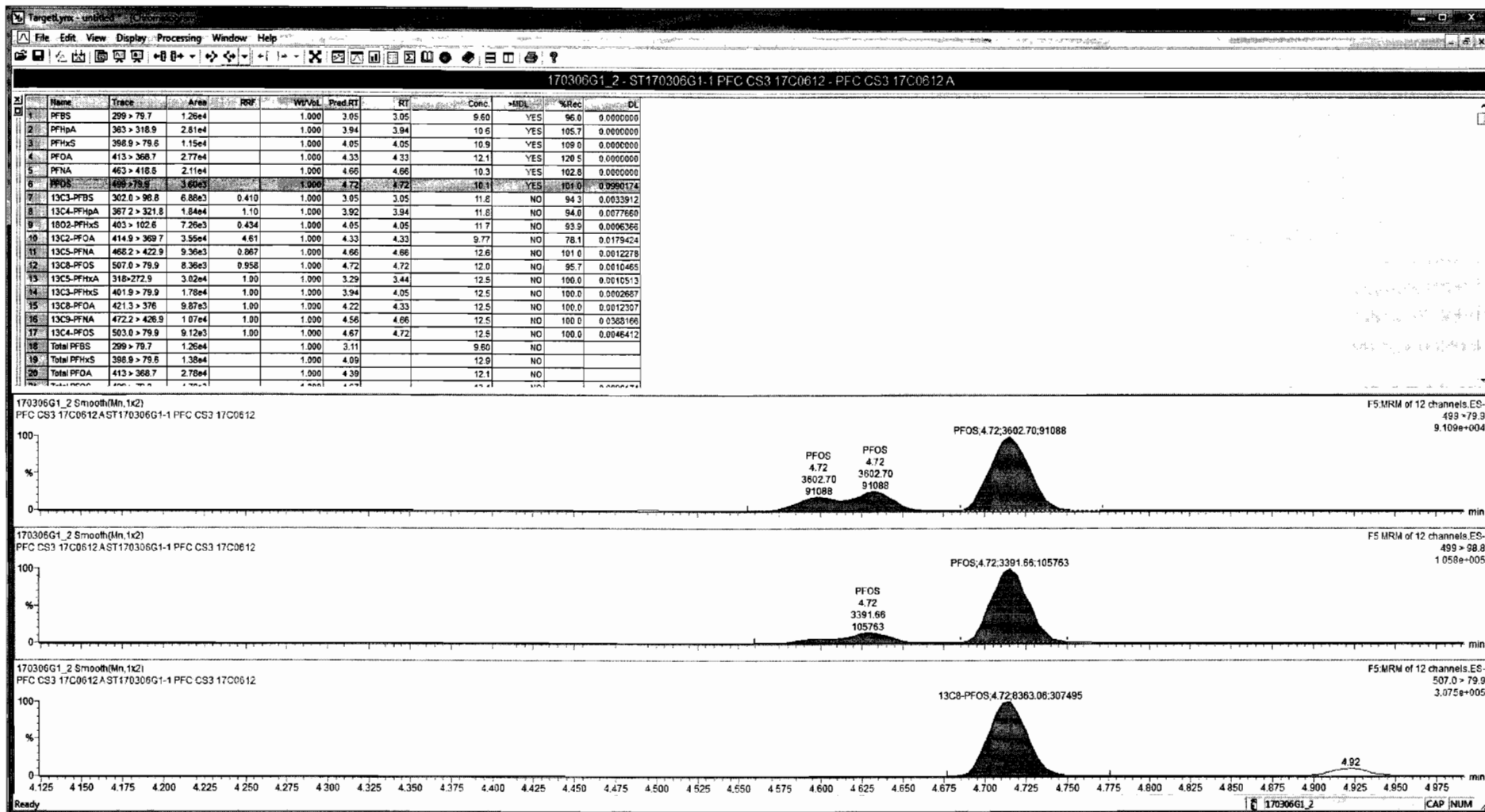
170306G1_2



13C5-PFNA

170306G1_2





Dataset: Untitled

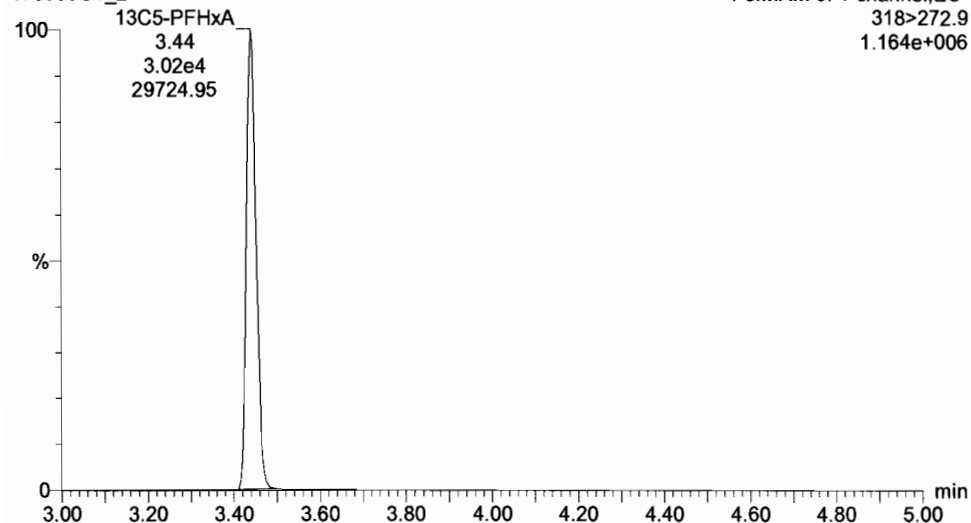
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Printed: Tuesday, March 07, 2017 09:00:55 Pacific Standard Time

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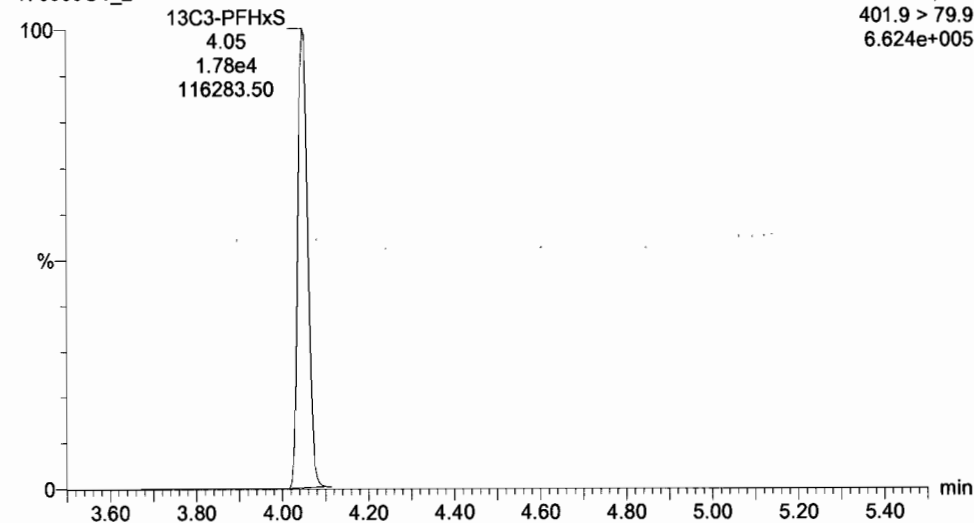
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170306G1_2



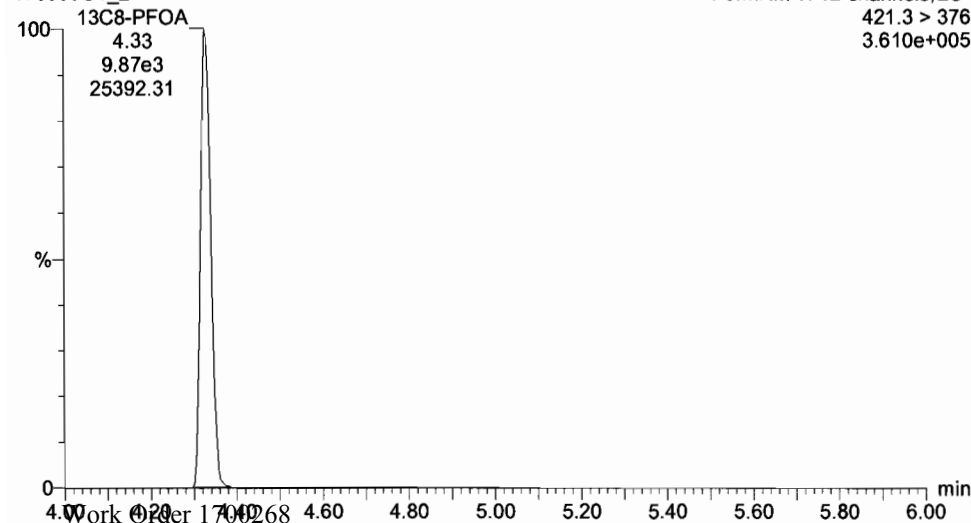
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170306G1_2



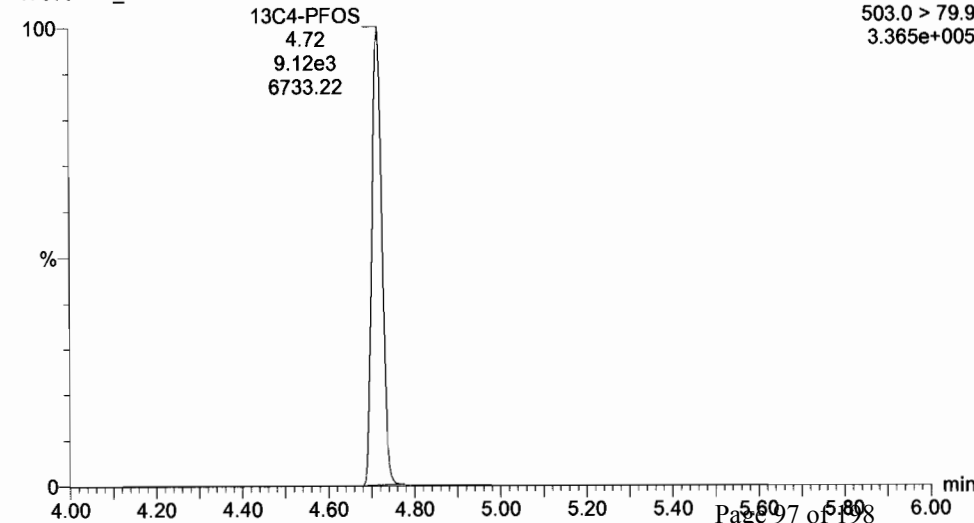
13C8-PFOA

170306G1_2



13C4-PFOS

170306G1_2



Dataset: Untitled

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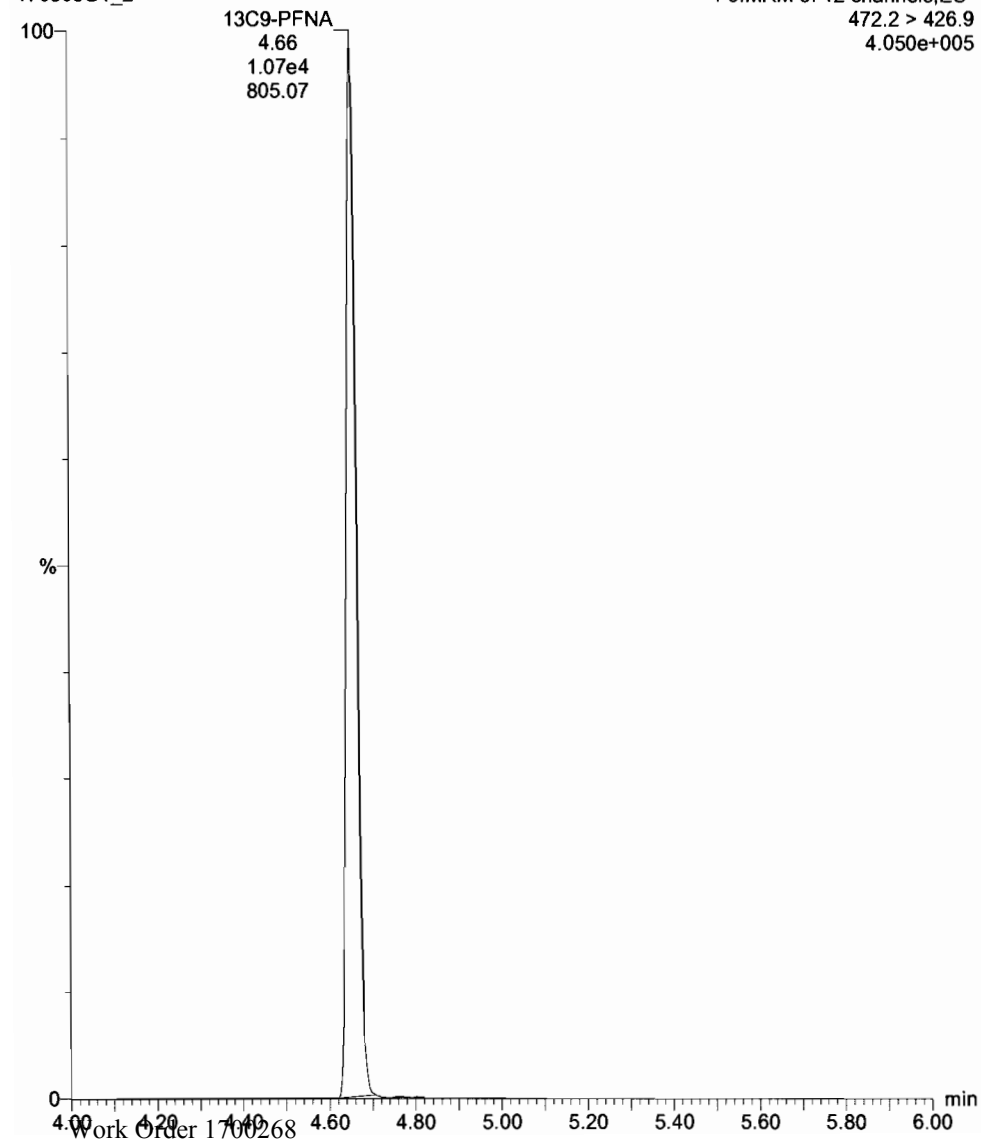
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13C9-PFNA

170306G1_2

F5:MRM of 12 channels,ES-
472.2 > 426.9
4.050e+005



Dataset: U:\G1.PRO\Results\2017\170306G1\170306G1-22.qld

Last Altered: Tuesday, March 07, 2017 09:10:55 Pacific Standard Time

Printed: Tuesday, March 07, 2017 09:12:46 Pacific Standard Time

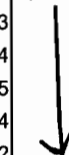
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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Name: 170306G1_22, Date: 06-Mar-2017, Time: 19:48:29, ID: ST170306G1-2 PFC CS3 17C0612, Description: PFC CS3 17C0612 A

	# Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1 PFBS	299 > 79.7	1.51e4	7.64e3		1.000	2.98	10.3	103.5
2	2 PFHpA	363 > 318.9	3.10e4	2.11e4		1.000	3.87	10.1	101.3
3	3 PFHxS	398.9 > 79.6	1.18e4	7.69e3		1.000	3.99	10.5	105.4
4	4 PFOA	413 > 368.7	2.89e4	4.14e4		1.000	4.27	10.8	107.5
5	5 PFNA	463 > 418.8	2.14e4	9.26e3		1.000	4.61	10.5	105.4
6	6 PFOS	499 > 79.9	3.84e3	9.66e3		1.000	4.67	9.32	93.2
7	7 13C3-PFBS	302.0 > 98.8	7.64e3	1.82e4	0.410	1.000	2.97	12.8	102.4
8	8 13C4-PFHpA	367.2 > 321.8	2.11e4	1.82e4	1.098	1.000	3.87	13.2	105.7
9	9 18O2-PFHxS	403 > 102.6	7.69e3	1.82e4	0.434	1.000	3.99	12.2	97.3
10	10 13C2-PFOA	414.9 > 369.7	4.14e4	1.01e4	4.608	1.000	4.27	11.1	89.2
11	11 13C5-PFNA	468.2 > 422.9	9.26e3	1.13e4	0.867	1.000	4.61	11.8	94.3
12	12 13C8-PFOS	507.0 > 79.9	9.66e3	1.05e4	0.958	1.000	4.67	12.0	95.8
13	13 13C5-PFHxA	318 > 272.9	3.58e4	3.58e4	1.000	1.000	3.35	12.5	100.0
14	14 13C3-PFHxS	401.9 > 79.9	1.82e4	1.82e4	1.000	1.000	3.99	12.5	100.0
15	15 13C8-PFOA	421.3 > 376	1.01e4	1.01e4	1.000	1.000	4.27	12.5	100.0
16	16 13C9-PFNA	472.2 > 426.9	1.13e4	1.13e4	1.000	1.000	4.61	12.5	100.0
17	17 13C4-PFOS	503.0 > 79.9	1.05e4	1.05e4	1.000	1.000	4.67	12.5	100.0

75-125



60-150



50-150

60-150

AC
3/7/17

✓ es 3/9/17

Dataset: Untitled

Last Altered: Tuesday, March 07, 2017 9:31:27 AM Pacific Standard Time
Printed: Tuesday, March 07, 2017 9:32:15 AM Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	170306G1_1	IPA	06-Mar-17	14:49:33
2	170306G1_2	ST170306G1-1 PFC CS3 17C0612	06-Mar-17	15:37:57
3	170306G1_3	IPA	06-Mar-17	15:50:07
4	170306G1_4	B7C0003-BS1 OPR 0.125	06-Mar-17	16:02:38
5	170306G1_5	B7C0015-BS1 OPR 0.125	06-Mar-17	16:15:10
6	170306G1_6	B7C0017-BS1 OPR 0.125	06-Mar-17	16:27:44
7	170306G1_7	IPA	06-Mar-17	16:40:16
8	170306G1_8	B7C0003-BLK1 Method Blank 0.125	06-Mar-17	16:52:50
9	170306G1_9	B7C0015-BLK1 Method Blank 0.125	06-Mar-17	17:05:23
10	170306G1_10	B7C0017-BLK1 Method Blank 0.125	06-Mar-17	17:17:56
11	170306G1_11	1700268-01 WI-CV-GW09M-0217 0.12317	06-Mar-17	17:30:29
12	170306G1_12	1700268-03 WI-CV-GW05S-0217 0.12246	06-Mar-17	17:43:02
13	170306G1_13	1700268-05 WI-CV-GW11S-0217 0.12773	06-Mar-17	17:55:31
14	170306G1_14	1700268-07 WI-CV-EB06-022617 0.10638	06-Mar-17	18:08:03
15	170306G1_15	1700268-08 WI-CV-EB05-022417 0.12657	06-Mar-17	18:20:37
16	170306G1_16	1700263-04RE1 OW2C-MW25-0217 0.12534	06-Mar-17	18:33:10
17	170306G1_17	1700293-01 WI-CV-GW02S-0317 0.125	06-Mar-17	18:45:44
18	170306G1_18	1700293-02 WI-CV-GW02S/SP-0317 0.125	06-Mar-17	18:58:16
19	170306G1_19	1700293-03 WI-CV-GW04S-0317 0.125	06-Mar-17	19:10:50
20	170306G1_20	1700293-04 WI-CV-GW04S/SP-0317 0.125	06-Mar-17	19:23:25
21	170306G1_21	IPA	06-Mar-17	19:35:53
22	170306G1_22	ST170306G1-2 PFC CS3 17C0612	06-Mar-17	19:48:29
23	170306G1_23	IPA	06-Mar-17	20:00:59
24	170306G1_24	1700293-05 WI-CV-GW02M-0317 0.125	06-Mar-17	20:13:35
25	170306G1_25	1700293-06 WI-CV-GW12D-0317 0.125	06-Mar-17	20:26:04
26	170306G1_26	1700293-07 WI-CV-EB09-030117 0.125	06-Mar-17	20:38:37
27	170306G1_27	1700293-08 WI-CV-GW08S-0317 0.125	06-Mar-17	20:51:11
28	170306G1_28	1700293-09 WI-CV-FB01-030217 0.125	06-Mar-17	21:03:44
29	170306G1_29	1700293-10 WI-CV-EB10-030217 0.125	06-Mar-17	21:16:17
30	170306G1_30	1700293-11 WI-CV-EB11-030217 0.125	06-Mar-17	21:28:51
31	Work Order 170306G1_31	B7C0017-MS1 Matrix Spike 0.125	06-Mar-17	21:41:24

Dataset: Untitled

Last Altered: Tuesday, March 07, 2017 9:31:27 AM Pacific Standard Time

Printed: Tuesday, March 07, 2017 9:32:15 AM Pacific Standard Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	170306G1_32	B7C0017-MSD1 Matrix Spike Dup 0.125	06-Mar-17	21:53:53
33	170306G1_33	IPA	06-Mar-17	22:06:26
34	170306G1_34	ST170306G1-3 PFC CS3 17C0612	06-Mar-17	22:19:02
35	170306G1_35	IPA	06-Mar-17	22:31:42

Dataset: Untitled

Last Altered: Tuesday, March 07, 2017 09:01:05 Pacific Standard Time

Printed: Tuesday, March 07, 2017 09:01:09 Pacific Standard Time

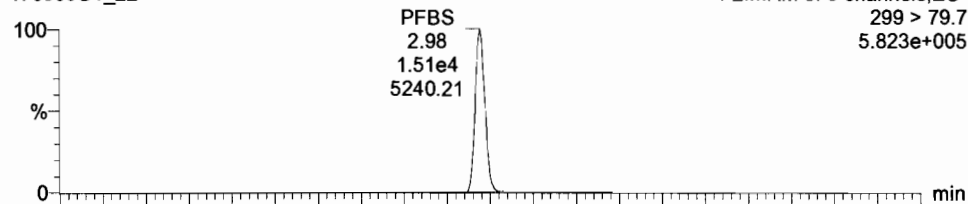
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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Name: 170306G1_22, Date: 06-Mar-2017, Time: 19:48:29, ID: ST170306G1-2 PFC CS3 17C0612, Description: PFC CS3 17C0612 A

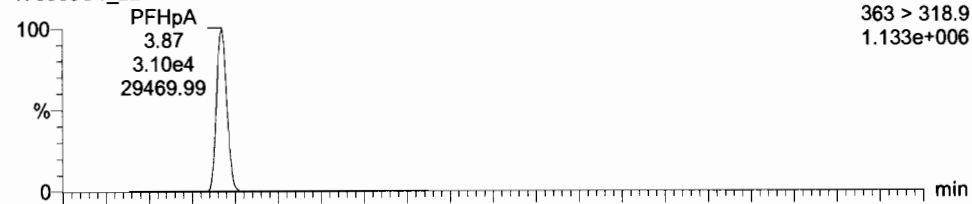
PFBS

170306G1_22

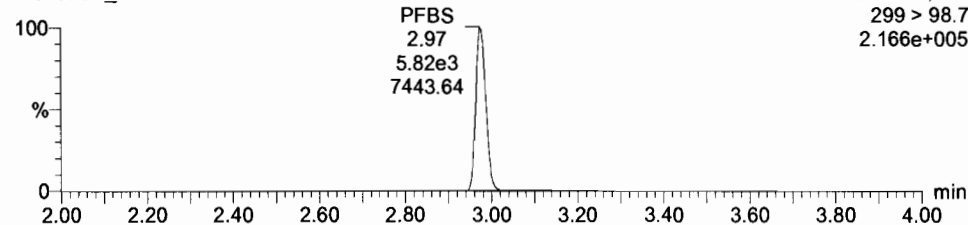


PFHpA

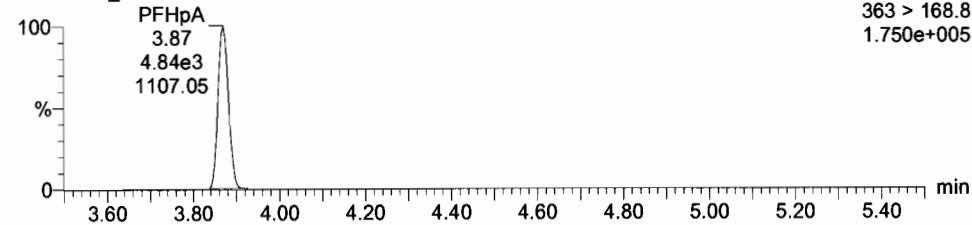
170306G1_22



170306G1_22

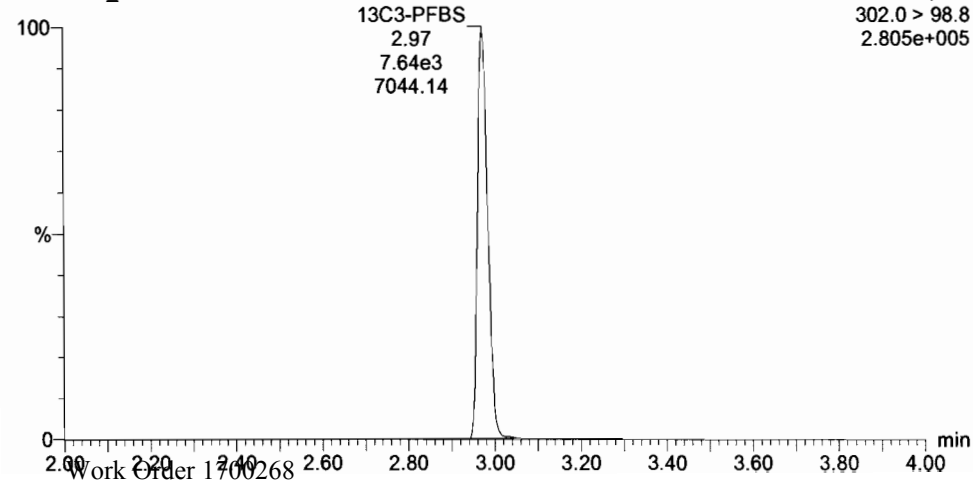


170306G1_22



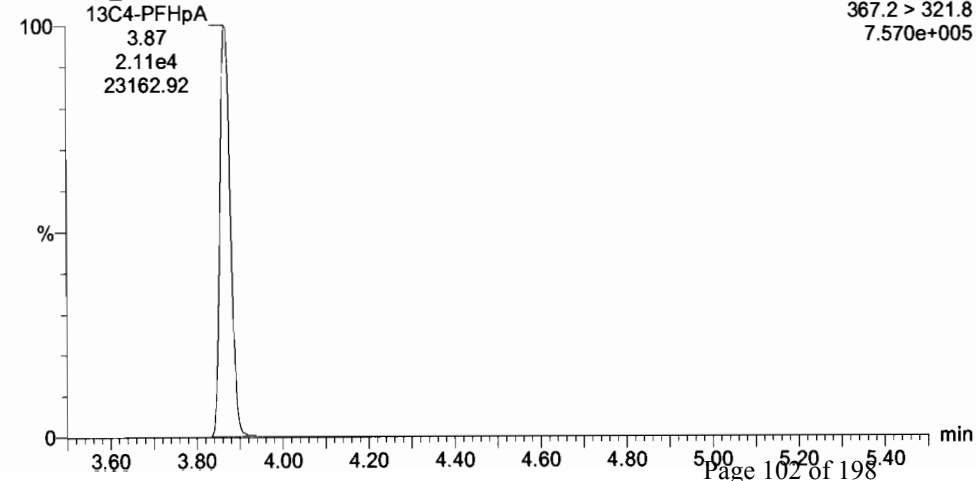
13C3-PFBS

170306G1_22



13C4-PFHpa

170306G1_22



Dataset: Untitled

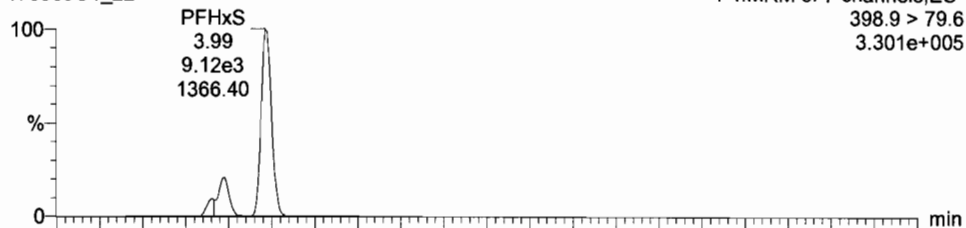
Last Altered: Tuesday, March 07, 2017 09:01:05 Pacific Standard Time

Printed: Tuesday, March 07, 2017 09:01:09 Pacific Standard Time

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PFHxS

170306G1_22

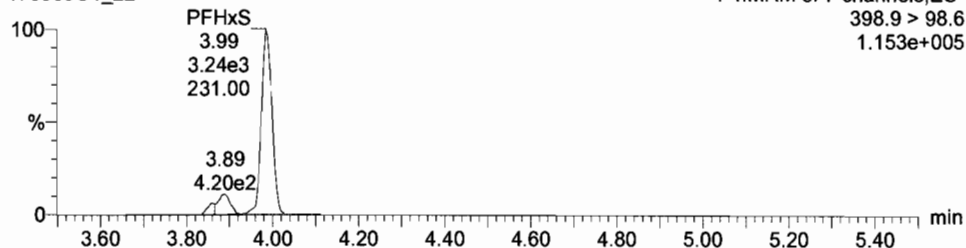


PFOA

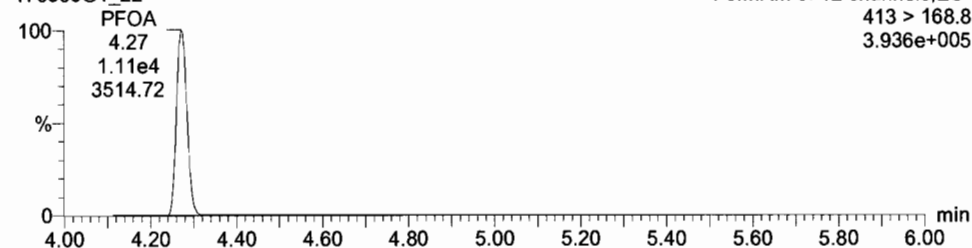
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170306G1_22

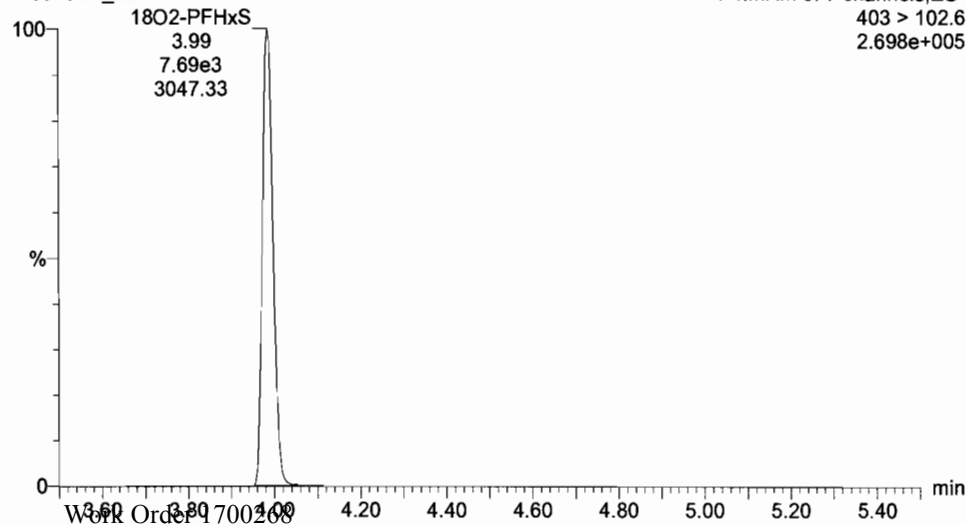


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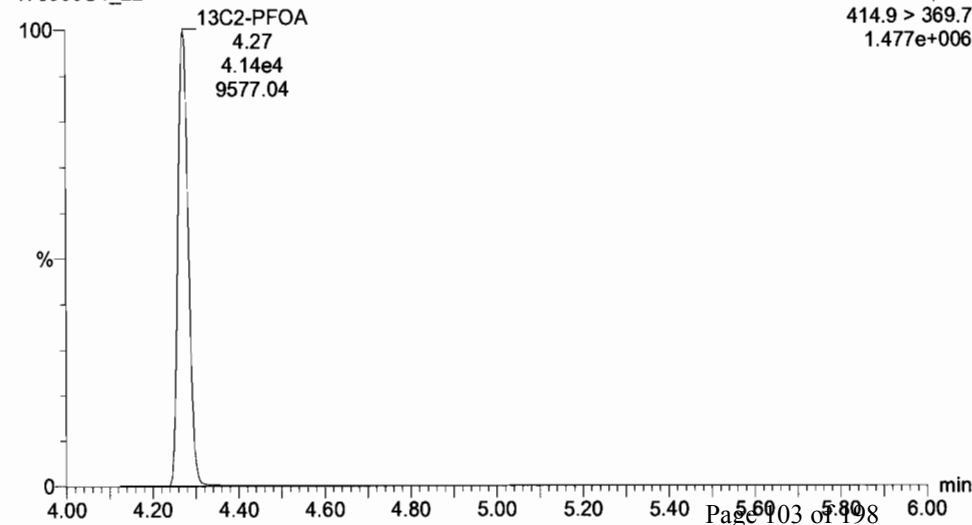
18O2-PFHxS

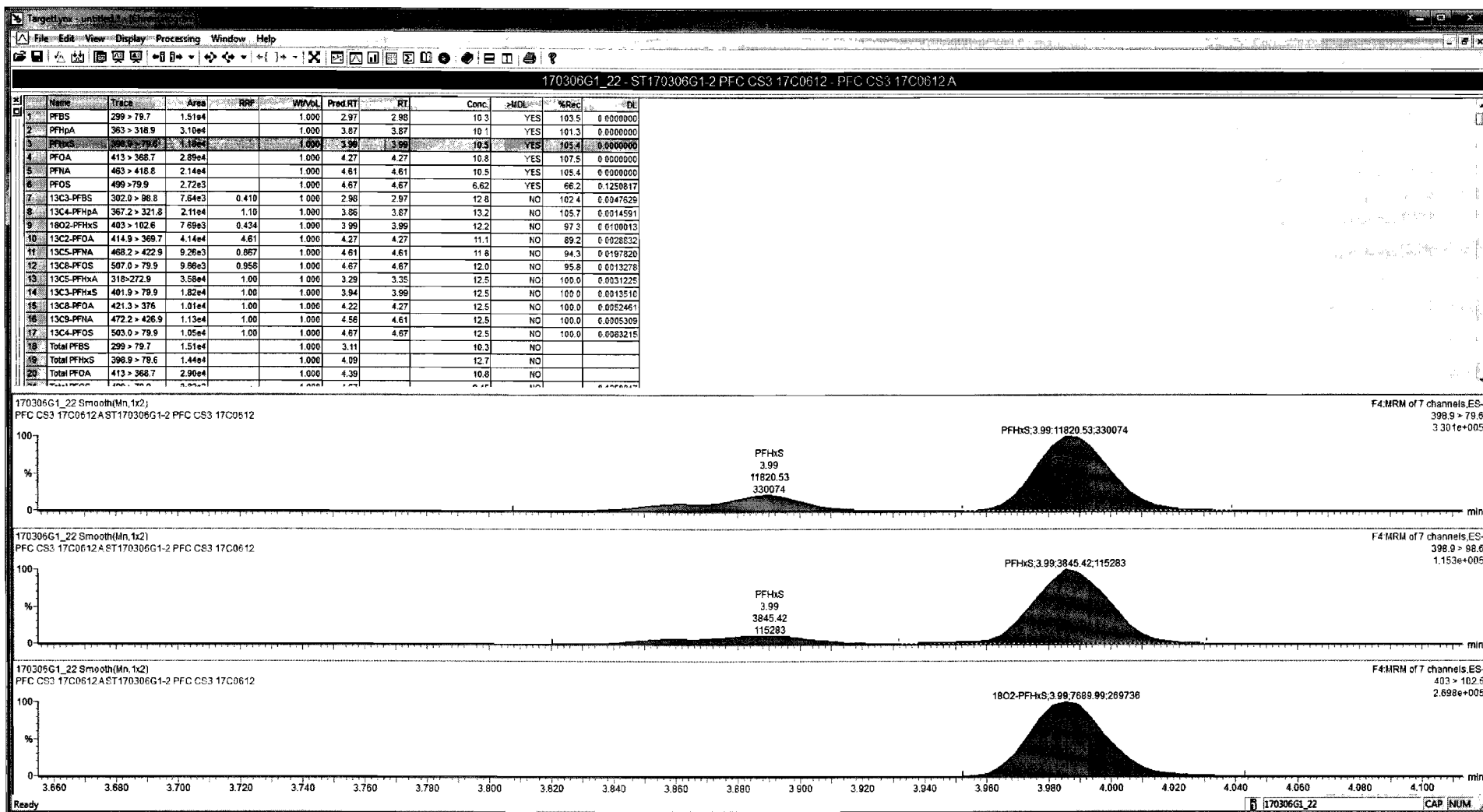
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13C2-PFOA

170306G1_22





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Last Altered: Tuesday, March 07, 2017 09:01:05 Pacific Standard Time

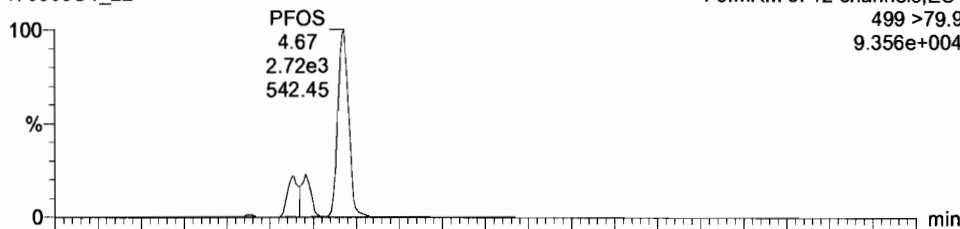
Printed: Tuesday, March 07, 2017 09:01:09 Pacific Standard Time

Name: 170306G1_22, Date: 06-Mar-2017, Time: 19:48:29, ID: ST170306G1-2 PFC CS3 17C0612, Description: PFC CS3 17C0612 A

PFOS

170306G1_22

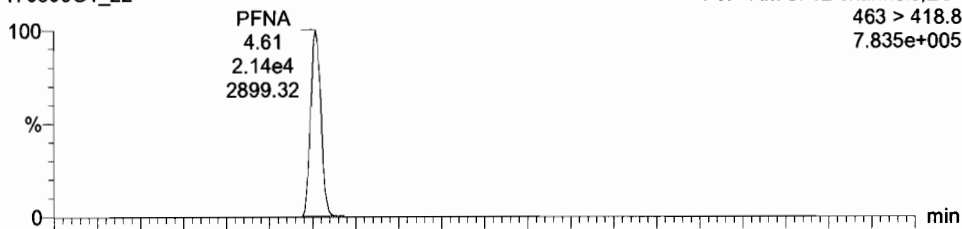
F5:MRM of 12 channels,ES-
499 > 79.9
9.356e+004



PFNA

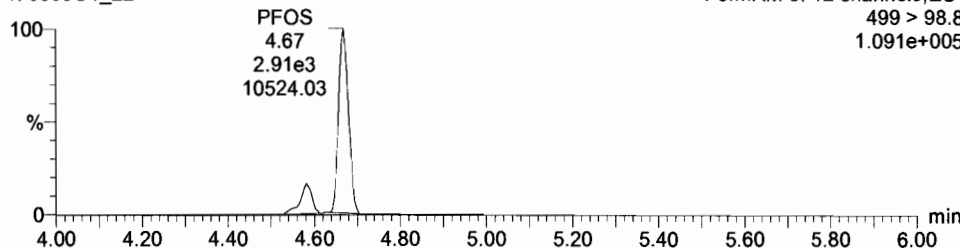
170306G1_22

F5:MRM of 12 channels,ES-
463 > 418.8
7.835e+005



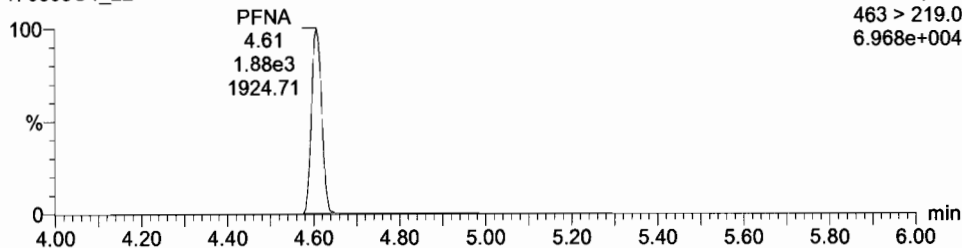
170306G1_22

F5:MRM of 12 channels,ES-
499 > 98.8
1.091e+005



170306G1_22

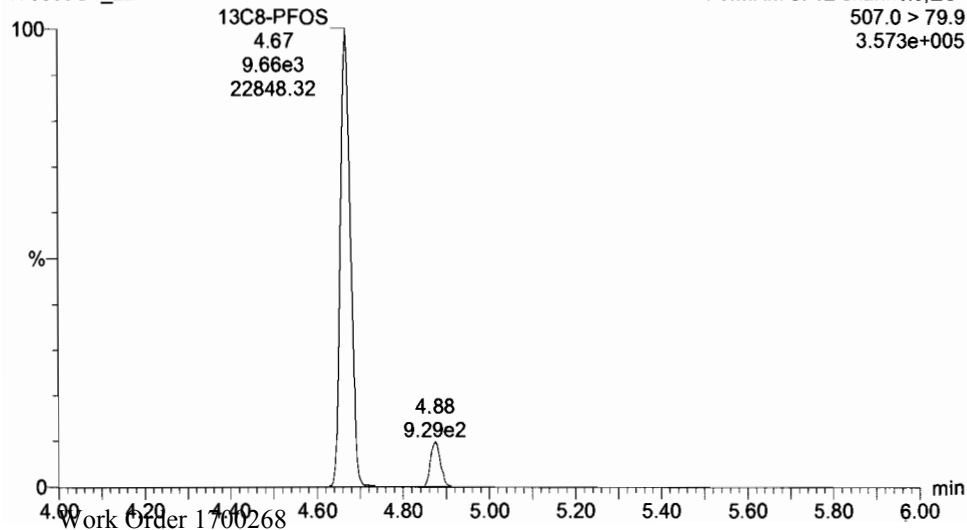
F5:MRM of 12 channels,ES-
463 > 219.0
6.968e+004



13C8-PFOS

170306G1_22

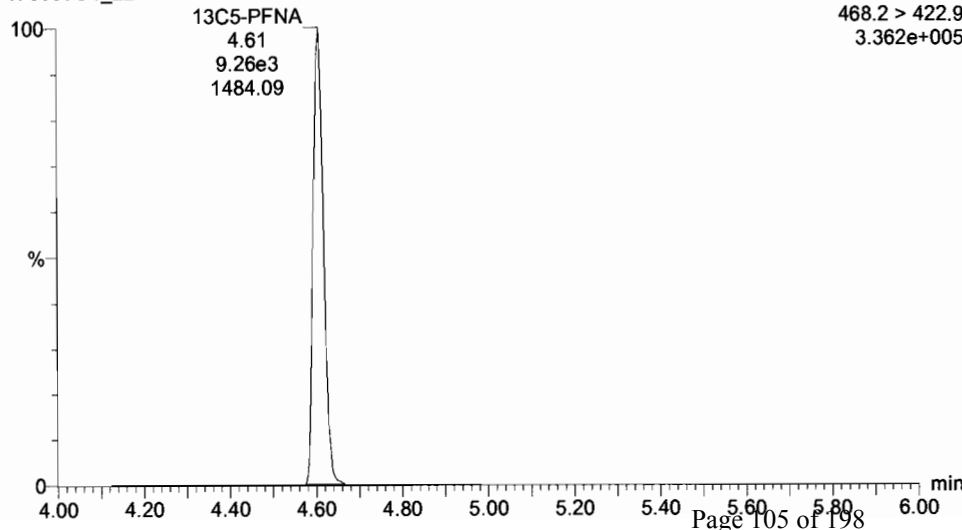
F5:MRM of 12 channels,ES-
507.0 > 79.9
3.573e+005

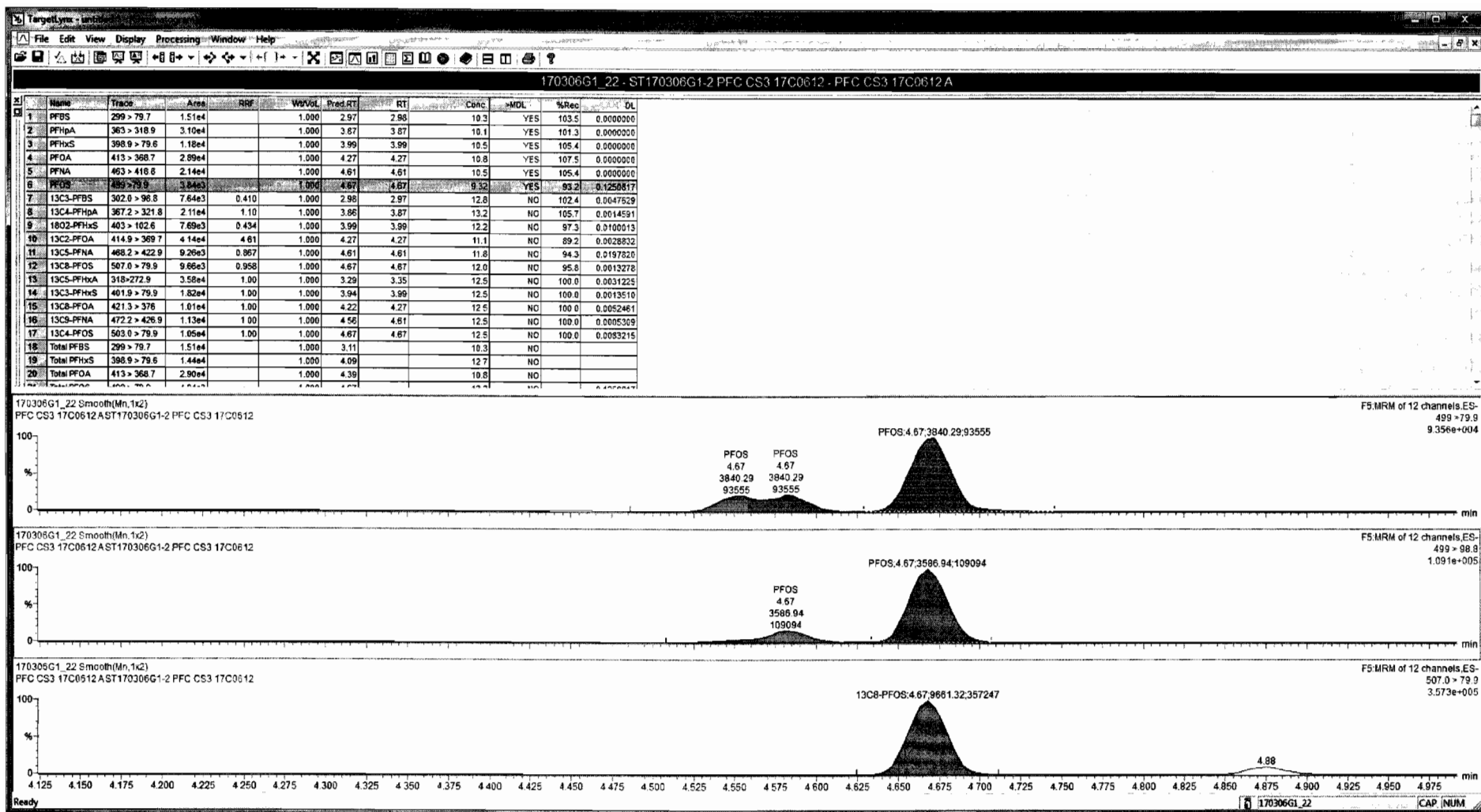


13C5-PFNA

170306G1_22

F5:MRM of 12 channels,ES-
468.2 > 422.9
3.362e+005





Dataset: Untitled

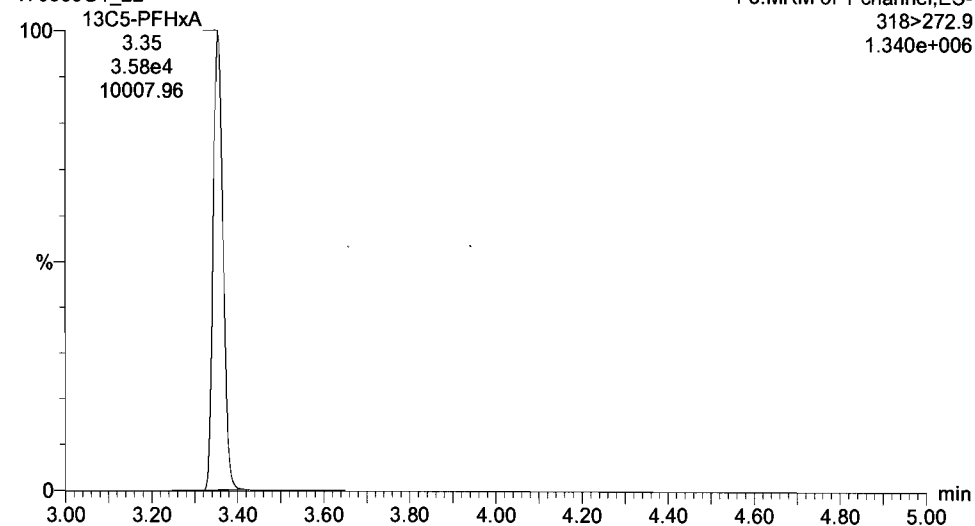
Last Altered: Tuesday, March 07, 2017 09:01:05 Pacific Standard Time

