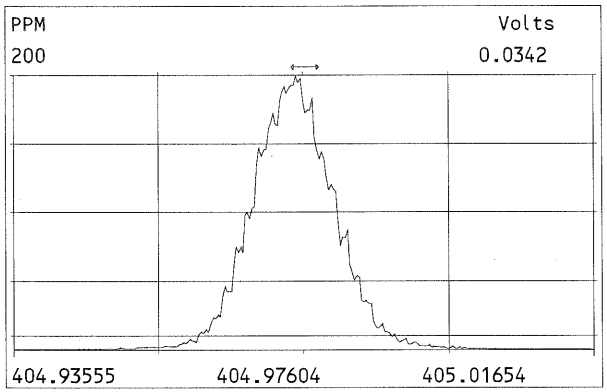
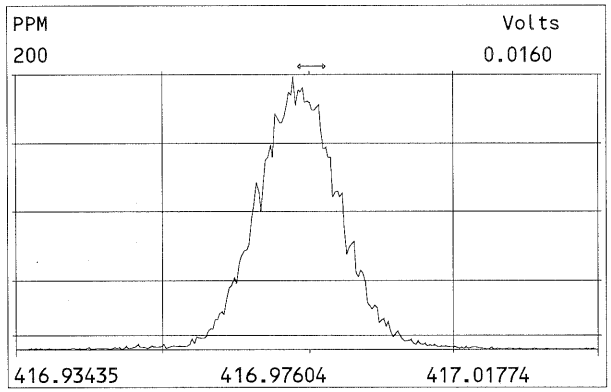
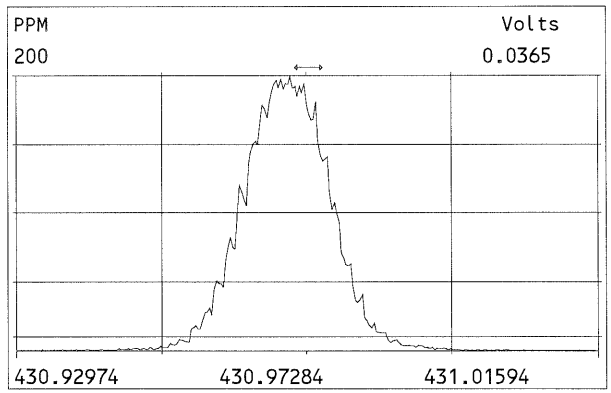
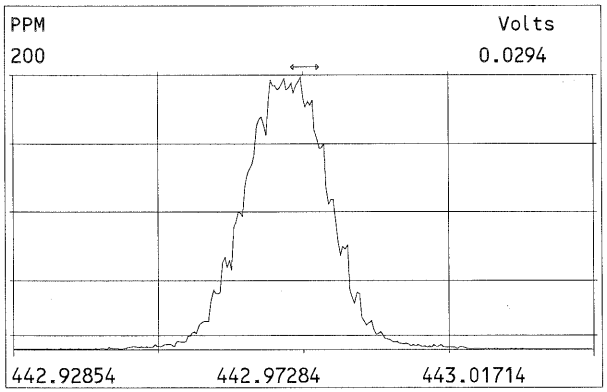
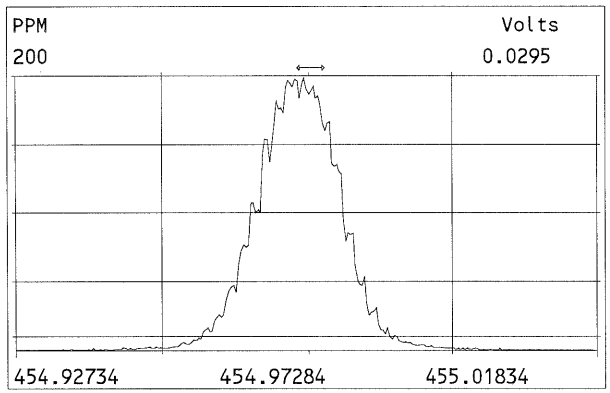
Peak Locate Examination: 8-APR-2011:08:50 File:07APR11M_RES_CHECK
Experiment:OCDD Function:4 Reference:PFK

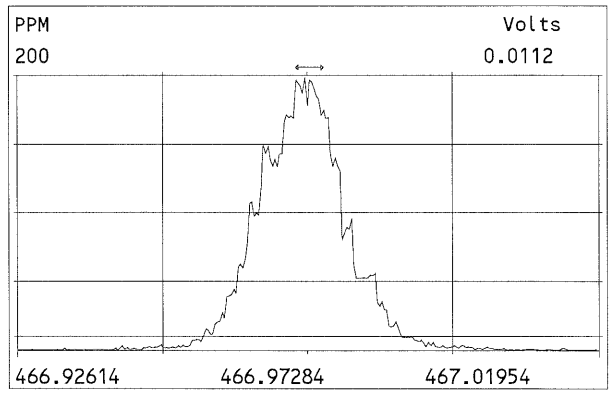


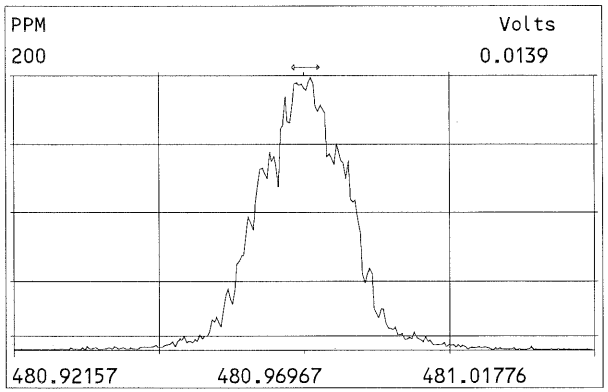




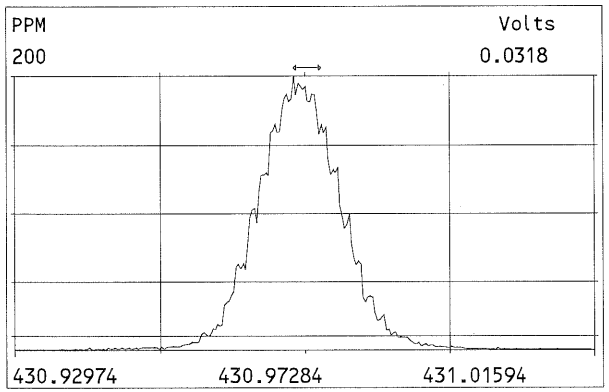


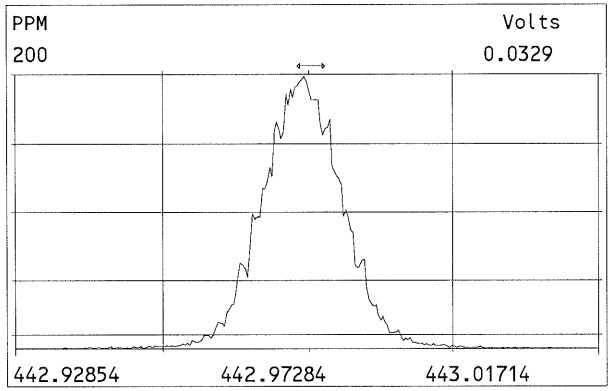


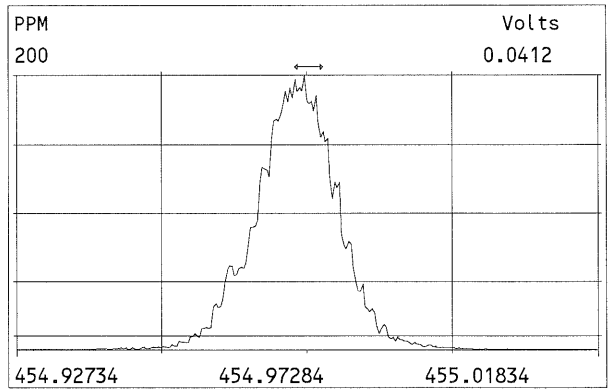


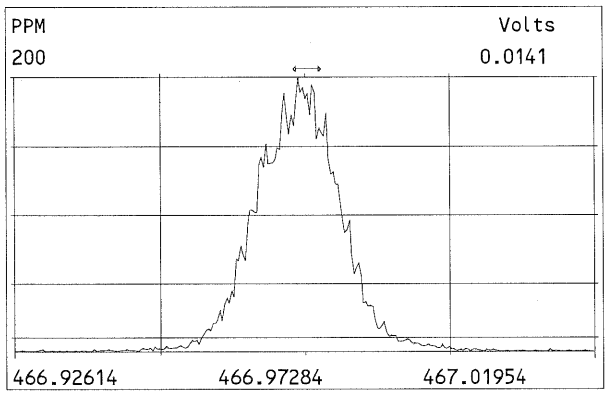


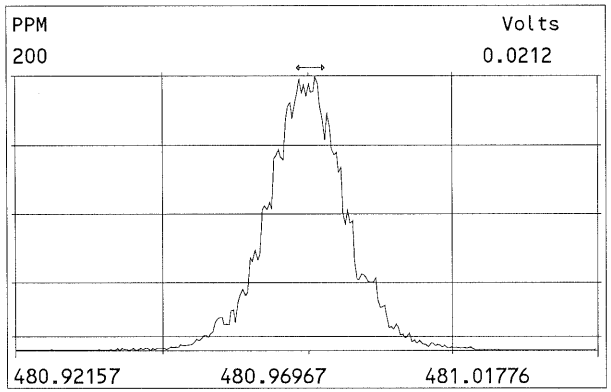
Peak Locate Examination: 8-APR-2011:08:50 File:07APR11M_RES_CHECK
Experiment:OCDD Function:5 Reference:PFK

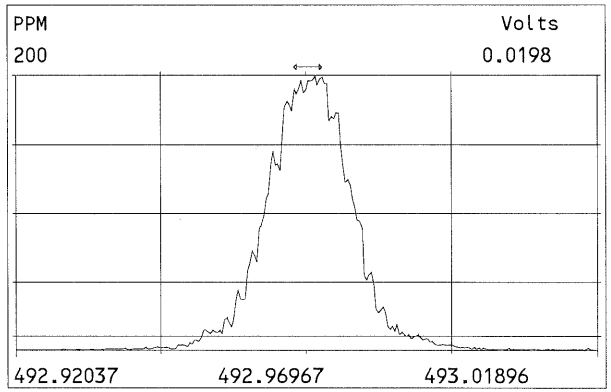


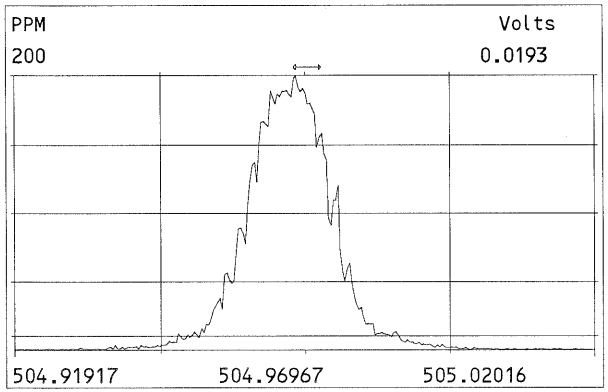


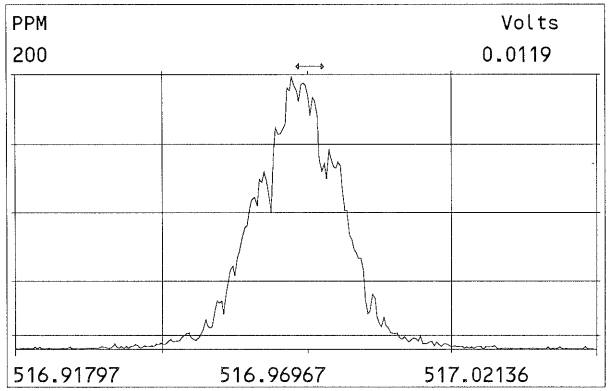












USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date:

Instrument ID: FAL3 GC Column ID: DB5

VER Data Filename: 07APR11M Sam:15 Analysis Date: 8-APR-11 04:08:18

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	y	12.3	7.80 - 12.9
1,2,3,7,8-PeCDD	M+2/M+4	1.52	1.32-1.78	y	50.7	39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	y	47.2	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	y	48.6	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	y	51.7	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	0.90	0.88-1.20	y	51.7	43.0 - 58.0
OCDD	M+2/M+4	0.92	0.76-1.02	y	95.7	79.0 - 126
2,3,7,8-TCDF	M/M+2	0.72	0.65-0.89	y	9.82	8.40 - 12.0
1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	y	50.5	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	y	47.9	41.0 - 60.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	y	49.7	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	y	51.0	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	y	51.1	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05-1.43	y	49.8	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.09	0.88-1.20	y	49.4	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88-1.20	y	49.4	43.0 - 58.0
OCDF	M+2/M+4	0.94	0.76-1.02	y	99.9	63.0 - 159

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

Analyst: _____ Date: 4/8/11

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date:

Instrument ID: FAL3 GC Column ID: DB5

VER Data Filename: 07APR11M Sam:15 Analysis Date: 8-APR-11 04:08:18

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.71	0.65-0.89	y	97.8	82.0 - 121
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.78	1.32-1.78	y	102	62.0 - 160
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	y	86.4	85.0 - 117
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05-1.43	y	103	85.0 - 118
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.01	0.88-1.20	y	105	72.0 - 138
13C-OCDD	M+2/M+4	0.96	0.76-1.02	y	198	96.0 - 415
13C-2,3,7,8-TCDF	M/M+2	0.88	0.65-0.89	y	97.3	71.0 - 140
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.63	1.32-1.78	y	106	76.0 - 130
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.65	1.32-1.78	y	108	77.0 - 130
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.47	0.43-0.59	y	87.5	76.0 - 131
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.48	0.43-0.59	y	93.5	70.0 - 143
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.47	0.43-0.59	y	92.9	73.0 - 137
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.47	0.43-0.59	y	94.5	74.0 - 135
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.49	0.37-0.51	y	98.1	78.0 - 129
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.48	0.37-0.51	y	104	77.0 - 129
13C-OCDF	M+2/M+4	0.96	0.76-1.02	y	182	96.0 - 415
CLEANUP STANDARD (4)						
37Cl-2,3,7,8-TCDD					9.24	7.80 - 12.8

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

(4) No ion abundance ratio; report concentration found.

Analyst: _____ Date: 4/8/11

FORM 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: FAL3 Initial Calibration Date: 3/7/11

RT Window Data Filename: 07APR11M Sam:15 Analysis Date: 8-APR-11 Time: 04:08:18

DB-5 IS Data Filename: 07APR11M Sam:15 Analysis Date: 8-APR-11 Time: 04:08:18

DB-225 IS Date Filename: Analysis Date: Time:

DB-5 RT WINDOW DEFINING STANDARDS RESULTS

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	24:35	1,3,6,8-TCDF (F)	23:13
1,2,8,9-TCDD (L)	28:34	1,2,8,9-TCDF (L)	28:48
1,2,4,7,9-PeCDD (F)	30:29	1,3,4,6,8-PeCDF (F)	28:39
1,2,3,8,9-PeCDD (L)	34:04	1,2,3,8,9-PeCDF (L)	34:30
1,2,4,6,7,9-HxCDD (F)	36:24	1,2,3,4,6,8-HxCDF (F)	35:31
1,2,3,7,8,9-HxCDD (L)	39:28	1,2,3,7,8,9-HxCDF (L)	40:04
1,2,3,4,6,7,9-HpCDD (F)	43:06	1,2,3,4,6,7,8-HpCDF (F)	42:35
1,2,3,4,6,7,8-HpCDD (L)	44:29	1,2,3,4,7,8,9-HpCDF (L)	45:25

(F) = First eluting iosmer (DB-5); (L) = Last eluting isomer (DB-5)

==========

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

COMPARED PEAKS (1)	% VALLEY HEIGHT BETWEEN
	<25%

(1) To meet contract requirement, %Valley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

Analyst: _____ Date: 4/8/11

USEPA - ITD

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.: Init. Cal. Date:

Instrument ID: FAL3 GC Column ID: DB5

Analysis Date: 8-APR-11 04:08:18 CS3 or VER Data Filename: 07APR11M Sam:15

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002
2,3,7,8-TCDF	13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	1.000	0.999-1.002
1,2,3,7,8-PeCDF	13C-1,2,3,7,8-PeCDF	1.001	0.999-1.002
2,3,4,7,8-PeCDF	13C-2,3,4,7,8-PeCDF	1.000	0.999-1.002
LABELED COMPOUNDS			
37Cl-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.023	0.989-1.052
13C-2,3,7,8-TCDD		1.023	0.976-1.043
13C-2,3,7,8-TCDF		0.994	0.923-1.103
13C-1,2,3,7,8-PeCDD		1.239	1.000-1.567
13C-1,2,3,7,8-PeCDF		1.175	0.923-1.203
13C-2,3,4,7,8-PeCDF		1.224	0.923-1.303

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Analyst: _____ Date: 4/8/11

USEPA - ITD

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.: Init. Cal. Date:

Instrument ID: FAL3 GC Column ID: DB5

Analysis Date: 8-APR-11 04:08:18 CS3 or VER Data Filename: 07APR11M Sam:15

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
1,2,3,4,7,8-HxCDD	13C-1,2,3,4,7,8-HxCDD	1.001	0.999-1.001
1,2,3,6,7,8-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.001	0.998-1.004
1,2,3,7,8,9-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.012	1.000-1.019
1,2,3,4,7,8-HxCDF	13C-1,2,3,4,7,8-HxCDF	1.000	0.999-1.001
1,2,3,6,7,8-HxCDF	13C-1,2,3,6,7,8-HxCDF	1.001	0.997-1.005
2,3,4,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	1.000	0.999-1.001
1,2,3,7,8,9-HxCDF	13C-1,2,3,7,8,9-HxCDF	1.001	0.999-1.001
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.000	0.999-1.001
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.001	0.999-1.001
1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,7,8,9-HpCDF	1.000	0.999-1.001
OCDD	13C-OCDD	1.001	0.999-1.001
OCDF	13C-OCDF	1.001	0.999-1.001
LABELED COMPOUNDS			
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,7,8,9-HxCDD	0.984	0.977-1.000
13C-1,2,3,6,7,8-HxCDD		0.989	0.981-1.003
13C-1,2,3,4,7,8-HxCDF		0.949	0.944-0.970
13C-1,2,3,6,7,8-HxCDF		0.954	0.949-0.975
13C-2,3,4,6,7,8-HxCDF		0.978	0.959-1.021
13C-1,2,3,7,8,9-HxCDF		1.015	0.977-1.047
13C-1,2,3,4,6,7,8-HpCDD		1.127	1.086-1.130
13C-1,2,3,4,6,7,8-HpCDF		1.079	1.043-1.085
13C-1,2,3,4,7,8,9-HpCDF		1.151	1.057-1.154
13C-OCDD		1.270	1.032-1.311
13C-OCDF		1.279	1.000-1.311

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Analyst: _____ Date: 4/8/11

FAL ID: ST040711M2 Filename: 07APR11M Sam:15 Acquired: 8-APR-11 04:08:18 ICal: pcddfal3-3-7-11
Client ID: 1613 CS3 100511J ConCal: ST040711M2 EndCal: ST040711M3
Results: GC Column: DB5 Amount: 1.000 NATO 1989 Tox: 102
WHO 1998 Tox: 127 WHO 2005 Tox: 116

Name	Resp	RA	RT	RRF	Conc	Qual	Fac	Noise-1	Noise-2	DL
2,3,7,8-TCDD	3.52e+06	0.81 y	27:38	1.13	12.3		2.50	-	-	*
1,2,3,7,8-PeCDD	1.34e+07	1.52 y	33:29	1.02	50.7		2.50	-	-	*
1,2,3,4,7,8-HxCDD	1.45e+07	1.27 y	38:52	1.45	47.2		2.50	-	-	*
1,2,3,6,7,8-HxCDD	1.40e+07	1.30 y	39:02	1.45	48.6		2.50	-	-	*
1,2,3,7,8,9-HxCDD	1.56e+07	1.26 y	39:28	1.47	51.7		2.50	-	-	*
1,2,3,4,6,7,8-HpCDD	1.21e+07	0.90 y	44:29	1.30	51.7		2.50	-	-	*
OCDD	1.72e+07	0.92 y	50:07	1.45	95.7		2.50	-	-	*
2,3,7,8-TCDF	4.88e+06	0.72 y	26:51	1.15	9.82		2.50	-	-	*
1,2,3,7,8-PeCDF	1.79e+07	1.61 y	31:45	0.89	50.5		2.50	-	-	*
2,3,4,7,8-PeCDF	1.69e+07	1.57 y	33:04	0.89	47.9		2.50	-	-	*
1,2,3,4,7,8-HxCDF	1.67e+07	1.22 y	37:28	1.01	49.7		2.50	-	-	*
1,2,3,6,7,8-HxCDF	2.01e+07	1.25 y	37:41	0.89	51.0		2.50	-	-	*
2,3,4,6,7,8-HxCDF	1.86e+07	1.25 y	38:36	1.02	51.1		2.50	-	-	*
1,2,3,7,8,9-HxCDF	2.12e+07	1.26 y	40:04	1.10	49.8		2.50	-	-	*
1,2,3,4,6,7,8-HpCDF	1.46e+07	1.09 y	42:35	1.48	49.4		2.50	-	-	*
1,2,3,4,7,8,9-HpCDF	1.16e+07	1.03 y	45:25	1.43	49.4		2.50	-	-	*
OCDF	1.84e+07	0.94 y	50:31	0.84	99.9		2.50	-	-	*
										Rec
13C-2,3,7,8-TCDD	2.53e+07	0.71 y	27:37	1.03	97.8					97.8
13C-1,2,3,7,8-PeCDD	2.60e+07	1.78 y	33:28	1.01	102					102
13C-1,2,3,4,7,8-HxCDD	2.12e+07	1.27 y	38:50	1.19	86.4					86.4
13C-1,2,3,6,7,8-HxCDD	1.98e+07	1.32 y	39:00	0.94	103					103
13C-1,2,3,4,6,7,8-HpCDD	1.80e+07	1.01 y	44:28	0.83	105					105
13C-OCDD	2.48e+07	0.96 y	50:06	0.61	198					98.8
13C-2,3,7,8-TCDF	4.33e+07	0.88 y	26:50	0.98	97.3					97.3
13C-1,2,3,7,8-PeCDF	4.00e+07	1.63 y	31:43	0.83	106					106
13C-2,3,4,7,8-PeCDF	3.94e+07	1.65 y	33:03	0.80	108					108
13C-1,2,3,4,7,8-HxCDF	3.33e+07	0.47 y	37:27	1.84	87.5					87.5
13C-1,2,3,6,7,8-HxCDF	4.42e+07	0.48 y	37:39	2.29	93.5					93.5
13C-2,3,4,6,7,8-HxCDF	3.57e+07	0.47 y	38:36	1.86	92.9					92.9
13C-1,2,3,7,8,9-HxCDF	3.87e+07	0.47 y	40:02	1.98	94.5					94.5
13C-1,2,3,4,6,7,8-HpCDF	2.00e+07	0.49 y	42:34	0.99	98.1					98.1
13C-1,2,3,4,7,8,9-HpCDF	1.64e+07	0.48 y	45:24	0.77	104					104
13C-OCDF	4.37e+07	0.96 y	50:29	1.17	182					90.9
37Cl-2,3,7,8-TCDD	1.70e+06		27:37	0.73	9.24					92.4
13C-1,2,3,4-TCDD	2.52e+07	0.70 y	27:00	-	66.3					
13C-1,2,3,4-TCDF	4.54e+07	0.87 y	25:44	-	63.1					
13C-1,2,3,7,8,9-HxCDD	2.07e+07	1.28 y	39:27	-	83.2					

						Fac	Noise-1	Noise-2	DL		#Hom
Total Tetra-Dioxins	1.64e+07		23:12	1.13	57.2	2.50	-	-	*		21
Total Penta-Dioxins	2.90e+07		30:29	1.02	110	2.50	-	-	*		6
Total Hexa-Dioxins	5.00e+07		36:24	1.46	167	2.50	-	-	*		10
Total Hepta-Dioxins	2.57e+07		43:06	1.30	110	2.50	-	-	*		20
Total Tetra-Furans	2.35e+07		23:13	1.15	47.3	2.50	-	-	*		22
1st Fn. Tot Penta-Furans	1.89e+07		28:39	0.89	53.6	2.50	-	-	*	PeCDF	1
Total Penta-Furans	4.95e+07		30:24	0.89	140	2.50	-	-	*	194	8
Total Hexa-Furans	8.85e+07		35:31	1.00	233	2.50	-	-	*		12
Total Hepta-Furans	2.68e+07		42:35	1.46	101	2.50	-	-	*		14

Analyst: _____ Date: 4/8/11

Frontier Analytical Laboratory - Acquisition Log

Run Name:07APR11M Instrument: FAL3 GC: DB5 Experiment:OCDD

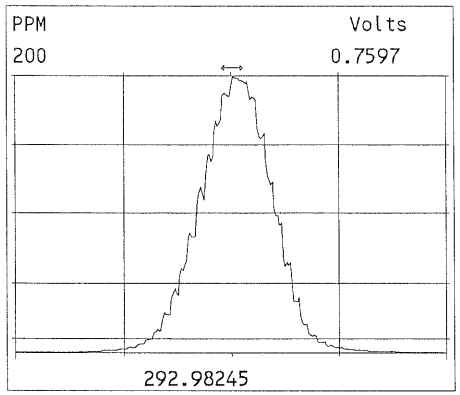
Data File	S	FAL ID	Client ID	Acquired	ConCal	EndCal	Analyst
07APR11M	1	ST040711M1	1613 CS3 100511J	7-APR-11 15:13:12	ST040711M1	ST040711M2	TC
07APR11M	2	2264-001-0001-MB	Method Blank	7-APR-11 16:08:34	ST040711M1	ST040711M2	TC
07APR11M	3	2264-001-0001-OPR	OPR	7-APR-11 17:03:57	ST040711M1	ST040711M2	TC
07APR11M	4	6678-008-0001-SA	LL-SED1-0-56-031511	7-APR-11 17:59:16	ST040711M1	ST040711M2	TC
07APR11M	5	6678-007-0001-SA	LL-SED2-0-56-031511-D	7-APR-11 18:54:38	ST040711M1	ST040711M2	TC
07APR11M	6	6678-006-0001-SA	LL-SED2-112-168-031511	7-APR-11 19:49:58	ST040711M1	ST040711M2	TC
07APR11M	7	6678-005-0001-SA	LL-SED2-56-112-031511	7-APR-11 20:45:17	ST040711M1	ST040711M2	TC
07APR11M	8	6678-004-0001-SA	LL-SED2-0-56-031511	7-APR-11 21:40:40	ST040711M1	ST040711M2	TC
07APR11M	9	6678-003-0001-SA	LL-SED3-141-167-031511	7-APR-11 22:36:00	ST040711M1	ST040711M2	TC
07APR11M	10	6678-002-0001-SA	LL-SED3-36-141-031511	7-APR-11 23:31:19	ST040711M1	ST040711M2	TC
07APR11M	11	6678-001-0001-SA	LL-SED3-0-36-031511	8-APR-11 00:26:42	ST040711M1	ST040711M2	TC
07APR11M	12	6678-005-0002-MS	LL-SED2-56-112-031511	8-APR-11 01:22:09	ST040711M1	ST040711M2	TC
07APR11M	13	6678-005-0002-MSD	LL-SED2-56-112-031511	8-APR-11 02:17:32	ST040711M1	ST040711M2	TC
07APR11M	14	SB040711M1	Solvent Blank	8-APR-11 03:12:55	ST040711M1	ST040711M2	TC
07APR11M	15	ST040711M2	1613 CS3 100511J	8-APR-11 04:08:18	ST040711M2	ST040711M3	TC
07APR11M	16	SB040711M2	Solvent Blank	8-APR-11 05:03:38	ST040711M2	ST040711M3	TC
07APR11M	17	6624-001-0001-SA	Lot #018690	8-APR-11 05:58:58	ST040711M2	ST040711M3	TC
07APR11M	18	SB040711M2	Solvent Blank	8-APR-11 06:54:16	ST040711M2	ST040711M3	TC
07APR11M	19	ST040711M3	1613 CS3 100511J	8-APR-11 07:49:36	ST040711M2	ST040711M3	TC

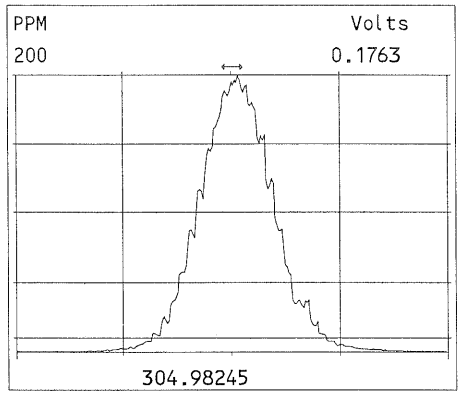
4/8/11

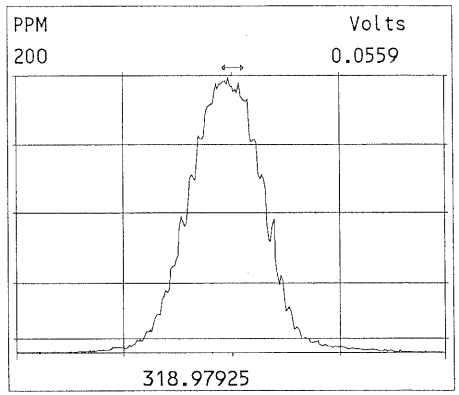
Data Backed Up:_____

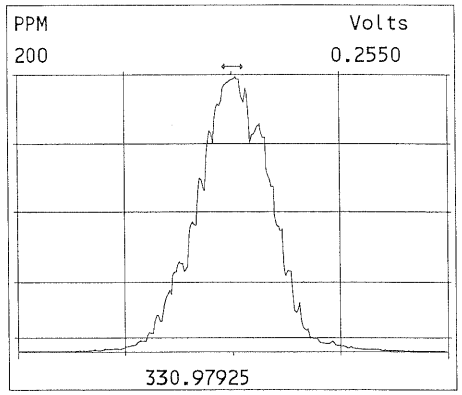
Date:_____

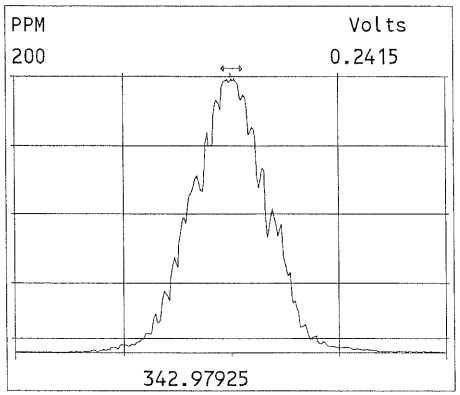
Peak Locate Examination: 7-APR-2011:15:11 File:07APR11M
Experiment:OCDD Function:1 Reference:PFK

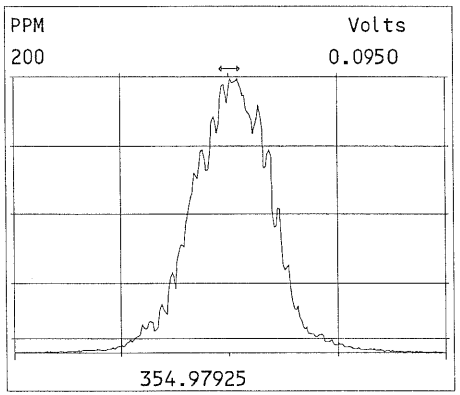


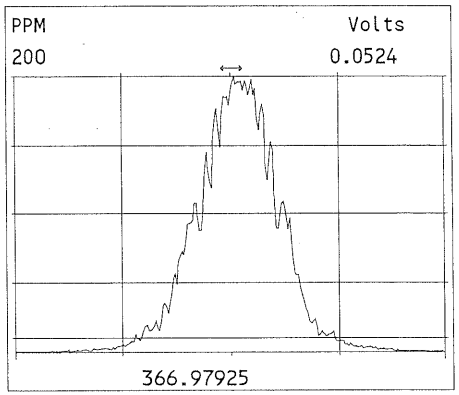


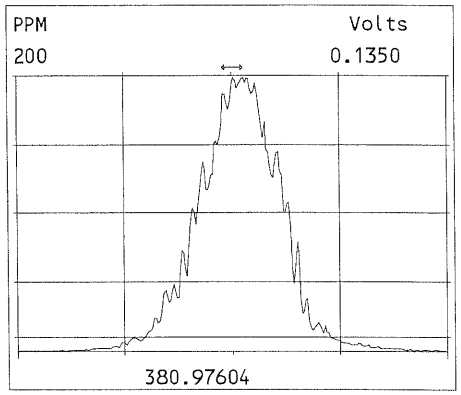


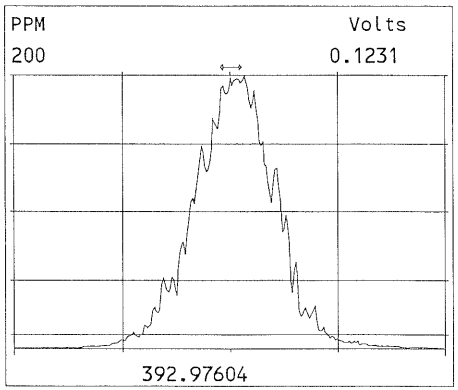


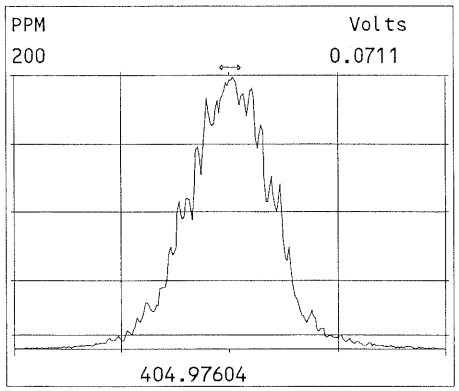


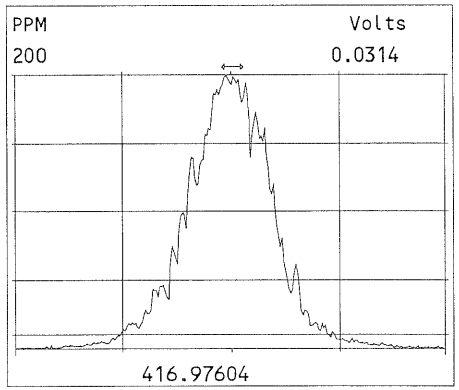




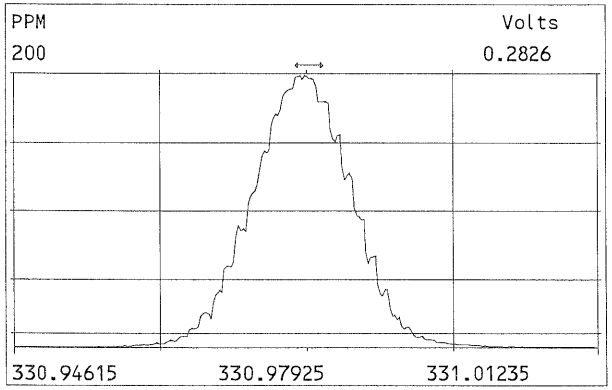


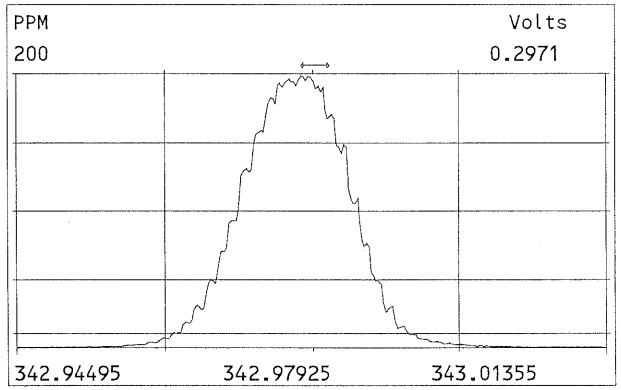


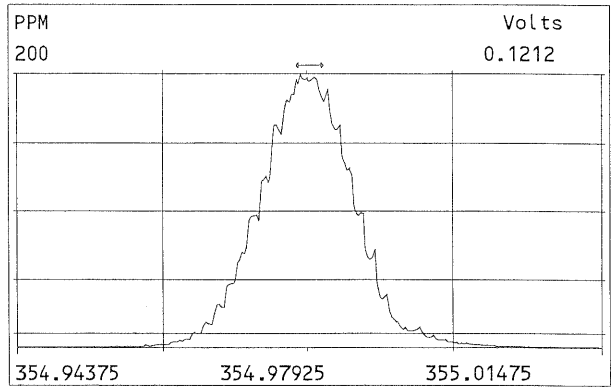


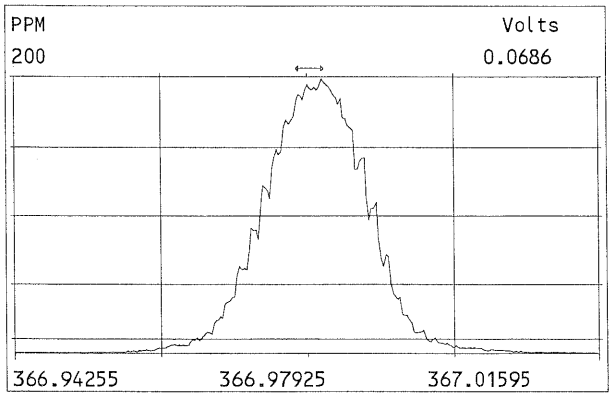


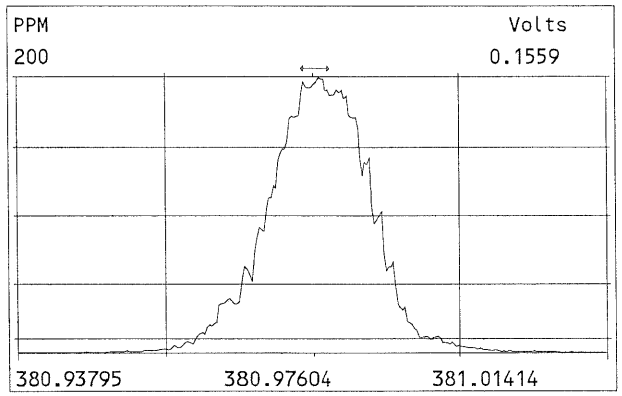
Peak Locate Examination: 7-APR-2011:15:11 File:07APR11M
Experiment:OCDD Function:2 Reference:PFK

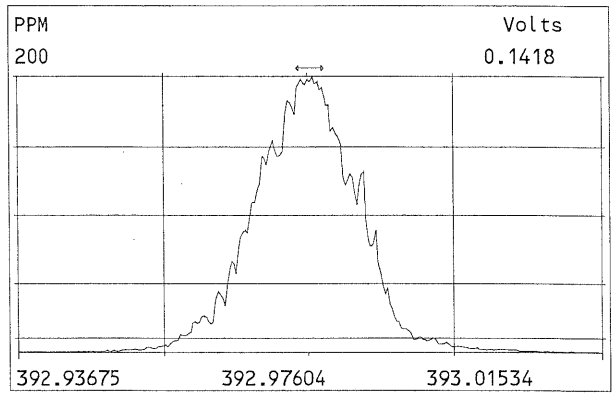


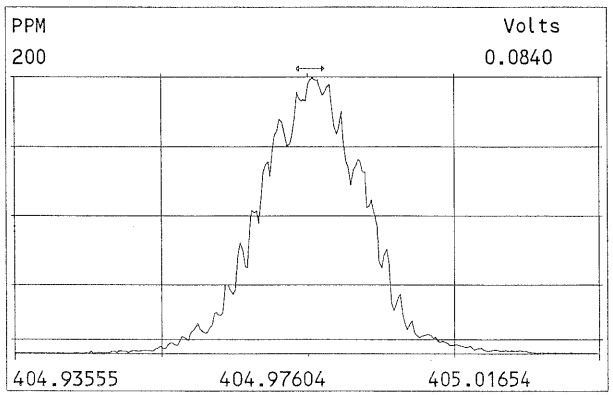


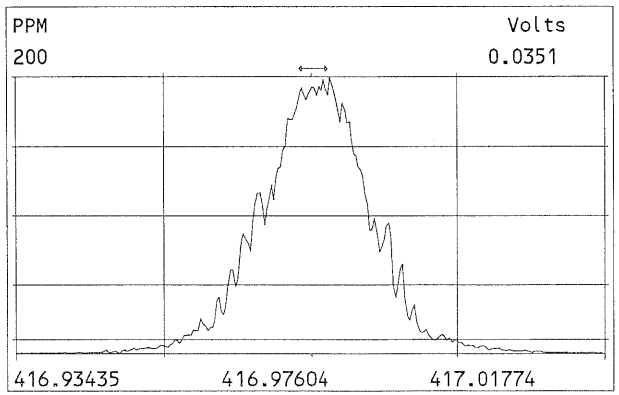






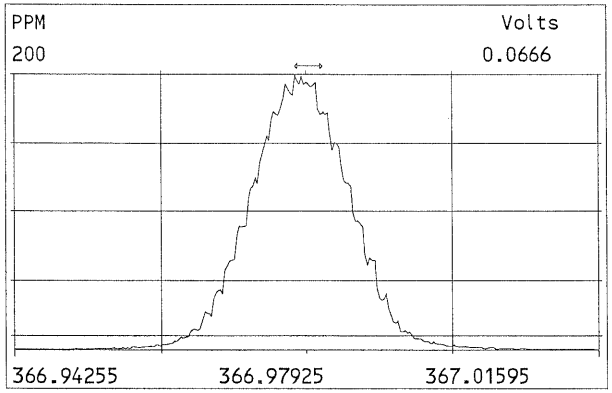


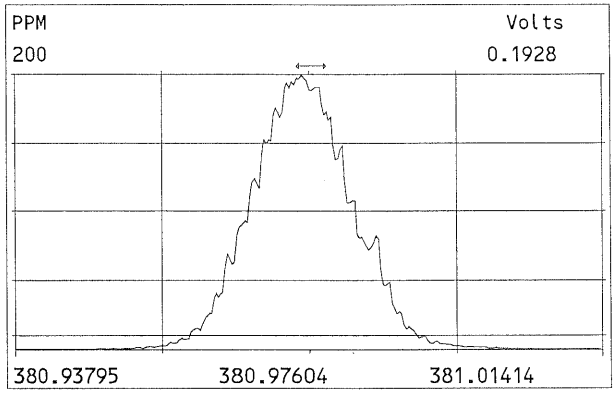


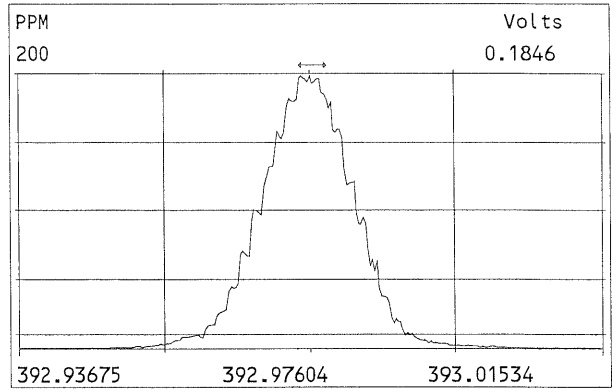


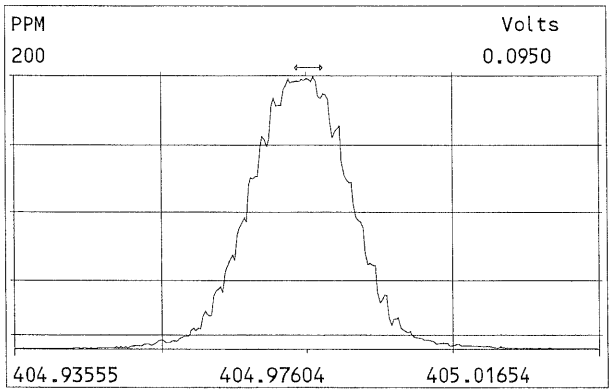
Peak Locate Examination: 7-APR-2011:15:12 File:07APR11M

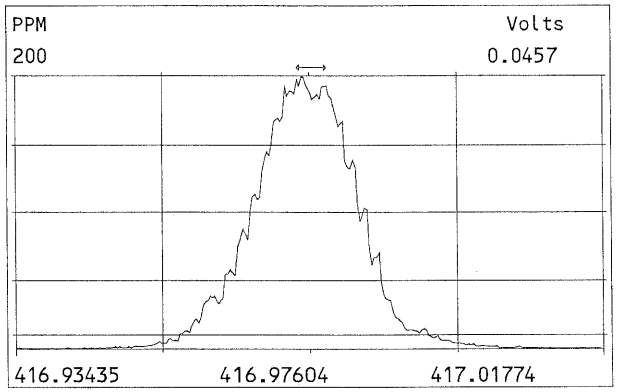
Experiment:OCDD Function:3 Reference:PFK

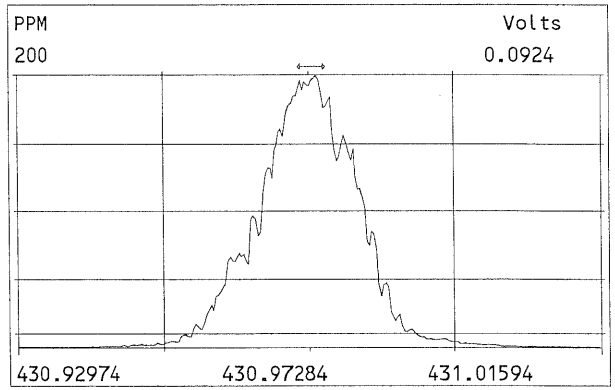


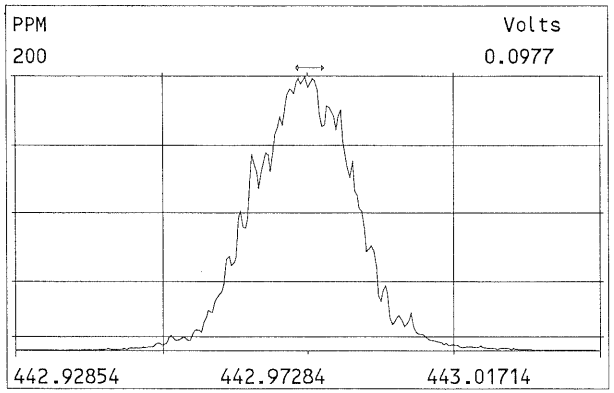


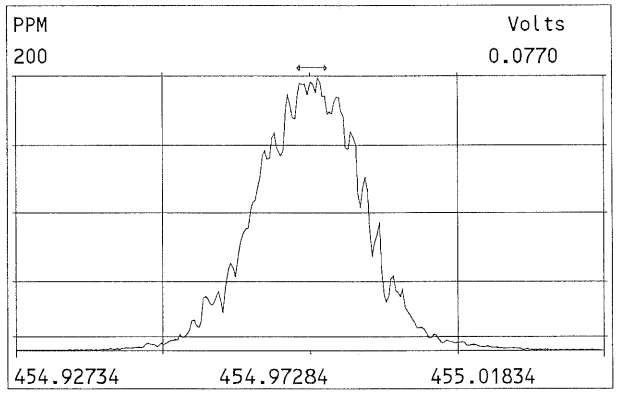






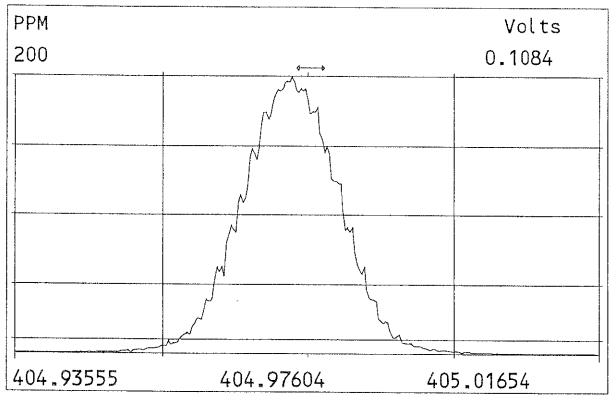


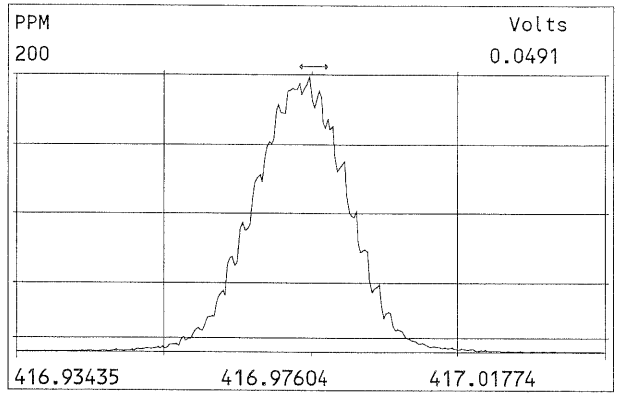


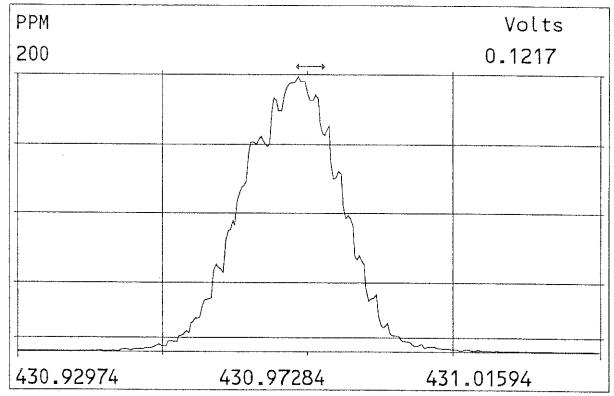


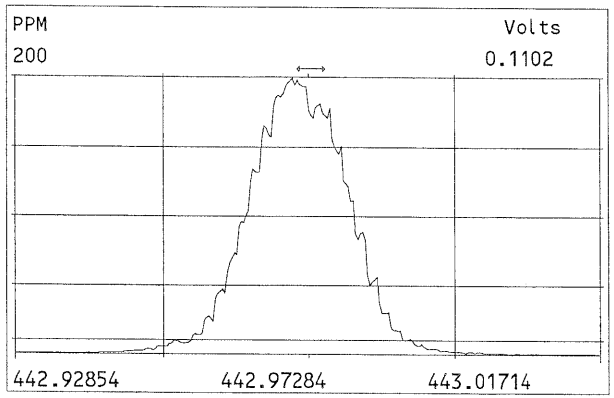
Peak Locate Examination: 7-APR-2011:15:12 File:07APR11M

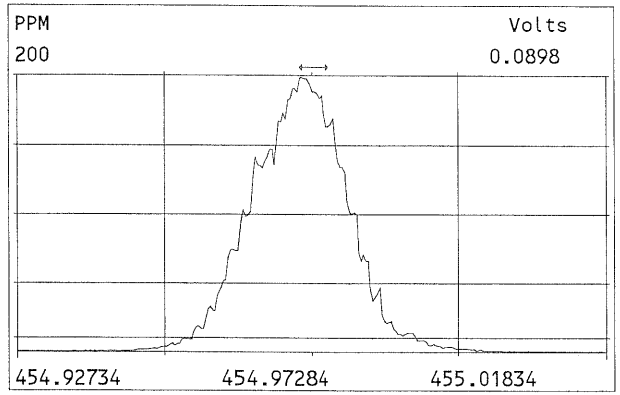
Experiment:OCDD Function:4 Reference:PFK

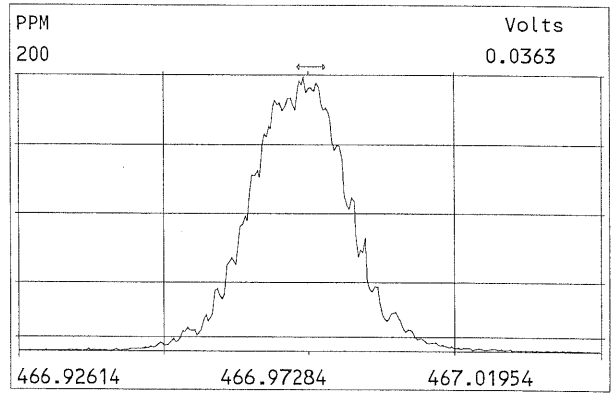


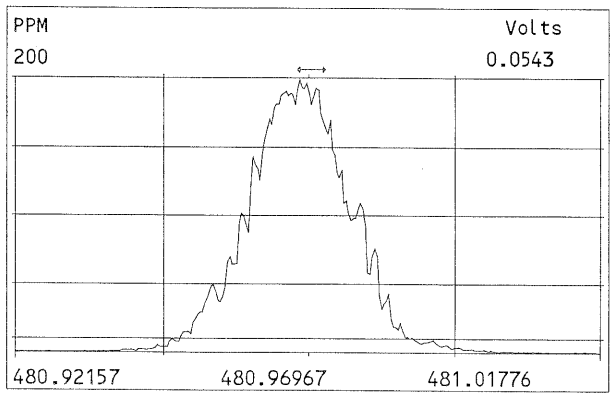






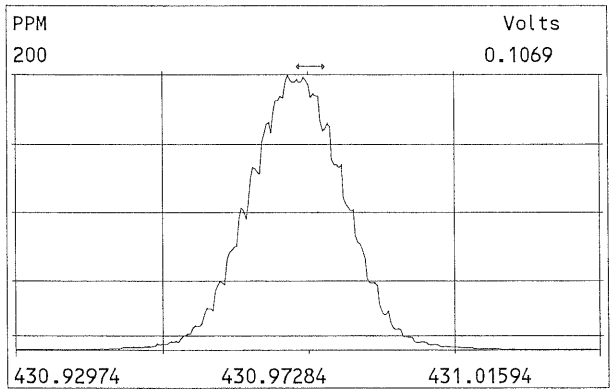


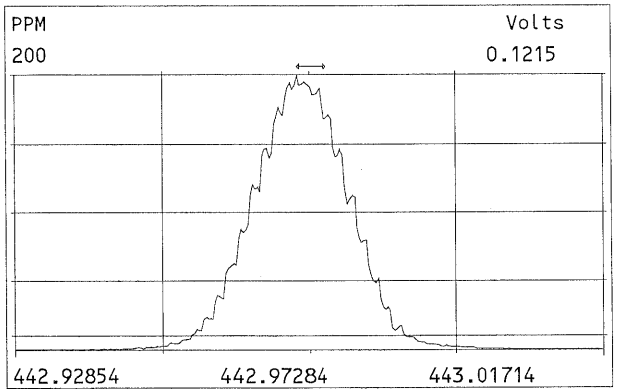


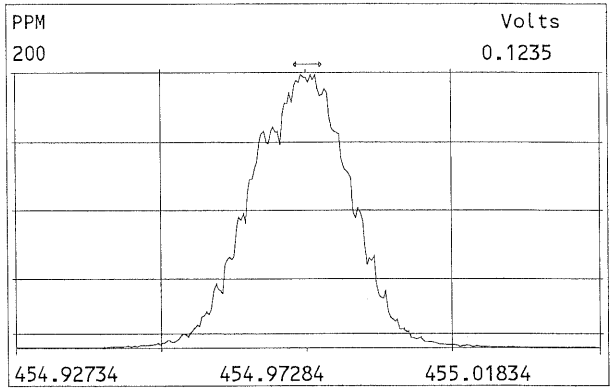


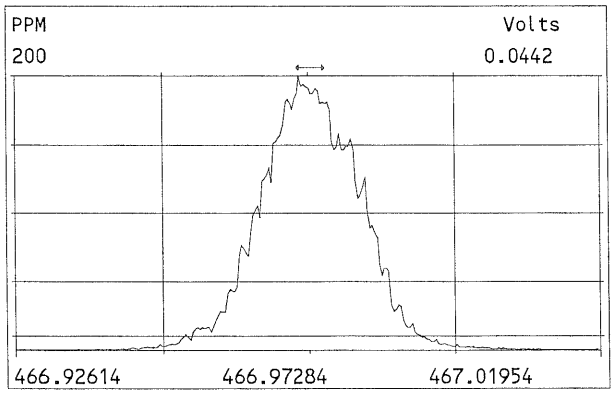
Peak Locate Examination: 7-APR-2011:15:12 File:07APR11M

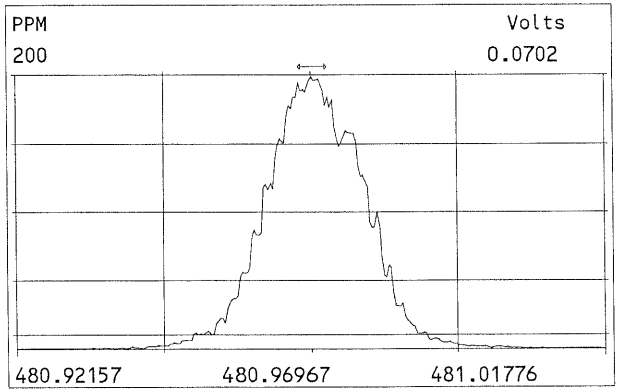
Experiment:OCDD Function:5 Reference:PFK

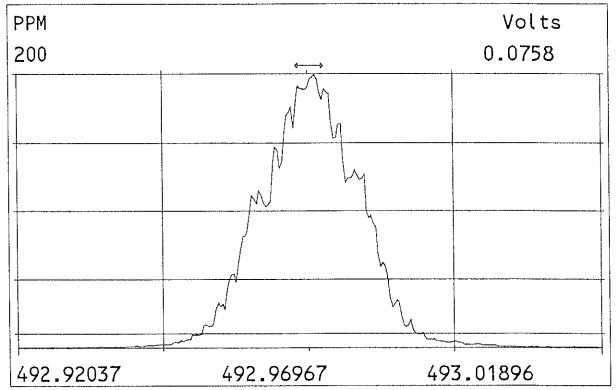


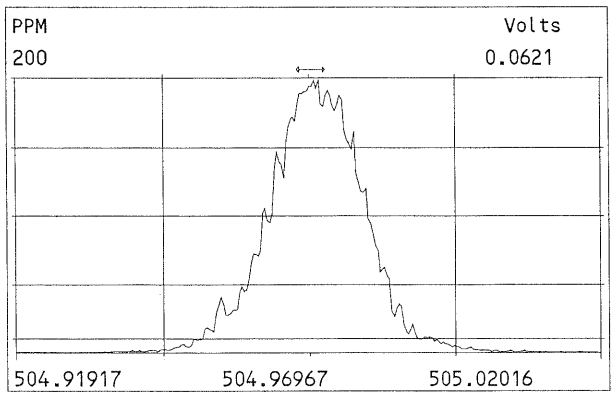


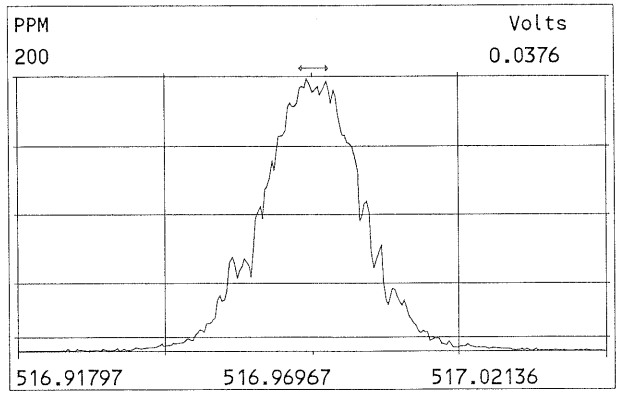




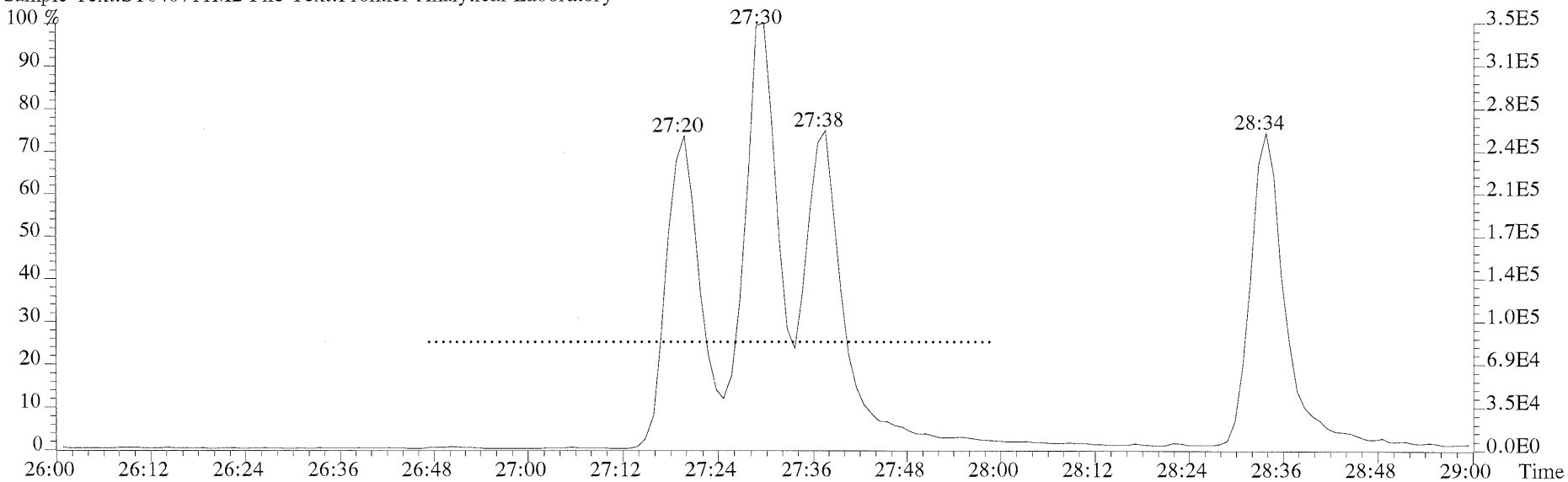








File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
319.8965 S:15 Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



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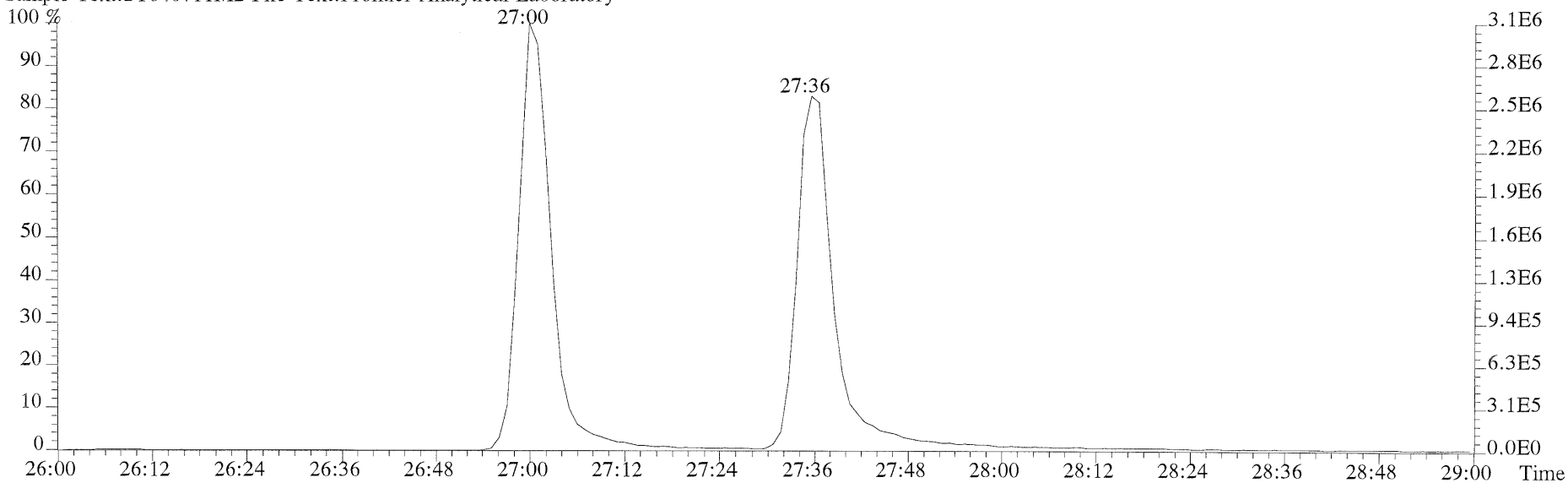

File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
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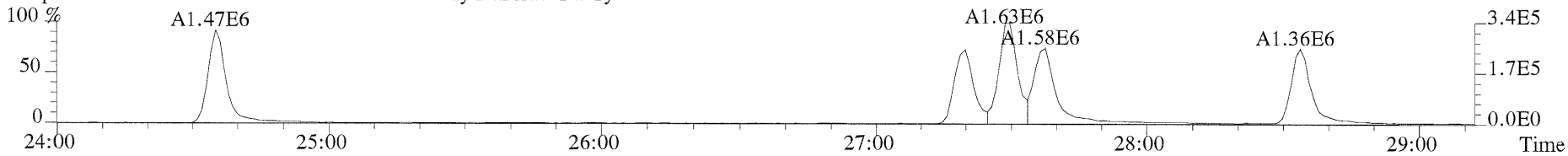
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



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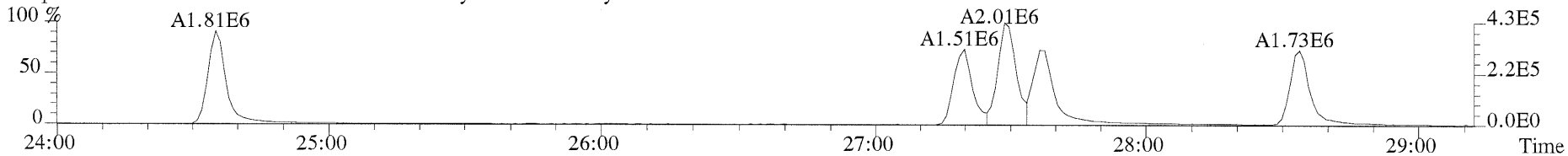

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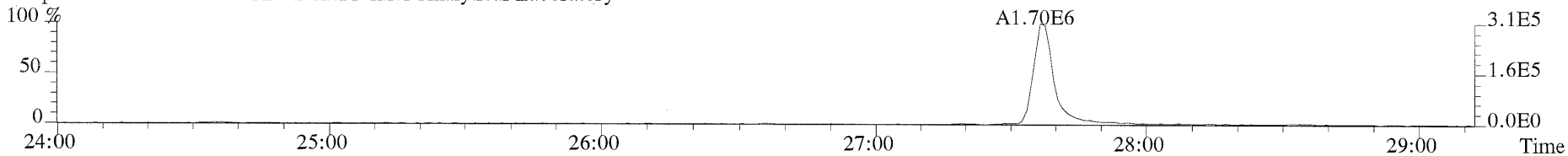
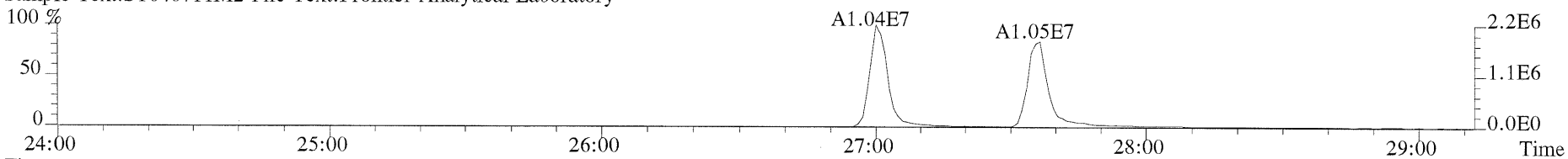
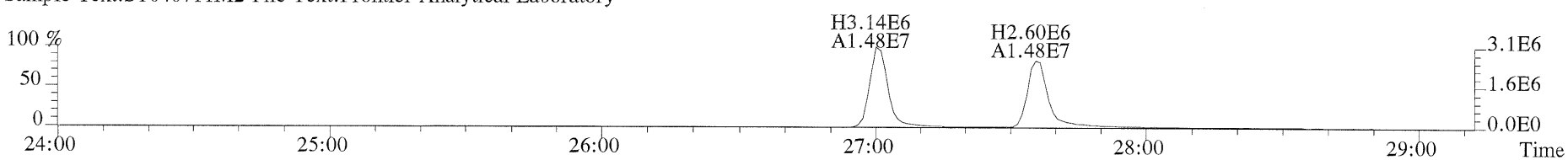
327.8847 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



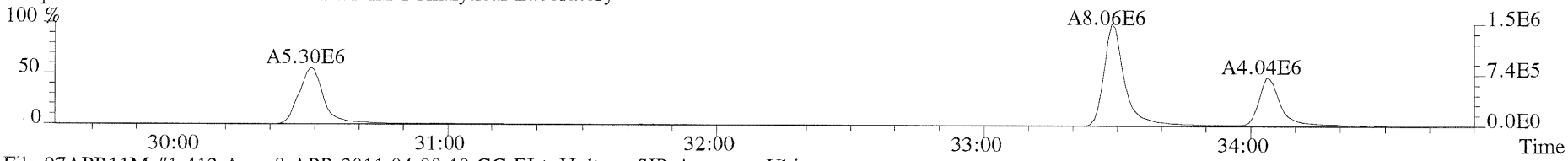
File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
331.9368 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



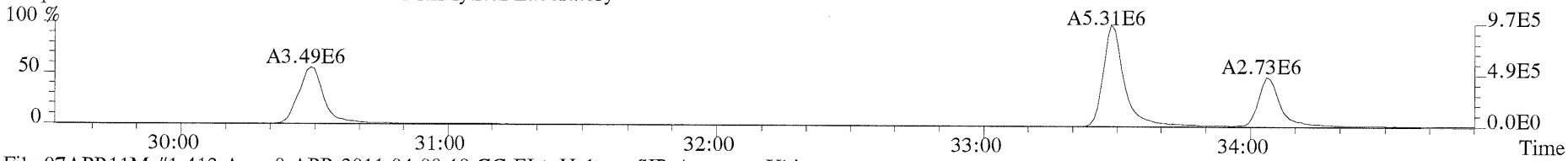
File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
333.9339 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



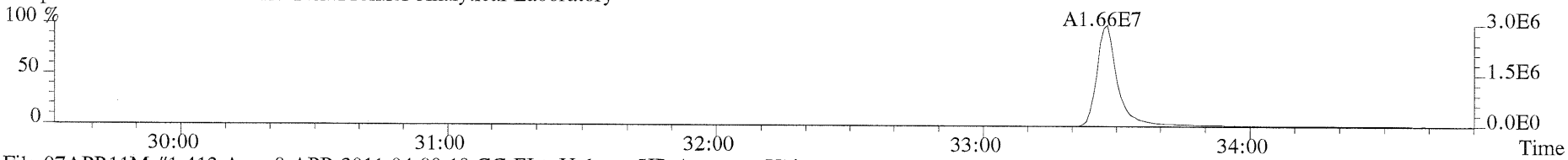
File:07APR11M #1-412 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
355.8546 S:15 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



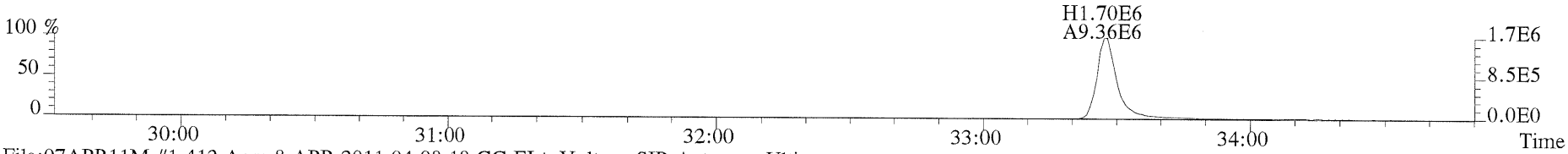
File:07APR11M #1-412 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
357.8517 S:15 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



