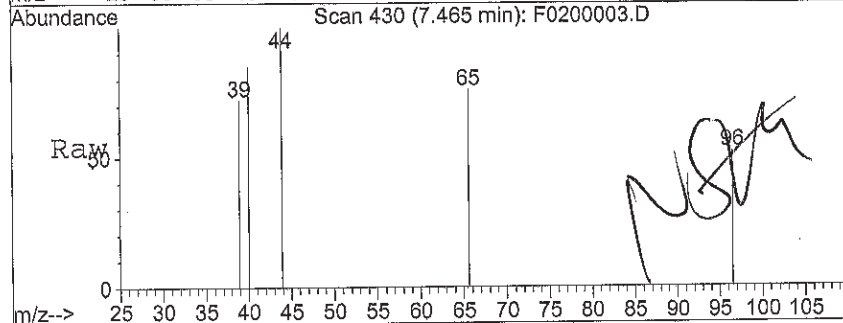
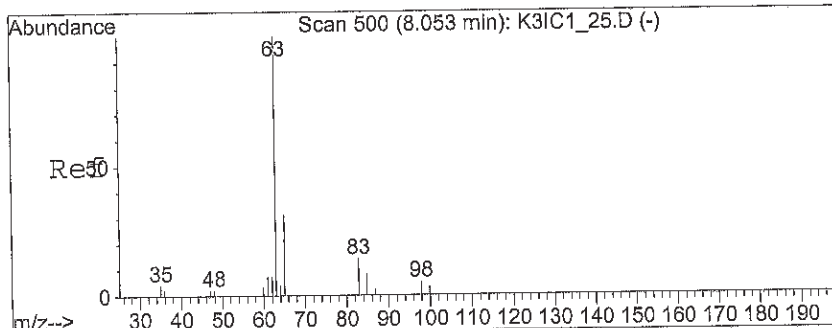
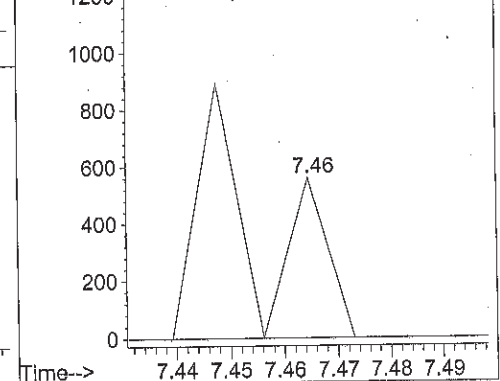
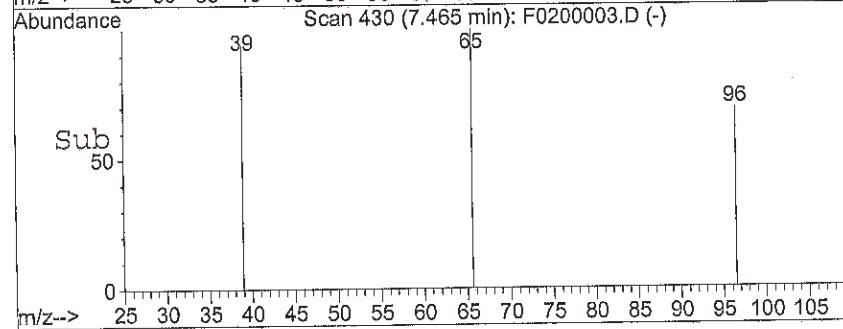


#17
trans-1,2-Dichloroethene
Concen: 0.08 ug/L
RT: 7.46 min Scan# 430
Delta R.T. 0.00 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion:	96	Resp:	283
Ion	Ratio	Lower	Upper
96	100		
61	0.0	104.2	156.2#
98	0.0	50.2	75.4#
63	160.1	37.5	56.3#

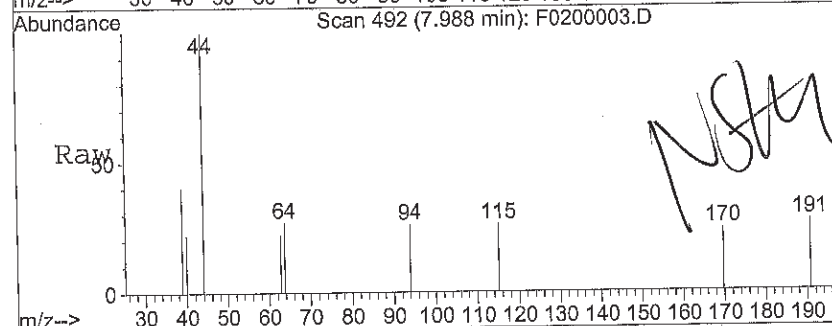


Abundance Ion 95.95 (95.65 to 96.65): F0200003.
1400 Ion 60.95 (60.65 to 61.65): F0200003.
1200 Ion 97.95 (97.65 to 98.65): F0200003.
Ion 63.05 (62.75 to 63.75): F0200003.

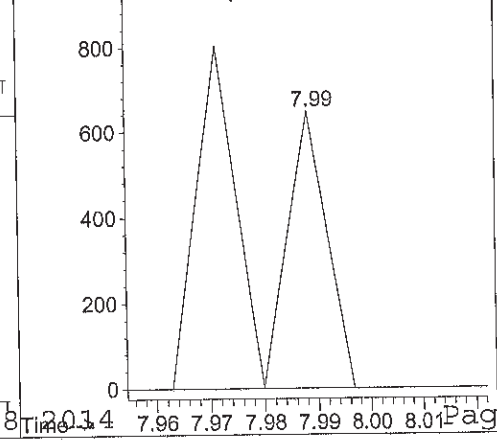
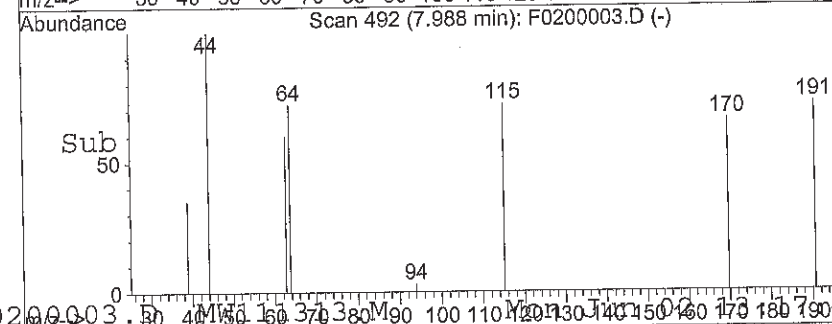


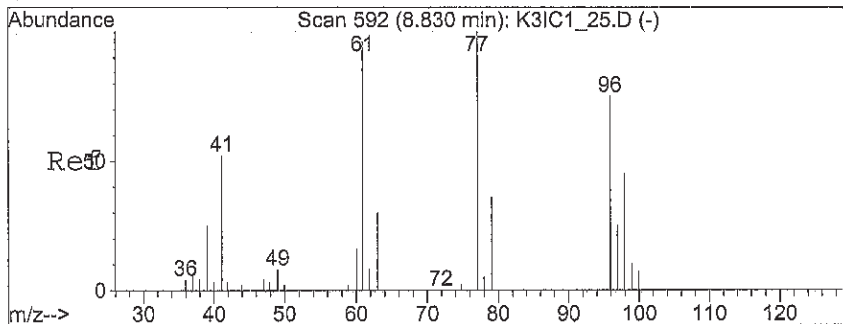
#18
1,1-Dichloroethane
Concen: 0.05 ug/L
RT: 7.99 min Scan# 492
Delta R.T. -0.06 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion:	63	Resp:	328
Ion	Ratio	Lower	Upper
63	100		
65	124.1	25.8	38.8#



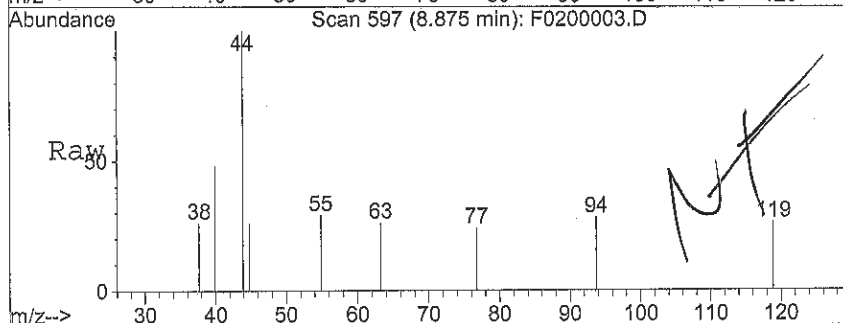
Abundance Ion 63.05 (62.75 to 63.75): F0200003.
Ion 65.05 (64.75 to 65.75): F0200003.





#20
 2,2-Dichloropropane
 Concen: 0.05 ug/L
 RT: 8.88 min Scan# 597
 Delta R.T. 0.05 min
 Lab File: F0200003.D
 Acq: 2 Jun 2014 12:51 pm

Tgt Ion:	77	Resp:	266
Ion	Ratio	Lower	Upper
77	100		
79	0.0	26.6	40.0#
97	0.0	18.9	28.3#
41	0.0	42.6	64.0#



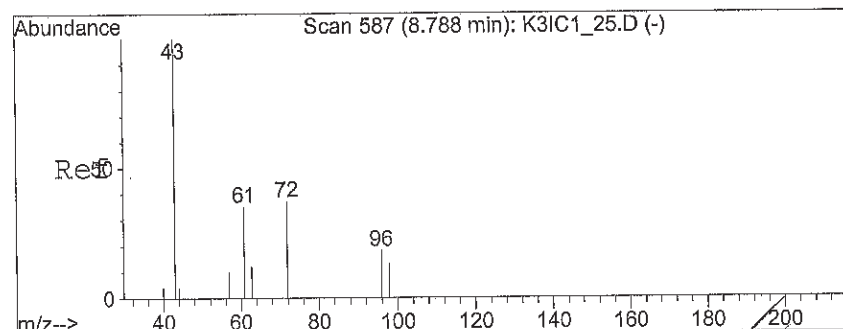
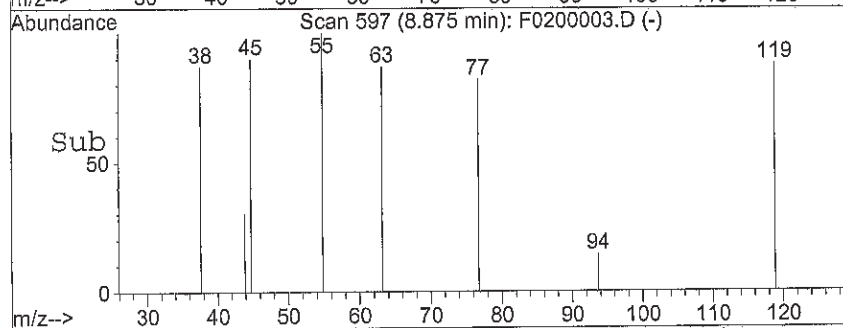
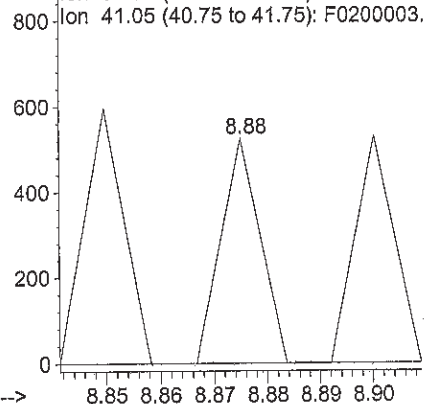
Abundance

Ion 77.05 (76.75 to 77.75): F0200003.D

Ion 79.00 (78.70 to 79.70): F0200003.D

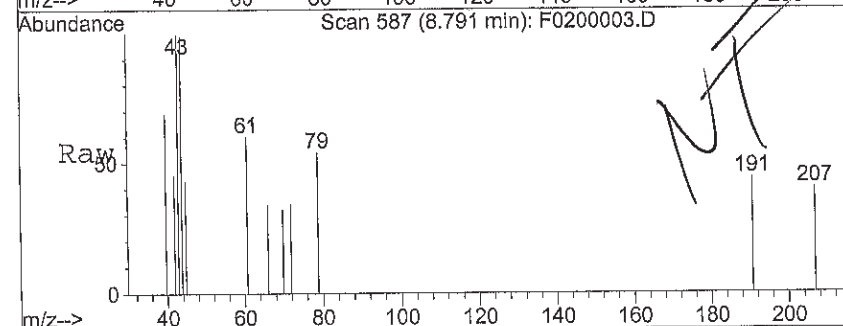
Ion 96.95 (96.65 to 97.65): F0200003.D

Ion 41.05 (40.75 to 41.75): F0200003.D



#21
 (MEK) 2-Butanone
 Concen: 0.79 ug/L
 RT: 8.79 min Scan# 587
 Delta R.T. 0.00 min
 Lab File: F0200003.D
 Acq: 2 Jun 2014 12:51 pm

Tgt Ion:	72	Resp:	309
Ion	Ratio	Lower	Upper
72	100		
57	0.0	17.5	26.3#
43	3239.8	314.2	471.2#

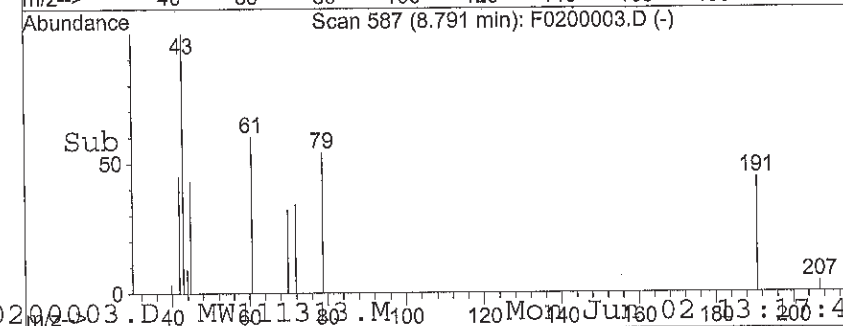
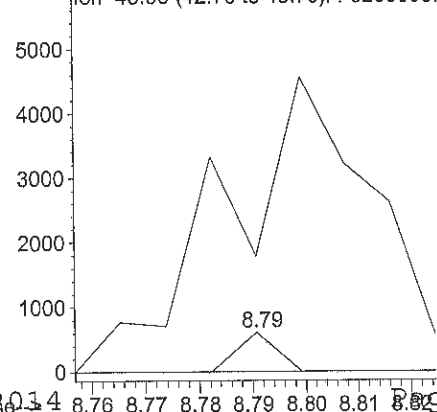


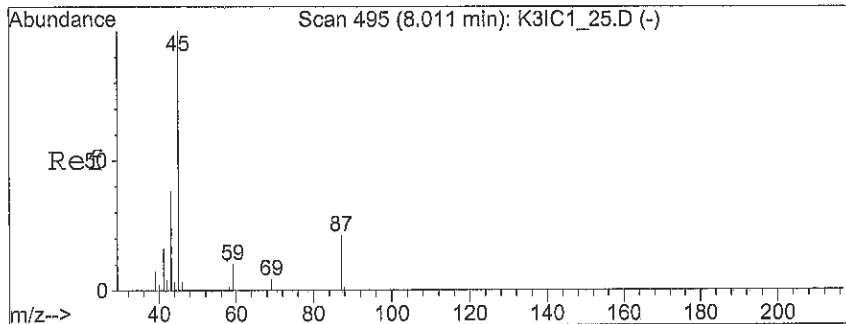
Abundance

Ion 72.00 (71.70 to 72.70): F0200003.D

Ion 57.10 (56.80 to 57.80): F0200003.D

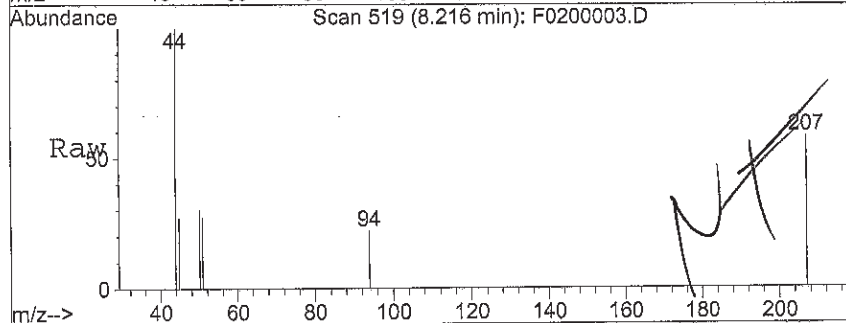
Ion 43.00 (42.70 to 43.70): F0200003.D





#22
 (DIPE) Diisopropyl Ether
 Concen: 0.03 ug/L
 RT: 8.22 min Scan# 519
 Delta R.T. 0.21 min
 Lab File: F0200003.D
 Acq: 2 Jun 2014 12:51 pm

Tgt Ion:	45	Resp:	305
Ion	Ratio	Lower	Upper
45	100		
87	0.0	17.0	25.6#
43	0.0	30.5	45.7#
59	0.0	7.4	11.2#



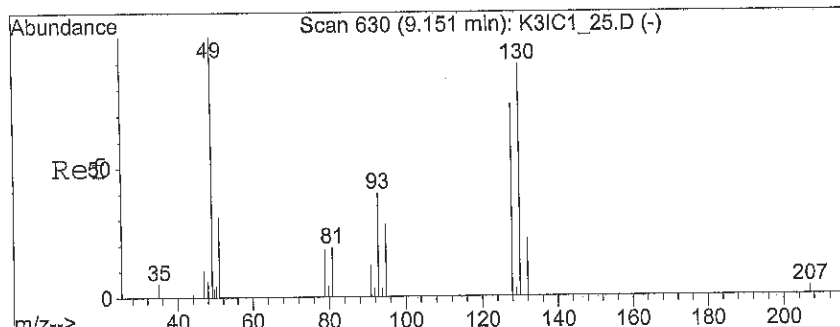
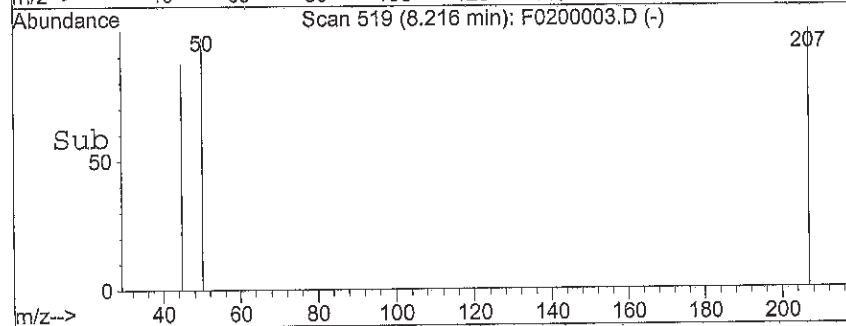
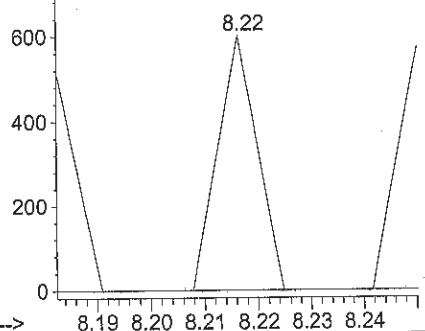
Abundance

Ion 45.00 (44.70 to 45.70): F0200003.D

Ion 87.10 (86.80 to 87.80): F0200003.D

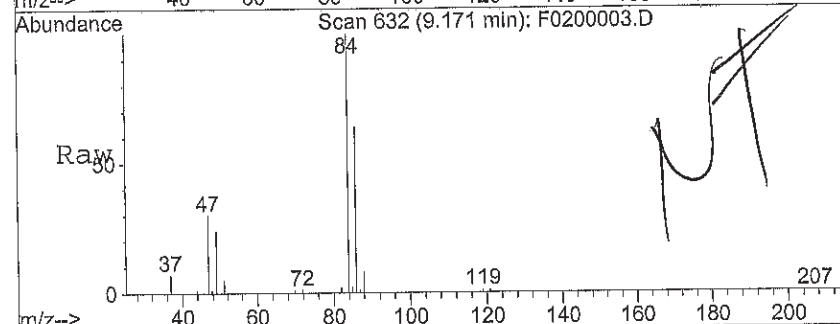
Ion 43.05 (42.75 to 43.75): F0200003.D

Ion 59.00 (58.70 to 59.70): F0200003.D



#23
 Bromochloromethane
 Concen: 0.17 ug/L
 RT: 9.17 min Scan# 632
 Delta R.T. 0.02 min
 Lab File: F0200003.D
 Acq: 2 Jun 2014 12:51 pm

Tgt Ion:	128	Resp:	310
Ion	Ratio	Lower	Upper
128	100		
49	72744.5	117.4	176.0#
130	0.0	111.0	166.6#
51	13790.6	48.0	72.0#



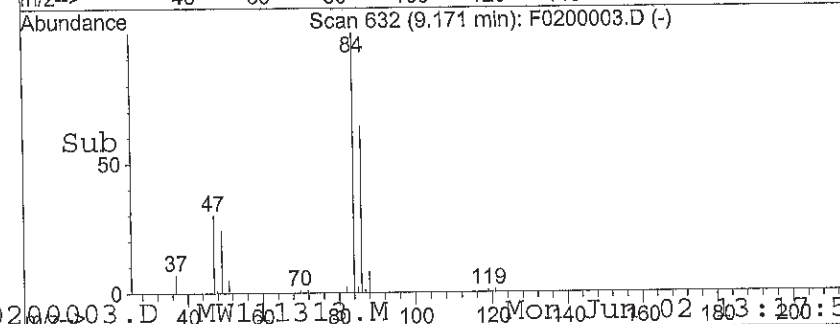
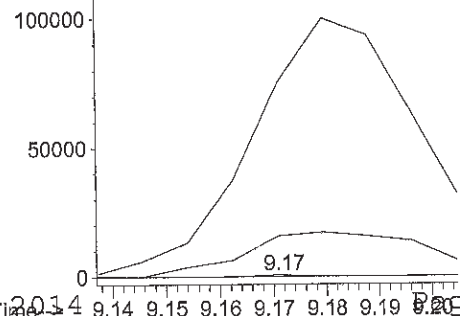
Abundance

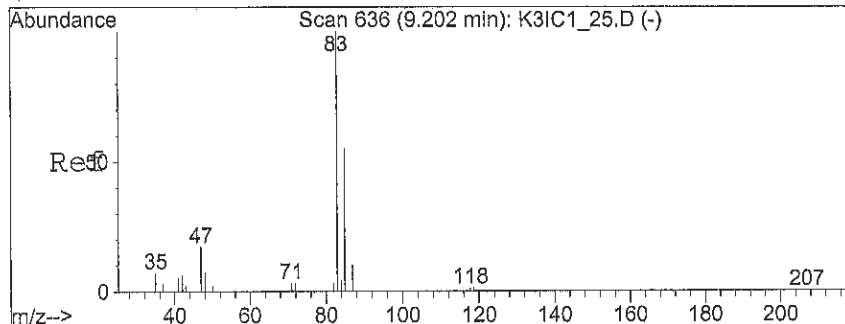
Ion 128.00 (127.70 to 128.70): F0200003.D

Ion 48.95 (48.65 to 49.65): F0200003.D

Ion 130.00 (129.70 to 130.70): F0200003.D

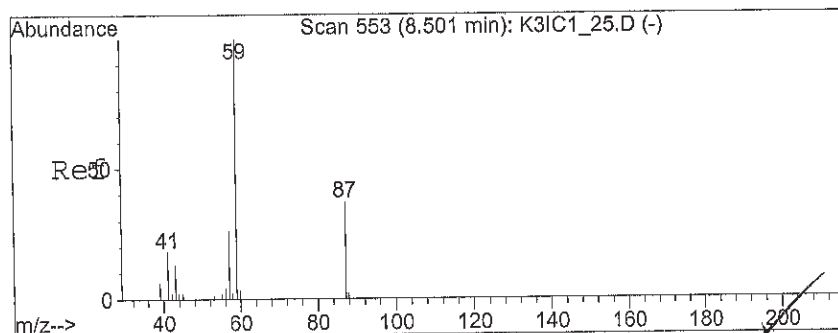
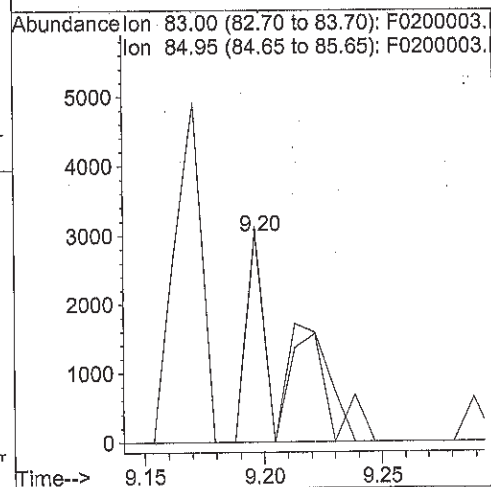
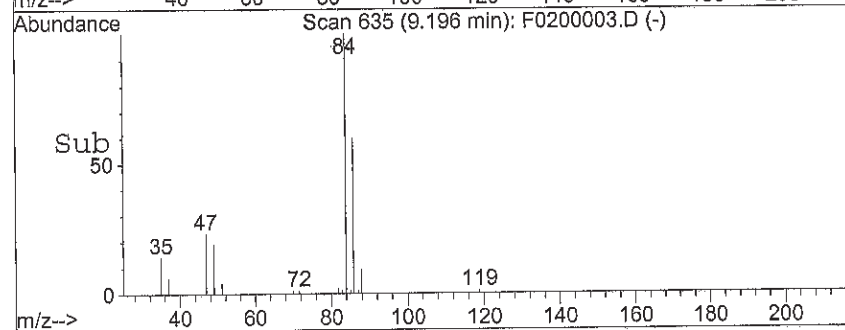
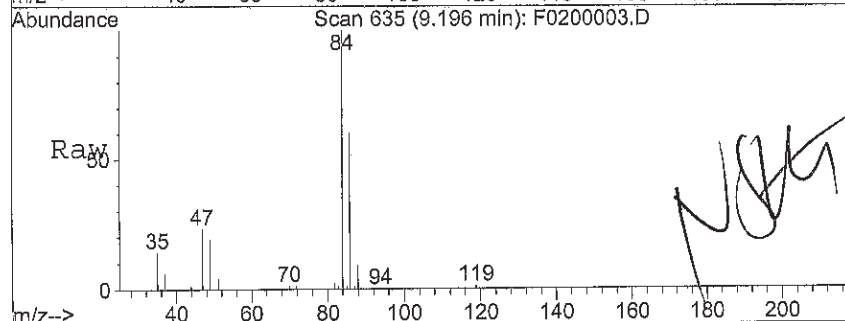
Ion 50.95 (50.65 to 51.65): F0200003.D





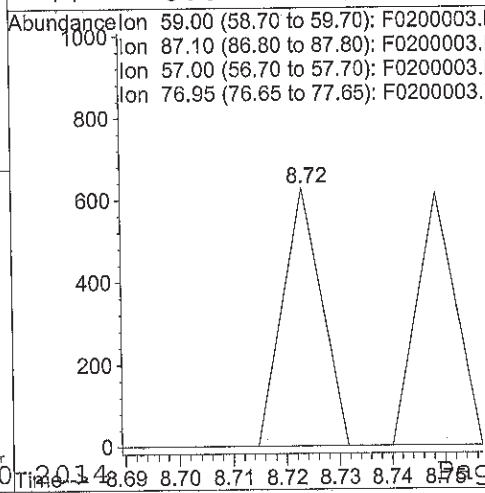
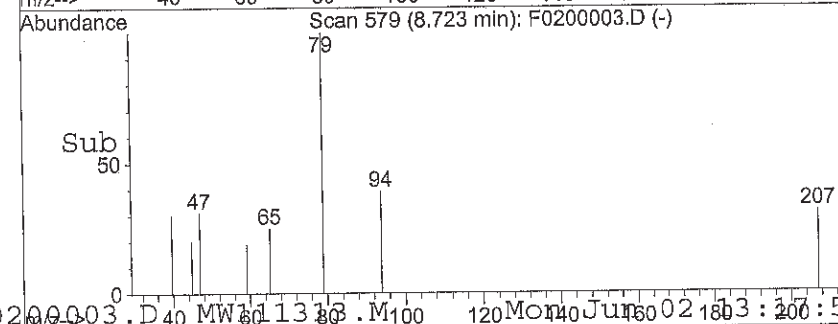
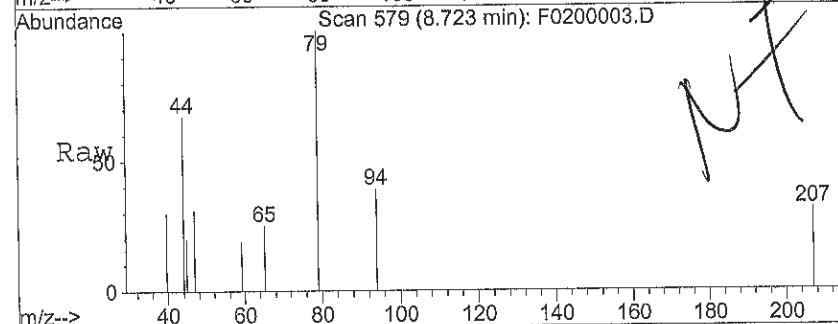
#24
 Chloroform
 Concen: 0.46 ug/L
 RT: 9.20 min Scan# 635
 Delta R.T. -0.01 min
 Lab File: F0200003.D
 Acq: 2 Jun 2014 12:51 pm

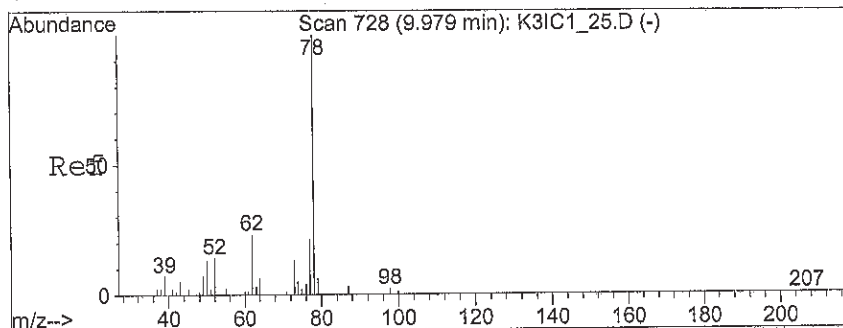
Tgt Ion: 83 Resp: 3340
 Ion Ratio Lower Upper
 83 100
 85 47.3 51.8 77.6#



#25
 (ETBE) 2-ethoxy 2-methyl propan
 Concen: 0.03 ug/L
 RT: 8.72 min Scan# 579
 Delta R.T. 0.22 min
 Lab File: F0200003.D
 Acq: 2 Jun 2014 12:51 pm

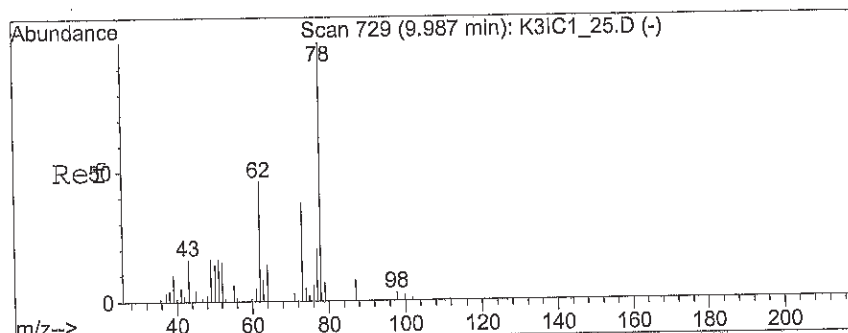
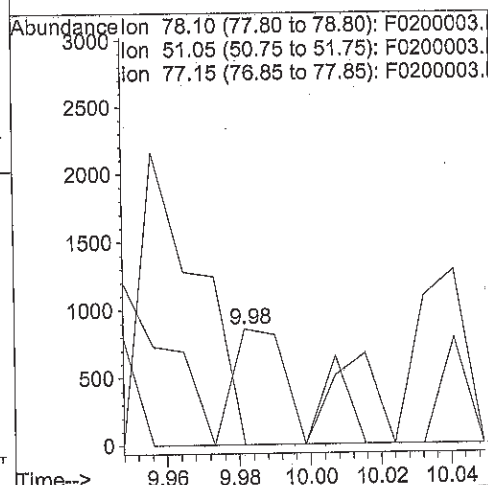
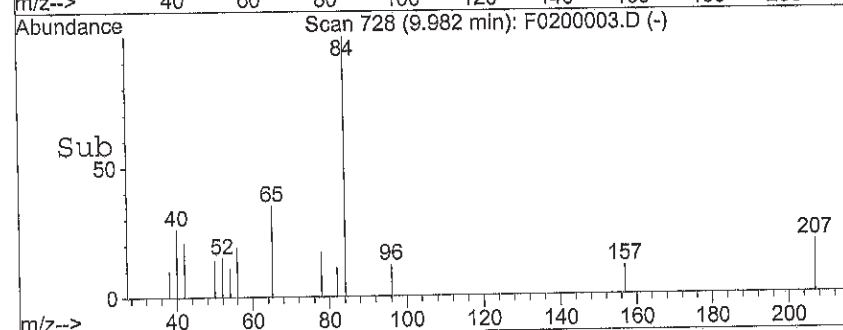
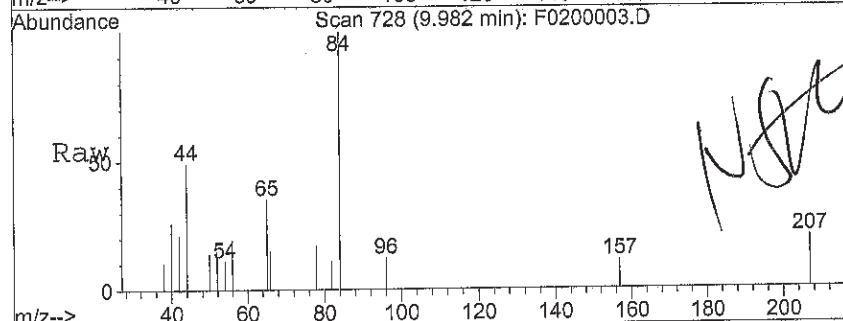
Tgt Ion: 59 Resp: 319
 Ion Ratio Lower Upper
 59 100
 87 0.0 27.8 41.8#
 57 0.0 19.8 29.6#
 77 0.0 0.0 0.0





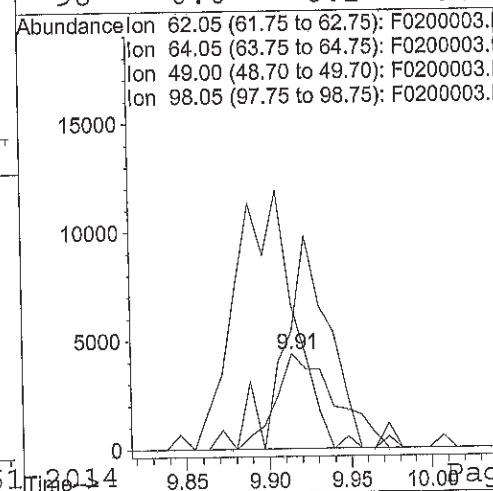
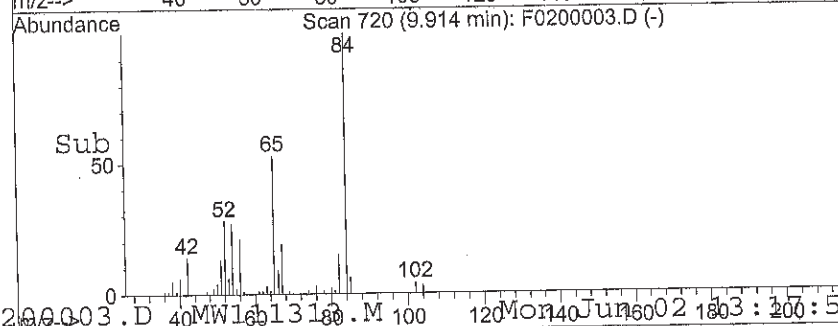
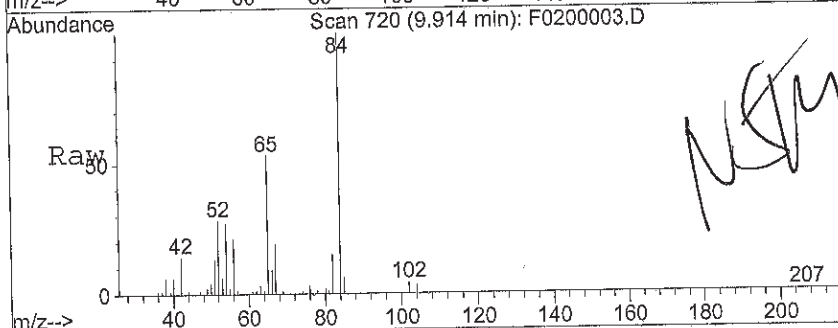
#31
Benzene
Concen: 0.09 ug/L
RT: 9.98 min Scan# 728
Delta R.T. 0.00 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

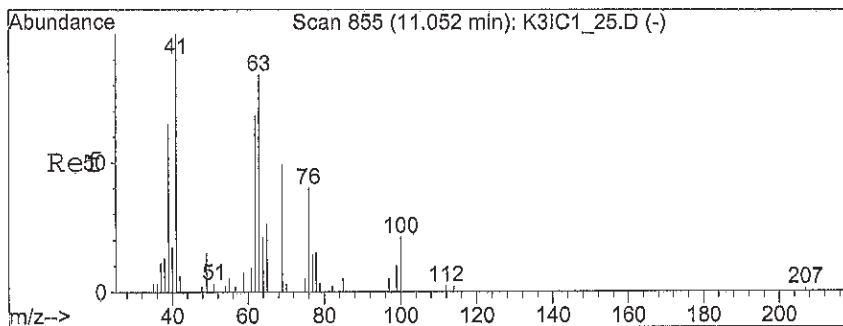
Tgt Ion: 78 Resp: 1177
Ion Ratio Lower Upper
78 100
51 0.0 14.2 21.2#
77 0.0 16.6 24.8#



#32
1,2-Dichloroethane
Concen: 2.37 ug/L
RT: 9.91 min Scan# 720
Delta R.T. -0.07 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

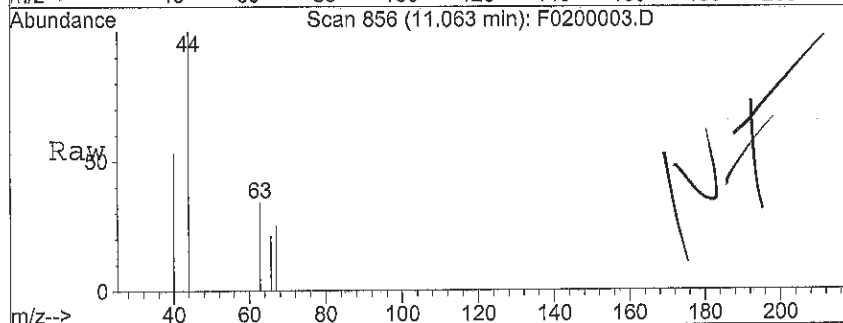
Tgt Ion: 62 Resp: 11006
Ion Ratio Lower Upper
62 100
64 172.3 28.0 42.0#
49 266.9 28.5 42.7#
98 0.0 6.2 9.4#





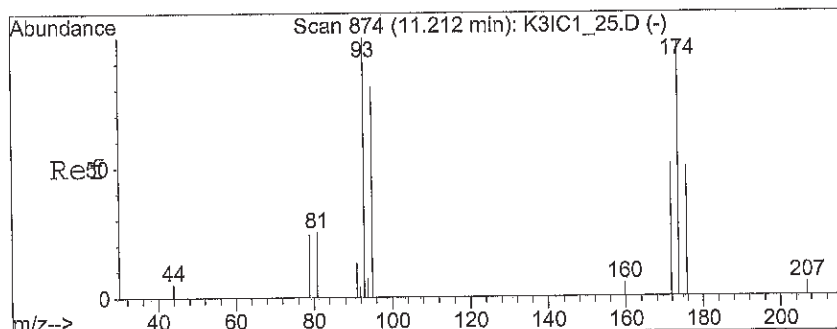
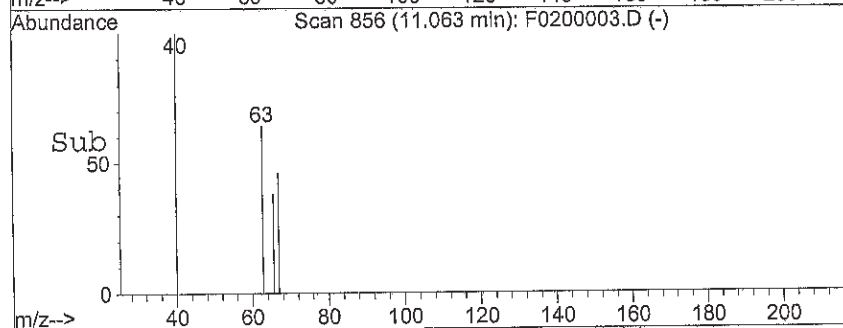
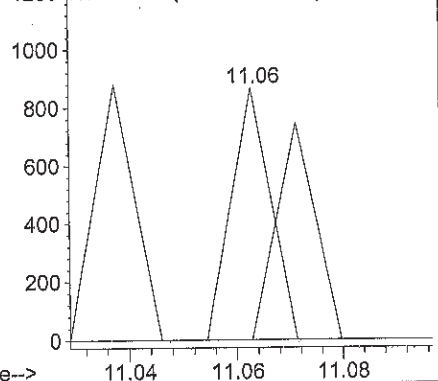
#34
1,2-Dichloropropane
Concen: 0.14 ug/L
RT: 11.06 min Scan# 856
Delta R.T. 0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion: 63 Resp: 439
Ion Ratio Lower Upper
63 100
62 0.0 67.4 101.2#
76 0.0 40.3 60.5#
41 86.1 103.0 154.6#



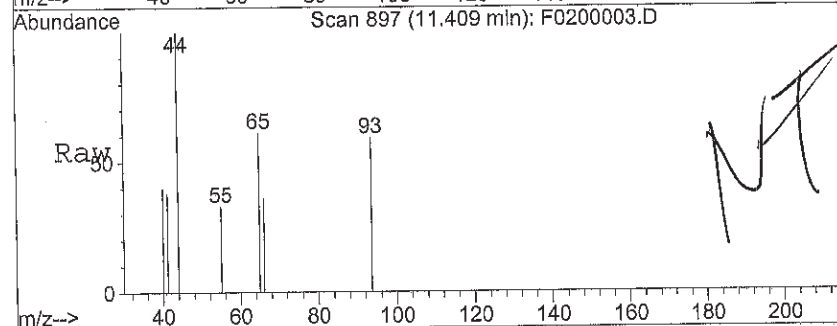
Abundance

Ion 63.05 (62.75 to 63.75): F0200003.
Ion 62.05 (61.75 to 62.75): F0200003.
Ion 76.05 (75.75 to 76.75): F0200003.
Ion 41.05 (40.75 to 41.75): F0200003.



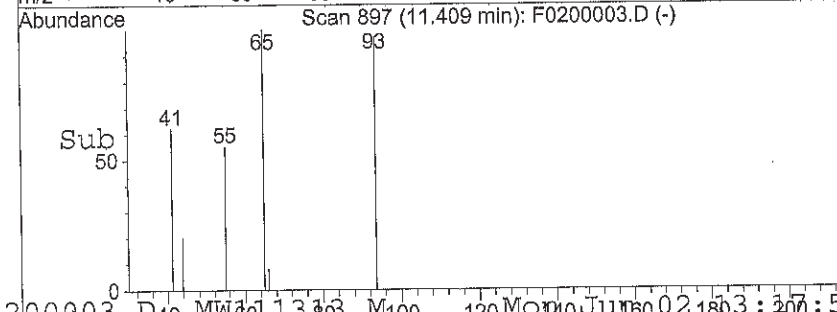
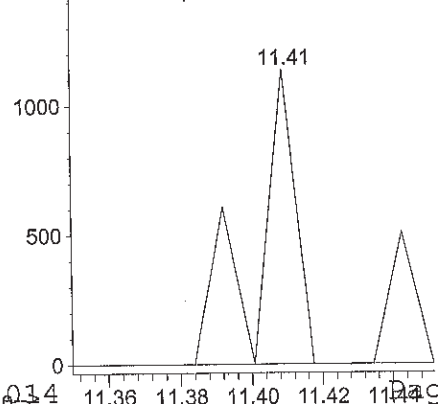
#35
Dibromomethane
Concen: 0.36 ug/L
RT: 11.41 min Scan# 897
Delta R.T. 0.20 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

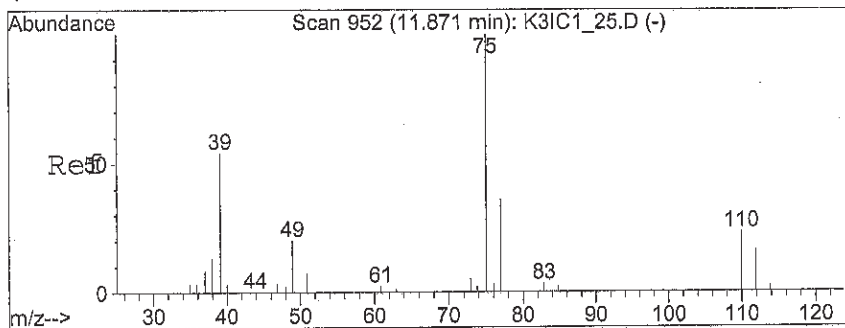
Tgt Ion: 93 Resp: 884
Ion Ratio Lower Upper
93 100
95 0.0 66.2 99.2#
174 0.0 75.5 113.3#



Abundance

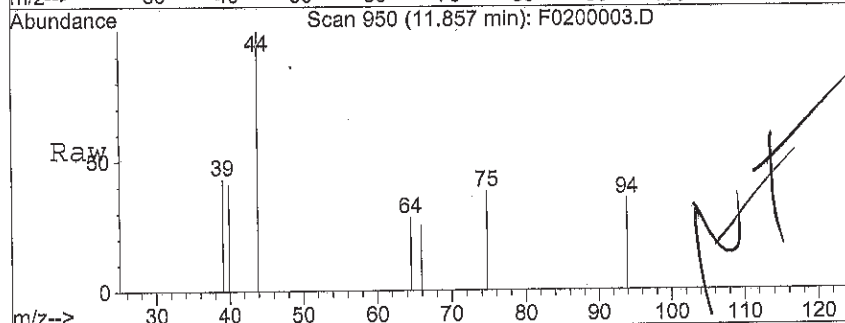
Ion 93.00 (92.70 to 93.70): F0200003.
Ion 95.00 (94.70 to 95.70): F0200003.
Ion 173.90 (173.60 to 174.60): F0200003.





#37
 cis-1,3-Dichloropropene
 Concen: 0.07 ug/L
 RT: 11.86 min Scan# 950
 Delta R.T. -0.01 min
 Lab File: F0200003.D
 Acq: 2 Jun 2014 12:51 pm

Tgt Ion:	75	Resp:	396
Ion	Ratio	Lower	Upper
75	100		
39	185.1	40.7	61.1#
77	0.0	28.8	43.2#
110	0.0	18.1	27.1#



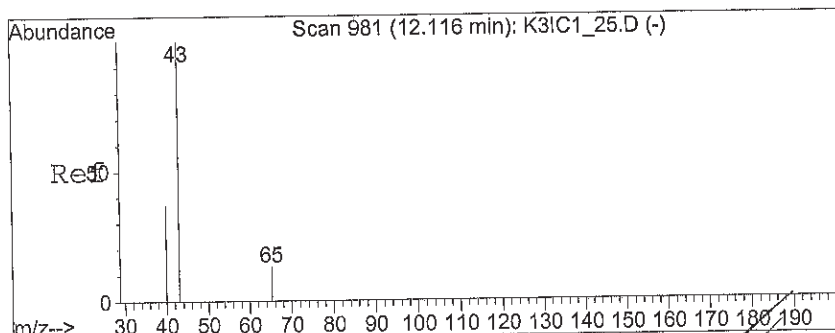
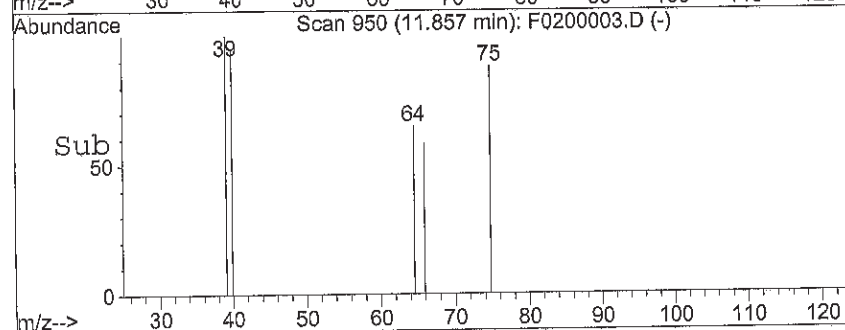
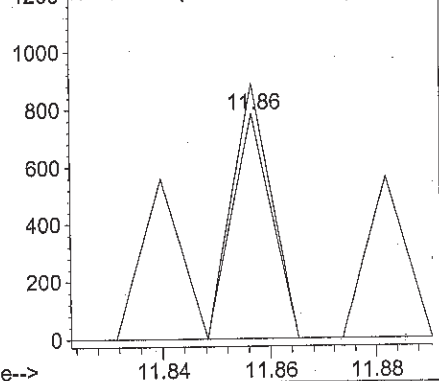
Abundance

Ion 75.05 (74.75 to 75.75): F0200003.D

Ion 39.05 (38.75 to 39.75): F0200003.D

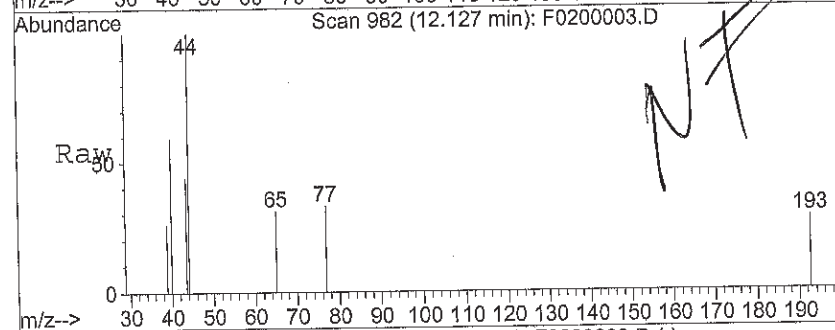
Ion 77.05 (76.75 to 77.75): F0200003.D

Ion 110.05 (109.75 to 110.75): F0200003.D



#40
 (MIBK) 4-Methyl-2-Pentanone
 Concen: 0.17 ug/L
 RT: 12.13 min Scan# 982
 Delta R.T. 0.01 min
 Lab File: F0200003.D
 Acq: 2 Jun 2014 12:51 pm

Tgt Ion:	43	Resp:	435
Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	0.0
85	0.0	0.0	0.0
100	0.0	0.0	0.0



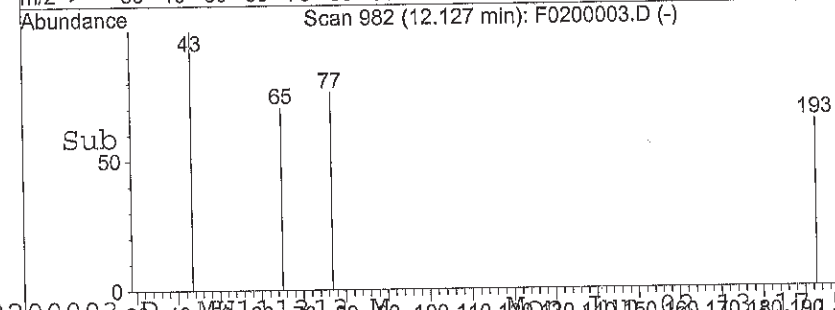
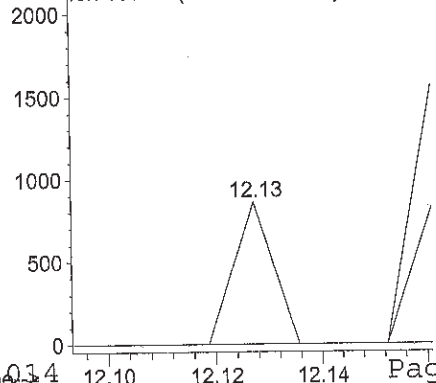
Abundance

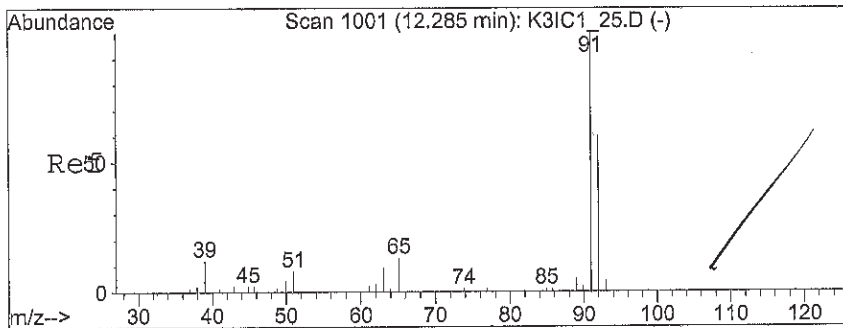
Ion 43.00 (42.70 to 43.70): F0200003.D

Ion 58.10 (57.80 to 58.80): F0200003.D

Ion 85.05 (84.75 to 85.75): F0200003.D

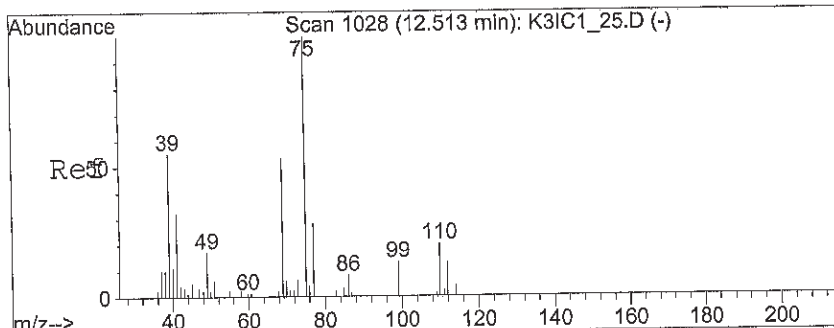
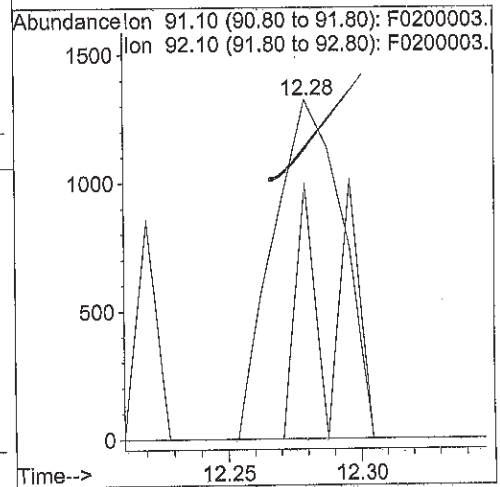
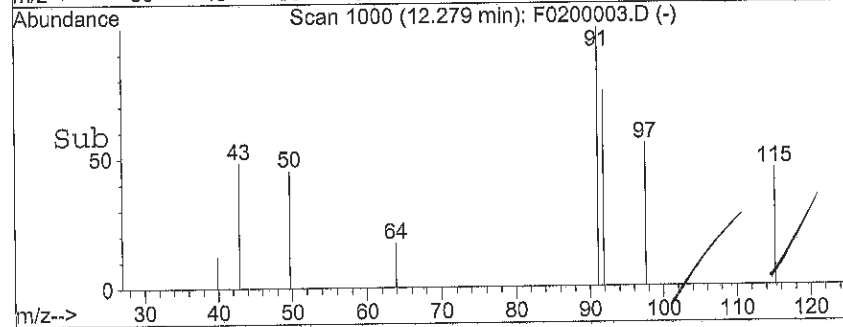
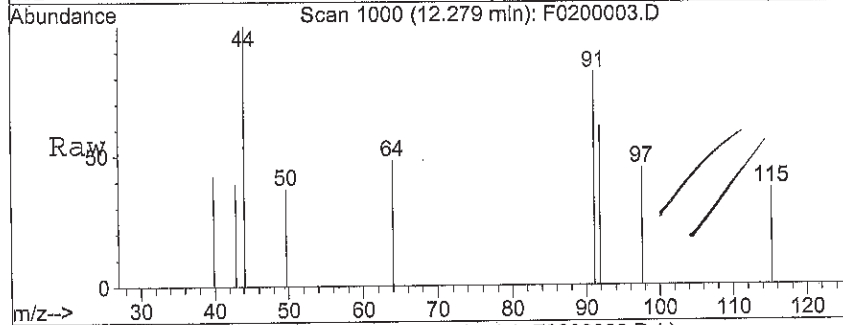
Ion 100.15 (99.85 to 100.85): F0200003.D





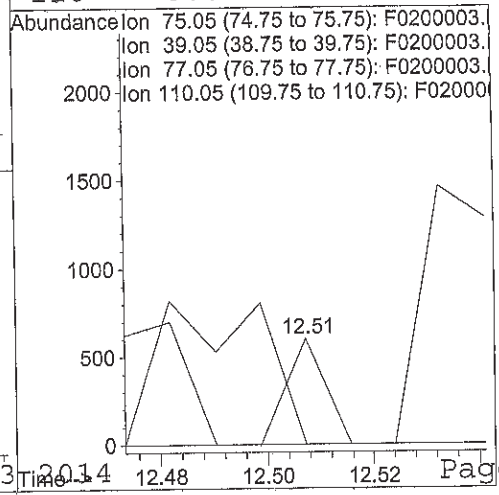
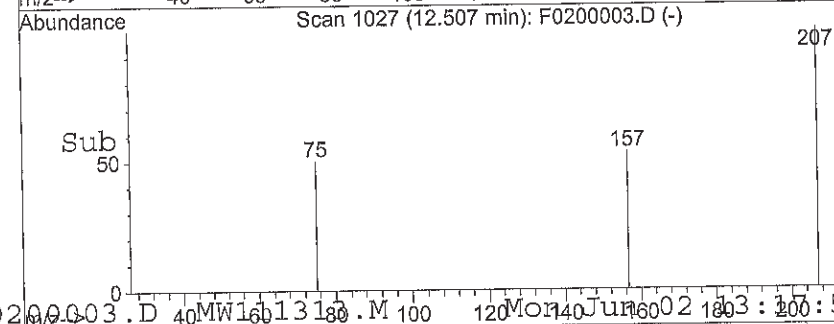
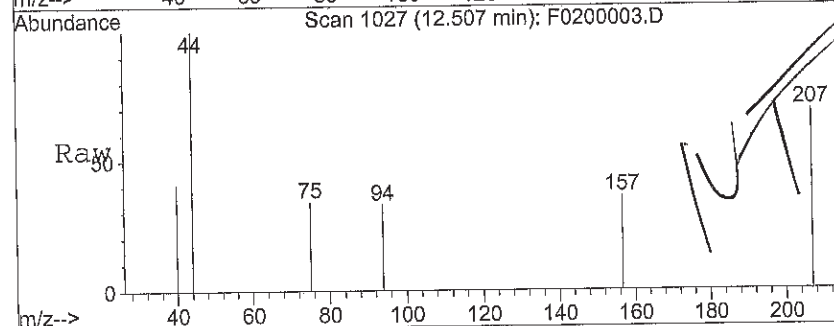
#41
Toluene
Concen: 0.14 ug/L
RT: 12.28 min Scan# 1000
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

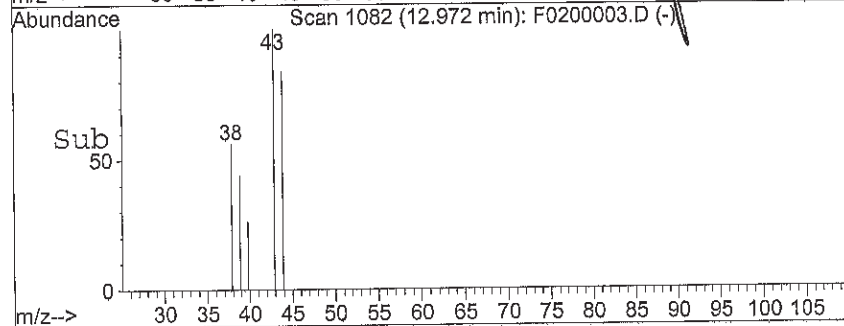
Tgt Ion: 91 Resp: 2379
Ion Ratio Lower Upper
91 100
92 42.8 47.4 71.0#



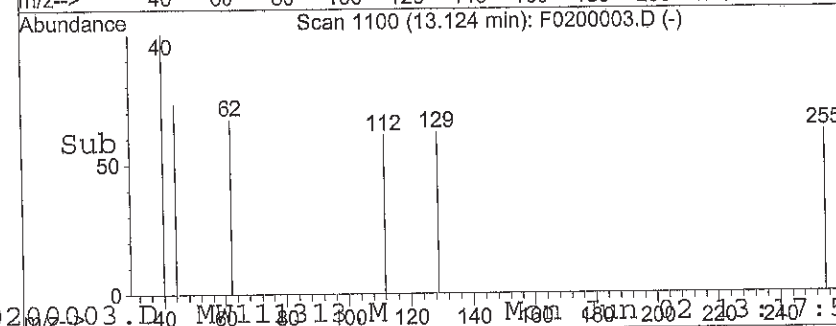
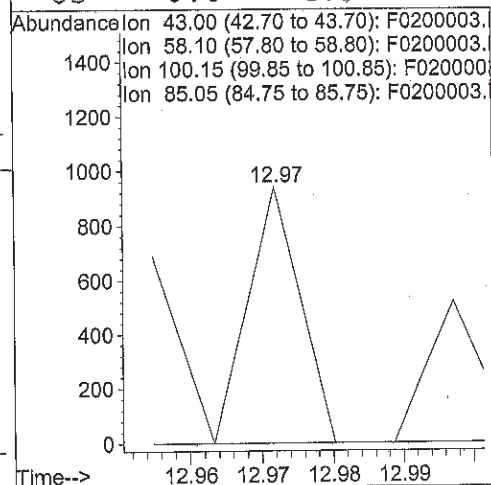
#42
trans-1,3-Dichloropropene
Concen: 0.05 ug/L
RT: 12.51 min Scan# 1027
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion: 75 Resp: 305
Ion Ratio Lower Upper
75 100
39 0.0 53.6 80.4#
77 0.0 25.4 38.2#
110 0.0 17.6 26.4#

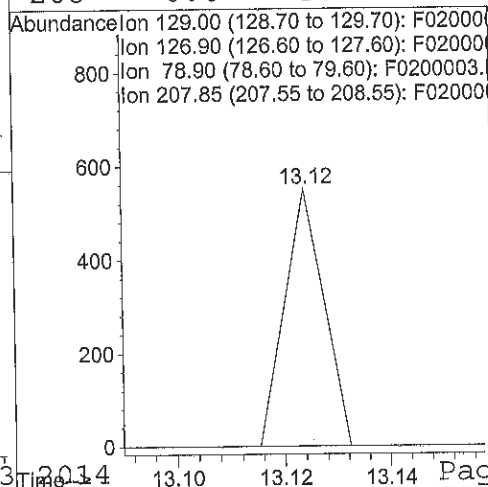


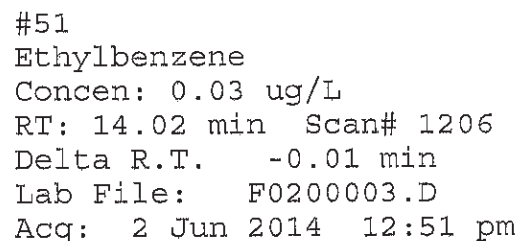


Tgt	Ion: 43	Resp:	476
Ion	Ratio	Lower	Upper
43	100		
58	0.0	40.9	61.3#
100	0.0	5.5	8.3#
85	0.0	4.3	6.5#

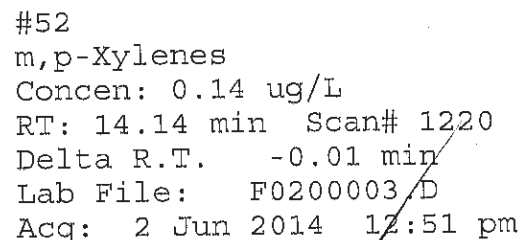
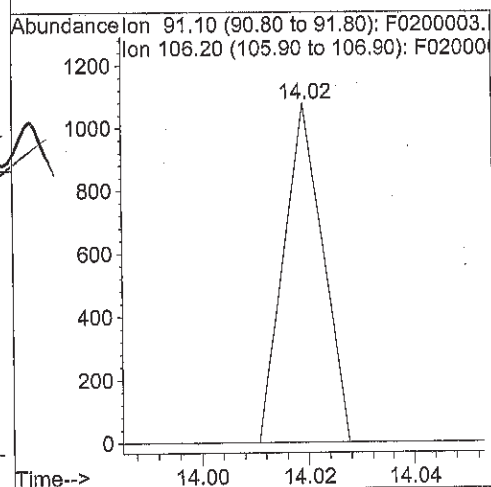