Printed: Tuesday, March 07, 2017 09:01:09 Pacific Standard Time

Name: 170306G1_22, Date: 06-Mar-2017, Time: 19:48:29, ID: ST170306G1-2 PFC CS3 17C0612, Description: PFC CS3 17C0612 A

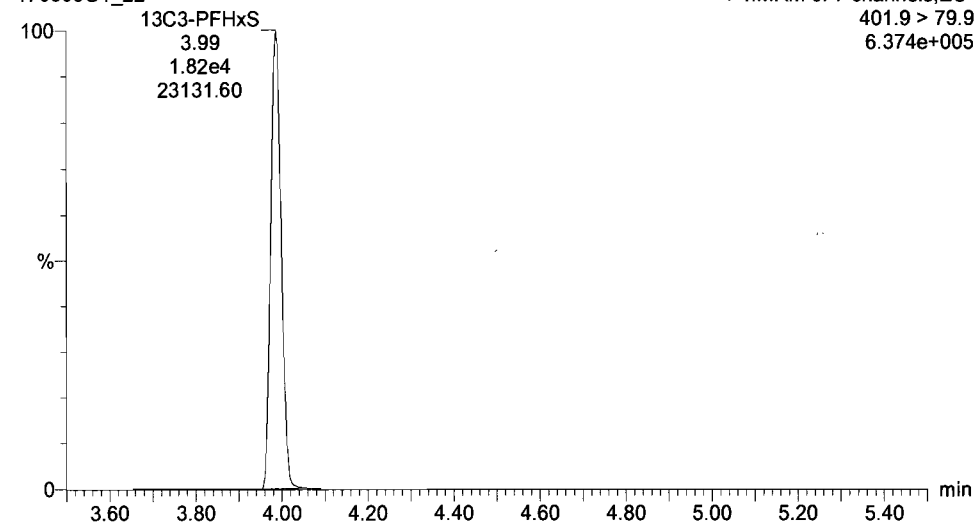
13C5-PFHxA

170306G1_22



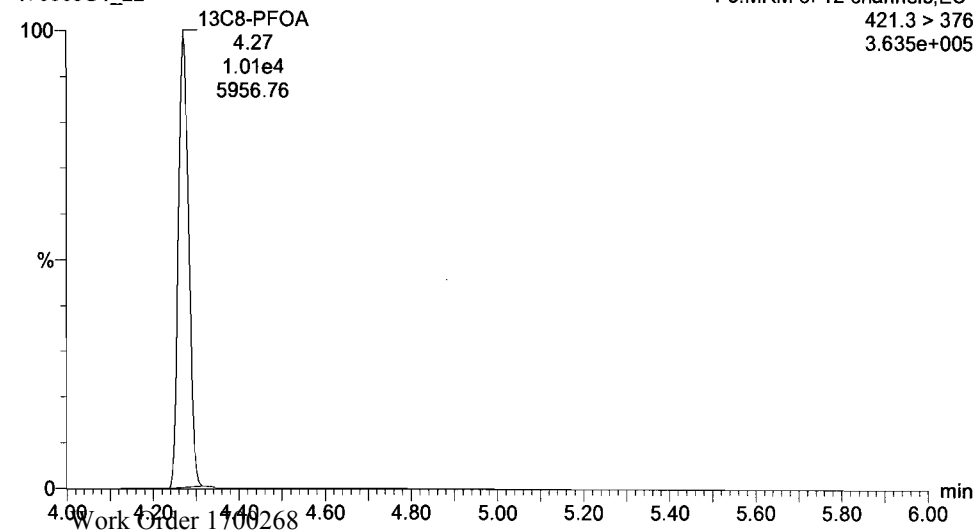
13C3-PFHxS

170306G1_22



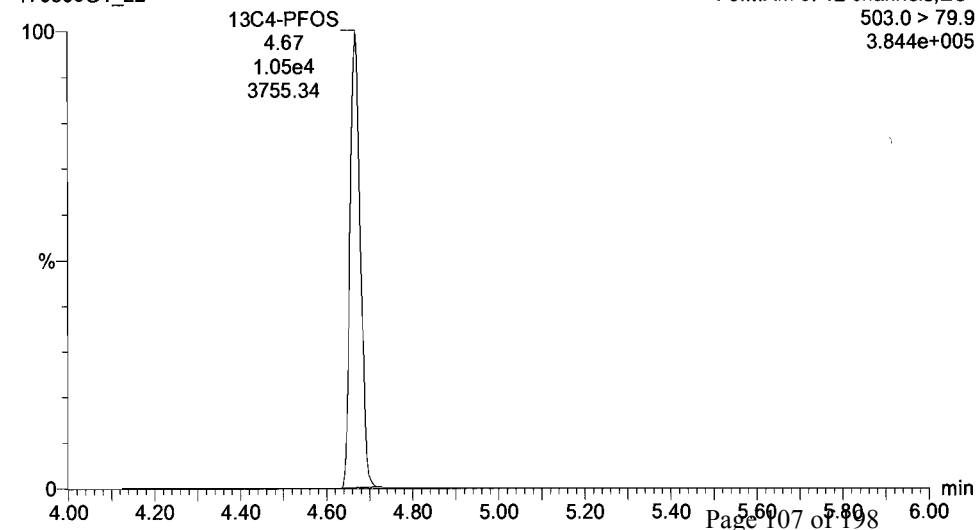
13C8-PFOA

170306G1_22



13C4-PFOS

170306G1_22

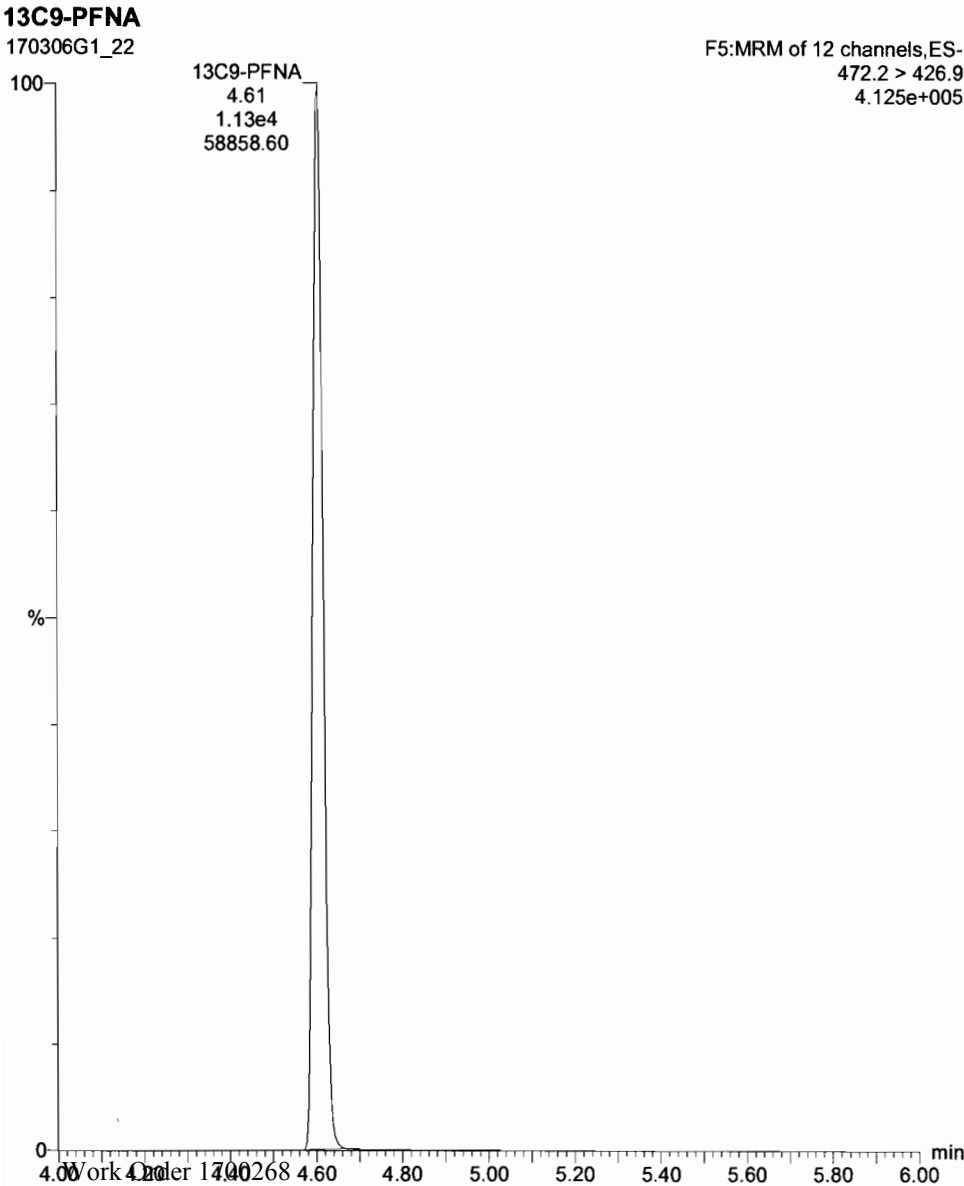


Dataset: Untitled

Last Altered: Tuesday, March 07, 2017 09:01:05 Pacific Standard Time

Printed: Tuesday, March 07, 2017 09:01:09 Pacific Standard Time

Name: 170306G1_22, Date: 06-Mar-2017, Time: 19:48:29, ID: ST170306G1-2 PFC CS3 17C0612, Description: PFC CS3 17C0612 A



INITIAL CALIBRATION

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:29:13 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.PRO\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:19:21

Compound name: PFBS

Correlation coefficient: $r = 0.999596$, $r^2 = 0.999192$

Calibration curve: $2.38097 * x + 0.0682571$

Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	0.250	3.05	3.44e2	6.21e3	0.263	5.1	2.77
2	2 170305G1_3	0.500	3.05	6.19e2	6.45e3	0.475	-5.0	2.40
3	3 170305G1_4	1.00	3.04	1.07e3	5.41e3	1.01	1.1	2.47
4	4 170305G1_5	2.00	3.03	2.78e3	7.24e3	1.99	-0.7	2.40
5	5 170305G1_6	5.00	3.03	5.91e3	6.73e3	4.58	-8.4	2.20
6	6 170305G1_7	10.0	3.03	1.12e4	5.49e3	10.7	7.2	2.56
7	7 170305G1_8	50.0	3.03	5.43e4	5.58e3	51.1	2.1	2.43
8	8 170305G1_9	100	3.03	9.61e4	5.11e3	98.6	-1.4	2.35

ES 3/6/17

Compound name: PFHpA

Correlation coefficient: $r = 0.999429$, $r^2 = 0.998857$

Calibration curve: $1.79957 * x + 0.123896$

Response type: Internal Std (Ref 8), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	0.250	3.93	7.46e2	1.70e4	0.235	-5.8	2.19
2	2 170305G1_3	0.500	3.92	1.43e3	1.69e4	0.518	3.7	2.11
3	3 170305G1_4	1.00	3.91	2.27e3	1.52e4	0.964	-3.6	1.86
4	4 170305G1_5	2.00	3.91	5.65e3	1.86e4	2.05	2.3	1.90
5	5 170305G1_6	5.00	3.91	1.36e4	1.95e4	4.78	-4.4	1.74
6	6 170305G1_7	10.0	3.91	1.98e4	1.29e4	10.6	6.4	1.93
7	7 170305G1_8	50.0	3.91	1.16e5	1.55e4	51.9	3.8	1.87
8	8 170305G1_9	100	3.91	1.99e5	1.42e4	97.6	-2.4	1.76

✓ AC
3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:29:13 Pacific Standard Time

Compound name: PFHxS

Correlation coefficient: $r = 0.999200$, $r^2 = 0.998401$

Calibration curve: $1.81334 * x + 0.103191$

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	0.250	4.04	3.26e2	7.11e3	0.259	3.8	2.29
2	2 170305G1_3	0.500	4.03	5.47e2	6.83e3	0.496	-0.9	2.00
3	3 170305G1_4	1.00	4.03	8.97e2	5.85e3	1.00	0.1	1.92
4	4 170305G1_5	2.00	4.03	2.23e3	7.43e3	2.01	0.5	1.87
5	5 170305G1_6	5.00	4.03	5.17e3	7.64e3	4.60	-8.0	1.69
6	6 170305G1_7	10.0	4.03	6.69e3	4.52e3	10.1	1.5	1.85
7	7 170305G1_8	50.0	4.03	4.78e4	6.24e3	52.8	5.6	1.92
8	8 170305G1_9	100	4.03	8.33e4	5.89e3	97.4	-2.6	1.77

Compound name: PFOA

Correlation coefficient: $r = 0.998804$, $r^2 = 0.997609$

Calibration curve: $0.794457 * x + 0.179058$

Response type: Internal Std (Ref 10), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	0.250	4.32	1.04e3	3.51e4	0.241	-3.7	1.48
2	2 170305G1_3	0.500	4.31	1.52e3	3.53e4	0.452	-9.6	1.08
3	3 170305G1_4	1.00	4.30	2.09e3	2.91e4	0.908	-9.2	0.901
4	4 170305G1_5	2.00	4.30	5.39e3	3.70e4	2.06	3.1	0.909
5	5 170305G1_6	5.00	4.30	1.24e4	3.46e4	5.43	8.5	0.898
6	6 170305G1_7	10.0	4.30	1.56e4	2.18e4	11.0	9.8	0.890
7	7 170305G1_8	50.0	4.30	1.10e5	3.30e4	52.3	4.6	0.835
8	8 170305G1_9	100	4.30	1.98e5	3.22e4	96.4	-3.6	0.767

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time

Printed: Monday, March 06, 2017 08:29:13 Pacific Standard Time

Compound name: PFNA

Correlation coefficient: $r = 0.999011$, $r^2 = 0.998022$

Calibration curve: $2.73664 * x + 0.0966541$

Response type: Internal Std (Ref 11), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	0.250	4.65	5.06e2	8.36e3	0.241	-3.5	3.03
2	2 170305G1_3	0.500	4.64	8.81e2	7.67e3	0.489	-2.1	2.87
3	3 170305G1_4	1.00	4.63	1.26e3	5.74e3	0.968	-3.2	2.75
4	4 170305G1_5	2.00	4.63	3.17e3	6.97e3	2.04	2.0	2.84
5	5 170305G1_6	5.00	4.63	7.77e3	7.48e3	4.71	-5.8	2.60
6	6 170305G1_7	10.0	4.63	7.05e3	2.88e3	11.1	11.4	3.06
7	7 170305G1_8	50.0	4.63	7.41e4	6.50e3	52.1	4.1	2.85
8	8 170305G1_9	100	4.63	1.56e5	7.35e3	97.1	-2.9	2.66

Compound name: PFOS

Coefficient of Determination: $R^2 = 0.997963$

Calibration curve: $-0.000185224 * x^2 + 0.54028 * x + -0.0525057$

Response type: Internal Std (Ref 12), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	0.250	4.62	3.72e1	6.28e3	0.234	-6.3	0.296
2	2 170305G1_3	0.500	4.71	7.39e1	6.57e3	0.358	-28.5	0.281
3	3 170305G1_4	1.00	4.69	1.82e2	4.73e3	0.989	-1.1	0.482
4	4 170305G1_5	2.00	4.69	5.28e2	5.18e3	2.46	23.0	0.638
5	5 170305G1_6	5.00	4.69	1.23e3	5.64e3	5.14	2.8	0.544
6	6 170305G1_7	10.0	4.69	8.60e2	1.88e3	10.7	7.1	0.571
7	7 170305G1_8	50.0	4.69	1.04e4	5.14e3	47.8	-4.4	0.507
8	8 170305G1_9	100	4.69	2.64e4	6.26e3	101	1.1	0.527

Ⓐ Point excluded.
es 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time

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Compound name: 13C3-PFBS

Response Factor: 0.40994

RRF SD: 0.0411734, Relative SD: 10.0438

Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	3.05	6.21e3	1.48e4	12.8	2.4	0.420
2	2 170305G1_3	12.5	3.05	6.45e3	1.61e4	12.2	-2.5	0.400
3	3 170305G1_4	12.5	3.03	5.41e3	1.44e4	11.5	-8.1	0.377
4	4 170305G1_5	12.5	3.03	7.24e3	1.74e4	12.7	1.2	0.415
5	5 170305G1_6	12.5	3.03	6.73e3	1.72e4	11.9	-4.7	0.391
6	6 170305G1_7	12.5	3.03	5.49e3	1.09e4	15.4	23.0	0.504
7	7 170305G1_8	12.5	3.03	5.58e3	1.48e4	11.5	-7.9	0.378
8	8 170305G1_9	12.5	3.03	5.11e3	1.29e4	12.1	-3.5	0.396

Compound name: 13C4-PFHpA

Response Factor: 1.09794

RRF SD: 0.0510391, Relative SD: 4.64862

Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	3.92	1.70e4	1.48e4	13.1	5.0	1.15
2	2 170305G1_3	12.5	3.92	1.69e4	1.61e4	11.9	-4.5	1.05
3	3 170305G1_4	12.5	3.91	1.52e4	1.44e4	12.1	-3.4	1.06
4	4 170305G1_5	12.5	3.91	1.86e4	1.74e4	12.1	-3.1	1.06
5	5 170305G1_6	12.5	3.91	1.95e4	1.72e4	12.9	3.0	1.13
6	6 170305G1_7	12.5	3.91	1.29e4	1.09e4	13.4	7.6	1.18
7	7 170305G1_8	12.5	3.91	1.55e4	1.48e4	11.9	-4.4	1.05
8	8 170305G1_9	12.5	3.91	1.42e4	1.29e4	12.5	-0.2	1.10

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

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Compound name: 18O2-PFHxS

Response Factor: 0.434252

RRF SD: 0.0243573, Relative SD: 5.60903

Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.04	7.11e3	1.48e4	13.8	10.7	0.481
2	2 170305G1_3	12.5	4.03	6.83e3	1.61e4	12.2	-2.6	0.423
3	3 170305G1_4	12.5	4.03	5.85e3	1.44e4	11.7	-6.2	0.407
4	4 170305G1_5	12.5	4.02	7.43e3	1.74e4	12.3	-1.8	0.426
5	5 170305G1_6	12.5	4.02	7.64e3	1.72e4	12.8	2.2	0.444
6	6 170305G1_7	12.5	4.02	4.52e3	1.09e4	12.0	-4.4	0.415
7	7 170305G1_8	12.5	4.02	6.24e3	1.48e4	12.1	-2.8	0.422
8	8 170305G1_9	12.5	4.02	5.89e3	1.29e4	13.1	5.0	0.456

Compound name: 13C2-PFOA

Response Factor: 4.60838

RRF SD: 0.269705, Relative SD: 5.85249

Response type: Internal Std (Ref 15), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.32	3.51e4	7.77e3	12.2	-2.0	4.51
2	2 170305G1_3	12.5	4.31	3.53e4	8.14e3	11.8	-5.8	4.34
3	3 170305G1_4	12.5	4.31	2.91e4	6.38e3	12.4	-1.0	4.56
4	4 170305G1_5	12.5	4.30	3.70e4	8.23e3	12.2	-2.4	4.50
5	5 170305G1_6	12.5	4.30	3.46e4	7.88e3	11.9	-4.6	4.40
6	6 170305G1_7	12.5	4.30	2.18e4	4.25e3	13.9	11.6	5.14
7	7 170305G1_8	12.5	4.30	3.30e4	7.29e3	12.3	-1.8	4.53
8	8 170305G1_9	12.5	4.30	3.22e4	6.59e3	13.3	6.0	4.89

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

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Compound name: 13C5-PFNA

Response Factor: 0.867114

RRF SD: 0.0501317, Relative SD: 5.78144

Response type: Internal Std (Ref 16), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.64	8.36e3	8.87e3	13.6	8.7	0.943
2	2 170305G1_3	12.5	4.64	7.67e3	8.20e3	13.5	7.9	0.936
3	3 170305G1_4	12.5	4.63	5.74e3	7.15e3	11.6	-7.4	0.803
4	4 170305G1_5	12.5	4.63	6.97e3	8.16e3	12.3	-1.4	0.855
5	5 170305G1_6	12.5	4.63	7.48e3	8.62e3	12.5	0.0	0.867
6	6 170305G1_7	12.5	4.63	2.88e3	3.54e3	11.7	-6.0	0.815
7	7 170305G1_8	12.5	4.63	6.50e3	7.60e3	12.3	-1.3	0.856
8	8 170305G1_9	12.5	4.63	7.35e3	8.52e3	12.4	-0.5	0.863

Compound name: 13C8-PFOS

Response Factor: 0.95832

RRF SD: 0.0597595, Relative SD: 6.23587

Response type: Internal Std (Ref 17), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.70	6.28e3	6.73e3	12.2	-2.5	0.934
2	2 170305G1_3	12.5	4.70	6.57e3	7.11e3	12.1	-3.6	0.924
3	3 170305G1_4	12.5	4.69	4.73e3	5.19e3	11.9	-4.7	0.913
4	4 170305G1_5	12.5	4.69	5.18e3	5.45e3	12.4	-0.9	0.950
5	5 170305G1_6	12.5	4.69	5.64e3	6.31e3	11.7	-6.8	0.894
6	6 170305G1_7	12.5	4.69	1.88e3	1.74e3	14.1	12.8	1.08
7	7 170305G1_8	12.5	4.69	5.14e3	5.13e3	13.1	4.4	1.00
8	8 170305G1_9	12.5	4.69	6.26e3	6.45e3	12.7	1.3	0.971

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

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Compound name: 13C5-PFHxA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 13), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	3.43	2.72e4	2.72e4	12.5	0.0	1.00
2	2 170305G1_3	12.5	3.43	2.95e4	2.95e4	12.5	0.0	1.00
3	3 170305G1_4	12.5	3.41	2.60e4	2.60e4	12.5	0.0	1.00
4	4 170305G1_5	12.5	3.41	3.17e4	3.17e4	12.5	0.0	1.00
5	5 170305G1_6	12.5	3.41	3.10e4	3.10e4	12.5	0.0	1.00
6	6 170305G1_7	12.5	3.41	2.37e4	2.37e4	12.5	0.0	1.00
7	7 170305G1_8	12.5	3.41	2.69e4	2.69e4	12.5	0.0	1.00
8	8 170305G1_9	12.5	3.41	2.39e4	2.39e4	12.5	0.0	1.00

Compound name: 13C3-PFHxS

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.04	1.48e4	1.48e4	12.5	0.0	1.00
2	2 170305G1_3	12.5	4.03	1.61e4	1.61e4	12.5	0.0	1.00
3	3 170305G1_4	12.5	4.03	1.44e4	1.44e4	12.5	0.0	1.00
4	4 170305G1_5	12.5	4.02	1.74e4	1.74e4	12.5	0.0	1.00
5	5 170305G1_6	12.5	4.02	1.72e4	1.72e4	12.5	0.0	1.00
6	6 170305G1_7	12.5	4.03	1.09e4	1.09e4	12.5	0.0	1.00
7	7 170305G1_8	12.5	4.02	1.48e4	1.48e4	12.5	0.0	1.00
8	8 170305G1_9	12.5	4.02	1.29e4	1.29e4	12.5	0.0	1.00

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time

Printed: Monday, March 06, 2017 08:29:13 Pacific Standard Time

Compound name: 13C8-PFOA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 15), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.32	7.77e3	7.77e3	12.5	0.0	1.00
2	2 170305G1_3	12.5	4.31	8.14e3	8.14e3	12.5	0.0	1.00
3	3 170305G1_4	12.5	4.30	6.38e3	6.38e3	12.5	0.0	1.00
4	4 170305G1_5	12.5	4.30	8.23e3	8.23e3	12.5	0.0	1.00
5	5 170305G1_6	12.5	4.30	7.88e3	7.88e3	12.5	0.0	1.00
6	6 170305G1_7	12.5	4.30	4.25e3	4.25e3	12.5	0.0	1.00
7	7 170305G1_8	12.5	4.30	7.29e3	7.29e3	12.5	0.0	1.00
8	8 170305G1_9	12.5	4.30	6.59e3	6.59e3	12.5	0.0	1.00

Compound name: 13C9-PFNA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 16), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.64	8.87e3	8.87e3	12.5	0.0	1.00
2	2 170305G1_3	12.5	4.64	8.20e3	8.20e3	12.5	0.0	1.00
3	3 170305G1_4	12.5	4.63	7.15e3	7.15e3	12.5	0.0	1.00
4	4 170305G1_5	12.5	4.63	8.16e3	8.16e3	12.5	0.0	1.00
5	5 170305G1_6	12.5	4.63	8.62e3	8.62e3	12.5	0.0	1.00
6	6 170305G1_7	12.5	4.63	3.54e3	3.54e3	12.5	0.0	1.00
7	7 170305G1_8	12.5	4.63	7.60e3	7.60e3	12.5	0.0	1.00
8	8 170305G1_9	12.5	4.63	8.52e3	8.52e3	12.5	0.0	1.00

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time

Printed: Monday, March 06, 2017 08:29:13 Pacific Standard Time

Compound name: 13C4-PFOS

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 17), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.70	6.73e3	6.73e3	12.5	0.0	1.00
2	2 170305G1_3	12.5	4.70	7.11e3	7.11e3	12.5	0.0	1.00
3	3 170305G1_4	12.5	4.69	5.19e3	5.19e3	12.5	0.0	1.00
4	4 170305G1_5	12.5	4.69	5.45e3	5.45e3	12.5	0.0	1.00
5	5 170305G1_6	12.5	4.69	6.31e3	6.31e3	12.5	0.0	1.00
6	6 170305G1_7	12.5	4.69	1.74e3	1.74e3	12.5	0.0	1.00
7	7 170305G1_8	12.5	4.69	5.13e3	5.13e3	12.5	0.0	1.00
8	8 170305G1_9	12.5	4.69	6.45e3	6.45e3	12.5	0.0	1.00

Dataset: Untitled

Last Altered: Monday, March 06, 2017 09:13:54 Pacific Standard Time

Printed: Monday, March 06, 2017 09:14:12 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	170305G1_1	IPA	05-Mar-17	12:34:35
2	170305G1_2	ST170305G1-1 PFC CS-2 17C0501	05-Mar-17	12:46:48
3	170305G1_3	ST170305G1-2 PFC CS-1 17C0502	05-Mar-17	12:59:15
4	170305G1_4	ST170305G1-3 PFC CS0 17C0503	05-Mar-17	13:11:49
5	170305G1_5	ST170305G1-4 PFC CS1 17C0504	05-Mar-17	13:24:21
6	170305G1_6	ST170305G1-5 PFC CS2 17C0505	05-Mar-17	13:36:55
7	170305G1_7	ST170305G1-6 PFC CS3 17C0506	05-Mar-17	13:49:29
8	170305G1_8	ST170305G1-7 PFC CS4 17C0507	05-Mar-17	14:02:00
9	170305G1_9	ST170305G1-8 PFC CS5 17C0508	05-Mar-17	14:14:34
10	170305G1_10	IPA	05-Mar-17	14:27:08
11	170305G1_11	SS170305G1-1 PFC SSS 17C0509	05-Mar-17	14:39:40
12	170305G1_12	IPA	05-Mar-17	14:52:09
13	170305G1_13	B7C0012-BS1 OPR 0.125	05-Mar-17	15:04:45
14	170305G1_14	B7C0010-BS1 OPR 0.125	05-Mar-17	15:17:15
15	170305G1_15	IPA	05-Mar-17	15:29:48
16	170305G1_16	B7C0012-BLK1 Method Blank 0.125	05-Mar-17	15:42:23
17	170305G1_17	B7C0010-BLK1 Method Blank 0.125	05-Mar-17	15:54:54
18	170305G1_18	1700268-02RE1 WI-CV-GW05M-0217 0.125	05-Mar-17	16:07:28
19	170305G1_19	1700268-04RE1 WI-CV-GW11M-0217 0.125	05-Mar-17	16:20:00
20	170305G1_20	1700280-01 WI-CV-GW03M-0217 0.125	05-Mar-17	16:32:34
21	170305G1_21	1700280-02 WI-CV-GW03D-0217 0.125	05-Mar-17	16:45:07
22	170305G1_22	1700280-03 WI-CV-EB07-022717 0.125	05-Mar-17	16:57:36
23	170305G1_23	1700280-04 WI-CV-GW04M-0217 0.125	05-Mar-17	17:10:09
24	170305G1_24	1700280-05 WI-CV-GW01M-0217 0.125	05-Mar-17	17:22:42
25	170305G1_25	1700280-06 WI-CV-EB08-022817 0.125	05-Mar-17	17:35:16
26	170305G1_26	1700280-07 WI-CV-GW01D-0217 0.125	05-Mar-17	17:47:49
27	170305G1_27	1700277-01 MILK-022717 0.005	05-Mar-17	18:00:22
28	170305G1_28	IPA	05-Mar-17	18:12:56
29	170305G1_29	ST170305G1-9 PFC CS3 17C0506	05-Mar-17	18:25:28
30	170305G1_30	IPA	05-Mar-17	18:38:01

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time

Printed: Monday, March 06, 2017 08:27:41 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

Calibration: U:\G1.PRO\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:19:21

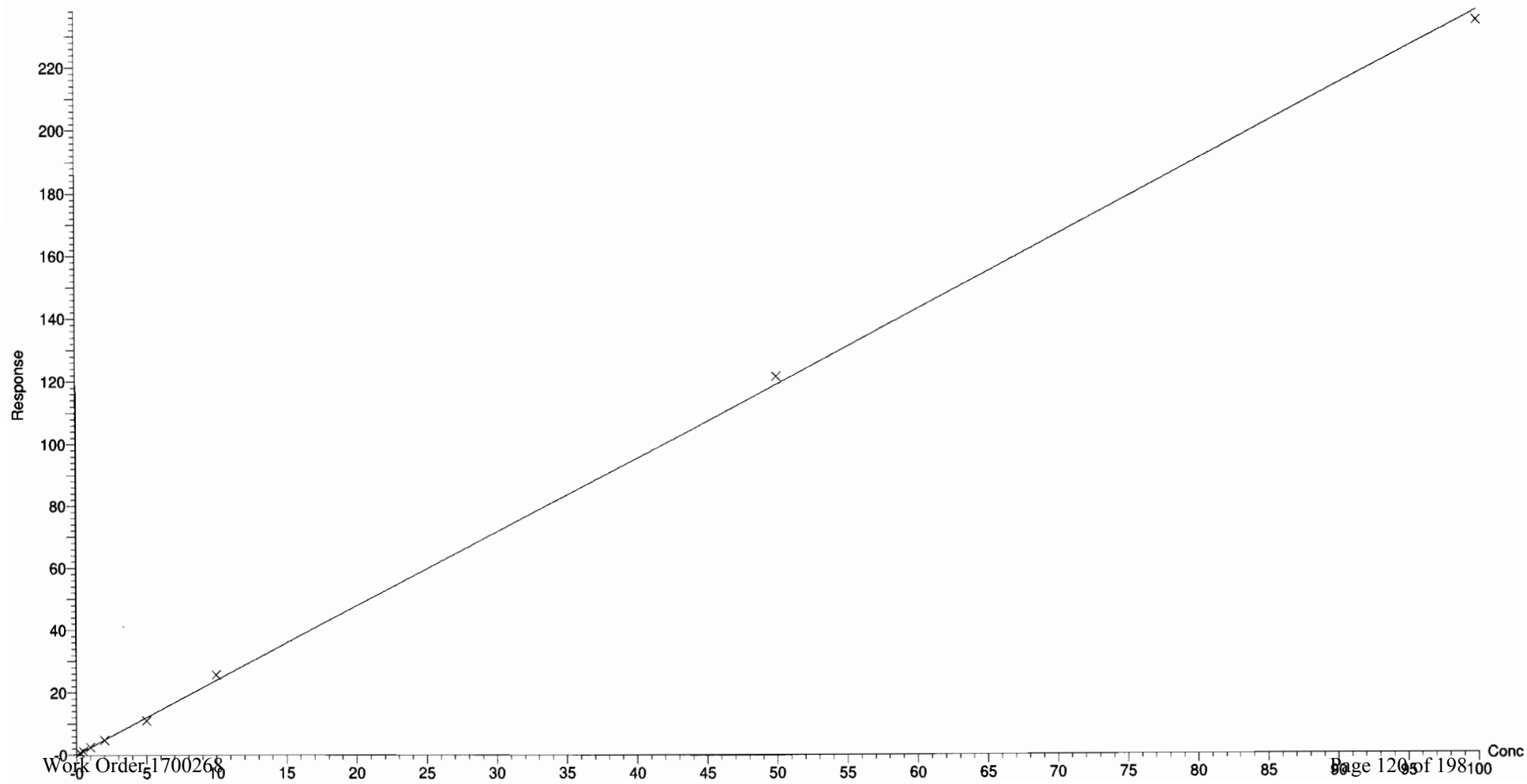
Compound name: PFBS

Correlation coefficient: $r = 0.999596$, $r^2 = 0.999192$

Calibration curve: $2.38097 * x + 0.0682571$

Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time

Printed: Monday, March 06, 2017 08:27:41 Pacific Standard Time

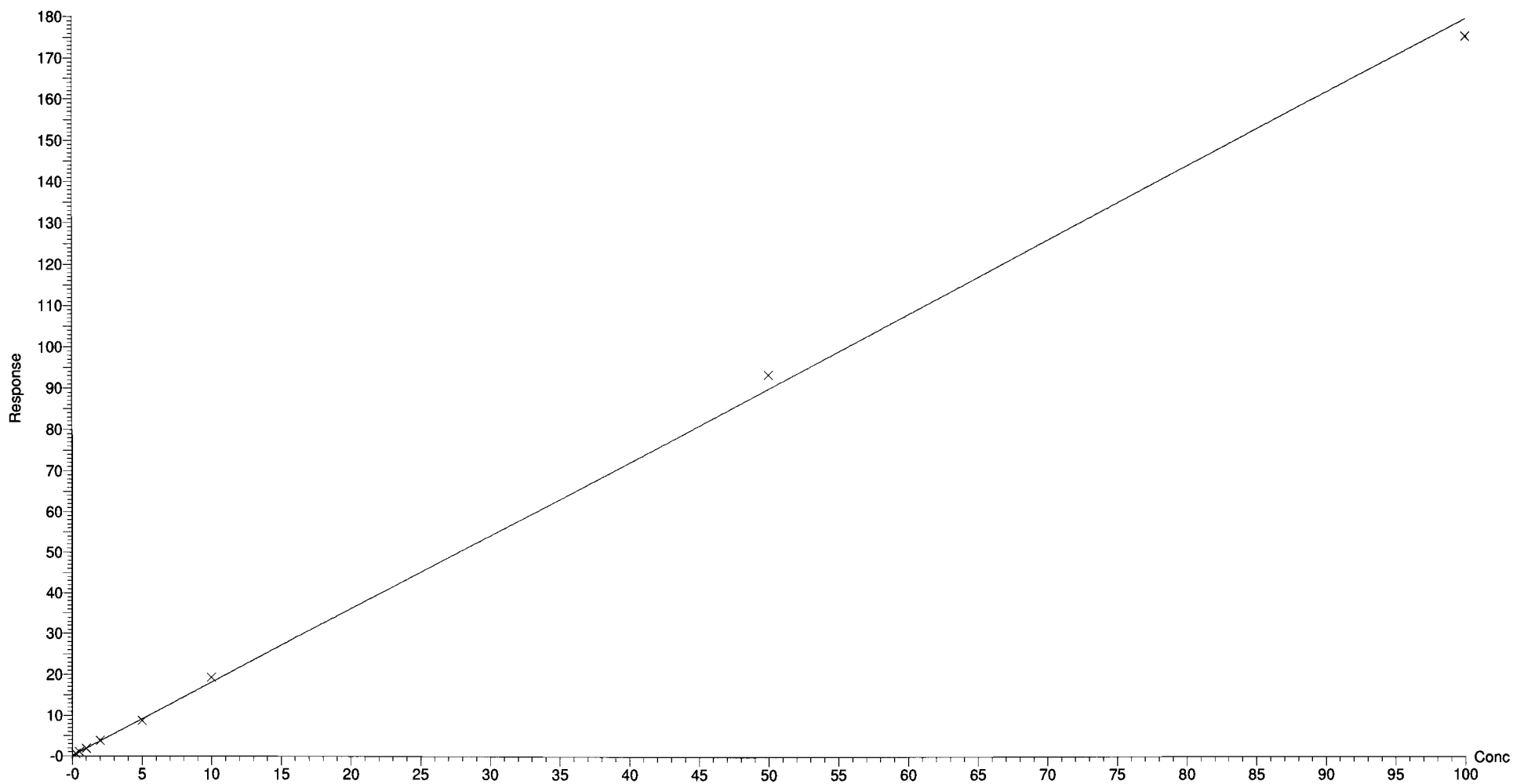
Compound name: PFHpA

Correlation coefficient: $r = 0.999429$, $r^2 = 0.998857$

Calibration curve: $1.79957 * x + 0.123896$

Response type: Internal Std (Ref 8), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time

Printed: Monday, March 06, 2017 08:27:41 Pacific Standard Time

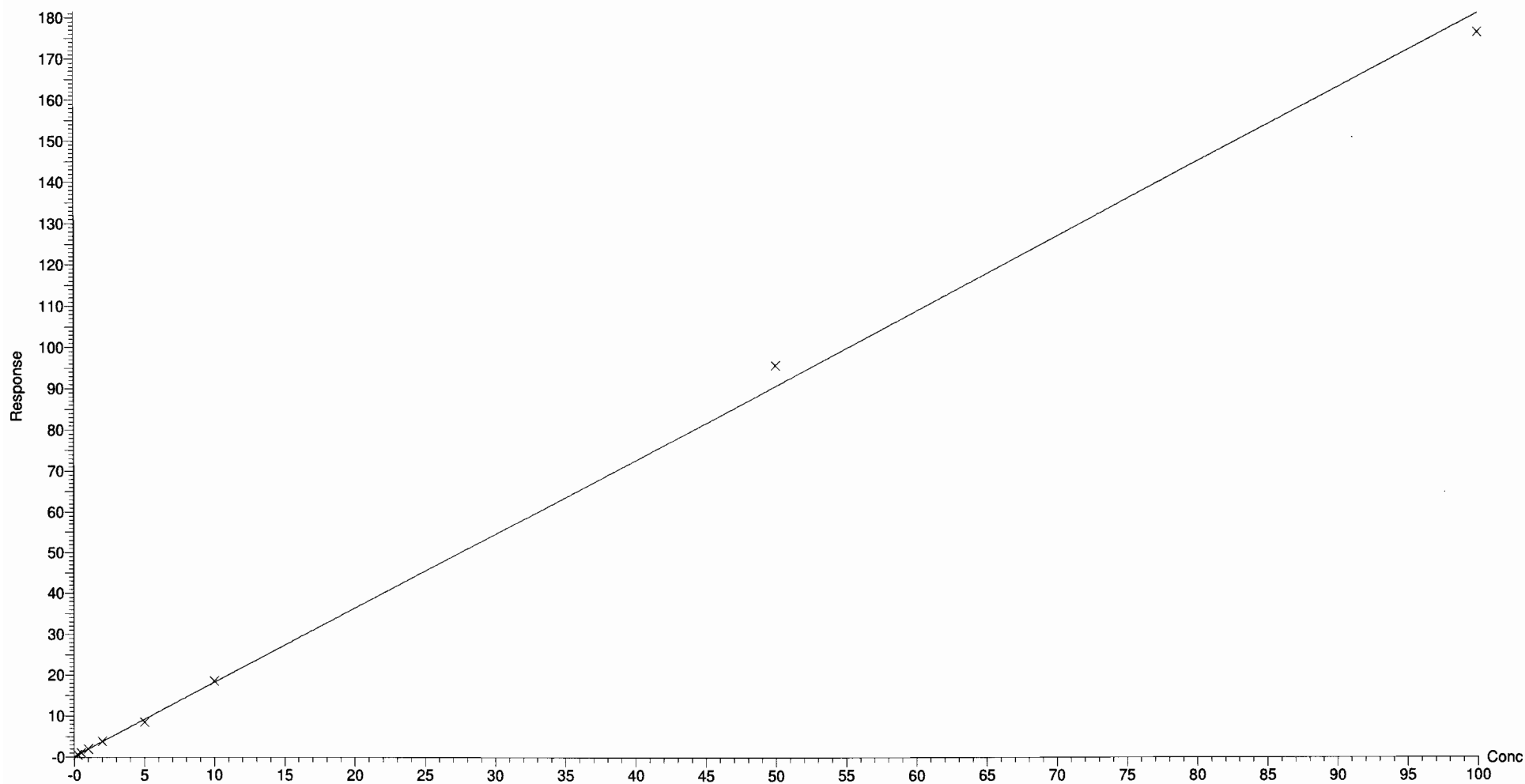
Compound name: PFHxS

Correlation coefficient: $r = 0.999200$, $r^2 = 0.998401$

Calibration curve: $1.81334 * x + 0.103191$

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time

Printed: Monday, March 06, 2017 08:27:41 Pacific Standard Time

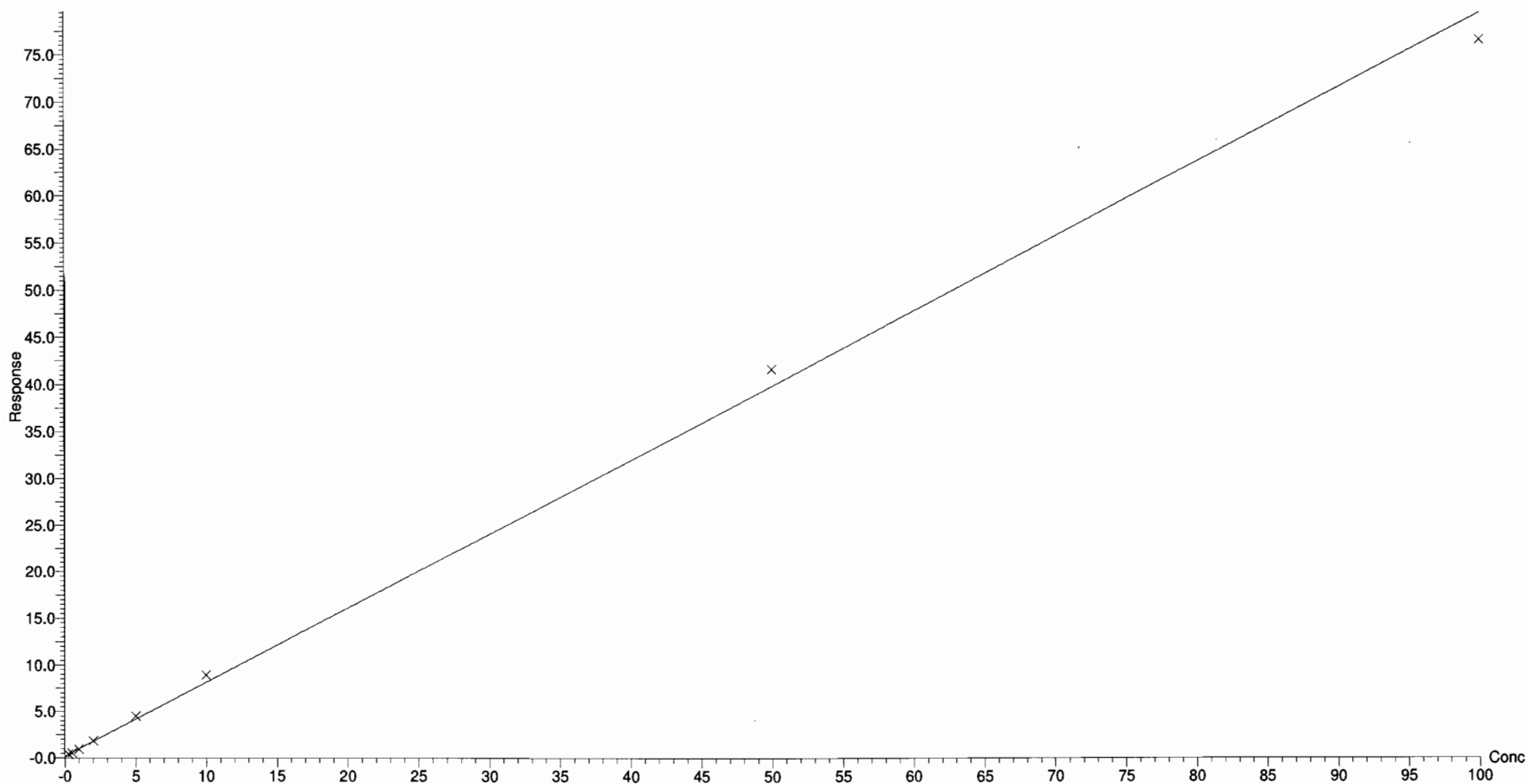
Compound name: PFOA

Correlation coefficient: $r = 0.998804$, $r^2 = 0.997609$

Calibration curve: $0.794457 * x + 0.179058$

Response type: Internal Std (Ref 10), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time

Printed: Monday, March 06, 2017 08:27:41 Pacific Standard Time

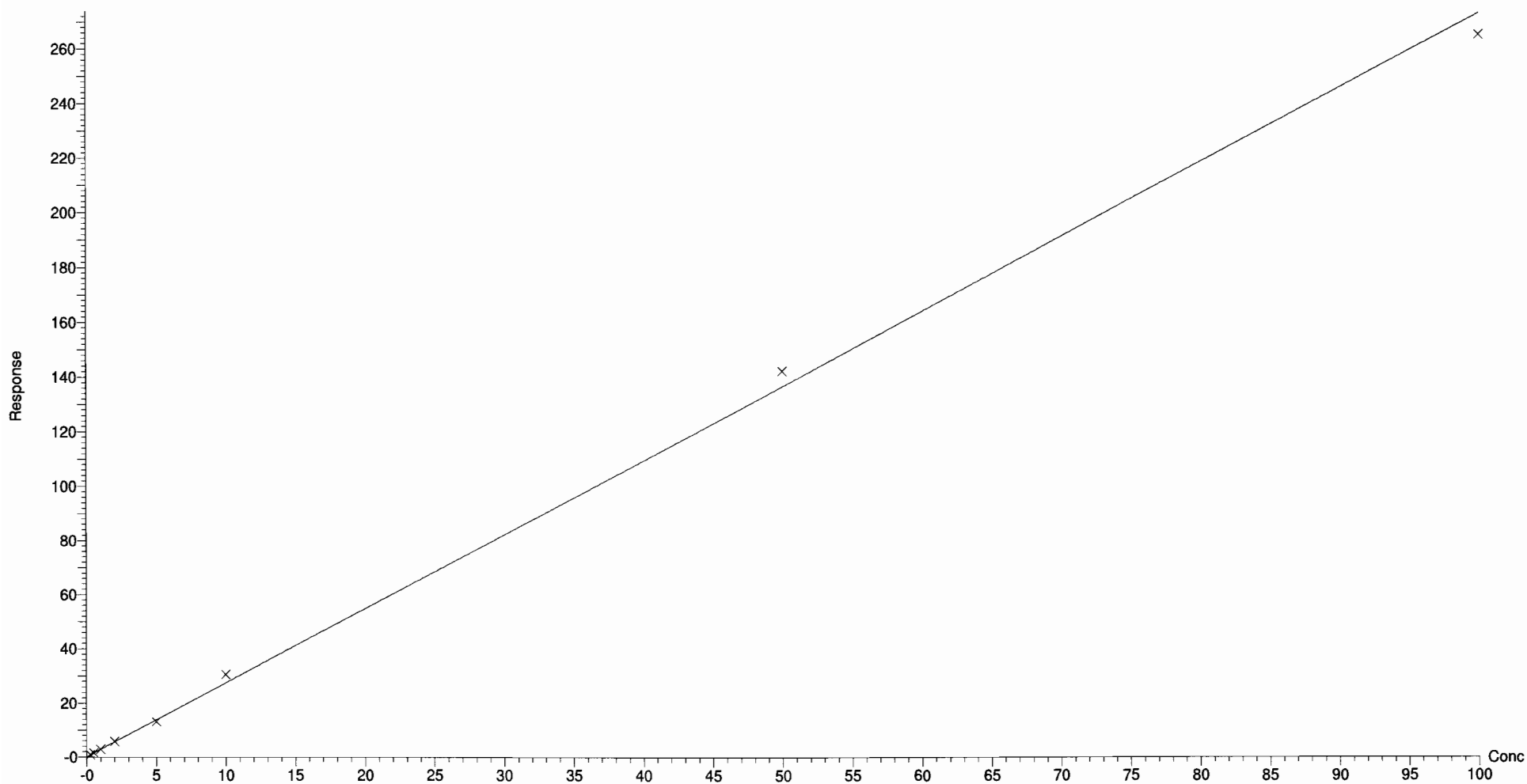
Compound name: PFNA

Correlation coefficient: $r = 0.999011$, $r^2 = 0.998022$

Calibration curve: $2.73664 * x + 0.0966541$

Response type: Internal Std (Ref 11), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time

