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AR226-17766

Analytical Report

Air Sampling Fluorochemical Report

DuPont Washington Works – Air Sampling Program Round 4

Exygen Research Report No. L0001359

Testing Laboratory

Exygen Research
3058 Research Drive
State College, PA 16801

Requester

Michael D Aucoin
URS Corporation
Barley Mill Plaza
Building 27 Room 1260
Lancaster Pike and Rt 141
Wilmington, DE 19805

ALL DATA CONTAINED IN THIS REPORT WAS GENERATED BY EXYGEN RESEARCH

Summary

Seven solid media samples were received by Centre Analytical Laboratories, Inc. (dba Exygen Research) (Exygen) from DuPont Corporation. The media represent samples of air collected on OVS tubes. Please see Table 1 for a completed listing of samples received and field air volumes collected.

The samples were analyzed for Perfluorooctanoic Acid (C8 Acid) using liquid chromatography / mass spectrometry (LCMS). The method employed is entitled "Method of Analysis for the Determination of Perfluorooctanoic Acid (PFOA) in OVS Airtubes by LCMS" (James Miller, Exygen Research, February 17, 2003).

The OVS tubes were separated into three fractions for specific fluorochemical analysis. Fraction A consisted of the filter, backing material and plastic ring. Fraction B contained the first bed of XAD resin and the PUF backing. Fraction C contained the second bed of XAD resin and PUF backing. Fractions A and B were extracted with 1 mL of methanol. Fraction C was not analyzed but saved for possible future analysis. Perfluorodecanoic Acid (C10 Acid) was added as a surrogate spike to each fraction prior to extraction. Sample WWK-A-AMS6-E4 was not analyzed as per client request.

Instrument operating conditions can be found at the beginning of each analytical run. Raw instrument data is given in Appendix A. Chain-of-custody information can be found in Appendix B.

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Results Summary

Request #	Air Volume Sampled (L)	C8 Acid (mg/m3)
WWK-A-AMS1-E4 A	1432	< 0.00007
WWK-A-AMS1-E4 B	1432	< 0.00007
WWK-A-AMS1-E4 C	1432	NA
WWK-A-AMS1-E4 (Total)		< 0.00014
WWK-A-AMS2-E4 A	1458	0.0002
WWK-A-AMS2-E4 B	1458	< 0.00007
WWK-A-AMS2-E4 C	1458	NA
WWK-A-AMS2-E4 (Total)		0.0002
WWK-A-AMS3-E4 A	1468	0.0002
WWK-A-AMS3-E4 B	1468	< 0.00007
WWK-A-AMS3-E4 C	1468	NA
WWK-A-AMS3-E4 (Total)		0.0002
WWK-A-AMS4-E4 A	1421	< 0.00007
WWK-A-AMS4-E4 B	1421	< 0.00007
WWK-A-AMS4-E4 C	1421	NA
WWK-A-AMS4-E4 (Total)		< 0.00014
WWK-A-AMS5-E4 A	1435	< 0.00007
WWK-A-AMS5-E4 B	1435	< 0.00007
WWK-A-AMS5-E4 C	1435	NA
WWK-A-AMS5-E4(Total)		< 0.00014

NA – Not Analyzed. Fraction B was below the quantitation limit, therefore the backup fraction does not require analysis.

1. “<” is defined as not detected at or above the reported level.
2. Sample results have not been corrected for blank results or control spike recoveries.
3. Please note the following descriptions of the OVS sample tube fractions:

Fraction	Fraction Description
A	Frit Extract
B	1st set beads extract
C	2nd set beads extract (not analyzed)

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QC Data

LCS

Please note: One control sample was spiked with each perfluorooctanoic acid to give a final concentration of 500 ppb. Air was pulled through the tube at a rate of 1-liter per minute for one hour (60 liters of air). The fractions were separated and analyzed. The acceptable range for control recovery is 75-125%.

Request #	C8 Acid (amount spiked - ppb)	C8 Acid (amount recovered - ppb)	C8 Acid (percent recovery)
Control 1	500	499	100

Blanks

Request #	Vol. Of Air (L)	C8 Acid (ug/fraction)
WWK-A-AMSFBLK-E4 A	0	< 0.10
WWK-A-AMSFBLK-E4 B	0	< 0.10

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Surrogates

A surrogate spike (C10 Acid) was added to all OVS tubes to give a final concentration of 500 ppb in the extract. Surrogate spike recoveries are given in the following table. There are no set criteria for surrogate spike recoveries. Advisory ranges are 75-125%.

Sample #	Amount Spiked (ppb)	Amount Recovered (ppb)	Percent Recovery (%)
WWK-A-AMSFBLK-E4 A	500	931	186*
WWK-A-AMSFBLK-E4 B	500	443	89
WWK-A-AMS1-E4 A	500	946	189*
WWK-A-AMS1-E4 B	500	465	93
WWK-A-AMS2-E4 A	500	802	161*
WWK-A-AMS2-E4 B	500	498	100
WWK-A-AMS3-E4 A	500	797	159*
WWK-A-AMS3-E4 B	500	474	95
WWK-A-AMS4-E4 A	500	794	159*
WWK-A-AMS4-E4 B	500	471	94
WWK-A-AMS5-E4 A	500	804	161*
WWK-A-AMS5-E4 B	500	424	85
Control Spike A	500	889	178*
Control Spike B	500	412	82

* Surrogate recovery outside of advisory range.

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Calculations

Request #	Vol. Of Air (L)	C8 Acid (raw-ppb)	C8 Acid (ug/fraction)	C8 Acid (mg/m3)
WWK-A-AMSFBLK-E4 A	0	< 10	< 0.10	< 0.00007
WWK-A-AMSFBLK-E4 B	0	< 10	< 0.10	< 0.00007
WWK-A-AMS1-E4 A	1432	< 10	< 0.10	0.0002
WWK-A-AMS1-E4 B	1432	< 10	0.31	< 0.00007
WWK-A-AMS2-E4 A	1458	311	< 0.10	0.0002
WWK-A-AMS2-E4 B	1458	< 10	0.31	< 0.00007
WWK-A-AMS3-E4 A	1468	314	< 0.10	< 0.00007
WWK-A-AMS3-E4 B	1468	< 10	< 0.10	< 0.00007
WWK-A-AMS4-E4 A	1421	< 10	< 0.10	< 0.00007
WWK-A-AMS4-E4 B	1421	< 10	< 0.10	< 0.00007
WWK-A-AMS5-E4 A	1435	< 10	< 0.10	< 0.00007
WWK-A-AMS5-E4 B	1435	< 10	< 0.10	< 0.00007
Control Spike A	0	499	0.50	< 0.00007
Control Spike B	0	< 10	< 0.10	< 0.00007

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Example Calculation

For sample WWK-A-AMS2-E4 A C8 Acid,

$$\begin{aligned} &= [311 \text{ ng/ml of C8 Acid} \times (1 \text{ ml}) \times (1 \text{ ug} / 1000 \text{ ng}) \times (1 \text{ mg} / 1000 \text{ ug})] / [(1458 \text{ L}) \times (1 \text{ m}^3 / 1000 \text{ L})] \\ &= 0.0002 \text{ mg} / \text{m}^3 \end{aligned}$$

Signatures


Paul Connolly, LCMS Team Leader

2/25/04
Date


John M. Flaherty, Vice President

3/25/04
Date

Other Lab Members Contributing to Data

James Miller

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Table 1. Login Information / Field Data

Sample ID	Oxygen Lab ID	Date Received	Description	Air Volume Sampled (L)
WWK-A-AMSFBLK-E4 A	L0001359-1	11/25/03	Frit extract	0
WWK-A-AMSFBLK-E4 B	L0001359-2	11/25/03	1st set beads extract	0
WWK-A-AMSFBLK-E4 C	L0001359-3	11/25/03	2nd set beads extract	0
WWK-A-AMS1-E4 A	L0001359-4	11/25/03	Frit extract	1432
WWK-A-AMS1-E4 B	L0001359-5	11/25/03	1st set beads extract	1432
WWK-A-AMS1-E4 C	L0001359-6	11/25/03	2nd set beads extract	1432
WWK-A-AMS2-E4 A	L0001359-7	11/25/03	Frit extract	1458
WWK-A-AMS2-E4 B	L0001359-8	11/25/03	1st set beads extract	1458
WWK-A-AMS2-E4 C	L0001359-9	11/25/03	2nd set beads extract	1458
WWK-A-AMS3-E4 A	L0001359-10	11/25/03	Frit extract	1468
WWK-A-AMS3-E4 B	L0001359-11	11/25/03	1st set beads extract	1468
WWK-A-AMS3-E4 C	L0001359-12	11/25/03	2nd set beads extract	1468
WWK-A-AMS4-E4 A	L0001359-13	11/25/03	Frit extract	1421
WWK-A-AMS4-E4 B	L0001359-14	11/25/03	1st set beads extract	1421
WWK-A-AMS4-E4 C	L0001359-15	11/25/03	2nd set beads extract	1421
WWK-A-AMS5-E4 A	L0001359-16	11/25/03	Frit extract	1435
WWK-A-AMS5-E4 B	L0001359-17	11/25/03	1st set beads extract	1435
WWK-A-AMS5-E4 C	L0001359-18	11/25/03	2nd set beads extract	1435
Control Spike A	L0001359-19	11/25/03	Frit extract	0
Control Spike B	L0001359-20	11/25/03	1st set beads extract	0
Control Spike C	L0001359-21	11/25/03	2nd set beads extract	0

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Table 2. Chain of Custody

Sample ID	Date Collected	Date Received at Exygen	Date Extracted by Exygen	Date Analyzed by Exygen
WWK-A-AMSFBLK-E4 A	11/23/03	11/25/03	12/3/03	12/9 - 12/10/03
WWK-A-AMSFBLK-E4 B	11/23/03	11/25/03	12/3/03	12/9 - 12/10/03
WWK-A-AMSFBLK-E4 C	11/23/03	11/25/03	NA	NA
WWK-A-AMS1-E4 A	11/23/03	11/25/03	12/3/03	12/9 - 12/10/03
WWK-A-AMS1-E4 B	11/23/03	11/25/03	12/3/03	12/9 - 12/10/03
WWK-A-AMS1-E4 C	11/23/03	11/25/03	NA	NA
WWK-A-AMS2-E4 A	11/23/03	11/25/03	12/3/03	12/9 - 12/10/03
WWK-A-AMS2-E4B	11/23/03	11/25/03	12/3/03	12/9 - 12/10/03
WWK-A-AMS2-E4 C	11/23/03	11/25/03	NA	NA
WWK-A-AMS3-E4 A	11/23/03	11/25/03	12/3/03	12/9 - 12/10/03
WWK-A-AMS3-E4 B	11/23/03	11/25/03	12/3/03	12/9 - 12/10/03
WWK-A-AMS3-E4 C	11/23/03	11/25/03	NA	NA
WWK-A-AMS4-E4 A	11/23/03	11/25/03	12/3/03	12/9 - 12/10/03
WWK-A-AMS4-E4 B	11/23/03	11/25/03	12/3/03	12/9 - 12/10/03
WWK-A-AMS4-E4 C	11/23/03	11/25/03	NA	NA
WWK-A-AMS5-E4 A	11/23/03	11/25/03	12/3/03	12/9 - 12/10/03
WWK-A-AMS5-E4 B	11/23/03	11/25/03	12/3/03	12/9 - 12/10/03
WWK-A-AMS5-E4 C	11/23/03	11/25/03	NA	NA
Control Spike A	NA	NA	12/3/03	12/9 - 12/10/03
Control Spike B	NA	NA	12/3/03	12/9 - 12/10/03
Control Spike C	NA	NA	NA	NA

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ANALYTICAL DATA REVIEW SHEET

LC/MS

James R. Miller
Analyst

James R. Miller 1/9/04
Signature/Date

John M. Flaherty
Reviewed by

John M. Flaherty 1/9/04
Signature/Date

Sequence Table:

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 1	STD 50 ppb	FC8-10	1	Sample		
2	Vial 1	STD 50 ppb	FC8-10	1	Calib		
3	Vial 2	STD 100 ppb	FC8-10	1	Calib		
4	Vial 3	STD 250 ppb	FC8-10	1	Calib		
5	Vial 4	STD 500 ppb	FC8-10	1	Calib		
6	Vial 5	STD 750 ppb	FC8-10	1	Calib		
7	Vial 6	STD 1000 ppb	FC8-10	1	Calib		
8	Vial 7	STD 1500 ppb	FC8-10	1	Calib		
9	Vial 92	Solvent blank	FC8-10	1	Sample		
10	Vial 11	L0001359-19	FC8-10	1	Sample		
11	Vial 12	L0001359-20	FC8-10	1	Sample		
12	Vial 13	L0001359-1	FC8-10	1	Sample		
13	Vial 14	L0001359-2	FC8-10	1	Sample		
14	Vial 15	L0001359-4	FC8-10	1	Sample		
15	Vial 16	L0001359-5	FC8-10	1	Sample		
16	Vial 17	L0001359-7	FC8-10	1	Sample		
17	Vial 18	L0001359-8	FC8-10	1	Sample		
18	Vial 19	L0001359-10	FC8-10	1	Sample		
19	Vial 20	L0001359-11	FC8-10	1	Sample		
20	Vial 4	STD 500 ppb	FC8-10	1	Sample		
21	Vial 92	Solvent blank	FC8-10	1	Sample		
22	Vial 21	L0001359-13	FC8-10	1	Sample		
23	Vial 22	L0001359-14	FC8-10	1	Sample		
24	Vial 23	L0001359-16	FC8-10	1	Sample		
25	Vial 24	L0001359-17	FC8-10	1	Sample		
26	Vial 4	STD 500 ppb	FC8-10	1	Sample		
27	Vial 92	Solvent blank	FC8-10	1	Sample		
28	Vial 1	STD 50 ppb	FC8-10	1	Calib		
29	Vial 2	STD 100 ppb	FC8-10	1	Calib		
30	Vial 3	STD 250 ppb	FC8-10	1	Calib		
31	Vial 4	STD 500 ppb	FC8-10	1	Calib		
32	Vial 5	STD 750 ppb	FC8-10	1	Calib		
33	Vial 6	STD 1000 ppb	FC8-10	1	Calib		
34	Vial 7	STD 1500 ppb	FC8-10	1	Calib		

Calibration Part:

Line	Location	SampleName	Method	CalLev	Update	RF	Update	RT	Interval
2	Vial 1	STD 50 ppb	FC8-10	1	Replace		Average		-2
3	Vial 2	STD 100 ppb	FC8-10	2	Replace		Average		-2
4	Vial 3	STD 250 ppb	FC8-10	3	Replace		Average		-2
5	Vial 4	STD 500 ppb	FC8-10	4	Replace		Average		-2
6	Vial 5	STD 750 ppb	FC8-10	5	Replace		Average		-2
7	Vial 6	STD 1000 ppb	FC8-10	6	Replace		Average		-2
8	Vial 7	STD 1500 ppb	FC8-10	7	Replace		Average		-2
28	Vial 1	STD 50 ppb	FC8-10	1	Average		Average		-2
29	Vial 2	STD 100 ppb	FC8-10	2	Average		Average		-2
30	Vial 3	STD 250 ppb	FC8-10	3	Average		Average		-2
31	Vial 4	STD 500 ppb	FC8-10	4	Average		Average		-2
32	Vial 5	STD 750 ppb	FC8-10	5	Average		Average		-2
33	Vial 6	STD 1000 ppb	FC8-10	6	Average		Average		-2
34	Vial 7	STD 1500 ppb	FC8-10	7	Average		Average		-2

=====
Calibration Table
=====

Calib. Data Modified : Friday, January 09, 2004 2:13:25 PM

Calculate : External Standard
Based on : Peak Area

Rel. Reference Window : 5.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 5.000 %
Abs. Non-ref. Window : 0.000 min
Uncalibrated Peaks : not reported
Partial Calibration : Yes, identified peaks are recalibrated
Correct All Ret. Times: No, only for identified peaks

Curve Type : Linear
Origin : Ignored
Weight : Equal

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :

Printout of recalibrations within a sequence:

Calibration Table after Recalibration

Normal Report after Recalibration

If the sequence is done with bracketing:

Results of first cycle (ending previous bracket)

Signal 1: MSD1 369, EIC=368.7:369.7

Signal 2: MSD1 469, EIC=468.7:469.7

RetTime	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
[min]	Sig	[ppb]					
7.463	1	1	50.00000	1.01066e4	4.94728e-3	1	C8 Acid
		2	100.00000	1.99451e4	5.01377e-3		
		3	250.00000	4.82344e4	5.18302e-3		
		4	500.00000	9.09422e4	5.49799e-3		
		5	750.00000	1.28865e5	5.82003e-3		
		6	1000.00000	1.58452e5	6.31106e-3		
		7	1500.00000	2.25877e5	6.64079e-3		
8.336	2	1	50.00000	1.40303e4	3.56372e-3	1	C10 Surrogate
		2	100.00000	2.74848e4	3.63837e-3		
		3	250.00000	6.62707e4	3.77241e-3		
		4	500.00000	1.26319e5	3.95823e-3		
		5	750.00000	1.79474e5	4.17888e-3		
		6	1000.00000	2.20810e5	4.52879e-3		
		7	1500.00000	3.12650e5	4.79770e-3		

More compound-specific settings:

Compound: C8 Acid

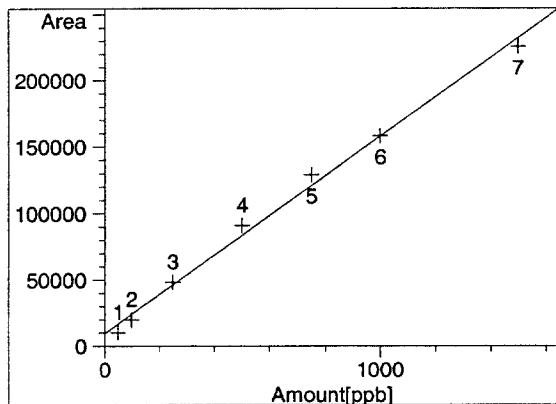
Time Window : From 7.291 min To 8.292 min

Compound: C10 Surrogate

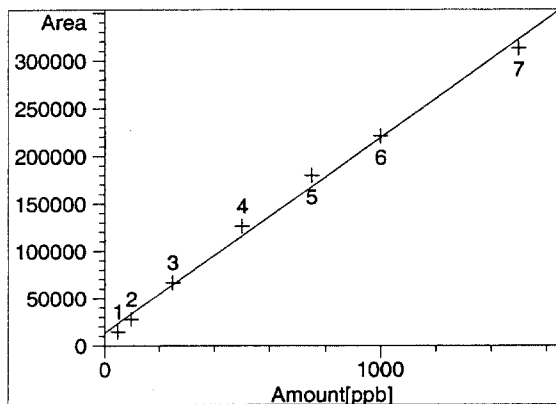
Time Window : From 8.140 min To 8.945 min

=====
Peak Sum Table
=====***No Entries in table***
=====

=====
Calibration Curves
=====



C8 Acid at exp. RT: 7.463
MSD1 369, EIC=368.7:369.7
Correlation: 0.99698
Residual Std. Dev.: 6705.26193
Formula: $y = mx + b$
m: 148.68546
b: 9339.65270
x: Amount [ppb]
y: Area



C10 Surrogate at exp. RT: 8.336
MSD1 469, EIC=468.7:469.7
Correlation: 0.99675
Residual Std. Dev.: 9660.28035
Formula: $y = mx + b$
m: 206.36797
b: 12944.44413
x: Amount [ppb]
y: Area

LC/MS SYSTEM AND OPERATING CONDITIONS

Client: Dupont

EXYGEN STUDY: L0001359

Instrument: Hewlett-Packard 1100 LC/MSD (LC/MS 3)
API-ES Interface - Negative SIM mode
Nitrogen: 10 L/min at 300°C
Fragmentor: Variable; Vcap: 3500V

Computer: Hewlett-Packard Kayak workstation

Software: Microsoft Windows NT 4.0
Agilent ChemStation Version A.08.03

HPLC Equipment: HP G1379A Solvent Degasser
HP G1311A Quaternary Pump
HP G1313A Autosampler
HP G1316A Column Thermostat
HP G1946A MSD

HPLC Column: Thermo Hypersil-Keystone Betasil C18, 30 x 2.0 mm x 3µm
Column Temp.: 35° C
Mobile Phase (A): 2mM Ammonium acetate in OmniSolv Water
Mobile Phase (B): HPLC grade Methanol

Time	% A	% B
0.0	70	30
6.0	10	90
10.0	10	90
10.0	STOP	STOP

Post Time = 4 min.

Total run time = 14 min.

Flow Rate: 0.3 mL/min
Injected Volume: 5 µL

Ions monitored:

Analyte	Ion (m/z)
C8 Acid (PFOA)	369
C10 Surrogate	469

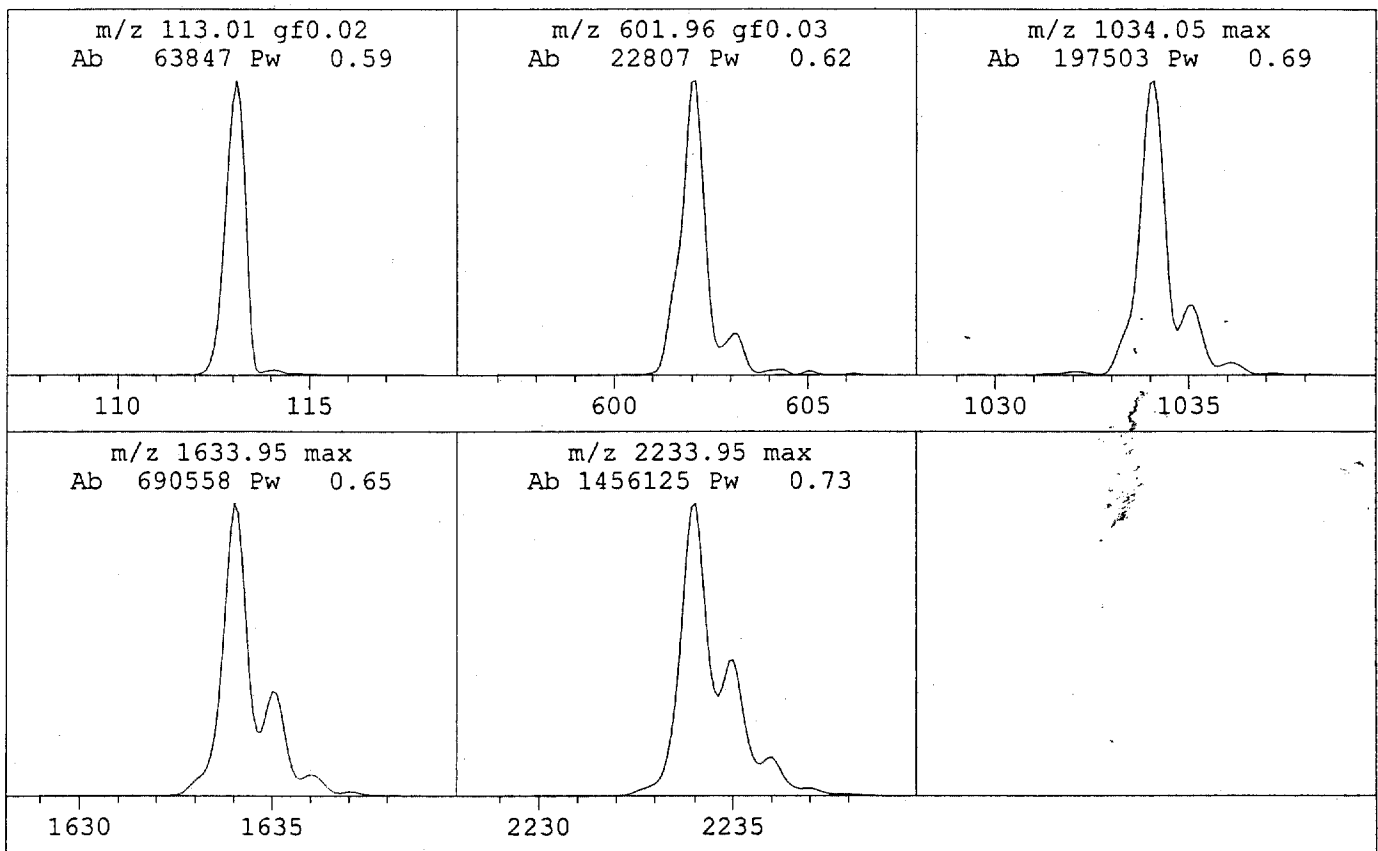
Extraction Date: December 3, 2003

Analyst:

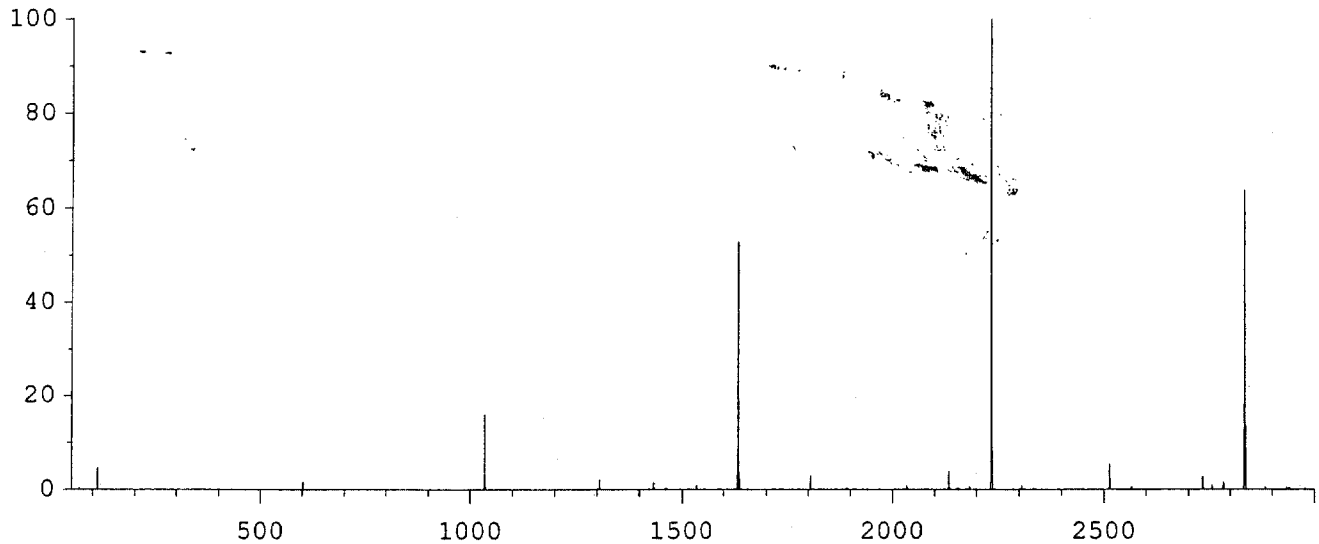
James R. Miller *JRM* 12/9/03
Exygen Research
3058 Research Drive, State College, PA 16801
Phone: (814) 272-1039, FAX: (814) 231-1580