Tgt	Ion:129	Resp:	280
Ion	Ratio	Lower	Upper
129	100		
127	0.0	61.6	92.4#
79	0.0	10.7	16.1#
208	0.0	1.4	2.0#

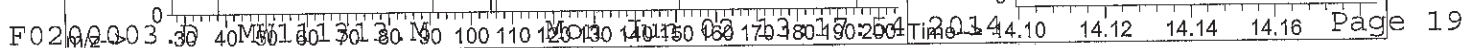
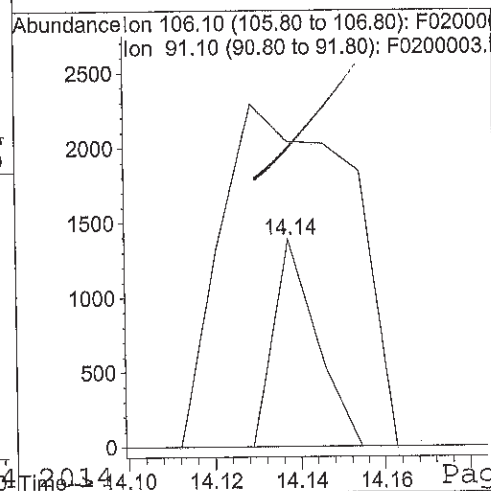


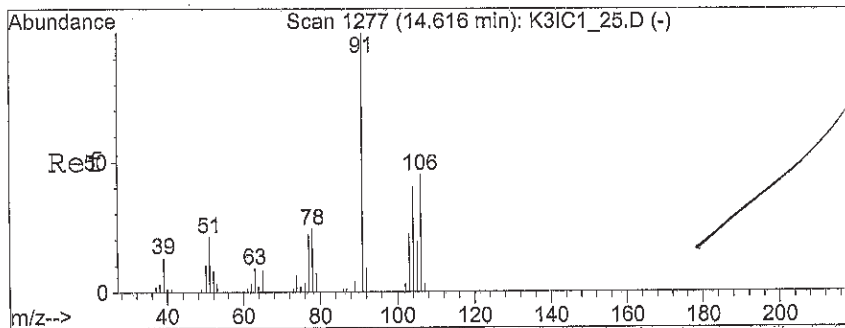


Tgt	Ion: 91	Resp:	546
Ion	Ratio	Lower	Upper
91	100		
106	0.0	23.5	35.3#



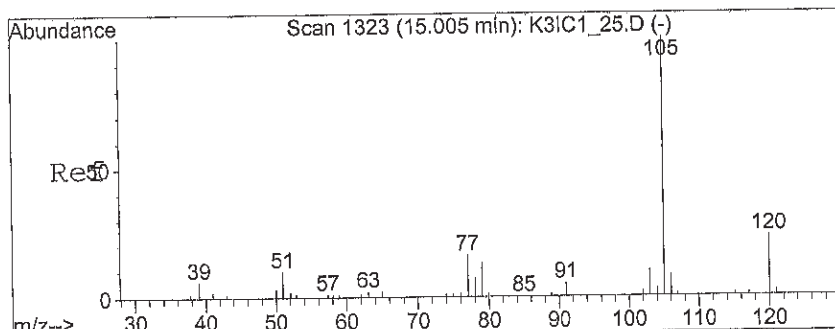
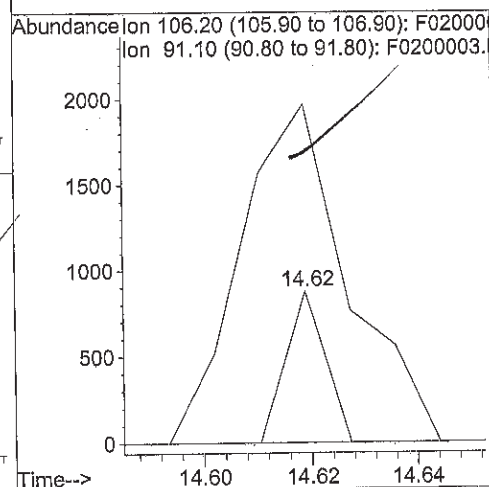
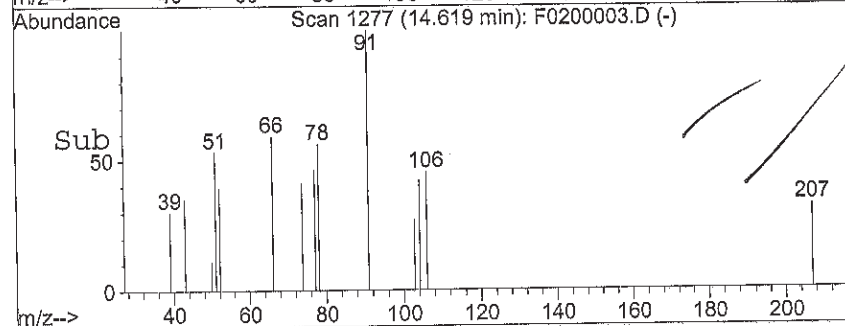
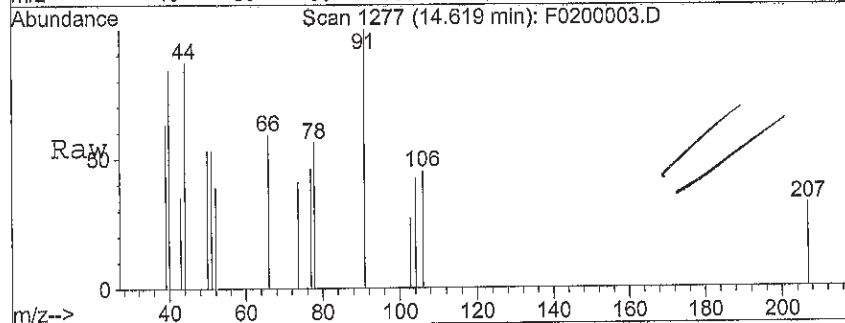
Tgt	Ion:106	Resp:	974
Ion	Ratio	Lower	Upper
106	100		
91	495.4	177.1	265.7#





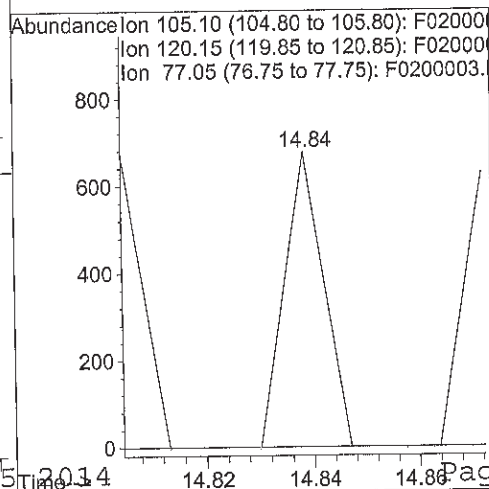
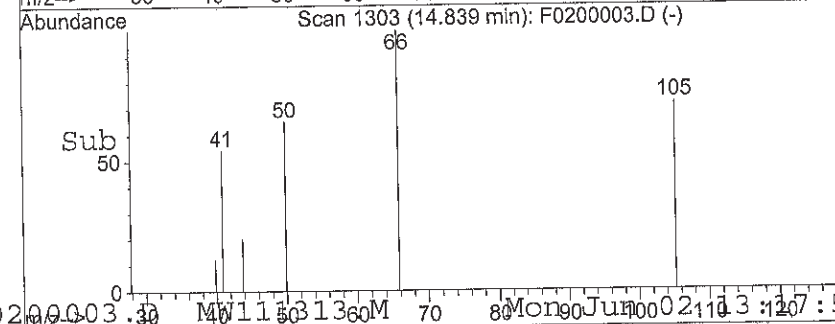
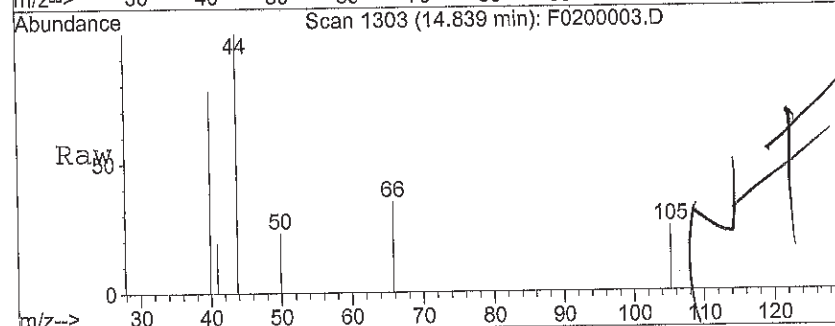
#53
o-Xylene
Concen: 0.06 ug/L
RT: 14.62 min Scan# 1277
Delta R.T. 0.00 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

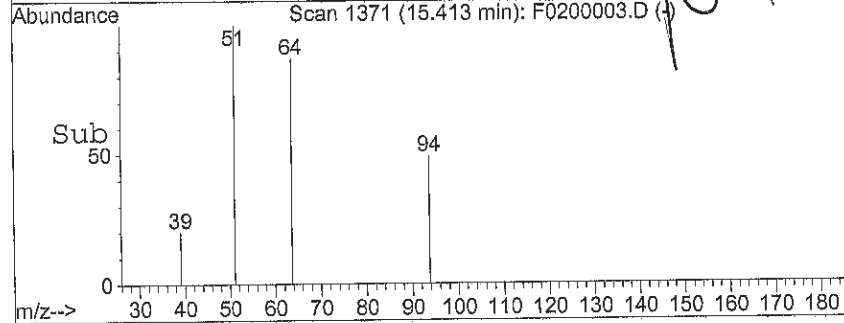
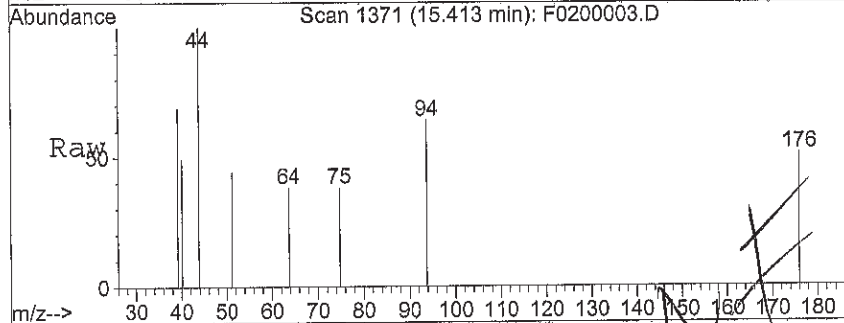
Tgt Ion:106 Resp: 444
Ion Ratio Lower Upper
106 100
91 614.0 179.0 268.6#



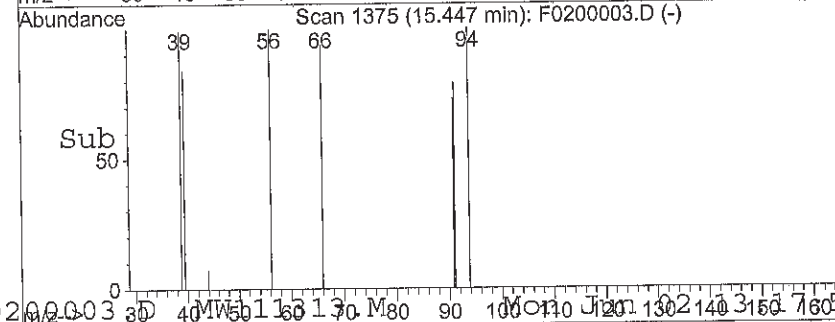
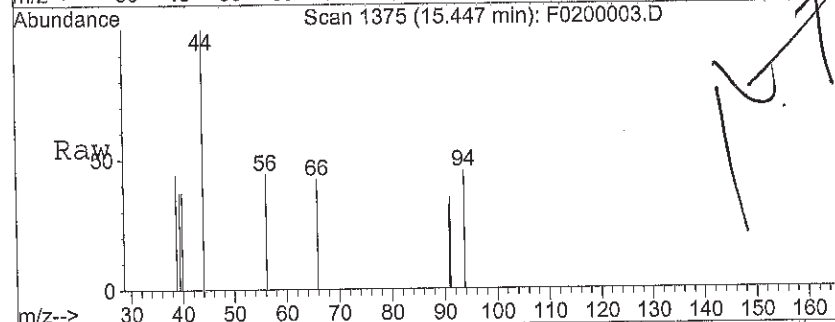
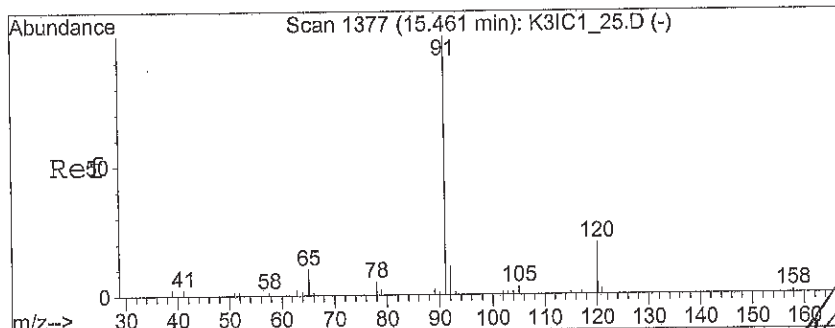
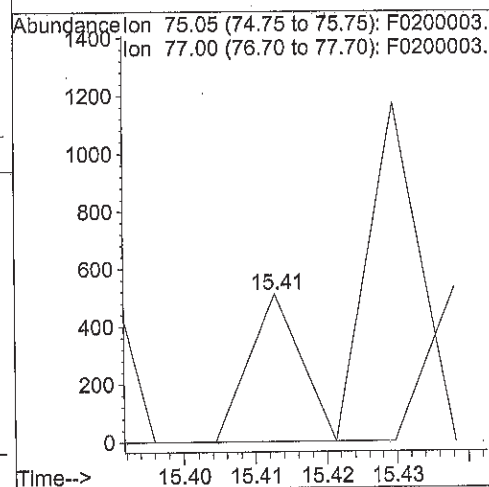
#56
Isopropylbenzene
Concen: 0.02 ug/L
RT: 14.84 min Scan# 1303
Delta R.T. -0.17 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion:105 Resp: 343
Ion Ratio Lower Upper
105 100
120 0.0 19.3 28.9#
77 0.0 13.1 19.7#

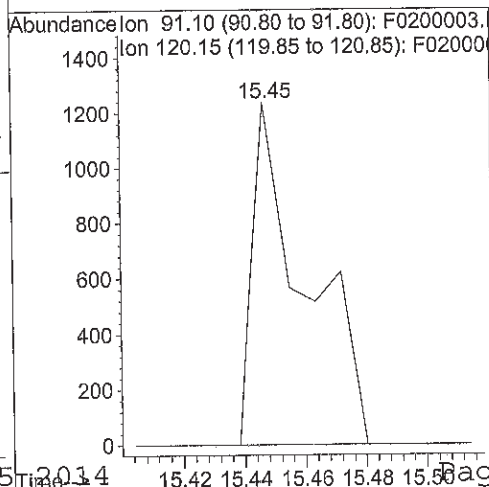


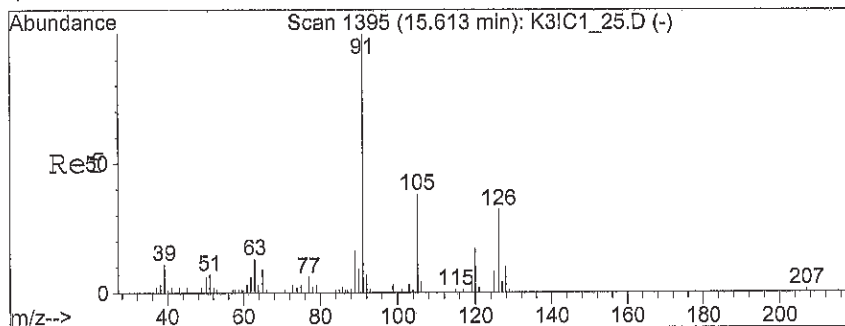


Tgt	Ion: 75	Resp:	259
Ion	Ratio	Lower	Upper
75	100		
77	0.0	31.2	46.8#



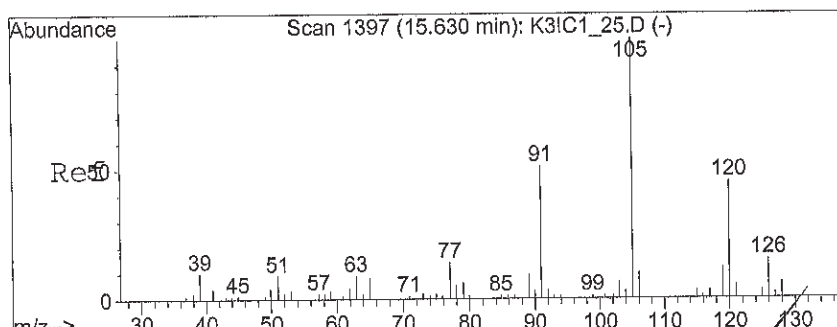
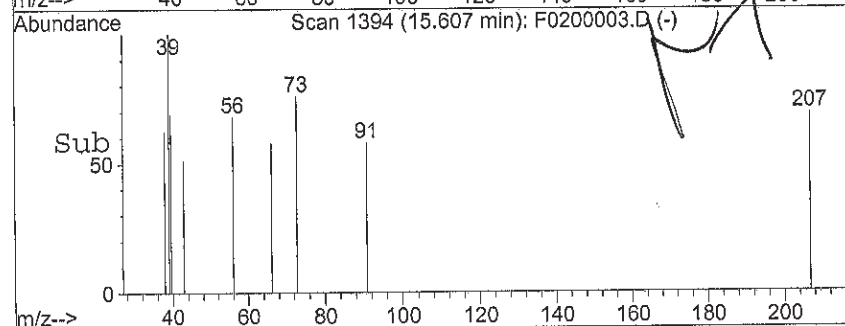
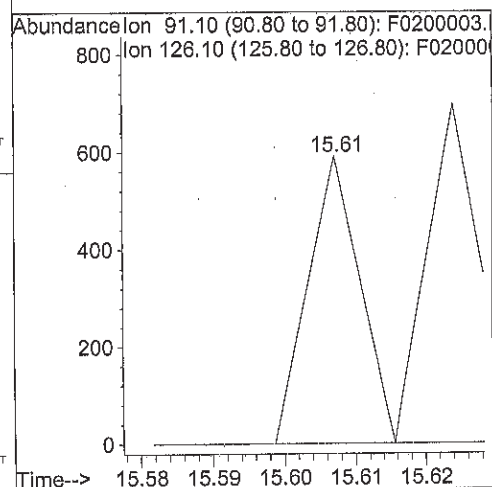
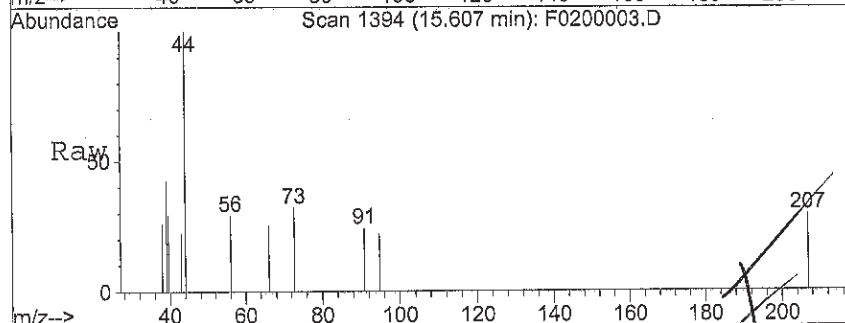
Tgt Ion: 91	Resp: 1489
Ion Ratio	Lower Upper
91 100	
120 0.0	16.1 24.1#





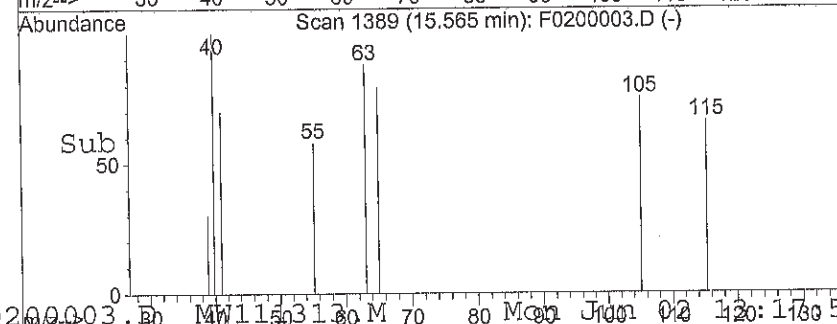
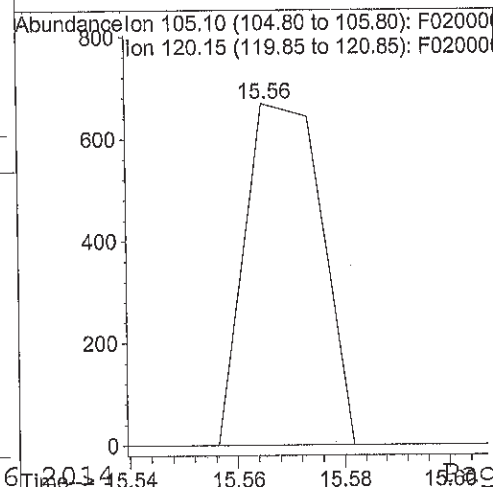
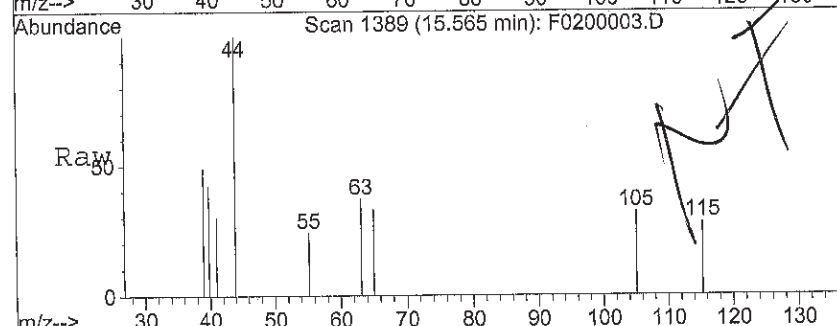
#63
 2-Chlorotoluene
 Concen: 0.02 ug/L
 RT: 15.61 min Scan# 1394
 Delta R.T. -0.01 min
 Lab File: F0200003.D
 Acq: 2 Jun 2014 12:51 pm

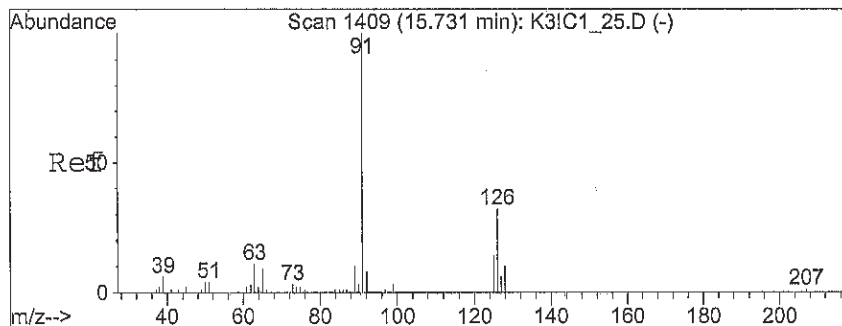
Tgt Ion: 91 Resp: 299
 Ion Ratio Lower Upper
 91 100
 126 0.0 24.0 36.0#



#64
 1,3,5-Trimethylbenzene
 Concen: 0.04 ug/L
 RT: 15.56 min Scan# 1389
 Delta R.T. -0.06 min
 Lab File: F0200003.D
 Acq: 2 Jun 2014 12:51 pm

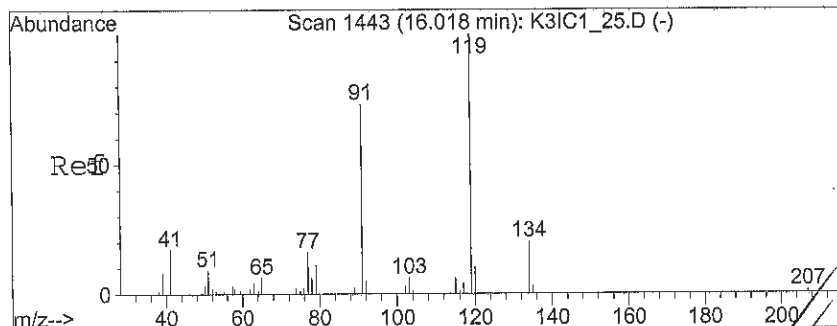
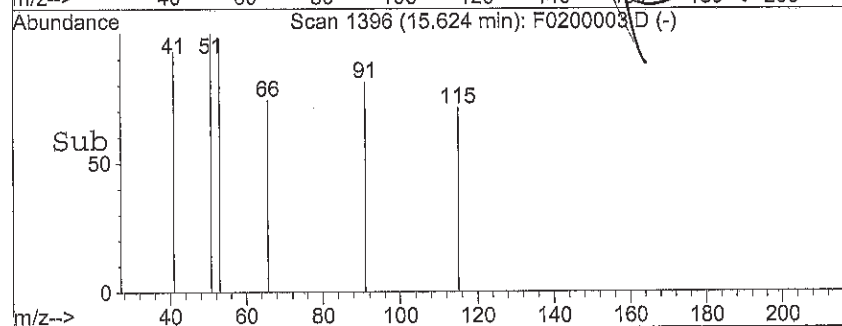
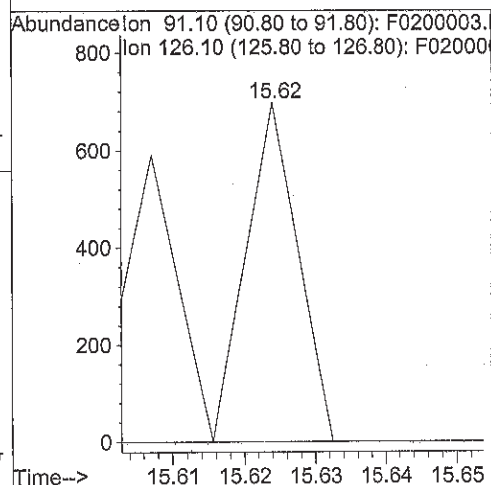
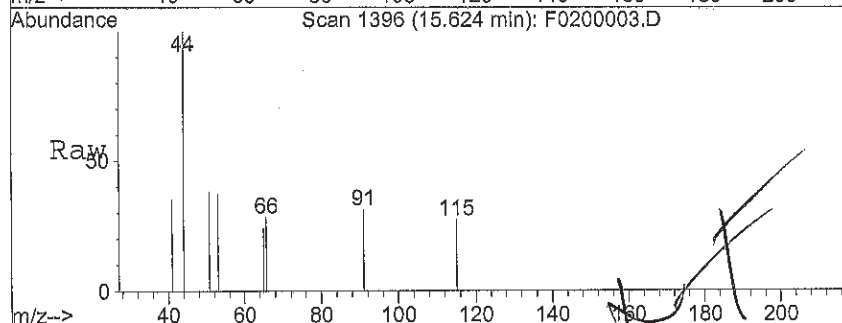
Tgt Ion: 105 Resp: 665
 Ion Ratio Lower Upper
 105 100
 120 0.0 36.4 54.6#





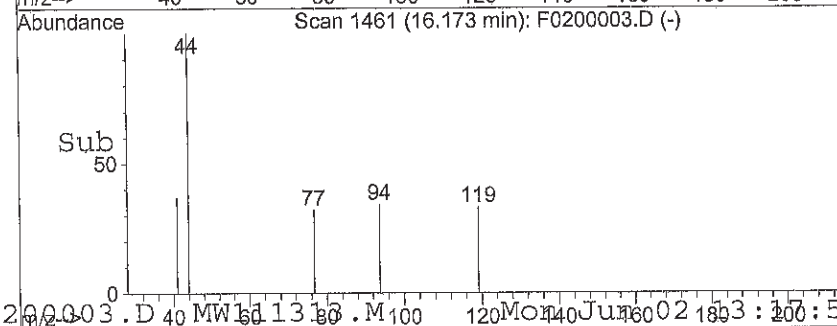
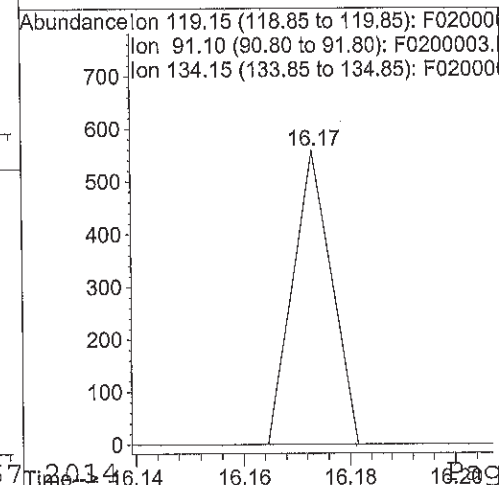
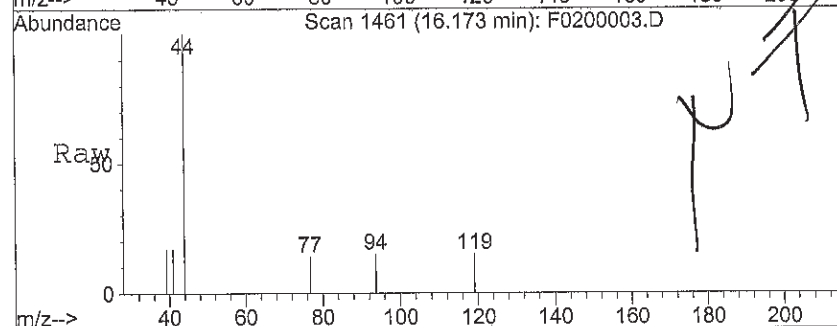
#65
 4-Chlorotoluene
 Concen: 0.02 ug/L
 RT: 15.62 min Scan# 1396
 Delta R.T. -0.11 min
 Lab File: F0200003.D
 Acq: 2 Jun 2014 12:51 pm

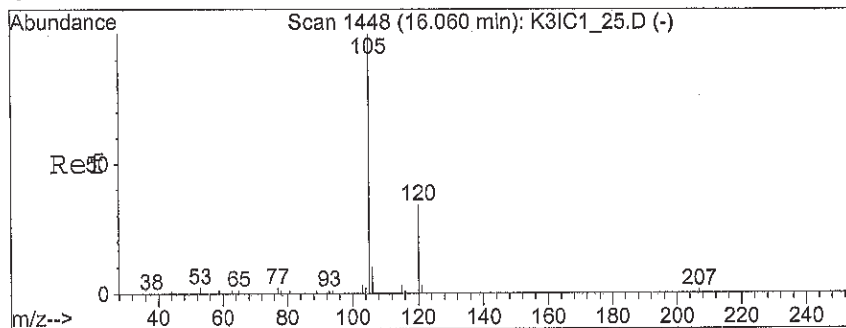
Tgt Ion: 91 Resp: 353
 Ion Ratio Lower Upper
 91 100
 126 0.0 24.6 36.8#



#66
 tert-Butylbenzene
 Concen: 0.02 ug/L
 RT: 16.17 min Scan# 1461
 Delta R.T. 0.15 min
 Lab File: F0200003.D
 Acq: 2 Jun 2014 12:51 pm

Tgt Ion: 119 Resp: 283
 Ion Ratio Lower Upper
 119 100
 91 0.0 56.3 84.5#
 134 0.0 16.1 24.1#





#67

1,2,4-Trimethylbenzene

Concen: 0.14 ug/L

RT: 16.05 min Scan# 1447

Delta R.T. -0.01 min

Lab File: F0200003.D

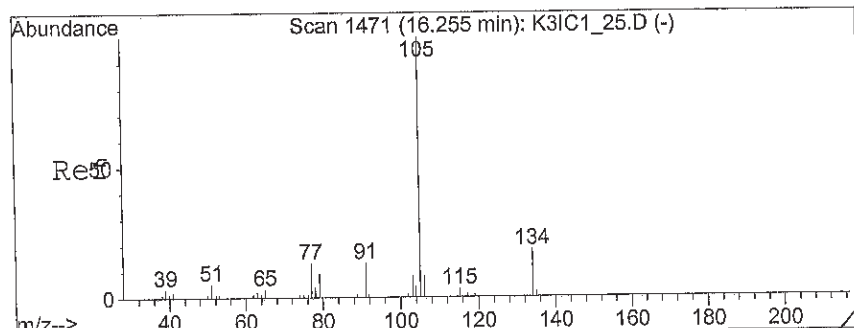
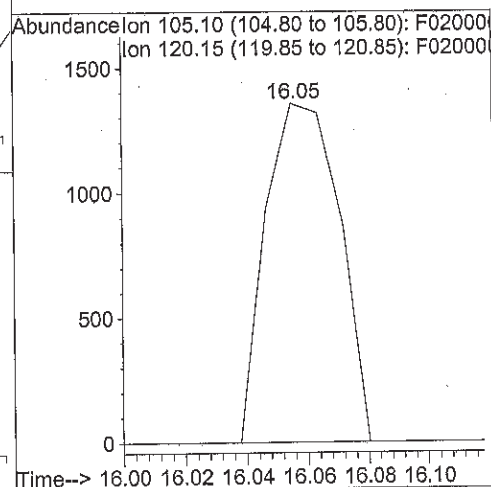
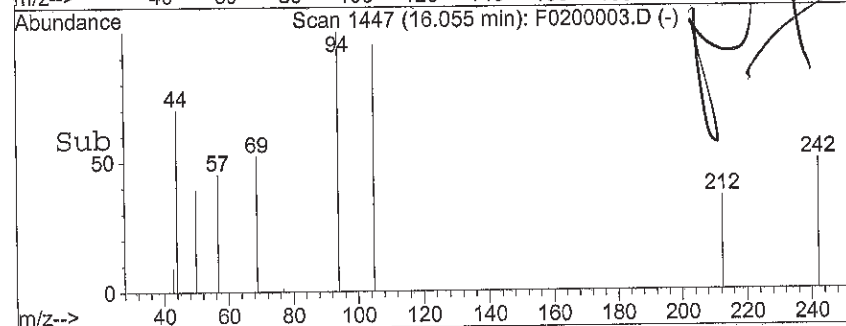
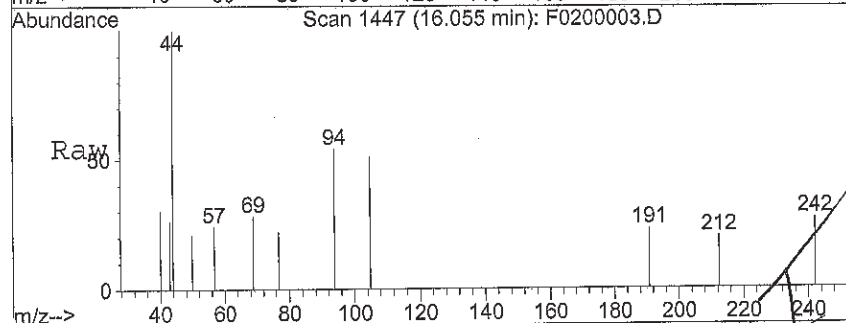
Acq: 2 Jun 2014 12:51 pm

Tgt Ion:105 Resp: 2267

Ion Ratio Lower Upper

105 100

120 0.0 33.8 50.8#



#68

sec-Butylbenzene

Concen: 0.02 ug/L

RT: 16.33 min Scan# 1480

Delta R.T. 0.08 min

Lab File: F0200003.D

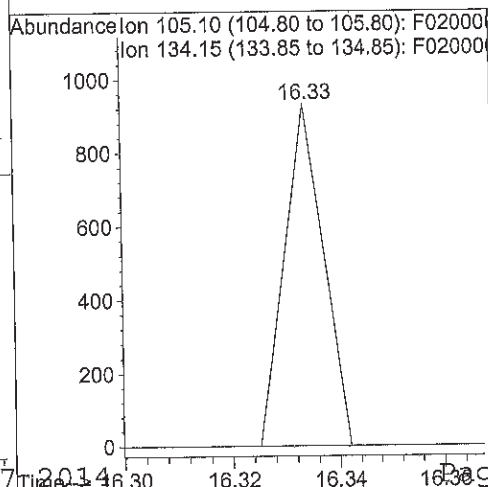
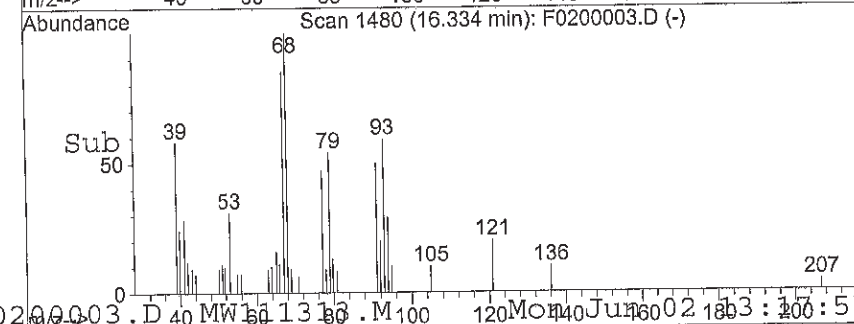
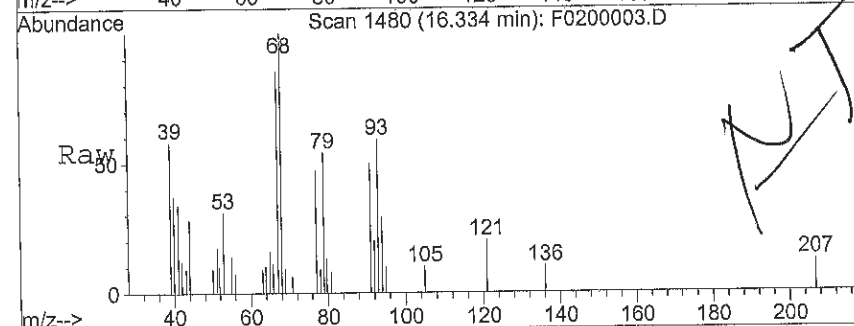
Acq: 2 Jun 2014 12:51 pm

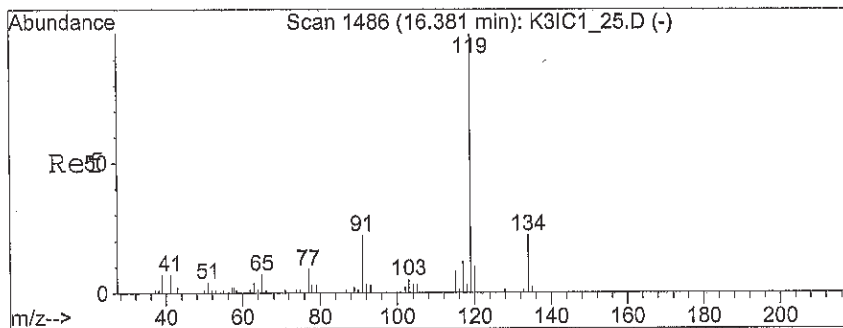
Tgt Ion:105 Resp: 472

Ion Ratio Lower Upper

105 100

134 0.0 13.0 19.6#





#69

p-Isopropyltoluene

Concen: 0.08 ug/L

RT: 16.38 min Scan# 1485

Delta R.T. -0.01 min

Lab File: F0200003.D

Acq: 2 Jun 2014 12:51 pm

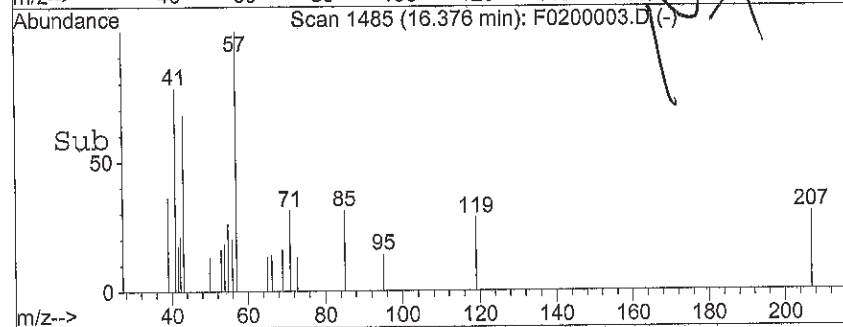
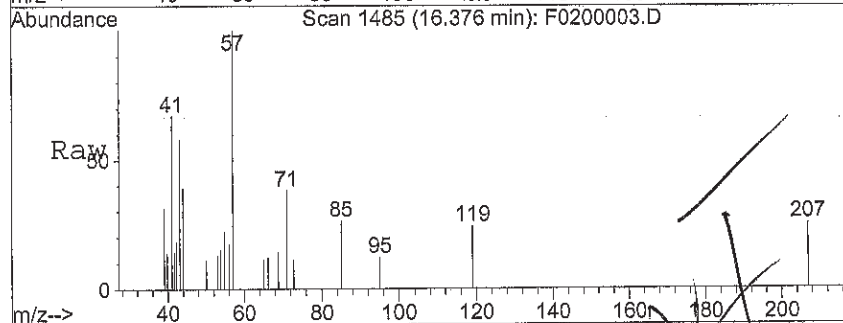
Tgt Ion: 119 Resp: 1382

Ion Ratio Lower Upper

119 100

134 0.0 17.4 26.2#

91 0.0 19.6 29.4#

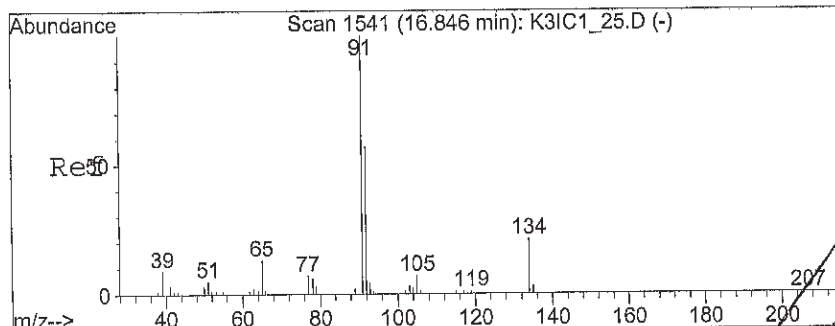
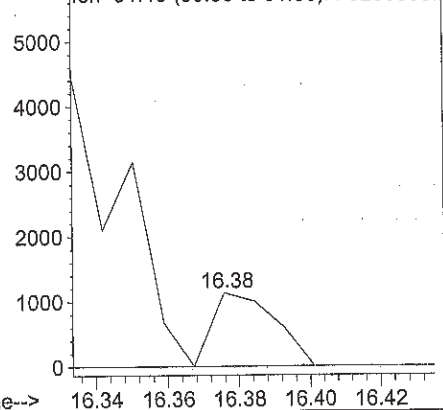


Abundance

Ion 119.15 (118.85 to 119.85): F0200003.D

Ion 134.15 (133.85 to 134.85): F0200003.D

Ion 91.10 (90.80 to 91.80): F0200003.D



#72

n-Butylbenzene

Concen: 0.01 ug/L

RT: 16.91 min Scan# 1548

Delta R.T. 0.06 min

Lab File: F0200003.D

Acq: 2 Jun 2014 12:51 pm

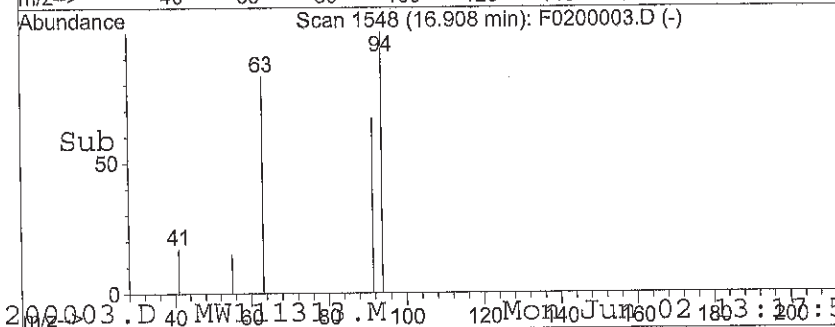
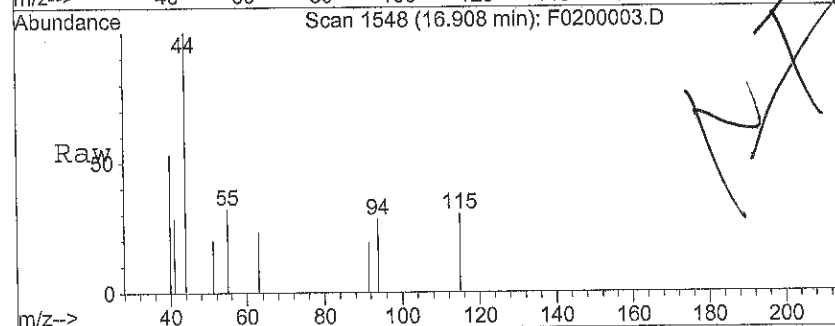
Tgt Ion: 91 Resp: 263

Ion Ratio Lower Upper

91 100

92 0.0 47.0 70.4#

134 0.0 18.1 27.1#

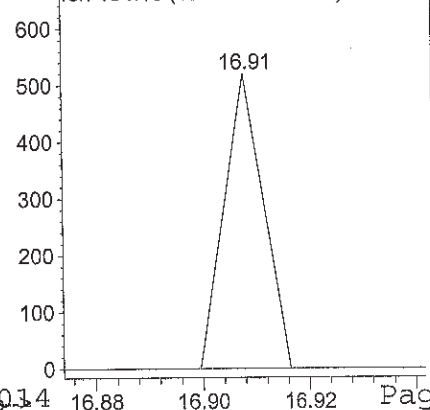


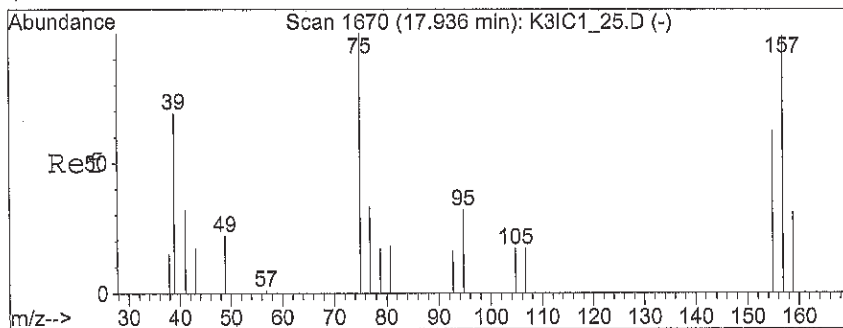
Abundance

Ion 91.10 (90.80 to 91.80): F0200003.D

Ion 92.10 (91.80 to 92.80): F0200003.D

Ion 134.15 (133.85 to 134.85): F0200003.D





#74

1,2-Dibromo-3-chloropropane

Concen: 1.37 ug/L

RT: 17.90 min Scan# 1666

Delta R.T. -0.03 min

Lab File: F0200003.D

Acq: 2 Jun 2014 12:51 pm

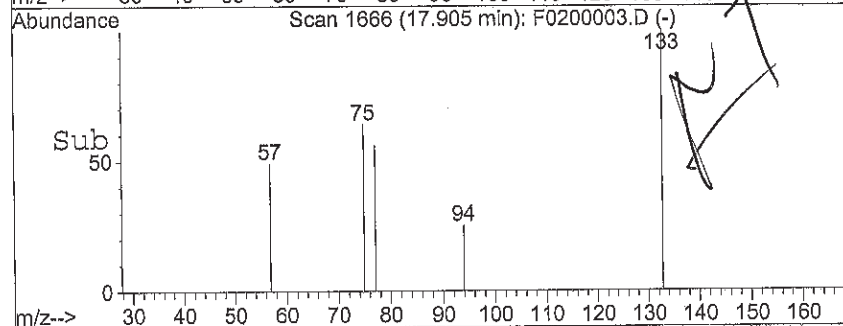
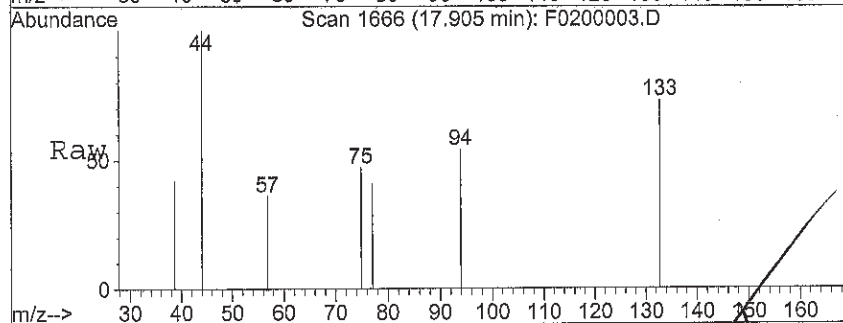
Tgt Ion: 75 Resp: 364

Ion Ratio Lower Upper

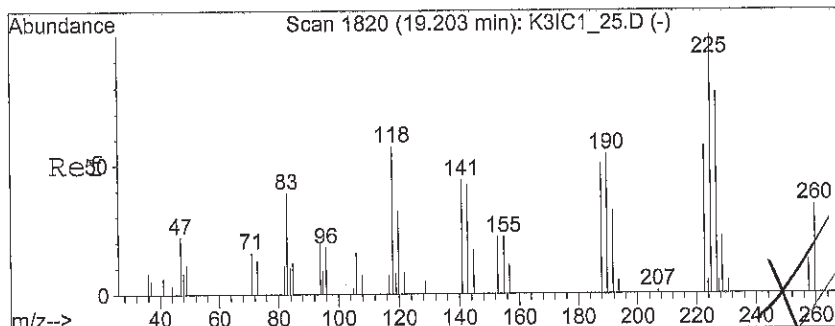
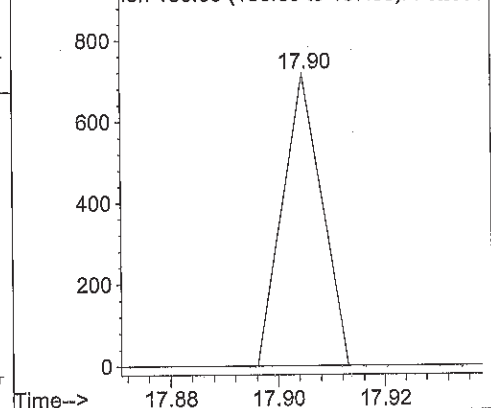
75 100

155 0.0 59.2 88.8#

157 0.0 77.0 115.6#



Abundance Ion 75.05 (74.75 to 75.75): F0200003.D
Ion 154.95 (154.65 to 155.65): F0200003.D
Ion 156.95 (156.65 to 157.65): F0200003.D



#76

Hexachlorobutadiene

Concen: 0.26 ug/L

RT: 19.20 min Scan# 1819

Delta R.T. -0.01 min

Lab File: F0200003.D

Acq: 2 Jun 2014 12:51 pm

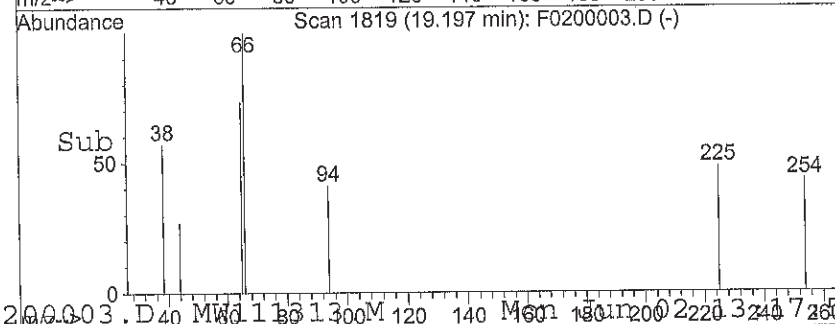
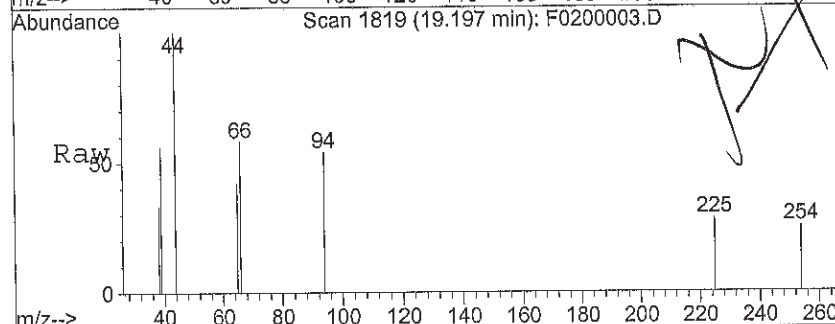
Tgt Ion: 225 Resp: 299

Ion Ratio Lower Upper

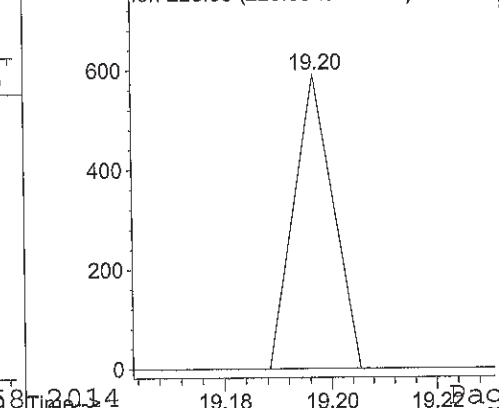
225 100

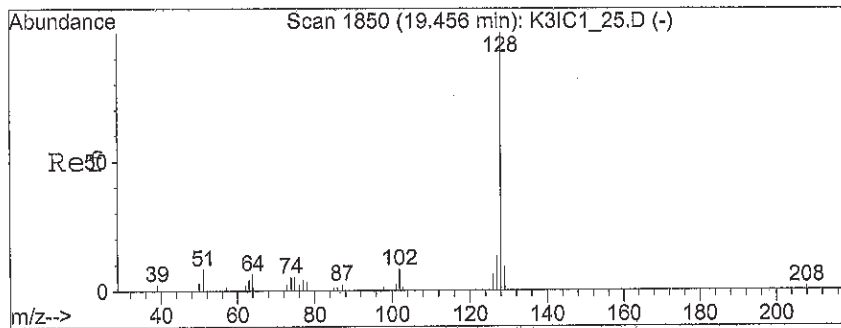
223 0.0 52.0 78.0#

227 0.0 50.6 75.8#



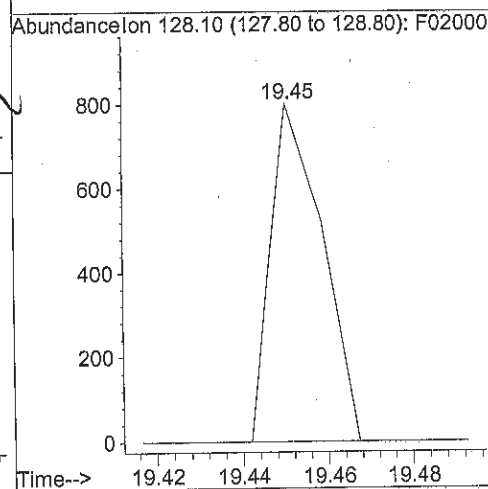
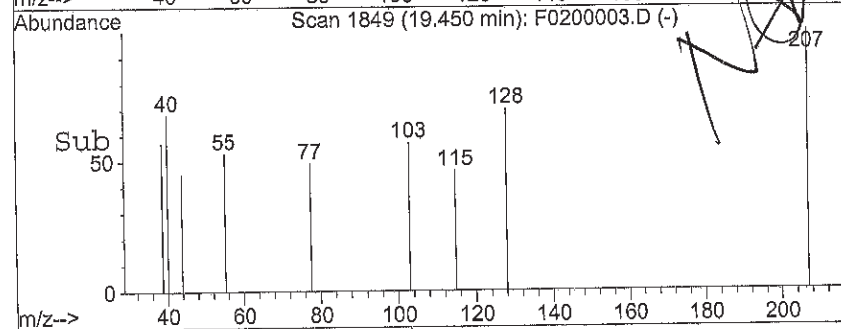
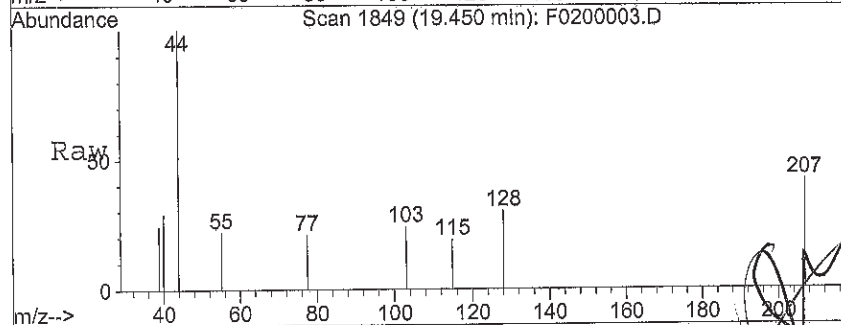
Abundance Ion 224.90 (224.60 to 225.60): F0200003.D
Ion 222.90 (222.60 to 223.60): F0200003.D
Ion 226.85 (226.55 to 227.55): F0200003.D





#77
Naphthalene
Concen: 0.05 ug/L
RT: 19.45 min Scan# 1849
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion:128 Resp: 670



Data File : C:\HPCHEM\1\DATA\060214L3\F0200003.D
 Acq On : 2 Jun 2014 12:51 pm
 Sample : 34F0201-DUP1
 Misc : 100cc SVL-528-SA8-SV-5.0-6.0
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:30 19114

Vial: 2
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Quant Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene (IS)	10.29	96	1396912	12.50	ug/L	-0.03
7) Chlorobenzene-d5 (IS)	13.92	117	1285027	12.50	ug/L	-0.01
10) 1,4-Dichlorobenzene-d4 (IS)	16.50	152	641852	12.50	ug/L	-0.01

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.42	113	429432m	11.82	ug/L	-0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	94.56%
3) Chloroform-d (SU6)	9.18	84	743878m	14.27	ug/L	-0.01
Spiked Amount	12.500	Range	70 - 140	Recovery	=	114.16%
4) Methylene Chloride-d2 (SU5)	7.07	86	313142	10.28	ug/L	-0.01
Spiked Amount	12.500	Range	70 - 140	Recovery	=	82.24%
5) 1,2-Dichloroethane-d4 (SU2)	9.89	65	367900m	14.82	ug/L	-0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	118.56%
6) Benzene-d6 (SU7)	9.93	84	1187305	10.83	ug/L	-0.02
Spiked Amount	12.500	Range	70 - 140	Recovery	=	86.64%
8) Toluene-d8 (SU3)	12.20	98	1321563	10.84	ug/L	-0.02
Spiked Amount	12.500	Range	75 - 125	Recovery	=	86.72%
9) 4-Bromofluorobenzene (SU4)	15.22	95	621191m	12.34	ug/L	-0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	98.72%

Target Compounds

Qvalue

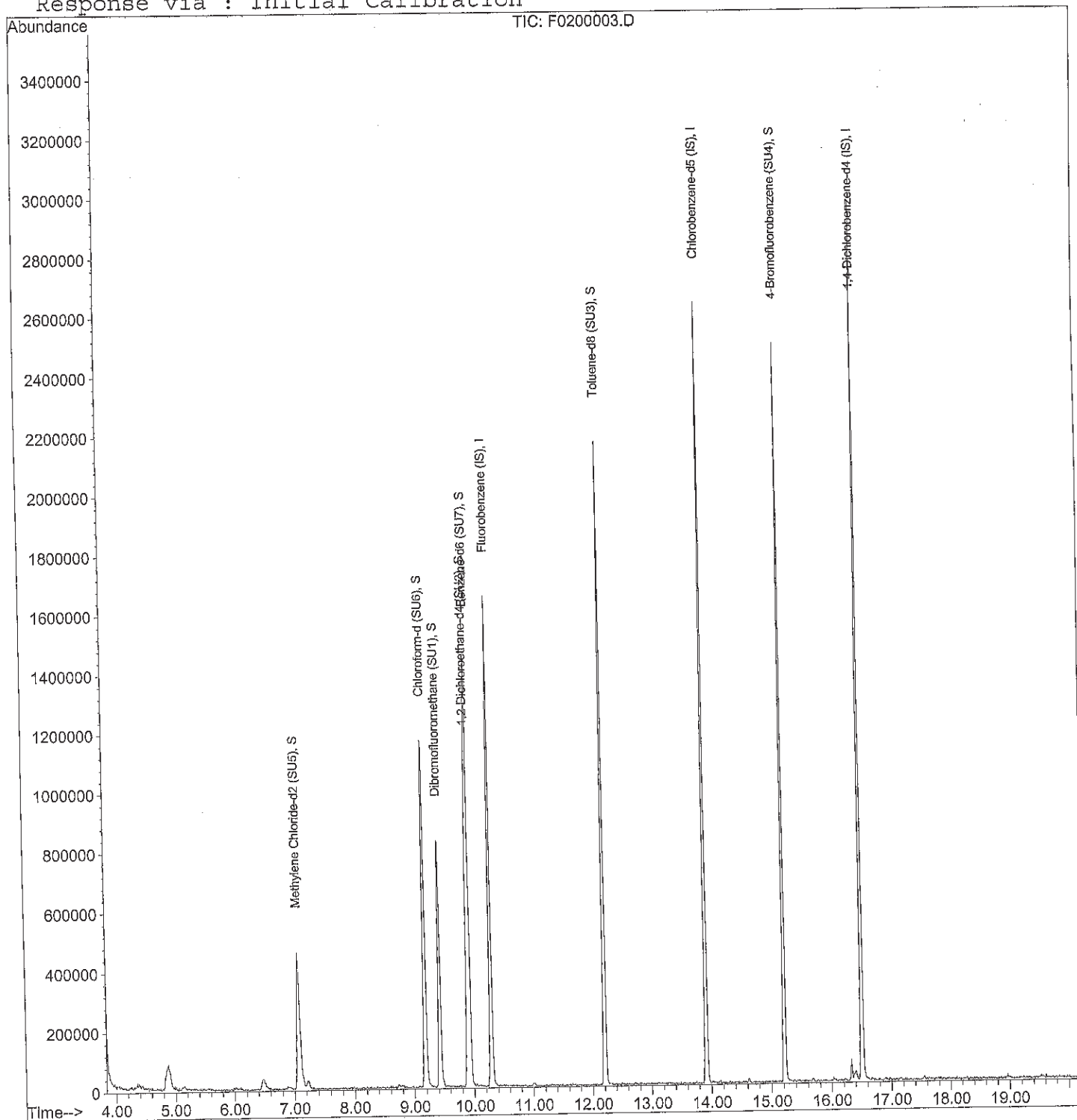
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200003.D
 Acq On : 2 Jun 2014 12:51 pm
 Sample : 34F0201-DUP1
 Misc : 100cc SVL-528-SA8-SV-5.0-6.0
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:30 19114

Vial: 2
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration



**RAW DATA FOR QC SAMPLES AND INITIAL CALIBRATION
LABORATORY CONTROL SAMPLES**

Data File : C:\HPCHEM\1\DATA\060214L3\F02LCS01.D
 Acq On : 2 Jun 2014 10:14 am
 Sample : 34F0201-BS1
 Misc : 20cc 1.25/2.5/12.5 ug/L LCS
 MS Integration Params: rteint.p
 Quant Time: Jun 2 10:41 19114

Vial: 10
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 1.00

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.29	96	1340147	12.50	ug/L	0.00
38) Chlorobenzene-d5 (IS)	13.91	117	1028974	12.50	ug/L	-0.01
59) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	463879	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	437130	13.08	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	104.64%
28) 1,2-Dichloroethane-d4 (SU2)	9.89	65	487198	15.34	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	122.72%
39) Toluene-d8 (SU3)	12.21	98	1292115	13.46	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	107.68%
58) 4-Bromofluorobenzene (SU4)	15.21	95	516854	12.28	ug/L	-0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	98.24%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
3) (F12) Dichlorodifluorometh	4.09	85	45929	1.40	ug/L	99
4) Chloromethane	4.45	50	31266	1.27	ug/L	100
5) Vinyl Chloride	4.60	62	28150	1.19	ug/L	71
6) Bromomethane	5.09	96	22764	1.37	ug/L	86
7) Chloroethane	5.25	64	12654	1.22	ug/L	98
8) (F11) Trichlorofluorometha	5.65	101	50063	1.36	ug/L	90
9) (F113) 1,1,2-Trichloro-tri	6.35	151	32181	1.22	ug/L	92
10) 1,1-Dichloroethene	6.42	96	41125	1.30	ug/L #	41
11) Acetone	6.46	58	20671	4.79	ug/L #	1
12) (IPA) Leak Check Compound	6.51	45	105227	65.34	ug/L	81
13) Carbon disulfide	6.85	76	136636	1.23	ug/L	96
14) Methylene Chloride	7.10	84	41022	1.11	ug/L #	72
15) (TBA) tert-Butanol	7.09	59	12464	5.45	ug/L #	88
16) (MTBE) Methyl-t-butyl ethe	7.40	73	146504	1.93	ug/L #	85
17) trans-1,2-Dichloroethene	7.47	96	40551	1.12	ug/L #	62
18) 1,1-Dichloroethane	8.06	63	75861	1.26	ug/L	94
19) cis-1,2-Dichloroethene	8.82	96	43644	1.04	ug/L	62
20) 2,2-Dichloropropane	8.84	77	5657	0.11	ug/L #	57
21) (MEK) 2-Butanone	8.80	72	7611	2.02	ug/L #	1
22) (DIPE) Diisopropyl Ether	8.01	45	149374	1.43	ug/L #	86
23) Bromochloromethane	9.17	128	17900	1.00	ug/L #	56
24) Chloroform	9.21	83	90933	1.30	ug/L	92