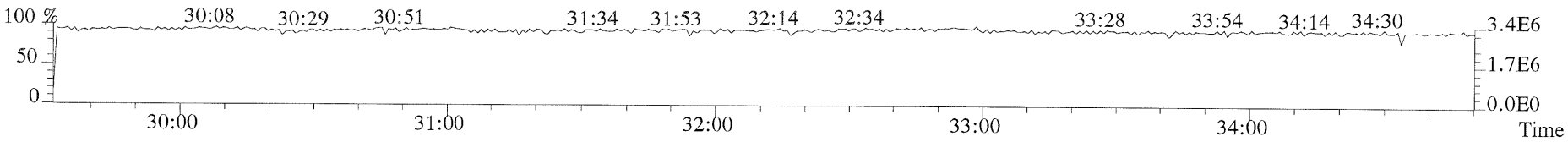
File:07APR11M #1-412 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
367.8949 S:15 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



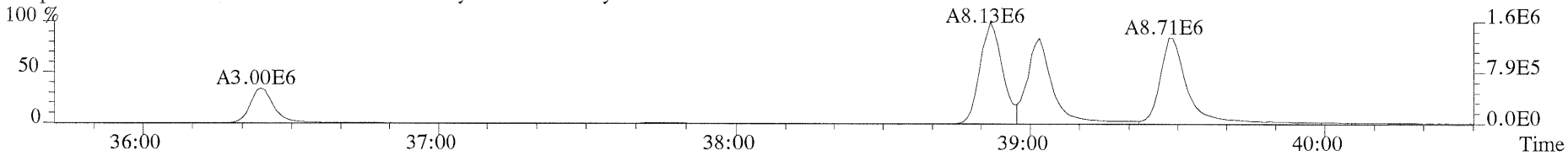
File:07APR11M #1-412 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
369.8919 S:15 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



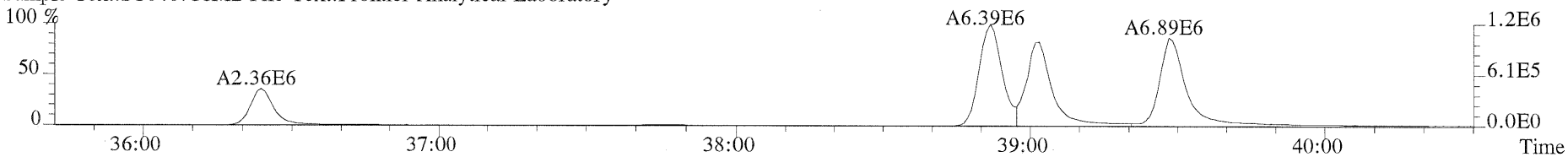
File:07APR11M #1-412 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
366.9792 S:15 F:2 Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



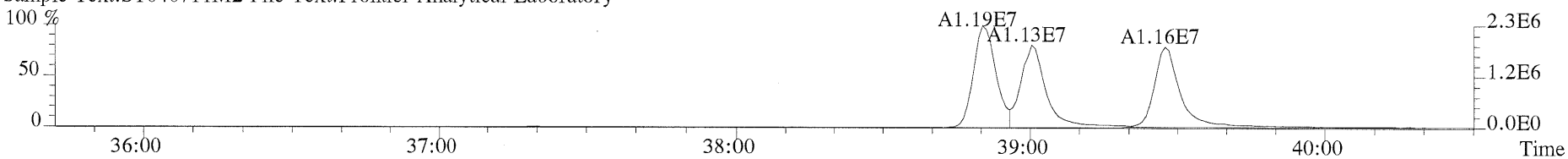
File:07APR11M #1-477 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
389.8156 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



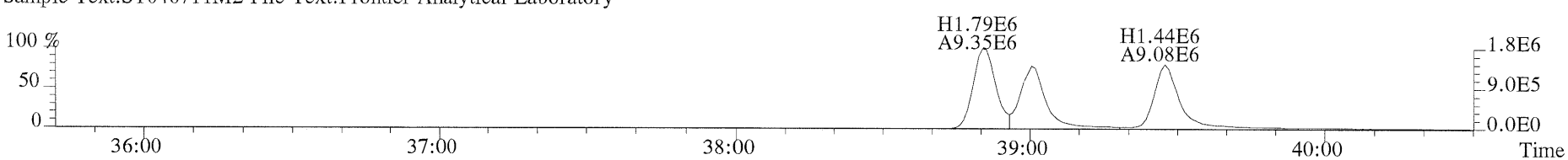
File:07APR11M #1-477 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
391.8127 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



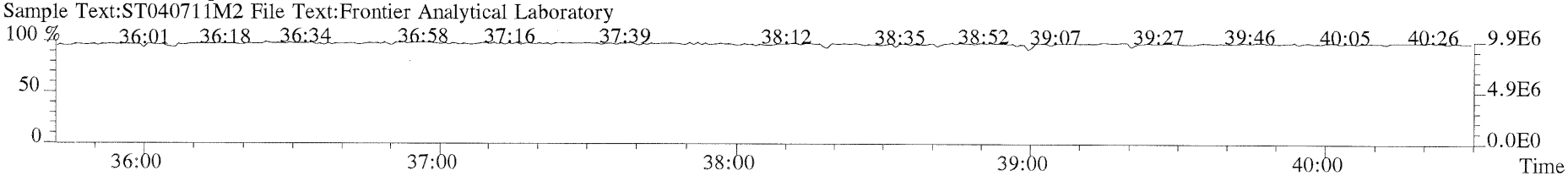
File:07APR11M #1-477 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
401.8559 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



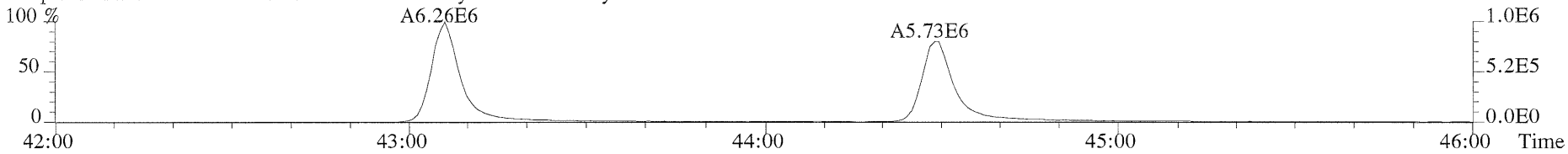
File:07APR11M #1-477 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
403.8530 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



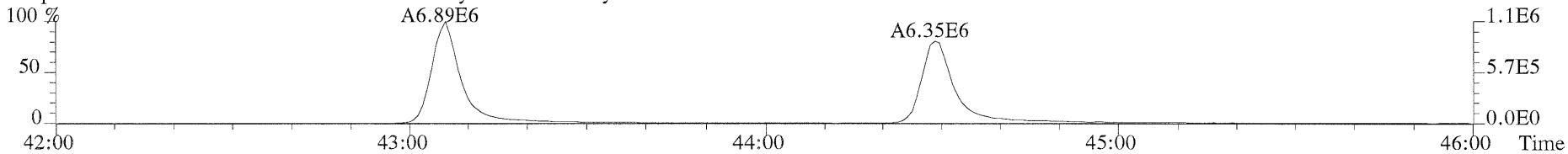
File:07APR11M #1-477 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
380.9760 S:15 F:3 Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



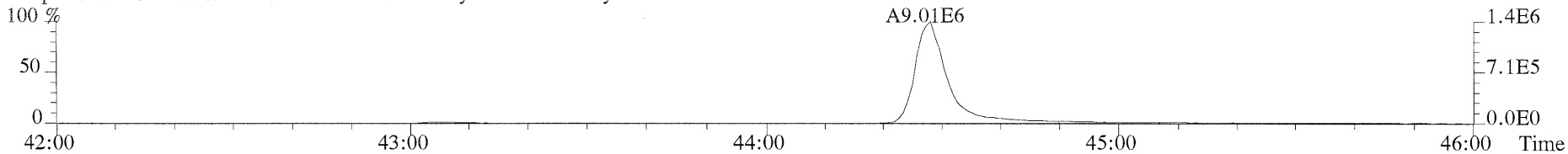
File:07APR11M #1-541 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
423.7767 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



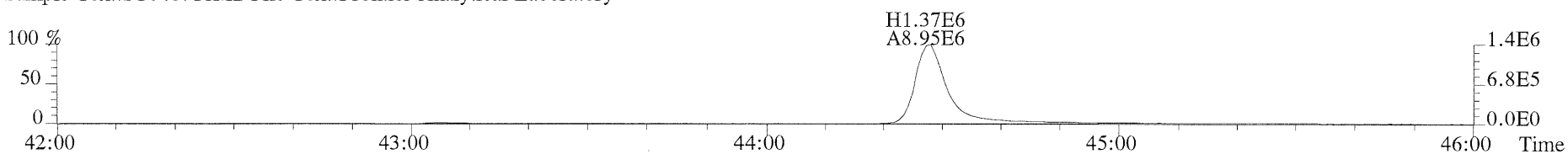
File:07APR11M #1-541 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
425.7737 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



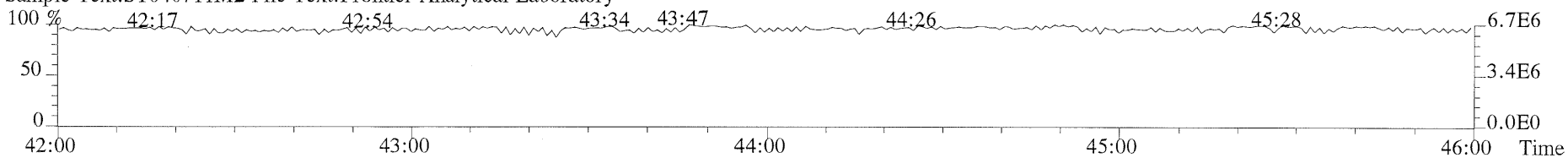
File:07APR11M #1-541 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
435.8169 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



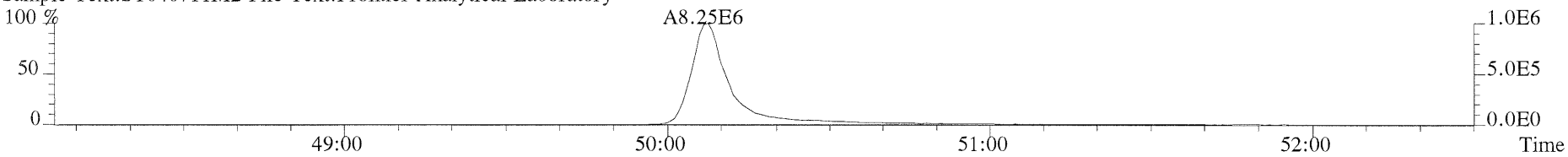
File:07APR11M #1-541 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
437.8140 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



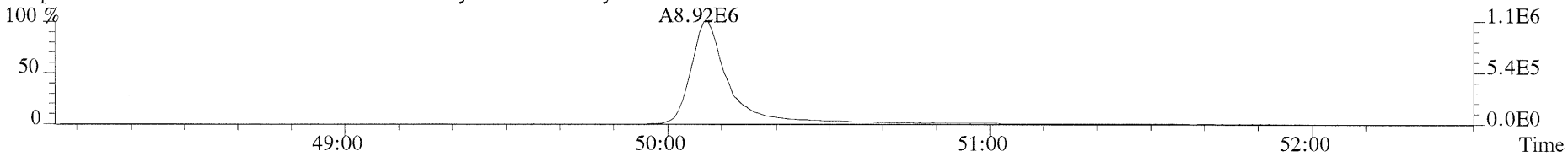
File:07APR11M #1-541 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
430.9728 S:15 F:4 Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



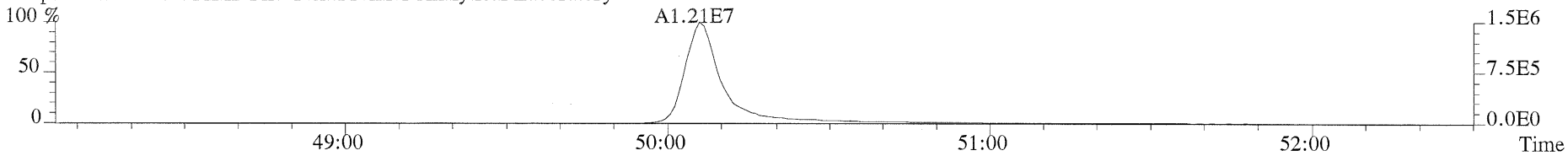
File:07APR11M #1-348 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
457.7377 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



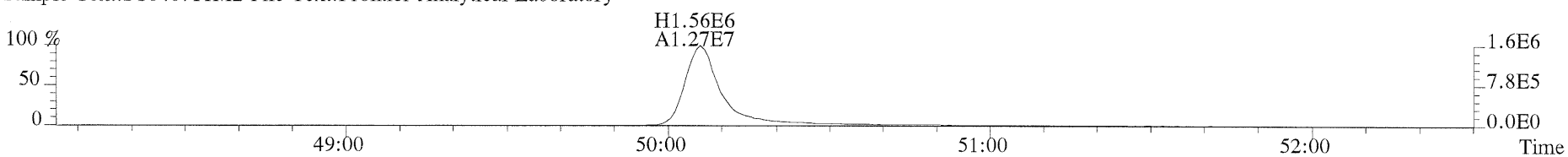
File:07APR11M #1-348 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
459.7348 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



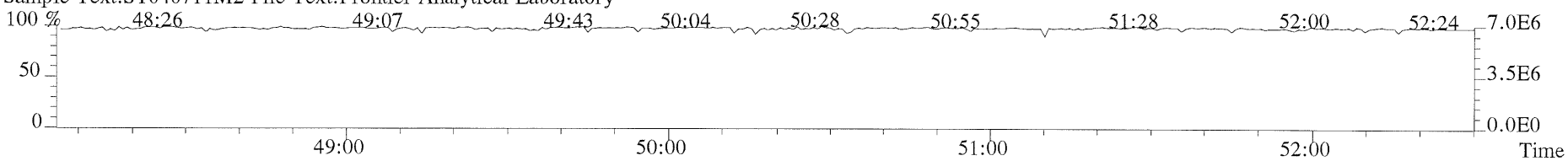
File:07APR11M #1-348 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
469.7780 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



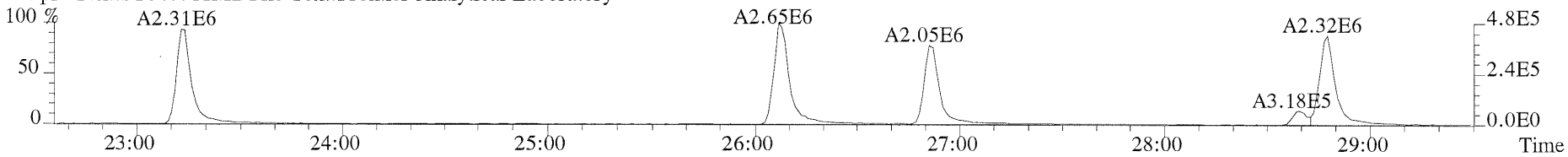
File:07APR11M #1-348 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
471.7750 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



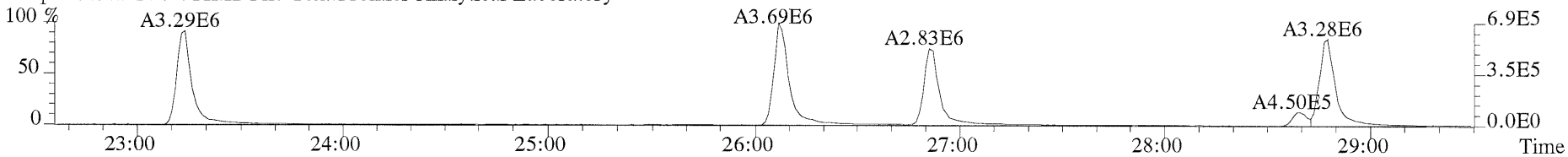
File:07APR11M #1-348 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
454.9728 S:15 F:5 Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



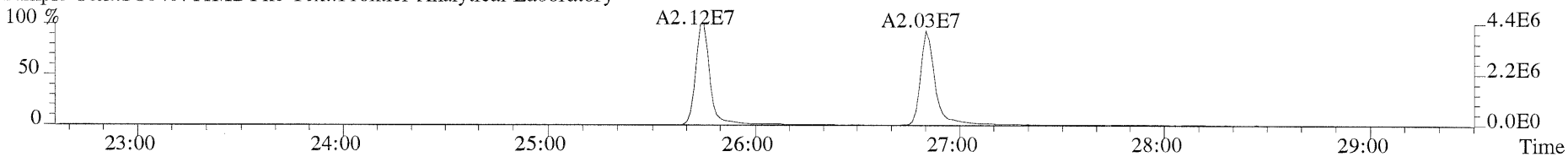
File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
303.9016 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



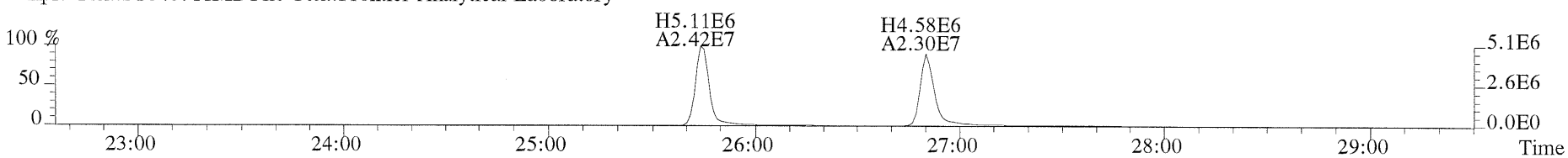
File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
305.8987 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



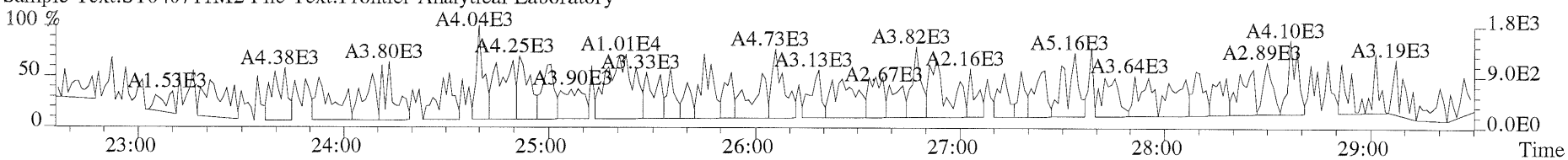
File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
315.9419 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



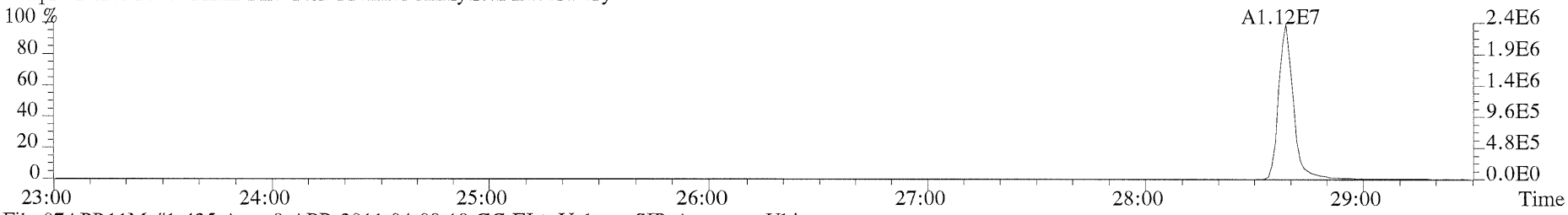
File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
317.9389 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



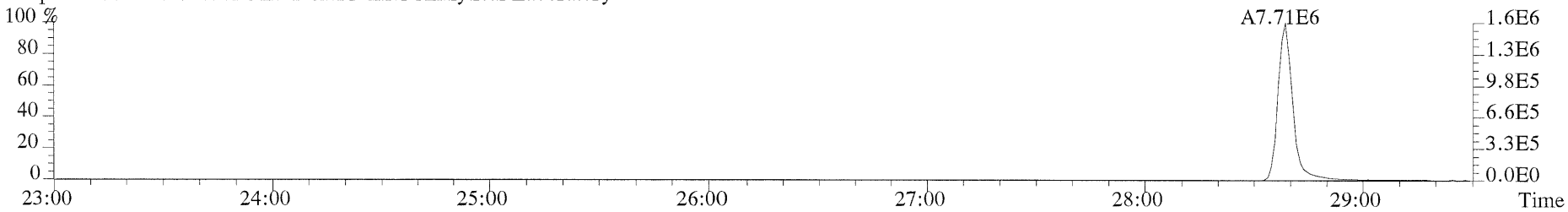
File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
375.8364 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



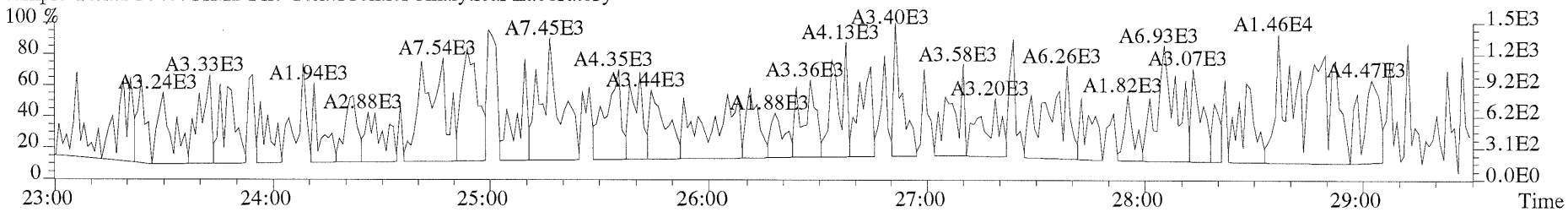
File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
339.8597 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



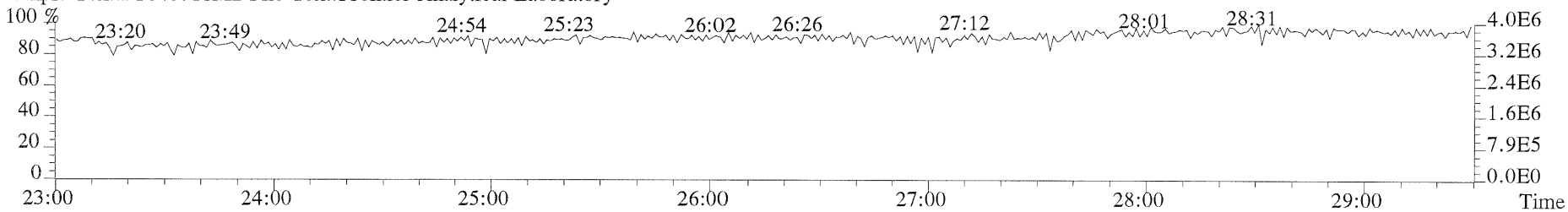
File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
341.8568 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



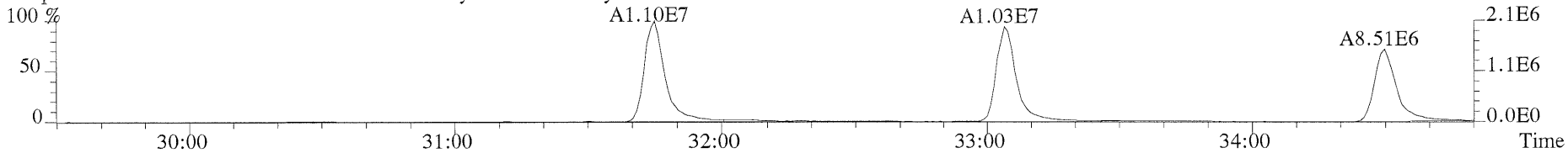
File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
409.7974 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



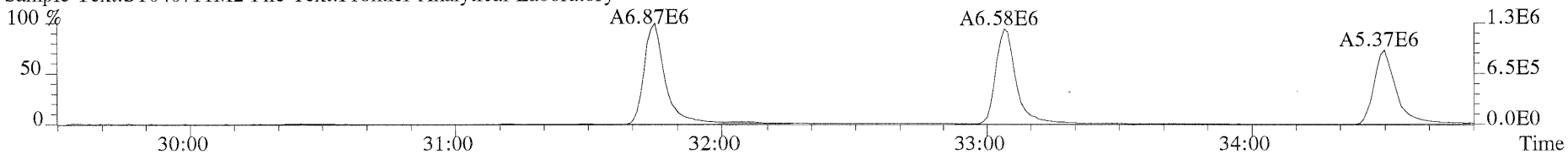
File:07APR11M #1-425 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
316.9824 S:15 Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



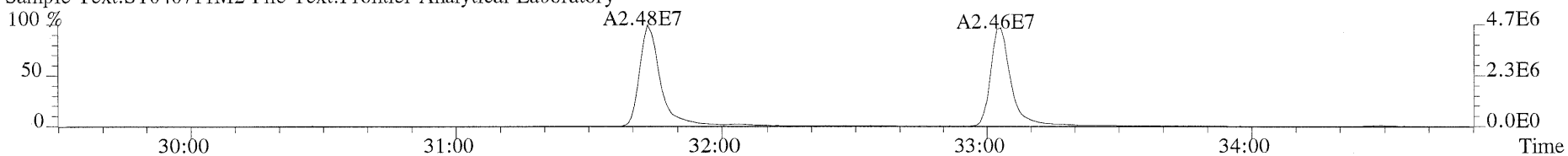
File:07APR11M #1-412 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
339.8597 S:15 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



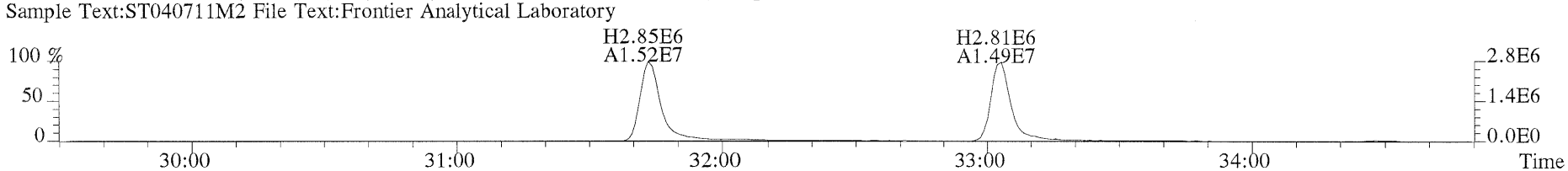
File:07APR11M #1-412 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
341.8568 S:15 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



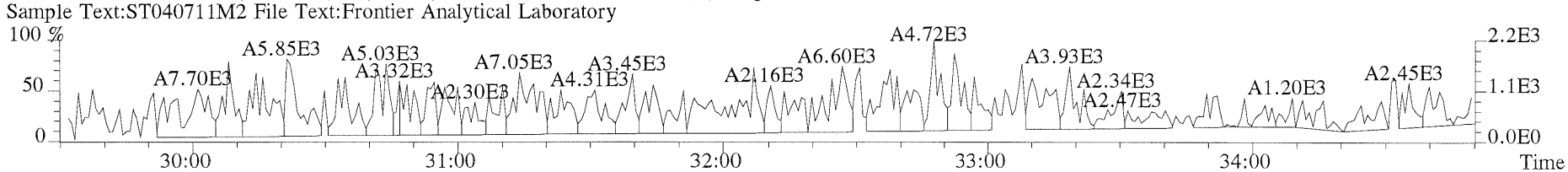
File:07APR11M #1-412 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
351.9000 S:15 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



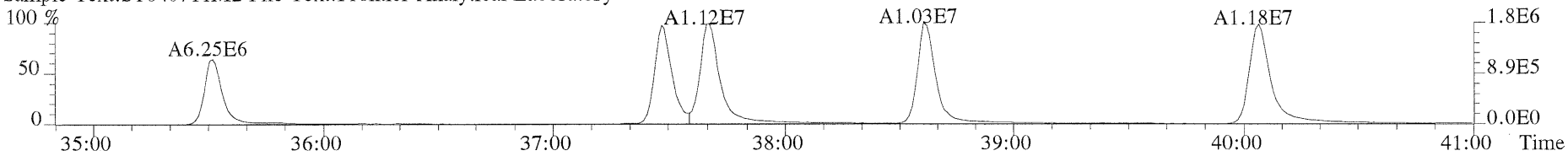
File:07APR11M #1-412 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
353.8970 S:15 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



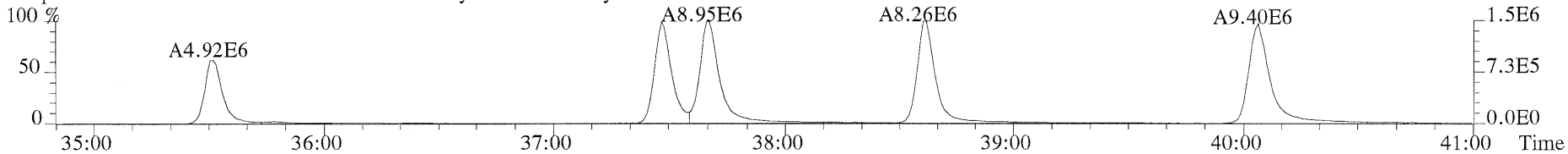
File:07APR11M #1-412 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
409.7974 S:15 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



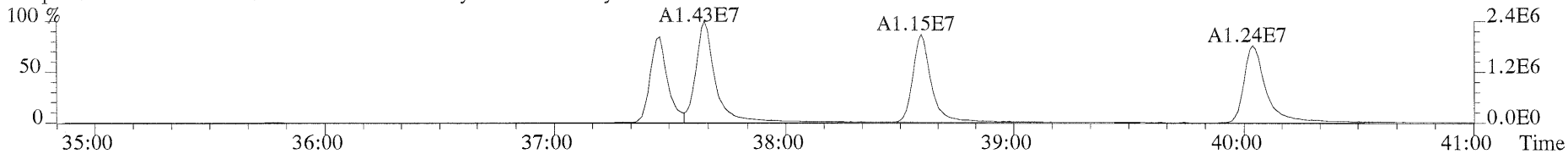
File:07APR11M #1-477 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
373.8207 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



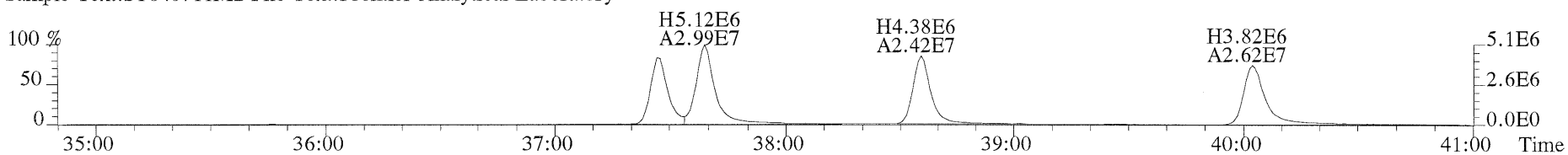
File:07APR11M #1-477 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
375.8178 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



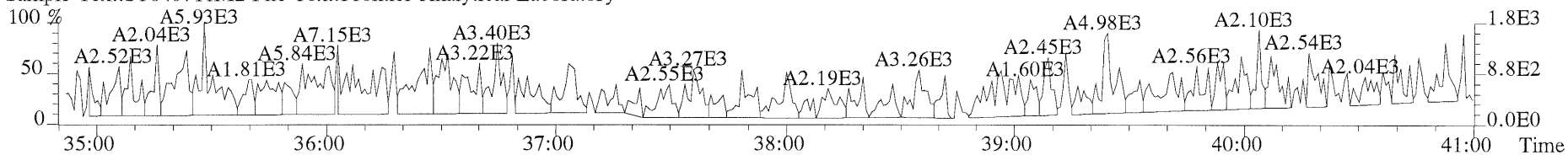
File:07APR11M #1-477 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
383.8639 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



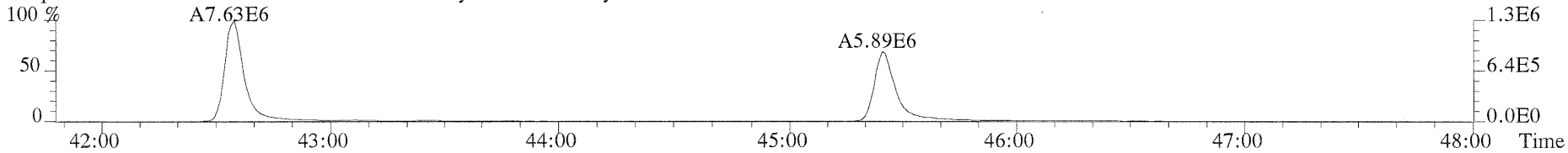
File:07APR11M #1-477 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
385.8610 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



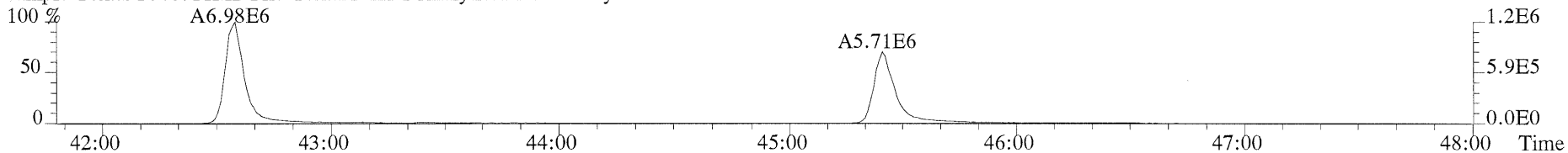
File:07APR11M #1-477 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
445.7555 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



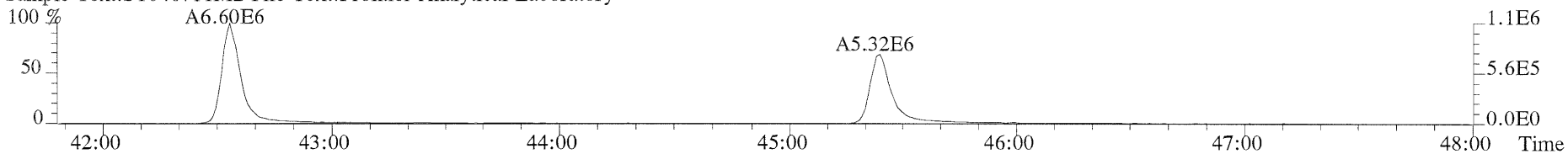
File:07APR11M #1-541 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
407.7818 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



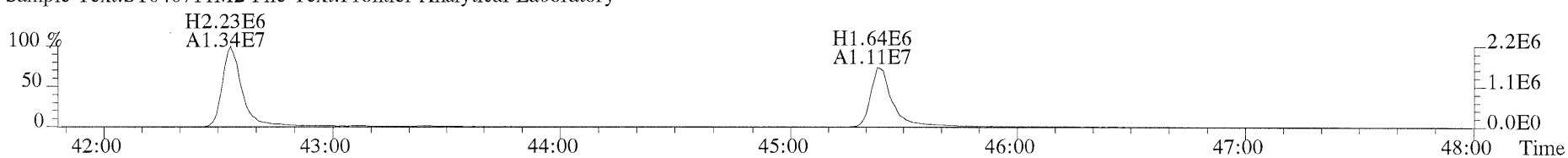
File:07APR11M #1-541 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
409.7788 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



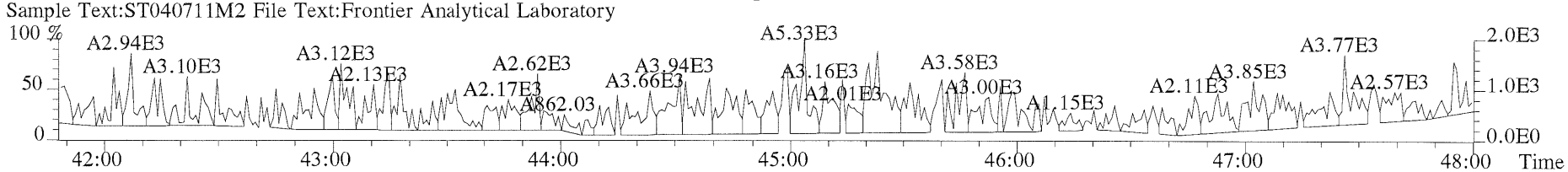
File:07APR11M #1-541 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
417.8253 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



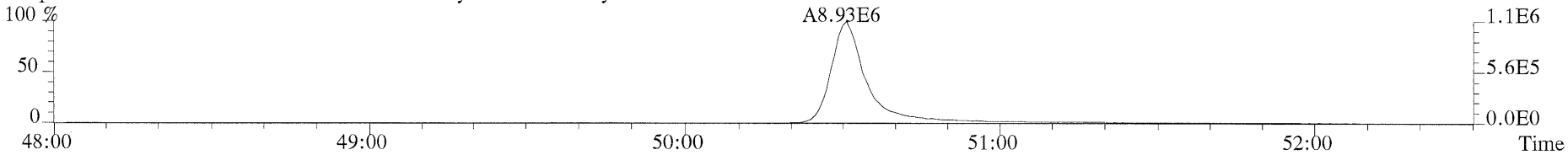
File:07APR11M #1-541 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
419.8220 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



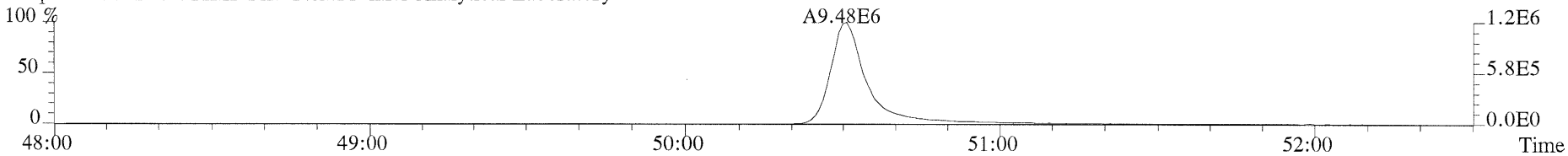
File:07APR11M #1-541 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
479.7165 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



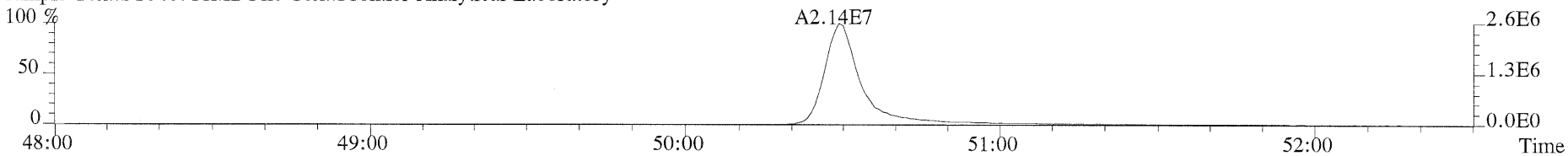
File:07APR11M #1-348 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
441.7428 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



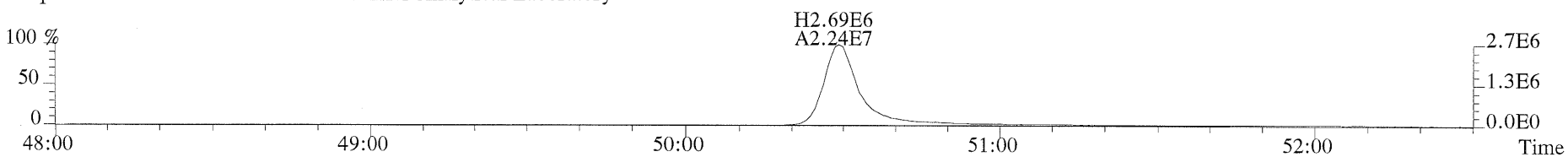
File:07APR11M #1-348 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
443.7398 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



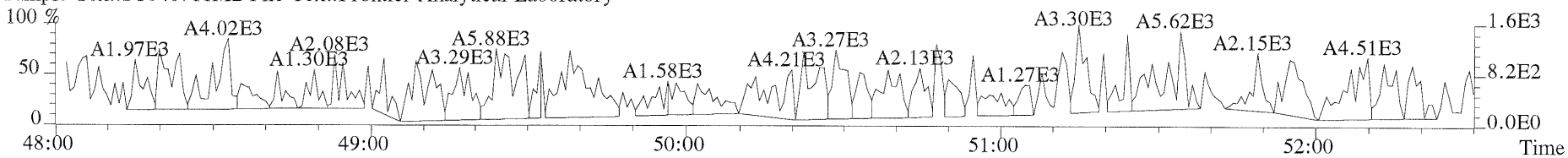
File:07APR11M #1-348 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
453.7831 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory



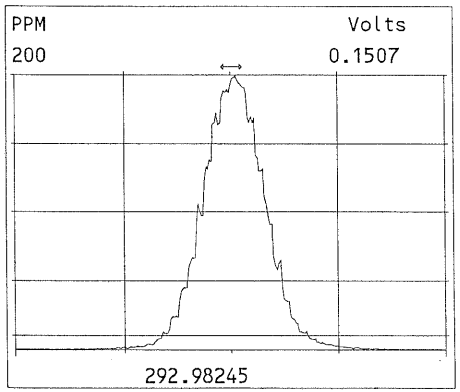
File:07APR11M #1-348 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
455.7801 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory

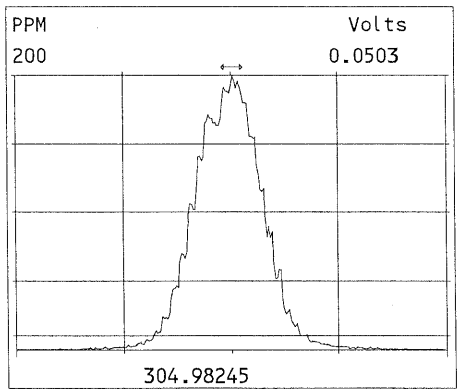


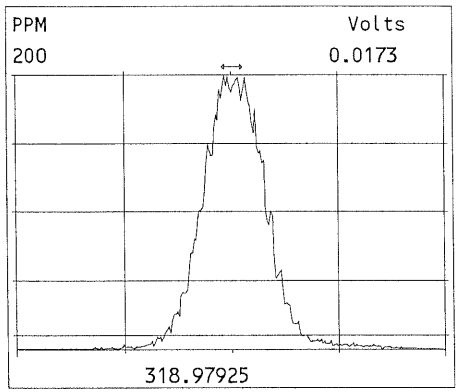
File:07APR11M #1-348 Acq: 8-APR-2011 04:08:18 GC EI+ Voltage SIR Autospec-Ultima
513.6775 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M2 File Text:Frontier Analytical Laboratory

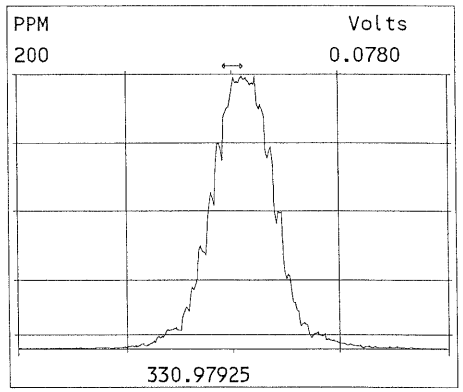


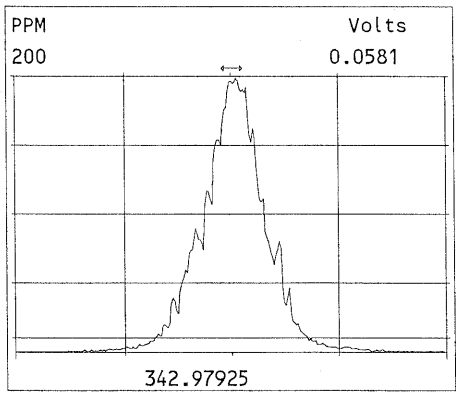
Peak Locate Examination: 8-APR-2011:08:48 File:07APR11M_RES_CHECK
Experiment:OCDD Function:1 Reference:PFK

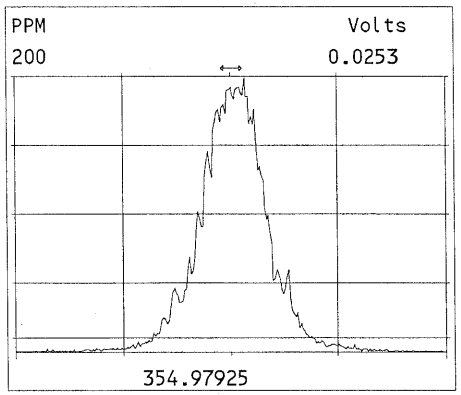


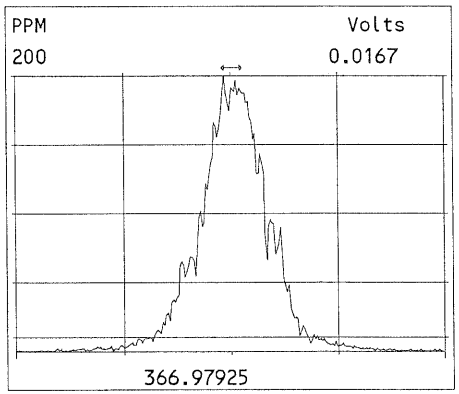


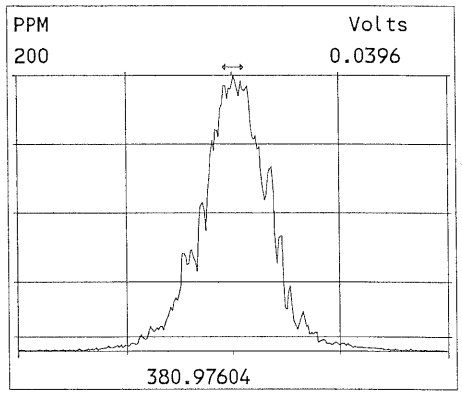


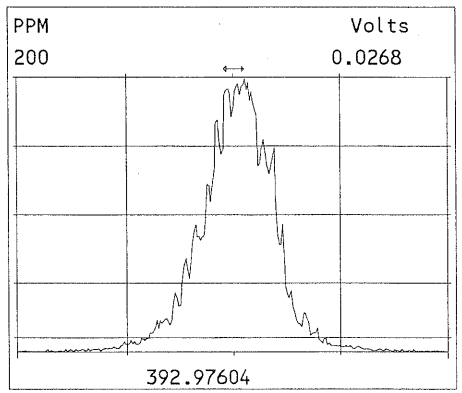


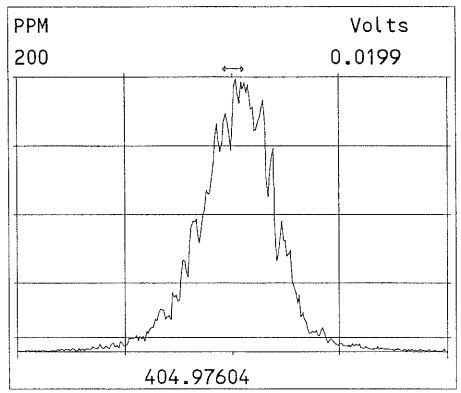


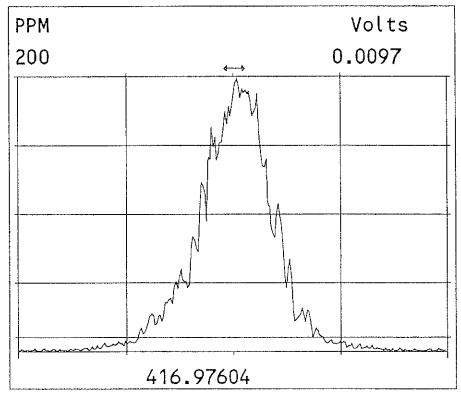




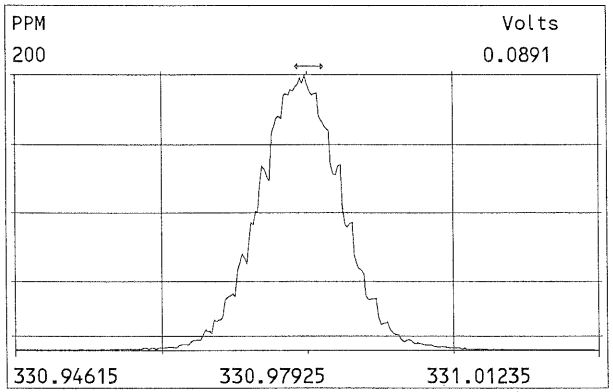


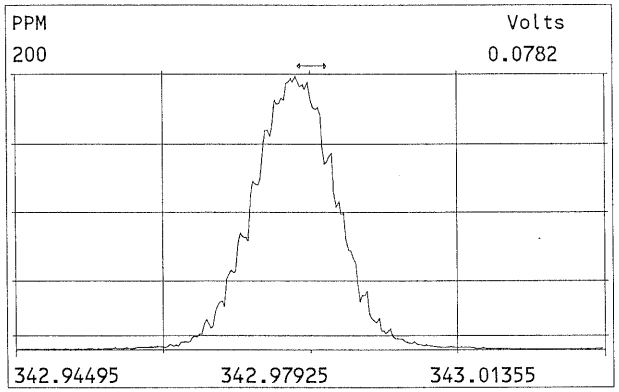


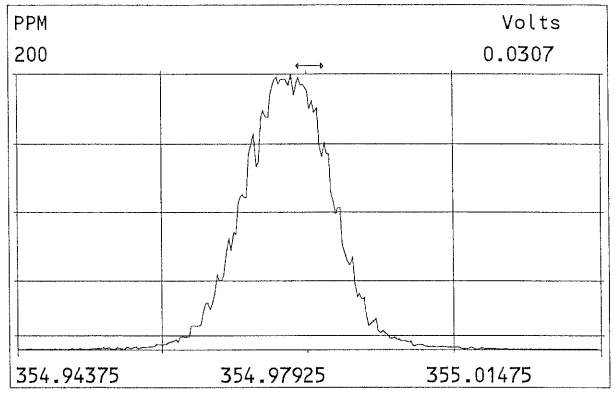


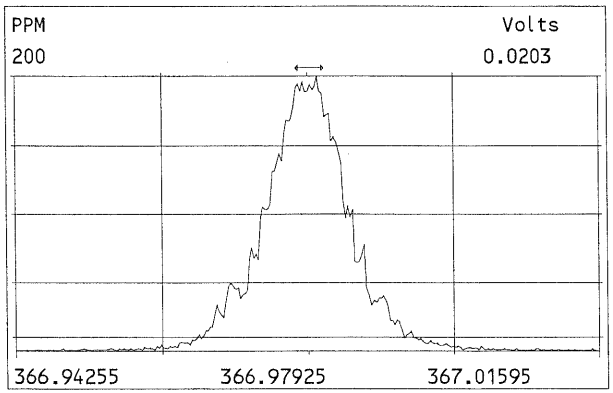


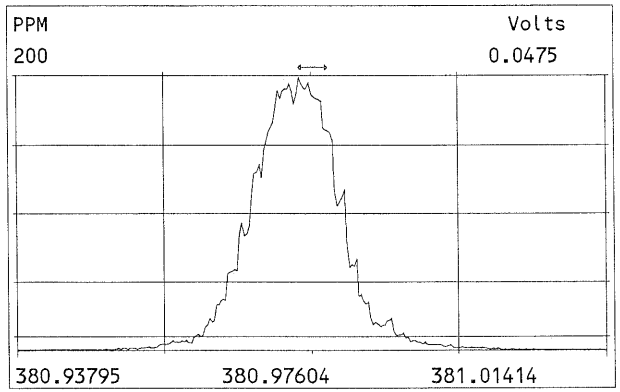
Peak Locate Examination: 8-APR-2011:08:49 File:07APR11M_RES_CHECK
Experiment:OCDD Function:2 Reference:PFK

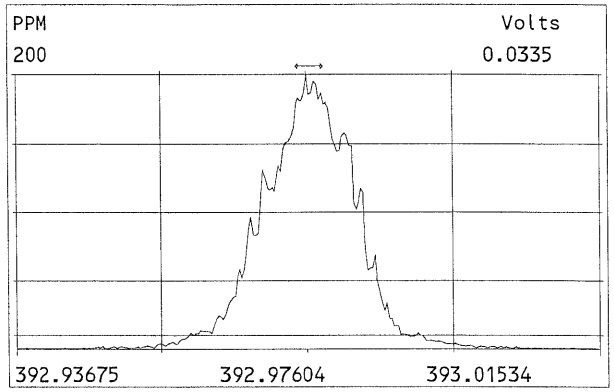


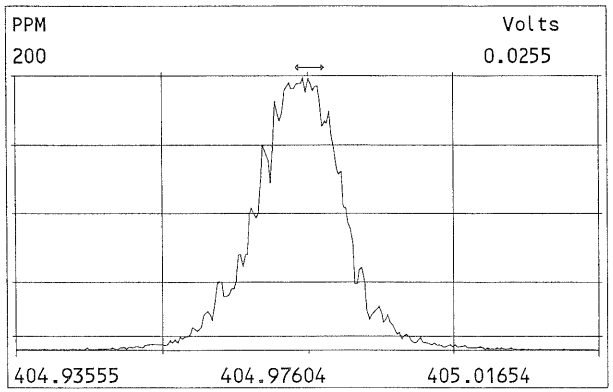


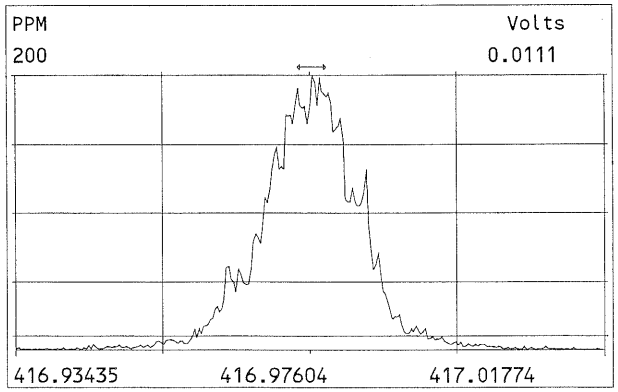




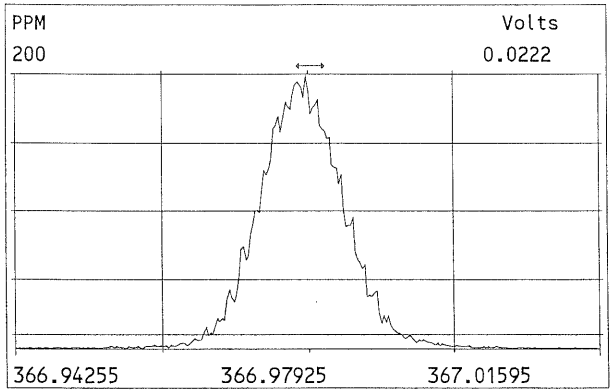


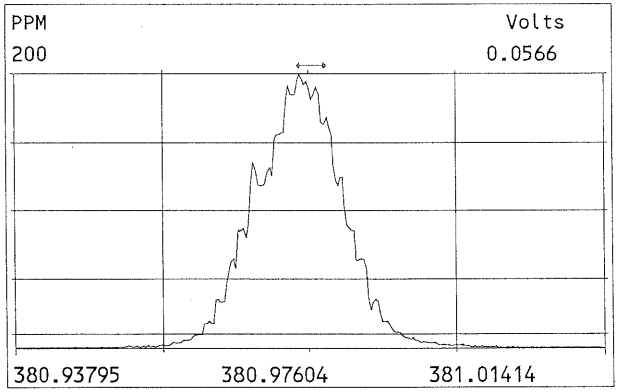


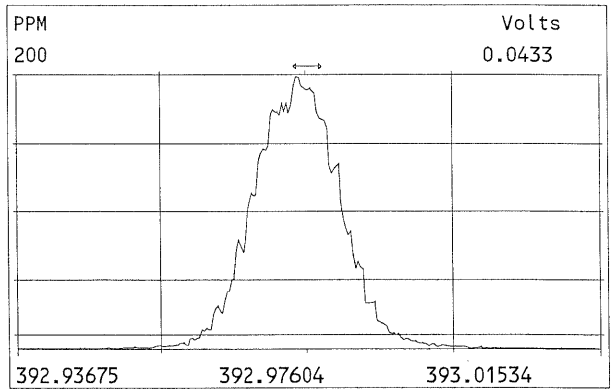


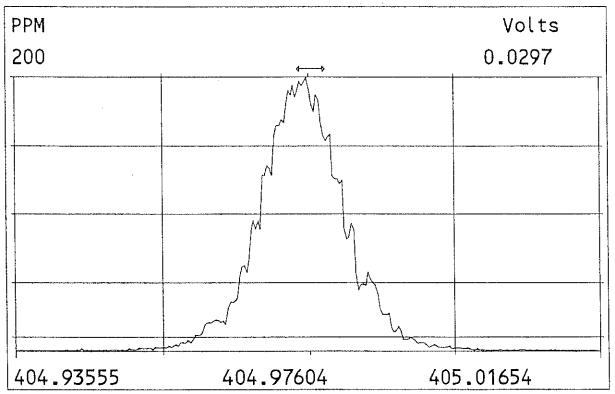


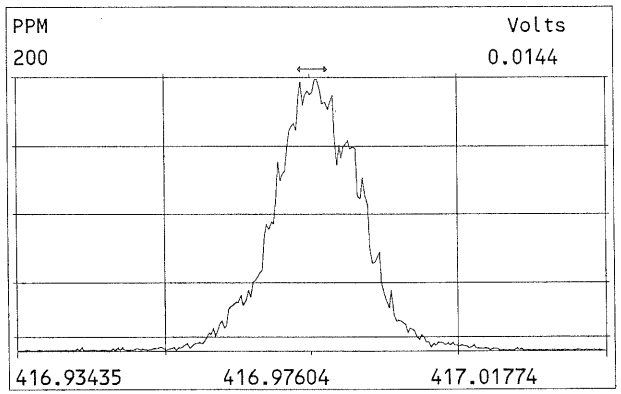
Peak Locate Examination: 8-APR-2011:08:49 File:07APR11M_RES_CHECK
Experiment:OCDD Function:3 Reference:PFK

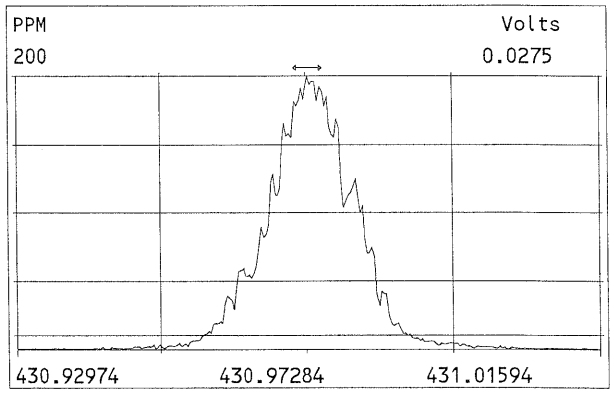


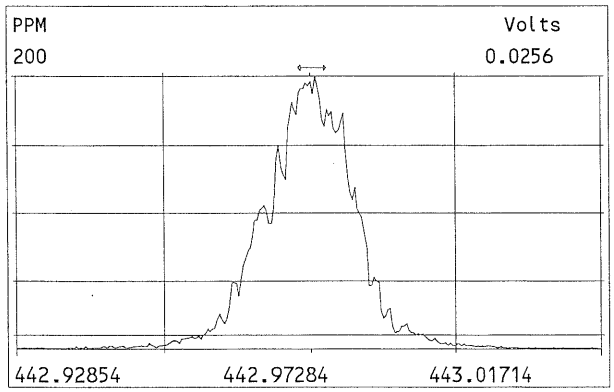


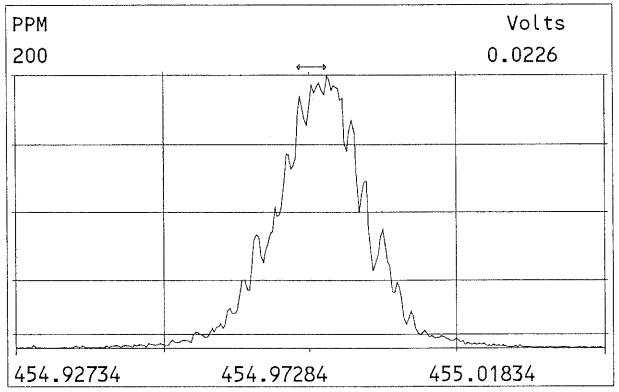




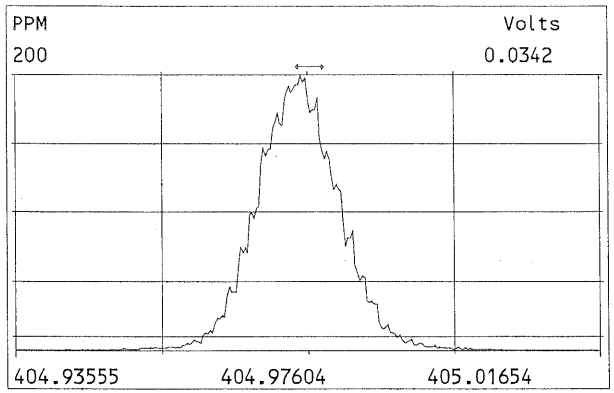


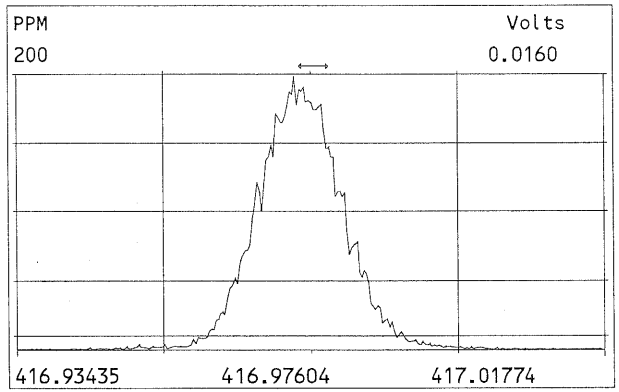


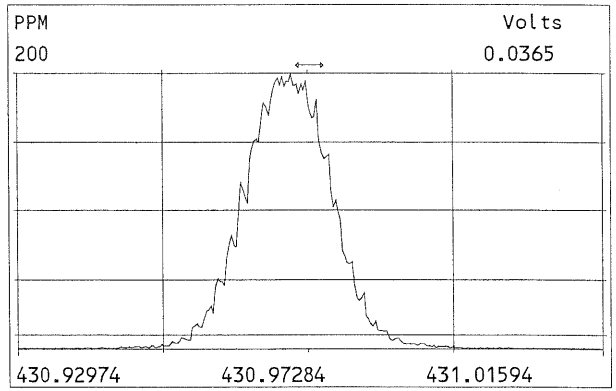


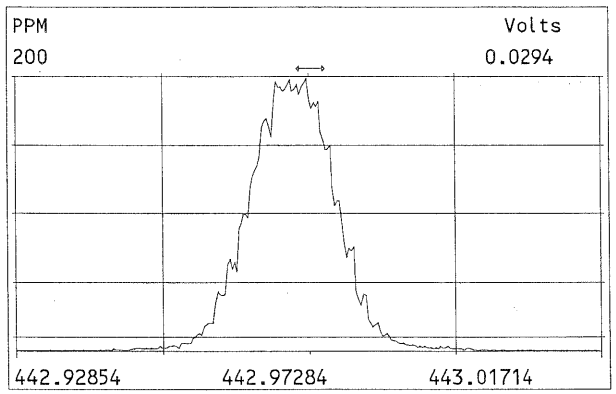


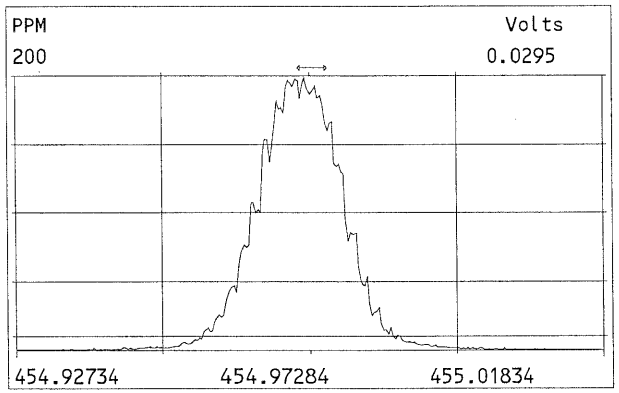
Peak Locate Examination: 8-APR-2011:08:50 File:07APR11M_RES_CHECK
Experiment:OCDD Function:4 Reference:PFK

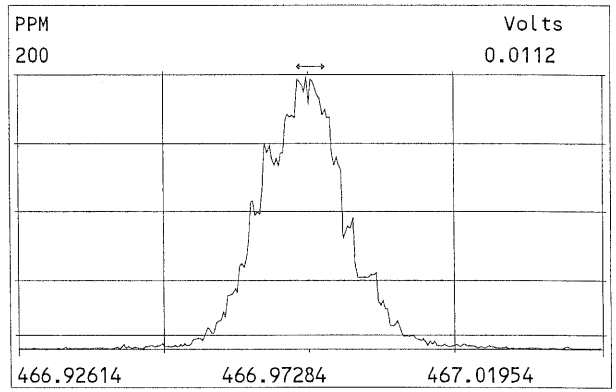


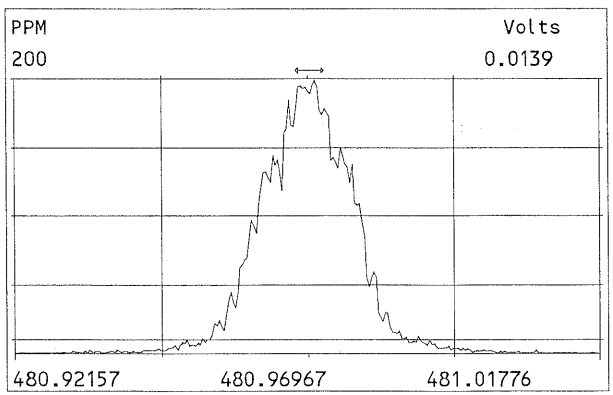




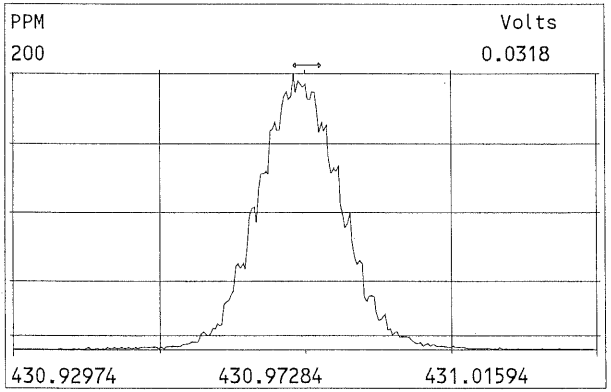


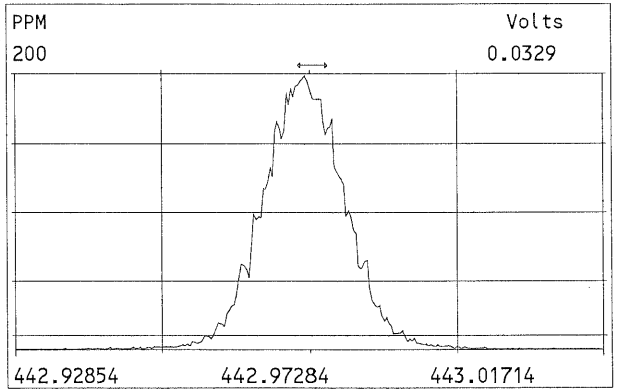


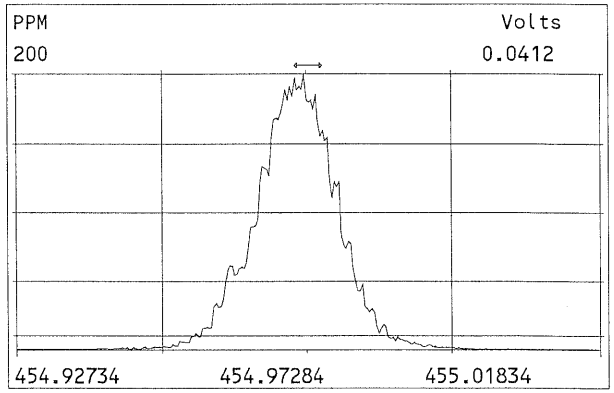


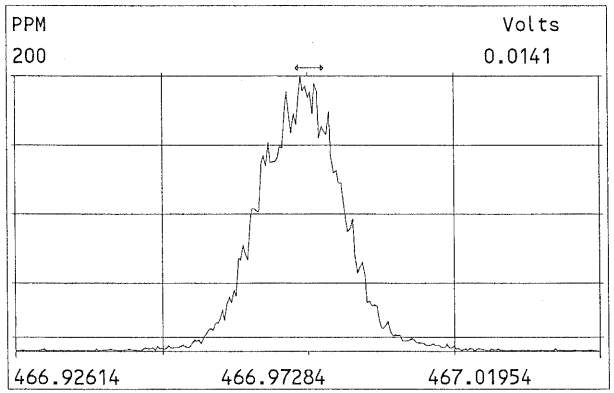


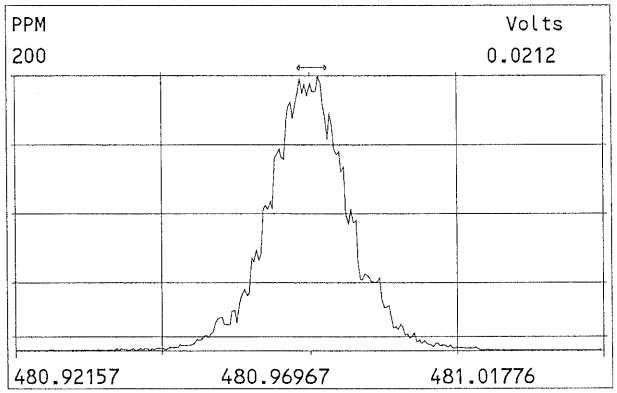
Peak Locate Examination: 8-APR-2011:08:50 File:07APR11M_RES_CHECK
Experiment:OCDD Function:5 Reference:PFK

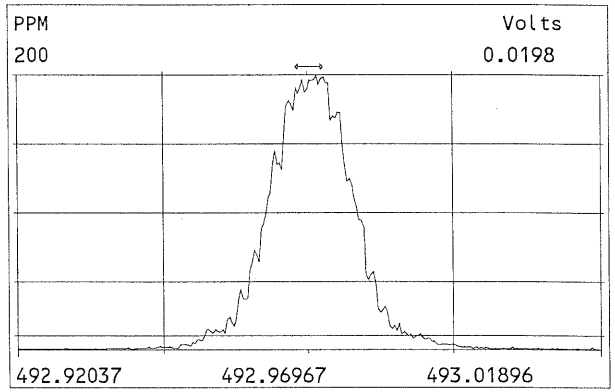


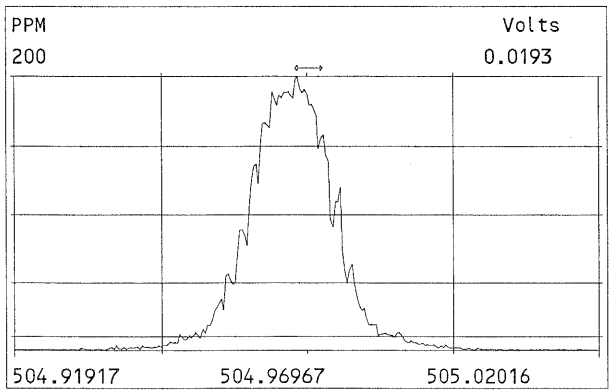


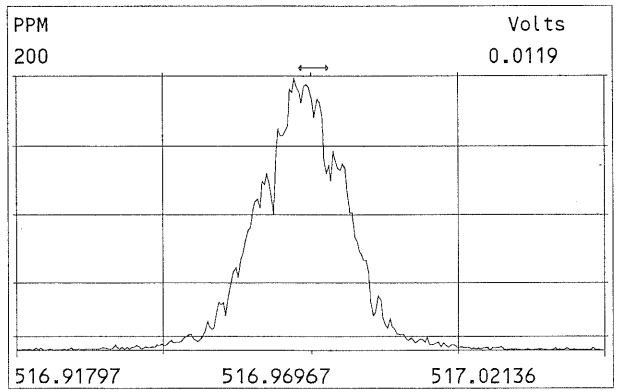












USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

VER Data Filename: 07APR11M Sam:19 Analysis Date: 8-APR-11 07:49:36

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	y	10.8	7.80 - 12.9
1,2,3,7,8-PeCDD	M+2/M+4	1.53	1.32-1.78	y	51.2	39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	y	48.0	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	y	47.2	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	y	49.4	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	0.92	0.88-1.20	y	51.1	43.0 - 58.0
OCDD	M+2/M+4	0.94	0.76-1.02	y	96.4	79.0 - 126
2,3,7,8-TCDF	M/M+2	0.72	0.65-0.89	y	10.2	8.40 - 12.0
1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	y	52.2	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.63	1.32-1.78	y	50.3	41.0 - 60.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	y	49.1	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	y	49.2	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	y	48.6	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	y	49.8	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.08	0.88-1.20	y	49.4	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.10	0.88-1.20	y	50.5	43.0 - 58.0
OCDF	M+2/M+4	0.92	0.76-1.02	y	99.3	63.0 - 159

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

Analyst: _____ Date: 4/8/11

USEPA - ITD

FORM 4B

PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

VER Data Filename: 07APR11M Sam:19 Analysis Date: 8-APR-11 07:49:36

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.73	0.65-0.89	y	98.4	82.0 - 121
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.78	1.32-1.78	y	96.0	62.0 - 160
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.31	1.05-1.43	y	86.6	85.0 - 117
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.31	1.05-1.43	y	105	85.0 - 118
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	y	106	72.0 - 138
13C-OCDD	M+2/M+4	0.96	0.76-1.02	y	212	96.0 - 415
13C-2,3,7,8-TCDF	M/M+2	0.88	0.65-0.89	y	101	71.0 - 140
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.69	1.32-1.78	y	107	76.0 - 130
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	y	107	77.0 - 130
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.48	0.43-0.59	y	89.2	76.0 - 131
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.47	0.43-0.59	y	97.3	70.0 - 143
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.47	0.43-0.59	y	96.3	73.0 - 137
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.47	0.43-0.59	y	96.8	74.0 - 135
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.49	0.37-0.51	y	101	78.0 - 129
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.49	0.37-0.51	y	101	77.0 - 129
13C-OCDF	M+2/M+4	0.94	0.76-1.02	y	200	96.0 - 415
CLEANUP STANDARD (4)						
37Cl-2,3,7,8-TCDD					9.28	7.80 - 12.8

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

(4) No ion abundance ratio; report concentration found.