Instrument : LCMS3
Tue Dec 02 09:17:46 2003

C:\HPCHEM\1\1946TUNE\ATUNES.TUN



Scan: 50.00 - 3000.00 Samples: 8 Thresh: 0 Step: 0.10
29501 peaks Base: 2233.95 Abundance: 1314304 F Raw, Gauss 0.3



m/z	gf	Abund	Rel Abund	Iso m/z	Iso Abund	Iso Ratio
113.00		61000	100.00	114.02	1982	3.25
601.99		21664	35.51	602.99	4281	19.76
1033.97		210944	345.81	1034.95	44120	20.92
1633.95		695552	1140.25	1634.95	256896	36.93
2233.95		1314304	2154.60	2234.95	652160	49.62

0016

000159

Instrument : LCMS3
Tue Dec 02 09:17:46 2003

C:\HPCHEM\1\1946TUNE\ATUNES.TUN

Mode: API-ES Polarity: NEG

Fragment VAR WidthGain -128
Skim2 6.0 WidthOffs VAR
Lens1 -4.0 MassGain-36.25
Lens2 19 MassOffs VAR
Iris 240

Energy 5.0
OpolPeak 300
OpolKnee 316

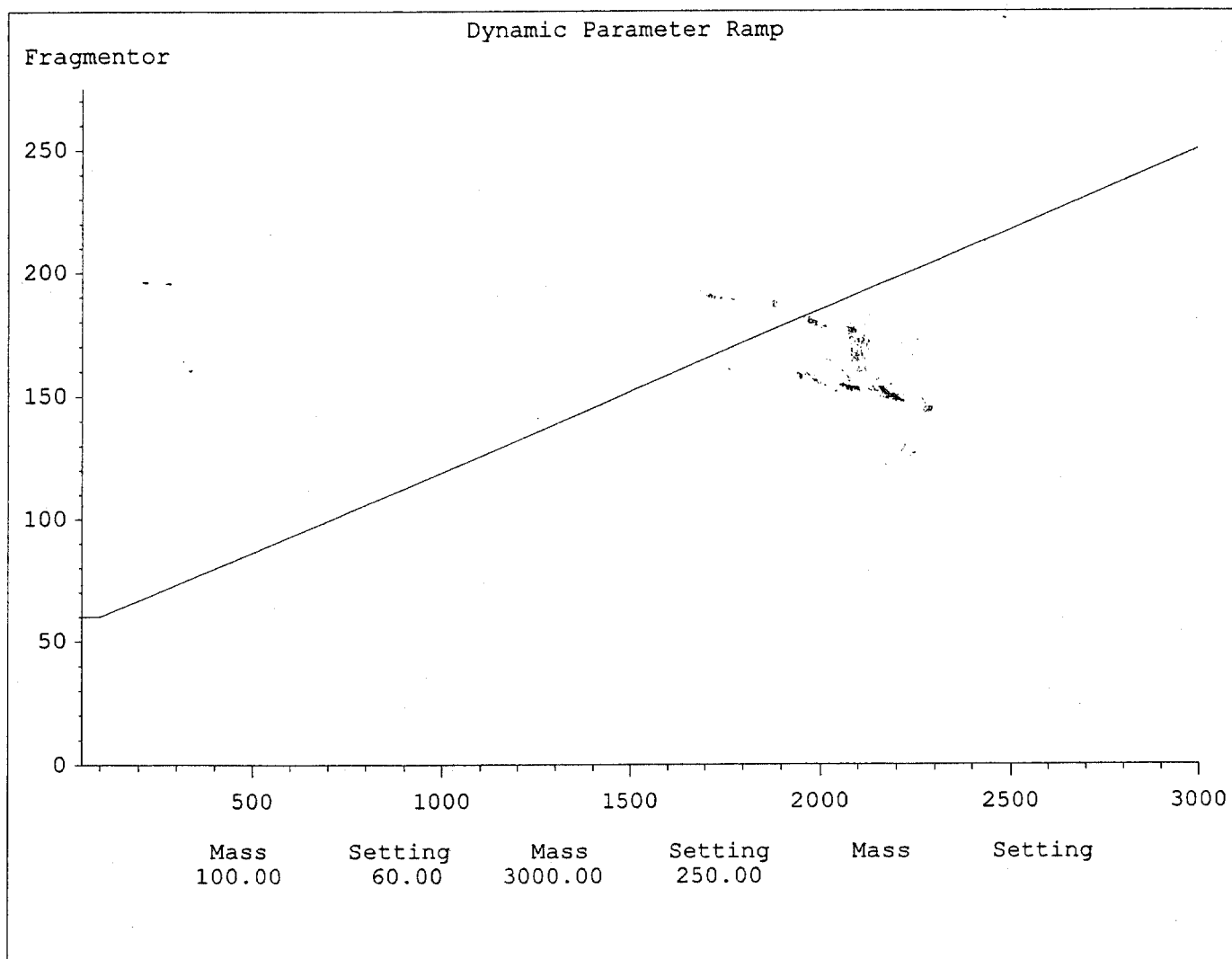
Gain 3.0 QuadDC 0.00

EMV 2164 Samples 8
VCap 4000 Averages 1
StepSize 0.10

Status:

CapCur 63 DryingGas 6.0
ChamCur 1.02 Gas Temp 300

Quad Temp 99 Neb Pres 20

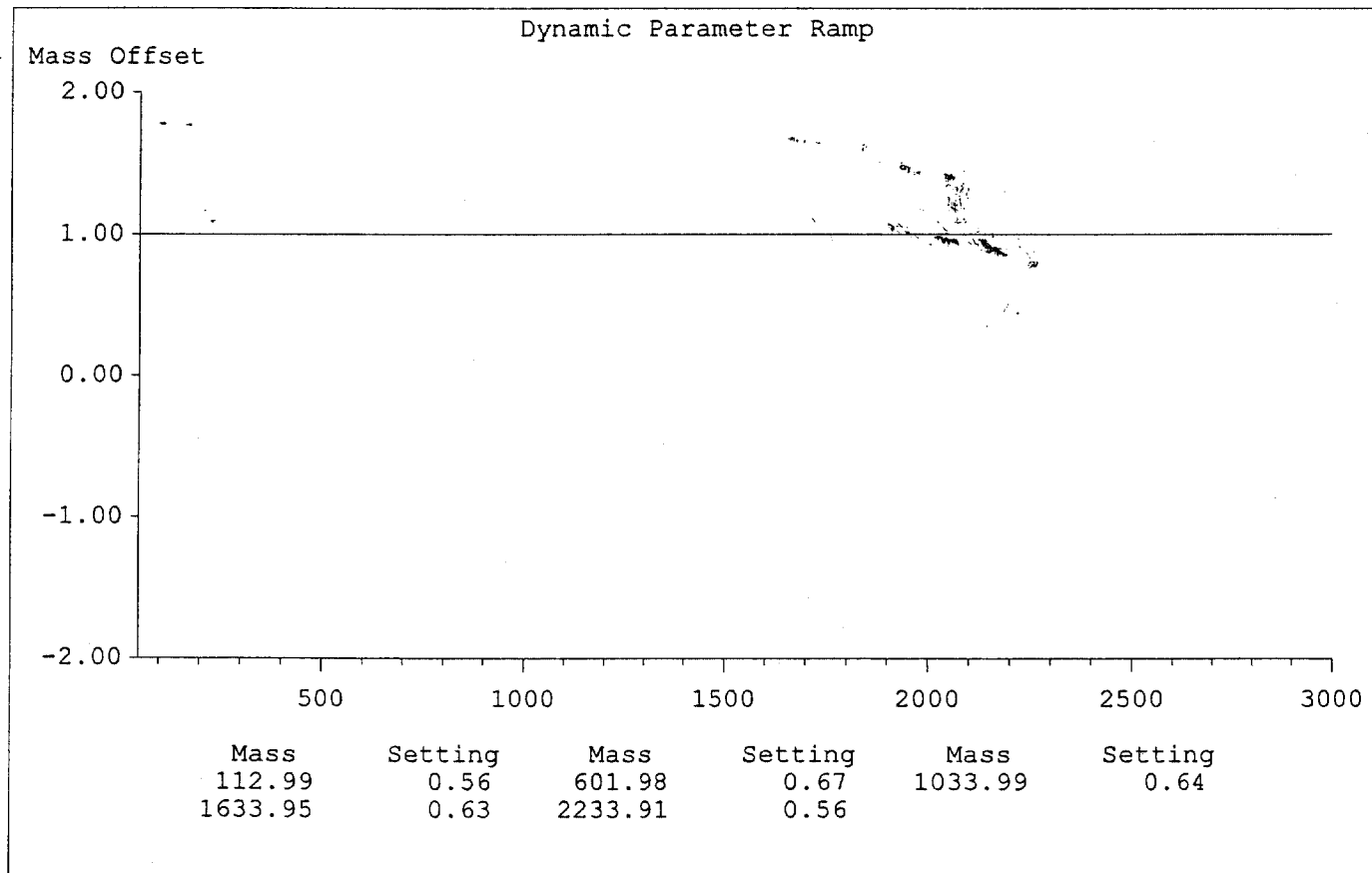
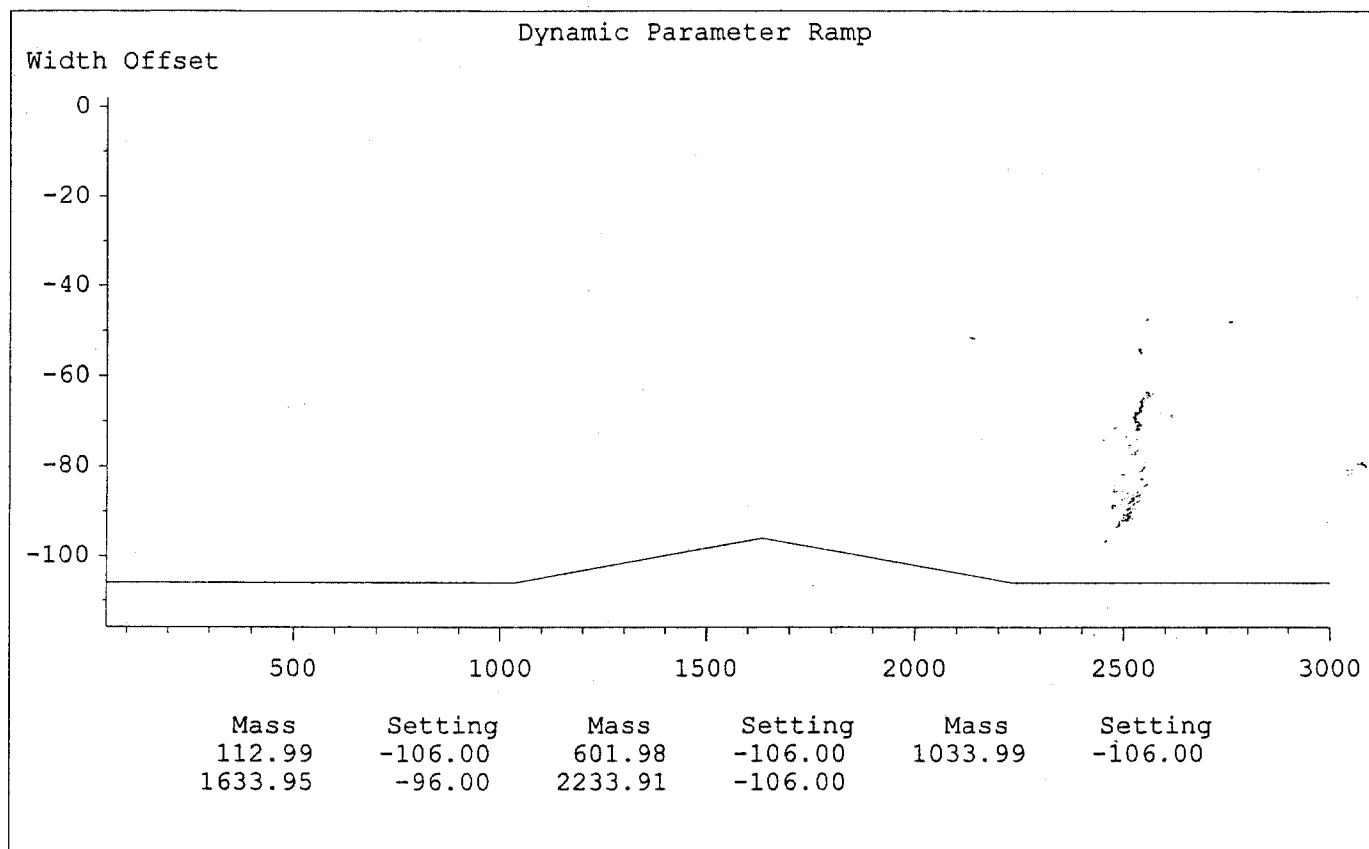


0017

000160

Instrument : LCMS3
Tue Dec 02 09:17:46 2003

C:\HPCHEM\1\1946TUNE\ATUNES.TUN

ARM
121

0018

000161

Sample Name:STD 50 ppb
Sample Info:Warm up

1

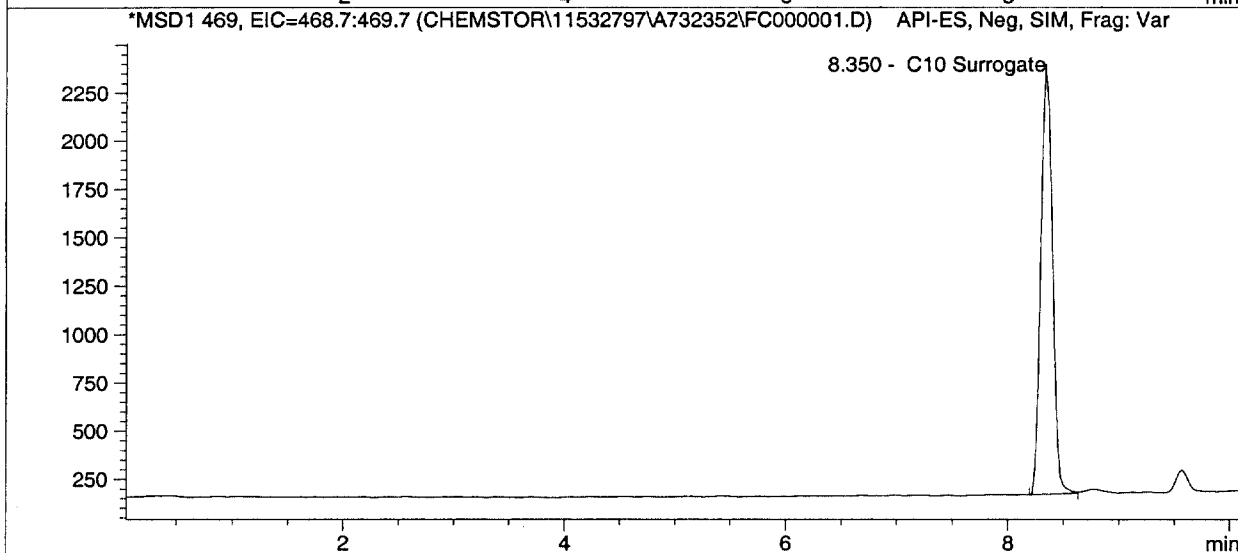
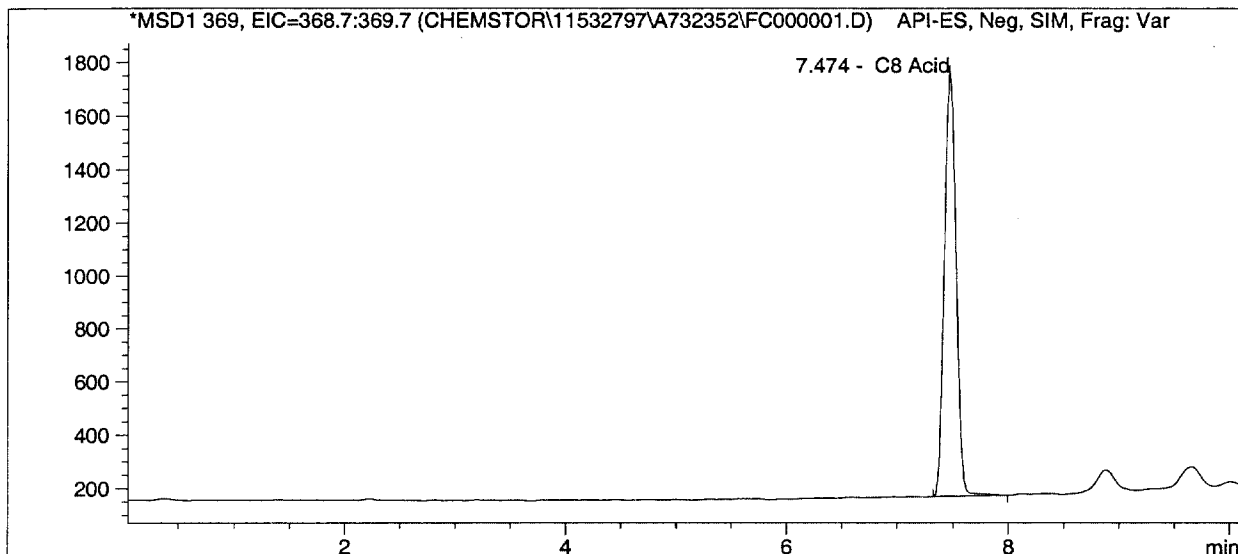
Data file :C:\HPCHEM\1\DATA\Chemstor\11532797\A732352\FC000001.D

=====

Injection Date	: 12/9/03	5:09:47 PM	Seq Line	:	1
Acq Operator	: jmillier		Vial No.	:	1
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
8 Acid	16.35	7.474	11770	MSD1 369, EIC=368.7:369.7
10 Surrogat	14.74	8.350	15986	MSD1 469, EIC=468.7:469.7

=====

*** End of Report ***

0019

Initials Jan
Date 1/9/04
Run# FC000001 To FC000034

Sample Name:STD 50 ppb

Sample Info:

1

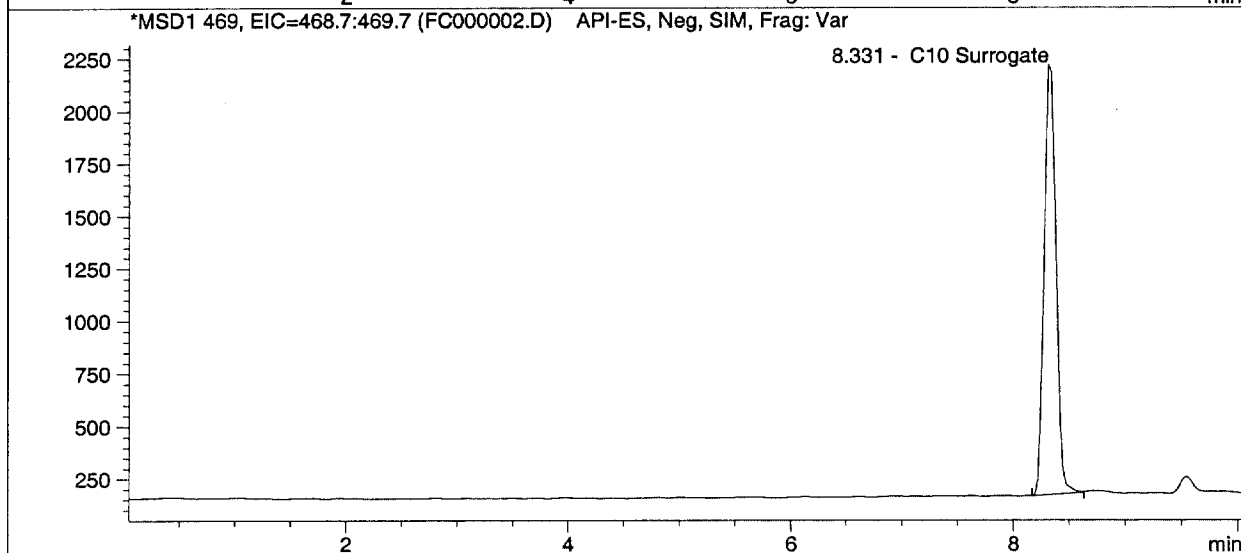
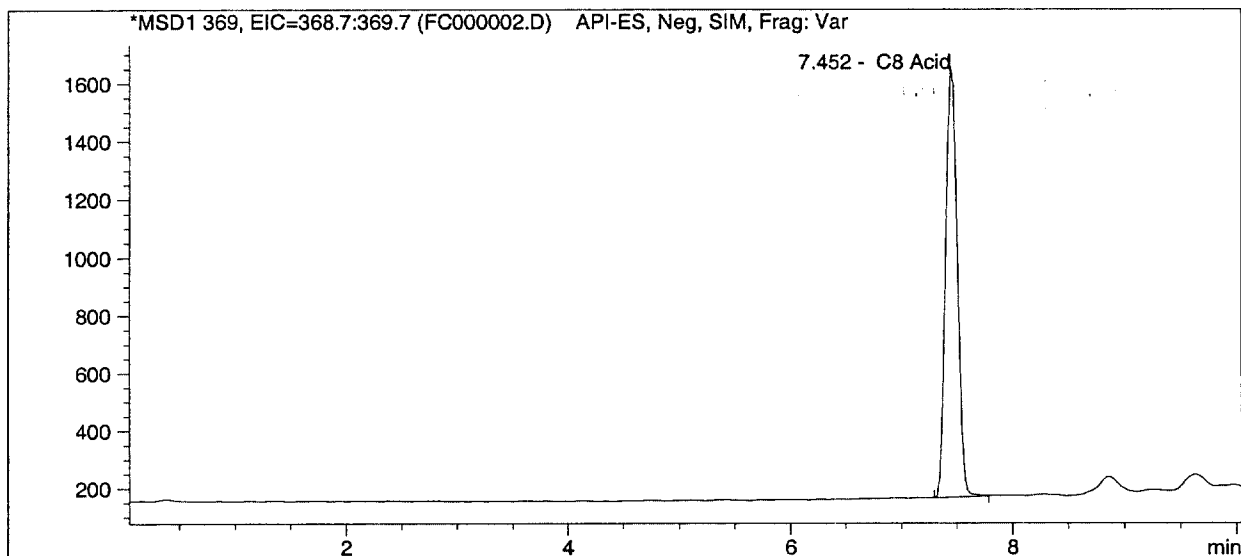
Data file :C:\HPCHEM\1\DATA\FC000002.D

=====

Injection Date	: 12/9/03	5:25:19 PM	Seq Line	:	2
Acq Operator	: jmillier		Vial No.	:	1
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	10.44	7.452	10892	MSD1 369, EIC=368.7:369.7
C10 Surrogate	10.39	8.331	15089	MSD1 469, EIC=468.7:469.7

=====
*** End of Report ***

0020

Sample Name:STD 100 ppb

Sample Info:

1

Data file :C:\HPCHEM\1\DATA\FC000003.D

=====

Injection Date	: 12/9/03	5:40:50 PM	Seq Line	:	3
Acq Operator	: jmillier		Vial No.	:	2
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

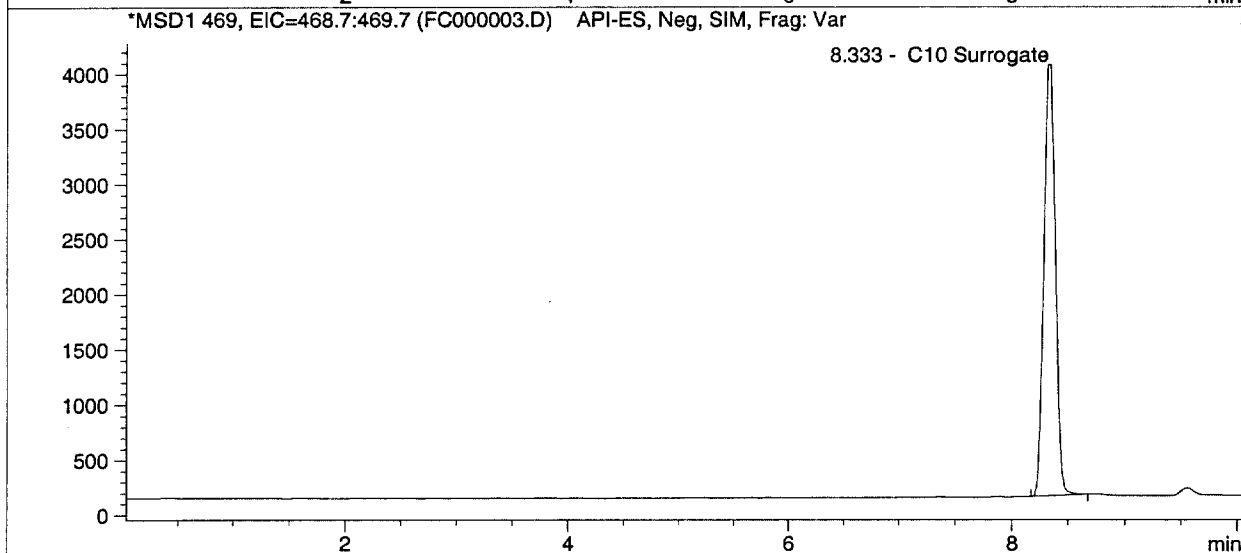
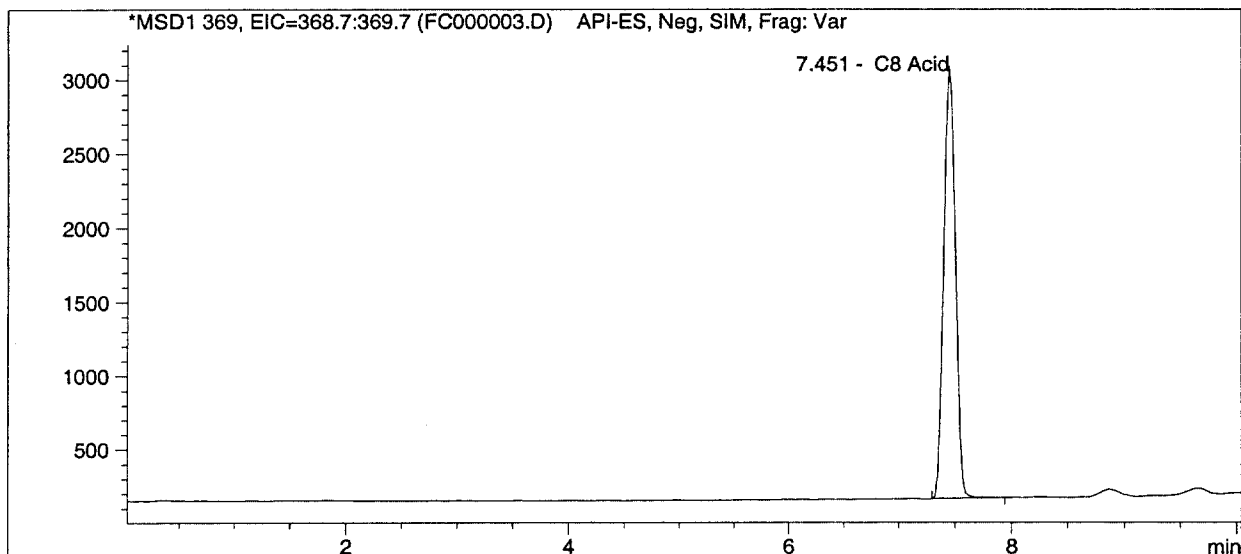
=====