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060214L3\F02LCS01.D
 Acq On : 2 Jun 2014 10:14 am
 Sample : 34F0201-BS1
 Misc : 20cc 1.25/2.5/12.5 ug/L LCS
 MS Integration Params: rteint.p
 Quant Time: Jun 2 10:41 19114

Vial: 10
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 1.00

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
25) (ETBE) 2-ethoxy 2-methyl p	8.49	59	125347	1.29	ug/L #	94
26) 1,1,1-Trichloroethane	9.50	97	62896	1.14	ug/L	94
27) (TAME) tert-Amyl methyl et	10.00	73	102348	1.21	ug/L #	87
29) 1,1-Dichloropropene	9.69	75	73517	1.42	ug/L #	89
30) Carbon Tetrachloride	9.71	117	56683	1.26	ug/L	99
31) Benzene	9.98	78	126210	1.00	ug/L #	72
32) 1,2-Dichloroethane	9.98	62	49627	1.11	ug/L	87
33) Trichloroethene	10.74	130	45164	1.11	ug/L #	85
34) 1,2-Dichloropropane	11.04	63	38791	1.29	ug/L #	24
35) Dibromomethane	11.21	93	34904	1.48	ug/L #	85
36) Bromodichloromethane	11.34	83	85295	1.80	ug/L	94
37) cis-1,3-Dichloropropene	11.87	75	63224	1.22	ug/L #	65
40) (MIBK) 4-Methyl-2-Pentanone	12.11	43	33918	1.65	ug/L #	100
41) Toluene	12.28	91	150872	1.08	ug/L	95
42) trans-1,3-Dichloropropene	12.50	75	55172	1.19	ug/L #	44
43) 1,1,2-Trichloroethane	12.76	83	29517	1.17	ug/L #	77
44) Tetrachloroethene	12.93	164	57314	1.16	ug/L	88
45) 1,3-Dichloropropane	12.96	76	60999	1.27	ug/L	91
46) 2-Hexanone	12.97	43	69329	3.08	ug/L #	86
47) Dibromochloromethane	13.25	129	58532	1.62	ug/L #	93
48) 1,2-Dibromoethane	13.42	107	46118	1.41	ug/L	99
49) Chlorobenzene	13.95	112	104019	1.10	ug/L #	78
50) 1,1,1,2-Tetrachloroethane	14.02	131	47326	1.41	ug/L	93
51) Ethylbenzene	14.02	91	214794	1.35	ug/L	90
52) m,p-Xylenes	14.15	106	128730	2.27	ug/L #	60
53) o-Xylene	14.61	106	69500	1.24	ug/L	23
54) Styrene	14.62	104	93689	1.14	ug/L #	66
55) Bromoform	14.91	173	34403	1.68	ug/L #	85
56) Isopropylbenzene	15.00	105	216128	1.41	ug/L #	87
57) 1,2,3-Trichloropropane	15.42	75	69629	1.66	ug/L	1
60) 1,1,2,2-Tetrachloroethane	15.34	83	54778	1.64	ug/L	94
61) Bromobenzene	15.43	156	41304	1.13	ug/L #	49
62) n-Propylbenzene	15.46	91	282058	1.50	ug/L #	91
63) 2-Chlorotoluene	15.61	91	192969	1.67	ug/L #	83
64) 1,3,5-Trimethylbenzene	15.62	105	189115	1.64	ug/L #	81
65) 4-Chlorotoluene	15.72	91	184419	1.73	ug/L #	84
66) tert-Butylbenzene	16.01	119	144033	1.46	ug/L #	56

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060214L3\F02LCS01.D

Vial: 10

Acq On : 2 Jun 2014 10:14 am

Operator: DN

Sample : 34F0201-BS1

Inst : GC/MS Ins

Misc : 20cc 1.25/2.5/12.5 ug/L LCS

Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Jun 2 10:41 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
67) 1,2,4-Trimethylbenzene	16.06	105	197996	1.64	ug/L #	82
68) sec-Butylbenzene	16.24	105	227794	1.46	ug/L	93
69) p-Isopropyltoluene	16.38	119	188141	1.48	ug/L #	82
70) 1,3-Dichlorobenzene	16.44	146	86616	1.26	ug/L #	88
71) 1,4-Dichlorobenzene	16.54	146	85497	1.25	ug/L	93
72) n-Butylbenzene	16.84	91	213432	1.60	ug/L #	90
73) 1,2-Dichlorobenzene	16.99	146	70156	1.15	ug/L #	85
74) 1,2-Dibromo-3-chloropropan	17.92	75	23697	4.43	ug/L #	70
75) 1,2,4-Trichlorobenzene	19.03	180	51291	1.24	ug/L #	95
76) Hexachlorobutadiene	19.20	225	35809	1.92	ug/L	88
77) Naphthalene	19.45	128	128510	1.40	ug/L	100
78) Hexachloroethane	17.29	201	15511	1.16	ug/L #	66
79) 1,2,3-Trichlorobenzene	19.81	180	46260	1.18	ug/L #	89

(#) = qualifier out of range (m) = manual integration

F02LCS01.D MW111313.M

Mon Jun 02 10:42:08 2014

Page 3

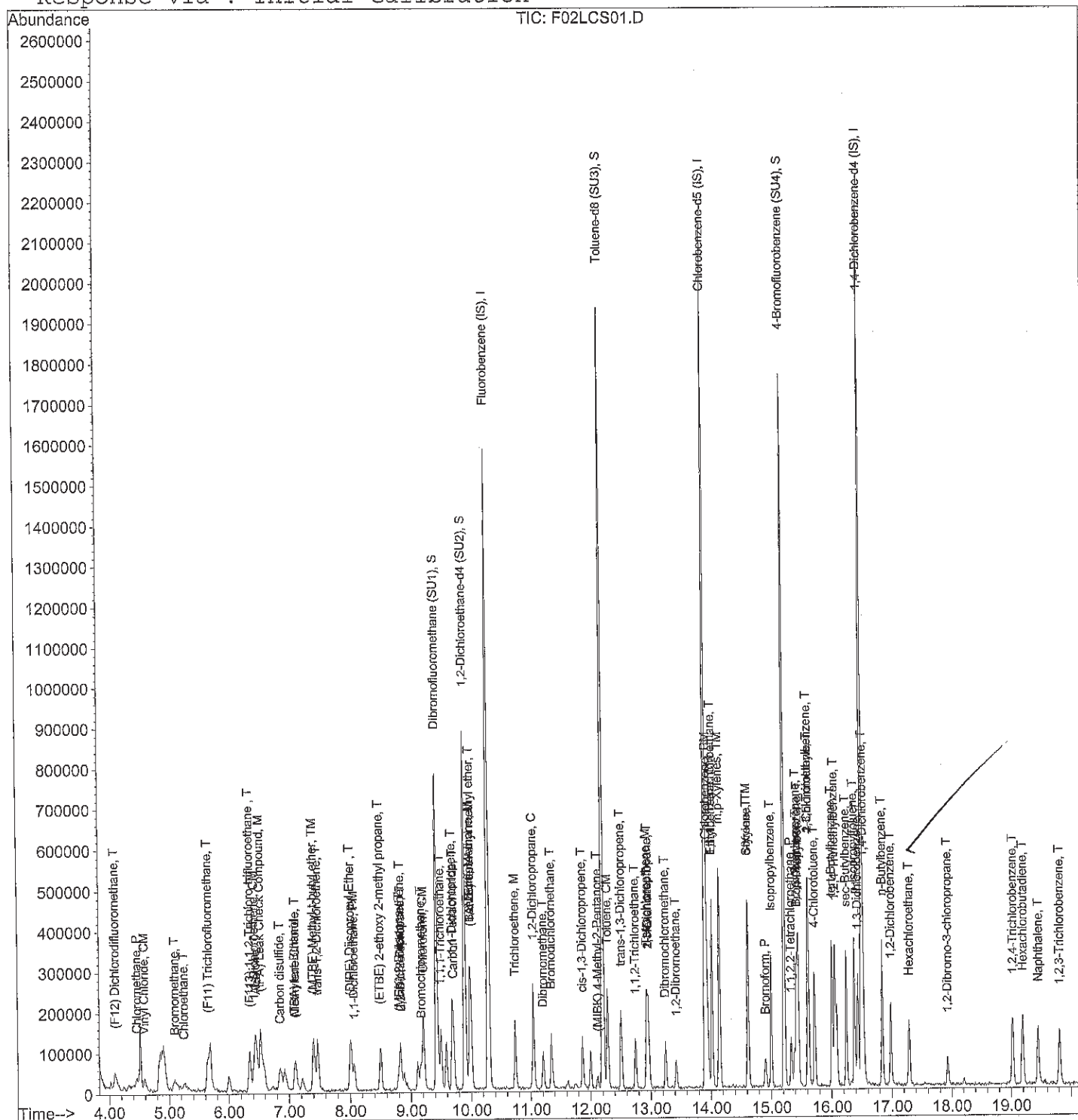
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F02LCS01.D
Acq On : 2 Jun 2014 10:14 am
Sample : 34F0201-BS1
Misc : 20cc 1.25/2.5/12.5 ug/L LCS
MS Integration Params: rteint.p
Quant Time: Jun 2 10:41 19114 Quan

Vial: 10
Operator: DN
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: MW111313.RES