Analyst: _____ Date: 4/8/11

FORM 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: FAL3 Initial Calibration Date: 3/7/11

RT Window Data Filename: 07APR11M Sam:19 Analysis Date: 8-APR-11 Time: 07:49:36

DB-5 IS Data Filename: 07APR11M Sam:19 Analysis Date: 8-APR-11 Time: 07:49:36

DB-225 IS Date Filename: Analysis Date: Time:

DB-5 RT WINDOW DEFINING STANDARDS RESULTS

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	24:35	1,3,6,8-TCDF (F)	23:13
1,2,8,9-TCDD (L)	28:33	1,2,8,9-TCDF (L)	28:47
1,2,4,7,9-PeCDD (F)	30:29	1,3,4,6,8-PeCDF (F)	28:38
1,2,3,8,9-PeCDD (L)	34:03	1,2,3,8,9-PeCDF (L)	34:29
1,2,4,6,7,9-HxCDD (F)	36:23	1,2,3,4,6,8-HxCDF (F)	35:30
1,2,3,7,8,9-HxCDD (L)	39:28	1,2,3,7,8,9-HxCDF (L)	40:03
1,2,3,4,6,7,9-HpCDD (F)	43:05	1,2,3,4,6,7,8-HpCDF (F)	42:34
1,2,3,4,6,7,8-HpCDD (L)	44:28	1,2,3,4,7,8,9-HpCDF (L)	45:24

(F) = First eluting iosmer (DB-5); (L) = Last eluting isomer (DB-5)

==========

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

COMPARED PEAKS (1)	% VALLEY HEIGHT BETWEEN
	<25%

(1) To meet contract requirement, %Valley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

Analyst: _____ Date: 4/8/11

USEPA - ITD

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.: Init. Cal. Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

Analysis Date: 8-APR-11 07:49:36 CS3 or VER Data Filename: 07APR11M Sam:19

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002
2,3,7,8-TCDF	13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	1.000	0.999-1.002
1,2,3,7,8-PeCDF	13C-1,2,3,7,8-PeCDF	1.000	0.999-1.002
2,3,4,7,8-PeCDF	13C-2,3,4,7,8-PeCDF	1.001	0.999-1.002
LABELED COMPOUNDS			
37Cl-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.023	0.989-1.052
13C-2,3,7,8-TCDD		1.022	0.976-1.043
13C-2,3,7,8-TCDF		0.994	0.923-1.103
13C-1,2,3,7,8-PeCDD		1.240	1.000-1.567
13C-1,2,3,7,8-PeCDF		1.175	0.923-1.203
13C-2,3,4,7,8-PeCDF		1.224	0.923-1.303

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Analyst: _____ Date: 4/8/11

USEPA - ITD

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.: Init. Cal. Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

Analysis Date: 8-APR-11 07:49:36 CS3 or VER Data Filename: 07APR11M Sam:19

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
1,2,3,4,7,8-HxCDD	13C-1,2,3,4,7,8-HxCDD	1.001	0.999-1.001
1,2,3,6,7,8-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.000	0.998-1.004
1,2,3,7,8,9-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.012	1.000-1.019
1,2,3,4,7,8-HxCDF	13C-1,2,3,4,7,8-HxCDF	1.001	0.999-1.001
1,2,3,6,7,8-HxCDF	13C-1,2,3,6,7,8-HxCDF	1.000	0.997-1.005
2,3,4,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	1.000	0.999-1.001
1,2,3,7,8,9-HxCDF	13C-1,2,3,7,8,9-HxCDF	1.000	0.999-1.001
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.000	0.999-1.001
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.001	0.999-1.001
1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,7,8,9-HpCDF	1.001	0.999-1.001
OCDD	13C-OCDD	1.000	0.999-1.001
OCDF	13C-OCDF	1.001	0.999-1.001
LABELED COMPOUNDS			
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,7,8,9-HxCDD	0.985	0.977-1.000
13C-1,2,3,6,7,8-HxCDD		0.989	0.981-1.003
13C-1,2,3,4,7,8-HxCDF		0.949	0.944-0.970
13C-1,2,3,6,7,8-HxCDF		0.955	0.949-0.975
13C-2,3,4,6,7,8-HxCDF		0.978	0.959-1.021
13C-1,2,3,7,8,9-HxCDF		1.015	0.977-1.047
13C-1,2,3,4,6,7,8-HpCDD		1.127	1.086-1.130
13C-1,2,3,4,6,7,8-HpCDF		1.079	1.043-1.085
13C-1,2,3,4,7,8,9-HpCDF		1.151	1.057-1.154
13C-OCDD		1.270	1.032-1.311
13C-OCDF		1.280	1.000-1.311

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Analyst: _____ Date: 4/8/11

FAL ID: ST040711M3 Filename: 07APR11M Sam:19 Acquired: 8-APR-11 07:49:36 ICal: pcddfal3-3-7-11
Client ID: 1613 CS3 100511J ConCal: ST040711M2 EndCal: ST040711M3
Results: 2264 GC Column: DB5 Amount: 1.000 NATO 1989 Tox: 101
WHO 1998 Tox: 126 WHO 2005 Tox: 115

Name	Resp	RA	RT	RRF	Conc	Qual	Fac	Noise-1	Noise-2	DL
2,3,7,8-TCDD	3.01e+06	0.78 y	27:36	1.13	10.8		2.50	-	-	*
1,2,3,7,8-PeCDD	1.23e+07	1.53 y	33:29	1.02	51.2		2.50	-	-	*
1,2,3,4,7,8-HxCDD	1.29e+07	1.27 y	38:52	1.45	48.0		2.50	-	-	*
1,2,3,6,7,8-HxCDD	1.21e+07	1.28 y	39:01	1.45	47.2		2.50	-	-	*
1,2,3,7,8,9-HxCDD	1.31e+07	1.24 y	39:28	1.47	49.4		2.50	-	-	*
1,2,3,4,6,7,8-HpCDD	1.05e+07	0.92 y	44:28	1.30	51.1		2.50	-	-	*
OCDD	1.62e+07	0.94 y	50:06	1.45	96.4		2.50	-	-	*
2,3,7,8-TCDF	4.86e+06	0.72 y	26:51	1.15	10.2		2.50	-	-	*
1,2,3,7,8-PeCDF	1.71e+07	1.61 y	31:44	0.89	52.2		2.50	-	-	*
2,3,4,7,8-PeCDF	1.61e+07	1.63 y	33:04	0.89	50.3		2.50	-	-	*
1,2,3,4,7,8-HxCDF	1.46e+07	1.22 y	37:28	1.01	49.1		2.50	-	-	*
1,2,3,6,7,8-HxCDF	1.76e+07	1.23 y	37:40	0.89	49.2		2.50	-	-	*
2,3,4,6,7,8-HxCDF	1.59e+07	1.23 y	38:36	1.02	48.6		2.50	-	-	*
1,2,3,7,8,9-HxCDF	1.89e+07	1.25 y	40:03	1.10	49.8		2.50	-	-	*
1,2,3,4,6,7,8-HpCDF	1.32e+07	1.08 y	42:34	1.48	49.4		2.50	-	-	*
1,2,3,4,7,8,9-HpCDF	1.00e+07	1.10 y	45:24	1.43	50.5		2.50	-	-	*
OCDF	1.75e+07	0.92 y	50:30	0.84	99.3		2.50	-	-	*
										Rec
13C-2,3,7,8-TCDD	2.47e+07	0.73 y	27:35	1.03	98.4					98.4
13C-1,2,3,7,8-PeCDD	2.37e+07	1.78 y	33:28	1.01	96.0					96.0
13C-1,2,3,4,7,8-HxCDD	1.85e+07	1.31 y	38:50	1.19	86.6					86.6
13C-1,2,3,6,7,8-HxCDD	1.76e+07	1.31 y	39:00	0.94	105					105
13C-1,2,3,4,6,7,8-HpCDD	1.57e+07	1.03 y	44:27	0.83	106					106
13C-OCDD	2.32e+07	0.96 y	50:06	0.61	212					106
13C-2,3,7,8-TCDF	4.15e+07	0.88 y	26:50	0.98	101					101
13C-1,2,3,7,8-PeCDF	3.71e+07	1.69 y	31:43	0.83	107					107
13C-2,3,4,7,8-PeCDF	3.59e+07	1.61 y	33:02	0.80	107					107
13C-1,2,3,4,7,8-HxCDF	2.95e+07	0.48 y	37:26	1.84	89.2					89.2
13C-1,2,3,6,7,8-HxCDF	4.01e+07	0.47 y	37:39	2.29	97.3					97.3
13C-2,3,4,6,7,8-HxCDF	3.22e+07	0.47 y	38:35	1.86	96.3					96.3
13C-1,2,3,7,8,9-HxCDF	3.45e+07	0.47 y	40:02	1.98	96.8					96.8
13C-1,2,3,4,6,7,8-HpCDF	1.80e+07	0.49 y	42:33	0.99	101					101
13C-1,2,3,4,7,8,9-HpCDF	1.39e+07	0.49 y	45:23	0.77	101					101
13C-OCDF	4.18e+07	0.94 y	50:28	1.17	200					99.9
37Cl-2,3,7,8-TCDD	1.65e+06		27:36	0.73	9.28					92.8
13C-1,2,3,4-TCDD	2.44e+07	0.73 y	26:60	-	64.2					
13C-1,2,3,4-TCDF	4.18e+07	0.88 y	25:44	-	58.1					
13C-1,2,3,7,8,9-HxCDD	1.80e+07	1.29 y	39:26	-	72.4					

							Fac	Noise-1	Noise-2	DL		#Hom
Total Tetra-Dioxins	1.50e+07		24:35	1.13	53.6		2.50	-	-	*		20
Total Penta-Dioxins	2.62e+07		30:29	1.02	109		2.50	-	-	*		5
Total Hexa-Dioxins	4.28e+07		36:23	1.46	163		2.50	-	-	*		9
Total Hepta-Dioxins	2.18e+07		43:05	1.30	107		2.50	-	-	*		16
Total Tetra-Furans	2.27e+07		23:13	1.15	47.6		2.50	-	-	*		21
1st Fn. Tot Penta-Furans	1.78e+07		28:38	0.89	54.8		2.50	-	-	*	PeCDF	2
Total Penta-Furans	4.76e+07		30:25	0.89	146		2.50	-	-	*	201	12
Total Hexa-Furans	7.77e+07		35:30	1.00	228		2.50	-	-	*		19
Total Hepta-Furans	2.34e+07		42:34	1.46	101		2.50	-	-	*		13

Analyst: _____ Date: 4/8/11

Frontier Analytical Laboratory - Acquisition Log

Run Name:07APR11M Instrument: FAL3 GC: DB5 Experiment:OCDD

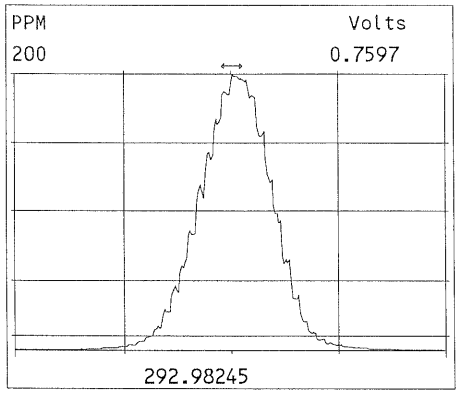
Data File	S	FAL ID	Client ID	Acquired	ConCal	EndCal	Analyst
07APR11M	1	ST040711M1	1613 CS3 100511J	7-APR-11 15:13:12	ST040711M1	ST040711M2	TC
07APR11M	2	2264-001-0001-MB	Method Blank	7-APR-11 16:08:34	ST040711M1	ST040711M2	TC
07APR11M	3	2264-001-0001-OPR	OPR	7-APR-11 17:03:57	ST040711M1	ST040711M2	TC
07APR11M	4	6678-008-0001-SA	LL-SED1-0-56-031511	7-APR-11 17:59:16	ST040711M1	ST040711M2	TC
07APR11M	5	6678-007-0001-SA	LL-SED2-0-56-031511-D	7-APR-11 18:54:38	ST040711M1	ST040711M2	TC
07APR11M	6	6678-006-0001-SA	LL-SED2-112-168-031511	7-APR-11 19:49:58	ST040711M1	ST040711M2	TC
07APR11M	7	6678-005-0001-SA	LL-SED2-56-112-031511	7-APR-11 20:45:17	ST040711M1	ST040711M2	TC
07APR11M	8	6678-004-0001-SA	LL-SED2-0-56-031511	7-APR-11 21:40:40	ST040711M1	ST040711M2	TC
07APR11M	9	6678-003-0001-SA	LL-SED3-141-167-031511	7-APR-11 22:36:00	ST040711M1	ST040711M2	TC
07APR11M	10	6678-002-0001-SA	LL-SED3-36-141-031511	7-APR-11 23:31:19	ST040711M1	ST040711M2	TC
07APR11M	11	6678-001-0001-SA	LL-SED3-0-36-031511	8-APR-11 00:26:42	ST040711M1	ST040711M2	TC
07APR11M	12	6678-005-0002-MS	LL-SED2-56-112-031511	8-APR-11 01:22:09	ST040711M1	ST040711M2	TC
07APR11M	13	6678-005-0002-MSD	LL-SED2-56-112-031511	8-APR-11 02:17:32	ST040711M1	ST040711M2	TC
07APR11M	14	SB040711M1	Solvent Blank	8-APR-11 03:12:55	ST040711M1	ST040711M2	TC
07APR11M	15	ST040711M2	1613 CS3 100511J	8-APR-11 04:08:18	ST040711M2	ST040711M3	TC
07APR11M	16	SB040711M2	Solvent Blank	8-APR-11 05:03:38	ST040711M2	ST040711M3	TC
07APR11M	17	6624-001-0001-SA	Lot #018690	8-APR-11 05:58:58	ST040711M2	ST040711M3	TC
07APR11M	18	SB040711M2	Solvent Blank	8-APR-11 06:54:16	ST040711M2	ST040711M3	TC
07APR11M	19	ST040711M3	1613 CS3 100511J	8-APR-11 07:49:36	ST040711M2	ST040711M3	TC

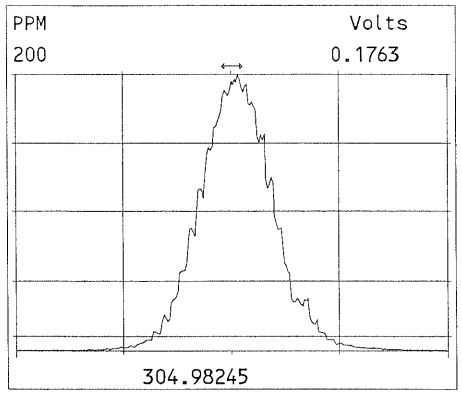
4/8/11

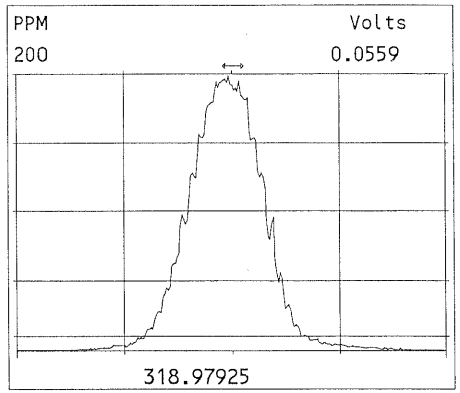
Data Backed Up:_____

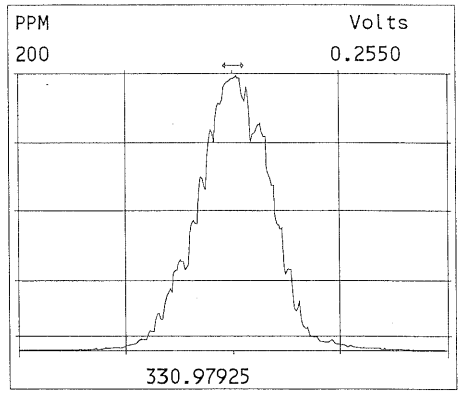
Date:_____

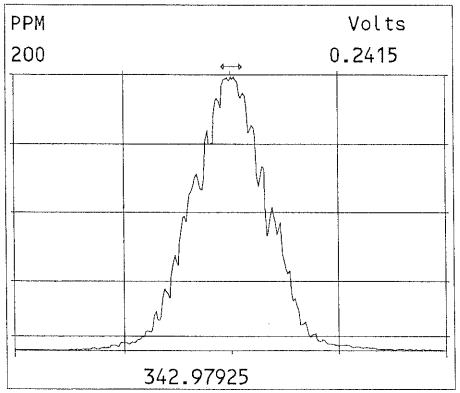
Peak Locate Examination: 7-APR-2011:15:11 File:07APR11M
Experiment:OCDD Function:1 Reference:PFK

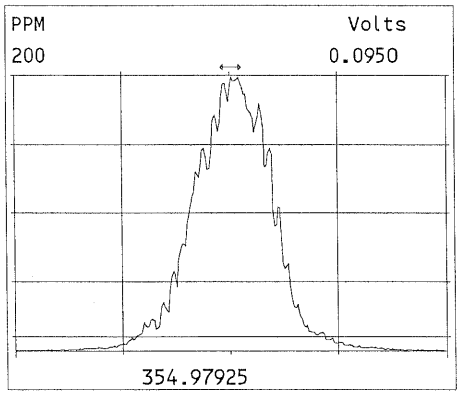


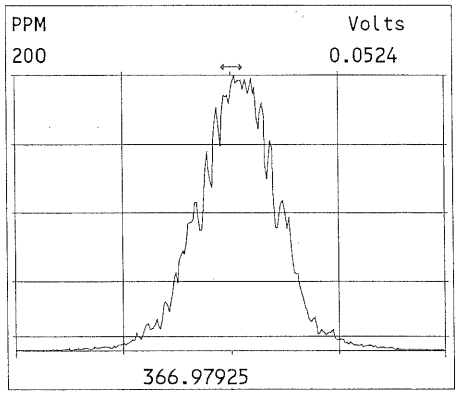


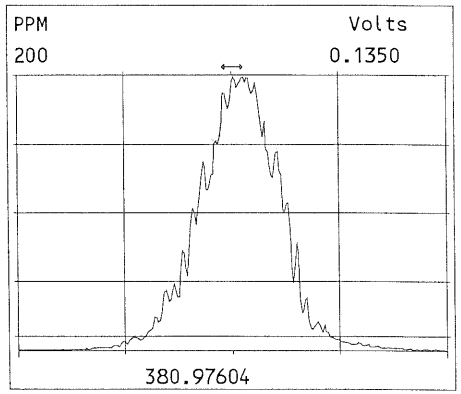


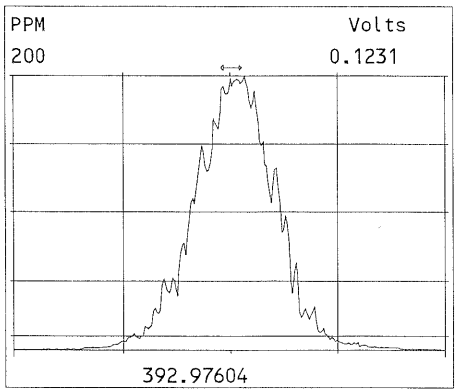


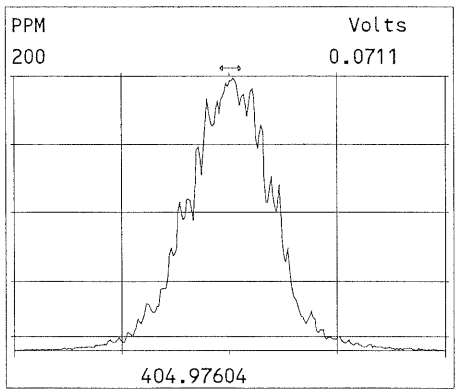


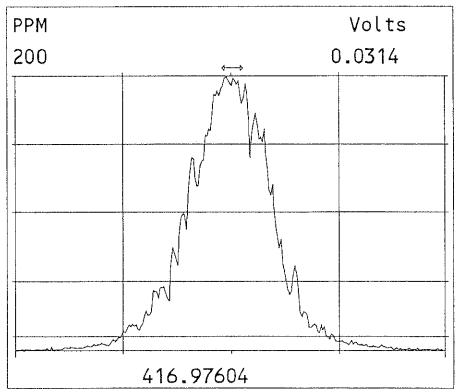






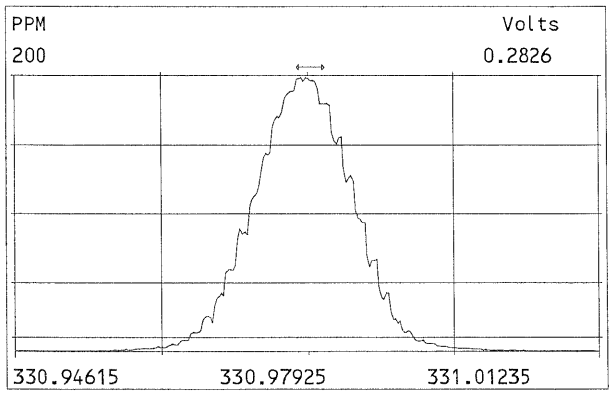


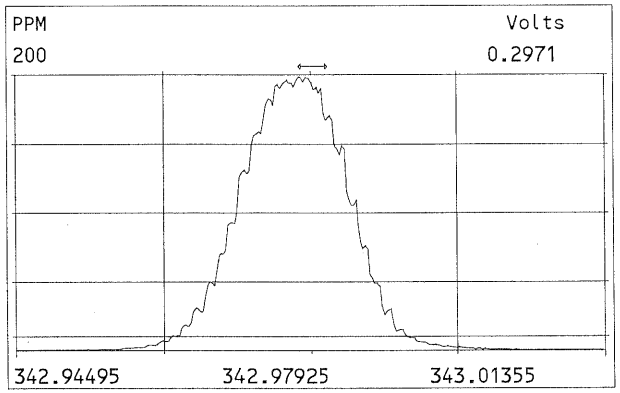


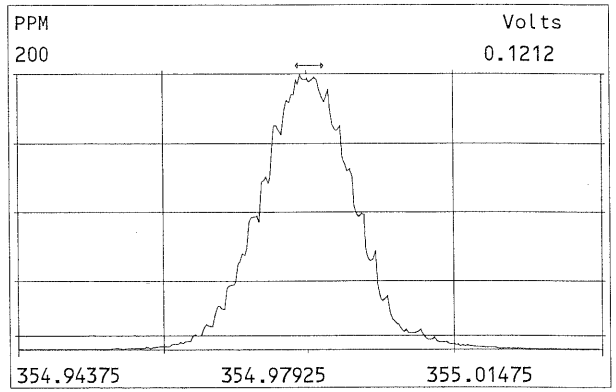


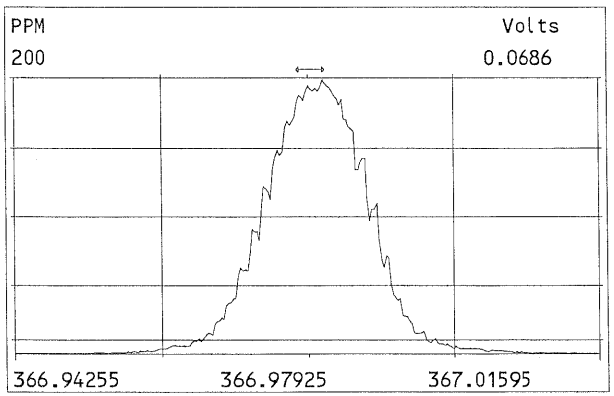
Peak Locate Examination: 7-APR-2011:15:11 File:07APR11M

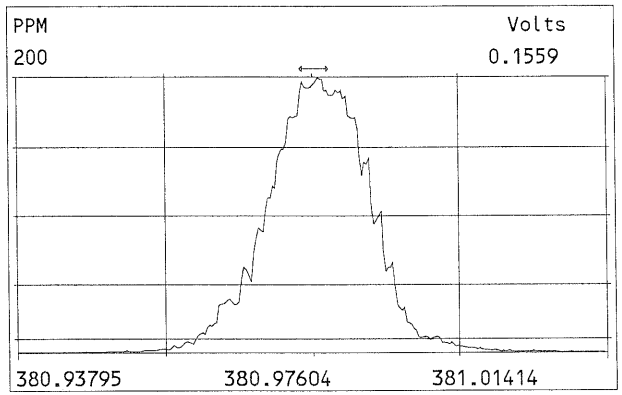
Experiment:OCDD Function:2 Reference:PFK

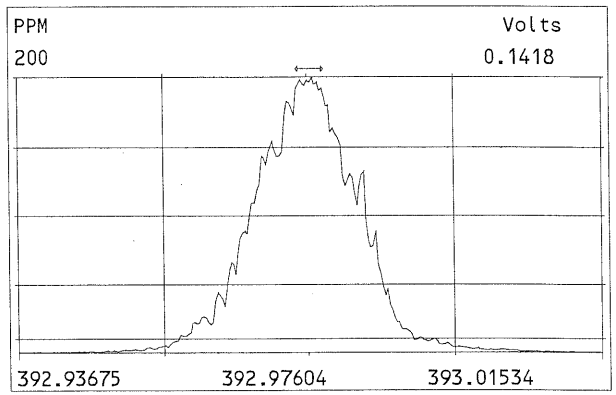


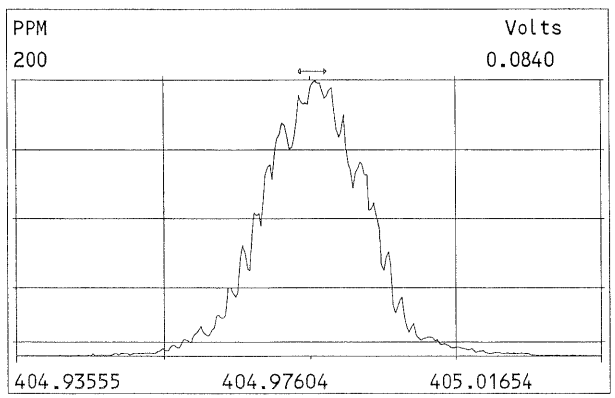


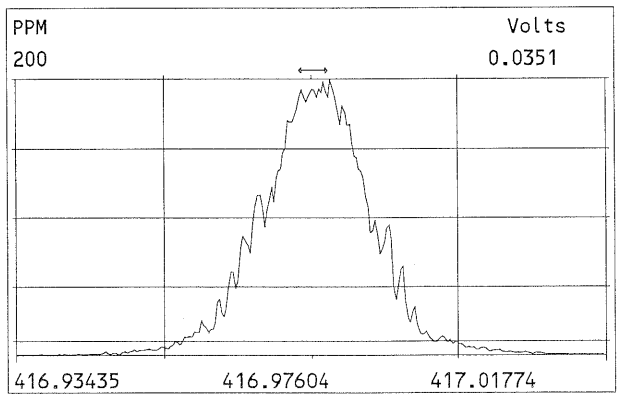




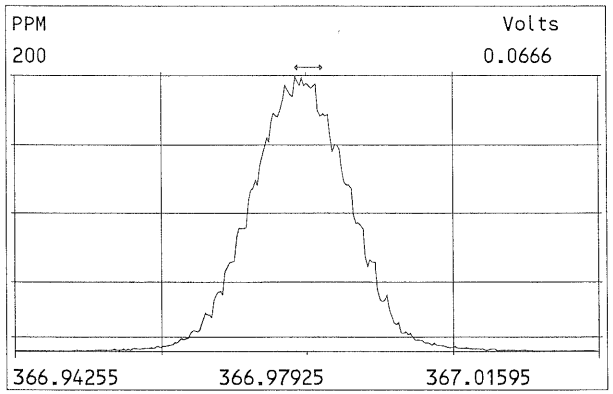


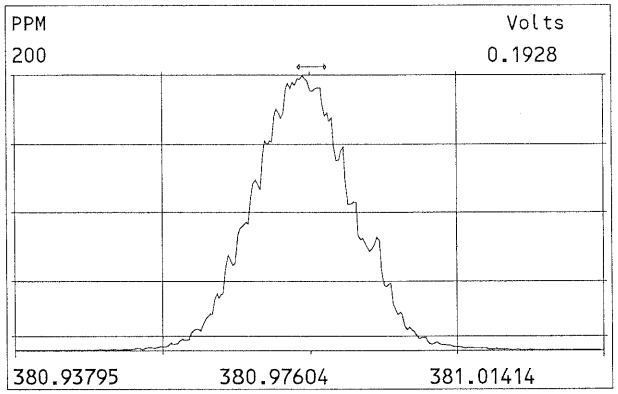


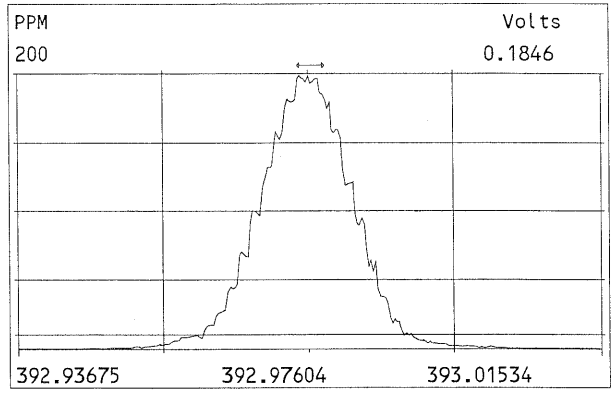


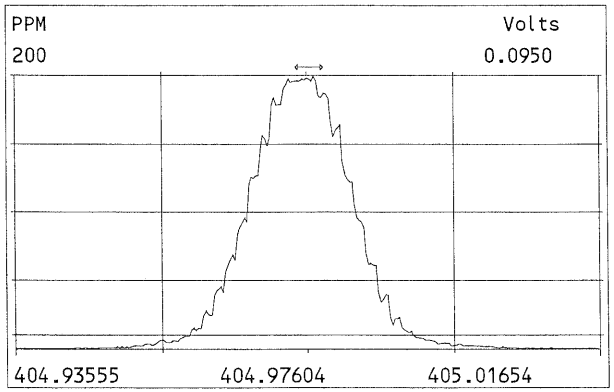


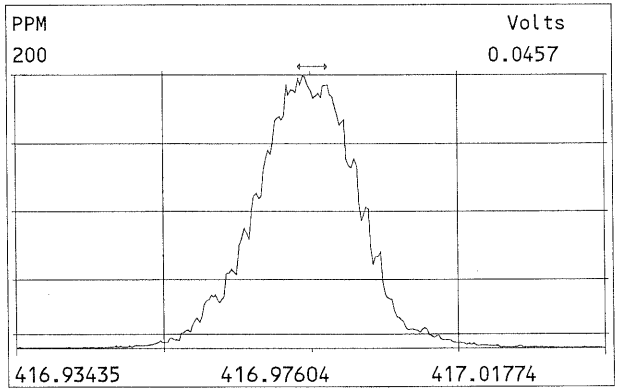
Peak Locate Examination: 7-APR-2011:15:12 File:07APR11M
Experiment:OCDD Function:3 Reference:PFK

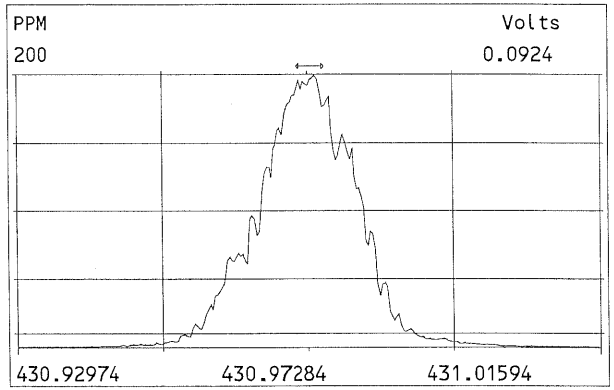


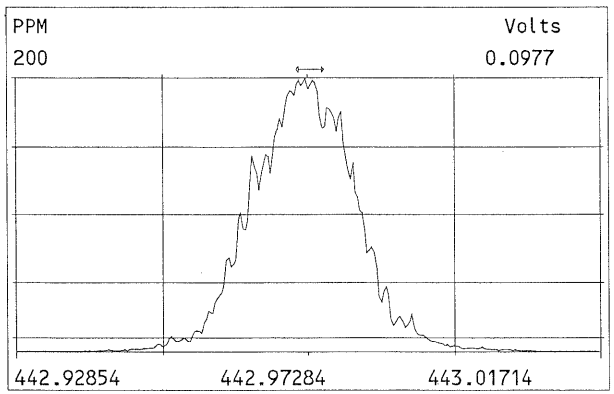


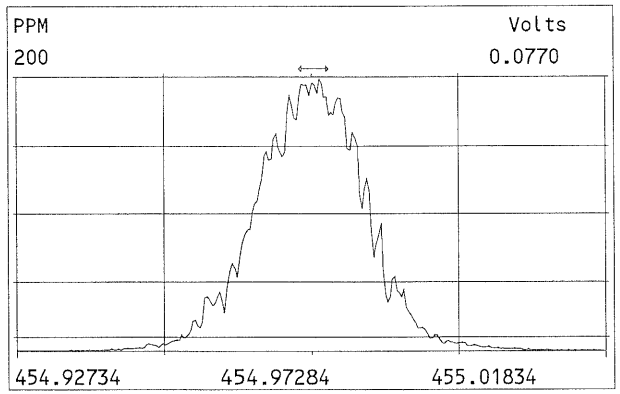




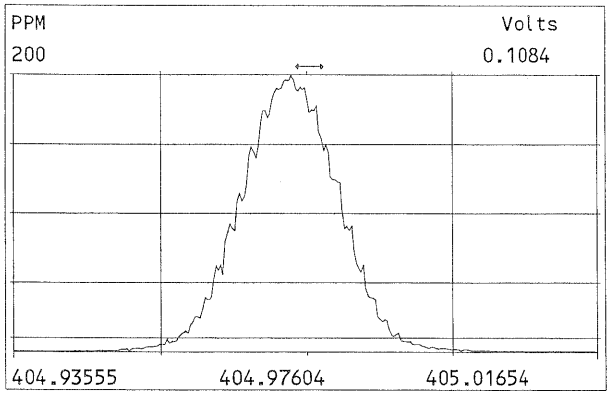


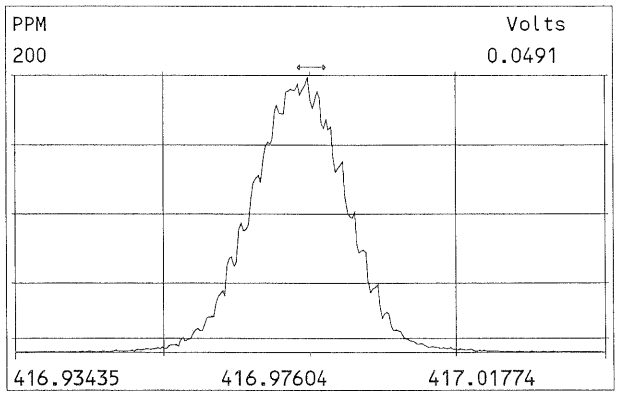


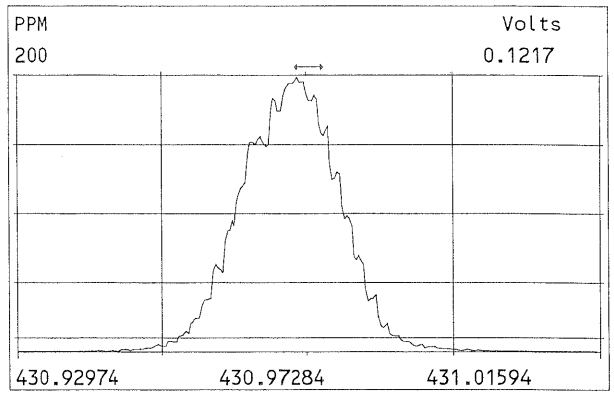


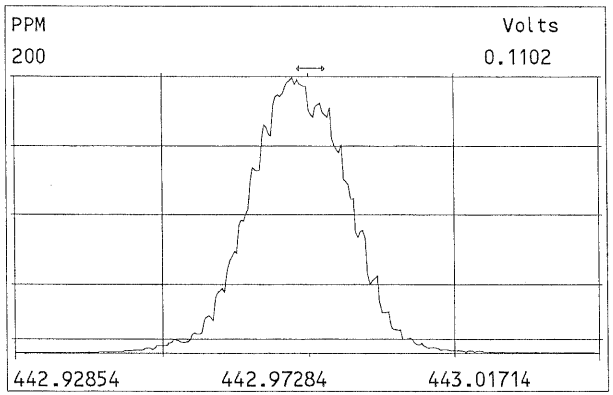


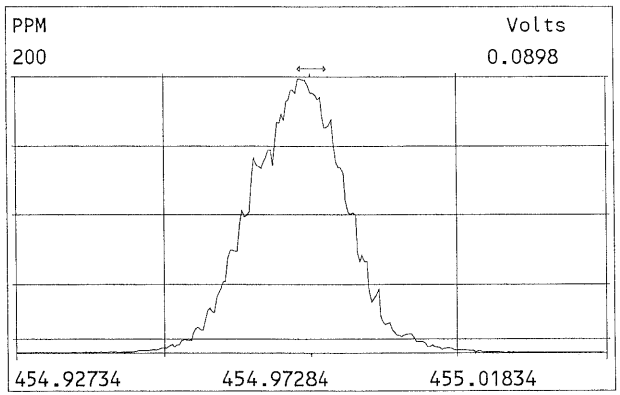
Peak Locate Examination: 7-APR-2011:15:12 File:07APR11M
Experiment:OCDD Function:4 Reference:PFK

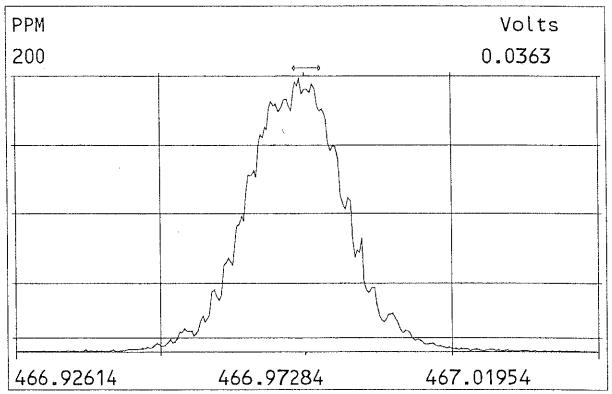


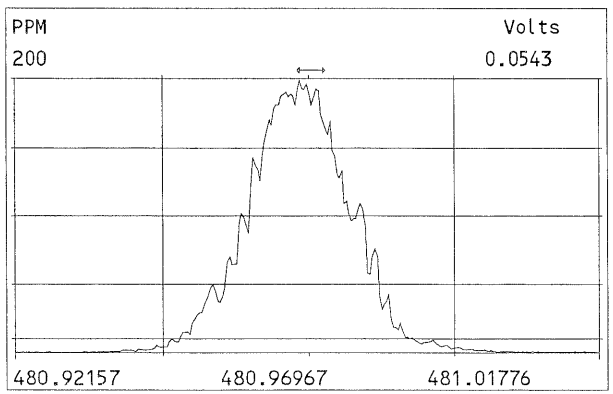




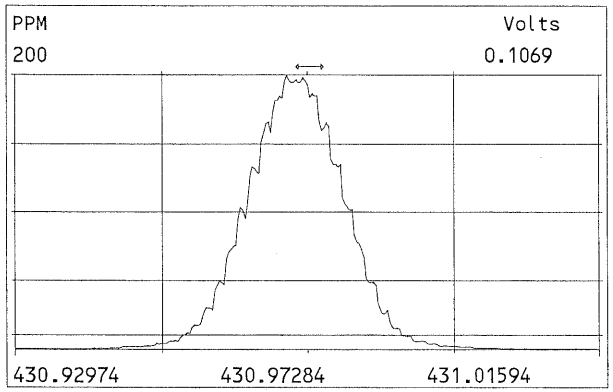


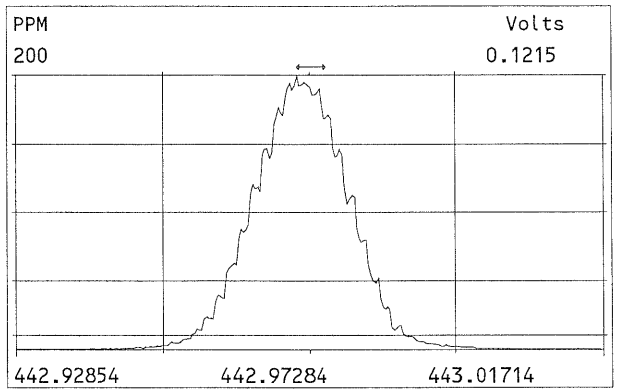


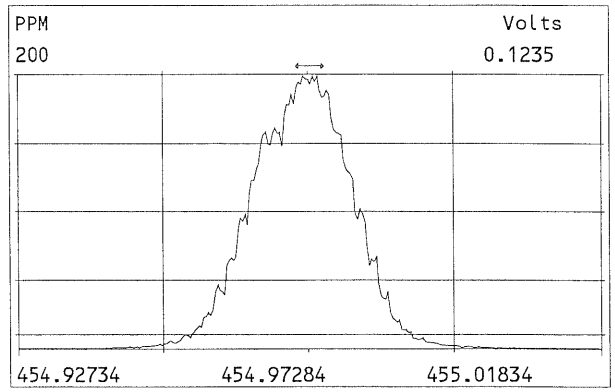


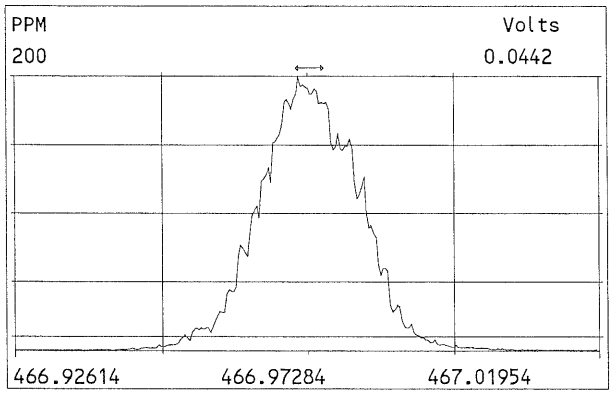


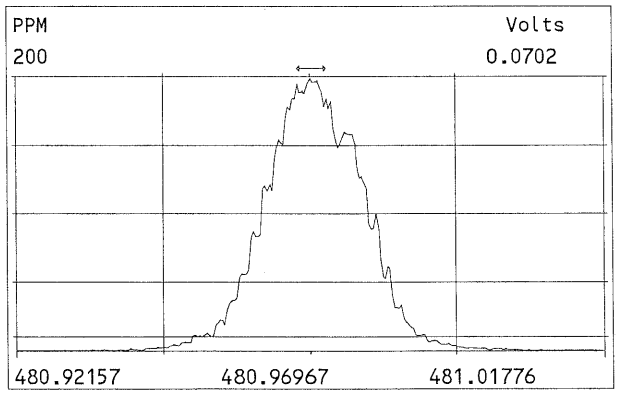
Peak Locate Examination: 7-APR-2011:15:12 File:07APR11M
Experiment:OCDD Function:5 Reference:PFK

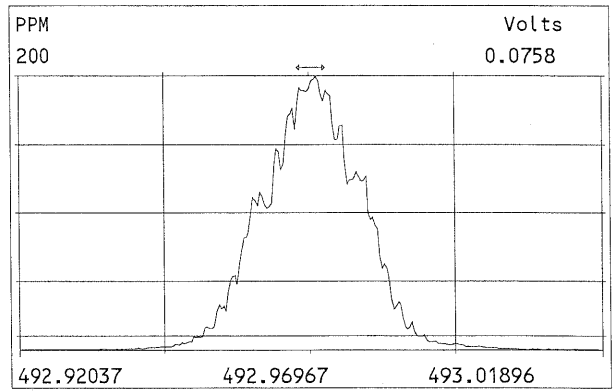


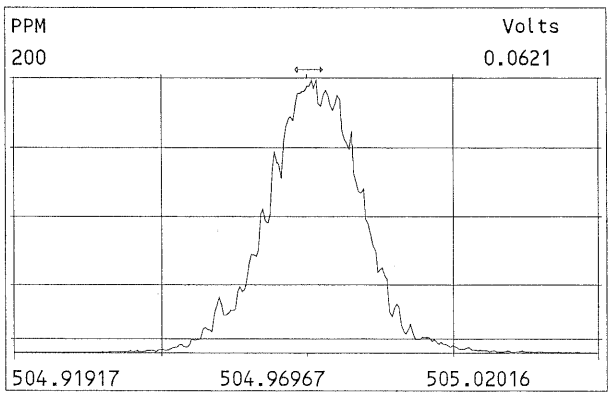


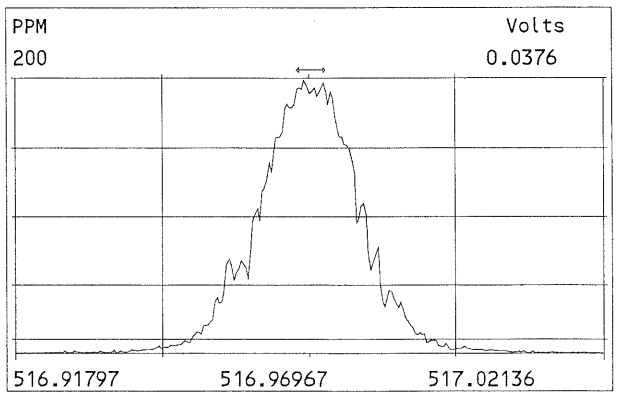




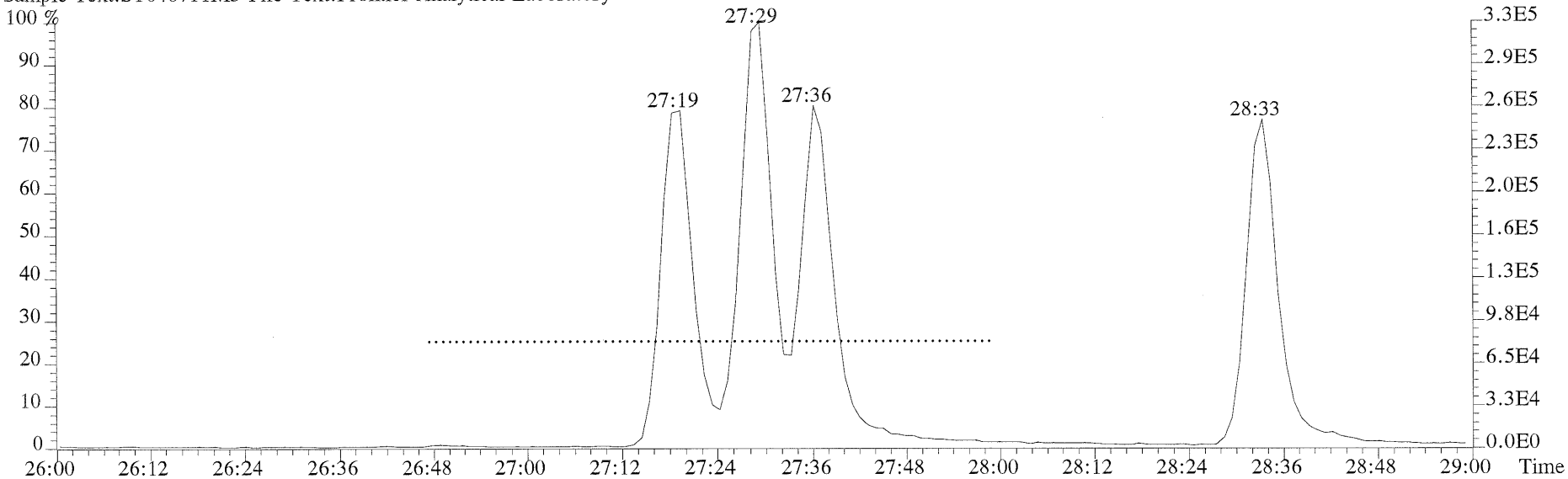








File:07APR11M #1-402 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
319.8965 S:19 Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



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333.9339 S:19 Exp:OCDD
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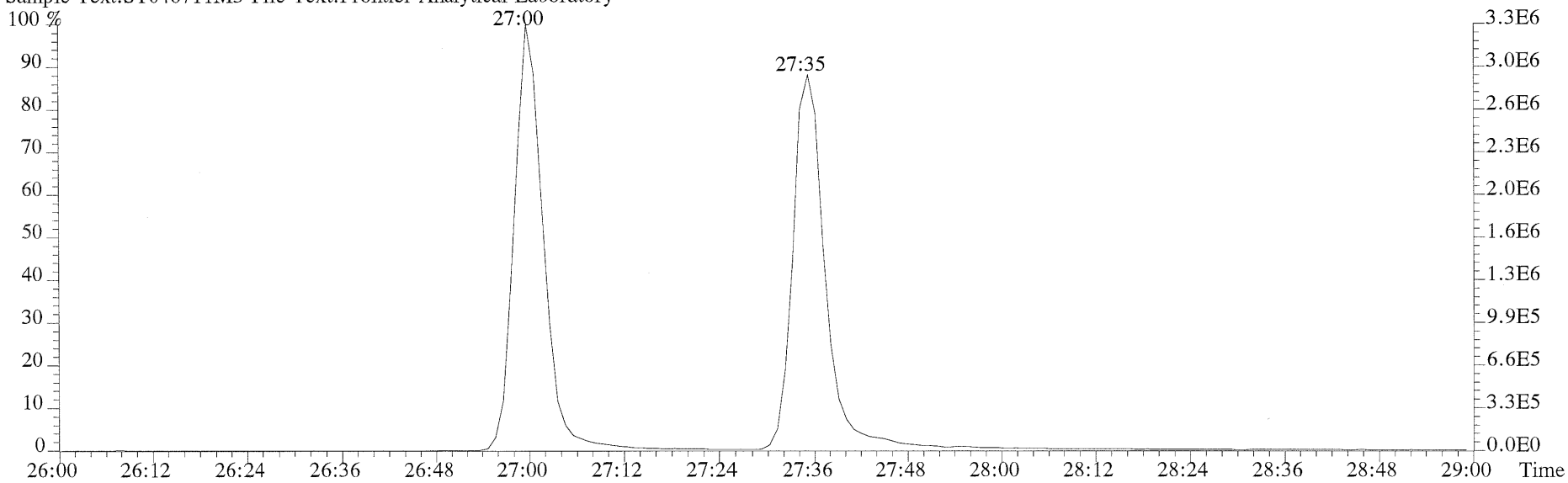

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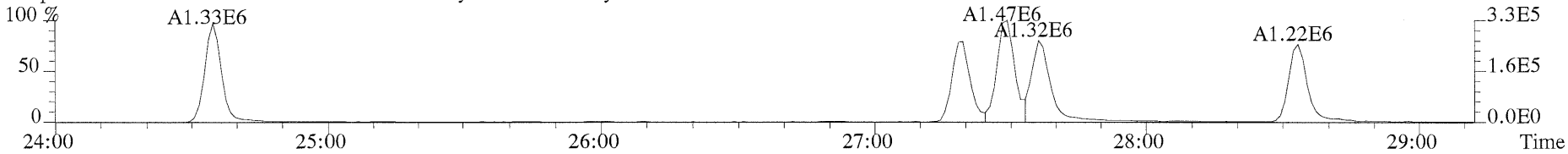
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



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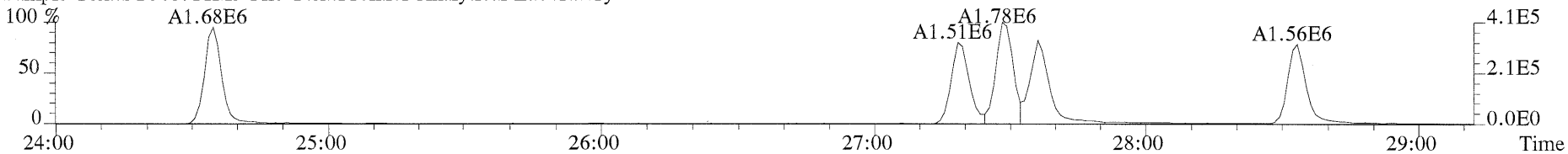
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



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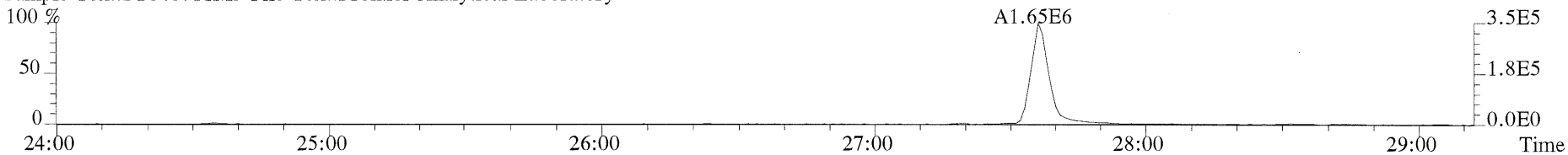

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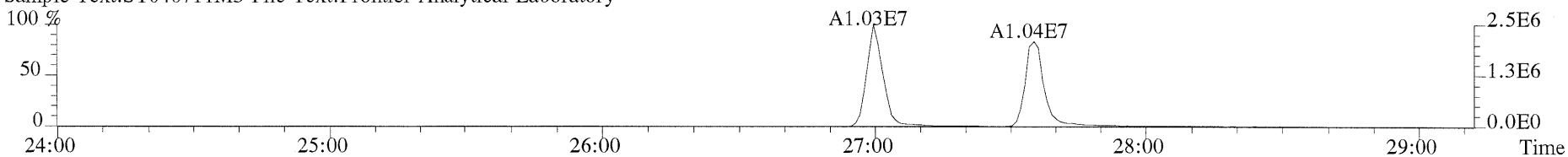
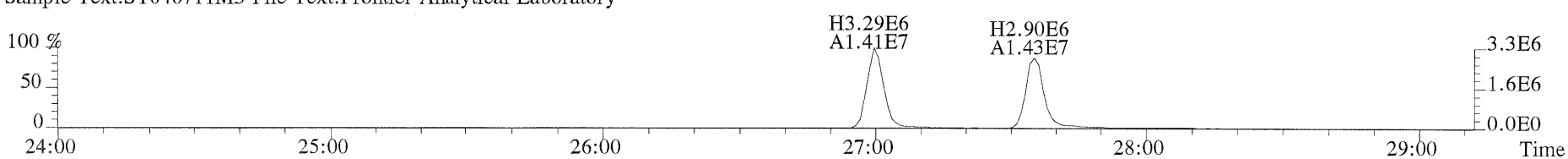
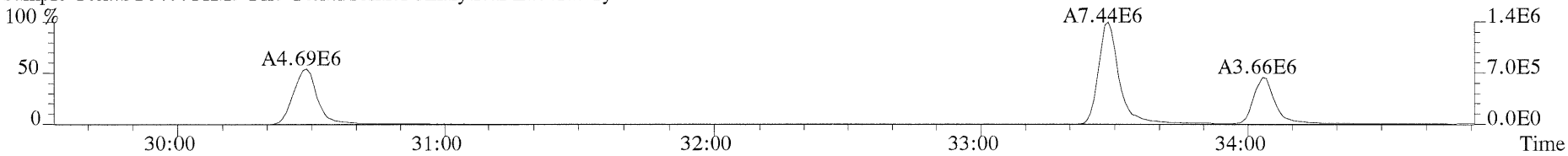
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



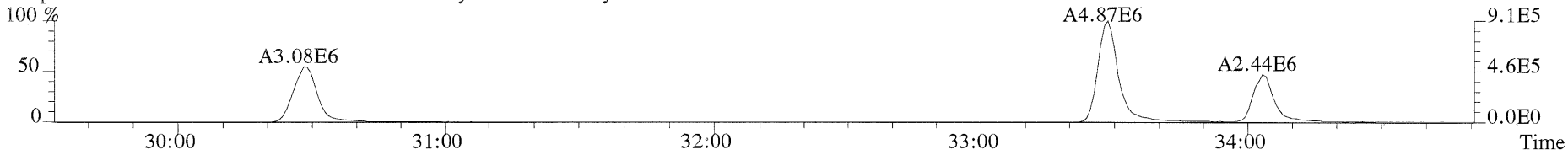
File:07APR11M #1-426 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
333.9339 S:19 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



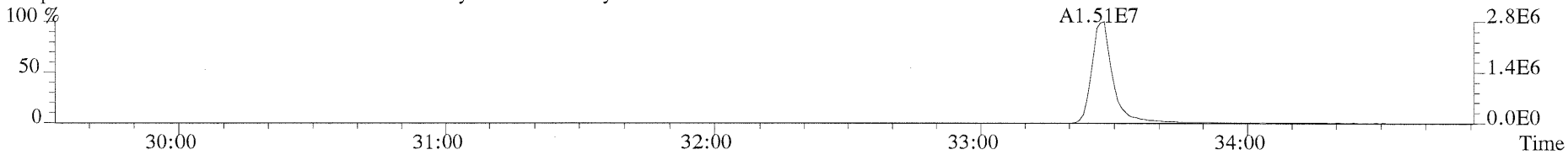
File:07APR11M #1-412 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
355.8546 S:19 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



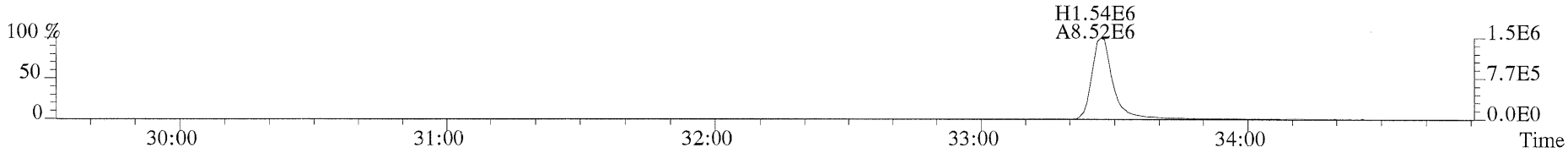
File:07APR11M #1-412 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
357.8517 S:19 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



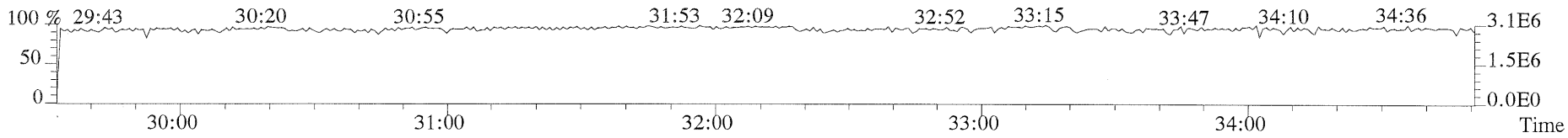
File:07APR11M #1-412 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
367.8949 S:19 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



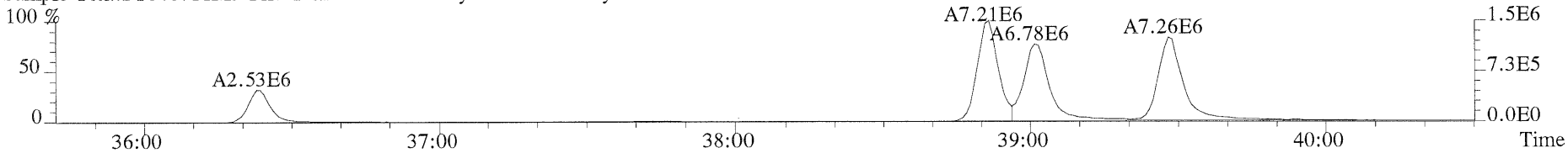
File:07APR11M #1-412 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
369.8919 S:19 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



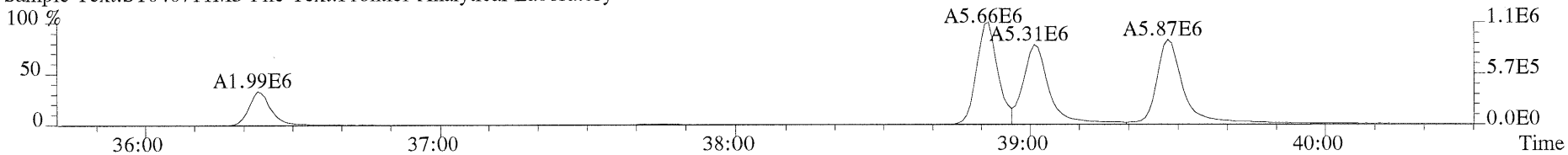
File:07APR11M #1-412 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
366.9792 S:19 F:2 Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



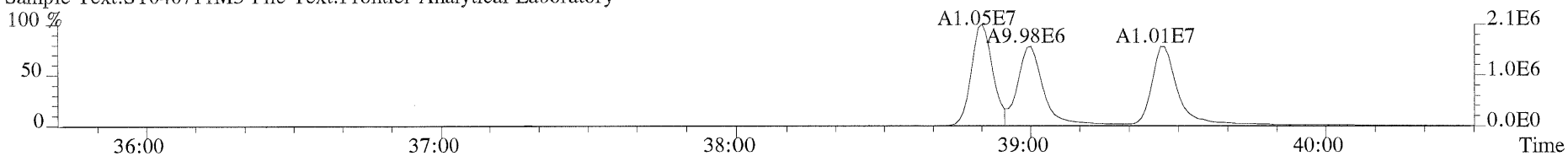
File:07APR11M #1-476 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
389.8156 S:19 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



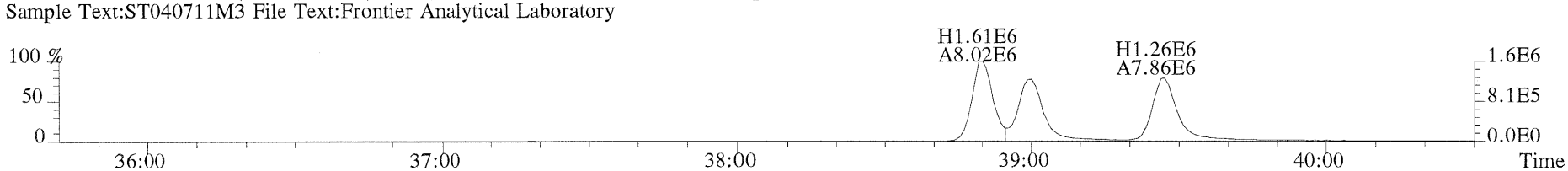
File:07APR11M #1-476 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
391.8127 S:19 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



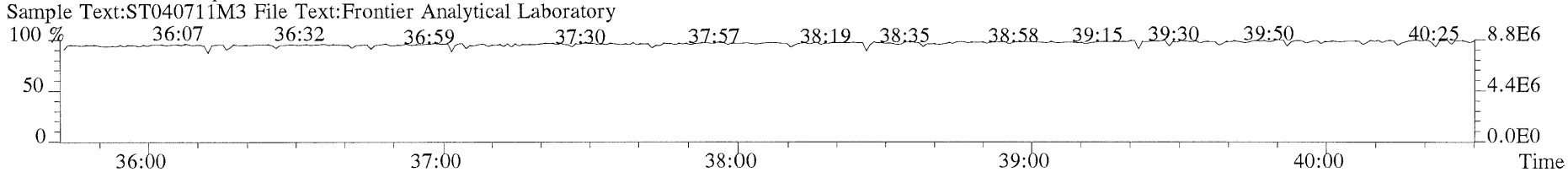
File:07APR11M #1-476 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
401.8559 S:19 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



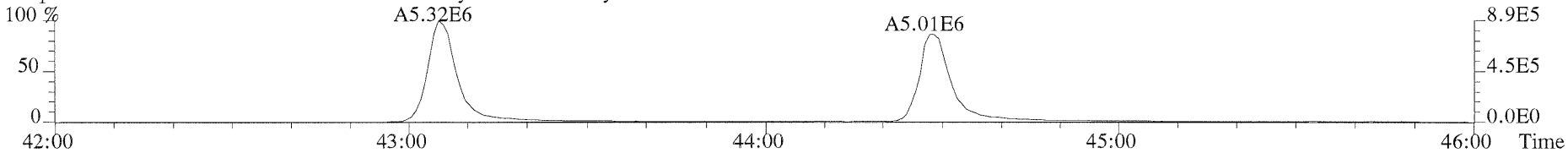
File:07APR11M #1-476 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
403.8530 S:19 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



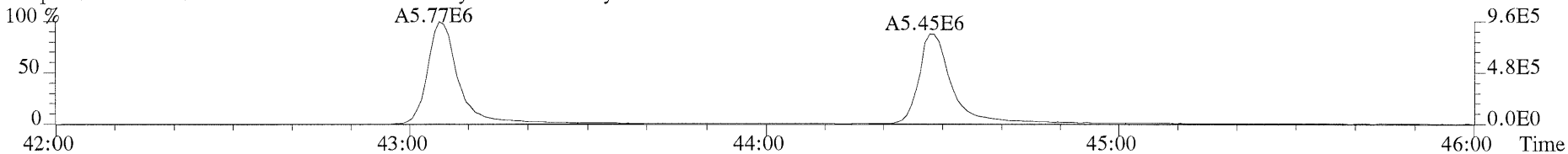
File:07APR11M #1-476 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
380.9760 S:19 F:3 Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



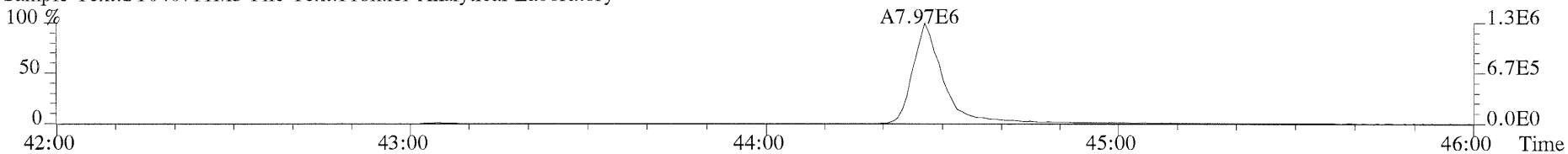
File:07APR11M #1-541 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
423.7767 S:19 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



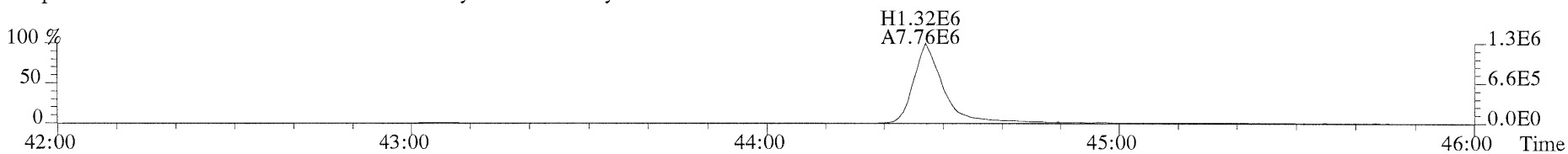
File:07APR11M #1-541 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
425.7737 S:19 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



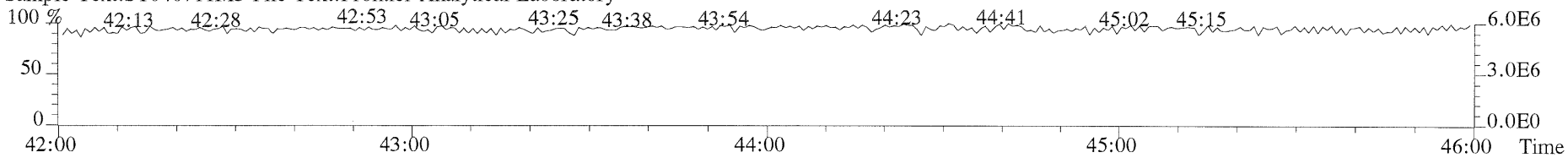
File:07APR11M #1-541 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
435.8169 S:19 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



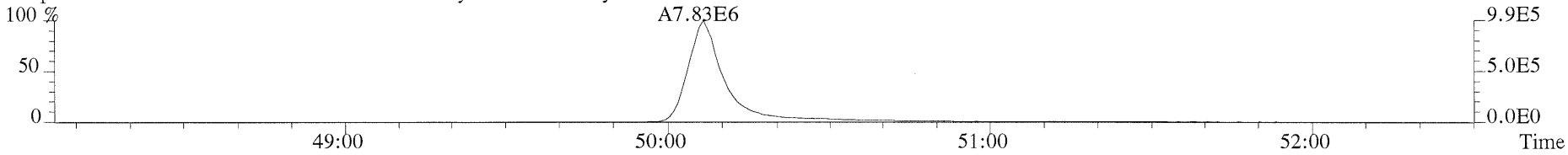
File:07APR11M #1-541 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
437.8140 S:19 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



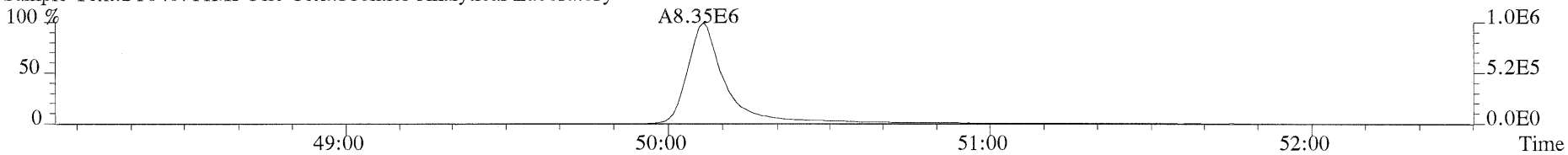
File:07APR11M #1-541 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
430.9728 S:19 F:4 Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



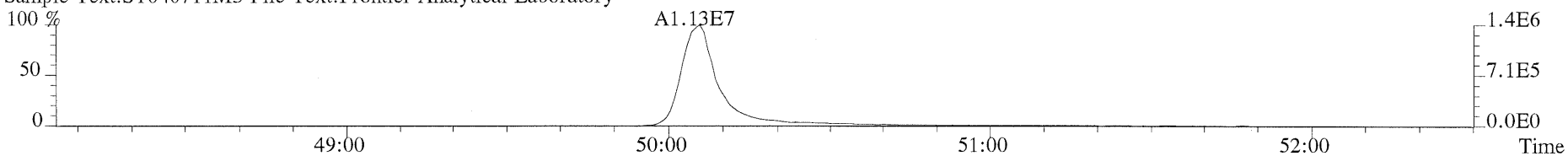
File:07APR11M #1-348 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
457.7377 S:19 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