Printed: Monday, March 06, 2017 08:27:41 Pacific Standard Time

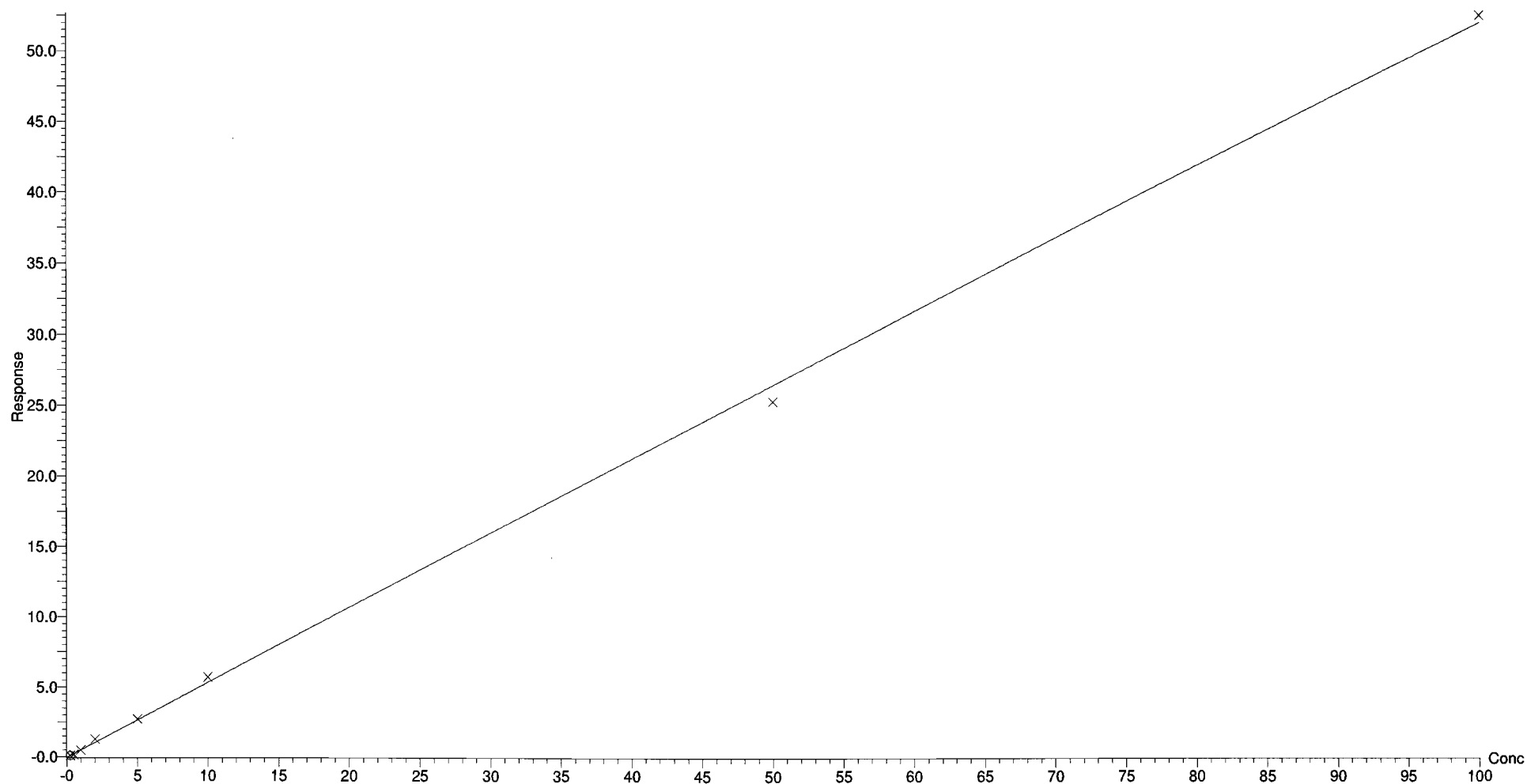
Compound name: PFOS

Coefficient of Determination: $R^2 = 0.997963$

Calibration curve: $-0.000185224 * x^2 + 0.54028 * x + -0.0525057$

Response type: Internal Std (Ref 12), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: Untitled

Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: 06 Mar 2017 08:36:20

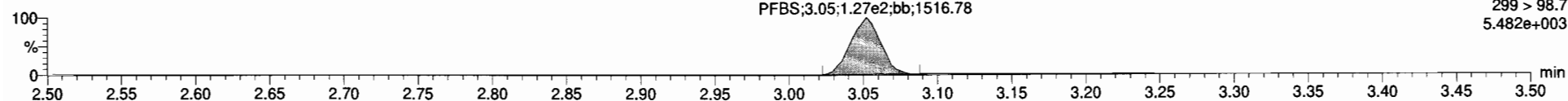
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PFBS

170305G1_2

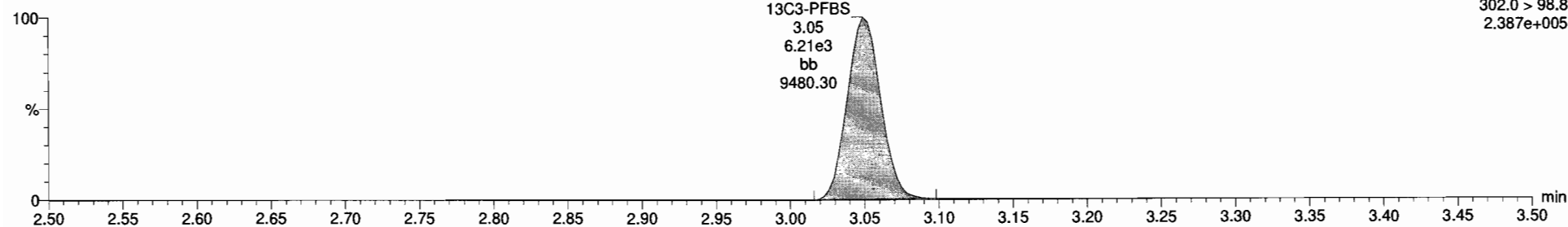


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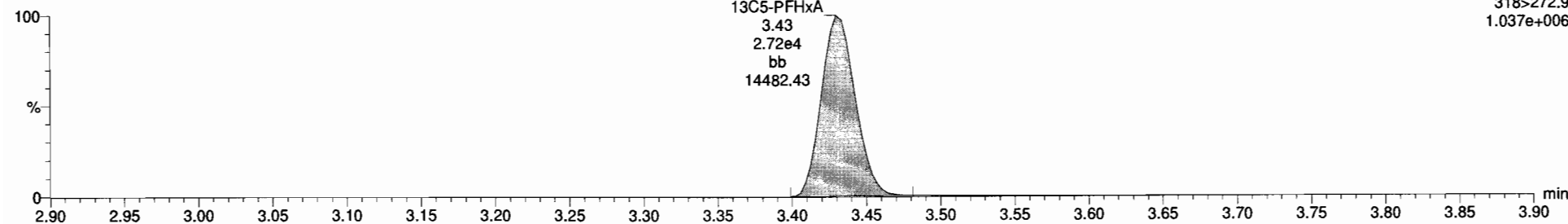
13C3-PFBS

170305G1_2



13C5-PFHxA

170305G1_2



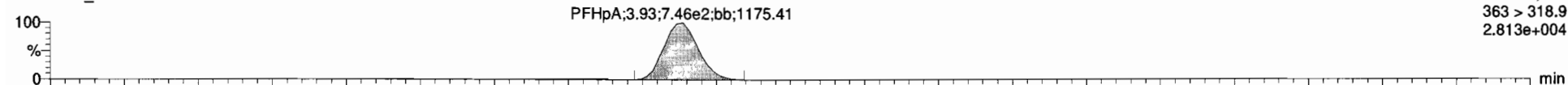
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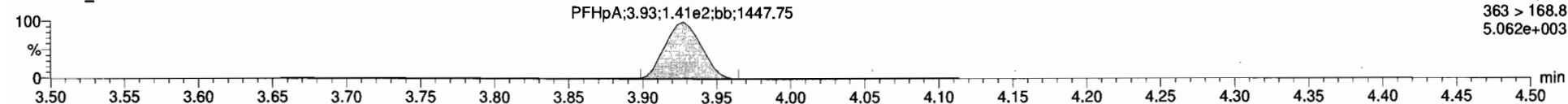
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PFHpA

170305G1_2

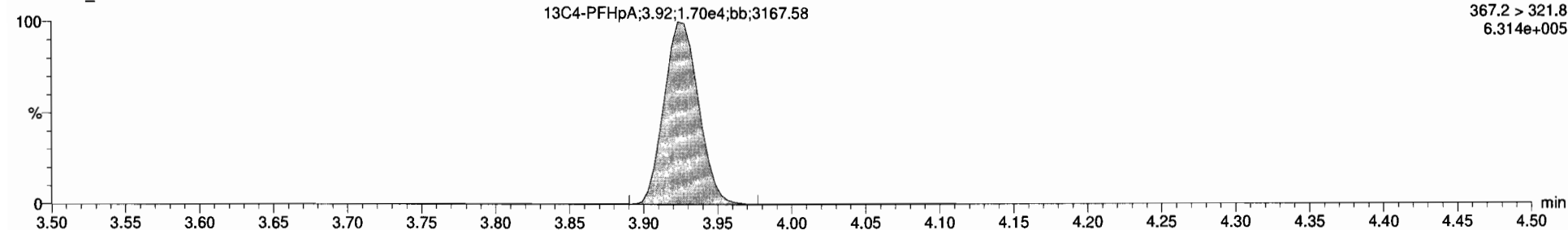


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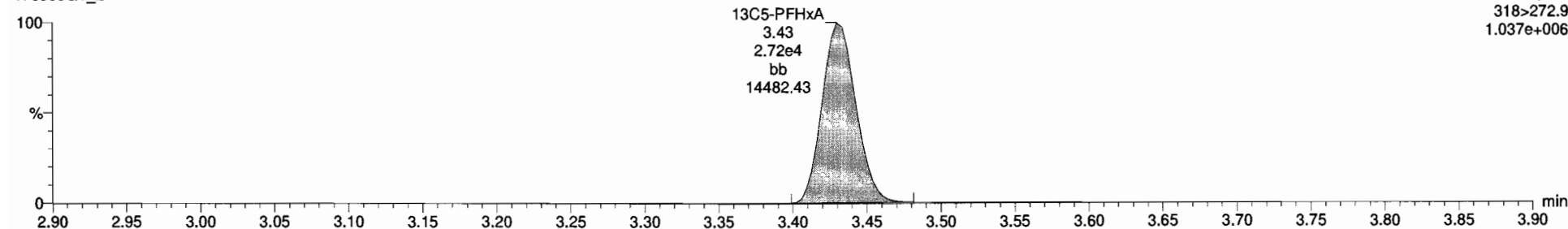
13C4-PFHpA

170305G1_2



13C5-PFHxA

170305G1_2



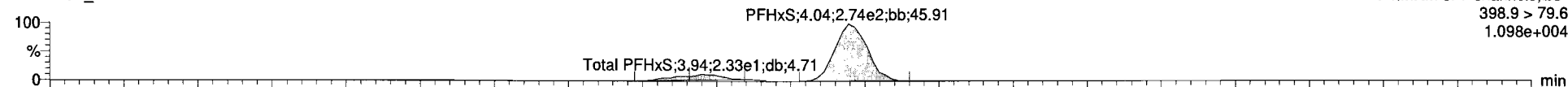
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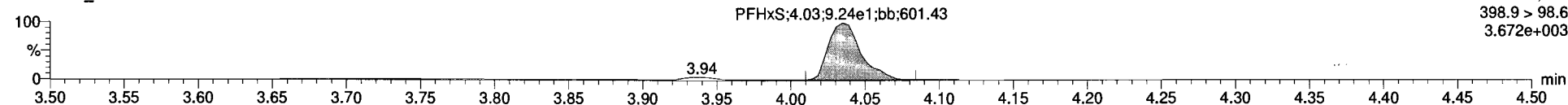
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Total PFHxS

170305G1_2

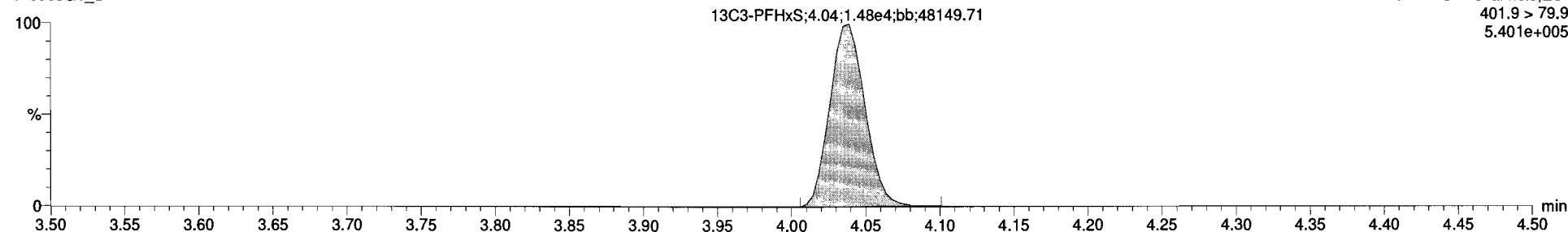


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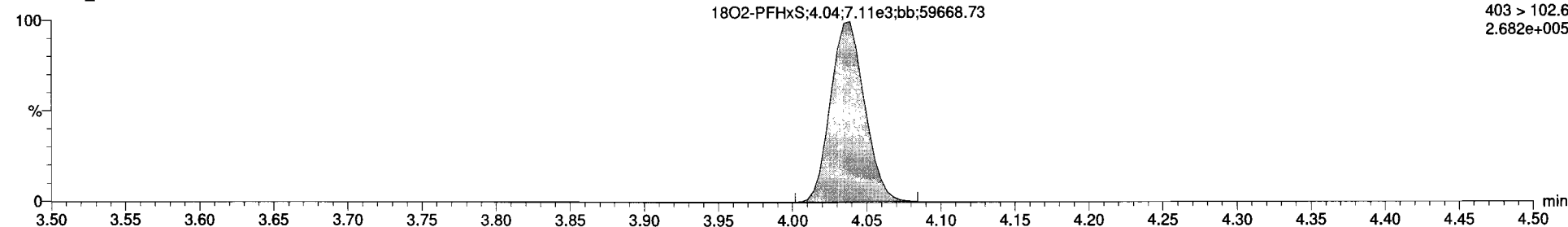
13C3-PFHxS

170305G1_2



18O2-PFHxS

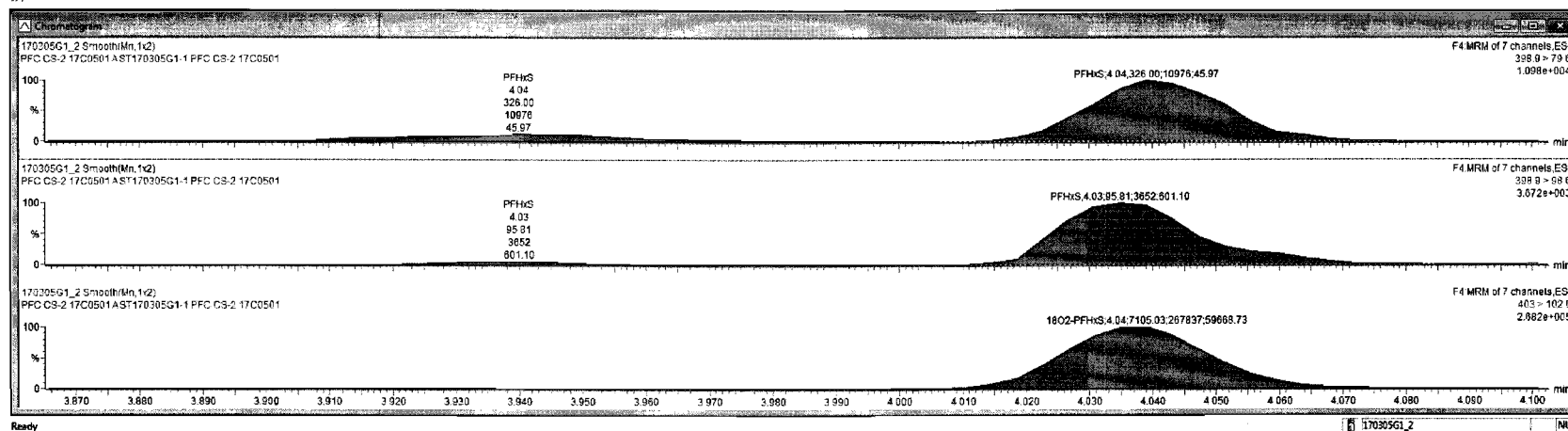
170305G1_2





170305G1_2 - ST170305G1-1 PFC CS-2 17C0501 - PFC CS-2 17C0501 A

#	Name	Trace	Area	RRP	WVAL	Pred.RT	RT	Conc.	MSDL	%Rec	DL
1	PFBS	299 > 79.7	3.44e2		1.000	3.05	3.05	0.283	NO	105.1	
2	PFHpA	363 > 318.8	7.46e2		1.000	3.92	3.93	0.235	NO	94.2	
3	PFHxS	398.9 > 79.6	3.29e2		1.000	4.04	4.04	0.259	NO	103.8	
4	PFOA	413 > 368.7	1.04e3		1.000	4.32	4.32	0.241	NO	96.3	
5	PFNA	463 > 418.8	5.06e2		1.000	4.64	4.65	0.241	NO	96.5	
6	PFOS	499 > 79.9	3.72e1		1.000	4.71	4.62	0.234	NO	93.7	0.1069576
7	13C3-PFBS	302.0 > 98.8	6.21e3	0.410	1.000	3.04	3.05	12.8	NO	102.4	0.0035537
8	13C4-PFHpA	367.2 > 321.8	1.70e4	1.10	1.000	3.82	3.92	13.1	NO	105.0	0.0105143
9	18O2-PFHxS	403 > 102.6	7.11e3	0.434	1.000	4.04	4.04	13.8	NO	110.7	0.0005992
10	13C2-PFOA	414.9 > 368.7	3.51e4	4.61	1.000	4.32	4.32	12.2	NO	98.0	0.0040166
11	13C5-PFNA	468.2 > 422.9	8.36e3	0.867	1.000	4.64	4.64	13.6	NO	103.7	0.0016950
12	13C6-PFOS	507.0 > 79.9	6.28e3	0.956	1.000	4.70	4.70	12.2	NO	97.5	0.0431338
13	13C3-PFHpA	318 > 272.9	2.72e4	1.00	1.000	3.29	3.43	12.5	NO	100.0	0.0021576
14	13C3-PFHxS	401.9 > 79.9	1.45e4	1.00	1.000	3.94	4.04	12.5	NO	100.0	0.0036490
15	13C5-PFOA	421.3 > 378	7.77e3	1.00	1.000	4.22	4.32	12.5	NO	100.0	0.0062119
16	13C5-PFNA	472.2 > 426.9	8.87e3	1.00	1.000	4.56	4.64	12.5	NO	100.0	0.0538988
17	13C4-PFOS	503.0 > 79.9	6.73e3	1.68	1.000	4.67	4.70	12.5	NO	100.0	0.0015837
18	Total PFBS	299 > 79.7	3.44e2		1.000	3.11		0.283	NO		
19	Total PFHxS	398.9 > 79.6	3.63e2		1.000	4.09		0.259	NO		
20	Total PFOA	413 > 368.7	1.10e3		1.000	4.39		0.241	NO		
21	Total PFOS	499 > 79.9	3.72e1		1.000	4.67		0.234	NO		0.1069576



Ready

170305G1_2

NUM

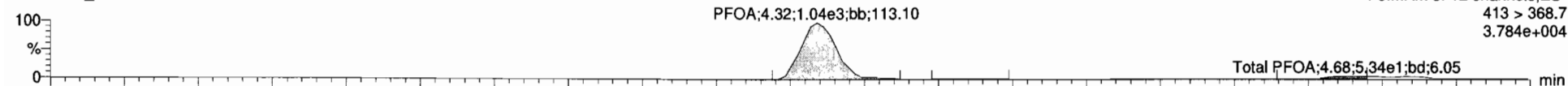
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Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

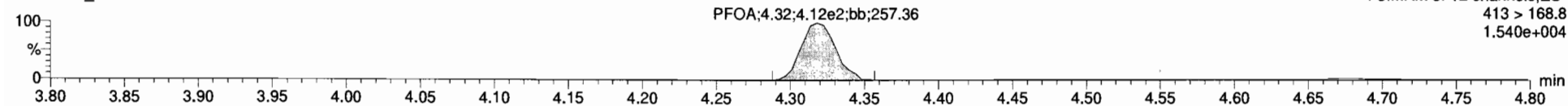
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Total PFOA

170305G1_2

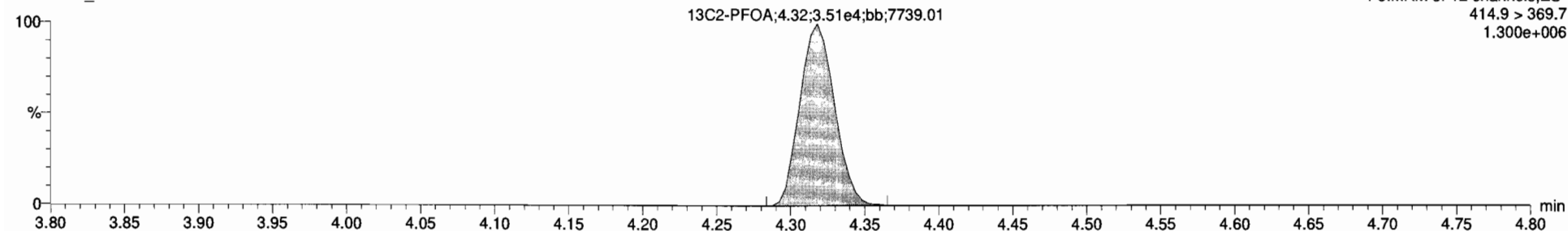


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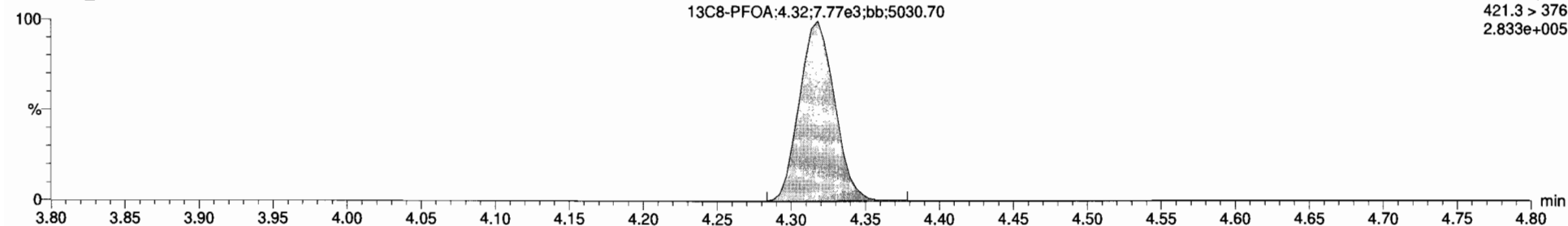
13C2-PFOA

170305G1_2



13C8-PFOA

170305G1_2



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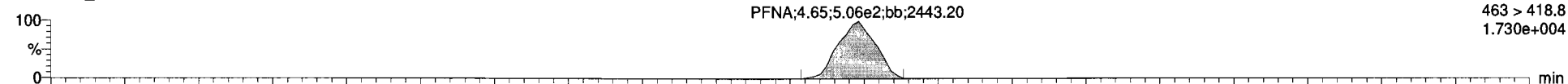
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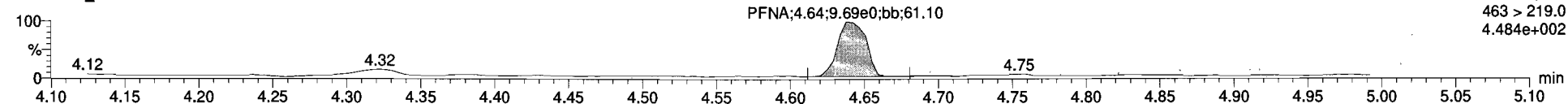
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170305G1_2

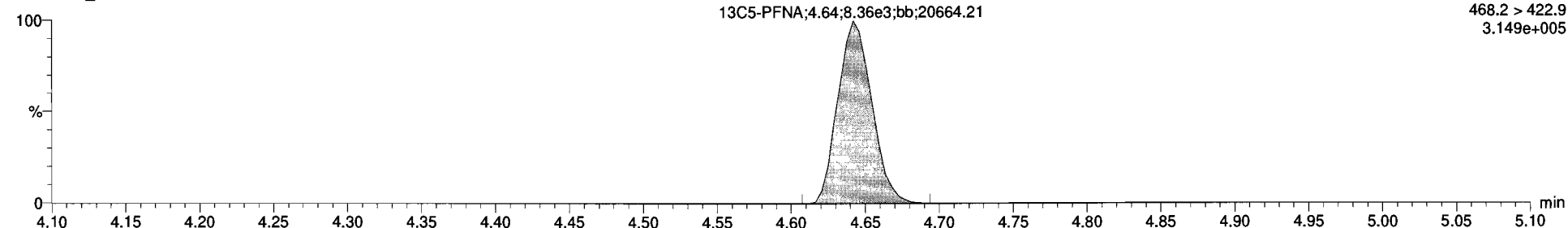


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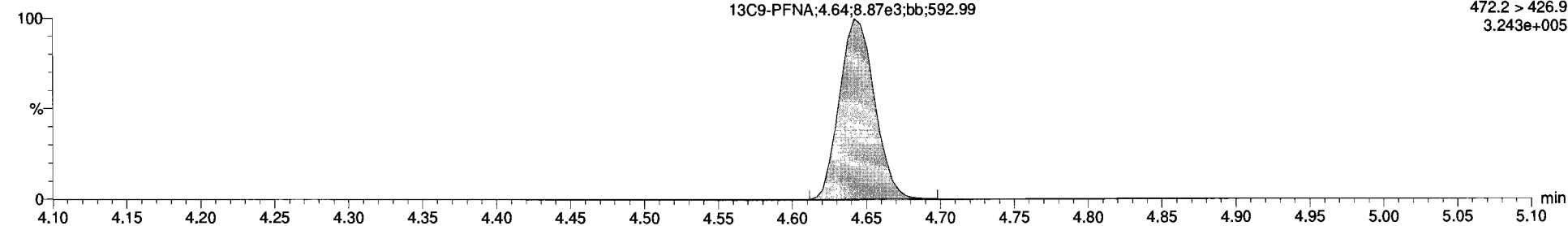
13C5-PFNA

170305G1_2



13C9-PFNA

170305G1_2



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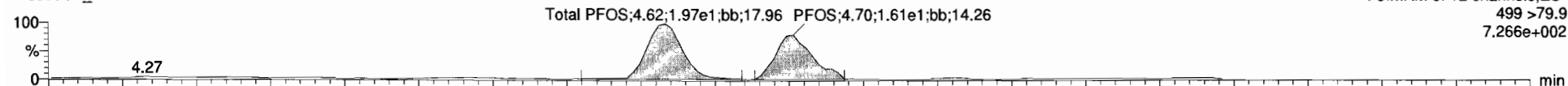
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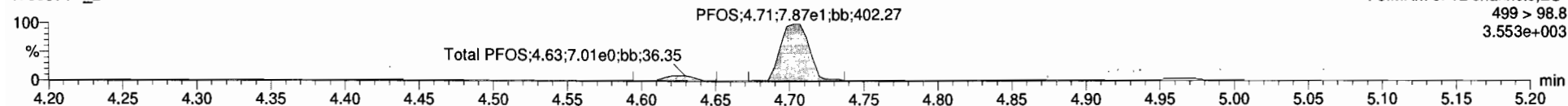
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Total PFOS

170305G1_2

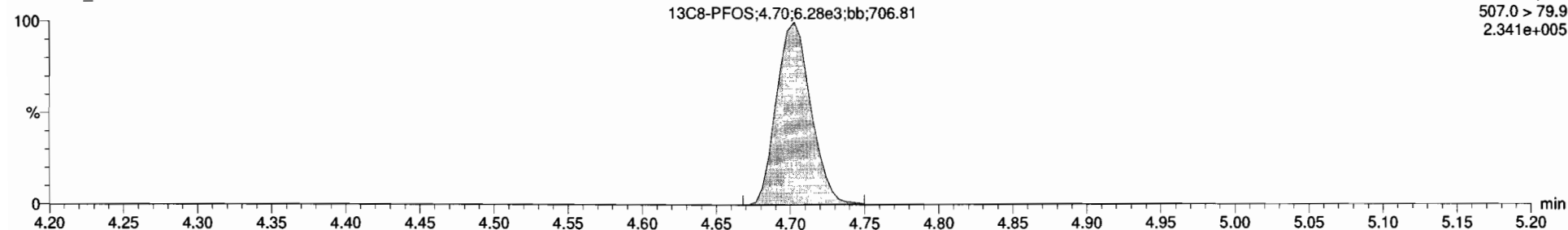


170305G1_2



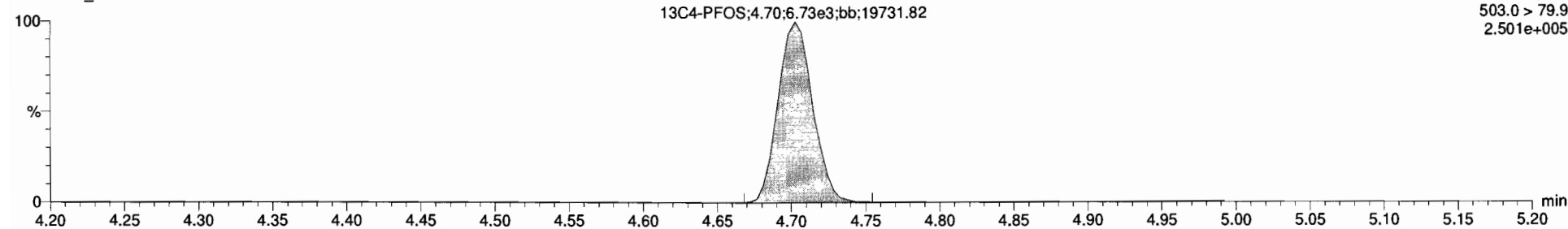
13C8-PFOS

170305G1_2

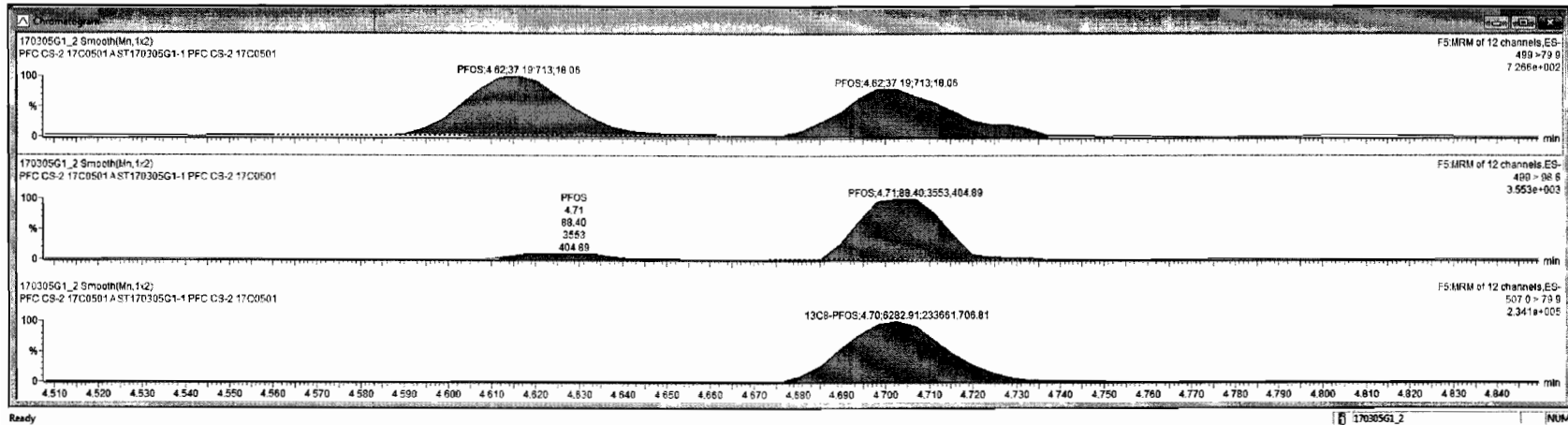


13C4-PFOS

170305G1_2



170305G1_2 - ST170305G1-1 PFC CS-2 17C0501 - PFC CS-2 17C0501 A												
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1	PFBS	299 > 79.7	3.44e2		1.000	3.95	3.95	0.263	NO	165.1		
2	PFHpA	363 > 318.9	7.45e2		1.000	3.92	3.93	0.235	NO	94.2		
3	PFHxS	398.9 > 79.6	3.26e2		1.000	4.04	4.04	0.259	NO	103.6		
4	PFOA	413 > 368.7	1.04e3		1.000	4.32	4.32	0.241	NO	96.3		
5	PFNA	463 > 418.8	5.06e2		1.000	4.64	4.65	0.241	NO	96.5		
6	PFOS	499 > 79.9	3.72e1		1.000	4.71	4.62	0.234	NO	93.7	0.1069576	
7	13C3-PFBS	302.0 > 98.8	6.21e3	0.410	1.000	3.94	3.95	12.8	NO	102.4	0.0035537	
8	13C4-PFHpA	367.2 > 321.8	1.78e4	1.18	1.000	3.92	3.92	13.1	NO	105.0	0.0105143	
9	18O2-PFHxS	403 > 102.6	7.11e3	0.434	1.000	4.04	4.04	13.8	NO	110.7	0.0025992	
10	13C2-PFOA	414.9 > 369.7	3.51e4	4.61	1.000	4.32	4.32	12.2	NO	99.0	0.0040166	
11	13C5-PFNA	468.2 > 422.9	8.36e3	0.867	1.000	4.64	4.64	13.6	NO	108.7	0.0016950	
12	13C6-PFOS	507.0 > 79.9	6.28e3	0.958	1.000	4.70	4.70	12.2	NO	97.5	0.0431338	
13	13C3-PFHxS	316 > 272.9	2.72e4	1.00	1.000	3.29	3.43	12.5	NO	100.0	0.0021578	
14	13C3-PFHxS	401.9 > 79.9	1.48e4	1.00	1.000	3.94	4.04	12.5	NO	100.0	0.0006490	
15	13C8-PFOA	421.3 > 376	7.77e3	1.00	1.000	4.22	4.32	12.5	NO	100.0	0.0052119	
16	13C9-PFNA	472.2 > 426.5	8.87e3	1.00	1.000	4.58	4.64	12.5	NO	100.0	0.0526968	
17	13C4-PFOS	503.0 > 79.9	6.73e3	1.00	1.000	4.67	4.70	12.5	NO	100.0	0.0015837	
18	Total PFBS	299 > 79.7	3.44e2		1.000	3.11		0.263	NO			
19	Total PFHxS	398.9 > 79.6	3.63e2		1.000	4.09		0.259	NO			
20	Total PFOA	413 > 368.7	1.10e3		1.000	4.39		0.241	NO			
21	Total PFOS	499 > 79.9	3.72e1		1.000	4.67		0.234	NO		0.1069576	



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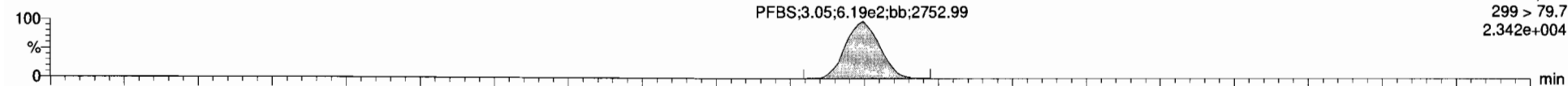
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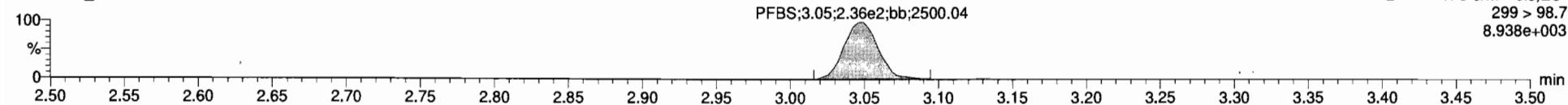
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PFBS

170305G1_3

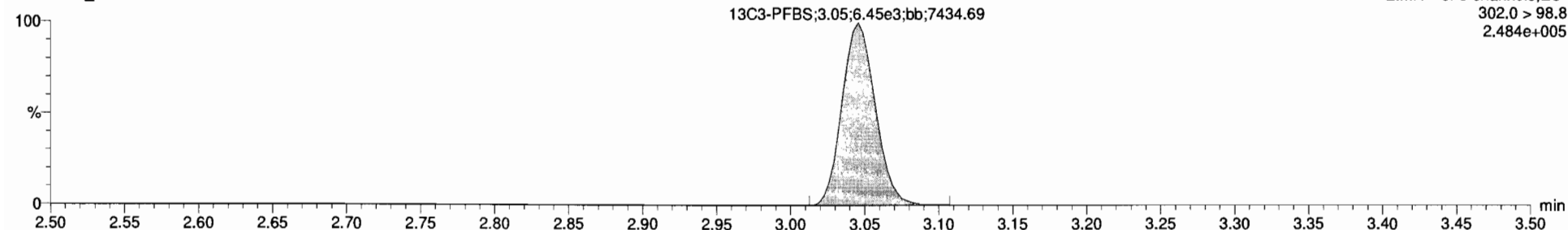


170305G1_3



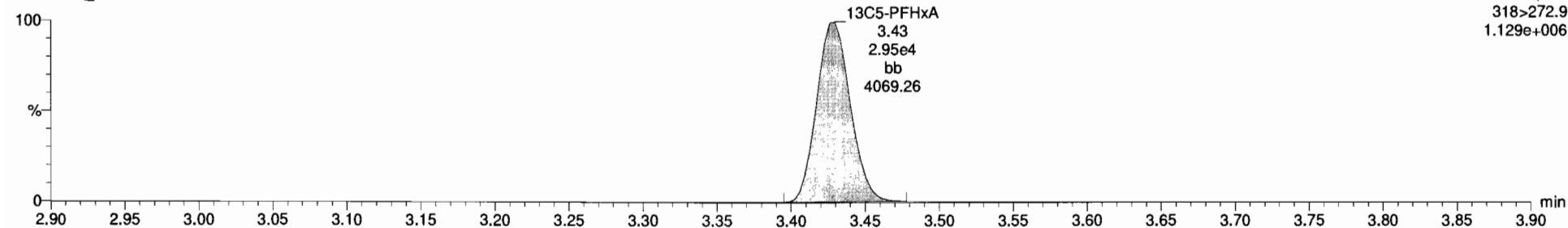
13C3-PFBS

170305G1_3



13C5-PFHxA

170305G1_3



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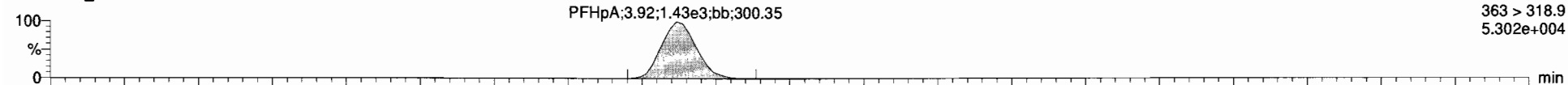
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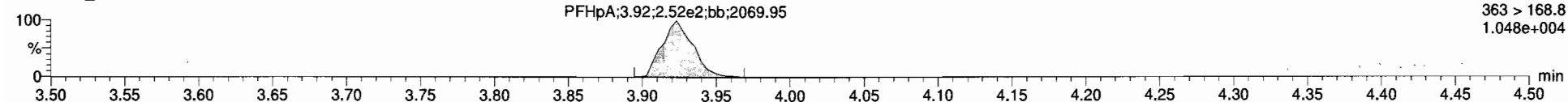
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170305G1_3

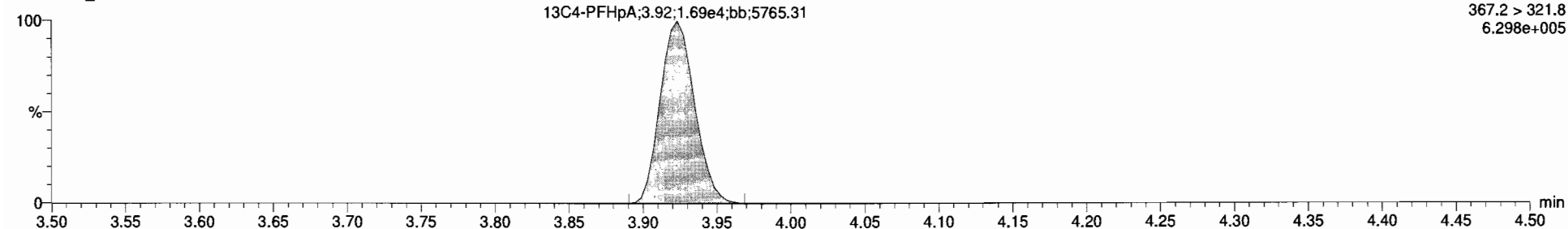


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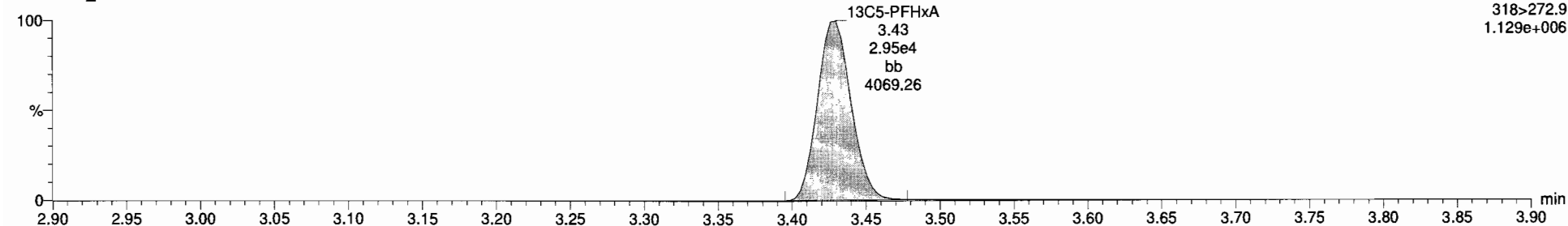
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170305G1_3



13C5-PFHxA

170305G1_3



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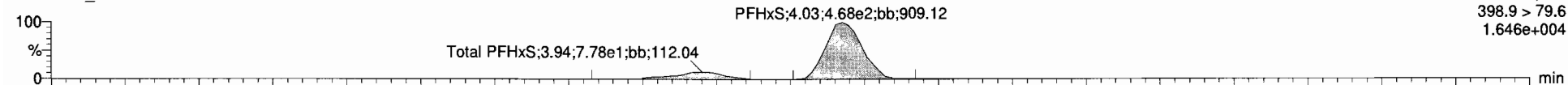
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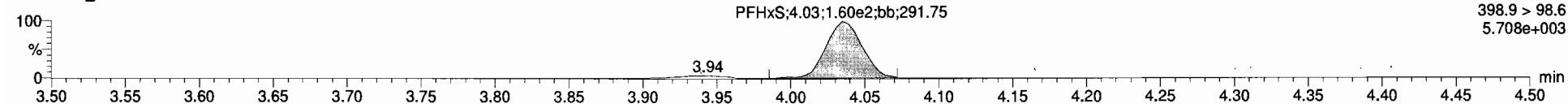
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Total PFHxS

170305G1_3

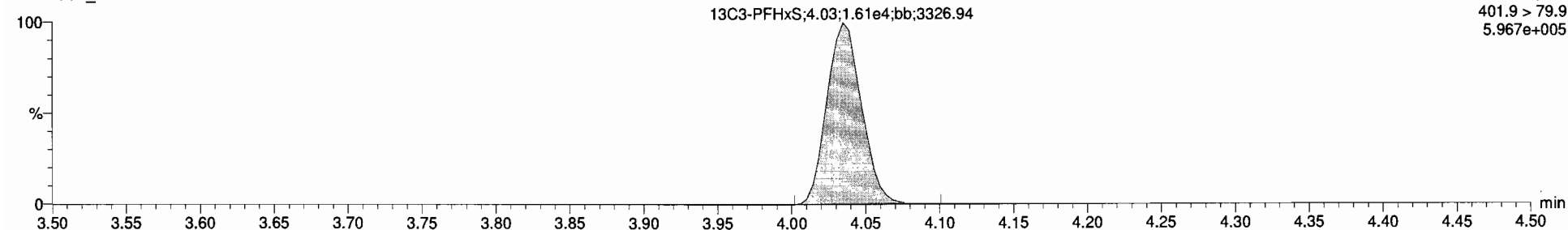


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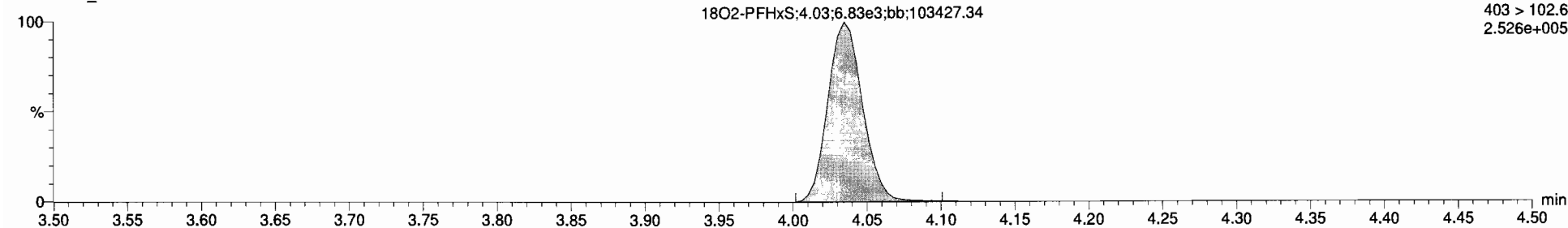
13C3-PFHxS