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Method       : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
Title        : 8260B      GC/MS #3      ICAL 11/13/13   DN
Last Update  : Wed Nov 13 19:38:32 2013
Response via : Initial Calibration
```



RAW DATA FOR QC SAMPLES AND INITIAL CALIBRATION
BLANK

Data File : C:\HPCHEM\1\DATA\060214L3\F02BLK01.D
 Acq On : 2 Jun 2014 11:15 am
 Sample : 34F0201-BLK1
 Misc : 100cc AMBIENT AIR/H2O
 MS Integration Params: rteint.p
 Quant Time: Jun 2 12:33 19114

Vial: 11
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.29	96	1631767	12.50	ug/L	0.00
38) Chlorobenzene-d5 (IS)	13.91	117	1469972	12.50	ug/L	-0.01
59) 1,4-Dichlorobenzene-d4 (IS)	16.50	152	712180	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.42	113	480490m	11.81	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	94.48%
28) 1,2-Dichloroethane-d4 (SU2)	9.89	65	447803m	11.58	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	92.64%
39) Toluene-d8 (SU3)	12.20	98	1604817	11.71	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	93.68%
58) 4-Bromofluorobenzene (SU4)	15.21	95	803898m	13.37	ug/L	0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	106.96%

Target Compounds

					Qvalue	
3) (F12) Dichlorodifluorometh	3.87	85	431	0.11	ug/L	#SM 44
4) Chloromethane	4.42	50	2833	-0.19	ug/L	93
5) Vinyl Chloride	4.48	62	356	0.12	ug/L	# 1
6) Bromomethane	5.12	96	1265	-1.07	ug/L	# 18
7) Chloroethane	5.20	64	2426	2.47	ug/L	90
8) (F11) Trichlorofluorometha	5.50	101	391	0.09	ug/L	# 16
11) Acetone	6.48	58	5279	3.30	ug/L	#MT 1
12) (IPA) Leak Check Compound	6.53	45	6298	32.12	ug/L	#SM 57
13) Carbon disulfide	6.74	76	366	0.03	ug/L	#NSL 76
14) Methylene Chloride	7.08	84	3885	0.87	ug/L	# 1
15) (TBA) tert-Butanol	7.09	59	263	0.94	ug/L	# 77
16) (MTBE) Methyl-t-butyl ethe	7.44	73	294	0.03	ug/L	# 55
18) 1,1-Dichloroethane	8.13	63	259	0.04	ug/L	# 1
19) cis-1,2-Dichloroethene	8.60	96	295	0.06	ug/L	# 3
20) 2,2-Dichloropropane	8.89	77	406	0.06	ug/L	#SM 48
22) (DIPE) Diisopropyl Ether	8.18	45	345	0.03	ug/L	# 48
23) Bromochloromethane	9.04	128	265	0.12	ug/L	# 1
24) Chloroform	9.20	83	3903	0.46	ug/L	# 18
29) 1,1-Dichloropropene	9.92	75	615	0.10	ug/L	# 1
30) Carbon Tetrachloride	9.55	117	266	0.05	ug/L	# 2
31) Benzene	9.92	78	13039	0.85	ug/L	# 67
32) 1,2-Dichloroethane	9.92	62	12933	2.38	ug/L	# 1

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060214L3\F02BLK01.D

Vial: 11

Acq On : 2 Jun 2014 11:15 am

Operator: DN

Sample : 34F0201-BLK1

Inst : GC/MS Ins

Misc : 100cc AMBIENT AIR/H2O

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 12:33 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

AP

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
34) 1,2-Dichloropropane	11.05	63	610	0.17	ug/L #	25
35) Dibromomethane	11.21	93	297	0.10	ug/L #	19
40) (MIBK) 4-Methyl-2-Pentanone	12.14	43	568	0.19	ug/L #	100
41) Toluene	12.28	91	1411	0.07	ug/L #	1
42) trans-1,3-Dichloropropene	12.41	75	270	0.04	ug/L #	1
45) 1,3-Dichloropropane	13.08	76	267	0.04	ug/L #	41
46) 2-Hexanone	12.97	43	1763	0.55	ug/L #	37
48) 1,2-Dibromoethane	13.66	107	262	0.06	ug/L #	3
51) Ethylbenzene	14.00	91	1311	0.06	ug/L #	45
52) m,p-Xylenes	14.12	106	359	0.04	ug/L #	63
54) Styrene	14.61	104	2037	-0.70	ug/L #	63
56) Isopropylbenzene	15.00	105	316	0.01	ug/L #	55
57) 1,2,3-Trichloropropane	15.42	75	310	0.05	ug/L #	1
60) 1,1,2,2-Tetrachloroethane	15.20	83	260	0.05	ug/L #	18
62) n-Propylbenzene	15.49	91	270	0.01	ug/L #	56
63) 2-Chlorotoluene	15.62	91	339	0.02	ug/L #	45
64) 1,3,5-Trimethylbenzene	15.59	105	270	0.02	ug/L #	31
65) 4-Chlorotoluene	15.74	91	267	0.02	ug/L #	44
66) tert-Butylbenzene	16.01	119	296	0.02	ug/L #	24
67) 1,2,4-Trimethylbenzene	16.06	105	982	0.05	ug/L #	33
68) sec-Butylbenzene	16.34	105	780	0.03	ug/L #	62
69) p-Isopropyltoluene	16.38	119	1146	0.06	ug/L #	1
70) 1,3-Dichlorobenzene	16.54	146	590	0.06	ug/L #	24
71) 1,4-Dichlorobenzene	16.54	146	590	0.06	ug/L #	22
72) n-Butylbenzene	16.82	91	374	0.02	ug/L #	30
74) 1,2-Dibromo-3-chloropropan	17.97	75	268	1.21	ug/L #	6
77) Naphthalene	19.45	128	1281	0.09	ug/L	100

(#) = qualifier out of range (m) = manual integration

F02BLK01.D MW111313.M

Mon Jun 02 12:33:59 2014

Page 2

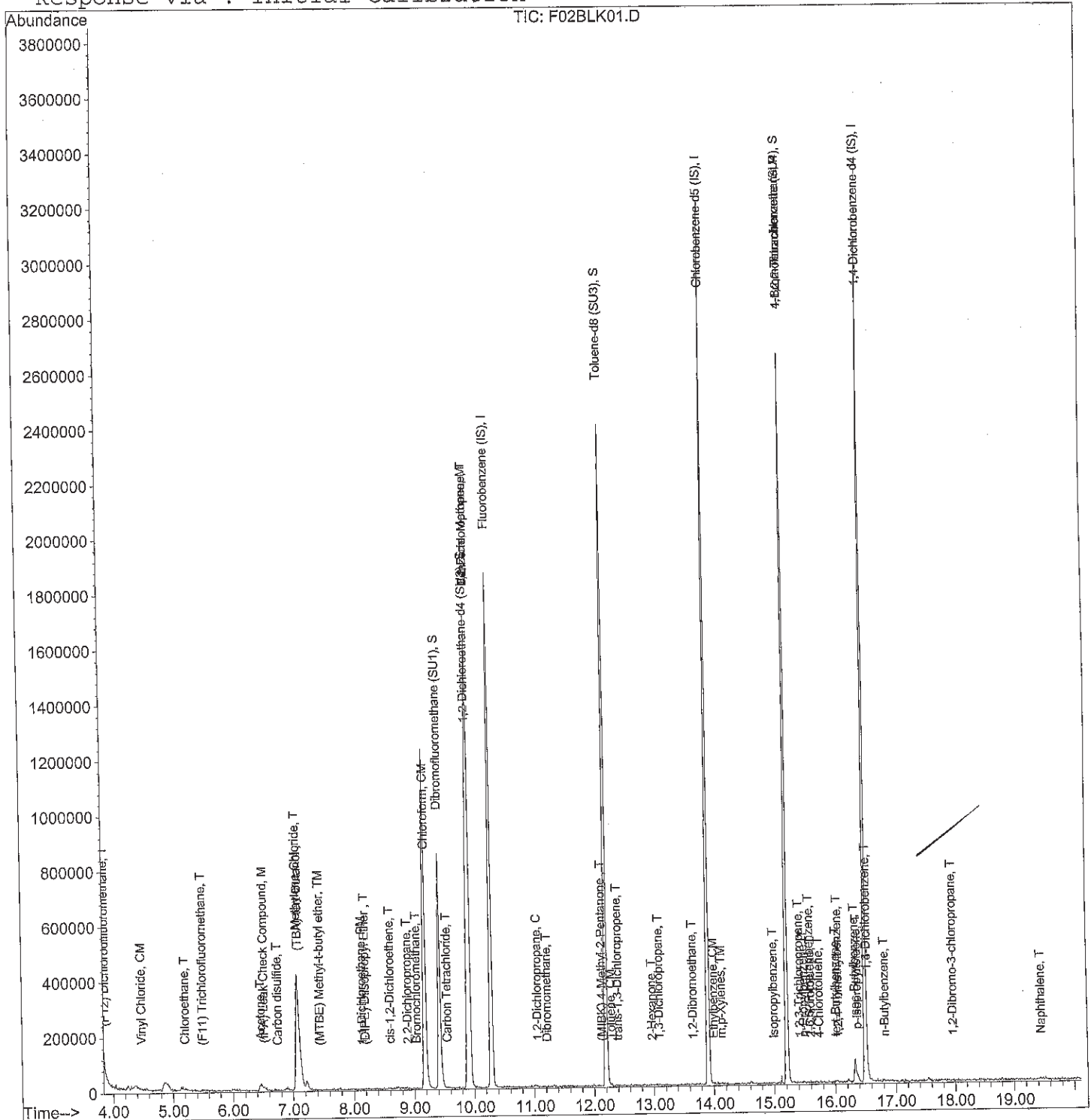
Quantitation Report

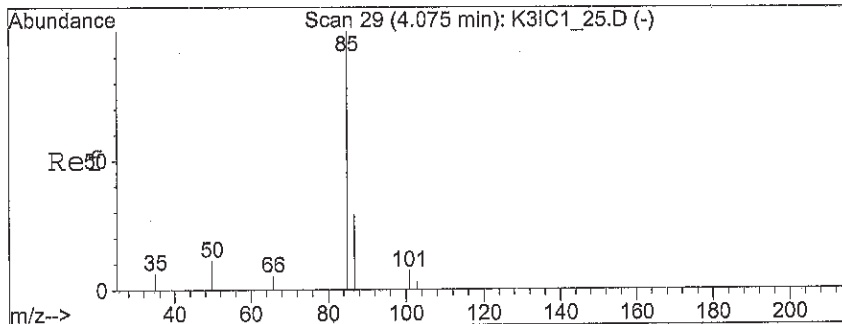
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Acq On : 2 Jun 2014 11:15 am
Sample : 34F0201-BLK1
Misc : 100cc AMBIENT AIR/H2O
MS Integration Params: rteint.p
Quant Time: Jun 2 12:33 19114

Vial: 11
Operator: DN
Inst : GC/MS Ins
Multiplr: 10.00

Quant Results File: MW111313.RES

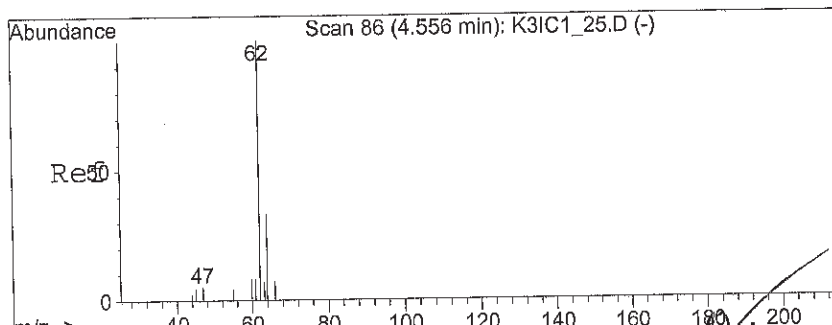
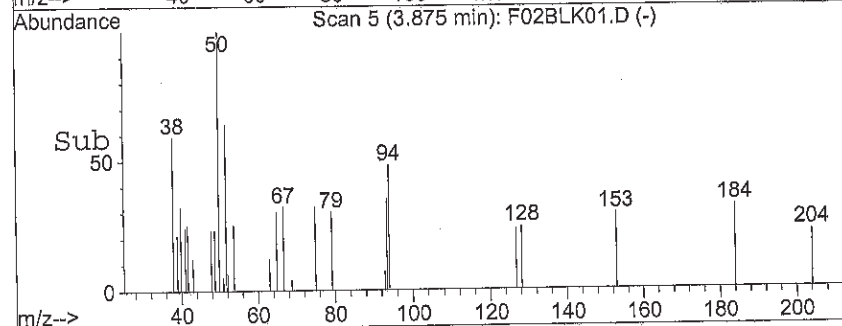
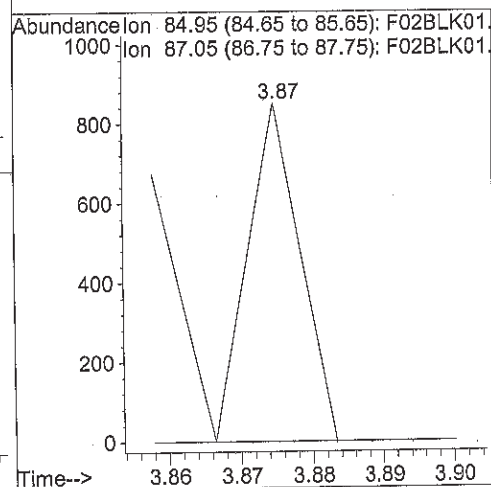
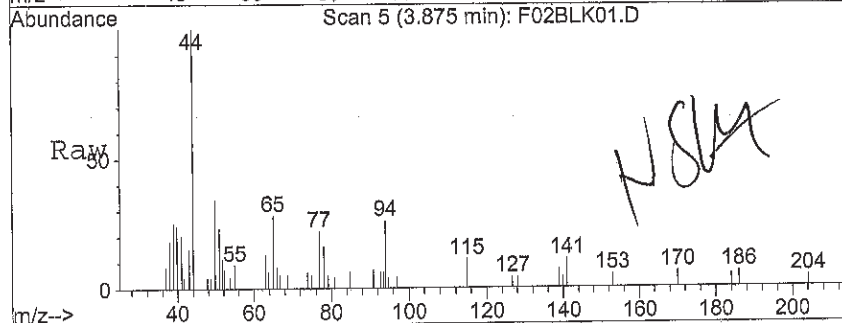
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Title : 8260B GC/MS #3 ICAL 11/13/13 DN
Last Update : Wed Nov 13 19:38:32 2013
Response via : Initial Calibration





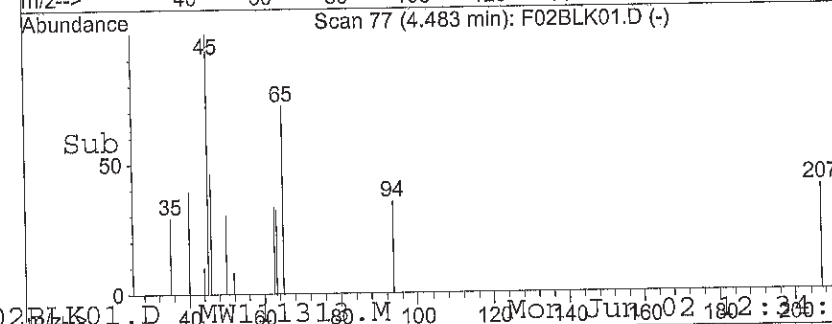
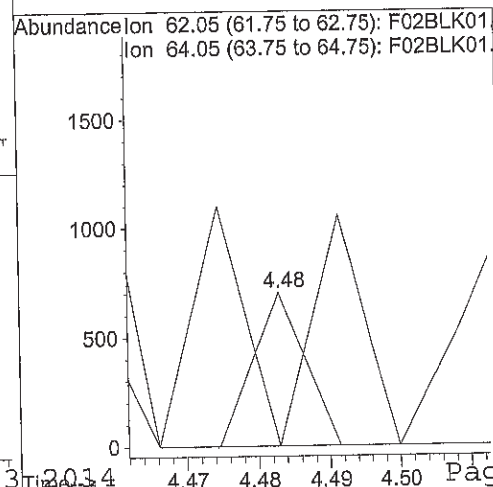
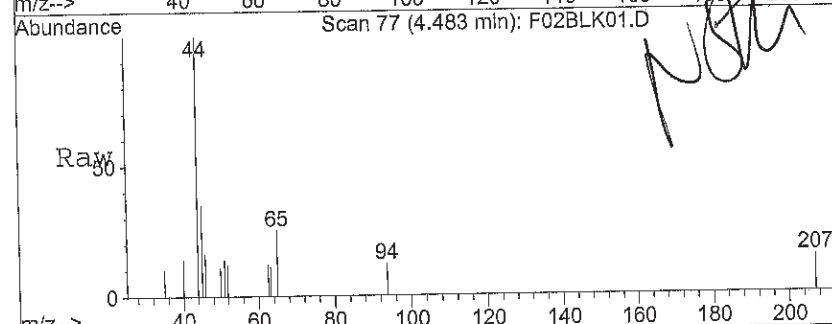
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 (F12) Dichlorodifluoromethane
 Concen: 0.11 ug/L
 RT: 3.87 min Scan# 5
 Delta R.T. -0.20 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

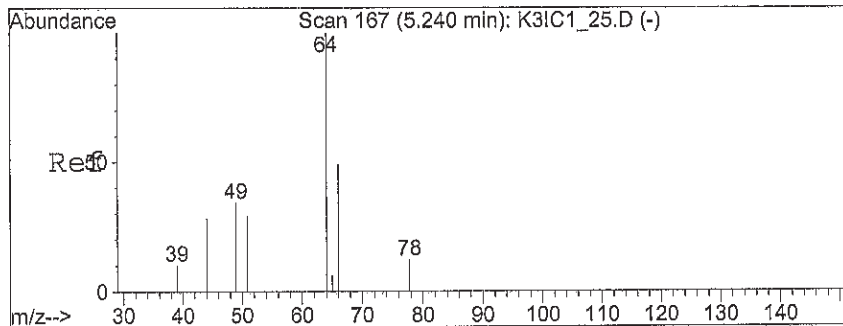
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 Ion Ratio Lower Upper
 85 100
 87 0.0 24.6 37.0#



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 Vinyl Chloride
 Concen: 0.12 ug/L
 RT: 4.48 min Scan# 77
 Delta R.T. -0.07 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

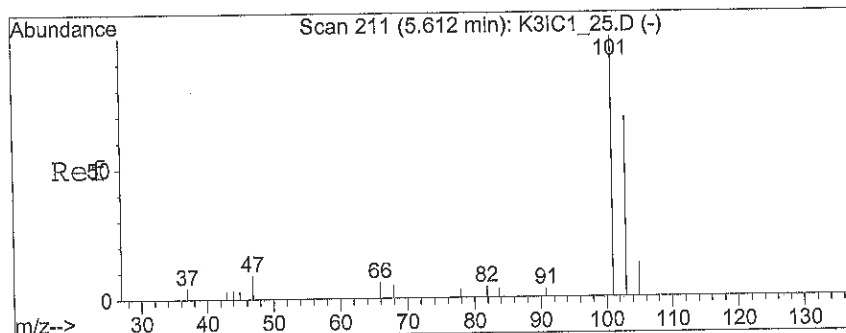
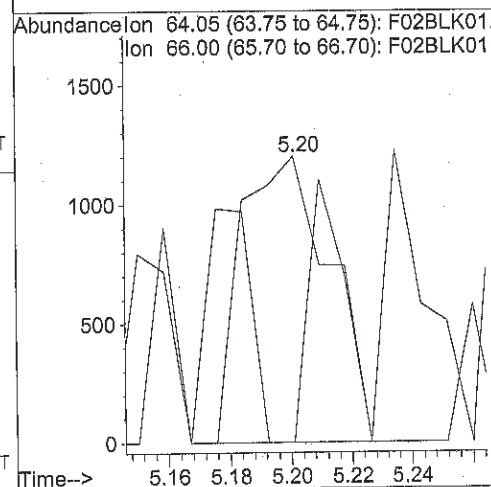
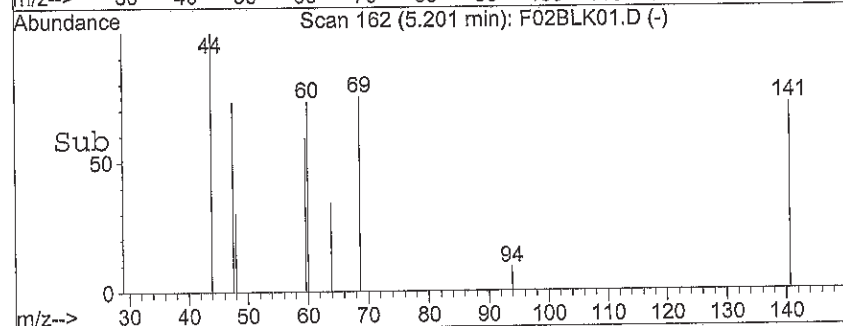
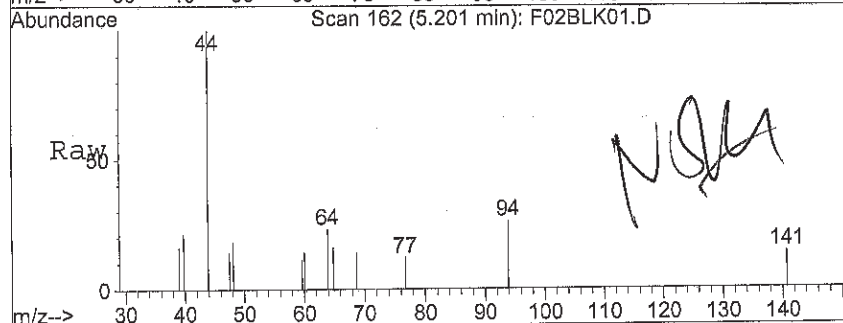
Tgt Ion: 62 Resp: 356
 Ion Ratio Lower Upper
 62 100
 64 150.0 25.6 38.4#





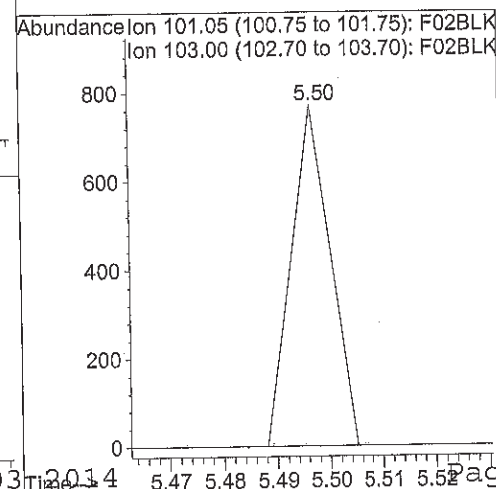
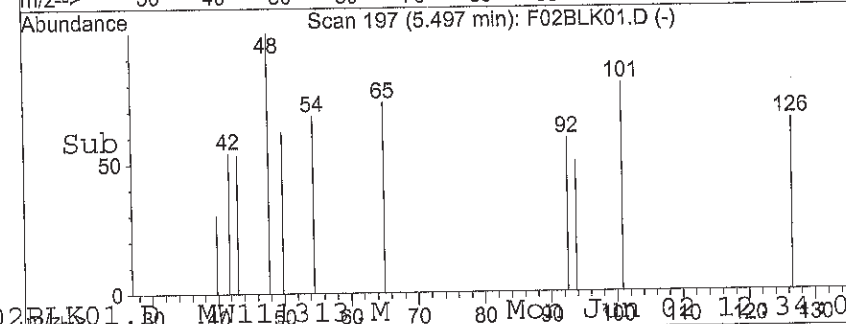
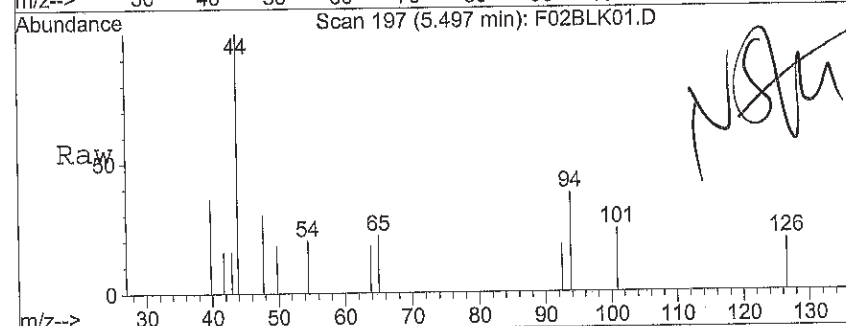
#7
Chloroethane
Concen: 2.47 ug/L
RT: 5.20 min Scan# 162
Delta R.T. -0.04 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

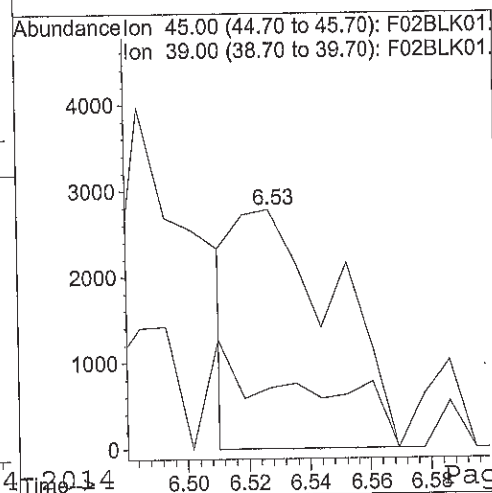
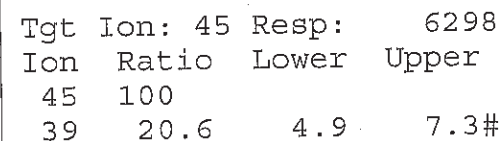
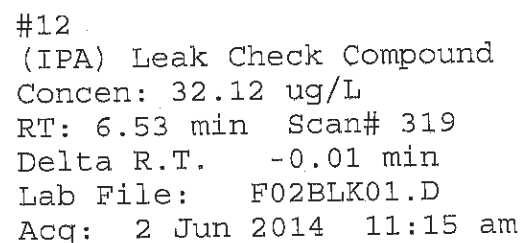
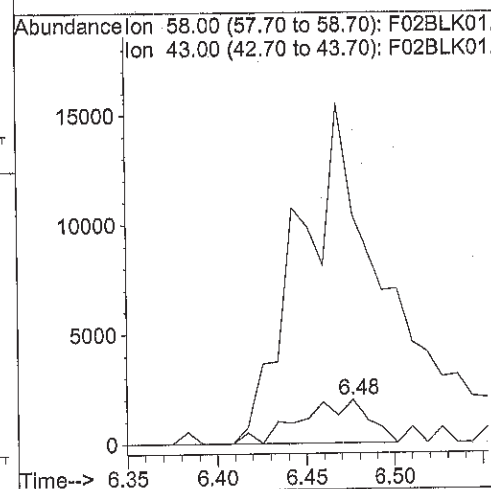
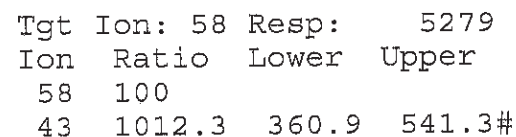
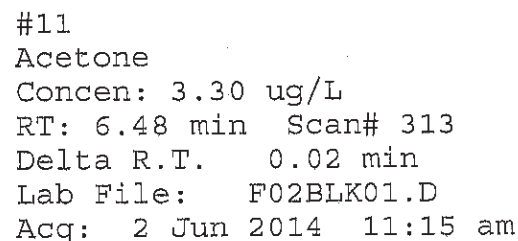
Tgt Ion: 64 Resp: 2426
Ion Ratio Lower Upper
64 100
66 37.6 35.4 53.0

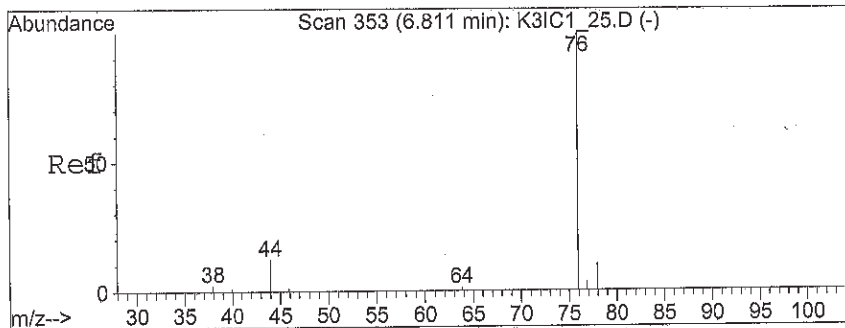


#8
(F11) Trichlorofluoromethane
Concen: 0.09 ug/L
RT: 5.50 min Scan# 197
Delta R.T. -0.12 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 101 Resp: 391
Ion Ratio Lower Upper
101 100
103 0.0 54.5 81.7#

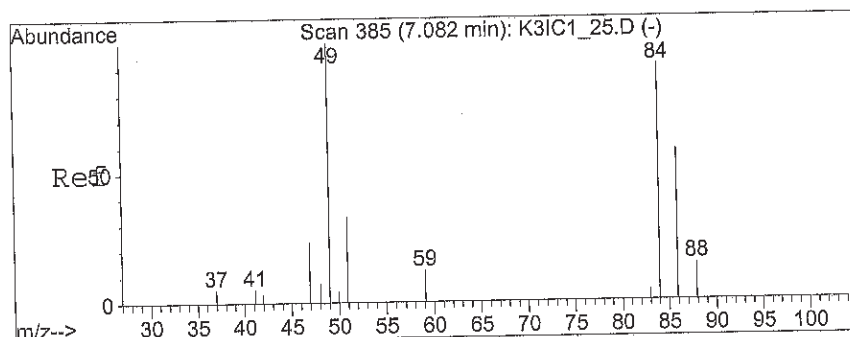
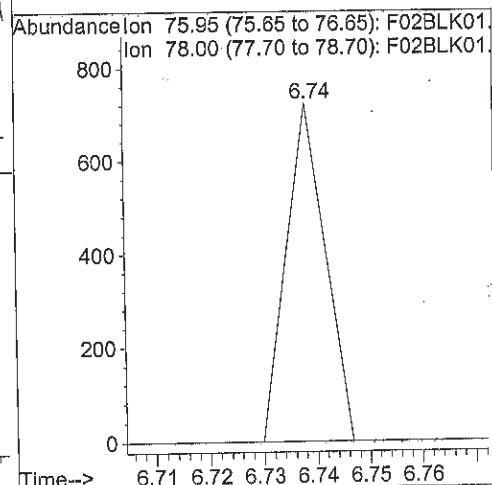
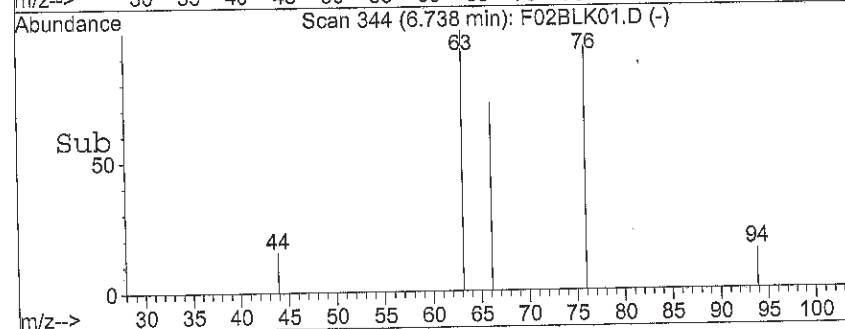
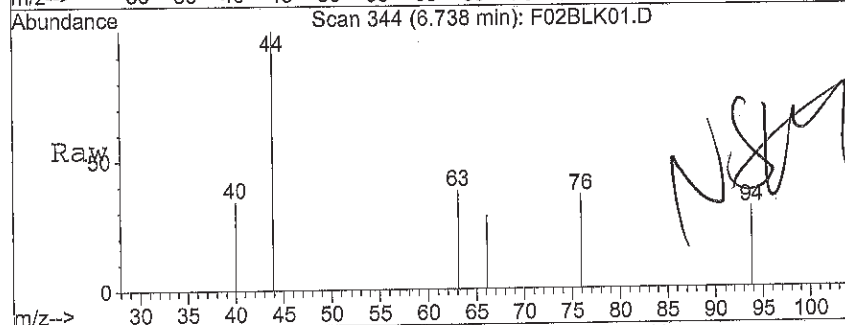






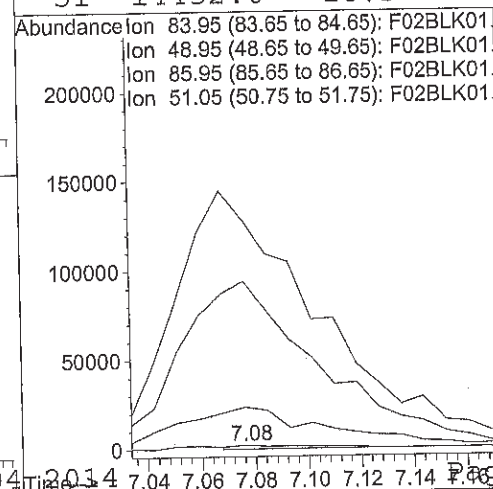
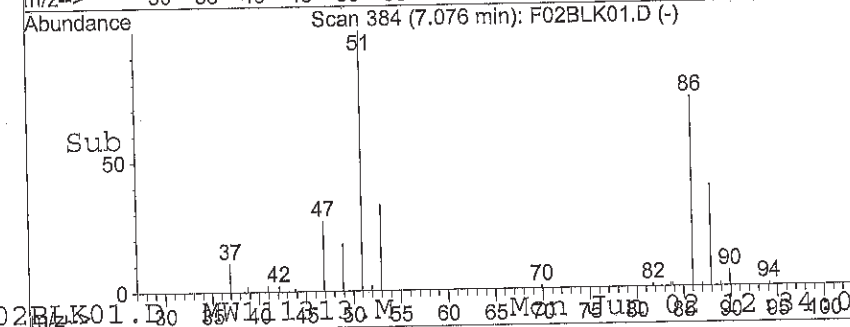
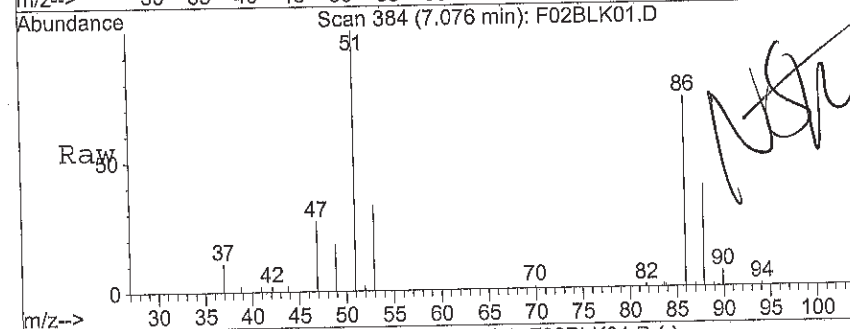
#13
Carbon disulfide
Concen: 0.03 ug/L
RT: 6.74 min Scan# 344
Delta R.T. -0.07 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

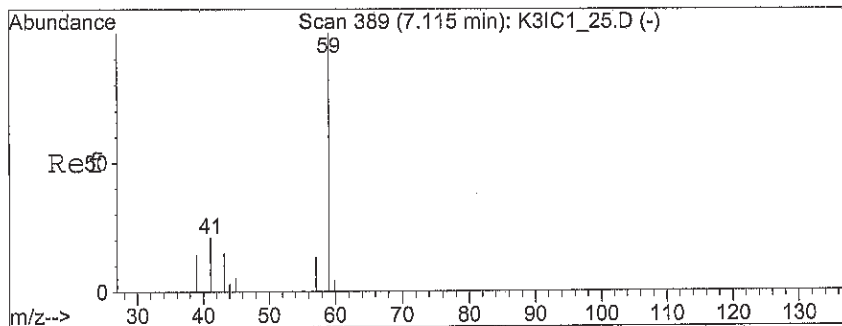
Tgt Ion: 76 Resp: 366
Ion Ratio Lower Upper
76 100
78 0.0 7.0 10.4#



#14
Methylene Chloride
Concen: 0.87 ug/L
RT: 7.08 min Scan# 384
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

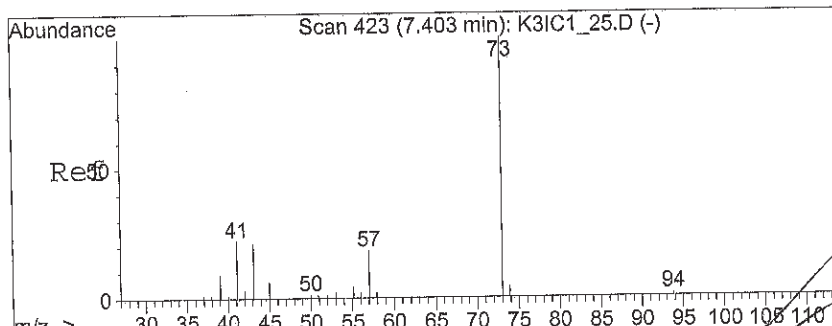
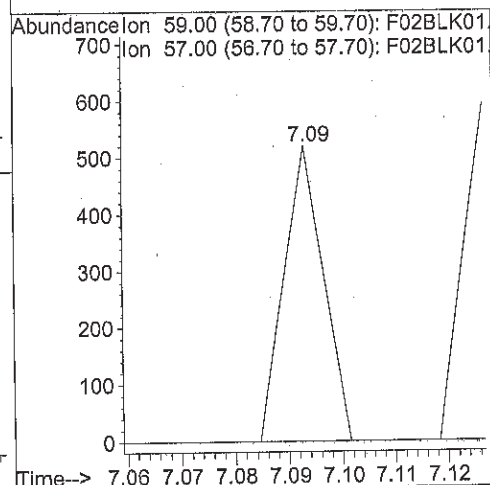
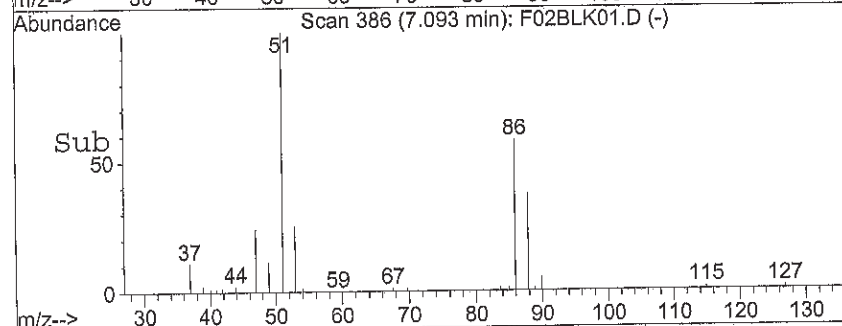
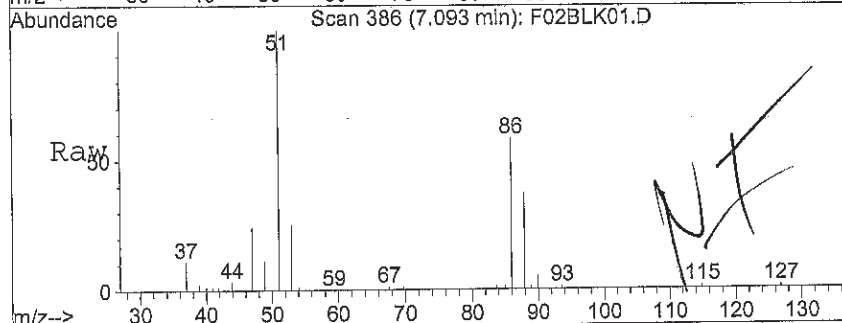
Tgt Ion: 84 Resp: 3885
Ion Ratio Lower Upper
84 100
49 2500.3 89.8 134.6#
86 9168.7 51.1 76.7#
51 14452.0 28.5 42.7#





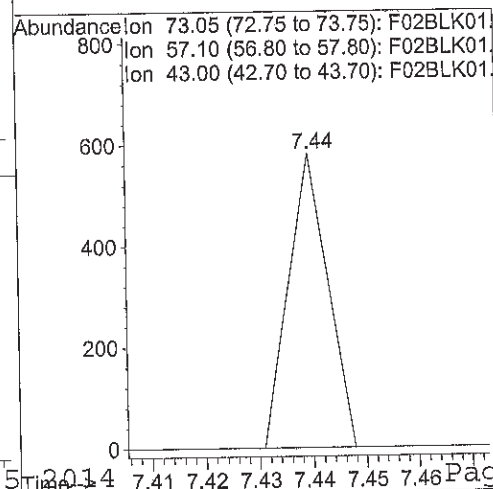
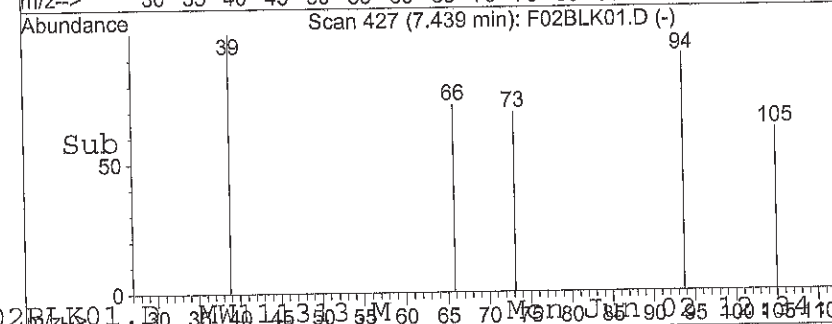
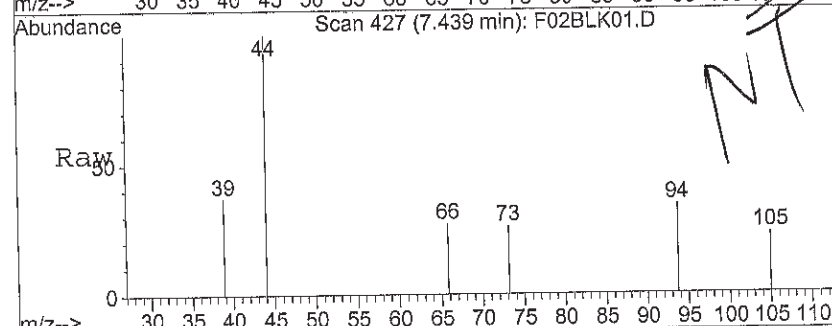
#15
 (TBA) tert-Butanol
 Concen: 0.94 ug/L
 RT: 7.09 min Scan# 386
 Delta R.T. -0.02 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

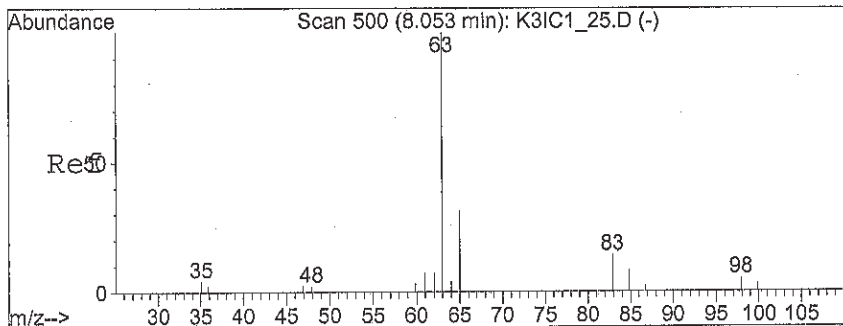
Tgt Ion: 59 Resp: 263
 Ion Ratio Lower Upper
 59 100
 57 0.0 6.4 9.6#



#16
 (MTBE) Methyl-t-butyl ether
 Concen: 0.03 ug/L
 RT: 7.44 min Scan# 427
 Delta R.T. 0.04 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

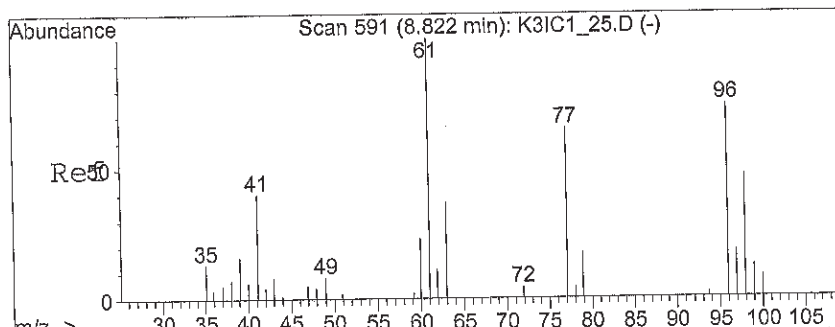
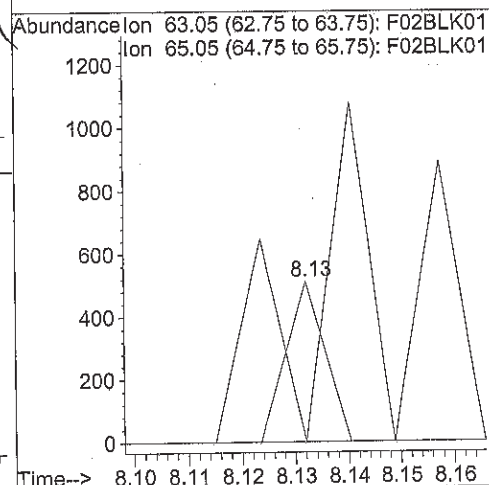
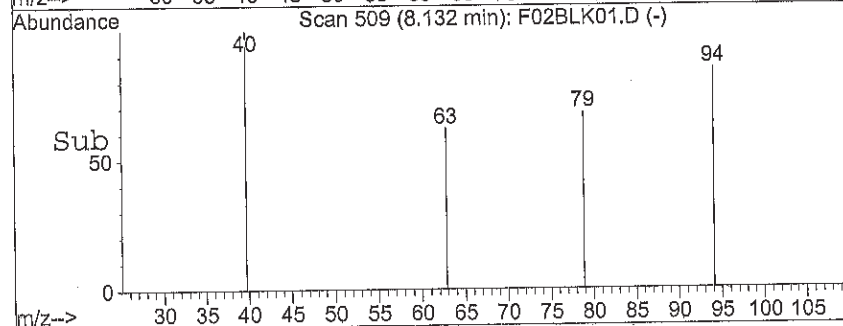
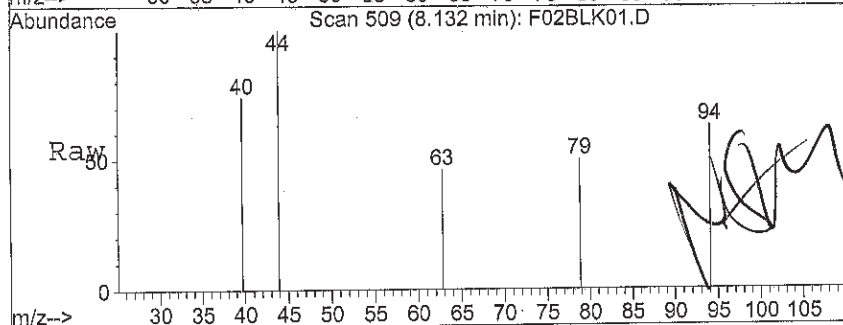
Tgt Ion: 73 Resp: 294
 Ion Ratio Lower Upper
 73 100
 57 0.0 15.8 23.8#
 43 0.0 18.4 27.6#





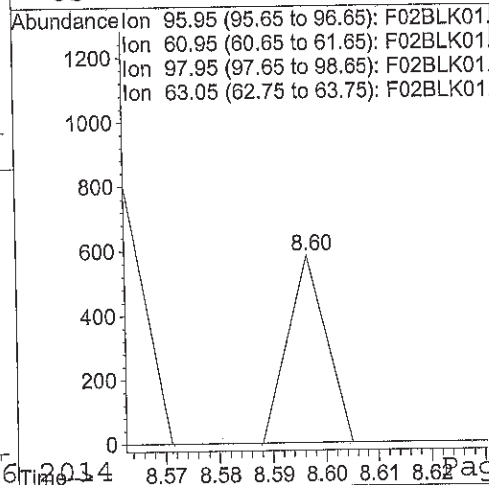
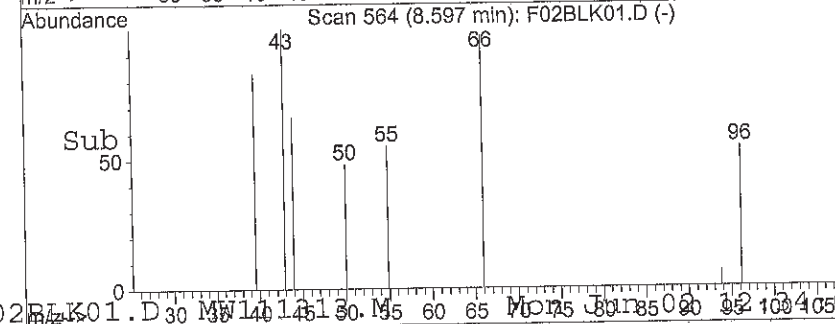
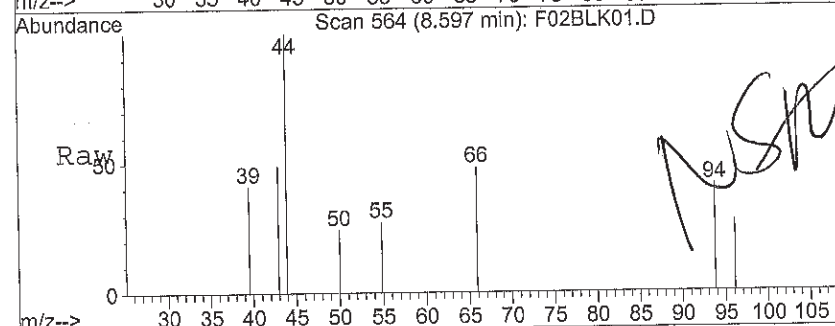
#18
 1,1-Dichloroethane
 Concen: 0.04 ug/L
 RT: 8.13 min Scan# 509
 Delta R.T. 0.08 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

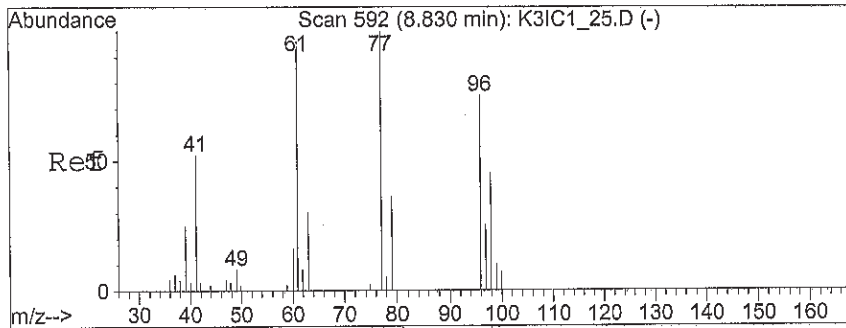
Tgt Ion: 63 Resp: 259
 Ion Ratio Lower Upper
 63 100
 65 511.2 25.8 38.8#



#19
 cis-1,2-Dichloroethene
 Concen: 0.06 ug/L
 RT: 8.60 min Scan# 564
 Delta R.T. -0.23 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

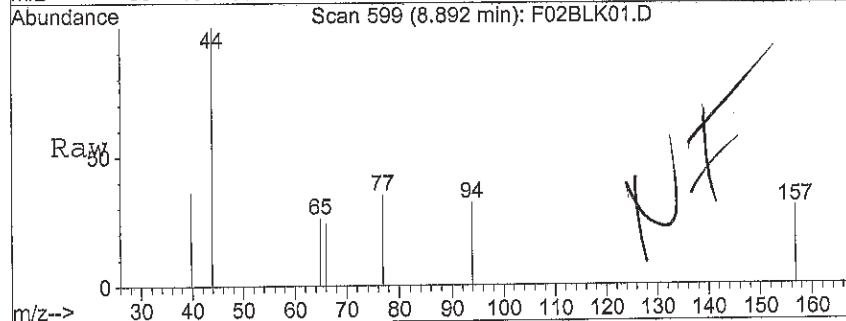
Tgt Ion: 96 Resp: 295
 Ion Ratio Lower Upper
 96 100
 61 0.0 110.3 165.5#
 98 0.0 49.8 74.6#
 63 0.0 36.7 55.1#





#20
 2,2-Dichloropropane
 Concen: 0.06 ug/L
 RT: 8.89 min Scan# 599
 Delta R.T. 0.06 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

Tgt Ion:	77	Resp:	406
Ion Ratio	Lower	Upper	
77	100		
79	0.0	26.6	40.0#
97	0.0	18.9	28.3#
41	88.7	42.6	64.0#



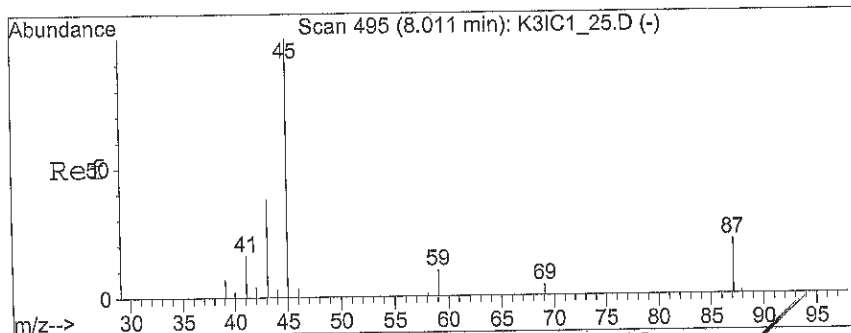
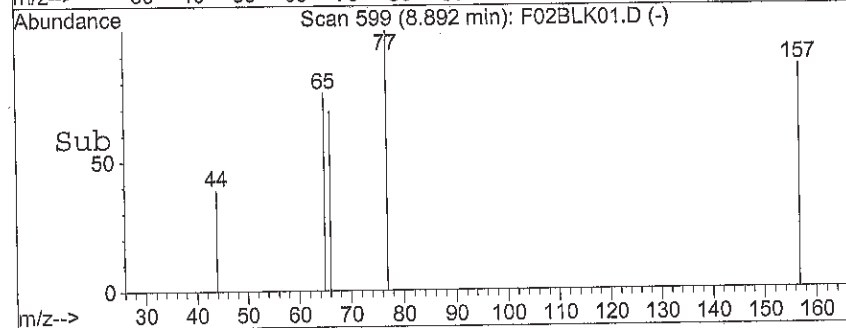
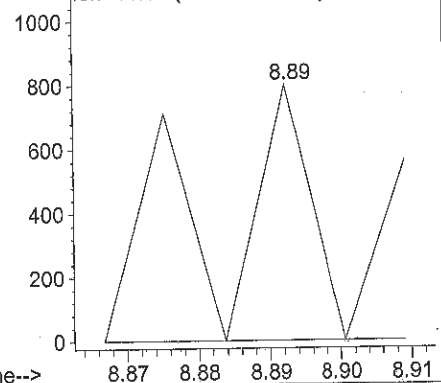
Abundance

Ion 77.05 (76.75 to 77.75): F02BLK01

Ion 79.00 (78.70 to 79.70): F02BLK01

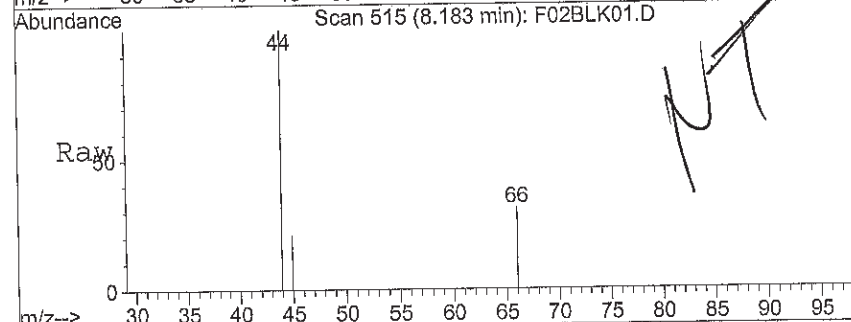
Ion 96.95 (96.65 to 97.65): F02BLK01

Ion 41.05 (40.75 to 41.75): F02BLK01



#22
 (DIPE) Diisopropyl Ether
 Concen: 0.03 ug/L
 RT: 8.18 min Scan# 515
 Delta R.T. 0.17 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

Tgt Ion:	45	Resp:	345
Ion Ratio	Lower	Upper	
45	100		
87	0.0	17.0	25.6#
43	0.0	30.5	45.7#
59	0.0	7.4	11.2#



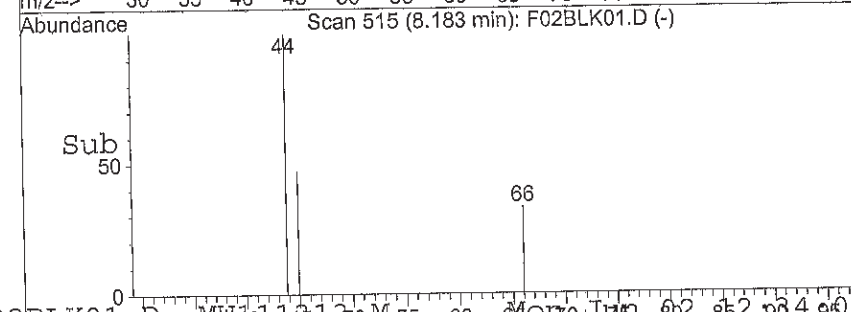
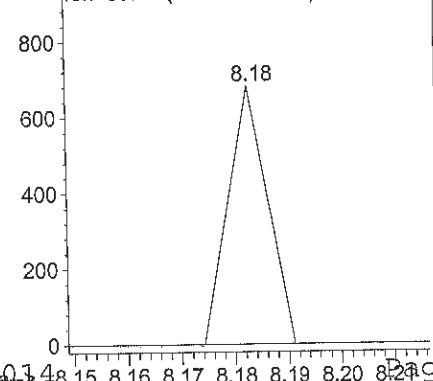
Abundance

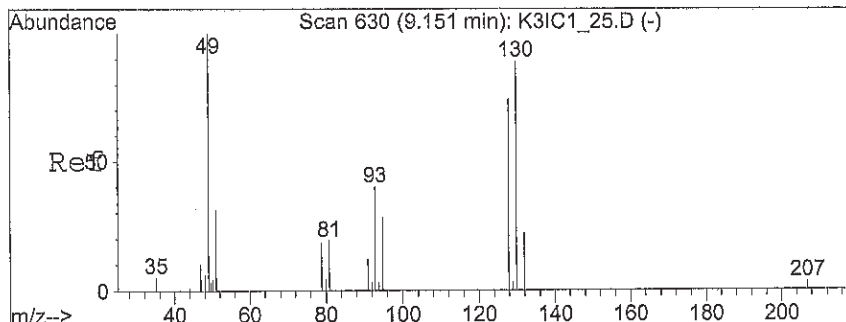
Ion 45.00 (44.70 to 45.70): F02BLK01

Ion 87.10 (86.80 to 87.80): F02BLK01

Ion 43.05 (42.75 to 43.75): F02BLK01

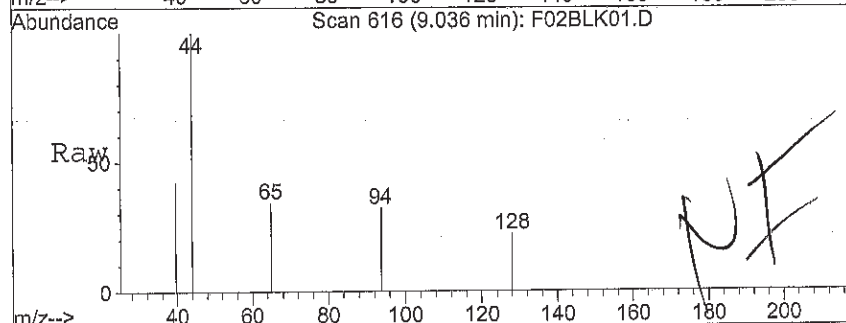
Ion 59.00 (58.70 to 59.70): F02BLK01





#23
 Bromochloromethane
 Concen: 0.12 ug/L
 RT: 9.04 min Scan# 616
 Delta R.T. -0.12 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

Tgt Ion:	128	Resp:	265
Ion Ratio	Lower	Upper	
128	100		
49	0.0	117.4	176.0#
130	0.0	111.0	166.6#
51	0.0	48.0	72.0#



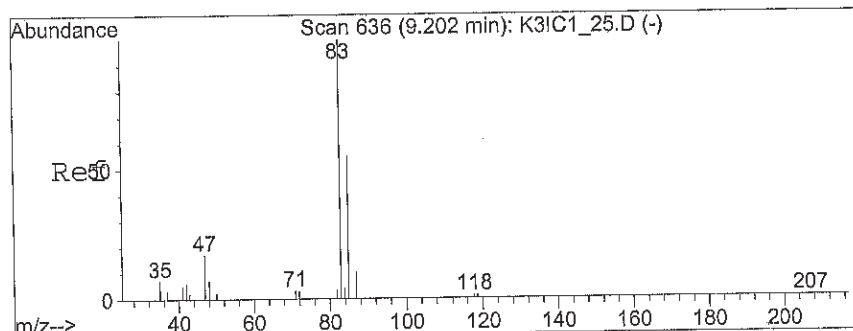
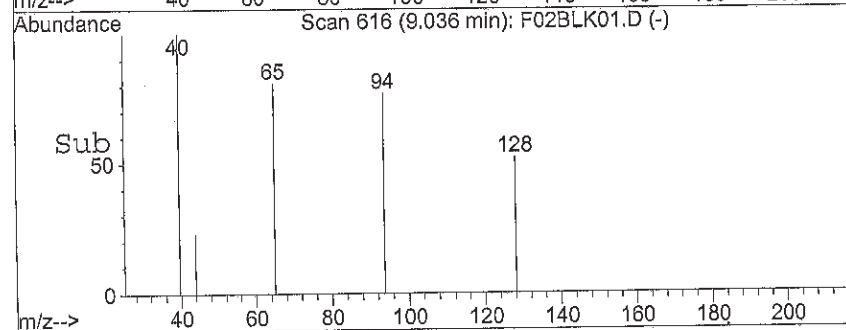
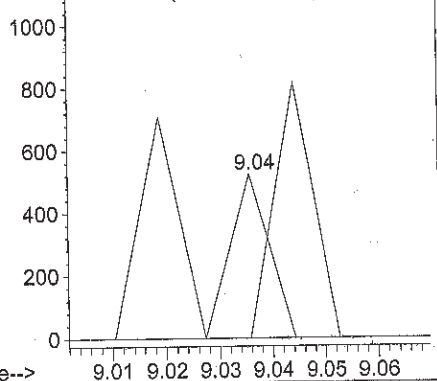
Abundance

Ion 128.00 (127.70 to 128.70): F02BLK01.D

Ion 48.95 (48.65 to 49.65): F02BLK01.D

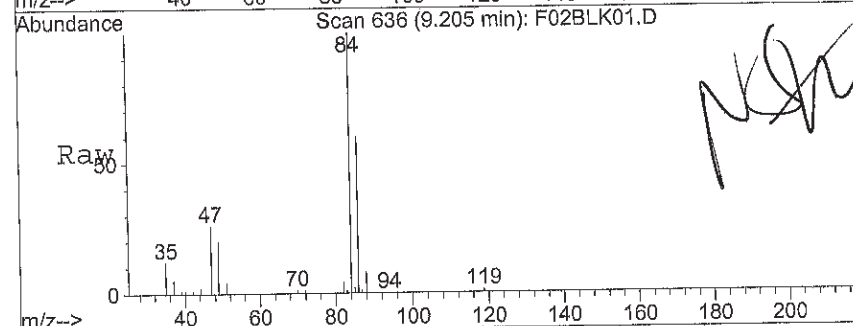