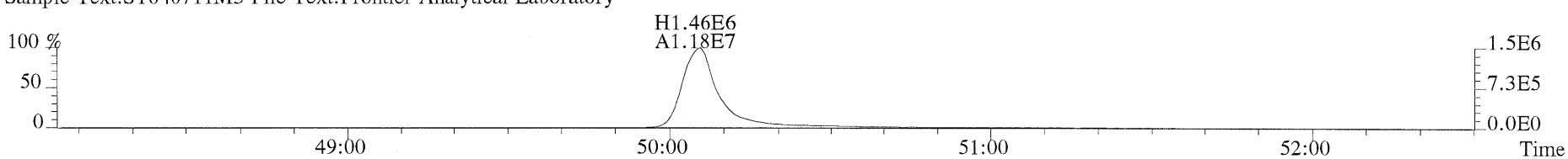
File:07APR11M #1-348 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
459.7348 S:19 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



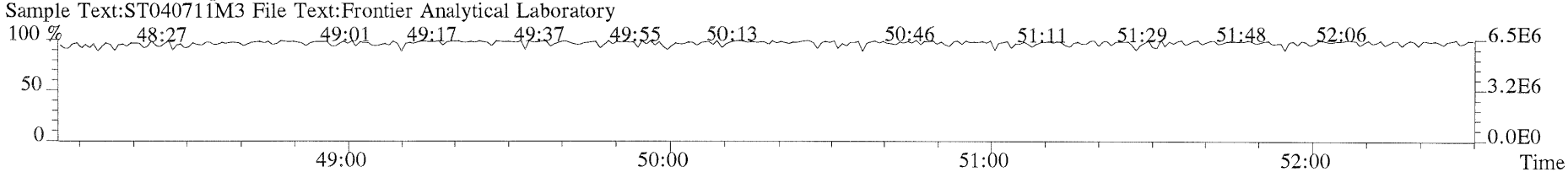
File:07APR11M #1-348 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
469.7780 S:19 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



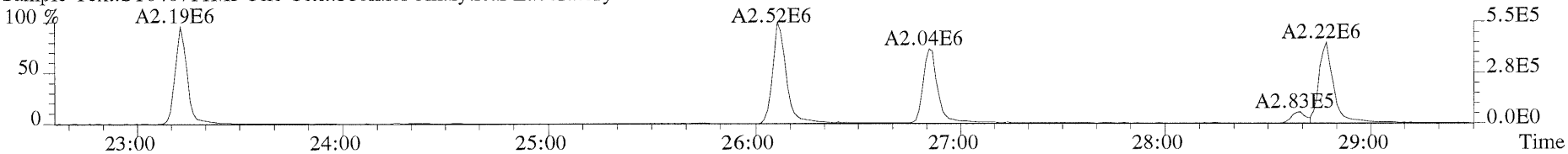
File:07APR11M #1-348 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
471.7750 S:19 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



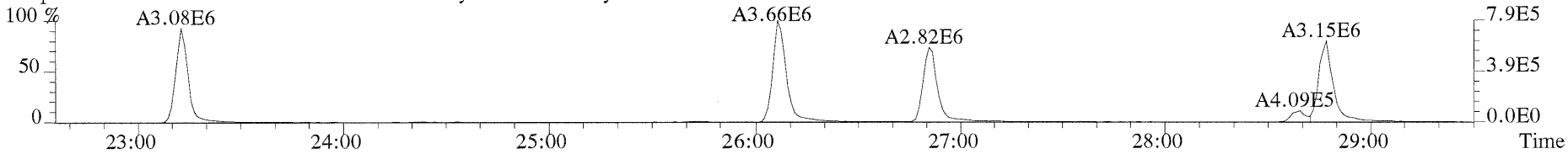
File:07APR11M #1-348 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
454.9728 S:19 F:5 Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



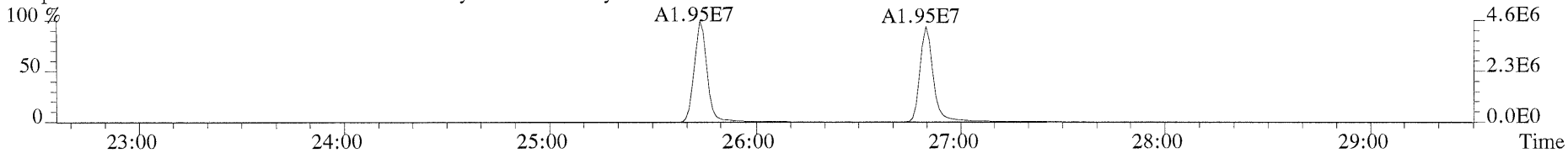
File:07APR11M #1-426 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
303.9016 S:19 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



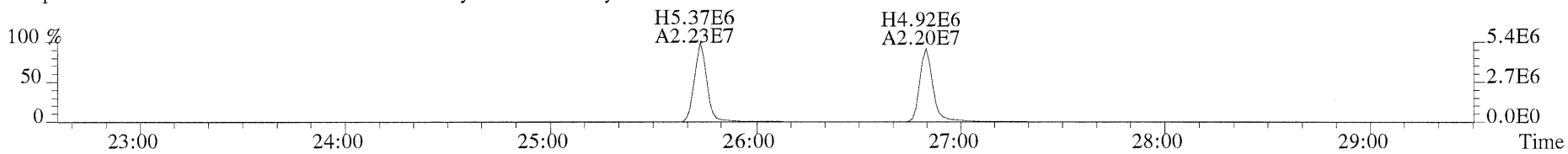
File:07APR11M #1-426 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
305.8987 S:19 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



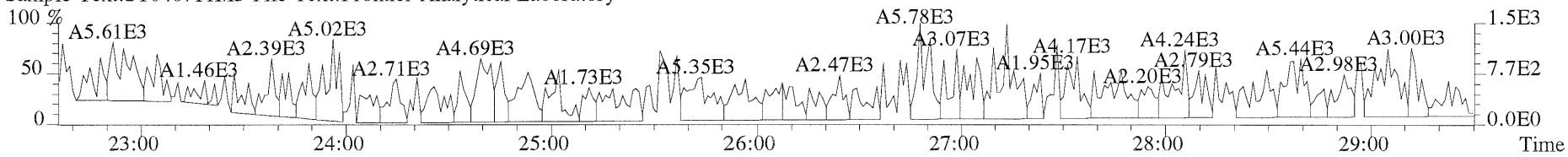
File:07APR11M #1-426 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
315.9419 S:19 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



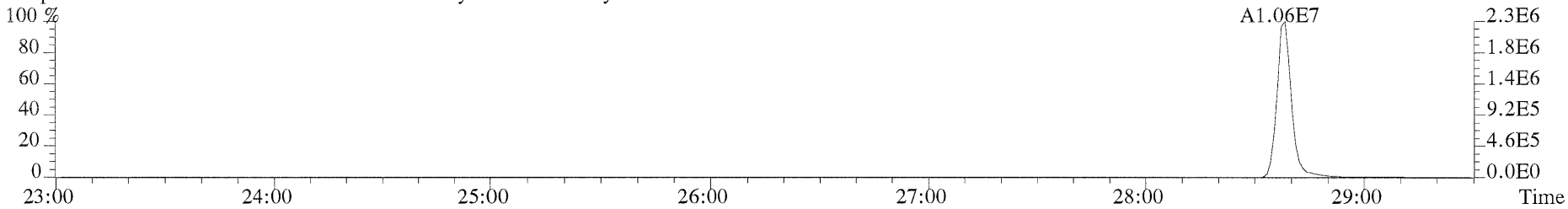
File:07APR11M #1-426 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
317.9389 S:19 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



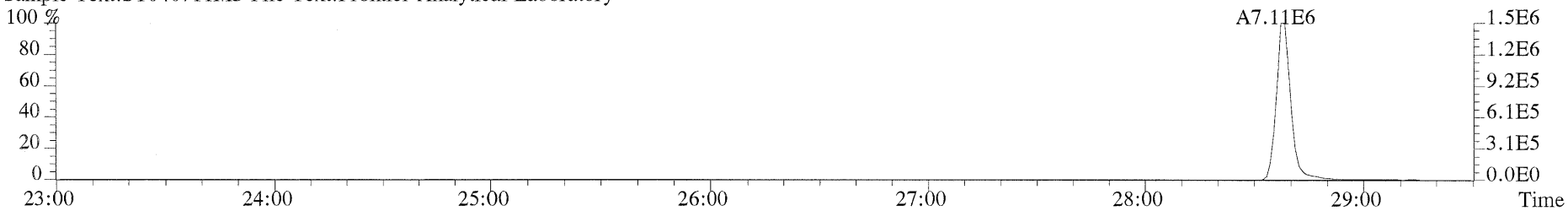
File:07APR11M #1-426 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
375.8364 S:19 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



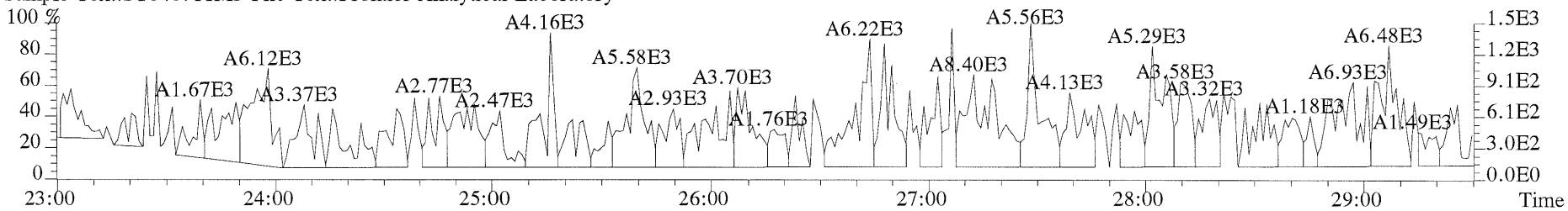
File:07APR11M #1-426 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
339.8597 S:19 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



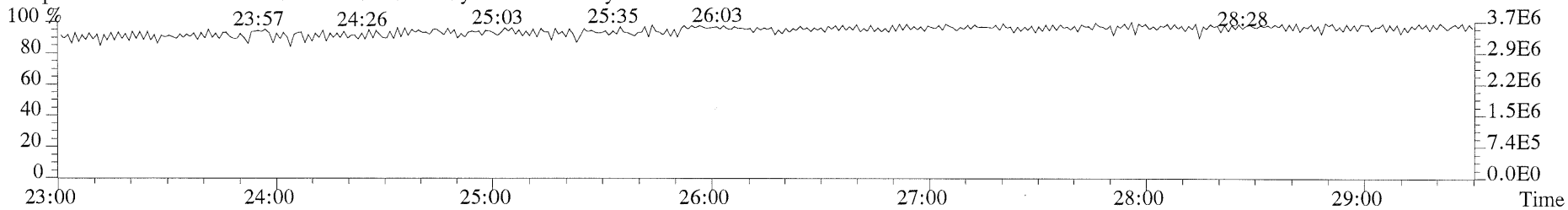
File:07APR11M #1-426 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
341.8568 S:19 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



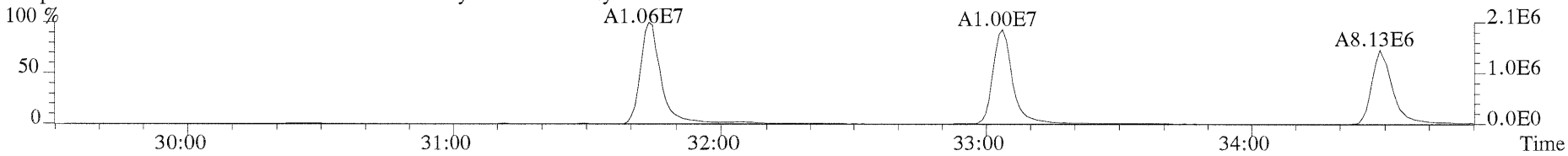
File:07APR11M #1-426 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
409.7974 S:19 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



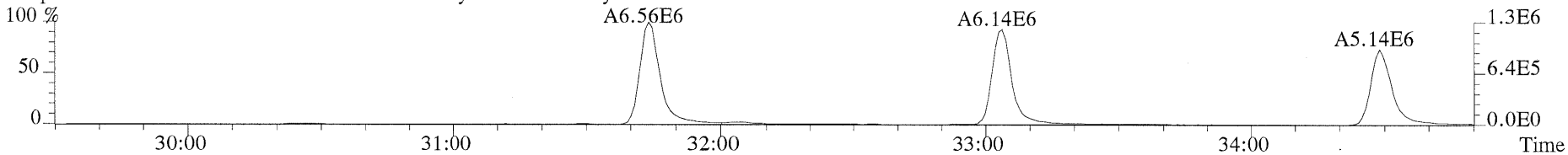
File:07APR11M #1-426 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
316.9824 S:19 Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



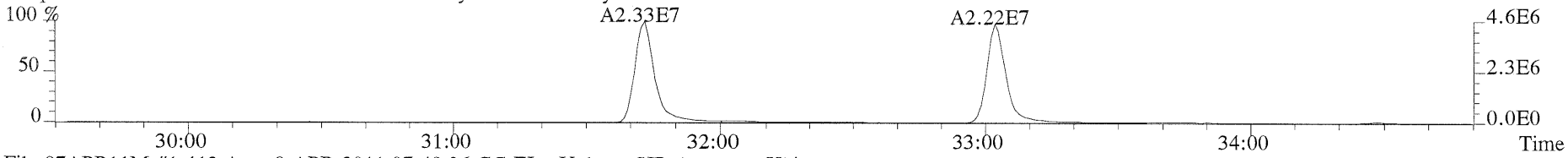
File:07APR11M #1-412 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
339.8597 S:19 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



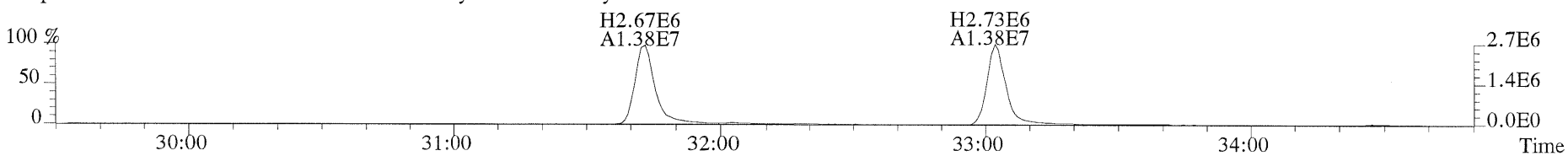
File:07APR11M #1-412 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
341.8568 S:19 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



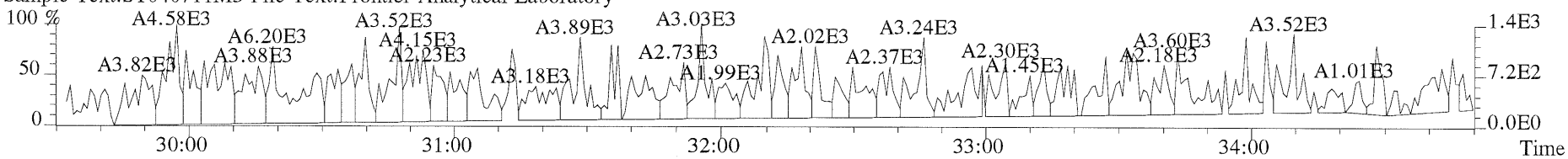
File:07APR11M #1-412 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
351.9000 S:19 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



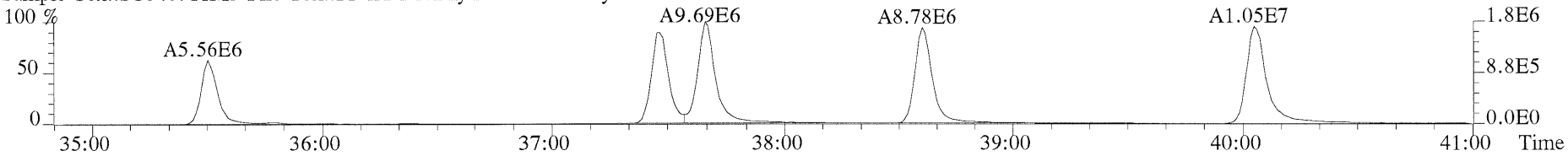
File:07APR11M #1-412 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
353.8970 S:19 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



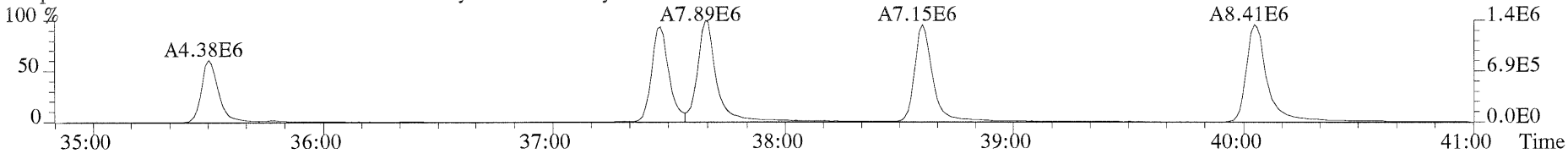
File:07APR11M #1-412 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
409.7974 S:19 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



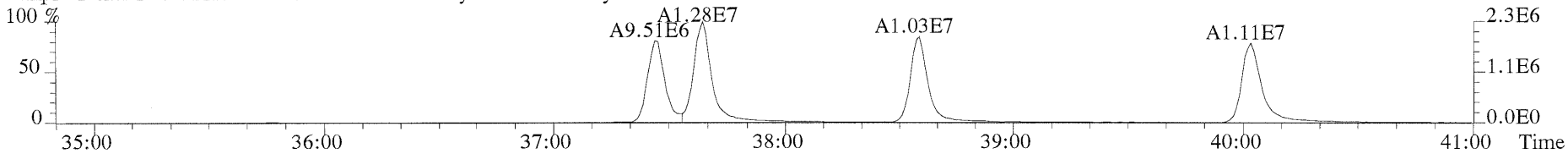
File:07APR11M #1-476 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
373.8207 S:19 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



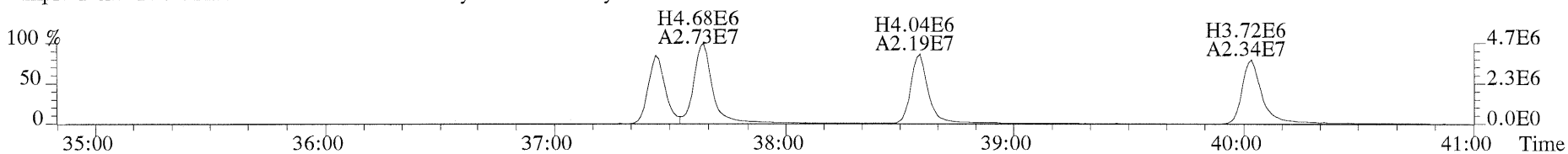
File:07APR11M #1-476 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
375.8178 S:19 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



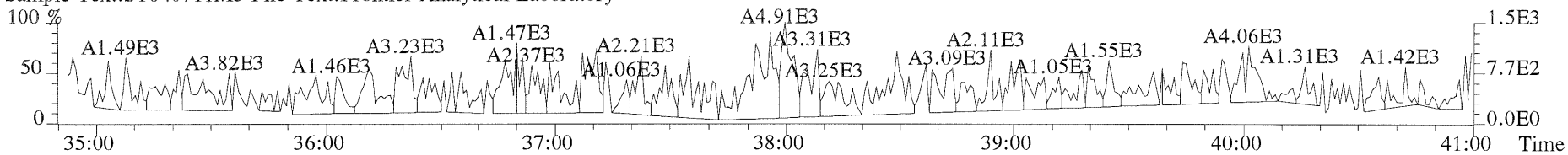
File:07APR11M #1-476 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
383.8639 S:19 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



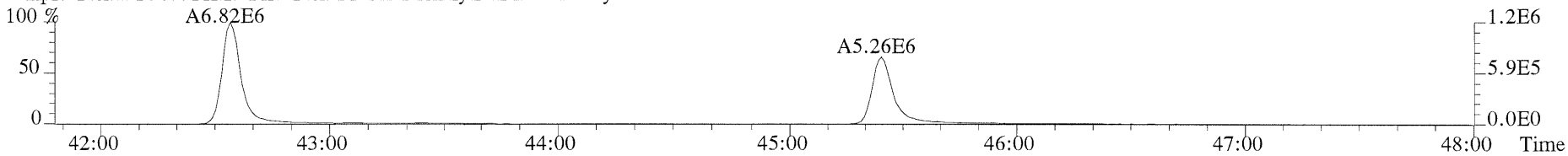
File:07APR11M #1-476 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
385.8610 S:19 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



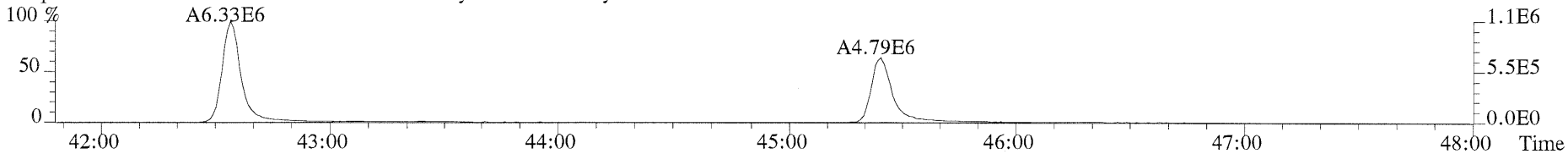
File:07APR11M #1-476 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
445.7555 S:19 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



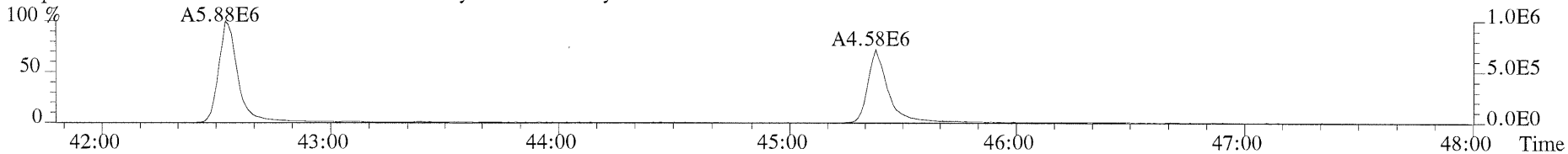
File:07APR11M #1-541 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
407.7818 S:19 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



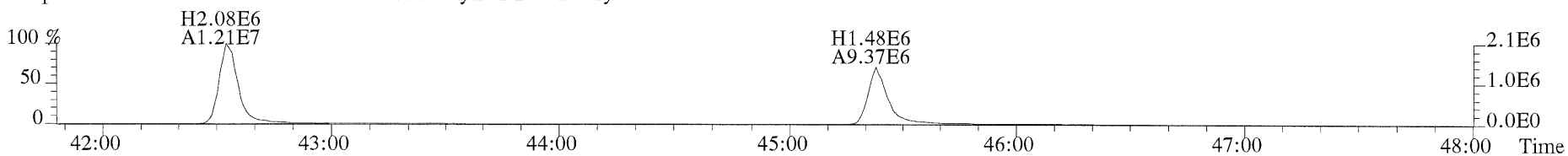
File:07APR11M #1-541 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
409.7788 S:19 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



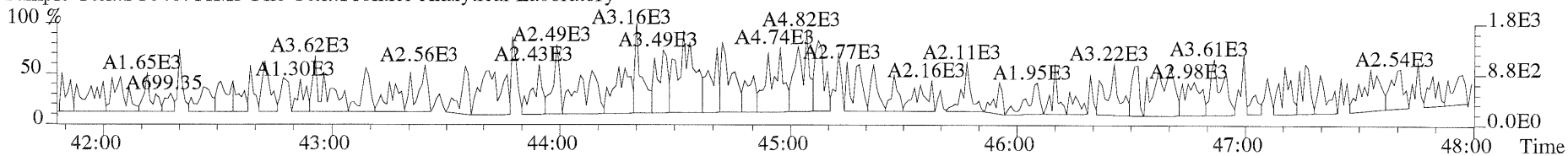
File:07APR11M #1-541 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
417.8253 S:19 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



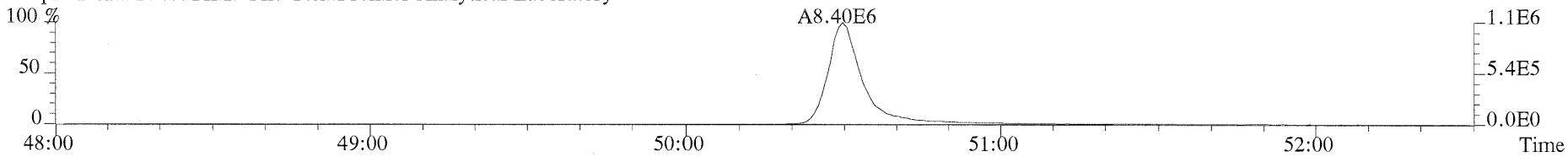
File:07APR11M #1-541 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
419.8220 S:19 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



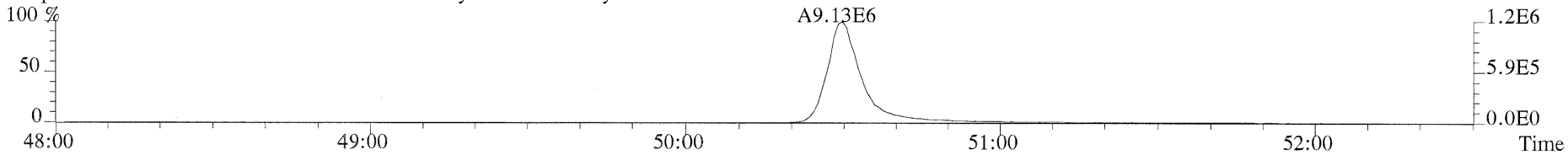
File:07APR11M #1-541 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
479.7165 S:19 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



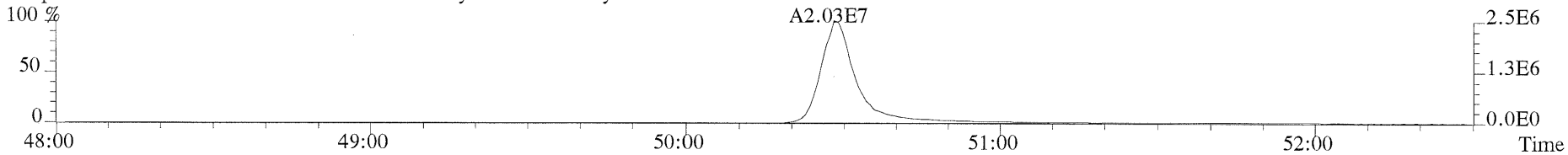
File:07APR11M #1-348 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
441.7428 S:19 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



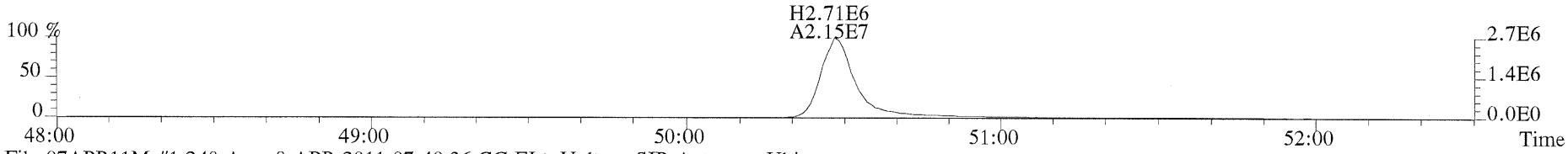
File:07APR11M #1-348 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
443.7398 S:19 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



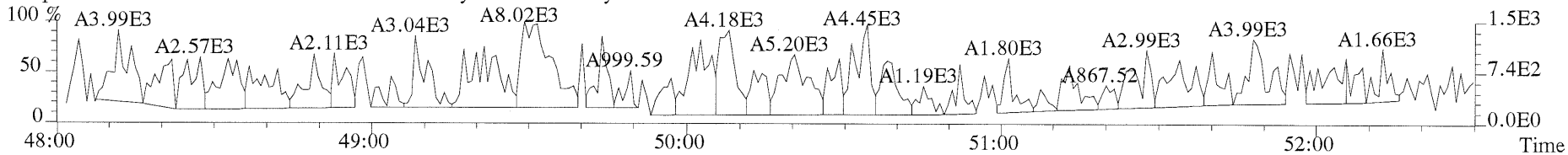
File:07APR11M #1-348 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
453.7831 S:19 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory



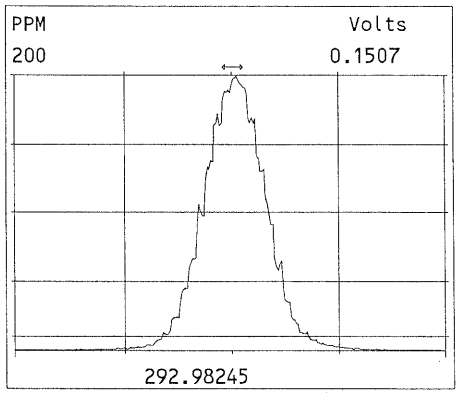
File:07APR11M #1-348 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
455.7801 S:19 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory

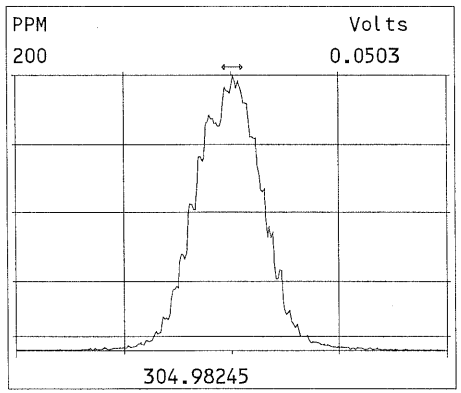


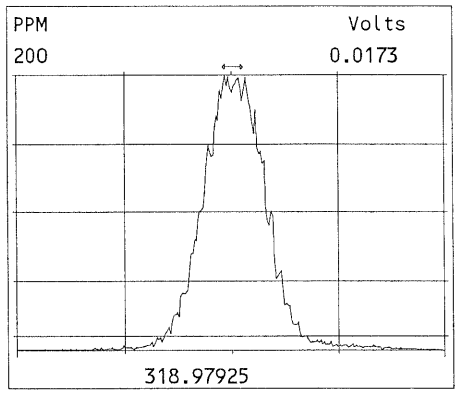
File:07APR11M #1-348 Acq: 8-APR-2011 07:49:36 GC EI+ Voltage SIR Autospec-Ultima
513.6775 S:19 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040711M3 File Text:Frontier Analytical Laboratory

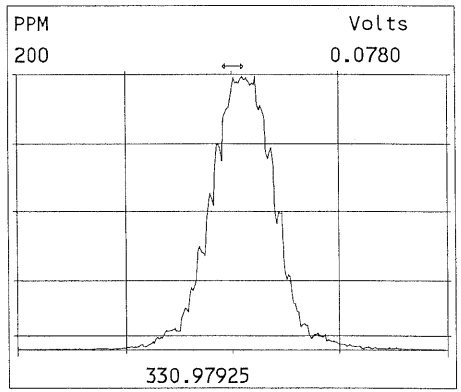


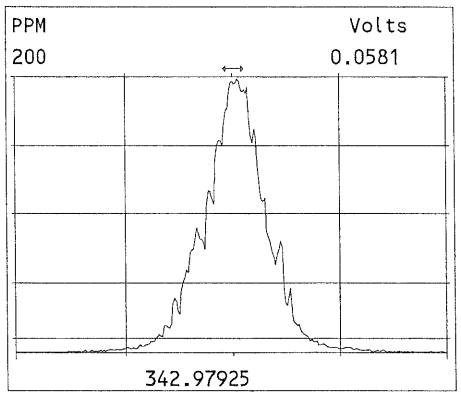
Peak Locate Examination: 8-APR-2011:08:48 File:07APR11M_RES_CHECK
Experiment:OCDD Function:1 Reference:PFK

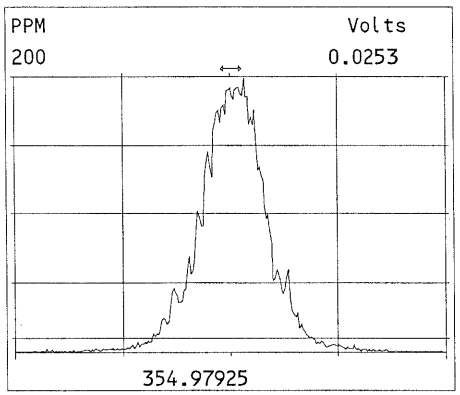


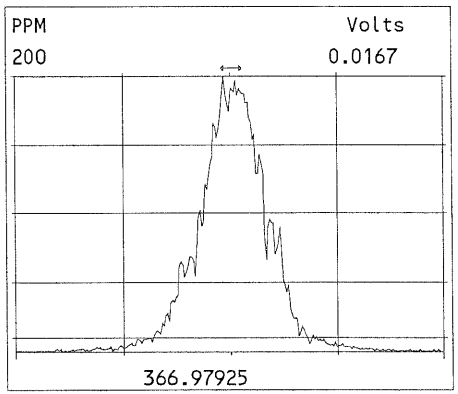


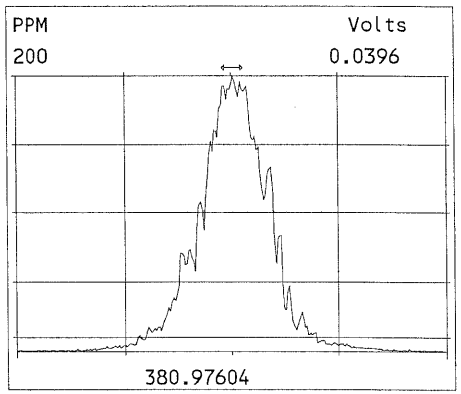


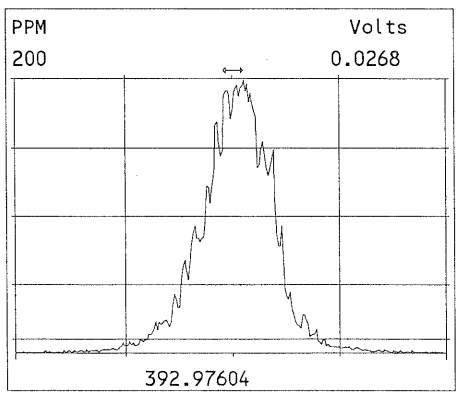


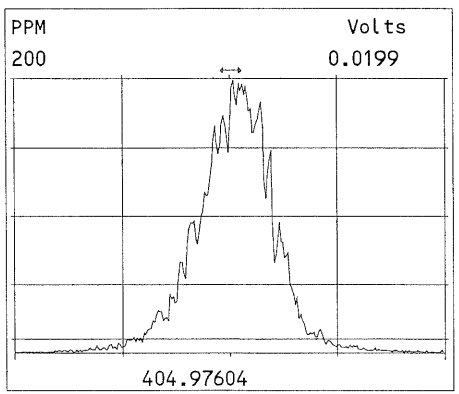


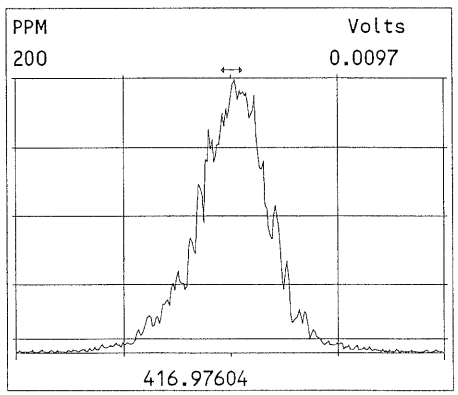




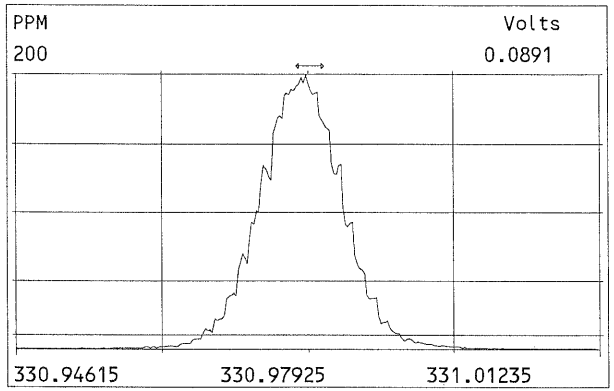


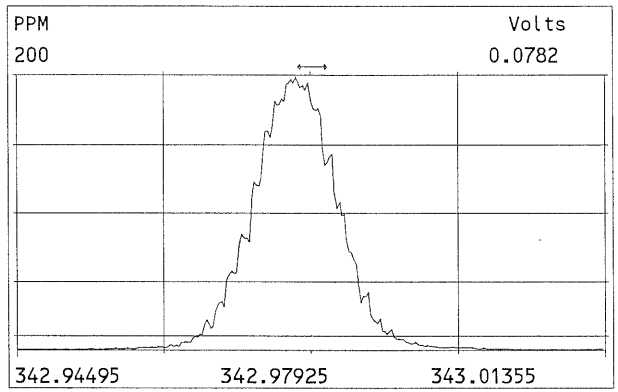


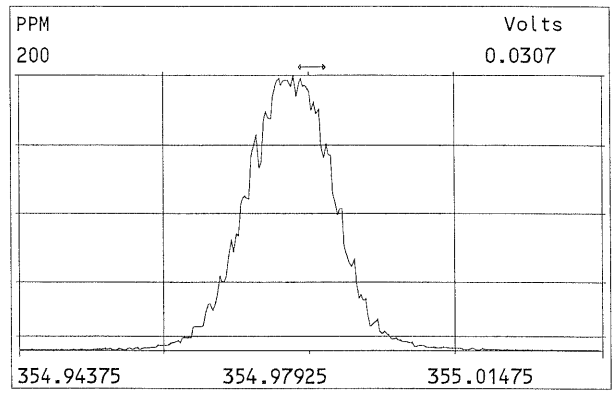


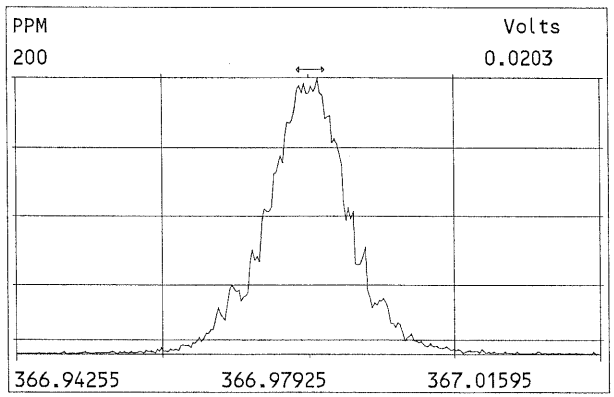


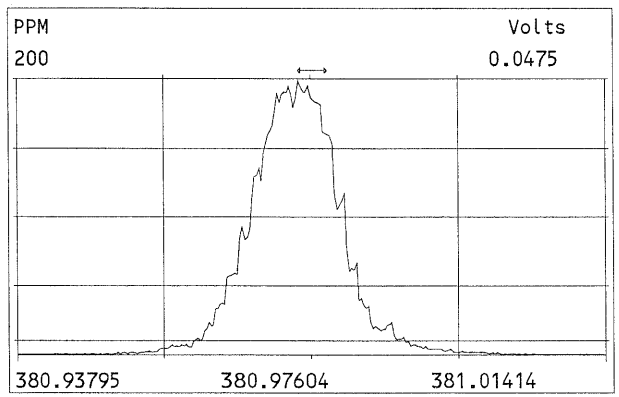
Peak Locate Examination: 8-APR-2011:08:49 File:07APR11M_RES_CHECK
Experiment:OCDD Function:2 Reference:PFK

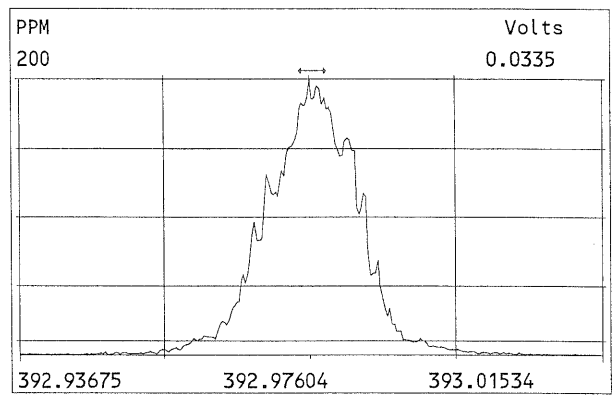


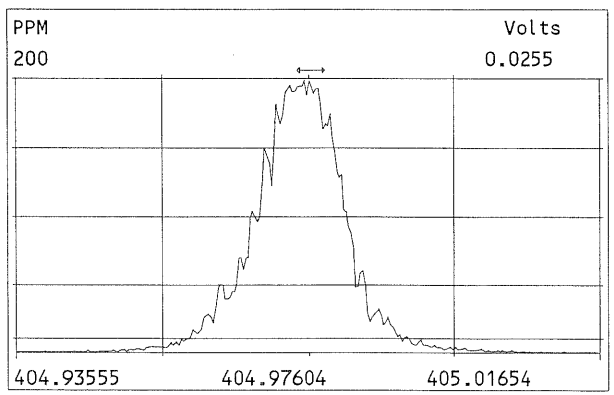


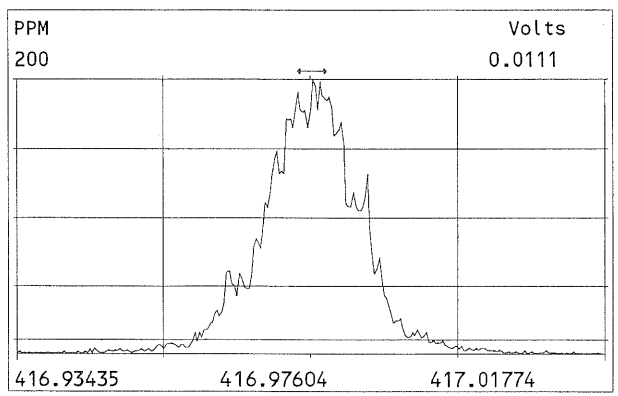




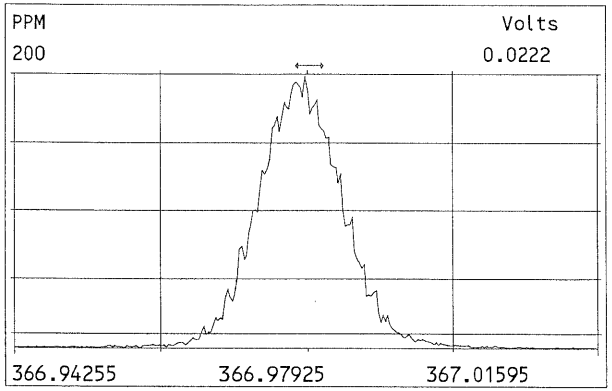


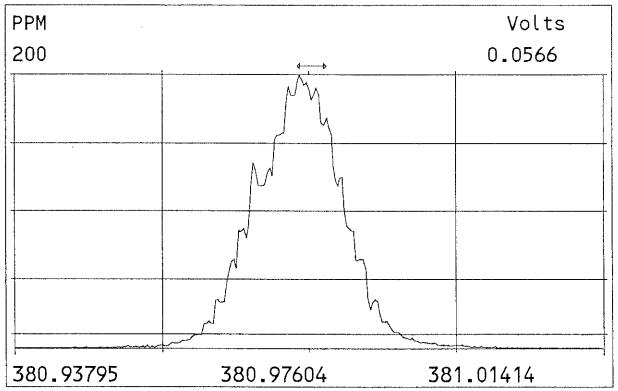


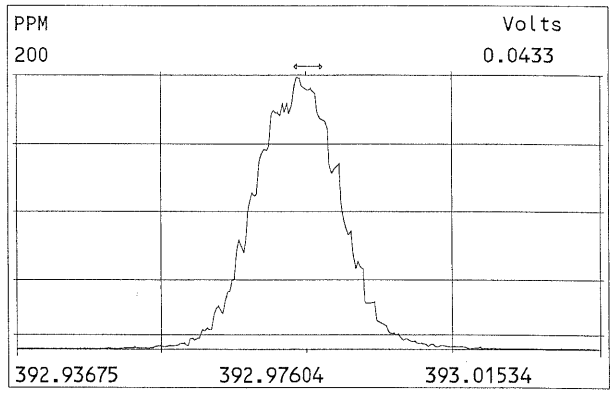


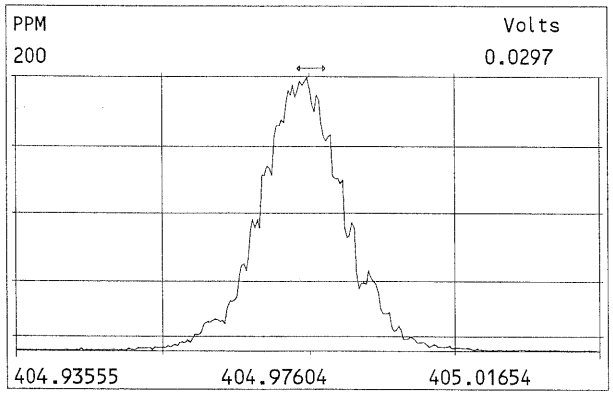


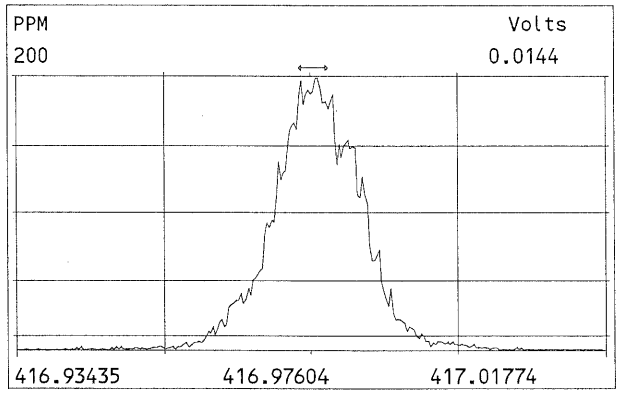
Peak Locate Examination: 8-APR-2011:08:49 File:07APR11M_RES_CHECK
Experiment:OCDD Function:3 Reference:PFK

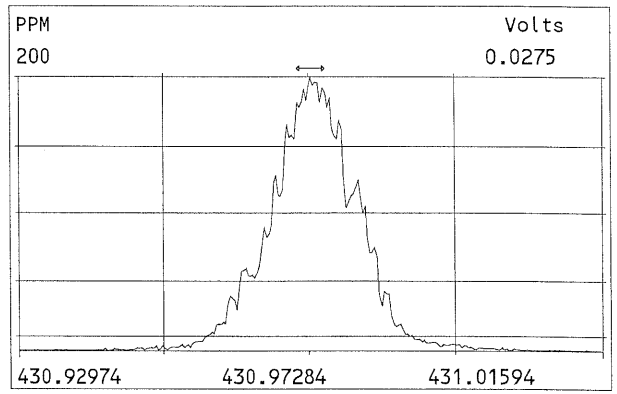


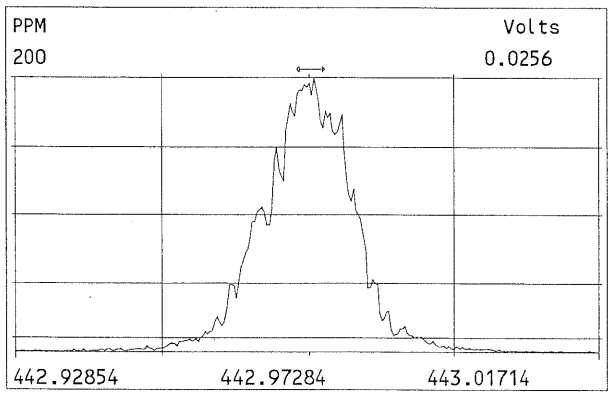


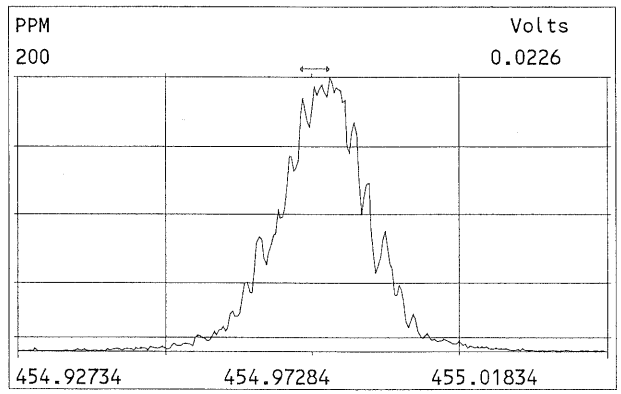




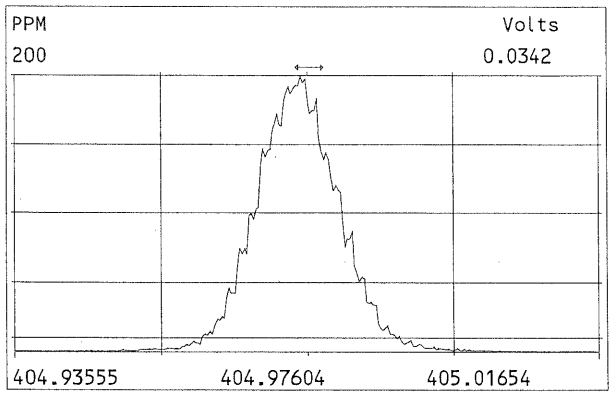


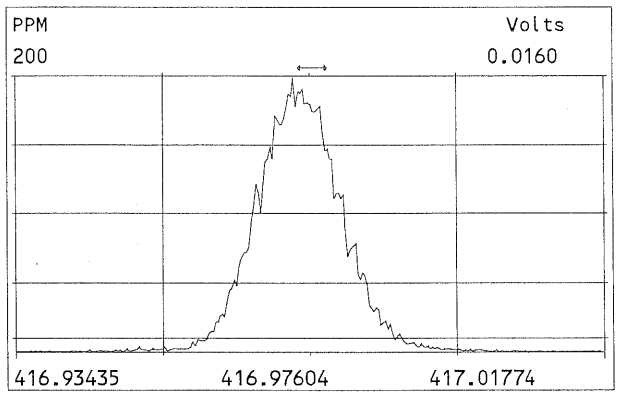


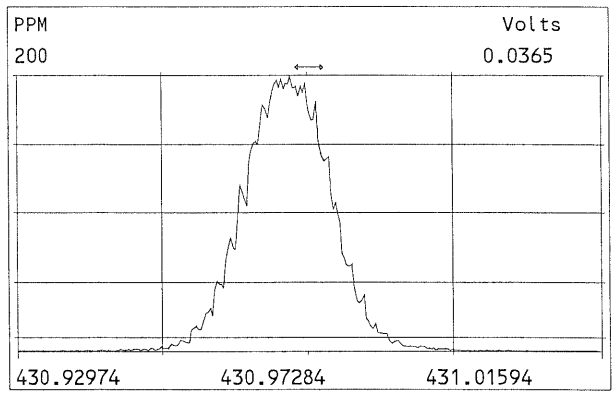


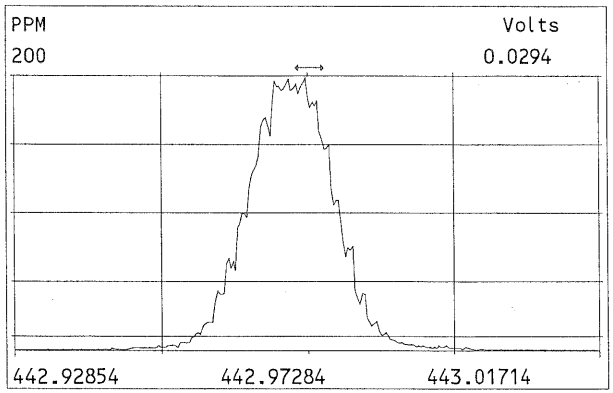


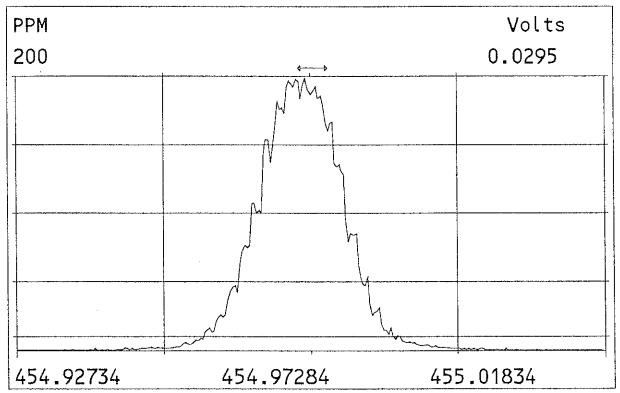
Peak Locate Examination: 8-APR-2011:08:50 File:07APR11M_RES_CHECK
Experiment:OCDD Function:4 Reference:PFK

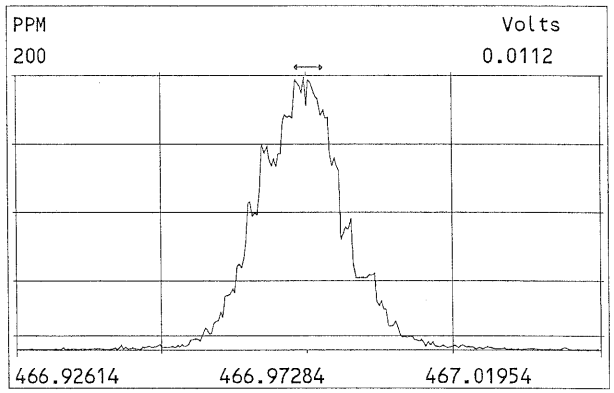


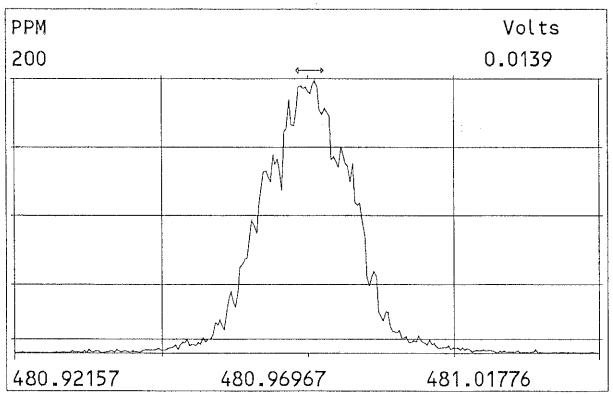




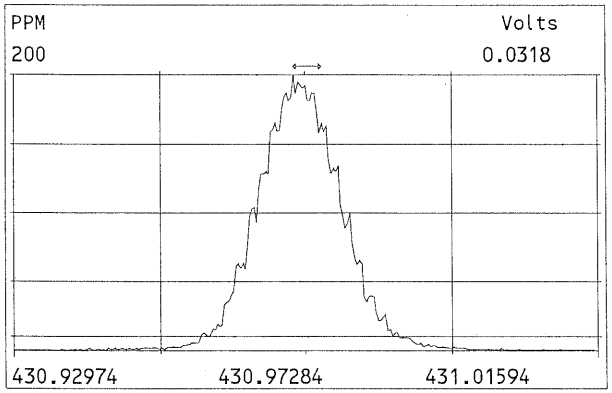


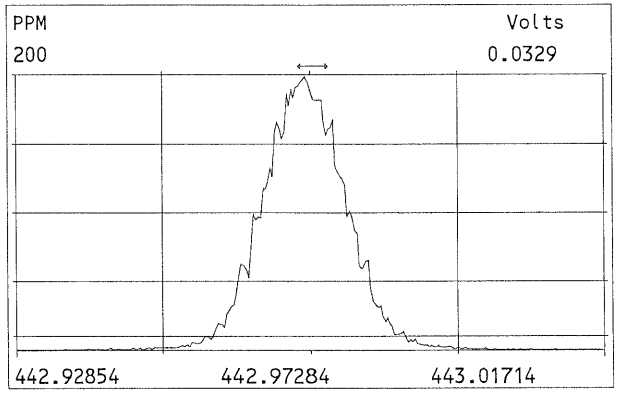


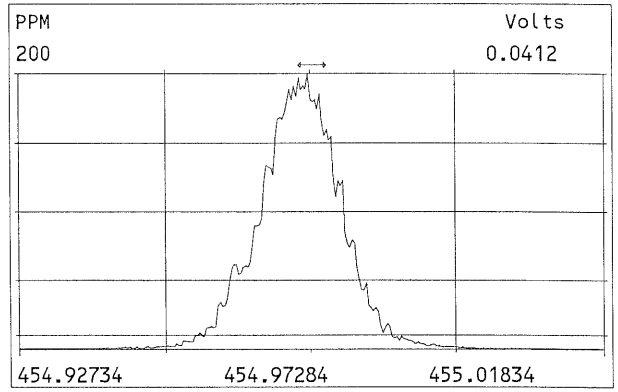


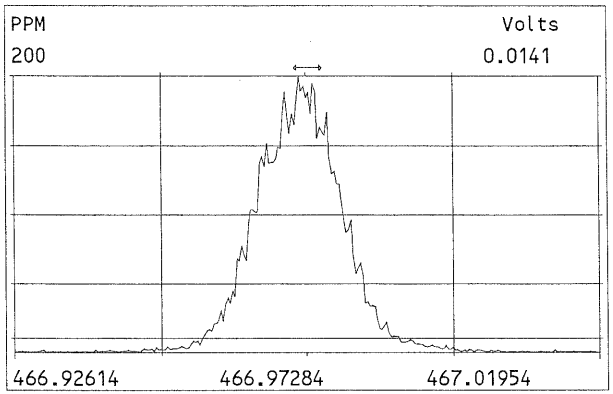


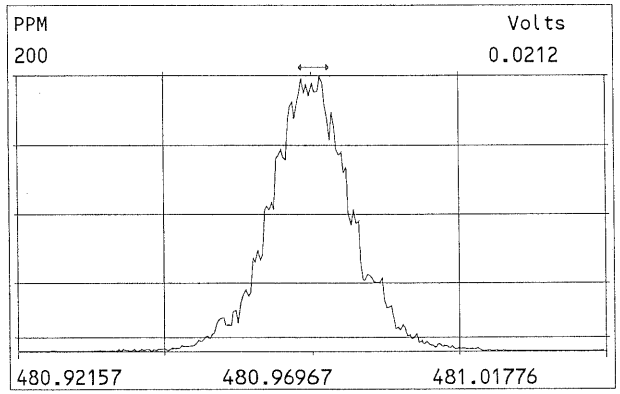
Peak Locate Examination: 8-APR-2011:08:50 File:07APR11M_RES_CHECK
Experiment:OCDD Function:5 Reference:PFK

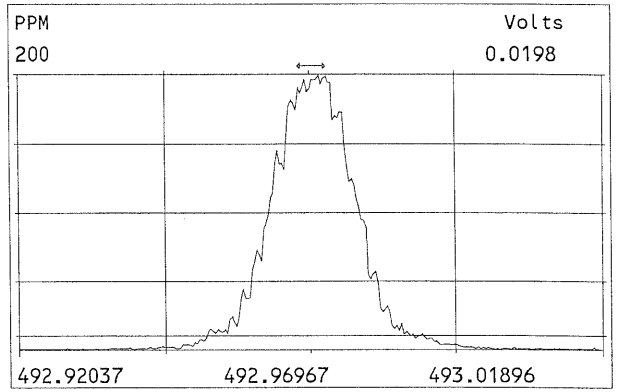


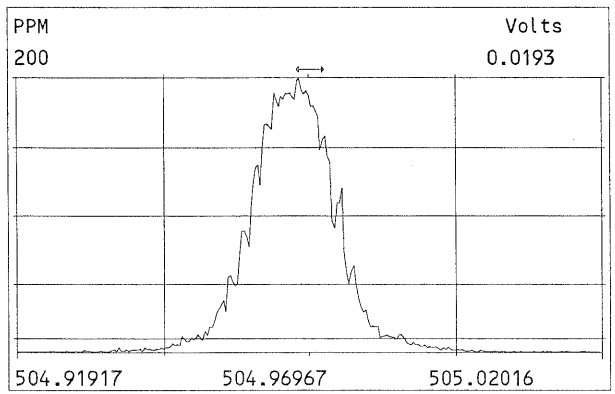


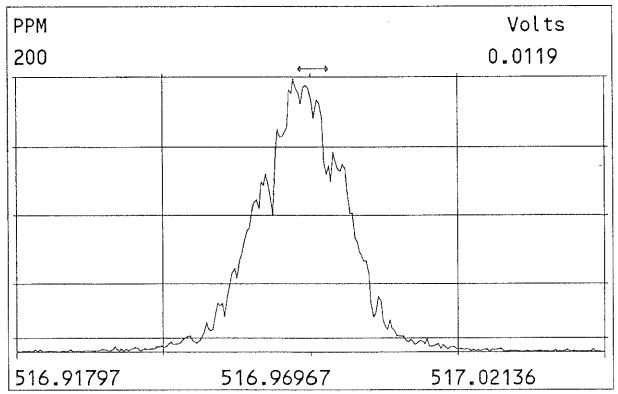












USEPA - ITD

FORM 4A
TCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 2/18/11

Instrument ID: FAL1 GC Column ID: DB225

VER Data Filename: 08APR11A Sam:1 Analysis Date: 8-APR-11 Time: 09:21:16

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
NATIVE ANALYTES						
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	y	9.02	8.40 - 12.0
LABELED COMPOUNDS						
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	y	94.8	71.0 - 140

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6A, Method 1613

Analyst:_____ Date: 4/8/11

FAL ID: ST040811A1 Filename: 08APR11A Sam:1 Acquired: 8-APR-11 09:21:16 ICal: tcdffal1-2-18-11
Client ID: 1613 CS3 100511J ConCal: ST040811A1 EndCal: ST040811A2
Results: 6624TCDF GC Column: DB225 Amount: 1.000

Name	Resp	RA	RT	RRF	Conc	Qual	Fac	Noise	DL	#Hom	Rec
2,3,7,8-TCDF	2.41e+07	0.78 y	19:22	1.16	9.02		2.50	-	-	1	
13C-2,3,7,8-TCDF	2.31e+08	0.80 y	19:21	1.05	94.8						94.8
13C-1,2,3,4-TCDF	2.31e+08	0.80 y	16:48	-	131						

Analyst: _____ Date: 4/8/11

Frontier Analytical Laboratory - Acquisition Log

Run Name:08APR11A Instrument: FAL1 GC: DB225 Experiment:TCDF

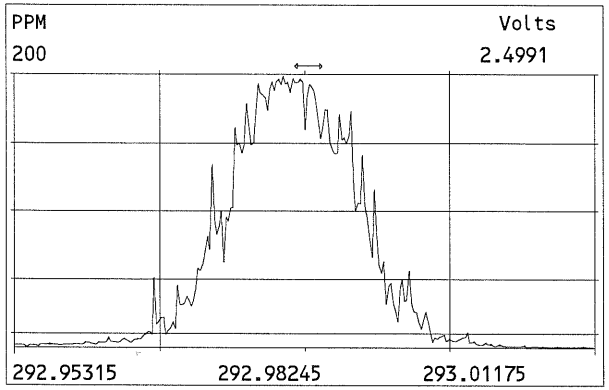
Data File	S	FAL ID	Client ID	Acquired	ConCal	EndCal	Analyst
08APR11A	1	ST040811A1	1613 CS3 100511J	8-APR-11 09:21:16	ST040811A1	ST040811A2	TC
08APR11A	2	6624-001-0001-SA	Lot #018690	8-APR-11 09:56:19	ST040811A1	ST040811A2	TC
08APR11A	3	6678-004-0001-SA	LL-SED2-0-56-031511	8-APR-11 10:31:24	ST040811A1	ST040811A2	TC
08APR11A	4	6678-007-0001-SA	LL-SED2-0-56-031511-D	8-APR-11 11:06:27	ST040811A1	ST040811A2	TC
08APR11A	5	6678-001-0001-SA	LL-SED3-0-36-031511	8-APR-11 11:41:32	ST040811A1	ST040811A2	TC
08APR11A	6	ST040811A2	1613 CS3 100511J	8-APR-11 12:16:35	ST040811A1	ST040811A2	TC

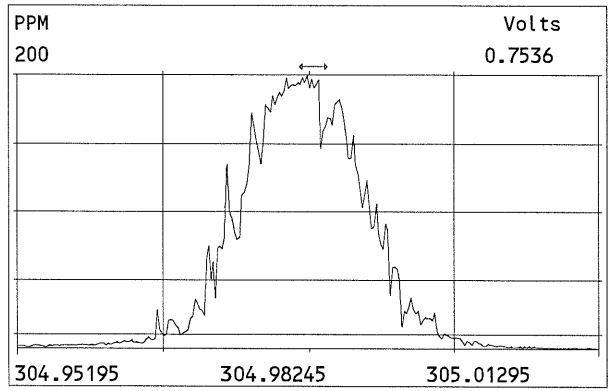
4/8/11

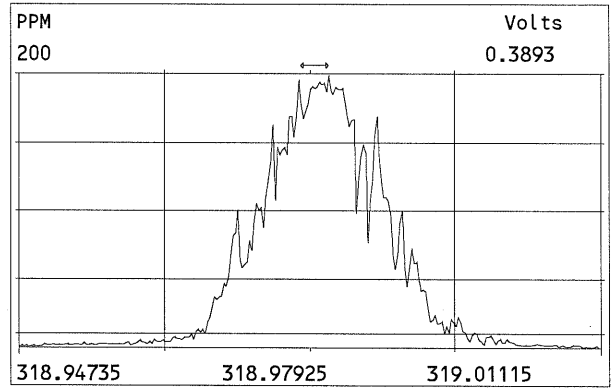
Data Backed Up:_____

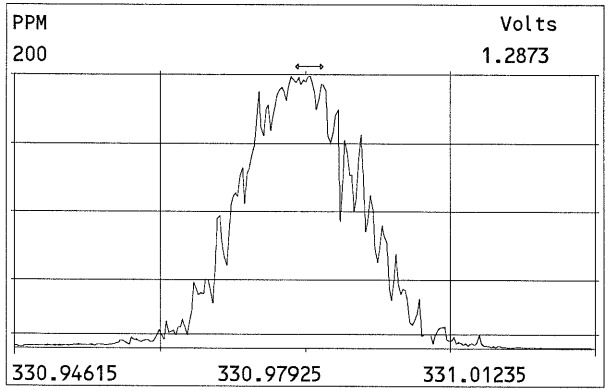
Date:_____

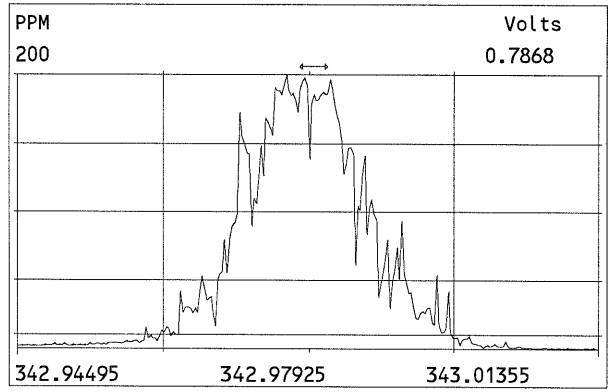
Peak Locate Examination: 8-APR-2011:09:20 File:08APR11A
Experiment:TCDF Function:1 Reference:PFK

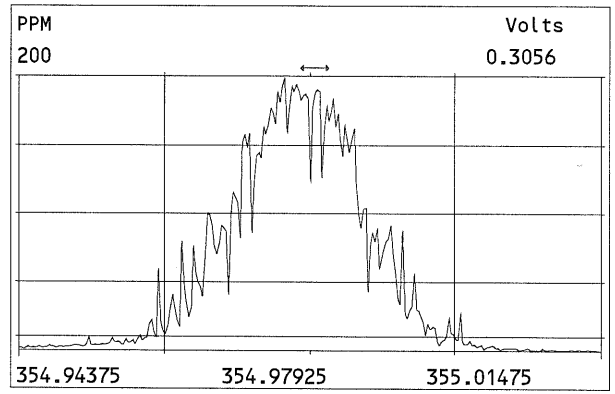


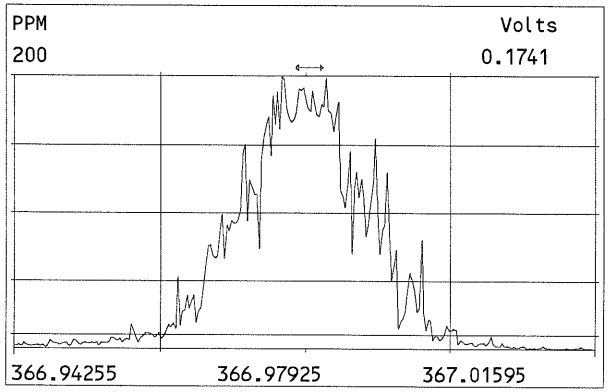


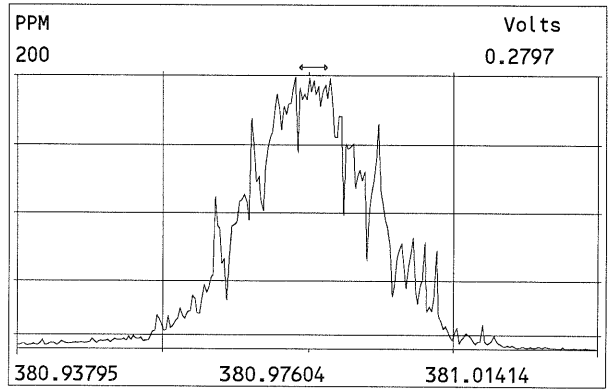












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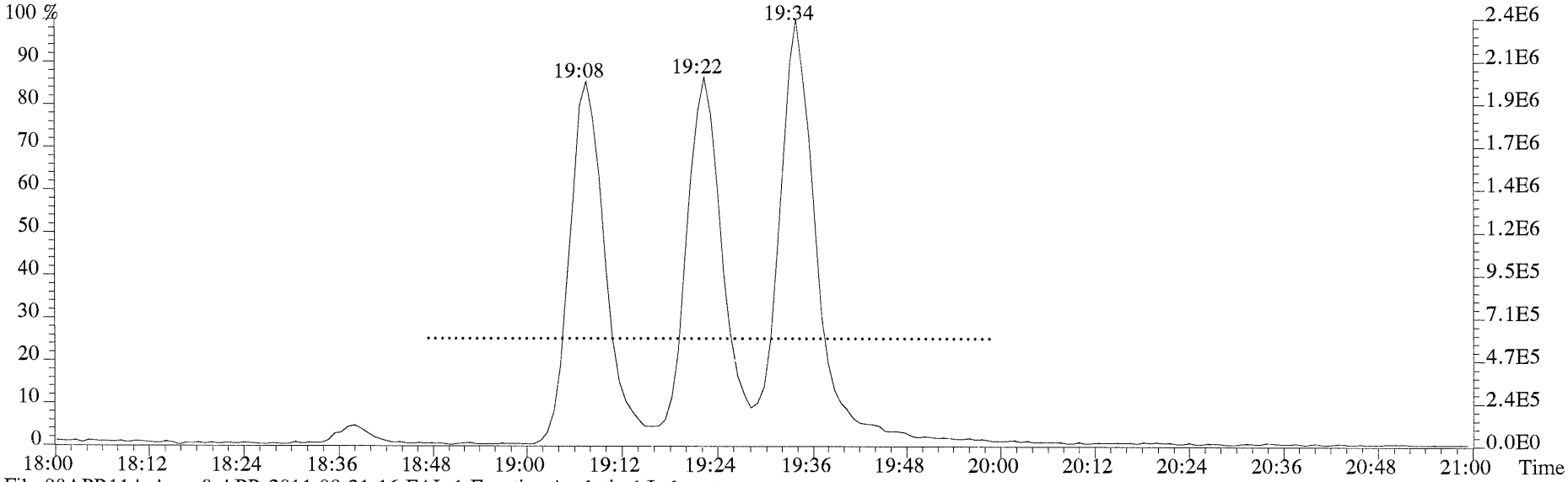
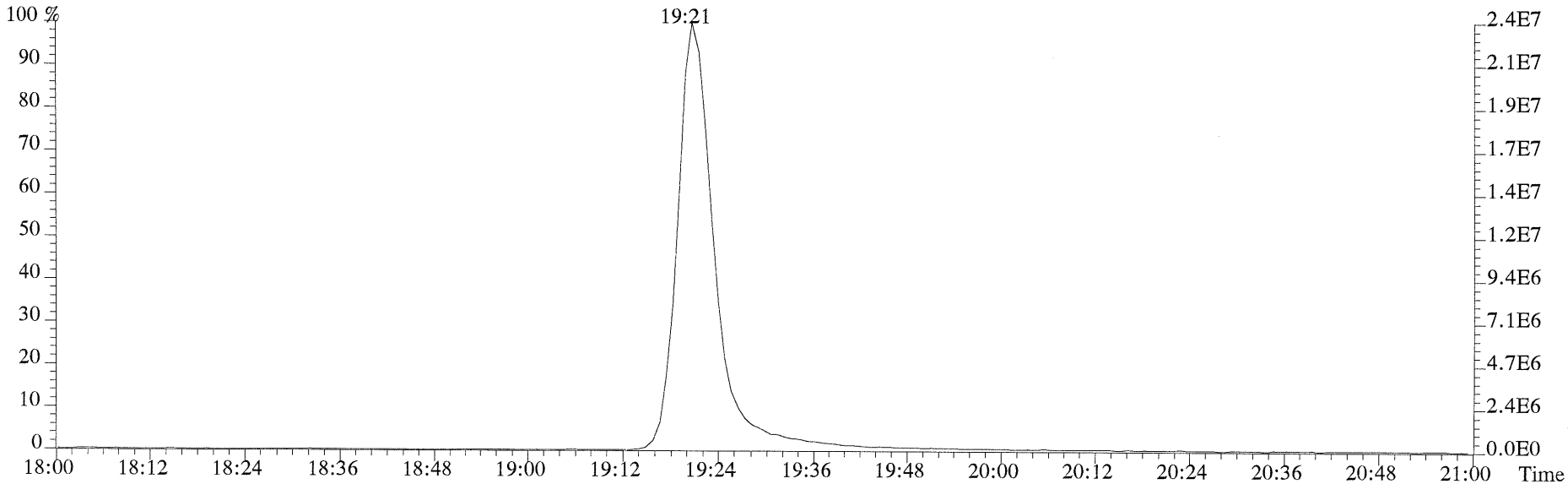
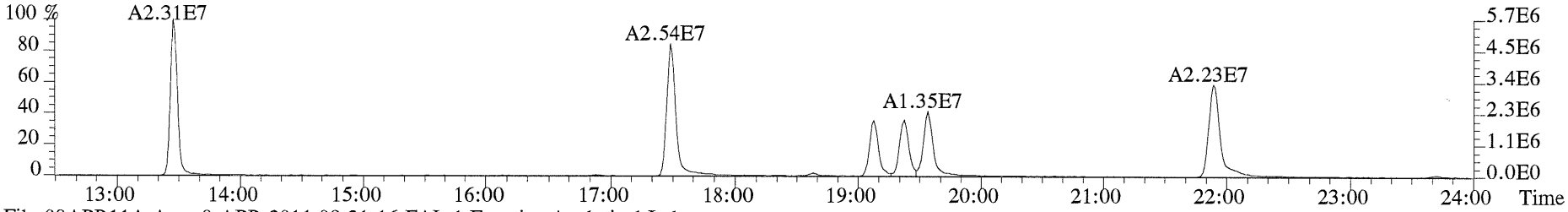
303.9016 Exp:TCDF
FAL ID:ST040811A1