170305G1_3

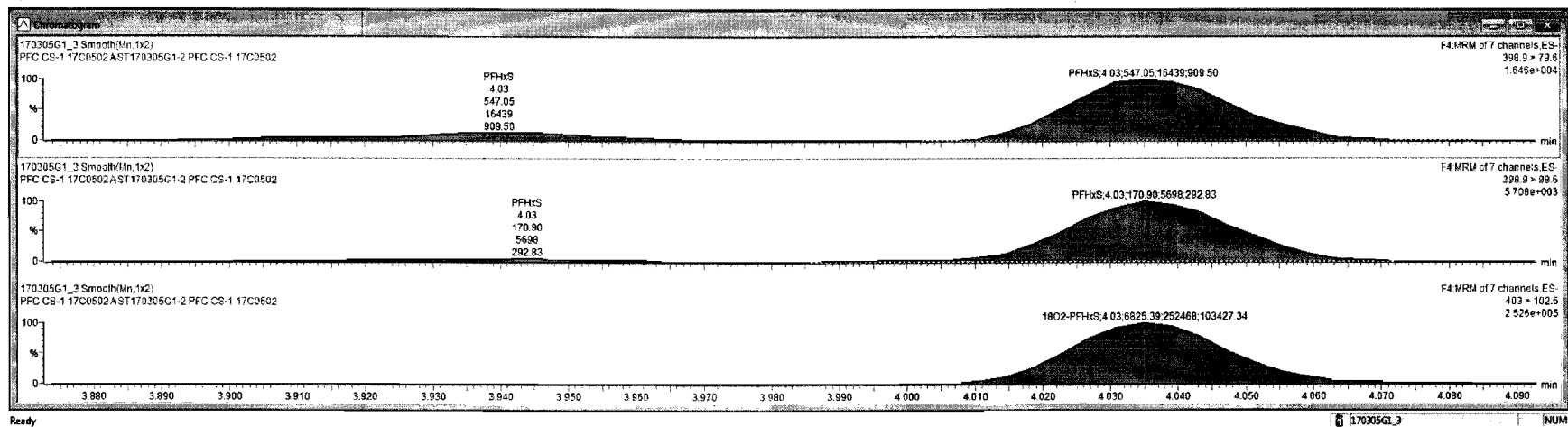


18O2-PFHxS

170305G1_3



170305G1_3-ST170305G1.2 PFC CS-1 17C0502 PFC CS-1 17C0502 A													
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1	PFB	299 > 79.7	6.19e2		1.000	3.05	3.05	0.475	NO	95.0			
2	PFHpA	363 > 318.9	1.43e3		1.000	3.92	3.92	0.518	NO	103.7			
3	PFHxS	398.9 > 78.8	5.47e2		1.000	4.03	4.03	0.496	NO	99.1			
4	PFOA	413 > 368.7	1.52e3		1.000	4.31	4.31	0.452	NO	90.4			
5	PFNA	463 > 418.8	8.81e2		1.000	4.64	4.64	0.489	NO	97.9			
6	PFO	499 > 79.9	7.39e1		1.000	4.71	4.71	0.358	NO	71.5	0.1053528		
7	13C3-PFB	302.0 > 98.8	6.45e3	0.410	1.000	3.04	3.05	12.2	NO	97.5	0.0042668		
8	13C4-PFHpA	367.2 > 321.8	1.89e4	1.10	1.000	3.91	3.92	11.9	NO	95.5	0.0052041		
9	18O2-PFHxS	403 > 102.6	6.83e3	0.434	1.000	4.03	4.03	12.2	NO	97.4	0.0002946		
10	13C2-PFOA	414.9 > 369.7	3.53e4	4.61	1.000	4.31	4.31	11.8	NO	94.2	0.0063474		
11	13C5-PFNA	460.2 > 422.9	7.87e3	0.867	1.000	4.64	4.64	13.5	NO	107.9	0.0073318		
12	13C8-PFO	507.0 > 79.9	6.57e3	0.958	1.000	4.70	4.70	12.1	NO	96.4	0.0047793		
13	13C5-PFHxS	318 > 272.9	2.95e4	1.00	1.000	3.29	3.43	12.5	NO	100.0	0.0076795		
14	13C3-PFHxS	401.9 > 79.9	1.61e4	1.00	1.000	3.94	4.03	12.5	NO	100.0	0.0083970		
15	13C8-PFOA	421.3 > 376	8.14e3	1.00	1.000	4.22	4.31	12.5	NO	100.0	0.0096315		
16	13C9-PFNA	472.2 > 426.8	8.20e3	1.00	1.000	4.56	4.64	12.5	NO	100.0	0.0015263		
17	13C4-PFO	503.0 > 79.9	7.11e3	1.00	1.000	4.67	4.70	12.5	NO	100.0	0.0052005		
18	Total PFB	299 > 79.7	6.19e2		1.000	3.11		0.475	NO				
19	Total PFHxS	398.9 > 79.6	6.25e2		1.000	4.09		0.517	NO				
20	Total PFOA	413 > 368.7	1.56e3		1.000	4.39		0.452	NO				
21	Total PFO	499 > 79.9	9.52e1		1.000	4.67		0.530	NO		0.1053528		



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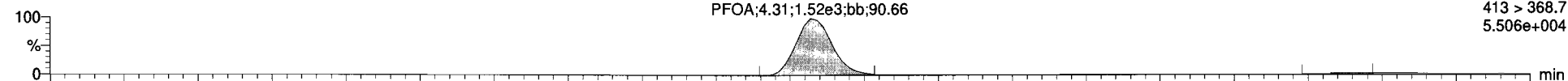
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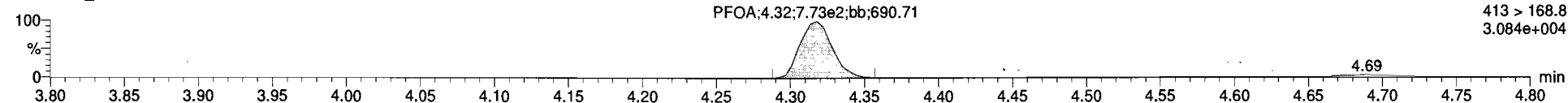
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Total PFOA

170305G1_3

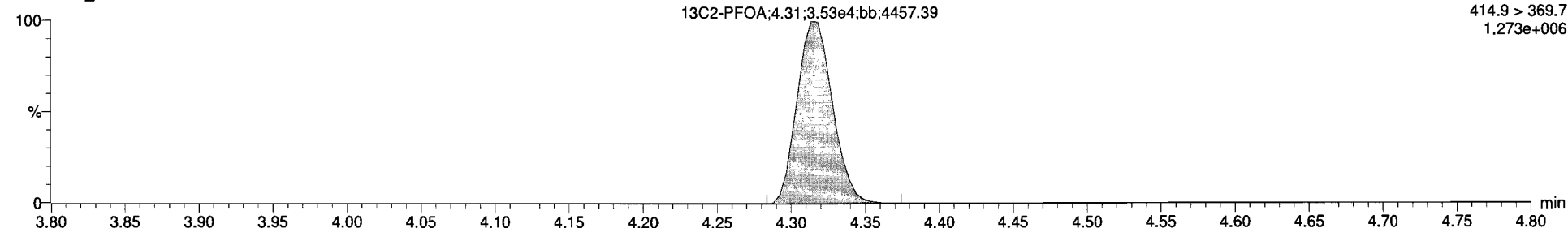


170305G1_3



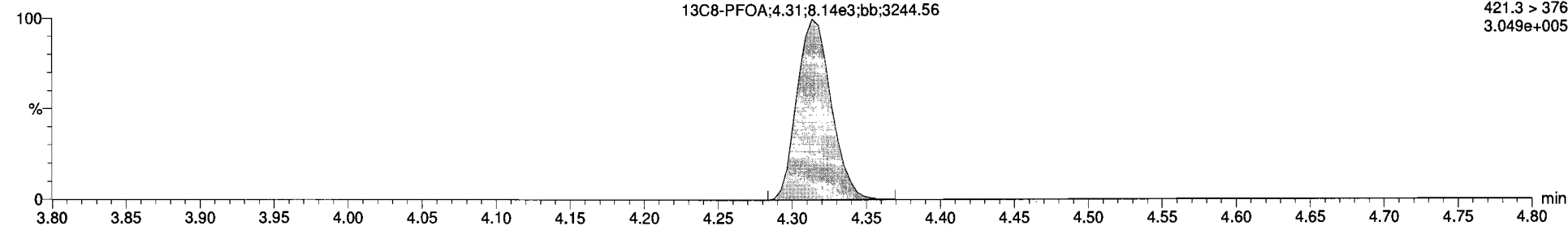
13C2-PFOA

170305G1_3



13C8-PFOA

170305G1_3



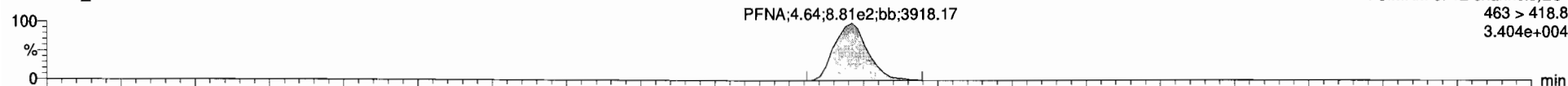
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Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

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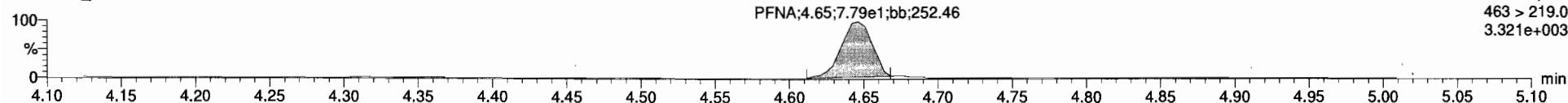
PFNA

170305G1_3



F5:MRM of 12 channels,ES-
463 > 418.8
3.404e+004

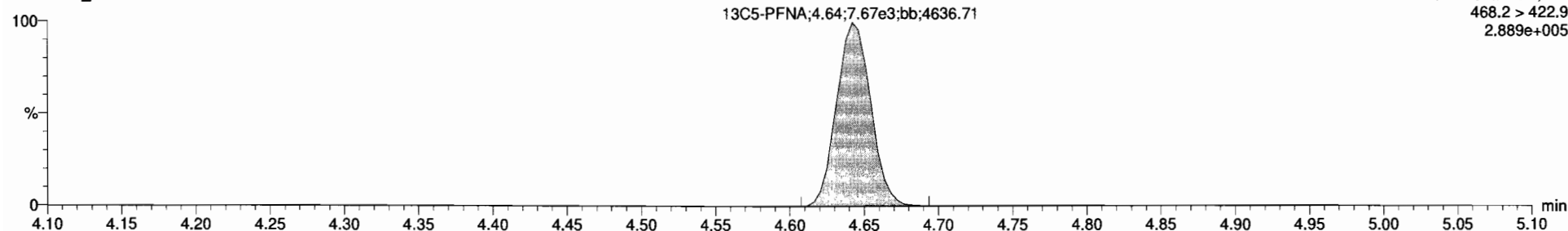
170305G1_3



F5:MRM of 12 channels,ES-
463 > 219.0
3.321e+003

13C5-PFNA

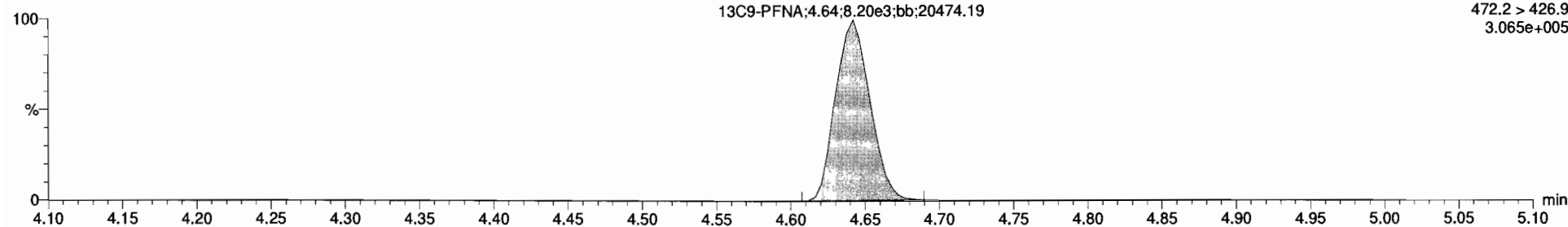
170305G1_3



F5:MRM of 12 channels,ES-
468.2 > 422.9
2.889e+005

13C9-PFNA

170305G1_3



F5:MRM of 12 channels,ES-
472.2 > 426.9
3.065e+005

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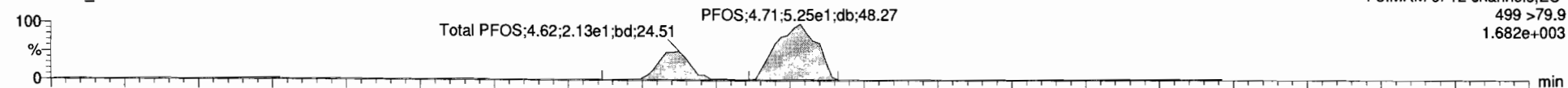
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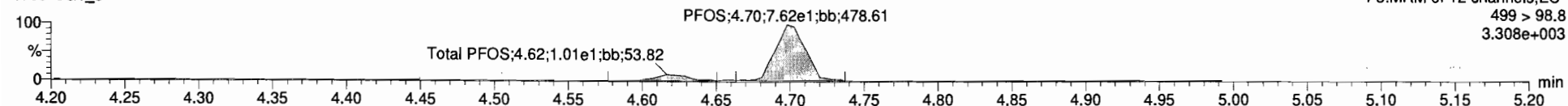
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Total PFOS

170305G1_3

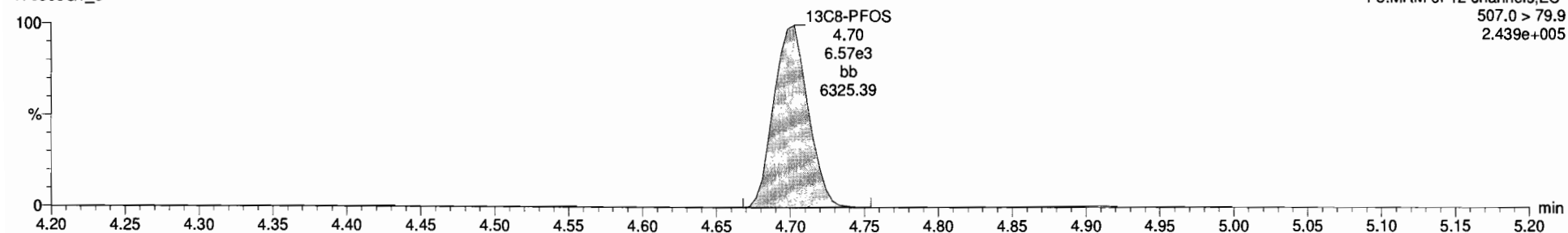


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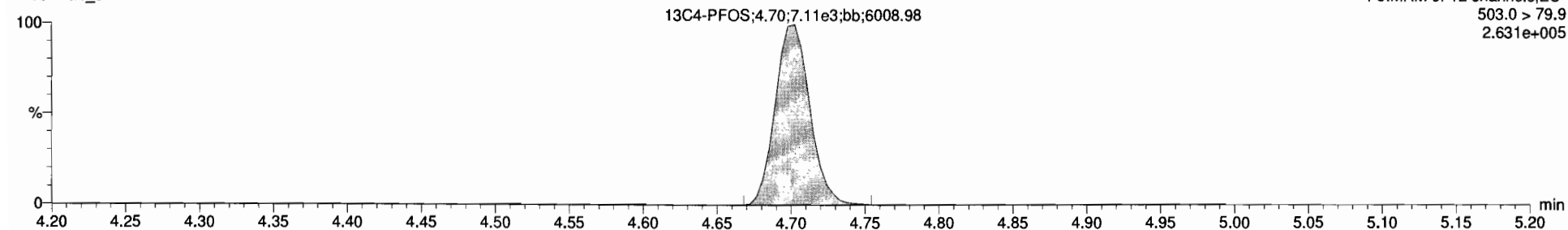
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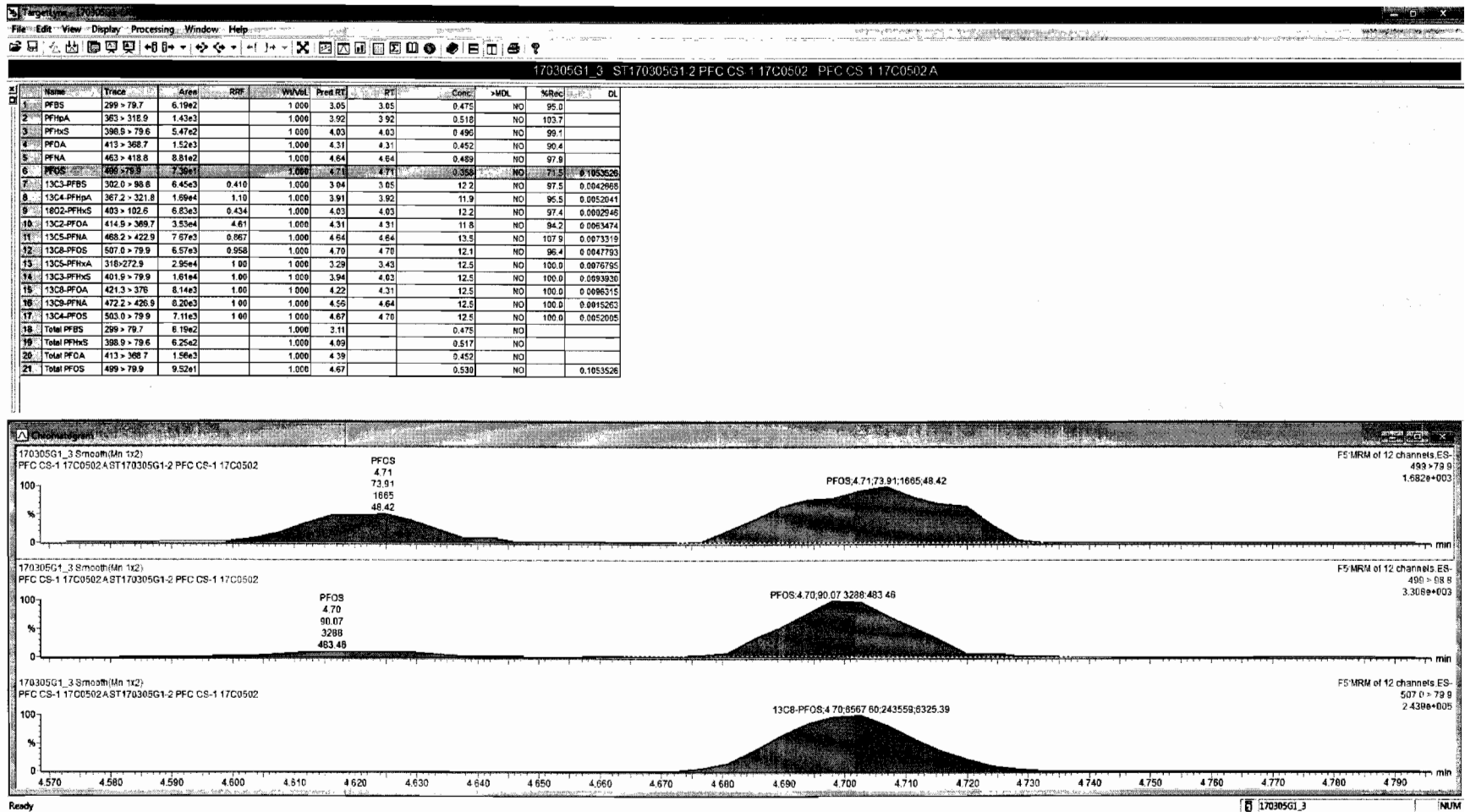
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13C4-PFOS

170305G1_3





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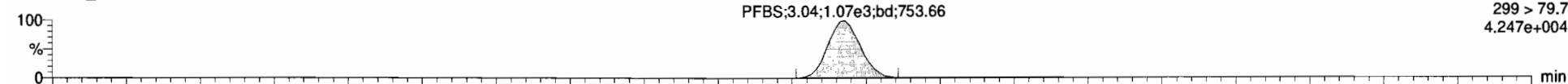
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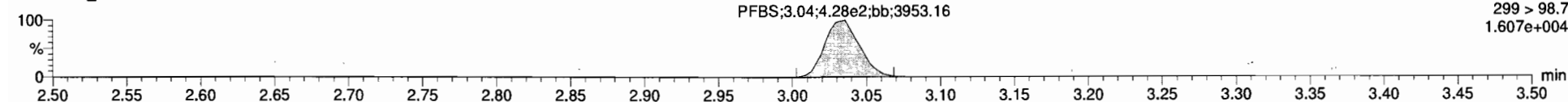
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PFBS

170305G1_4

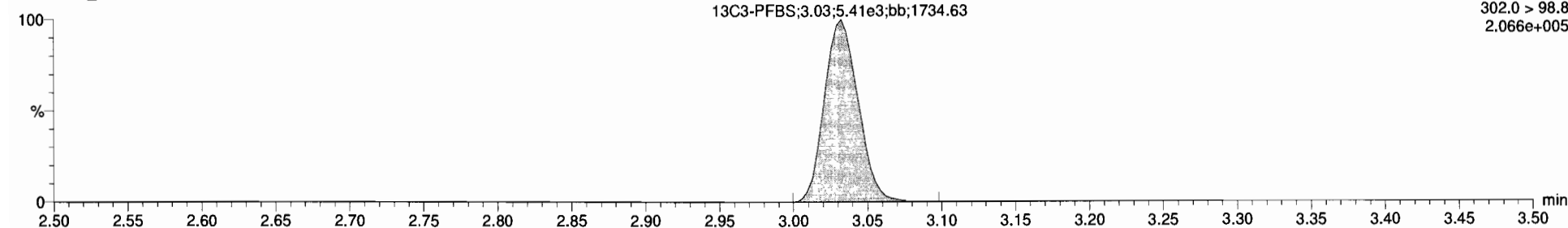


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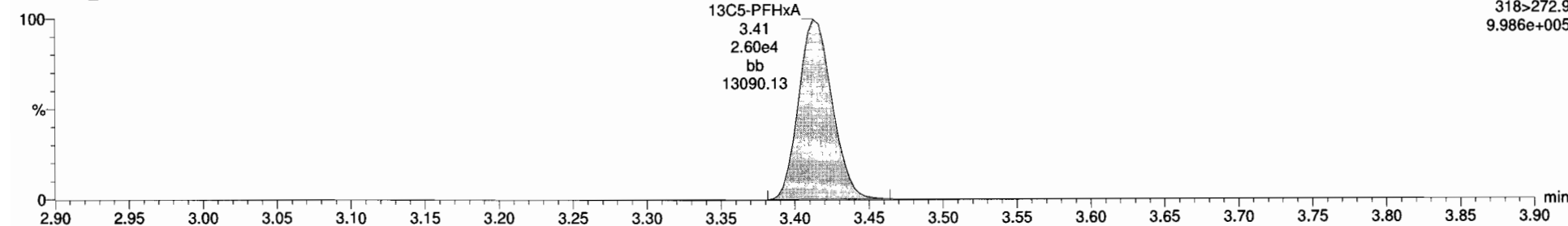
13C3-PFBS

170305G1_4



13C5-PFHxA

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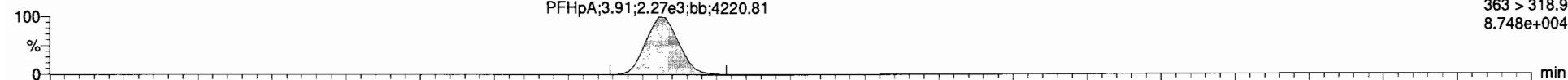
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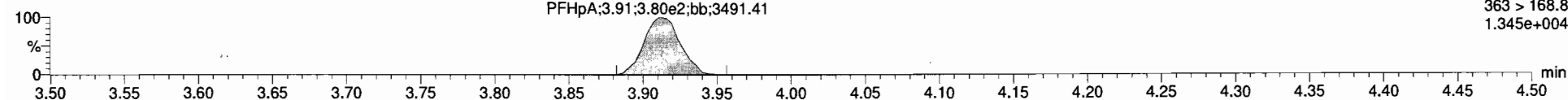
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PFHpA

170305G1_4

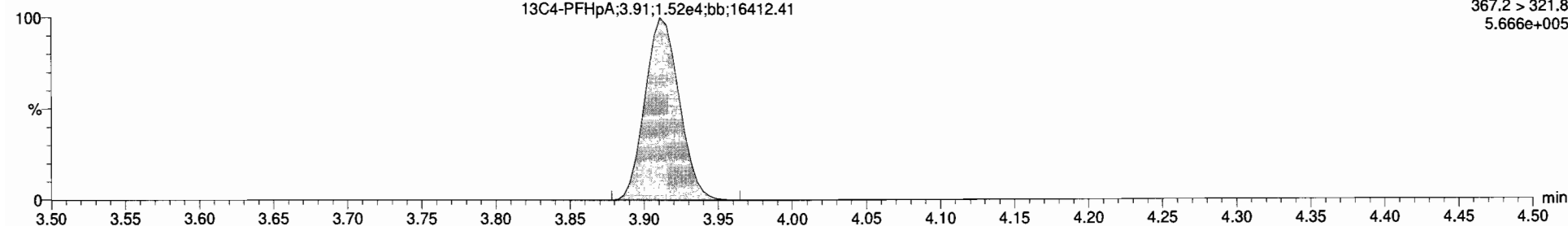


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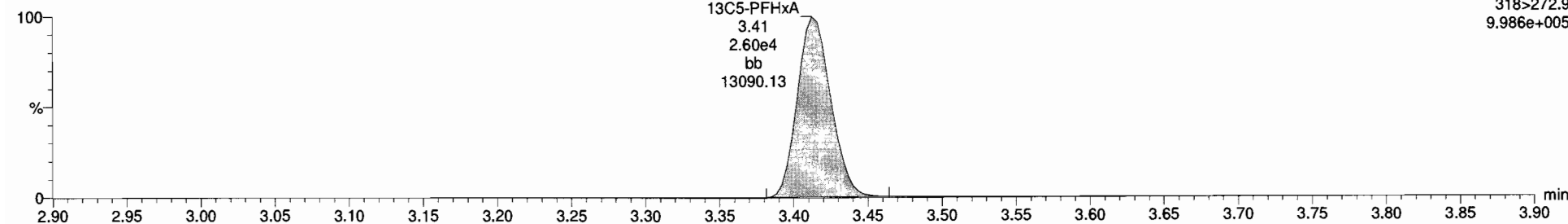
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13C5-PFHxA

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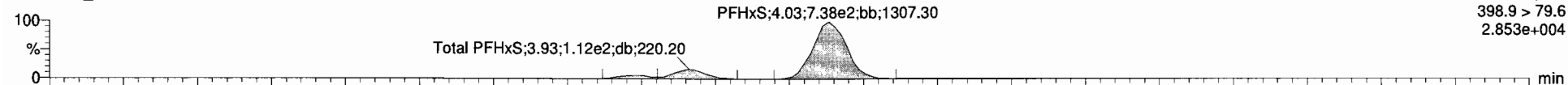
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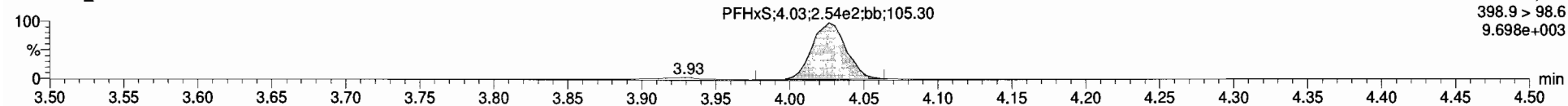
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Total PFHxS

170305G1_4

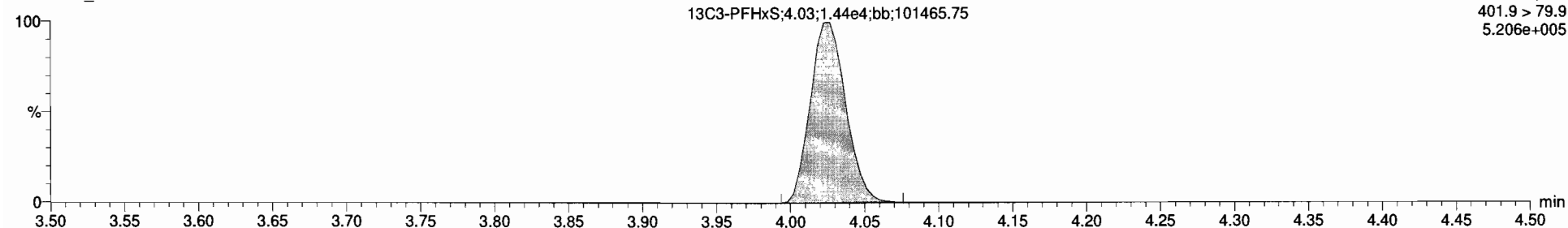


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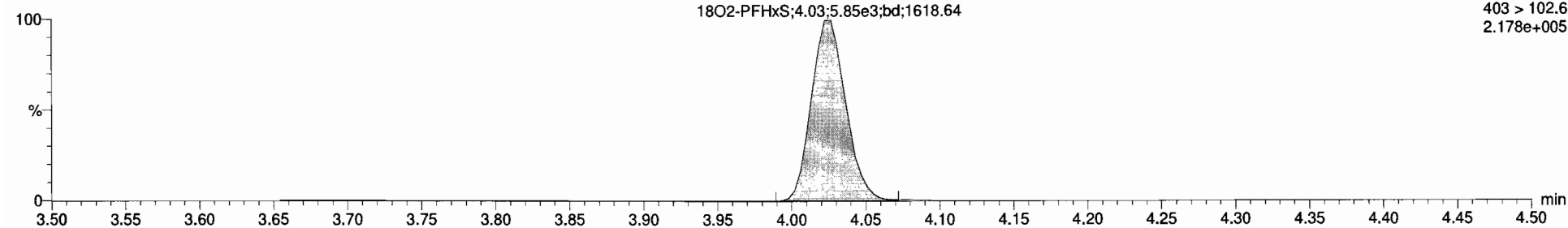
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170305G1_4



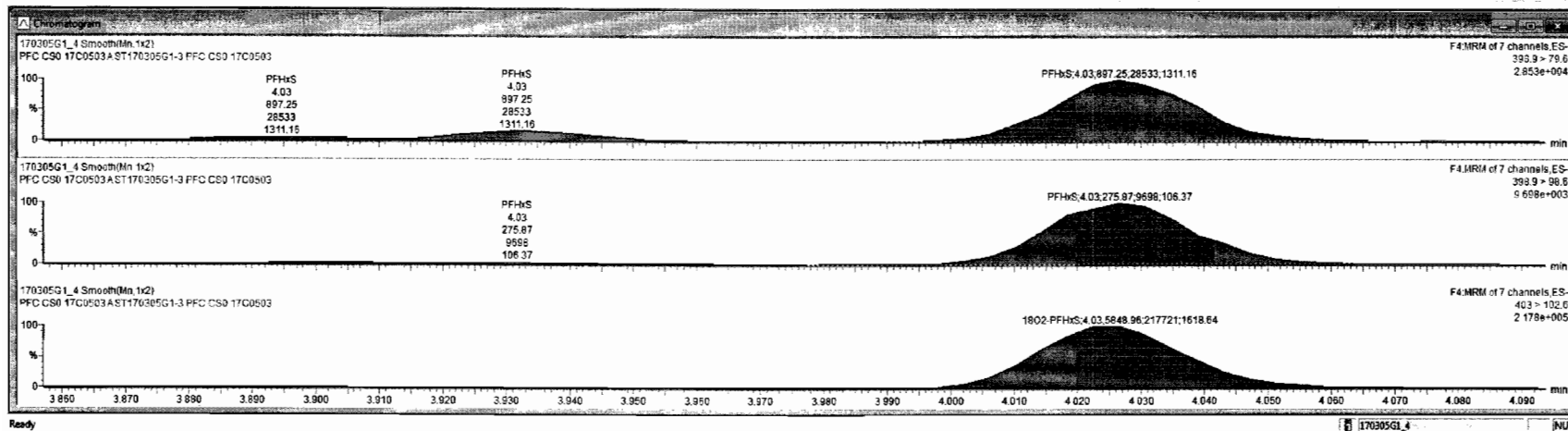
18O2-PFHxS

170305G1_4





Name	Trace	Area	RRF	Wt/Mol	Pred RT	RT	Conc	AMOL	%Rec	DL
1 PFBS	299 > 79.7	1.07e3		1.000	3.03	3.04	1.91	NO	101.1	
2 PFHpA	363 > 318.9	2.27e3		1.000	3.91	3.91	0.964	NO	96.4	
3 PFHxS	398.9 > 79.8	2.57e3		1.000	4.03	4.03	1.00	NO	100.1	
4 PFDA	413 > 368.7	2.09e3		1.000	4.31	4.30	0.908	NO	90.8	
5 PFNA	463 > 419.5	1.26e3		1.000	4.63	4.63	0.958	NO	95.8	
6 PFOS	499 > 79.9	1.82e2		1.000	4.70	4.69	0.889	NO	88.9	0.1002511
7 13C3-PFBS	302.0 > 98.8	5.41e3	0.410	1.000	3.03	3.03	11.5	NO	91.8	0.0174615
8 13C4-PFHpA	367.2 > 321.5	1.52e4	1.10	1.000	3.90	3.91	12.1	NO	96.6	0.0012598
9 18O2-PFHxS	403 > 102.6	5.85e3	0.434	1.000	4.03	4.03	11.7	NO	93.8	0.0186300
10 13C2-PFDA	414.9 > 369.7	2.91e4	4.61	1.000	4.30	4.31	12.4	NO	99.0	0.0006311
11 13C5-PFNA	468.2 > 422.9	5.74e3	0.067	1.000	4.63	4.63	11.6	NO	92.6	0.0007193
12 13C6-PFOS	507.0 > 79.9	4.73e3	0.958	1.000	4.69	4.69	11.9	NO	95.3	0.0110670
13 13C5-PFHpA	318 > 272.9	2.60e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0023673
14 13C3-PFHxS	401.9 > 79.9	1.44e4	1.00	1.000	3.94	4.03	12.5	NO	100.0	0.0003060
15 13C6-PFDA	421.5 > 376	6.38e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0102755
16 13C9-PFNA	472.2 > 428.9	7.15e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0800796
17 13C4-PFOS	503.9 > 79.9	5.19e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.0010954
18 Total PFBS	299 > 79.7	1.08e3		1.000	3.11		1.91	NO		
19 Total PFHxS	398.9 > 79.8	1.05e3		1.000	4.09		1.36	NO		
20 Total PFDA	413 > 368.7	2.16e3		1.000	4.39		0.958	NO		
21 Total PFOS	499 > 79.9	2.19e2		1.000	4.67		1.26	NO		0.1002511



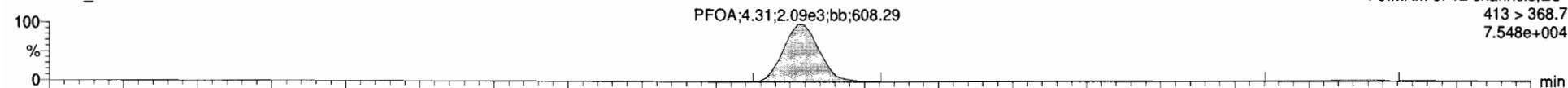
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Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

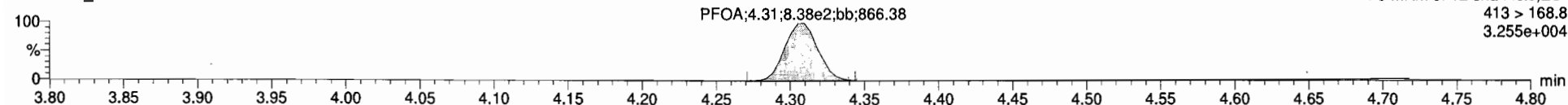
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Total PFOA

170305G1_4

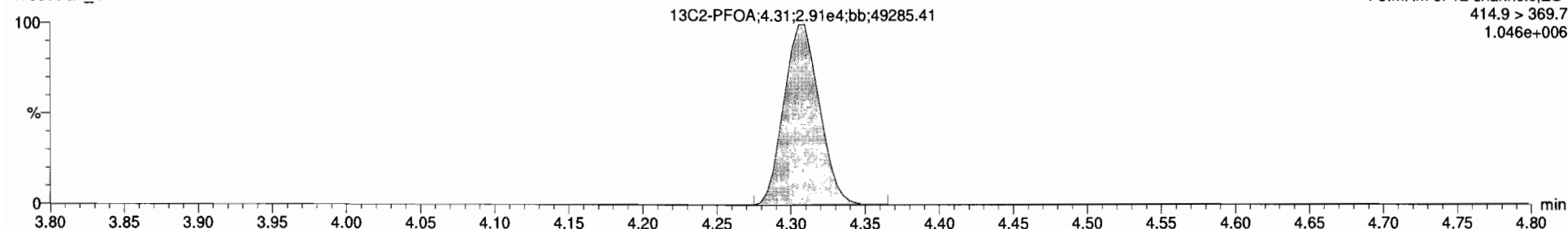


170305G1_4



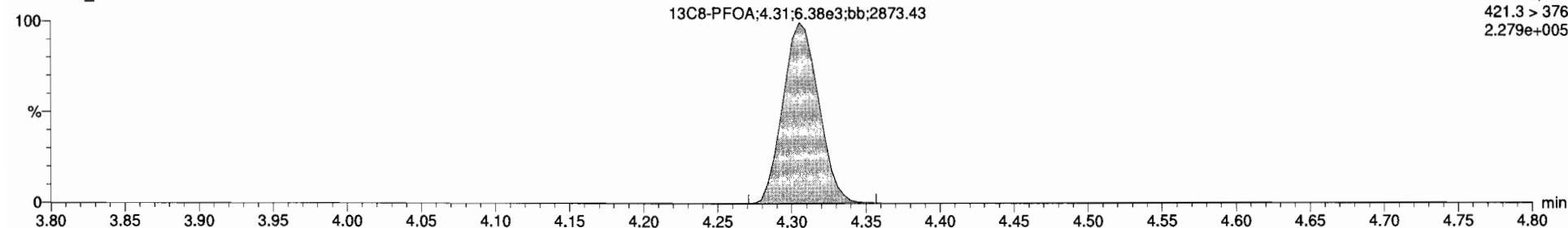
13C2-PFOA

170305G1_4



13C8-PFOA

170305G1_4



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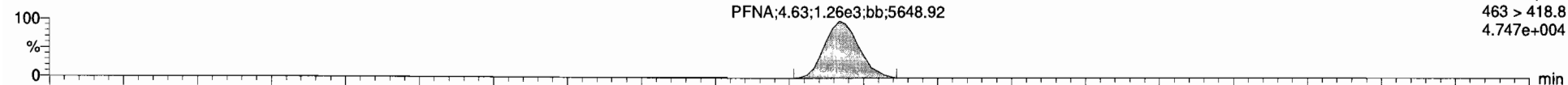
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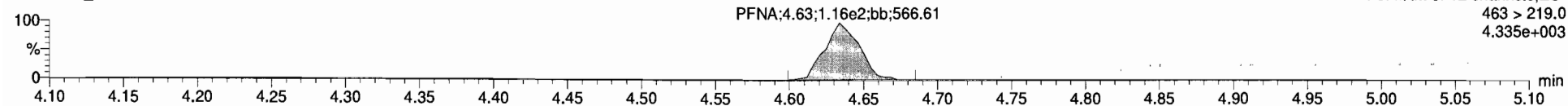
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PFNA

170305G1_4

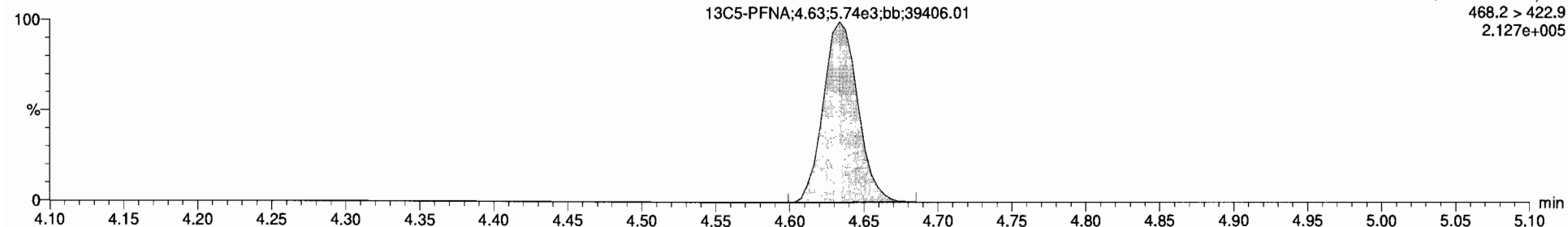


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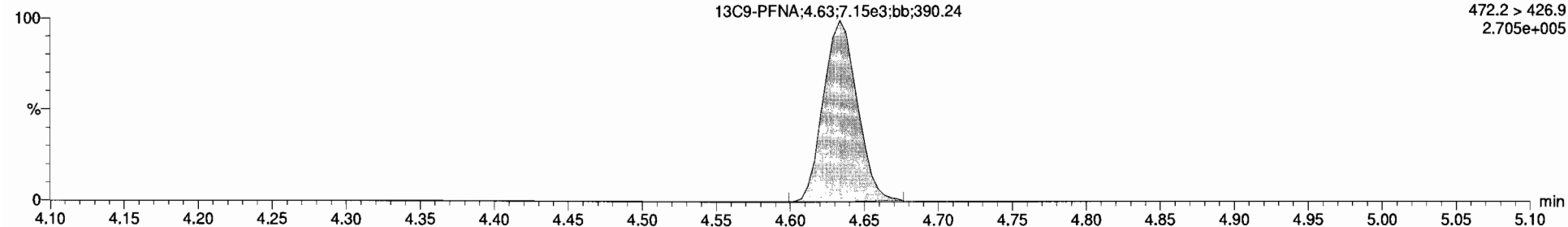
13C5-PFNA

170305G1_4



13C9-PFNA

170305G1_4



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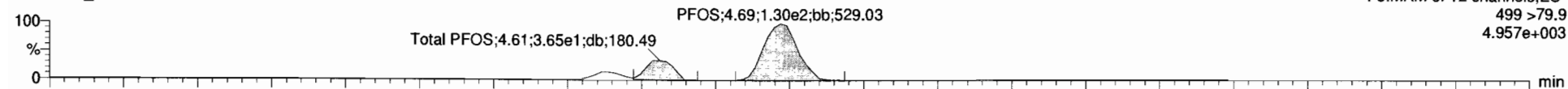
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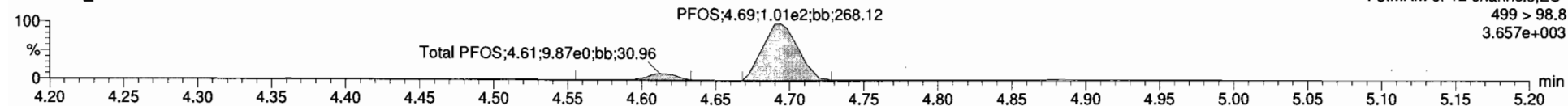
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Total PFOS

170305G1_4

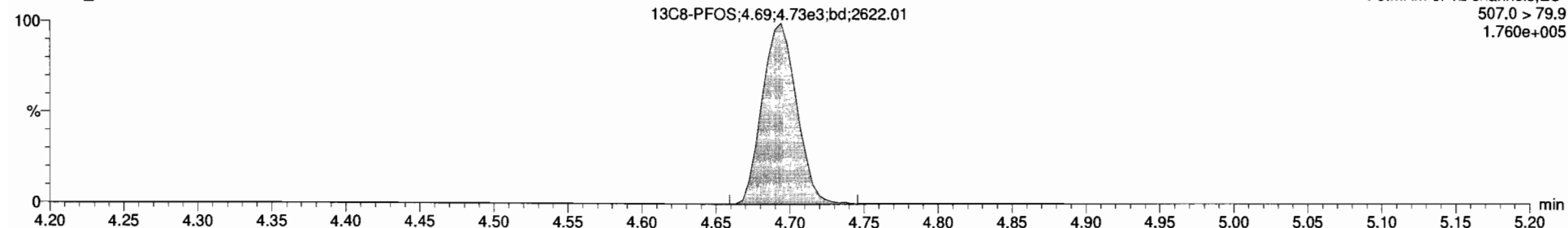


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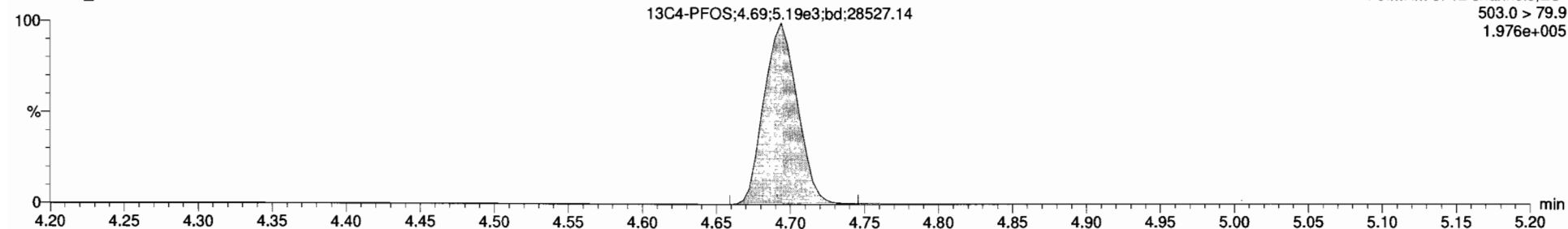
13C8-PFOS

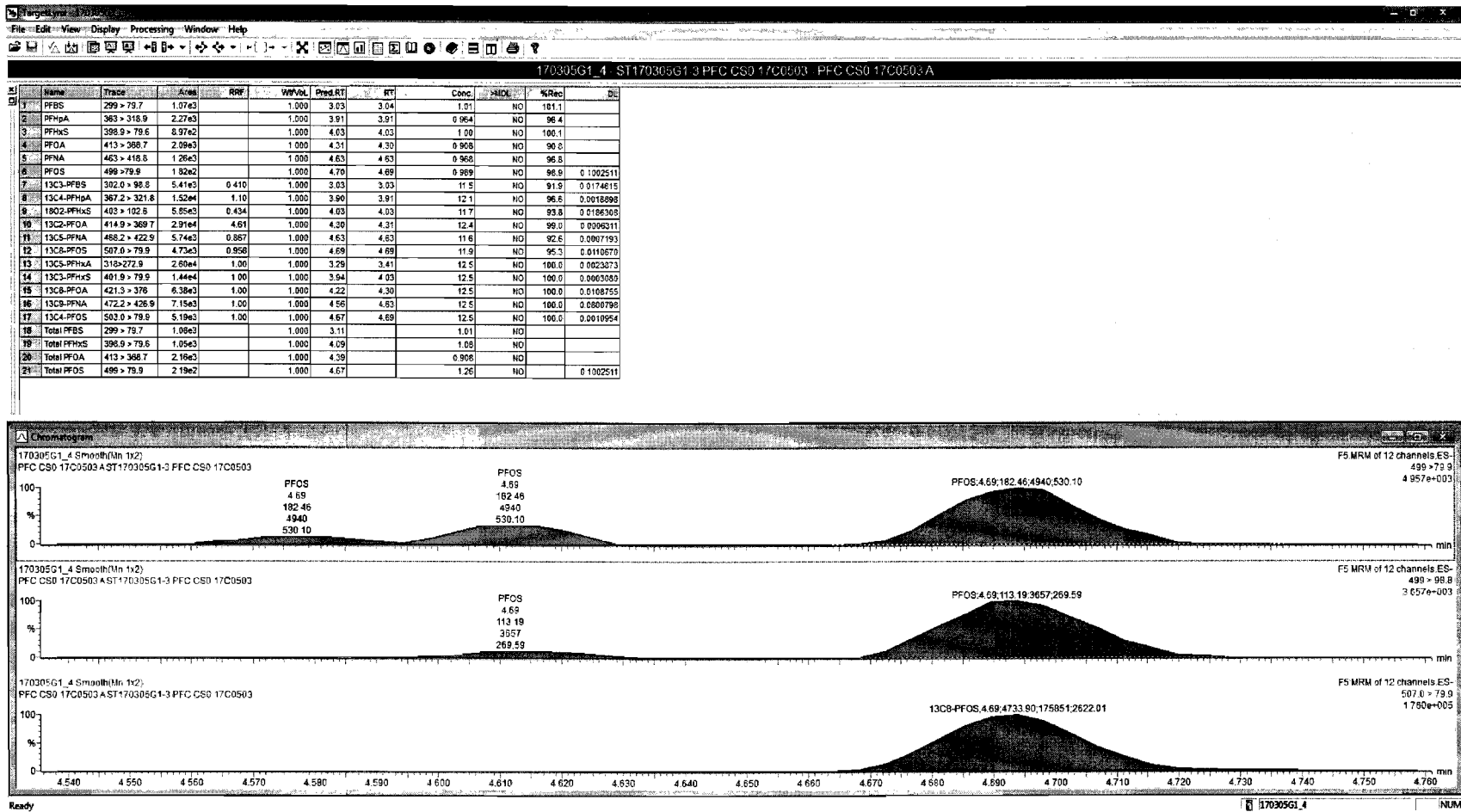
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13C4-PFOS

170305G1_4





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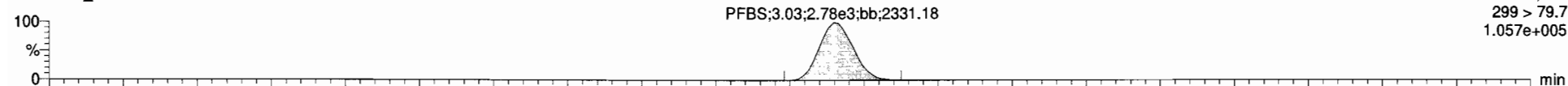
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Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

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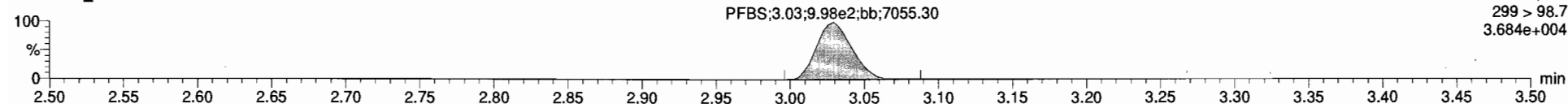
PFBS