Ion 130.00 (129.70 to 130.70): F02BLK01.D

Ion 50.95 (50.65 to 51.65): F02BLK01.D



#24
 Chloroform
 Concen: 0.46 ug/L
 RT: 9.20 min Scan# 636
 Delta R.T. 0.00 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

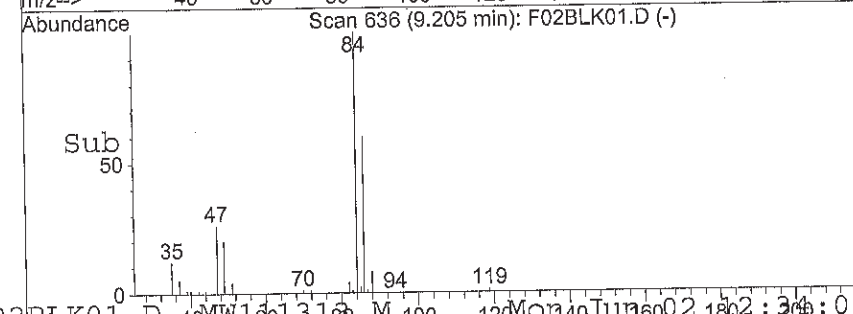
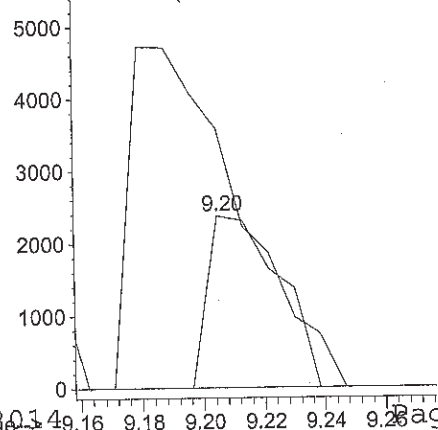
Tgt Ion:	83	Resp:	3903
Ion Ratio	Lower	Upper	
83	100		
85	0.0	51.8	77.6#

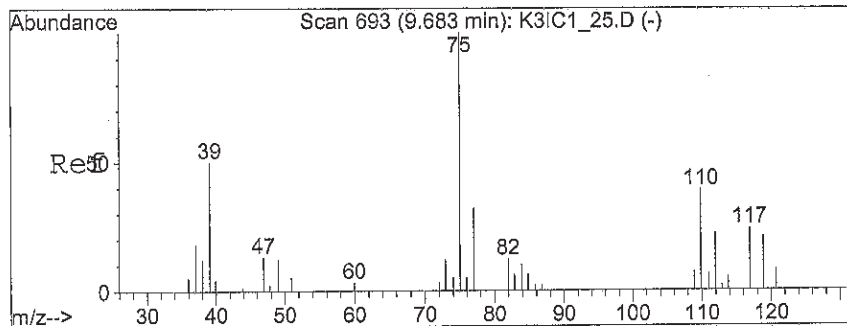


Abundance

Ion 83.00 (82.70 to 83.70): F02BLK01.D

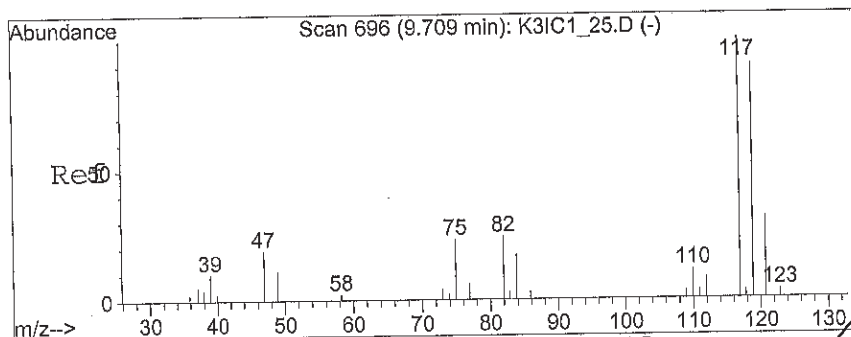
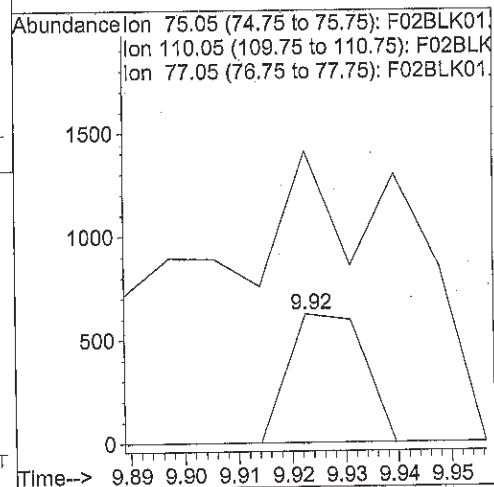
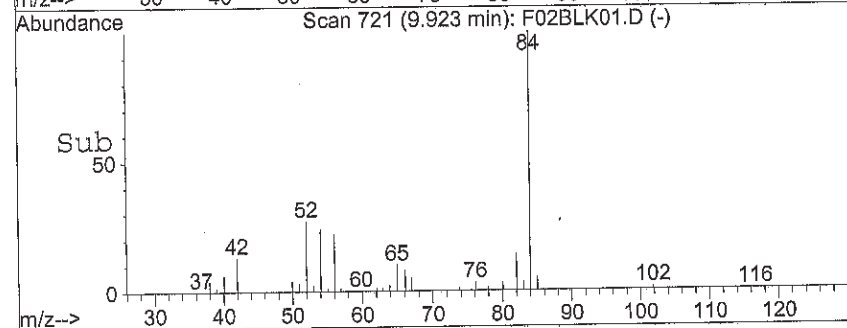
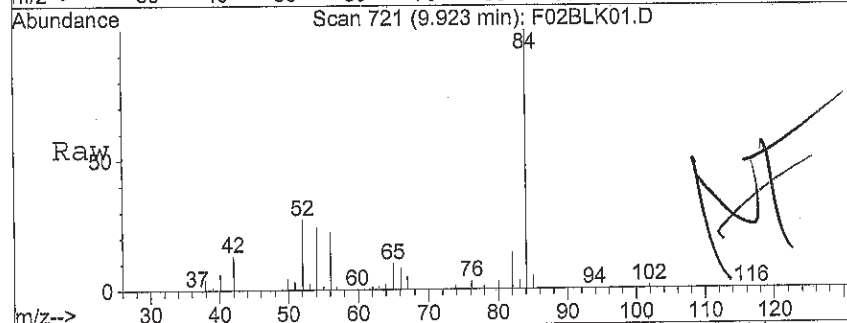
Ion 84.95 (84.65 to 85.65): F02BLK01.D





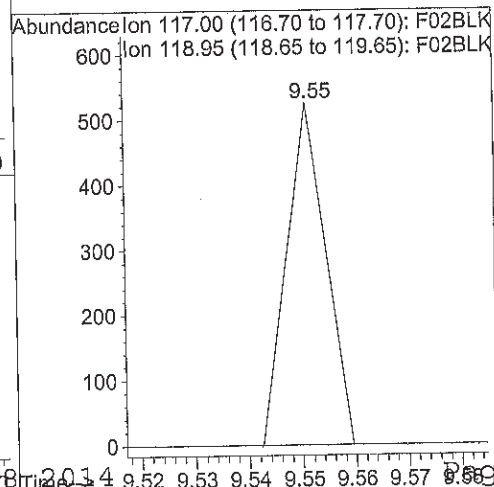
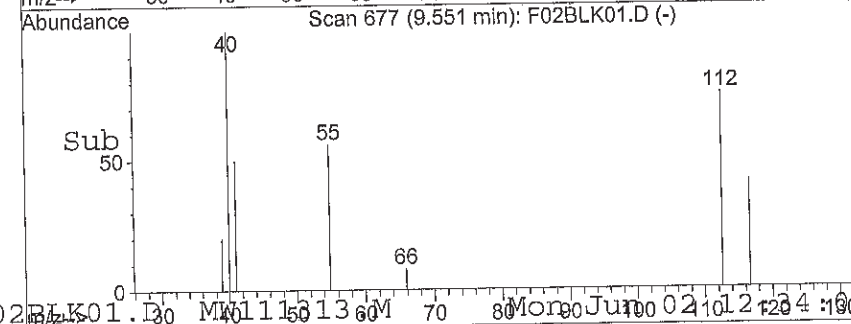
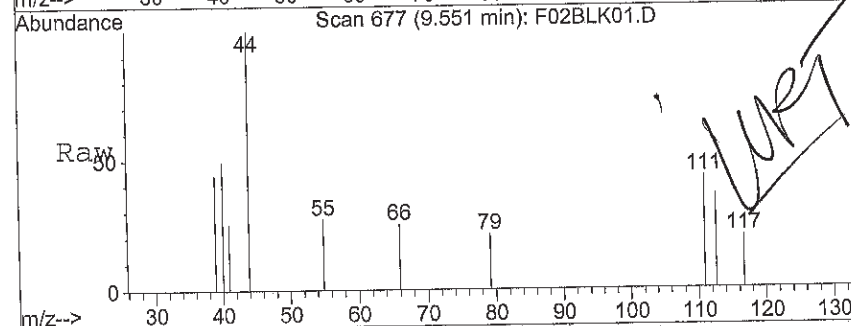
#29
 1,1-Dichloropropene
 Concen: 0.10 ug/L
 RT: 9.92 min Scan# 721
 Delta R.T. 0.24 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

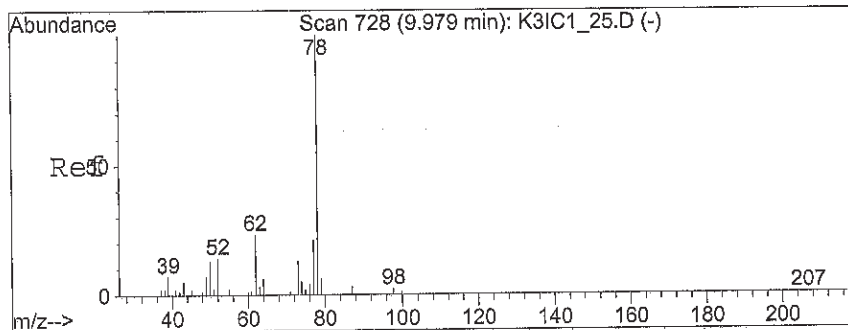
Tgt Ion: 75 Resp: 615
 Ion Ratio Lower Upper
 75 100
 110 0.0 29.0 43.6#
 77 631.4 25.0 37.4#



#30
 Carbon Tetrachloride
 Concen: 0.05 ug/L
 RT: 9.55 min Scan# 677
 Delta R.T. -0.16 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

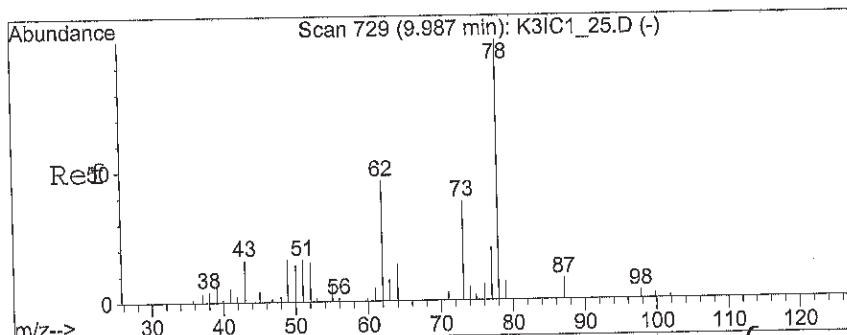
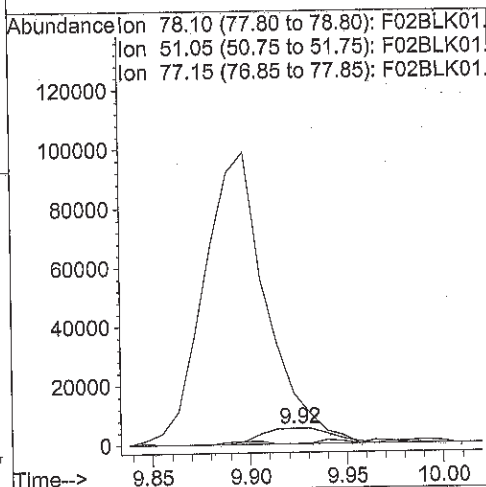
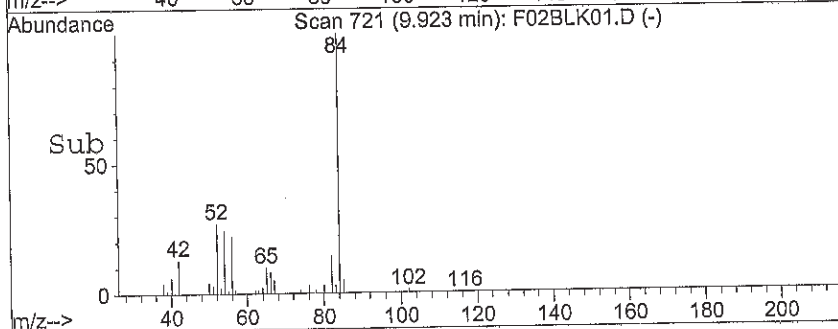
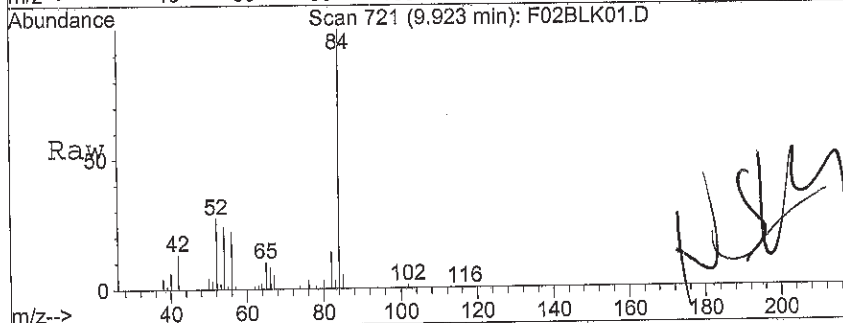
Tgt Ion: 117 Resp: 266
 Ion Ratio Lower Upper
 117 100
 119 0.0 75.8 113.8#





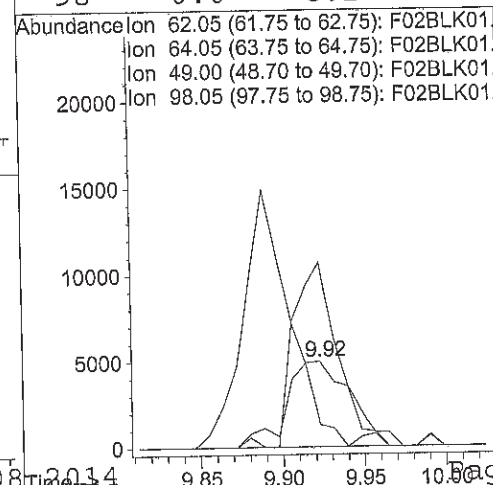
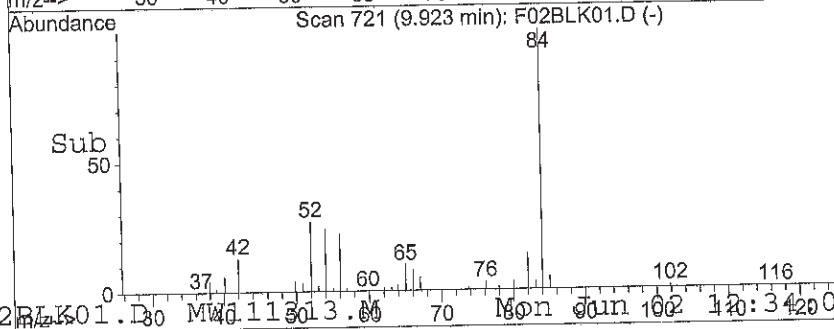
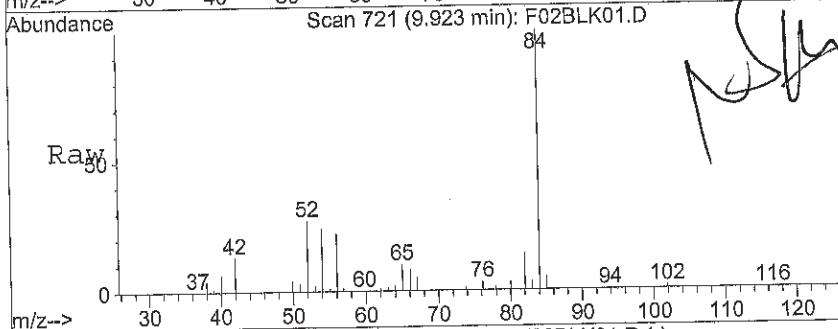
#31
Benzene
Concen: 0.85 ug/L
RT: 9.92 min Scan# 721
Delta R.T. -0.06 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

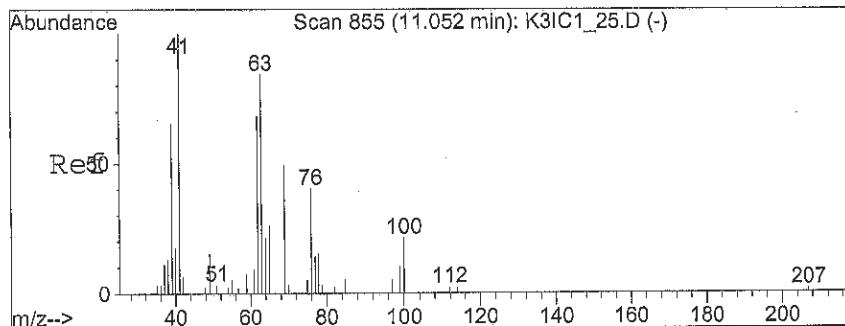
Tgt Ion: 78 Resp: 13039
Ion Ratio Lower Upper
78 100
51 0.0 14.2 21.2#
77 8.3 16.6 24.8#



#32
1,2-Dichloroethane
Concen: 2.38 ug/L
RT: 9.92 min Scan# 721
Delta R.T. -0.06 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

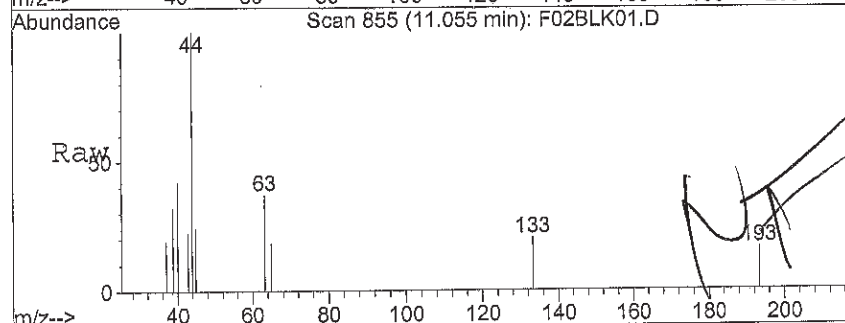
Tgt Ion: 62 Resp: 12933
Ion Ratio Lower Upper
62 100
64 160.2 28.0 42.0#
49 0.0 28.5 42.7#
98 0.0 6.2 9.4#



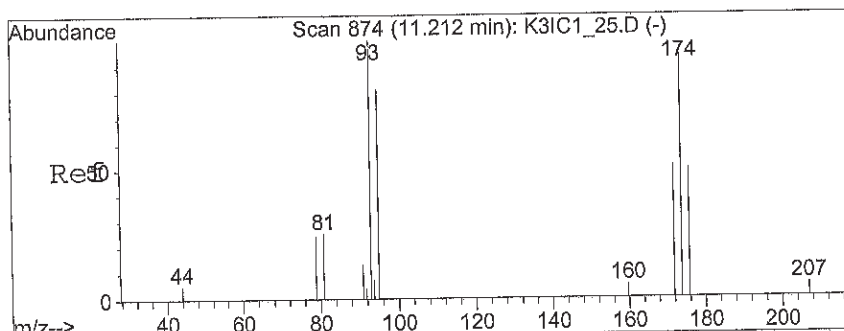
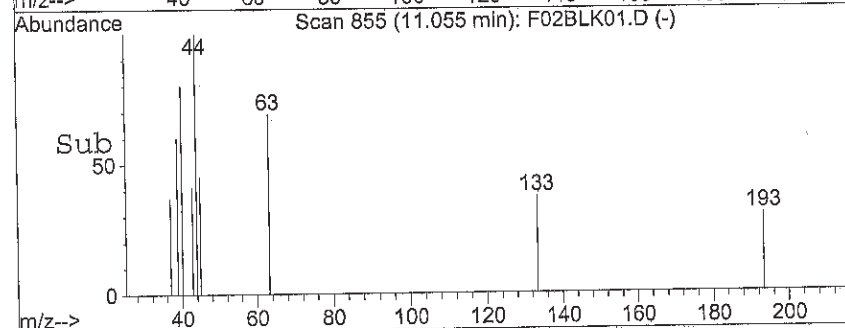
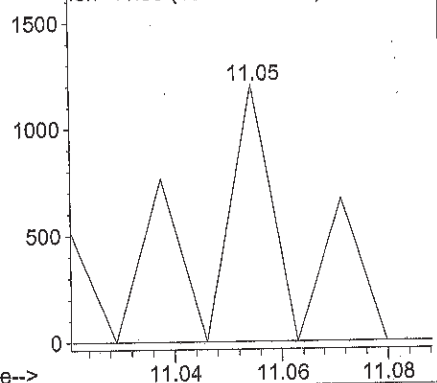


#34
 1,2-Dichloropropane
 Concen: 0.17 ug/L
 RT: 11.05 min Scan# 855
 Delta R.T. 0.00 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

Tgt Ion:	63	Resp:	610
Ion Ratio	Lower	Upper	
63	100		
62	0.0	67.4	101.2#
76	0.0	40.3	60.5#
41	55.4	103.0	154.6#

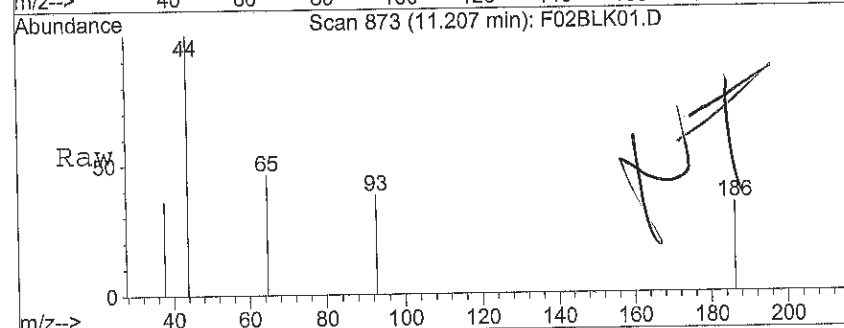


Abundance Ion 63.05 (62.75 to 63.75): F02BLK01.D
 Ion 62.05 (61.75 to 62.75): F02BLK01.D
 Ion 76.05 (75.75 to 76.75): F02BLK01.D
 Ion 41.05 (40.75 to 41.75): F02BLK01.D

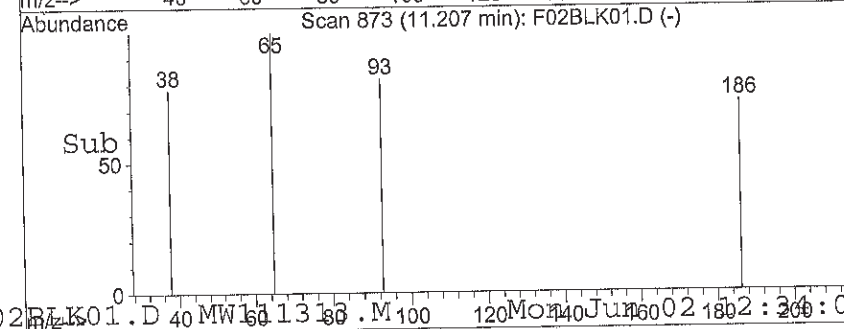
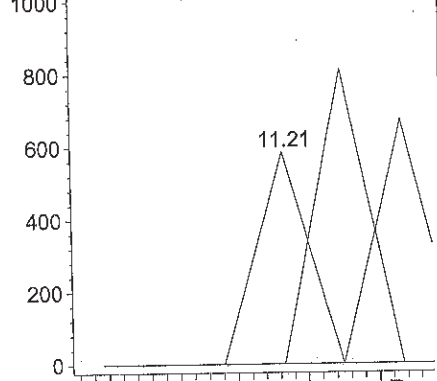


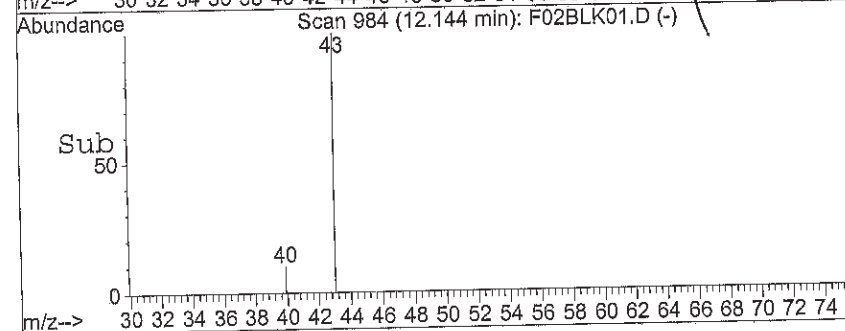
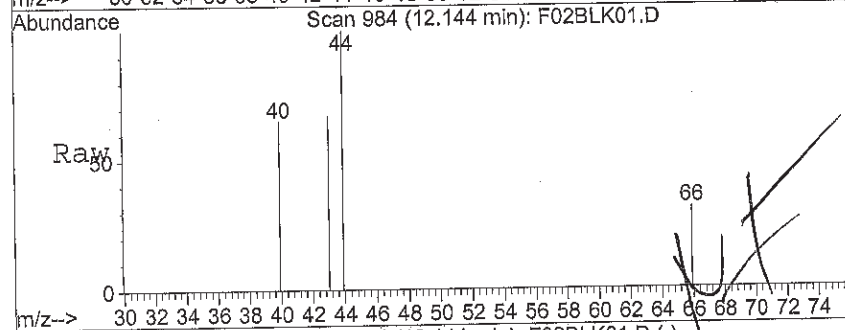
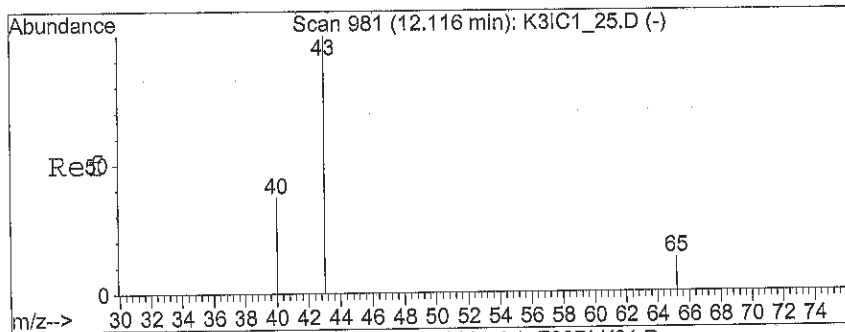
#35
 Dibromomethane
 Concen: 0.10 ug/L
 RT: 11.21 min Scan# 873
 Delta R.T. -0.01 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

Tgt Ion:	93	Resp:	297
Ion Ratio	Lower	Upper	
93	100		
95	138.4	66.2	99.2#
174	0.0	75.5	113.3#



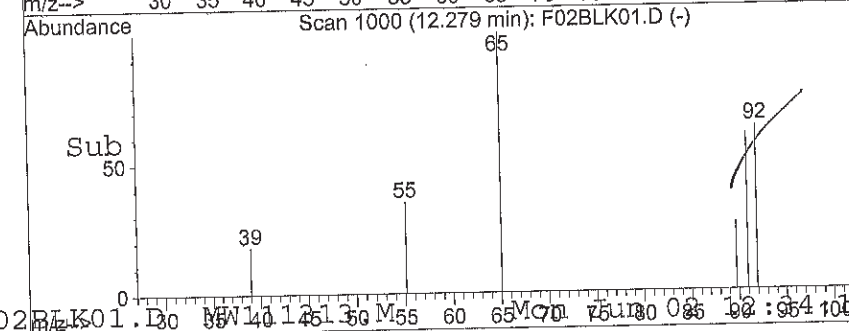
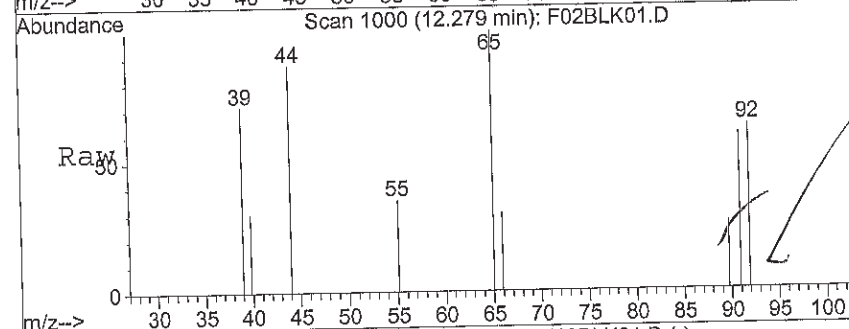
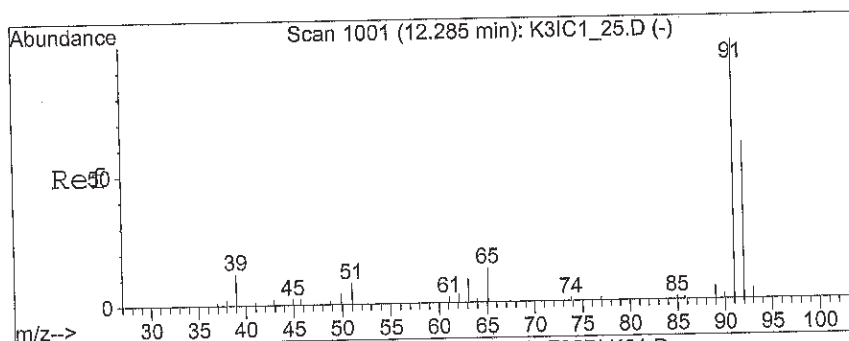
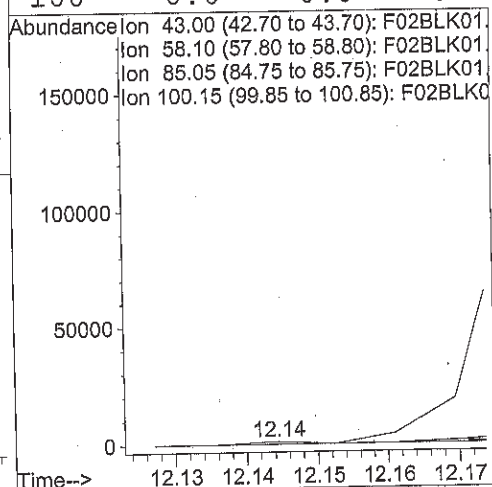
Abundance Ion 93.00 (92.70 to 93.70): F02BLK01.D
 Ion 95.00 (94.70 to 95.70): F02BLK01.D
 Ion 173.90 (173.60 to 174.60): F02BLK01.D





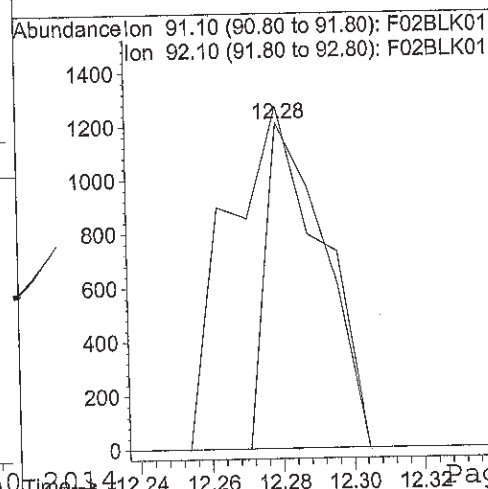
#40
(MIBK) 4-Methyl-2-Pentanone
Concen: 0.19 ug/L
RT: 12.14 min Scan# 984
Delta R.T. 0.03 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

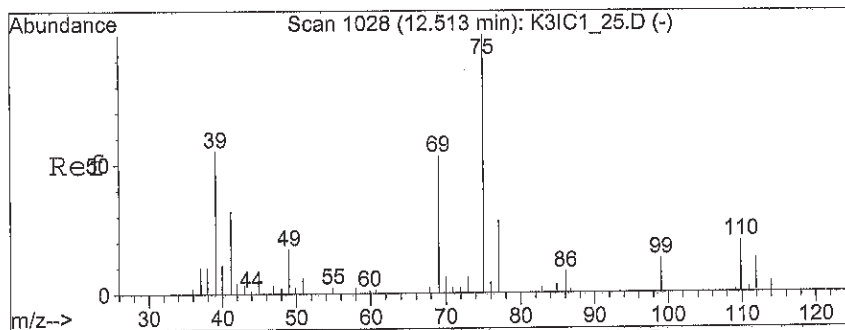
Tgt Ion:	43	Resp:	568
Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	0.0
85	0.0	0.0	0.0
100	0.0	0.0	0.0



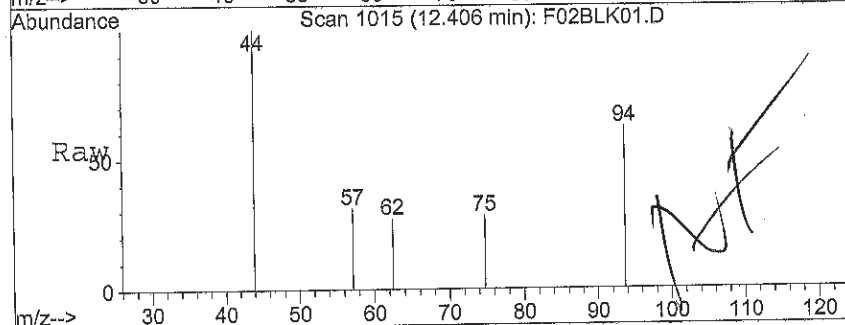
#41
Toluene
Concen: 0.07 ug/L
RT: 12.28 min Scan# 1000
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion:	91	Resp:	1411
Ion	Ratio	Lower	Upper
91	100		
92	163.1	47.4	71.0#

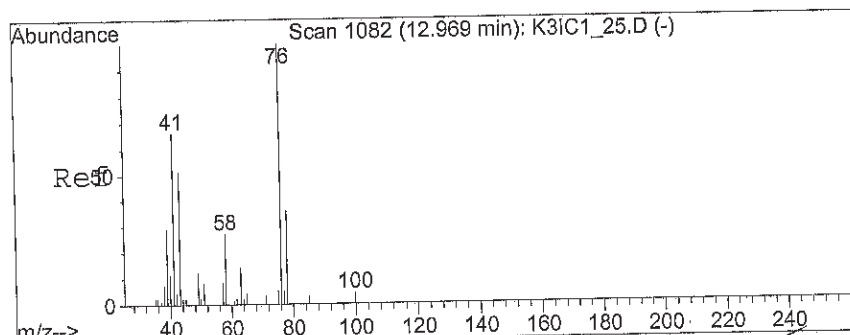
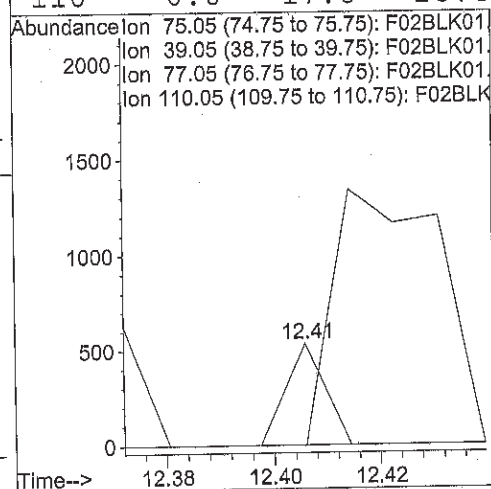
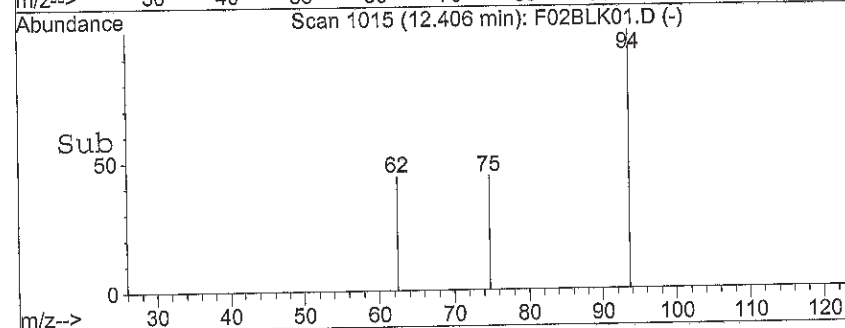




#42
 trans-1,3-Dichloropropene
 Concen: 0.04 ug/L
 RT: 12.41 min Scan# 1015
 Delta R.T. -0.11 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

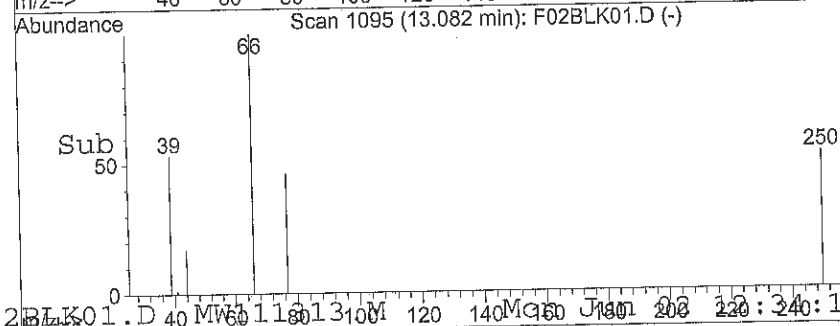
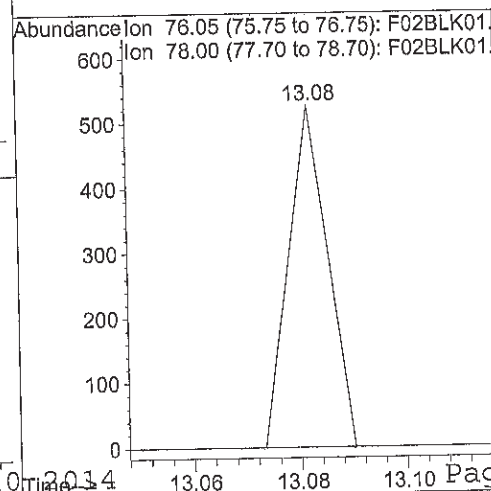
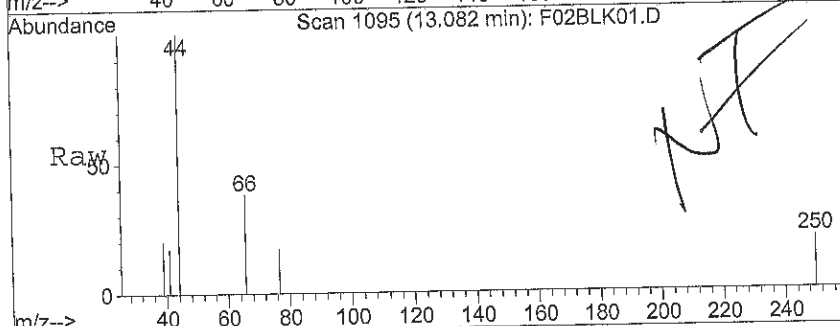


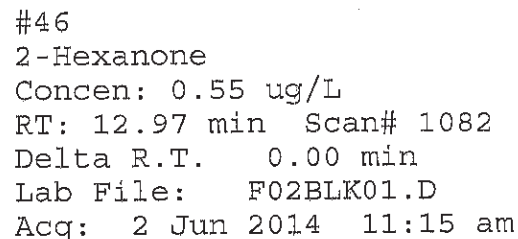
Tgt Ion: 75 Resp: 270
 Ion Ratio Lower Upper
 75 100
 39 823.7 53.6 80.4#
 77 0.0 25.4 38.2#
 110 0.0 17.6 26.4#



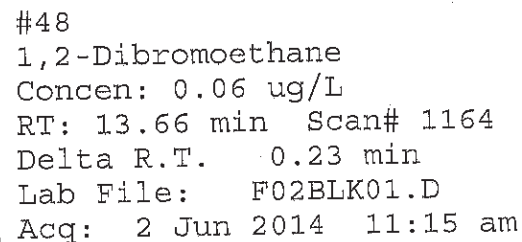
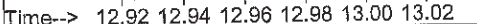
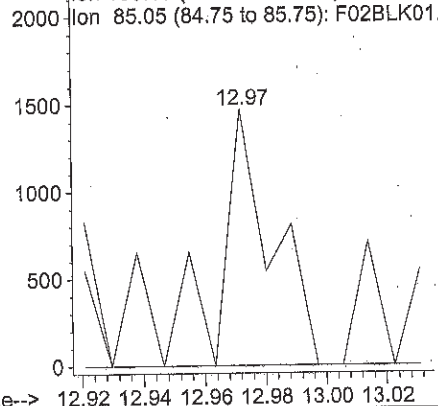
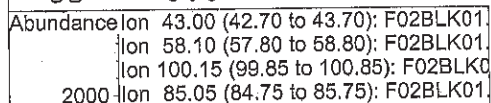
#45
 1,3-Dichloropropane
 Concen: 0.04 ug/L
 RT: 13.08 min Scan# 1095
 Delta R.T. 0.11 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

Tgt Ion: 76 Resp: 267
 Ion Ratio Lower Upper
 76 100
 78 0.0 26.9 40.3#

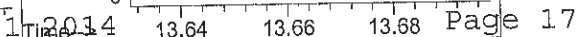
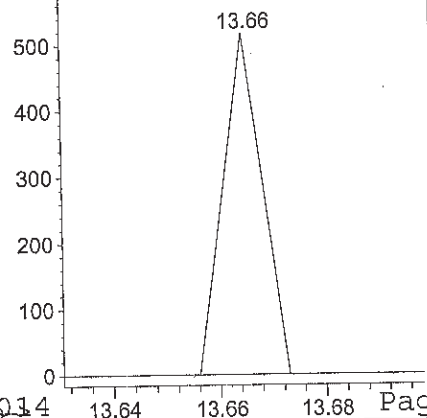
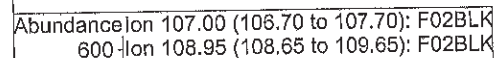


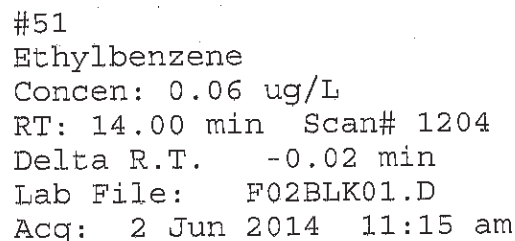


Tgt	Ion: 43	Resp:	1763
Ion	Ratio	Lower	Upper
43	100		
58	0.0	40.9	61.3#
100	0.0	5.5	8.3#
85	0.0	4.3	6.5#

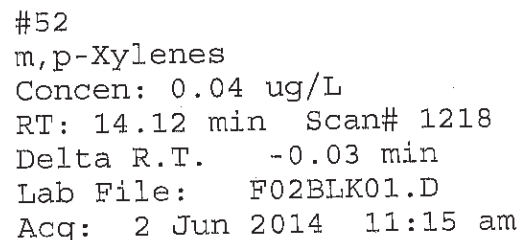
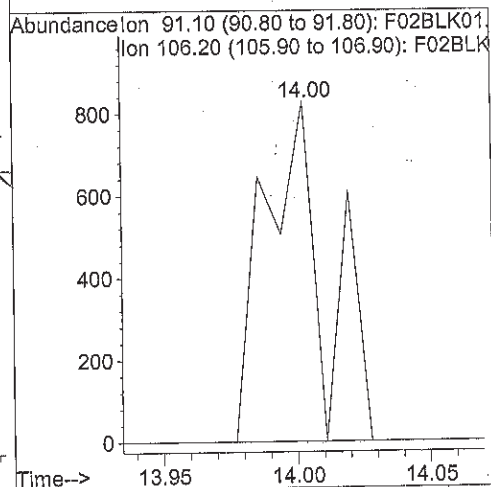


Tgt	Ion:107	Resp:	262
Ion	Ratio	Lower	Upper
107	100		
109	0.0	74.4	111.6#

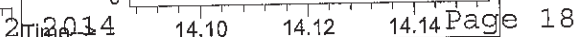
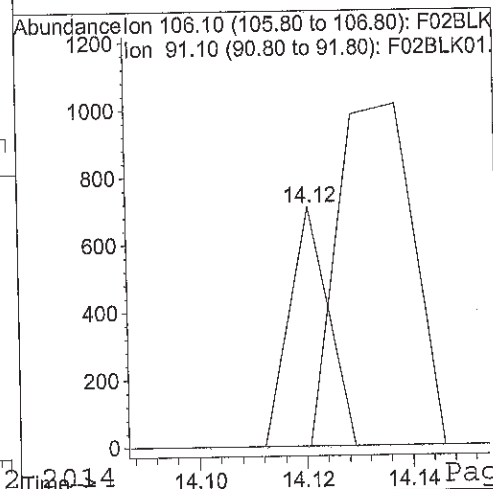


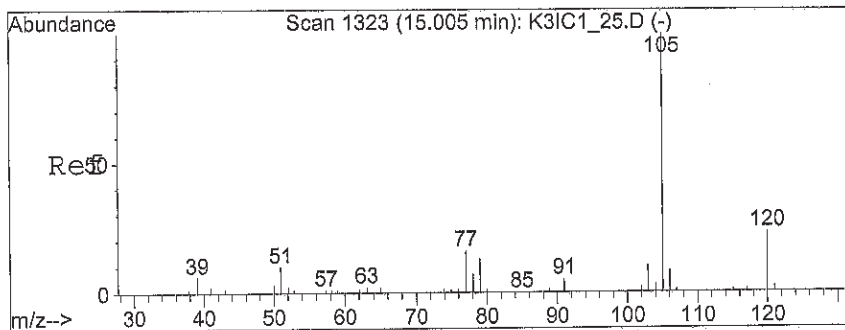


Tgt Ion:	91	Resp:	1311
Ion Ratio	Lower	Upper	
91	100		
106	0.0	23.5	35.3#



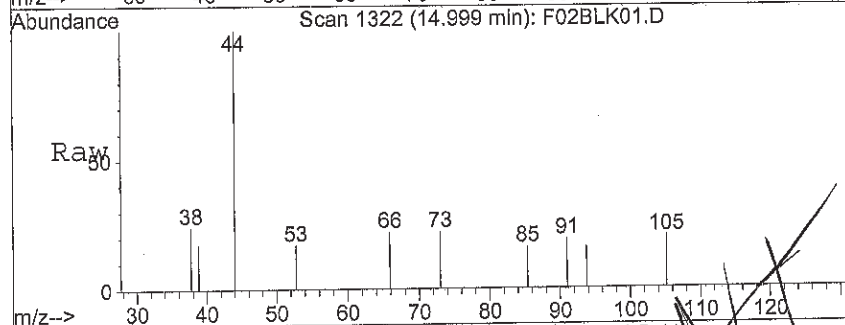
Tgt	Ion:106	Resp:	359
Ion	Ratio	Lower	Upper
106	100		
91	281.9	177.1	265.7#



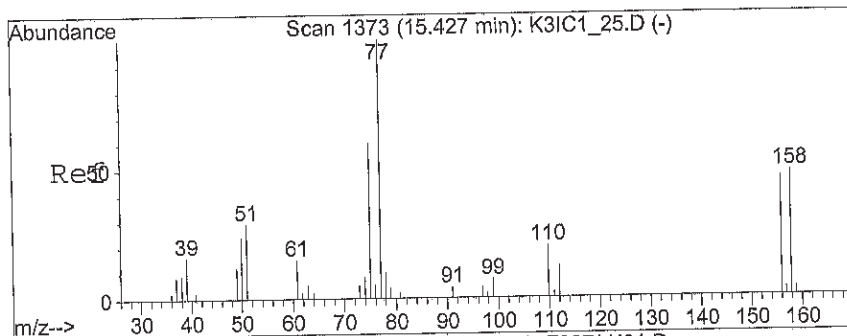
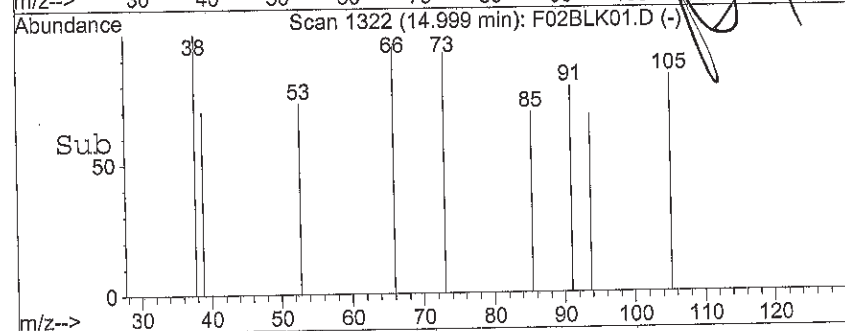
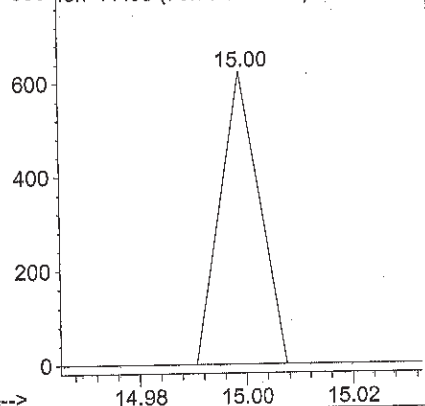


#56
Isopropylbenzene
Concen: 0.01 ug/L
RT: 15.00 min Scan# 1322
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 105 Resp: 316
Ion Ratio Lower Upper
105 100
120 0.0 19.3 28.9#
77 0.0 13.1 19.7#

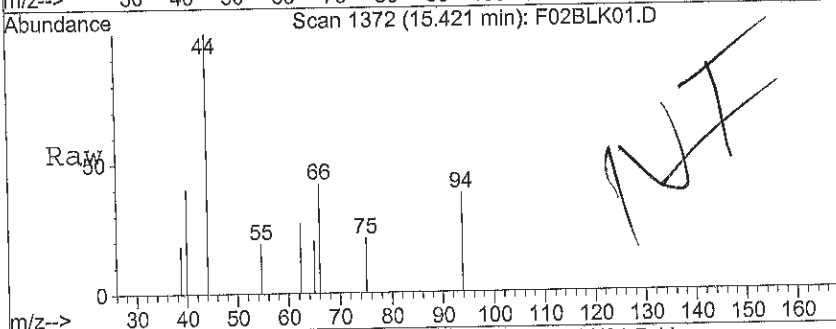


Abundance Ion 105.10 (104.80 to 105.80): F02BLK01
Ion 120.15 (119.85 to 120.85): F02BLK01
Ion 77.05 (76.75 to 77.75): F02BLK01

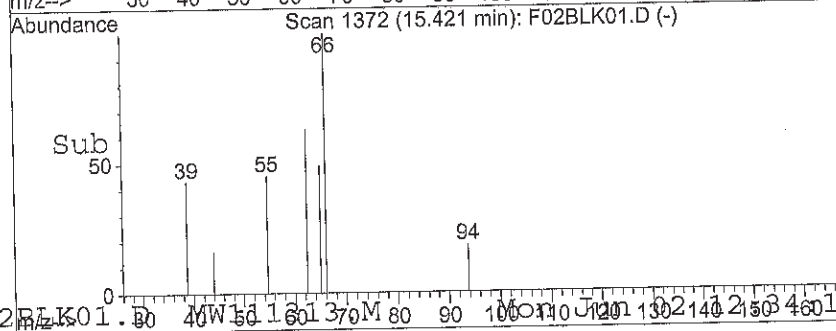
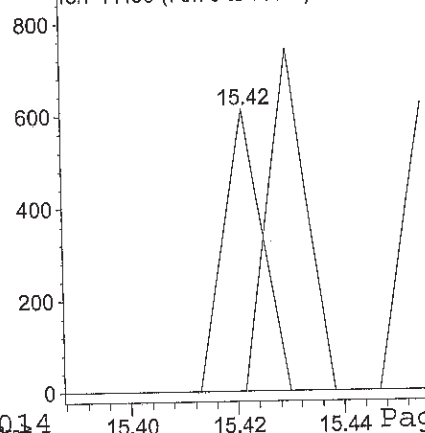


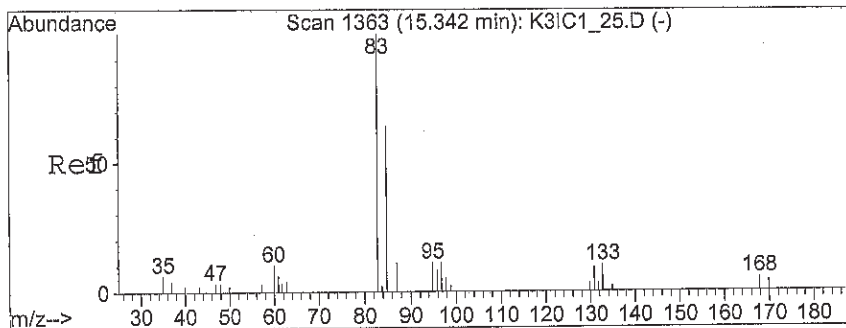
#57
1,2,3-Trichloropropane
Concen: 0.05 ug/L
RT: 15.42 min Scan# 1372
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 75 Resp: 310
Ion Ratio Lower Upper
75 100
77 121.3 31.2 46.8#



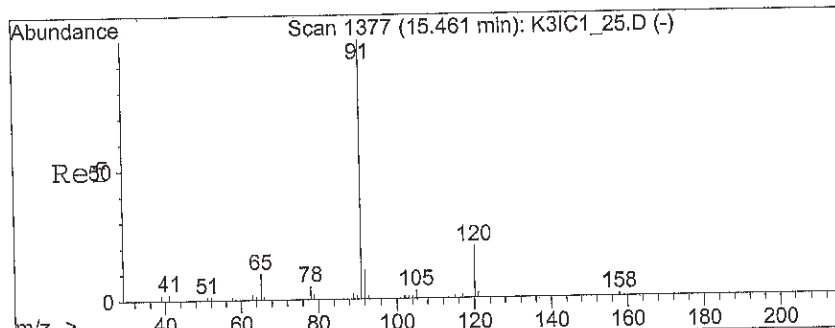
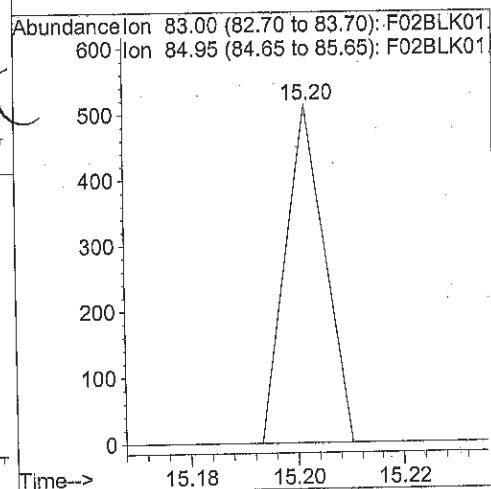
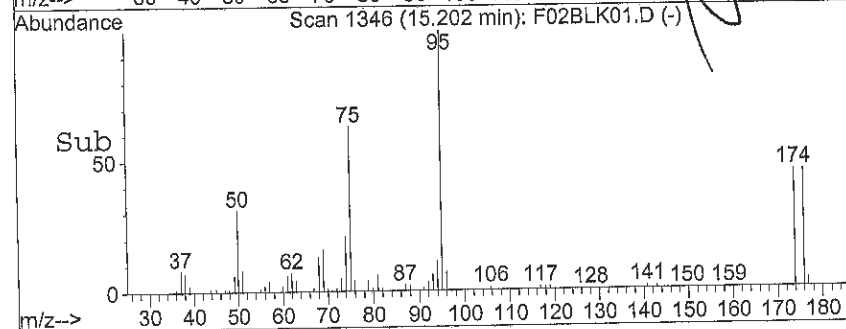
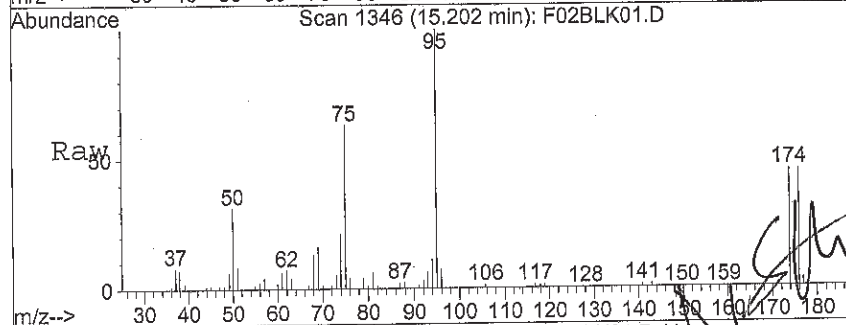
Abundance Ion 75.05 (74.75 to 75.75): F02BLK01
Ion 77.00 (76.70 to 77.70): F02BLK01





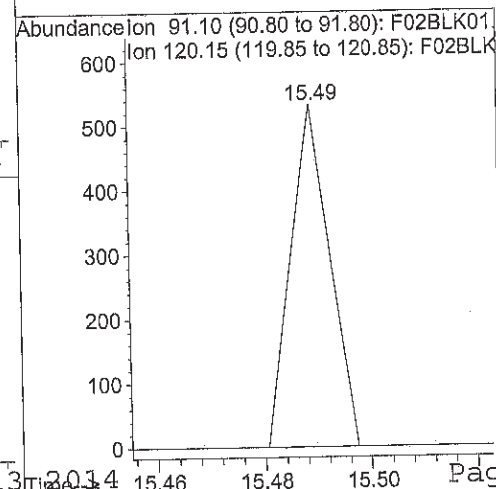
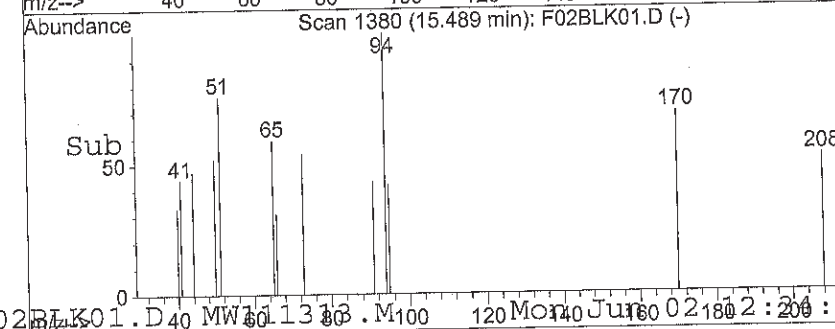
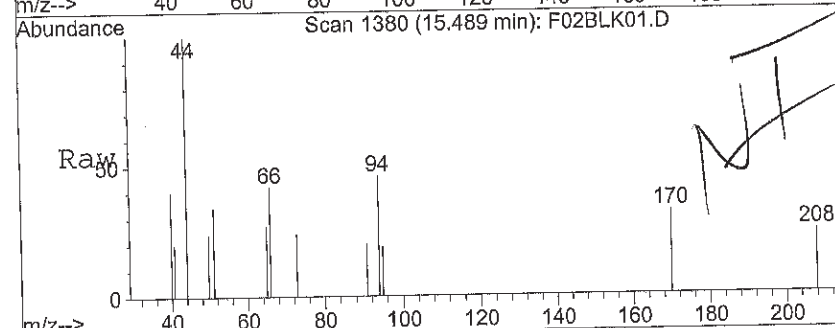
#60
 1,1,2,2-Tetrachloroethane
 Concen: 0.05 ug/L
 RT: 15.20 min Scan# 1346
 Delta R.T. -0.14 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

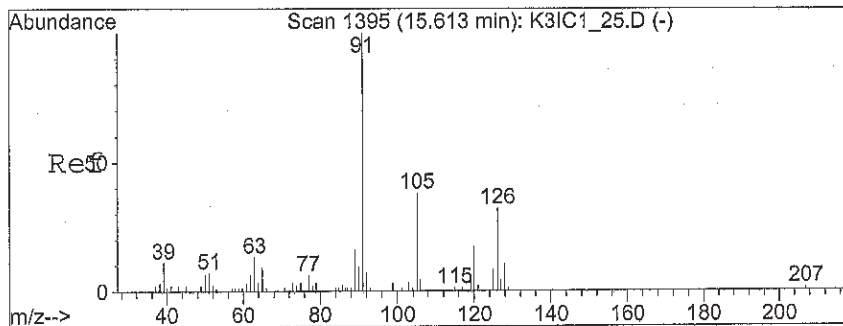
Tgt Ion: 83 Resp: 260
 Ion Ratio Lower Upper
 83 100
 85 0.0 51.2 76.8#



#62
 n-Propylbenzene
 Concen: 0.01 ug/L
 RT: 15.49 min Scan# 1380
 Delta R.T. 0.03 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

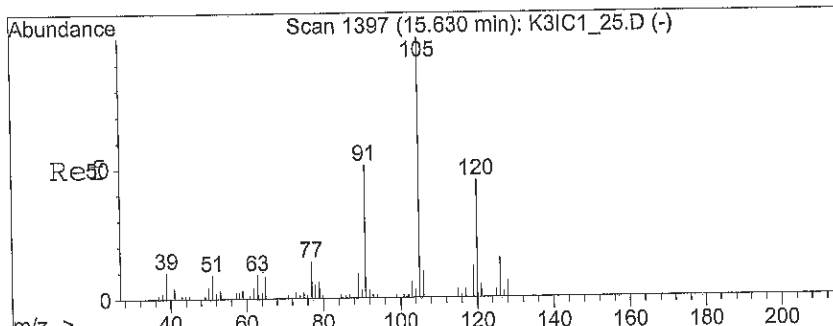
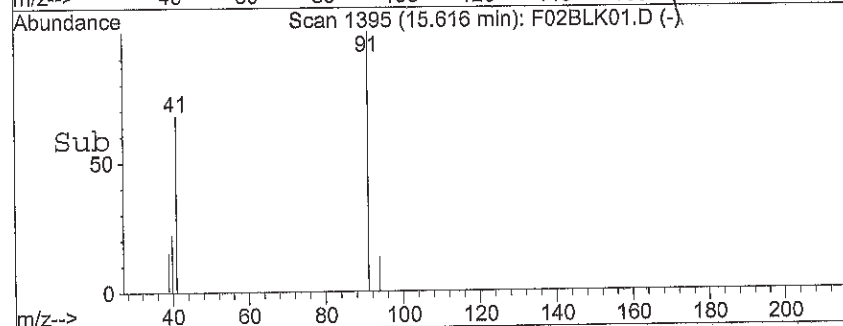
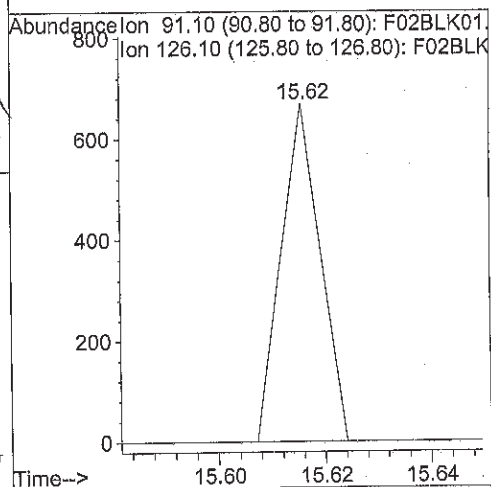
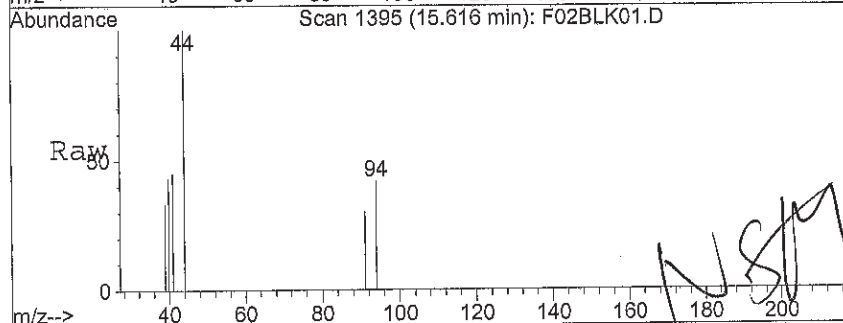
Tgt Ion: 91 Resp: 270
 Ion Ratio Lower Upper
 91 100
 120 0.0 16.1 24.1#





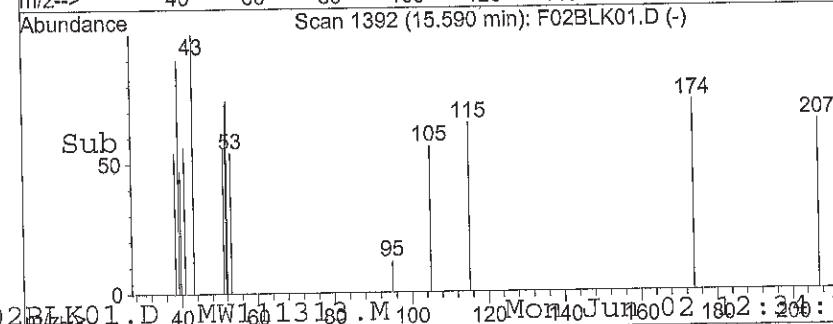
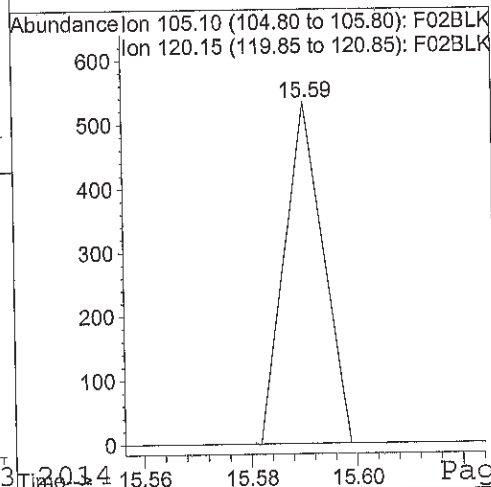
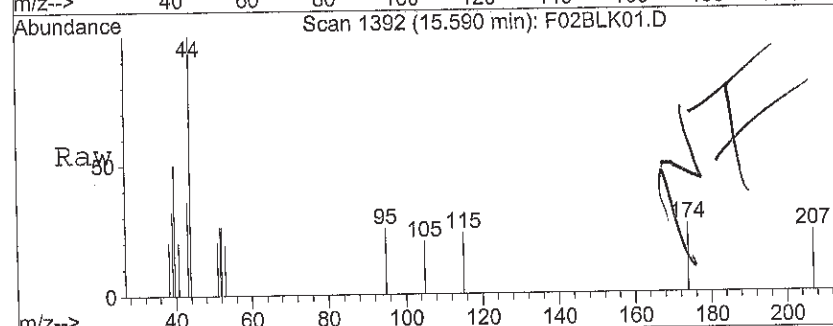
#63
2-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.62 min Scan# 1395
Delta R.T. 0.00 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

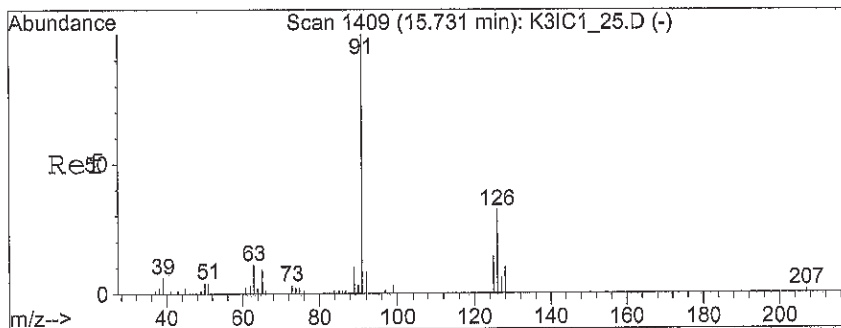
Tgt Ion: 91 Resp: 339
Ion Ratio Lower Upper
91 100
126 0.0 24.0 36.0#



#64
1,3,5-Trimethylbenzene
Concen: 0.02 ug/L
RT: 15.59 min Scan# 1392
Delta R.T. -0.04 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

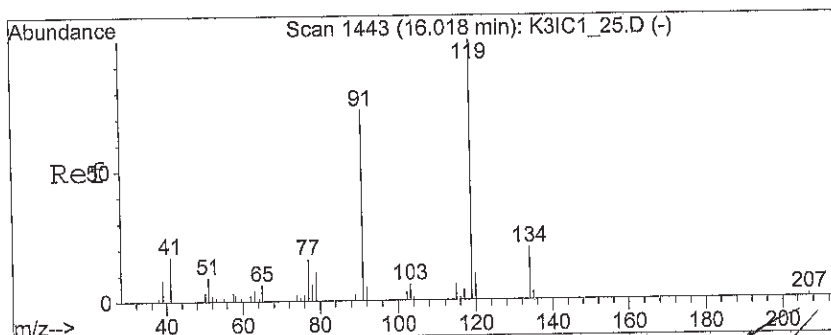
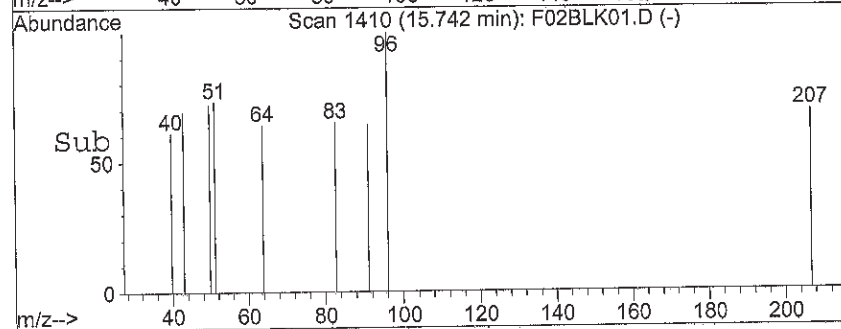
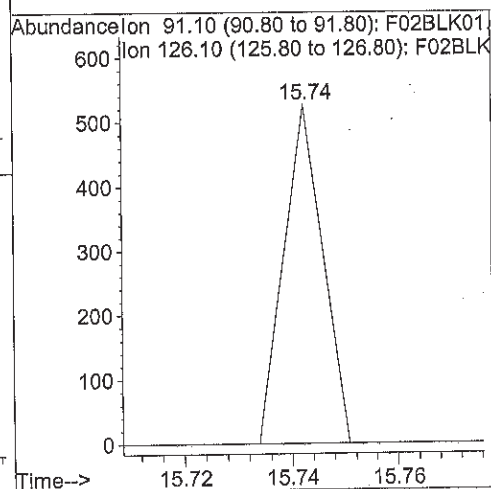
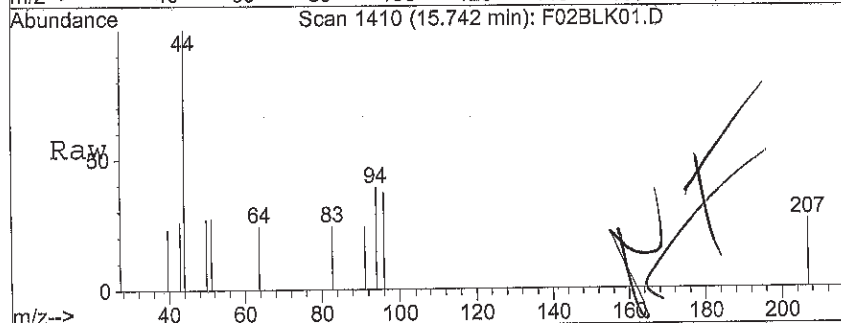
Tgt Ion: 105 Resp: 270
Ion Ratio Lower Upper
105 100
120 0.0 36.4 54.6#





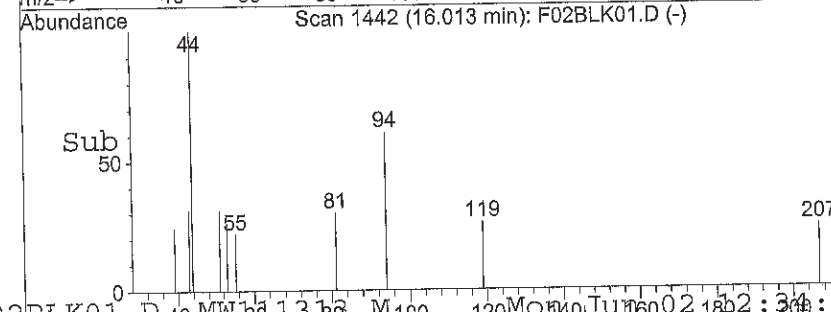
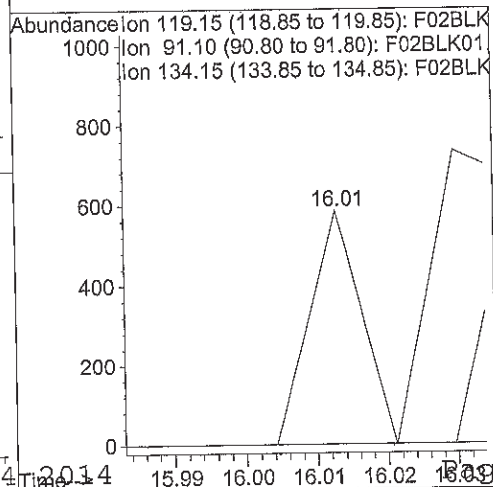
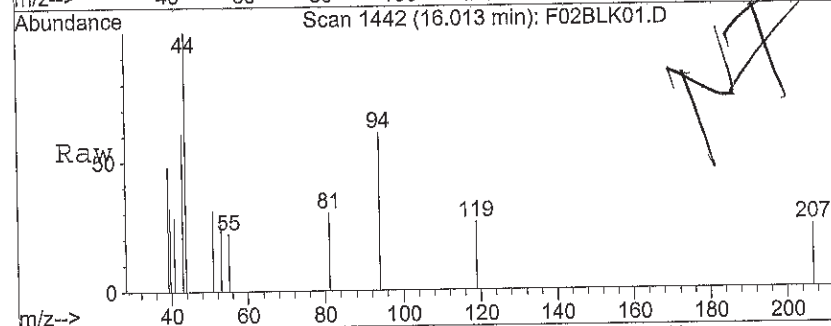
#65
 4-Chlorotoluene
 Concen: 0.02 ug/L
 RT: 15.74 min Scan# 1410
 Delta R.T. 0.01 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

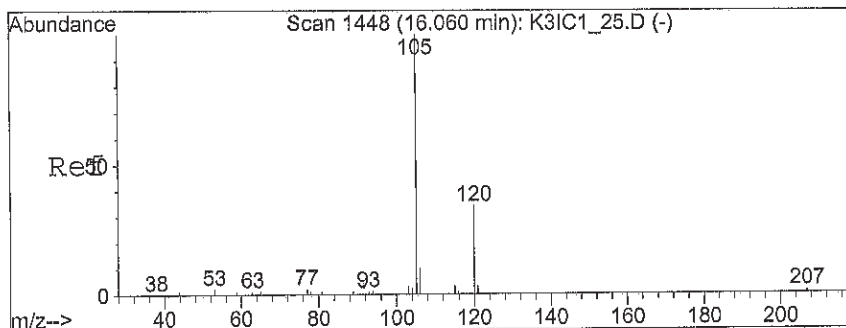
Tgt Ion: 91 Resp: 267
 Ion Ratio Lower Upper
 91 100
 126 0.0 24.6 36.8#



#66
 tert-Butylbenzene
 Concen: 0.02 ug/L
 RT: 16.01 min Scan# 1442
 Delta R.T. -0.01 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

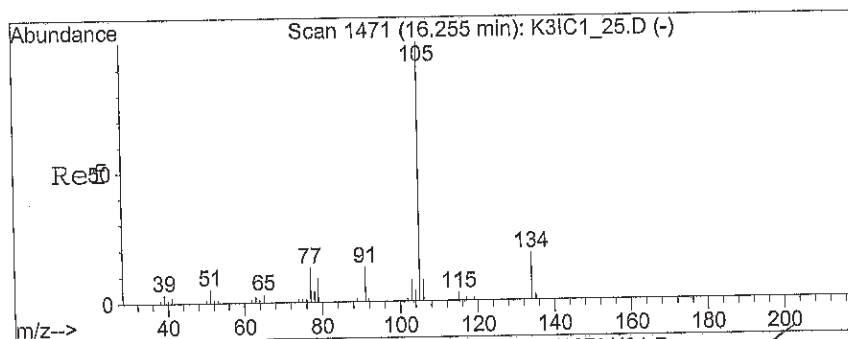
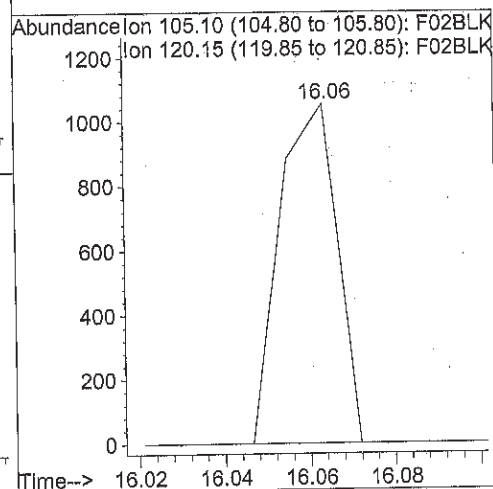
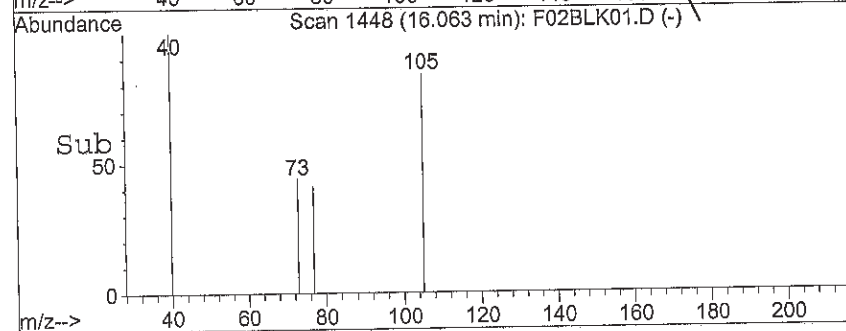
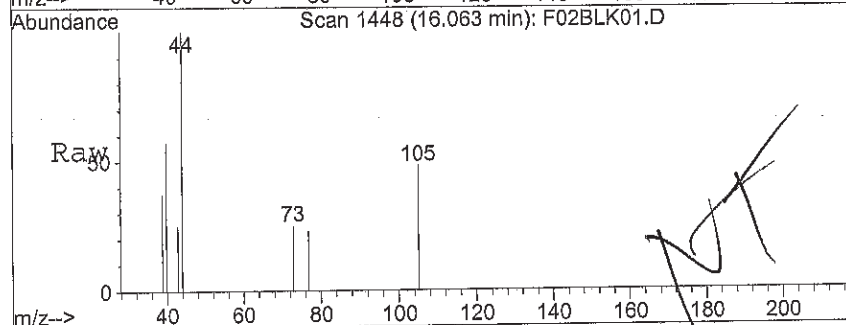
Tgt Ion: 119 Resp: 296
 Ion Ratio Lower Upper
 119 100
 91 0.0 56.3 84.5#
 134 0.0 16.1 24.1#





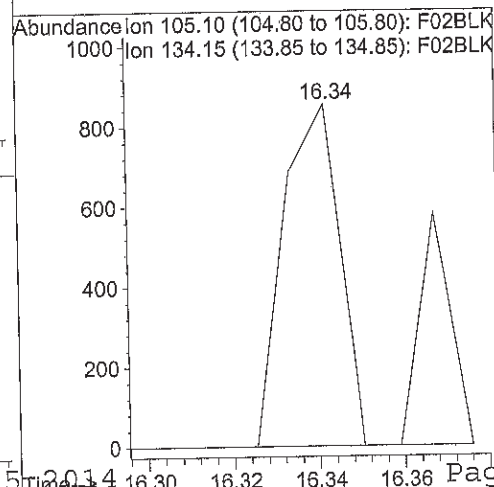
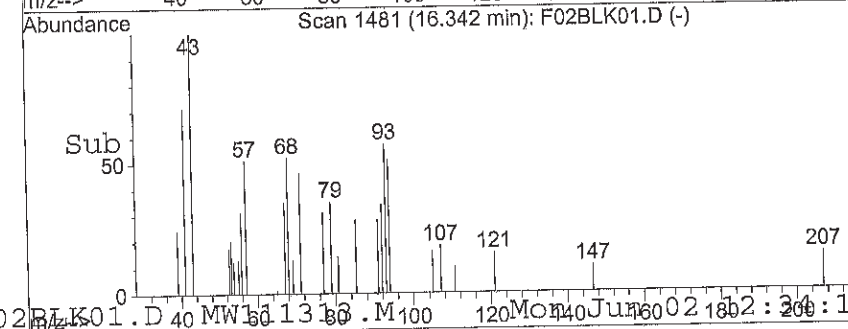
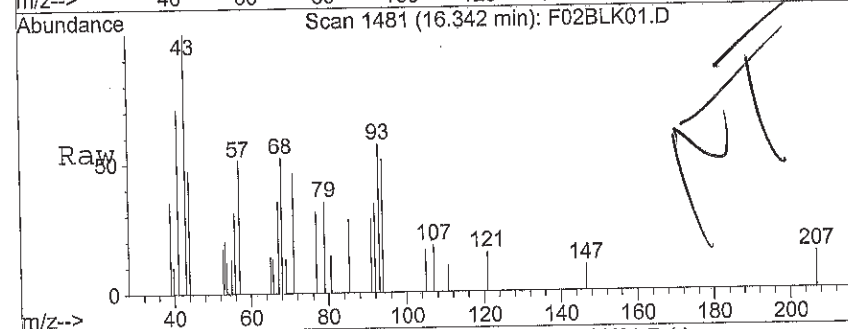
#67
 1,2,4-Trimethylbenzene
 Concen: 0.05 ug/L
 RT: 16.06 min Scan# 1448
 Delta R.T. 0.00 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

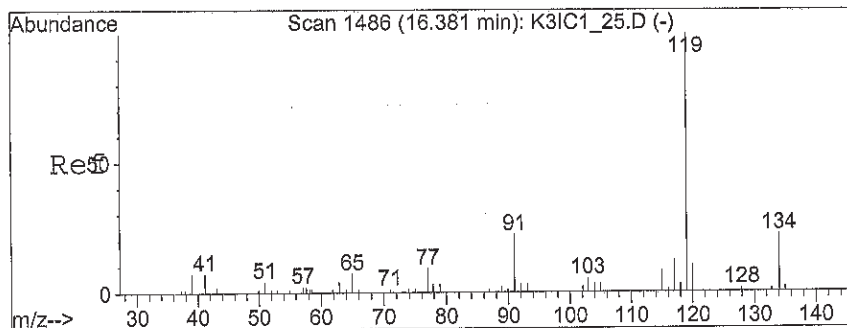
Tgt Ion:105 Resp: 982
 Ion Ratio Lower Upper
 105 100
 120 0.0 33.8 50.8#



#68
 sec-Butylbenzene
 Concen: 0.03 ug/L
 RT: 16.34 min Scan# 1481
 Delta R.T. 0.09 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

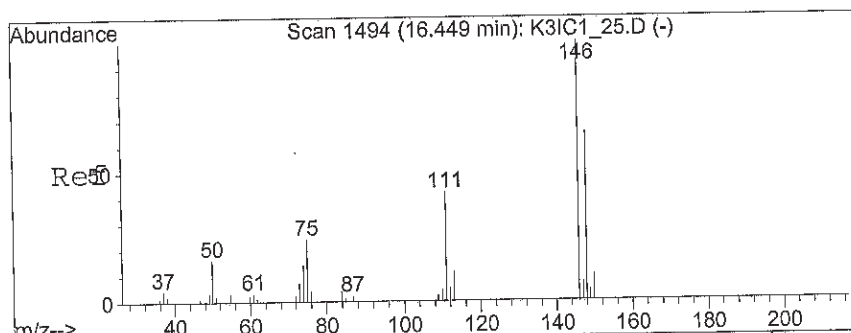
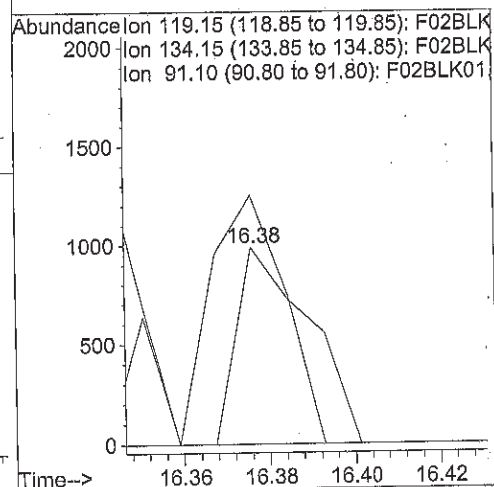
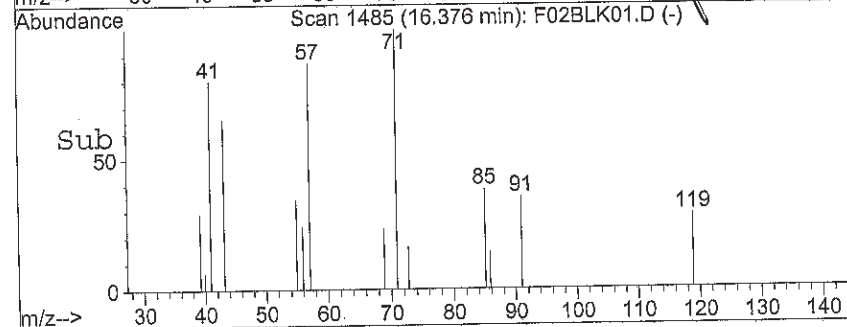
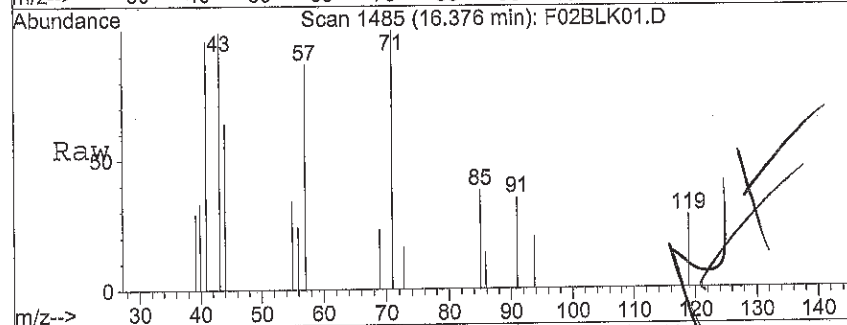
Tgt Ion:105 Resp: 780
 Ion Ratio Lower Upper
 105 100
 134 0.0 13.0 19.6#





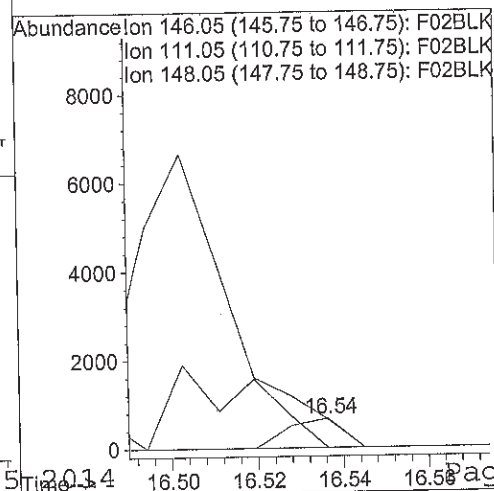
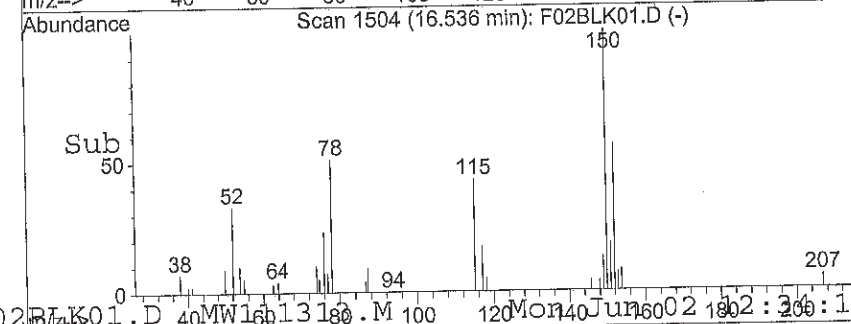
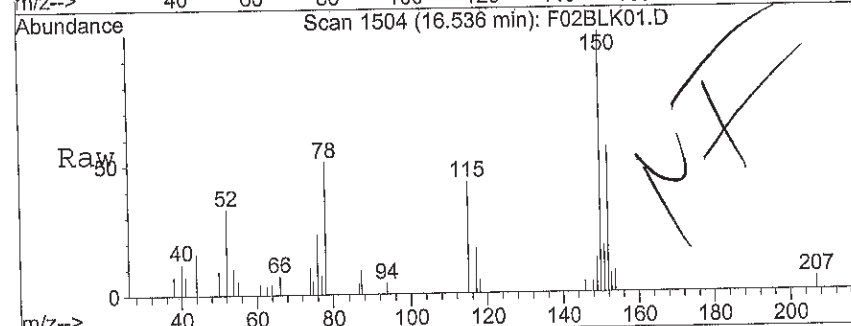
#69
p-Isopropyltoluene
Concen: 0.06 ug/L
RT: 16.38 min Scan# 1485
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

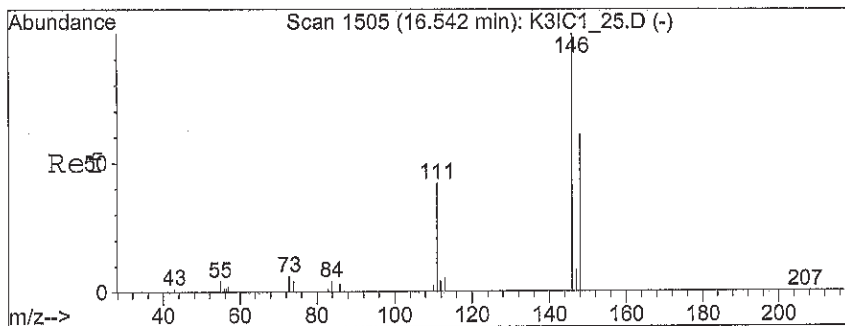
Tgt Ion:119 Resp: 1146
Ion Ratio Lower Upper
119 100
134 0.0 17.4 26.2#
91 130.5 19.6 29.4#



#70
1,3-Dichlorobenzene
Concen: 0.06 ug/L
RT: 16.54 min Scan# 1504
Delta R.T. 0.09 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

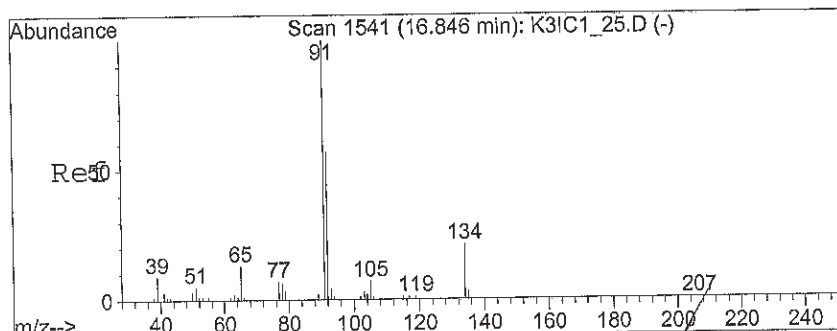
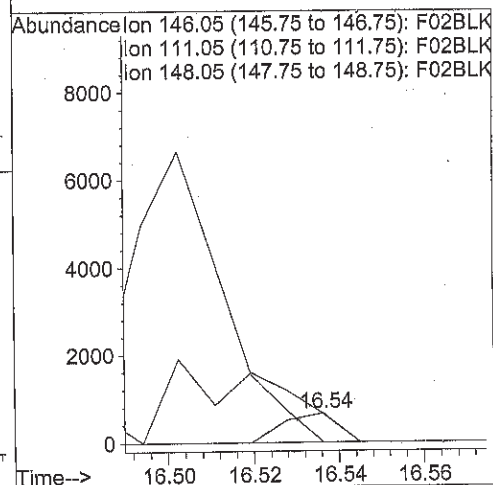
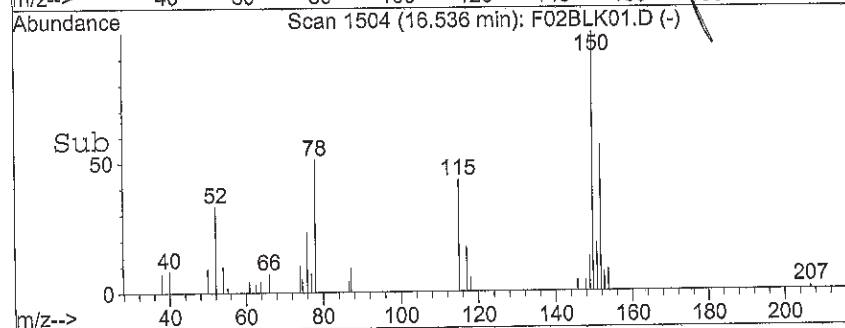
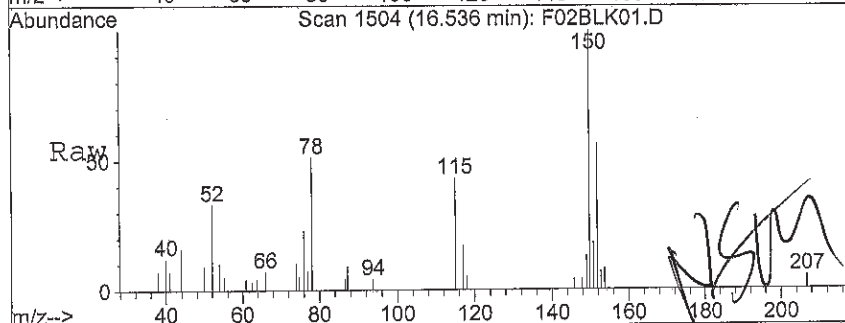
Tgt Ion:146 Resp: 590
Ion Ratio Lower Upper
146 100
111 0.0 34.2 51.4#
148 0.0 50.9 76.3#





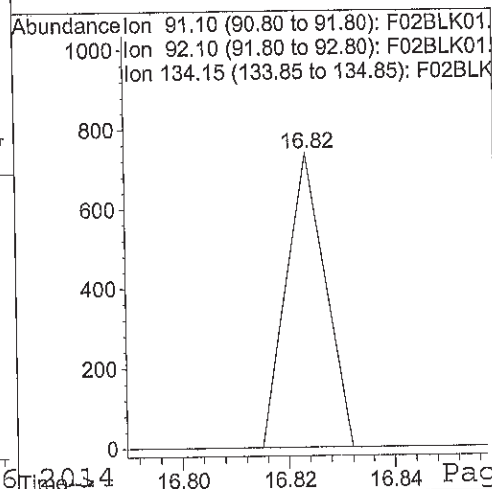
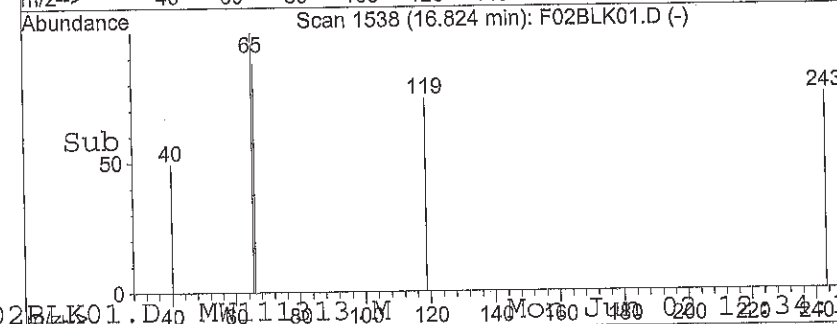
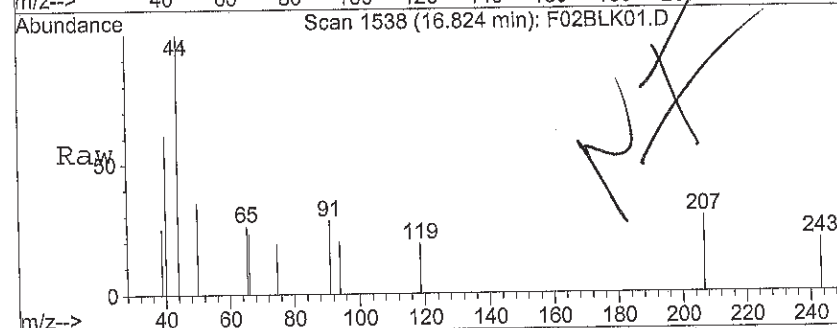