File:08APR11A Acq: 8-APR-2011 09:21:16 FAL-1 Frontier Analytical Laboratory
317.9389 Exp:TCDF
FAL ID:ST040811A1



File:08APR11A Acq: 8-APR-2011 09:21:16 FAL-1 Frontier Analytical Laboratory
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:TCDF
FAL ID:ST040811A1



File:08APR11A Acq: 8-APR-2011 09:21:16 FAL-1 Frontier Analytical Laboratory
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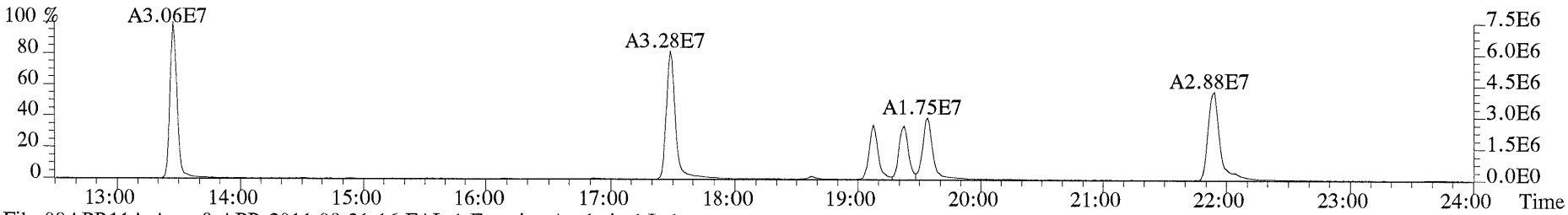
FAL ID:ST040811A1



File:08APR11A Acq: 8-APR-2011 09:21:16 FAL-1 Frontier Analytical Laboratory
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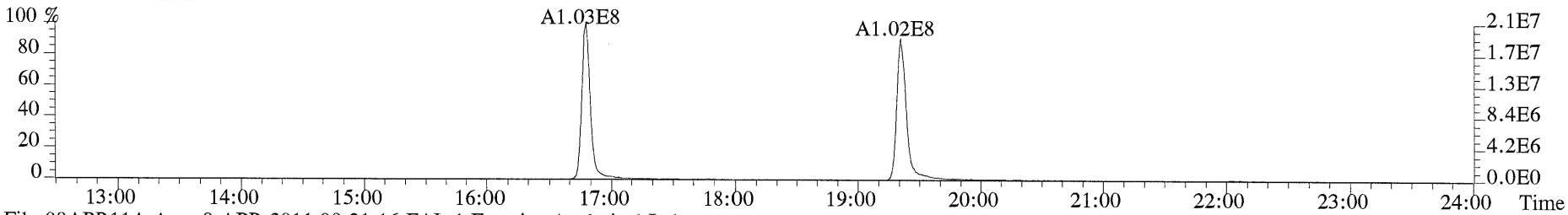
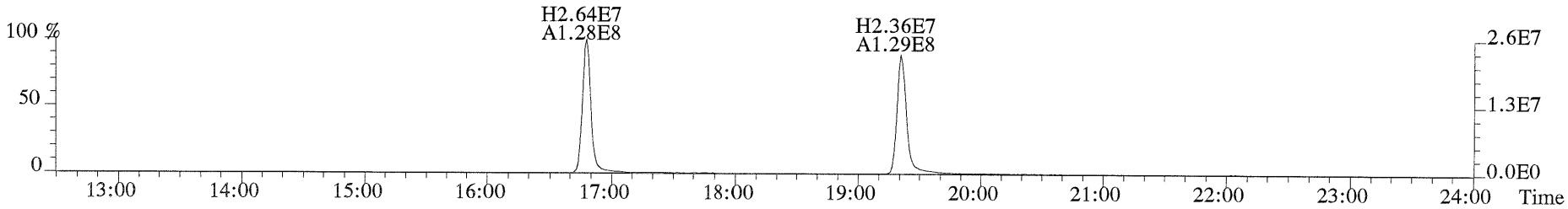
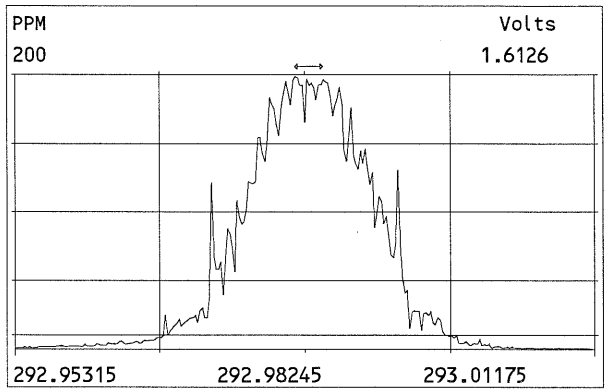
FAL ID:ST040811A1

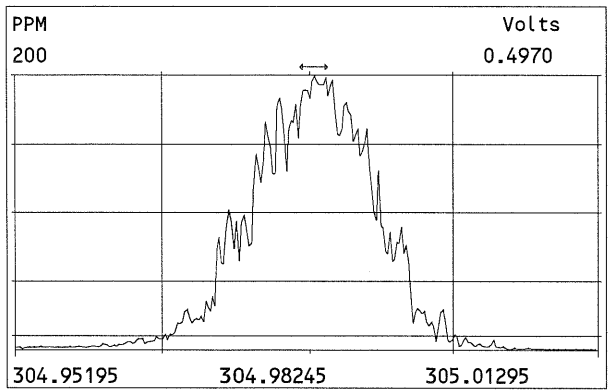


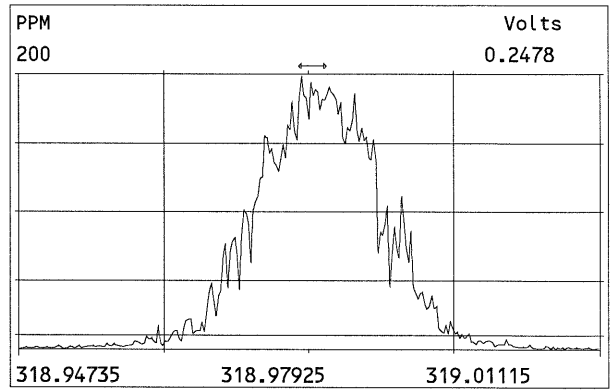
File:08APR11A Acq: 8-APR-2011 09:21:16 FAL-1 Frontier Analytical Laboratory
317.9389 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:TCDF
FAL ID:ST040811A1

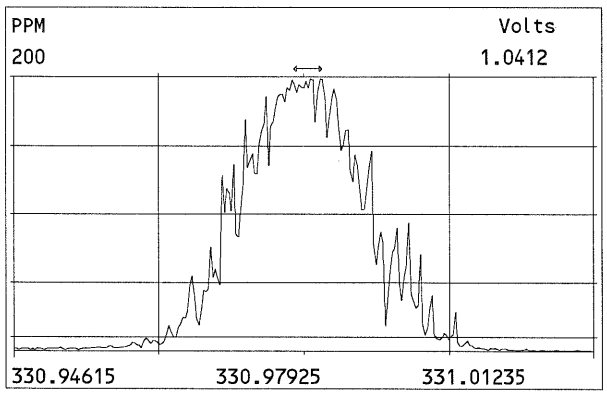


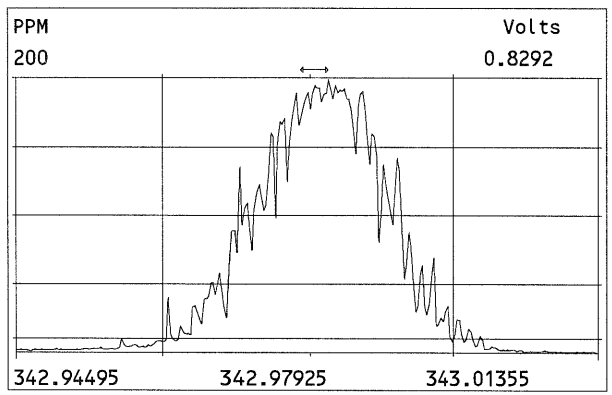
Peak Locate Examination: 8-APR-2011:12:58 File:08APR11A_RES_CHECK
Experiment:TCDF Function:1 Reference:PFK

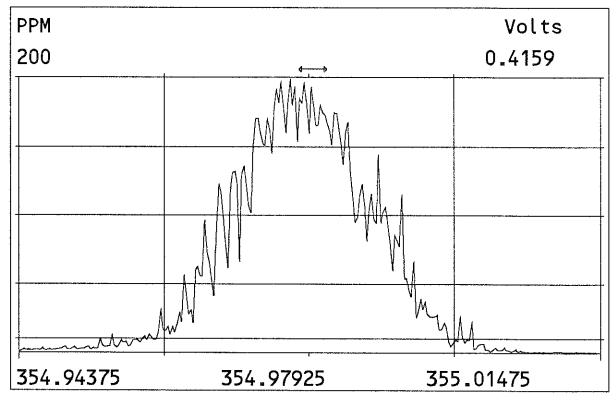


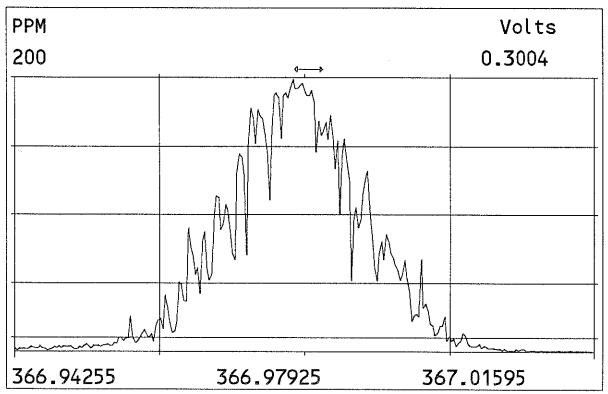


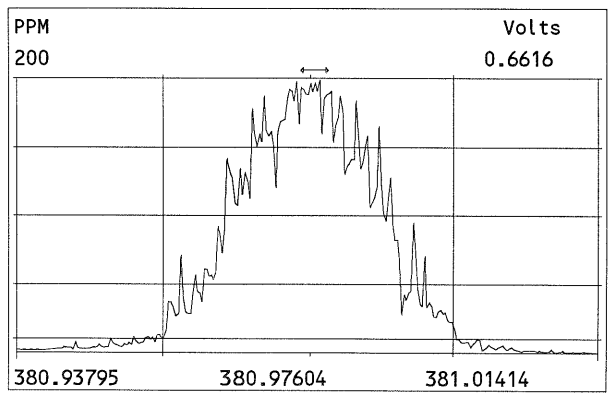












USEPA - ITD

FORM 4A
TCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 2/18/11

Instrument ID: FAL1 GC Column ID: DB225

VER Data Filename: 08APR11A Sam:6 Analysis Date: 8-APR-11 Time: 12:16:35

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
NATIVE ANALYTES						
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	y	8.54	8.40 - 12.0
LABELED COMPOUNDS						
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	y	95.0	71.0 - 140

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6A, Method 1613

Analyst: _____ Date: 4/8/11

FAL ID: ST040811A2 Filename: 08APR11A Sam:6 Acquired: 8-APR-11 12:16:35 ICal: tcdffal1-2-18-11
Client ID: 1613 CS3 100511J ConCal: ST040811A1 EndCal: ST040811A2
Results: 6678TCDF GC Column: DB225 Amount: 1.000

Name	Resp	RA	RT	RRF	Conc	Qual	Fac	Noise	DL	#Hom	
2,3,7,8-TCDF	1.56e+07	0.77 y	19:18	1.16	8.54		2.50	-	-	1	
13C-2,3,7,8-TCDF	1.58e+08	0.80 y	19:16	1.05	95.0						Rec 95.0
13C-1,2,3,4-TCDF	1.58e+08	0.79 y	16:43	-	89.5						

Analyst: Date: 4/8/11

Frontier Analytical Laboratory - Acquisition Log

Run Name:08APR11A Instrument: FAL1 GC: DB225 Experiment:TCDF

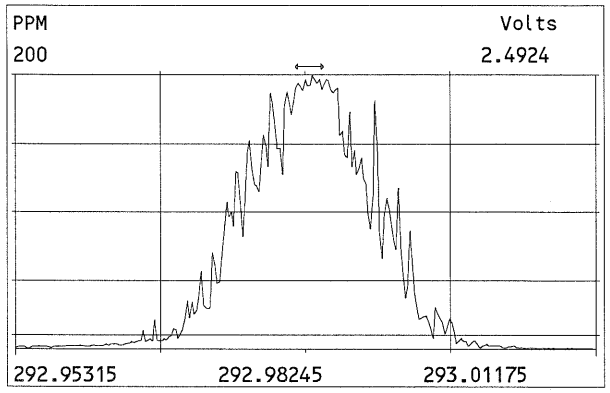
Data File	S	FAL ID	Client ID	Acquired	ConCal	EndCal	Analyst
08APR11A	1	ST040811A1	1613 CS3 100511J	8-APR-11 09:21:16	ST040811A1	ST040811A2	TC
08APR11A	2	6624-001-0001-SA	Lot #018690	8-APR-11 09:56:19	ST040811A1	ST040811A2	TC
08APR11A	3	6678-004-0001-SA	LL-SED2-0-56-031511	8-APR-11 10:31:24	ST040811A1	ST040811A2	TC
08APR11A	4	6678-007-0001-SA	LL-SED2-0-56-031511-D	8-APR-11 11:06:27	ST040811A1	ST040811A2	TC
08APR11A	5	6678-001-0001-SA	LL-SED3-0-36-031511	8-APR-11 11:41:32	ST040811A1	ST040811A2	TC
08APR11A	6	ST040811A2	1613 CS3 100511J	8-APR-11 12:16:35	ST040811A1	ST040811A2	TC

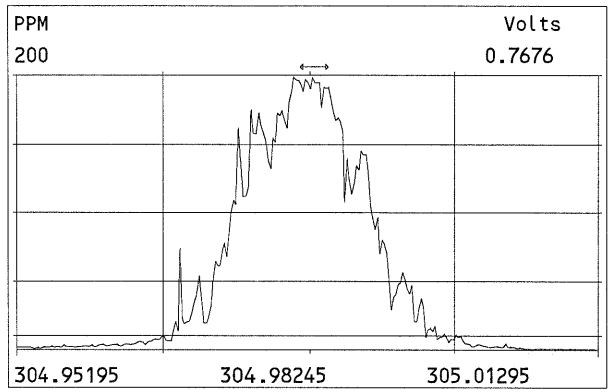
4/8/11

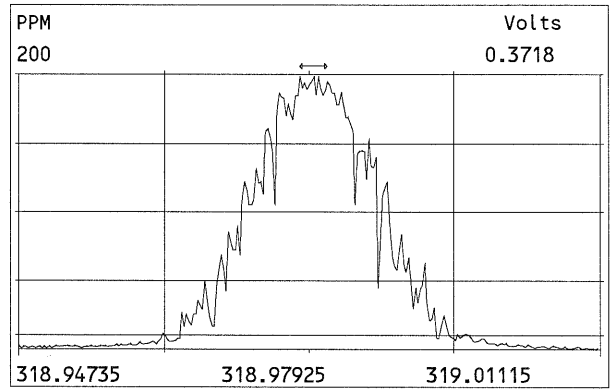
Data Backed Up:_____

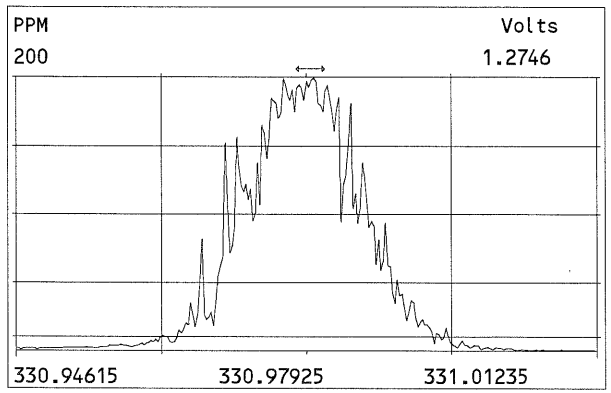
Date:_____

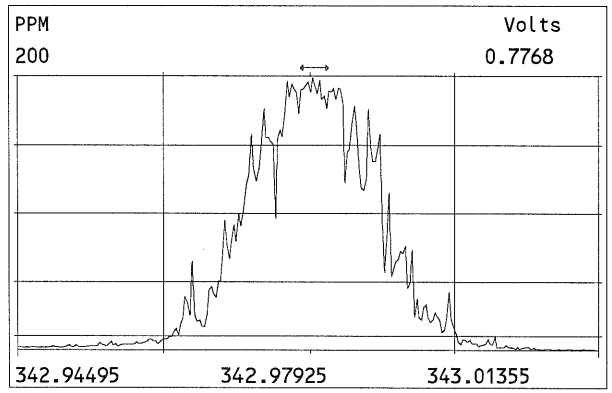
Peak Locate Examination: 8-APR-2011:09:21 File:08APR11A
Experiment:TCDF Function:1 Reference:PFK

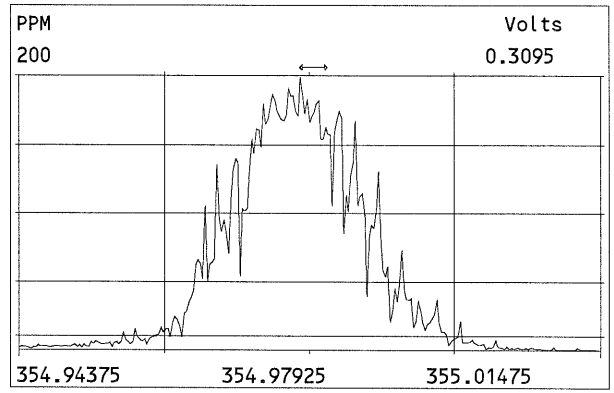


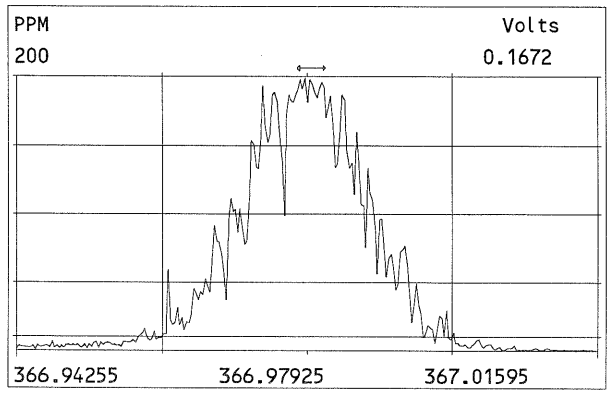


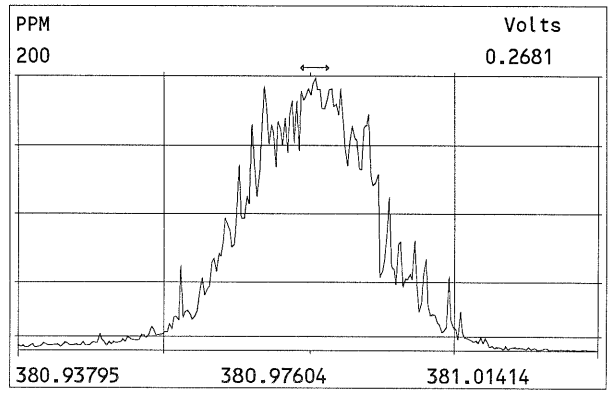




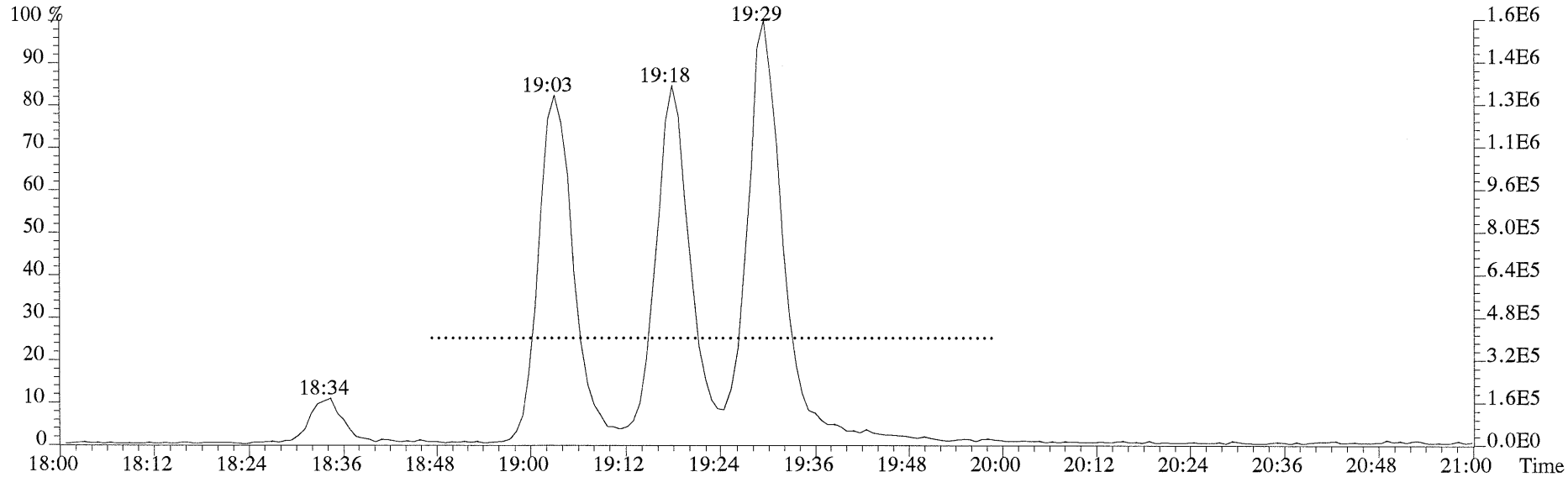




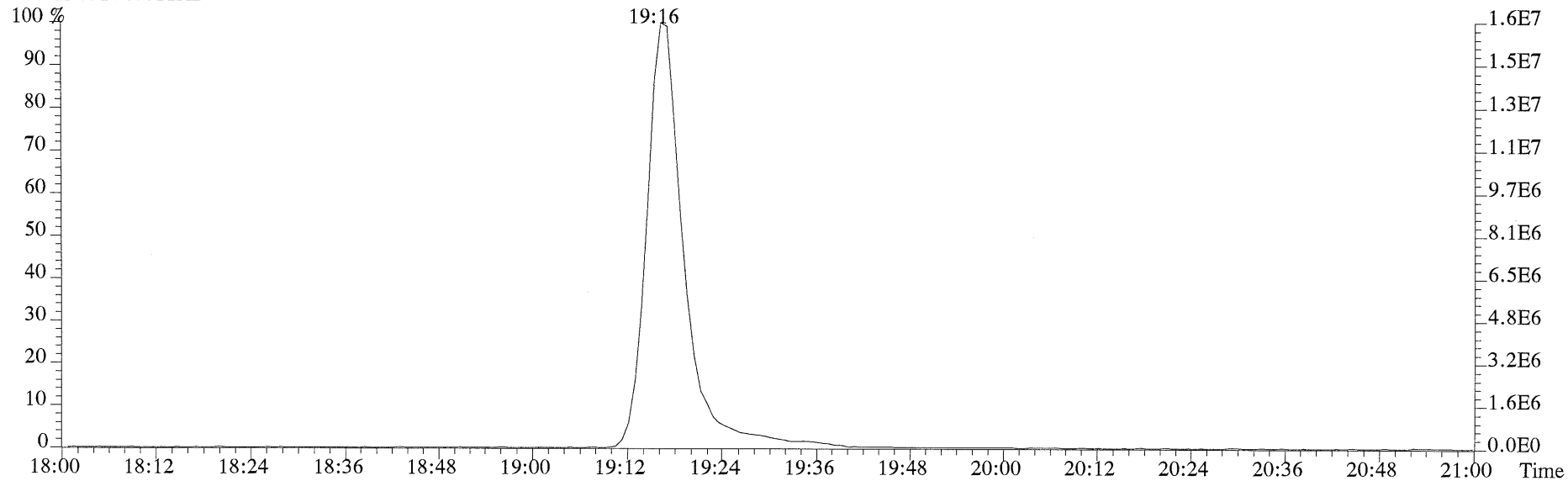




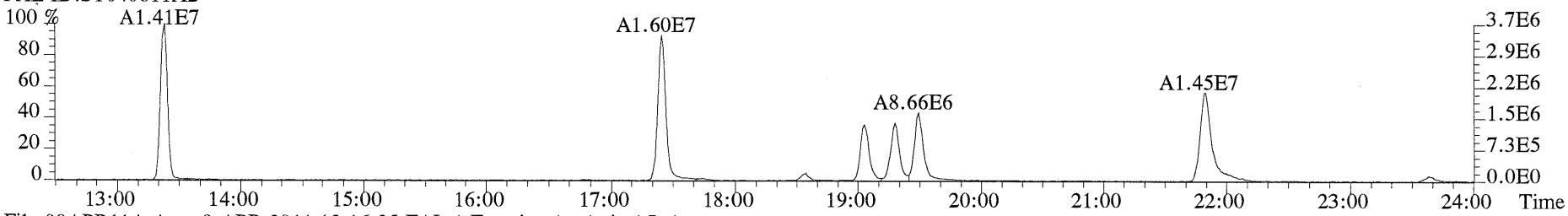
File:08APR11A Acq: 8-APR-2011 12:16:35 FAL-1 Frontier Analytical Laboratory
303.9016 S:6 Exp:TCDF
FAL ID:ST040811A2



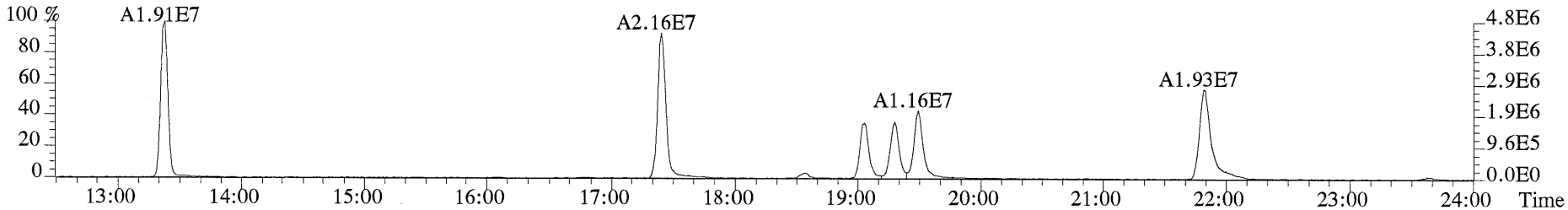
File:08APR11A Acq: 8-APR-2011 12:16:35 FAL-1 Frontier Analytical Laboratory
317.9389 S:6 Exp:TCDF
FAL ID:ST040811A2



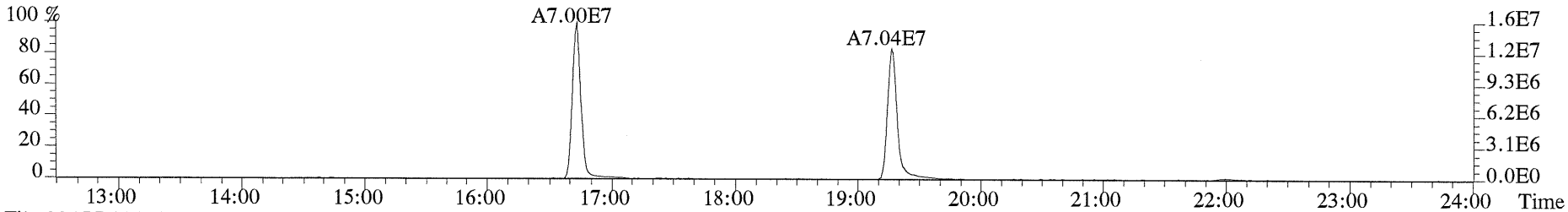
File:08APR11A Acq: 8-APR-2011 12:16:35 FAL-1 Frontier Analytical Laboratory
303.9016 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:TCDF
FAL ID:ST040811A2



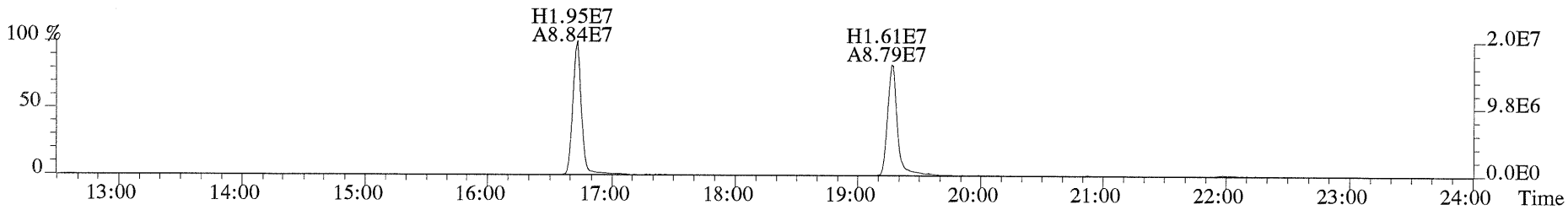
File:08APR11A Acq: 8-APR-2011 12:16:35 FAL-1 Frontier Analytical Laboratory
305.8987 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:TCDF
FAL ID:ST040811A2



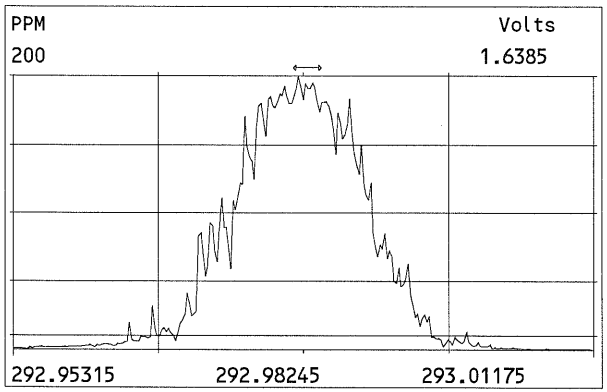
File:08APR11A Acq: 8-APR-2011 12:16:35 FAL-1 Frontier Analytical Laboratory
315.9419 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:TCDF
FAL ID:ST040811A2

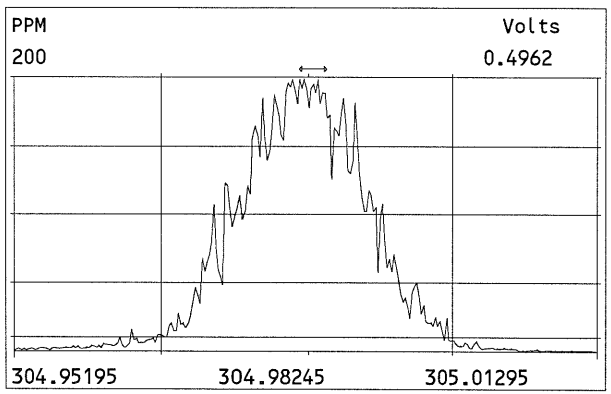


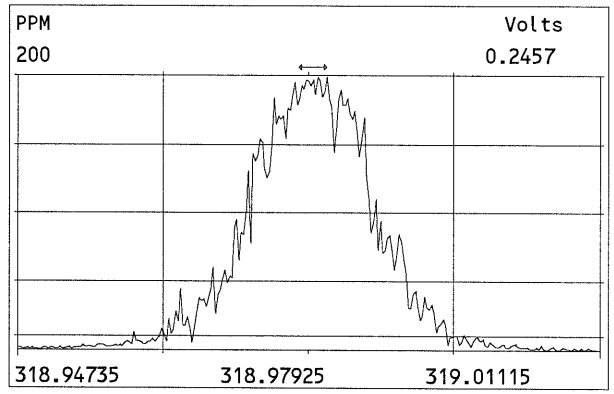
File:08APR11A Acq: 8-APR-2011 12:16:35 FAL-1 Frontier Analytical Laboratory
317.9389 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:TCDF
FAL ID:ST040811A2

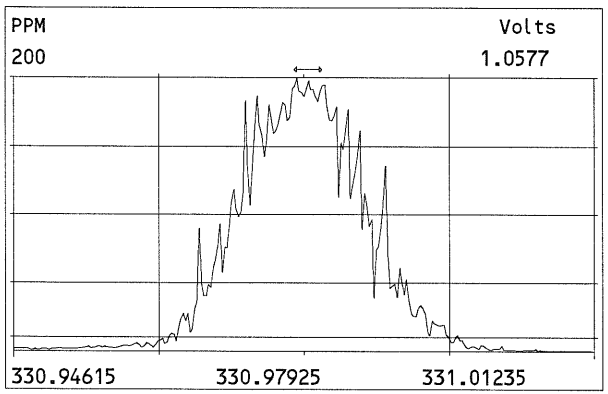


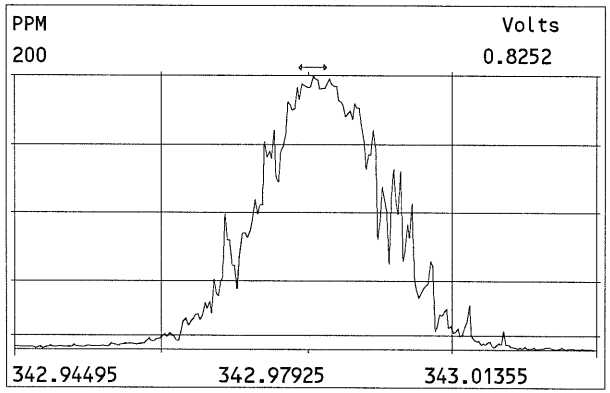
Peak Locate Examination: 8-APR-2011:12:58 File:08APR11A_RES_CHECK
Experiment:TCDF Function:1 Reference:PFK

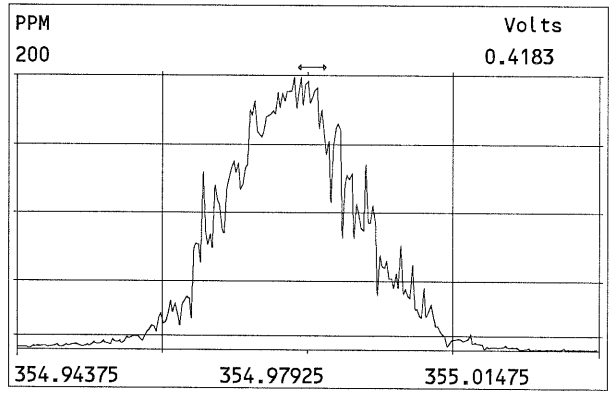


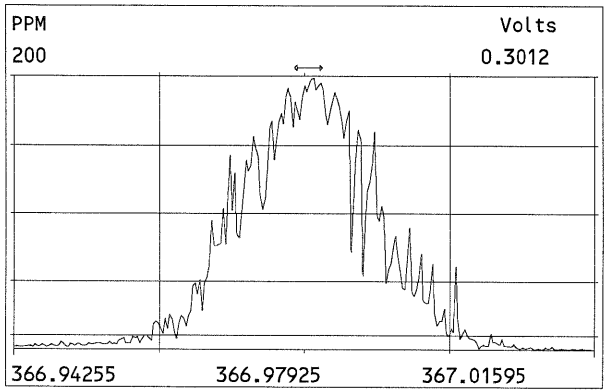












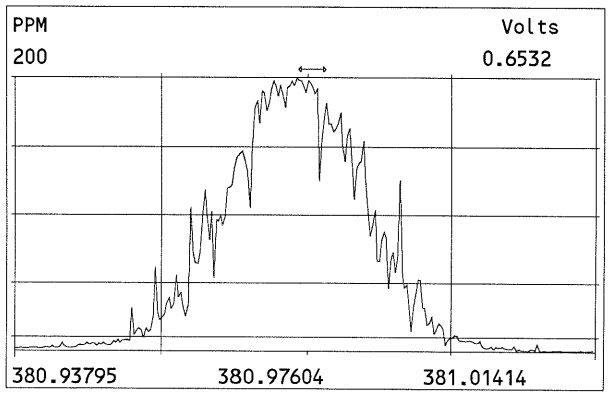


Table of Contents: ARI Job SN54

Client: Floyd Snider

Project: POS-LL Lora Lake - Subsurface Sediment

BC
Signature

March-24-2011
Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

April 21, 2011

Erin Breckel
Floyd-Snider Inc.
601 Union Street, Suite 600
Seattle, WA 98101-2341

RE: Client Project: Lora Lake Subsurface Sediment, POS-LL
ARI Job No: SN54

Dear Ms. Breckel:

Please find enclosed the original Chain-of-Custody (COC) record, sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and detail of these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
-For-
Susan D. Dunnihoo
Director, Client Services
sue@arilabs.com
206-695-6207

Enclosures

cc: eFile SN54

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: SN54

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: SN54	Turn-around Requested: Standard	Page: 1 of 1	
ARI Client Company: Floyd Snider	Phone: 206-292-2078	Date: 3/15/11	Ice Present? Y
Client Contact: Erin Breckel		No. of Coolers: 1	Cooler Temps: 1.5
Client Project Name: Lora Lake - Subsurface Sediment			
Client Project #: POS-LL	Samplers: EB/AM		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: cPAHs (8270-SIM LOW LEVEL)	PCP (8041)	Metals (As, Pb) (6010)	Dioxins (1613)	TOC (PSEP)				Notes/Comments
LL-SED3-0-36-031511	3/15/11	12:30	Sediment	4	X	X	X	X	X				
LL-SED3-36-141-031511		12:40		4	X	X	X	X	X				Hold - will call if we decide to analyze
LL-SED3-141-167-031511		12:50		4	X	X	X	X	X				
LL-SED2-0-56-031511		14:15		4	X	X	X	X	X				
LL-SED2-56-112-031511		14:25		8	X	X	X	X	X				MS/MSD Volume
LL-SED2-112-168-031511		14:55		4	X	X	X	X	X				
LL-SED2-0-56-031511-D		14:15		4	X	X	X	X	X				
LL-SED1-0-56-031511		18:00		4	X	X	X	X	X				

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
Samples frozen, need to be thawed and homogenized.	Erin Breckel			
	Printed Name: Erin Breckel	Printed Name: Jennifer Millsap	Printed Name	Printed Name
	Company: Floyd Snider	Company: ARI	Company	Company
	Date & Time: 3/16/11 10:10	Date & Time: 3/16/11 1610	Date & Time	Date & Time

SN54

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Floyd Snider
Project Name: Lora Lake- Subsurface Sediment
COC No(s): NA
Delivered by: Fed-Ex UPS Courier Hand Delivered Other:
Assigned ARI Job No: SN54
Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)	1.5	
If cooler temperature is out of compliance fill out form 00070F	Temp Gun ID#:	90041619

Cooler Accepted by: JM Date: 3/16/11 Time: 1000

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
Were all bottles sealed in individual plastic bags?		YES JM	NO
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Was Sample Split by ARI : NA YES Date/Time: Equipment: Split by:

Samples Logged by: JM Date: 3/17/11 Time: 945

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

Samples LL-SED3-36-141-031511 + LL-SED3-141-167-031511 were split + preserved for sulfide.

By: JM Date: 3/17/11

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	● ● ●

Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

Subject: Lora Lake samples
From: Erin Breckel <Erin.Breckel@floydsnider.com>
Date: Wed, 16 Mar 2011 16:56:01 -0700
To: 'Sue Dunnihoo' <sue@arilabs.com>
CC: Megan McCullough <Megan.McCullough@floydsnider.com>

Sue -

For both samples LL-SED3-36-141-031511 and LL-SED3-141-167-031511 can you please add a sulfide analysis to these samples?

I'm out of the office for the next two days, but if you have any questions regarding these samples you can talk to Megan McCullough here.

Thanks for your help!
Erin

Erin Breckel
FLOYD | SNIDER
Strategy * Science * Engineering
Two Union Square
601 Union Street, Suite 600
Seattle, WA 98101
tel: 206.292.2078 fax: 206.682.7867
www.floydsnider.com

Subject: Lora Lake samples
From: Erin Breckel <Erin.Breckel@floydsnider.com>
Date: Wed, 16 Mar 2011 11:43:07 -0700
To: 'Sue Dunnihoo' <sue@arilabs.com>

Hi Sue –

We dropped off our Lora Lake sediment samples this morning and had two samples listed as hold on the COC until we determined whether to analyze them or not. We just met and decided to go ahead and analyze them both. They are samples LL-SED3-36-141-031511 and LL-SED3-141-167-031511. Could you please let the lab know?

Thanks,
Erin

Erin Breckel
FLOYD | SNIDER
Strategy * Science * Engineering
Two Union Square
601 Union Street, Suite 600
Seattle, WA 98101
tel: 206.292.2078 fax: 206.682.7867
www.floydsnider.com

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: SN54

Case Narrative

Client: Floyd Snider
Project: Lora Lake Subsurface Sediment, POS-LL
ARI Job No.: SN54

Sample receipt

Analytical Resources, Inc. (ARI) accepted sediment samples on March 16, 2011 under ARI job SN54. The cooler temperature measured by IR thermometer following ARI SOP was 1.5°C. For details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

Samples **LL-SED3-0-36-031511**, **LL-SED2-0-56-031511**, **LL-SED2-0-56-031511-D**, and **LL-SED1-0-56-031511** were centrifuged prior to analysis.

Dioxin/Furan analyses were subcontracted to Frontier Analytical Laboratory in El Dorado Hills, CA. The dioxin data on CD as generated by Frontier is forwarded with this package.

SIM PAHs by SW8270D

The samples were initially screened to determine if a response was present that would require modifications in the extraction process. Based on the screen, the initial extraction weights were reduced for samples **LL-SED3-0-36-031511**, **LL-SED2-0-56-031511**, and **LL-SED2-0-56-031511-D**. The samples and associated laboratory QC were extracted and analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements.

The internal standard areas of Naphthalene-d8 fell outside the control limits low for samples **LL-SED2-112-168-031511**, **LL-SED2-0-56-031511-D**, and **LL-SED1-0-56-031511**. The internal standard area of Phenanthrene-d10 fell outside the control limits low for sample **LL-SED1-0-56-031511**. These internal standards are not associated with requested compounds. No corrective action was taken.

The internal standard areas of Perylene-d12 fell outside the control limits low for samples **LL-SED2-112-168-031511**, **LL-SED2-0-56-031511-D**, and **LL-SED1-0-56-031511**. The samples were re-analyzed at dilutions and the internal standard areas were comparable to the initial analysis. No corrective action was taken.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limit.

The LCS percent recovery of Benzo(a)pyrene fell outside the control limits low for **LCS-032611**. All other percent recoveries were within control limits. No corrective action was taken.

The matrix spike and matrix spike duplicate percent recoveries were within advisory control limits.

In response to comments from NELAP and DOD auditors, ARI will now report the 'total' benzofluoranthenes rather than the individual compounds. This total will include the response of the b, k and j isomers.

Pentachlorophenol by SW8041

The samples and associated laboratory QC were extracted and analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limit. The LCS percent recovery was within control limits.

The matrix spike and matrix spike duplicate percent recoveries were within advisory control limits.

Total Arsenic and Lead by SW846 6010B

The samples and associated laboratory QC were digested and analyzed within the method recommended holding time.

The method blank was clean at the reporting limits. The LCS percent recoveries were within control limits.

The matrix spike percent recoveries and duplicate RPDs were within control limits.

General Chemistry

The samples and associated laboratory QC were prepared and analyzed within the method recommended holding time.

The method blanks were clean at the reporting limits. The LCS percent recoveries were within control limits.

The SRM percent recovery was within limits.

The matrix spike percent recovery of sulfide fell outside the control limits low for sample **LL-SED3-141-167-031511**. All other quality control parameters were met. No corrective action was taken.

The replicate RPD/RSDs were within limits.

Geotechnical Parameters

A laboratory-specific case narrative follows.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: Floyd-Snider	**ARI Project No.:** SN54
Client Project: Lora Lake – Subsurface Sediment	**Client Project No.:** POS-LLA

Case Narrative

1. Four samples were submitted for preparation on March 16, 2011, and were in good condition. Each sample was comprised of two, partially full 8oz jars.
2. The samples were submitted for separation of solids by means of centrifuging according to modified Corp of Engineers draft interim guide lines.
3. The samples were centrifuged in a pre-cooled centrifuge (4°C) at 1,000xg for 30 minutes.
4. After centrifuging of the sample, the supernatant liquid was decanted. The solids for each sample were combined, homogenized and spooned into a labeled 8 oz jar.
5. There were no other anomalies in the sample or methods on this project.

Approved by: [signature] Date: 3/22/11
Title: *Geotechnical Laboratory Manager*

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: SN54
Client: Floyd Snider
Project Event: POS-LL
Project Name: Lora Lake - Subsurface Sediment

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	LL-SED3-0-36-031511	SN54A	11-5925	Sediment	03/15/11 12:30	03/16/11 10:10
2.	LL-SED3-36-141-031511	SN54B	11-5926	Sediment	03/15/11 12:40	03/16/11 10:10
3.	LL-SED3-141-167-031511	SN54C	11-5927	Sediment	03/15/11 12:50	03/16/11 10:10
4.	LL-SED2-0-56-031511	SN54D	11-5928	Sediment	03/15/11 14:15	03/16/11 10:10
5.	LL-SED2-56-112-031511	SN54E	11-5929	Sediment	03/15/11 14:25	03/16/11 10:10
6.	LL-SED2-112-168-031511	SN54F	11-5930	Sediment	03/15/11 14:55	03/16/11 10:10
7.	LL-SED2-0-56-031511-D	SN54G	11-5931	Sediment	03/15/11 14:15	03/16/11 10:10
8.	LL-SED1-0-56-031511	SN54H	11-5932	Sediment	03/15/11 18:00	03/16/11 10:10

Printed 03/17/11

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q — Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

LCS SOLUTIONS

LABL	SOLN ID	TEST	CONC. UG/ML	SOLVENT	EXP.
1	1820-2	PCB 1660	20	ACETONE	01/25/12
2#	NA	BCOC PEST	10	ACETONE	NA
3	1793-3	PEST	01/02/10	ACETONE	12/15/11
4	1806-2	LOW PEST	.1/.2/1	ACETONE	12/15/11
5	1779-1	EPH	1500	MECL2	11/11/11
6	1791-5	PCP	12.5/125	ACETONE	12/10/11
7	1834-4	ABN	100	MEOH	08/21/11
8	1785-3	TBT	2.5	MECL2	11/27/11
9	1786-3	PORE TBT	.125/.25	MECL2	11/27/11
10	1790-1	ABN ACID	100/200	MEOH	06/07/11
11	1777-2	TPHD	15000	ACETONE	11/01/11
12	1790-2	ABN BASE	200	MEOH	06/07/11
13	1716-2	LOW PCB	2	ACETONE	03/30/11
14	1822-2	LOW ABN ACID	10/20	MEOH	06/07/11
15	1814-2	SIM PNA	15/75	MEOH	01/04/12
16	1834-5	1,4-DIOXANE	100	MEOH	08/25/11
17	1772-3	1248 PCB	10	ACETONE	05/01/11
18	1814-3	LOW SIM PNA	1.5	ACETONE	01/04/12
19	1815-2	AK103	7500	ACETONE	06/02/11
20	1775-3	PNA	100	ACETONE	08/14/11
21	1725-1	SKY/BHT	100	MEOH	03/18/11
22	1781-1	HERB	05 to 4000	MEOH	04/15/11
23	1822-3	LW ABN BASE	20	MEOH	06/07/11
24	1822-4	LOW ABN	10	ACETONE	10/01/11
25#	NA	DIPHENYL	100	MEOH	NA
26	1823-1	OP-PEST	25	MEOH	07/01/11
27	NA	STEROLS	200	MEOH	NA
28#	1807-1	ADD. PEST	2	ACETONE	08/31/11
29#	NA	DECANES	100	MEOH	NA

LCS SOLUTIONS

30	NA	EDB/DBCP	0.2	MEOH	NA
31	1835-2	TERPINEOL	100	MEOH	09/02/11
32	NA	GUAIACOL	50-200	ACETONE	NA
33	NA	RETENE	100	MEOH	NA
34	NA	CONGENERS	2.5	ACETONE	NA
35	NA	ALKYL PNA A	10	MEOH	NA
36	NA	ALKYL PNA B	10	MEOH	NA
37	1773-1	CAR/PERY	100	ACETONE	10/14/11
50	1757-4	FULL RESIN	250	ACETONE	08/14/11
51	1772-1	DDTS	0.01	ACETONE	04/24/11
52	NA	1232 PCB	20	ACETONE	NA
53	1780-1	DALAPON	50	MEOH	05/07/11
54	1753-1	T-CHLORDANE	10	ACETONE	07/21/11
55	1753-2	TOXAPHENE	50	ACETONE	07/21/11
	#=PROJECT SPECIFIC SOLUTION				
	*=REVERIFIED SOLUTION				

03/04/11

SURR SOLUTIONS

LABEL	SOLN ID	TEST	CONC. UG/ML	SOLVENT	EXP.
A	1824-2	ABN	100/150	MEOH	07/22/11
B	1834-6	SIM PNA	15/75	ACETONE	10/05/11
C	1705-4	SIM ABN	25/37.5	MEOH	03/08/11
D	1795-4	LOW PCB	0.2	ACETONE	12/16/11
E	1771-3	HERB	62.5	MEOH	10/06/11
F	1791-3	PCP	12.5	ACETONE	12/09/11
G	1824-1	d8-DIOXANE	100	MEOH	08/14/11
H	1723-2	OP-PEST	25	MEOH	04/02/11
I	1835-1	LOW S. PNA	1.5	ACETONE	10/05/11
J	1787-2	TBT-PORE	0.125	MECL2	11/27/11
K	1795-2	MED PCB	20	ACETONE	12/16/11
L	1785-4	TBT	2.5	MECL2	11/27/11
M	1767-1	EPH	1500	MECL2	06/02/11
N	1795-3	PCB	2	ACETONE	12/16/11
O	1821-3	TPH	450	MECL2	09/07/11
P	1813-2	HCID	2250	MECL2	08/05/11
Q	NA	EDB	1	MEOH	NA
R	1757-3	RESIN ACID	250	ACETONE	08/14/11
S*	NA	PBDE	.25	MEOH	NA
T	1768-2	ALKYL PNA	10	MEOH	07/22/11
U	NA	CONGENER	2.5	ACETONE	NA
V	1791-4	LOW PCP	1.25	ACETONE	12/09/11
*reverified solution					

Analytical Resources,Incorporated
Analytical Chemists and Consultants

Spike Recovery Control Limits for Polycyclic Aromatic Hydrocarbons Selected Ion Monitoring (SIM) EPA Method SW-846-8270D-Modified [1,7]

Effective 5/1/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

Sample Matrix	Water		Soil	
Sample Volume / Final Volume	**500 mL to 0.5 mL**		**7.5 g / 0.5 mL**	
	Control Limits	**ME Limits [2]**	**Control Limits**	**ME Limits [2]**
LCS Spike Recovery [6]				
Napthalene	39 - **100**	30 - 102	37 - **100**	27 - 107
2-Methylnapthalene	39 - **100**	31 - **100**	37 - **100**	28 - **100**
1-Methylnapthalene	30 - 160 [3]	30 - 160 [3]	30 - 160 [3]	30 - 160 [3]
Acenaphthylene	37 - 100	27 - 111	35 - **100**	26 - 102
Acenapthene	42 - **100**	33 - 107	39 - **100**	31 - **100**
Dibenzofuran	46 - **100**	38 - 101	39 - **100**	31 - **100**
Fluorene	49 - 101	40 - 110	42 - **100**	33 - 106
Phenanthrene	55 - 101	47 - 109	47 - **100**	38 - 108
Anthracene	47 - 102	38 - 111	41 - 106	30 - 117
Fluoranthene	60 - 106	52 - 114	52 - 109	43 - 119
Pyrene	55 - 110	46 - 119	47 - 111	36 - 122
Benz(a)anthracene	56 - 104	48 - 112	47 - 114	36 - 125
Chrysene	58 - 104	50 - 112	51 - 106	42 - 115
Benzofluoranthene(s) (Total)	30 - 160 [8]	30 - 160 [8]	30 - 160 [8]	30 - 160 [8]
Benzo(a)pyrene	32 - 110	19 - 123	44 - 111	33 - 122
Indeno(1,2,3-cd)pyrene	50 - 114	39 - 125	41 - 114	29 - 126
Dibenzo(a,h)anthracene	42 - 121	29 - 134	42 - 116	30 - 128
Benzo(g,h,i)perylene	50 - 113	40 - 124	37 - 115	27 - 107
MB / LCS Surrogate Recovery				
d10-2-Methylnaphthalene	36 - 101	(4)	35 - **100**	(4)
d14-Dibenzo(a,h)anthracene	42 - 121	(4)	37 - 120	(4)
Sample Surrogate Recovery				
d10-2-Methylnaphthalene	30 - 106	(4)	34 - **100**	(4)
d14-Dibenzo(a,h)anthracene	**10** - 130	(4)	**10** - 117	(4)

(1) ARI's Control limits calculated using all available spike recovery data from 1/1/08 through 12/31/08.
(2) **ME** = A **marginal exceedance** defined in the NELAC Standard [5] as beyond the LCS-CL but still within the ME limits. ME limits are between 3 and 4 standard deviations around the mean. A maximum of one marginal exceedance is acceptable. Two or more marginal exceedances require corrective action.
(3) 30 – 160 are default, advisory control limits used when there is insufficient data to calculate historic control limits. **DO NOT** use these limits as the sole reason to reject the data from a batch of analyses.
(4) Marginal Exceedances not allowed for surrogate standards.
(5) **2003 NELAC Standard (EPA/600/R-04/003), July 2003**, Chapter 5, pages 251-252.
(6) Laboratory Control Sample (LCS) spike recovery control limits also used as advisory control limits for sample matrix spike (MS) analyzes. MS recovery values are advisory and not used to assess the acceptability of an analytical batch.
(7) Highlighted control limits (**bold font**) adjusted to demonstrate that ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit.
(8) Default limits pending generation of historic limits for total benzofluoranthrenes (7/29/10)

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Spike Recovery Control Limits for Chlorinated Phenols
EPA Method SW-846-8041[1,2]

Effective 5/1/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	ARI's Calculated Control Limits	
Sample Matrix:	Water	Soil / Sediment
Sample Amount / Final Volume:	500 / 50 mL	10 g / 25 mL
LCS Spike Recovery [3]		
Pentachlorophenol	27 - 115	**10** - 162
Method Blank/LCS Surrogate Recovery		
2,4,6-Tribromophenol	40 - 130	50 - 115
Sample Surrogate Recovery		
2,4,6-Tribromophenol	11 - 156	**10** - 146

(1) ARI's Control limits calculated using all available spike recovery data from 1/1/08 through 12/1/08.
(2) Highlighted control limits (**bold font**) adjusted to demonstrate that ARI does not use control limits < 10.
(3) Laboratory Control Sample (LCS) spike recovery control limits also used as advisory control limits for sample matrix spike (MS) analyzes. MS recovery values are advisory and not used to assess the acceptability of an analytical batch.

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Summary of Laboratory Control Limits Metals Analyses (All Methods & Sample Matrices)

Effective 5/1/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

Element	Matrix Spike Recovery	LCS Recovery	Replicate RPD
Aluminum	75 - 125	80 - 120	≤ 20%
Antimony	75 - 125	80 - 120	≤ 20%
Arsenic	75 - 125	80 - 120	≤ 20%
Barium	75 - 125	80 - 120	≤ 20%
Beryllium	75 - 125	80 - 120	≤ 20%
Boron	75 - 125	80 - 120	≤ 20%
Cadmium	75 - 125	80 - 120	≤ 20%
Calcium	75 - 125	80 - 120	≤ 20%
Chromium	75 - 125	80 - 120	≤ 20%
Cobalt	75 - 125	80 - 120	≤ 20%
Copper	75 - 125	80 - 120	≤ 20%
Iron	75 - 125	80 - 120	≤ 20%
Lead	75 - 125	80 - 120	≤ 20%
Magnesium	75 - 125	80 - 120	≤ 20%
Manganese	75 - 125	80 - 120	≤ 20%
Mercury	75 - 125	80 - 120	≤ 20%
Nickel	75 - 125	80 - 120	≤ 20%
Potassium	75 - 125	80 - 120	≤ 20%
Selenium	75 - 125	80 - 120	≤ 20%
Silica	75 - 125	80 - 120	≤ 20%
Silver	75 - 125	80 - 120	≤ 20%
Sodium	75 - 125	80 - 120	≤ 20%
Strontium	75 - 125	80 - 120	≤ 20%
Thallium	75 - 125	80 - 120	≤ 20%
Vanadium	75 - 125	80 - 120	≤ 20%
Zinc	75 - 125	80 - 120	≤ 20%

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Spike Recovery Control Limits for Conventional Wet Chemistry

Effective 5/1/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	ARI's Control Limits	
Sample Matrix:	Water	Soil / Sediment
Matrix Spike Recoveries	% Recovery	% Recovery
Ammonia	75 - 125	75 - 125
Bromide	75 125	75 - 125
Chloride	75 125	75 - 125
Cyanide	75 - 125	75 - 125
Ferrous Iron	75 - 125	75 - 125
Fluoride	75 - 125	75 - 125
Formaldehyde	75 - 125	75 - 125
Hexane Extractable Material	-- - --	78 - 114
Hexavalent Chromium	75 - 125	75 - 125
Nitrate/Nitrite	75 - 125	75 - 125
Oil and Grease	75 - 125	75 - 125
Phenol	75 - 125	75 - 125
Phosphorous	75 - 125	75 - 125
Sulfate	75 - 125	75 - 125
Sulfide	75 - 125	75 - 125
Total Kjeldahl Nitrogen	75 - 125	75 - 125
Total Organic Carbon	75 - 125	75 - 125
Duplicate RPDs		
Acidity	±20%	±20%
Alkalinity	±20%	±20%
BOD	±20%	±20%
Cation Exchange	±20%	±20%
COD	±20%	±20%
Conductivity	±20%	±20%
Salinity	±20%	±20%
Solids	±20%	±20%
Turbidity	±20%	±20%

SIM PAH Analysis
Report and Summary QC Forms

ARI Job ID: SN54

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: LL-SED3-0-36-031511
SAMPLE

Lab Sample ID: SN54A
LIMS ID: 11-5925
Matrix: Sediment
Data Release Authorized: MW
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/01/11 18:13
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 5.92 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 75.4%

CAS Number	Analyte	RL	Result
56-55-3	**Benzo(a)anthracene**	8.4	62
218-01-9	**Chrysene**	8.4	140
50-32-8	**Benzo(a)pyrene**	8.4	88
193-39-5	**Indeno(1,2,3-cd)pyrene**	8.4	68
53-70-3	Dibenz(a,h)anthracene	8.4	< 8.4 U
TOTBFA	**Total Benzofluoranthenes**	8.4	180

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	64.0%
d14-Dibenzo(a,h)anthracen	57.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS **Sample ID: LL-SED3-36-141-031511**
Page 1 of 1 **SAMPLE**

Lab Sample ID: SN54B
LIMS ID: 11-5926
Matrix: Sediment
Data Release Authorized:
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/01/11 18:41
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.07 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 3.00
Percent Moisture: 88.3%

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	15	< 15 U
218-01-9	**Chrysene**	**15**	**18**
50-32-8	Benzo(a)pyrene	15	< 15 U
193-39-5	Indeno(1,2,3-cd)pyrene	15	< 15 U
53-70-3	Dibenz(a,h)anthracene	15	< 15 U
TOTBFA	Total Benzofluoranthenes	15	< 15 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	74.0%
d14-Dibenzo(a,h)anthracen	55.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS **Sample ID: LL-SED3-141-167-031511**
Page 1 of 1 **SAMPLE**

Lab Sample ID: SN54C
LIMS ID: 11-5927
Matrix: Sediment
Data Release Authorized:
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/01/11 19:09
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.06 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 3.00
Percent Moisture: 87.9%

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	15	< 15 U
218-01-9	Chrysene	15	< 15 U
50-32-8	Benzo(a)pyrene	15	< 15 U
193-39-5	Indeno(1,2,3-cd)pyrene	15	< 15 U
53-70-3	Dibenz(a,h)anthracene	15	< 15 U
TOTBFA	Total Benzofluoranthenes	15	< 15 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	65.0%
d14-Dibenzo(a,h)anthracen	51.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: LL-SED2-0-56-031511
SAMPLE

Lab Sample ID: SN54D
LIMS ID: 11-5928
Matrix: Sediment
Data Release Authorized:
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/01/11 19:37
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 3.29 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 85.9%

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	15	130
218-01-9	Chrysene	15	300
50-32-8	Benzo(a)pyrene	15	170
193-39-5	Indeno(1,2,3-cd)pyrene	15	110
53-70-3	Dibenz(a,h)anthracene	15	30
TOTBFA	Total Benzofluoranthenes	15	470

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	70.3%
d14-Dibenzo(a,h)anthracen	53.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: LL-SED2-56-112-031511
SAMPLE

Lab Sample ID: SN54E
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized: MW
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/04/11 11:59
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.15 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 3.00
Percent Moisture: 86.2%

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	15	< 15 U
218-01-9	Chrysene	15	< 15 U
50-32-8	Benzo(a)pyrene	15	< 15 U
193-39-5	Indeno(1,2,3-cd)pyrene	15	< 15 U
53-70-3	Dibenz(a,h)anthracene	15	< 15 U
TOTBFA	Total Benzofluoranthenes	15	< 15 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	72.0%
d14-Dibenzo(a,h)anthracen	55.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
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Sample ID: LL-SED2-112-168-031511
SAMPLE

Lab Sample ID: SN54F
LIMS ID: 11-5930
Matrix: Sediment
Data Release Authorized:
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/04/11 15:08
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.09 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 3.00
Percent Moisture: 87.7%

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	15	< 15 U
218-01-9	Chrysene	15	< 15 U
50-32-8	Benzo(a)pyrene	15	< 15 U
193-39-5	Indeno(1,2,3-cd)pyrene	15	< 15 U
53-70-3	Dibenz(a,h)anthracene	15	< 15 U
TOTBFA	Total Benzofluoranthenes	15	< 15 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	84.0%
d14-Dibenzo(a,h)anthracen	64.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
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Sample ID: LL-SED2-112-168-031511
DILUTION

Lab Sample ID: SN54F
LIMS ID: 11-5930
Matrix: Sediment
Data Release Authorized:
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/04/11 19:24
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.09 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 30.0
Percent Moisture: 87.7%

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	150	< 150 U
218-01-9	Chrysene	150	< 150 U
50-32-8	Benzo(a)pyrene	150	< 150 U
193-39-5	Indeno(1,2,3-cd)pyrene	150	< 150 U
53-70-3	Dibenz(a,h)anthracene	150	< 150 U
TOTBFA	Total Benzofluoranthenes	150	< 150 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	90.0%
d14-Dibenzo(a,h)anthracen	60.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: LL-SED2-0-56-031511-D
SAMPLE

Lab Sample ID: SN54G
LIMS ID: 11-5931
Matrix: Sediment
Data Release Authorized:
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/04/11 15:36
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 2.15 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 88.7%

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	23	270
218-01-9	Chrysene	23	620
50-32-8	Benzo(a)pyrene	23	400
193-39-5	Indeno(1,2,3-cd)pyrene	23	280
53-70-3	Dibenz(a,h)anthracene	23	74
TOTBFA	Total Benzofluoranthenes	23	1,100

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	75.0%
d14-Dibenzo(a,h)anthracen	59.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS

Sample ID: LL-SED2-0-56-031511-D
DILUTION

Lab Sample ID: SN54G
LIMS ID: 11-5931
Matrix: Sediment
Data Release Authorized:
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/04/11 17:22
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 2.15 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 3.00
Percent Moisture: 88.7%

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	70	240
218-01-9	Chrysene	70	570
50-32-8	Benzo(a)pyrene	70	330
193-39-5	Indeno(1,2,3-cd)pyrene	70	270
53-70-3	Dibenz(a,h)anthracene	70	96
TOTBFA	Total Benzofluoranthenes	70	1,000

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	69.0%
d14-Dibenzo(a,h)anthracen	59.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS

Sample ID: LL-SED1-0-56-031511
SAMPLE

Lab Sample ID: SN54H
LIMS ID: 11-5932
Matrix: Sediment
Data Release Authorized:
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/04/11 16:03
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.56 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 45.6%

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	4.7	37
218-01-9	Chrysene	4.7	81
50-32-8	Benzo(a)pyrene	4.7	55
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	38
53-70-3	Dibenz(a,h)anthracene	4.7	5.8
TOTBFA	Total Benzofluoranthenes	4.7	140

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	72.7%
d14-Dibenzo(a,h)anthracen	62.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: LL-SED1-0-56-031511
DILUTION

Lab Sample ID: SN54H
LIMS ID: 11-5932
Matrix: Sediment
Data Release Authorized: MW
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/04/11 17:50
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.56 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 3.00
Percent Moisture: 45.6%

CAS Number	Analyte	RL	Result
56-55-3	**Benzo(a)anthracene**	14	31
218-01-9	**Chrysene**	14	70
50-32-8	**Benzo(a)pyrene**	14	46
193-39-5	**Indeno(1,2,3-cd)pyrene**	14	34
53-70-3	Dibenz(a,h)anthracene	14	< 14 U
TOTBFA	**Total Benzofluoranthenes**	14	130

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	62.0%
d14-Dibenzo(a,h)anthracen	58.0%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL

Client ID	MNP	DBA	TOT OUT
LL-SED3-0-36-031511	64.0%	57.7%	0
LL-SED3-36-141-031511	74.0%	55.0%	0
LL-SED3-141-167-031511	65.0%	51.0%	0
LL-SED2-0-56-031511	70.3%	53.7%	0
MB-032611	63.0%	74.3%	0
LCS-032611	58.3%	75.3%	0
LCSD-032611	59.0%	70.3%	0
LL-SED2-56-112-031511	72.0%	55.0%	0
LL-SED2-56-112-031511 MS	67.0%	54.0%	0
LL-SED2-56-112-031511 MSD	83.0%	57.0%	0
LL-SED2-112-168-031511	84.0%	64.0%	0
LL-SED2-112-168-031511 DL	90.0%	60.0%	0
LL-SED2-0-56-031511-D	75.0%	59.0%	0
LL-SED2-0-56-031511-D DL	69.0%	59.0%	0
LL-SED1-0-56-031511	72.7%	62.0%	0
LL-SED1-0-56-031511 DL	62.0%	58.0%	0

	LCS/MB LIMITS	QC LIMITS
(MNP) = d10-2-Methylnaphthalene	(35-100)	(34-100)
(DBA) = d14-Dibenzo(a,h)anthracene	(37-120)	(10-117)

Prep Method: SW3550C
Log Number Range: 11-5925 to 11-5932

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: LL-SED2-56-112-031511
MATRIX SPIKE

Lab Sample ID: SN54E
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized:
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted MS/MSD: 03/26/11

Date Analyzed MS: 04/04/11 12:37
MSD: 04/04/11 13:05
Instrument/Analyst MS: NT12/JZ
MSD: NT12/JZ

Sample Amount MS: 10.1 g-dry-wt
MSD: 10.1 g-dry-wt
Final Extract Volume MS: 0.50 mL
MSD: 0.50 mL
Dilution Factor MS: 3.00
MSD: 3.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Benzo(a)anthracene	< 14.8 U	95.0	149	63.8%	118	148	79.7%	21.6%
Chrysene	< 14.8 U	97.5	149	65.4%	114	148	77.0%	15.6%
Benzo(a)pyrene	< 14.8 U	89.9	149	60.3%	116	148	78.4%	25.4%
Indeno(1,2,3-cd)pyrene	< 14.8 U	81.6	149	54.8%	86.5	148	58.4%	5.8%
Dibenz(a,h)anthracene	< 14.8 U	88.4	149	59.3%	93.6	148	63.2%	5.7%
Total Benzofluoranthenes	< 14.8 U	196	298	65.8%	225	297	75.8%	13.8%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: LL-SED2-56-112-031511
MATRIX SPIKE

Lab Sample ID: SN54E
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized:
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/04/11 12:37
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.08 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 3.00
Percent Moisture: 86.2%

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	15	---
218-01-9	Chrysene	15	---
50-32-8	Benzo(a)pyrene	15	---
193-39-5	Indeno(1,2,3-cd)pyrene	15	---
53-70-3	Dibenz(a,h)anthracene	15	---
TOTBFA	Total Benzofluoranthenes	15	---

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	67.0%
d14-Dibenzo(a,h)anthracen	54.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS

Sample ID: LL-SED2-56-112-031511
MATRIX SPIKE DUPLICATE

Lab Sample ID: SN54E
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized:
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/26/11
Date Analyzed: 04/04/11 13:05
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.11 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 3.00
Percent Moisture: 86.2%

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	15	---
218-01-9	Chrysene	15	---
50-32-8	Benzo(a)pyrene	15	---
193-39-5	Indeno(1,2,3-cd)pyrene	15	---
53-70-3	Dibenz(a,h)anthracene	15	---
TOTBFA	Total Benzofluoranthenes	15	---

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	83.0%
d14-Dibenzo(a,h)anthracen	57.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: LCS-032611
LAB CONTROL SAMPLE

Lab Sample ID: LCS-032611
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized: MW
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: NA
Date Received: NA

Date Extracted: 03/26/11

Date Analyzed LCS: 04/01/11 16:49
LCSD: 04/01/11 17:17
Instrument/Analyst LCS: NT12/JZ
LCSD: NT12/JZ

Sample Amount LCS: 10.0 g-dry-wt
LCSD: 10.0 g-dry-wt
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzo(a)anthracene	108	150	72.0%	104	150	69.3%	3.8%
Chrysene	122	150	81.3%	123	150	82.0%	0.8%
Benzo(a)pyrene	70.6	150	47.1%	62.2	150	41.5%	12.7%
Indeno(1,2,3-cd)pyrene	108	150	72.0%	108	150	72.0%	0.0%
Dibenz(a,h)anthracene	116	150	77.3%	112	150	74.7%	3.5%
Total Benzofluoranthenes	242	300	80.7%	234	300	78.0%	3.4%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-2-Methylnaphthalene	58.3%	59.0%
d14-Dibenzo(a,h)anthracen	75.3%	70.3%

4B

SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO.