170305G1_5



F2:MRM of 3 channels,ES-
299 > 79.7
1.057e+005

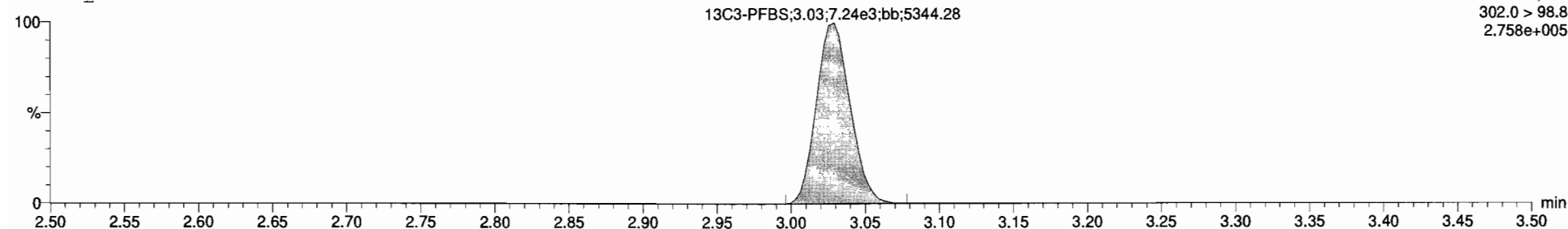
170305G1_5



F2:MRM of 3 channels,ES-
299 > 98.7
3.684e+004

13C3-PFBS

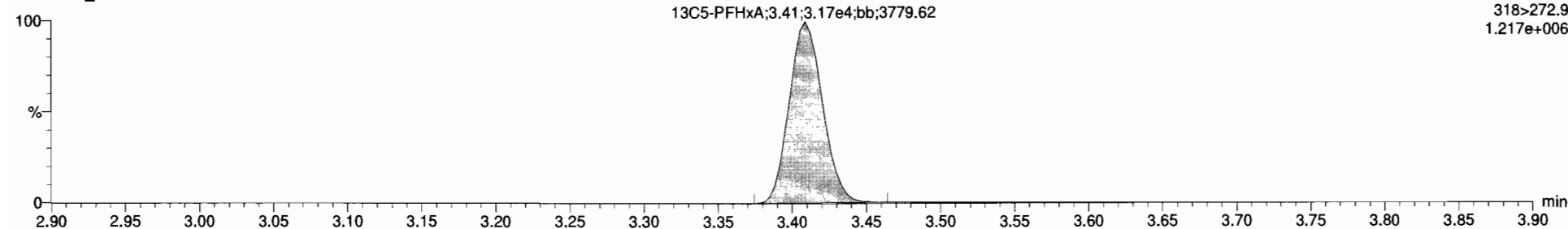
170305G1_5



F2:MRM of 3 channels,ES-
302.0 > 98.8
2.758e+005

13C5-PFHxA

170305G1_5



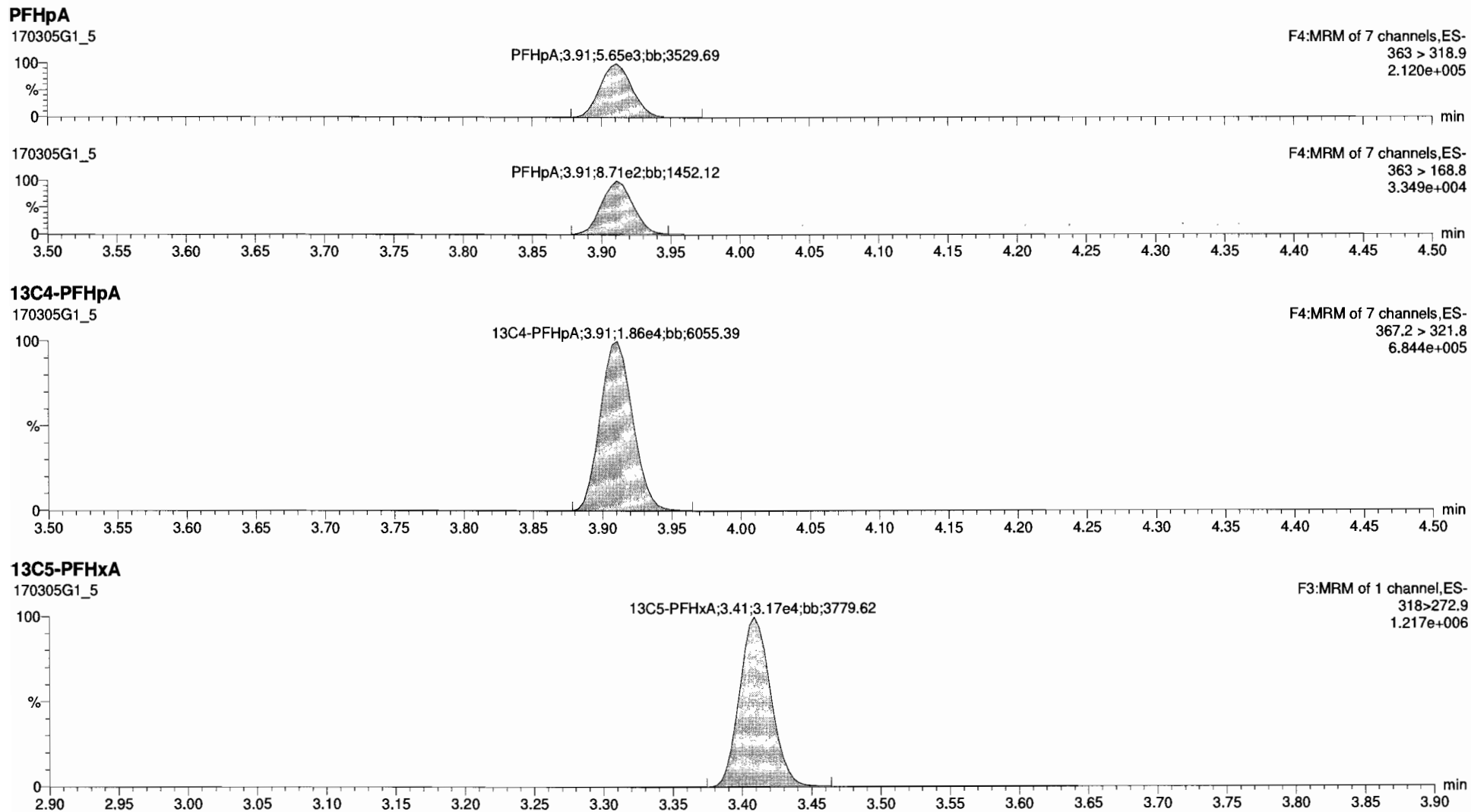
F3:MRM of 1 channel,ES-
318>272.9
1.217e+006

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Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

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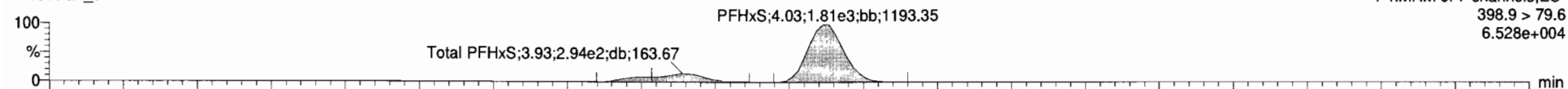
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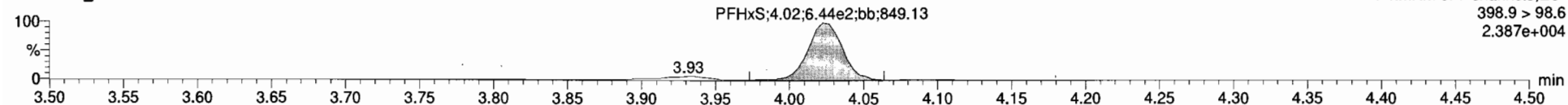
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Total PFHxS

170305G1_5

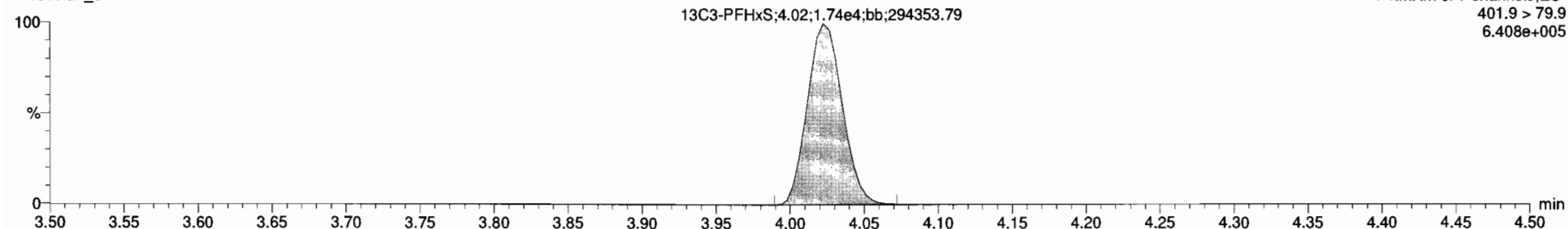


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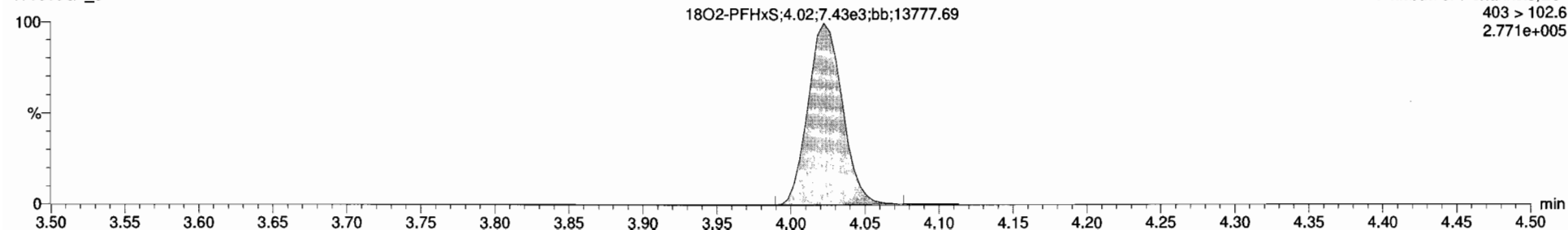
13C3-PFHxS

170305G1_5

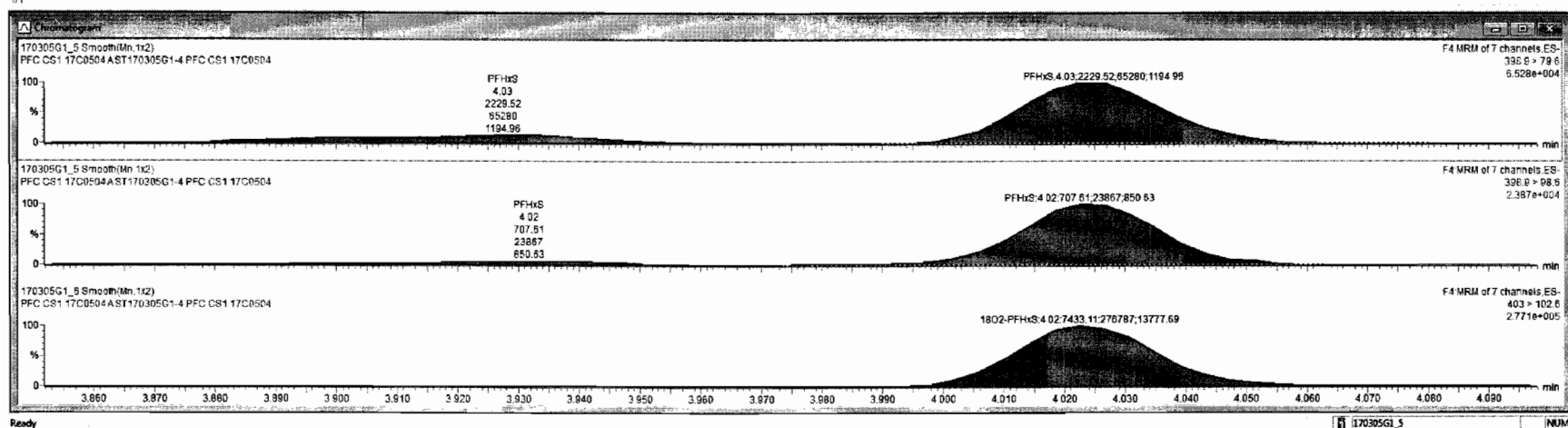


18O2-PFHxS

170305G1_5



170305G1_5 ST:170305G1 4 PFC CS1 17C0504 PFC CS1 17C0504 A												
#	Name	Trace	Area	RRF	WWSL	Prod RT	RT	Comp	>MOL	%Rec	DL	
1	PFBS	299 > 79.7	2.7843		1.000	3.93	3.93	1.99	NO	99.3		
2	PFHxA	363 > 318.9	5.6543		1.000	3.91	3.91	2.63	NO	102.3		
3	PFHxS	386.9 > 79.6	2.2343		1.000	4.82	4.83	2.61	NO	100.5		
4	PFOA	413 > 368.7	5.3943		1.000	4.30	4.30	2.06	NO	103.1		
5	PFNA	463 > 418.8	3.1743		1.000	4.63	4.63	2.84	NO	102.0		
6	PFOS	499 > 79.9	5.2842		1.000	4.69	4.69	2.46	YES	123.0	0.1190520	
7	13C3-PFBS	302.0 > 98.6	7.2443	0.410	1.000	3.83	3.83	12.7	NO	101.2	0.0061404	
8	13C4-PFHxA	367.2 > 321.8	1.8644	1.10	1.000	3.90	3.91	12.1	NO	96.9	0.0050106	
9	18O2-PFHxS	403 > 102.6	7.4343	0.434	1.000	4.02	4.02	12.3	NO	96.2	0.0022555	
10	13C2-PFOA	414.9 > 369.7	3.7044	4.61	1.000	4.30	4.30	12.2	NO	97.6	0.0185493	
11	13C5-PFNA	468.2 > 422.9	6.9743	0.867	1.000	4.63	4.63	12.3	NO	96.6	0.0011307	
12	13C8-PFOS	507.0 > 79.9	5.1843	0.958	1.000	4.69	4.69	12.4	NO	99.1	0.0187137	
13	13C5-PFHxA	318-272.9	3.1744	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0082680	
14	13C3-PFHxS	401.9 > 79.9	1.7444	1.00	1.000	3.94	4.02	12.5	NO	100.0	0.0001062	
15	13C8-PFOA	421.3 > 376	8.2343	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0221408	
16	13C9-PFNA	472.2 > 426.9	8.1643	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0003300	
17	13C4-PFOS	503.0 > 79.9	5.4543	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.0016094	
18	Total PFBS	299 > 79.7	2.7843		1.000	3.11		1.99	NO			
19	Total PFHxS	386.9 > 79.6	2.6343		1.000	4.09		2.27	NO			
20	Total PFOA	413 > 368.7	5.4643		1.000	4.39		2.06	NO			
21	Total PFOS	499 > 79.9	6.8642		1.000	4.67		3.37	NO		0.1190520	



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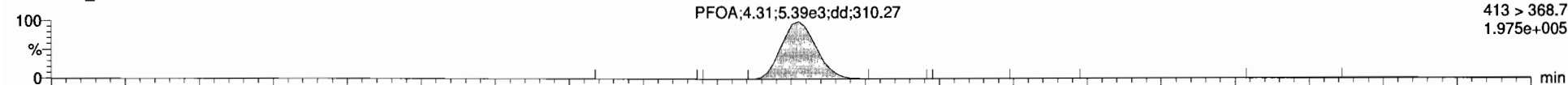
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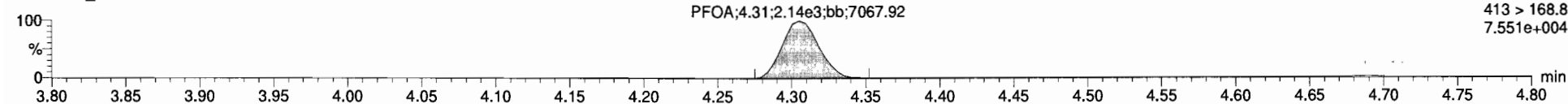
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Total PFOA

170305G1_5

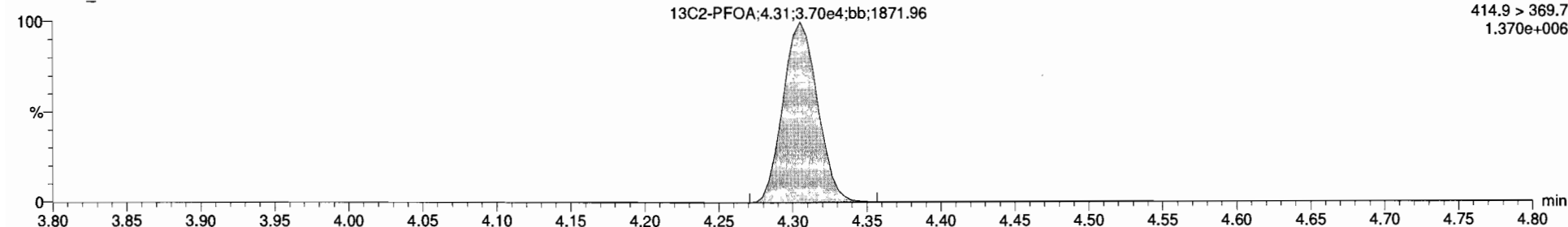


170305G1_5



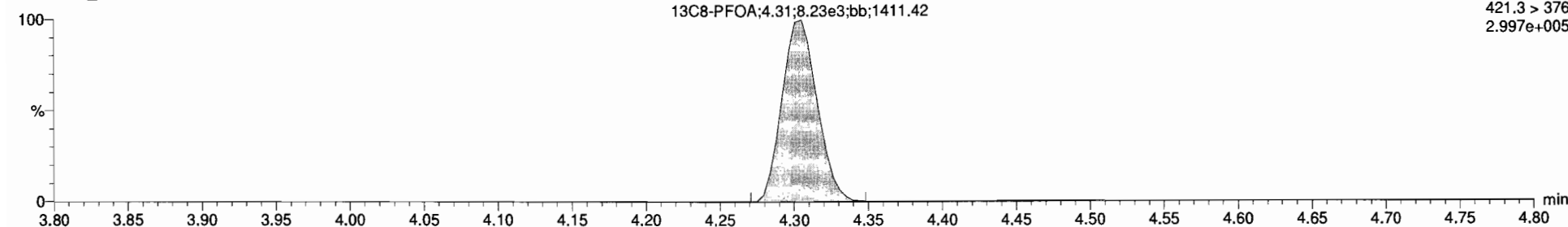
13C2-PFOA

170305G1_5



13C8-PFOA

170305G1_5



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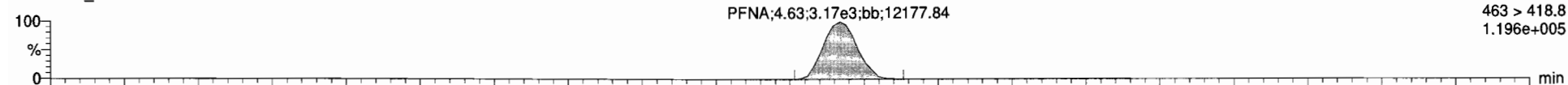
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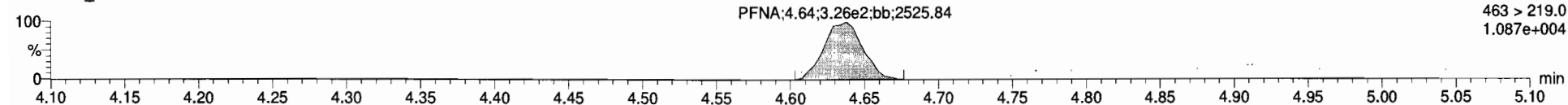
PFNA

170305G1_5



F5:MRM of 12 channels,ES-
463 > 418.8
1.196e+005

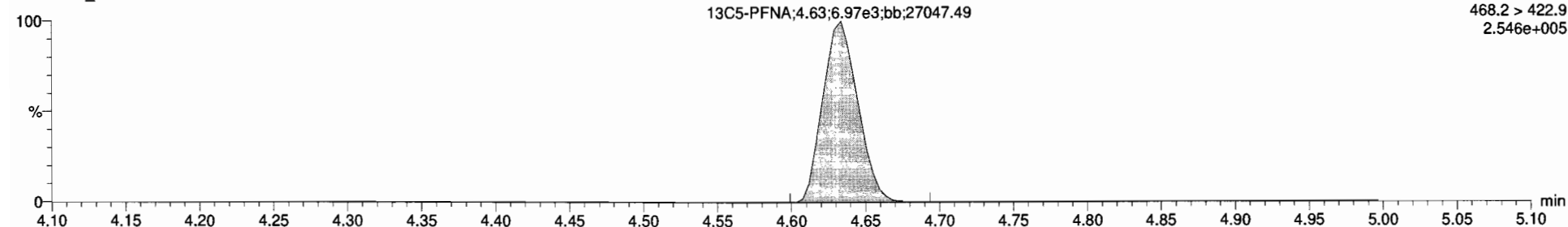
170305G1_5



F5:MRM of 12 channels,ES-
463 > 219.0
1.087e+004

13C5-PFNA

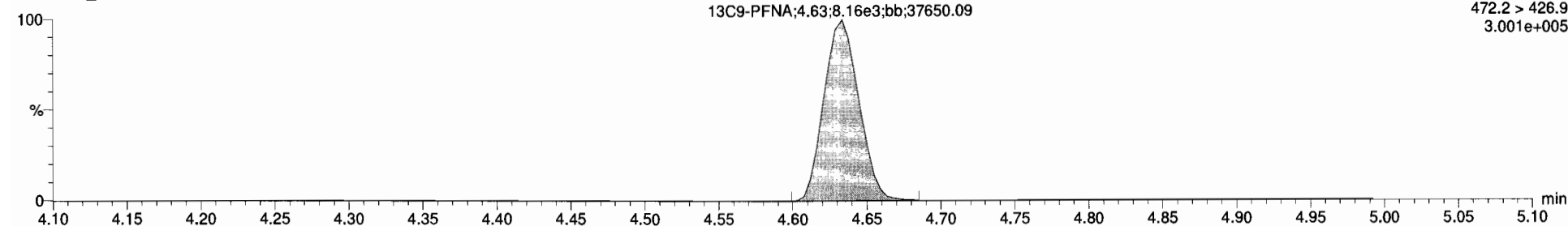
170305G1_5



F5:MRM of 12 channels,ES-
468.2 > 422.9
2.546e+005

13C9-PFNA

170305G1_5



F5:MRM of 12 channels,ES-
472.2 > 426.9
3.001e+005

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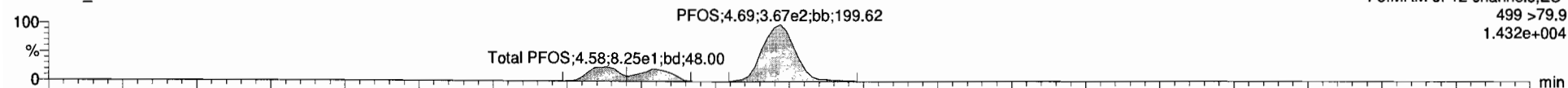
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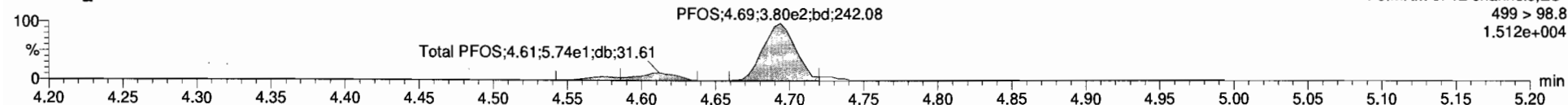
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Total PFOS

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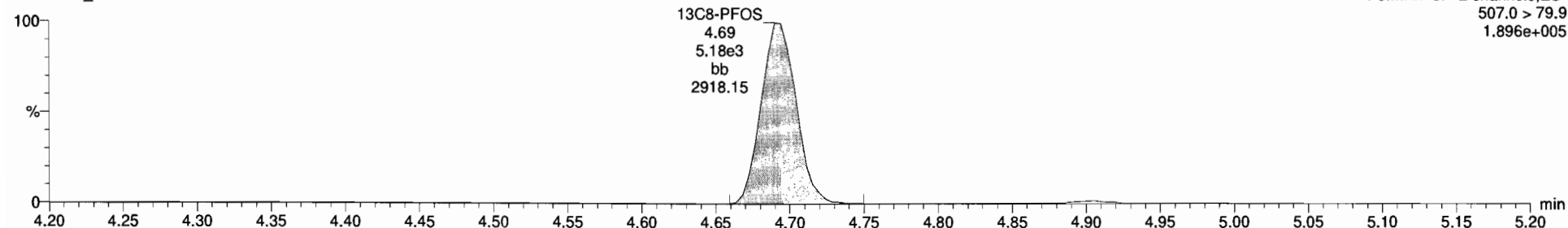


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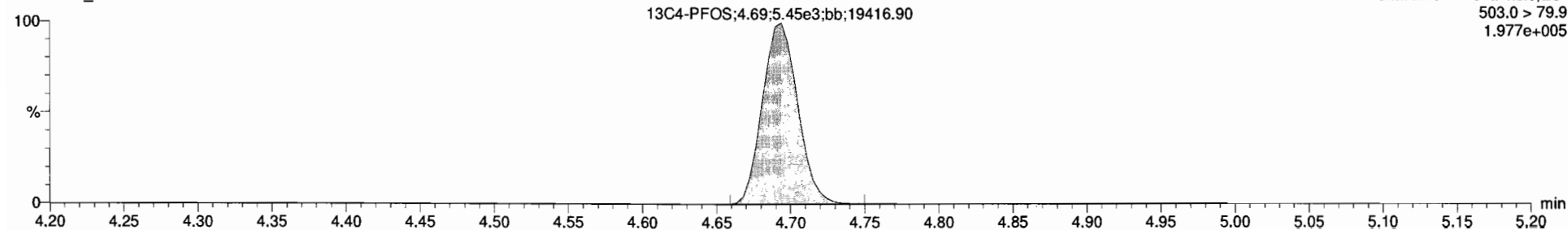
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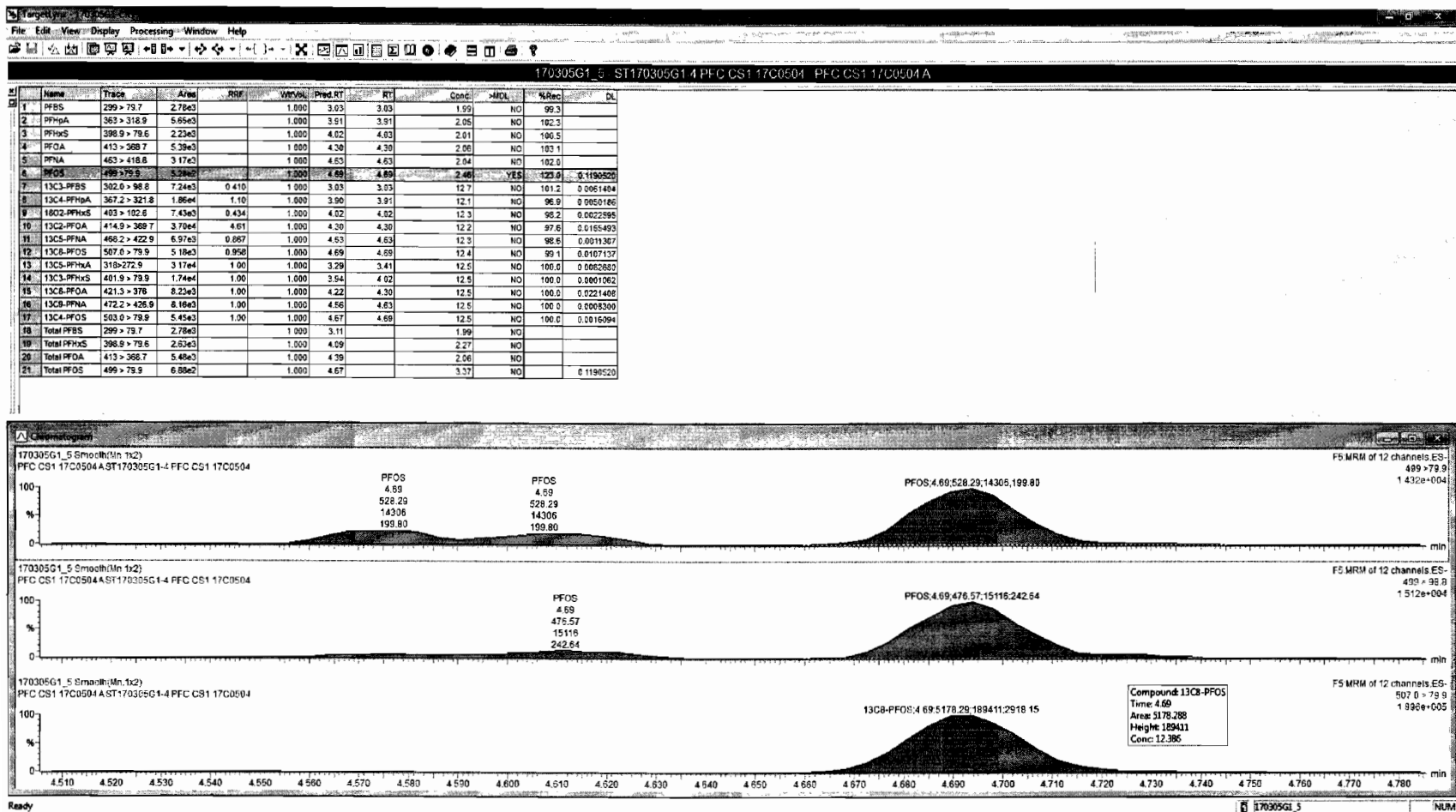
170305G1_5



13C4-PFOS

170305G1_5





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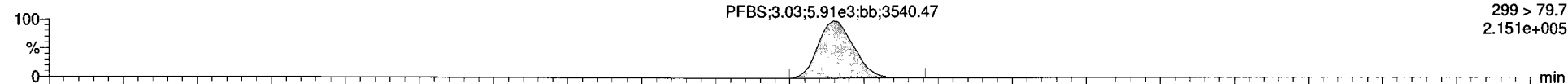
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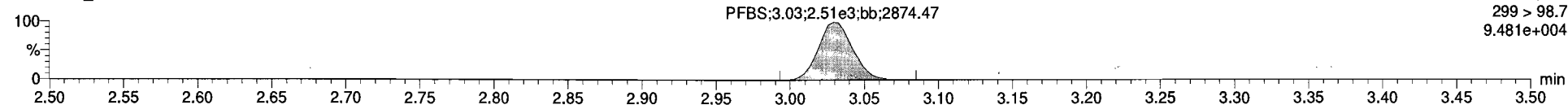
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PFBS

170305G1_6

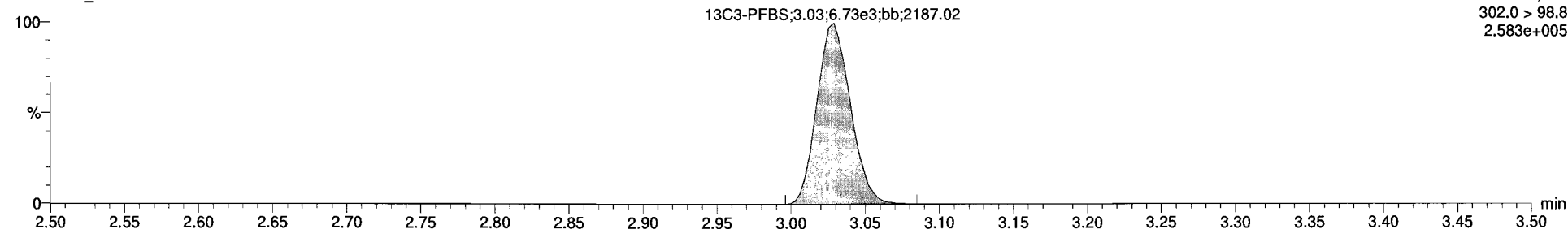


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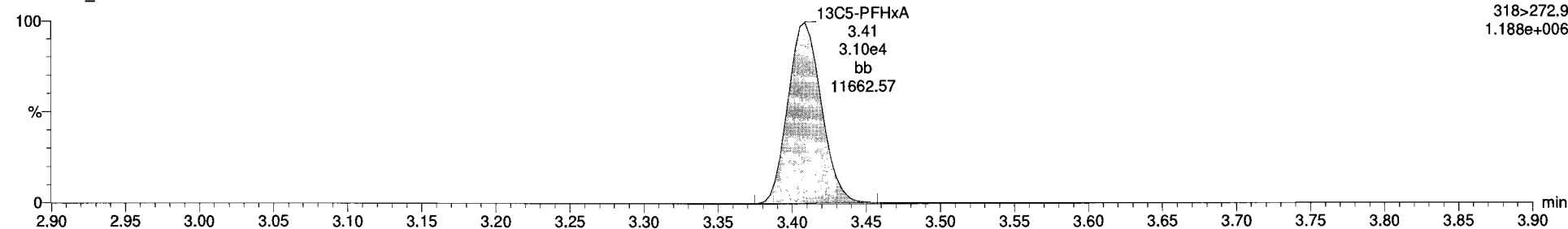
13C3-PFBS

170305G1_6



13C5-PFHxA

170305G1_6



Dataset: Untitled

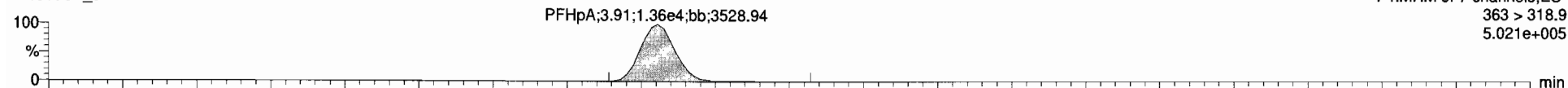
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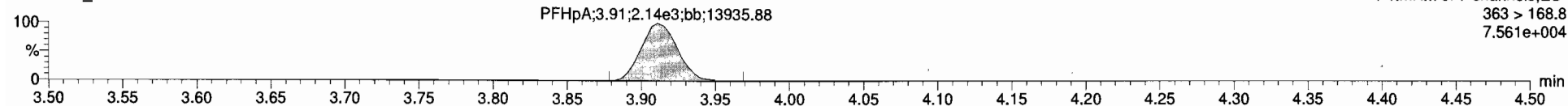
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PFHpA

170305G1_6

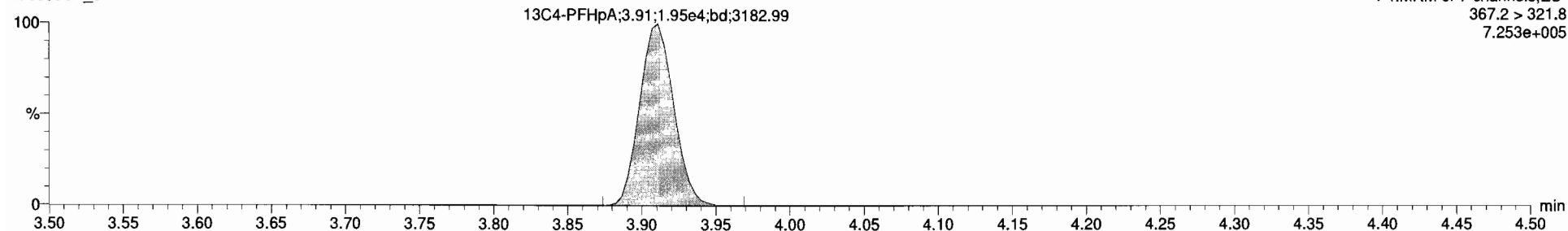


170305G1_6



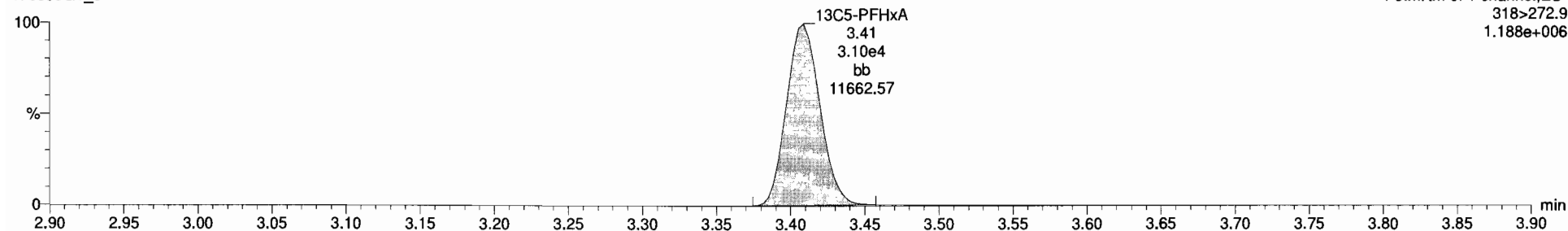
13C4-PFHpA

170305G1_6



13C5-PFHxA

170305G1_6



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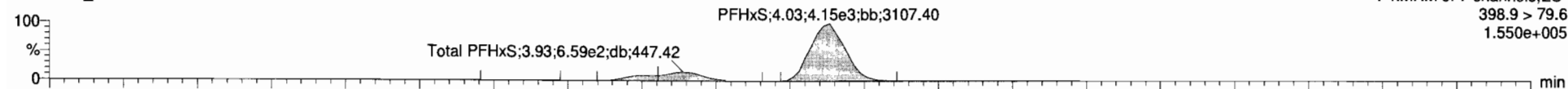
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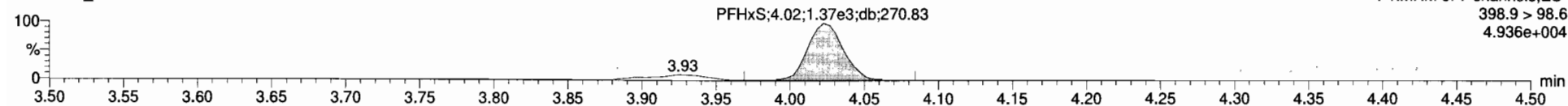
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Total PFHxS

170305G1_6

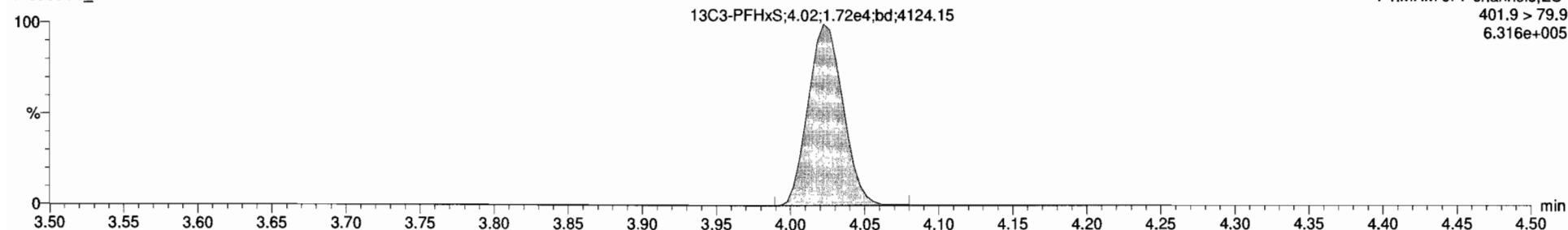


170305G1_6



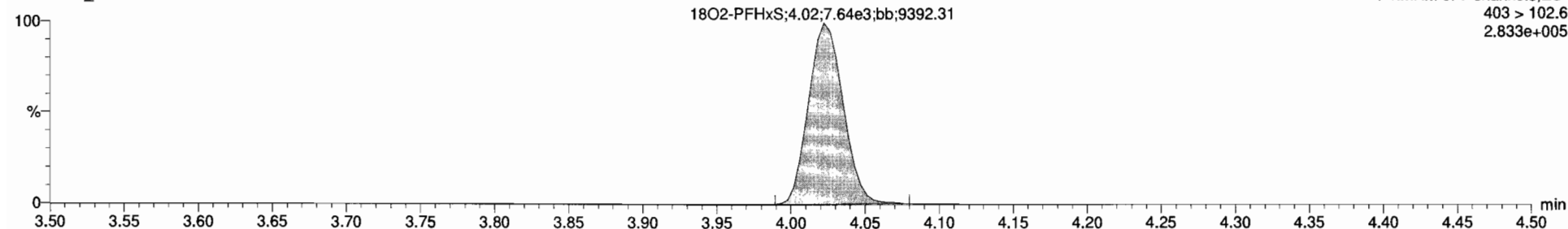
13C3-PFHxS

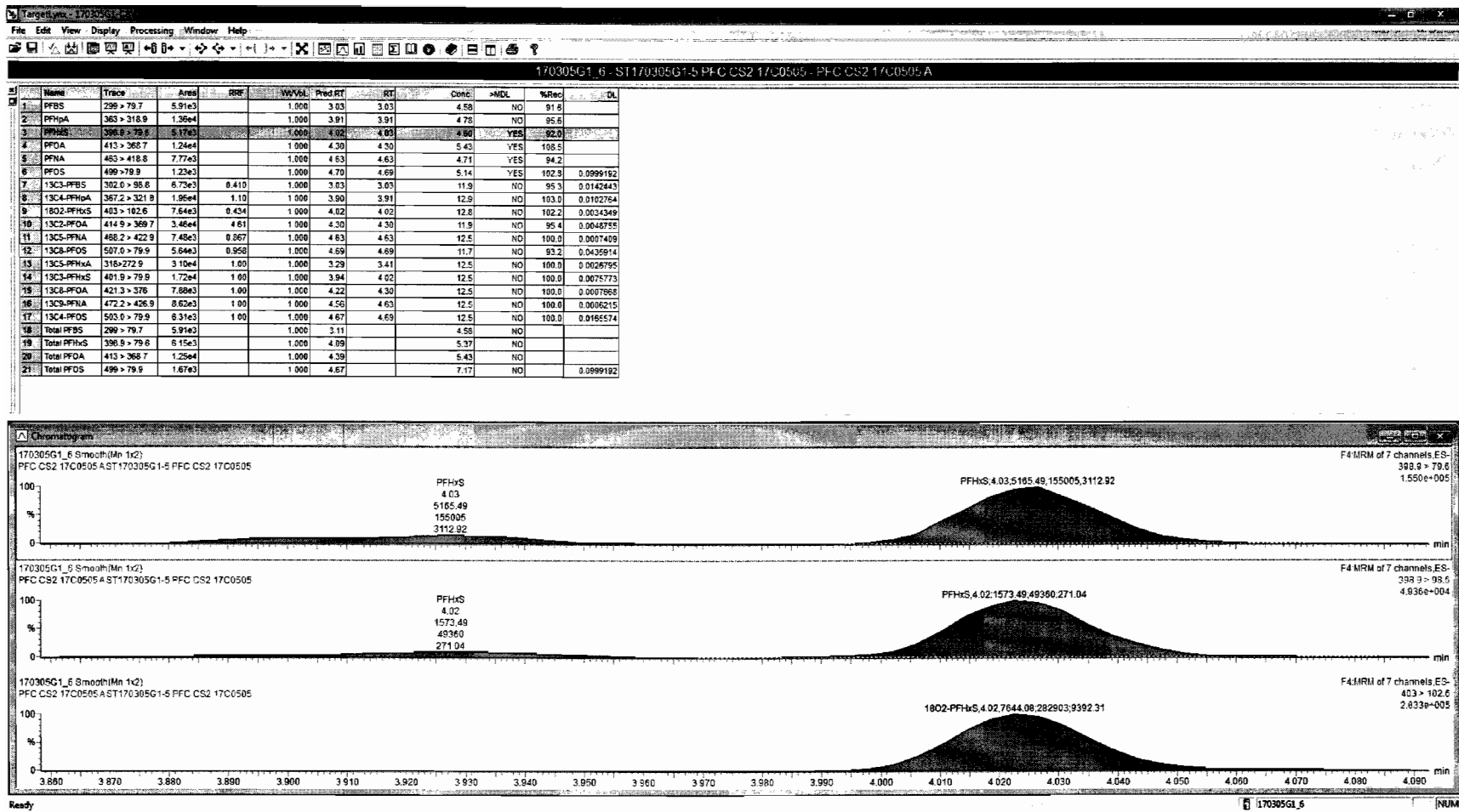
170305G1_6



18O2-PFHxS

170305G1_6





Dataset: Untitled

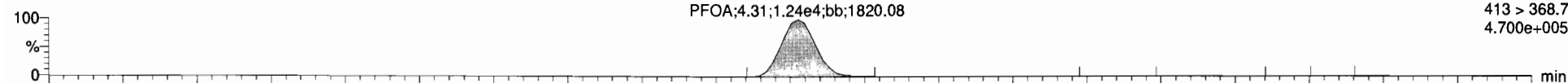
Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time

Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

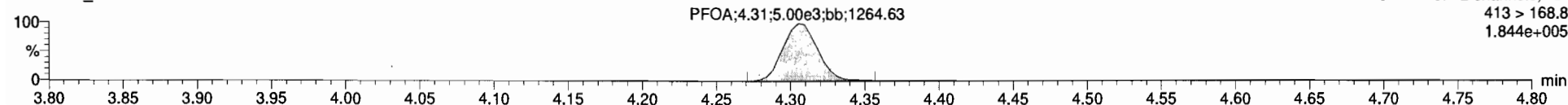
ID: ST170305G1-5 PFC CS2 17C0505, Description: PFC CS2 17C0505 A, Name: 170305G1_6, Date: 05-Mar-2017, Time: 13:36:55, Instrument: , Lab: , User:

Total PFOA

170305G1_6

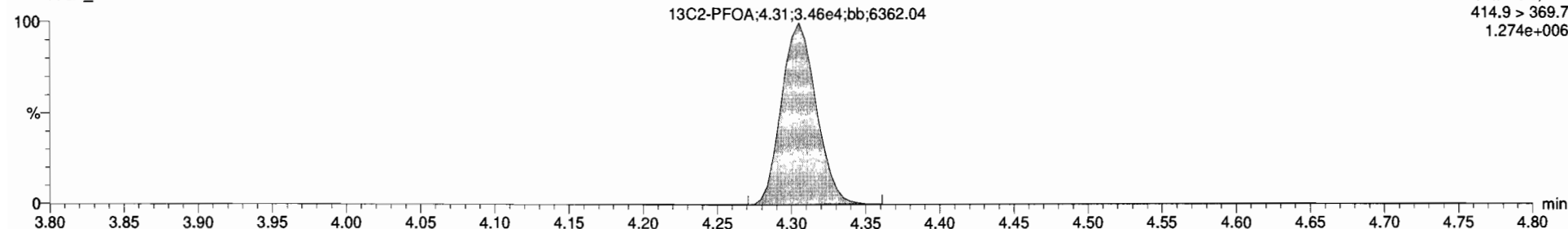


170305G1_6



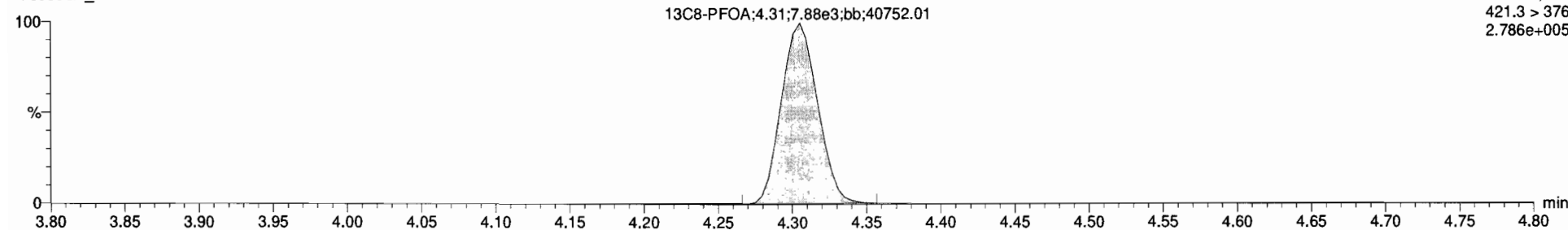
13C2-PFOA

170305G1_6



13C8-PFOA

170305G1_6



Dataset: Untitled

Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time

Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

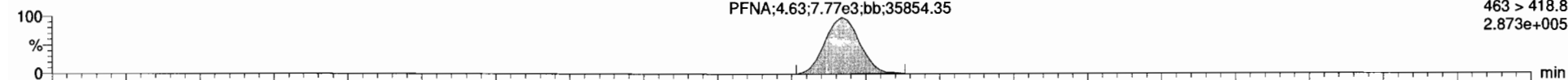
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PFNA

170305G1_6

PFNA;4.63;7.77e3;bb;35854.35

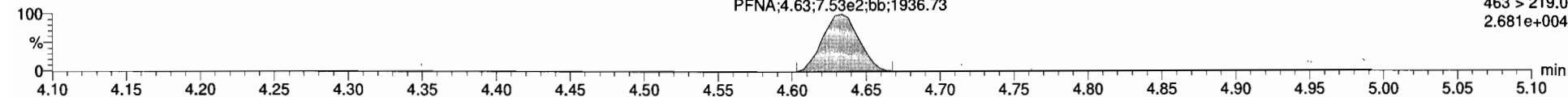
F5:MRM of 12 channels,ES-
463 > 418.8
2.873e+005