#71
 1,4-Dichlorobenzene
 Concen: 0.06 ug/L
 RT: 16.54 min Scan# 1504
 Delta R.T. -0.01 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

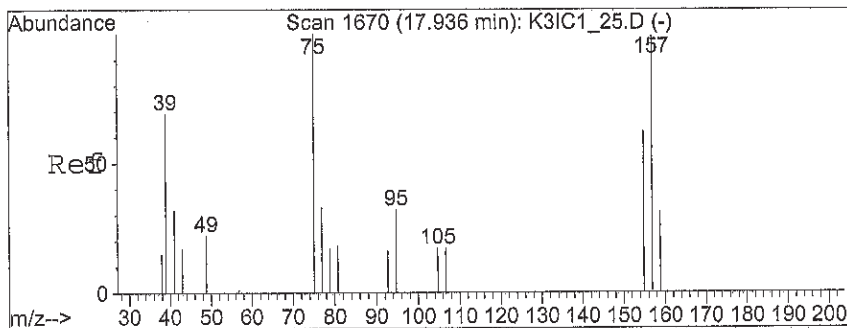
Tgt Ion: 146 Resp: 590
 Ion Ratio Lower Upper
 146 100
 111 0.0 37.6 56.4#
 148 0.0 52.6 78.8#



#72
 n-Butylbenzene
 Concen: 0.02 ug/L
 RT: 16.82 min Scan# 1538
 Delta R.T. -0.02 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

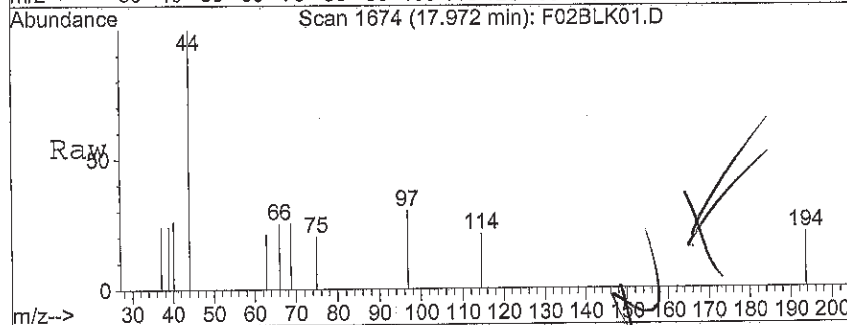
Tgt Ion: 91 Resp: 374
 Ion Ratio Lower Upper
 91 100
 92 0.0 47.0 70.4#
 134 0.0 18.1 27.1#



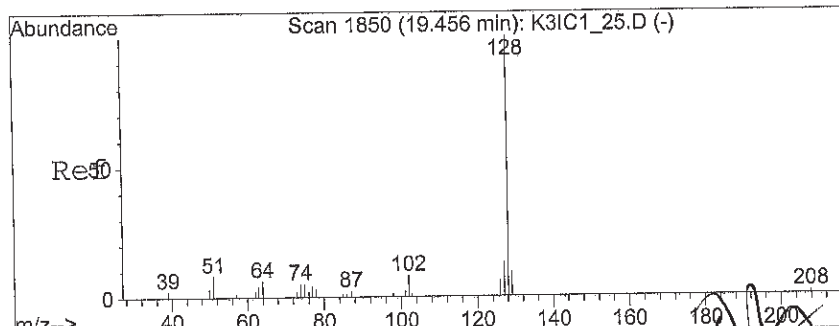
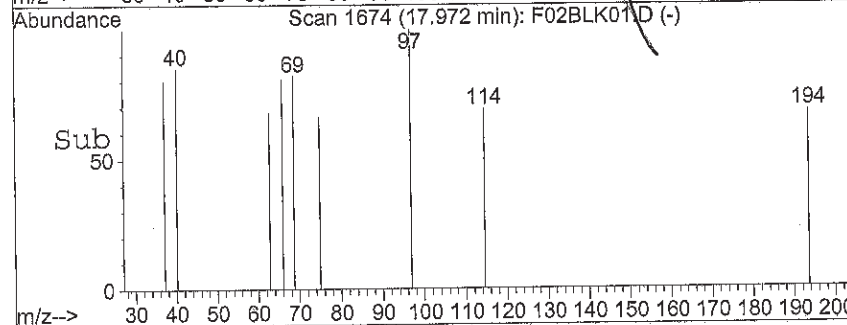
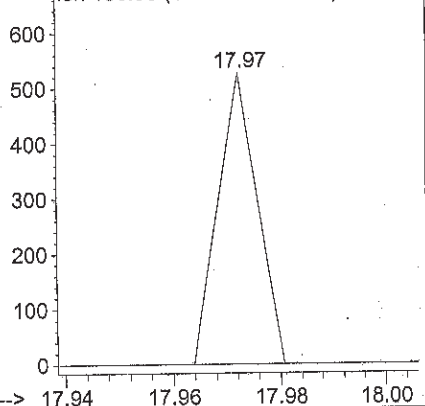


#74
 1,2-Dibromo-3-chloropropane
 Concen: 1.21 ug/L
 RT: 17.97 min Scan# 1674
 Delta R.T. 0.04 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

Tgt Ion: 75 Resp: 268
 Ion Ratio Lower Upper
 75 100
 155 0.0 59.2 88.8#
 157 0.0 77.0 115.6#

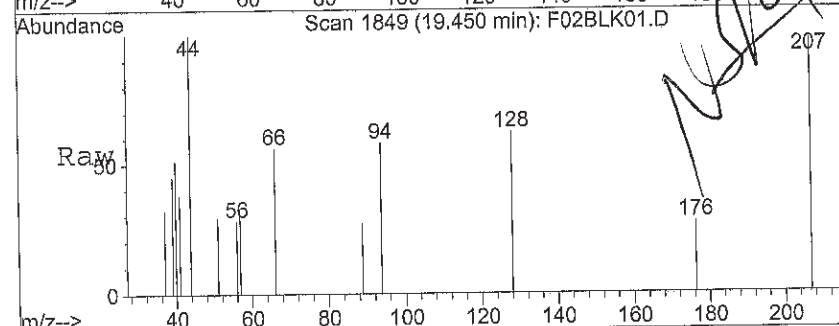


Abundance Ion 75.05 (74.75 to 75.75): F02BLK01
 Ion 154.95 (154.65 to 155.65): F02BLK
 Ion 156.95 (156.65 to 157.65): F02BLK

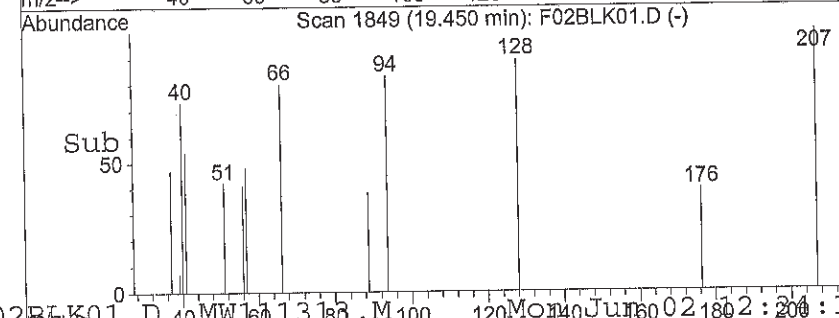
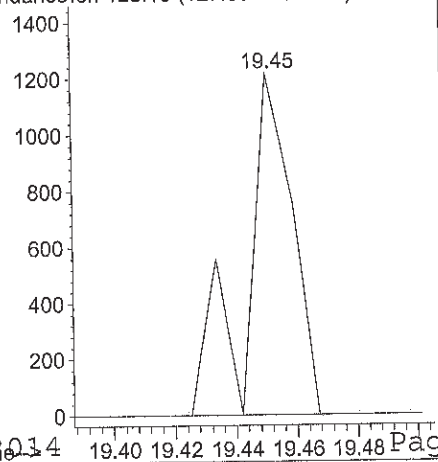


#77
 Naphthalene
 Concen: 0.09 ug/L
 RT: 19.45 min Scan# 1849
 Delta R.T. -0.01 min
 Lab File: F02BLK01.D
 Acq: 2 Jun 2014 11:15 am

Tgt Ion: 128 Resp: 1281



Abundance Ion 128.10 (127.80 to 128.80): F02BLK



Data File : C:\HPCHEM\1\DATA\060214L3\F02BLK01.D Vial: 11
 Acq On : 2 Jun 2014 11:15 am Operator: DN
 Sample : 34F0201-BLK1 Inst : GC/MS Ins
 Misc : 100cc AMBIENT AIR/H2O Multiplr: 10.00
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:27 19114 Quant Results File: SS072713.RES

Quant Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.29	96	1631767	12.50	ug/L	-0.03
7) Chlorobenzene-d5 (IS)	13.91	117	1469938	12.50	ug/L	-0.02
10) 1,4-Dichlorobenzene-d4 (IS)	16.50	152	712180	12.50	ug/L	-0.01

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.42	113	480490m	11.32	ug/L	-0.01
Spiked Amount	12.500	Range 75 - 125	Recovery	=	90.56%	
3) Chloroform-d (SU6)	9.18	84	849749m	13.96	ug/L	-0.01
Spiked Amount	12.500	Range 70 - 140	Recovery	=	111.68%	
4) Methylene Chloride-d2 (SU5)	7.08	86	356203	10.01	ug/L	0.00
Spiked Amount	12.500	Range 70 - 140	Recovery	=	80.08%	
5) 1,2-Dichloroethane-d4 (SU2)	9.89	65	447803m	15.44	ug/L	-0.01
Spiked Amount	12.500	Range 75 - 125	Recovery	=	123.52%	
6) Benzene-d6 (SU7)	9.92	84	1385164	10.82	ug/L	-0.03
Spiked Amount	12.500	Range 70 - 140	Recovery	=	86.56%	
8) Toluene-d8 (SU3)	12.20	98	1604817	11.51	ug/L	-0.02
Spiked Amount	12.500	Range 75 - 125	Recovery	=	92.08%	
9) 4-Bromofluorobenzene (SU4)	15.21	95	803898m	13.96	ug/L	-0.02
Spiked Amount	12.500	Range 75 - 125	Recovery	=	111.68%	

Target Compounds

Qvalue

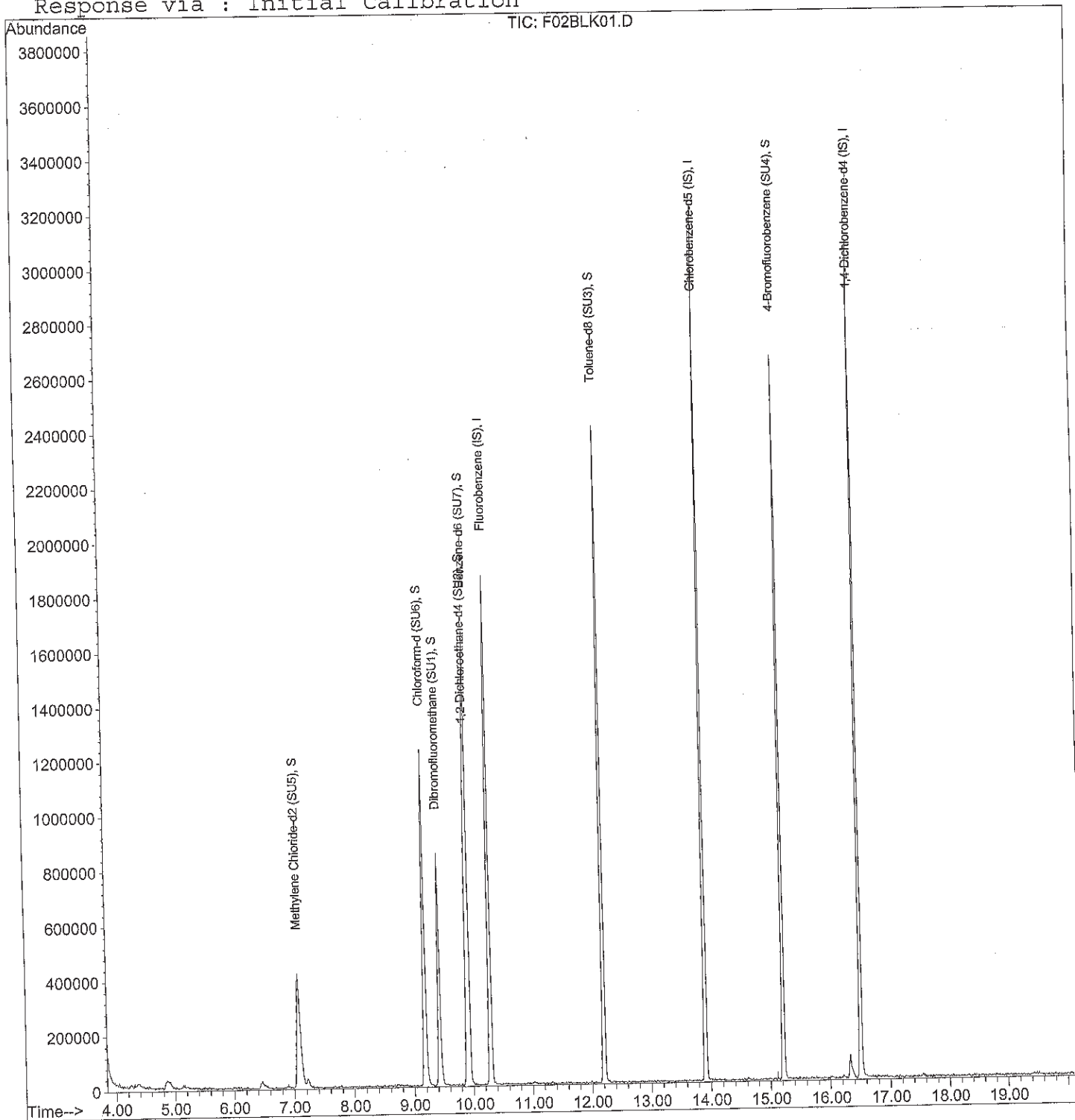
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F02BLK01.D
 Acq On : 2 Jun 2014 11:15 am
 Sample : 34F0201-BLK1
 Misc : 100cc AMBIENT AIR/H2O
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:27 19114

Vial: 11
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration



**RAW DATA FOR ANALYZED SAMPLES INCLUDING
CHROMATOGRAMS, QUANTITATION REPORTS AND
SPECTRA**

Data File : C:\HPCHEM\1\DATA\060214L3\F0200001.D

Vial: 11

Acq On : 2 Jun 2014 11:46 am

Operator: DN

Sample : 3F40201-01

Inst : GC/MS Ins

Misc : 100cc Equipment Blank

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 12:47 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.29	96	959959	12.50	ug/L	0.00
38) Chlorobenzene-d5 (IS)	13.91	117	899548	12.50	ug/L	-0.01
59) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	456072	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	270540m	11.30	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	90.40%
28) 1,2-Dichloroethane-d4 (SU2)	9.89	65	285346m	12.54	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	100.32%
39) Toluene-d8 (SU3)	12.20	98	947418	11.29	ug/L	-0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	90.32%
58) 4-Bromofluorobenzene (SU4)	15.21	95	449683m	12.22	ug/L	-0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	97.46%

Target Compounds

					Qvalue	
3) (F12) Dichlorodifluorometh	3.87	85	270	0.11	ug/L	44
4) Chloromethane	4.39	50	3448	0.92	ug/L	54
5) Vinyl Chloride	4.40	62	289	0.17	ug/L	43
6) Bromomethane	5.14	96	2397	0.49	ug/L	89
7) Chloroethane	5.22	64	699	1.56	ug/L	91
8) (F11) Trichlorofluorometha	5.71	101	281	0.11	ug/L	16
10) 1,1-Dichloroethene	6.18	96	283	0.12	ug/L	34
11) Acetone	6.46	58	6749	14.29	ug/L	1
12) (IPA) Leak Check Compound	6.55	45	2677	23.21	ug/L	1
13) Carbon disulfide	6.87	76	297	0.04	ug/L	76
14) Methylene Chloride	7.06	84	7916	3.00	ug/L	1
15) (TBA) tert-Butanol	6.93	59	1307	7.98	ug/L	77
16) (MTBE) Methyl-t-butyl ethe	7.40	73	270	0.05	ug/L	1
17) trans-1,2-Dichloroethene	7.43	96	254	0.10	ug/L	4
18) 1,1-Dichloroethane	8.09	63	270	0.06	ug/L	42
19) cis-1,2-Dichloroethene	8.65	96	257	0.09	ug/L	3
20) 2,2-Dichloropropane	8.78	77	407	0.11	ug/L	1
22) (DIPE) Diisopropyl Ether	7.82	45	282	0.04	ug/L	1
23) Bromochloromethane	9.00	128	355	0.28	ug/L	1
24) Chloroform	9.19	83	1062	0.21	ug/L	18
29) 1,1-Dichloropropene	9.85	75	294	0.08	ug/L	41
31) Benzene	9.95	78	3108	0.34	ug/L	57

(#)= qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060214L3\F0200001.D

Vial: 11

Acq On : 2 Jun 2014 11:46 am

Operator: DN

Sample : 3F40201-01

Inst : GC/MS Ins

Misc : 100cc Equipment Blank

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 12:47 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32) 1,2-Dichloroethane	9.92	62	13541	4.24	ug/L #	1
34) 1,2-Dichloropropane	11.06	63	300	0.14	ug/L #	2
35) Dibromomethane	11.01	93	272	0.16	ug/L #	5
36) Bromodichloromethane	11.13	83	263	0.08	ug/L #	21
40) (MIBK) 4-Methyl-2-Pentanone	12.10	43	288	0.16	ug/L #	100
41) Toluene	12.28	91	342	0.03	ug/L #	1
42) trans-1,3-Dichloropropene	12.50	75	256	0.06	ug/L #	1
45) 1,3-Dichloropropane	12.92	76	539	0.13	ug/L #	70
46) 2-Hexanone	12.97	43	1526	0.78	ug/L #	37
51) Ethylbenzene	14.00	91	1606	0.12	ug/L #	45
54) Styrene	14.62	104	597	-0.79	ug/L #	58
56) Isopropylbenzene	15.21	105	1562	0.12	ug/L #	1
57) 1,2,3-Trichloropropane	15.35	75	284	0.08	ug/L #	36
60) 1,1,2,2-Tetrachloroethane	15.19	83	253	0.08	ug/L #	18
62) n-Propylbenzene	15.39	91	267	0.01	ug/L #	56
63) 2-Chlorotoluene	15.39	91	267	0.02	ug/L #	45
64) 1,3,5-Trimethylbenzene	15.62	105	264	0.02	ug/L #	18
65) 4-Chlorotoluene	15.96	91	339	0.03	ug/L #	44
68) sec-Butylbenzene	16.31	105	283	0.02	ug/L #	62
69) p-Isopropyltoluene	16.37	119	266	0.02	ug/L #	1
70) 1,3-Dichlorobenzene	16.50	146	307	0.05	ug/L #	1
71) 1,4-Dichlorobenzene	16.50	146	307	0.05	ug/L #	1
72) n-Butylbenzene	16.87	91	283	0.02	ug/L #	30
73) 1,2-Dichlorobenzene	17.13	146	254	0.04	ug/L #	24
74) 1,2-Dibromo-3-chloropropan	18.16	75	374	1.59	ug/L #	6

(#) = qualifier out of range (m) = manual integration

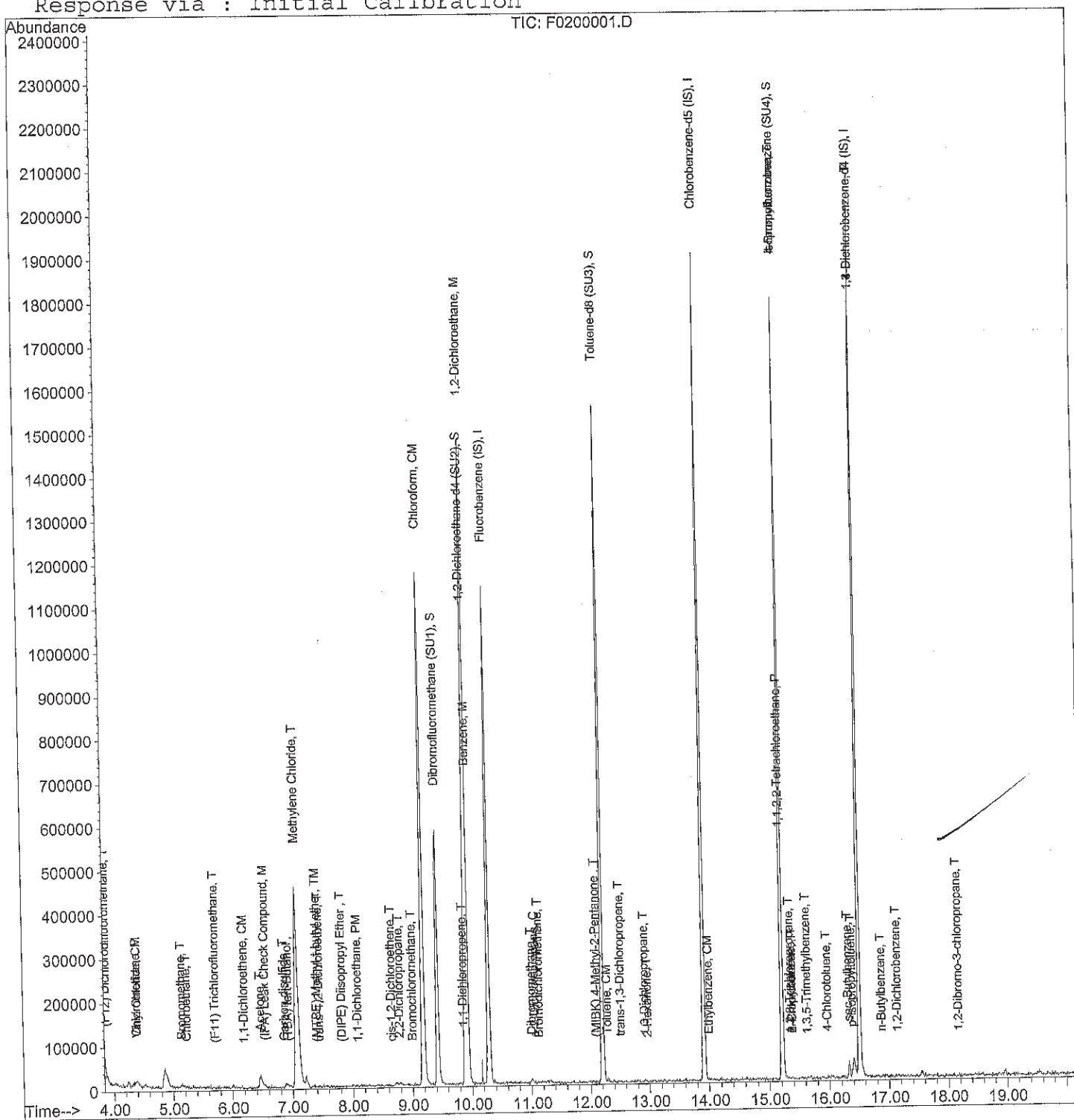
Quantitation Report

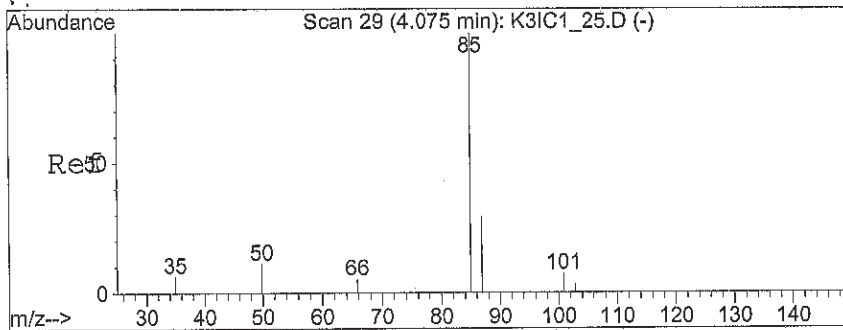
Data File : C:\HPCHEM\1\DATA\060214L3\F0200001.D
Acq On : 2 Jun 2014 11:46 am
Sample : 3F40201-01
Misc : 100cc Equipment Blank
MS Integration Params: rteint.p
Quant Time: Jun 2 12:47 19114

Vial: 11
Operator: DN
Inst : GC/MS Ins
Multiplr: 10.00

Quant Results File: MW111313.RES

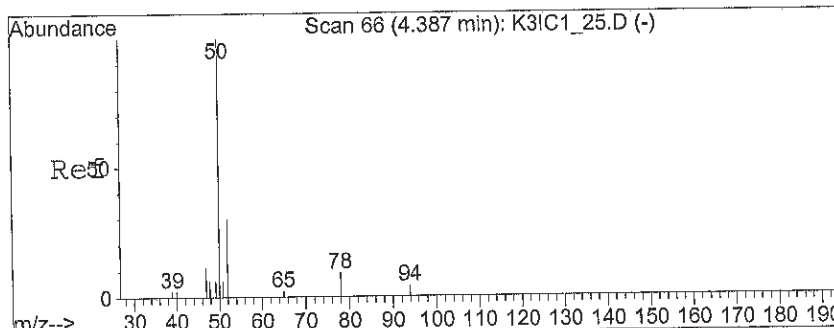
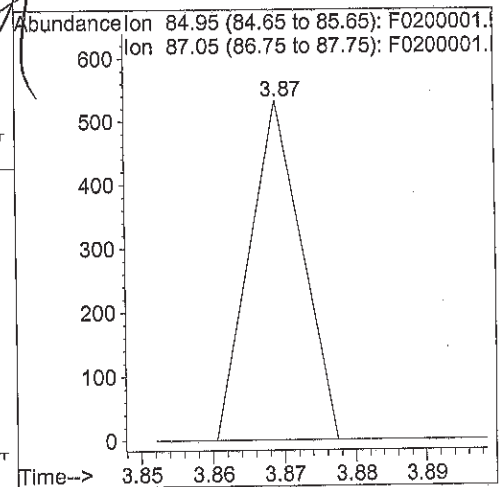
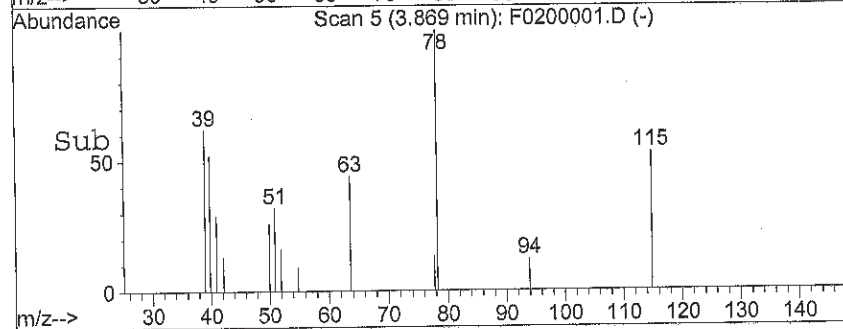
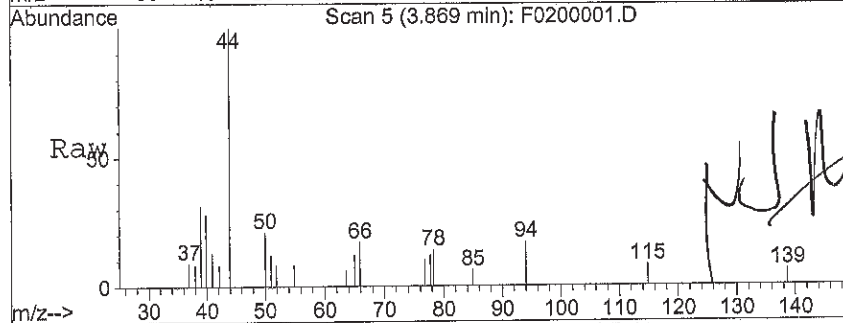
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Method       : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
Title        : 8260B      GC/MS #3      ICAL 11/13/13   DN
Last Update   : Wed Nov 13 19:38:32 2013
Response via  : Initial Calibration
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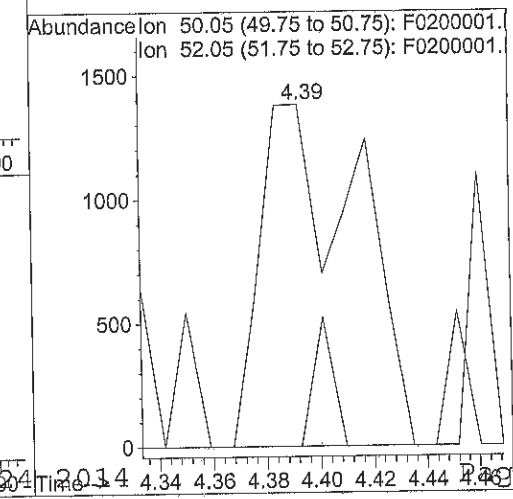
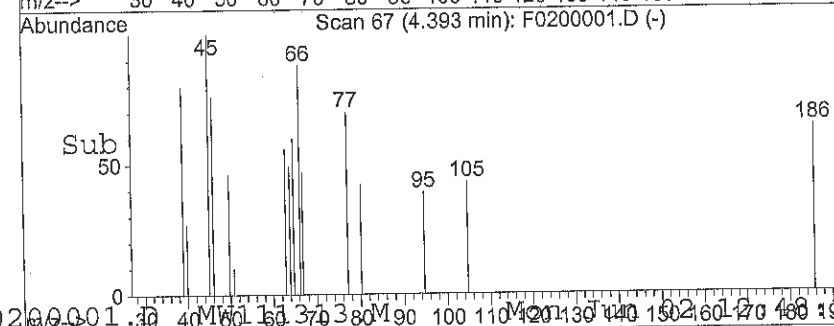
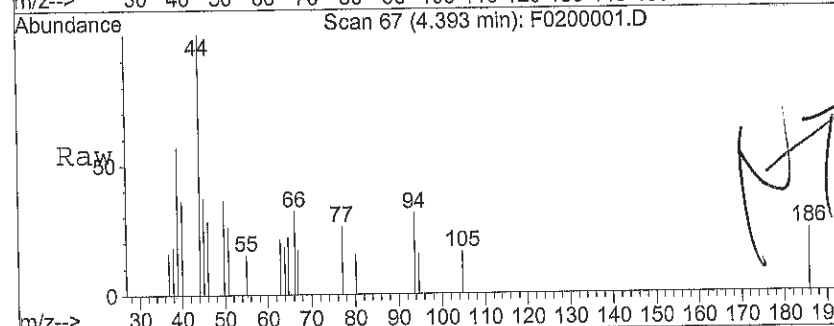
#3
 (F12) Dichlorodifluoromethane
 Concen: 0.11 ug/L
 RT: 3.87 min Scan# 5
 Delta R.T. -0.21 min
 Lab File: F0200001.D
 Acq: 2 Jun 2014 11:46 am

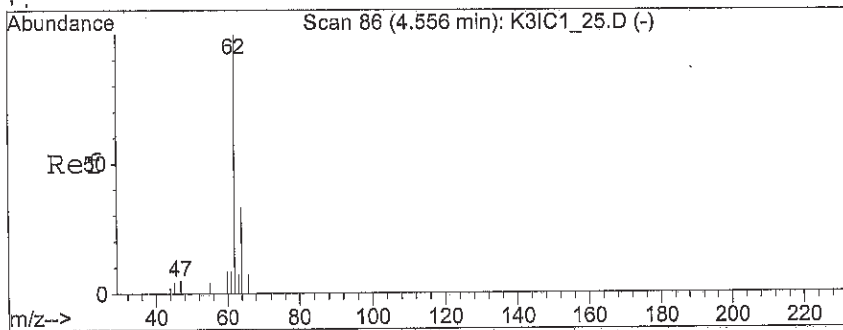
Tgt Ion: 85 Resp: 270
 Ion Ratio Lower Upper
 85 100
 87 0.0 24.6 37.0#



#4
 Chloromethane
 Concen: 0.92 ug/L
 RT: 4.39 min Scan# 67
 Delta R.T. 0.01 min
 Lab File: F0200001.D
 Acq: 2 Jun 2014 11:46 am

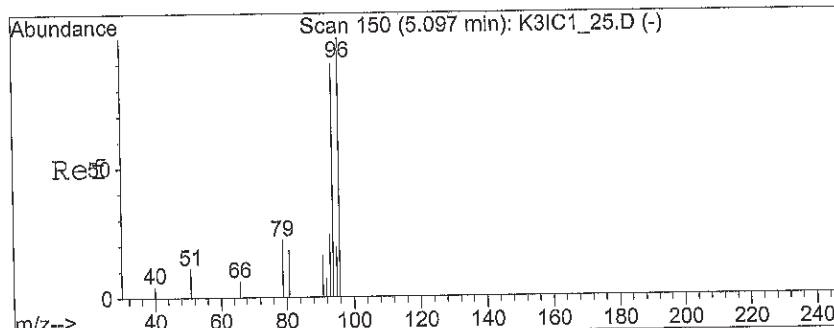
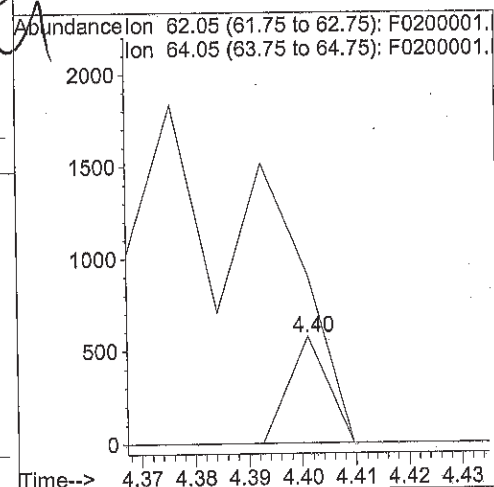
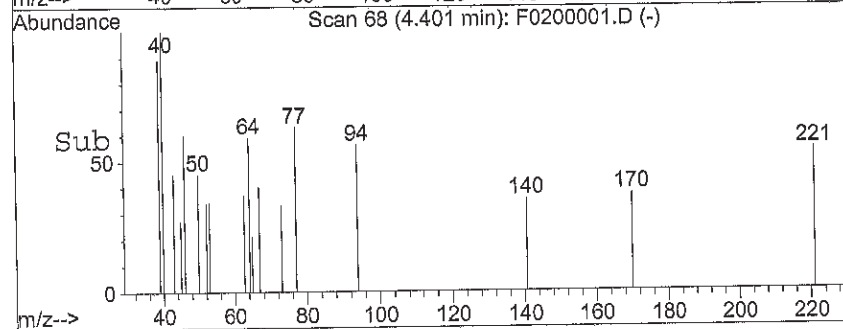
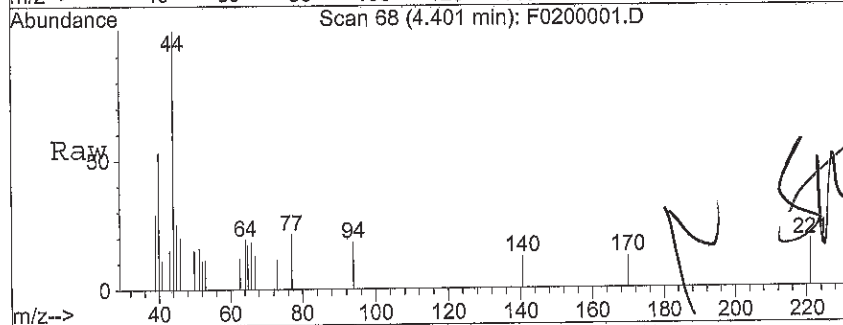
Tgt Ion: 50 Resp: 3448
 Ion Ratio Lower Upper
 50 100
 52 7.7 26.9 40.3#





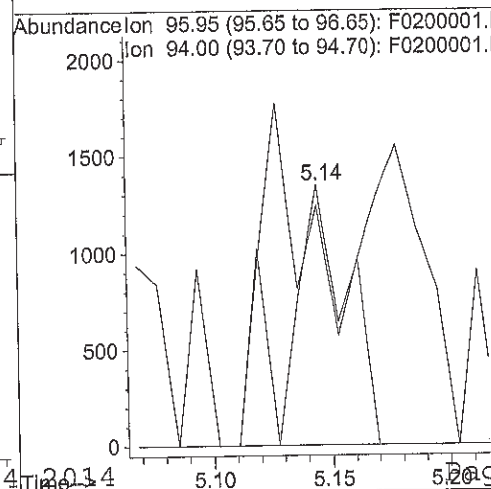
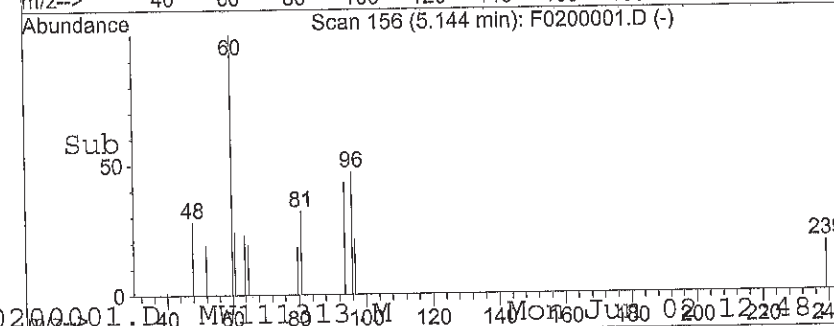
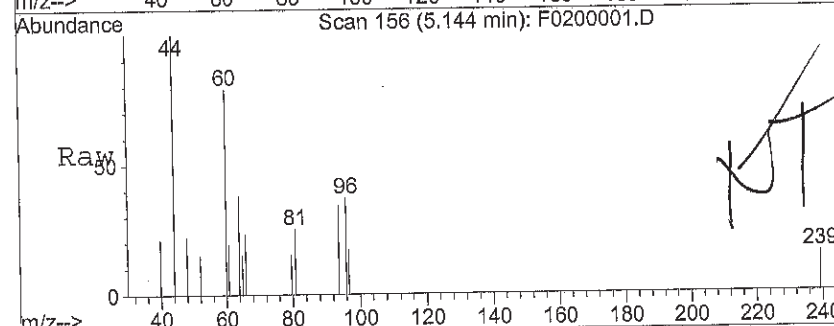
#5
 Vinyl Chloride
 Concen: 0.17 ug/L
 RT: 4.40 min Scan# 68
 Delta R.T. -0.15 min
 Lab File: F0200001.D
 Acq: 2 Jun 2014 11:46 am

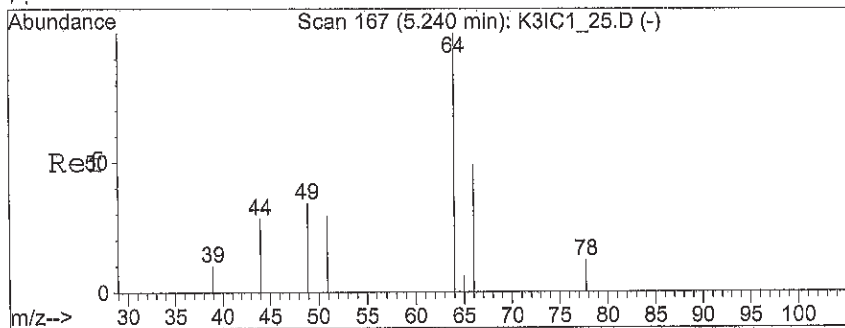
Tgt Ion: 62 Resp: 289
 Ion Ratio Lower Upper
 62 100
 64 0.0 25.6 38.4#



#6
 Bromomethane
 Concen: 0.49 ug/L
 RT: 5.14 min Scan# 156
 Delta R.T. 0.05 min
 Lab File: F0200001.D
 Acq: 2 Jun 2014 11:46 am

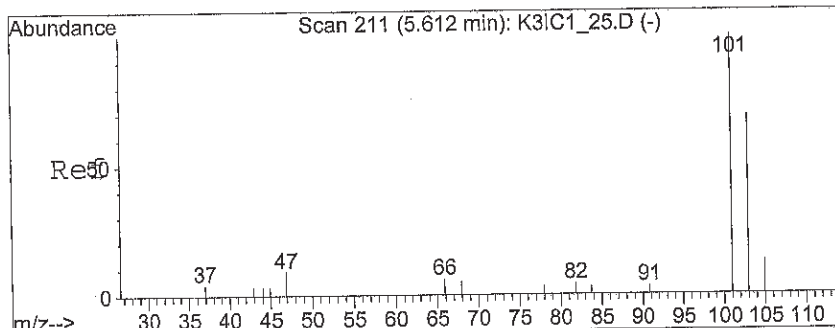
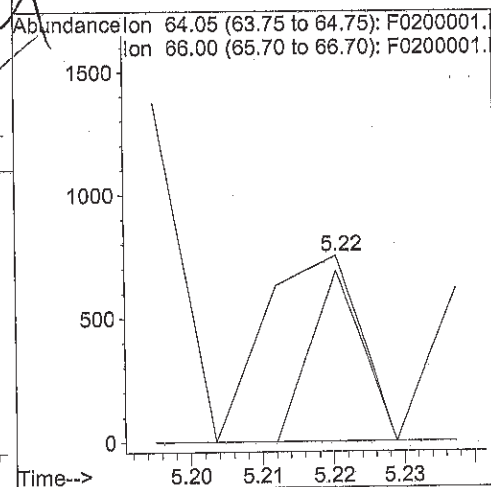
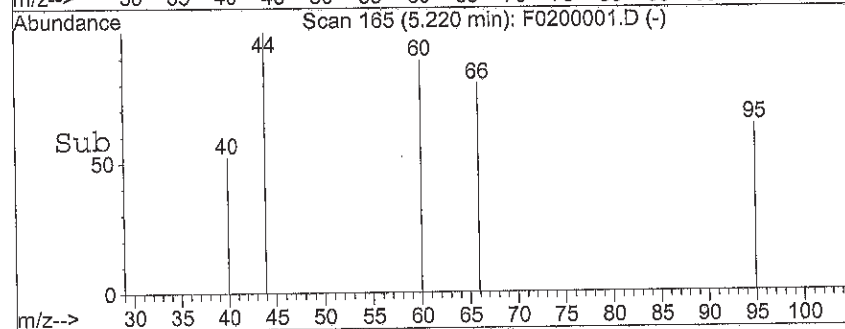
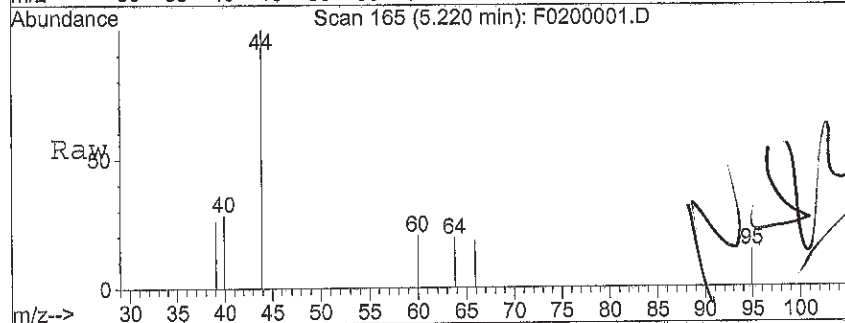
Tgt Ion: 96 Resp: 2397
 Ion Ratio Lower Upper
 96 100
 94 113.2 101.0 151.4





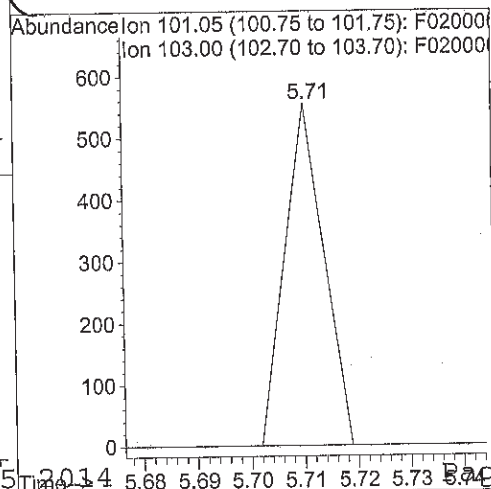
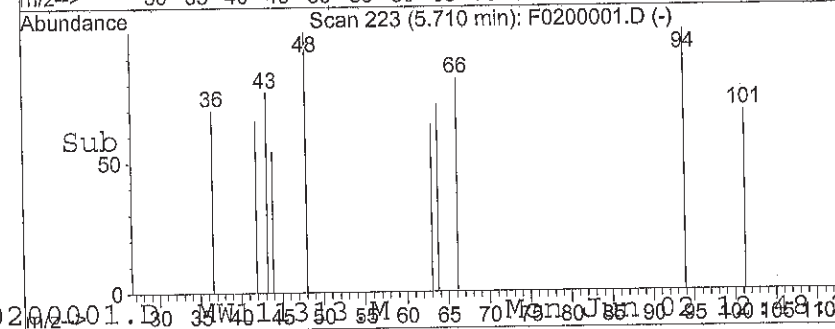
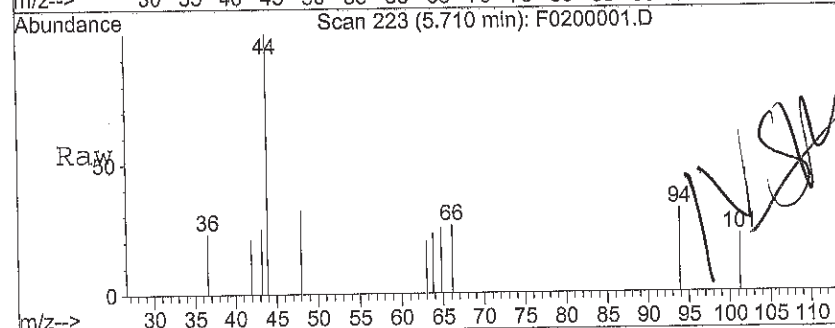
#7
Chloroethane
Concen: 1.56 ug/L
RT: 5.22 min Scan# 165
Delta R.T. -0.02 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

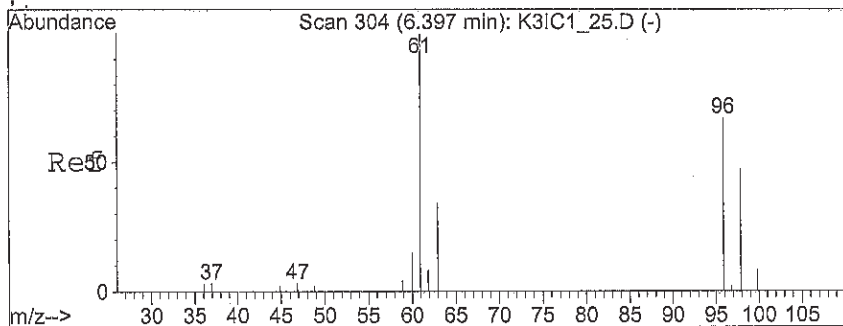
Tgt Ion: 64 Resp: 699
Ion Ratio Lower Upper
64 100
66 49.8 35.4 53.0



#8
(F11) Trichlorofluoromethane
Concen: 0.11 ug/L
RT: 5.71 min Scan# 223
Delta R.T. 0.10 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

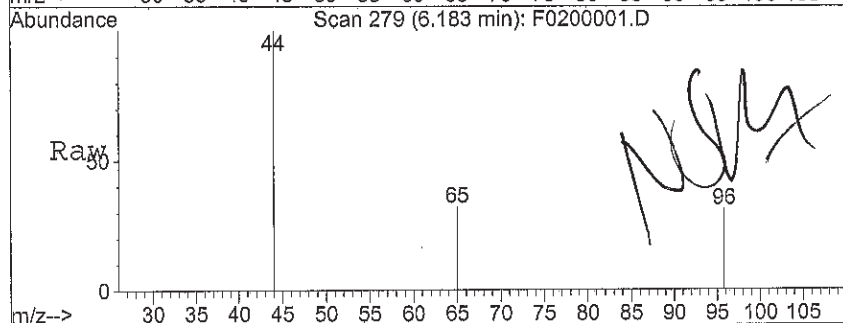
Tgt Ion: 101 Resp: 281
Ion Ratio Lower Upper
101 100
103 0.0 54.5 81.7#





#10
1,1-Dichloroethene
Concen: 0.12 ug/L
RT: 6.18 min Scan# 279
Delta R.T. -0.21 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 96 Resp: 283
Ion Ratio Lower Upper
96 100
61 90.1 130.0 195.0#
98 0.0 56.2 84.4#
63 107.1 41.5 62.3#



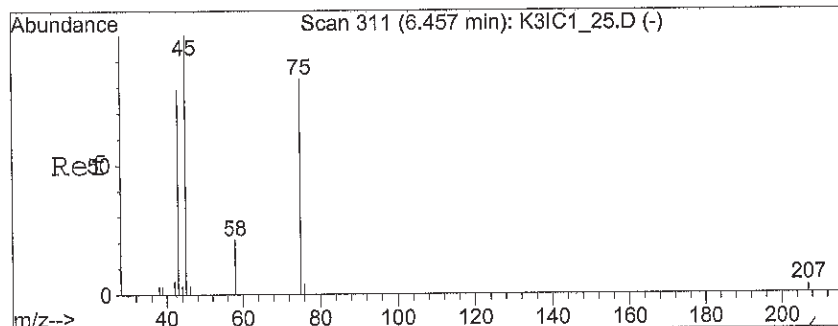
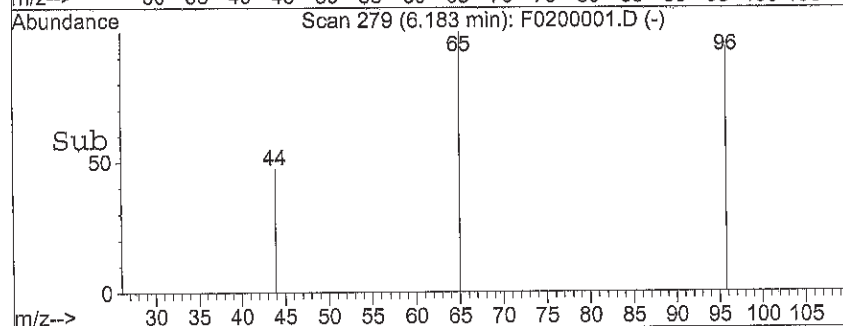
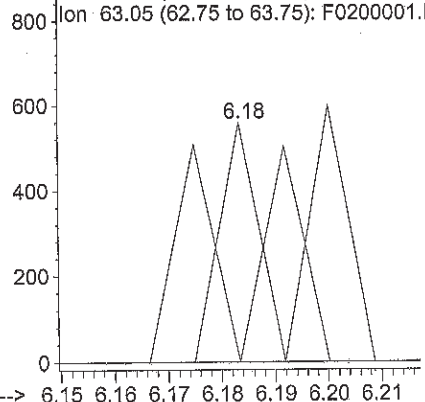
Abundance

Ion 95.95 (95.65 to 96.65): F0200001.D

Ion 61.05 (60.75 to 61.75): F0200001.D

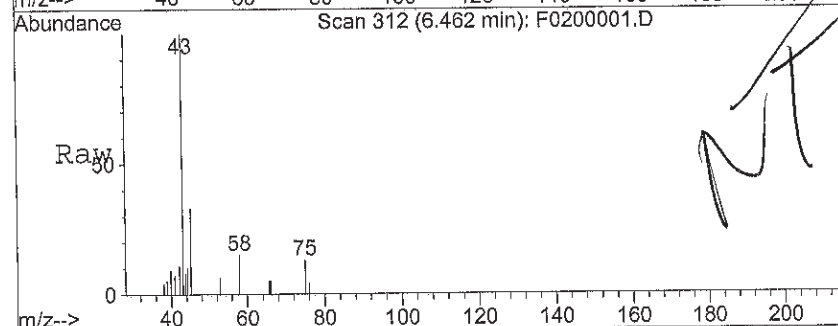
Ion 97.95 (97.65 to 98.65): F0200001.D

Ion 63.05 (62.75 to 63.75): F0200001.D



#11
Acetone
Concen: 14.29 ug/L
RT: 6.46 min Scan# 312
Delta R.T. 0.01 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

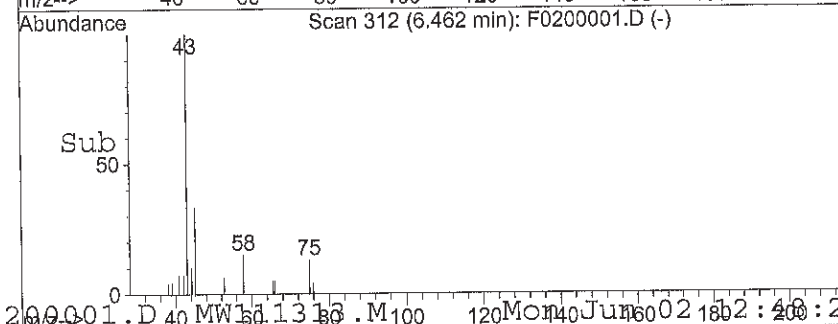
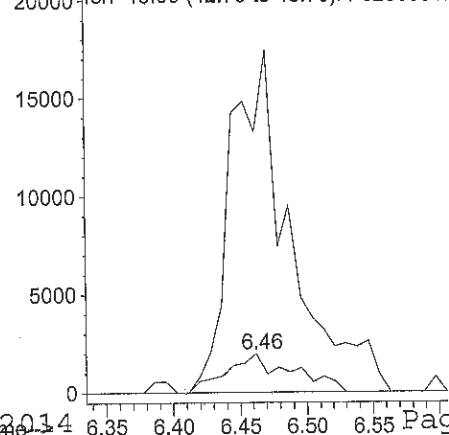
Tgt Ion: 58 Resp: 6749
Ion Ratio Lower Upper
58 100
43 800.8 360.9 541.3#

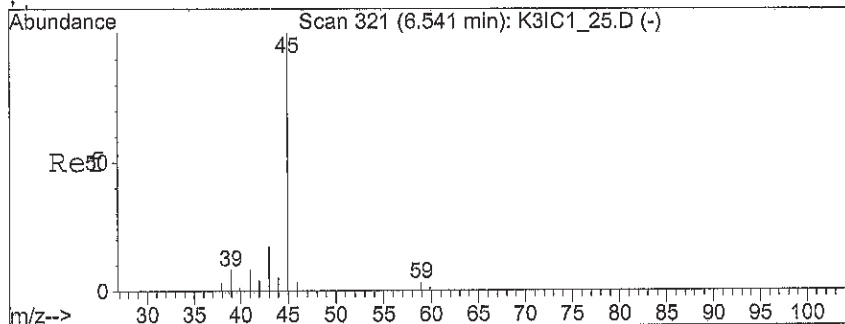


Abundance