SN54MBS2

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No: SN54 Project: LORA LAKE - SUBSURFA

Lab File ID: 04011104 Date Extracted: 03/26/11

Instrument ID: NT12 Date Analyzed: 04/01/11

Matrix: SOLID Time Analyzed: 1621

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SN54LCSS2	SN54LCSS2	04011105	04/01/11
02	SN54LCSDS2	SN54LCSDS2	04011106	04/01/11
03	LL-SED3-0-36-031	SN54A	04011108	04/01/11
04	LL-SED3-36-141-0	SN54B	04011109	04/01/11
05	LL-SED3-141-167-	SN54C	04011110	04/01/11
06	LL-SED2-0-56-031	SN54D	04011111	04/01/11
07	LL-SED2-56-112-0	SN54E	04041103	04/04/11
08	LL-SED2-56-112-	SN54EMS	04041104	04/04/11
09	LL-SED2-56-112-	SN54EMSD	04041105	04/04/11
10	LL-SED2-112-168-	SN54F	04041108	04/04/11
11	LL-SED2-0-56-031	SN54G	04041109	04/04/11
12	LL-SED1-0-56-031	SN54H	04041110	04/04/11
13	LL-SED2-0-56-031	SN54G	04041112	04/04/11
14	LL-SED1-0-56-031	SN54H	04041113	04/04/11
15	LL-SED2-112-168-	SN54F	04041114	04/04/11
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FORM IV SV

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS

Sample ID: MB-032611
METHOD BLANK

Lab Sample ID: MB-032611
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized: MW
Reported: 04/06/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
Event: POS-LL
Date Sampled: NA
Date Received: NA

Date Extracted: 03/26/11
Date Analyzed: 04/01/11 16:21
Instrument/Analyst: NT12/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.00 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
56-55-3	Benzo(a)anthracene	5.0	< 5.0 U
218-01-9	Chrysene	5.0	< 5.0 U
50-32-8	Benzo(a)pyrene	5.0	< 5.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	< 5.0 U
53-70-3	Dibenz(a,h)anthracene	5.0	< 5.0 U
TOTBFA	Total Benzofluoranthenes	5.0	< 5.0 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	63.0%
d14-Dibenzo(a,h)anthracen	74.3%

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

Instrument ID: NT12 Project: LORA LAKE

DFTPP Injection Date: 03/31/11 DFTPP Injection Time: 2014

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	19.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	78.7
70	Less than 2.0% of mass 69	0.4 (0.5)1
127	10.0 - 80.0% of mass 198	54.0
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.8
275	10.0 - 60.0% of mass 198	26.9
365	Greater than 1.0% of mass 198	4.71
441	0.0 - 24.0% of mass 442	9.4 (16.8)2
442	50.0 - 200.0% of mass 198	55.8
443	15.0 - 24.0% of mass 442	11.1 (19.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	IC0250331	IC0250331	03311102	03/31/11	2027
02	IC010331	IC010331	03311103	03/31/11	2055
03	IC050331	IC050331	03311104	03/31/11	2123
04	IC10331	IC10331	03311105	03/31/11	2151
05	IC50331	IC50331	03311106	03/31/11	2219
06	IC10331	IC100331	03311107	03/31/11	2247
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5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

Instrument ID: NT12 Project: LORA LAKE

DFTPP Injection Date: 04/01/11 DFTPP Injection Time: 1457

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	21.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	78.0
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	10.0 - 80.0% of mass 198	54.2
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	8.1
275	10.0 - 60.0% of mass 198	29.2
365	Greater than 1.0% of mass 198	5.20
441	0.0 - 24.0% of mass 442	10.3 (16.2)2
442	50.0 - 200.0% of mass 198	63.5
443	15.0 - 24.0% of mass 442	12.8 (20.2)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CC0401	CC0401	04011102	04/01/11	1516
02	SN54MBS2	SN54MBS2	04011104	04/01/11	1621
03	SN54LCSS2	SN54LCSS2	04011105	04/01/11	1649
04	SN54LCSDS2	SN54LCSDS2	04011106	04/01/11	1717
05	LL-SED3-0-36-031	SN54A	04011108	04/01/11	1813
06	LL-SED3-36-141-0	SN54B	04011109	04/01/11	1841
07	LL-SED3-141-167-	SN54C	04011110	04/01/11	1909
08	LL-SED2-0-56-031	SN54D	04011111	04/01/11	1937
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FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

Instrument ID: NT12 Project: LORA LAKE

DFTPP Injection Date: 04/04/11 DFTPP Injection Time: 0949

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	23.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	89.0
70	Less than 2.0% of mass 69	0.6 (0.7)1
127	10.0 - 80.0% of mass 198	55.8
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.7
275	10.0 - 60.0% of mass 198	28.4
365	Greater than 1.0% of mass 198	5.30
441	0.0 - 24.0% of mass 442	9.5 (15.9)2
442	50.0 - 200.0% of mass 198	59.7
443	15.0 - 24.0% of mass 442	11.8 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CC0404	CC0404	04041102	04/04/11	1118
02	LL-SED2-56-112-0	SN54E	04041103	04/04/11	1159
03	LL-SED2-56-112-	SN54EMS	04041104	04/04/11	1237
04	LL-SED2-56-112-	SN54EMSD	04041105	04/04/11	1305
05	LL-SED2-112-168-	SN54F	04041108	04/04/11	1508
06	LL-SED2-0-56-031	SN54G	04041109	04/04/11	1536
07	LL-SED1-0-56-031	SN54H	04041110	04/04/11	1603
08	LL-SED2-0-56-031	SN54G	04041112	04/04/11	1722
09	LL-SED1-0-56-031	SN54H	04041113	04/04/11	1750
10	LL-SED2-112-168-	SN54F	04041114	04/04/11	1924
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FORM V SV

SEMIVOLATILE 8270-D INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No: SN54 Project: LORA LAKE

Instrument ID: NT12 Calibration Date: 03/31/11

LAB FILE ID: RRF0.1=03311103 RRF0.5=03311104 RRF1 =03311105
RRF2.5=03311102 RRF5 =03311106 RRF10 =03311107

COMPOUND	RRF 0.1	RRF 0.5	RRF 1	RRF 2.5	RRF 5	RRF 10	RRF	%RSD /R^2
Naphthalene	1.030	1.042	0.965	0.986	0.939	0.832	0.966	7.9
2-Methylnaphthalene	0.631	0.576	0.543	0.524	0.506	0.440	0.537	12.0
Acenaphthylene	1.965	1.845	1.787	1.691	1.698	1.515	1.750	8.8
Acenaphthene	1.327	1.098	1.099	1.028	1.040	0.947	1.090	11.8
Dibenzofuran	1.757	1.558	1.484	1.412	1.412	1.269	1.482	11.1
Fluorene	1.422	1.243	1.226	1.170	1.182	1.080	1.220	9.3
Phenanthrene	1.257	1.100	1.060	1.001	0.985	0.931	1.056	10.9
Anthracene	1.239	1.096	1.061	1.061	1.016	0.886	1.060	10.8
Fluoranthene	1.341	1.211	1.140	1.107	1.091	0.997	1.148	10.2
Pyrene	1.261	1.104	1.076	1.030	1.041	0.948	1.077	9.7
Benzo(a)anthracene	1.113	0.946	0.943	0.936	0.956	0.875	0.962	8.3
Chrysene	1.084	0.955	0.934	0.902	0.919	0.844	0.940	8.5
Benzo(b)fluoranthene	1.229	1.140	1.147	1.092	1.106	1.051	1.128	5.4
Benzo(k)fluoranthene	1.417	1.208	1.150	1.133	1.114	1.074	1.183	10.4
Benzo(j)fluoranthene	1.377	1.140	1.086	1.083	1.089	1.006	1.130	11.4
Benzo(a)pyrene	1.253	1.010	0.996	0.993	1.017	0.942	1.035	10.6
Indeno(1,2,3-cd)pyrene	1.375	1.312	1.221	1.206	1.253	1.186	1.259	5.7
Dibenzo(a,h)anthracene	1.251	0.938	0.993	1.004	1.014	0.976	1.029	10.8
Benzo(g,h,i)perylene	1.367	1.130	1.044	1.054	1.082	1.021	1.116	11.5
1-methylnaphthalene	0.730	0.609	0.567	0.543	0.523	0.455	0.571	16.3
Perylene	1.046	0.885	0.855	0.837	0.838	0.792	0.876	10.1
2-Methylnaphthalene-d10	0.722	0.660	0.620	0.589	0.575	0.502	0.611	12.3
Dibenzo(a,h)anthracene-d14	1.103	0.944	0.889	0.901	0.922	0.872	0.938	9.0

<- Outside QC limits: %RSD <20% or R^2 > 0.990

7B

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No: SN54 Project: LORA LAKE

Instrument ID: NT12 Cont. Calib. Date: 04/01/11

Init. Calib. Date: 03/31/11 Cont. Calib. Time: 1516

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Naphthalene	0.966	0.992	0.700	AVRG	2.7
2-Methylnaphthalene	0.537	0.538	0.400	AVRG	0.2
Acenaphthylene	1.750	1.659	0.900	AVRG	-5.2
Acenaphthene	1.090	1.040	0.900	AVRG	-4.6
Dibenzofuran	1.482	1.436	0.800	AVRG	-3.1
Fluorene	1.220	1.207	0.900	AVRG	-1.1
Phenanthrene	1.056	1.064	0.700	AVRG	0.8
Anthracene	1.060	1.010	0.700	AVRG	-4.7
Fluoranthene	1.148	1.130	0.600	AVRG	-1.6
Pyrene	1.077	1.059	0.600	AVRG	-1.7
Benzo(a)anthracene	0.962	0.936	0.800	AVRG	-2.7
Chrysene	0.940	0.907	0.700	AVRG	-3.5
Benzo(b)fluoranthene	1.128	1.129	0.700	AVRG	0.1
Benzo(k)fluoranthene	1.183	1.061	0.700	AVRG	-10.3
Benzo(j)fluoranthene	1.130	1.063	0.010	AVRG	-5.9
Benzo(a)pyrene	1.035	1.015	0.700	AVRG	-1.9
Indeno(1,2,3-cd)pyrene	1.259	1.196	0.500	AVRG	-5.0
Dibenzo(a,h)anthracene	1.029	0.996	0.400	AVRG	-3.2
Benzo(g,h,i)perylene	1.116	1.041	0.500	AVRG	-6.7
1-methylnaphthalene	0.571	0.564	0.010	AVRG	-1.2
Perylene	0.876	0.837	0.010	AVRG	-4.4
2-Methylnaphthalene-d10	0.611	0.599	0.010	AVRG	-2.0
Dibenzo(a,h)anthracene-d14	0.938	0.879	0.010	AVRG	-6.3

<- Exceeds QC limit of 20% D

* RF less than minimum RF

FORM VII SV-1

7B

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No: SN54 Project: LORA LAKE

Instrument ID: NT12 Cont. Calib. Date: 04/04/11

Init. Calib. Date: 03/31/11 Cont. Calib. Time: 1118

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Naphthalene	0.966	0.941	0.700	AVRG	-2.6
2-Methylnaphthalene	0.537	0.566	0.400	AVRG	5.4
Acenaphthylene	1.750	1.648	0.900	AVRG	-5.8
Acenaphthene	1.090	0.998	0.900	AVRG	-8.4
Dibenzofuran	1.482	1.356	0.800	AVRG	-8.5
Fluorene	1.220	1.159	0.900	AVRG	-5.0
Phenanthrene	1.056	0.994	0.700	AVRG	-5.9
Anthracene	1.060	1.037	0.700	AVRG	-2.2
Fluoranthene	1.148	1.074	0.600	AVRG	-6.4
Pyrene	1.077	1.156	0.600	AVRG	7.3
Benzo(a)anthracene	0.962	0.962	0.800	AVRG	0.0
Chrysene	0.940	0.893	0.700	AVRG	-5.0
Benzo(b)fluoranthene	1.128	1.172	0.700	AVRG	3.9
Benzo(k)fluoranthene	1.183	1.096	0.700	AVRG	-7.4
Benzo(j)fluoranthene	1.130	1.090	0.010	AVRG	-3.5
Benzo(a)pyrene	1.035	1.004	0.700	AVRG	-3.0
Indeno(1,2,3-cd)pyrene	1.259	1.198	0.500	AVRG	-4.8
Dibenzo(a,h)anthracene	1.029	1.008	0.400	AVRG	-2.0
Benzo(g,h,i)perylene	1.116	1.053	0.500	AVRG	-5.6
1-methylnaphthalene	0.571	0.581	0.010	AVRG	1.8
Perylene	0.876	0.820	0.010	AVRG	-6.4
2-Methylnaphthalene-d10	0.611	0.657	0.010	AVRG	7.5
Dibenzo(a,h)anthracene-d14	0.938	0.903	0.010	AVRG	-3.7

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII SV-1

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No: SN54 Project: LORA LAKE

Ical Midpoint ID: 03311102 Ical Date: 03/31/11

Instrument ID: NT12 Cont. Cal Date: 04/01/11

		IS1(NPT) AREA #	RT #	IS2(ANT) AREA #	RT #	IS3(PHN) AREA #	RT #
	ICAL MIDPT	494112	4.92	280105	7.16	461353	9.10
	UPPER LIMIT	988224		560210		922706	
	LOWER LIMIT	247056		140052		230676	
	CCAL	499536	4.85	294599	7.09	482436	9.03
	UPPER LIMIT		5.35		7.59		9.53
	LOWER LIMIT		4.35		6.59		8.53
01	SN54MBS2	362184	4.84	207575	7.08	332402	9.02
02	SN54LCSS2	366499	4.84	217644	7.08	347080	9.02
03	SN54LCSDS2	364394	4.84	218342	7.08	356245	9.02
04	LL-SED3-0-36	342514	4.84	202181	7.09	322755	9.03
05	LL-SED3-36-1	301159	4.84	187766	7.09	301621	9.02
06	LL-SED3-141-	262380	4.85	167023	7.09	271187	9.03
07	LL-SED2-0-56	249435	4.84	163363	7.09	258445	9.03
08							
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25							

IS1 = Naphthalene-d8
IS2 = Acenaphthene-d10
IS3 = Phenanthrene-d10

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

FORM VIII SV-1

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No: SN54 Project: LORA LAKE

Ical Midpoint ID: 03311102 Ical Date: 03/31/11

Instrument ID: NT12 Cont. Cal Date: 04/01/11

		IS4(CRY) AREA #	RT #	IS5(PRY) AREA #	RT #	AREA #	RT #
	ICAL MIDPT	503160	13.80	442215	17.47		
	UPPER LIMIT	1006320		884430			
	LOWER LIMIT	251580		221108			
	CCAL	526425	13.68	439084	17.32		
	UPPER LIMIT		14.18		17.82		
	LOWER LIMIT		13.18		16.82		
01	SN54MBS2	371865	13.67	319297	17.32		
02	SN54LCSS2	381079	13.67	335486	17.32		
03	SN54LCSDS2	383014	13.68	345990	17.32		
04	LL-SED3-0-36	373966	13.73	298676	17.39		
05	LL-SED3-36-1	322033	13.69	280959	17.35		
06	LL-SED3-141-	293472	13.69	247444	17.36		
07	LL-SED2-0-56	339995	13.73	242975	17.38		
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23							
24							
25							

IS4 = Chrysene-d12
IS5 = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

FORM VIII SV-2

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No: SN54 Project: LORA LAKE

Ical Midpoint ID: 03311102 Ical Date: 03/31/11

Instrument ID: NT12 Cont. Cal Date: 04/04/11

		IS1(NPT) AREA #	RT #	IS2(ANT) AREA #	RT #	IS3(PHN) AREA #	RT #
	ICAL MIDPT	494112	4.92	280105	7.16	461353	9.10
	UPPER LIMIT	988224		560210		922706	
	LOWER LIMIT	247056		140052		230676	
	CCAL	401183	4.80	270252	7.04	455484	8.98
	UPPER LIMIT		5.30		7.54		9.48
	LOWER LIMIT		4.30		6.54		8.48
01	LL-SED2-56-1	327676	4.80	205193	7.04	322531	8.98
02	LL-SED2-56-1	303192	4.80	192063	7.04	293988	8.98
03	LL-SED2-56-1	262660	4.80	181702	7.04	299869	8.98
04	LL-SED2-112-	223462*	4.80	148879	7.05	248837	8.98
05	LL-SED2-0-56	210690*	4.80	140224	7.04	232179	8.99
06	LL-SED1-0-56	208943*	4.80	140371	7.05	227824*	8.98
07	LL-SED2-0-56	261511	4.81	166500	7.05	238192	8.99
08	LL-SED1-0-56	269407	4.81	163401	7.05	239810	8.98
09	LL-SED2-112-	305119	4.81	194866	7.05	291590	8.99
10							
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23							
24							
25							

IS1 = Naphthalene-d8
IS2 = Acenaphthene-d10
IS3 = Phenanthrene-d10

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

FORM VIII SV-1

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No: SN54 Project: LORA LAKE

Ical Midpoint ID: 03311102 Ical Date: 03/31/11

Instrument ID: NT12 Cont. Cal Date: 04/04/11

		IS4(CRY) AREA #	RT #	IS5(PRY) AREA #	RT #	AREA #	RT #
	ICAL MIDPT	503160	13.80	442215	17.47		
	UPPER LIMIT	1006320		884430			
	LOWER LIMIT	251580		221108			
	CCAL	430701	13.60	334445	17.23		
	UPPER LIMIT		14.10		17.73		
	LOWER LIMIT		13.10		16.73		
01	LL-SED2-56-1	332757	13.61	295718	17.26		
02	LL-SED2-56-1	320215	13.61	271011	17.26		
03	LL-SED2-56-1	326706	13.61	267412	17.26		
04	LL-SED2-112-	266485	13.62	175502*	17.27		
05	LL-SED2-0-56	292600	13.66	173734*	17.31		
06	LL-SED1-0-56	279926	13.65	163012*	17.30		
07	LL-SED2-0-56	263188	13.64	165436*	17.28		
08	LL-SED1-0-56	272758	13.63	171762*	17.26		
09	LL-SED2-112-	253711	13.62	174659*	17.27		
10							
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25							

IS4 = Chrysene-d12
IS5 = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

FORM VIII SV-2

PCP/Chlorophenols Analysis
Report and Summary QC Forms

ARI Job ID: SN54

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED3-0-36-031511
SAMPLE

Lab Sample ID: SN54A
LIMS ID: 11-5925
Matrix: Sediment
Data Release Authorized: MW
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/28/11
Date Analyzed: 04/07/11 03:51
Instrument/Analyst: ECD1/YZ

Sample Amount: 2.46 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 75.4%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	25	< 25 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	91.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED3-36-141-031511
SAMPLE

Lab Sample ID: SN54B
LIMS ID: 11-5926
Matrix: Sediment
Data Release Authorized: MW
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/28/11
Date Analyzed: 04/07/11 04:27
Instrument/Analyst: ECD1/YZ

Sample Amount: 1.17 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 88.3%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	53	< 53 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	71.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: LL-SED3-141-167-031511
SAMPLE

Lab Sample ID: SN54C
LIMS ID: 11-5927
Matrix: Sediment
Data Release Authorized:
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/28/11
Date Analyzed: 04/07/11 05:03
Instrument/Analyst: ECD1/YZ

Sample Amount: 1.22 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 87.9%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	51	< 51 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	70.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED2-0-56-031511
SAMPLE

Lab Sample ID: SN54D
LIMS ID: 11-5928
Matrix: Sediment
Data Release Authorized: MW
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/28/11
Date Analyzed: 04/07/11 05:39
Instrument/Analyst: ECD1/YZ

Sample Amount: 1.42 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 85.9%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	44	< 44 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	88.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: LL-SED2-56-112-031511
SAMPLE

Lab Sample ID: SN54E
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized:
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/28/11
Date Analyzed: 04/07/11 06:15
Instrument/Analyst: ECD1/YZ

Sample Amount: 1.38 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 86.2%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	45	< 45 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	87.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED2-112-168-031511
SAMPLE

Lab Sample ID: SN54F
LIMS ID: 11-5930
Matrix: Sediment
Data Release Authorized:
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/28/11
Date Analyzed: 04/07/11 10:20
Instrument/Analyst: ECD1/YZ

Sample Amount: 1.23 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 87.7%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	51	< 51 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	80.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED2-0-56-031511-D
SAMPLE

Lab Sample ID: SN54G
LIMS ID: 11-5931
Matrix: Sediment
Data Release Authorized: MW
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/28/11
Date Analyzed: 04/07/11 10:56
Instrument/Analyst: ECD1/YZ

Sample Amount: 1.14 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 88.7%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	55	< 55 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	90.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED1-0-56-031511
SAMPLE

Lab Sample ID: SN54H
LIMS ID: 11-5932
Matrix: Sediment
Data Release Authorized:
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/28/11
Date Analyzed: 04/07/11 11:32
Instrument/Analyst: ECD1/YZ

Sample Amount: 5.45 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 45.6%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	110	< 110 Y

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	82.4%

ANALYTICAL RESOURCES INCORPORATED

SW8041 CHLOROPHENOLICS SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment POS-LL

Client ID	TBP	TOT OUT
LL-SED3-0-36-031511	91.2%	0
LL-SED3-36-141-031511	71.2%	0
LL-SED3-141-167-031511	70.4%	0
LL-SED2-0-56-031511	88.8%	0
MB-032811	67.6%	0
LCS-032811	69.4%	0
LL-SED2-56-112-031511	87.2%	0
LL-SED2-56-112-031511 MS	78.4%	0
LL-SED2-56-112-031511 MSD	75.2%	0
LL-SED2-112-168-031511	80.4%	0
LL-SED2-0-56-031511-D	90.8%	0
LL-SED1-0-56-031511	82.4%	0

	LCS/MB LIMITS	QC LIMITS
(TBP) = 2,4,6-Tribromophenol	(50-115)	(10-146)

Prep Method: SW3550B
Log Number Range: 11-5925 to 11-5932

FORM-II SW8041

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: LL-SED2-56-112-031511
MS/MSD

Lab Sample ID: SN54E
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized:
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted MS/MSD: 03/28/11

Date Analyzed MS: 04/07/11 06:51
MSD: 04/07/11 07:27
Instrument/Analyst MS: ECD1/YZ
MSD: ECD1/YZ
Percent Moisture: 86.2%

Sample Amount MS: 1.39 g-dry-wt
MSD: 1.38 g-dry-wt
Final Extract Volume MS: 25 mL
MSD: 25 mL
Dilution Factor MS: 1.00
MSD: 1.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Pentachlorophenol	< 45.3	308	450	68.4%	316	453	69.8%	2.6%

Results reported in µg/kg
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED2-56-112-031511
MATRIX SPIKE

Lab Sample ID: SN54E
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized: YYW
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/28/11
Date Analyzed: 04/07/11 06:51
Instrument/Analyst: ECD1/YZ

Sample Amount: 1.39 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 86.2%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	45	---

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	78.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED2-56-112-031511
MATRIX SPIKE DUP

Lab Sample ID: SN54E
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized: WW
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/28/11
Date Analyzed: 04/07/11 07:27
Instrument/Analyst: ECD1/YZ

Sample Amount: 1.38 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 86.2%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	45	---

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	75.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LCS-032811
LAB CONTROL

Lab Sample ID: LCS-032811
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized:
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Date Extracted: 03/28/11
Date Analyzed: 04/06/11 18:13
Instrument/Analyst: ECD1/YZ

Sample Amount: 10.0 g
Final Extract Volume: 25 mL
Dilution Factor: 1.00

Analyte	Lab Control	Spike Added	Recovery
Pentachlorophenol	50.2	62.5	80.3%

Chlorophenols Surrogate Recovery	
2,4,6-Tribromophenol	69.4%

Results reported in µg/kg

CHLOROPHENOL METHOD BLANK SUMMARY

SAMPLE NO.

SN54MBS1

Lab Name: ANALYTICAL RESOURCES, INC — Client: FLOYD SNIDER

ARI Job No.: SN54 — Project: LORA LAKE

Lab Sample ID: SN54MBS1 — Lab File ID: 0401A005

Matrix (soil/water) SOLID — Extraction:(SepF/Cont/Sonc) SW3550C

Sulfur Cleanup (Y/N) Y — Date Extracted: 03/28/11

Date Analyzed (1): 04/06/11 — Date Analyzed (2): 04/06/11

Time Analyzed (1): 1737 — Time Analyzed (2): 1737

Instrument ID (1): ECD1 — Instrument ID (2): ECD1

GC Column (1): ZB5 ID: 0.53(mm) — GC Column (2): ZB35 ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	SN54LCSS1	SN54LCSS1	04/06/11	04/06/11
02	LL-SED3-0-36	SN54A	04/07/11	04/07/11
03	LL-SED3-36-1	SN54B	04/07/11	04/07/11
04	LL-SED3-141-	SN54C	04/07/11	04/07/11
05	LL-SED2-0-56	SN54D	04/07/11	04/07/11
06	LL-SED2-56-1	SN54E	04/07/11	04/07/11
07	LL-SED2-56-1	SN54EMS	04/07/11	04/07/11
08	LL-SED2-56-1	SN54EMSD	04/07/11	04/07/11
09	LL-SED2-112-	SN54F	04/07/11	04/07/11
10	LL-SED2-0-56	SN54G	04/07/11	04/07/11
11	LL-SED1-0-56	SN54H	04/07/11	04/07/11

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: MB-032811
METHOD BLANK

Lab Sample ID: MB-032811
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized: MW
Reported: 04/07/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: NA
Date Received: NA

Date Extracted: 03/28/11
Date Analyzed: 04/06/11 17:37
Instrument/Analyst: ECD1/YZ

Sample Amount: 10.0 g
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	6.2	< 6.2 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	67.6%

6D
CHLOROPHENOL INITIAL CALIBRATION
RETENTION TIME WINDOWS

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB5 ID: 0.53 (mm) Instrument ID: ECD1

Calibration Date: 04/01/11

	RT OF STANDARDS						MEAN	RT WINDOW		
COMPOUND	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	RT	FROM	TO	
Pentachlorophenol	21.82	21.81	21.80	21.79	21.79	21.78	21.80	21.72	21.86	
2,4,6-Trichloropheno	13.41	13.41	13.41	13.41	13.41	13.41	13.41	13.34	13.48	
2,3,6-Trichloropheno	14.38	14.38	14.38	14.38	14.38	14.38	14.38	14.31	14.45	
2,4,5-Trichloropheno		16.12	16.10	16.08	16.08	16.07	16.09	16.01	16.15	<-
2,3,4-Trichloropheno	17.29	17.39	17.37	17.35	17.33	17.32	17.35	17.28	17.42	
2,3,5,6-Tetrachlorop	17.73	17.73	17.73	17.72	17.72	17.72	17.72	17.65	17.79	
2,3,4,5-Tetrachlorop	20.59	20.57	20.56	20.54	20.53	20.53	20.56	20.48	20.61	
2,4-Dichlorophenol	12.43	12.44	12.43	12.43	12.43	12.43	12.43	12.36	12.50	
2,4,6-Tribromophenol	19.69	19.68	19.66	19.65	19.64	19.64	19.66	19.58	19.72	

6D
CHLOROPHENOL INITIAL CALIBRATION
RETENTION TIME WINDOWS

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB35 ID: 0.53 (mm) Instrument ID: ECD1

Calibration Date: 04/01/11

	RT OF STANDARDS						MEAN	RT WINDOW	
COMPOUND	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	RT	FROM	TO
Pentachlorophenol___	22.65	22.64	22.64	22.63	22.63	22.62	22.64	22.56	22.70
2,4,6-Trichloropheno	13.78	13.78	13.78	13.78	13.78	13.78	13.78	13.71	13.85
2,3,6-Trichloropheno	15.19	15.19	15.19	15.18	15.18	15.18	15.18	15.11	15.25
2,4,5-Trichloropheno	17.19	17.17	17.16	17.15	17.15	17.14	17.16	17.08	17.22
2,3,4-Trichloropheno	18.76	18.75	18.74	18.73	18.71	18.71	18.74	18.66	18.80
2,3,5,6-Tetrachlorop	18.42	18.42	18.41	18.41	18.41	18.41	18.41	18.34	18.48
2,3,4,5-Tetrachlorop	21.85	21.84	21.83	21.82	21.81	21.81	21.83	21.75	21.89
2,4-Dichlorophenol__	13.43	13.43	13.43	13.43	13.43	13.43	13.43	13.36	13.50
2,4,6-Tribromophenol	20.89	20.89	20.88	20.87	20.86	20.86	20.88	20.80	20.94

6E
CHLOROPHENOL INITIAL CALIBRATION
CALIBRATION FACTORS

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB5 ID: 0.53 (mm) Instrument ID: ECD1

Calibration Date: 04/01/11

COMPOUND	CALIBRATION FACTORS LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	R^2/ %RSD	CT
Pentachlorophenol	29405	27955	27704	22662	24213	22067	12.0	A
2,4,6-Trichlorophenol	23973	19056	17104	13948	14398	12938	0.9928	L
2,3,6-Trichlorophenol	17697	15903	15568	12834	13478	12207	14.4	A
2,4,5-Trichlorophenol		8437	8744	7336	7536	6502	11.6	A
2,3,4-Trichlorophenol	15137	12572	13596	10067	9677	7988	0.9986	Q
2,3,5,6-Tetrachloroph	28937	25200	24487	20185	21240	19116	15.9	A
2,3,4,5-Tetrachloroph	19018	18483	17317	14350	15450	13546	13.7	A
2,4-Dichlorophenol	1167	995	930	711	692	595	0.9988	Q
2,4,6-Tribromophenol	24452	23977	22590	18840	20483	18745	11.7	A
						AVE RSD	20.6	

CT stands for Curve Types:
- A Indicates an Average Response Factor Curve
- L Indicates a Linear Curve
- Q Indicates a Quadratic Curve

CALIBRATION FILES

LVL 1: /chem2/ecd1.i/PCP20110401.b/ical-1.b/0401A009.d
LVL 2: /chem2/ecd1.i/PCP20110401.b/ical-1.b/0401A010.d
LVL 3: /chem2/ecd1.i/PCP20110401.b/ical-1.b/0401A011.d
LVL 4: /chem2/ecd1.i/PCP20110401.b/ical-1.b/0401A008.d
LVL 5: /chem2/ecd1.i/PCP20110401.b/ical-1.b/0401A012.d
LVL 6: /chem2/ecd1.i/PCP20110401.b/ical-1.b/0401A013.d

6E
CHLOROPHENOL INITIAL CALIBRATION
CALIBRATION FACTORS

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB35 ID: 0.53 (mm) Instrument ID: ECD1

Calibration Date: 04/01/11

COMPOUND	CALIBRATION FACTORS LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	R^2/ %RSD	CT
Pentachlorophenol____	27844	27891	28971	25017	28058	26455	5.1	A
2,4,6-Trichlorophenol	18067	16685	17022	14481	16094	14858	8.4	A
2,3,6-Trichlorophenol	16623	15623	15797	13291	14677	13675	8.7	A
2,4,5-Trichlorophenol	9223	8624	8724	7196	7623	6835	11.9	A
2,3,4-Trichlorophenol	10128	10897	11196	8917	9732	8688	10.2	A
2,3,5,6-Tetrachloroph	25256	23960	24545	20670	22769	21310	7.9	A
2,3,4,5-Tetrachloroph	16901	17108	17518	14662	16006	14923	7.4	A
2,4-Dichlorophenol___	1052	934	903	724	742	641	18.6	A
2,4,6-Tribromophenol	21409	20597	22269	19519	22526	21660	5.2	A
						AVE RSD	9.3	

CT stands for Curve Types:
- A Indicates an Average Response Factor Curve
- L Indicates a Linear Curve
- Q Indicates a Quadratic Curve

CALIBRATION FILES

LVL 1: /chem2/ecd1.i/PCP20110401.b/ical-2.b/0401A009.d
LVL 2: /chem2/ecd1.i/PCP20110401.b/ical-2.b/0401A010.d
LVL 3: /chem2/ecd1.i/PCP20110401.b/ical-2.b/0401A011.d
LVL 4: /chem2/ecd1.i/PCP20110401.b/ical-2.b/0401A008.d
LVL 5: /chem2/ecd1.i/PCP20110401.b/ical-2.b/0401A012.d
LVL 6: /chem2/ecd1.i/PCP20110401.b/ical-2.b/0401A013.d

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB5 ID: 0.53 (mm)

Init. Calib. Date(s): 04/01/11 04/01/11

Client Sample No.(PCP): Date Analyzed :04/06/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :1701

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	21.79	21.72	21.86	22.9	25.0	-8.4
2,4,6-Trichlorophenol	13.41	13.34	13.48	27.7	25.0	10.8
2,3,6-Trichlorophenol	14.38	14.31	14.45	22.6	25.0	-9.6
2,4,5-Trichlorophenol	16.08	16.01	16.15	23.8	25.0	-4.8
2,3,4-Trichlorophenol	17.33	17.28	17.42	24.5	25.0	-2.0
2,3,5,6-Tetrachlorophenol	17.72	17.65	17.79	22.5	25.0	-10.0
2,3,4,5-Tetrachlorophenol	20.54	20.48	20.61	22.5	25.0	-10.0
2,4-Dichlorophenol	12.43	12.36	12.50	256	250	2.4
2,4,6-Tribromophenol (surr	19.65	19.58	19.72	23.0	25.0	-8.0

AVERAGE %D = 7.3

FORM VII PCP

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB35 ID: 0.53 (mm)

Init. Calib. Date(s): 04/01/11 04/01/11

Client Sample No.(PCP): Date Analyzed :04/06/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :1701

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	22.63	22.56	22.70	22.3	25.0	-10.8
2,4,6-Trichlorophenol	13.77	13.71	13.85	22.0	25.0	-12.0
2,3,6-Trichlorophenol	15.18	15.11	15.25	22.0	25.0	-12.0
2,4,5-Trichlorophenol	17.15	17.08	17.22	22.3	25.0	-10.8
2,3,4-Trichlorophenol	18.72	18.66	18.80	22.9	25.0	-8.4
2,3,5,6-Tetrachlorophenol	18.41	18.34	18.48	22.1	25.0	-11.6
2,3,4,5-Tetrachlorophenol	21.81	21.75	21.89	22.8	25.0	-8.8
2,4-Dichlorophenol	13.43	13.36	13.50	222	250	-11.2
2,4,6-Tribromophenol (surr	20.86	20.80	20.94	21.8	25.0	-12.8

AVERAGE %D = 10.9

FORM VII PCP

7E

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB5 ID: 0.53 (mm)

Init. Calib. Date(s): 04/01/11 04/01/11

Client Sample No.(PCP): Date Analyzed :04/07/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :0015

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	21.81	21.72	21.86	21.9	25.0	-12.4
2,4,6-Trichlorophenol	13.42	13.34	13.48	27.3	25.0	9.2
2,3,6-Trichlorophenol	14.39	14.31	14.45	22.6	25.0	-9.6
2,4,5-Trichlorophenol	16.10	16.01	16.15	23.8	25.0	-4.8
2,3,4-Trichlorophenol	17.36	17.28	17.42	21.6	25.0	-13.6
2,3,5,6-Tetrachlorophenol	17.73	17.65	17.79	22.5	25.0	-10.0
2,3,4,5-Tetrachlorophenol	20.56	20.48	20.61	23.3	25.0	-6.8
2,4-Dichlorophenol	12.44	12.36	12.50	234	250	-6.4
2,4,6-Tribromophenol (surr	19.66	19.58	19.72	23.2	25.0	-7.2

AVERAGE %D = 8.9

FORM VII PCP

7E

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB35 ID: 0.53 (mm)

Init. Calib. Date(s): 04/01/11 04/01/11

Client Sample No.(PCP): Date Analyzed :04/07/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :0015

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	22.64	22.56	22.70	23.6	25.0	-5.6
2,4,6-Trichlorophenol	13.79	13.71	13.85	22.7	25.0	-9.2
2,3,6-Trichlorophenol	15.19	15.11	15.25	22.5	25.0	-10.0
2,4,5-Trichlorophenol	17.16	17.08	17.22	23.0	25.0	-8.0
2,3,4-Trichlorophenol	18.74	18.66	18.80	23.6	25.0	-5.6
2,3,5,6-Tetrachlorophenol	18.42	18.34	18.48	22.7	25.0	-9.2
2,3,4,5-Tetrachlorophenol	21.83	21.75	21.89	23.2	25.0	-7.2
2,4-Dichlorophenol	13.44	13.36	13.50	227	250	-9.2
2,4,6-Tribromophenol (surr	20.88	20.80	20.94	23.0	25.0	-8.0

AVERAGE %D = 8.0

FORM VII PCP

7E

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB5 ID: 0.53 (mm)

Init. Calib. Date(s): 04/01/11 04/01/11

Client Sample No.(PCP): Date Analyzed :04/07/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :0315

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	21.81	21.72	21.86	22.0	25.0	-12.0
2,4,6-Trichlorophenol	13.42	13.34	13.48	27.4	25.0	9.6
2,3,6-Trichlorophenol	14.39	14.31	14.45	22.8	25.0	-8.8
2,4,5-Trichlorophenol	16.10	16.01	16.15	24.7	25.0	-1.2
2,3,4-Trichlorophenol	17.36	17.28	17.42	21.8	25.0	-12.8
2,3,5,6-Tetrachlorophenol	17.74	17.65	17.79	23.2	25.0	-7.2
2,3,4,5-Tetrachlorophenol	20.56	20.48	20.61	23.1	25.0	-7.6
2,4-Dichlorophenol	12.45	12.36	12.50	256	250	2.4
2,4,6-Tribromophenol (surr	19.67	19.58	19.72	23.4	25.0	-6.4

AVERAGE %D = 7.6

FORM VII PCP

7E

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB35 ID: 0.53 (mm)

Init. Calib. Date(s): 04/01/11 04/01/11

Client Sample No.(PCP): Date Analyzed :04/07/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :0315

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	22.65	22.56	22.70	23.9	25.0	-4.4
2,4,6-Trichlorophenol	13.79	13.71	13.85	23.0	25.0	-8.0
2,3,6-Trichlorophenol	15.20	15.11	15.25	22.6	25.0	-9.6
2,4,5-Trichlorophenol	17.17	17.08	17.22	23.2	25.0	-7.2
2,3,4-Trichlorophenol	18.74	18.66	18.80	23.2	25.0	-7.2
2,3,5,6-Tetrachlorophenol	18.42	18.34	18.48	22.3	25.0	-10.8
2,3,4,5-Tetrachlorophenol	21.83	21.75	21.89	23.4	25.0	-6.4
2,4-Dichlorophenol	13.44	13.36	13.50	229	250	-8.4
2,4,6-Tribromophenol (surr	20.88	20.80	20.94	23.3	25.0	-6.8

AVERAGE %D = 7.6

FORM VII PCP

7E

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB5 ID: 0.53 (mm)

Init. Calib. Date(s): 04/01/11 04/01/11

Client Sample No.(PCP): Date Analyzed :04/07/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :0944

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	21.81	21.72	21.86	21.4	25.0	-14.4
2,4,6-Trichlorophenol	13.42	13.34	13.48	28.1	25.0	12.4
2,3,6-Trichlorophenol	14.39	14.31	14.45	23.3	25.0	-6.8
2,4,5-Trichlorophenol	16.09	16.01	16.15	24.5	25.0	-2.0
2,3,4-Trichlorophenol	17.35	17.28	17.42	21.1	25.0	-15.6
2,3,5,6-Tetrachlorophenol	17.73	17.65	17.79	22.4	25.0	-10.4
2,3,4,5-Tetrachlorophenol	20.55	20.48	20.61	22.2	25.0	-11.2
2,4-Dichlorophenol	12.45	12.36	12.50	266	250	6.4
2,4,6-Tribromophenol (surr	19.66	19.58	19.72	23.0	25.0	-8.0

AVERAGE %D = 9.7

FORM VII PCP

7E

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB35 ID: 0.53 (mm)

Init. Calib. Date(s): 04/01/11 04/01/11

Client Sample No.(PCP): Date Analyzed :04/07/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :0944

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	22.64	22.56	22.70	23.2	25.0	-7.2
2,4,6-Trichlorophenol	13.79	13.71	13.85	24.1	25.0	-3.6
2,3,6-Trichlorophenol	15.20	15.11	15.25	23.6	25.0	-5.6
2,4,5-Trichlorophenol	17.16	17.08	17.22	23.4	25.0	-6.4
2,3,4-Trichlorophenol	18.73	18.66	18.80	23.9	25.0	-4.4
2,3,5,6-Tetrachlorophenol	18.42	18.34	18.48	23.6	25.0	-5.6
2,3,4,5-Tetrachlorophenol	21.83	21.75	21.89	22.8	25.0	-8.8
2,4-Dichlorophenol	13.44	13.36	13.50	236	250	-5.6
2,4,6-Tribromophenol (surr	20.88	20.80	20.94	23.3	25.0	-6.8

AVERAGE %D = 6.0

FORM VII PCP

7E

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB5 ID: 0.53 (mm)

Init. Calib. Date(s): 04/01/11 04/01/11

Client Sample No.(PCP): Date Analyzed :04/07/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :1244

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	21.80	21.72	21.86	23.0	25.0	-8.0
2,4,6-Trichlorophenol	13.42	13.34	13.48	28.9	25.0	15.6
2,3,6-Trichlorophenol	14.38	14.31	14.45	24.1	25.0	-3.6
2,4,5-Trichlorophenol	16.09	16.01	16.15	24.6	25.0	-1.6
2,3,4-Trichlorophenol	17.34	17.28	17.42	22.7	25.0	-9.2
2,3,5,6-Tetrachlorophenol	17.72	17.65	17.79	23.2	25.0	-7.2
2,3,4,5-Tetrachlorophenol	20.54	20.48	20.61	23.2	25.0	-7.2
2,4-Dichlorophenol	12.44	12.36	12.50	274	250	9.6
2,4,6-Tribromophenol (surr	19.65	19.58	19.72	23.3	25.0	-6.8

AVERAGE %D = 7.6

FORM VII PCP

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB35 ID: 0.53 (mm)

Init. Calib. Date(s): 04/01/11 04/01/11

Client Sample No.(PCP): Date Analyzed :04/07/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :1244

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	22.63	22.56	22.70	24.5	25.0	-2.0
2,4,6-Trichlorophenol	13.78	13.71	13.85	25.5	25.0	2.0
2,3,6-Trichlorophenol	15.19	15.11	15.25	24.7	25.0	-1.2
2,4,5-Trichlorophenol	17.15	17.08	17.22	24.4	25.0	-2.4
2,3,4-Trichlorophenol	18.72	18.66	18.80	24.6	25.0	-1.6
2,3,5,6-Tetrachlorophenol	18.42	18.34	18.48	24.5	25.0	-2.0
2,3,4,5-Tetrachlorophenol	21.82	21.75	21.89	23.9	25.0	-4.4
2,4-Dichlorophenol	13.44	13.36	13.50	250	250	0.0
2,4,6-Tribromophenol (surr	20.87	20.80	20.94	24.1	25.0	-3.6

AVERAGE %D = 2.1

FORM VII PCP

CHLOROPHENOL ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB5 ID: 0.53 (mm) Instrument ID: ECD1

Init. Calib. Date(s): 04/01/11 04/01/11

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 19.65

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #
01		PCP D	04/01/11	1629	19.65
02		PCP A	04/01/11	1706	19.69
03		PCP B	04/01/11	1742	19.68
04		PCP C	04/01/11	1818	19.66
05		PCP E	04/01/11	1854	19.64
06		PCP F	04/01/11	1931	19.64
07		PCP CCAL	04/06/11	1701	19.65
08	SN54MBS1	SN54MBS1	04/06/11	1737	19.65
09	SN54LCSS1	SN54LCSS1	04/06/11	1813	19.65
10		PCP CCAL	04/07/11	0015	19.66
11		PCP CCAL	04/07/11	0315	19.67
12	LL-SED3-0-36	SN54A	04/07/11	0351	19.65
13	LL-SED3-36-1	SN54B	04/07/11	0427	19.65
14	LL-SED3-141-	SN54C	04/07/11	0503	19.65
15	LL-SED2-0-56	SN54D	04/07/11	0539	19.65
16	LL-SED2-56-1	SN54E	04/07/11	0615	19.65
17	LL-SED2-56-1	SN54EMS	04/07/11	0651	19.65
18	LL-SED2-56-1	SN54EMSD	04/07/11	0727	19.65
19		PCP CCAL	04/07/11	0944	19.66
20	LL-SED2-112-	SN54F	04/07/11	1020	19.65
21	LL-SED2-0-56	SN54G	04/07/11	1056	19.64
22	LL-SED1-0-56	SN54H	04/07/11	1132	19.64
23		PCP CCAL	04/07/11	1244	19.65

QC LIMITS

S1 = 2,4,6-Tribromophenol (+/- 0.07 MINUTES)

* Values outside of QC limits.

CHLOROPHENOL ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SN54 Project: LORA LAKE

GC Column: ZB35 ID: 0.53 (mm) Instrument ID: ECD1

Init. Calib. Date(s): 04/01/11 04/01/11

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 20.87

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #
01		PCP D	04/01/11	1629	20.87
02		PCP A	04/01/11	1706	20.89
03		PCP B	04/01/11	1742	20.89
04		PCP C	04/01/11	1818	20.88
05		PCP E	04/01/11	1854	20.86
06		PCP F	04/01/11	1931	20.86
07		PCP CCAL	04/06/11	1701	20.86
08	SN54MBS1	SN54MBS1	04/06/11	1737	20.87
09	SN54LCSS1	SN54LCSS1	04/06/11	1813	20.87
10		PCP CCAL	04/07/11	0015	20.88
11		PCP CCAL	04/07/11	0315	20.88
12	LL-SED3-0-36	SN54A	04/07/11	0351	20.87
13	LL-SED3-36-1	SN54B	04/07/11	0427	20.88
14	LL-SED3-141-	SN54C	04/07/11	0503	20.87
15	LL-SED2-0-56	SN54D	04/07/11	0539	20.87
16	LL-SED2-56-1	SN54E	04/07/11	0615	20.87
17	LL-SED2-56-1	SN54EMS	04/07/11	0651	20.87
18	LL-SED2-56-1	SN54EMSD	04/07/11	0727	20.87
19		PCP CCAL	04/07/11	0944	20.88
20	LL-SED2-112-	SN54F	04/07/11	1020	20.87
21	LL-SED2-0-56	SN54G	04/07/11	1056	20.87
22	LL-SED1-0-56	SN54H	04/07/11	1132	20.87
23		PCP CCAL	04/07/11	1244	20.87

QC LIMITS

S1 = 2,4,6-Tribromophenol (+/- 0.07 MINUTES)

* Values outside of QC limits.

FORM VIII PCP

Metals Analysis
Report and Summary QC Forms

ARI Job ID: SN54

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa

SDG: SN54

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
LL-SED3-0-36-03151	SN54A	11-5925	
LL-SED3-36-141-031	SN54B	11-5926	
LL-SED3-141-167-03	SN54C	11-5927	
LL-SED2-0-56-03151	SN54D	11-5928	
LL-SED2-56-112-031	SN54E	11-5929	
LL-SED2-56-112-031D	SN54EDUP	11-5929	
LL-SED2-56-112-031S	SN54ESPK	11-5929	
LL-SED2-112-168-03	SN54F	11-5930	
PBS	SN54MB1	11-5930	
LCSS	SN54MB1SPK	11-5930	
LL-SED2-0-56-03151	SN54G	11-5931	
LL-SED1-0-56-03151	SN54H	11-5932	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 5/23/11 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED3-0-36-031511
SAMPLE

Lab Sample ID: SN54A
LIMS ID: 11-5925
Matrix: Sediment
Data Release Authorized:
Reported: 03/23/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Percent Total Solids: 11.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/21/11	6010B	03/22/11	**7440-38-2**	**Arsenic**	40	**70**	
3050B	03/21/11	6010B	03/22/11	**7439-92-1**	**Lead**	20	**450**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED3-36-141-031511
SAMPLE

Lab Sample ID: SN54B
LIMS ID: 11-5926
Matrix: Sediment
Data Release Authorized:
Reported: 03/23/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Percent Total Solids: 12.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/21/11	6010B	03/22/11	7440-38-2	Arsenic	40	40	U
3050B	03/21/11	6010B	03/22/11	7439-92-1	Lead	20	20	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED3-141-167-031511
SAMPLE

Lab Sample ID: SN54C
LIMS ID: 11-5927
Matrix: Sediment
Data Release Authorized:
Reported: 03/23/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Percent Total Solids: 11.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/21/11	6010B	03/22/11	**7440-38-2**	**Arsenic**	40	**50**	
3050B	03/21/11	6010B	03/22/11	7439-92-1	Lead	20	20	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED2-0-56-031511
SAMPLE

Lab Sample ID: SN54D
LIMS ID: 11-5928
Matrix: Sediment
Data Release Authorized:
Reported: 03/23/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Percent Total Solids: 8.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/21/11	6010B	03/22/11	**7440-38-2**	**Arsenic**	60	**70**	
3050B	03/21/11	6010B	03/22/11	**7439-92-1**	**Lead**	20	**350**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED2-56-112-031511
SAMPLE

Lab Sample ID: SN54E
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized:
Reported: 03/23/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Percent Total Solids: 13.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/21/11	6010B	03/22/11	**7440-38-2**	**Arsenic**	40	**80**	
3050B	03/21/11	6010B	03/22/11	7439-92-1	Lead	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED2-56-112-031511
MATRIX SPIKE

Lab Sample ID: SN54E
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized:
Reported: 03/23/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010B	80	1,620	1,440	107%	
Lead	6010B	10 U	1,460	1,440	101%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED2-56-112-031511
DUPLICATE

Lab Sample ID: SN54E
LIMS ID: 11-5929
Matrix: Sediment
Data Release Authorized:
Reported: 03/23/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010B	80	120	40.0%	+/- 40	L
Lead	6010B	10 U	10 U	0.0%	+/- 10	L

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED2-112-168-031511
SAMPLE

Lab Sample ID: SN54F
LIMS ID: 11-5930
Matrix: Sediment
Data Release Authorized:
Reported: 03/23/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Percent Total Solids: 12.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/21/11	6010B	03/22/11	**7440-38-2**	**Arsenic**	40	**80**	
3050B	03/21/11	6010B	03/22/11	7439-92-1	Lead	20	20	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED2-0-56-031511-D
SAMPLE

Lab Sample ID: SN54G
LIMS ID: 11-5931
Matrix: Sediment
Data Release Authorized:
Reported: 03/23/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Percent Total Solids: 10.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/21/11	6010B	03/22/11	**7440-38-2**	**Arsenic**	50	**80**	
3050B	03/21/11	6010B	03/22/11	**7439-92-1**	**Lead**	20	**380**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED1-0-56-031511
SAMPLE

Lab Sample ID: SN54H
LIMS ID: 11-5932
Matrix: Sediment
Data Release Authorized:
Reported: 03/23/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Percent Total Solids: 65.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/21/11	6010B	03/22/11	**7440-38-2**	**Arsenic**	7	**9**	
3050B	03/21/11	6010B	03/22/11	**7439-92-1**	**Lead**	3	**29**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: SN54LCS
LIMS ID: 11-5930
Matrix: Sediment
Data Release Authorized:
Reported: 03/23/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	204	200	102%	
Lead	6010B	200	200	100%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: SN54MB
LIMS ID: 11-5930
Matrix: Sediment
Data Release Authorized:
Reported: 03/23/11

QC Report No: SN54-Floyd Snider
Project: Lora Lake - Subsurface Sediment
POS-LL
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/21/11	6010B	03/22/11	7440-38-2	Arsenic	5	5	U
3050B	03/21/11	6010B	03/22/11	7439-92-1	Lead	2	2	U

U-Analyte undetected at given RL
RL-Reporting Limit

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa

UNITS: ug/L

SDG: SN54

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Arsenic	AS	ICP	IP032271	2000.0	2041.47	102.1	2000.0	2030.01	101.5	2025.39	101.3	1990.25	99.5	1990.20	99.5	2020.93	101.0
Lead	PB	ICP	IP032271	2000.0	1963.04	98.2	2000.0	1945.12	97.3	1948.85	97.4	1921.07	96.1	1964.92	98.2	1952.91	97.6

SN54 : 86009

Control Limits: Mercury 80-120; Other Metals 90-110

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa

SDG: SN54

UNITS: ug/L

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Arsenic	AS	ICP	IP032271	2000.0	2003.51	100.2	2010.32	100.5	1996.69	99.8	1979.69	99.0				
Lead	PB	ICP	IP032271	2000.0	1946.37	97.3	1936.73	96.8	1925.16	96.3	1949.07	97.5				

Control Limits: Mercury 80-120; Other Metals 90-110

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa

UNITS: ug/L

SDG: SN54

ANALYTE	EL	M	RUN	CRA/I TV	CR-1	%R	CR-2	%R	CR-3	%R	CR-4	%R	CR-5	%R	CR-6	%R
Arsenic	AS	ICP	IP032271	50.0	51.05	**102.1**	50.19	**100.4**								
Lead	PB	ICP	IP032271	20.0	20.46	**102.3**	20.07	**100.4**								

SN54 : 00100

Control Limits: no control limits have been established by the EPA at this time.

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa

SDG: SN54

UNITS:ug/L

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Arsenic	AS	ICP	IP032271	10.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Lead	PB	ICP	IP032271	3.0	20.0	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U

SN54:00101

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa

SDG: SN54

UNITS: ug/L

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Arsenic	AS	ICP	IP032271	10.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U				
Lead	PB	ICP	IP032271	3.0	20.0	20.0	U	20.0	U	20.0	U	20.0	U				

SN54-001102

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

ICS SOURCE: I.V.

PROJECT: Lora Lake - Subsurfa

RUNID: IP032271

SDG: SN54

INSTRUMENT ID: OPTIMA ICP 2

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Aluminum	200000	200000	202617.0	203157.9	**101.6**	202283.2	202085.4	**101.0**			
Antimony		1000	3.1	1040.0	**104.0**	4.2	1027.4	**102.7**			
Arsenic		1000	13.0	1018.8	**101.9**	15.7	1004.9	**100.5**			
Barium		1000	0.3	983.7	**98.4**	1.0	964.7	**96.5**			
Beryllium		1000	0.1	1004.8	**100.5**	0.0	980.8	**98.1**			
Boron			-6.2	-5.9		-6.6	-6.3				
Cadmium		1000	1.1	995.3	**99.5**	1.3	997.6	**99.8**			
Calcium	100000	100000	102961.0	102500.8	**102.5**	101481.1	100984.3	**101.0**			
Chromium		1000	-0.7	1012.9	**101.3**	0.3	997.7	**99.8**			
Cobalt		1000	1.3	925.2	**92.5**	1.2	923.9	**92.4**			
Copper		1000	-0.4	1006.9	**100.7**	0.0	1044.2	**104.4**			
Iron	200000	200000	200623.7	200411.7	**100.2**	197183.3	196283.1	**98.1**			
Lead		1000	-3.0	952.7	**95.3**	-1.8	942.5	**94.3**			
Magnesium	100000	100000	105993.8	102095.3	**102.1**	104500.5	100418.6	**100.4**			
Manganese		1000	0.7	939.9	**94.0**	0.7	920.5	**92.1**			
Molybdenum			4.3	4.9		4.3	4.5				
Nickel		1000	3.6	974.6	**97.5**	3.1	953.0	**95.3**			
Potassium			3.6	549.3		24.3	533.4				
Selenium		1000	29.6	1026.2	**102.6**	24.0	1013.5	**101.4**			
Silicon			-6.3	-6.3		-8.7	-8.4				
Silver		1000	-0.2	1009.7	**101.0**	-0.2	1031.8	**103.2**			
Sodium			9.9	13.8		6.2	10.3				
Strontium			3.7	3.7		3.7	3.7				
Thallium		1000	-0.9	932.2	**93.2**	0.6	923.3	**92.3**			
Tin			0.1	-0.2		-0.9	-0.6				
Titanium			-1.1	0.4		-0.3	0.0				
Vanadium		1000	0.4	964.1	**96.4**	0.5	989.4	**98.9**			
Zinc		1000	3.4	983.4	**98.3**	1.8	960.7	**96.1**			

SN54 90103

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa

SDG: SN54 UNITS: ug/L

ANALYTE	EL	METH	INSTRUMENT	WAVELENTH (nm)	GFA BACK-GROUND	CLP CRDL	RL	RL DATE	ICP LINEAR RANGE (ug/L)	ICP LR DATE
Arsenic	AS	ICP	OPTIMA ICP 2	197.20		10	50.0	4/1/2010	30000.0	2/3/2011
Lead	PB	ICP	OPTIMA ICP 2	220.35		3	20.0	4/1/2010	300000.0	2/3/2011

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa

IEC DATE: 3/14/2011

SDG: SN54

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	AL	AS	BA	BE	CA	CD	CO	CR	CU	FE
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	9.9066900	0.0000000	0.0000000
Arsenic	188.98	0.0000000	0.0000000	0.0000000	0.0000000	0.0893242	0.0000000	-1.0280600	0.9896930	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1423420	0.0000000	0.0000000	0.0649797
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	3.6086500	0.0000000	0.0000000	0.0000000	0.0000000	0.1351930	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0148832	0.0000000	0.0000000	0.0000000	0.0000000	-0.0451581
Cobalt	228.62	0.0000000	0.0000000	0.0227510	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1969920	-0.0283867	0.0000000	-0.0499474
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	-0.1952990	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-1.9460200	1.1789000	0.0588763
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-1.3945700	-0.8349460	0.0000000	0.4579600
Manganese	257.61	0.0056707	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.0082982
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0185703	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0000000	0.0000000	0.0000000	0.0000000	0.1513640	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	288.16	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-3.7058000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	2.4468400	0.3572340	0.0000000	-0.1350510
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	-0.2650000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.0000000	0.0000000	0.1735400	0.0000000	0.0000000	0.1546720	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-4.7348500	0.0000000	0.0820500
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0805698	0.0000000	0.0000000

SN54 : 60195

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa

IEC DATE: 3/14/2011

SDG: SN54

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	MG	MN	MO	NI	PB	SB	TI	TL	V	ZN
Aluminum	308.22	0.0000000	1.8788800	12.1307000	0.0000000	0.0000000	0.0000000	2.3503300	0.0000000	18.0364000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	-0.3855180	0.0000000	0.0000000	-1.5147100	0.0000000	-3.2063100	0.0000000
Arsenic	188.98	0.0000000	0.0000000	1.3620000	0.0000000	0.0000000	0.0000000	-8.1444600	0.0000000	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0759003	0.0000000	0.0000000	0.0000000	0.0000000	0.4900780	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.5371850	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	-0.6212080	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0685552	0.0000000	0.2199000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.2689540	0.0000000
Cobalt	228.62	0.0000000	0.0000000	-0.2536290	0.1584550	0.0000000	0.0000000	1.6159400	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0040015	0.0000000	0.1558430	0.0000000	0.0000000	0.0000000	0.3031690	0.0000000	0.0000000	0.0000000
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	5.2755600	0.0000000
Lead	220.35	0.0000000	0.0000000	-0.3729230	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	-2.6953000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0058832	0.0000000	0.0000000	0.0000000	-0.2659040	0.0000000	0.0000000	0.0000000	-0.0245885	0.0000000
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.5897980	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0859101	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	288.16	-0.1197900	0.0000000	-1.8474100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.1773070	0.1067270	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.2224750	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	37.7400000	0.0000000	0.0000000	62.9290000
Thallium	190.80	0.0000000	0.0000000	-3.9138800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1.6225600	0.0000000
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.6365040	-0.3516110	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	1.2363700	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	-0.1619680	-0.9516330	0.0000000	0.0000000	0.0000000	0.6209970	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.2547300	0.0000000	-0.0673589	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

SN54 : 60196

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa

SDG: SN54

ANALYSIS METHOD: ICP

ARI PREP CODE: SWC

PREPDATE: 3/21/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
LL-SED3-0-36-03151	SN54A	1.037	0.0	50.0
LL-SED3-36-141-031	SN54B	1.021	0.0	50.0
LL-SED3-141-167-03	SN54C	1.082	0.0	50.0
LL-SED2-0-56-03151	SN54D	1.022	0.0	50.0
LL-SED2-56-112-031	SN54E	1.068	0.0	50.0
LL-SED2-56-112-031D	SN54EDUP	1.066	0.0	50.0
LL-SED2-56-112-031S	SN54ESPK	1.071	0.0	50.0
LL-SED2-112-168-03	SN54F	1.064	0.0	50.0
LL-SED2-0-56-03151	SN54G	1.040	0.0	50.0
LL-SED1-0-56-03151	SN54H	1.032	0.0	50.0
PBS	SN54MB1	1.000	0.0	50.0
LCSS	SN54MB1SPK	1.000	0.0	50.0

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa | INSTRUMENT ID: OPTIMA ICP 2 | START DATE: 3/22/2011

SDG: SN54 | RUNID: IP032271 | METHOD: ICP | END DATE: 3/22/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	11084				X																	X									
S2	S2	1.00	11125																														
S3	S3	1.00	11143				X																	X									
S4	S4	1.00	11170																														
S5	S5	1.00	11191																														
ICV	ICV	1.00	11233				X																	X									
ICB	ICB	1.00	11264				X																	X									
ZZZZZZ	ZZZZZZ	1.00	11304																														
S0	S0	1.00	11345				X																	X									
CCV	CCV1	1.00	11385				X																	X									
CCB	CCB1	1.00	11420				X																	X									
CRI	CRII	1.00	11461				X																	X									
ICSA	ICSAI	1.00	11500				X																	X									
ICSAB	ICSABI	1.00	11542				X																	X									
CCV	CCV2	1.00	11580				X																	X									
CCB	CCB2	1.00	12011				X																	X									
ZZZZZZ	SN04MB1	2.00	12052																														
ZZZZZZ	SN74MB1	2.00	12092																														
ZZZZZZ	SN74C-L	10.00	12133																														
ZZZZZZ	SN74C	2.00	12172																														
ZZZZZZ	SN04B	2.00	12212																														
ZZZZZZ	SN04ADUP	2.00	12244																														
ZZZZZZ	SN04A	2.00	12282																														
ZZZZZZ	SN04ASPK	2.00	12320																														
ZZZZZZ	SN04APOST	2.00	12350																														
ZZZZZZ	SN74MB1SPK	2.00	12385																														
CCV	CCV3	1.00	12424				X																	X									
CCB	CCB3	1.00	12455				X																	X									
CRI	CRIF	1.00	12500				X																	X									
ICSA	ICSAF	1.00	12540				X																	X									
ICSAB	ICSABF	1.00	12581				X																	X									
CCV	CCV4	1.00	13021				X																	X									
CCB	CCB4	1.00	13052				X																	X									
ZZZZZZ	SN04C	2.00	13093																														
ZZZZZZ	SN04D	2.00	13125																														

FORM XIV

SN54-00108

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa | INSTRUMENT ID: OPTIMA ICP 2 | START DATE: 3/22/2011

SDG: SN54 | RUNID: IP032271 | METHOD: ICP | END DATE: 3/22/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	SN04E	2.00	13165																														
ZZZZZZ	SN04F	2.00	13203																														
ZZZZZZ	SN04G	2.00	13243																														
ZZZZZZ	SN04H	2.00	13282																														
ZZZZZZ	SN04I	2.00	13304																														
ZZZZZZ	SN04J	2.00	13344																														
ZZZZZZ	SN04K	2.00	13383																														
ZZZZZZ	SN04MB1SPK	2.00	13422																														
CCV	CCV5	1.00	13461				X																	X									
CCB	CCB5	1.00	13493				X																	X									
ZZZZZZ	SN20MB1	2.00	13534																														
ZZZZZZ	SN04L	2.00	13573																														
ZZZZZZ	SN20B	2.00	14013																														
ZZZZZZ	SN20C	2.00	14051																														
ZZZZZZ	SN20D	2.00	14085																														
ZZZZZZ	SN20ADUP	2.00	14115																														
ZZZZZZ	SN20A	2.00	14155																														
ZZZZZZ	SN20ASPK	2.00	14195																														
ZZZZZZ	ZZZZZZ	2.00	14225																														
ZZZZZZ	SN20MB1SPK	2.00	14255																														
CCV	CCV6	1.00	14294				X																	X									
CCB	CCB6	1.00	14330				X																	X									
ZZZZZZ	SN04B	10.00	14365																														
ZZZZZZ	SN04C	5.00	14404																														
ZZZZZZ	SN04H	5.00	14442																														
ZZZZZZ	SN20E	2.00	14482																														
ZZZZZZ	SN20F	2.00	14520																														
ZZZZZZ	SN20G	2.00	14555																														
ZZZZZZ	SN20H	2.00	14581																														
LL-SED3-0-36-03151	SN54A	2.00	15020				X																	X									
LL-SED3-36-141-031	SN54B	2.00	15060				X																	X									
LCSS	SN54MB1SPK	2.00	15095				X																	X									
CCV	CCV7	1.00	15135				X																	X									
CCB	CCB7	1.00	15170				X																	X									
PBS	SN54MB1	2.00	15211				X																	X									

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake - Subsurfa | INSTRUMENT ID: OPTIMA ICP 2 | START DATE: 3/22/2011

SDG: SN54 | RUNID: IP032271 | METHOD: ICP | END DATE: 3/22/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
LL-SED3-141-167-03	SN54C	2.00	15250				X																	X									
LL-SED2-0-56-03151	SN54D	2.00	15290				X																	X									
LL-SED2-112-168-03	SN54F	2.00	15330				X																	X									
LL-SED2-0-56-03151	SN54G	2.00	15365				X																	X									
LL-SED2-56-112-031D	SN54EDUP	2.00	15405				X																	X									
LL-SED2-56-112-031	SN54E	2.00	15444				X																	X									
LL-SED2-56-112-031S	SN54ESPK	2.00	15484				X																	X									
ZZZZZZ	ZZZZZZ	2.00	15523																														
ZZZZZZ	SN63MB1SPK	2.00	15563																														
CCV	CCV8	1.00	16003				X																	X									
CCB	CCB8	1.00	16034				X																	X									
ZZZZZZ	SN63MB1	2.00	16073																														
ZZZZZZ	SN20D	5.00	16113																														
LL-SED1-0-56-03151	SN54H	2.00	16151				X																	X									
ZZZZZZ	SN63B	2.00	16191																														
ZZZZZZ	SN63C	2.00	16225																														
ZZZZZZ	SN63ADUP	2.00	16265																														
ZZZZZZ	SN63A	2.00	16303																														
ZZZZZZ	SN63ASPK	2.00	16333																														
ZZZZZZ	ZZZZZZ	2.00	16354																														
ZZZZZZ	SN63MB2SPK	1.00	16380																														
CCV	CCV9	1.00	16420				X																	X									
CCB	CCB9	1.00	16451				X																	X									

SN54 00110

General Chemistry Analysis
Report and Summary QC Forms

ARI Job ID: SN54

SAMPLE RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Client ID: LL-SED3-0-36-031511
ARI ID: 11-5925 SN54A

Analyte	Date	Method	Units	RL	Sample
Total Solids	03/22/11 032211#1	EPA 160.3	Percent	0.01	12.80
Total Organic Carbon	03/29/11 032911#1	Plumb,1981	Percent	0.146	8.32

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Client ID: LL-SED3-36-141-031511
ARI ID: 11-5926 SN54B

Analyte	Date	Method	Units	RL	Sample
Total Solids	03/22/11 032211#1	EPA 160.3	Percent	0.01	12.10
Preserved Total Solids	03/17/11 031711#1	EPA 160.3	Percent	0.01	12.30
Sulfide	03/21/11 032111#1	EPA 376.2	mg/kg	7.85	< 7.85 U
Total Organic Carbon	03/29/11 032911#1	Plumb,1981	Percent	0.198	25.7

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Client ID: LL-SED3-141-167-031511
ARI ID: 11-5927 SN54C

Analyte	Date	Method	Units	RL	Sample
Total Solids	03/22/11 032211#1	EPA 160.3	Percent	0.01	12.70
Preserved Total Solids	03/17/11 031711#1	EPA 160.3	Percent	0.01	12.30
Sulfide	03/21/11 032111#1	EPA 376.2	mg/kg	7.91	< 7.91 U
Total Organic Carbon	03/29/11 032911#1	Plumb,1981	Percent	0.200	21.1

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Client ID: LL-SED2-0-56-031511
ARI ID: 11-5928 SN54D

Analyte	Date	Method	Units	RL	Sample
Total Solids	03/22/11 032211#1	EPA 160.3	Percent	0.01	7.00
Total Organic Carbon	03/29/11 032911#1	Plumb,1981	Percent	0.198	17.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Client ID: LL-SED2-56-112-031511
ARI ID: 11-5929 SN54E

Analyte	Date	Method	Units	RL	Sample
Total Solids	03/22/11 032211#1	EPA 160.3	Percent	0.01	13.80
Total Organic Carbon	03/29/11 032911#1	Plumb,1981	Percent	0.216	26.1

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Client ID: LL-SED2-112-168-031511
ARI ID: 11-5930 SN54F

Analyte	Date	Method	Units	RL	Sample
Total Solids	03/22/11 032211#1	EPA 160.3	Percent	0.01	11.90
Total Organic Carbon	03/29/11 032911#1	Plumb,1981	Percent	0.202	22.9

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Client ID: LL-SED2-0-56-031511-D
ARI ID: 11-5931 SN54G

Analyte	Date	Method	Units	RL	Sample
Total Solids	03/22/11 032211#1	EPA 160.3	Percent	0.01	5.70
Total Organic Carbon	03/29/11 032911#1	Plumb,1981	Percent	0.200	12.1

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Client ID: LL-SED1-0-56-031511
ARI ID: 11-5932 SN54H

Analyte	Date	Method	Units	RL	Sample
Total Solids	03/22/11 032211#1	EPA 160.3	Percent	0.01	41.30
Total Organic Carbon	03/29/11 032911#1	Plumb,1981	Percent	0.020	4.22

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: SN54C Client ID: LL-SED3-141-167-031511						
Sulfide	03/21/11	mg/kg	< 7.91	729	1,160	62.8%
ARI ID: SN54E Client ID: LL-SED2-56-112-031511						
Total Organic Carbon	03/29/11	Percent	26.1	57.6	31.4	100.4%

REPLICATE RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: 03/15/11
Date Received: 03/16/11

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: SN54B Client ID: LL-SED3-36-141-031511					
Preserved Total Solids	03/17/11	Percent	12.30	12.40	0.8%
ARI ID: SN54C Client ID: LL-SED3-141-167-031511					
Sulfide	03/21/11	mg/kg	< 7.91	< 7.96	NA
ARI ID: SN54E Client ID: LL-SED2-56-112-031511					
Total Solids	03/22/11	Percent	13.80	13.80 13.90	0.4%
Total Organic Carbon	03/29/11	Percent	26.1	22.2 18.9	16.1%

LAB CONTROL RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Sulfide EPA 376.2	PREP	03/21/11	mg/kg	7.30	7.28	100.3%
Total Organic Carbon Plumb,1981	ICVL	03/29/11	Percent	0.094	0.100	94.0%

METHOD BLANK RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank
Total Solids	03/22/11	Percent	< 0.01 U
Preserved Total Solids	03/17/11	Percent	< 0.01 U
Sulfide	03/21/11	mg/kg	< 1.00 U
Total Organic Carbon	03/29/11	Percent	< 0.020 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
SN54-Floyd Snider

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/31/11

Project: Lora Lake - Subsurface Sedim
Event: POS-LL
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	03/29/11	Percent	2.44	2.99	81.6%

Total Solids

ARI Job ID: SN54

Extractions Total Solids-extts
Data By: Yen Luu
Created: 3/17/11

Worklist: 6028
Analyst: RVR
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID / CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
1.	SN54A 11-5925 LL-SED3-0-36-031511	1.18	3.58	1.77	24.6	NR
2.	SN54B 11-5926 LL-SED3-36-141-031511	1.18	11.12	2.34	11.7	NR
3.	SN54C 11-5927 LL-SED3-141-167-031511	1.17	11.44	2.41	12.1	NR
4.	SN54D 11-5928 LL-SED2-0-56-031511	1.16	4.36	1.61	14.1	NR
5.	SN54E 11-5929 LL-SED2-56-112-031511	1.17	12.14	2.68	13.8	NR
6.	SN54F 11-5930 LL-SED2-112-168-031511	1.16	11.79	2.47	12.3	NR
7.	SN54G 11-5931 LL-SED2-0-56-031511-D	1.19	3.58	1.46	11.3	NR
8.	SN54H 11-5932 LL-SED1-0-56-031511	1.16	3.64	2.51	54.4	NR

Extractions Total Solids-extts
Data By: Yen Luu
Created: 3/17/11

Worklist: 6028
Analyst: YL
Comments:

Oven ID: 015

Balance ID: 21754520

Samples In: Date: 3/23/11 Time: 19:25 Temp: 102 Analyst: WC

Samples Out: Date 3/24/11 Time: 09:10 Temp: 105° Analyst: RF

	ARI ID / CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
1.	SN54A 11-5925 LL-SED3-0-36-031511	1.18	3.58g	1.77		NR
2.	SN54B 11-5926 LL-SED3-36-141-031511	1.18g	11.12g	2.34		NR
3.	SN54C 11-5927 LL-SED3-141-167-031511	1.17g	11.44g	2.41		NR
4.	SN54D 11-5928 LL-SED2-0-56-031511	1.16g	4.36g	1.61		NR
5.	SN54E 11-5929 LL-SED2-56-112-031511	1.17g	12.14g	2.68		NR
6.	SN54F 11-5930 LL-SED2-112-168-031511	1.16g	11.79g	2.47		NR
7.	SN54G 11-5931 LL-SED2-0-56-031511-D	1.19g	3.58g	1.46		NR
8.	SN54H 11-5932 LL-SED1-0-56-031511	1.16g	3.64g	2.51		NR

Solids Data Entry Report Checked by: KM Date: 3/22/11
Date: 03/22/11 Data Analyst: DM

Solids Determination performed on 03/21/11 by KM

JOB	SAMPLE	CLIENTID	TAREWEIGHT	SAMPDISH	DRYWEIGHT	SOLIDS
SN54	A	LL-SED3-0-36-031511	1.005	10.326	2.055	11.26
SN54	B	LL-SED3-36-141-0315	0.973	10.574	2.128	12.03
SN54	C	LL-SED3-141-167-031	0.965	10.092	2.043	11.81
SN54	D	LL-SED2-0-56-031511	0.991	10.236	1.796	8.71
SN54	E	LL-SED2-56-112-0315	0.993	10.314	2.200	12.95
SN54	F	LL-SED2-112-168-031	0.977	10.205	2.104	12.21
SN54	G	LL-SED2-0-56-031511	0.947	10.622	1.946	10.33
SN54	H	LL-SED1-0-56-031511	0.952	10.096	6.902	65.07

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Total Solids Bench Sheet

Laboratory Section Metals

Oven Identification: 07 **Balance ID:** 068755

Samples in Oven: Date: 3/21/11 Time: 1040 Temp: 102°C Analyst: KM

Removed from Oven: Date: 3-22-11 Time: 0910 Temp: 103°C Analyst: DM

Source of Total Solids Data If From A Different Lab: —

ARI Sample ID	Tare Weight (g)	Tare + Sample Wet (g)	Tare + Sample Dry (g)	Date & Time Last Weight	Final Weighting >12 hrs[1]
SN80 E	0.960	10.101	9.052	–	√
SN54 A	1.005	10.326	2.055	–	√
" B	0.973	10.574	2.128	–	√
" C	0.965	10.092	2.043	–	√
" D	0.991	10.236	1.796	–	√
" E	0.993	10.314	2.200	–	√
" F	0.977	10.205	2.104	–	√
" G	0.947	10.622	1.946	–	√
" H	0.952	10.096	6.902	–	√

KM 3/21/11

1) Place a check mark in this column if samples have dried > 12 but < 24 hours. When samples have been at 104°C < 12 hours, constant weight must be verified as described in SOP 10023S. Use a 2nd bench sheet for additional weightings.