170305G1_6

PFNA;4.63;7.53e2;bb;1936.73

F5:MRM of 12 channels,ES-
463 > 219.0
2.681e+004

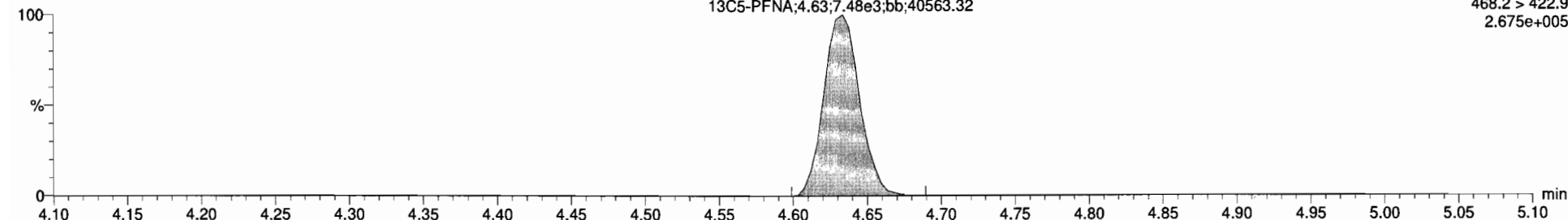


13C5-PFNA

170305G1_6

13C5-PFNA;4.63;7.48e3;bb;40563.32

F5:MRM of 12 channels,ES-
468.2 > 422.9
2.675e+005

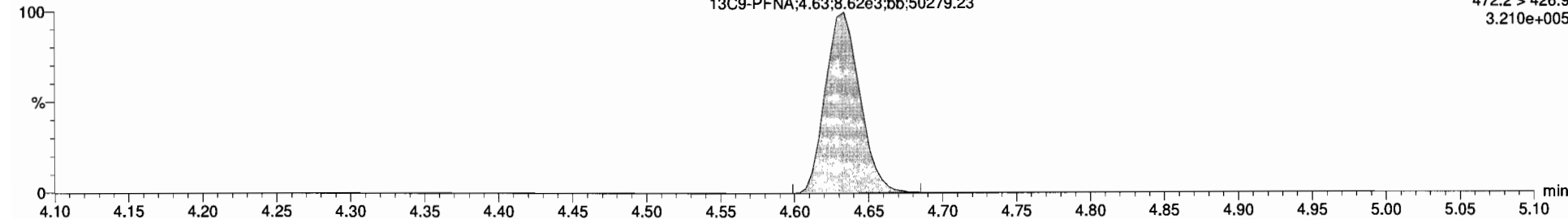


13C9-PFNA

170305G1_6

13C9-PFNA;4.63;8.62e3;bb;50279.23

F5:MRM of 12 channels,ES-
472.2 > 426.9
3.210e+005



Dataset: Untitled

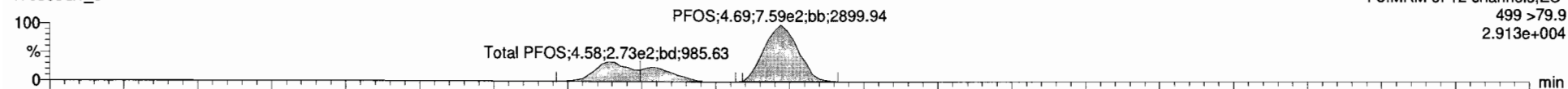
Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time

Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-5 PFC CS2 17C0505, Description: PFC CS2 17C0505 A, Name: 170305G1_6, Date: 05-Mar-2017, Time: 13:36:55, Instrument: , Lab: , User:

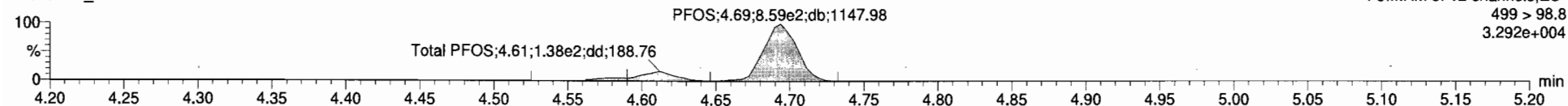
Total PFOS

170305G1_6



F5:MRM of 12 channels,ES-
499 >79.9
2.913e+004

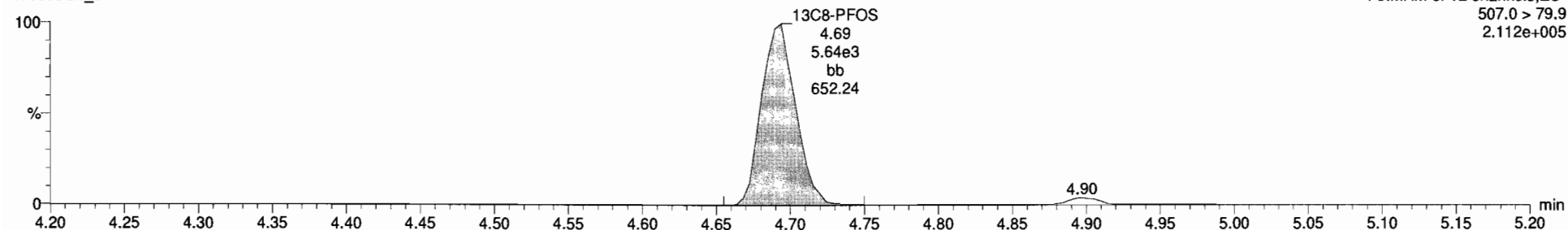
170305G1_6



F5:MRM of 12 channels,ES-
499 > 98.8
3.292e+004

¹³C8-PFOS

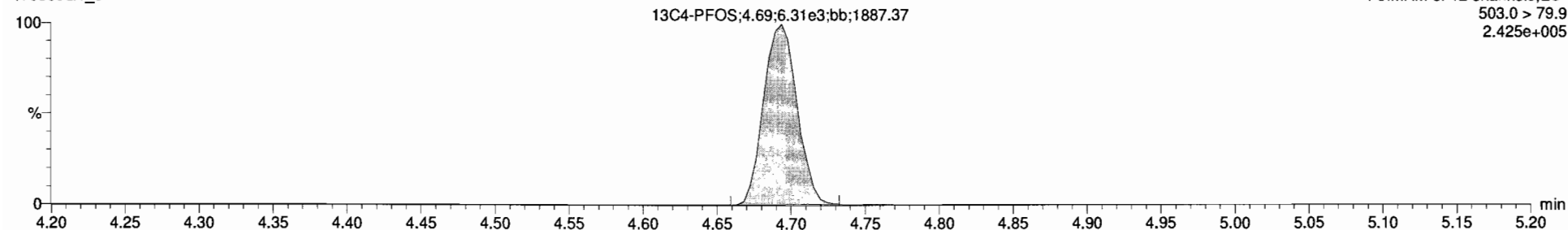
170305G1_6



F5:MRM of 12 channels,ES-
507.0 > 79.9
2.112e+005

¹³C4-PFOS

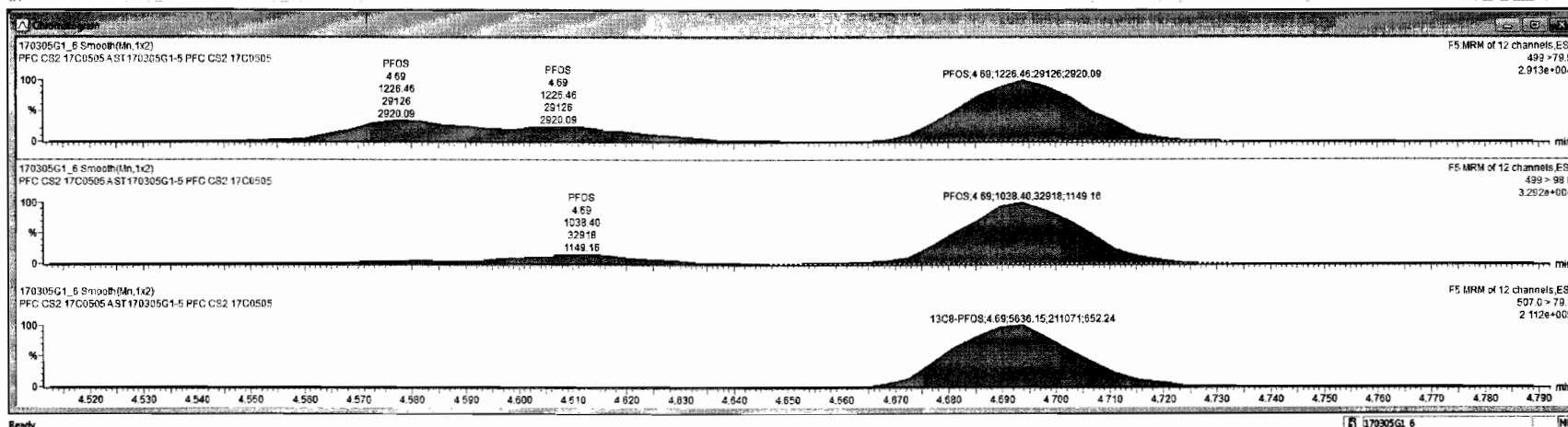
170305G1_6



F5:MRM of 12 channels,ES-
503.0 > 79.9
2.425e+005

170305G1_6 ST170305G1-5 PFC CS2 17C0505 PFC CS2 17C0505A													
Name	Trace	Area	RRF	WVWL	Pred RT	RT	Cone	SMDL	%Rel	DL			

1	PFBS	299 > 79.7	5.91e3		1.000	3.83	3.03	4.58	NO	91.6			
2	PFHpA	363 > 318.9	1.36e4		1.000	3.91	3.91	4.78	NO	95.6			
3	PFHxS	398.9 > 79.8	5.17e3		1.000	4.62	4.03	4.60	YES	92.0			
4	PFOA	413 > 368.7	1.24e4		1.000	4.30	4.30	5.43	YES	108.5			
5	PFNA	463 > 418.8	7.77e3		1.000	4.63	4.63	4.71	YES	94.2			
6	PFOS	499 > 79.9	1.23e3		1.000	4.79	4.69	5.14	YES	102.8	0.0999192		
7	13C3-PFBS	302.0 > 98.8	6.73e3	0.410	1.000	3.83	3.03	11.9	NO	95.3	0.0142443		
8	13C4-PFHpA	367.2 > 321.8	1.95e4	1.10	1.000	3.90	3.91	12.9	NO	103.0	0.0102784		
9	18O2-PFHxS	403 > 102.6	7.64e3	0.434	1.000	4.62	4.02	12.8	NO	102.2	0.0034349		
10	13C2-PFOA	414.9 > 369.7	3.46e4	4.61	1.000	4.30	4.30	11.9	NO	95.4	0.0048755		
11	13C5-PFNA	468.2 > 422.9	7.48e3	0.867	1.000	4.63	4.63	12.5	NO	100.0	0.0007499		
12	13C8-PFOS	507.0 > 79.9	5.64e3	0.958	1.000	4.69	4.69	11.7	NO	93.2	0.0435914		
13	13C5-PFHxS	318 > 272.9	3.10e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0026795		
14	13C3-PFHxS	401.9 > 79.9	1.72e4	1.00	1.000	3.94	4.02	12.5	NO	100.0	0.0075773		
15	13C6-PFOA	421.3 > 376	7.88e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0007668		
16	13C9-PFNA	472.2 > 426.9	8.62e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0008215		
17	13C4-PFOS	503.0 > 79.9	6.31e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.0165574		
18	Total PFBS	299 > 79.7	5.91e3		1.000	3.81		4.58	NO				
19	Total PFHxS	398.9 > 79.8	6.15e3		1.000	4.69		5.37	NO				
20	Total PFOA	413 > 368.7	1.25e4		1.000	4.39		5.43	NO				
21	Total PFOS	499 > 79.9	1.67e3		1.000	4.67		7.17	NO		0.0999192		



Dataset: Untitled

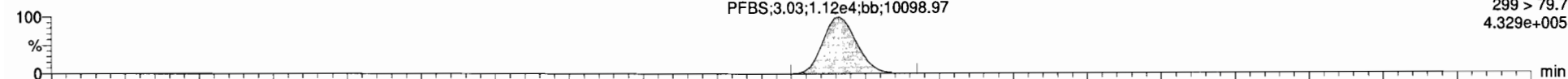
Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time

Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-6 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_7, Date: 05-Mar-2017, Time: 13:49:29, Instrument: , Lab: , User:

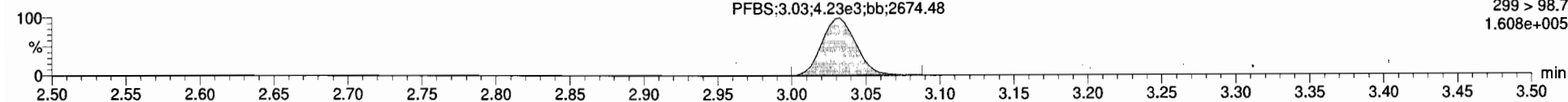
PFBS

170305G1_7



F2:MRM of 3 channels,ES-
299 > 79.7
4.329e+005

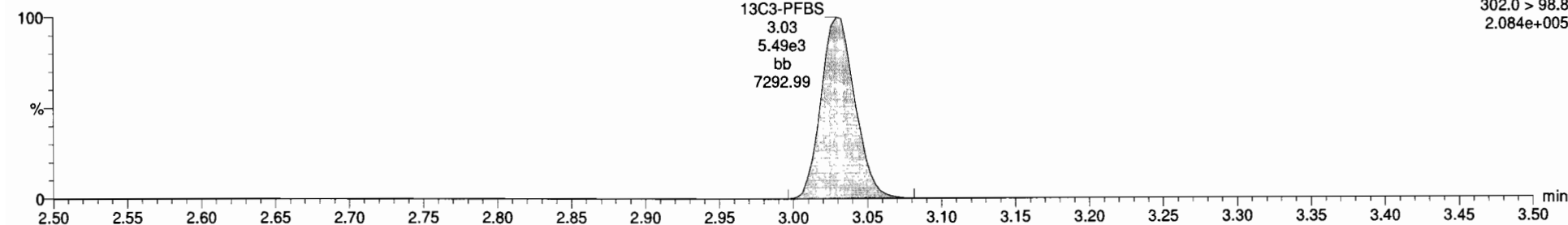
170305G1_7



F2:MRM of 3 channels,ES-
299 > 98.7
1.608e+005

13C3-PFBS

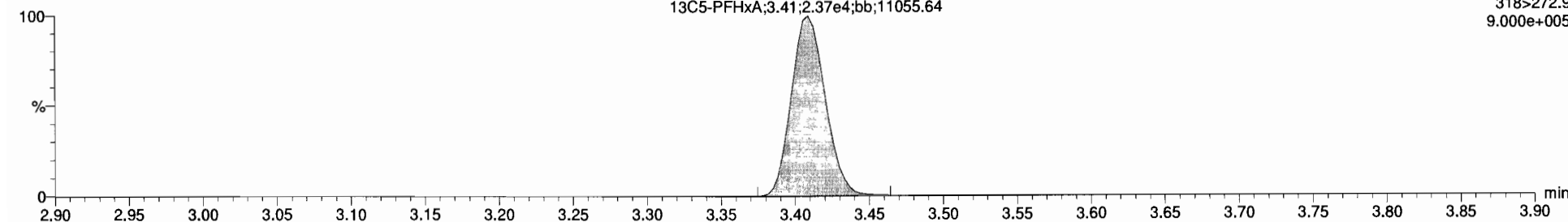
170305G1_7



F2:MRM of 3 channels,ES-
302.0 > 98.8
2.084e+005

13C5-PFHxA

170305G1_7



F3:MRM of 1 channel,ES-
318>272.9
9.000e+005

Dataset: Untitled

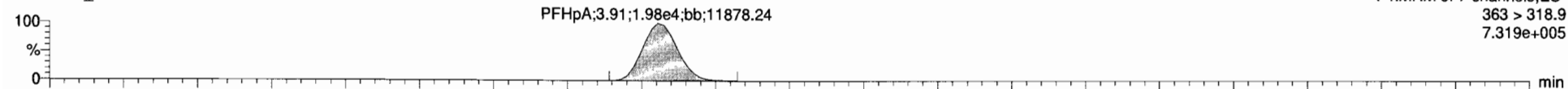
Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time

Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

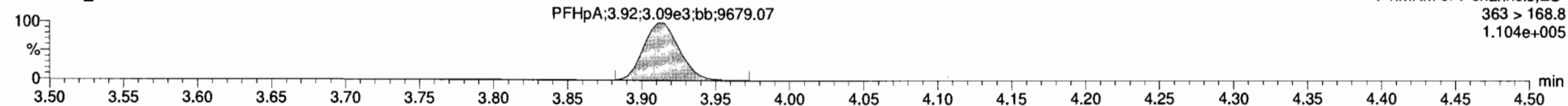
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PFHpA

170305G1_7

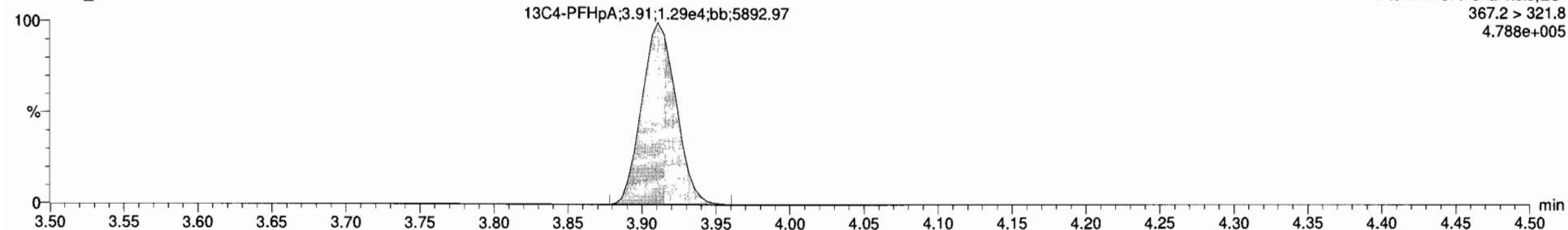


170305G1_7



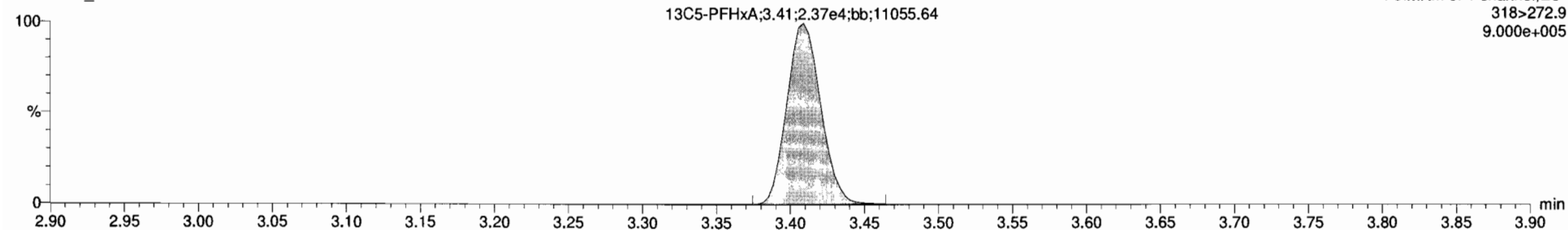
13C4-PFHpA

170305G1_7



13C5-PFHxA

170305G1_7



Dataset: Untitled

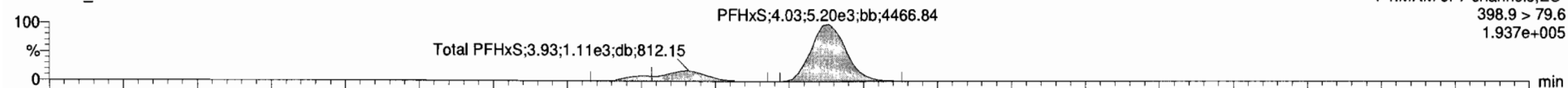
Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time

Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

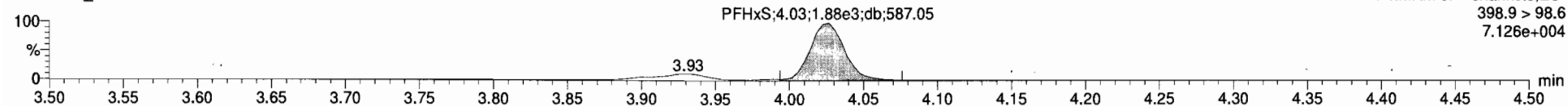
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Total PFHxS

170305G1_7

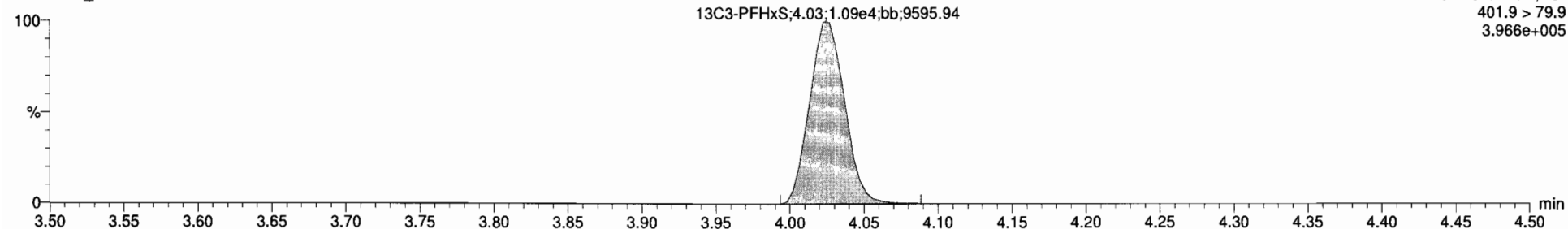


170305G1_7



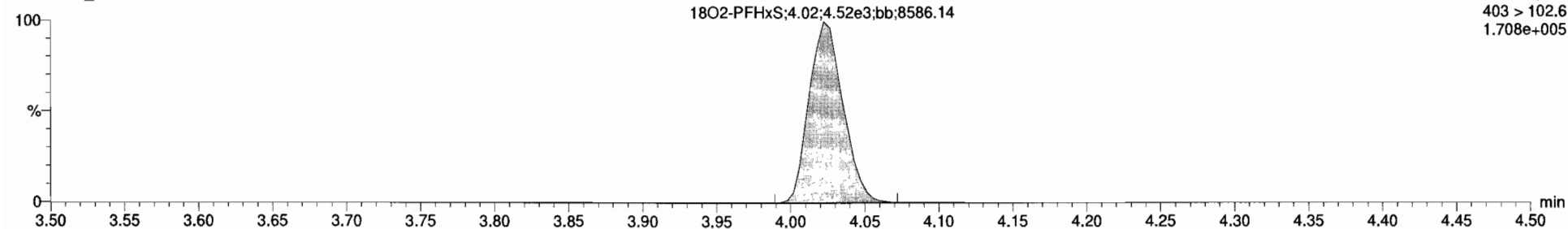
13C3-PFHxS

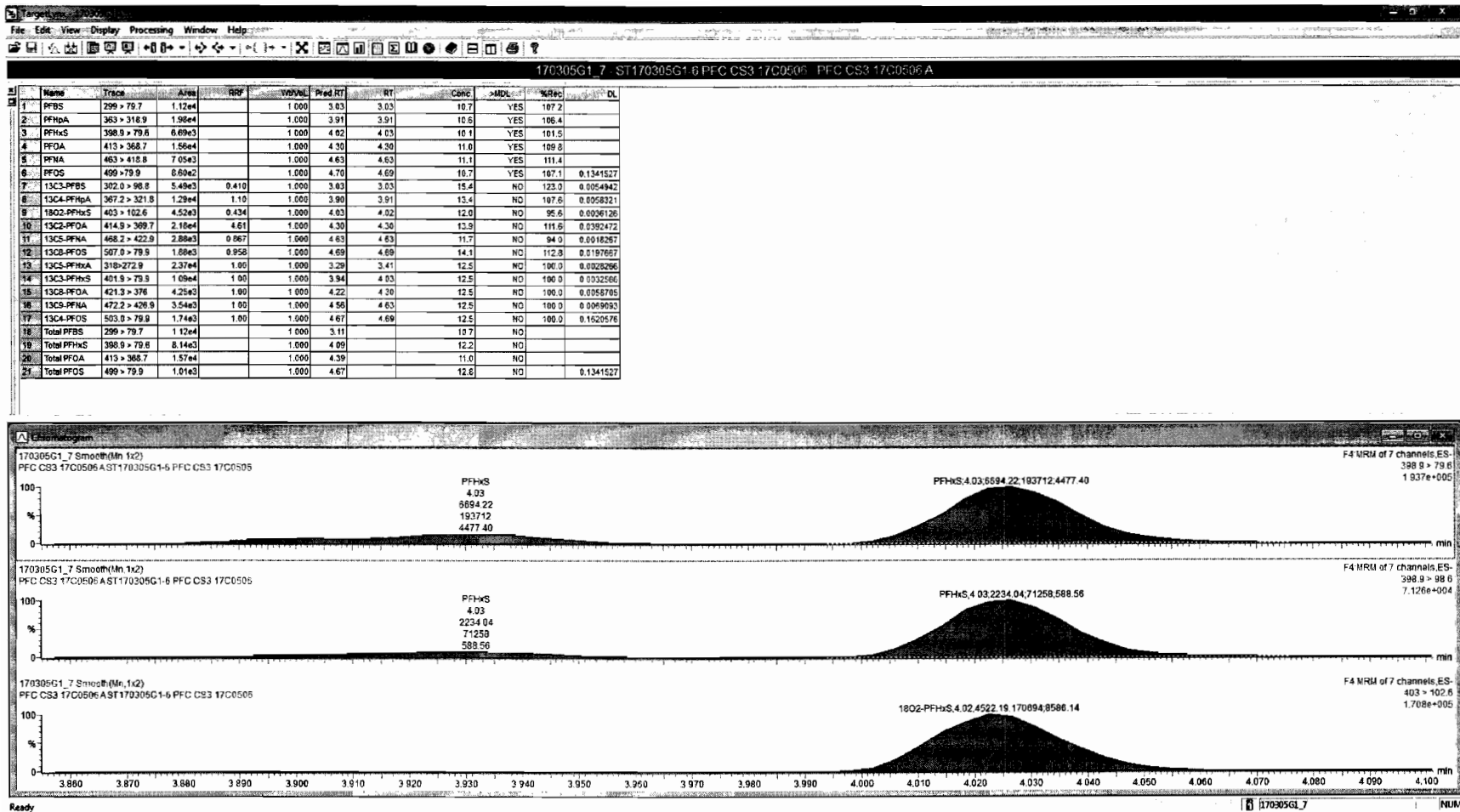
170305G1_7



18O2-PFHxS

170305G1_7





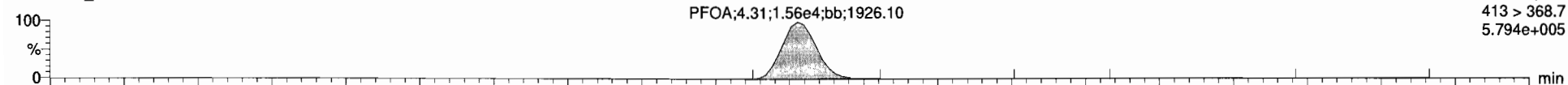
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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

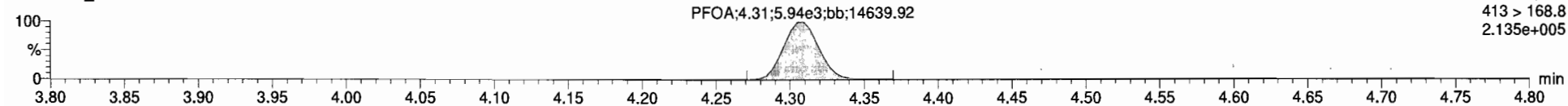
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Total PFOA

170305G1_7

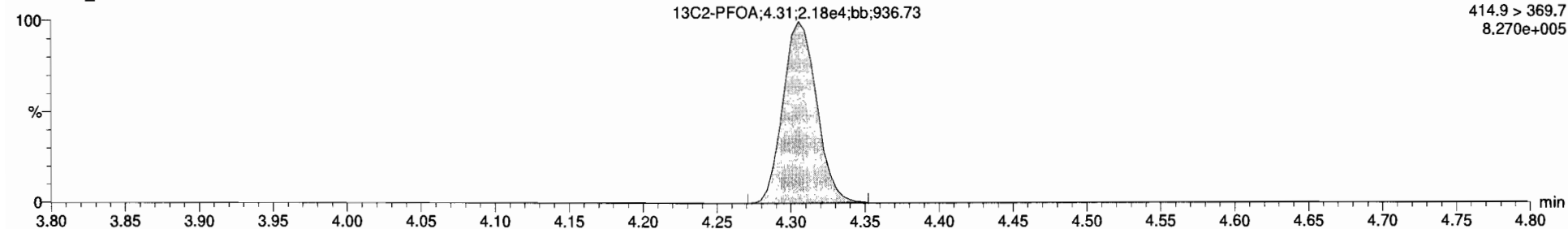


170305G1_7



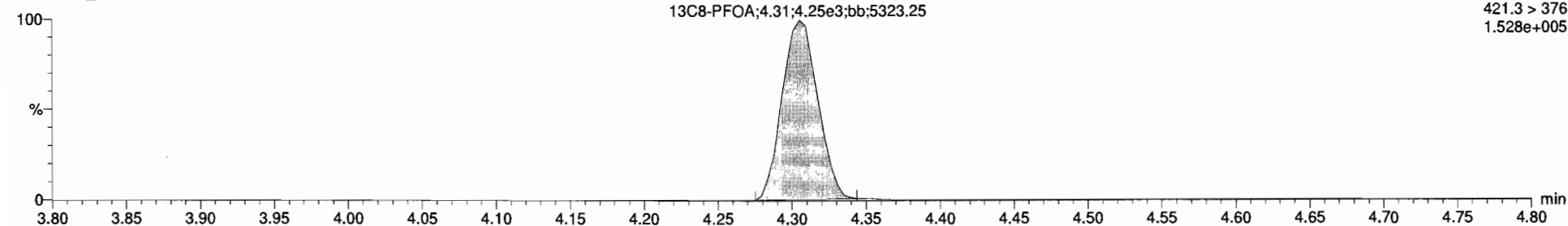
13C2-PFOA

170305G1_7



13C8-PFOA

170305G1_7



Dataset: Untitled

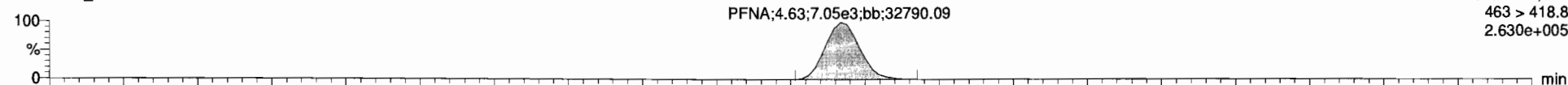
Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time

Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-6 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_7, Date: 05-Mar-2017, Time: 13:49:29, Instrument: , Lab: , User:

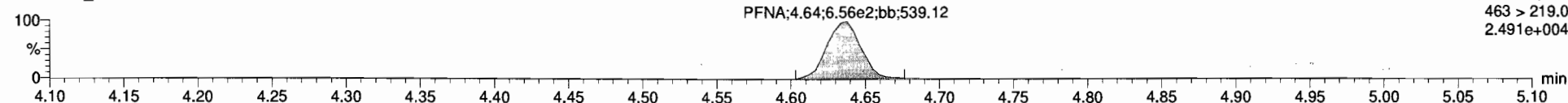
PFNA

170305G1_7



F5:MRM of 12 channels,ES-
463 > 418.8
2.630e+005

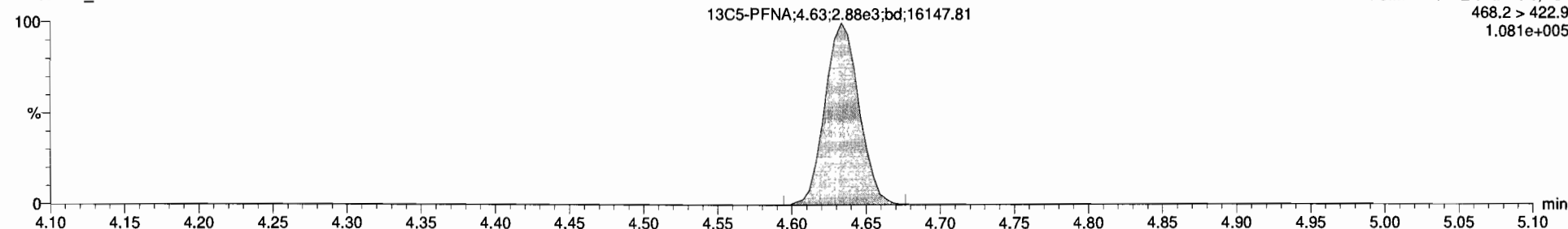
170305G1_7



F5:MRM of 12 channels,ES-
463 > 219.0
2.491e+004

13C5-PFNA

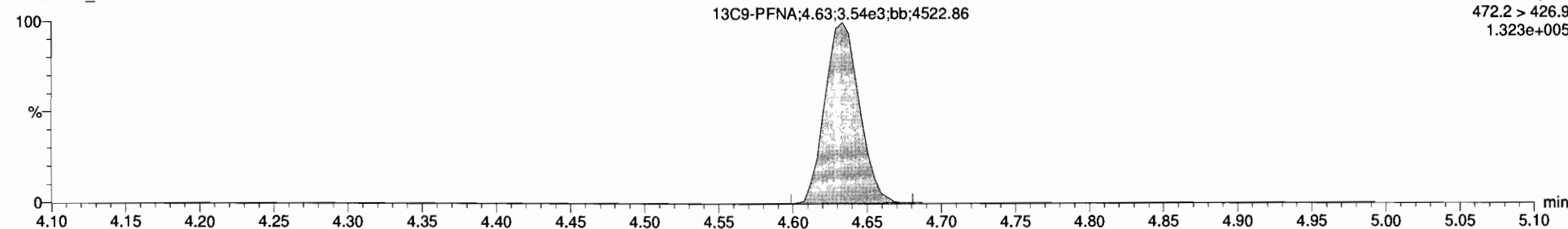
170305G1_7



F5:MRM of 12 channels,ES-
468.2 > 422.9
1.081e+005

13C9-PFNA

170305G1_7



F5:MRM of 12 channels,ES-
472.2 > 426.9
1.323e+005

Dataset: Untitled

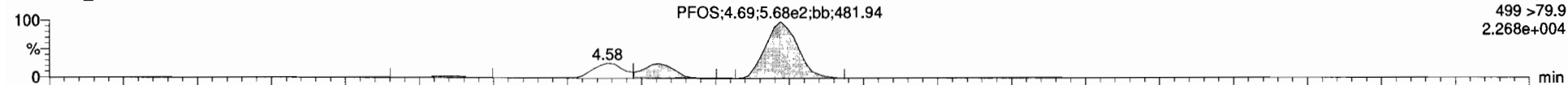
Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time

Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-6 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_7, Date: 05-Mar-2017, Time: 13:49:29, Instrument: , Lab: , User:

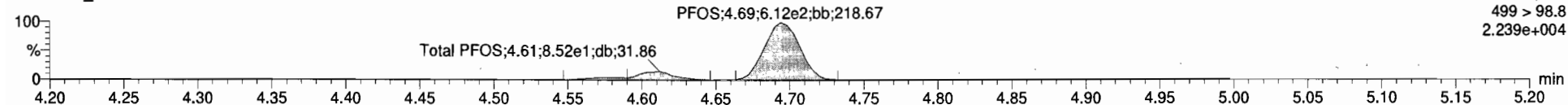
Total PFOS

170305G1_7



F5:MRM of 12 channels,ES-
499 >79.9
2.268e+004

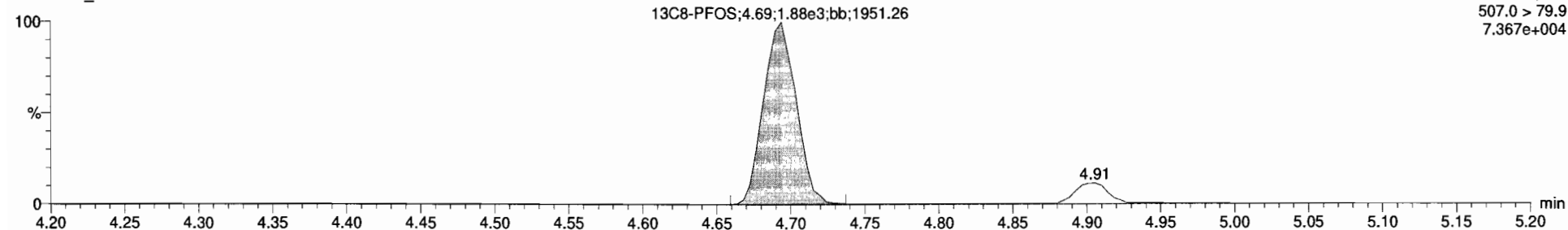
170305G1_7



F5:MRM of 12 channels,ES-
499 > 98.8
2.239e+004

13C8-PFOS

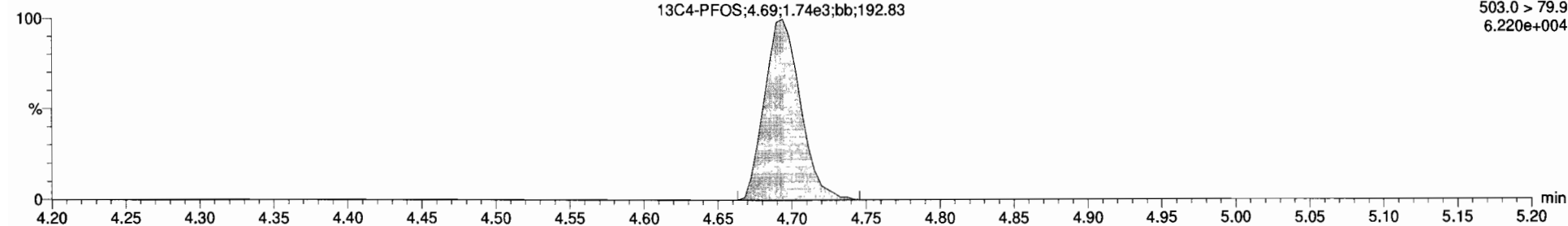
170305G1_7



F5:MRM of 12 channels,ES-
507.0 > 79.9
7.367e+004

13C4-PFOS

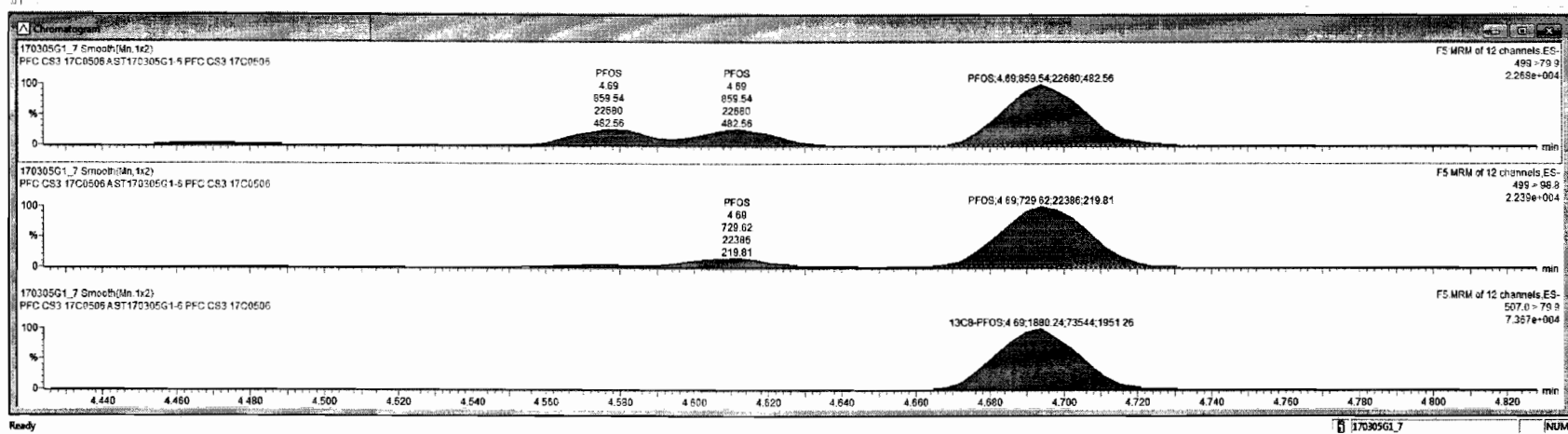
170305G1_7



F5:MRM of 12 channels,ES-
503.0 > 79.9
6.220e+004



170305G1_7 - ST170305G1-6 PFC CS3 17C0506 - PFC CS3 17C0506 A											
#	Name	Trace	Area	RRF	WtVal	Pred RT	RT	Conc.	>40L	%Rec	DL
1	PFBS	299 > 79.7	1.12e4		1.000	3.03	3.03	10.7	YES	107.2	0.0000000
2	PFHpA	363 > 318.9	1.96e4		1.000	3.91	3.91	10.6	YES	106.4	0.0000000
3	PFHxS	398.9 > 79.8	6.69e3		1.000	4.02	4.03	10.1	YES	101.5	0.0000000
4	PFOA	413 > 368.7	1.56e4		1.000	4.30	4.30	11.0	YES	109.3	0.0000000
5	PFNA	463 > 418.8	7.05e3		1.000	4.53	4.53	11.1	YES	111.4	0.0000000
6	PFOS	499 > 79.9	8.14e3		1.000	4.69	4.69	10.9	YES	109.4	0.1024216
7	13C3-PFBS	302.0 > 98.8	5.49e2	0.410	1.000	3.03	3.03	15.4	NO	123.0	0.0054942
8	13C4-PFHpA	367.2 > 321.8	1.29e4	1.10	1.000	3.90	3.91	13.4	NO	107.8	0.0058321
9	18O2-PFHxS	403 > 102.6	4.52e3	0.434	1.000	4.03	4.02	12.0	NO	95.6	0.0036126
10	13C2-PFOA	414.8 > 369.7	2.18e4	4.61	1.000	4.30	4.30	13.9	NO	111.6	0.032472
11	13C5-PFNA	468.2 > 422.9	2.86e3	0.867	1.000	4.63	4.63	11.7	NO	94.9	0.0018287
12	13C6-PFOS	507.0 > 79.8	1.86e3	0.958	1.000	4.69	4.69	14.1	NO	112.8	0.0197667
13	13C5-PFHxS	318.0 > 272.9	2.37e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0028266
14	13C3-PFHxS	401.9 > 79.9	1.08e4	1.00	1.000	3.84	4.03	12.5	NO	100.0	0.0032560
15	13C8-PFOA	421.3 > 378	4.25e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0058705
16	13C9-PFNA	472.2 > 426.9	3.54e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0059093
17	13C4-PFOS	503.0 > 79.9	1.74e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.1620578
18	Total PFBS	299 > 79.7	1.12e4		1.000	3.11		10.7	NO		
19	Total PFHxS	398.9 > 79.8	8.14e3		1.000	4.09		12.2	NO		
20	Total PFOA	413 > 368.7	1.57e4		1.000	4.39		11.0	NO		
21	Total PFOS	499 > 79.9	1.01e3		1.000	4.87		13.0	NO		0.1024216



Dataset: Untitled

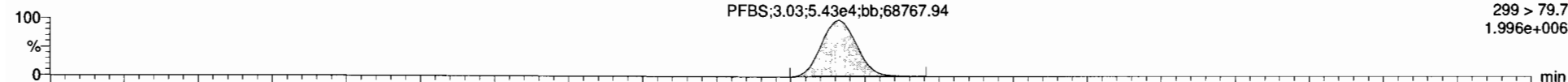
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Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

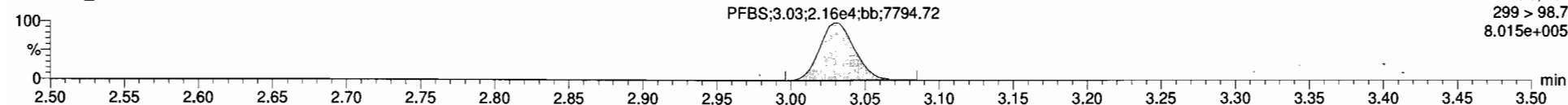
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PFBS

170305G1_8

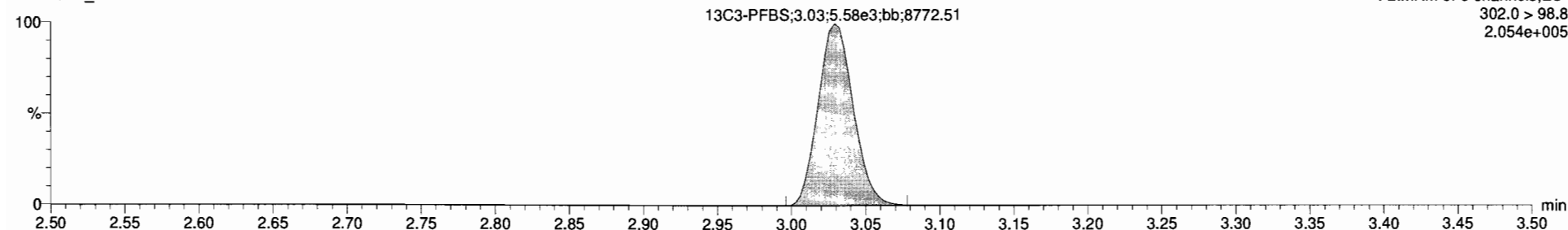


170305G1_8



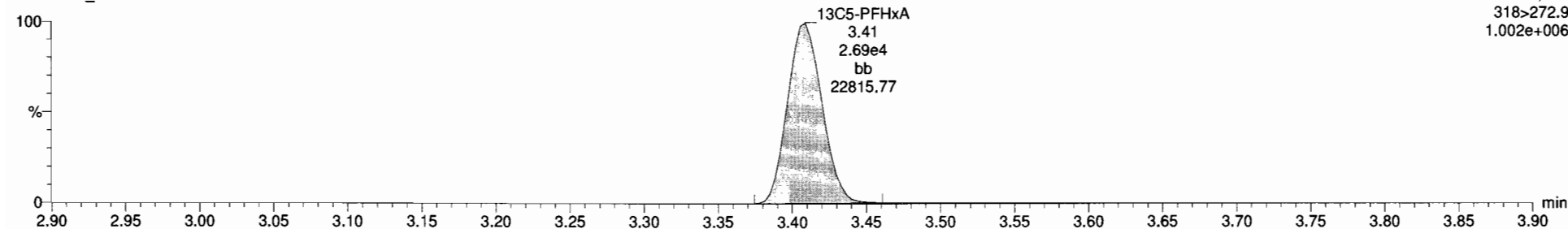
13C3-PFBS

170305G1_8



13C5-PFHxA

170305G1_8



Dataset: Untitled

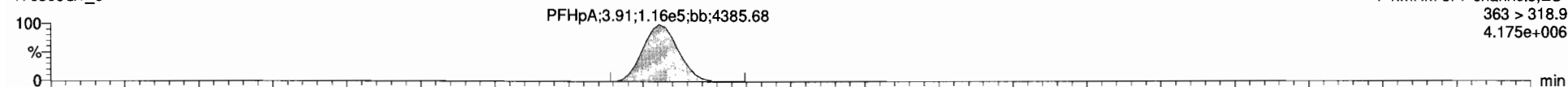
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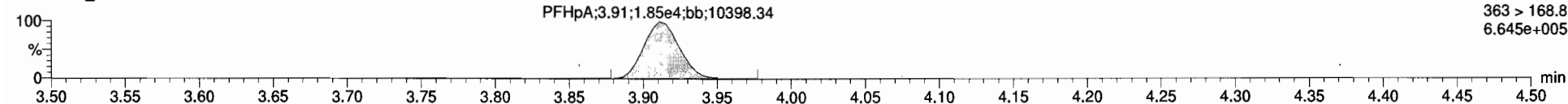
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PFHpA