Ion 58.00 (57.70 to 58.70): F0200001.D

Ion 43.00 (42.70 to 43.70): F0200001.D





#12

(IPA) Leak Check Compound

Concen: 23.21 ug/L

RT: 6.55 min Scan# 322

Delta R.T. 0.01 min

Lab File: F0200001.D

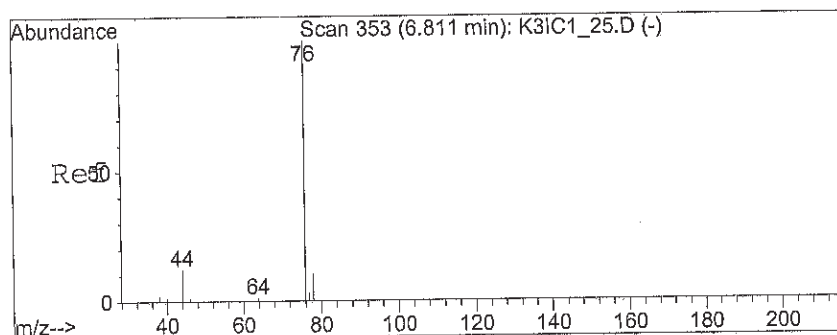
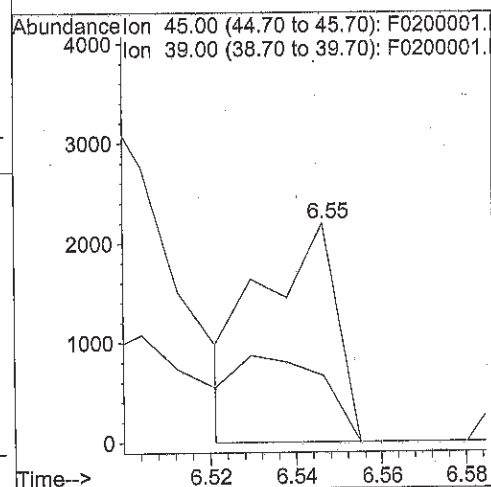
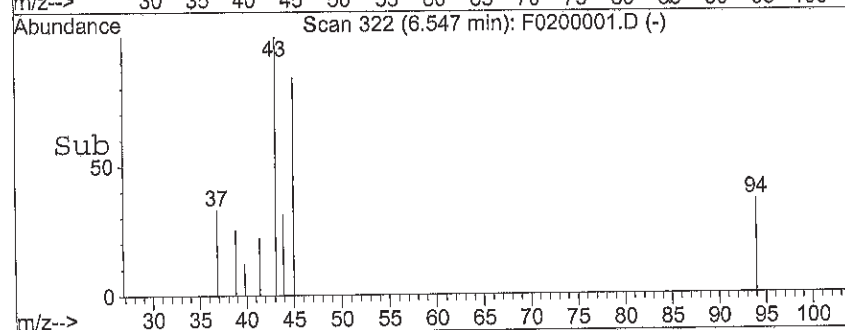
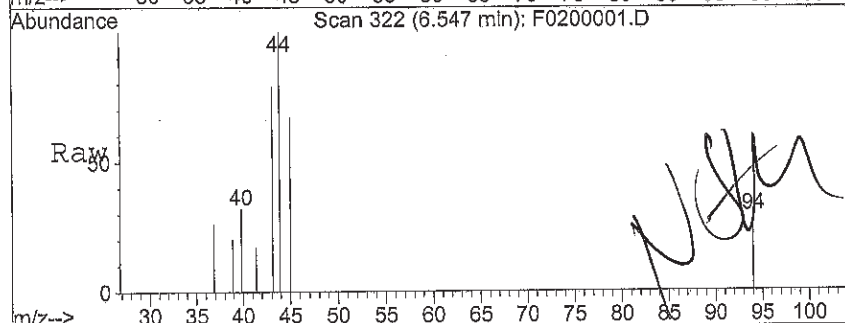
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 45 Resp: 2677

Ion Ratio Lower Upper

45 100

39 43.9 4.9 7.3#



#13

Carbon disulfide

Concen: 0.04 ug/L

RT: 6.87 min Scan# 360

Delta R.T. 0.06 min

Lab File: F0200001.D

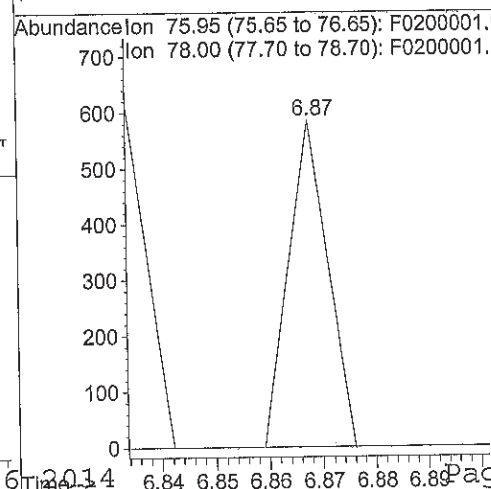
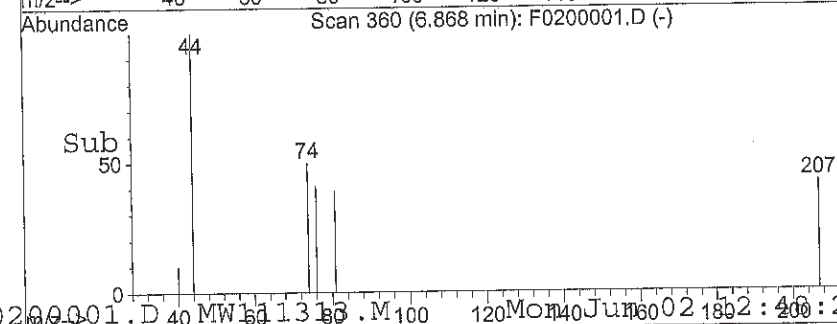
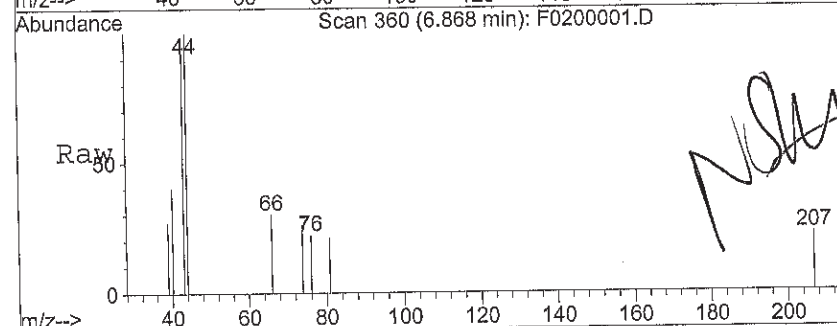
Acq: 2 Jun 2014 11:46 am

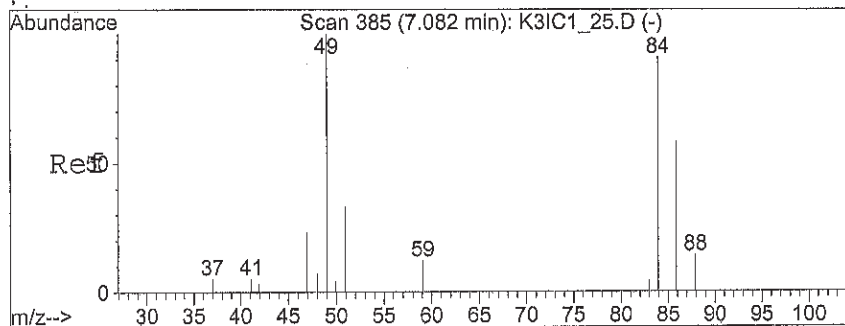
Tgt Ion: 76 Resp: 297

Ion Ratio Lower Upper

76 100

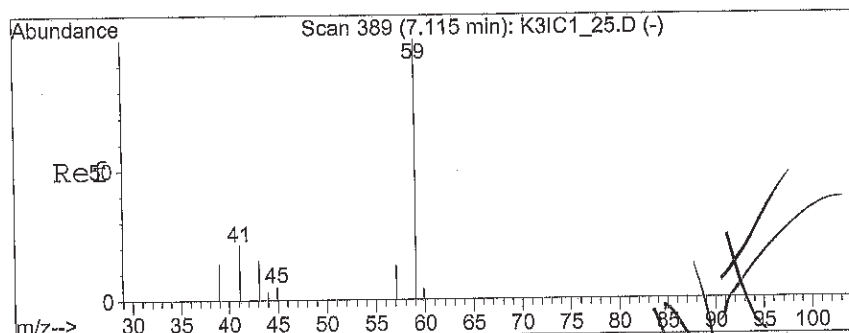
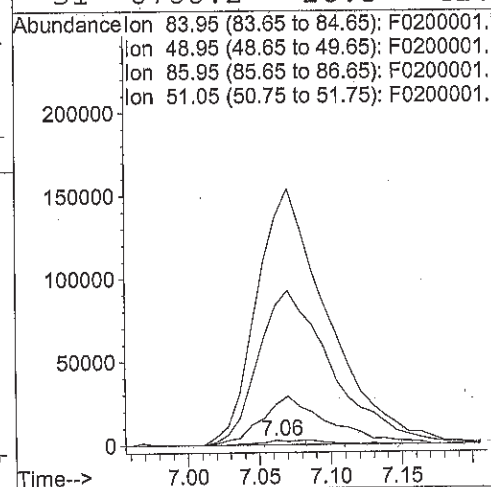
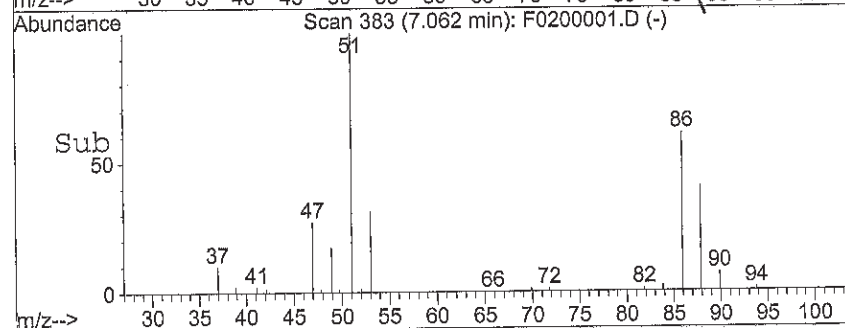
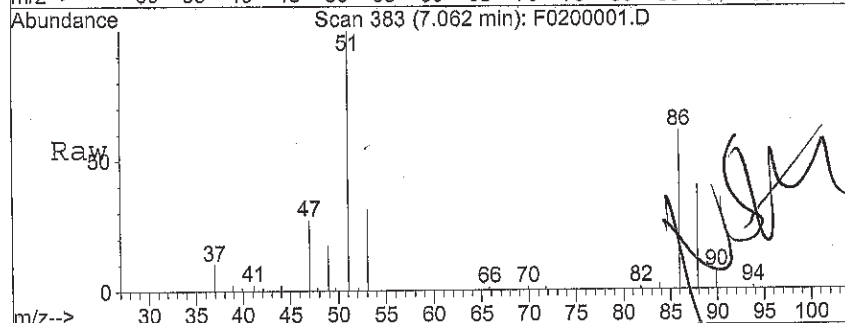
78 0.0 7.0 10.4#





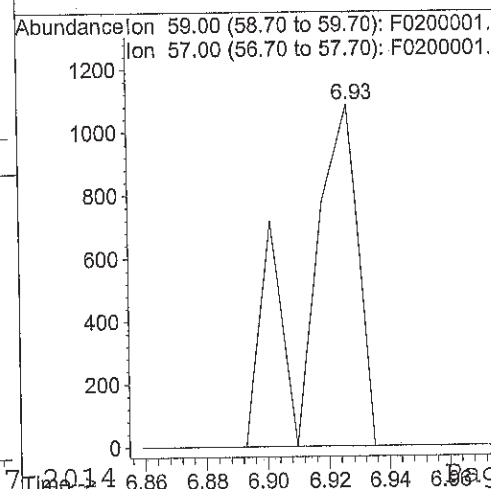
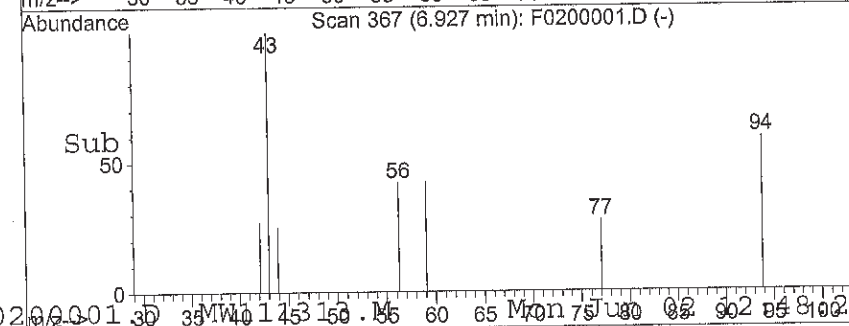
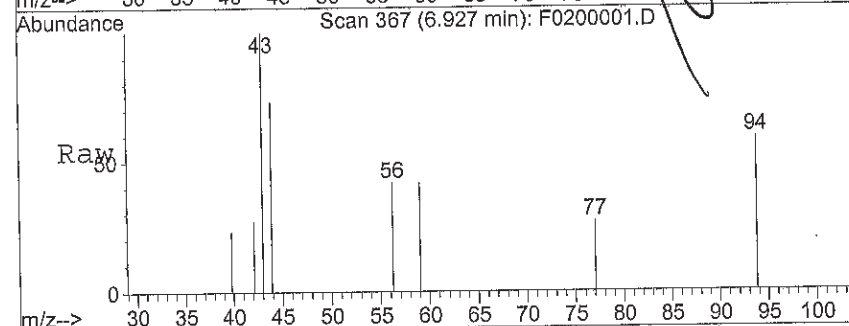
#14
Methylene Chloride
Concen: 3.00 ug/L
RT: 7.06 min Scan# 383
Delta R.T. -0.02 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

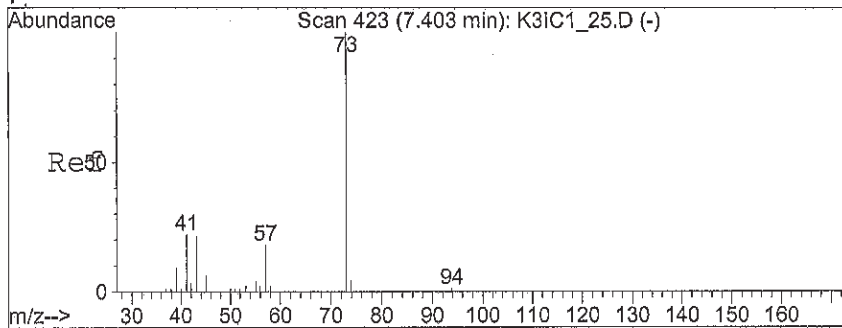
Tgt Ion: 84 Resp: 7916
Ion Ratio Lower Upper
84 100
49 1179.4 89.8 134.6#
86 4221.8 51.1 76.7#
51 6788.2 28.5 42.7#



#15
(TBA) tert-Butanol
Concen: 7.98 ug/L
RT: 6.93 min Scan# 367
Delta R.T. -0.19 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 59 Resp: 1307
Ion Ratio Lower Upper
59 100
57 0.0 6.4 9.6#





#16

(MTBE) Methyl-t-butyl ether

Concen: 0.05 ug/L

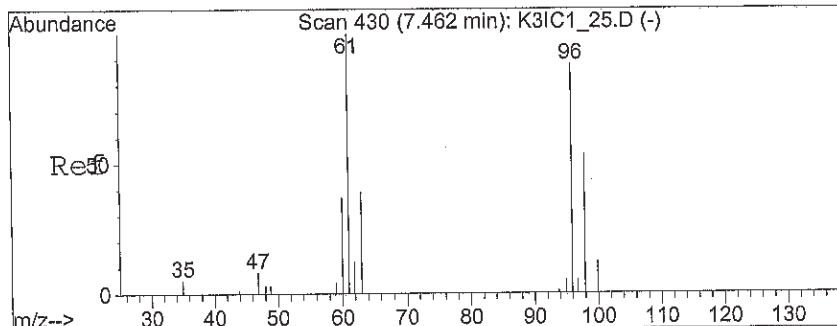
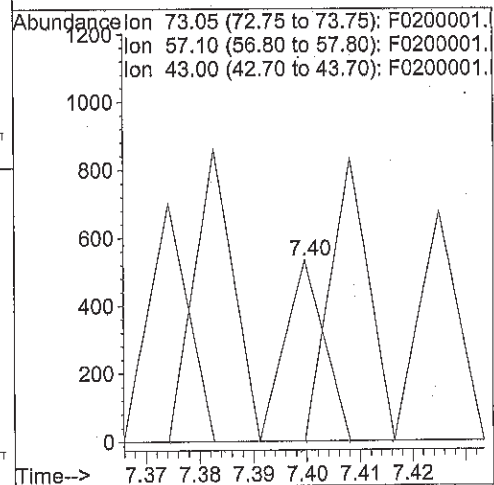
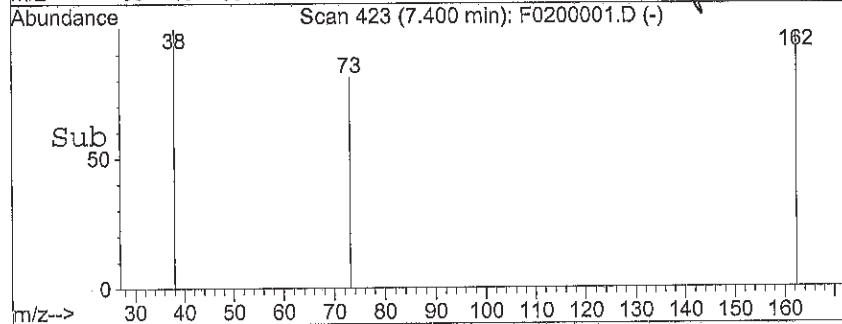
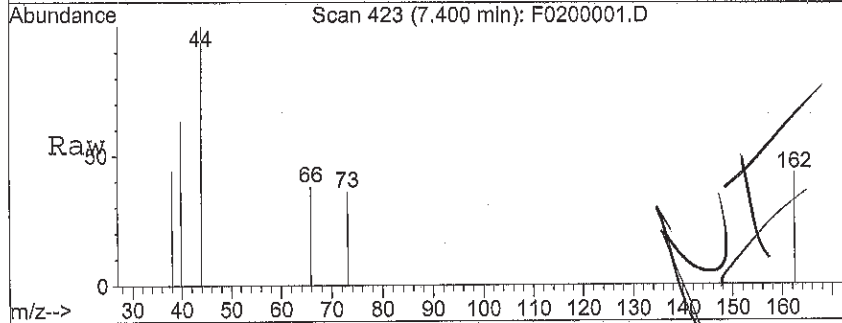
RT: 7.40 min Scan# 423

Delta R.T. -0.00 min

Lab File: F0200001.D

Acq: 2 Jun 2014 11:46 am

Tgt Ion:	73	Resp:	270
Ion	Ratio	Lower	Upper
73	100		
57	0.0	15.8	23.8#
43	283.3	18.4	27.6#



#17

trans-1,2-Dichloroethene

Concen: 0.10 ug/L

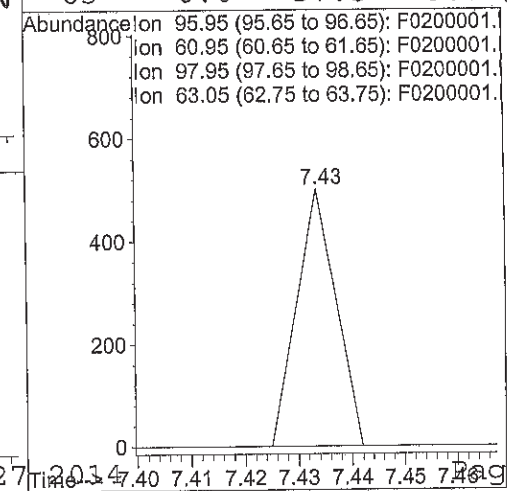
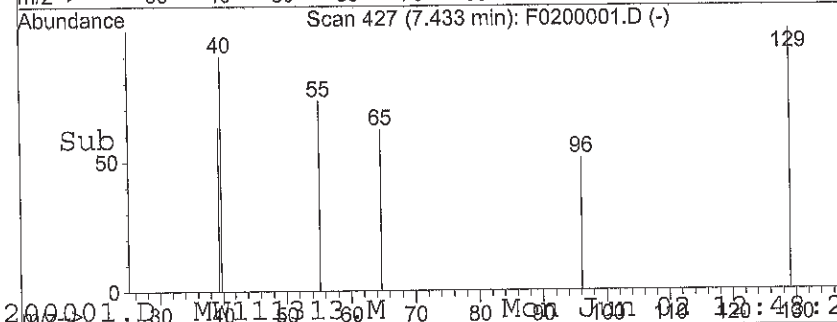
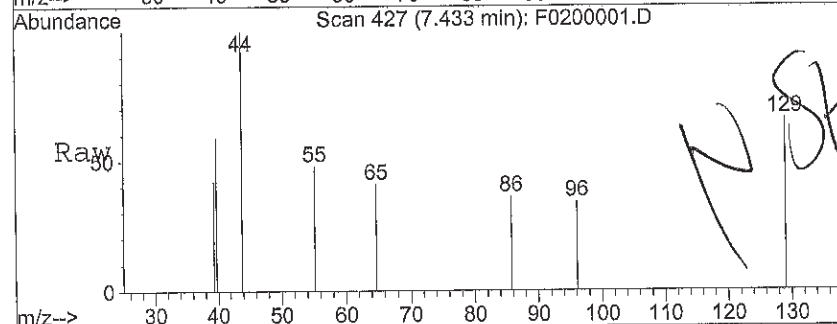
RT: 7.43 min Scan# 427

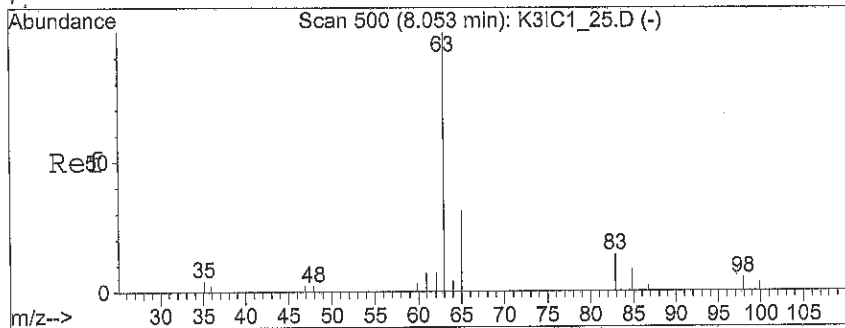
Delta R.T. -0.03 min

Lab File: F0200001.D

Acq: 2 Jun 2014 11:46 am

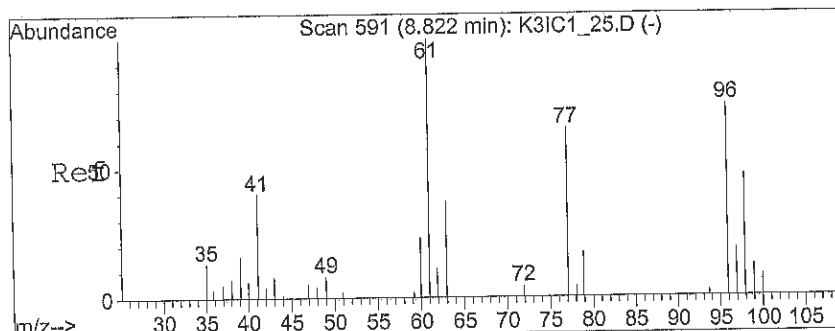
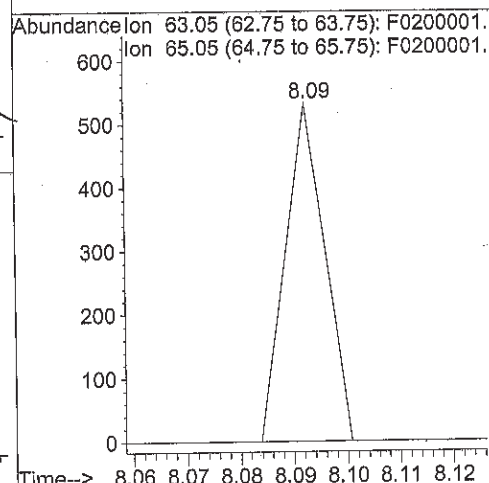
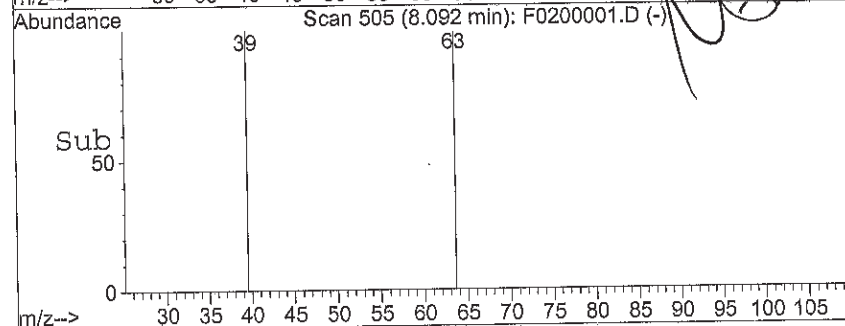
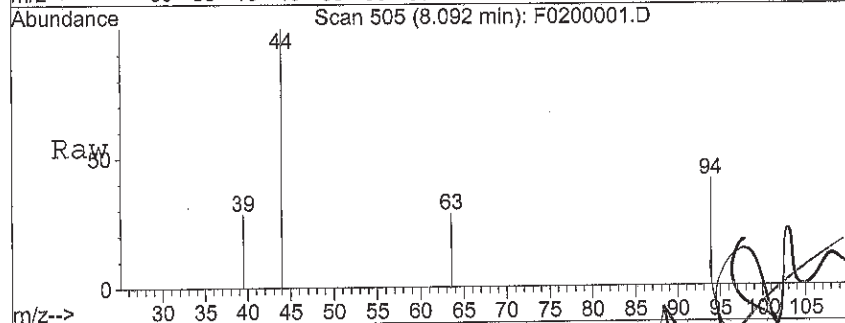
Tgt Ion:	96	Resp:	254
Ion	Ratio	Lower	Upper
96	100		
61	0.0	104.2	156.2#
98	0.0	50.2	75.4#
63	0.0	37.5	56.3#





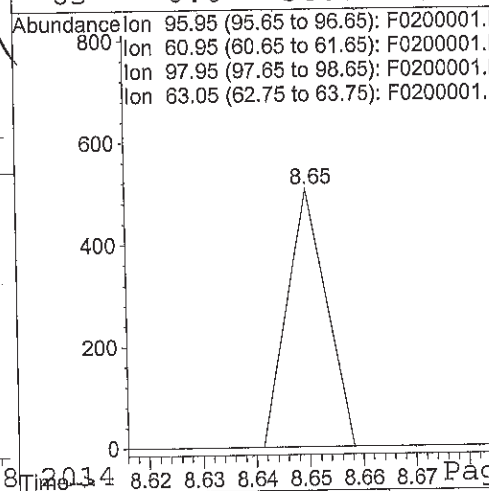
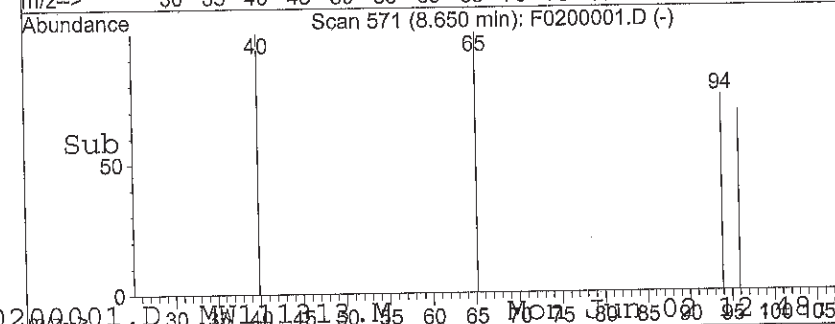
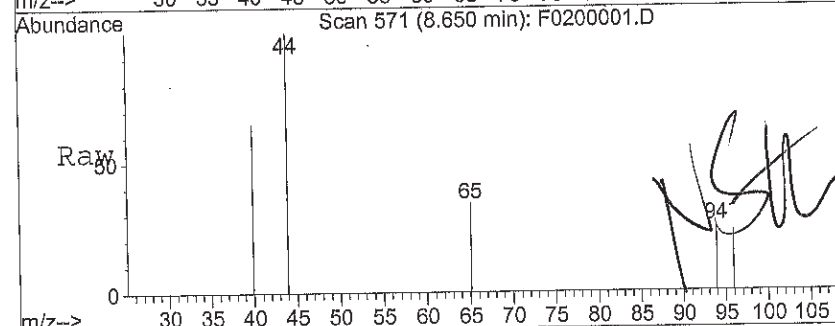
#18
 1,1-Dichloroethane
 Concen: 0.06 ug/L
 RT: 8.09 min Scan# 505
 Delta R.T. 0.04 min
 Lab File: F0200001.D
 Acq: 2 Jun 2014 11:46 am

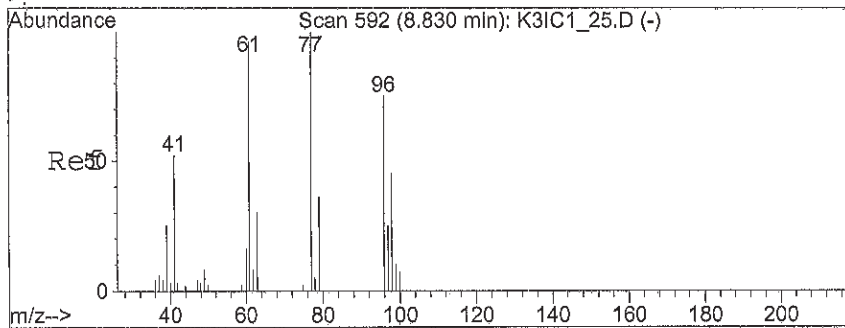
Tgt Ion: 63 Resp: 270
 Ion Ratio Lower Upper
 63 100
 65 0.0 25.8 38.8#



#19
 cis-1,2-Dichloroethene
 Concen: 0.09 ug/L
 RT: 8.65 min Scan# 571
 Delta R.T. -0.17 min
 Lab File: F0200001.D
 Acq: 2 Jun 2014 11:46 am

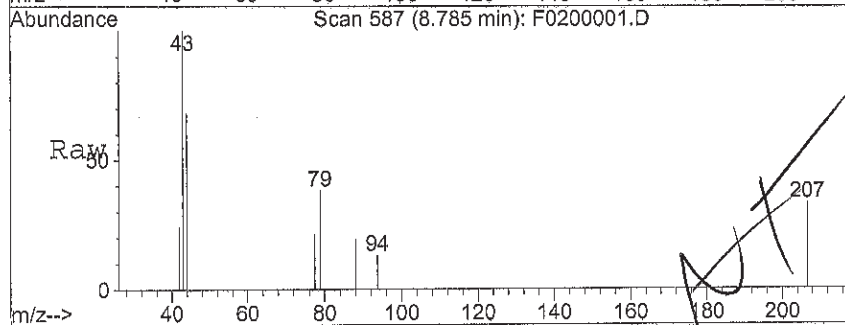
Tgt Ion: 96 Resp: 257
 Ion Ratio Lower Upper
 96 100
 61 0.0 110.3 165.5#
 98 0.0 49.8 74.6#
 63 0.0 36.7 55.1#



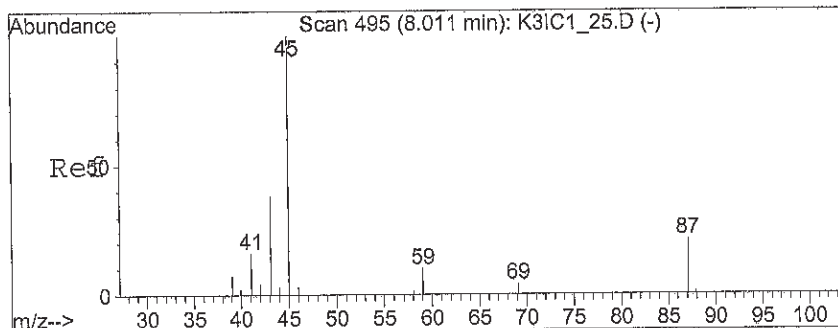
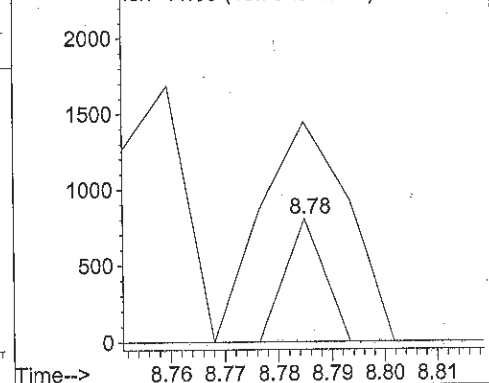
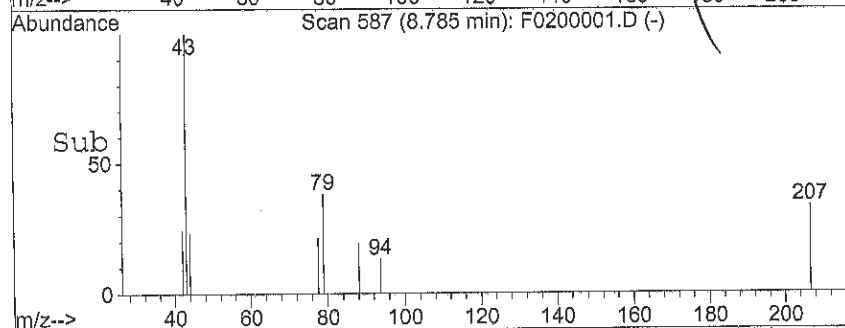


#20
2,2-Dichloropropane
Concen: 0.11 ug/L
RT: 8.78 min Scan# 587
Delta R.T. -0.05 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 77 Resp: 407
Ion Ratio Lower Upper
77 100
79 402.5 26.6 40.0#
97 0.0 18.9 28.3#
41 0.0 42.6 64.0#

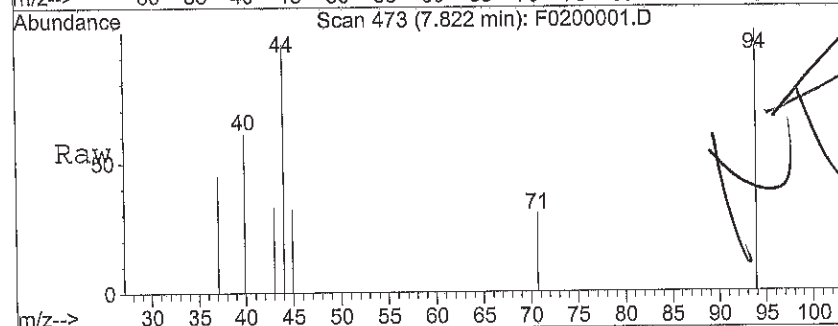


Abundance Ion 77.05 (76.75 to 77.75): F0200001.
Ion 79.00 (78.70 to 79.70): F0200001.
Ion 96.95 (96.65 to 97.65): F0200001.
Ion 41.05 (40.75 to 41.75): F0200001.

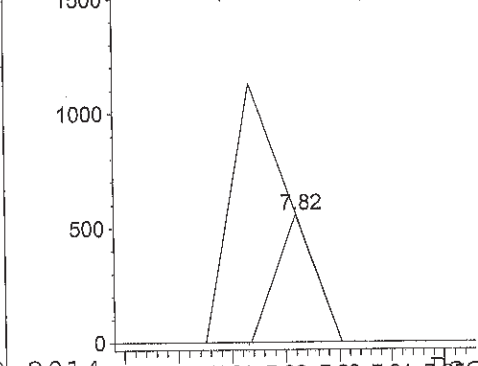
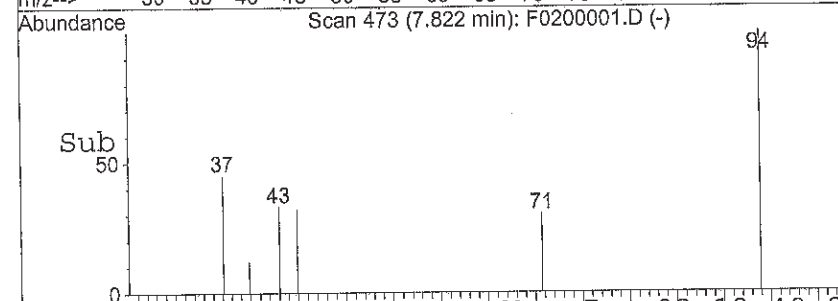


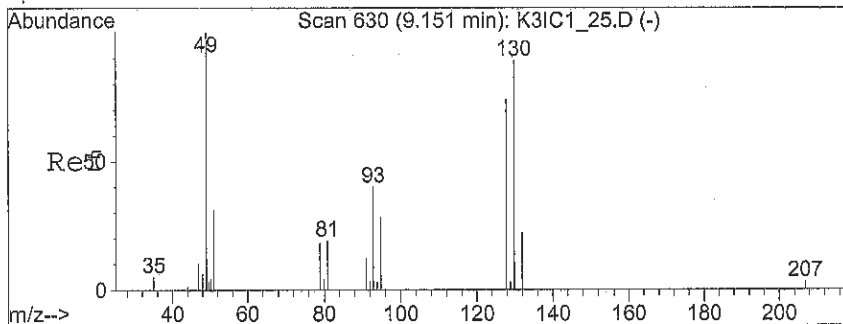
#22
(DIPE) Diisopropyl Ether
Concen: 0.04 ug/L
RT: 7.82 min Scan# 473
Delta R.T. -0.19 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 45 Resp: 282
Ion Ratio Lower Upper
45 100
87 0.0 17.0 25.6#
43 304.3 30.5 45.7#
59 0.0 7.4 11.2#



Abundance Ion 45.00 (44.70 to 45.70): F0200001.
Ion 87.10 (86.80 to 87.80): F0200001.
Ion 43.05 (42.75 to 43.75): F0200001.
Ion 59.00 (58.70 to 59.70): F0200001.





#23

Bromochloromethane

Concen: 0.28 ug/L

RT: 9.00 min Scan# 612

Delta R.T. -0.15 min

Lab File: F0200001.D

Acq: 2 Jun 2014 11:46 am

Tgt Ion: 128 Resp: 355

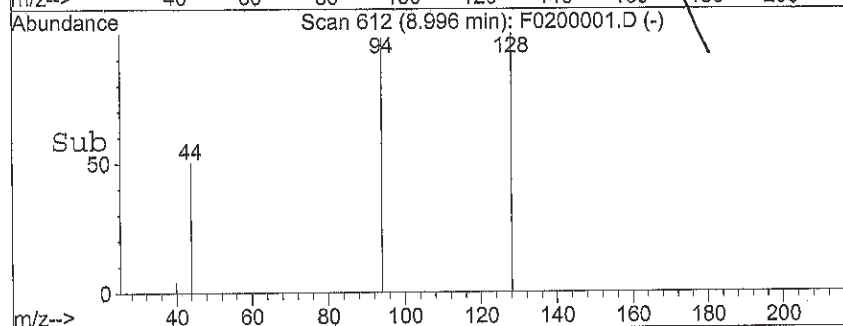
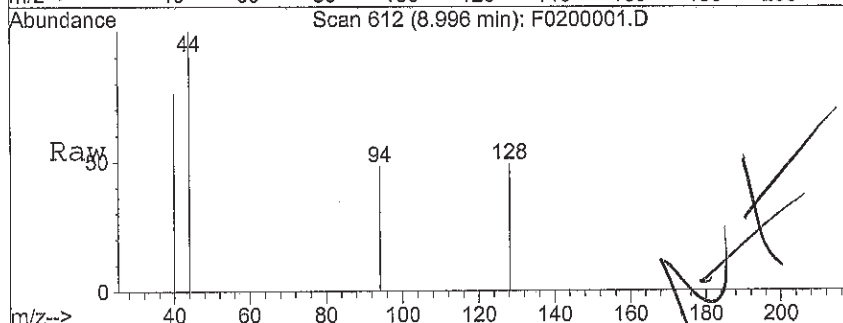
Ion Ratio Lower Upper

128 100

49 0.0 117.4 176.0#

130 0.0 111.0 166.6#

51 0.0 48.0 72.0#



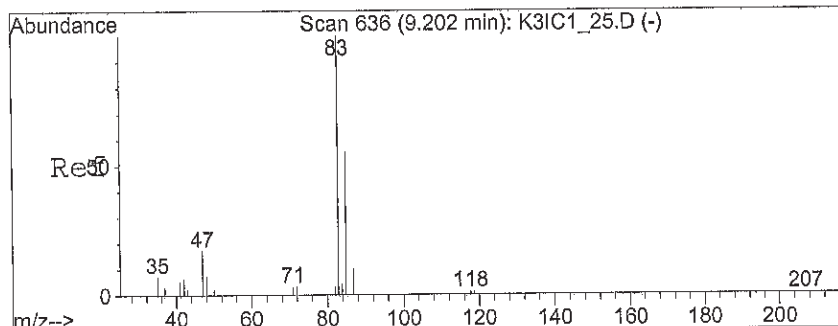
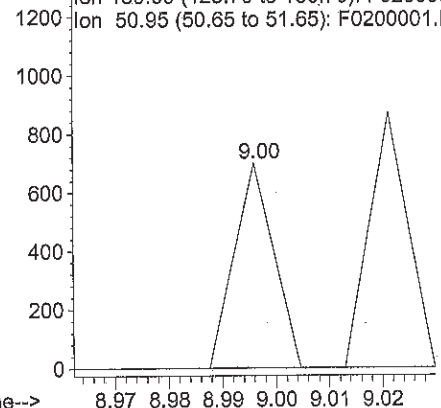
Abundance

Ion 128.00 (127.70 to 128.70): F0200001.D

Ion 48.95 (48.65 to 49.65): F0200001.D

Ion 130.00 (129.70 to 130.70): F0200001.D

Ion 50.95 (50.65 to 51.65): F0200001.D



#24

Chloroform

Concen: 0.21 ug/L

RT: 9.19 min Scan# 635

Delta R.T. -0.01 min

Lab File: F0200001.D

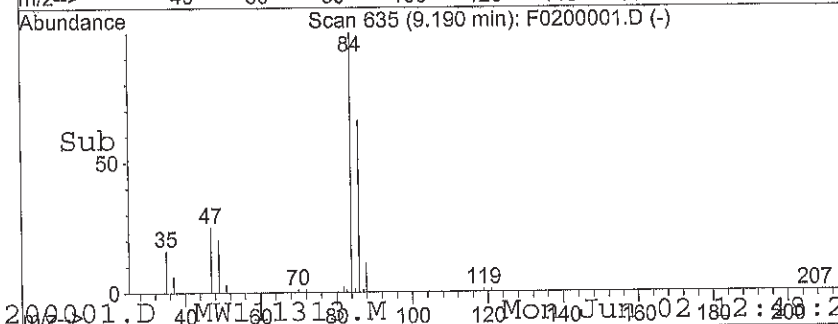
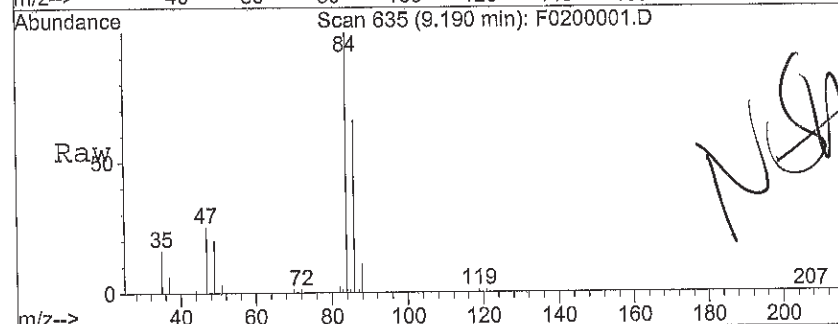
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 83 Resp: 1062

Ion Ratio Lower Upper

83 100

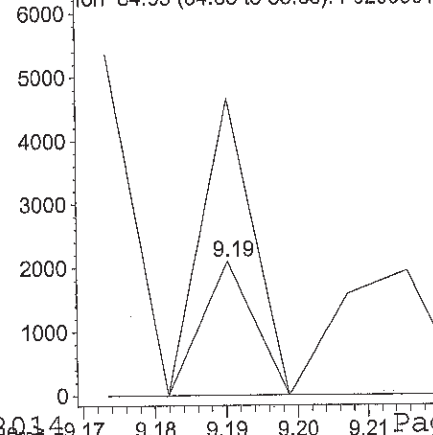
85 0.0 51.8 77.6#

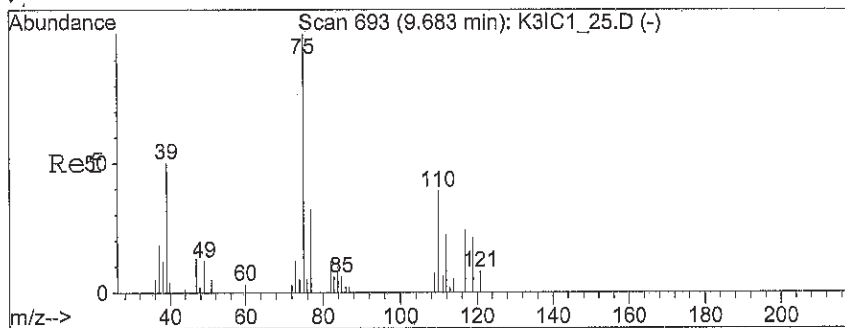


Abundance

Ion 83.00 (82.70 to 83.70): F0200001.D

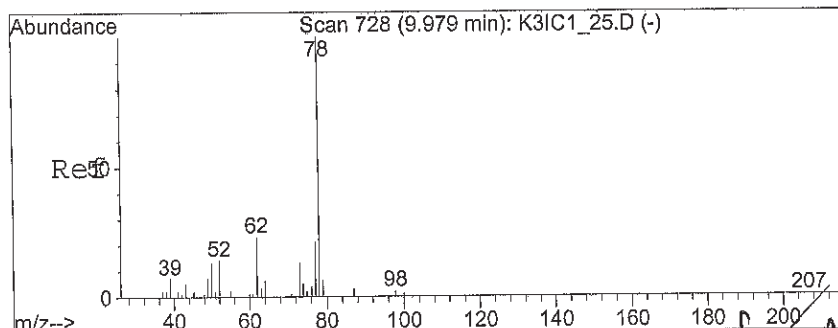
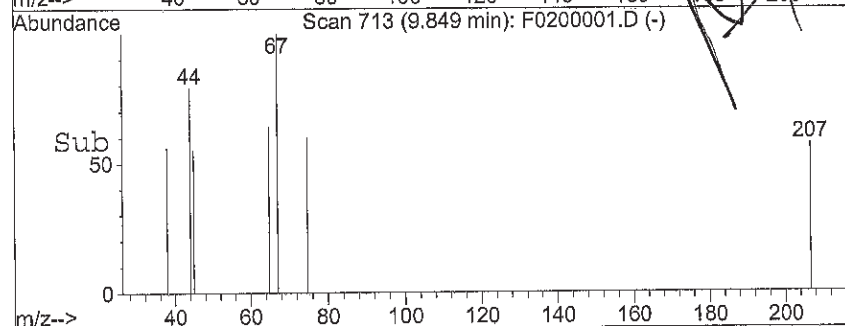
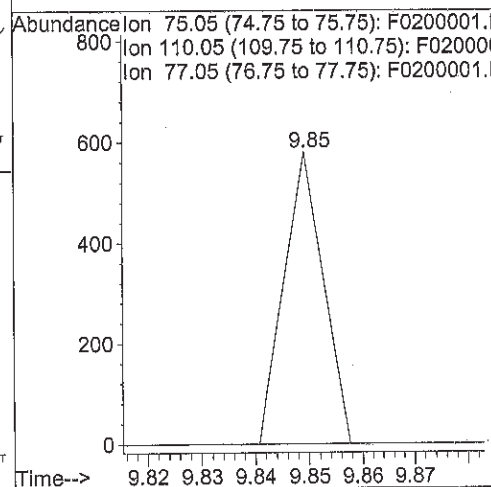
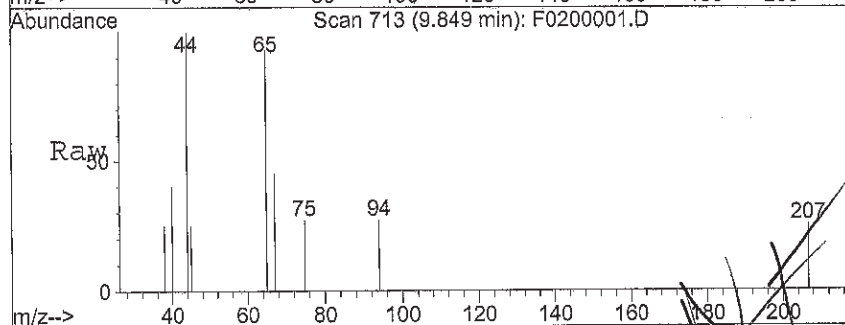
Ion 84.95 (84.65 to 85.65): F0200001.D





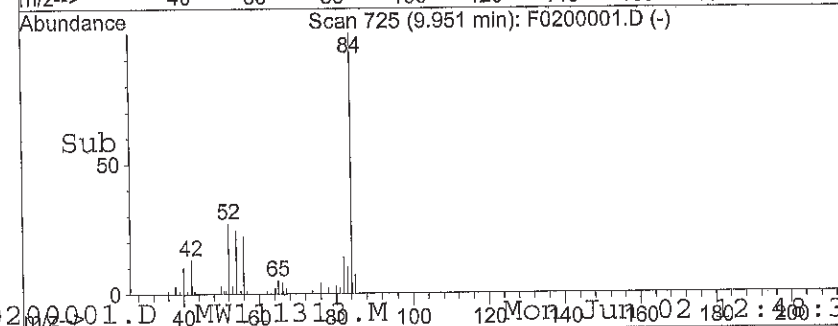
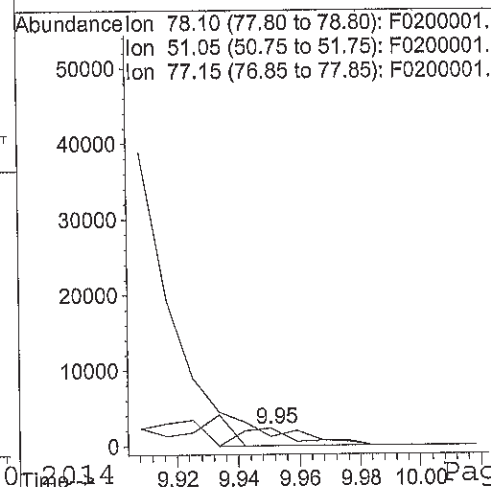
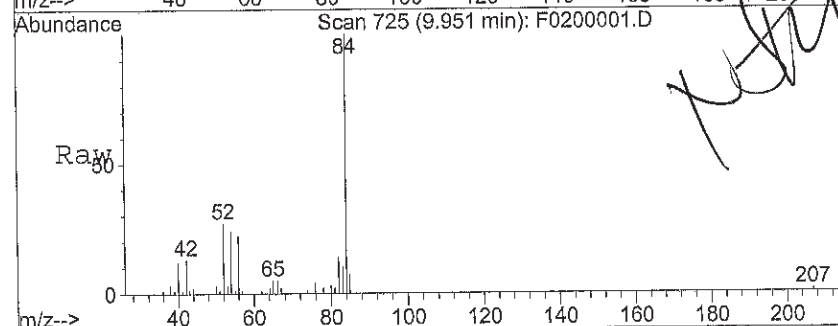
#29
 1,1-Dichloropropene
 Concen: 0.08 ug/L
 RT: 9.85 min Scan# 713
 Delta R.T. 0.17 min
 Lab File: F0200001.D
 Acq: 2 Jun 2014 11:46 am

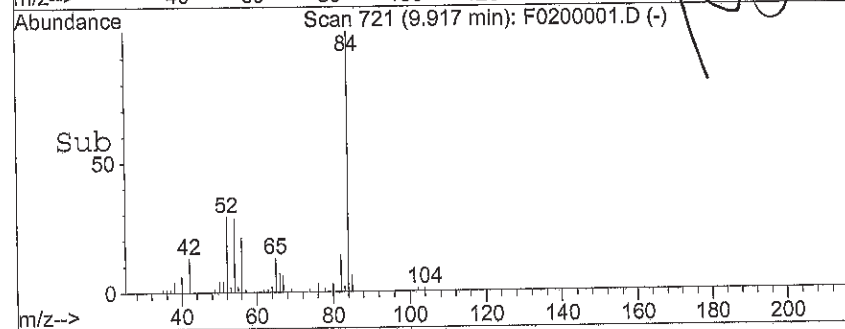
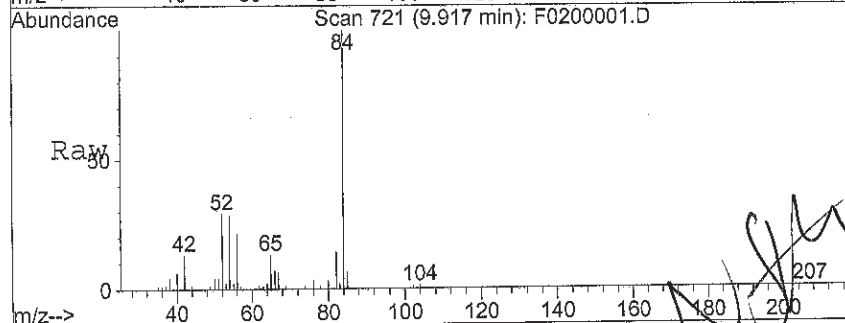
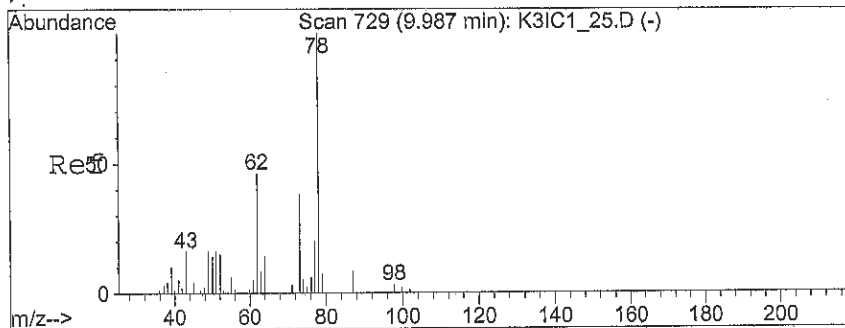
Tgt Ion: 75 Resp: 294
 Ion Ratio Lower Upper
 75 100
 110 0.0 29.0 43.6#
 77 0.0 25.0 37.4#



#31
 Benzene
 Concen: 0.34 ug/L
 RT: 9.95 min Scan# 725
 Delta R.T. -0.03 min
 Lab File: F0200001.D
 Acq: 2 Jun 2014 11:46 am

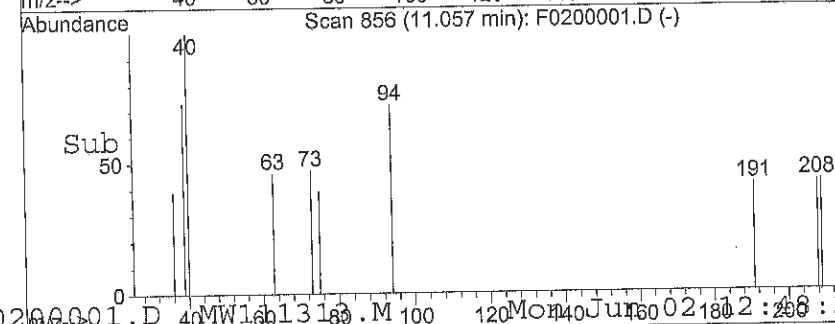
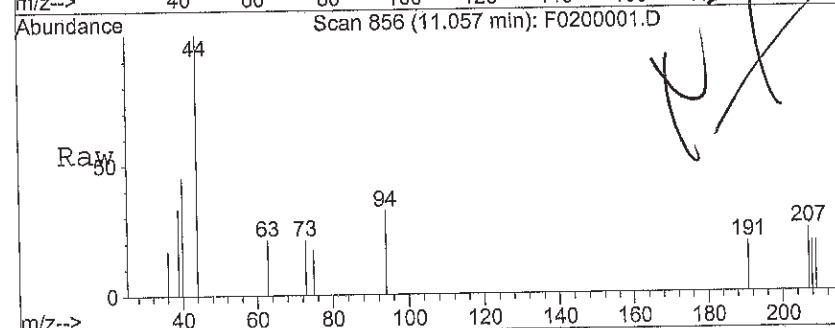
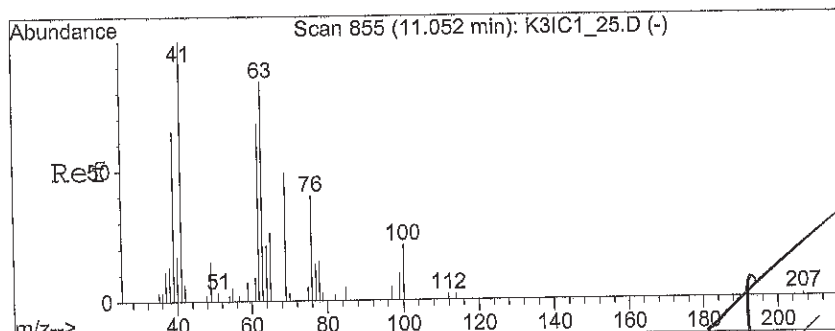
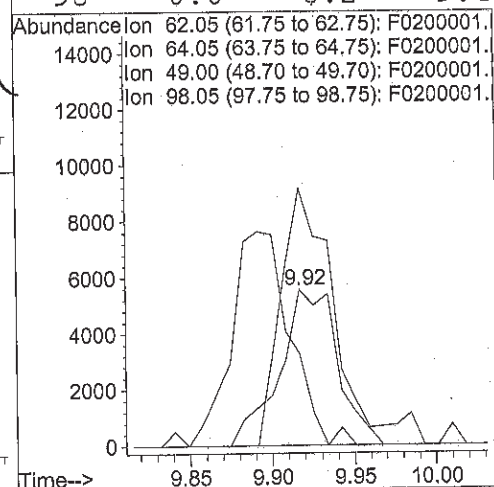
Tgt Ion: 78 Resp: 3108
 Ion Ratio Lower Upper
 78 100
 51 0.0 14.2 21.2#
 77 0.0 16.6 24.8#





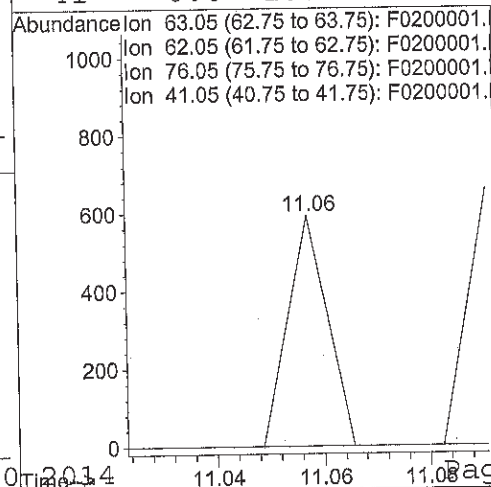
#32
1,2-Dichloroethane
Concen: 4.24 ug/L
RT: 9.92 min Scan# 721
Delta R.T. -0.07 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

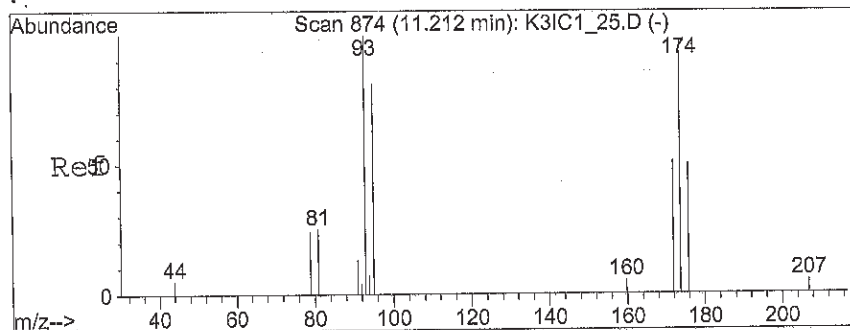
Tgt Ion: 62 Resp: 13541
Ion Ratio Lower Upper
62 100
64 146.0 28.0 42.0#
49 0.0 28.5 42.7#
98 0.0 6.2 9.4#



#34
1,2-Dichloropropane
Concen: 0.14 ug/L
RT: 11.06 min Scan# 856
Delta R.T. 0.01 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

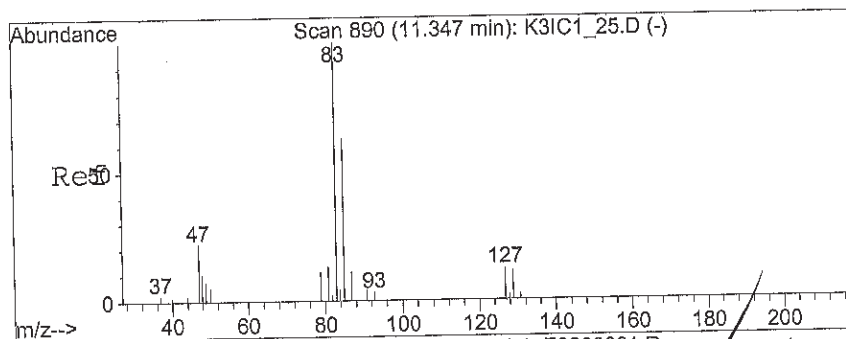
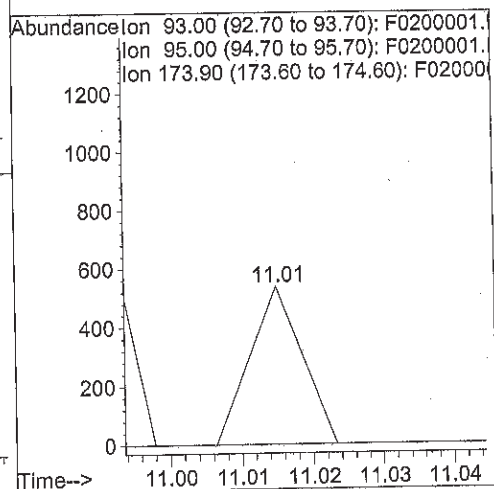
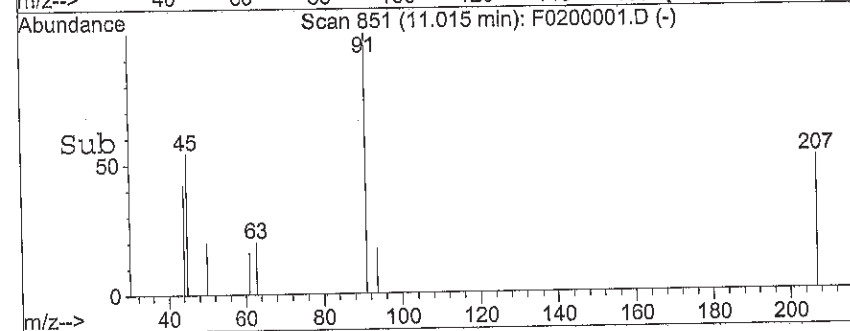
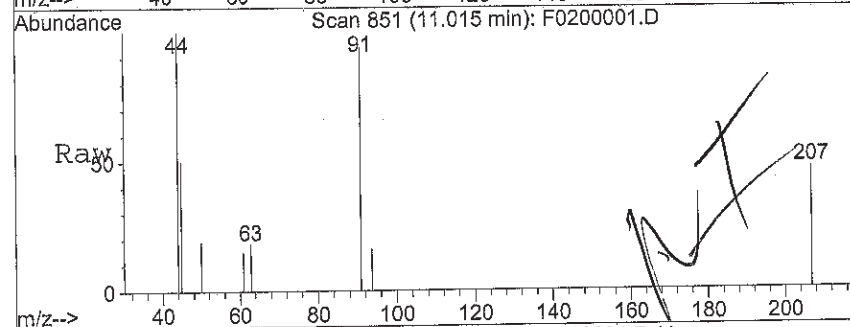
Tgt Ion: 63 Resp: 300
Ion Ratio Lower Upper
63 100
62 0.0 67.4 101.2#
76 0.0 40.3 60.5#
41 0.0 103.0 154.6#





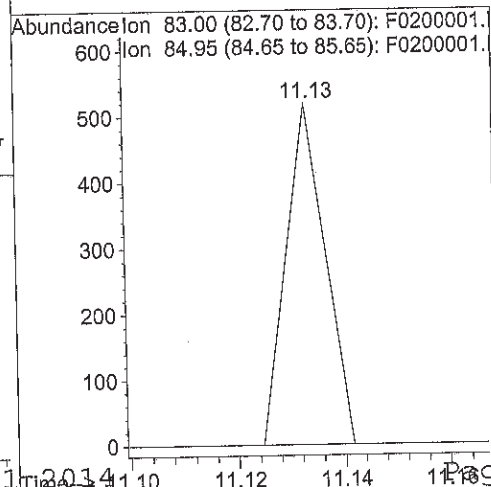
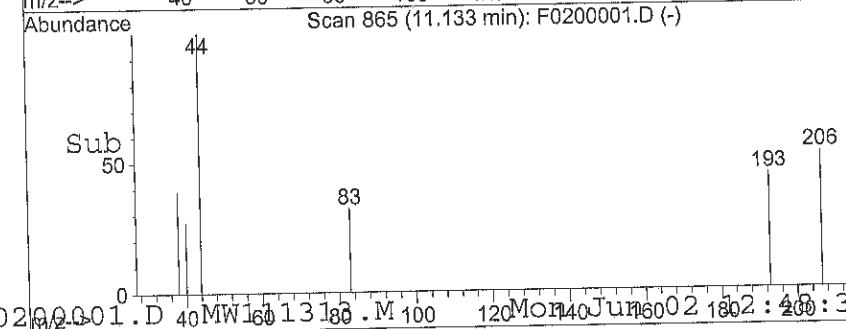
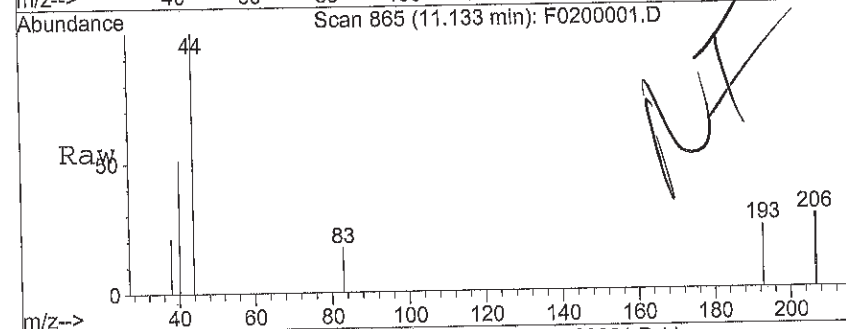
#35
 Dibromomethane
 Concen: 0.16 ug/L
 RT: 11.01 min Scan# 851
 Delta R.T. -0.20 min
 Lab File: F0200001.D
 Acq: 2 Jun 2014 11:46 am

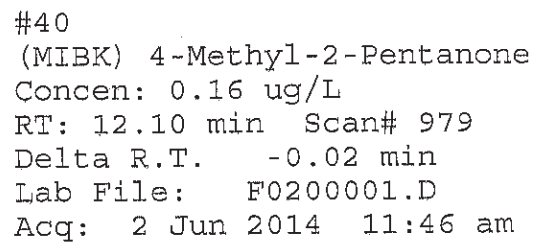
Tgt Ion: 93 Resp: 272
 Ion Ratio Lower Upper
 93 100
 95 0.0 66.2 99.2#
 174 0.0 75.5 113.3#



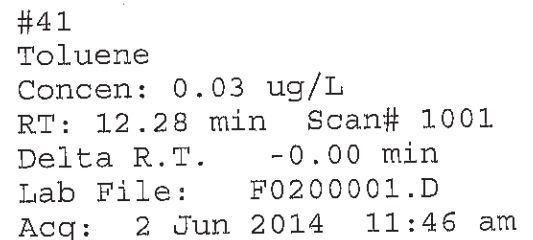
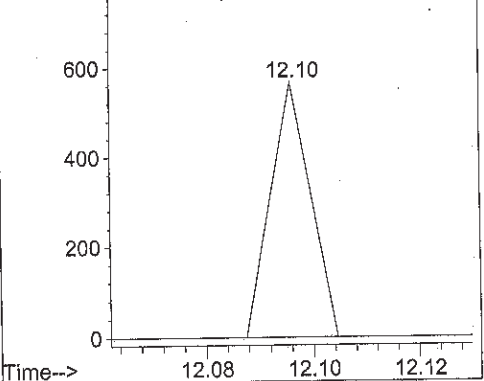
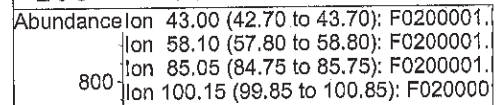
#36
 Bromodichloromethane
 Concen: 0.08 ug/L
 RT: 11.13 min Scan# 865
 Delta R.T. -0.21 min
 Lab File: F0200001.D
 Acq: 2 Jun 2014 11:46 am

Tgt Ion: 83 Resp: 263
 Ion Ratio Lower Upper
 83 100
 85 0.0 48.2 72.2#

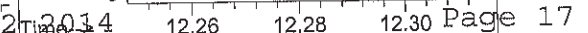
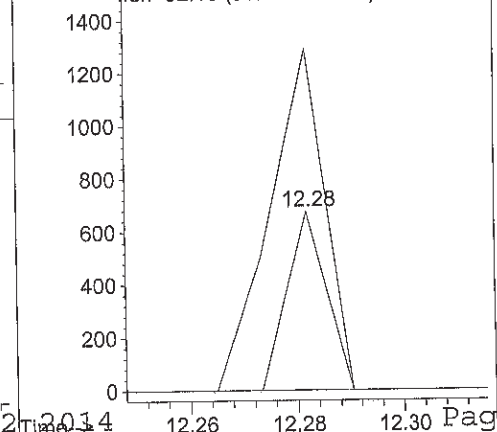
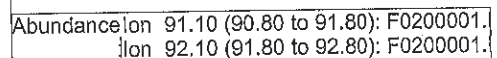


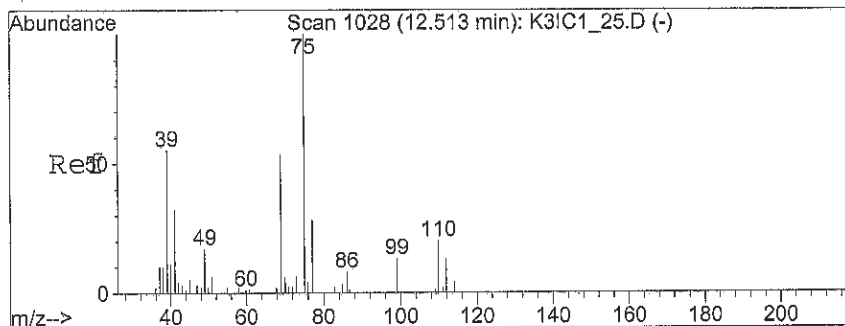


Tgt	Ion: 43	Resp:	288
Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	0.0
85	0.0	0.0	0.0
100	0.0	0.0	0.0



Tgt	Ion: 91	Resp:	342
Ion	Ratio	Lower	Upper
91	100		
92	266.7	47.4	71.0#





#42

trans-1,3-Dichloropropene

Concen: 0.06 ug/L

RT: 12.50 min Scan# 1027

Delta R.T. -0.01 min

Lab File: F0200001.D

Acq: 2 Jun 2014 11:46 am

Tgt Ion: 75 Resp: 256

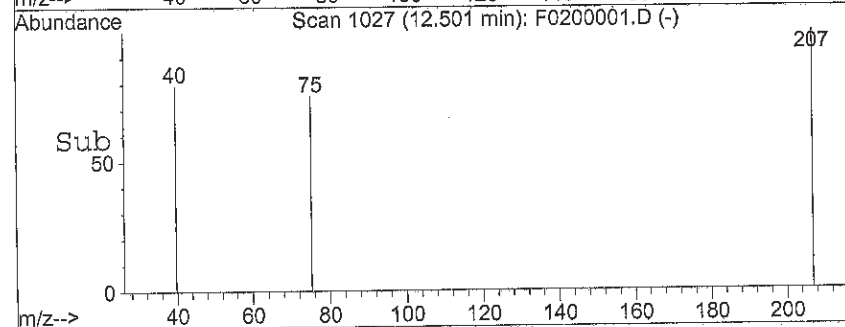
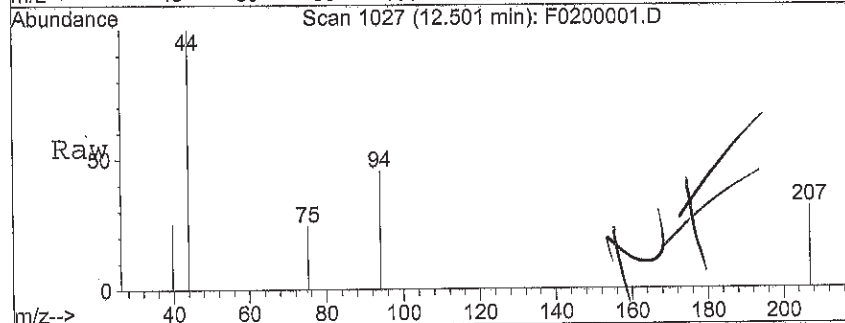
Ion Ratio Lower Upper

75 100

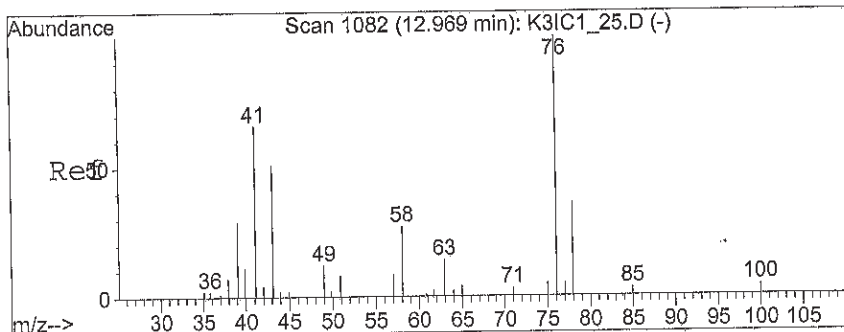
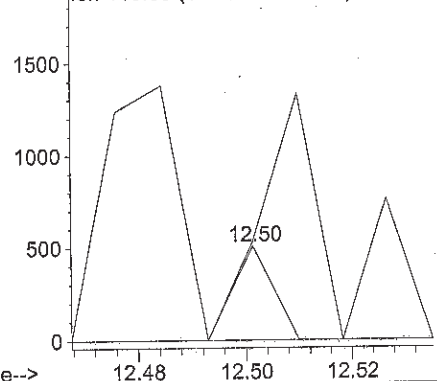
39 519.9 53.6 80.4#

77 0.0 25.4 38.2#

110 0.0 17.6 26.4#



Abundance Ion 75.05 (74.75 to 75.75): F0200001.D
Ion 39.05 (38.75 to 39.75): F0200001.D
Ion 77.05 (76.75 to 77.75): F0200001.D
Ion 110.05 (109.75 to 110.75): F0200001.D



#45

1,3-Dichloropropane

Concen: 0.13 ug/L

RT: 12.92 min Scan# 1076

Delta R.T. -0.05 min

Lab File: F0200001.D

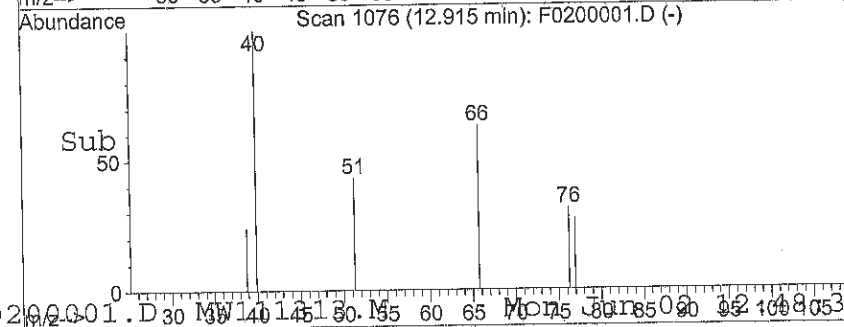
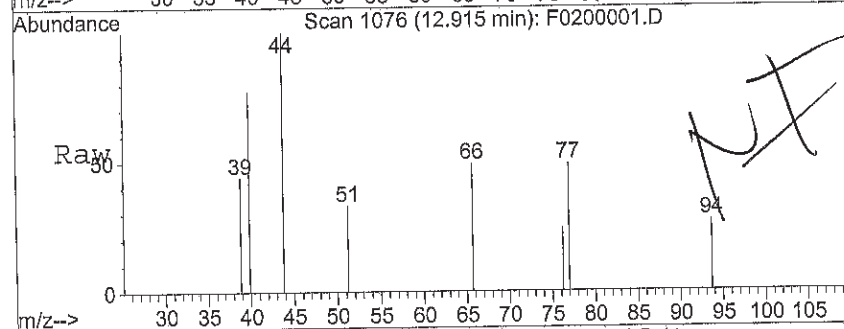
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 76 Resp: 539

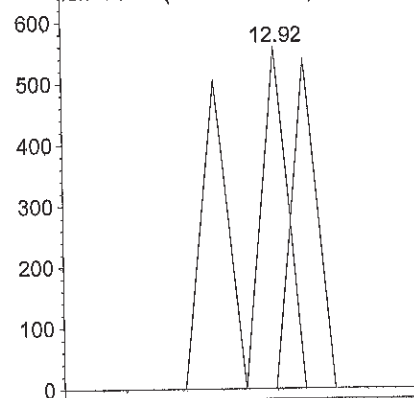
Ion Ratio Lower Upper

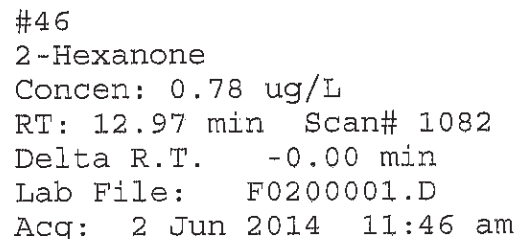
76 100

78 50.6 26.9 40.3#

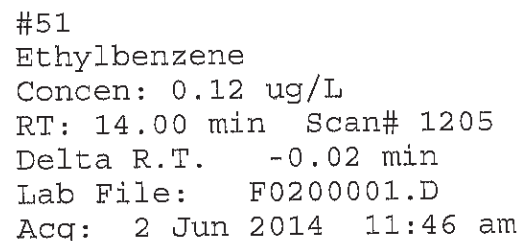
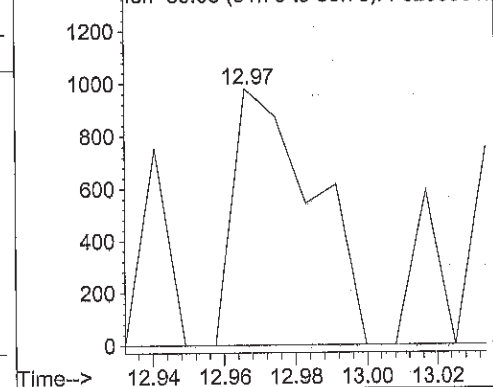
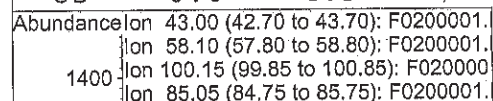


Abundance Ion 76.05 (75.75 to 76.75): F0200001.D
Ion 78.00 (77.70 to 78.70): F0200001.D

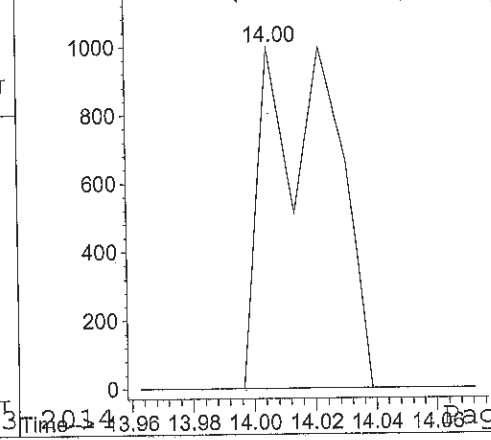
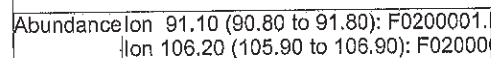


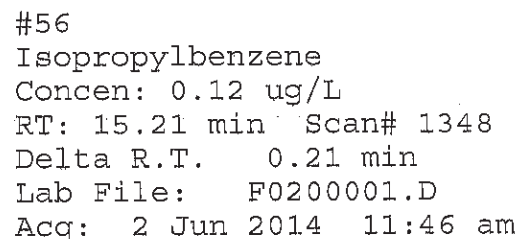


Tgt Ion: 43	Resp: 1526
Ion Ratio	Lower Upper
43 100	
58 0.0	40.9 61.3#
100 0.0	5.5 8.3#
85 0.0	4.3 6.5#

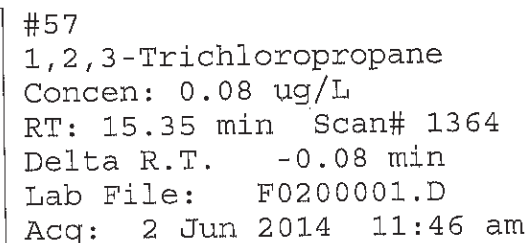
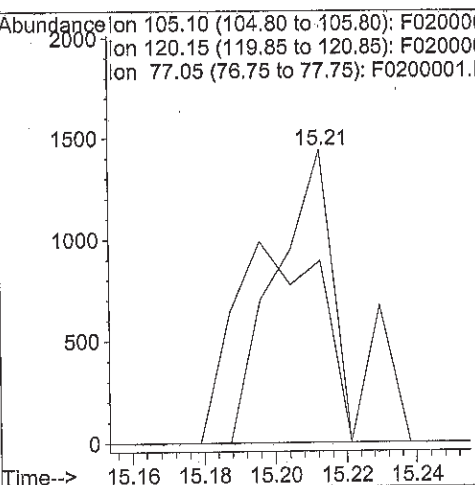
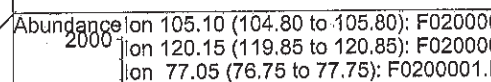


Tgt Ion: 91	Resp: 1606
Ion Ratio	Lower Upper
91 100	
106 0.0	23.5 35.3#

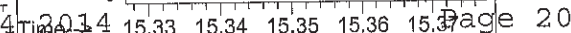
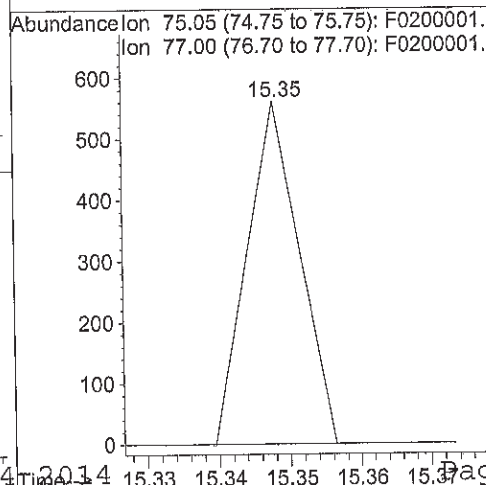
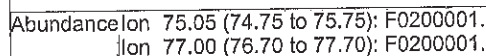


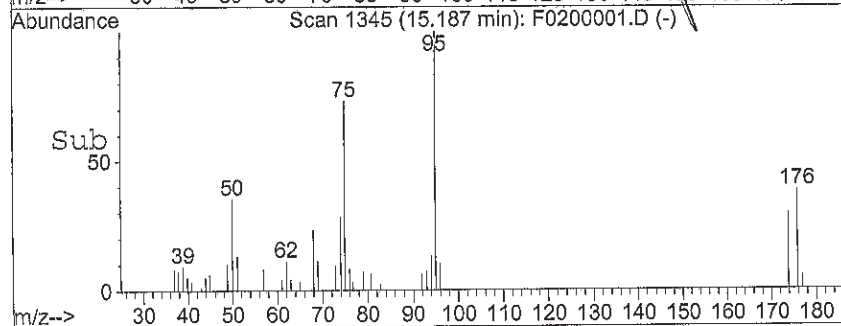


Tgt	Ion:105	Resp:	1562
Ion	Ratio	Lower	Upper
105	100		
120	0.0	19.3	28.9#
77	128.8	13.1	19.7#



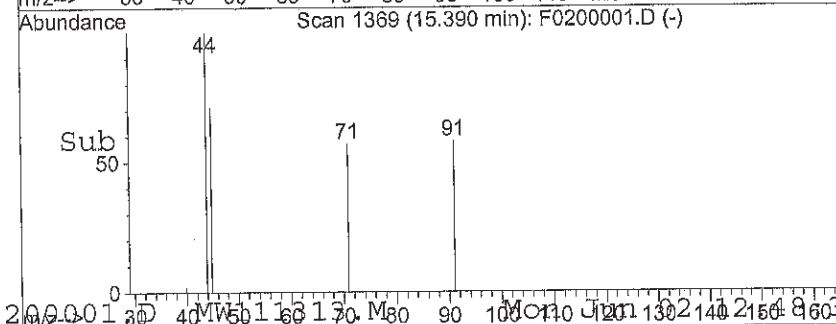
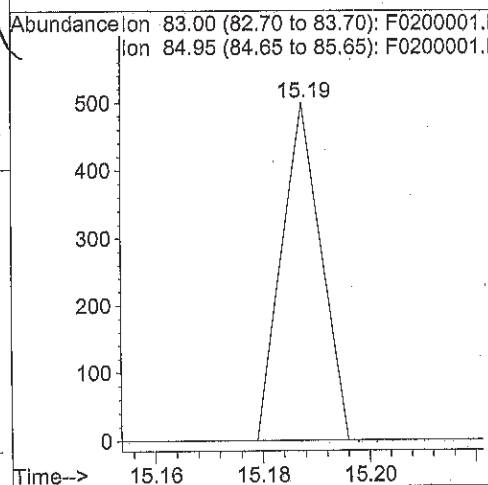
Tgt	Ion: 75	Resp:	284
Ion	Ratio	Lower	Upper
75	100		
77	0.0	31.2	46.8#





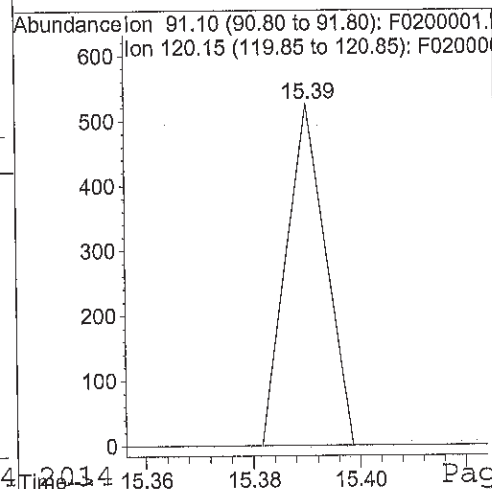
```
#60
1,1,2,2-Tetrachloroethane
Concen: 0.08 ug/L
RT: 15.19 min Scan# 1345
Delta R.T. -0.15 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am
```

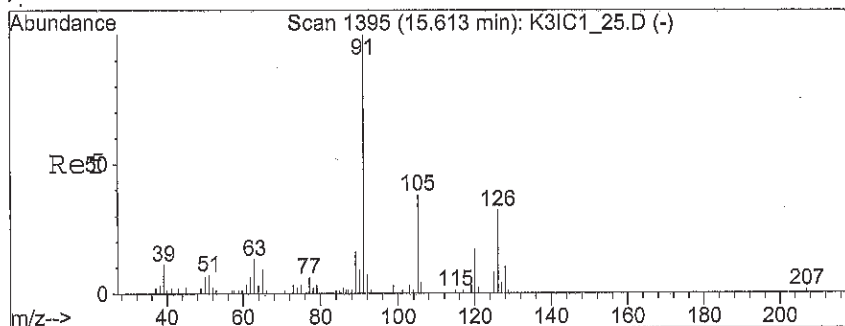
Tgt	Ion: 83	Resp:	253
Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.2	76.8#