SIM PAH Raw Data
Extraction Bench Sheets and Notes

ARI Job ID: SN54

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

SIM PNA-Soil/(Sediment)
Sonication (3550C) (SOP # 3304S)

Preparation Test SIM PNA # 1 In-House (5ppb)
ARI Job No(s) SN89, SN54 Batch set up by: JH

Bottle #	Extraction Requirements	Verify Client ID	Volume Extracted (dry wt)	Sonic Horn ID + Check	KD 80-85°C ---------- Hex X X 2 100°C	TurboVap (1) 2 3	(REQ) ~~(Opt)~~ Silica Gel Clean (1:1) (Y) N	TurboVap 1 (2) 3	Final Effective Volume	Volume to Lab	Comments
	SN89 MBS	Date 03/26/11	10.00g	3					0.5mL	0.5mL	
	SBS	↓	↓	4					↓	↓	
	SBS Dup.		↓	7					↓	↓	
	QLS		↓	8					↓	↓	
1	A	checked	7.15	9							see Notes
1	B		14.25	10							↓
2	SN54 A		24.07	11							
4	B		86.10	12							
4	C		83.15	3							
2	D		23.35	4							see Notes
3	E		73.52	7							
5	EMS		73.08	8							
5	EMSD		73.29	9							
3	F		82.00	10							
3	G		19.06	11							see Notes
2	H	↓	19.41	12	↓	↓	↓	↓	↓	↓	
Analyst/Date		AR 03/26/11 →	AC 3-28-11		KP/YL 3/29/11	B 3-30-11	→	→	→	→	

Standard	Standard ID	Volume	Expiration Date	Analyst	Witness
Surrogate	B2	100µL	10/05/11	AR	TH
Spike	15	100µL	11/04/12	AR	TH
QLS Spike	4	50µL	11/04/12	AR	TH
Extraction Time: 15:20			Balance ID: 2175452A		

SPECIAL INSTRUCTIONS: 1. Weigh into ~~100mL~~ beakers. 2. Extract 2X with 1:1 DCM/Acetone. Plus 1 X DCM only.
3. Collect into ~~250mL~~ 500mL E-Flask with 5-10g sodium sulfate in the bottom + small funnel with neutral glasswool. NO SODIUM SULFATE IN FUNNEL. 4. KD (~~small~~ Normal drying column) to 8mL at 80-85°. 5. Exchange (2 X with 10mL) to Hexane at 100°. 6. TurboVap. 7. Silica Clean-up ~~Opt~~-Any color=REQUIRED (All ~~or none~~). 8. TurboVap (if Silica Clean).
9. Vial in DCM.

A. Need Total Solids Y (N) B. ~~Archive~~/Freeze (Y) N
SN89 only

SN54 : 00131

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: SN54 Client ID: Floyd Snider

Parameter: SIM PNA Client Project: Lora lake - Subsurface Sediment

Note problems, concerns, corrective actions	Analyst/Date
Screens: Soil/Sediment/Solid/Other:	
☐ No Anomalies (standard soil/sediment)	
☒ Wet sediment/sludge= Wet (A-H)	
☐ Standing Water Decanted=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay (Difficult to homogenize/Mixed with Kitchen Aid)=	
☐ Rocks/Organics=	
☐ Oily, obvious fuel/sulfur odors=	
☒ Other (Details)= Samples A, B and C are provided in amber Jar.	WC 3/23/11
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates=	
☐ Emulsions=	
☐ Other (Details)=	
☒ Other Notes/Comments= Samples A, D, G and H were received as mostly water (~80%). As per project manager, Volume for these Samples was taken from the metals lab. Two jars each were centrifuged and combined by the Geotech lab.	JH 3/26/11
GCMS analyst, reduced extraction weights for Samples A, D and G, based on sample pre-screens.	JH 3/26/11
At vialing filtered samples SN54 A-H with GDX stacked with 0.45, Split samples SN54 A-H at ~1.25mL for SPE clean up, Samples were dark and viscous, after clean up combined Samples into turbo tubes for final blow down.	3-30-11 TS

SIM PAH Raw Data
Initial Calibration

ARI Job ID: SN54

Analytical Chemists and Consultants

GC/MS SVOA Analyst Notes / Corrective Action Log

ARI Project ID: Curve Client ID: /

ARI SOP: **801S**(SIM-PNA) **802S**(Butyl Tins) **804S**(SVOA-8270D) **805S**(op-Pest)

Parameter(s): Sim-PNA

Instrument: NT-2 NT-4 NT-6 NT-8 NT11, (NT12)

Curve Date: 3/31/11 Analysis Start Date: 3/31/11

DFTPP Tune Meets Criteria?	(YES) / NO	Internal Standard Meets Criteria?	(YES) / NO
DDT Breakdown <20%?	(YES) / NO / NA	Method Blank In Control?	YES / NO (NA)
Peak Tailing Factor ≤2?	(YES) / NO / NA	LCS / LCSD Recovery In Control?	(YES) / NO
ICal acceptable?	(YES) / NO	CCal acceptable?	(YES) / NO
Q flag applied?	YES / (NO)	Q flag applied?	YES / (NO)
Surrogate Recovery in Control?	(YES) / NO	Special Analysis Criteria Met?	YES / NO / (NA)
Manual Integrations for ICal?	(YES) / NO	Manual Integrations for Samples?	Yes /(NO) (NA)

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

no perylene added in ICV.
(ICV for perylene will be performed if needed).

Additional Details on Reverse: Yes / No

Analyst: [signature] **Date:** 04/08/11

Reviewer: VD **Date:** 4/5/11

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-MAR-2011 20:27
End Cal Date : 31-MAR-2011 22:47
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt12.i/20110331.b/SIMPNA0331.m
Cal Date : 01-Apr-2011 17:23 jianqing
Curve Type : Average

Calibration File Names:
Level 1: /chem1/nt12.i/20110331.b/03311103.d
Level 2: /chem1/nt12.i/20110331.b/03311104.d
Level 3: /chem1/nt12.i/20110331.b/03311105.d
Level 4: /chem1/nt12.i/20110331.b/03311102.d
Level 5: /chem1/nt12.i/20110331.b/03311106.d
Level 6: /chem1/nt12.i/20110331.b/03311107.d

04/01/11

Compound	0.10000 Level 1	0.50000 Level 2	1.000 Level 3	2.500 Level 4	5.000 Level 5	10.000 Level 6	___ RRF	% RSD
28 Naphthalene	1.02984	1.04229	0.96546	0.98620	0.93861	0.83191	0.96572	7.891
32 2-Methylnaphthalene	0.63113	0.57566	0.54305	0.52380	0.50615	0.44017	0.53666	12.045
105 1-methylnaphthalene	0.73051	0.60922	0.56684	0.54282	0.52262	0.45464	0.57111	16.350
40 Acenaphthylene	1.96509	1.84469	1.78684	1.69133	1.69760	1.51530	1.75014	8.772
44 Acenaphthene	1.32697	1.09842	1.09926	1.02851	1.04015	0.94739	1.09012	11.813
46 Dibenzofuran	1.75677	1.55840	1.48369	1.41226	1.41246	1.26907	1.48211	11.143
49 Fluorene	1.42196	1.24282	1.22580	1.16986	1.18176	1.07992	1.22035	9.339
60 Phenanthrene	1.25697	1.09982	1.05963	1.00114	0.98489	0.93079	1.05554	10.890
61 Anthracene	1.23908	1.09624	1.06084	1.06111	1.01593	0.88579	1.05983	10.814
64 Fluoranthene	1.34085	1.21122	1.14001	1.10737	1.09067	0.99664	1.14779	10.242
65 Pyrene	1.26093	1.10447	1.07602	1.03032	1.04090	0.94833	1.07683	9.707
68 Benzo(a)anthracene	1.11299	0.94652	0.94287	0.93557	0.95613	0.87492	0.96150	8.284
71 Chrysene	1.08380	0.95515	0.93453	0.90160	0.91903	0.84421	0.93972	8.517
74 Benzo(b)fluoranthene	1.22881	1.13978	1.14663	1.09249	1.10623	1.05109	1.12751	5.365
75 Benzo(k)fluoranthene	1.41742	1.20751	1.14974	1.13283	1.11431	1.07459	1.18273	10 400
188 Benzo(j)fluoranthene	1.37699	1.13978	1.08633	1.08271	1.08914	1.00588	1.13014	11.354
76 Benzo(a)pyrene	1.25288	1.00999	0.99588	0.99323	1.01691	0.94227	1.03519	10.608
78 Indeno(1,2,3-cd)pyrene	1.37479	1.31242	1.22066	1.20629	1.25293	1.18555	1.25877	5.722
79 Dibenzo(a,h)anthracene	1.25074	0.93800	0.99289	1.00459	1.01450	0.97604	1.02946	10.848
80 Benzo(g,h,i)perylene	1.36701	1.12986	1.04412	1.05448	1.08217	1.02109	1.11645	11.492
99 Perylene	1.04566	0.88472	0.85494	0.83735	0.83808	0.79215	0.87548	10.122

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-MAR-2011 20:27
End Cal Date : 31-MAR-2011 22:47
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt12.i/20110331.b/SIMPNA0331.m
Cal Date : 01-Apr-2011 17:23 jianqing
Curve Type : Average

Compound	0.10000 Level 1	0.50000 Level 2	1.000 Level 3	2.500 Level 4	5.000 Level 5	10.000 Level 6	___ RRF	% RSD
58 Pentachlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
187 Total Benzofluoranthenes	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
152 Benzo(e)pyrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 190 2-Methylnaphthalene-d10	0.72188	0.66040	0.61951	0.58941	0.57524	0.50250	0.61149	12.308
$ 191 Dibenzo(a,h)anthracene-d14	1.10300	0.94416	0.88878	0.90105	0.92161	0.87241	0.93850	8.994
$ 55 2,4,6-Tribromophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt12.i/20110331.b/SIMPNA0331.m
Batch File: /chem1/nt12.i/20110331.b
Inst ID: nt12.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	03311102	03311103	03311104	03311105	03311106	03311107
INJ.DATE:	31-MAR-2011	31-MAR-2011	31-MAR-2011	31-MAR-2011	31-MAR-2011	31-MAR-2011
INJ.TIME:	20:27	20:55	21:23	21:51	22:19	22:47

AR 06/01/11

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 27 Naphthalene-d8	4.920	4.917	4.917	4.920	4.920	4.917	4.917	4.817-5.017	4.919	0.002
28 Naphthalene	4.945	4.945	4.949	4.945	4.948	4.945	4.945	4.845-5.045	4.946	0.002
$ 190 2-Methylnaphthalene-d1	5.655	5.655	5.655	5.655	5.655	5.655	5.655	5.555-5.755	5.655	0.000
32 2-Methylnaphthalene	5.700	5.700	5.700	5.696	5.699	5.700	5.700	5.600-5.800	5.699	0.001
105 1-methylnaphthalene	5.892	5.889	5.892	5.892	5.892	5.892	5.892	5.792-5.992	5.892	0.001
40 Acenaphthylene	7.025	7.025	7.025	7.025	7.022	7.025	7.025	6.925-7.125	7.024	0.001
* 42 Acenaphthene-d10	7.164	7.161	7.161	7.164	7.164	7.164	7.164	7.064-7.264	7.163	0.002
44 Acenaphthene	7.208	7.211	7.208	7.208	7.208	7.208	7.208	7.108-7.308	7.208	0.001
46 Dibenzofuran	7.353	7.350	7.353	7.353	7.353	7.353	7.353	7.253-7.453	7.353	0.001
49 Fluorene	7.808	7.804	7.808	7.807	7.807	7.808	7.808	7.708-7.908	7.807	0.001
* 59 Phenanthrene-d10	9.098	9.098	9.098	9.098	9.101	9.098	9.098	8.998-9.198	9.099	0.001
60 Phenanthrene	9.133	9.130	9.130	9.133	9.133	9.133	9.133	9.033-9.233	9.132	0.002
61 Anthracene	9.164	9.164	9.164	9.164	9.164	9.164	9.164	9.064-9.264	9.164	0.000
64 Fluoranthene	10.827	10.821	10.827	10.824	10.824	10.827	10.827	10.727-10.927	10.825	0.003
65 Pyrene	11.301	11.298	11.294	11.298	11.297	11.301	11.301	11.201-11.401	11.298	0.002
68 Benzo(a)anthracene	13.690	13.686	13.683	13.689	13.693	13.693	13.693	13.593-13.793	13.689	0.004
* 69 Chrysene-d12	13.803	13.806	13.803	13.803	13.806	13.806	13.806	13.706-13.906	13.805	0.002

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt12.i/20110331.b/SIMPNA0331.m
Batch File: /chem1/nt12.i/20110331.b
Inst ID: nt12.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
71 Chrysene	13.873	13.873	13.866	13.872	13.876	13.873	13.873	13.773-13.973	13.872	0.003
74 Benzo(b)fluoranthene	16.306	16.302	16.299	16.302	16.305	16.312	16.312	16.212-16.412	16.304	0.004
75 Benzo(k)fluoranthene	16.362	16.359	16.359	16.359	16.359	16.369	16.369	16.269-16.469	16.361	0.004
188 Benzo(j)fluoranthene	16.435	16.425	16.429	16.432	16.435	16.444	16.444	16.344-16.544	16.433	0.007
76 Benzo(a)pyrene	17.262	17.255	17.255	17.252	17.262	17.268	17.268	17.168-17.368	17.259	0.006
* 77 Perylene-d12	17.470	17.464	17.464	17.467	17.470	17.473	17.473	17.373-17.573	17.468	0.004
78 Indeno(1,2,3-cd)pyrene	19.818	19.802	19.802	19.799	19.818	19.833	19.833	19.733-19.933	19.812	0.013
$ 191 Dibenzo(a,h)anthracene	19.745	19.729	19.733	19.729	19.739	19.751	19.751	19.651-19.851	19.738	0.009
79 Dibenzo(a,h)anthracene	19.827	19.818	19.821	19.821	19.830	19.840	19.840	19.740-19.940	19.826	0.008
80 Benzo(g,h,i)perylene	20.670	20.648	20.663	20.654	20.666	20.676	20.676	20.576-20.776	20.663	0.010
$ 55 2,4,6-Tribromophenol	+++++	+++++	+++++	+++++	+++++	+++++	14.264	14.164-14.364	+++++	+++++
99 Perylene	17.536	17.536	17.536	17.530	17.533	17.536	17.536	17.436-17.636	17.535	0.003
58 Pentachlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	10.007	9.907-10.107	+++++	+++++
187 Total Benzofluoranthen	+++++	+++++	+++++	+++++	+++++	+++++	17.639	17.539-17.739	+++++	+++++
152 Benzo(e)pyrene	+++++	+++++	+++++	+++++	+++++	+++++	30.943	30.843-31.043	+++++	+++++

Analytical Resources Inc.: Organics Instrument Log

NT-12 Serial No.:GC=US00032558, MS= US01180091

Date: 3/31/11 Analysis: SimPAH Analyst: JB

GC Program: SimPAH_3.E Column No: 167992 Column Type: ZB-5

Instrument Tune (.U or .CT.): 110331 EM Voltage: 2660

Calibration File: 03311102 Curve Date: 3/31/11 Injection Vol.: 1µl

IS/SS	Ical/Ccal	LCS/ICV
1754-1	1818-1	
	1788-3	

Document All Maintenance Tasks In StarLIMS

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt12.i/20110331.b

	Time	Filename	LabID	ClientId	DF								
1	2014	03311101.d	DFTPP0331	DFTPP0331	1	NO ISTDS FOUND							
2	2027	03311102.d	IC0250331	IC0250331	1	4.92	494112	7.16	280105	9.10	461353	13.80	503160	17.47	442215
3	2055	03311103.d	IC010331	IC010331	1	4.92	382584	7.16	224662	9.10	370050	13.81	404335	17.46	354686
4	2123	03311104.d	IC050331	IC050331	1	4.92	399629	7.16	230116	9.10	380150	13.80	423330	17.46	369841
5	2151	03311105.d	IC10331	IC10331	1	4.92	447156	7.16	253822	9 10	425121	13.80	461408	17.47	420159
6	2219	03311106.d	IC50331	IC50331	1	4.92	424290	7.16	233090	9.10	394000	13.81	423013	17.47	385980
7	2247	03311107.d	IC100331	IC10331	1	4.92	479714	7.16	252063	9.10	420234	13.81	454758	17.47	406204
8	2315	03311108.d	IC200331	IC200331 extra AR	1	4.92	431209	7.16	238299	9.10	401066	13.81	433254	17.47	394342

JB 04/01/11

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt12.i/20110331.b

ARI Job No.: IC02   Method: SIMPNA0331.m   Instrument: nt12.i   Date: 31-MAR-2011

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2027	03311102.d	IC0250331	IC0250331	1	NO MANUAL INTEGRATION
2055	03311103.d	IC010331	IC010331	1	NO MANUAL INTEGRATION
2123	03311104.d	IC050331	IC050331	1	Benzo(a)anthracene, Benzo(a)pyrene, Dibenzo(a,h)anthracene,
2151	03311105.d	IC10331	IC10331	1	NO MANUAL INTEGRATION
2219	03311106.d	IC50331	IC50331	1	NO MANUAL INTEGRATION
2247	03311107.d	IC100331	IC10331	1	NO MANUAL INTEGRATION

04/01/11

Data File: /chem1/nt12.i/20110331.b/tune.b/03311101.d

Date : 31-MAR-2011 20:14

Client ID: DFTPP0331

Instrument: nt12.i

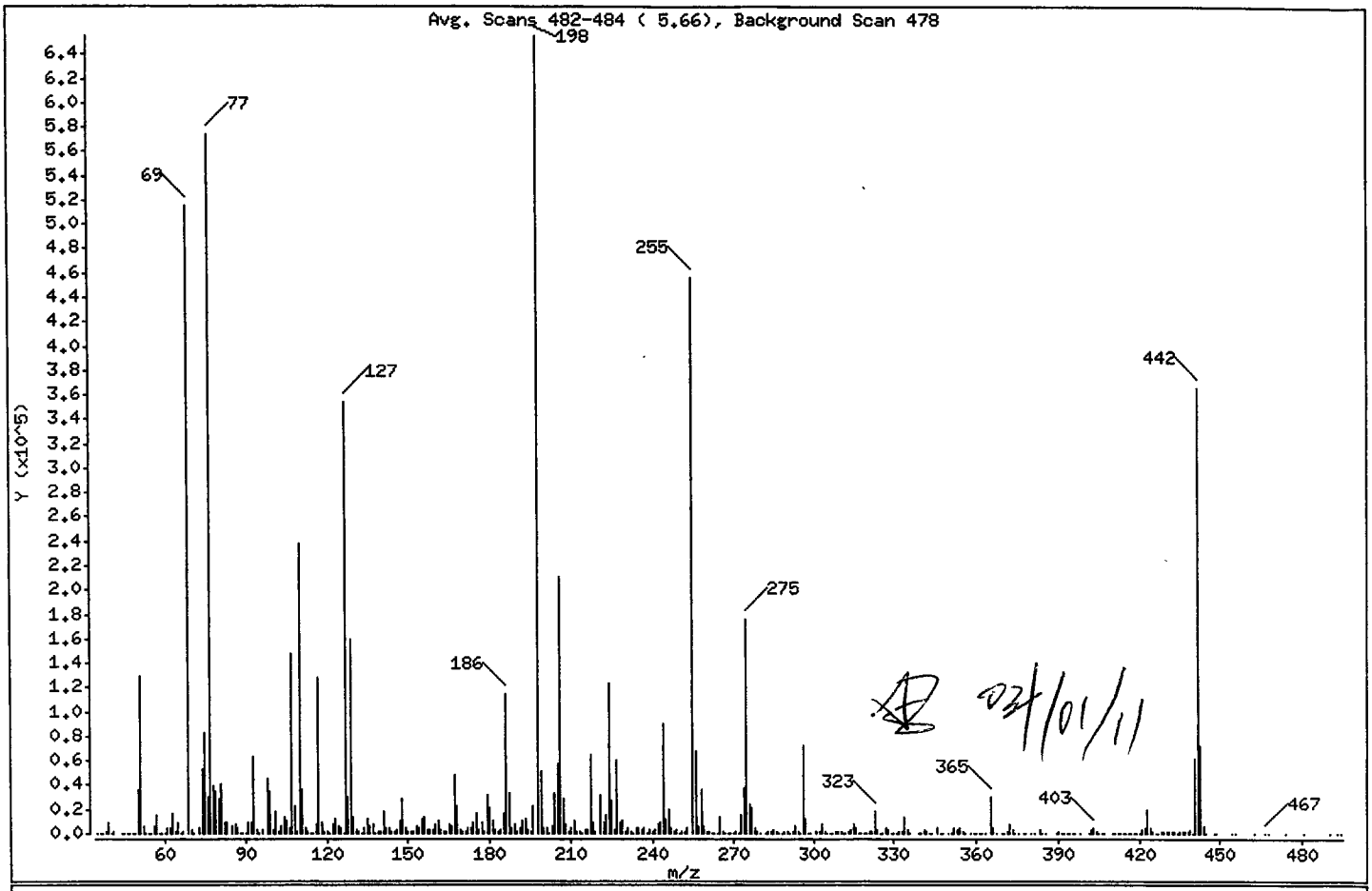
Sample Info: DFTPP0331

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	19.69
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	78.66
70	Less than 2.00% of mass 69	0.40 (0.50)
127	10.00 - 80.00% of mass 198	53.97
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	7.79
275	10.00 - 60.00% of mass 198	26.89
365	Greater than 1.00% of mass 198	4.71
441	0.01 - 24.00% of mass 442	9.40 (16.84)
442	50.00 - 200.00% of mass 198	55.79
443	15.00 - 24.00% of mass 442	11.11 (19.92)

Data File: /chem1/nt12.i/20110331.b/tune.b/03311101.d

Date : 31-MAR-2011 20:14

Client ID: DFTPP0331 Instrument: nt12.i

Sample Info: DFTPP0331

Operator: JZ

Column phase: ZB-5msi Column diameter: 0.32

Data File: 03311101.d
Spectrum: Avg. Scans 482-484 (5.66), Background Scan 478
Location of Maximum: 198.00
Number of points: 394

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	612	140.00	1666	241.00	3403	346.00	3950
36.00	181	141.00	18336	242.00	7630	347.00	691
37.00	518	142.00	5189	243.00	8406	348.00	56
38.00	1675	143.00	4787	244.00	89752	350.00	556
39.00	9265	144.00	1323	245.00	12268	351.00	210
40.00	574	145.00	1048	246.00	20272	352.00	5114
41.00	761	146.00	2945	247.00	3780	353.00	3262
44.00	43	147.00	10618	248.00	1407	354.00	4524
45.00	78	148.00	28280	249.00	3356	355.00	1609
46.00	60	149.00	5053	250.00	508	356.00	277
47.00	107	150.00	1458	251.00	1606	358.00	205
48.00	214	151.00	2111	252.00	1728	359.00	461
49.00	523	152.00	1434	253.00	4807	360.00	303
50.00	36520	153.00	6118	255.00	456320	361.00	550
51.00	129064	154.00	5165	256.00	68120	362.00	219
52.00	6002	155.00	12120	257.00	5397	363.00	193
53.00	733	156.00	13350	258.00	36192	365.00	30872
54.00	62	157.00	3318	259.00	5278	366.00	4506
55.00	729	158.00	3317	260.00	1306	367.00	402
56.00	6448	159.00	3009	261.00	973	369.00	293
57.00	15302	160.00	7531	262.00	164	370.00	602
58.00	658	161.00	10379	263.00	281	371.00	947
59.00	164	162.00	2879	264.00	535	372.00	7911
60.00	227	163.00	1429	265.00	13069	373.00	2464
61.00	4122	164.00	977	266.00	1736	374.00	187
62.00	5135	165.00	7676	267.00	555	375.00	156
63.00	16760	166.00	6736	268.00	329	377.00	466
64.00	2178	167.00	48624	269.00	493	378.00	72
65.00	8420	168.00	23120	270.00	706	380.00	72
66.00	430	169.00	3088	271.00	1482	381.00	174
67.00	970	170.00	1245	272.00	720	383.00	2322
69.00	515584	171.00	1484	273.00	15391	384.00	571
70.00	2598	172.00	4473	274.00	36928	385.00	257
71.00	278	173.00	5014	275.00	176256	389.00	134
73.00	4478	174.00	8950	276.00	24792	390.00	1063

Data File: /chem1/nt12.i/20110331.b/tune.b/03311101.d

Date : 31-MAR-2011 20:14

Client ID: DFTPP0331 Instrument: nt12.i

Sample Info: DFTPP0331

Operator: JZ

Column phase: ZB-5msi Column diameter: 0.32

Data File: 03311101.d
Spectrum: Avg. Scans 482-484 (5.66), Background Scan 478
Location of Maximum: 198.00
Number of points: 394

m/z	Y	m/z	Y	m/z	Y	m/z	Y
74.00	52336	175.00	17000	277.00	20608	391.00	613
75.00	82696	176.00	3561	278.00	3839	392.00	675
76.00	29520	177.00	8429	279.00	903	393.00	155
77.00	574208	178.00	1888	280.00	405	394.00	53
78.00	39336	179.00	32192	282.00	611	395.00	78
79.00	35048	180.00	21832	283.00	1994	396.00	156
80.00	28976	181.00	11130	284.00	1528	398.00	61
81.00	40616	182.00	2550	285.00	3123	401.00	473
82.00	9469	183.00	920	286.00	1215	402.00	3429
83.00	9491	184.00	2918	287.00	98	403.00	4444
85.00	6025	185.00	16113	288.00	204	404.00	1400
86.00	7864	186.00	114832	289.00	1493	405.00	246
87.00	4530	187.00	33608	290.00	1150	406.00	85
88.00	456	188.00	4155	291.00	424	407.00	171
89.00	741	189.00	7729	292.00	1282	410.00	338
90.00	359	190.00	1679	293.00	5422	411.00	59
91.00	8697	191.00	3925	294.00	1367	412.00	288
92.00	9722	192.00	10797	295.00	570	413.00	62
93.00	62768	193.00	11404	296.00	72376	414.00	116
94.00	3354	194.00	3574	297.00	11570	415.00	319
95.00	414	195.00	2250	298.00	710	416.00	229
96.00	2725	196.00	23304	299.00	504	417.00	241
98.00	45184	198.00	655488	301.00	960	418.00	258
99.00	34768	199.00	51056	302.00	1550	419.00	24
100.00	2441	200.00	3768	303.00	7568	420.00	98
101.00	18736	201.00	3895	304.00	1736	421.00	3247
102.00	1238	202.00	358	305.00	141	422.00	3938
103.00	6585	203.00	6471	306.00	199	423.00	19888
104.00	13969	204.00	33520	307.00	330	424.00	3955
105.00	10643	205.00	57048	308.00	1058	425.00	780
106.00	3843	206.00	210944	309.00	1110	426.00	619
107.00	148416	207.00	28512	310.00	1005	427.00	477
108.00	22168	208.00	7802	311.00	191	428.00	1065
109.00	832	209.00	2100	312.00	489	429.00	922
110.00	237440	210.00	4845	313.00	1078	430.00	1034

Data File: /chem1/nt12.i/20110331.b/tune.b/03311101.d

Date : 31-MAR-2011 20:14

Client ID: DFTPP0331 Instrument: nt12.i

Sample Info: DFTPP0331

Operator: JZ

Column phase: ZB-5msi Column diameter: 0.32

Data File: 03311101.d
Spectrum: Avg. Scans 482-484 (5.66), Background Scan 478
Location of Maximum: 198.00
Number of points: 394

m/z	Y	m/z	Y	m/z	Y	m/z	Y
111.00	35864	211.00	10197	314.00	2957	431.00	864
112.00	4264	212.00	1707	315.00	7566	432.00	776
113.00	1063	213.00	1107	316.00	4170	433.00	1166
114.00	505	214.00	424	317.00	532	434.00	520
115.00	444	215.00	3179	318.00	603	435.00	2007
116.00	7606	216.00	3532	319.00	289	436.00	1581
117.00	127472	217.00	64840	320.00	625	437.00	1718
118.00	8568	218.00	9360	321.00	2037	438.00	1285
119.00	992	219.00	1436	322.00	1011	439.00	2279
120.00	1205	221.00	31184	323.00	17768	440.00	404
121.00	534	222.00	9561	324.00	2786	441.00	61584
122.00	7775	223.00	14903	325.00	372	442.00	365696
123.00	12511	224.00	122816	326.00	344	443.00	72840
124.00	6616	225.00	27784	327.00	3904	444.00	6371
125.00	4767	226.00	3099	328.00	2526	445.00	677
126.00	473	227.00	60992	329.00	418	448.00	85
127.00	353792	228.00	8680	330.00	240	449.00	114
128.00	29984	229.00	9960	331.00	297	455.00	74
129.00	159488	230.00	1173	332.00	1662	456.00	69
130.00	13978	231.00	4680	333.00	1729	463.00	93
131.00	2437	232.00	831	334.00	13645	467.00	220
132.00	1247	233.00	265	335.00	2611	468.00	93
133.00	289	234.00	4005	336.00	404	474.00	72
134.00	4813	235.00	4166	339.00	357	481.00	103
135.00	12545	236.00	3099	340.00	429	490.00	116
136.00	5676	237.00	4095	341.00	2293	493.00	55
137.00	6839	238.00	280	342.00	839	494.00	62
138.00	686	239.00	2416	343.00	81		
139.00	1502	240.00	1585	344.00	118		

Data File: /chem1/nt12.i/20110331.b/tune.b/03311101.d

Date : 31-MAR-2011 20:14

Client ID: DFTPP0331

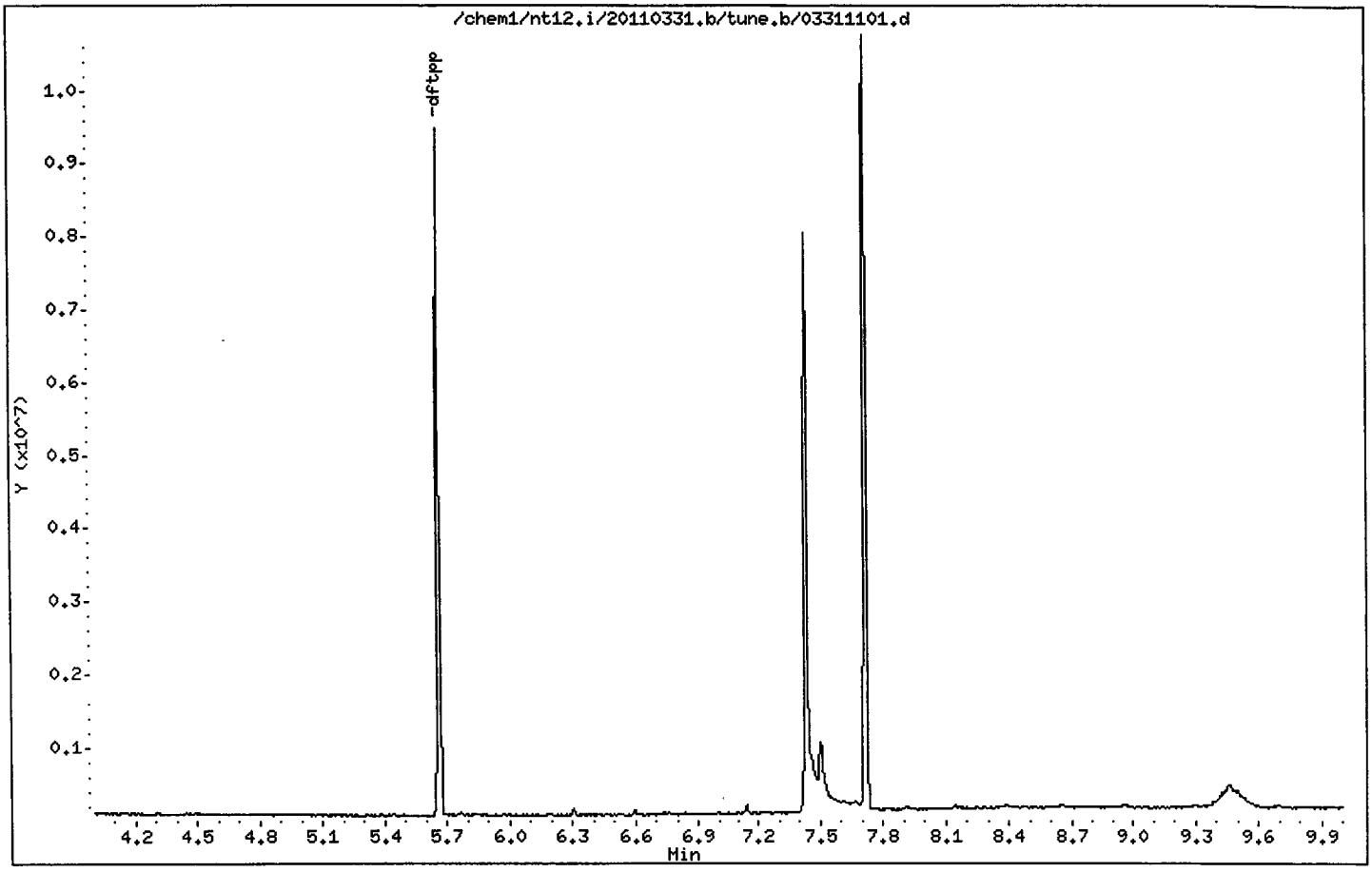
Instrument: nt12.i

Sample Info: DFTPP0331

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem1/nt12.i/20110331.b/ddt.b/03311101.d ARI ID: DDT0331
Method: /chem1/nt12.i/20110331.b/ddt.b/sw846ddt.m Misc: 11-
Analysis Date: 31-MAR-2011 13:17 Instrument: nt12.i

COMPOUND	RT	AREA
Pentachlorophenol	5.774	52518
Benzidine	7.452	816154
4,4'-DDE	----	----
4,4'-DDD	7.527	26312
4,4'-DDT	7.751	412197

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

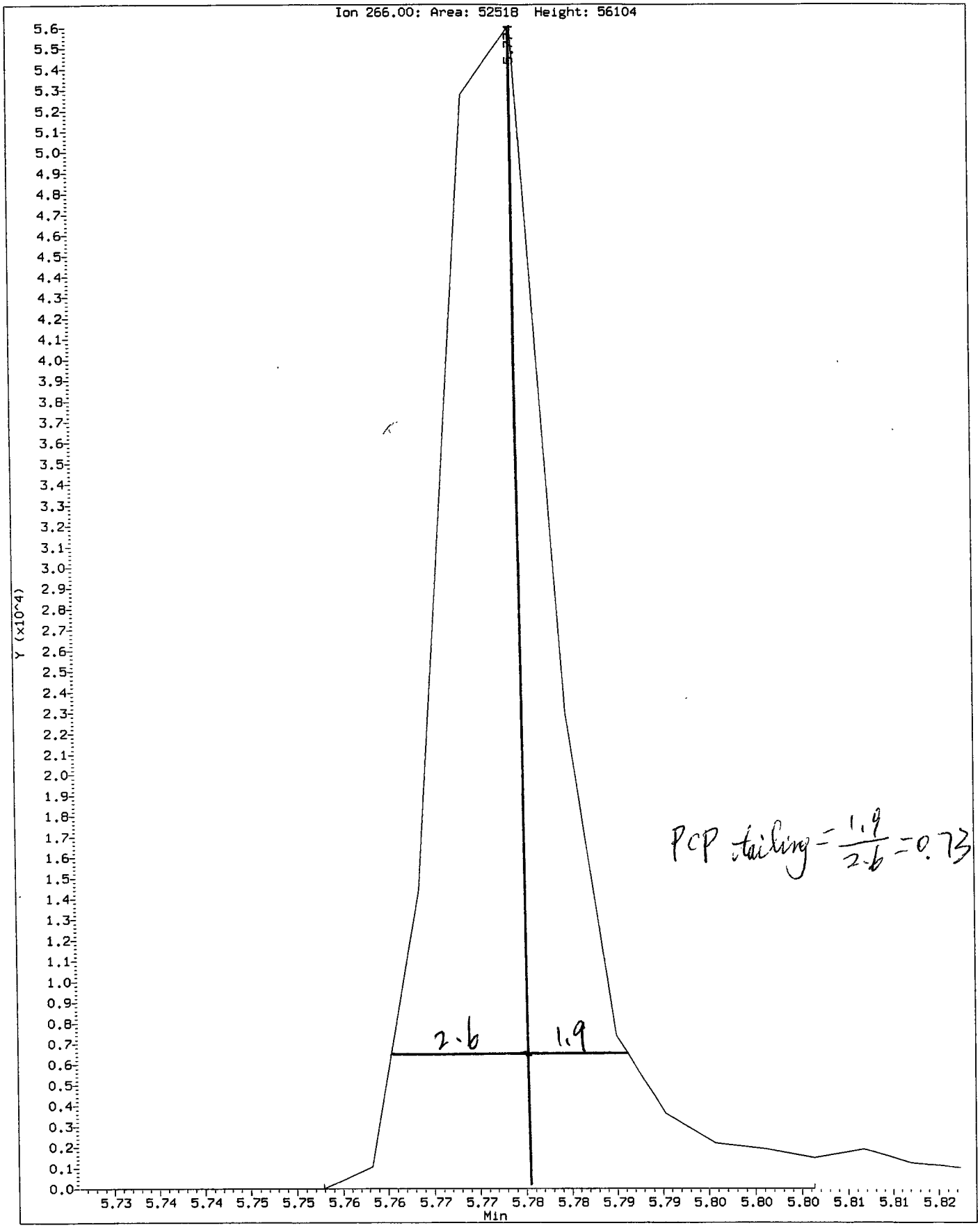
$$\text{DDT Percent Breakdown} = \frac{(0 + 26312) * 100}{(0 + 26312 + 412197)}$$

DDT Percent Breakdown = 6.0 %

ok 04/01/11

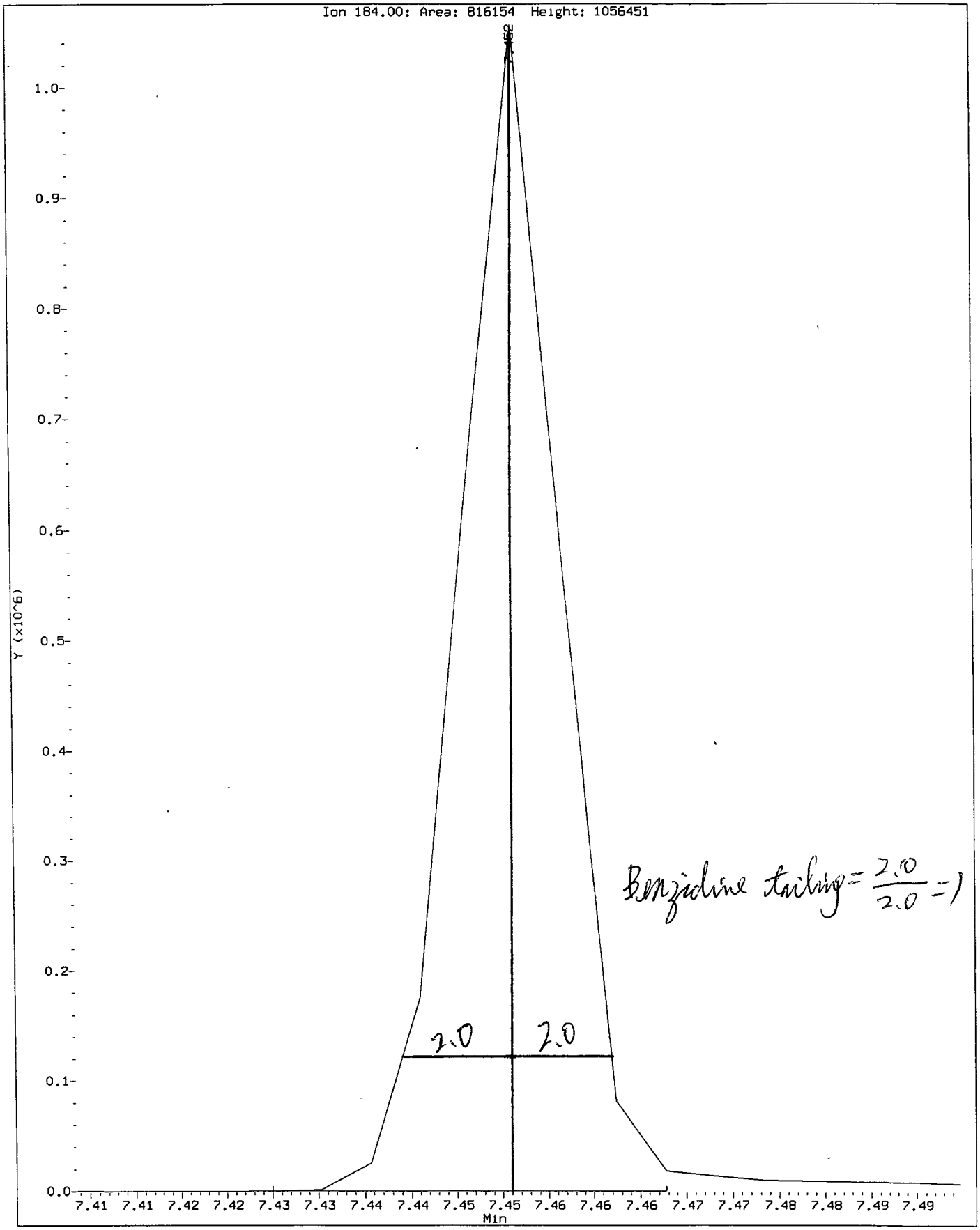
Data File: /chem1/nt12.i/20110331.b/ddt.b/03311101.d
Injection Date: 31-MAR-2011 13:17
Instrument: nt12.i
Client Sample ID: DDT0331

Compound: Pentachlorophenol
CAS Number: 87-86-5



Data File: /chem1/nt12.i/20110331.b/ddt.b/03311101.d
Injection Date: 31-MAR-2011 13:17
Instrument: nt12.i
Client Sample ID: DDT0331

Compound: Benzidine
CAS Number:



SN54 : 00148

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem1/nt12.i/20110331.b/03311103.d
Lab Smp Id: IC010331 Client Smp ID: IC010331
Inj Date : 31-MAR-2011 20:55
Operator : JZ Inst ID: nt12.i
Smp Info : IC010331,
Misc Info : 11-
Comment : 1ul Injection
Method : /chem1/nt12.i/20110331.b/SIMPNA0331.m
Meth Date : 01-Apr-2011 17:46 jianqing Quant Type: ISTD
Cal Date : 31-MAR-2011 22:47 Cal File: 03311107.d
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

04/01/11

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 27 Naphthalene-d8	136	4.917	4.917	(1.000)	382584	2.00000	
28 Naphthalene	128	4.945	4.945	(1.006)	19700	0.10000	0.1066
$ 190 2-Methylnaphthalene-d10	152	5.655	5.655	(1.150)	13809	0.10000	0.1181
32 2-Methylnaphthalene	141	5.700	5.700	(1.159)	12073	0.10000	0.1176
105 1-methylnaphthalene	141	5.889	5.892	(1.198)	13974	0.10000	0.1279
40 Acenaphthylene	152	7.025	7.025	(0.981)	22074	0.10000	0.1123
* 42 Acenaphthene-d10	164	7.161	7.164	(1.000)	224662	2.00000	
44 Acenaphthene	153	7.211	7.208	(1.007)	14906	0.10000	0.1217
46 Dibenzofuran	168	7.350	7.353	(1.026)	19734	0.10000	0.1185
49 Fluorene	166	7.804	7.808	(1.090)	15973	0.10000	0.1165
* 59 Phenanthrene-d10	188	9.098	9.098	(1.000)	370050	2.00000	
60 Phenanthrene	178	9.130	9.133	(1.003)	23257	0.10000	0.1191
61 Anthracene	178	9.164	9.164	(1.007)	22926	0.10000	0.1169
64 Fluoranthene	202	10.821	10.827	(1.189)	24809	0.10000	0.1168
65 Pyrene	202	11.298	11.301	(0.818)	25492	0.10000	0.1171
68 Benzo(a)anthracene	228	13.686	13.693	(0.991)	22501	0.10000	0.1158
* 69 Chrysene-d12	240	13.806	13.806	(1.000)	404335	2.00000	
71 Chrysene	228	13.873	13.873	(1.005)	21911	0.10000	0.1153
74 Benzo(b)fluoranthene	252	16.302	16.312	(0.934)	21792	0.10000	0.1090
75 Benzo(k)fluoranthene	252	16.359	16.369	(0.937)	25137	0.10000	0.1198
188 Benzo(j)fluoranthene	252	16.425	16.444	(0.941)	24420	0.10000	0.1218
76 Benzo(a)pyrene	252	17.255	17.268	(0.988)	22219	0.10000	0.1210
* 77 Perylene-d12	264	17.464	17.473	(1.000)	354686	2.00000	
78 Indeno(1,2,3-cd)pyrene	276	19.802	19.833	(1.134)	24381	0.10000	0.1092
$ 191 Dibenzo(a,h)anthracene-d14	292	19.729	19.751	(1.130)	19561	0.10000	0.1175
79 Dibenzo(a,h)anthracene	278	19.818	19.840	(1.135)	22181	0.10000	0.1215
80 Benzo(g,h,i)perylene	276	20.648	20.676	(1.182)	24243	0.10000	0.1224

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
99 Perylene	252	17.536	17.536	(1.004)	18544	0.10000	0.1194

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: 03311103.d
Lab Smp Id: IC010331
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem1/nt12.i/20110331.b/SIMPNA0331.m
Misc Info: 11-

Calibration Date: 31-MAR-2011
Calibration Time: 20:27
Client Smp ID: IC010331
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	494112	247056	988224	382584	-22.57
42 Acenaphthene-d10	280105	140052	560210	224662	-19.79
59 Phenanthrene-d10	461353	230676	922706	370050	-19.79
69 Chrysene-d12	503160	251580	1006320	404335	-19.64
77 Perylene-d12	442215	221108	884430	354686	-19.79

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	4.92	4.42	5.42	4.92	-0.06
42 Acenaphthene-d10	7.16	6.66	7.66	7.16	-0.04
59 Phenanthrene-d10	9.10	8.60	9.60	9.10	0.00
69 Chrysene-d12	13.80	13.30	14.30	13.81	0.02
77 Perylene-d12	17.47	16.97	17.97	17.46	-0.04

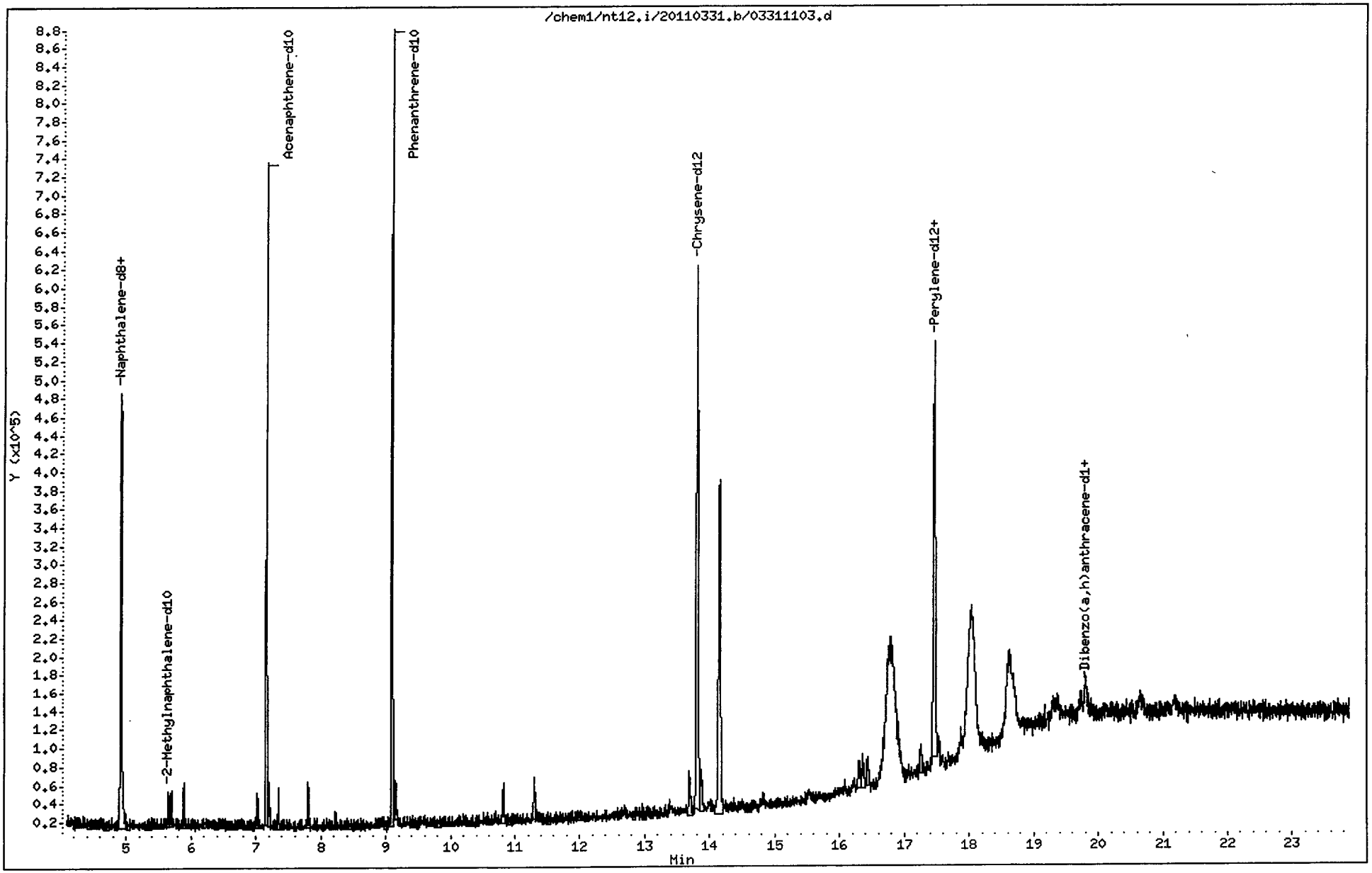
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20110331.b/03311103.d
Date : 31-MAR-2011 20:55
Client ID: IC010331
Sample Info: IC010331,

Instrument: nt12.i

Operator: JZ
Column diameter: 0.32

Column phase: ZB35



SN54 : 00152

CO-ELUTION SUMMARY FOR FILE - 03311103.d

Lab ID: IC010331, Method: SIMPNA0331.m, Instrument: nt12.i, Date: 31-MAR-2011

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem1/nt12.i/20110331.b/03311104.d
Lab Smp Id: IC050331 Client Smp ID: IC050331
Inj Date : 31-MAR-2011 21:23
Operator : JZ Inst ID: nt12.i
Smp Info : IC050331,
Misc Info : 11-
Comment : 1ul Injection
Method : /chem1/nt12.i/20110331.b/SIMPNA0331.m
Meth Date : 01-Apr-2011 17:46 jianqing Quant Type: ISTD
Cal Date : 31-MAR-2011 22:47 Cal File: 03311107.d
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

04/01/11

AMOUNTS

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 27 Naphthalene-d8	136	4.917	4.917	(1.000)	399629	2.00000	
28 Naphthalene	128	4.949	4.945	(1.006)	104132	0.50000	0.5396
$ 190 2-Methylnaphthalene-d10	152	5.655	5.655	(1.150)	65979	0.50000	0.5400
32 2-Methylnaphthalene	141	5.700	5.700	(1.159)	57513	0.50000	0.5363
105 1-methylnaphthalene	141	5.892	5.892	(1.198)	60865	0.50000	0.5334
40 Acenaphthylene	152	7.025	7.025	(0.981)	106123	0 50000	0.5270
* 42 Acenaphthene-d10	164	7.161	7.164	(1.000)	230116	2.00000	
44 Acenaphthene	153	7.208	7.208	(1.007)	63191	0.50000	0.5038
46 Dibenzofuran	168	7.353	7.353	(1.027)	89653	0.50000	0.5257
49 Fluorene	166	7.808	7.808	(1.090)	71498	0.50000	0.5092
* 59 Phenanthrene-d10	188	9.098	9.098	(1.000)	380150	2.00000	
60 Phenanthrene	178	9.130	9.133	(1.003)	104524	0.50000	0.5210
61 Anthracene	178	9.164	9.164	(1.007)	104184	0.50000	0.5172
64 Fluoranthene	202	10.827	10.827	(1.190)	115111	0.50000	0.5276
65 Pyrene	202	11.294	11.301	(0.818)	116889	0.50000	0.5128
68 Benzo(a)anthracene	228	13.683	13.693	(0.991)	100173	0.50000	0.4922(M)
* 69 Chrysene-d12	240	13.803	13.806	(1.000)	423330	2.00000	
71 Chrysene	228	13.866	13.873	(1.005)	101086	0.50000	0.5082
74 Benzo(b)fluoranthene	252	16.299	16.312	(0.933)	105384	0.50000	0.5054
75 Benzo(k)fluoranthene	252	16.359	16.369	(0.937)	111647	0.50000	0.5105
188 Benzo(j)fluoranthene	252	16.429	16.444	(0.941)	105384	0.50000	0.5043
76 Benzo(a)pyrene	252	17.255	17.268	(0.988)	93384	0.50000	0.4878(M)
* 77 Perylene-d12	264	17.464	17.473	(1.000)	369841	2.00000	
78 Indeno(1,2,3-cd)pyrene	276	19.802	19.833	(1.134)	121347	0.50000	0.5213
$ 191 Dibenzo(a,h)anthracene-d14	292	19.733	19.751	(1.130)	87297	0.50000	0.5030
79 Dibenzo(a,h)anthracene	278	19.821	19.840	(1.135)	86728	0.50000	0.4556(M)
80 Benzo(g,h,i)perylene	276	20.663	20.676	(1.183)	104467	0.50000	0.5060

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
99 Perylene	252	17.536	17.536	(1.004)	81801	0.50000	0.5053

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: 03311104.d
Lab Smp Id: IC050331
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem1/nt12.i/20110331.b/SIMPNA0331.m
Misc Info: 11-

Calibration Date: 31-MAR-2011
Calibration Time: 20:27
Client Smp ID: IC050331
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	494112	247056	988224	399629	-19.12
42 Acenaphthene-d10	280105	140052	560210	230116	-17.85
59 Phenanthrene-d10	461353	230676	922706	380150	-17.60
69 Chrysene-d12	503160	251580	1006320	423330	-15.87
77 Perylene-d12	442215	221108	884430	369841	-16.37

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	4.92	4.42	5.42	4.92	-0.06
42 Acenaphthene-d10	7.16	6.66	7.66	7.16	-0.04
59 Phenanthrene-d10	9.10	8.60	9.60	9.10	0.00
69 Chrysene-d12	13.80	13.30	14.30	13.80	0.00
77 Perylene-d12	17.47	16.97	17.97	17.46	-0.04

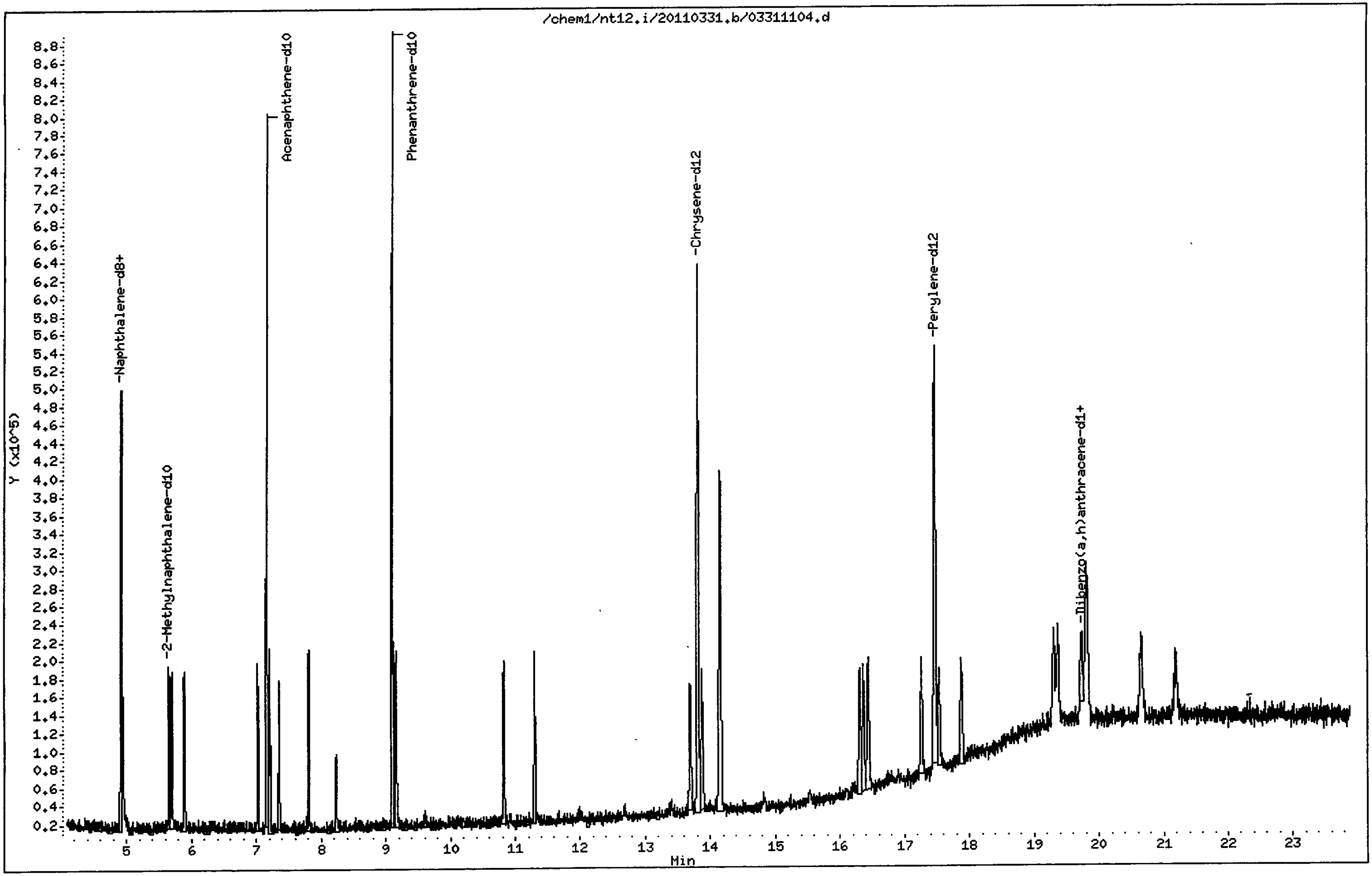
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20110331.b/03311104.d
Date : 31-MAR-2011 21:23
Client ID: IC050331
Sample Info: IC050331,

Column phase: ZB35

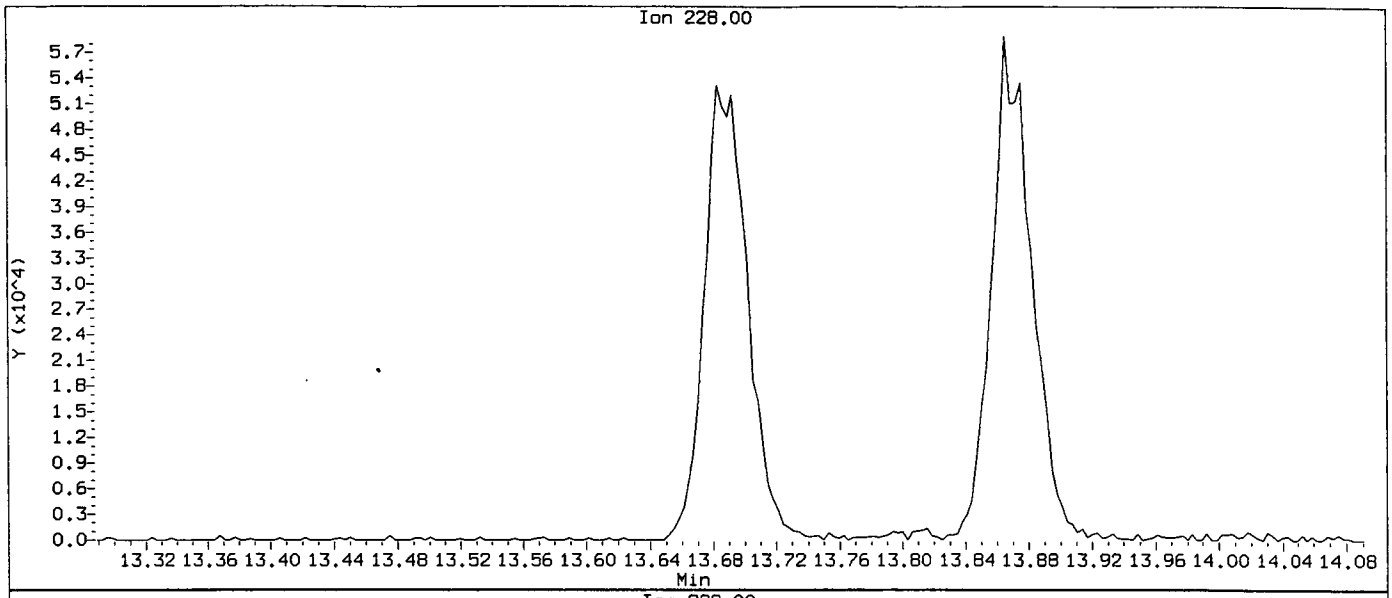
Instrument: nt12.i

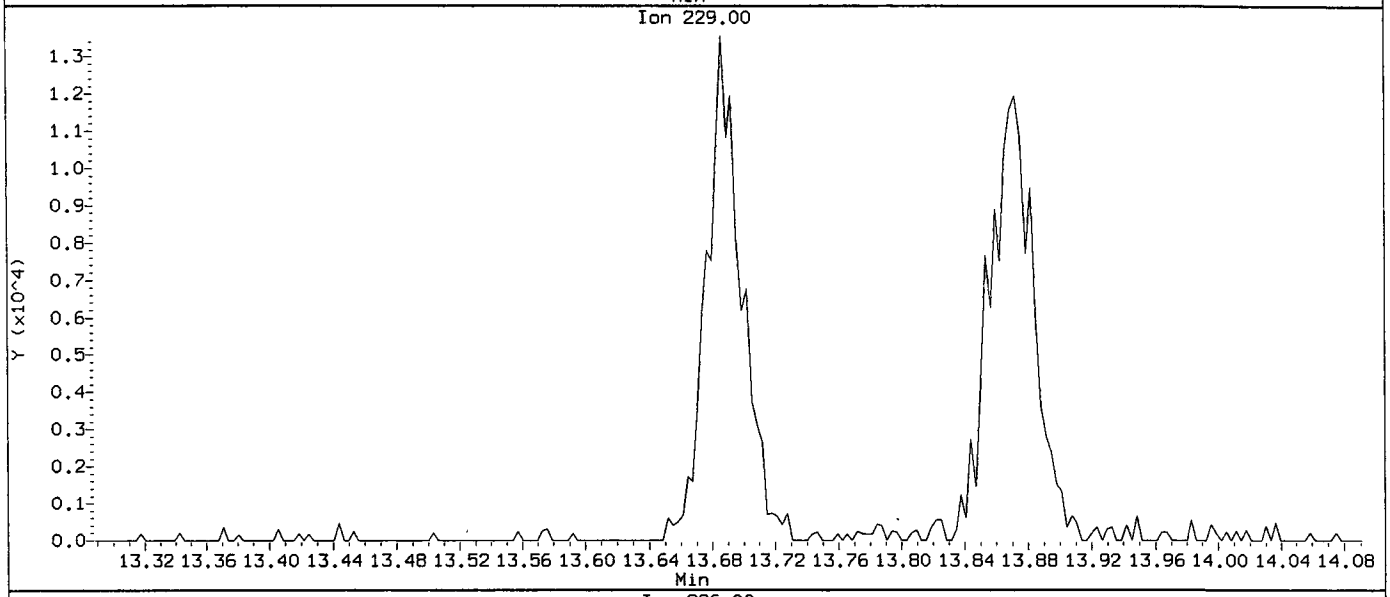
Operator: JZ
Column diameter: 0.32

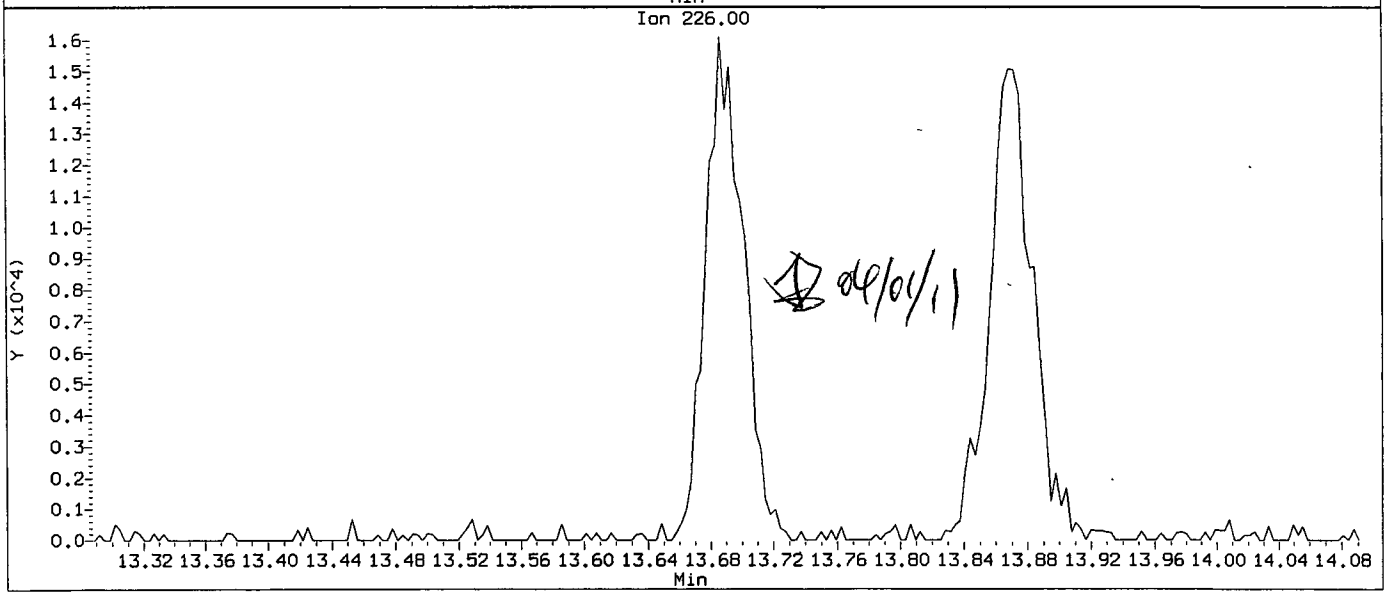


Data File: /chem1/nt12.i/20110331.b/03311104.d
Injection Date: 31-MAR-2011 21:23
Instrument: nt12.i
Client Sample ID: IC050331