Acq. Method : FC8-10.M

Analysis Method : C:\HPCHEM\1\METHODS\120903.M

Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	80.24	7.451	21270	MSD1 369, EIC=368.7:369.7
C10 Surrogat	77.29	8.333	28894	MSD1 469, EIC=468.7:469.7

=====

*** End of Report ***

0021

Sample Name:STD 250 ppb

Sample Info:

1

Data file :C:\HPCHEM\1\DATA\FC000004.D

=====

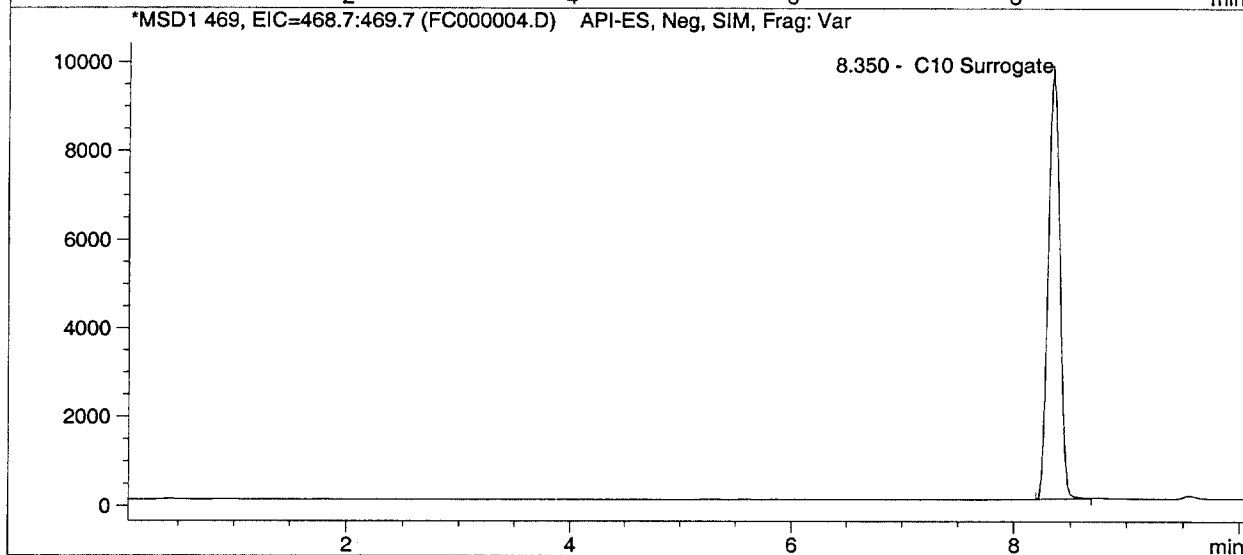
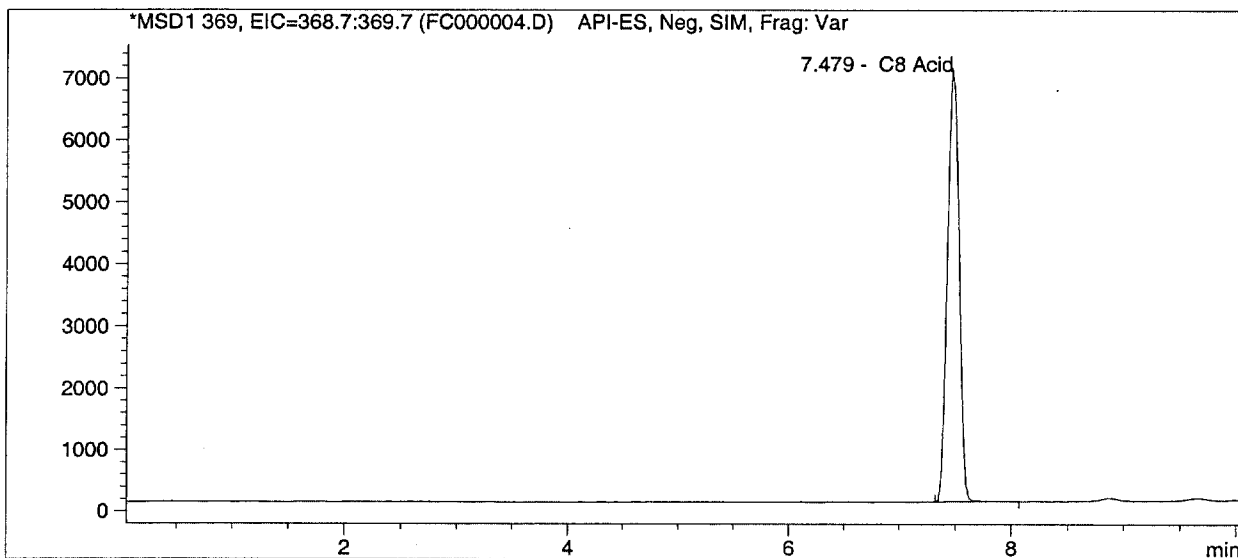
Injection Date	: 12/9/03	5:56:25 PM	Seq Line	:	4
Acq Operator	: jmillier		Vial No.	:	3
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M

Analysis Method : C:\HPCHEM\1\METHODS\120903.M

Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
8 Acid	280.04	7.479	50977	MSD1 369, EIC=368.7:369.7
10 Surrogat	274.70	8.350	69633	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0022

Sample Name:STD 500 ppb

Sample Info:

1

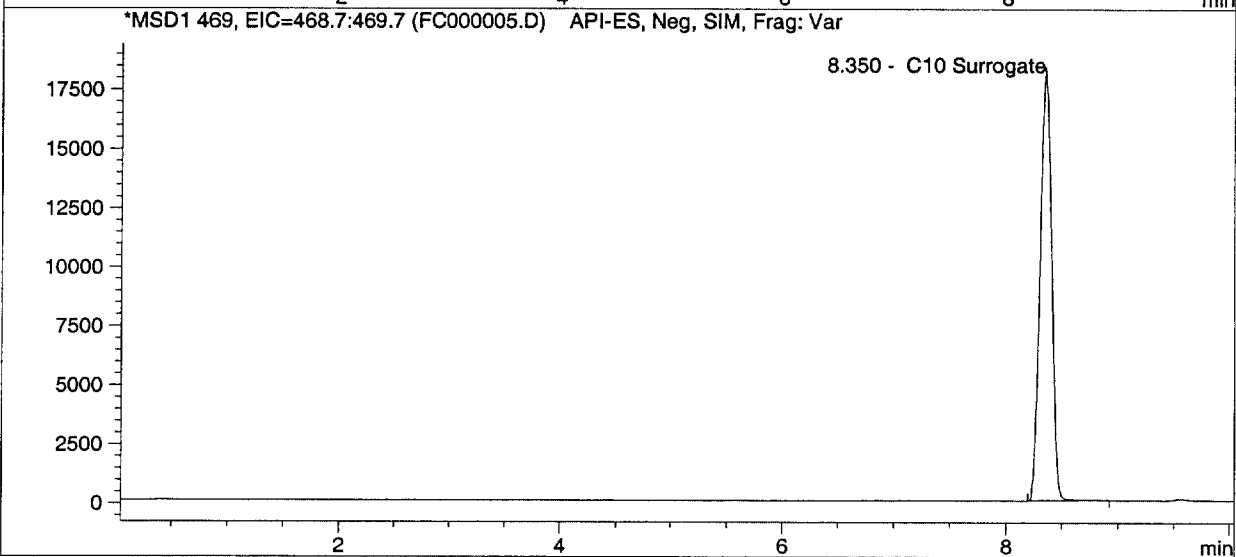
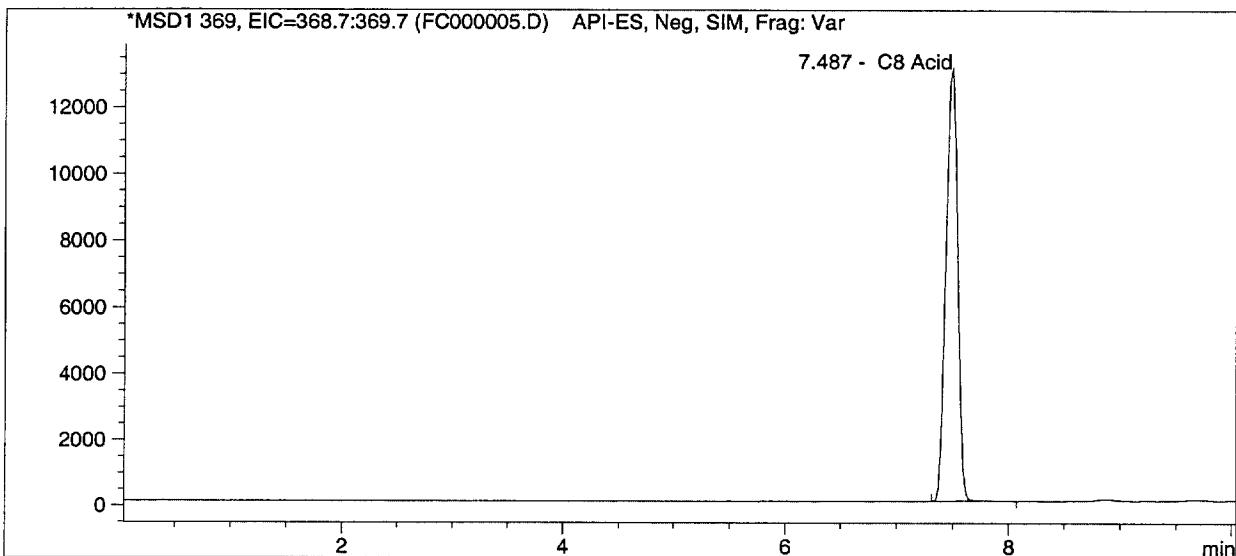
Data file :C:\HPCHEM\1\DATA\FC000005.D

=====

Injection Date	: 12/9/03	6:11:59 PM	Seq Line	:	5
Acq Operator	: jmilller		Vial No.	:	4
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	583.46	7.487	96091	MSD1 369, EIC=368.7:369.7
C10 Surrogat	576.55	8.350	131926	MSD1 469, EIC=468.7:469.7

=====

*** End of Report ***

0023

Sample Name:STD 750 ppb

Sample Info:

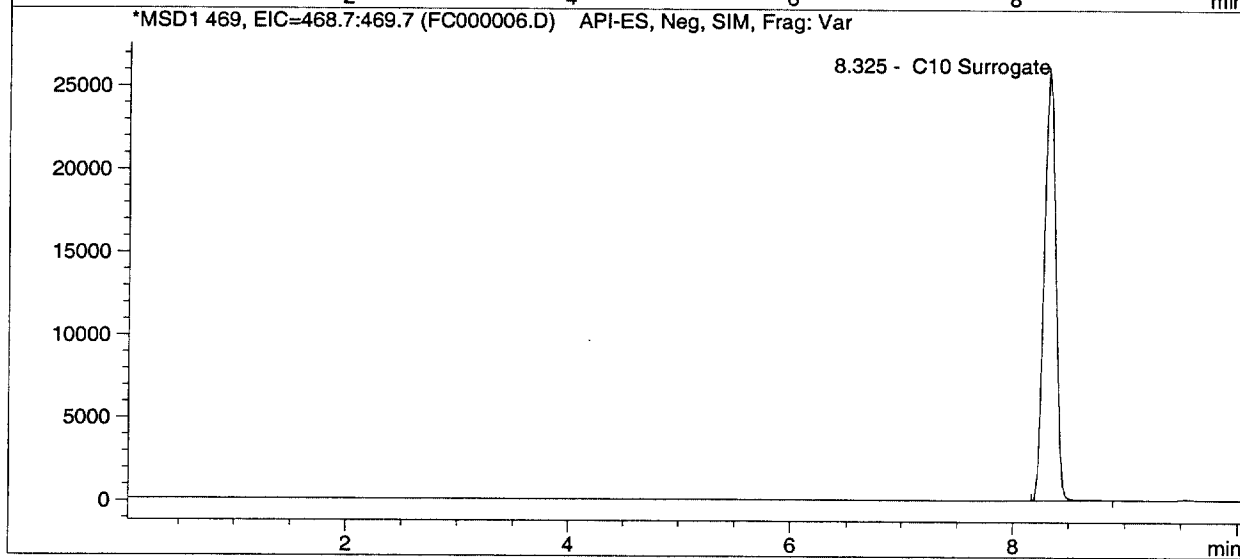
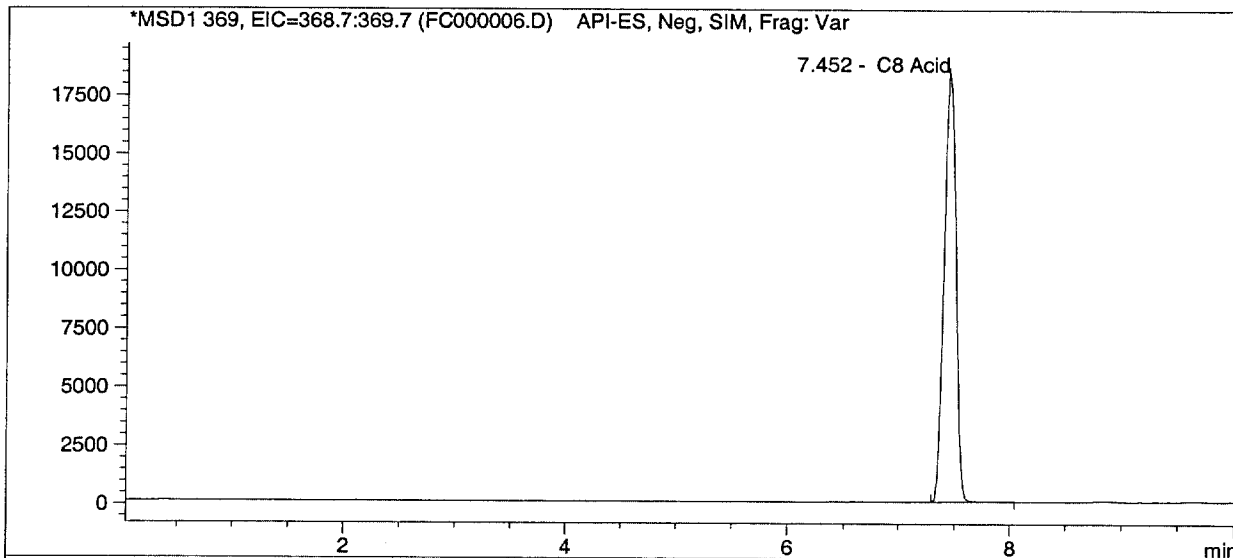
1

Data file :C:\HPCHEM\1\DATA\FC000006.D

```
=====
Injection Date   : 12/9/03      6:27:34 PM      Seq Line   :           6
Acq Operator    : jmillers      Vial No.     :           5
Instrument      : PC00414       Inj. No.     :           1
Dilution       : 1             Inj. Vol.    :           5 µl
=====
```

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
8 Acid	849.14	7.452	135594	MSD1 369, EIC=368.7:369.7
10 Surrogat	846.39	8.325	187613	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0024

Sample Name:STD 1000 ppb

Sample Info:

1

Data file :C:\HPCHEM\1\DATA\FC000007.D

=====

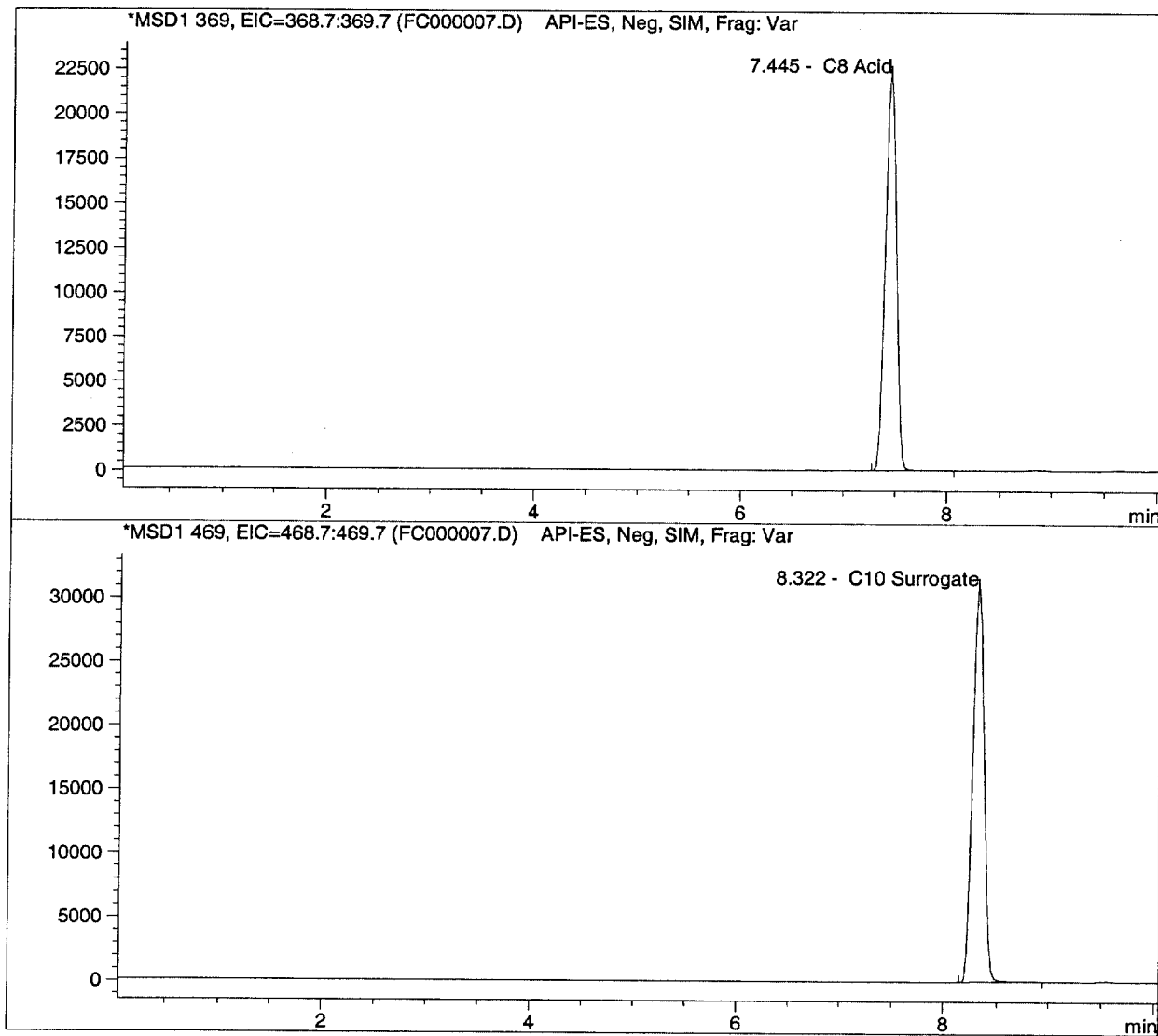
Injection Date	: 12/9/03	6:43:09 PM	Seq Line	:	7
Acq Operator	: jmillier		Vial No.	:	6
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M

Analysis Method : C:\HPCHEM\1\METHODS\120903.M

Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
8 Acid	1042.89	7.445	164402	MSD1 369, EIC=368.7:369.7
10 Surrogat	1037.25	8.322	226999	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0025

Sample Name:STD 1500 ppb

Sample Info:

1

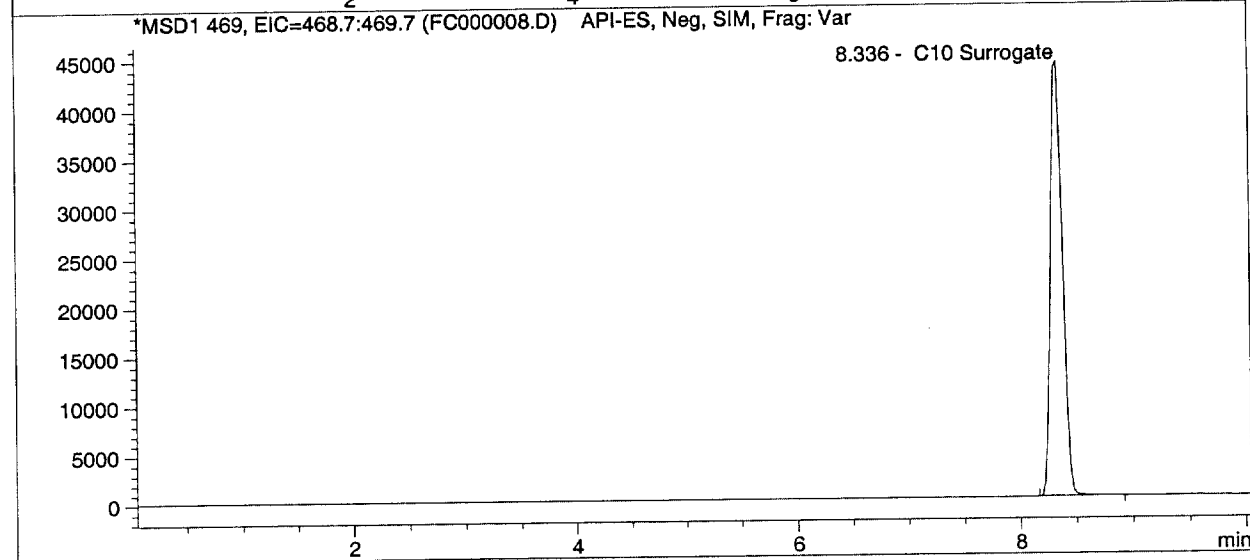
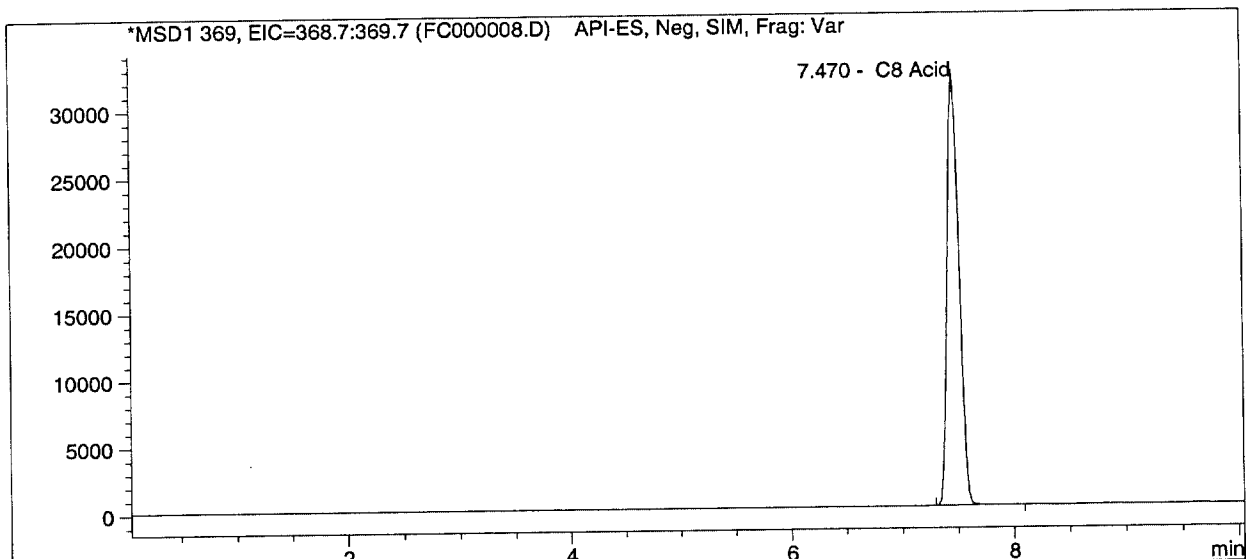
Data file :C:\HPCHEM\1\DATA\FC000008.D

=====

Injection Date	: 12/9/03	6:58:44 PM	Seq Line	:	8
Acq Operator	: jmillar		Vial No.	:	7
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	1541.14	7.470	238485	MSD1 369, EIC=368.7:369.7
C10 Surrogat	1525.55	8.336	327769	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0026

Sample Name: Solvent blank
Sample Info:

1

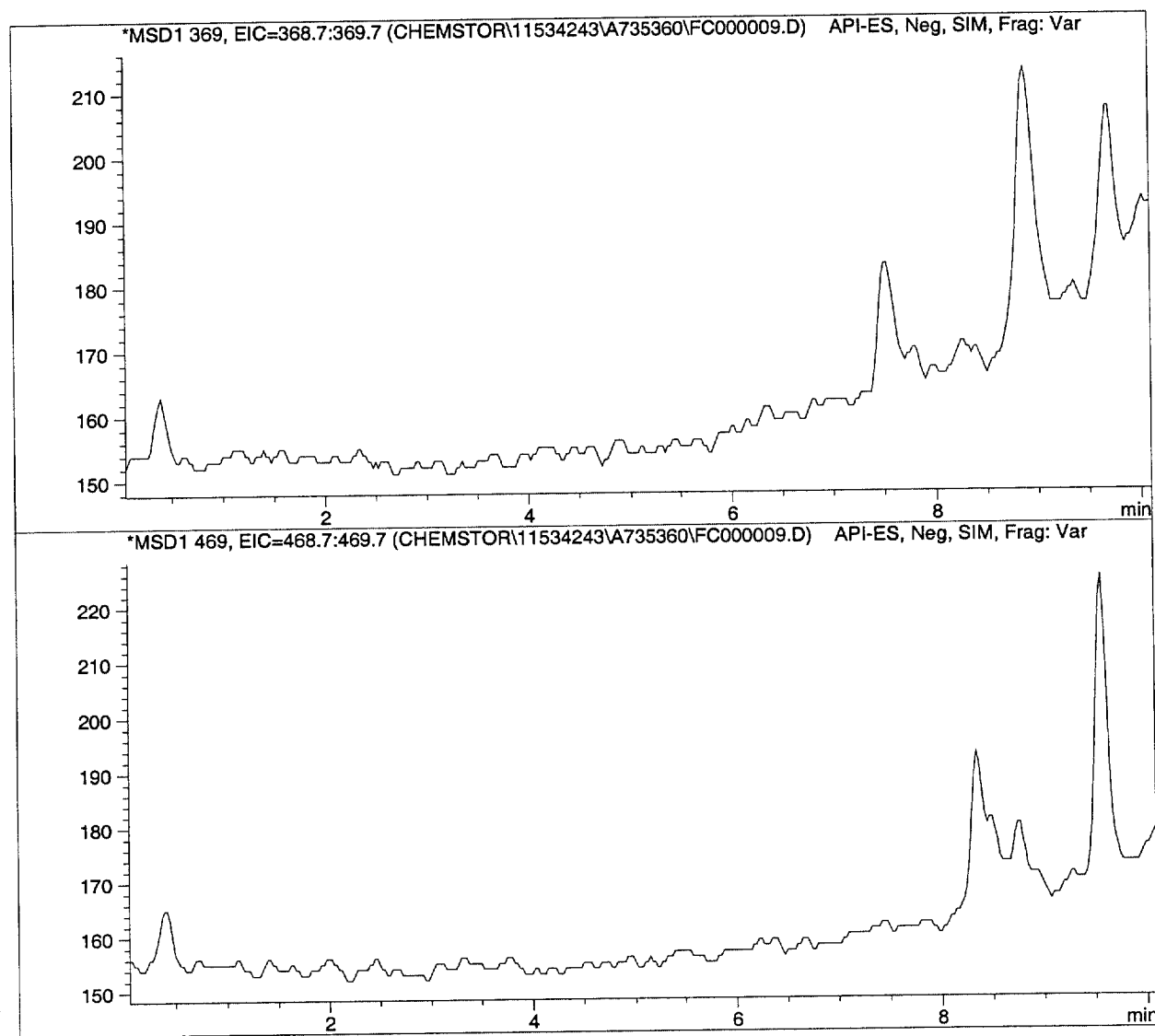
Data file : C:\HPCHEM\1\DATA\Chemstor\11534243\A735360\FC000009.D

=====

Injection Date	: 12/9/03	7:14:10 PM	Seq Line	:	9
Acq Operator	: jmillar		Vial No.	:	92
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
8 Acid	0.00	0.000	0	MSD1 369, EIC=368.7:369.7
10 Surrogat	0.00	0.000	0	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0027

Sample Name:L0001359-19

Sample Info:

1

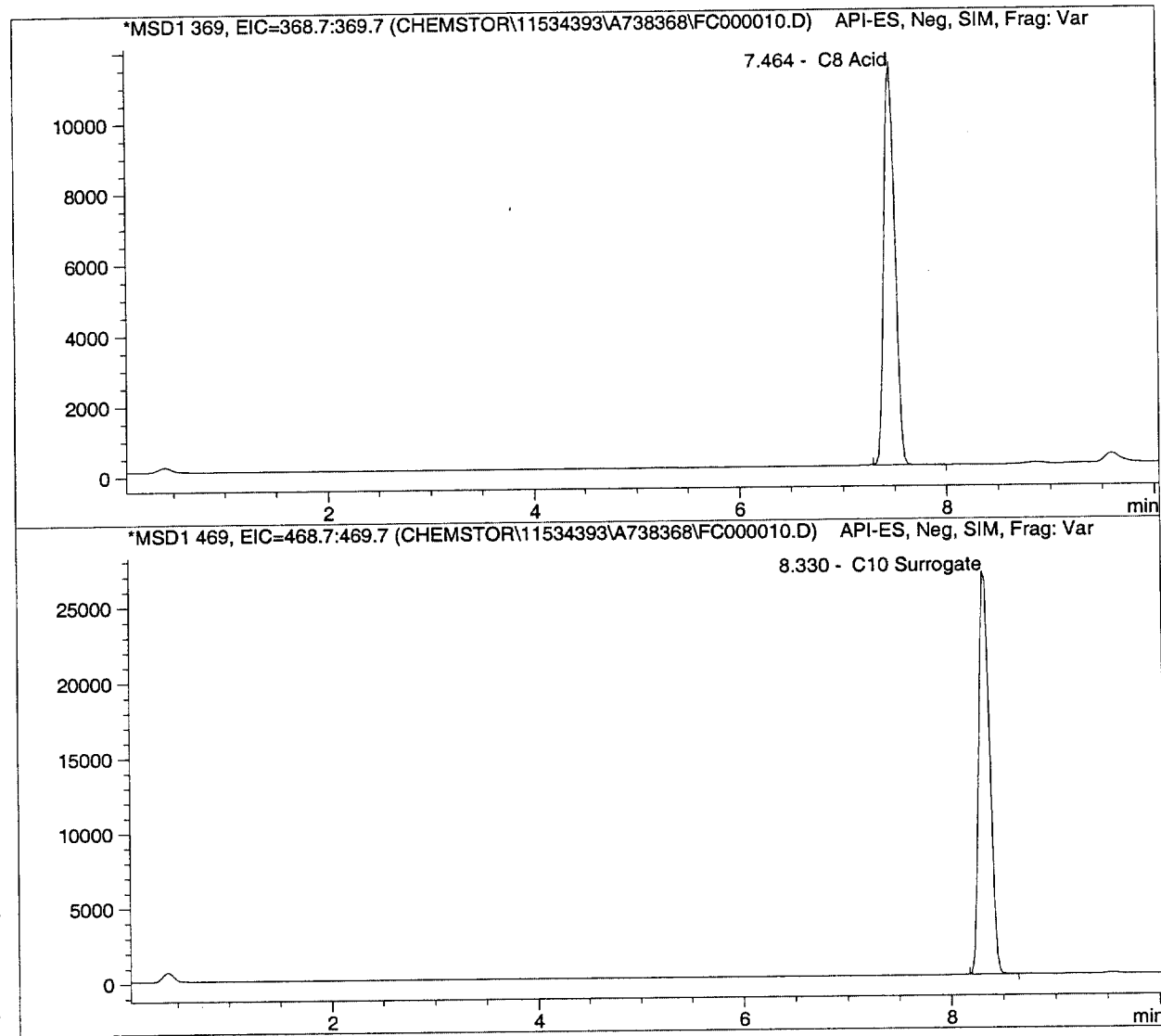
Data file :C:\HPCHEM\1\DATA\Chemstor\11534393\A738368\FC000010.D

=====

Injection Date	: 12/9/03	7:29:42 PM	Seq Line	:	10
Acq Operator	: jmillier		Vial No.	:	11
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	499.30	7.464	83579	MSD1 369, EIC=368.7:369.7
C10 Surrogat	889.29	8.330	196466	MSD1 469, EIC=468.7:469.7

*** End of Report ***

U028

Sample Name:L0001359-20

Sample Info:

1

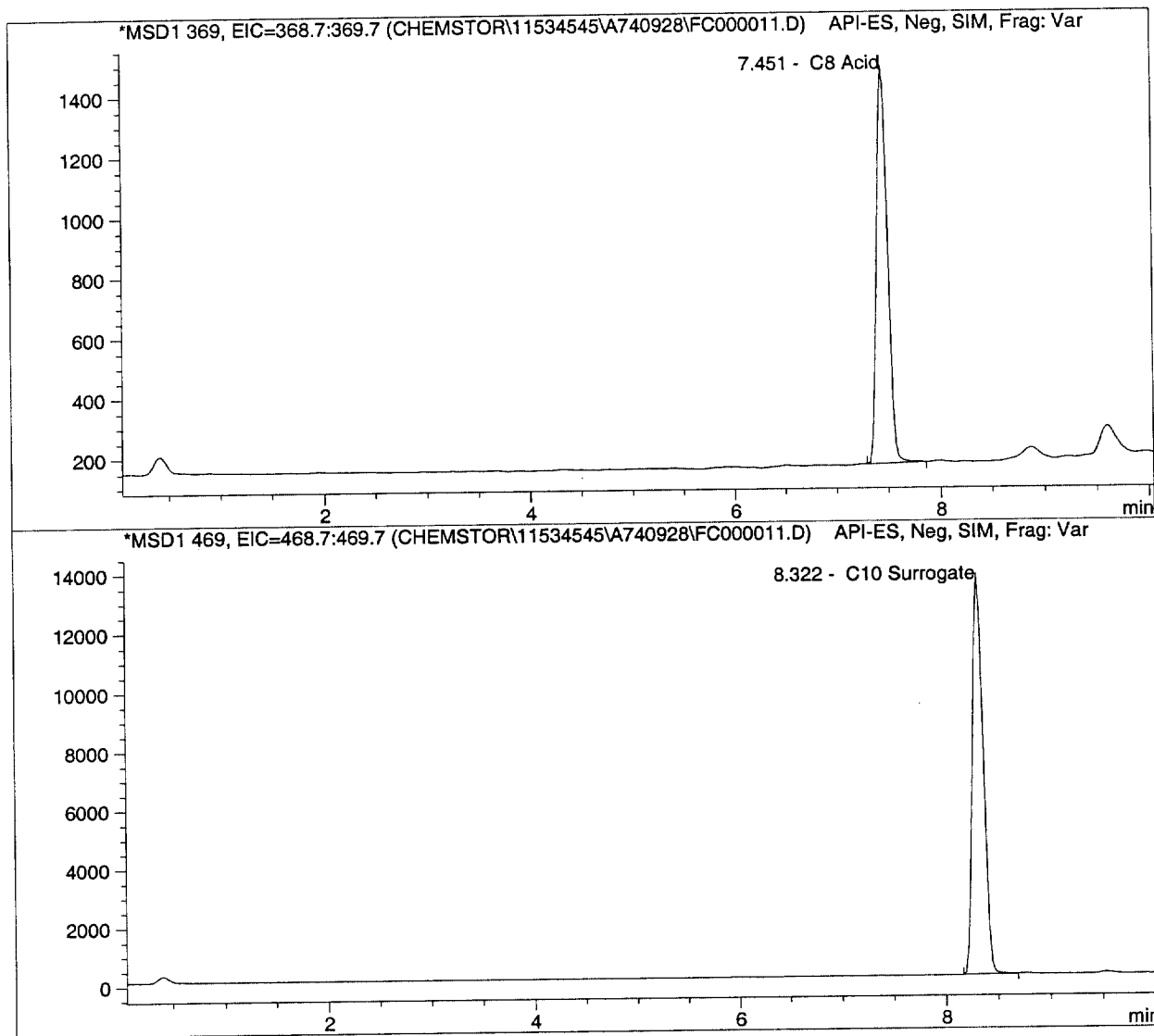
Data file :C:\HPCHEM\1\DATA\Chemstor\11534545\A740928\FC000011.D

=====

Injection Date	: 12/9/03	7:45:13 PM	Seq Line	:	11
Acq Operator	: jmillier		Vial No.	:	12
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	2.54	7.451	9717	MSD1 369, EIC=368.7:369.7
C10 Surrogat	412.47	8.322	98065	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0029

Sample Name:L0001359-1

Sample Info:

1

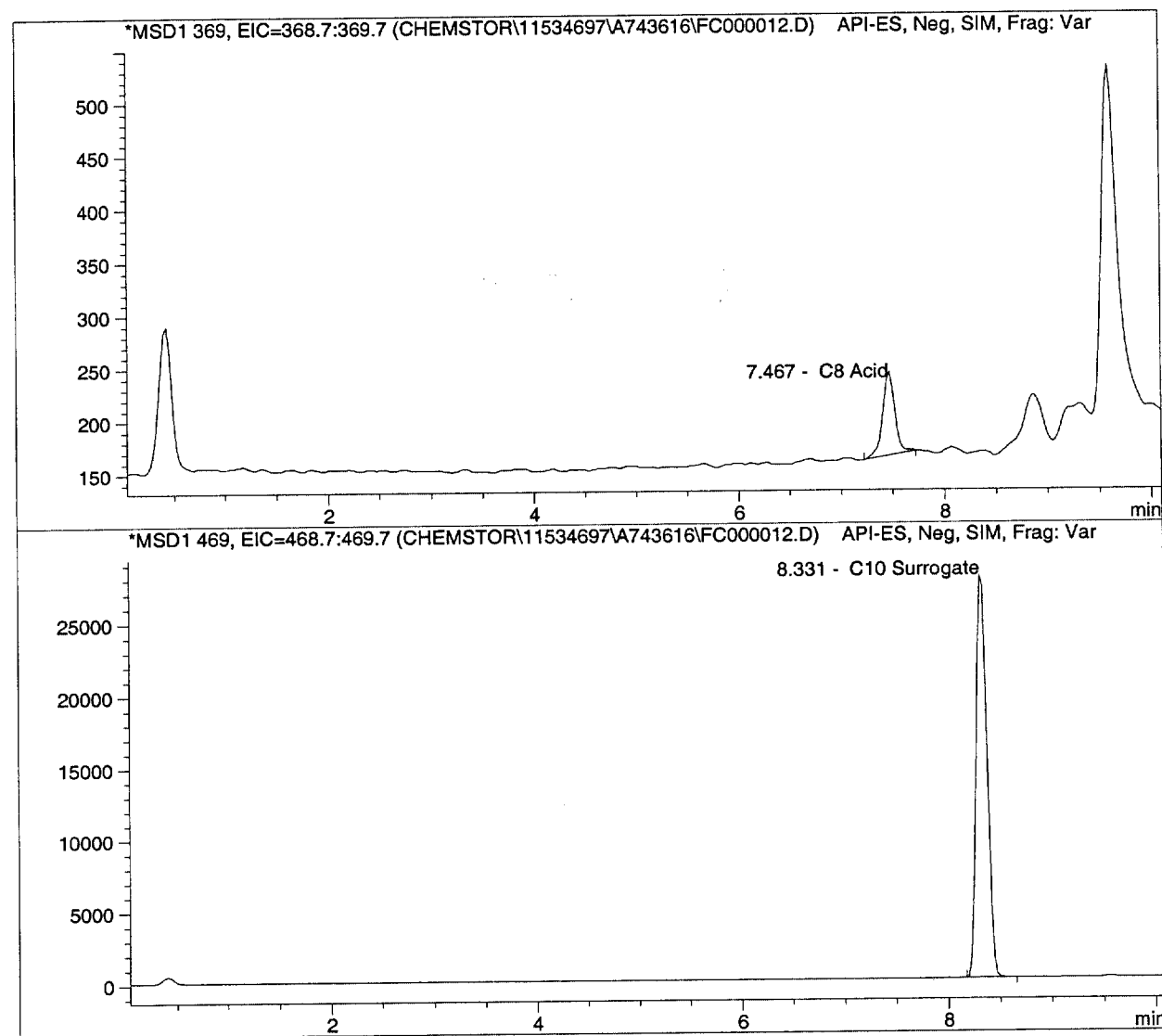
Data file :C:\HPCHEM\1\DATA\Chemstor\11534697\A743616\FC000012.D

=====

Injection Date	: 12/9/03	8:00:48 PM	Seq Line	:	12
Acq Operator	: jmillier		Vial No.	:	13
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	0.00	7.467	654	MSD1 369, EIC=368.7:369.7
C10 Surrogat	931.12	8.331	205098	MSD1 469, EIC=468.7:469.7

*** End of Report ***

Sample Name:L0001359-2

Sample Info:

1

Data file :C:\HPCHEM\1\DATA\Chemstor\11534847\A747072\FC000013.D

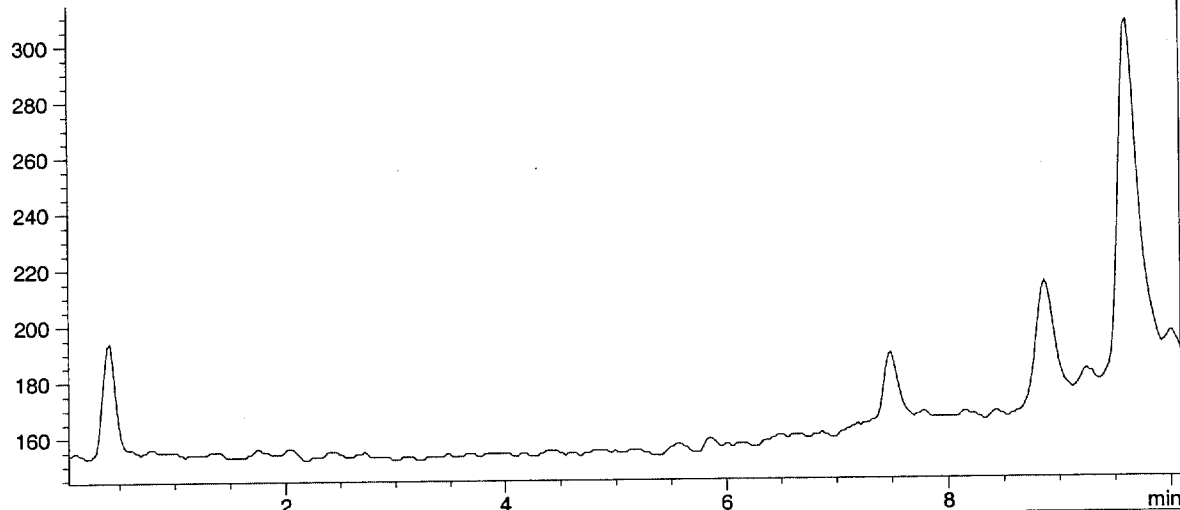
=====

Injection Date	: 12/9/03	8:16:26 PM	Seq Line	:	13
Acq Operator	: jmillier		Vial No.	:	14
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

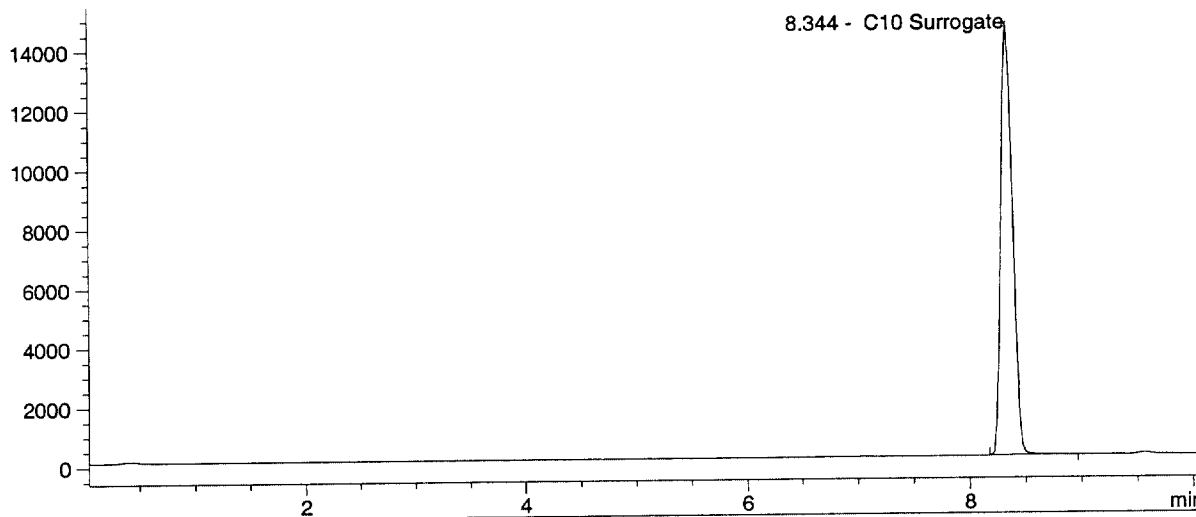
Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.

*MSD1 369, EIC=368.7:369.7 (CHEMSTOR\11534847\A747072\FC000013.D) API-ES, Neg, SIM, Frag: Var



*MSD1 469, EIC=468.7:469.7 (CHEMSTOR\11534847\A747072\FC000013.D) API-ES, Neg, SIM, Frag: Var



Compound	Amount (ng/mL)	R.T.	Area	Signal
18 Acid	0.00	0.000	0	MSD1 369, EIC=368.7:369.7
10 Surrogat	442.77	8.344	104318	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0031

Sample Name:L0001359-4

Sample Info:

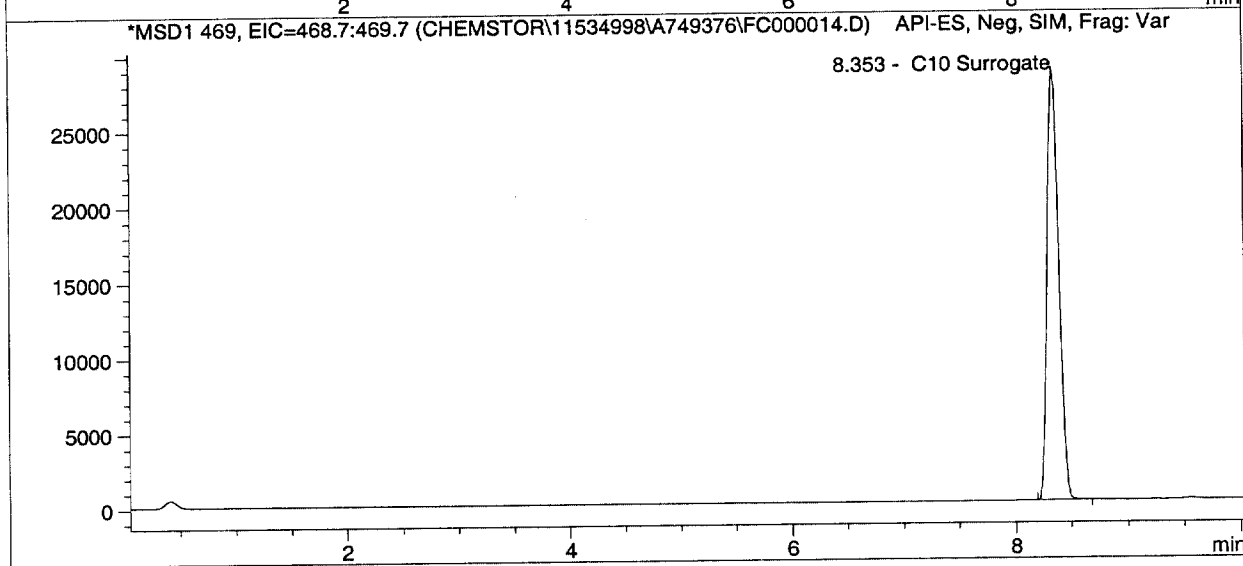
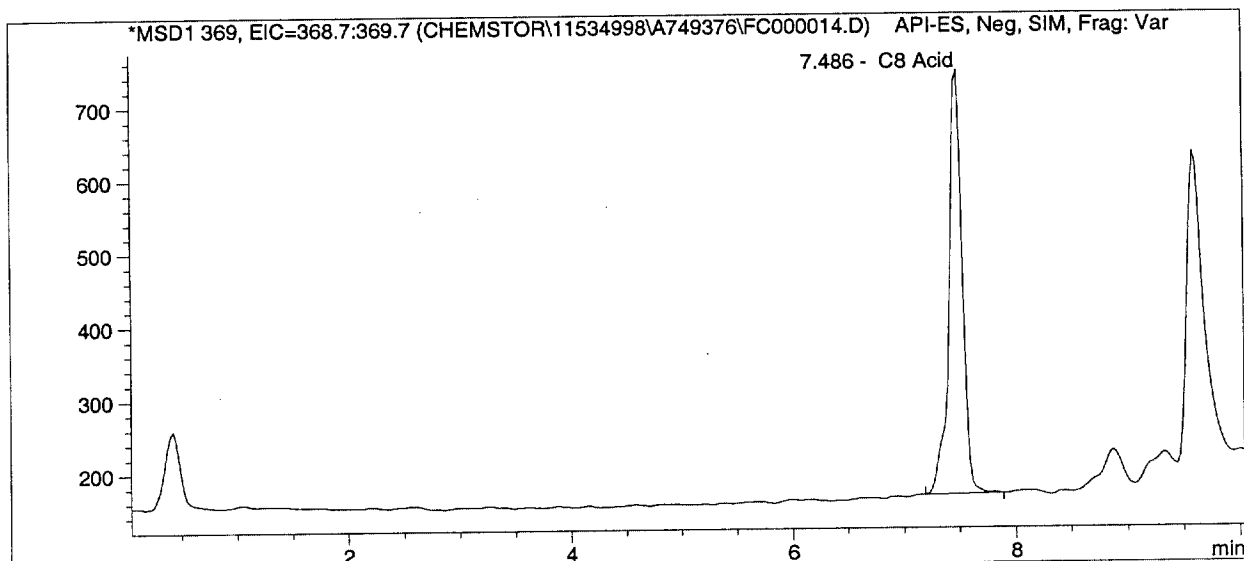
1

Data file :C:\HPCHEM\1\DATA\Chemstor\11534998\A749376\FC000014.D

Injection Date : 12/9/03 8:32:00 PM Seq Line : 14
Acq Operator : jmillers Vial No. : 15
Instrument : PC00414 Inj. No. : 1
Dilution : 1 Inj. Vol. : 5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	0.00	7.486	4908	MSD1 369, EIC=368.7:369.7
C10 Surrogat	945.92	8.353	208153	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0032

000175

Sample Name:L0001359-5

Sample Info:

1

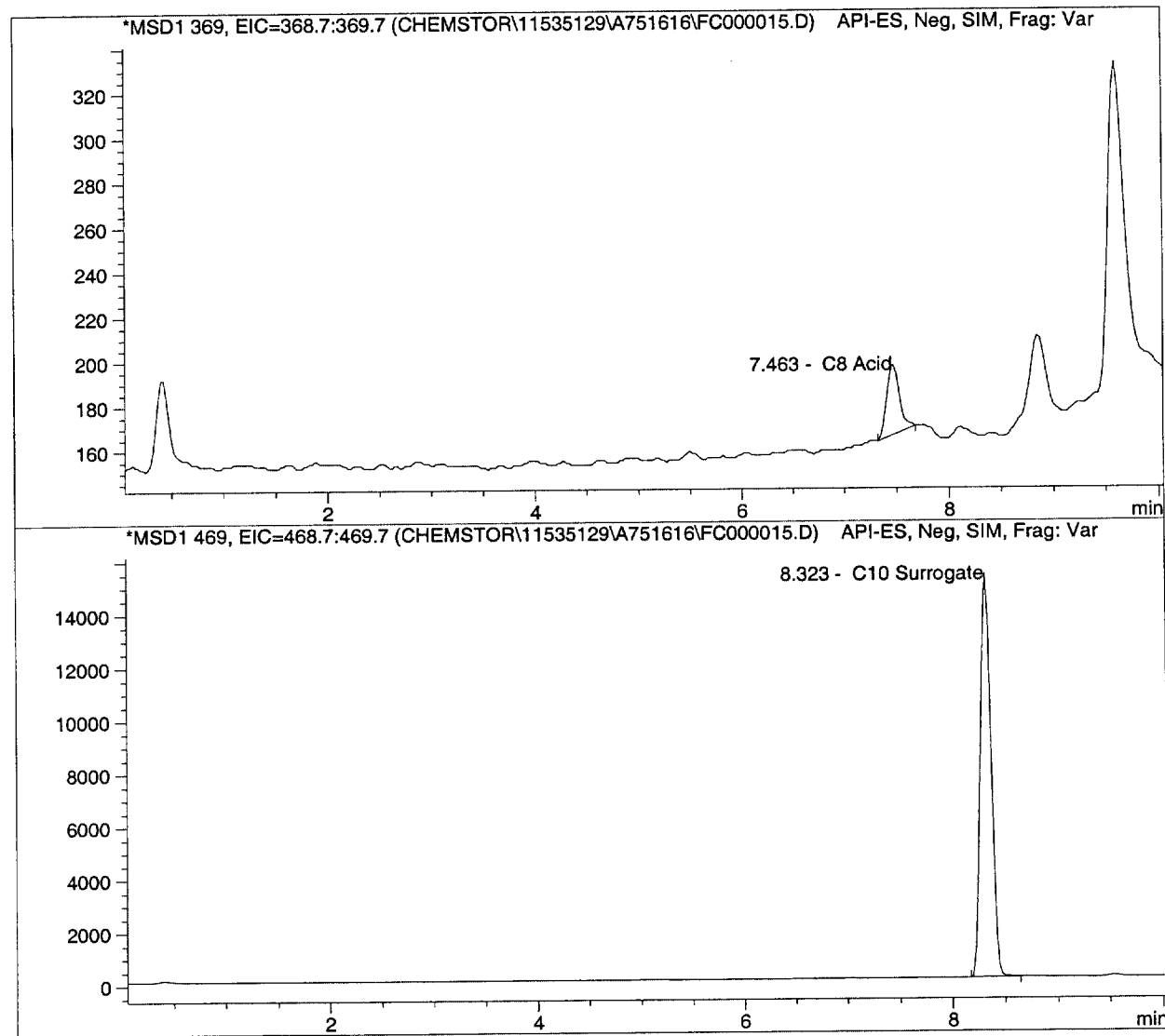
Data file :C:\HPCHEM\1\DATA\Chemstor\11535129\A751616\FC000015.D

=====

Injection Date	: 12/9/03	8:47:36 PM	Seq Line	:	15
Acq Operator	: jmillier		Vial No.	:	16
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	0.00	7.463	265	MSD1 369, EIC=368.7:369.7
C10 Surrogat	464.61	8.323	108826	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0033

Sample Name:L0001359-7

Sample Info:

1

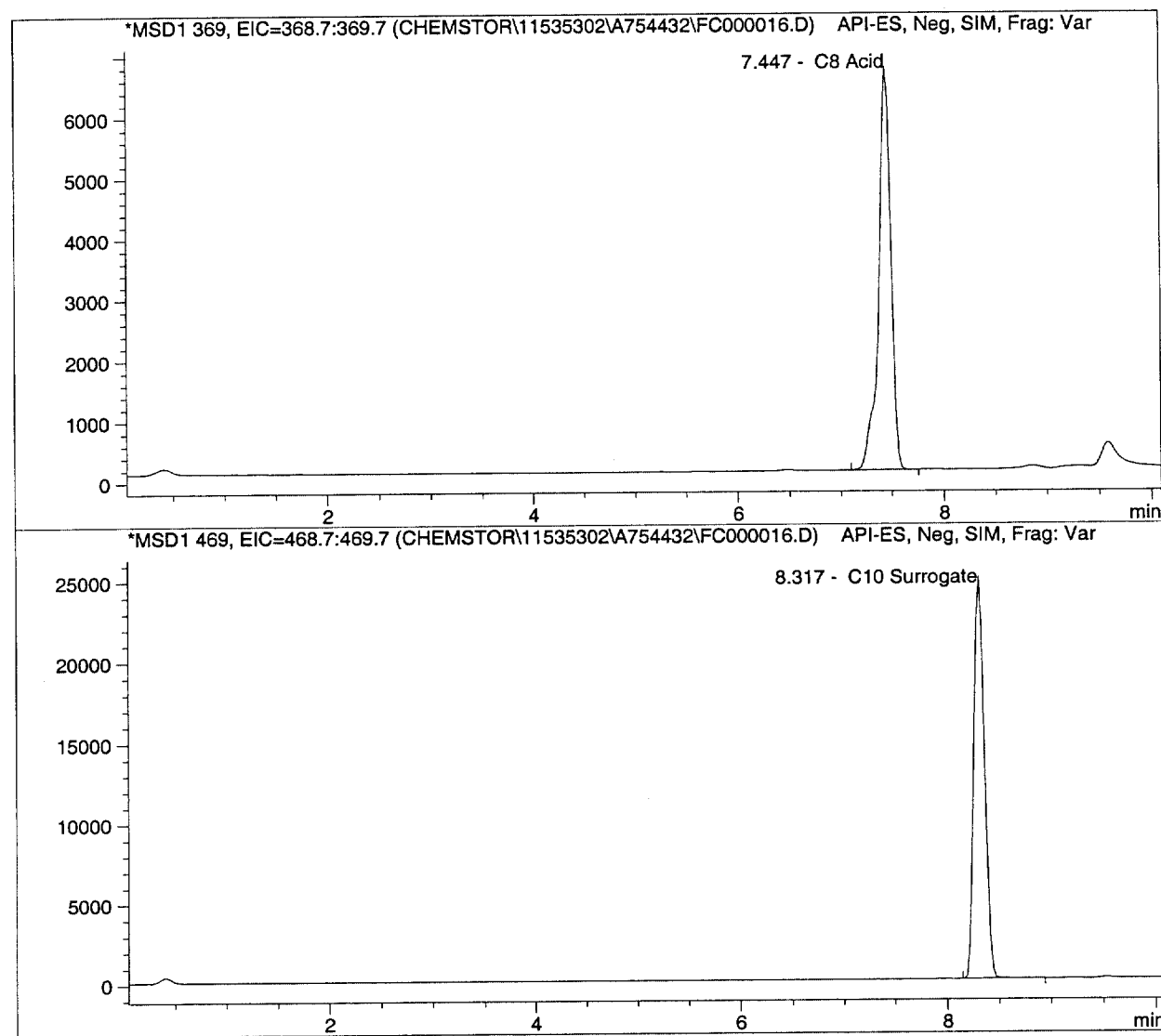
Data file :C:\HPCHEM\1\DATA\Chemstor\11535302\A754432\FC000016.D

=====

Injection Date	: 12/9/03	9:03:14 PM	Seq Line	:	16
Acq Operator	: jmillier		Vial No.	:	17
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	310.88	7.447	55563	MSD1 369, EIC=368.7:369.7
C10 Surrogat	802.05	8.317	178461	MSD1 469, EIC=468.7:469.7

=====
*** End of Report ***

0034

000177

Sample Name:L0001359-8

Sample Info:

1

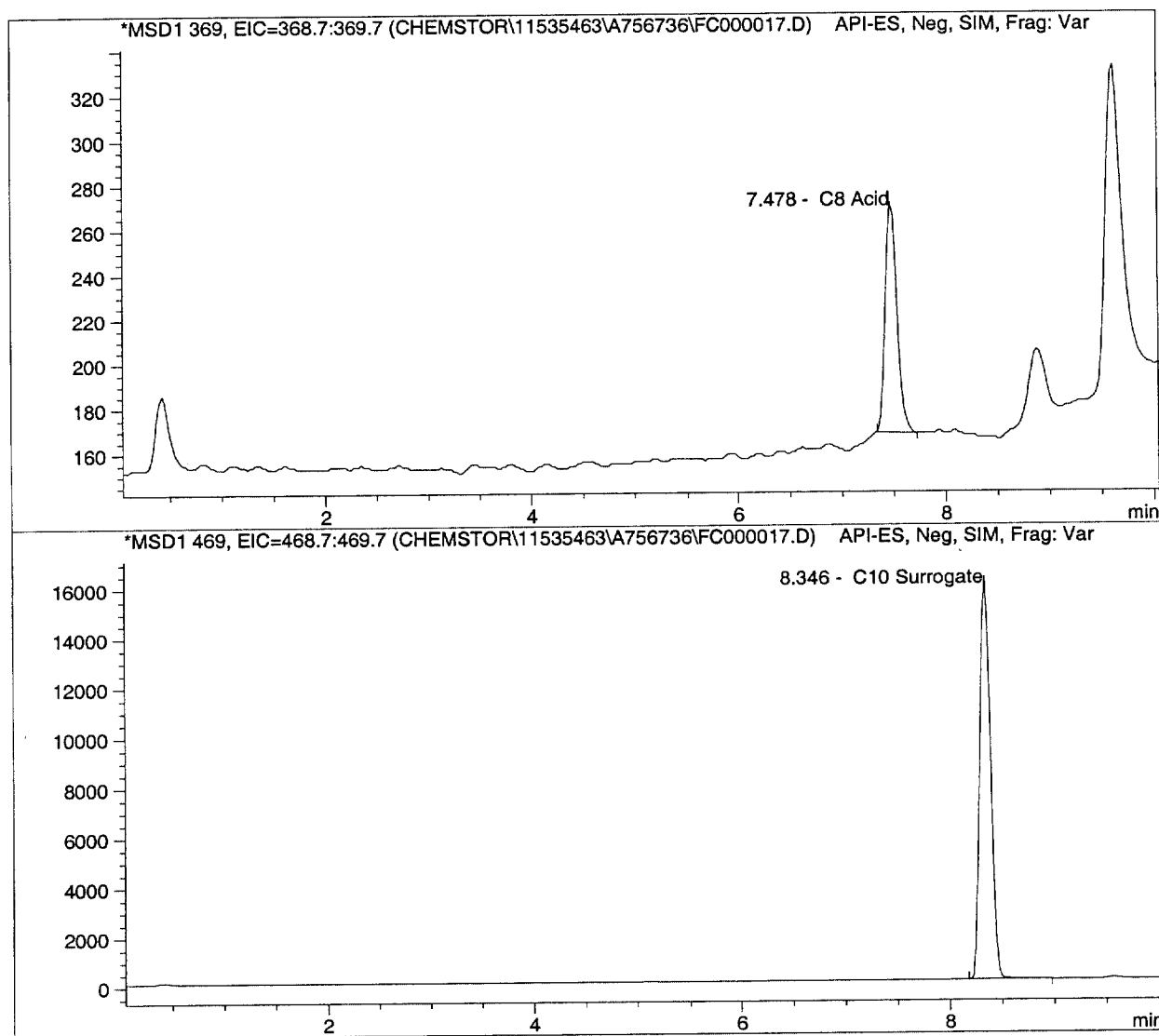
Data file :C:\HPCHEM\1\DATA\Chemstor\11535463\A756736\FC000017.D

=====

Injection Date	: 12/9/03	9:18:49 PM	Seq Line	:	17
Acq Operator	: jmillier		Vial No.	:	18
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	0.00	7.478	796	MSD1 369, EIC=368.7:369.7
C10 Surrogat	497.50	8.346	115613	MSD1 469, EIC=468.7:469.7

=====
*** End of Report ***

Sample Name:L0001359-10

Sample Info:

1

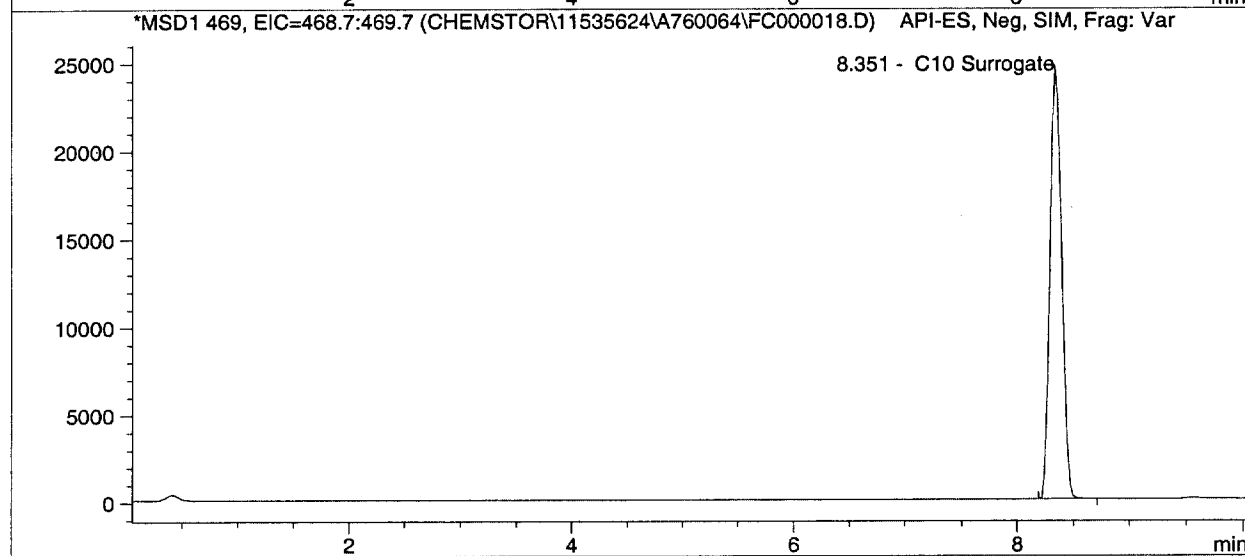
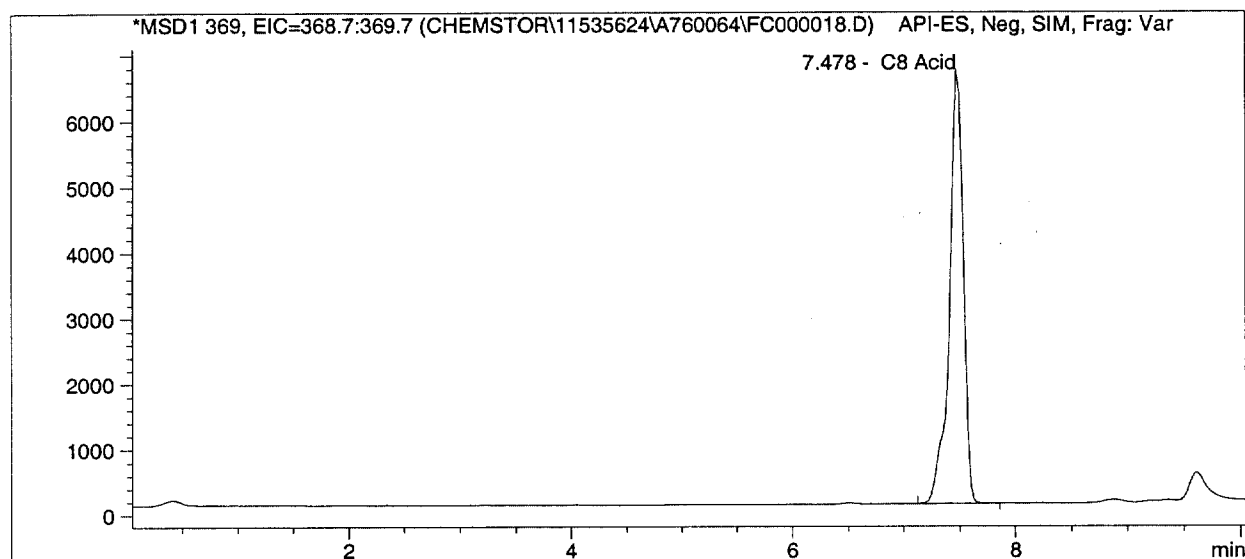
Data file :C:\HPCHEM\1\DATA\Chemstor\11535624\A760064\FC000018.D

=====

Injection Date	: 12/9/03	9:34:26 PM	Seq Line	:	18
Acq Operator	: jmillier		Vial No.	:	19
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	314.03	7.478	56031	MSD1 369, EIC=368.7:369.7
C10 Surrogat	797.47	8.351	177518	MSD1 469, EIC=468.7:469.7

=====
*** End of Report ***

0036

Sample Name:L0001359-11

Sample Info:

1

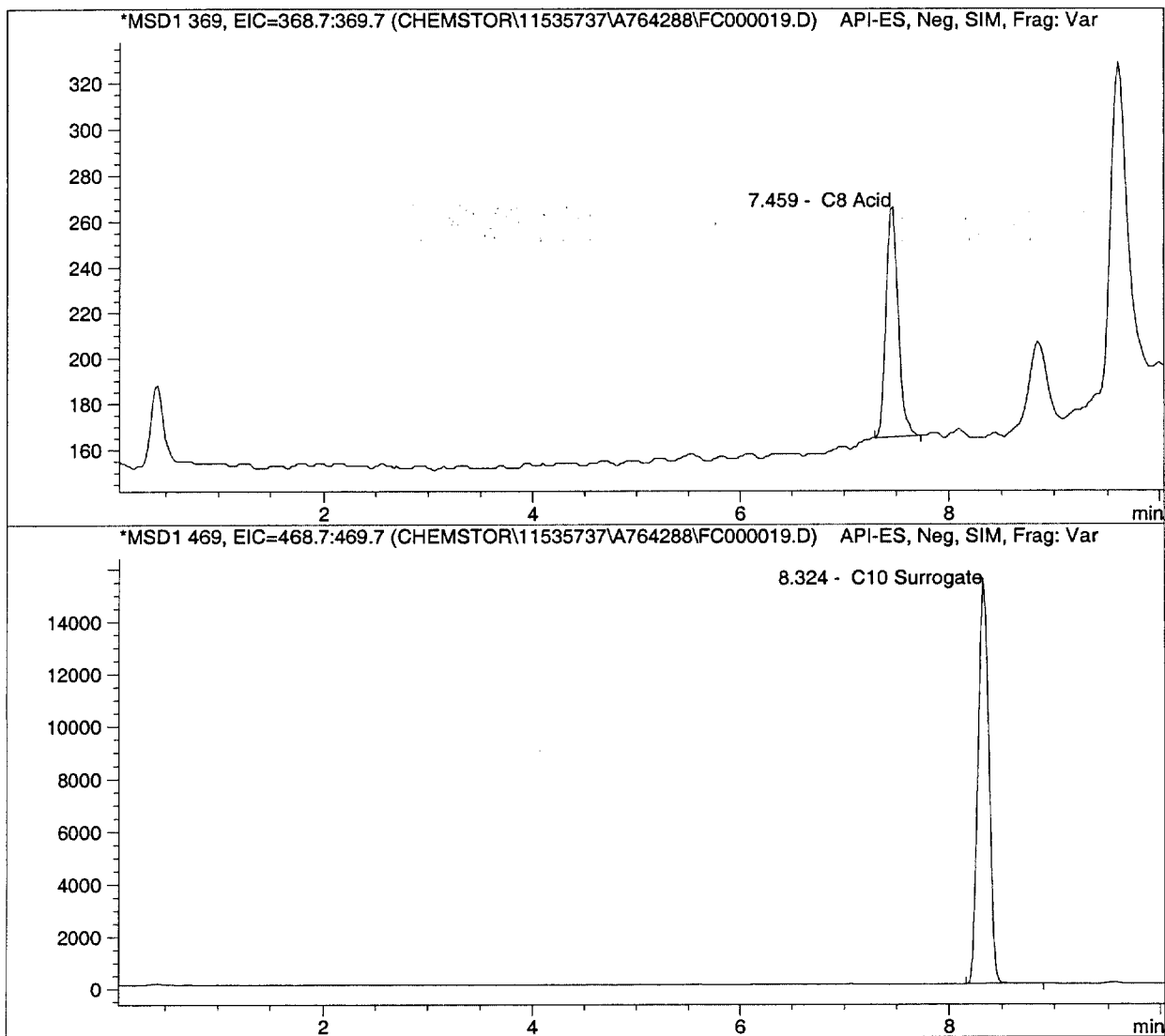
Data file :C:\HPCHEM\1\DATA\Chemstor\11535737\A764288\FC000019.D

=====

Injection Date	: 12/9/03	9:50:02 PM	Seq Line	:	19
Acq Operator	: jmillier		Vial No.	:	20
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	0.00	7.459	803	MSD1 369, EIC=368.7:369.7
C10 Surrogat	473.73	8.324	110708	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0037

Sample Name:STD 500 ppb

Sample Info:

1

Data file :C:\HPCHEM\1\DATA\Chemstor\11535837\A767232\FC000020.D

=====

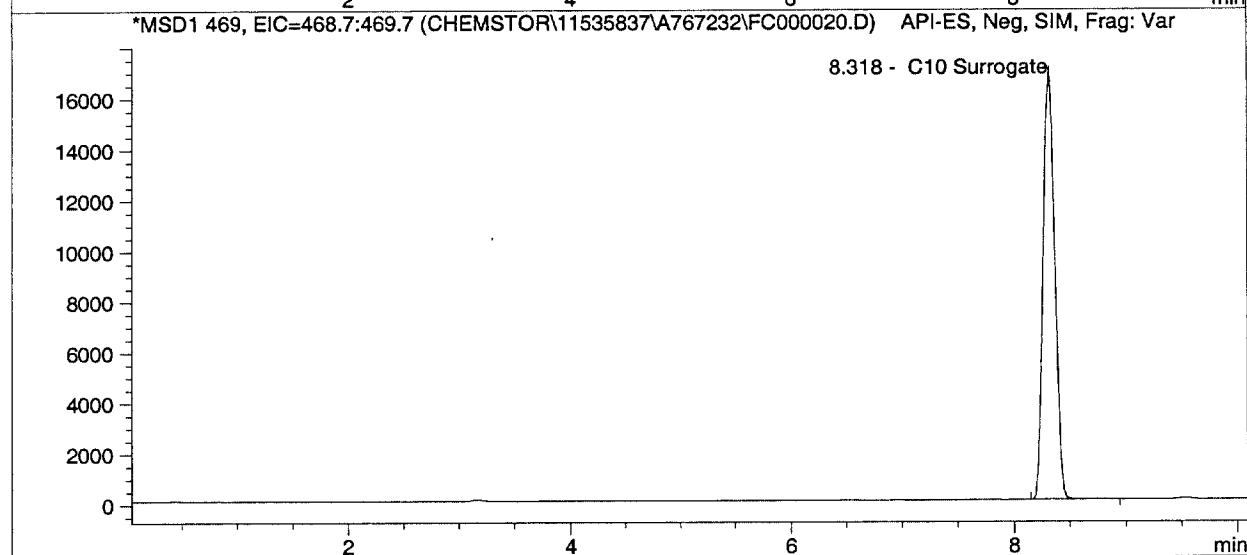
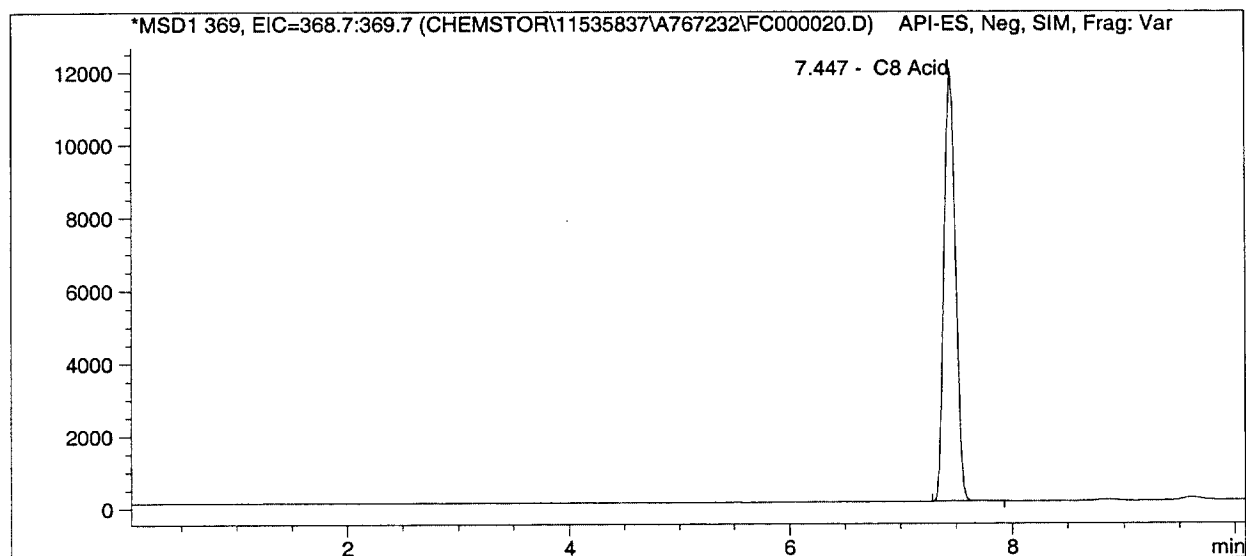
Injection Date	: 12/9/03	10:05:37 PM	Seq Line	:	20
Acq Operator	: jmillier		Vial No.	:	4
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M

Analysis Method : C:\HPCHEM\1\METHODS\120903.M

Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	516.46	7.447	86130	MSD1 369, EIC=368.7:369.7
C10 Surrogat	526.59	8.318	121615	MSD1 469, EIC=468.7:469.7