170305G1_8

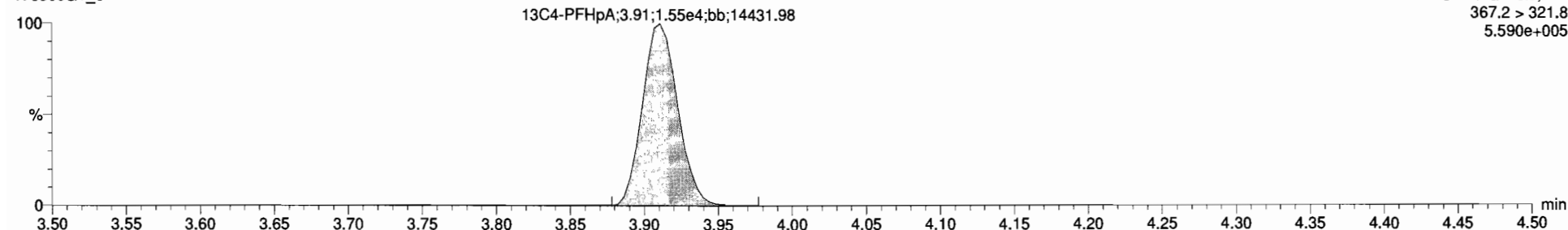


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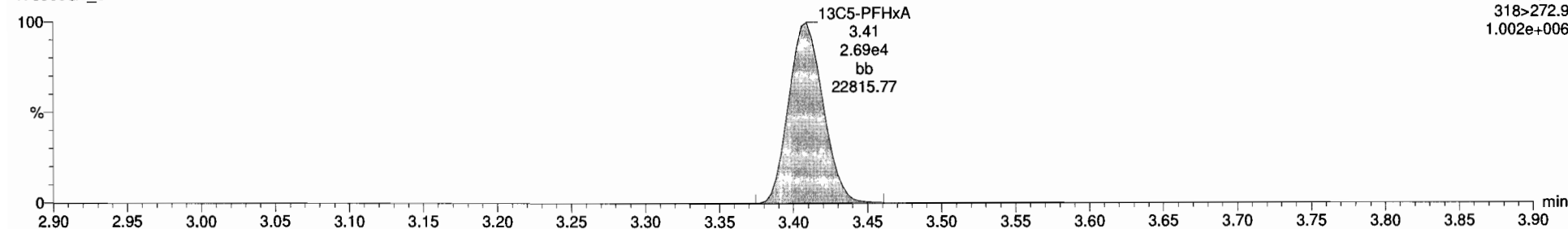
13C4-PFHpA

170305G1_8



13C5-PFHxA

170305G1_8



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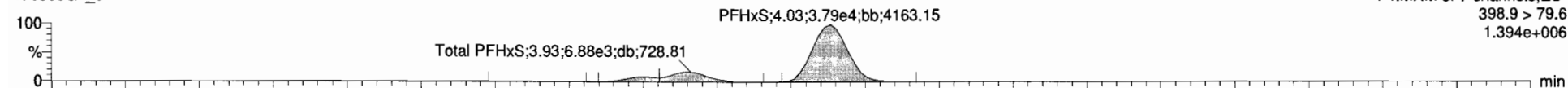
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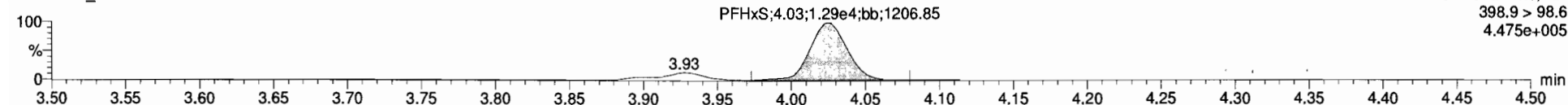
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Total PFHxS

170305G1_8

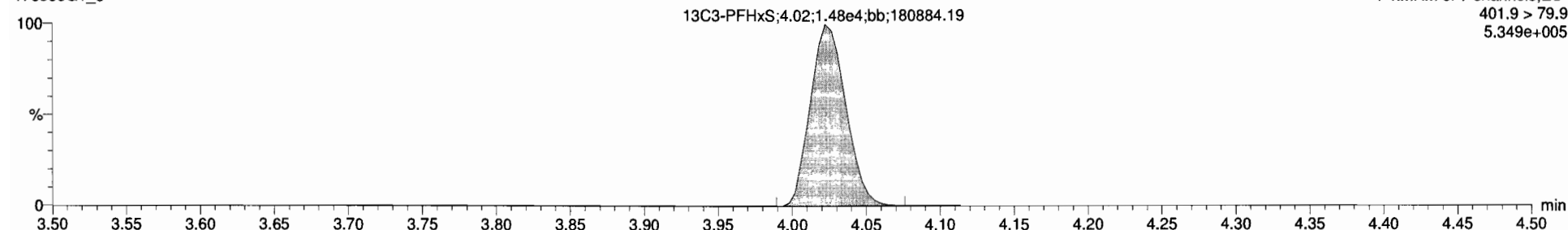


170305G1_8



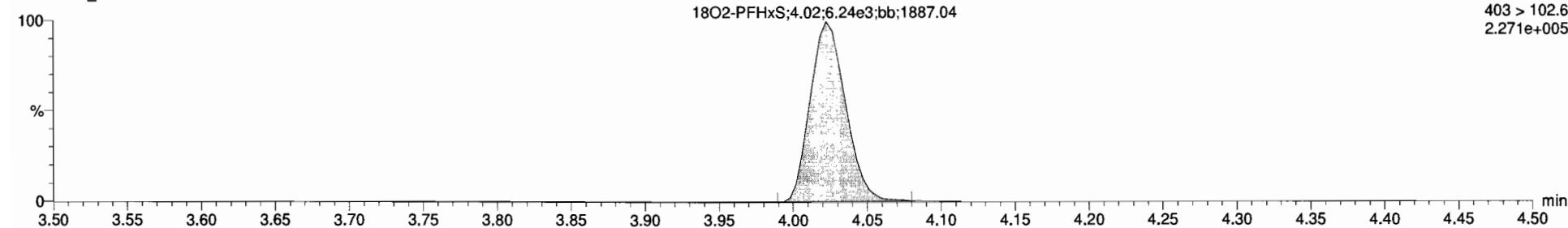
13C3-PFHxS

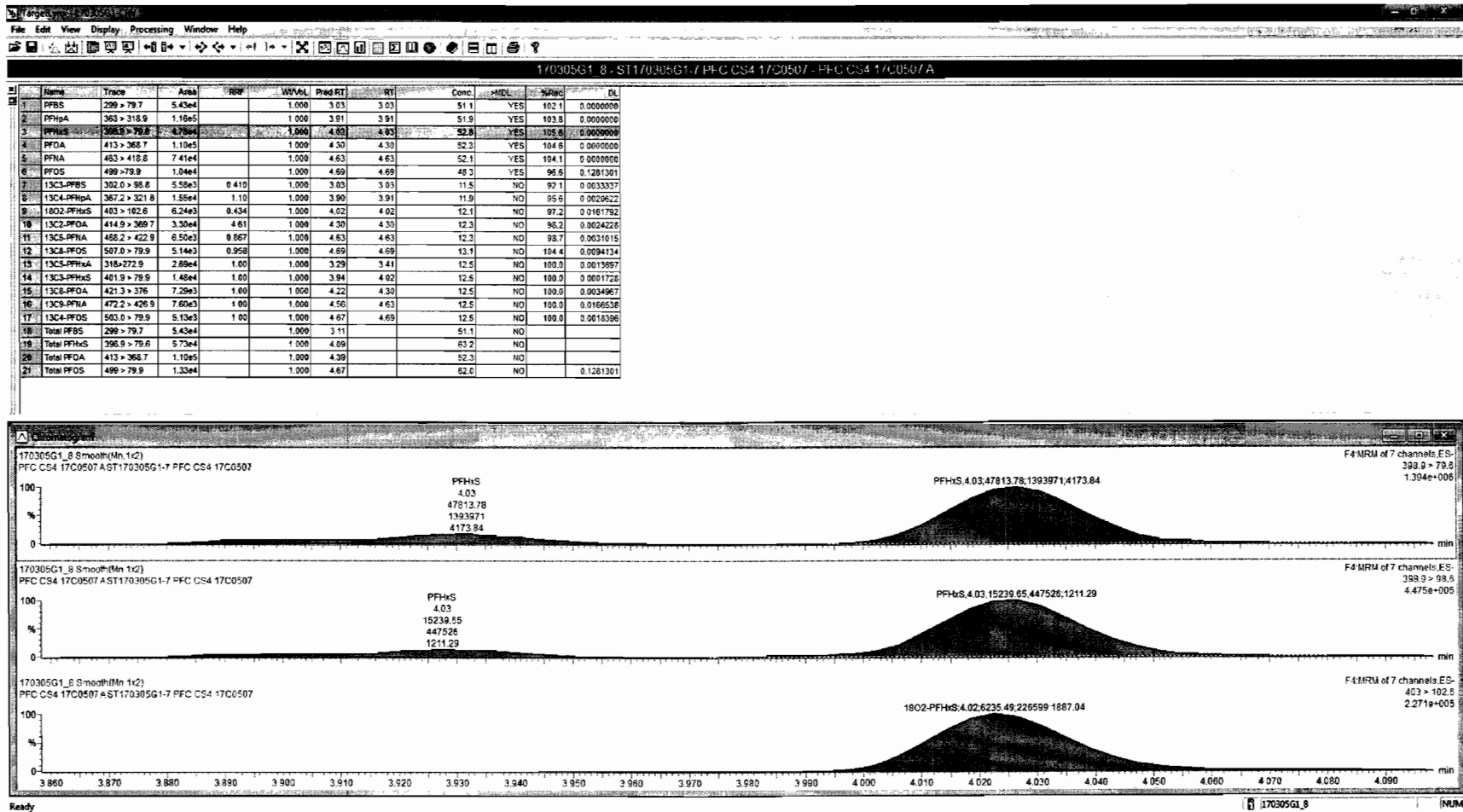
170305G1_8



18O2-PFHxS

170305G1_8





Dataset: Untitled

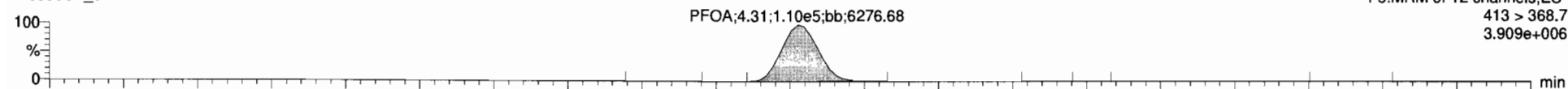
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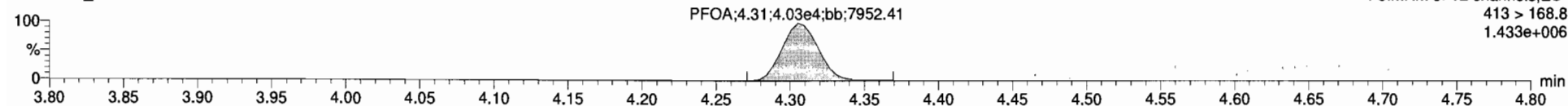
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Total PFOA

170305G1_8

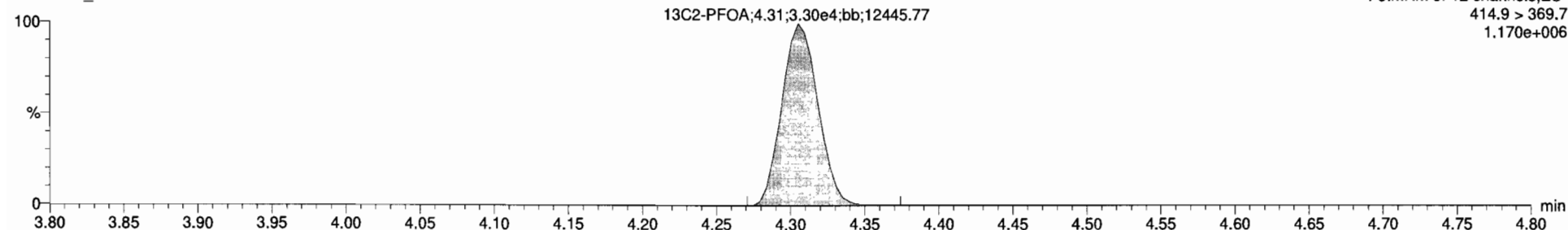


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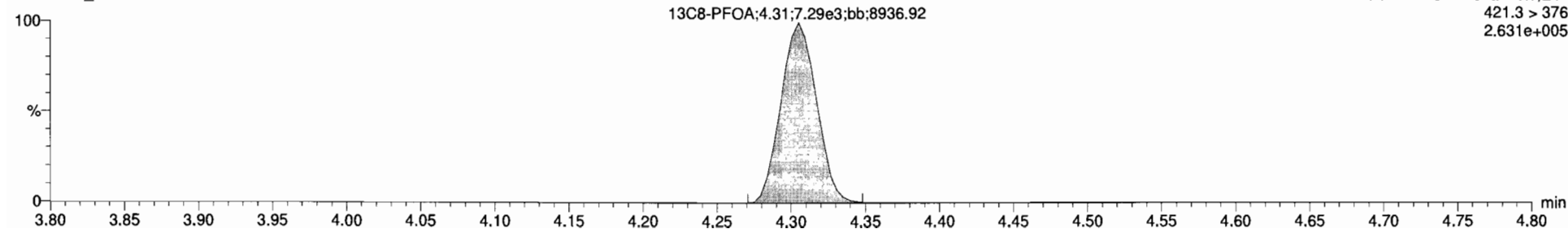
13C2-PFOA

170305G1_8



13C8-PFOA

170305G1_8



Dataset: Untitled

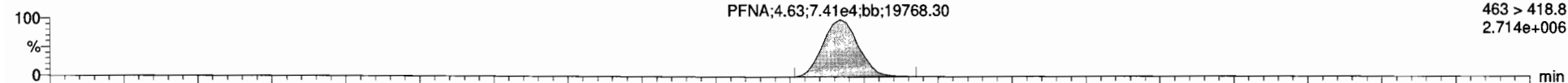
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Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

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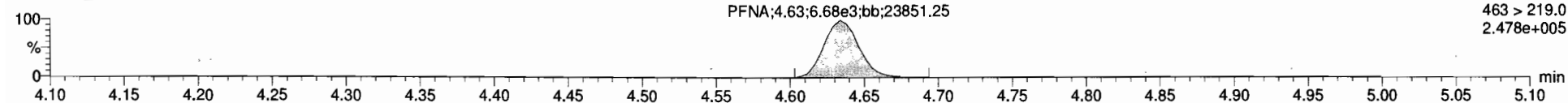
PFNA

170305G1_8



F5:MRM of 12 channels,ES-
463 > 418.8
2.714e+006

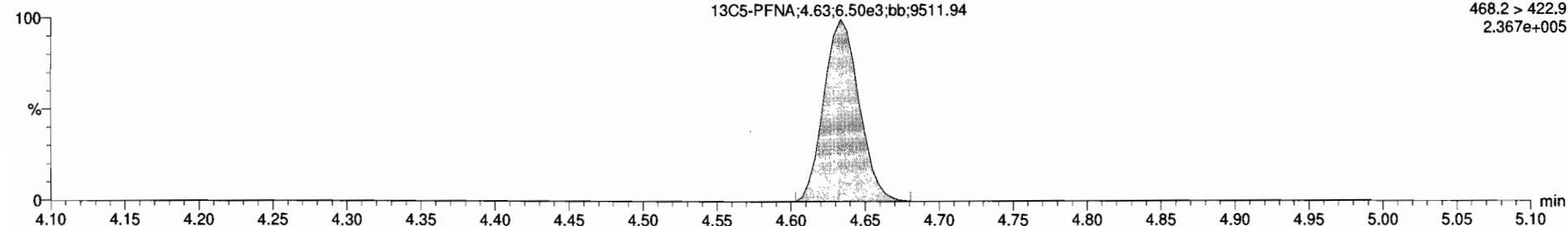
170305G1_8



F5:MRM of 12 channels,ES-
463 > 219.0
2.478e+005

13C5-PFNA

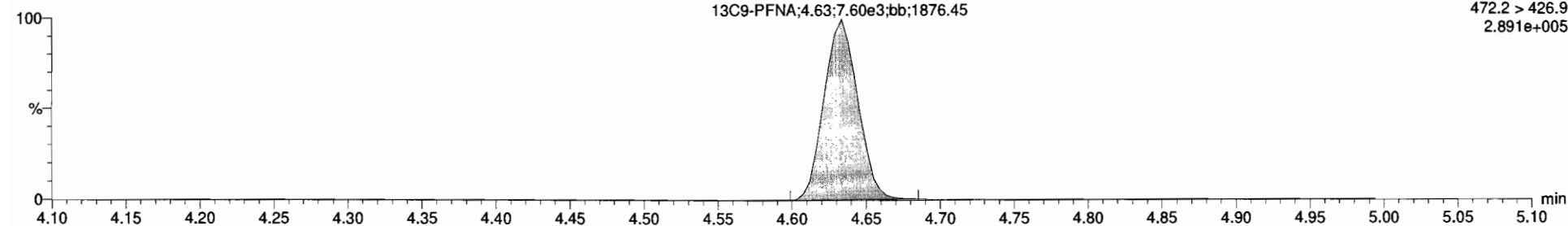
170305G1_8



F5:MRM of 12 channels,ES-
468.2 > 422.9
2.367e+005

13C9-PFNA

170305G1_8



F5:MRM of 12 channels,ES-
472.2 > 426.9
2.891e+005

Dataset: Untitled

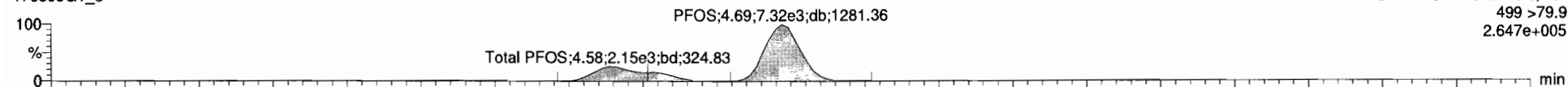
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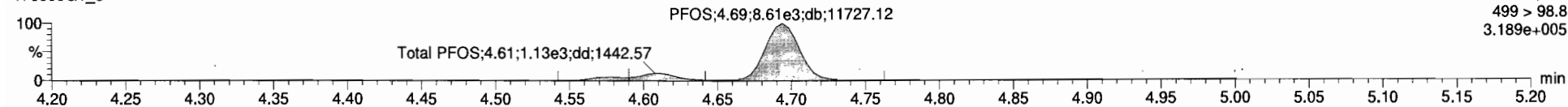
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Total PFOS

170305G1_8

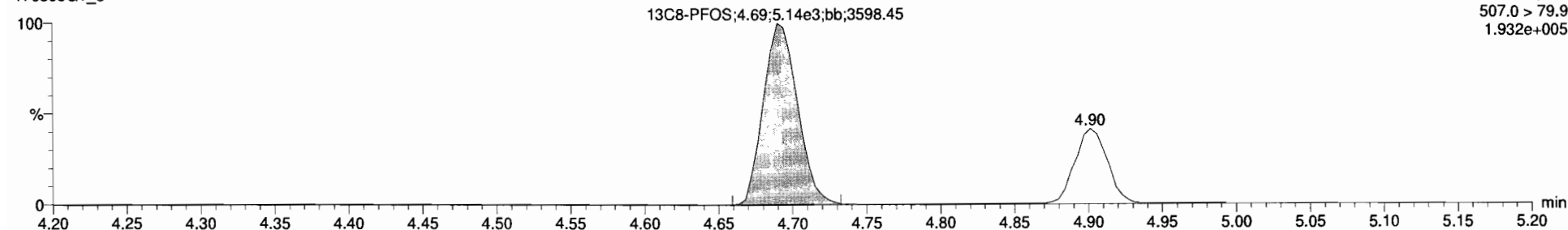


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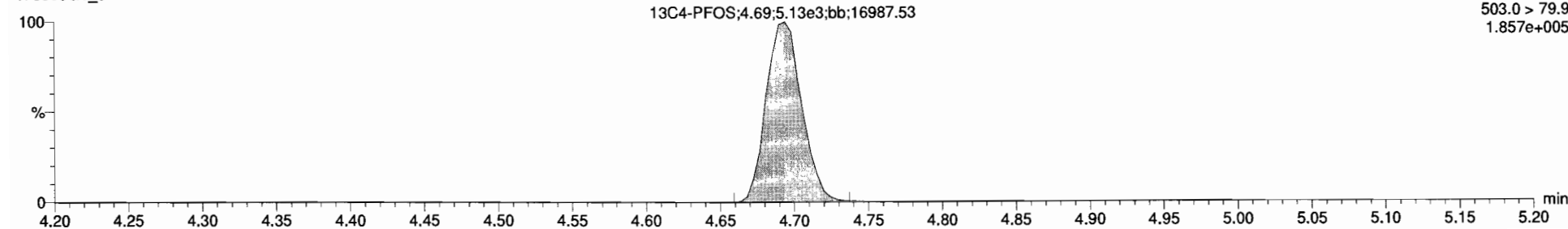
13C8-PFOS

170305G1_8



13C4-PFOS

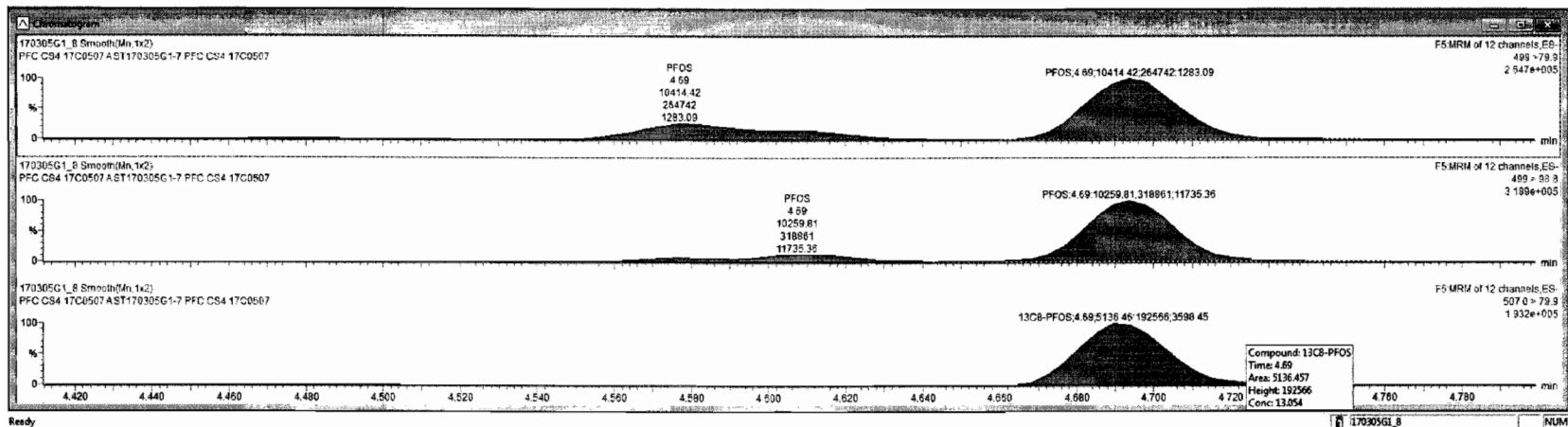
170305G1_8





170305C1_8 - ST170305C1-7 PFC CS4 17C0507 - PFC CS4 17C0507 A

Name	Trace	Area	RFI	WFI%	Prod.RT	RT	Comp.	>MSL	%Rec	DL	
1	PFBS	290 > 79.7	5.43e4	1.000	3.03	3.03	51.1	YES	102.1	0.0000000	
2	PFHpA	363 > 318.9	1.16e5	1.000	2.91	3.91	51.9	YES	103.5	0.0000000	
3	PFHxS	398.9 > 79.8	4.78e4	1.000	4.02	4.02	52.6	YES	105.6	0.0000000	
4	PFOA	413 > 368.7	1.10e5	1.000	4.30	4.30	52.3	YES	104.6	0.0000000	
5	PFNA	463 > 416.8	7.41e4	1.000	4.63	4.63	52.1	YES	104.1	0.0000000	
6	PFOS	499 > 79.9	1.04e4	1.000	4.69	4.69	48.3	YES	96.8	0.1281301	
7	13C3-PFBS	302.0 > 96.8	5.58e3	0.410	1.000	3.03	3.03	11.5	NO	92.1	0.0033337
8	13C4-PFHpA	367.2 > 321.8	1.55e4	1.10	1.000	3.90	3.91	11.9	NO	95.6	0.0020622
9	18O2-PFHxS	403 > 102.6	6.24e3	0.434	1.000	4.02	4.02	12.1	NO	97.2	0.0181782
10	13C2-PFOA	414.9 > 369.7	3.30e4	4.61	1.000	4.30	4.30	12.3	NO	98.2	0.0024278
11	13C5-PFNA	460.2 > 422.9	6.50e3	0.867	1.000	4.63	4.63	12.3	NO	95.7	0.0031015
12	13C8-PFOS	507.0 > 79.9	5.14e3	0.956	1.000	4.69	4.69	13.1	NO	104.4	0.0094134
13	13C5-PFHpA	319 > 272.9	2.89e4	1.000	1.000	3.29	3.41	12.5	NO	100.0	0.0019697
14	13C3-PFHxS	401.9 > 79.9	1.45e4	1.000	1.000	3.94	4.02	12.5	NO	100.0	0.0001720
15	13C8-PFOA	421.3 > 378	7.29e3	1.000	1.000	4.22	4.30	12.5	NO	100.0	0.0034967
16	13C9-PFNA	472.2 > 426.9	7.60e3	1.000	1.000	4.56	4.63	12.5	NO	100.0	0.0166532
17	13C4-PFOS	503.0 > 79.8	5.13e3	1.000	1.000	4.67	4.68	12.5	NO	100.0	0.0016396
18	Total PFBS	290 > 79.7	5.43e4	1.000	3.11		51.1	NO			
19	Total PFHxS	396.9 > 79.8	5.73e4	1.000	4.09		63.2	NO			
20	Total PFOA	413 > 368.7	1.10e5	1.000	4.39		52.3	NO			
21	Total PFOS	499 > 79.9	1.33e4	1.000	4.67		62.0	NO		0.1281301	



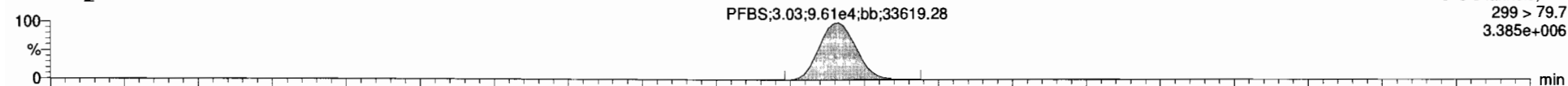
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Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

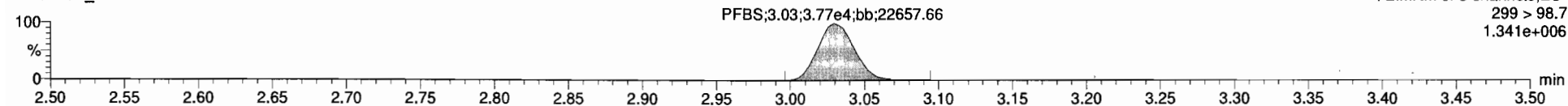
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PFBS

170305G1_9

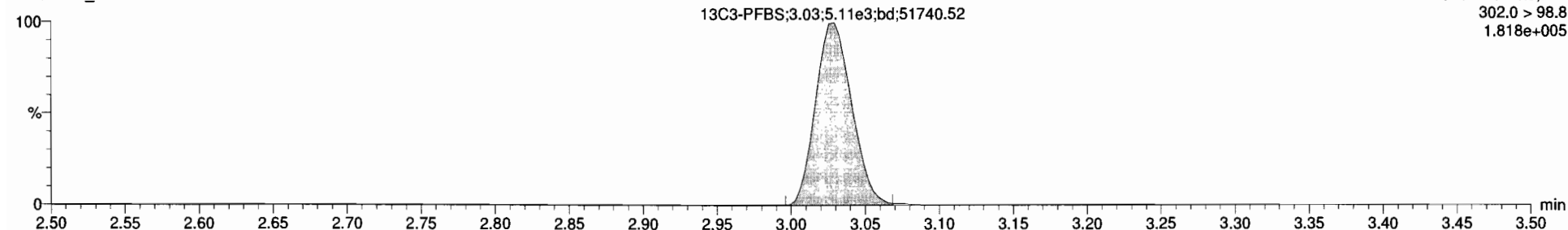


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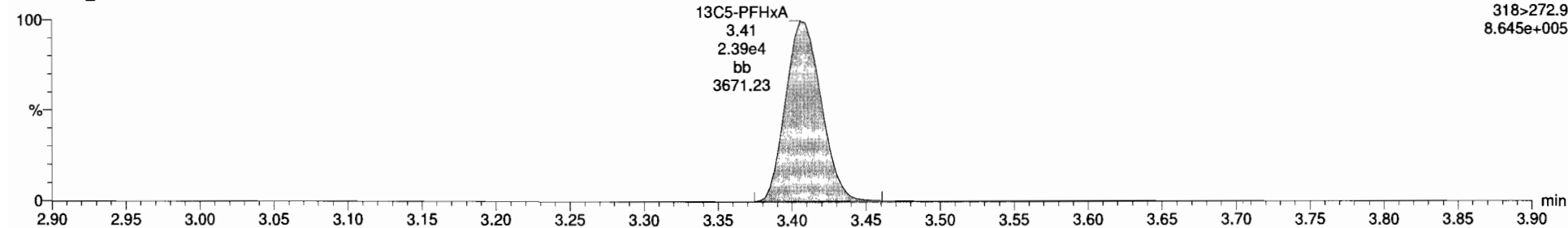
13C3-PFBS

170305G1_9



13C5-PFHxA

170305G1_9



Dataset: Untitled

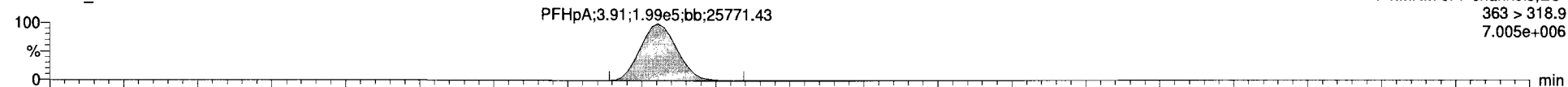
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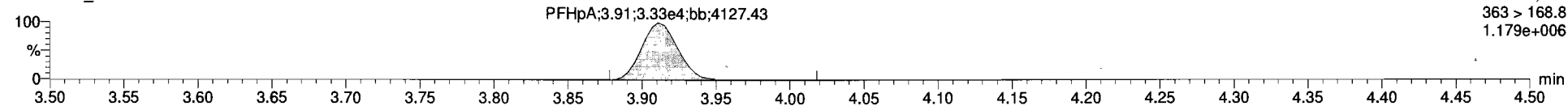
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PFHpA

170305G1_9

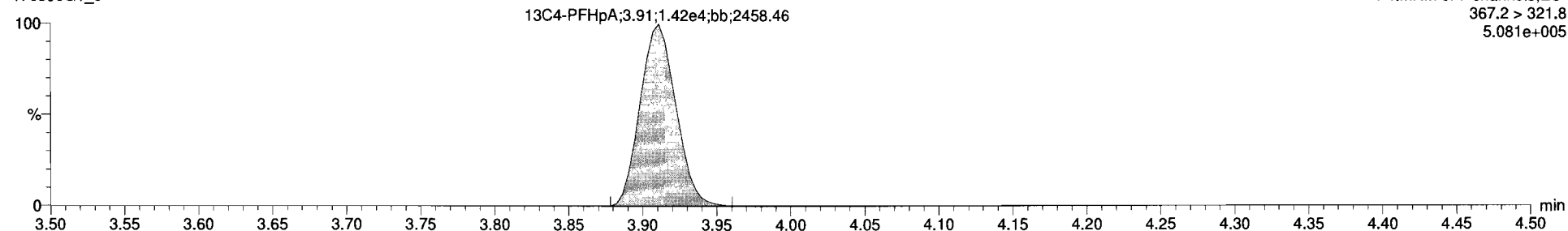


170305G1_9



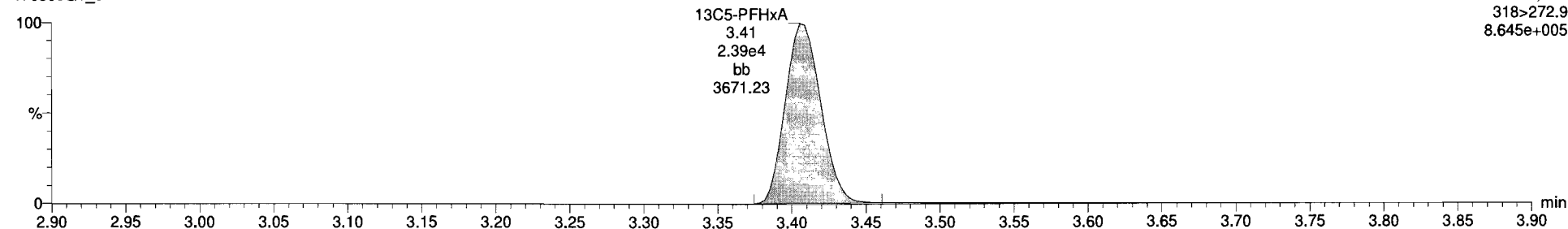
13C4-PFHpA

170305G1_9



13C5-PFHxA

170305G1_9



Dataset: Untitled

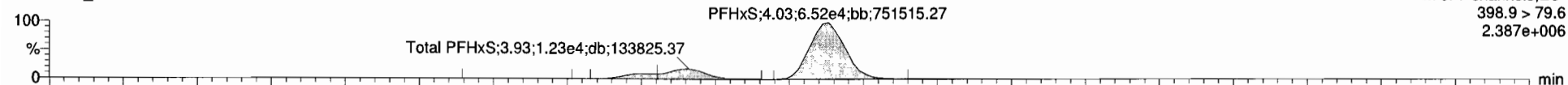
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Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

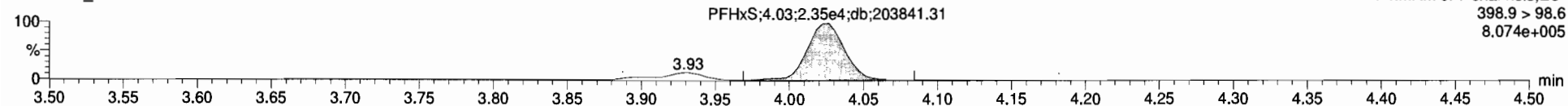
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Total PFHxS

170305G1_9

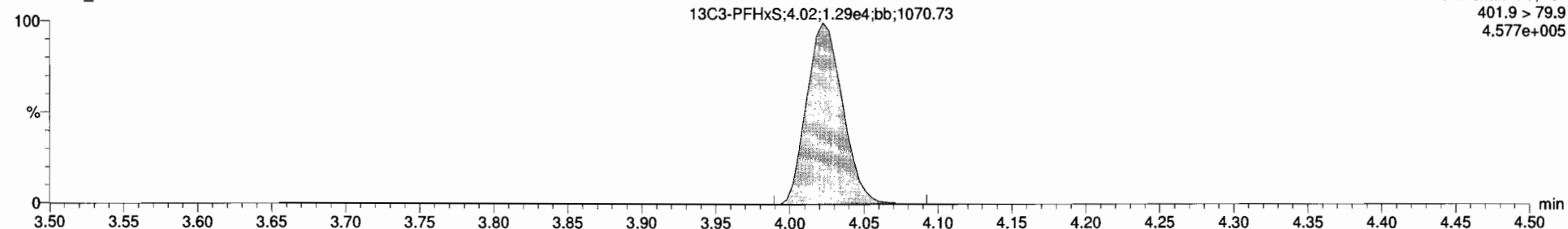


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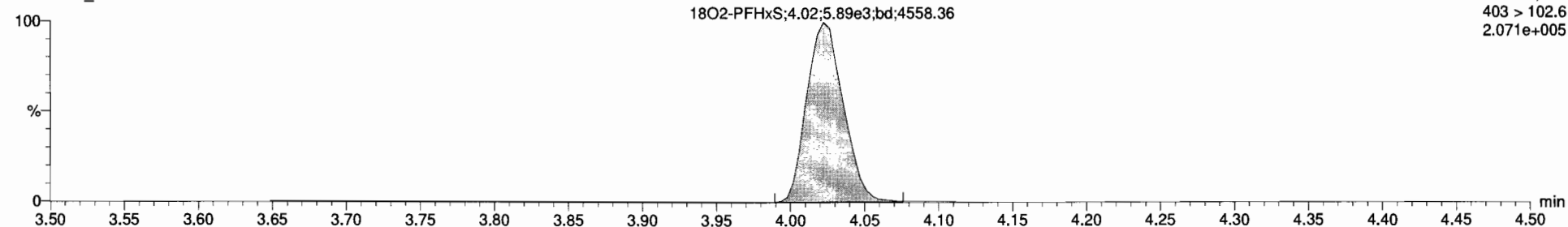
13C3-PFHxS

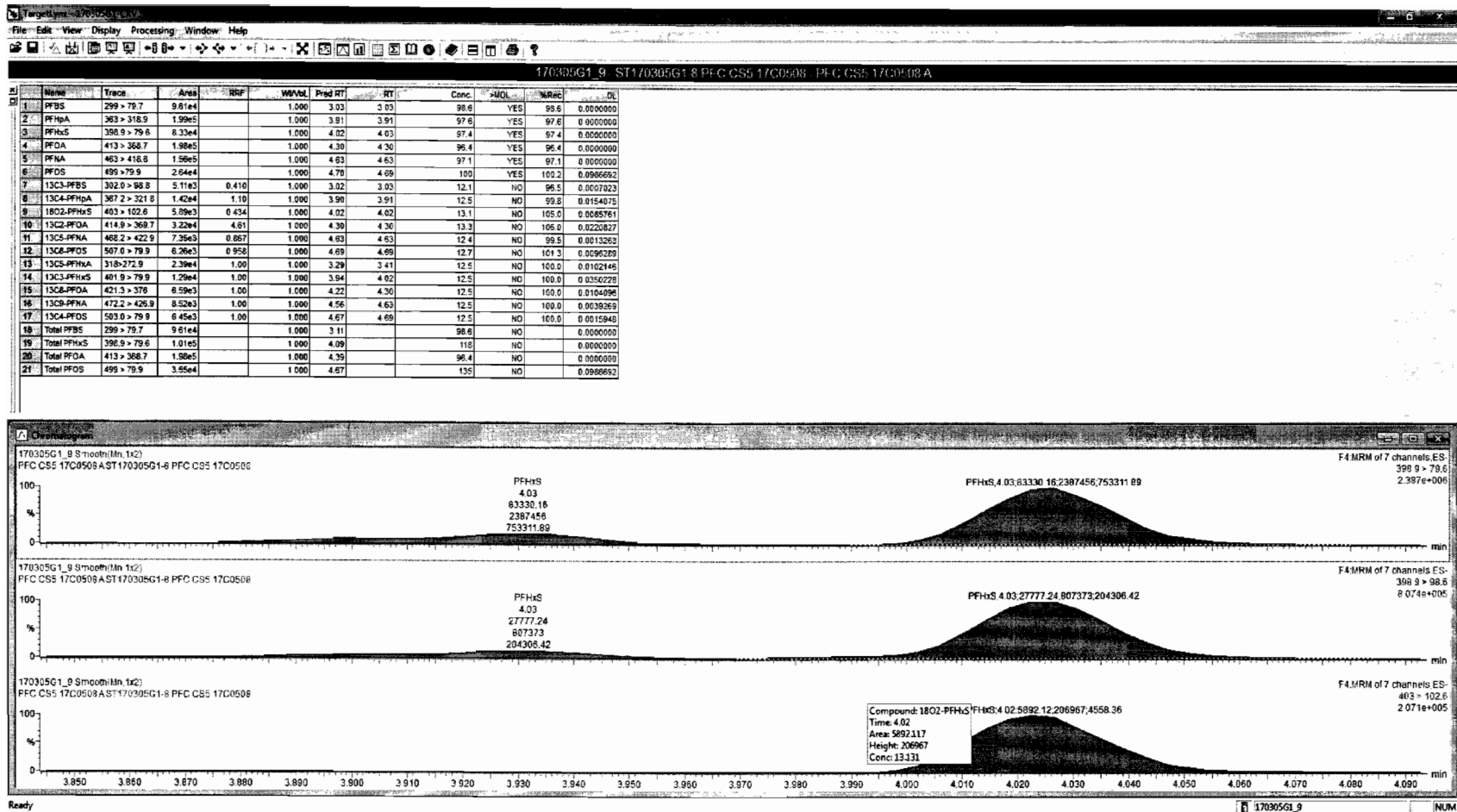
170305G1_9



18O2-PFHxS

170305G1_9





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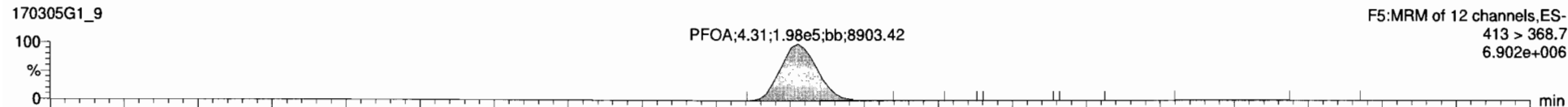
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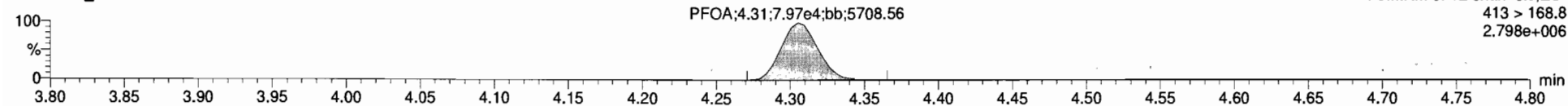
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Total PFOA

170305G1_9

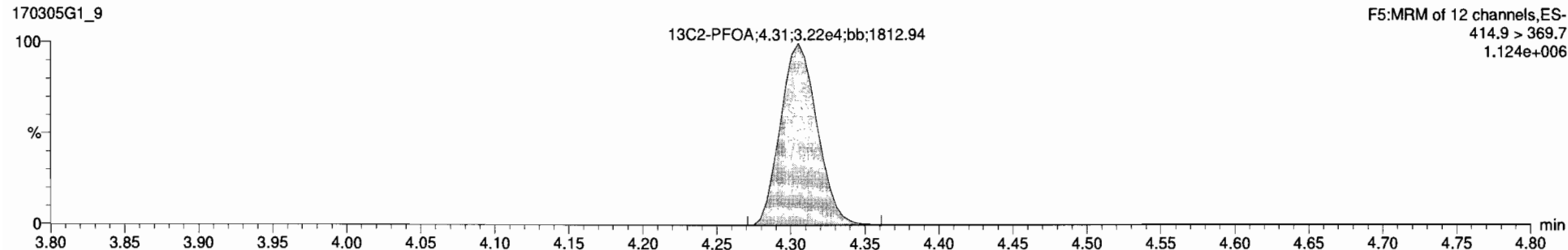


170305G1_9



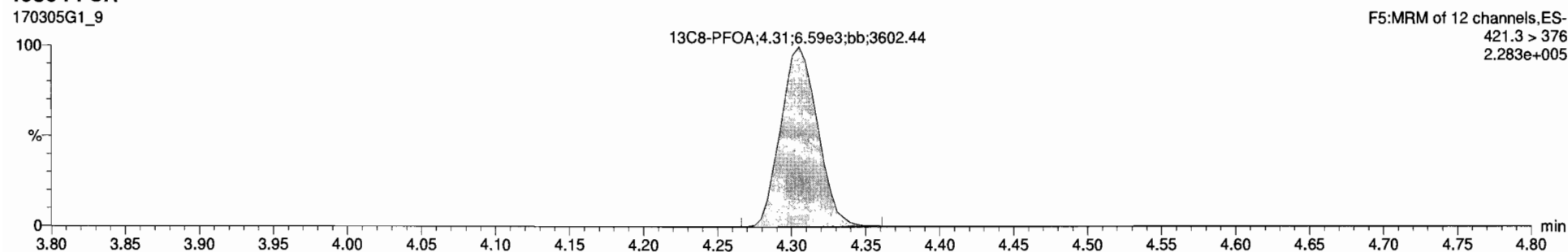
13C2-PFOA

170305G1_9



13C8-PFOA

170305G1_9



Dataset: Untitled

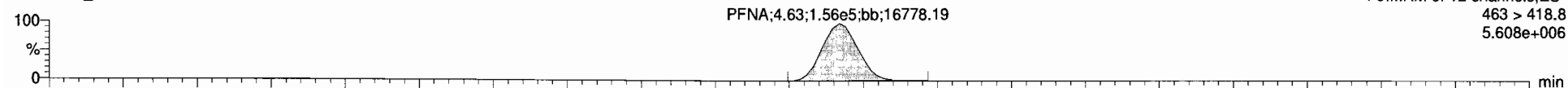
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Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

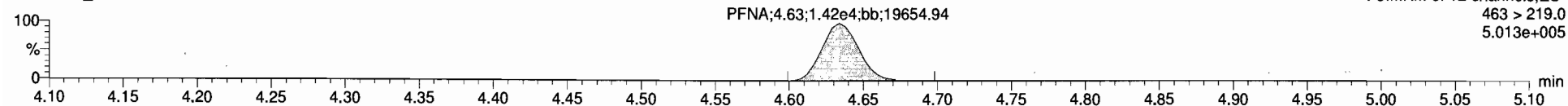
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PFNA

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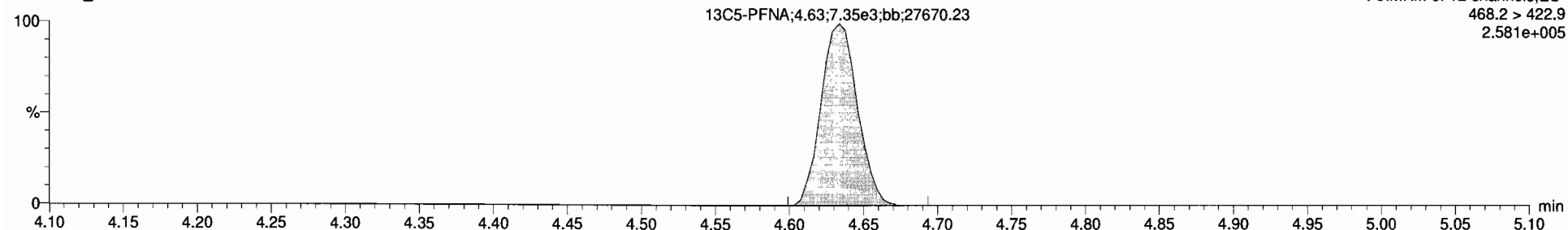


170305G1_9



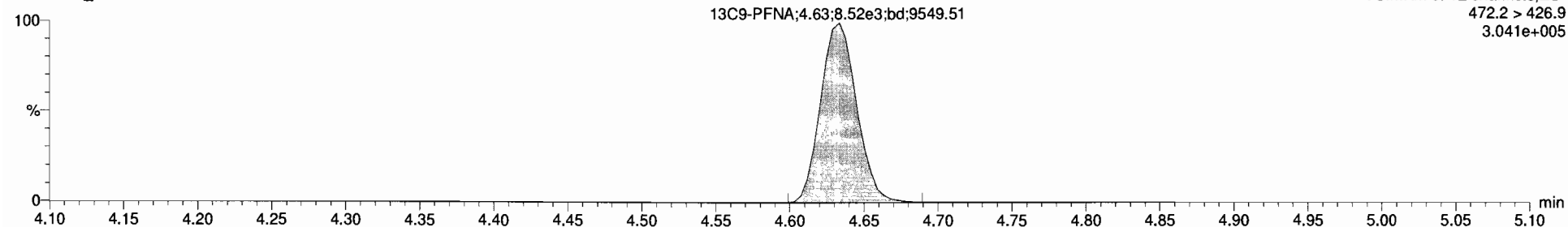
13C5-PFNA

170305G1_9



13C9-PFNA

170305G1_9



Dataset: Untitled

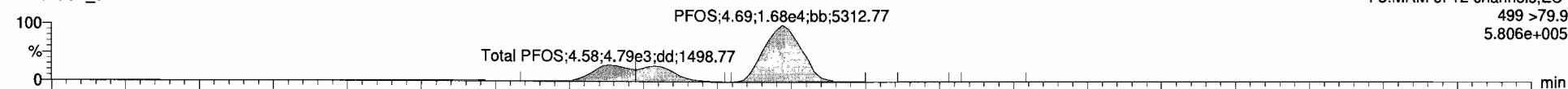
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Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-8 PFC CS5 17C0508, Description: PFC CS5 17C0508 A, Name: 170305G1_9, Date: 05-Mar-2017, Time: 14:14:34, Instrument: , Lab: , User:

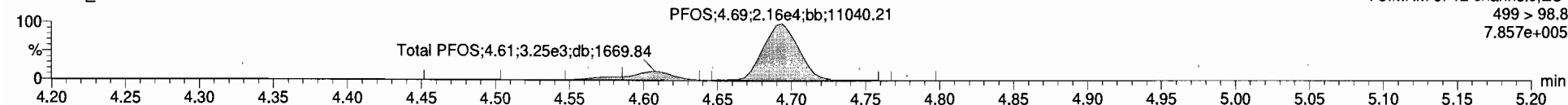
Total PFOS

170305G1_9



F5:MRM of 12 channels,ES-
499 >79.9
5.806e+005

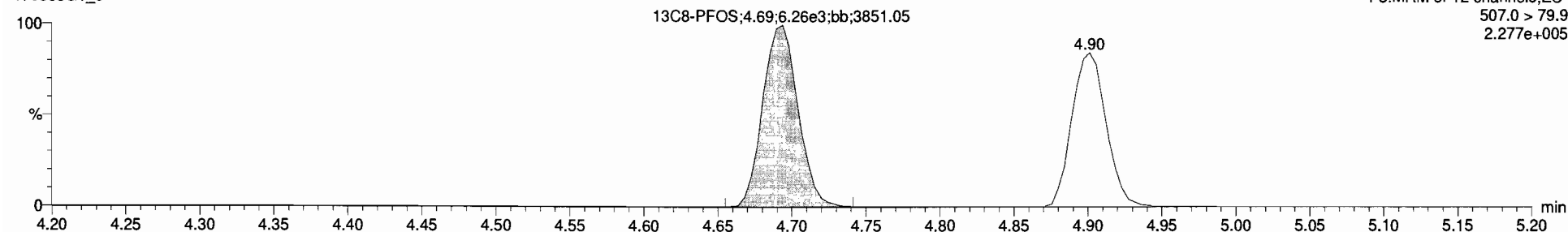
170305G1_9



F5:MRM of 12 channels,ES-
499 > 98.8
7.857e+005

13C8-PFOS

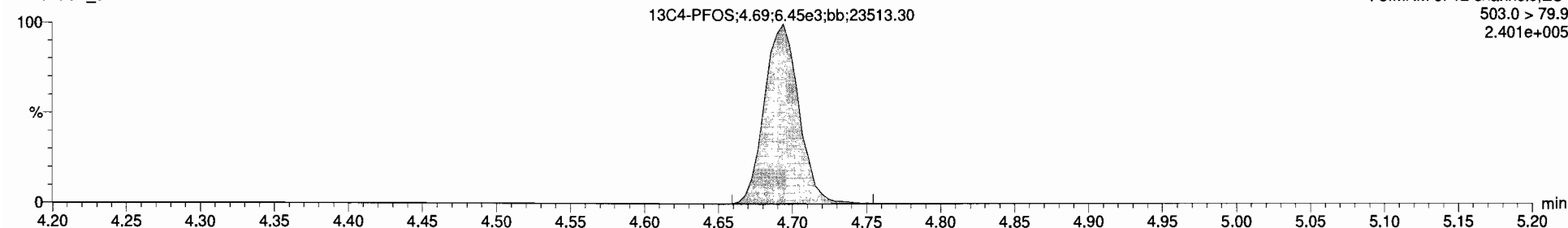
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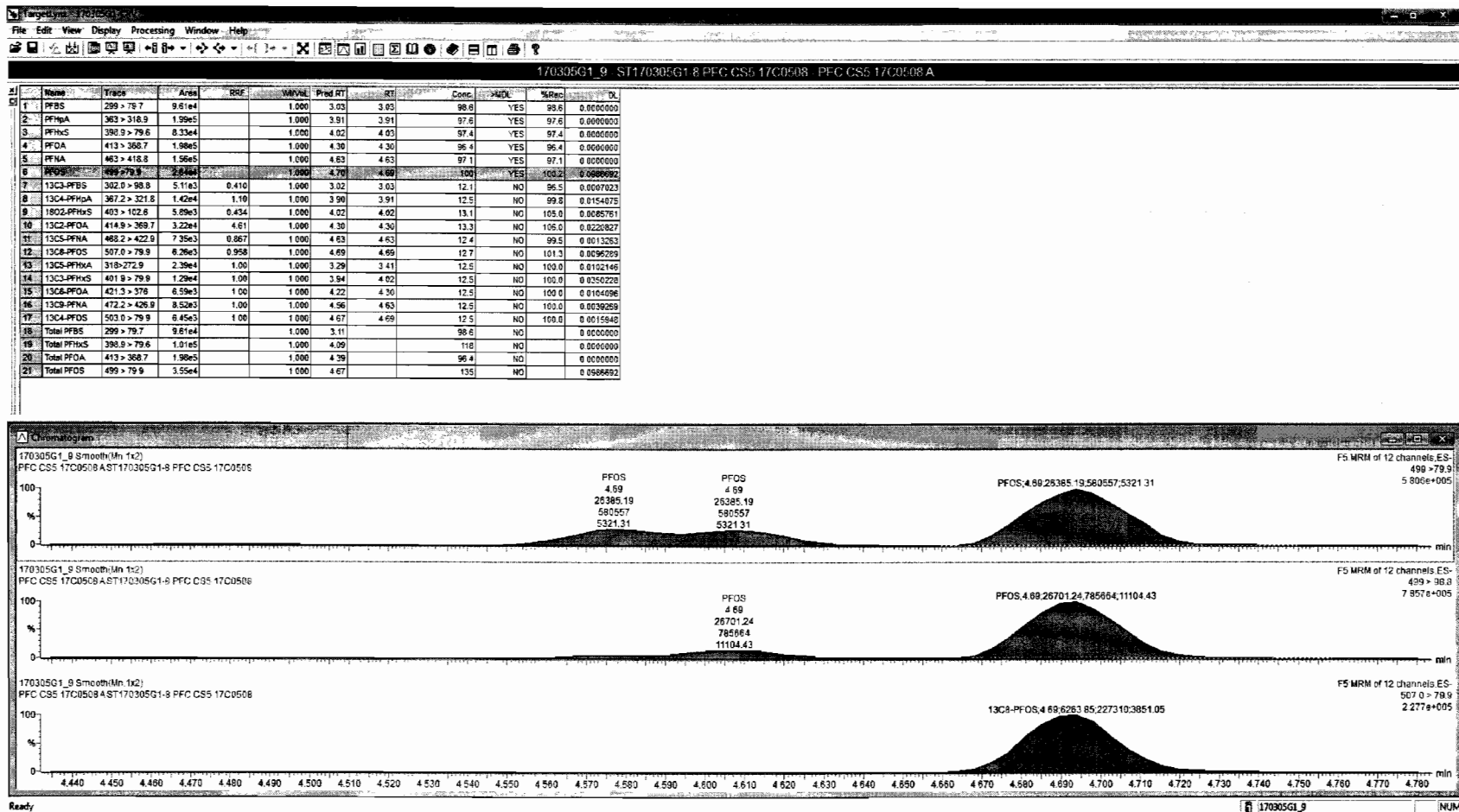
F5:MRM of 12 channels,ES-
507.0 > 79.9
2.277e+005

13C4-PFOS

170305G1_9



F5:MRM of 12 channels,ES-
503.0 > 79.9
2.401e+005



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-11.qld

Last Altered: Monday, March 06, 2017 09:12:14 Pacific Standard Time

Printed: Monday, March 06, 2017 09:13:06 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Name: 170305G1_11, Date: 05-Mar-2017, Time: 14:39:40, ID: SS170305G1-1 PFC SSS 17C0509, Description: PFC SSS 17C0509 A

	#	Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.09e4	6.54e3		1.000	3.03	8.70	87.0
2	2	PFHpA	363 > 318.9	2.52e4	1.73e4		1.000	3.91	10.0	100.4
3	3	PFHxS	398.9 > 79.6	8.94e3	6.56e3		1.000	4.03	9.33	93.3
4	4	PFOA	413 > 368.7	2.26e4	3.20e4		1.000	4.31	10.9	108.7
5	5	PFNA	463 > 418.8	1.28e4	5.80e3		1.000	4.63	10.0	100.4
6	6	PFOS	499 > 79.9	2.01e3	4.01e3		1.000	4.69	11.7	117.2
7	7	13C3-PFBS	302.0 > 98.8	6.54e3	1.49e4	0.410	1.000	3.03	13.4	106.8
8	8	13C4-PFHpA	367.2 > 321.8	1.73e4	1.49e4	1.098	1.000	3.91	13.2	105.7
9	9	18O2-PFHxS	403 > 102.6	6.56e3	1.49e4	0.434	1.000	4.02	12.6	101.2
10	10	13C2-PFOA	414.9 > 369.7	3.20e4	7.38e3	4.608	1.000	4.31	11.8	94.1
11	11	13C5-PFNA	468.2 > 422.9	5.80e3	6.69e3	0.867	1.000	4.63	12.5	99.9
12	12	13C8-PFOS	507.0 > 79.9	4.01e3	4.48e3	0.958	1.000	4.69	11.7	93.4
13	13	13C5-PFHxA	318 > 272.9	2.89e4	2.89e4	1.000	1.000	3.41	12.5	100.0
14	14	13C3-PFHxS	401.9 > 79.9	1.49e4	1.49e4	1.000	1.000	4.03	12.5	100.0
15	15	13C8-PFOA	421.3 > 376	7.38e3	7.38e3	1.000	1.000	4.31	12.5	100.0
16	16	13C9-PFNA	472.2 > 426.9	6.69e3	6.69e3	1.000	1.000	4.63	12.5	100.0
17	17	13C4-PFOS	503.0 > 79.9	4.48e3	4.48e3	1.000	1.000	4.69	12.5	100.0

75-125
↓

ES
3/6/17

✓ AC
3/6/17

Dataset: Untitled

Last Altered: Monday, March 06, 2017 09:10:12 Pacific Standard Time

Printed: Monday, March 06, 2017 09:10:17 Pacific Standard Time

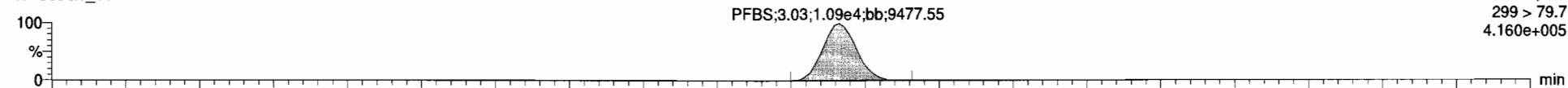
Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53

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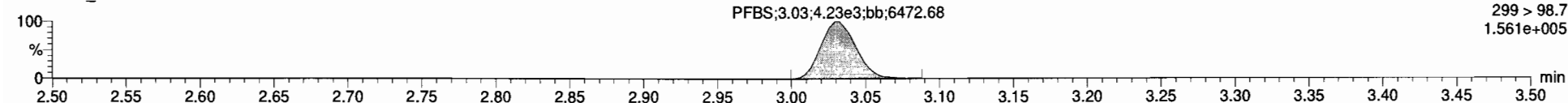
PFBS

170305G1_11



F2:MRM of 3 channels,ES-
299 > 79.7
4.160e+005

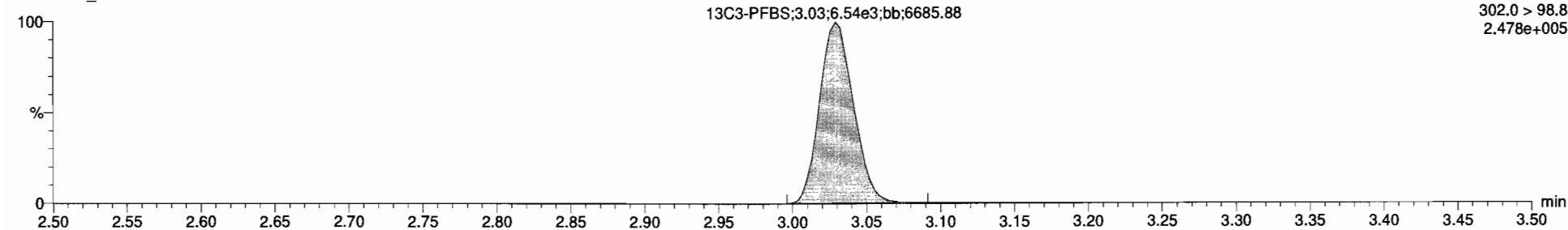
170305G1_11



F2:MRM of 3 channels,ES-
299 > 98.7
1.561e+005

13C3-PFBS

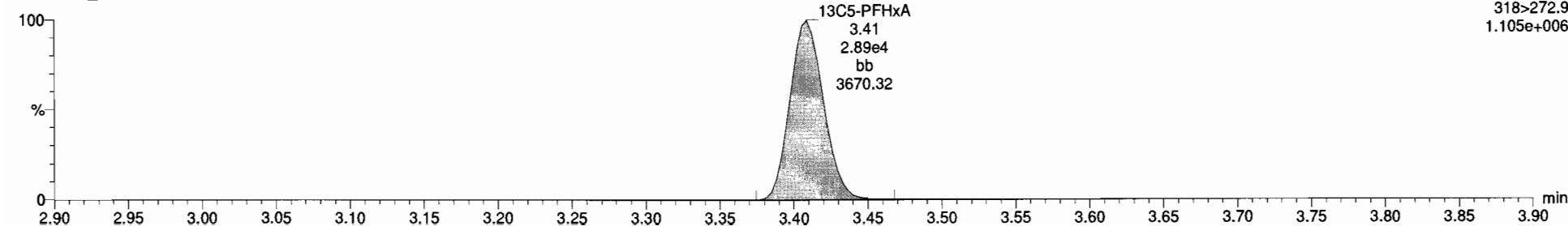
170305G1_11



F2:MRM of 3 channels,ES-
302.0 > 98.8
2.478e+005

13C5-PFHxA

170305G1_11



F3:MRM of 1 channel,ES-
318>272.9
1.105e+006

Dataset: Untitled

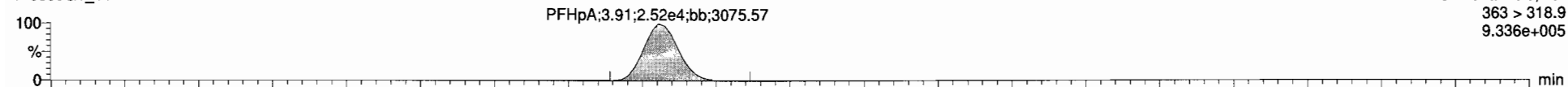
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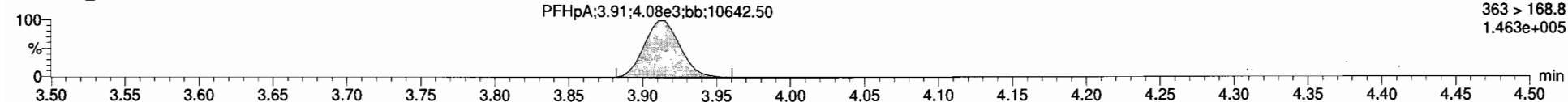
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PFHpA

170305G1_11

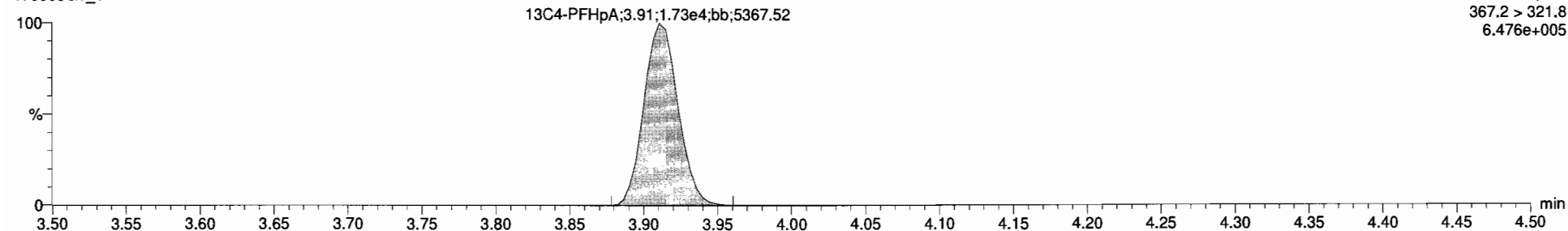


170305G1_11



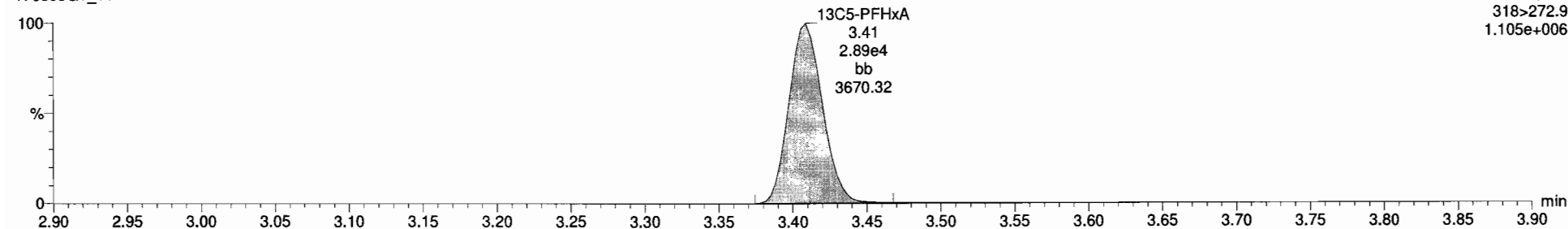
13C4-PFHpA

170305G1_11



13C5-PFHxA

170305G1_11



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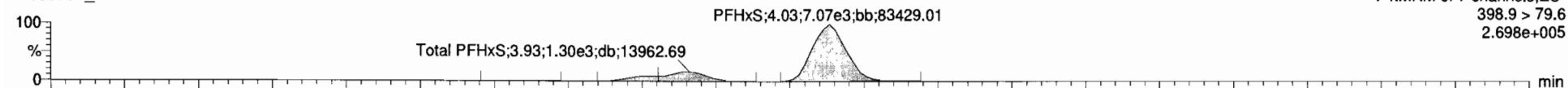
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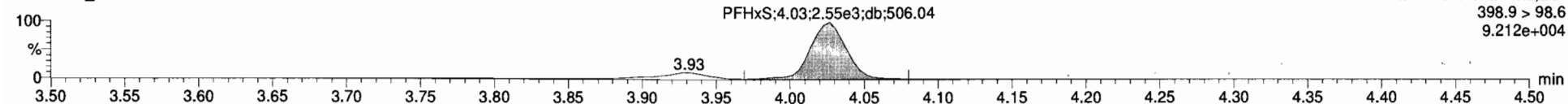
Total PFHxS

170305G1_11



F4:MRM of 7 channels,ES-
398.9 > 79.6
2.698e+005

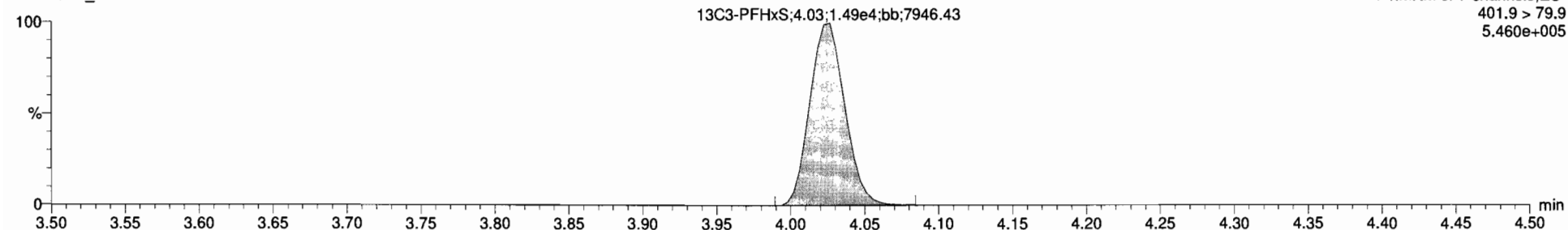
170305G1_11



F4:MRM of 7 channels,ES-
398.9 > 98.6
9.212e+004

13C3-PFHxS

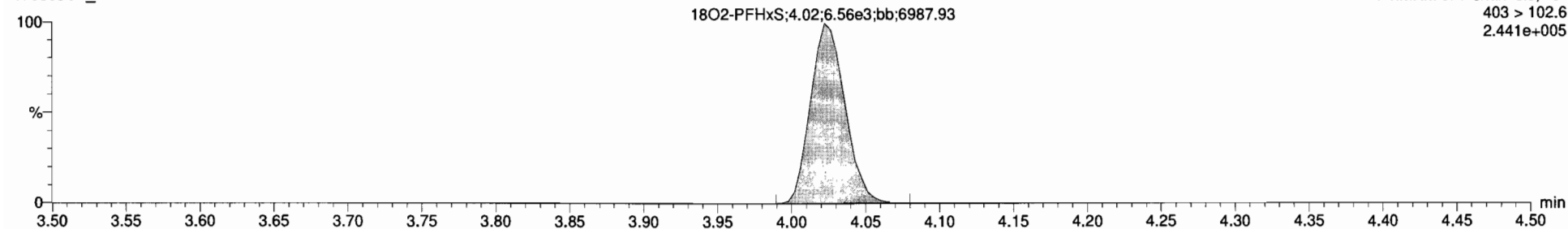
170305G1_11



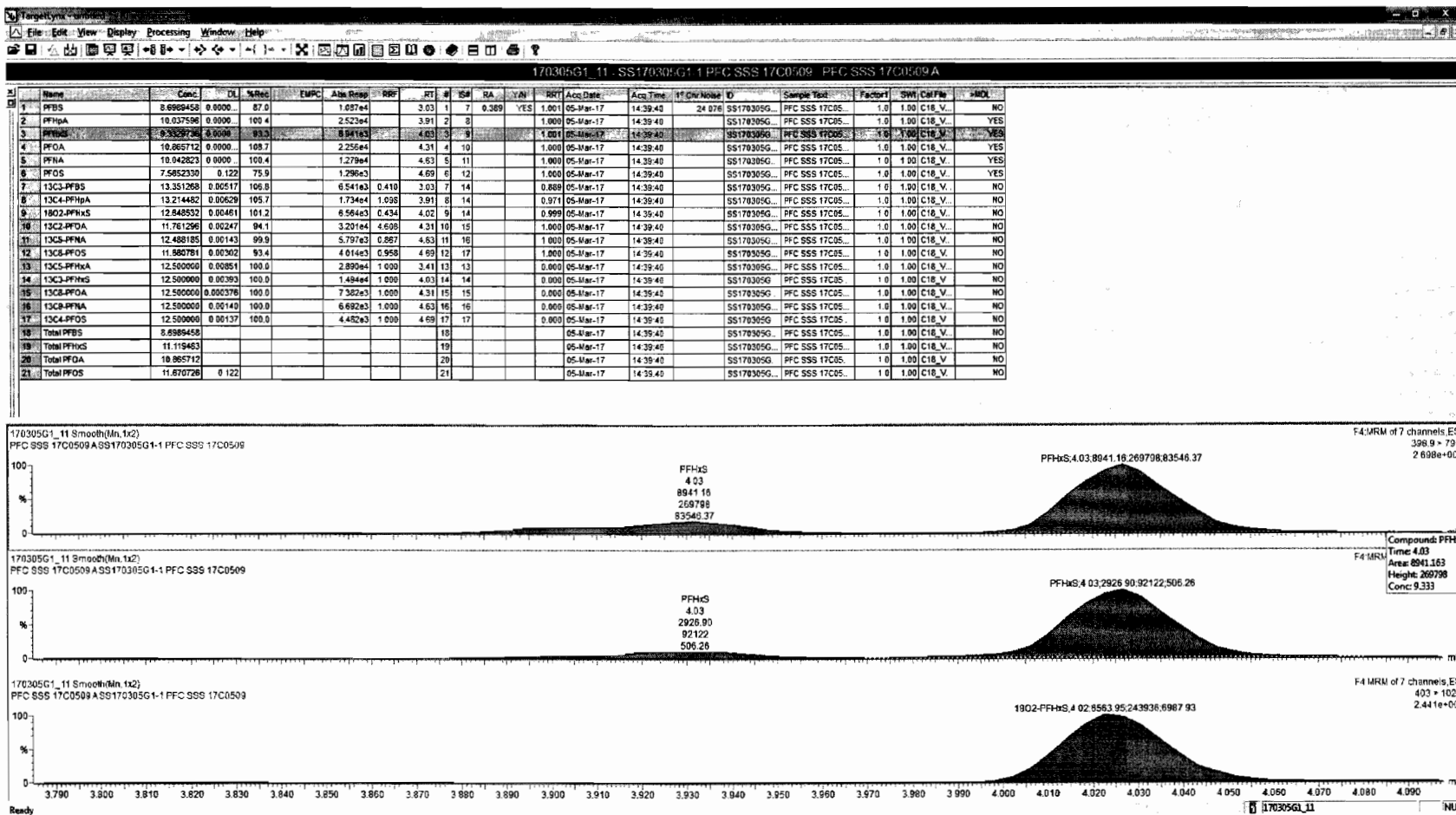
F4:MRM of 7 channels,ES-
401.9 > 79.9
5.460e+005

18O2-PFHxS

170305G1_11



F4:MRM of 7 channels,ES-
403 > 102.6
2.441e+005



Dataset: Untitled

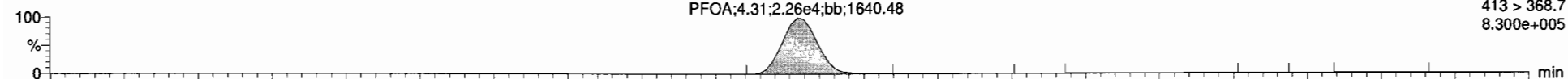
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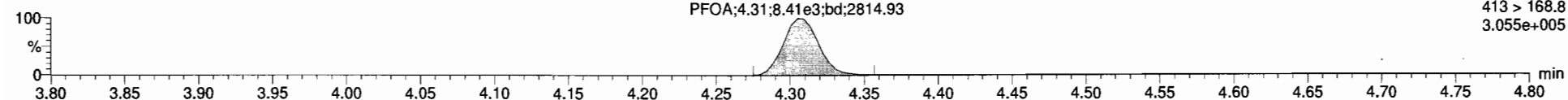
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Total PFOA

170305G1_11

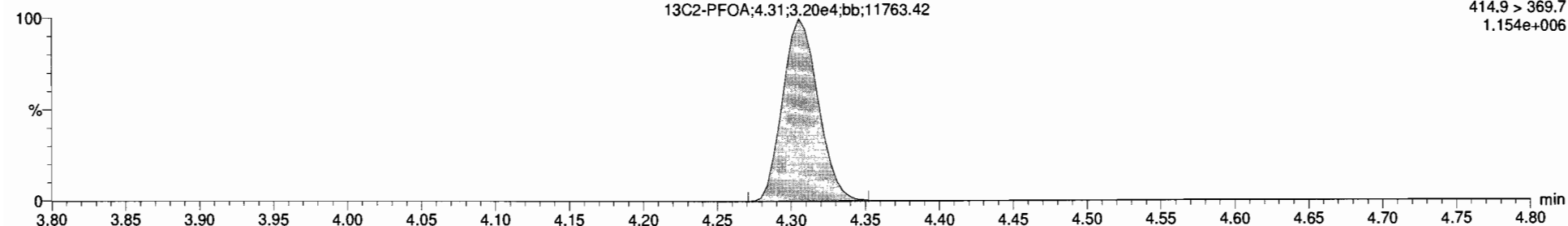


170305G1_11



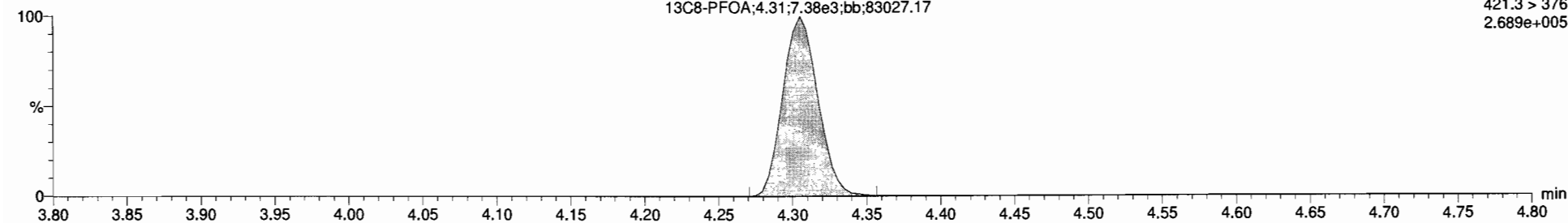
13C2-PFOA

170305G1_11



13C8-PFOA

170305G1_11



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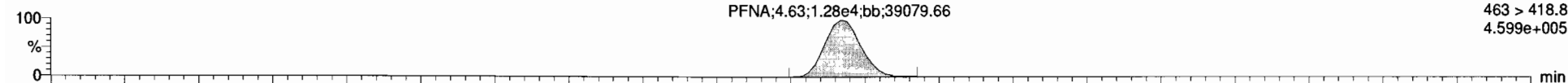
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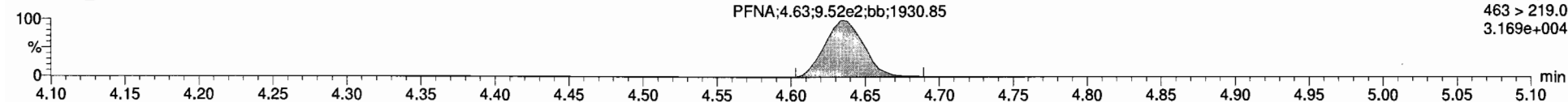
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PFNA

170305G1_11

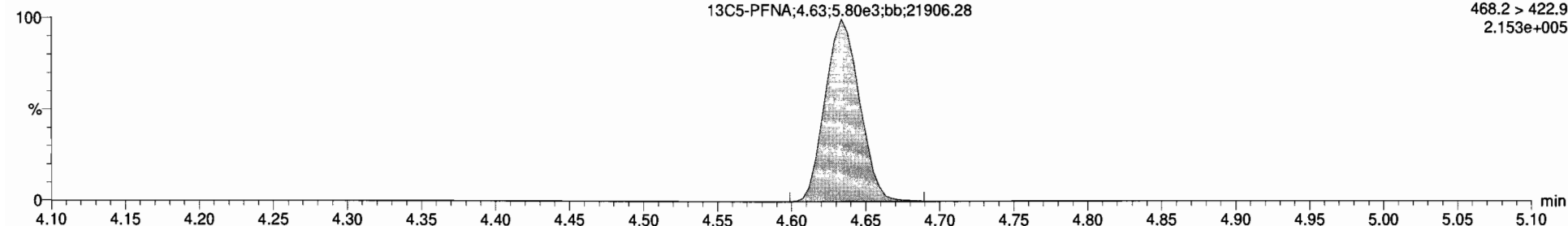


170305G1_11



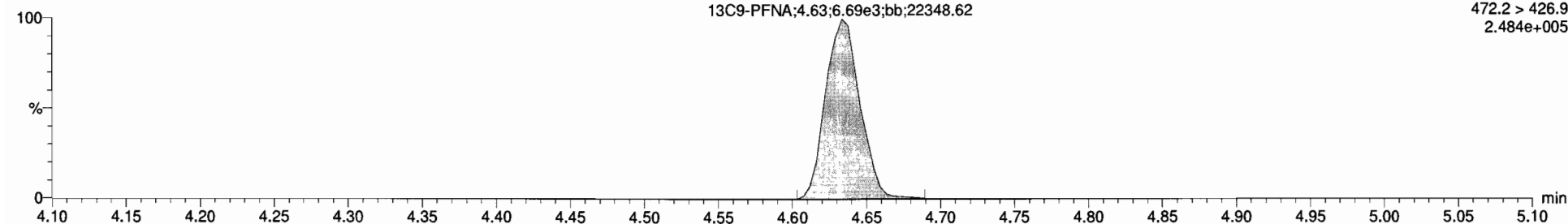
13C5-PFNA

170305G1_11



13C9-PFNA

170305G1_11



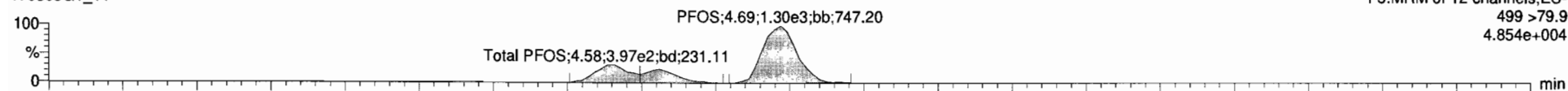
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Printed: Monday, March 06, 2017 09:10:17 Pacific Standard Time

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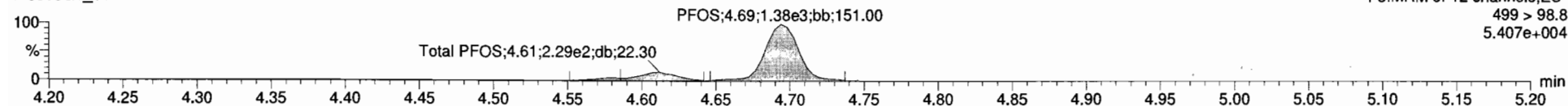
Total PFOS

170305G1_11



F5:MRM of 12 channels,ES-
499 >79.9
4.854e+004

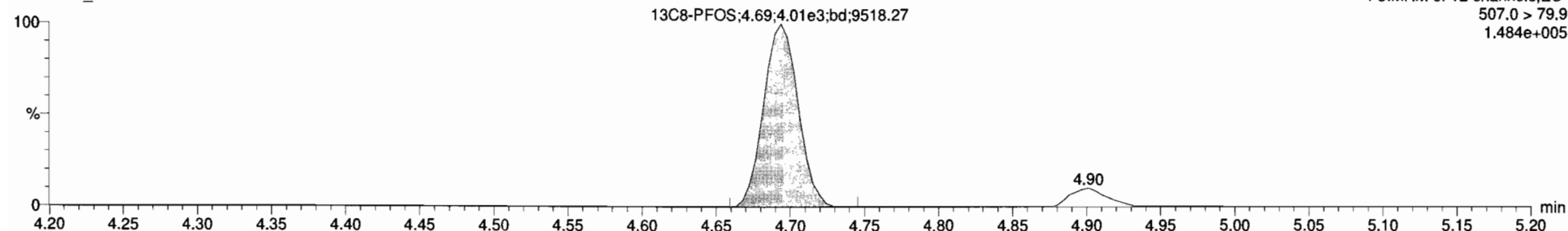
170305G1_11



F5:MRM of 12 channels,ES-
499 > 98.8
5.407e+004

13C8-PFOS

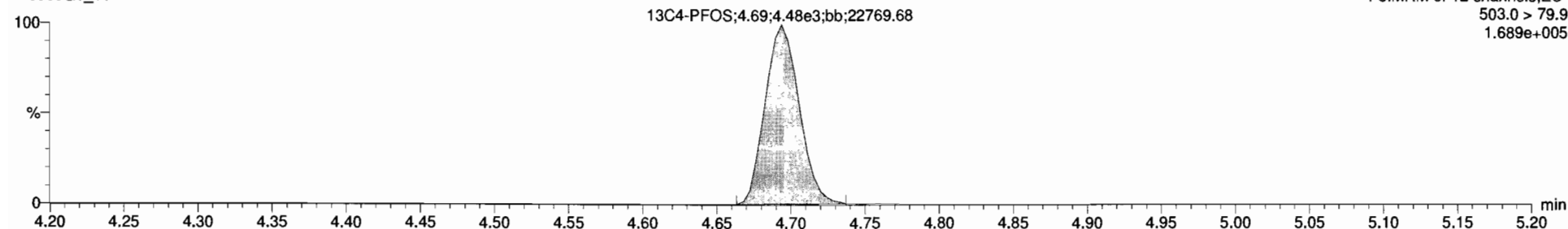
170305G1_11



F5:MRM of 12 channels,ES-
507.0 > 79.9
1.484e+005

13C4-PFOS

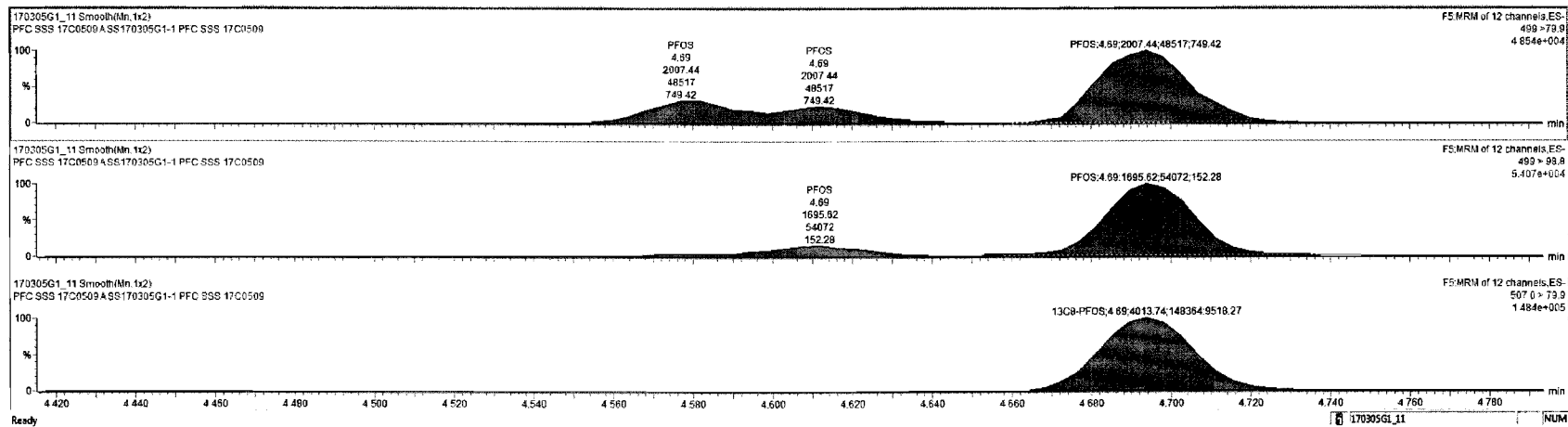
170305G1_11



F5:MRM of 12 channels,ES-
503.0 > 79.9
1.689e+005

170305G1_11 - SS170305G1-1 PFC SSS 17C0509 - PFC SSS 17C0509A

	Name	Conc	DL	NHco	EMPC	Abs Resp	RRR	RT	#	SR	RA	Y/N	RRY	Acq Date	Acq Time	1 st Chr Name	ID	Sample Test	Factor	SWH	Cal File	→MOD
1	PFBS	8.698458	0.0000	87.0		1.067e4	3.03	1	7	0.309	YES	1.001	05-Mar-17	14:39:40	24.076	SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
2	PFHxA	10.037596	0.0000	100.4		2.523e4	3.91	2	0			1.000	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	YES	
3	PFHxS	9.3329736	0.0000	93.3		9.941e3	4.03	3	9			1.001	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	YES	
4	PFDA	10.865712	0.0000	108.7		2.256e4	4.31	4	10			1.000	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	YES	
5	PFNA	10.042823	0.0000	100.4		1.275e4	4.63	5	11			1.000	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	YES	
6	PFOS	11.719505	0.122	117.2		2.007e3	4.69	6	12			1.000	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	YES	
7	13C3-PFBS	13.351258	0.00517	106.8		6.541e3	0.410	3.03	7	14		0.999	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
8	13C3-PFHxA	13.214432	0.00629	105.7		1.734e4	1.095	3.91	8	14		0.971	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
9	16O2-PFHxS	12.648532	0.00461	101.2		6.564e3	0.434	4.02	9	14		0.999	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
10	13C3-PFDA	11.781296	0.00247	94.1		3.201e4	4.608	4.31	10	15		1.000	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
11	13C3-PFNA	12.488185	0.00143	99.9		5.797e3	0.367	4.63	11	16		1.000	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
12	13C3-PFOS	11.608781	0.00302	95.4		4.014e3	0.358	4.69	12	17		1.000	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
13	13C3-PFHxA	12.509000	0.00851	100.0		2.896e4	1.000	3.41	13	13		0.000	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
14	13C3-PFHxS	12.509000	0.00393	100.0		1.494e4	1.000	4.03	14	14		0.000	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
15	13C3-PFDA	12.509000	0.000376	100.0		7.382e3	1.000	4.31	15	15		0.000	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
16	13C3-PFNA	12.509000	0.00140	100.0		6.692e3	1.000	4.63	16	16		0.000	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
17	13C3-PFOS	12.509000	0.00137	100.0		4.482e3	1.000	4.69	17	17		0.000	05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
18	Total PFBS	8.698458											05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
19	Total PFHxS	11.119483											05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
20	Total PFDA	10.865712											05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	
21	Total PFOS	15.801081	0.122										05-Mar-17	14:39:40		SS170305G	PFC SSS 17C0509	1.0	1.00	C18_V	NO	



[illegible]

[illegible]

[illegible]

**DATA VALIDATION SUMMARY REPORT
COUPEVILLE, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1700268
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: Coupeville, CTO-0008, Washington
Date: March 24, 2017

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-GW09M-0217	1700268-01	Water
2	WI-CV-GW05M-0217	1700268-02	Water
3	WI-CV-GW05S-0217	1700268-03	Water
4	WI-CV-GW11M-0217	1700268-04	Water
5	WI-CV-GW11S-0217	1700268-05	Water
6	WI-CV-EB06-022617	1700268-06	Water
7	WI-CV-EB05-022417	1700268-07	Water

A full data validation was performed on the analytical data for five water samples and two aqueous equipment blank samples collected on February 23-26, 2017 by CH2M HILL at the Coupeville site in Washington. The samples were analyzed under the EPA Method "Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)".

Specific method references are as follows:

Analysis
PFCs

Method References
USEPA Method 537 Modified

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM), Version 5.0 (July 2013) and the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA "Contract Laboratories Program National Functional Guidelines for Superfund Organic Methods Data Review," August 2014;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate recovery (%R)
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Ongoing Precision and Recovery (OPR)
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no rejections of data.

Overall the data is acceptable for the intended purposes as qualified for the data quality indicator criteria as detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedences of QC criteria.

Perfluorinated Compounds (PFCs)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

Initial Calibration

- All percent difference (%D) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- The field blank samples were free of contamination except for the following.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-EB06-022617	Perfluorooctanesulfonate	1.12	U	5
WI-CV-EB05-022417	None - ND	-	-	-
WI-CV-FB01-031217 (SDG 1700293)	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- A MS/MSD sample was not collected.

Ongoing Precision and Recovery (OPR)

- The OPR samples exhibited acceptable percent recoveries (%R) values.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- Several samples were analyzed at various dilutions due to high concentrations of target compounds. The reporting limits were adjusted accordingly. No action was required.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:

Nancy Weaver
Senior Chemist

Dated: _____

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the samples.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the samples.

Sample ID: WI-CV-GW09M-0217				Modified EPA Method 537					
Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700268-01	Date Received:	28-Feb-2017 7:28		
Project:	Navy Clean CTO-0008 OLF Coupeville	Sample Size:	0.123 L	QC Batch:	B7C0003	Date Extracted:	01-Mar-2017 8:54		
Date Collected:	23-Feb-2017 16:55			Date Analyzed:	06-Mar-17 17:30	Column:	BEH C18		
Location:	MW09M								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	11.2	1.82	4.07	8.12		IS 13C3-PFBS	95.8	60 - 150	
PFOA	ND	0.661	2.03	8.12		IS 13C2-PFOA	86.1	60 - 150	
PFOS	ND	0.819	0.915	8.12		IS 13C8-PFOS	93.9	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers

Only the linear isomer is reported for all other analytes

NW 3/29/17

2

Sample ID: WI-CV-GW05M-0217				Modified EPA Method 537					
Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700268-02	Date Received:	28-Feb-2017 7:28		
Project:	Navy Clean CTO-0008 OLF Coupeville	Sample Size:	0.0655 L	QC Batch:	B7C0012	Date Extracted:	01-Mar-2017 8:54		
Date Collected:	23-Feb-2017 15:45			Date Analyzed:	05-Mar-17 16:07	Column:	BEH C18		
Location:	MW05M								
Analyte	Conc. (mg/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	473	3.42	7.63	15.3		IS 13C3-PFBS	103	60- 150	
PFOA	1190	1.24	3.82	15.3		IS 13C2-PFOA	84.9	60- 150	
PFOS	3.26	1.54	1.72	15.3	J	IS 13C8-PFOS	98.7	60- 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers

Only the linear isomer is reported for all other analytes

mw 3/24/17

3

Sample ID: W1-CV-GW05S-0217				Modified EPA Method 537					
Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700268-03	Date Received:	28-Feb-2017 7:28		
Project:	Navy Clean CTO-0008 OLF Coupeville	Sample Size:	0.122 L	QC Batch:	B7C0003	Date Extracted:	01-Mar-2017 8:54		
Date Collected:	24-Feb-2017 17:30			Date Analyzed:	06-Mar-17 17:43	Column:	BEH C18		
Location:	MW05S								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	12.9	1.83	4.10	8.17		IS 13C3-PFBS	75.3	60- 150	
PFOA	9.87	0.665	2.05	8.17		IS 13C2-PFOA	75.9	60- 150	
PFOS	ND	0.824	0.922	8.17		IS 13C8-PFOS	78.8	60- 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to DL

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

DL - Detection limit

RL - Reporting limit

NW 3/24/17

4

Sample ID: WI-CV-GW11M-0217				Modified EPA Method 537					
Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700268-04	Date Received:	28-Feb-2017 7:28		
Project:	Navy Clean CTO-0008 OLF Coupeville	Sample Size:	0.0653 L	QC Batch:	B7C0012	Date Extracted:	01-Mar-2017 8:54		
Date Collected:	26-Feb-2017 14:35			Date Analyzed:	05-Mar-17 16:20	Column:	BEH C18		
Location:	MW11M								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.43	7.66	15.3		IS 13C3-PFBS	90.6	60- 150	
PFOA	ND	1.25	3.83	15.3		IS 13C2-PFOA	87.4	60- 150	
PFOS	ND	1.55	1.72	15.3		IS 13C8-PFOS	86.1	60- 150	

DL - Detection limit
 RL - Reporting limit
 LCL-UCL - Lower control limit - upper control limit
 Results reported to DL
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
 Only the linear isomer is reported for all other analytes.

NW 3/24/17

5

Sample ID: WI-CV-GW11S-0217				Modified EPA Method 537			
Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700268-05	Date Received:	28-Feb-2017 7:28
Project:	Navy Clean CTO-0008 OLF Coupeville	Sample Size:	0.128 L	QC Batch:	B7C0003	Date Extracted:	01-Mar-2017 8:54
Date Collected:	26-Feb-2017 16:30			Date Analyzed:	06-Mar-17 17:55	Column:	BEH C18
Location:	MW11S						
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R LCL-UCL Qualifiers
PFBS	ND	1.75	3.91	7.83		IS 13C3-PFBS	79.6 60 - 150
PFOA	ND	0.637	1.95	7.83		IS 13C2-PFOA	93.0 60 - 150
PFOS	1.00	0.790	0.879	7.83		IS 13C8-PFOS	89.8 60 - 150

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

DL - Detection limit

RL - Reporting limit

new 3/24/17

Sample ID: WI-CV-EB06-022617					Modified EPA Method 537				
Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700268-07	Date Received:	28-Feb-2017	7:28	
Project:	Navy Clean CTO-0008 OLF Coupeville	Sample Size:	0.106 L	QC Batch:	B7C0003	Date Extracted:	01-Mar-2017	8:54	
Date Collected:	26-Feb-2017 17:45			Date Analyzed:	06-Mar-17 18:08	Column:	BEH C18		
Location:	Eq. Blank								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	2.10	4.72	9.40		IS 13C3-PFBS	86.8	60- 150	
PFOA	ND	0.765	2.36	9.40		IS 13C2-PFOA	84.2	60- 150	
PFOS	1.12	0.948	1.06	9.40	J	IS 13C8-PFOS	91.9	60- 150	

DL - Detection limit
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
 Results reported to DL
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
 Only the linear isomer is reported for all other analytes.

NW 3/24/17

Sample ID: WI-CV-EB05-022417				Modified EPA Method 537					
Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700268-08	Date Received:	28-Feb-2017 7:28		
Project:	Navy Clean CTO-0008 OLF Coupeville	Sample Size:	0.127 L	QC Batch:	B7C0003	Date Extracted:	01-Mar-2017 8:54		
Date Collected:	24-Feb-2017 11:35			Date Analyzed:	06-Mar-17 18:20	Column:	BEH C18		
Location:	Eq. Blank								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.77	3.94	7.90		IS 13C3-PFBS	97.9	60 - 150	
PFOA	ND	0.643	1.97	7.90		IS 13C2-PFOA	88.7	60 - 150	
PFOS	ND	0.797	0.886	7.90		IS 13C8-PFOS	99.8	60 - 150	

DL - Detection limit
 RL - Reporting limit
 LCL-UCL - Lower control limit - upper control limit
 Results reported to DL
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
 Only the linear isomer is reported for all other analytes

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