Compound: Benzo(a)anthracene
CAS Number: 56-55-3





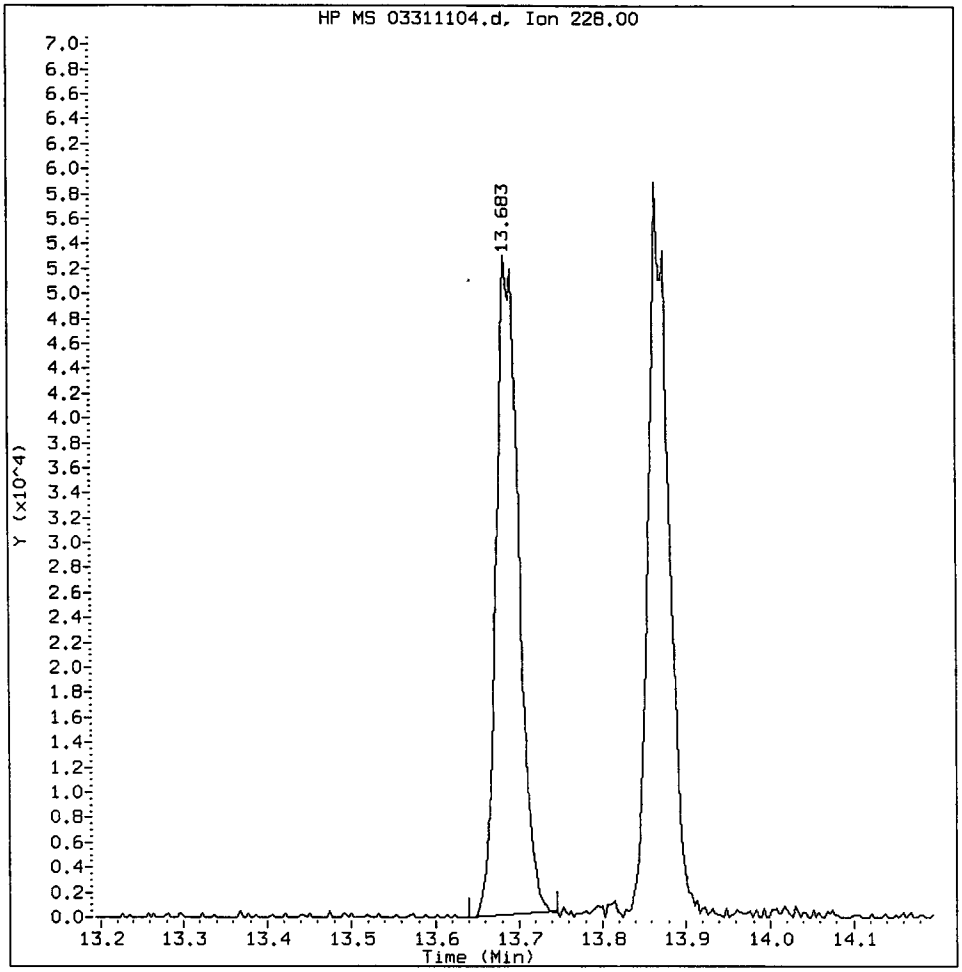


04/04/11

SN54 : 00158

IC050331, /chem1/nt12.i/20110331.b/03311104.d

Benzo(a)anthracene Amount: 0.49 Area: 100173



MANUAL INTEGRATION for Benzo(a)anthracene

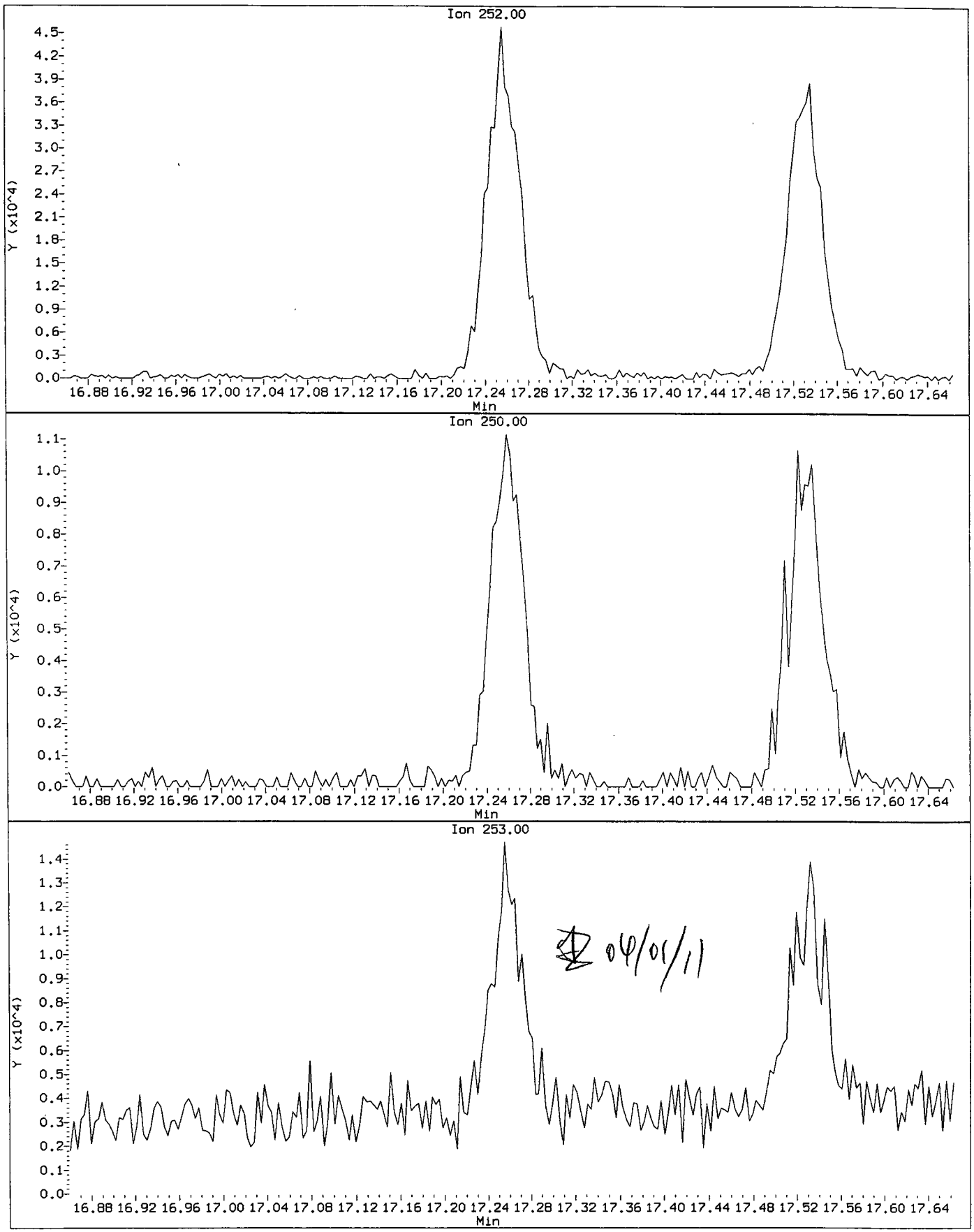
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: 04/04/11

Data File: /chem1/nt12.i/20110331.b/03311104.d
Injection Date: 31-MAR-2011 21:23
Instrument: nt12.i
Client Sample ID: IC050331

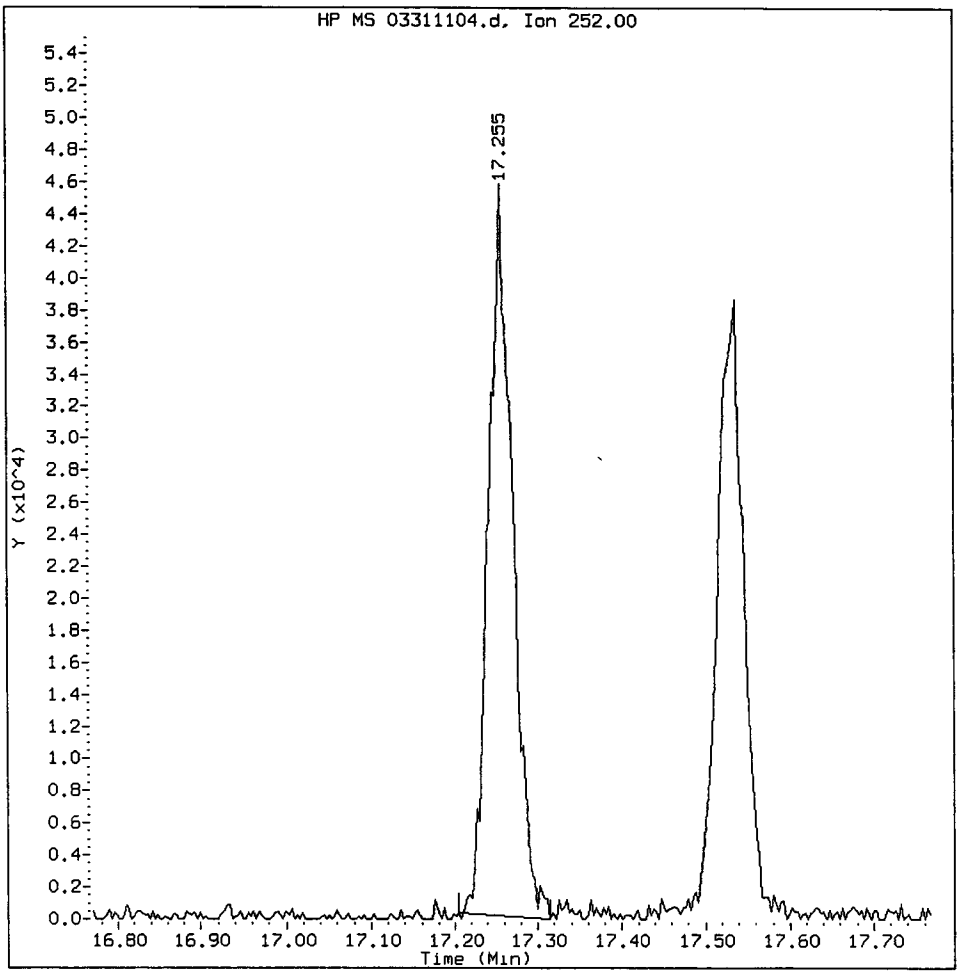
Compound: Benzo(a)pyrene
CAS Number: 50-32-8



04/01/11

IC050331, /chem1/nt12.i/20110331.b/03311104.d

Benzo(a)pyrene Amount: 0.49 Area: 93384



MANUAL INTEGRATION for Benzo(a)pyrene

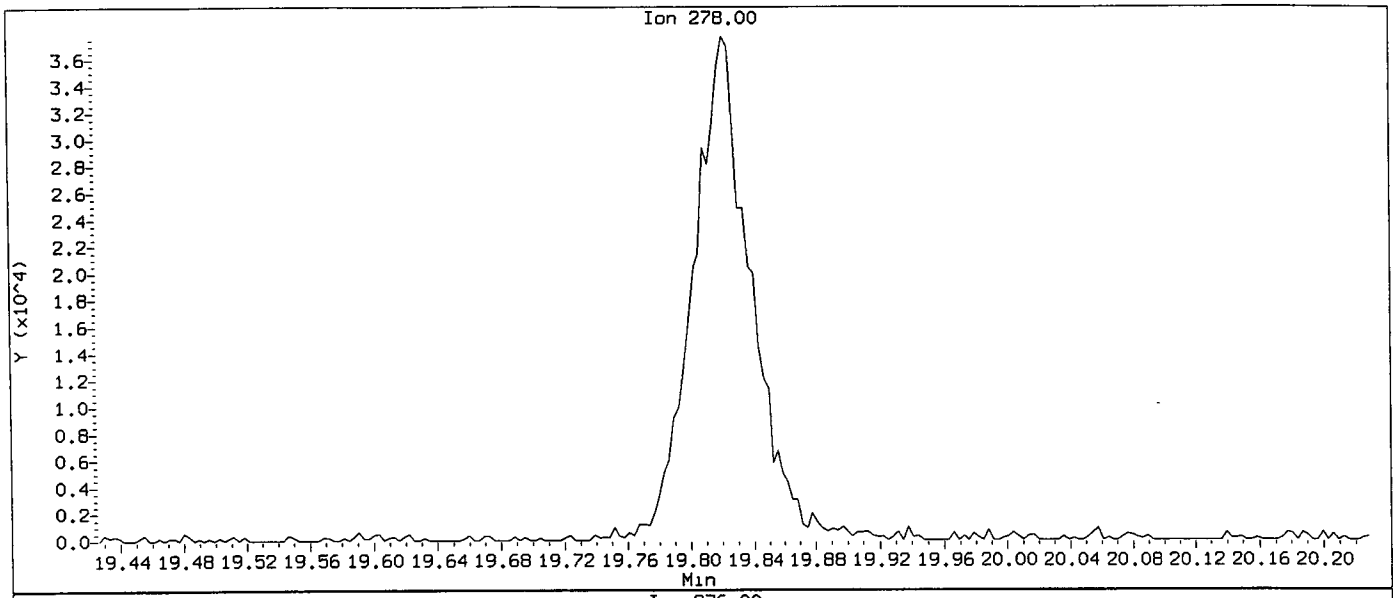
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

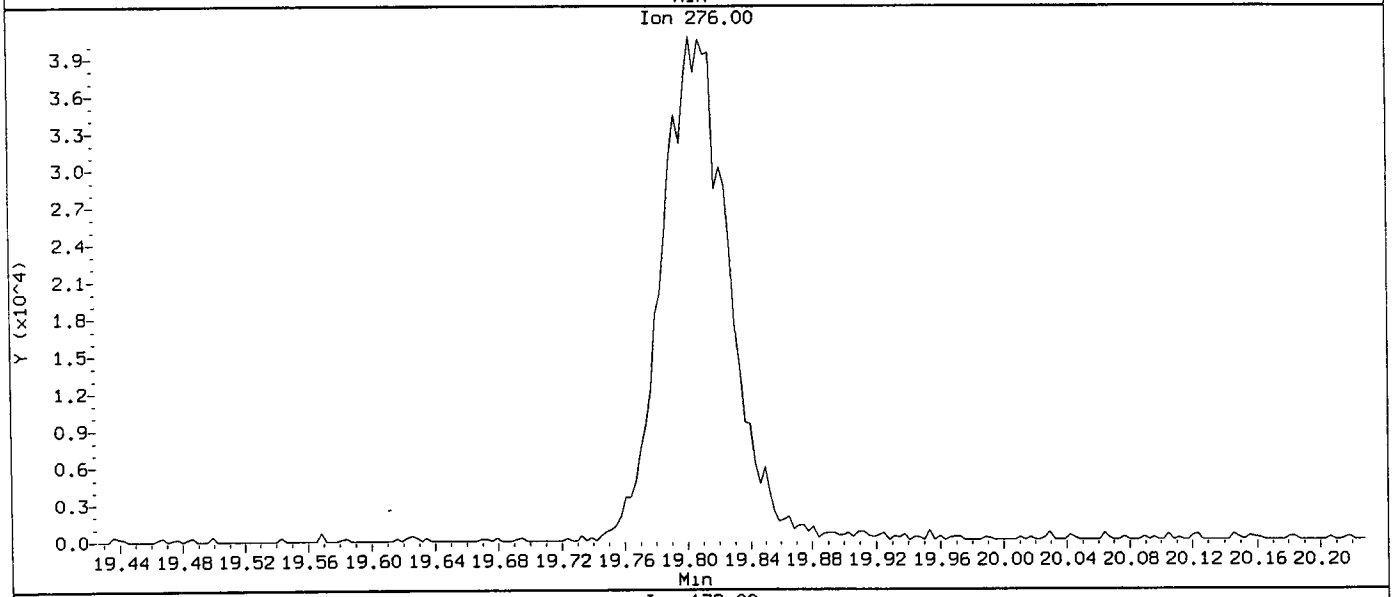
5. Other _____

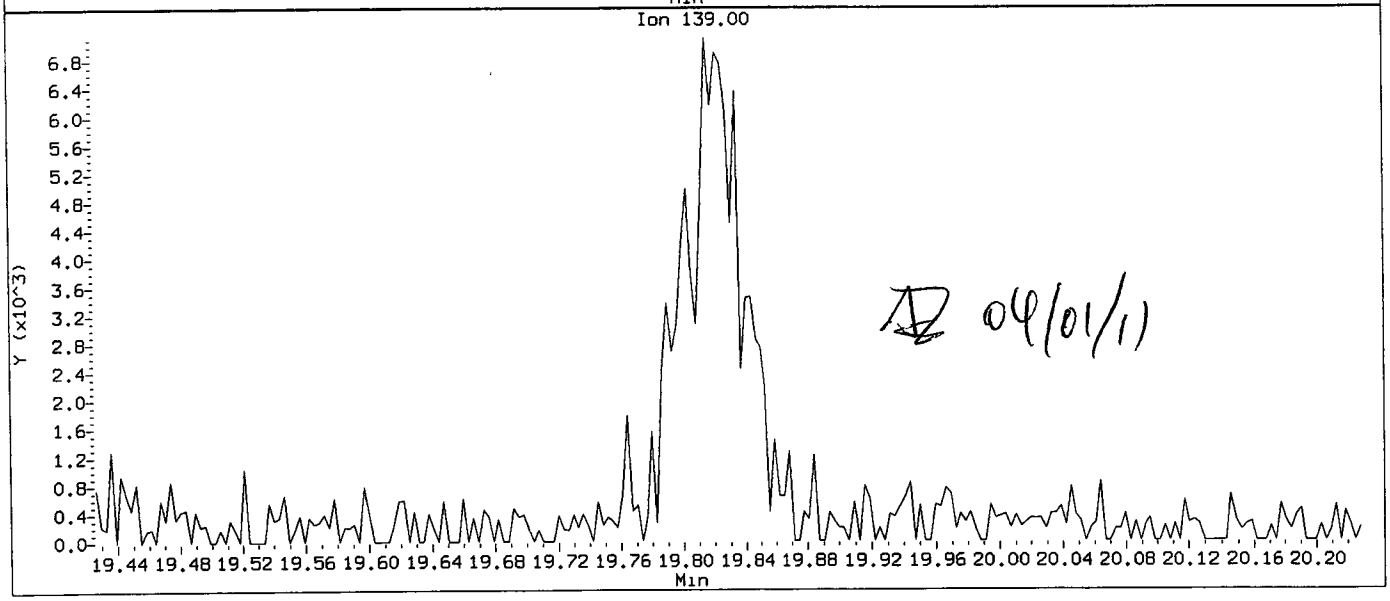
Analyst: _____ Date: 04/01/11

Data File: /chem1/nt12.i/20110331.b/03311104.d
Injection Date: 31-MAR-2011 21:23
Instrument: nt12.i
Client Sample ID: IC050331

Compound: Dibenzo(a,h)anthracene
CAS Number: 53-70-3



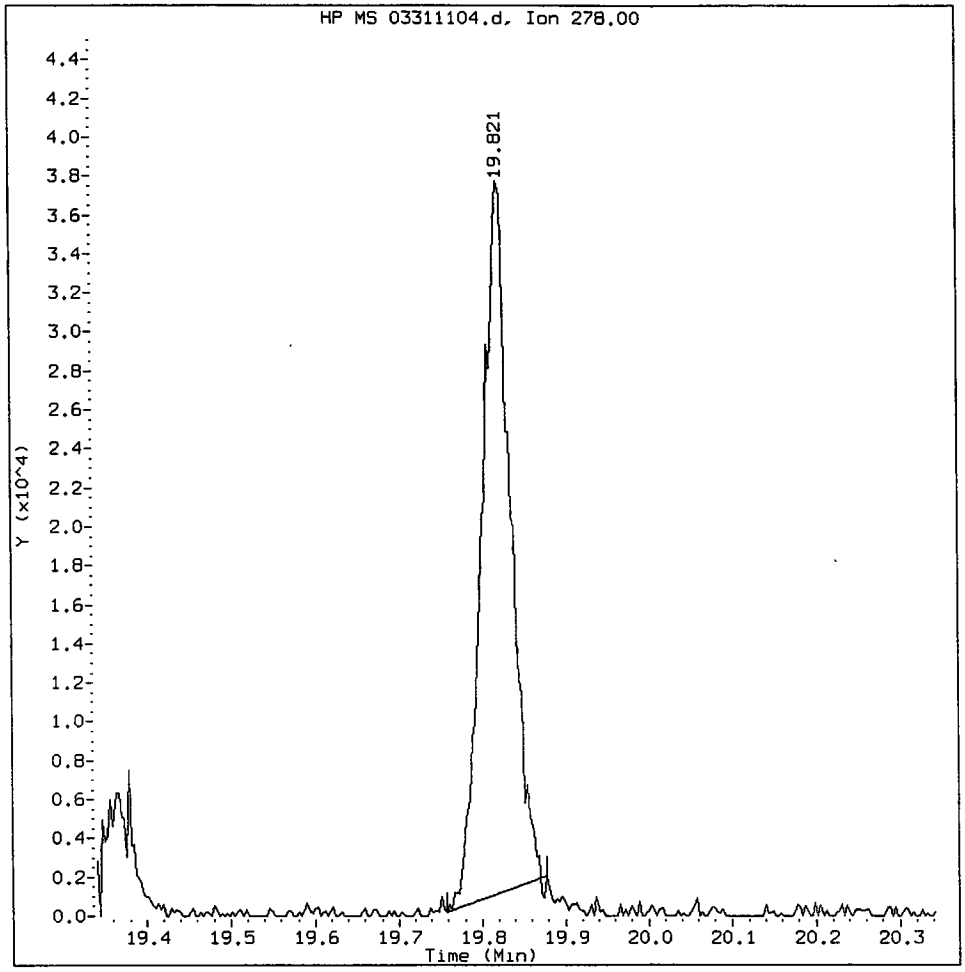




AD 04/01/11

IC050331, /chem1/nt12.i/20110331.b/03311104.d

Dibenzo(a,h)anthracene Amount: 0.46 Area: 86728



MANUAL INTEGRATION for Dibenzo(a,h)anthracene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: [signature] Date: 04/01/11

CO-ELUTION SUMMARY FOR FILE - 03311104.d

Lab ID: IC050331, Method: SIMPNA0331.m, Instrument: nt12.i, Date: 31-MAR-2011

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem1/nt12.i/20110331.b/03311105.d
Lab Smp Id: IC10331 Client Smp ID: IC10331
Inj Date : 31-MAR-2011 21:51
Operator : JZ Inst ID: nt12.i
Smp Info : IC10331,
Misc Info : 11-
Comment : 1ul Injection
Method : /chem1/nt12.i/20110331.b/SIMPNA0331.m
Meth Date : 01-Apr-2011 17:46 jianqing Quant Type: ISTD
Cal Date : 31-MAR-2011 22:47 Cal File: 03311107.d
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

04/01/11

AMOUNTS

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 27 Naphthalene-d8	136	4.920	4.917	(1.000)	447156	2.00000	
28 Naphthalene	128	4.945	4.945	(1.005)	215855	1.00000	0.9997
$ 190 2-Methylnaphthalene-d10	152	5.655	5.655	(1.149)	138509	1.00000	1.013
32 2-Methylnaphthalene	141	5.696	5.700	(1.158)	121414	1.00000	1.012
105 1-methylnaphthalene	141	5.892	5.892	(1.198)	126734	1.00000	0.9925
40 Acenaphthylene	152	7.025	7.025	(0.981)	226770	1.00000	1.021
* 42 Acenaphthene-d10	164	7.164	7.164	(1.000)	253822	2.00000	
44 Acenaphthene	153	7.208	7.208	(1.006)	139508	1.00000	1.008
46 Dibenzofuran	168	7.353	7.353	(1.026)	188297	1.00000	1.001
49 Fluorene	166	7.807	7.808	(1.090)	155567	1.00000	1.004
* 59 Phenanthrene-d10	188	9.098	9.098	(1.000)	425121	2.00000	
60 Phenanthrene	178	9.133	9.133	(1.004)	225236	1.00000	1.004
61 Anthracene	178	9.164	9.164	(1.007)	225493	1.00000	1.001
64 Fluoranthene	202	10.824	10.827	(1.190)	242321	1.00000	0.9932
65 Pyrene	202	11.298	11.301	(0.818)	248242	1.00000	0.9992
68 Benzo(a)anthracene	228	13.689	13.693	(0.992)	217524	1.00000	0.9806
* 69 Chrysene-d12	240	13.803	13.806	(1.000)	461408	2.00000	
71 Chrysene	228	13.872	13.873	(1.005)	215600	1.00000	0.9945
74 Benzo(b)fluoranthene	252	16.302	16.312	(0.933)	240884	1.00000	1.017
75 Benzo(k)fluoranthene	252	16.359	16.369	(0.937)	241536	1.00000	0.9721
188 Benzo(j)fluoranthene	252	16.432	16.444	(0.941)	228216	1.00000	0.9612
76 Benzo(a)pyrene	252	17.252	17.268	(0.988)	209214	1.00000	0.9620
* 77 Perylene-d12	264	17.467	17.473	(1.000)	420159	2.00000	
78 Indeno(1,2,3-cd)pyrene	276	19.799	19.833	(1.133)	256435	1.00000	0.9697
$ 191 Dibenzo(a,h)anthracene-d14	292	19.729	19.751	(1.130)	186714	1.00000	0.9470
79 Dibenzo(a,h)anthracene	278	19.821	19.840	(1.135)	208586	1.00000	0.9645
80 Benzo(g,h,i)perylene	276	20.654	20.676	(1.182)	219349	1.00000	0.9352

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
99 Perylene	252	17.530	17.536	(1.004)	179605	1.00000	0.9765

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: 03311105.d
Lab Smp Id: IC10331
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem1/nt12.i/20110331.b/SIMPNA0331.m
Misc Info: 11-

Calibration Date: 31-MAR-2011
Calibration Time: 20:27
Client Smp ID: IC10331
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	494112	247056	988224	447156	-9.50
42 Acenaphthene-d10	280105	140052	560210	253822	-9.38
59 Phenanthrene-d10	461353	230676	922706	425121	-7.85
69 Chrysene-d12	503160	251580	1006320	461408	-8.30
77 Perylene-d12	442215	221108	884430	420159	-4.99

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	4.92	4.42	5.42	4.92	0.00
42 Acenaphthene-d10	7.16	6.66	7.66	7.16	0.00
59 Phenanthrene-d10	9.10	8.60	9.60	9.10	0.00
69 Chrysene-d12	13.80	13.30	14.30	13.80	0.00
77 Perylene-d12	17.47	16.97	17.97	17.47	-0.02

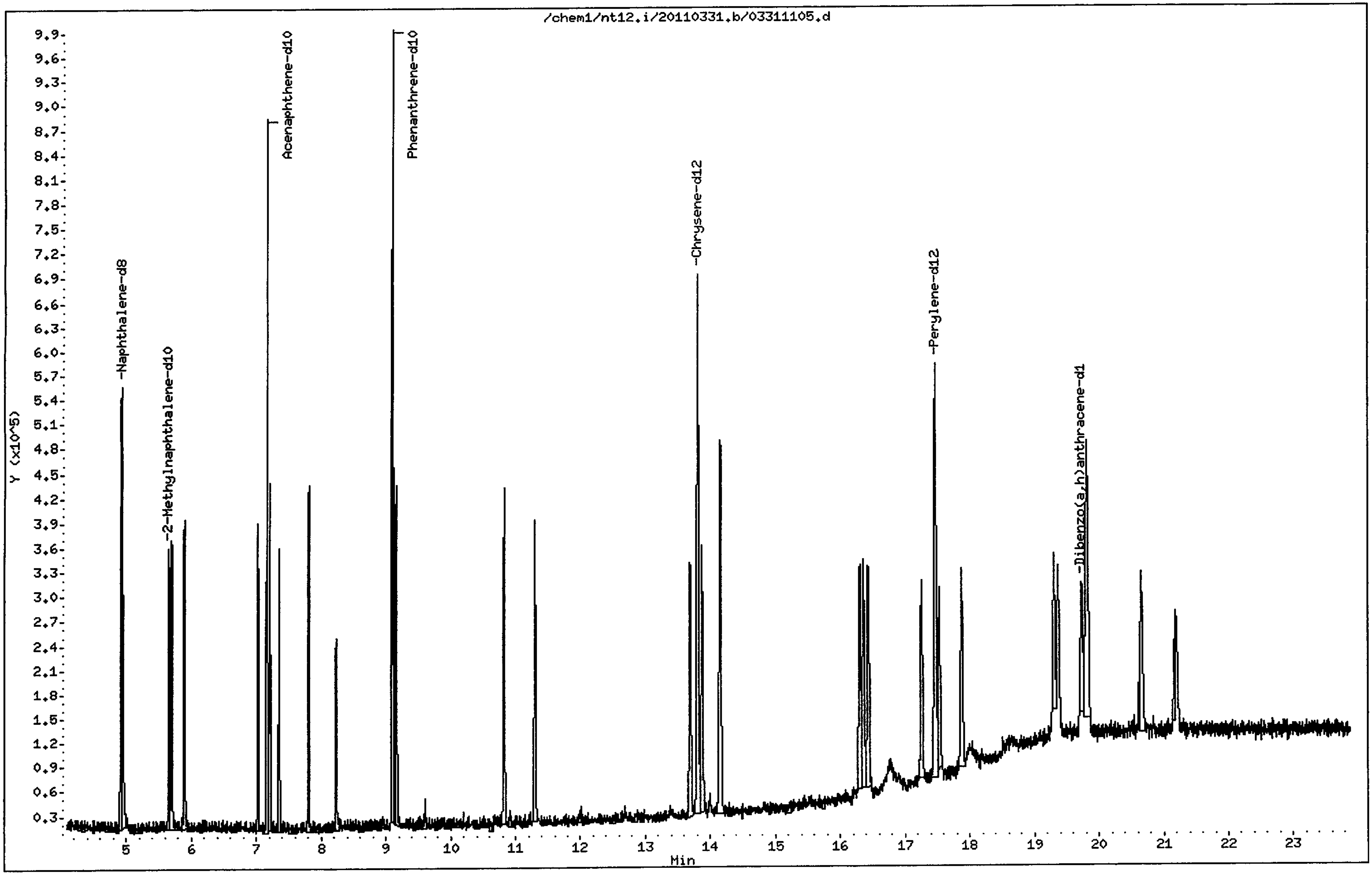
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20110331.b/03311105.d
Date : 31-MAR-2011 21:51
Client ID: IC10331
Sample Info: IC10331,

Column phase: ZB35

Instrument: nt12.i

Operator: JZ
Column diameter: 0.32



SN54 : 00168

CO-ELUTION SUMMARY FOR FILE - 03311105.d

Lab ID: IC10331, Method: SIMPNA0331.m, Instrument: nt12.i, Date: 31-MAR-2011

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem1/nt12.i/20110331.b/03311102.d
Lab Smp Id: IC0250331 Client Smp ID: IC0250331
Inj Date : 31-MAR-2011 20:27
Operator : JZ Inst ID: nt12.i
Smp Info : IC0250331
Misc Info : 11-
Comment : 1ul Injection
Method : /chem1/nt12.i/20110331.b/SIMPNA0331.m
Meth Date : 01-Apr-2011 17:46 jianqing Quant Type: ISTD
Cal Date : 31-MAR-2011 22:47 Cal File: 03311107.d
Als bottle: 2 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

04/01/11

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 27 Naphthalene-d8	136	4.920	4.917	(1.000)	494112	2.00000	
28 Naphthalene	128	4.945	4.945	(1.005)	609116	2.50000	2.553
$ 190 2-Methylnaphthalene-d10	152	5.655	5.655	(1.149)	364043	2.50000	2.410
32 2-Methylnaphthalene	141	5.700	5.700	(1.158)	323517	2.50000	2.440
105 1-methylnaphthalene	141	5.892	5.892	(1.198)	335266	2.50000	2.376
40 Acenaphthylene	152	7.025	7.025	(0.981)	592188	2.50000	2.416
* 42 Acenaphthene-d10	164	7.164	7.164	(1.000)	280105	2.00000	
44 Acenaphthene	153	7.208	7.208	(1.006)	360113	2.50000	2.359
46 Dibenzofuran	168	7.353	7.353	(1.026)	494475	2.50000	2.382
49 Fluorene	166	7.808	7.808	(1.090)	409605	2.50000	2.397
* 59 Phenanthrene-d10	188	9.098	9.098	(1.000)	461353	2.00000	
60 Phenanthrene	178	9.133	9.133	(1.004)	577350	2.50000	2.371
61 Anthracene	178	9.164	9.164	(1.007)	611931	2.50000	2.503
64 Fluoranthene	202	10.827	10.827	(1.190)	638608	2.50000	2.412
65 Pyrene	202	11.301	11.301	(0.819)	648018	2.50000	2.392
68 Benzo(a)anthracene	228	13.690	13.693	(0.992)	588425	2.50000	2.433
* 69 Chrysene-d12	240	13.803	13.806	(1.000)	503160	2.00000	
71 Chrysene	228	13.873	13.873	(1.005)	567061	2.50000	2.399
74 Benzo(b)fluoranthene	252	16.306	16.312	(0.933)	603897	2.50000	2.422
75 Benzo(k)fluoranthene	252	16.362	16.369	(0.937)	626194	2.50000	2.395
188 Benzo(j)fluoranthene	252	16.435	16.444	(0.941)	598489	2.50000	2.395
76 Benzo(a)pyrene	252	17.262	17.268	(0.988)	549027	2.50000	2.399
* 77 Perylene-d12	264	17.470	17.473	(1.000)	442215	2.00000	
78 Indeno(1,2,3-cd)pyrene	276	19.818	19.833	(1.134)	666802	2.50000	2.396
$ 191 Dibenzo(a,h)anthracene-d14	292	19.745	19.751	(1.130)	498072	2.50000	2.400
79 Dibenzo(a,h)anthracene	278	19.827	19.840	(1.135)	555306	2.50000	2.440
80 Benzo(g,h,i)perylene	276	20.670	20.676	(1.183)	582882	2.50000	2.361

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
99 Perylene	252	17.536	17.536	(1.004)	462859	2.50000	2.391

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: 03311102.d
Lab Smp Id: IC0250331
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem1/nt12.i/20110331.b/SIMPNA0331.m
Misc Info: 11-

Calibration Date: 31-MAR-2011
Calibration Time: 20:27
Client Smp ID: IC0250331
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

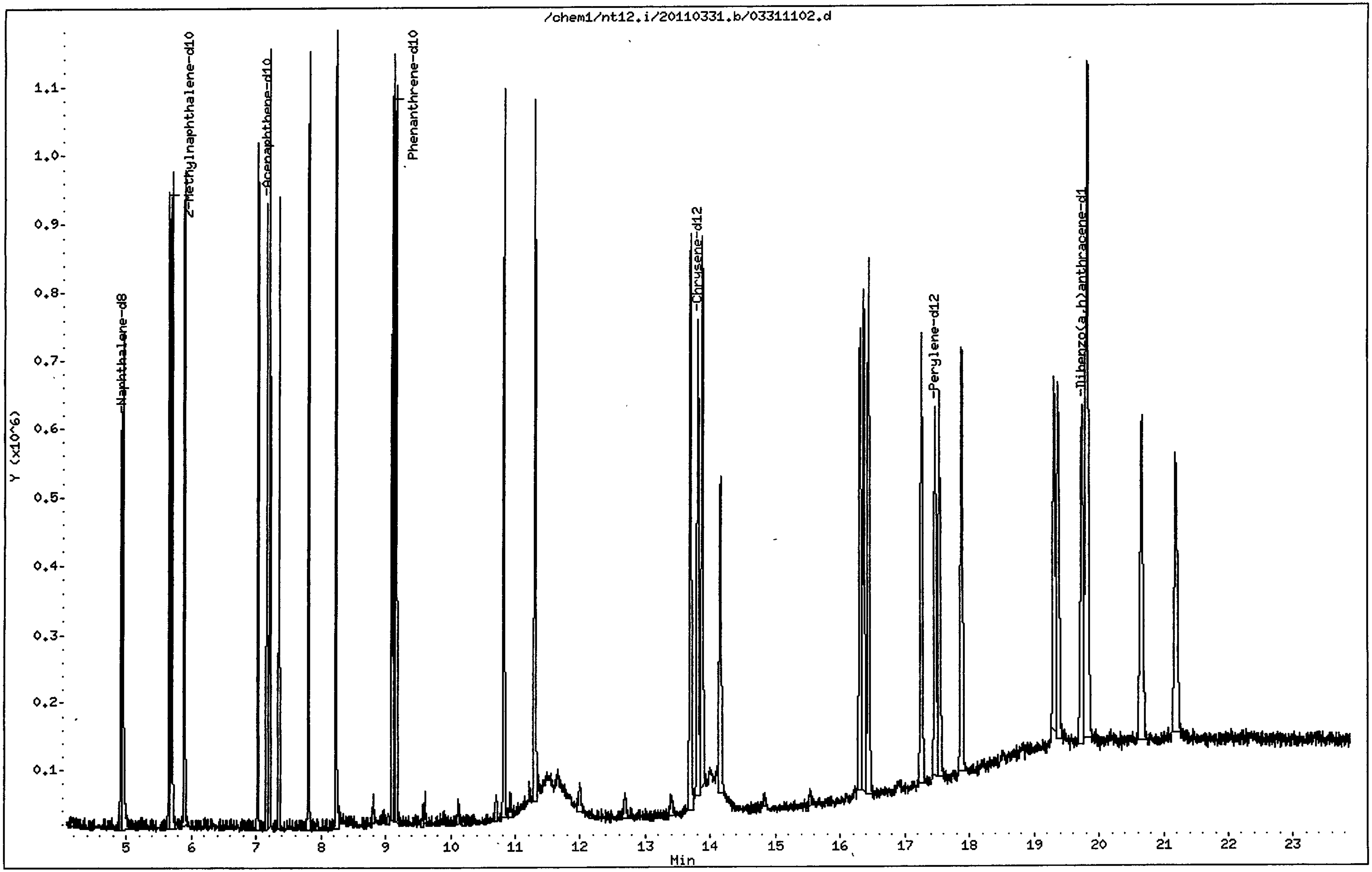
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	494112	247056	988224	494112	0.00
42 Acenaphthene-d10	280105	140052	560210	280105	0.00
59 Phenanthrene-d10	461353	230676	922706	461353	0.00
69 Chrysene-d12	503160	251580	1006320	503160	0.00
77 Perylene-d12	442215	221108	884430	442215	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	4.92	4.42	5.42	4.92	0.00
42 Acenaphthene-d10	7.16	6.66	7.66	7.16	0.00
59 Phenanthrene-d10	9.10	8.60	9.60	9.10	0.00
69 Chrysene-d12	13.80	13.30	14.30	13.80	0.00
77 Perylene-d12	17.47	16.97	17.97	17.47	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20110331.b/03311102.d
Date : 31-MAR-2011 20:27
Client ID: IC0250331
Sample Info: IC0250331
Column phase: ZB35

Instrument: nt12.i
Operator: JZ
Column diameter: 0.32



CO-ELUTION SUMMARY FOR FILE - 03311102.d

Lab ID: IC0250331, Method: SIMPNA0331.m, Instrument: nt12.i, Date: 31-MAR-201

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem1/nt12.i/20110331.b/03311106.d
Lab Smp Id: IC50331 Client Smp ID: IC50331
Inj Date : 31-MAR-2011 22:19
Operator : JZ Inst ID: nt12.i
Smp Info : IC50331,
Misc Info : 11-
Comment : 1ul Injection
Method : /chem1/nt12.i/20110331.b/SIMPNA0331.m
Meth Date : 01-Apr-2011 17:46 jianqing Quant Type: ISTD
Cal Date : 31-MAR-2011 22:47 Cal File: 03311107.d
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

04/01/11

AMOUNTS

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 27 Naphthalene-d8	136	4.920	4.917	(1.000)	424290	2.00000	
28 Naphthalene	128	4.948	4.945	(1.006)	995611	5.00000	4.860
$ 190 2-Methylnaphthalene-d10	152	5.655	5.655	(1.149)	610176	5.00000	4.704
32 2-Methylnaphthalene	141	5.699	5.700	(1.158)	536889	5.00000	4.716
105 1-methylnaphthalene	141	5.892	5.892	(1.198)	554359	5.00000	4.576
40 Acenaphthylene	152	7.022	7.025	(0.980)	989235	5.00000	4.850
* 42 Acenaphthene-d10	164	7.164	7.164	(1.000)	233090	2.00000	
44 Acenaphthene	153	7.208	7.208	(1.006)	606119	5.00000	4.771
46 Dibenzofuran	168	7.353	7.353	(1.026)	823076	5.00000	4.765
49 Fluorene	166	7.807	7.808	(1.090)	688644	5.00000	4.842
* 59 Phenanthrene-d10	188	9.101	9.098	(1.000)	394000	2.00000	
60 Phenanthrene	178	9.133	9.133	(1.003)	970112	5.00000	4.665
61 Anthracene	178	9.164	9.164	(1.007)	1000694	5.00000	4.793
64 Fluoranthene	202	10.824	10.827	(1.189)	1074309	5.00000	4.751
65 Pyrene	202	11.297	11.301	(0.818)	1100784	5.00000	4.833
68 Benzo(a)anthracene	228	13.693	13.693	(0.992)	1011134	5.00000	4.972
* 69 Chrysene-d12	240	13.806	13.806	(1.000)	423013	2.00000	
71 Chrysene	228	13.876	13.873	(1.005)	971908	5.00000	4.890
74 Benzo(b)fluoranthene	252	16.305	16.312	(0.933)	1067461	5.00000	4.906
75 Benzo(k)fluoranthene	252	16.359	16.369	(0.936)	1075252	5.00000	4.711
188 Benzo(j)fluoranthene	252	16.435	16.444	(0.941)	1050965	5.00000	4.819
76 Benzo(a)pyrene	252	17.262	17.268	(0.988)	981267	5.00000	4.912
* 77 Perylene-d12	264	17.470	17.473	(1.000)	385980	2.00000	
78 Indeno(1,2,3-cd)pyrene	276	19.818	19.833	(1.134)	1209015	5.00000	4.977
$ 191 Dibenzo(a,h)anthracene-d14	292	19.739	19.751	(1.130)	889305	5.00000	4.910
79 Dibenzo(a,h)anthracene	278	19.830	19.840	(1.135)	978944	5.00000	4.927
80 Benzo(g,h,i)perylene	276	20.666	20.676	(1.183)	1044239	5.00000	4.846

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
99 Perylene	252	17.533	17.536	(1.004)	808709	5.00000	4.786

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: 03311106.d
Lab Smp Id: IC50331
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem1/nt12.i/20110331.b/SIMPNA0331.m
Misc Info: 11-

Calibration Date: 31-MAR-2011
Calibration Time: 20:27
Client Smp ID: IC50331
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	494112	247056	988224	424290	-14.13
42 Acenaphthene-d10	280105	140052	560210	233090	-16.78
59 Phenanthrene-d10	461353	230676	922706	394000	-14.60
69 Chrysene-d12	503160	251580	1006320	423013	-15.93
77 Perylene-d12	442215	221108	884430	385980	-12.72

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	4.92	4.42	5.42	4.92	0.00
42 Acenaphthene-d10	7.16	6.66	7.66	7.16	0.00
59 Phenanthrene-d10	9.10	8.60	9.60	9.10	0.03
69 Chrysene-d12	13.80	13.30	14.30	13.81	0.02
77 Perylene-d12	17.47	16.97	17.97	17.47	0.00

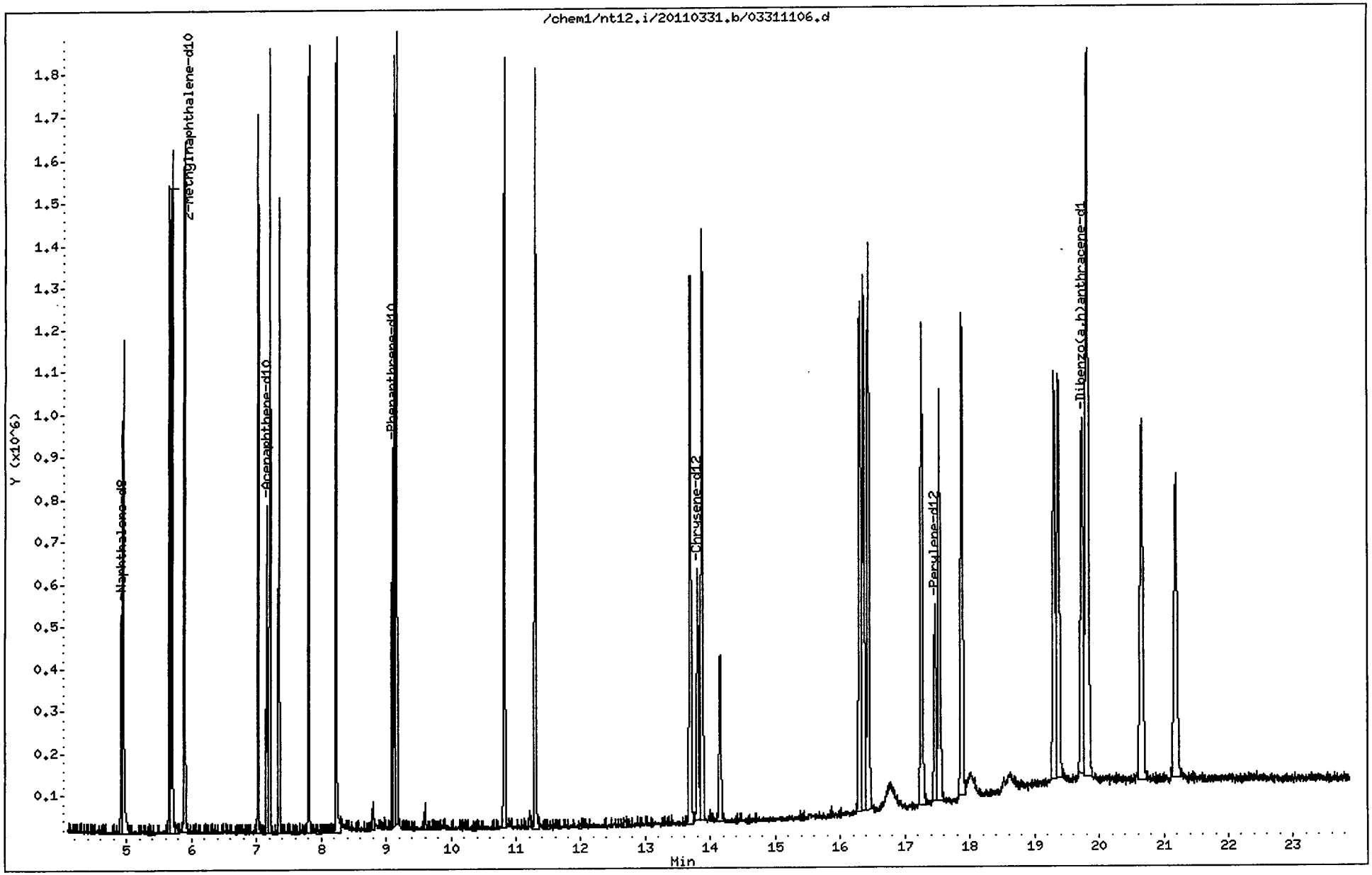
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20110331.b/03311106.d
Date : 31-MAR-2011 22:19
Client ID: IC50331
Sample Info: IC50331,

Instrument: nt12.i

Operator: JZ
Column diameter: 0.32

Column phase: ZB35



SN54:00178

CO-ELUTION SUMMARY FOR FILE - 03311106.d

Lab ID: IC50331, Method: SIMPNA0331.m, Instrument: nt12.i, Date: 31-MAR-2011

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem1/nt12.i/20110331.b/03311107.d
Lab Smp Id: IC100331 Client Smp ID: IC10331
Inj Date : 31-MAR-2011 22:47
Operator : JZ Inst ID: nt12.i
Smp Info : IC100331,
Misc Info : 11-
Comment : 1ul Injection
Method : /chem1/nt12.i/20110331.b/SIMPNA0331.m
Meth Date : 01-Apr-2011 17:46 jianqing Quant Type: ISTD
Cal Date : 31-MAR-2011 22:47 Cal File: 03311107.d
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

04/01/11

AMOUNTS

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 27 Naphthalene-d8	136	4.917	4.917	(1.000)	479714	2.00000	
28 Naphthalene	128	4.945	4.945	(1.006)	1995389	10.0000	8.614
$ 190 2-Methylnaphthalene-d10	152	5.655	5.655	(1.150)	1205283	10.0000	8.218
32 2-Methylnaphthalene	141	5.700	5.700	(1.159)	1055784	10.0000	8.202
105 1-methylnaphthalene	141	5.892	5.892	(1.198)	1090496	10.0000	7.961
40 Acenaphthylene	152	7.025	7.025	(0.981)	1909756	10.0000	8 658
* 42 Acenaphthene-d10	164	7.164	7.164	(1.000)	252063	2.00000	
44 Acenaphthene	153	7.208	7.208	(1.006)	1194013	10.0000	8.691
46 Dibenzofuran	168	7.353	7.353	(1.026)	1599433	10.0000	8.563
49 Fluorene	166	7.808	7.808	(1.090)	1361038	10.0000	8.849
* 59 Phenanthrene-d10	188	9.098	9.098	(1.000)	420234	2.00000	
60 Phenanthrene	178	9.133	9.133	(1.004)	1955746	10.0000	8.818
61 Anthracene	178	9.164	9.164	(1.007)	1861190	10.0000	8.358
64 Fluoranthene	202	10.827	10.827	(1.190)	2094104	10.0000	8.683
65 Pyrene	202	11.301	11.301	(0.819)	2156305	10.0000	8.807
68 Benzo(a)anthracene	228	13.693	13.693	(0.992)	1989377	10.0000	9.100
* 69 Chrysene-d12	240	13.806	13.806	(1.000)	454758	2.00000	
71 Chrysene	228	13.873	13.873	(1.005)	1919561	10.0000	8.984
74 Benzo(b)fluoranthene	252	16.312	16.312	(0.934)	2134788	10.0000	9.322
75 Benzo(k)fluoranthene	252	16.369	16.369	(0.937)	2182504	10.0000	9.086
188 Benzo(j)fluoranthene	252	16.444	16.444	(0.941)	2042956	10.0000	8.900
76 Benzo(a)pyrene	252	17.268	17.268	(0.988)	1913767	10.0000	9.102
* 77 Perylene-d12	264	17.473	17.473	(1.000)	406204	2.00000	
78 Indeno(1,2,3-cd)pyrene	276	19.833	19.833	(1.135)	2407866	10.0000	9.418
$ 191 Dibenzo(a,h)anthracene-d14	292	19.751	19.751	(1.130)	1771889	10.0000	9.296
79 Dibenzo(a,h)anthracene	278	19.840	19.840	(1.135)	1982350	10.0000	9.481
80 Benzo(g,h,i)perylene	276	20.676	20.676	(1.183)	2073848	10.0000	9.146

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
99 Perylene	252	17.536	17.536	(1.004)	1608876	10.0000	9.048

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: 03311107.d
Lab Smp Id: IC100331
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem1/nt12.i/20110331.b/SIMPNA0331.m
Misc Info: 11-

Calibration Date: 31-MAR-2011
Calibration Time: 20:27
Client Smp ID: IC10331
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

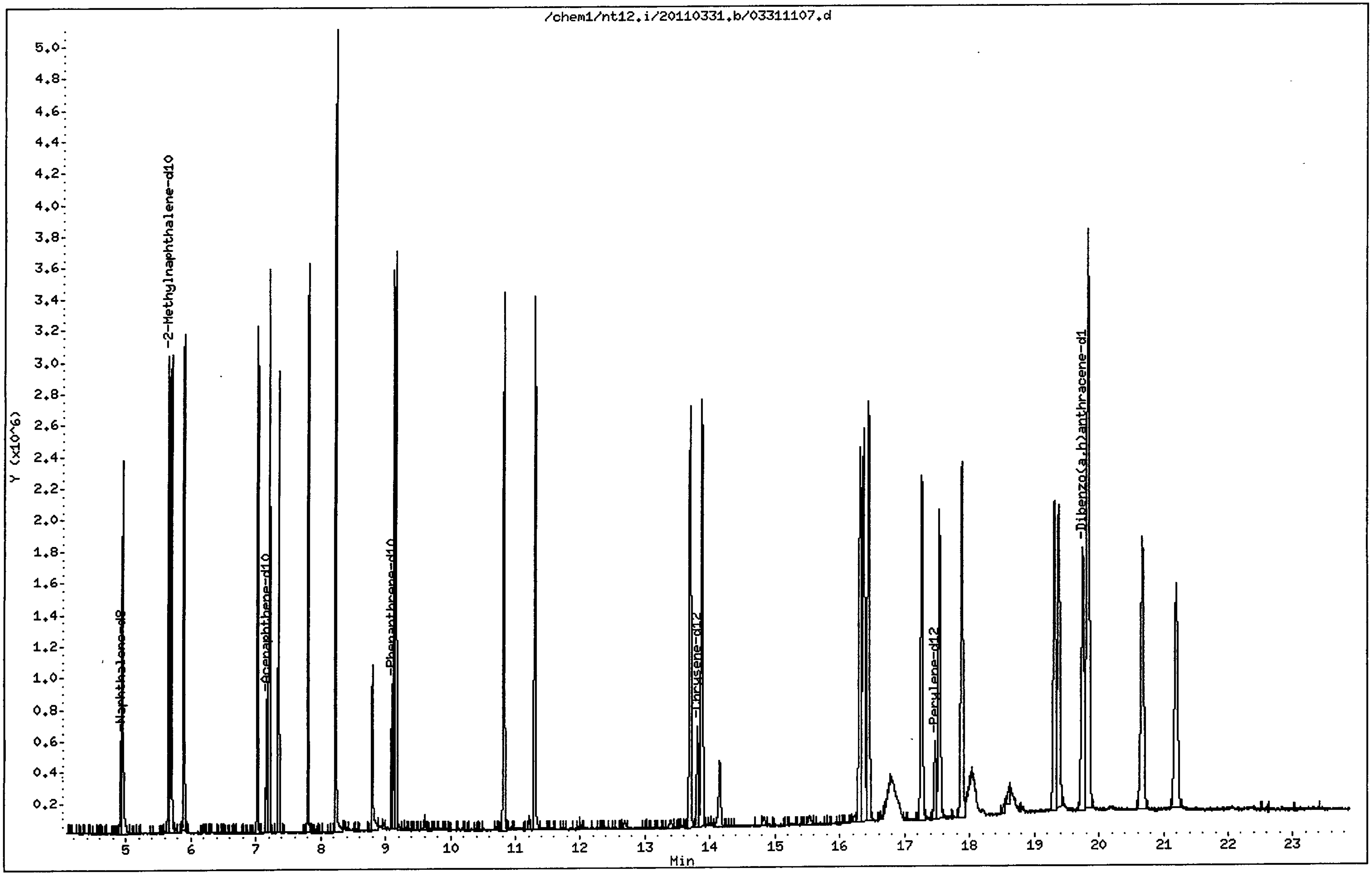
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	494112	247056	988224	479714	-2.91
42 Acenaphthene-d10	280105	140052	560210	252063	-10.01
59 Phenanthrene-d10	461353	230676	922706	420234	-8.91
69 Chrysene-d12	503160	251580	1006320	454758	-9.62
77 Perylene-d12	442215	221108	884430	406204	-8.14

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	4.92	4.42	5.42	4.92	-0.07
42 Acenaphthene-d10	7.16	6.66	7.66	7.16	0.00
59 Phenanthrene-d10	9.10	8.60	9.60	9.10	0.00
69 Chrysene-d12	13.80	13.30	14.30	13.81	0.02
77 Perylene-d12	17.47	16.97	17.97	17.47	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20110331.b/03311107.d
Date : 31-MAR-2011 22:47
Client ID: IC10331
Sample Info: IC100331,
Column phase: ZB35

Instrument: nt12.i
Operator: JZ
Column diameter: 0.32



CO-ELUTION SUMMARY FOR FILE - 03311107.d

Lab ID: IC100331, Method: SIMPNA0331.m, Instrument: nt12.i, Date: 31-MAR-2011

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem1/nt12.i/20110401.b/04011103.d
Lab Smp Id: ICV0331 Client Smp ID: ICV0331
Inj Date : 01-APR-2011 15:53
Operator : JZ Inst ID: nt12.i
Smp Info : ICV0331
Misc Info : 11-
Comment : 1ul Injection
Method : /chem1/nt12.i/20110401.b/SIMPNA0331.m
Meth Date : 04-Apr-2011 08:48 jianqing Quant Type: ISTD
Cal Date : 31-MAR-2011 22:47 Cal File: 03311107.d
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

04/04/11

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/mL)
* 27	Naphthalene-d8	136	4.851	4.851	(1.000)	405752	2.00000	
28	Naphthalene	128	4.876	4.879	(1.005)	524717	2.67821	2.678(R)
$ 190	2-Methylnaphthalene-d10	152	Compound Not Detected.					
32	2-Methylnaphthalene	141	5.630	5.630	(1.161)	294338	2.70344	2.703(R)
105	1-methylnaphthalene	141	5.823	5.823	(1.200)	265630	2.29260	2.293
40	Acenaphthylene	152	6.952	6.952	(0.980)	496272	2.32632	2.326
* 42	Acenaphthene-d10	164	7.091	7.091	(1.000)	243785	2.00000	
44	Acenaphthene	153	7.139	7.139	(1.007)	304522	2.29176	2.292
46	Dibenzofuran	168	7.281	7.281	(1.027)	450265	2.49236	2.492
49	Fluorene	166	7.735	7.738	(1.091)	353391	2.37571	2.376
* 59	Phenanthrene-d10	188	9.026	9.029	(1.000)	404374	2.00000	
60	Phenanthrene	178	9.060	9.060	(1.004)	500017	2.34292	2.343
61	Anthracene	178	9.092	9.092	(1.007)	526287	2.45603	2.456
64	Fluoranthene	202	10.733	10.736	(1.189)	548293	2.36264	2.363
65	Pyrene	202	11.200	11.203	(0.819)	564584	2.46598	2.466
68	Benzo(a)anthracene	228	13.570	13.570	(0.992)	499141	2.44164	2.442
* 69	Chrysene-d12	240	13.680	13.683	(1.000)	425229	2.00000	
71	Chrysene	228	13.749	13.753	(1.005)	475813	2.38146	2.381
74	Benzo(b)fluoranthene	252	16.164	16.167	(0.933)	509580	2.48981	2.490
75	Benzo(k)fluoranthene	252	16.217	16.227	(0.936)	535096	2.49240	2.492
188	Benzo(j)fluoranthene	252	Compound Not Detected.					
76	Benzo(a)pyrene	252	17.113	17.117	(0.988)	427034	2.27255	2.273
* 77	Perylene-d12	264	17.322	17.325	(1.000)	363042	2.00000	
78	Indeno(1,2,3-cd)pyrene	276	19.635	19.644	(1.134)	562724	2.46275	2.463
$ 191	Dibenzo(a,h)anthracene-d14	292	Compound Not Detected.					
79	Dibenzo(a,h)anthracene	278	19.654	19.660	(1.135)	461801	2.47126	2.471
80	Benzo(g,h,i)perylene	276	20.458	20.471	(1.181)	485824	2.39724	2.397
99	Perylene	252	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: 04011103.d
Lab Smp Id: ICV0331
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem1/nt12.i/20110401.b/SIMPNA0331.m
Misc Info: 11-

Calibration Date: 01-APR-2011
Calibration Time: 15:16
Client Smp ID: ICV0331
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	494112	247056	988224	405752	-17.88
42 Acenaphthene-d10	280105	140052	560210	243785	-12.97
59 Phenanthrene-d10	461353	230676	922706	404374	-12.35
69 Chrysene-d12	503160	251580	1006320	425229	-15.49
77 Perylene-d12	442215	221108	884430	363042	-17.90

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
27 Naphthalene-d8	4.85	4.35	5.35	4.85	0.00
42 Acenaphthene-d10	7.09	6.59	7.59	7.09	0.00
59 Phenanthrene-d10	9.03	8.53	9.53	9.03	-0.04
69 Chrysene-d12	13.68	13.18	14.18	13.68	-0.02
77 Perylene-d12	17.32	16.82	17.82	17.32	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: NONE
Lab Smp Id: ICV0331
Level:
Data Type: MS DATA
SpikeList File: pnalcss.spk
Sublist File: pnax.sub
Method File: /chem1/nt12.i/20110401.b/SIMPNA0331.m
Misc Info: 11-

Client SDG: 20110401
Fraction: SV
Client Smp ID: ICV0331
Operator: JZ
SampleType: LCS
Quant Type: ISTD

SPIKE COMPOUND	AMOUNT ADDED ug/mL	AMOUNT RECOVERED ug/mL	% RECOVERED	LIMITS
28 Naphthalene	2.505	2.678	106.91*	
32 2-Methylnaphthalen	2.505	2.703	107.92*	
105 1-methylnaphthalen	2.505	2.293	91.52	
40 Acenaphthylene	2.505	2.326	92.87	
44 Acenaphthene	2.505	2.292	91.49	
46 Dibenzofuran	2.505	2.492	99.50	
49 Fluorene	2.505	2.376	94.84	
60 Phenanthrene	2.505	2.343	93.53	
61 Anthracene	2.505	2.456	98.04	
64 Fluoranthene	2.505	2.363	94.32	
65 Pyrene	2.505	2.466	98.44	
68 Benzo(a)anthracene	2.505	2.442	97.47	
71 Chrysene	2.505	2.381	95.07	
74 Benzo(b)fluoranthe	2.505	2.490	99.39	
75 Benzo(k)fluoranthe	2.505	2.492	99.50	
76 Benzo(a)pyrene	2.505	2.273	90.72	
78 Indeno(1,2,3-cd)py	2.505	2.463	98.31	
79 Dibenzo(a,h)anthra	2.505	2.471	98.65	
80 Benzo(g,h,i)peryle	2.505	2.397	95.70	
99 Perylene	2.505	0.000	NR *	

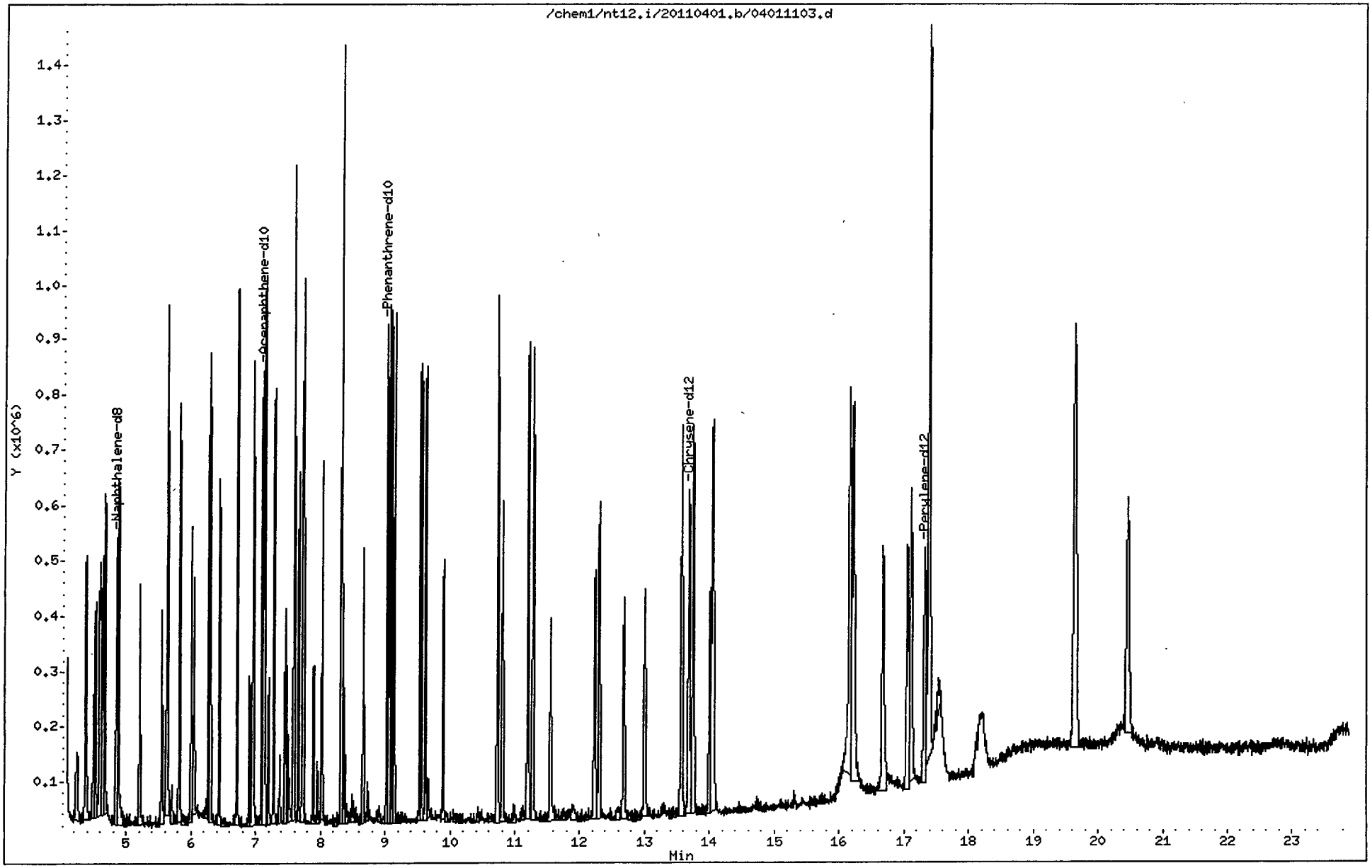
SURROGATE COMPOUND	AMOUNT ADDED ug/mL	AMOUNT RECOVERED ug/mL	% RECOVERED	LIMITS
$ 190 2-Methylnaphthale	1.875	0.000	*	
$ 191 Dibenzo(a,h)anthr	1.875	0.000	no signal source *	

04/04/11

Data File: /chem1/nt12.i/20110401.b/04011103.d
Date : 01-APR-2011 15:53
Client ID: ICV0331
Sample Info: ICV0331

Instrument: nt12.i
Operator: JZ
Column diameter: 0.32

Column phase: ZB35



CO-ELUTION SUMMARY FOR FILE - 04011103.d

Lab ID: ICV0331, Method: SIMPNA0331.m, Instrument: nt12.i, Date: 01-APR-2011

RT	CO-ELUTION COMPOUNDS
	NO CO-ELUTIONS

SIM PAH Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: SN54

Analytical Chemists and Consultants

GC/MS SVOA Analyst Notes / Corrective Action Log

ARI Project ID: SN54 Client ID: Floyd Snider

ARI SOP: **801S**(SIM-PNA) **802S**(Butyl Tins) **804S**(SVOA-8270D) **805S**(op-Pest)

Parameter(s): Sim PNA

Instrument: NT-2 NT-4 NT-6 NT-8 NT11 , (NT12)

Curve Date: 3/31/11 Analysis Start Date: 4/1 ; 4/4/11

DFTPP Tune Meets Criteria?	(YES) / NO	Internal Standard Meets Criteria?	(YES) / (NO)
DDT Breakdown <20%?	(YES) / NO / NA	Method Blank In Control?	(YES) / NO
Peak Tailing Factor ≤2?	(YES) / NO / NA	LCS / LCSD Recovery In Control?	(YES) / NO
ICal acceptable?	(YES) / NO	CCal acceptable?	(YES) / NO
Q flag applied?	YES / NO	Q flag applied?	YES / NO
Surrogate Recovery in Control?	(YES) / NO	Special Analysis Criteria Met?	YES / NO / (NA)
Manual Integrations for ICal?	(YES) / NO	Manual Integrations for Samples?	(Yes) / NO

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

4/1 Samples SN54A-D + MB/LCS/LCSD

4/4 Samples E-H + MS/MSD + Dilution for Samples F-H.

Due to matrix effect, IS, Perylene-d12, response out of QC limit at low bias on all the dilutions. Trans PM was informed. No corrective action needed.

Forms included.

Additional Details on Reverse: Yes / No

Analyst: [signature] **Date:** 06/01/11

Reviewer: MW **Date:** 6/6/11

Analytical Resources Inc.: Organics Instrument Log

NT-12 Serial No.:GC=US00032558, MS= US01180091

Date: 4/1/11 Analysis: SimPAH Analyst: AR

GC Program: SimPAH35 Column No: 167992 Column Type: 2B35

Instrument Tune (.U or .CT.): 40331 EM Voltage: 2682

Calibration File: 04m1107 Curve Date: 3/31/11 Injection Vol.:

IS/SS	Ical/Ccal	LCS/ICV
1754-1	1808-1	
	1788-3	

Document All Maintenance Tasks In StarLIMS

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt12.i/20110401.b

	Time	Filename	LabID	ClientId	DF											
1	1457	04011101 d	DFTPP0401	DFTPP0401	1	NO ISTDS FOUND										
2	1516	04011102 d	CC0401	CC0401	1	4 85	499536	7 09	294599	9 03	482436	13.68	526425	17 32	439084	
3	1553	04011103 d	ICV0331	ICV0331	1	4 85	405752	7 09	243785	9 03	404374	13 68	425229	17 32	363042	
4	1621	04011104.d	SN54MBS2	SN54MBS2	1	4.84	362184	7 08	207575	9.02	332402	13.67	371865	17 32	319297	
5	1649	04011105 d	SN54LCSS2	SN54LCSS2	1	4 84	366499	7 08	217644	9 02	347080	13 67	381079	17 32	335486	
6	1717	04011106 d	SN54LCSDS2	SN54LCSDS2	1	4 84	364394	7 08	218342	9 02	356245	13 68	383014	17 32	345990	
7	1745	04011107.d	SN54QLS	SN54QLS	1	4 84	354887	7 08	221805	9.02	359036	13.68	388118	17 31	344619	
8	1813	04011108 d	SN54A	LL-SED3-0-36	1	4.84	342514	7.09	202181	9.03	322755	13.73	373966	17.39	298676	
9	1841	04011109 d	SN54B 3X	LL-SED3-36-1	3	4 84	301159	7 09	187766	9 02	301621	13.69	322033	17 35	280959	
10	1909	04011110.d	SN54C 3X	LL-SED3-141-	3	4 85	262380	7 09	167023	9 03	271187	13.69	293472	17 36	247444	
11	1937	04011111 d	SN54D	LL-SED2-0-56	1	4.84	249435	7 09	163363	9 03	258445	13.73	339995	17.38	242975	
12	2038	04011112 d	SN54E 3X	LL-SED2-56-1	3	4.85	261670	7.09	166252	9 03	276567	13.70	293916	17 36	214585	
13	2106	04011113 d	SN54EMS	LL-SED2-56-1	3	4.85	231693	7.09	145320	9.03	254871	13.70	270090	17.36	201254	
14	2134	04011114.d	SN54EMSD	LL-SED2-56-1	3	4.85	232782	7 09	152172	9.03	249322	13.70	277173	17.36	190902	
15	2202	04011115 d	SN54B 1X	LL-SED3-36-1	1	4 85	202881	7 09	131352	9 03	218351	13.72	239578	17.40	164864	
16	2230	04011116.d	SN54C 1X	LL-SED3-141-	1	4 85	211721	7.09	131101	9 03	230943	13.72	243922	17.41	161259	

Is out NR

AR 04/04/11

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt12.i/20110401.b

ARI Job No.: CC04 Method: SIMPNA0331.m Instrument: nt12.i Date: 01-APR-2011

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1516	04011102.d	CC0401	CC0401	1	NO MANUAL INTEGRATION
1621	04011104.d	SN54MBS2	SN54MBS2	1	NO MANUAL INTEGRATION
1649	04011105.d	SN54LCSS2	SN54LCSS2	1	NO MANUAL INTEGRATION
1717	04011106.d	SN54LCSDS2	SN54LCSDS2	1	NO MANUAL INTEGRATION
1813	04011108.d	SN54A	LL-SED3-0-	1	NO MANUAL INTEGRATION
1841	04011109.d	SN54B	LL-SED3-36	3	NO MANUAL INTEGRATION
1909	04011110.d	SN54C	LL-SED3-14	3	NO MANUAL INTEGRATION
1937	04011111.d	SN54D	LL-SED2-0-	1	Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene,

04/05/11

SN54 00191

Q-FLAG SUMMARY FOR DATABATCH - /chem1/nt12.i/20110401.b

Instrument: nt12.i Date: 01-APR-2011 Method: SIMPNA0331.m

INITIAL CAL: 31-MAR-2011

Compound	%RSD or R^2
NO Q-FLAGS	

CONTINUING CAL: 01-APR-2011

Compound	%D
NO Q-FLAGS	

JZ 04/01/11