=====
*** End of Report ***

0038

000181

Sample Name: Solvent blank ,
Sample Info:

1

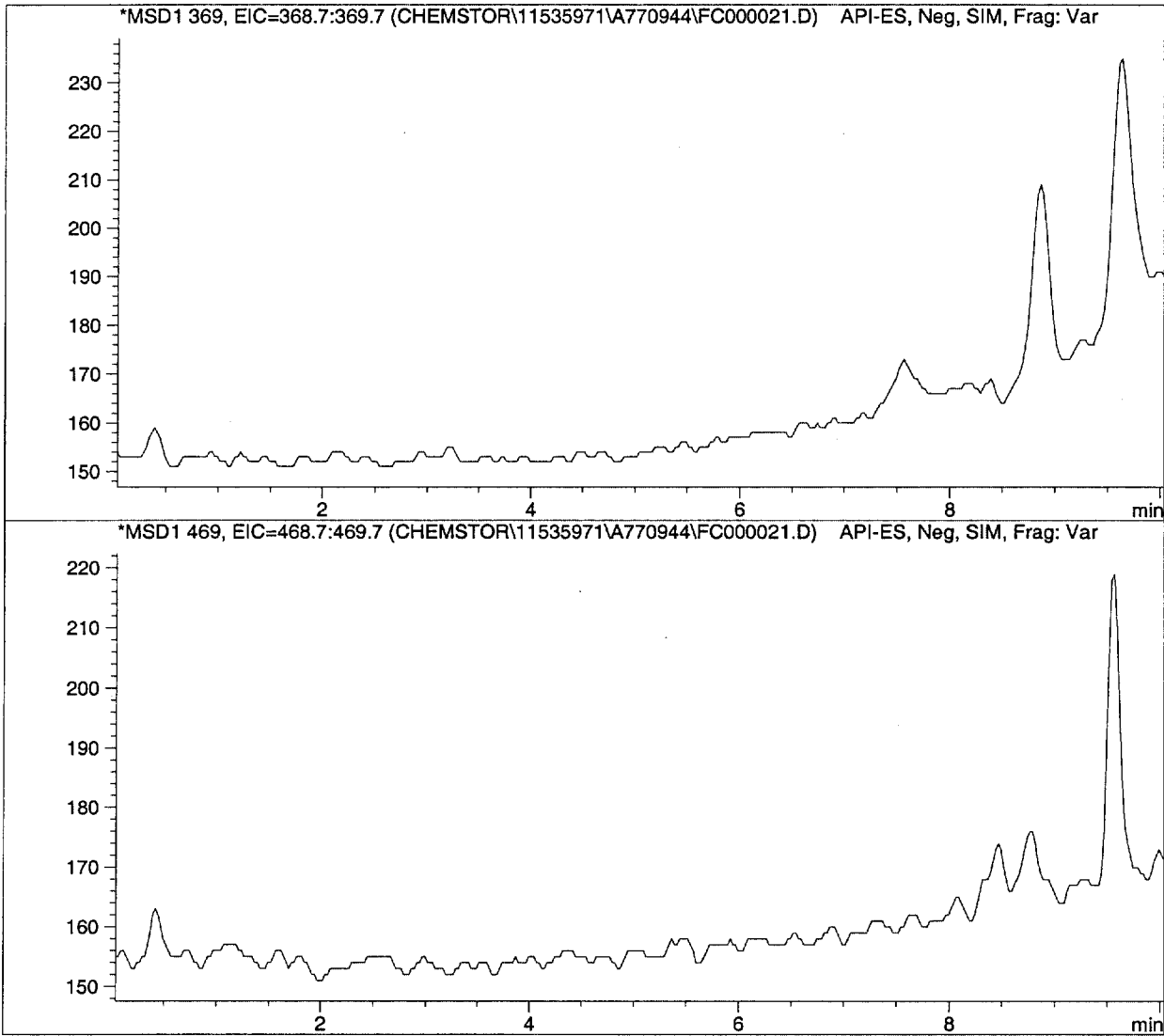
Data file : C:\HPCHEM\1\DATA\Chemstor\11535971\A770944\FC000021.D

=====

Injection Date	: 12/9/03	10:21:06 PM	Seq Line	:	21
Acq Operator	: jmillier		Vial No.	:	92
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
18 Acid	0.00	0.000	0	MSD1 369, EIC=368.7:369.7
10 Surrogat	0.00	0.000	0	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0039

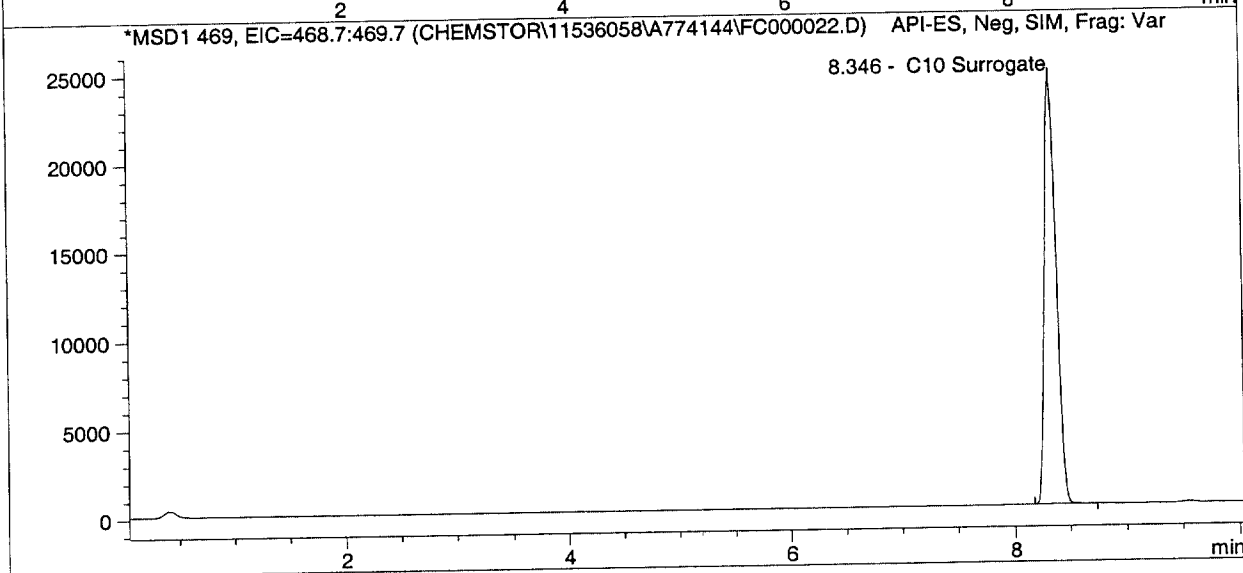
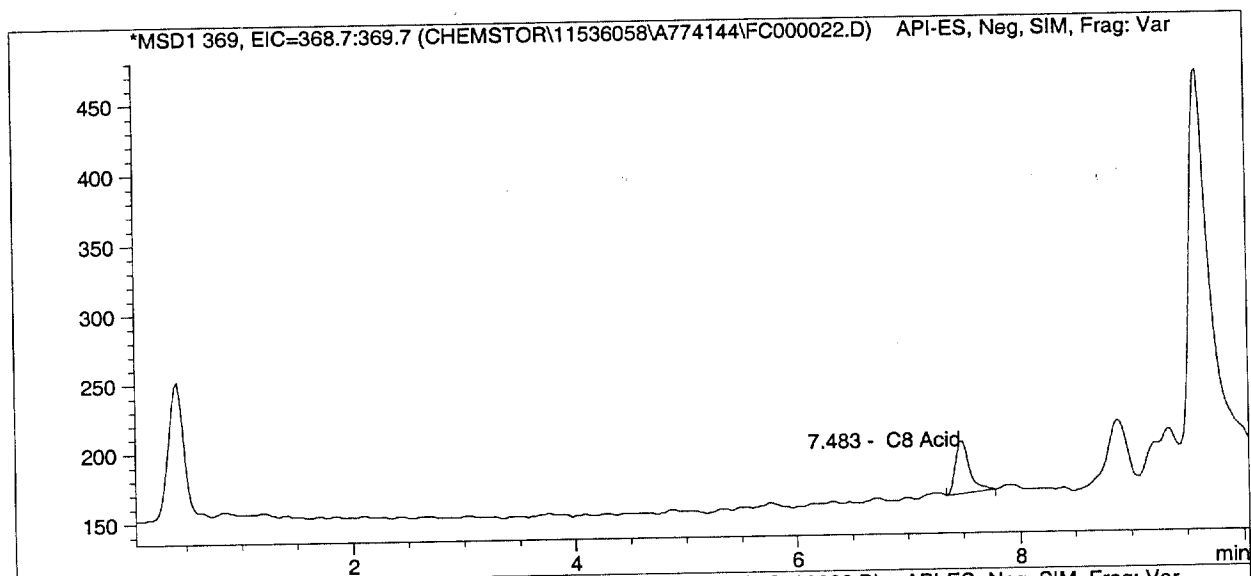
Sample Name: L0001359-13
Sample Info:

Data file : C:\HPCHEM\1\DATA\Chemstor\11536058\A774144\FC000022.D

=====
Injection Date : 12/9/03 10:36:38 PM Seq Line : 22
Acq Operator : jmillar Vial No. : 21
Instrument : PC00414 Inj. No. : 1
Dilution : 1 Inj. Vol. : 5 µl
=====

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	0.00	7.483	330	MSD1 369, EIC=368.7:369.7
C10 Surrogat	793.64	8.346	176726	MSD1 469, EIC=468.7:469.7

=====
*** End of Report ***

0040

000183

Sample Name:L0001359-14

Sample Info:

1

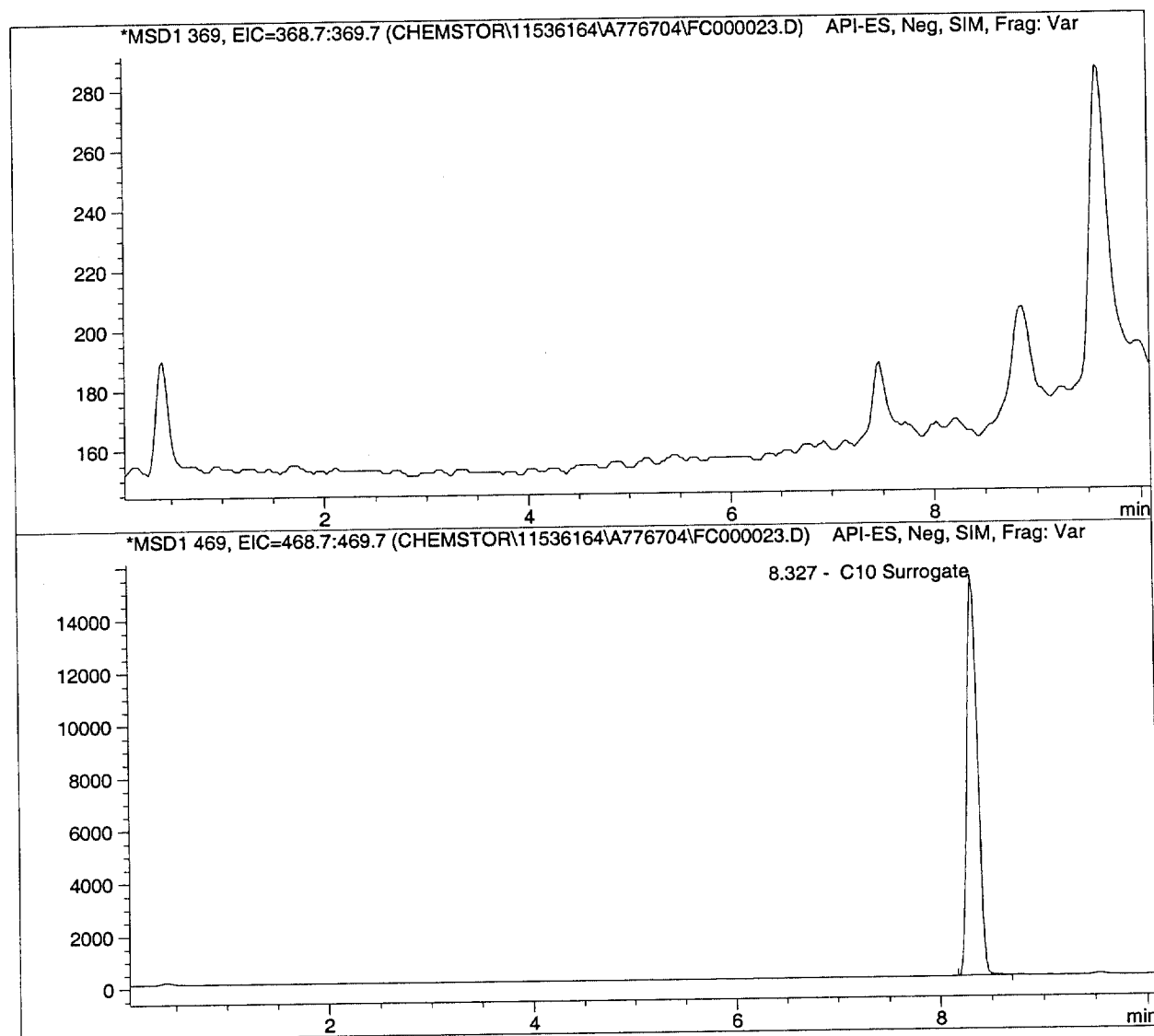
Data file :C:\HPCHEM\1\DATA\Chemstor\11536164\A776704\FC000023.D

=====

Injection Date	: 12/9/03	10:52:11 PM	Seq Line	:	23
Acq Operator	: jmillar		Vial No.	:	22
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
8 Acid	0.00	0.000	0	MSD1 369, EIC=368.7:369.7
10 Surrogat	470.53	8.327	110047	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0041

Sample Name:L0001359-16

Sample Info:

1

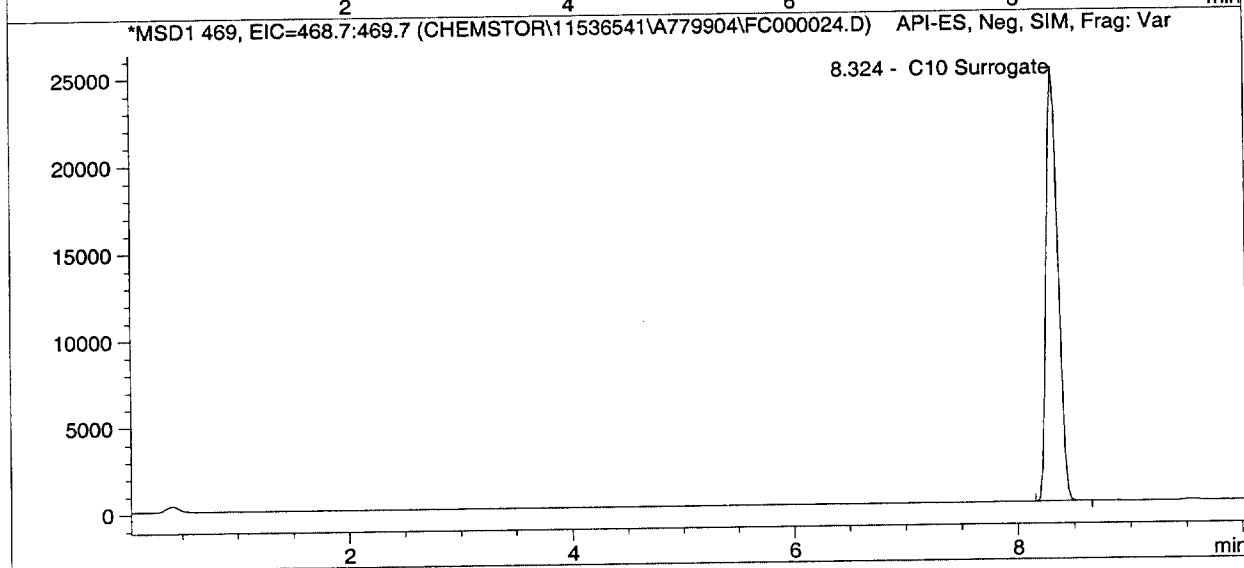
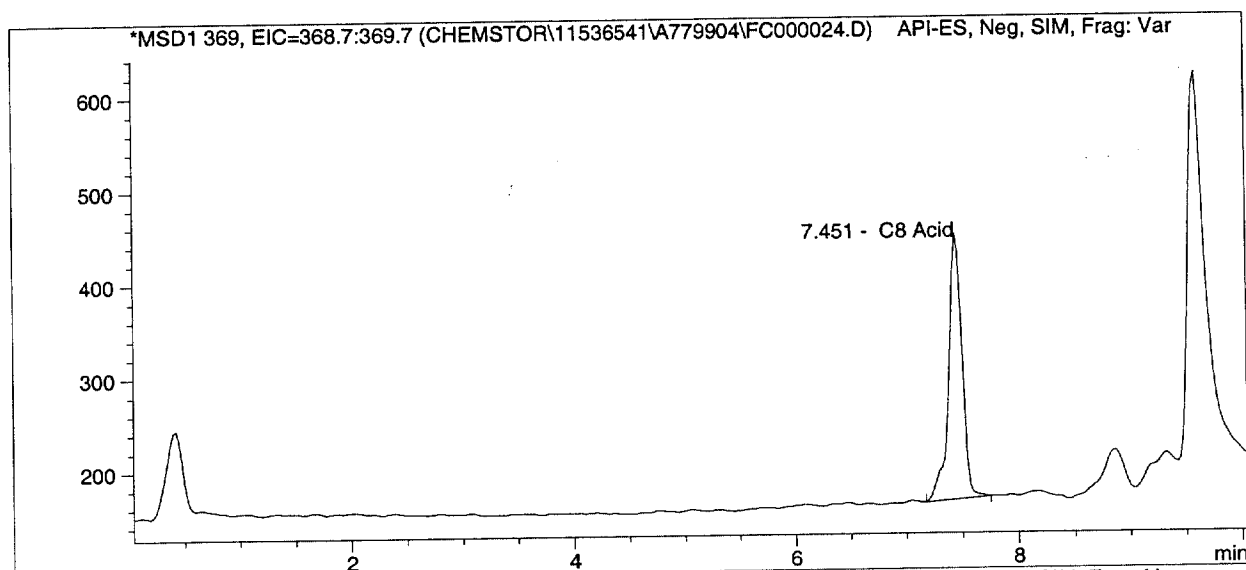
Data file :C:\HPCHEM\1\DATA\Chemstor\11536541\A779904\FC000024.D

=====

Injection Date	: 12/9/03	11:07:49 PM	Seq Line	:	24
Acq Operator	: jmillier		Vial No.	:	23
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	0.00	7.451	2365	MSD1 369, EIC=368.7:369.7
C10 Surrogat	804.04	8.324	178872	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0042

Sample Name: L0001359-17

Sample Info:

1

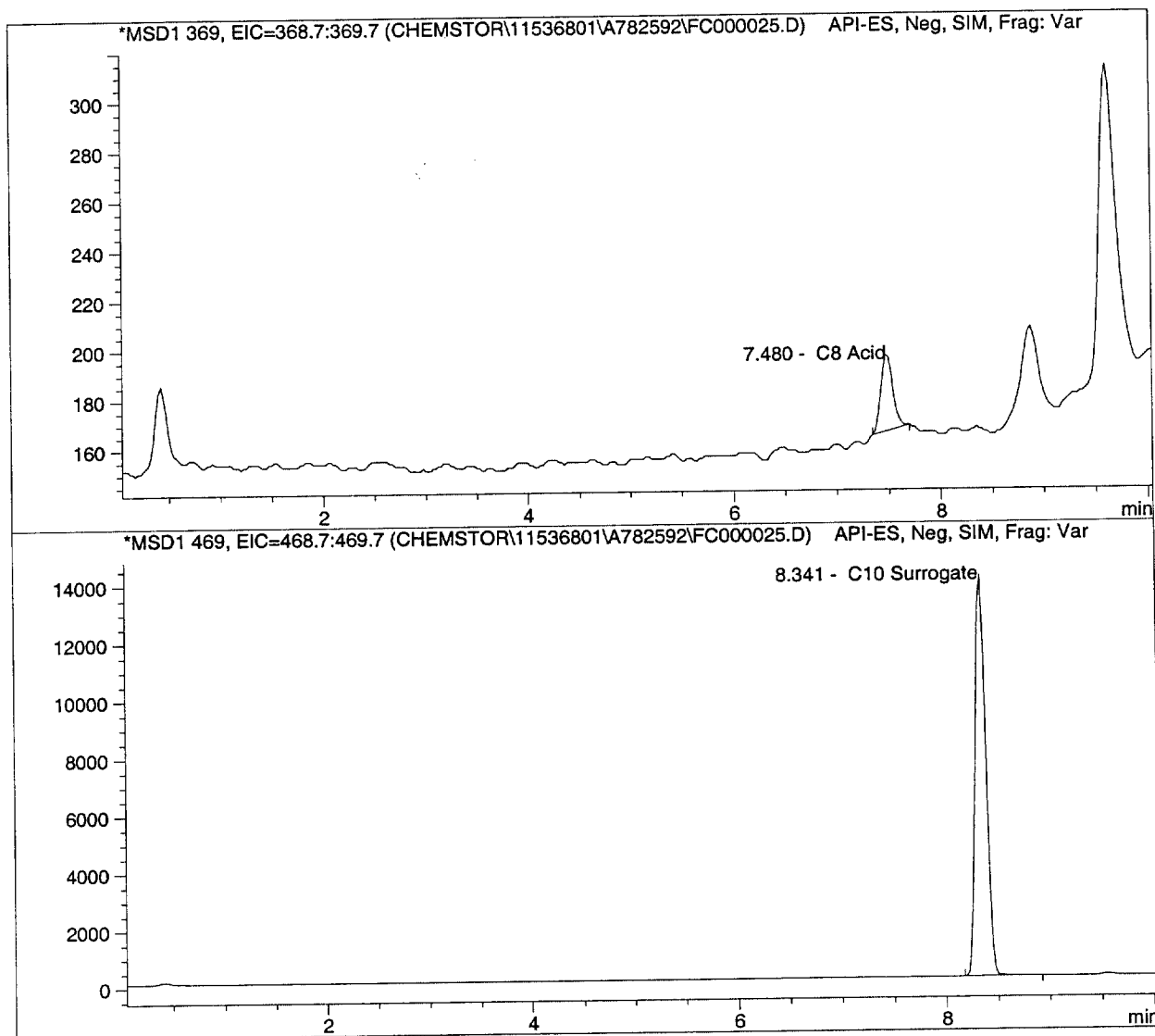
Data file : C:\HPCHEM\1\DATA\Chemstor\11536801\A782592\FC000025.D

=====

Injection Date	: 12/9/03	11:23:24 PM	Seq Line	:	25
Acq Operator	: jmillar		Vial No.	:	24
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	0.00	7.480	246	MSD1 369, EIC=368.7:369.7
C10 Surrogat	423.56	8.341	100354	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0043

Sample Name:STD 500 ppb
Sample Info:

1

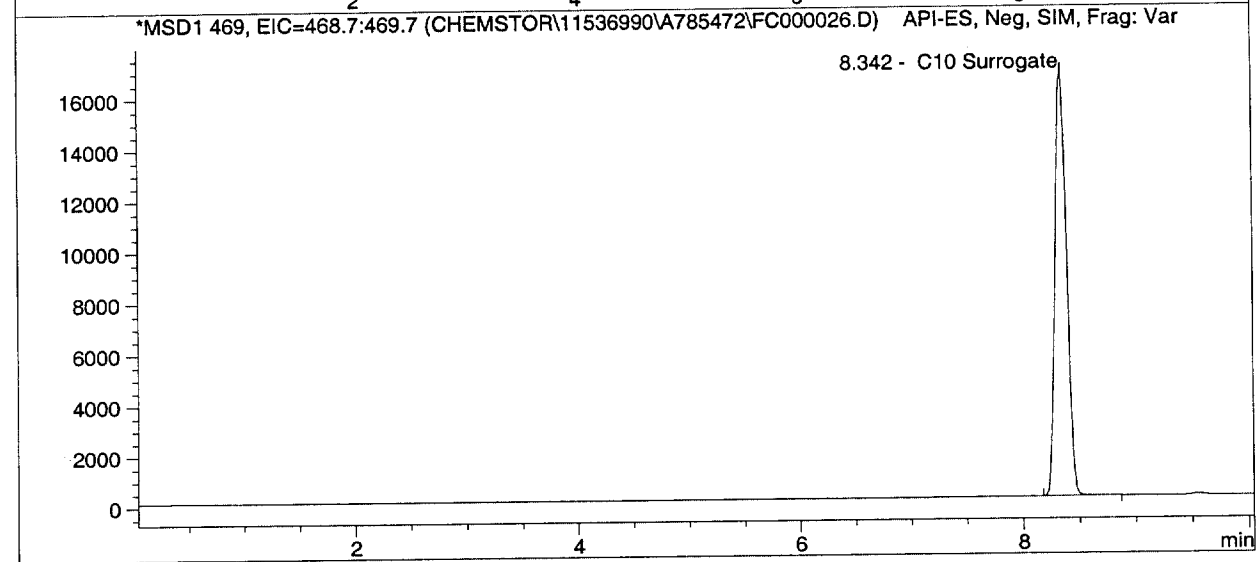
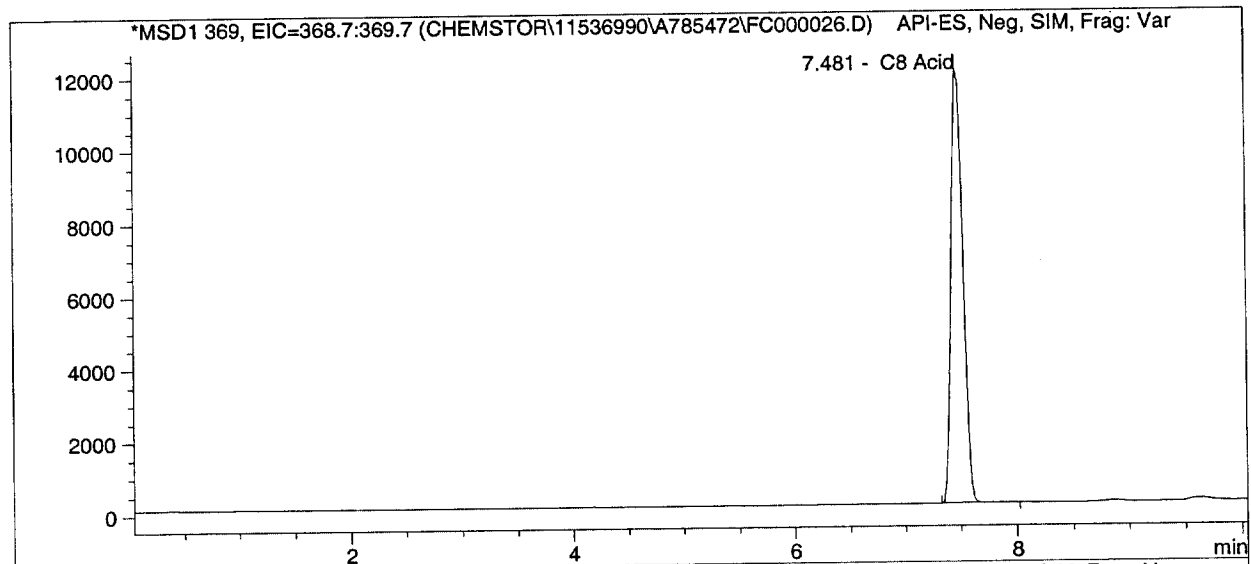
Data file :C:\HPCHEM\1\DATA\Chemstor\11536990\A785472\FC000026.D

=====

Injection Date	: 12/9/03	11:38:58 PM	Seq Line	:	26
Acq Operator	: jmillier		Vial No.	:	4
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	529.14	7.481	88015	MSD1 369, EIC=368.7:369.7
C10 Surrogat	530.73	8.342	122470	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0044

Sample Name: Solvent blank
Sample Info:

1

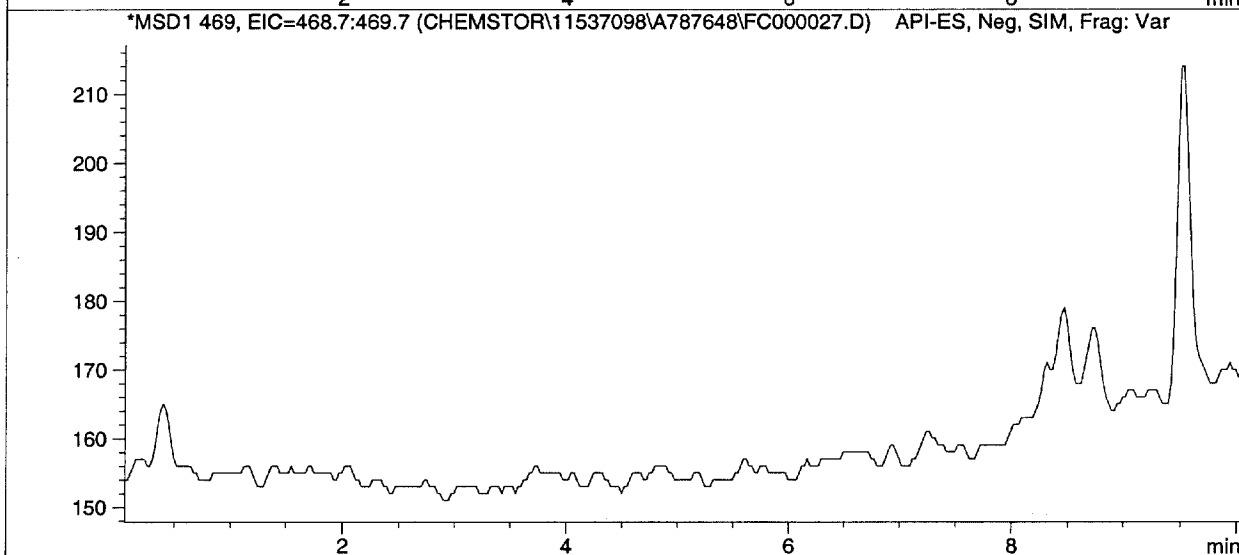
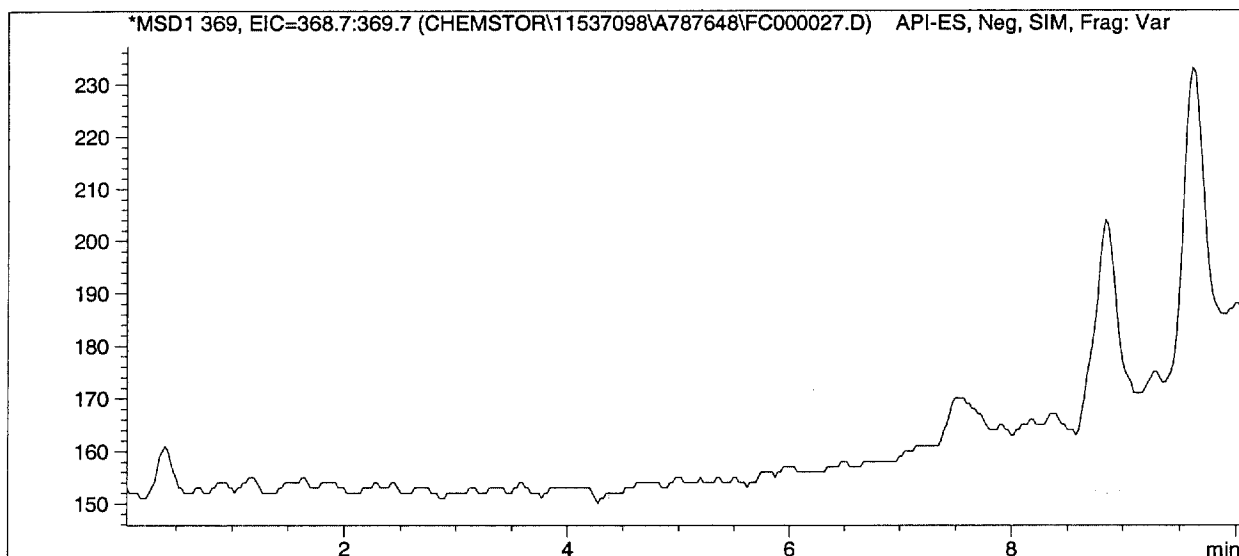
Data file : C:\HPCHEM\1\DATA\Chemstor\11537098\A787648\FC000027.D

=====

Injection Date	: 12/9/03	11:54:26 PM	Seq Line	:	27
Acq Operator	: jmillier		Vial No.	:	92
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
8 Acid	0.00	0.000	0	MSD1 369, EIC=368.7:369.7
10 Surrogat	0.00	0.000	0	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0045

000188

Sample Name:STD 50 ppb

Sample Info:

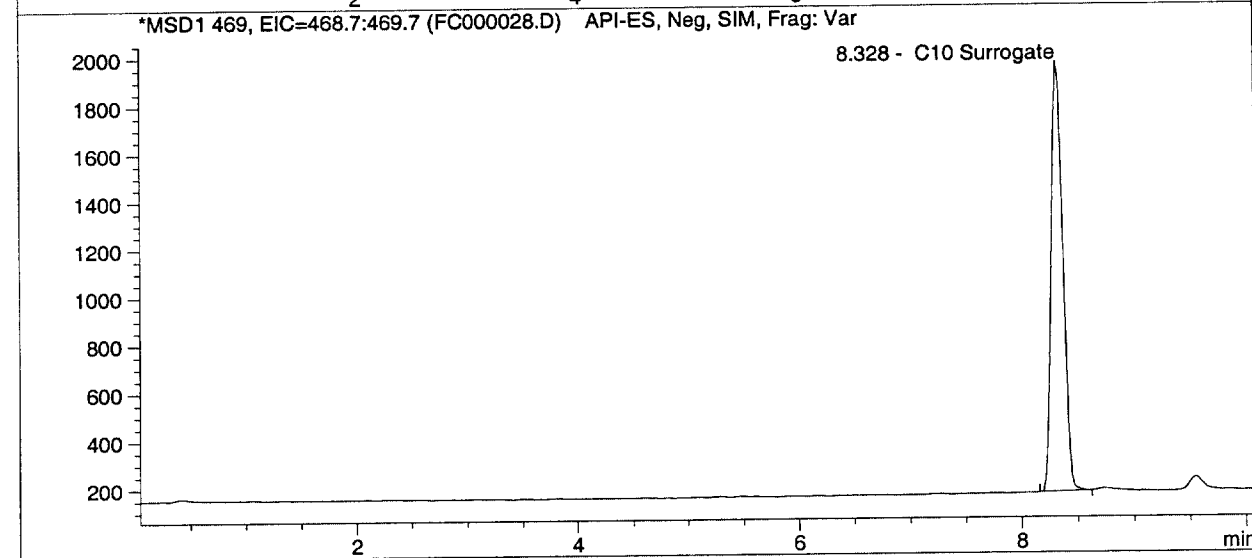
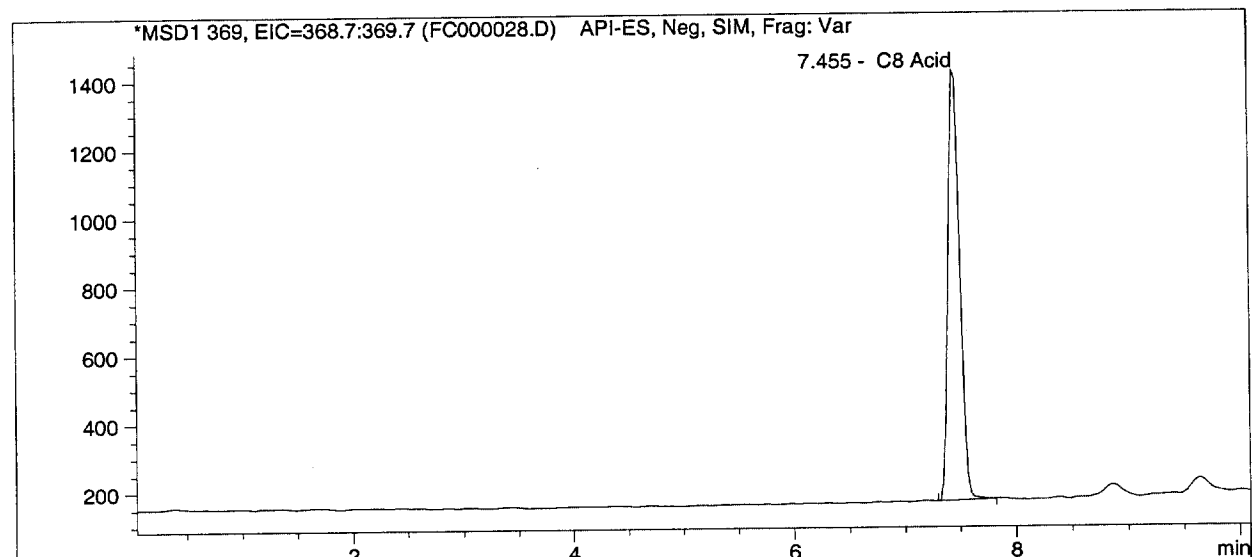
1

Data file :C:\HPCHEM\1\DATA\FC000028.D

=====
Injection Date : 12/10/03 12:09:58 AM Seq Line : 28
Acq Operator : jmillier Vial No. : 1
Instrument : PC00414 Inj. No. : 1
Dilution : 1 Inj. Vol. : 5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	0.08	7.455	9352	MSD1 369, EIC=368.7:369.7
C10 Surrogat	0.27	8.328	13001	MSD1 469, EIC=468.7:469.7

=====
*** End of Report ***

Sample Name:STD 100 ppb

Sample Info:

1

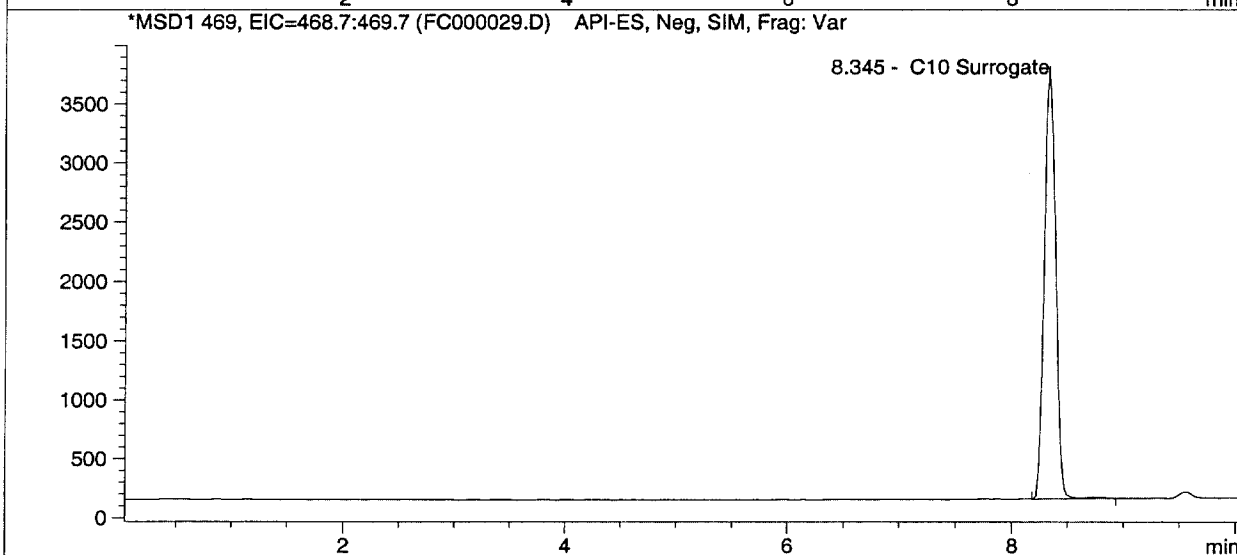
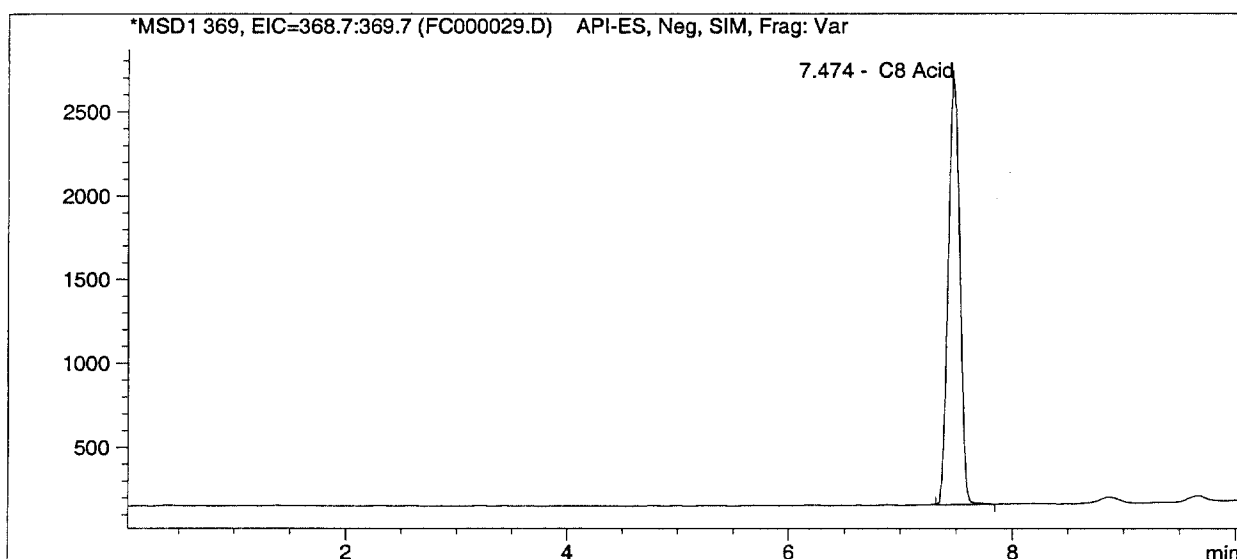
Data file :C:\HPCHEM\1\DATA\FC000029.D

=====

Injection Date	: 12/10/03	12:25:30 AM	Seq Line	:	29
Acq Operator	: jmillier		Vial No.	:	2
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	62.42	7.474	18620	MSD1 369, EIC=368.7:369.7
10 Surrogat	63.94	8.345	26139	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0047

Sample Name:STD 250 ppb

Sample Info:

1

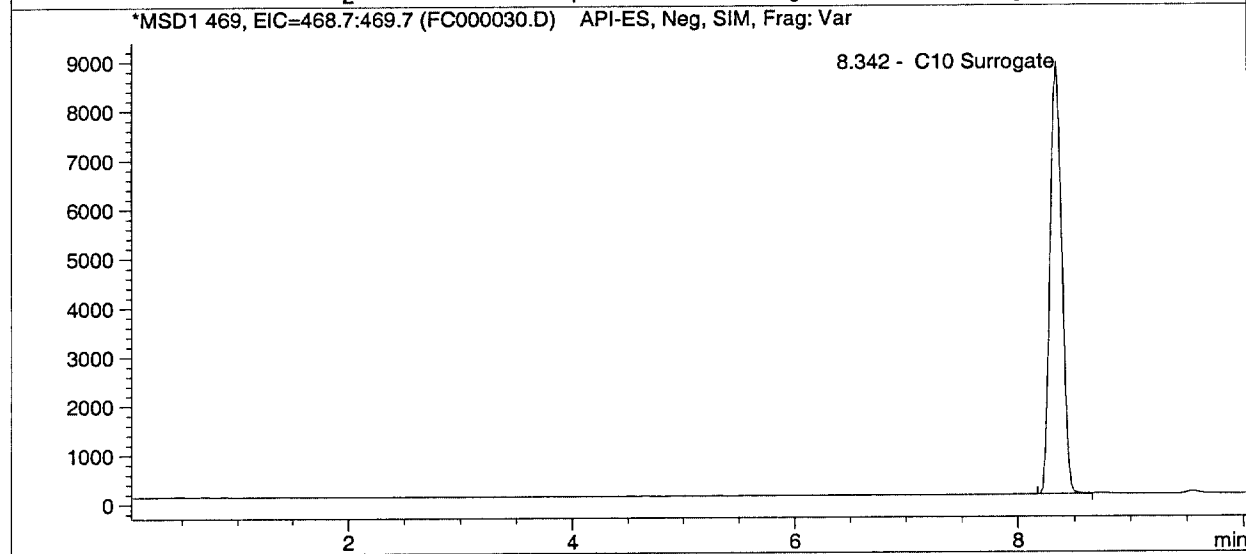
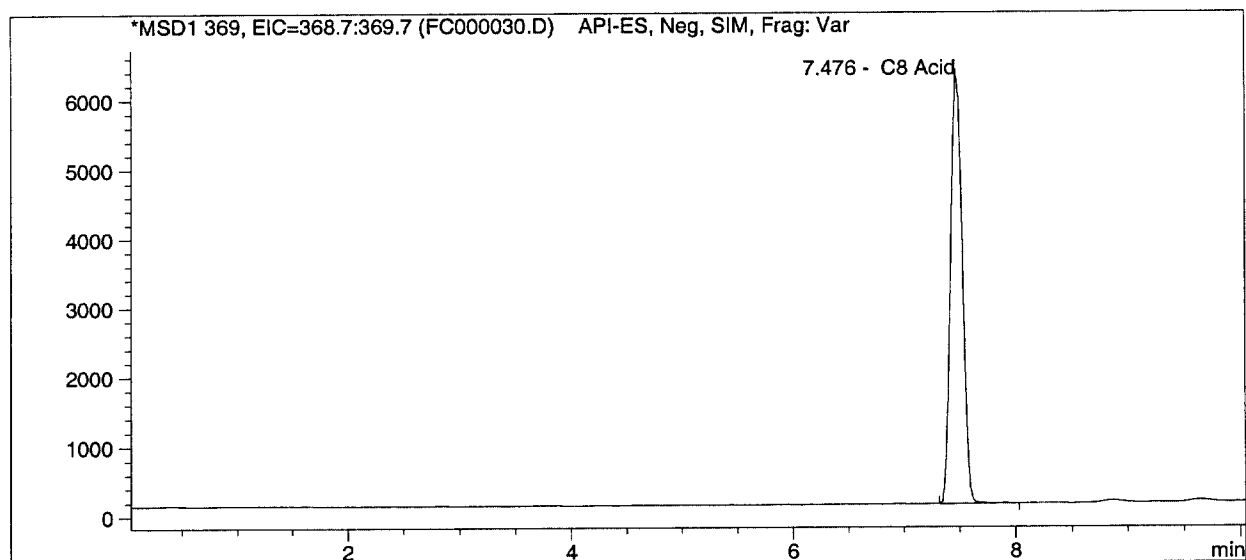
Data file :C:\HPCHEM\1\DATA\FC000030.D

=====

Injection Date	: 12/10/03	12:41:03 AM	Seq Line	:	30
Acq Operator	: jmillar		Vial No.	:	3
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	243.39	7.476	45528	MSD1 369, EIC=368.7:369.7
C10 Surrogat	242.11	8.342	62908	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0048

000191

Sample Name:STD 500 ppb
Sample Info:

1

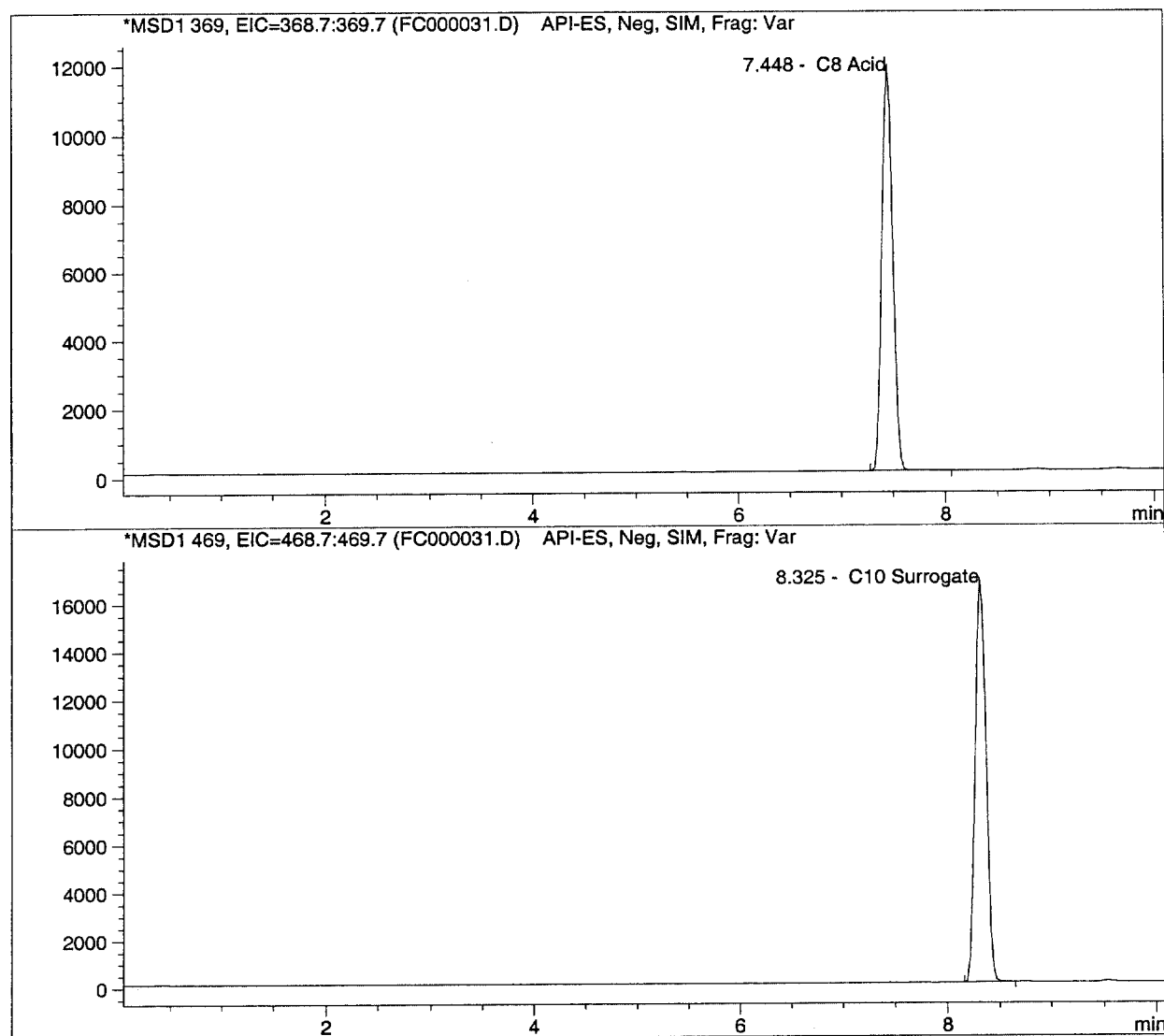
Data file :C:\HPCHEM\1\DATA\FC000031.D

=====

Injection Date	: 12/10/03	12:56:38 AM	Seq Line	:	31
Acq Operator	: jmillar		Vial No.	:	4
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	514.20	7.448	85794	MSD1 369, EIC=368.7:369.7
C10 Surrogat	522.21	8.325	120712	MSD1 469, EIC=468.7:469.7

=====
*** End of Report ***

0049

Sample Name:STD 750 ppb

Sample Info:

1

Data file :C:\HPCHEM\1\DATA\FC000032.D

=====

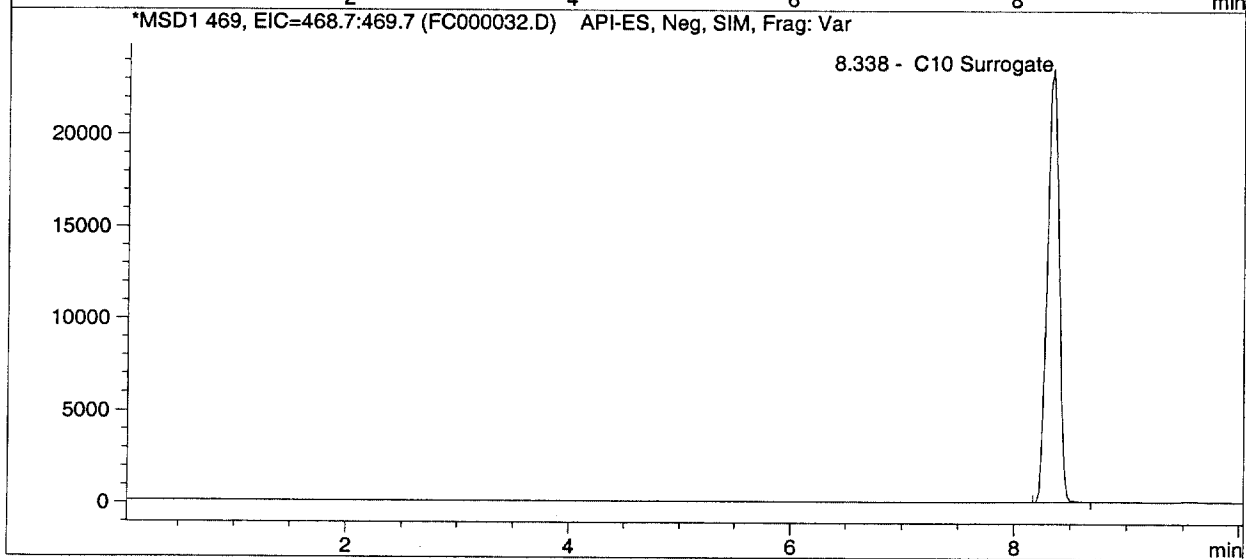
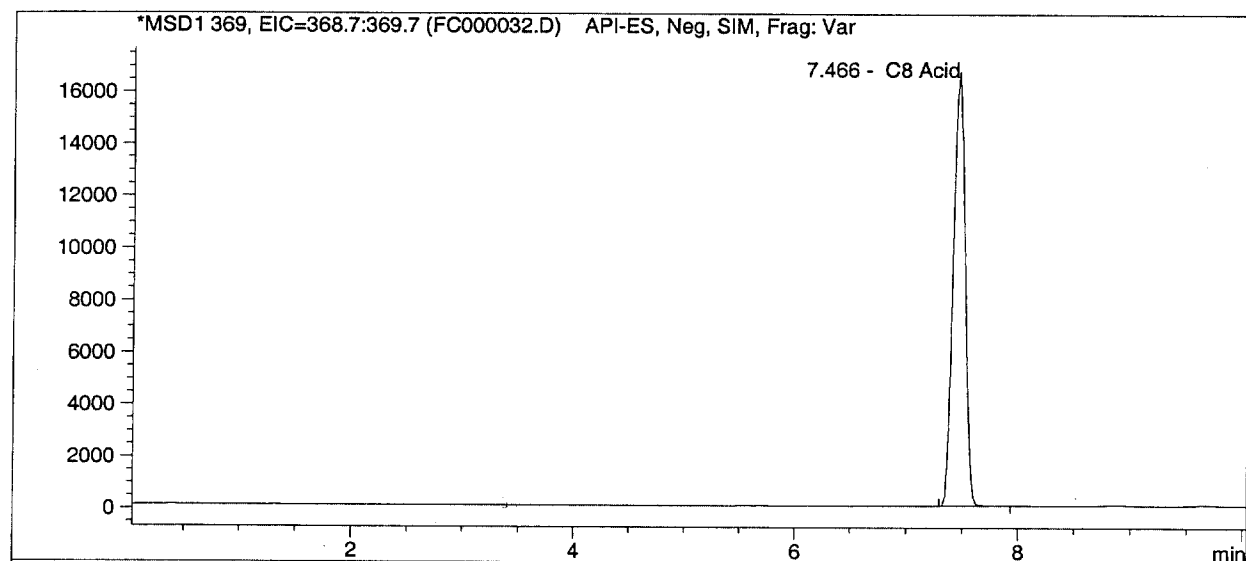
Injection Date	: 12/10/03	1:12:11 AM	Seq Line	:	32
Acq Operator	: jmillier		Vial No.	:	5
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M

Analysis Method : C:\HPCHEM\1\METHODS\120903.M

Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	758.63	7.466	122137	MSD1 369, EIC=368.7:369.7
C10 Surrogat	767.52	8.338	171335	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0050

Sample Name:STD 1000 ppb

Sample Info:

1

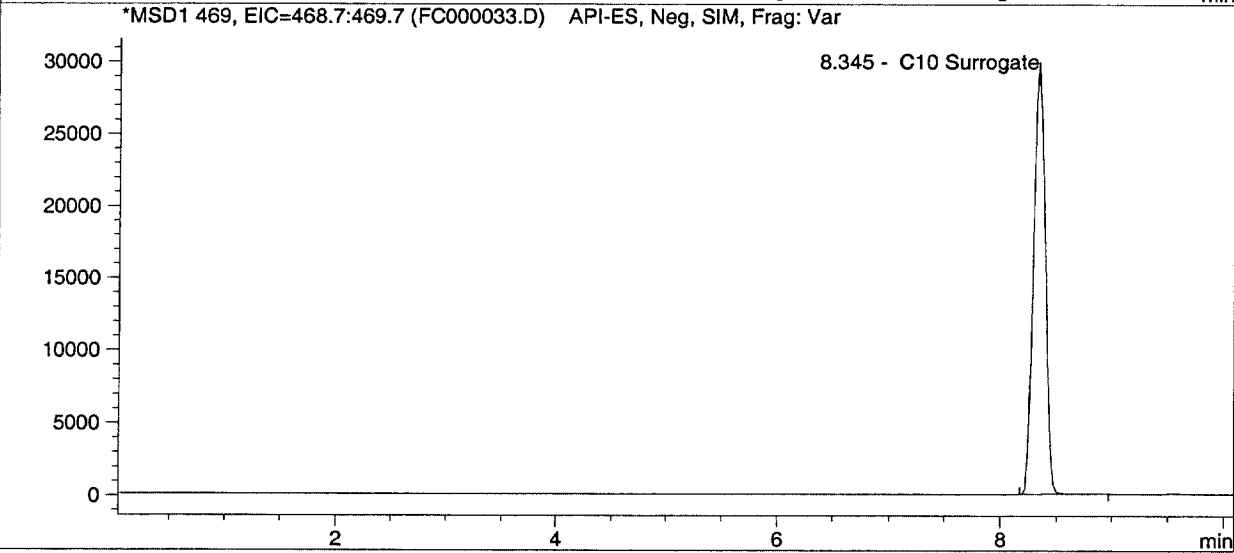
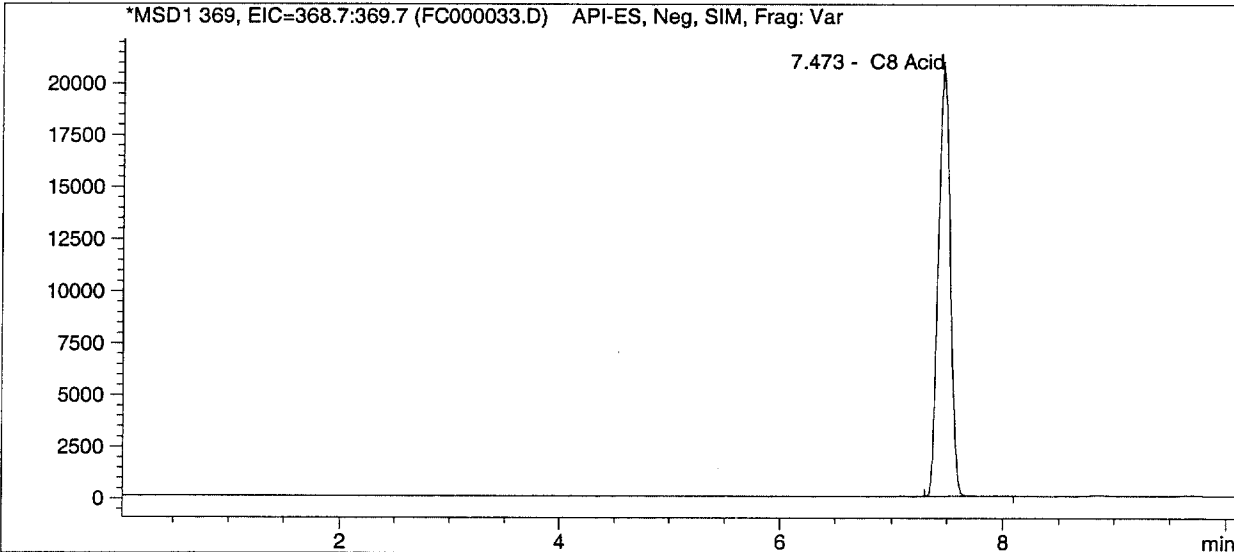
Data file :C:\HPCHEM\1\DATA\FC000033.D

=====

Injection Date	: 12/10/03	1:27:47 AM	Seq Line	:	33
Acq Operator	: jmillier		Vial No.	:	6
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M
Analysis Method : C:\HPCHEM\1\METHODS\120903.M
Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
C8 Acid	962.85	7.473	152502	MSD1 369, EIC=368.7:369.7
10 Surrogat	977.27	8.345	214621	MSD1 469, EIC=468.7:469.7

*** End of Report ***

0051

Sample Name:STD 1500 ppb

Sample Info:

1

Data file :C:\HPCHEM\1\DATA\FC000034.D

=====

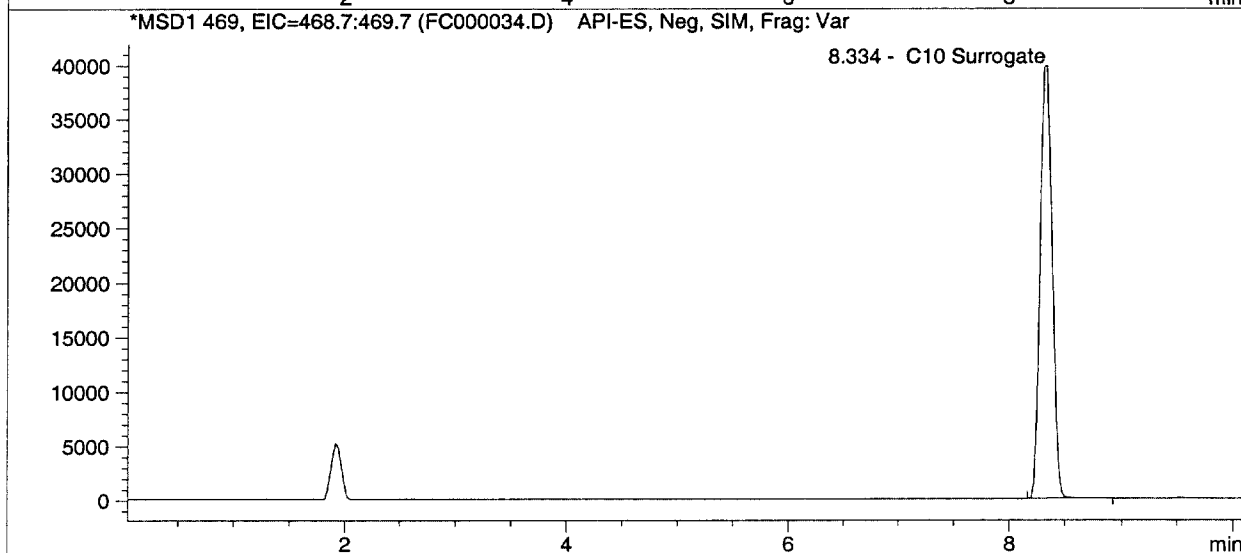
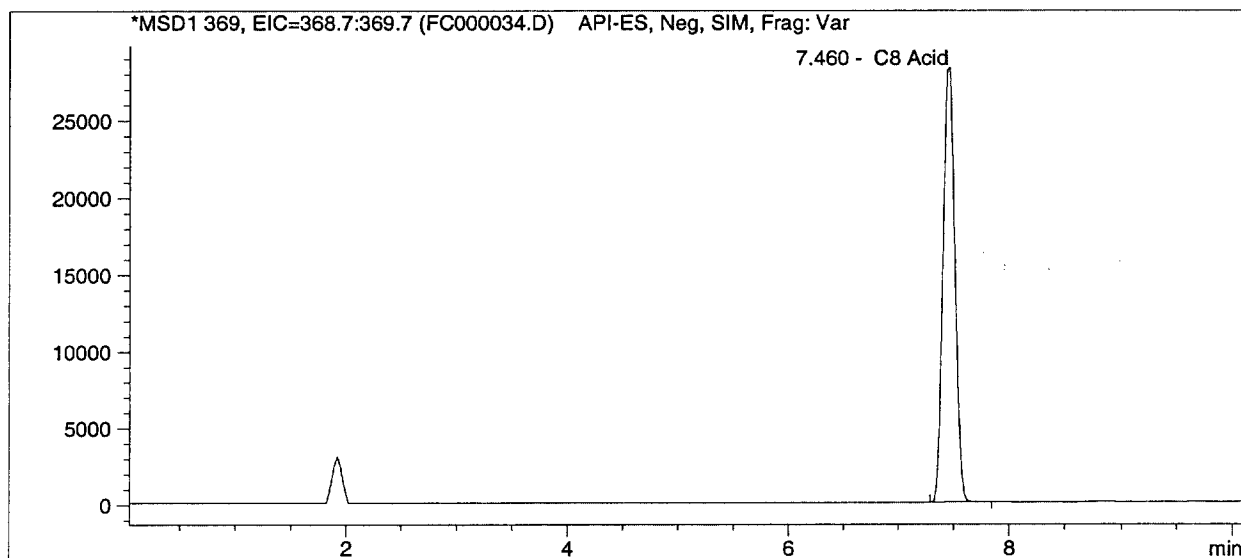
Injection Date	: 12/10/03	1:43:22 AM	Seq Line	:	34
Acq Operator	: jmillier		Vial No.	:	7
Instrument	: PC00414		Inj. No.	:	1
Dilution	: 1		Inj. Vol.	:	5 µl

Acq. Method : FC8-10.M

Analysis Method : C:\HPCHEM\1\METHODS\120903.M

Last Changed : 1/9/04 02:13:25 pm

LC/MS analysis of perfluorooctanoic acid.



Compound	Amount (ng/mL)	R.T.	Area	Signal
8 Acid	1371.55	7.460	213269	MSD1 369, EIC=368.7:369.7
10 Surrogat	1379.02	8.334	297530	MSD1 469, EIC=468.7:469.7

=====

*** End of Report ***

0052

January Projects

Client	Project	Responsible Group	Revenue
Cecos	quarterly monitoring	GCMS, Inorganics	\$80,000
DuPont	water / blood / air samples	LCMS	\$30,000 \$ 50,000
DuPont	reference standads	LC, GCMS, Inorganics, LCMS	\$15,000
DuPont	DPX-MP062 ILV	LCMS	\$13,000
3M / Daikin	water and soil samples	LCMS	\$30,000
Hercules	Rf-Teta paper analysis	LCMS	\$10,000
BP	phytoremediation study	GCMS	\$30,000
Rutgers Organics	routine environmental	GCMS / Inorganics	\$6,000
SPI (fluoropolymer)	water / air / solids	LCMS	\$10,000
Crompton	propargite ILV	LCMS	\$13,000
Bayer	fipronil report	LCMS	\$6,000
Beazer	craig farm monitoring	LCMS	\$5,000
Neolytica	90 day stability	LC	\$2,000
NIH	(need project)	LCMS / GCMS	\$25,000
AMEC	method development	LCMS	\$7,500
Southern California	percherate	LCMS	\$3,000
Lyondell	deicer characterization	LCMS	\$5,000
Misc Environmental	cyanide testing	Inorganics	\$15,000
Calgon Carbon	OP pesticides (low level)	GCMS (pending)	\$6,000 \$ 11 000
Lonza / TRS	Kd Stud	E-Fate	\$8,000
SEMATEC			\$10,000 9000
Phibro	stability and release	LC, micro, Inorganics	\$40,000
Phibro	salinomycin validation	LCMS	\$18,000
Cognis	BAP in vitamin E	GCMS	\$10,000
Aventis Pasteur	method transfers (4)	Inorganics	\$20,000 \$10,000
Eyeteck	AN-TMD-1002 (samples)	LC	\$25,000
Pfizer	validation (Macugen mPEG)	LC (completion of analytical)	\$28,000
Pfizer	PEG sample analysis	LCMS	\$6,000
Pfizer	method development (6)	GCMS (not yet awarded)	\$30,000
Ft Dodge AH	Amitraz physical properties	GCMS, LC	\$27,500
Ft Dodge AH	EU validation (initiation)	LC	\$70,000
Boston Scientific	MD + Samples	LC	\$20,000
Vertex	stability and release	LC	\$25,000 30000
West Pharmaceutical	cleaning validation	Inorganics	\$3,000
Pliva	dissolution validation	LCMS (pending)	\$12,000
L'Oreal	zinc in cosmetics transfer	Inorganics (pending)	\$6,000
Schering Plough	stability and release	GCMS, LC	\$10,000
Taxolog	rat plasma testing	LCMS (pending)	\$20,000 \$ 22 000
Par Pharmaceutical	unknown ID	LCMS	\$6,000
ALSO			
3M	blood validation (prepaid)	LCMS	
Pfizer AH	amoxycillin validation (prepaid)	LCMS	
Ft Dodge	5 batch (prepaid)	LC, GCMS	
Ft Dodge	MD report (prepaid)	Inorganics	
Ft Dodge	routine (waiting on Celsus)	GCMS	

\$ 681,000

0053

000196

Login

Login Group: L0001359

Login #:	L0001359 > 1,469	Conform COC Sample:	True
Project:	P0000419	Conform COC:	True
Project Storage:		Conform Sample:	True
Submitted By:	Michael D. Aucoin	Conform Request:	True
Status:	Unreceived		
Login Type:	Immediate Receipt of Samples		
Started:	T		
Date Start:	11/25/2003 11:21:15AM		
Due Date:	12/09/2003		
Received Date:	11/25/2003		
Received By:	AMMERMAN, MARK		
Spread Sample:			
Label:			
Project Title/Type:	Analysis of PFOA in OVS Tubes / ROUTINE		

A + B Fracs.

Login Notes:

Conform Notes: As per Mike Aucoin, sample WWK-A-AMS6-E4 is cancelled. MSA 11/25/03

Packages / Containers

<u>Package</u>	<u>Carton</u>	<u>Mail Date / Condition</u>	<u>Shipper / ID</u>	<u>Temp. Control / Temperat</u>	<u>Direction / Handled By</u>
PK0001939		11/25/2003 10:50:59AM Package & Contents Uncompromised	FEDEX 8363913019820200	RT	RECEIVED AMMERMAN, MARK

<u>Container #</u>	<u>Gross Weight</u>	<u>pH</u>	<u>Container Type</u>	<u>Preservative</u>	<u>Mfg. Lot</u>	<u>Mfg. ID</u>
C0020181	7.2 g		Other	NONE		
C0020182	7.2 g		Other	NONE		
C0020183	7.2 g		Other	NONE		
C0020184	7.2 g		Other	NONE		
C0020185	7.2 g		Other	NONE		
C0020186	7.2 g		Other	NONE		
C0020187	7.2 g		Other	NONE		
C0020188	7.2 g		Other	NONE		
C0020189	7.2 g		Other	NONE		
C0020190	7.1 g		Other	NONE		
C0020191	7.1 g		Other	NONE		
C0020192	7.1 g		Other	NONE		
C0020193	7.2 g		Other	NONE		
C0020194	7.2 g		Other	NONE		
C0020195	7.2 g		Other	NONE		
C0020196	7.1 g		Other	NONE		
C0020197	7.1 g		Other	NONE		
C0020198	7.1 g		Other	NONE		
C0020199	7.1 g		Other	NONE		
C0020200	7.1 g		Other	NONE		
C0020201	7.1 g		Other	NONE		

ICOC

Miscellaneous

Item Key

None

Description

0054



Samples

Sample ID	Matrix	Fraction	Sample	Date Sampled	Date Received	Date Due
L0001359-0001	GAS	OVS Tubes	WWK-A-AMSFBLK-E4 A		11/25/2003	12/09/2003
L0001359-0002	GAS	OVS Tubes	WWK-A-AMSFBLK-E4 B		11/25/2003	12/09/2003
L0001359-0003	GAS	OVS Tubes	WWK-A-AMSFBLK-E4 C		11/25/2003	12/09/2003
L0001359-0004	GAS	OVS Tubes	WWK-A-AMS1-E4 A		11/25/2003	12/09/2003
L0001359-0005	GAS	OVS Tubes	WWK-A-AMS1-E4 B		11/25/2003	12/09/2003
L0001359-0006	GAS	OVS Tubes	WWK-A-AMS1-E4 C		11/25/2003	12/09/2003
L0001359-0007	GAS	OVS Tubes	WWK-A-AMS2-E4 A		11/25/2003	12/09/2003
L0001359-0008	GAS	OVS Tubes	WWK-A-AMS2-E4 B		11/25/2003	12/09/2003
L0001359-0009	GAS	OVS Tubes	WWK-A-AMS2-E4 C		11/25/2003	12/09/2003
L0001359-0010	GAS	OVS Tubes	WWK-A-AMS3-E4 A		11/25/2003	12/09/2003
L0001359-0011	GAS	OVS Tubes	WWK-A-AMS3-E4 B		11/25/2003	12/09/2003
L0001359-0012	GAS	OVS Tubes	WWK-A-AMS3-E4 C		11/25/2003	12/09/2003
L0001359-0013	GAS	OVS Tubes	WWK-A-AMS4-E4 A		11/25/2003	12/09/2003
L0001359-0014	GAS	OVS Tubes	WWK-A-AMS4-E4 B		11/25/2003	12/09/2003
L0001359-0015	GAS	OVS Tubes	WWK-A-AMS4-E4 C		11/25/2003	12/09/2003
L0001359-0016	GAS	OVS Tubes	WWK-A-AMS5-E4 A		11/25/2003	12/09/2003
L0001359-0017	GAS	OVS Tubes	WWK-A-AMS5-E4 B		11/25/2003	12/09/2003
L0001359-0018	GAS	OVS Tubes	WWK-A-AMS5-E4 C		11/25/2003	12/09/2003
L0001359-0019	GAS	OVS Tubes	Control 1 A		11/25/2003	12/09/2003
L0001359-0020	GAS	OVS Tubes	Control 1 B		11/25/2003	12/09/2003
L0001359-0021	GAS	OVS Tubes	Control 1 C		11/25/2003	12/09/2003

0055



Bottles

L0001359-0001

Container
C0020181 / Other / NONE

Method

L0001359-0002

Container
C0020182 / Other / NONE

Method

L0001359-0003

Container
C0020183 / Other / NONE

Method

L0001359-0004

Container
C0020184 / Other / NONE

Method

L0001359-0005

Container
C0020185 / Other / NONE

Method

L0001359-0006

Container
C0020186 / Other / NONE

Method

L0001359-0007

Container
C0020187 / Other / NONE

Method

L0001359-0008

Container
C0020188 / Other / NONE

Method

L0001359-0009

Container
C0020189 / Other / NONE

Method

L0001359-0010

Container
C0020190 / Other / NONE

Method

L0001359-0011

Container
C0020191 / Other / NONE

Method

L0001359-0012

Container

Method

0056



Login

C0020192 / Other / NONE

L0001359-0013

Container

C0020193 / Other / NONE

Method

L0001359-0014

Container

C0020194 / Other / NONE

Method

L0001359-0015

Container

C0020195 / Other / NONE

Method

L0001359-0016

Container

C0020196 / Other / NONE

Method

L0001359-0017

Container

C0020197 / Other / NONE

Method

L0001359-0018

Container

C0020198 / Other / NONE

Method

L0001359-0019

Container

C0020199 / Other / NONE

Method

L0001359-0020

Container

C0020200 / Other / NONE

Method

L0001359-0021

Container

C0020201 / Other / NONE

Method



CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

PROJECT INFORMATION

Client (name & address):

ADDON
DuPont Washington Works

Phone: (302) 892-1098

Fax:

Sampler: REK/LMK

Project Manager (Name & E-mail Address):

Mike Guevin

Project Name:

Air Sampling Program

P.O. #:

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

ANALYSES REQUESTED

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	FC-143
	WUOK-A-AMS5-BLK-E4	11/24/03	0715	X		1	Air	Field Blank	X
	WUOK-A-AMS1-E4		0612	X		1	Air		X
	WUOK-A-AMS2-E4		0622	X		1	Air		X
	WUOK-A-AMS3-E4		0622	X		1	Air		X
	WUOK-A-AMS4-E4		0634	X		1	Air		X
	WUOK-A-AMS5-E4		0601	X		1	Air		X
	WUOK-A-AMS6-E4		0645	X		1	Air	sample container not properly	X
	Control 1								

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
<u>J. Randall</u>	11/24/03	0830

Cooler ID # 166006 Cooler Temp. (°C) 14

Received by	Date	Time
<u>J. Randall</u>	11/24/03	0830
	11/21/03	1050

LAB USE ONLY

OTHER INFORMATION

Event 4

PROJECT REQUIREMENTS

Results Deadline:

Laboratory Report Options:

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other _____

Air Sampling Program

LK, REK

836391301982

Event 4

	AMS-1	VWVK-A-AMS1-E4	1.018	23-Nov	6:35	24-Nov	6:12	1.003	1428
669842	AMS-1	VWVK-A-AMS1-E4	1.018	23-Nov	6:35	24-Nov	6:12	1.003	1428
669908	AMS-2	VWVK-A-AMS2-E4	1.029	23-Nov	6:30	24-Nov	6:22	1.008	1434
669878	AMS-3	VWVK-A-AMS3-E4	1.028	23-Nov	6:30	24-Nov	6:22	1.022	1433
669901	AMS-4	VWVK-A-AMS4-E4	1.021	23-Nov	6:44	24-Nov	6:34	0.9668	1431
669769	AMS-5	VWVK-A-AMS5-E4	1.015	23-Nov	6:09	24-Nov	6:01	0.9892	1434
669865	AMS-6	VWVK-A-AMS6-E4	1.014	23-Nov	6:56	24-Nov	6:45	*	880
Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes
0	0	5	300	10	600	15	900	20	1200
1	60	6	360	11	660	16	960	21	1260
2	120	7	420	12	720	17	1020	22	1320
3	180	8	480	13	780	18	1080	23	1380
4	240	9	540	14	840	19	1140	24	1440

WWW-K-K-AMSFBLK-E4

yes or no

11/23 = 48 degrees and clear, expect temperature to go to upper 60's.

11/24 = 45 degrees and clear, expect rain and drop in temperature to 30's

yes

yes or no

Comments: Total minutes column is the reading from the monitor counter.

* The pump for AMS6 was not running when we collected the sample and the counter only read 880 minutes. We can not get the AMS6 pump to run for Post Calibration even plugged into building outlet. We will replace pump before next test.

11/24/03

000202

11/25/2003

Page 2 of 2

airdataevent4

Another Calculation
1442.994
1460.529
1468.826
1422.2709
1437.0114
#VALIDE!

0060

000203