```
#62
n-Propylbenzene
Concen: 0.01 ug/L
RT: 15.39 min Scan# 1369
Delta R.T. -0.07 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am
```

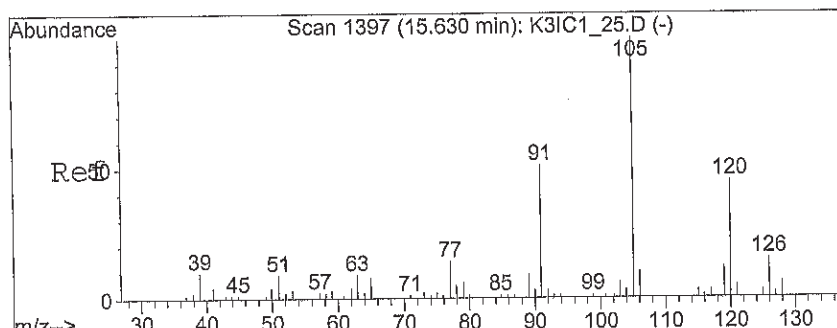
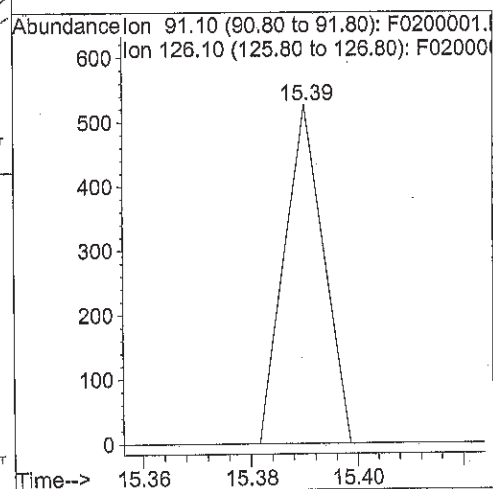
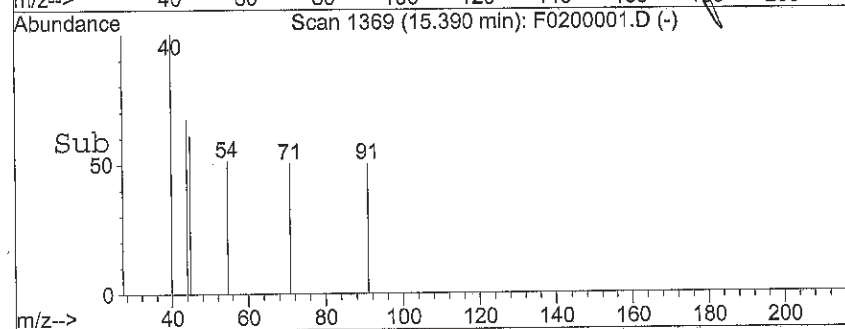
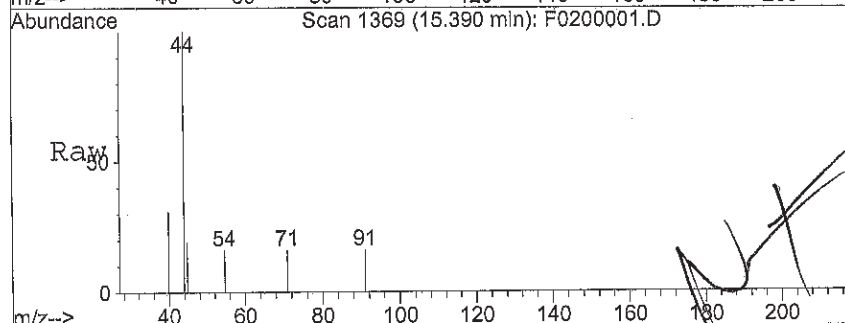
```
Tgt Ion: 91 Resp: 267
Ion Ratio Lower Upper
91 100
120 0.0 16.1 24.1#
```





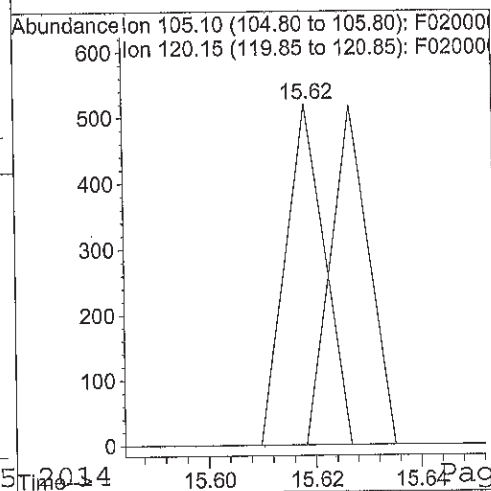
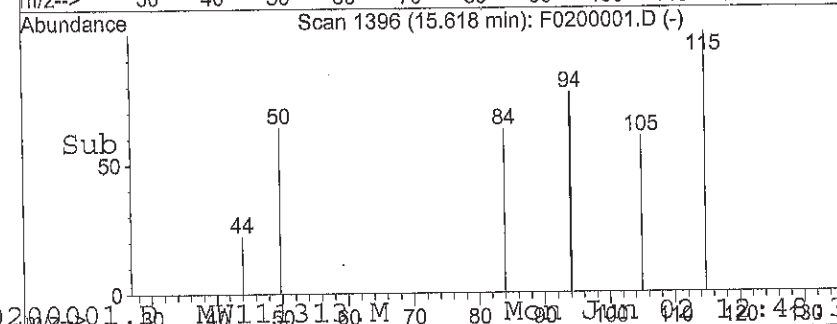
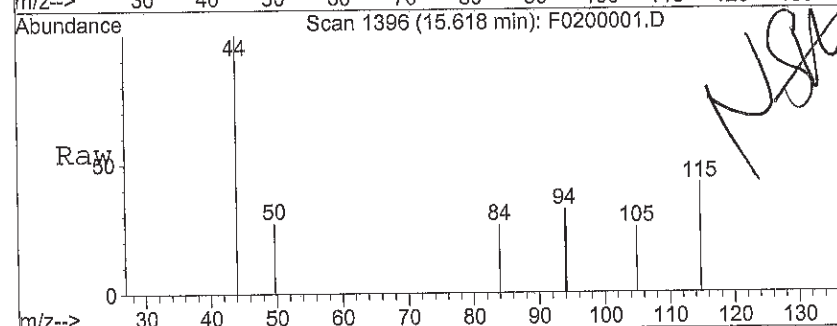
#63
2-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.39 min Scan# 1369
Delta R.T. -0.22 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

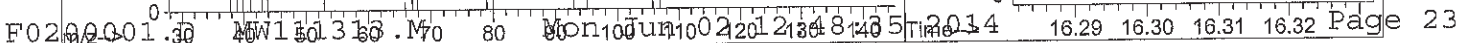
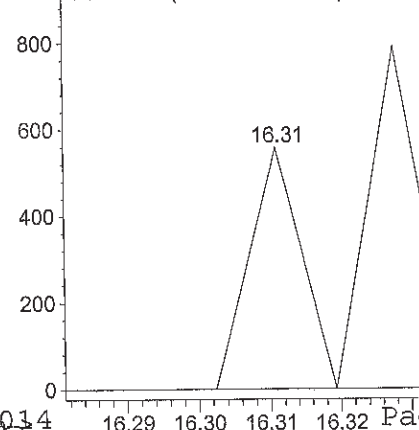
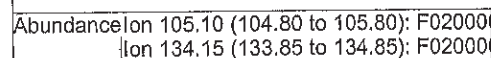
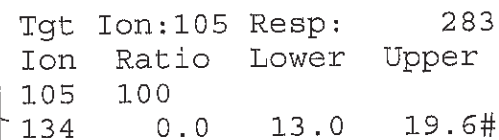
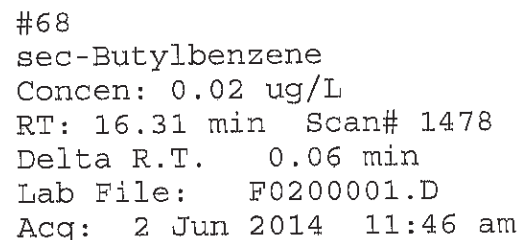
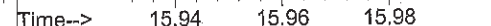
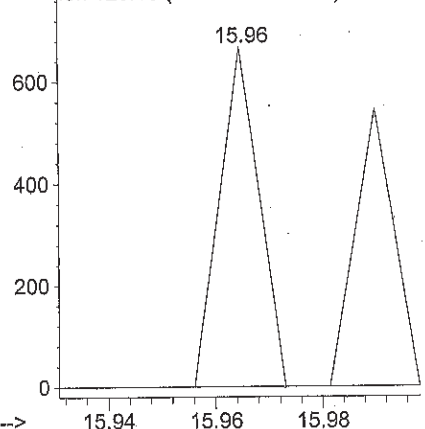
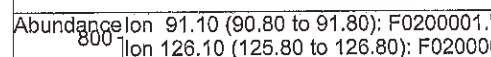
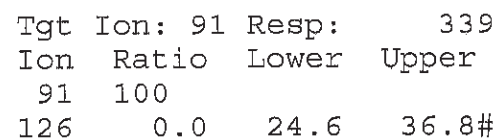
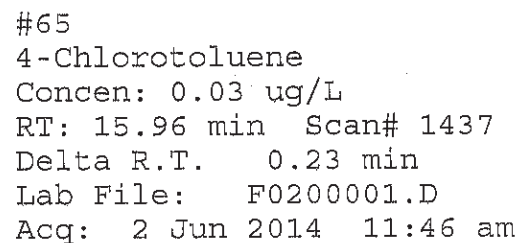
Tgt Ion: 91 Resp: 267
Ion Ratio Lower Upper
91 100
126 0.0 24.0 36.0#

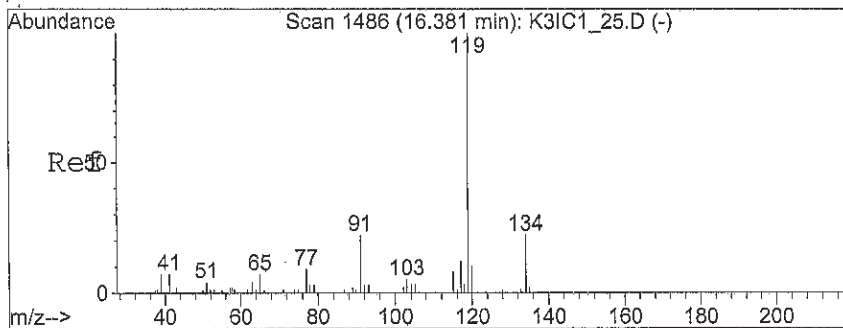


#64
1,3,5-Trimethylbenzene
Concen: 0.02 ug/L
RT: 15.62 min Scan# 1396
Delta R.T. -0.01 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 105 Resp: 264
Ion Ratio Lower Upper
105 100
120 99.2 36.4 54.6#







#69

p-Isopropyltoluene

Concen: 0.02 ug/L

RT: 16.37 min Scan# 1485

Delta R.T. -0.01 min

Lab File: F0200001.D

Acq: 2 Jun 2014 11:46 am

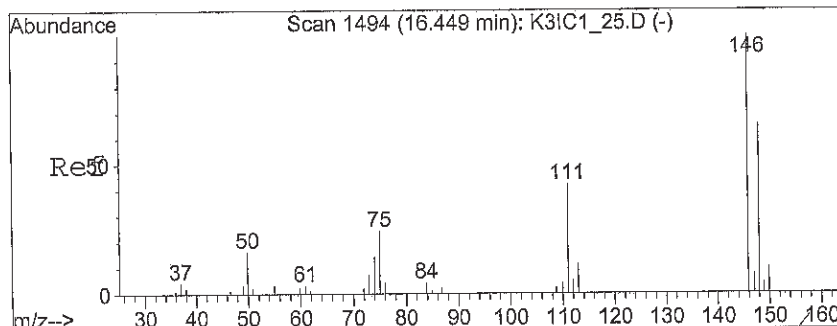
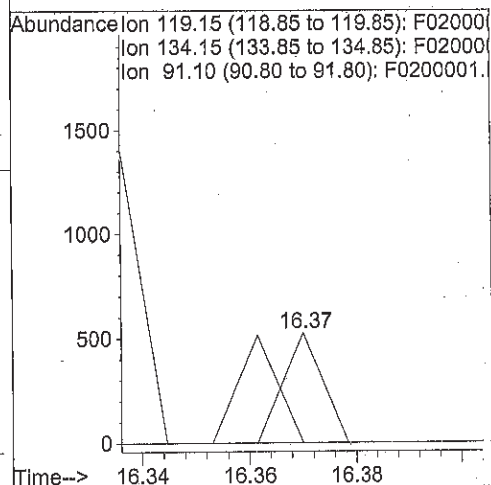
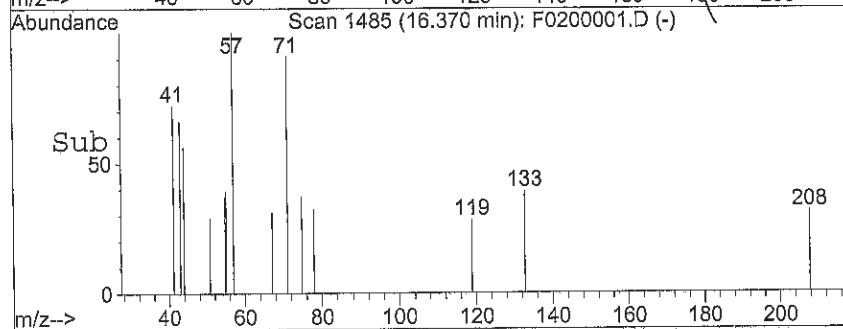
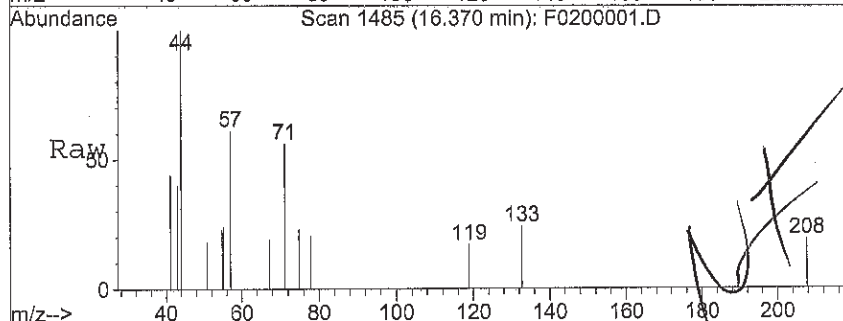
Tgt Ion:119 Resp: 266

Ion Ratio Lower Upper

119 100

134 97.7 17.4 26.2#

91 0.0 19.6 29.4#



#70

1,3-Dichlorobenzene

Concen: 0.05 ug/L

RT: 16.50 min Scan# 1500

Delta R.T. 0.05 min

Lab File: F0200001.D

Acq: 2 Jun 2014 11:46 am

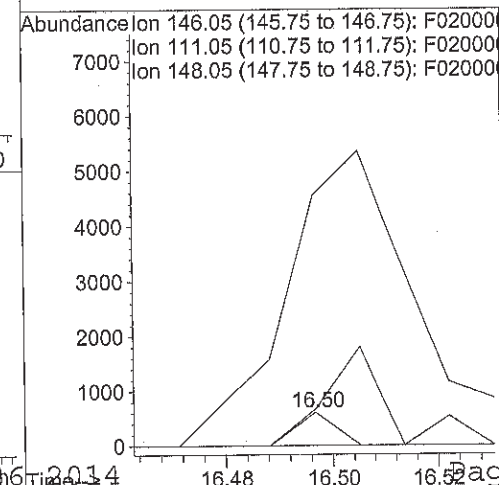
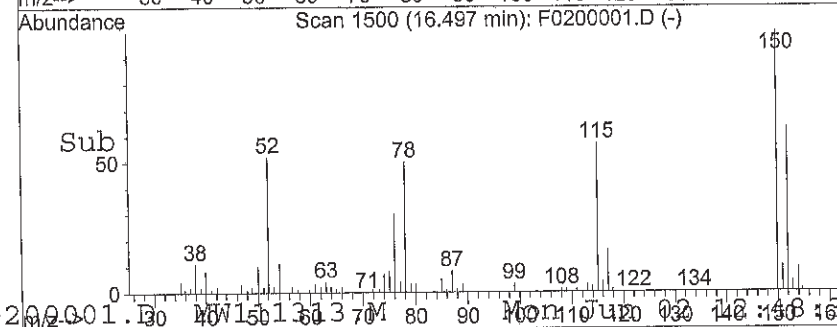
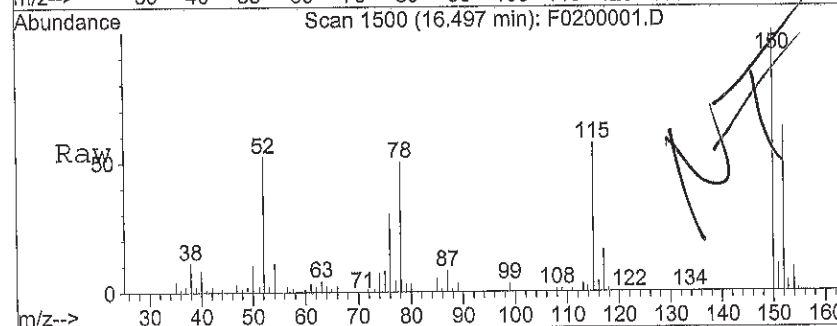
Tgt Ion:146 Resp: 307

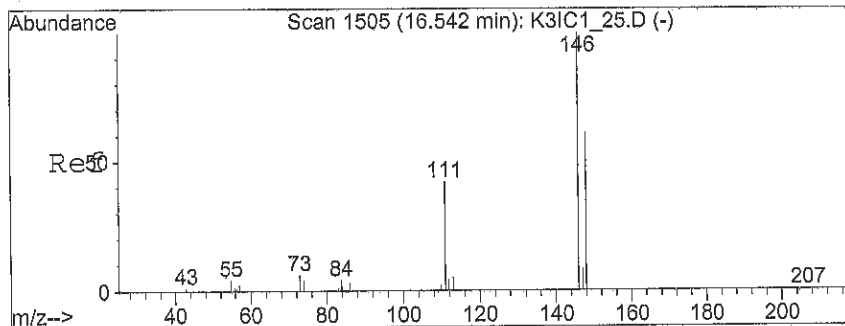
Ion Ratio Lower Upper

146 100

111 2899.0 34.2 51.4#

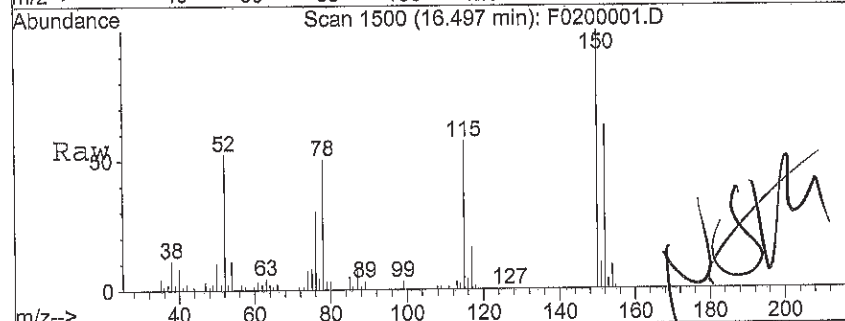
148 495.4 50.9 76.3#





#71
1,4-Dichlorobenzene
Concen: 0.05 ug/L
RT: 16.50 min Scan# 1500
Delta R.T. -0.05 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 146 Resp: 307
Ion Ratio Lower Upper
146 100
111 2899.0 37.6 56.4#
148 495.4 52.6 78.8#

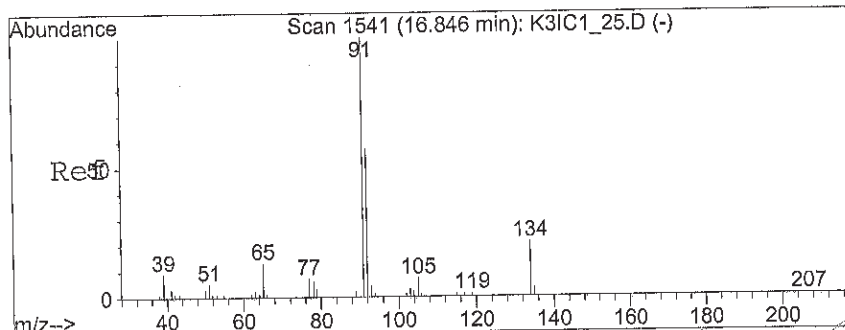
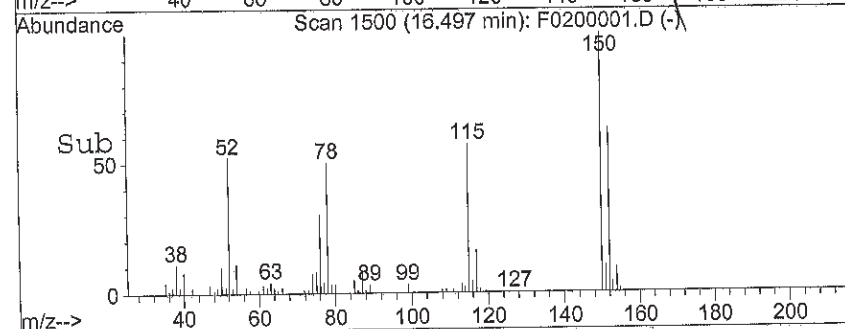
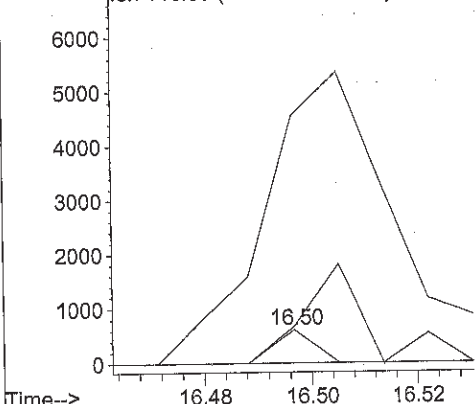


Abundance

Ion 146.05 (145.75 to 146.75): F0200001.D

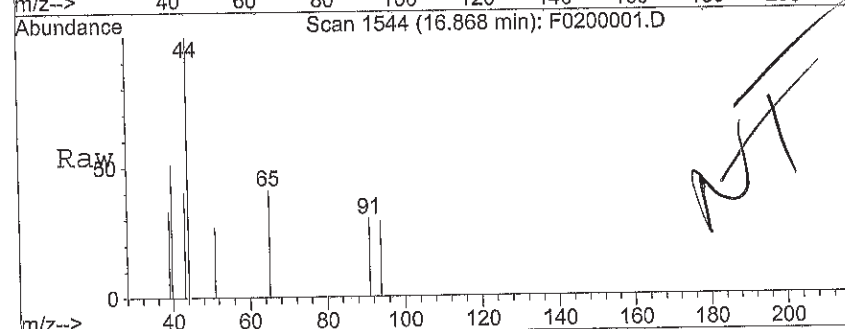
Ion 111.05 (110.75 to 111.75): F0200001.D

Ion 148.05 (147.75 to 148.75): F0200001.D



#72
n-Butylbenzene
Concen: 0.02 ug/L
RT: 16.87 min Scan# 1544
Delta R.T. 0.02 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 91 Resp: 283
Ion Ratio Lower Upper
91 100
92 0.0 47.0 70.4#
134 0.0 18.1 27.1#

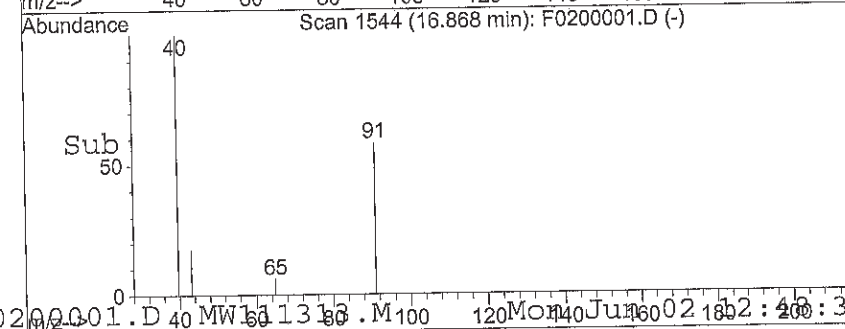
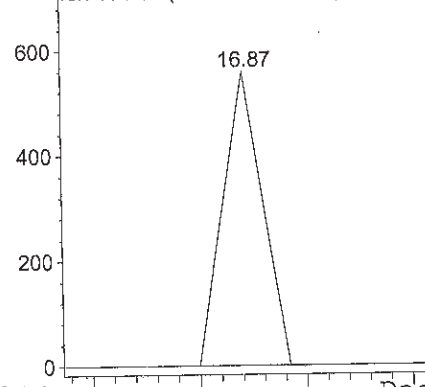


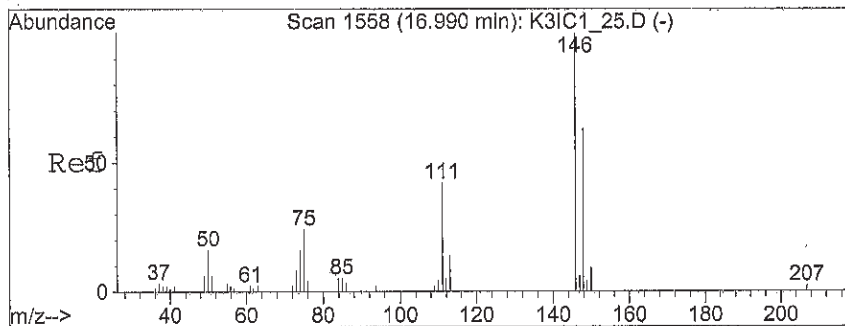
Abundance

Ion 91.10 (90.80 to 91.80): F0200001.D

Ion 92.10 (91.80 to 92.80): F0200001.D

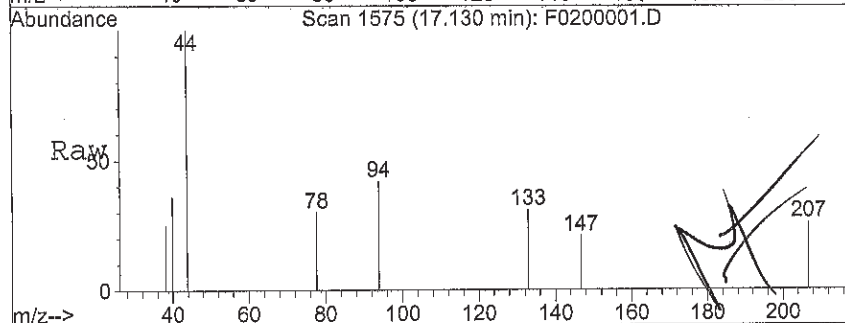
Ion 134.15 (133.85 to 134.85): F0200001.D





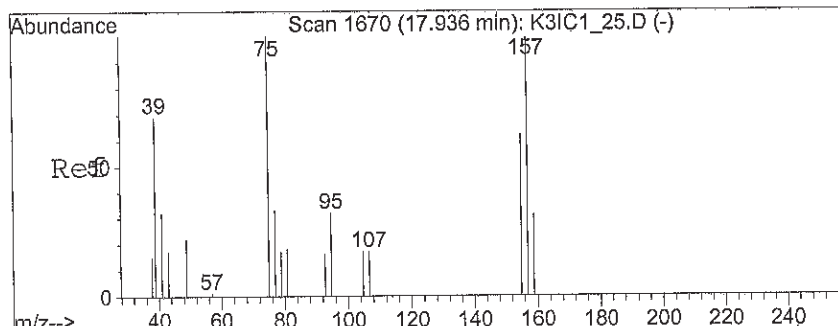
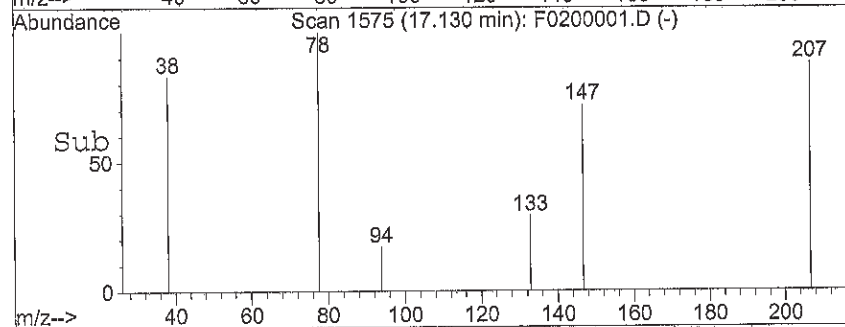
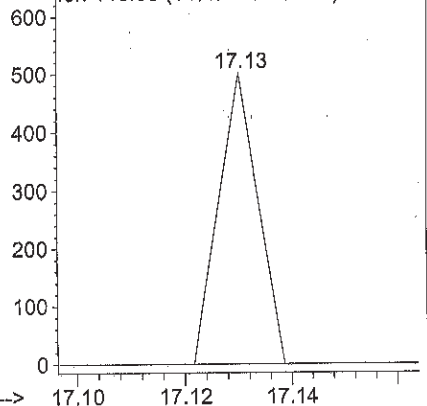
#73
 1,2-Dichlorobenzene
 Concen: 0.04 ug/L
 RT: 17.13 min Scan# 1575
 Delta R.T. 0.14 min
 Lab File: F0200001.D
 Acq: 2 Jun 2014 11:46 am

Tgt Ion: 146 Resp: 254
 Ion Ratio Lower Upper
 146 100
 111 0.0 34.7 52.1#
 148 0.0 51.7 77.5#



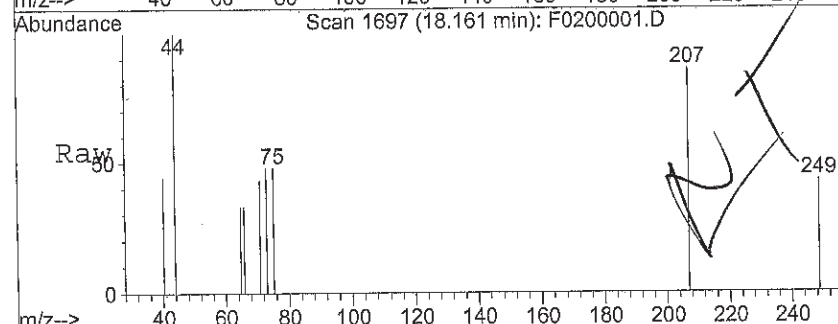
Abundance

Ion 146.05 (145.75 to 146.75): F0200001.D



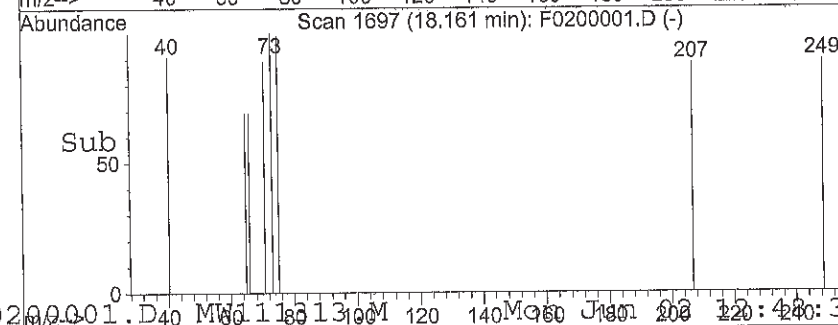
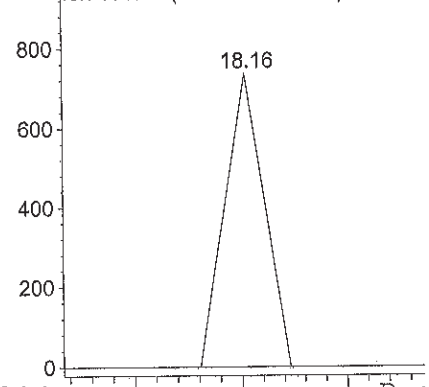
#74
 1,2-Dibromo-3-chloropropane
 Concen: 1.59 ug/L
 RT: 18.16 min Scan# 1697
 Delta R.T. 0.23 min
 Lab File: F0200001.D
 Acq: 2 Jun 2014 11:46 am

Tgt Ion: 75 Resp: 374
 Ion Ratio Lower Upper
 75 100
 155 0.0 59.2 88.8#
 157 0.0 77.0 115.6#



Abundance

Ion 75.05 (74.75 to 75.75): F0200001.D



Data File : C:\HPCHEM\1\DATA\060214L3\F0200001.D
 Acq On : 2 Jun 2014 11:46 am
 Sample : 3F40201-01
 Misc : 100cc Equipment Blank
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:23 19114

Vial: 11
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Quant Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.29	96	959959	12.50	ug/L	-0.02
7) Chlorobenzene-d5 (IS)	13.91	117	899548	12.50	ug/L	-0.02
10) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	456072	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	270525m	10.84	ug/L	0.00
Spiked Amount	12.500	Range 75 - 125	Recovery	=	86.72%	
3) Chloroform-d (SU6)	9.17	84	462180m	12.90	ug/L	-0.02
Spiked Amount	12.500	Range 70 - 140	Recovery	=	103.20%	
4) Methylene Chloride-d2 (SU5)	7.07	86	277877m	13.27	ug/L	0.00
Spiked Amount	12.500	Range 70 - 140	Recovery	=	106.16%	
5) 1,2-Dichloroethane-d4 (SU2)	9.88	65	227984m	13.36	ug/L	-0.02
Spiked Amount	12.500	Range 75 - 125	Recovery	=	106.88%	
6) Benzene-d6 (SU7)	9.93	84	1056734m	14.03	ug/L	-0.03
Spiked Amount	12.500	Range 70 - 140	Recovery	=	112.24%	
8) Toluene-d8 (SU3)	12.20	98	947418	11.10	ug/L	-0.02
Spiked Amount	12.500	Range 75 - 125	Recovery	=	88.80%	
9) 4-Bromofluorobenzene (SU4)	15.21	95	392355m	11.14	ug/L	-0.02
Spiked Amount	12.500	Range 75 - 125	Recovery	=	89.12%	

Target Compounds

Qvalue

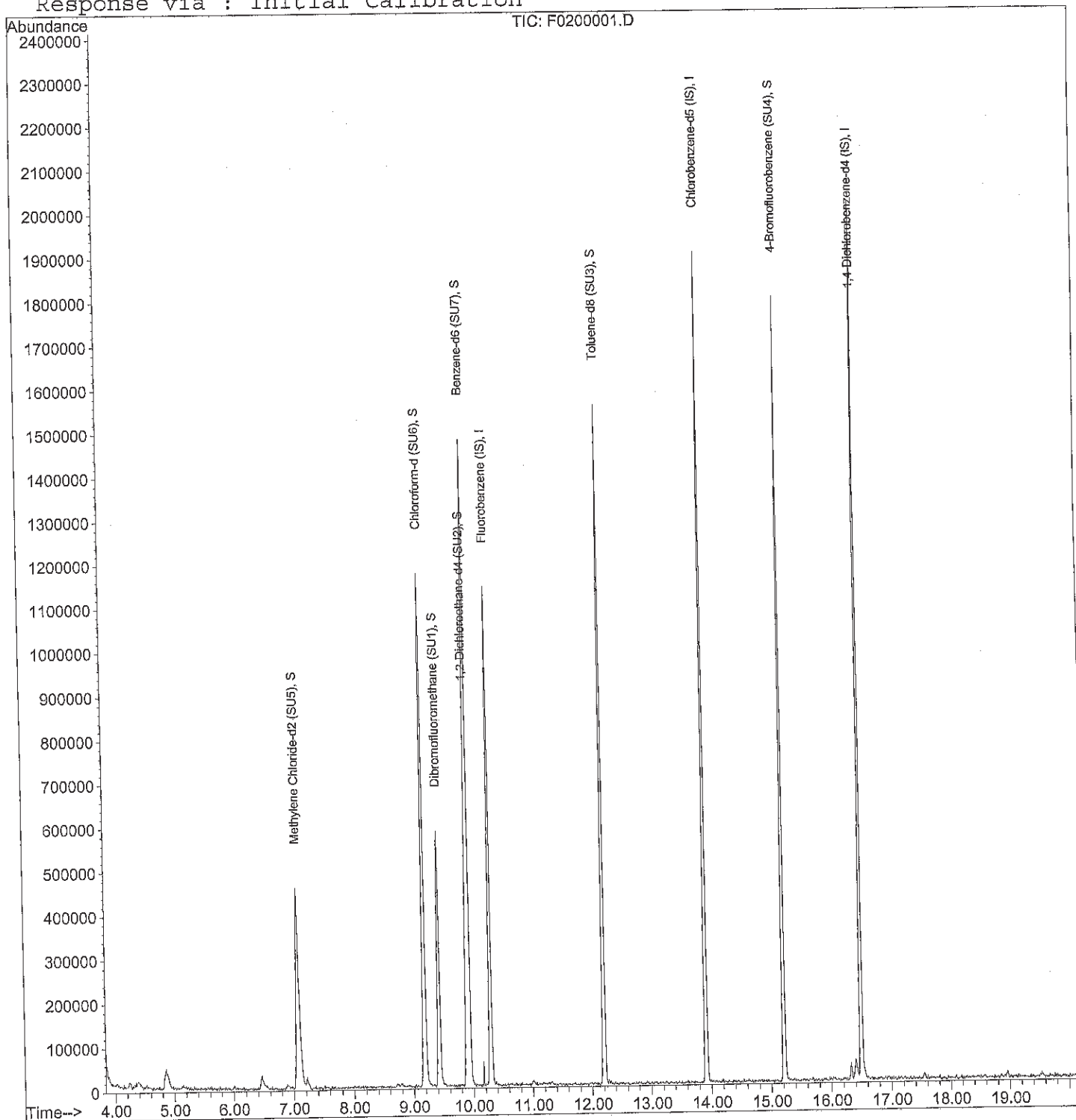
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200001.D
 Acq On : 2 Jun 2014 11:46 am
 Sample : 3F40201-01
 Misc : 100cc Equipment Blank
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:23 19114

Vial: 11
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration



Data File : C:\HPCHEM\1\DATA\060214L3\F0200002.D

Vial: 1

Acq On : 2 Jun 2014 12:16 pm

Operator: DN

Sample : 3F40201-02

Inst : GC/MS Ins

Misc : 100cc SVL-528-SA8-SV-5.0-6.0

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 12:57 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.29	96	1361744	12.50	ug/L	0.00
38) Chlorobenzene-d5 (IS)	13.92	117	1270833	12.50	ug/L	0.00
59) 1,4-Dichlorobenzene-d4 (IS)	16.50	152	624007	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.42	113	392551m	11.56	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	92.48%
28) 1,2-Dichloroethane-d4 (SU2)	9.89	65	357991m	11.09	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	88.72%
39) Toluene-d8 (SU3)	12.20	98	1339609	11.30	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	90.40%
58) 4-Bromofluorobenzene (SU4)	15.22	95	592792m	11.40	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	91.20%

Target Compounds

					Qvalue	
3) (F12) Dichlorodifluorometh	4.09	85	1657	0.50	ug/L	#NM 44
4) Chloromethane	4.39	50	5008	0.97	ug/L	# 77
5) Vinyl Chloride	4.41	62	313	0.13	ug/L	# 1
6) Bromomethane	5.14	96	709	-1.30	ug/L	# 43
7) Chloroethane	5.20	64	1791	2.27	ug/L	# 97
8) (F11) Trichlorofluorometha	5.66	101	263	0.07	ug/L	# 52
11) Acetone	6.48	58	6358	7.27	ug/L	# 1
12) (IPA) Leak Check Compound	6.49	45	46799	286.00	ug/L	#SM 87
13) Carbon disulfide	6.86	76	2687	0.24	ug/L	# 84
14) Methylene Chloride	7.08	84	4498	1.20	ug/L	# 1
15) (TBA) tert-Butanol	6.90	59	1358	5.85	ug/L	#NT 77
16) (MTBE) Methyl-t-butyl ethe	7.41	73	275	0.04	ug/L	#NSM 1
17) trans-1,2-Dichloroethene	7.62	96	313	0.09	ug/L	# 4
18) 1,1-Dichloroethane	8.04	63	264	0.04	ug/L	# 42
19) cis-1,2-Dichloroethene	8.98	96	296	0.07	ug/L	# 3
20) 2,2-Dichloropropane	8.75	77	851	0.16	ug/L	# 1
21) (MEK) 2-Butanone	8.80	72	272	0.71	ug/L	# 1
22) (DIPE) Diisopropyl Ether	7.92	45	410	0.04	ug/L	# 56
24) Chloroform	9.20	83	1955	0.27	ug/L	# 1
25) (ETBE) 2-ethoxy 2-methyl p	8.44	59	286	0.03	ug/L	# 1
30) Carbon Tetrachloride	9.66	117	266	0.06	ug/L	# 0.00 99
31) Benzene	9.93	78	13109	1.02	ug/L	#SM 70

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060214L3\F0200002.D
Acq On : 2 Jun 2014 12:16 pm
Sample : 3F40201-02
Misc : 100cc SVL-528-SA8-SV-5.0-6.0
MS Integration Params: rteint.p
Quant Time: Jun 2 12:57 19114

Vial: 1
Operator: DN
Inst : GC/MS Ins
Multiplr: 10.00

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
Title : 8260B GC/MS #3 ICAL 11/13/13 DN
Last Update : Wed Nov 13 19:38:32 2013
Response via : Initial Calibration
DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32) 1,2-Dichloroethane	9.92	62	11263	2.48	ug/L #	1
34) 1,2-Dichloropropane	11.01	63	316	0.10	ug/L #	2
35) Dibromomethane	11.26	93	349	0.15	ug/L #	5
36) Bromodichloromethane	11.32	83	558	0.12	ug/L #	21
37) cis-1,3-Dichloropropene	12.02	75	309	0.06	ug/L #	36
40) (MIBK) 4-Methyl-2-Pentanone	12.14	43	608	0.24	ug/L #	100
41) Toluene	12.29	91	2610	0.15	ug/L #	66
45) 1,3-Dichloropropane	13.16	76	270	0.05	ug/L #	41
46) 2-Hexanone	12.99	43	396	0.14	ug/L #	76
47) Dibromochloromethane	13.40	129	256	0.06	ug/L #	21
48) 1,2-Dibromoethane	13.62	107	255	0.06	ug/L #	3
49) Chlorobenzene	13.95	112	257	0.02	ug/L #	28
51) Ethylbenzene	14.03	91	2572	0.13	ug/L #	45
52) m,p-Xylenes	14.14	106	632	0.09	ug/L #	1
54) Styrene	14.63	104	2276	-0.64	ug/L #	48
56) Isopropylbenzene	15.23	105	3222	0.17	ug/L #	1
57) 1,2,3-Trichloropropane	15.38	75	1018	0.20	ug/L #	36
60) 1,1,2,2-Tetrachloroethane	15.21	83	929	0.21	ug/L #	57
62) n-Propylbenzene	15.46	91	394	0.02	ug/L #	56
63) 2-Chlorotoluene	15.61	91	462	0.03	ug/L #	45
64) 1,3,5-Trimethylbenzene	15.61	105	271	0.02	ug/L #	31
65) 4-Chlorotoluene	15.61	91	462	0.03	ug/L #	44
67) 1,2,4-Trimethylbenzene	16.06	105	728	0.04	ug/L #	82
68) sec-Butylbenzene	16.33	105	781	0.04	ug/L #	62
69) p-Isopropyltoluene	16.39	119	1205	0.07	ug/L #	77
70) 1,3-Dichlorobenzene	16.54	146	254	0.03	ug/L #	1
71) 1,4-Dichlorobenzene	16.54	146	254	0.03	ug/L #	1
72) n-Butylbenzene	16.81	91	576	0.03	ug/L #	30
73) 1,2-Dichlorobenzene	16.78	146	257	0.03	ug/L #	24
74) 1,2-Dibromo-3-chloropropan	17.94	75	262	1.25	ug/L #	6
77) Naphthalene	19.44	128	285	0.02	ug/L	100

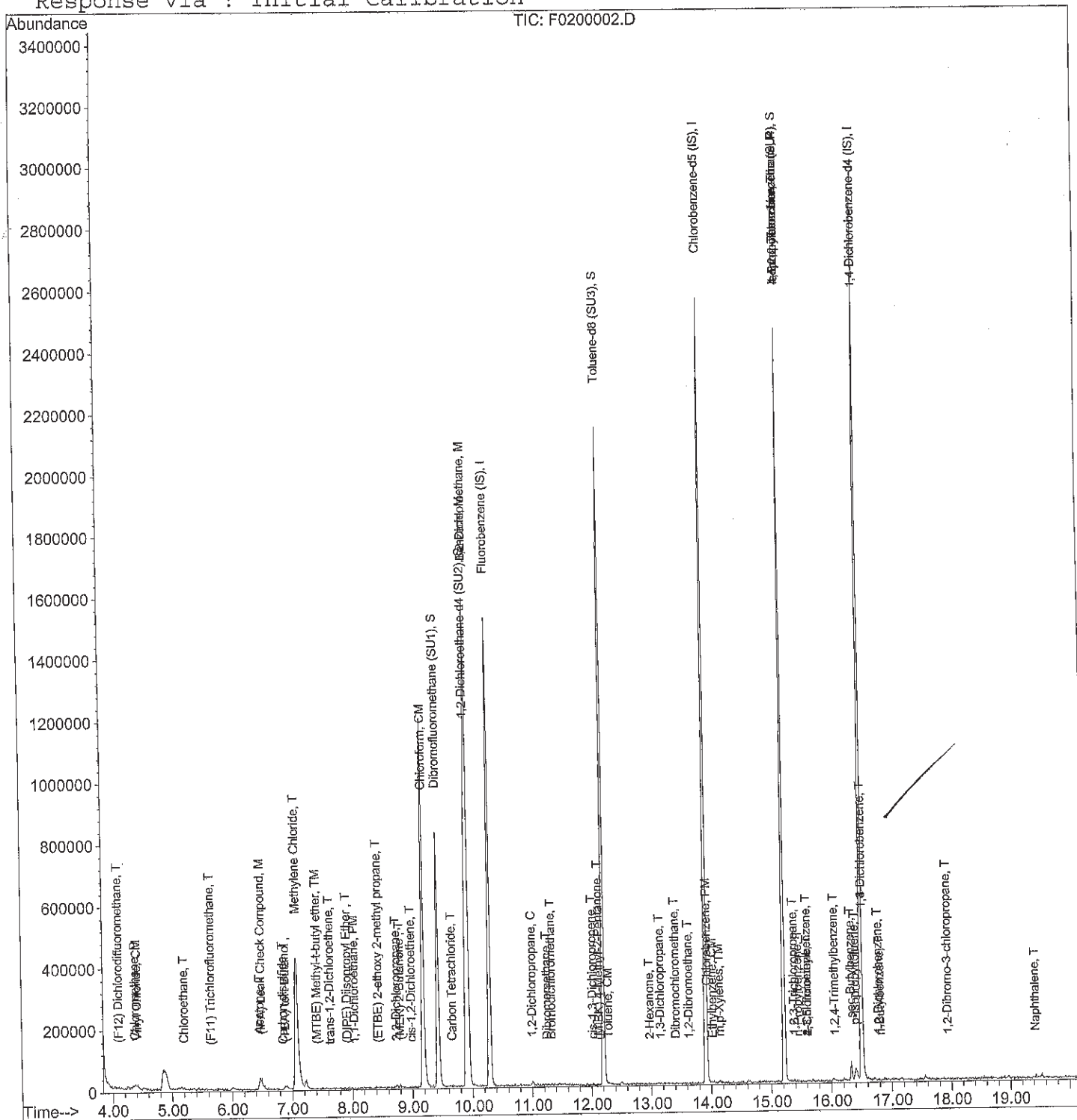
Quantitation Report

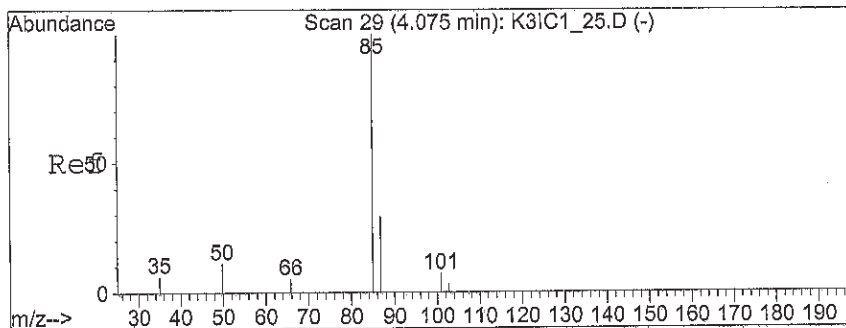
Data File : C:\HPCHEM\1\DATA\060214L3\F0200002.D
 Acq On : 2 Jun 2014 12:16 pm
 Sample : 3F40201-02
 Misc : 100cc SVL-528-SA8-SV-5.0-6.0
 MS Integration Params: rteint.p
 Quant Time: Jun 2 12:57 19114

Vial: 1
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: MW111313.RES

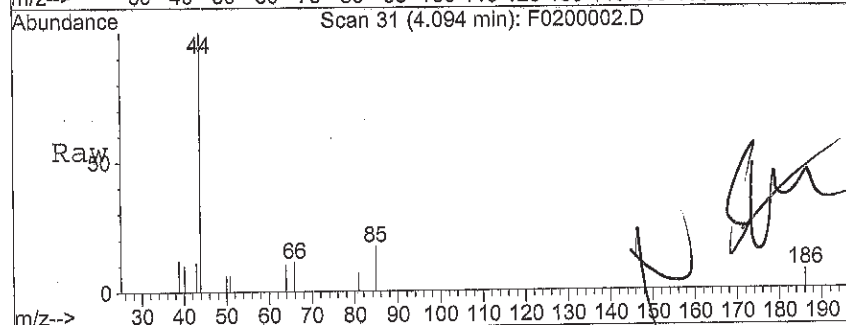
Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration



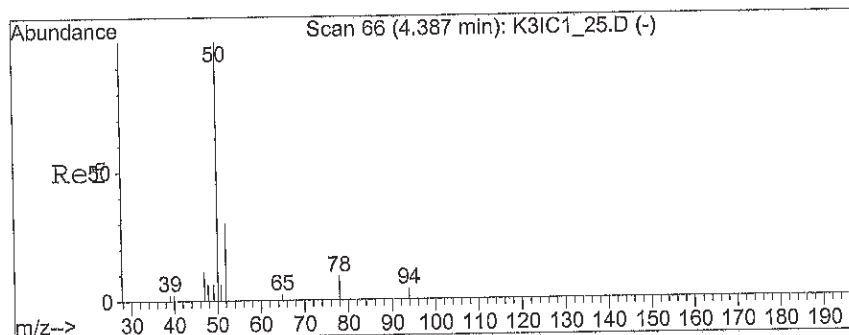
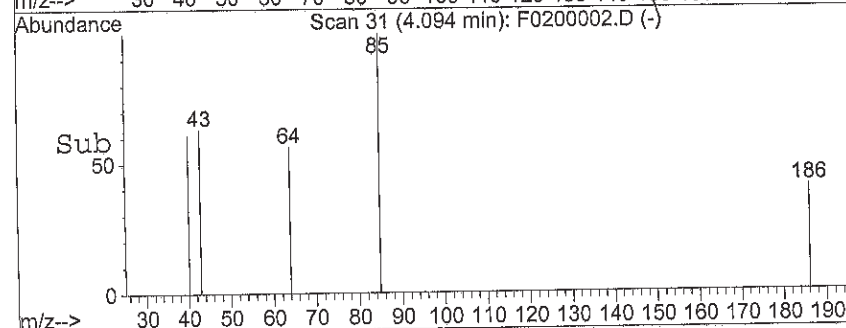
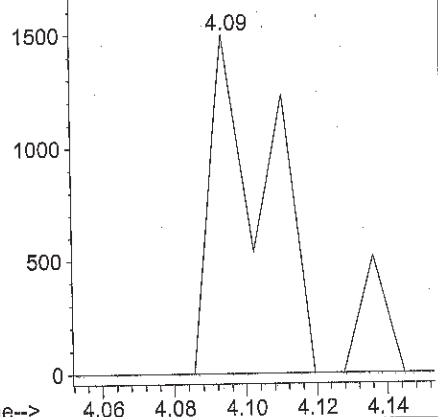


#3
 (F12) Dichlorodifluoromethane
 Concen: 0.50 ug/L
 RT: 4.09 min Scan# 31
 Delta R.T. 0.02 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 85 Resp: 1657
 Ion Ratio Lower Upper
 85 100
 87 0.0 24.6 37.0#

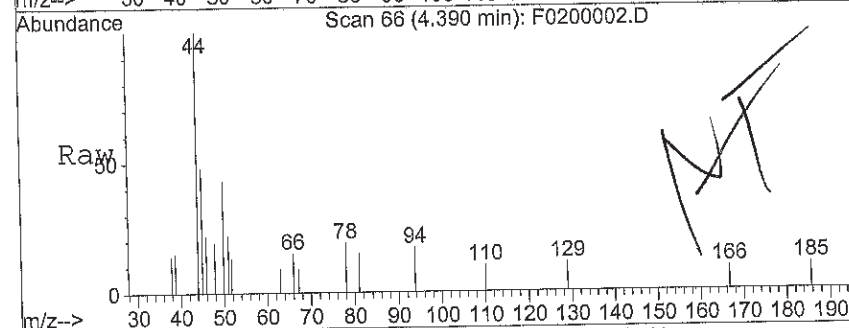


Abundance Ion 84.95 (84.65 to 85.65): F0200002.
 Ion 87.05 (86.75 to 87.75): F0200002.

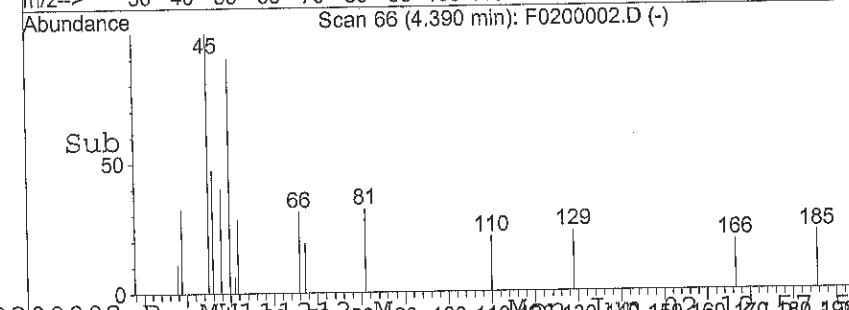
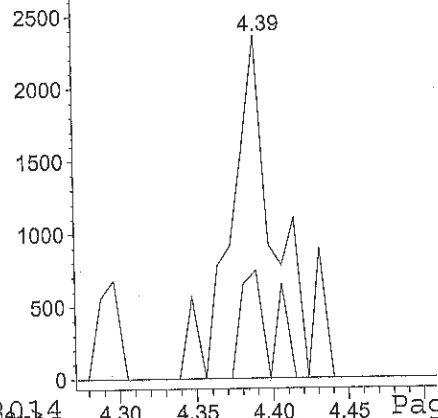


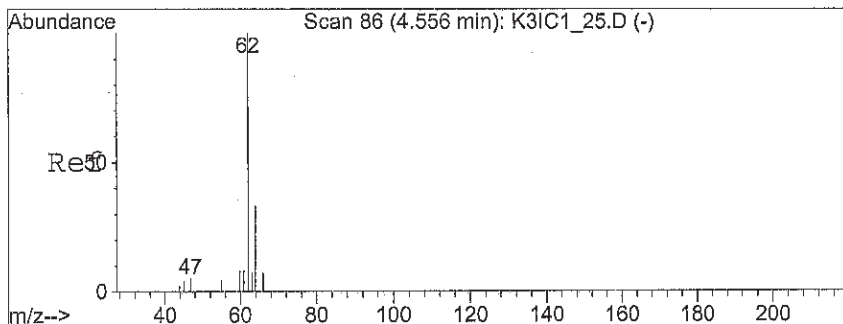
#4
 Chloromethane
 Concen: 0.97 ug/L
 RT: 4.39 min Scan# 66
 Delta R.T. 0.00 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 50 Resp: 5008
 Ion Ratio Lower Upper
 50 100
 52 20.6 26.9 40.3#



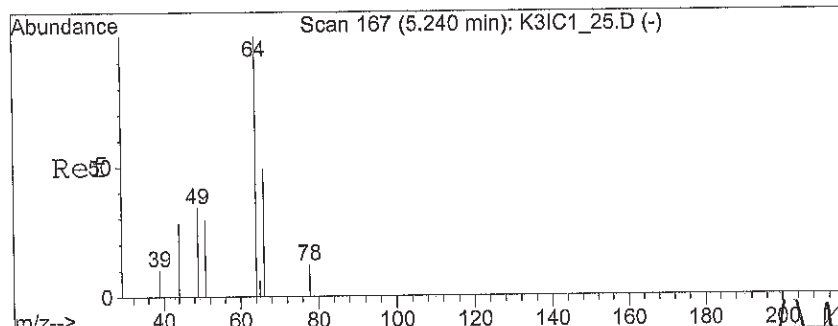
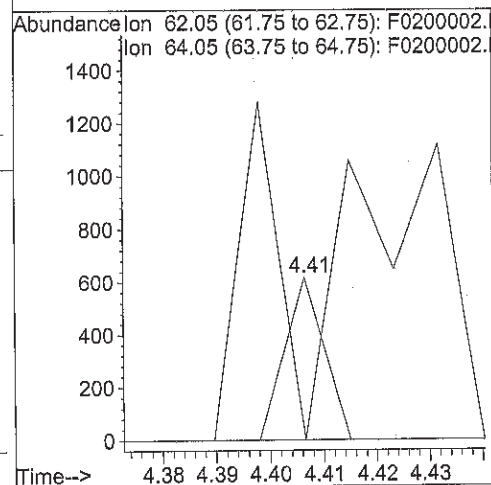
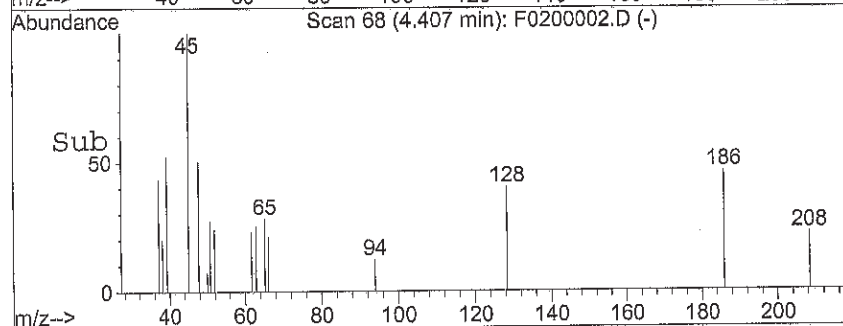
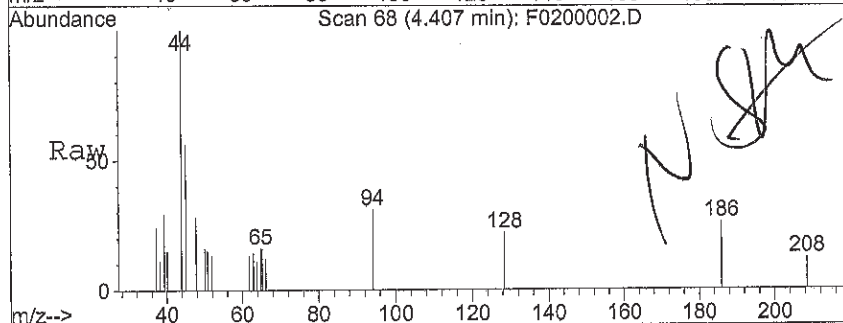
Abundance Ion 50.05 (49.75 to 50.75): F0200002.
 Ion 52.05 (51.75 to 52.75): F0200002.





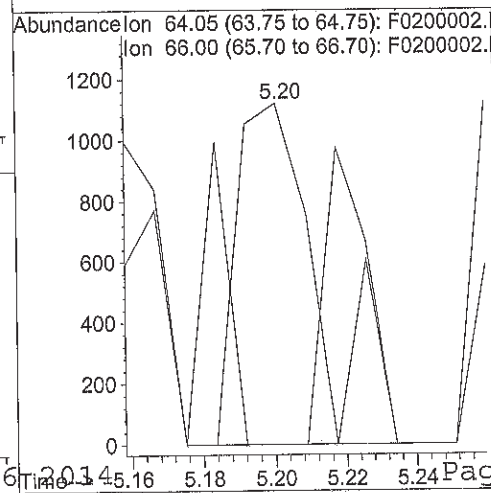
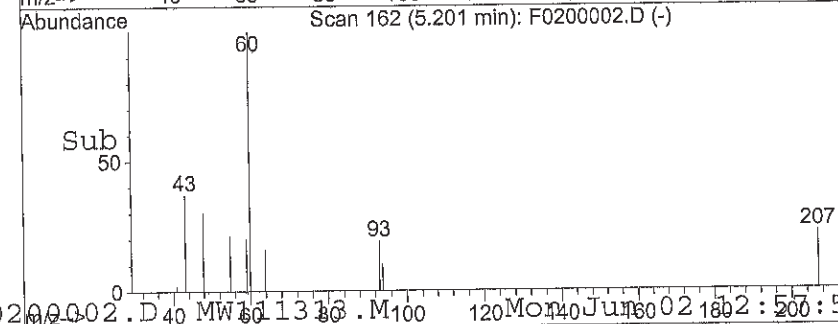
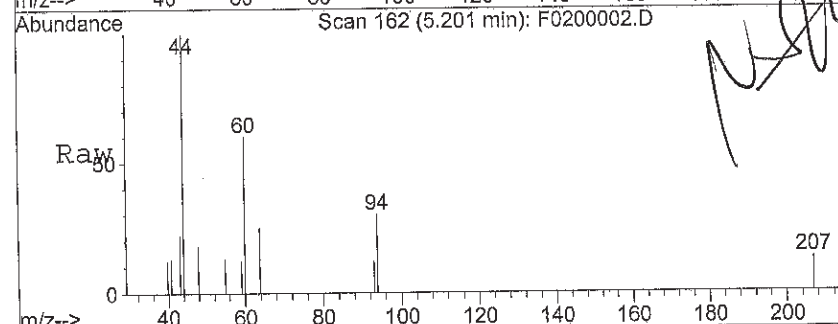
#5
 Vinyl Chloride
 Concen: 0.13 ug/L
 RT: 4.41 min Scan# 68
 Delta R.T. -0.15 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

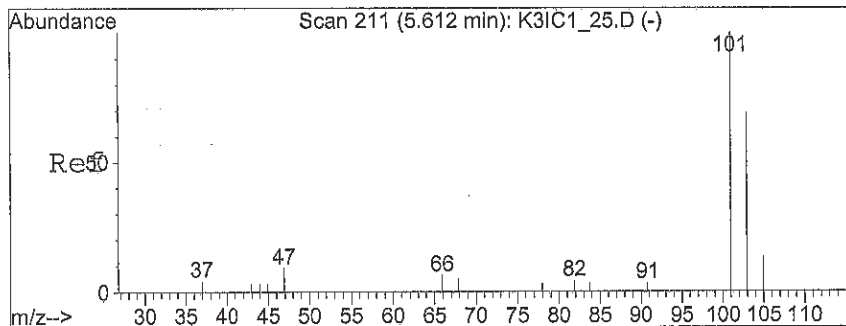
Tgt Ion: 62 Resp: 313
 Ion Ratio Lower Upper
 62 100
 64 207.0 25.6 38.4#



#7
 Chloroethane
 Concen: 2.27 ug/L
 RT: 5.20 min Scan# 162
 Delta R.T. -0.04 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 64 Resp: 1791
 Ion Ratio Lower Upper
 64 100
 66 46.3 35.4 53.0





#8

(F11) Trichlorofluoromethane

Concen: 0.07 ug/L

RT: 5.66 min Scan# 216

Delta R.T. 0.04 min

Lab File: F0200002.D

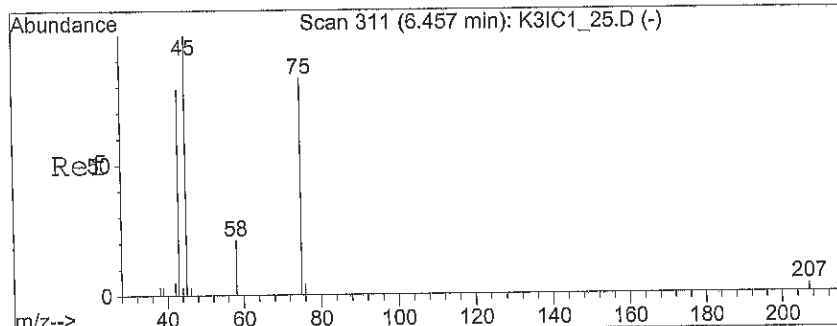
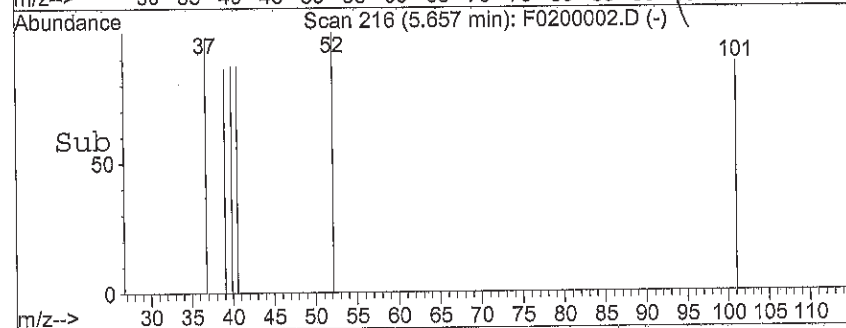
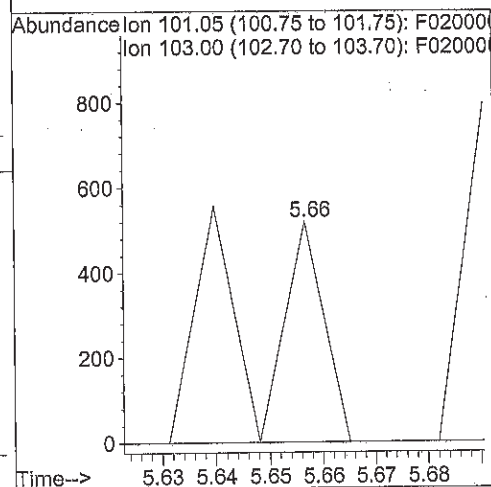
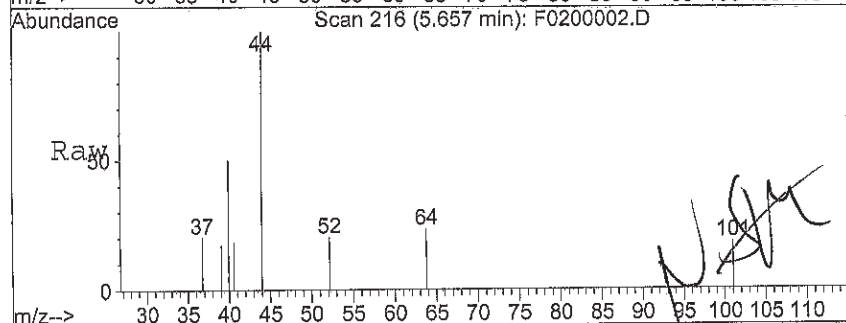
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 101 Resp: 263

Ion Ratio Lower Upper

101 100

103 107.2 54.5 81.7#



#11

Acetone

Concen: 7.27 ug/L

RT: 6.48 min Scan# 313

Delta R.T. 0.02 min

Lab File: F0200002.D

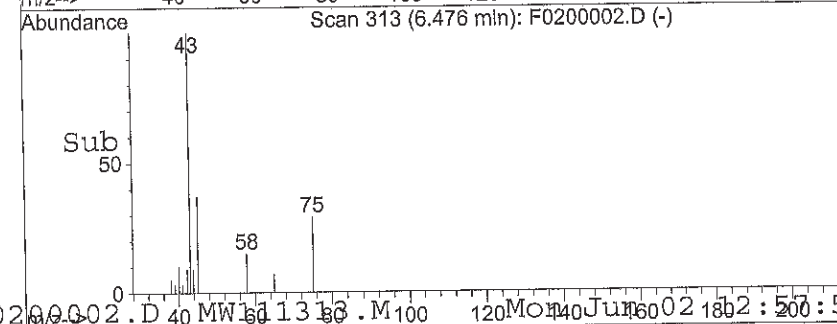
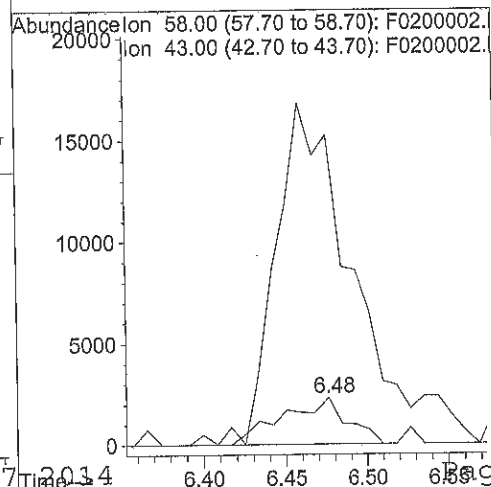
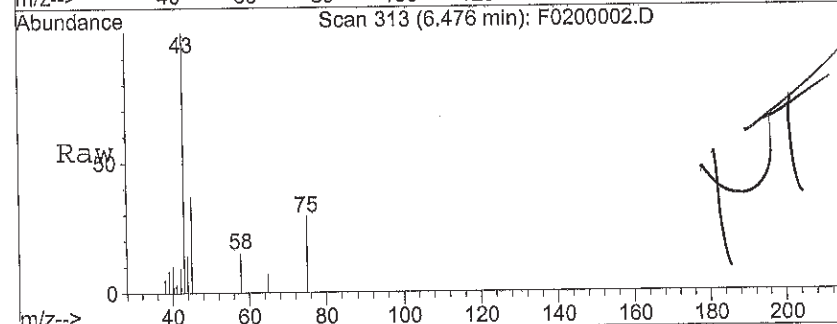
Acq: 2 Jun 2014 12:16 pm

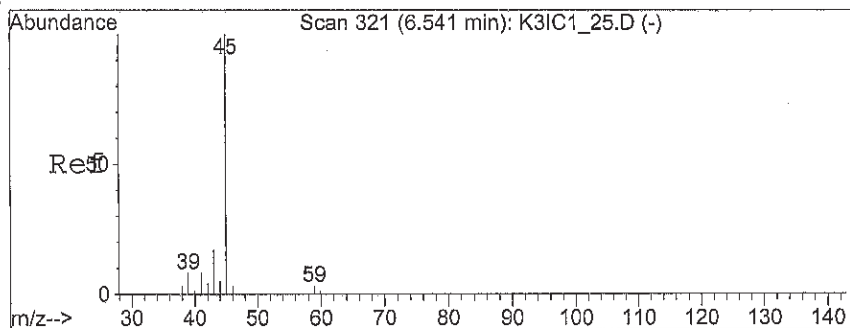
Tgt Ion: 58 Resp: 6358

Ion Ratio Lower Upper

58 100

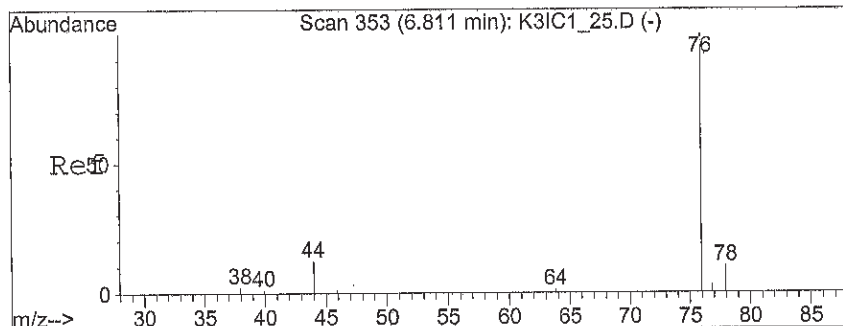
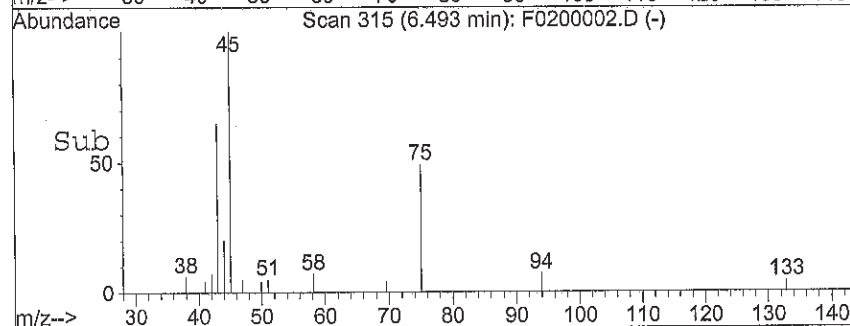
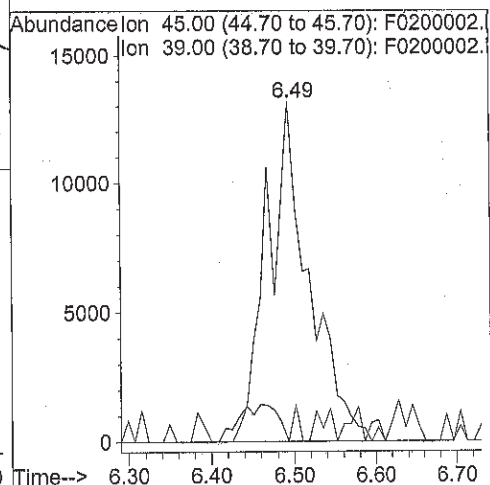
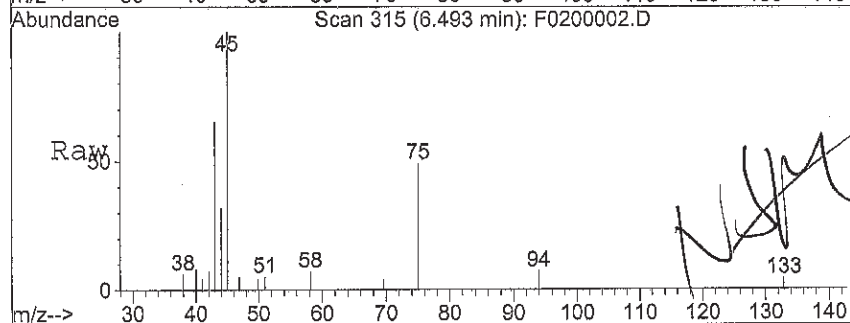
43 881.8 360.9 541.3#





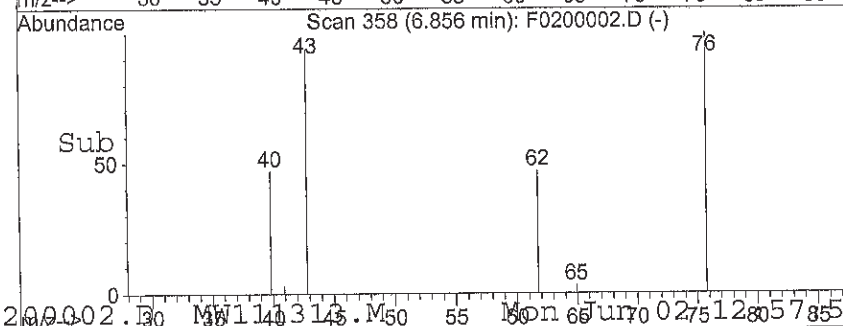
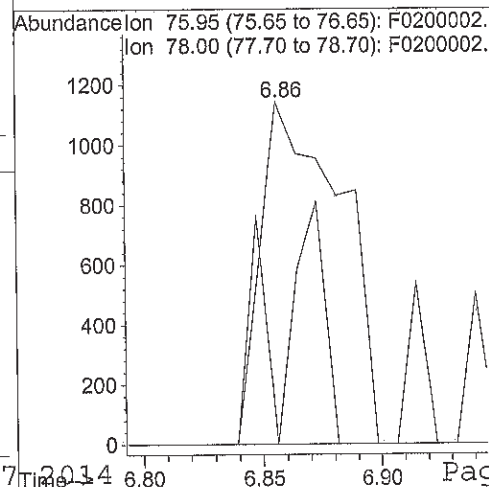
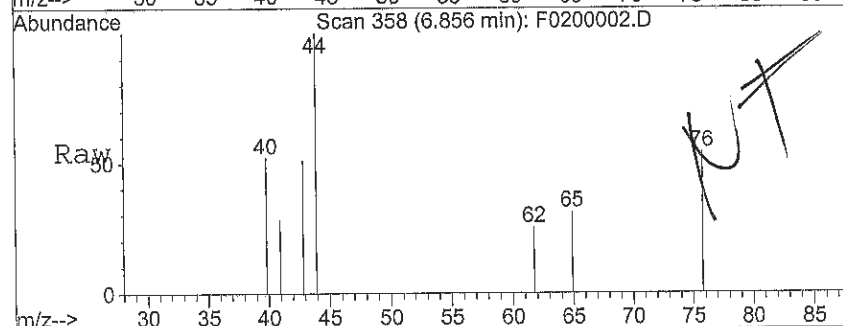
#12
 (IPA) Leak Check Compound
 Concen: 286.00 ug/L
 RT: 6.49 min Scan# 315
 Delta R.T. -0.05 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

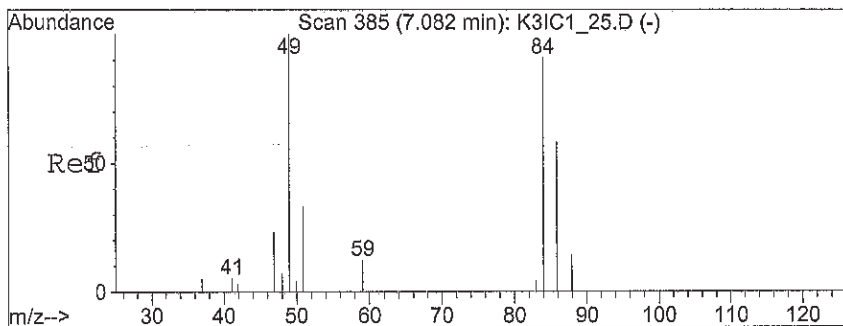
Tgt Ion: 45 Resp: 46799
 Ion Ratio Lower Upper
 45 100
 39 1.5 4.9 7.3#



#13
 Carbon disulfide
 Concen: 0.24 ug/L
 RT: 6.86 min Scan# 358
 Delta R.T. 0.04 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

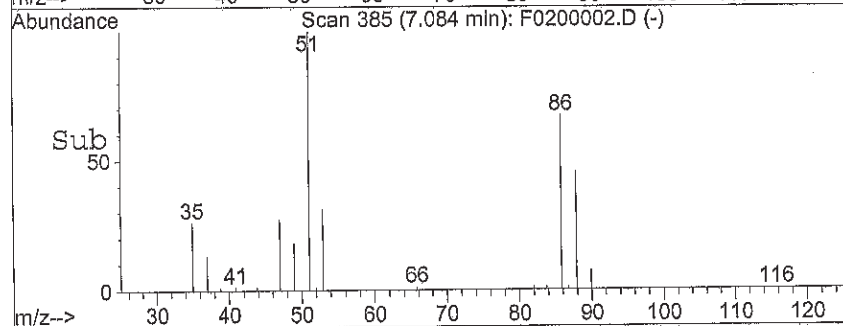
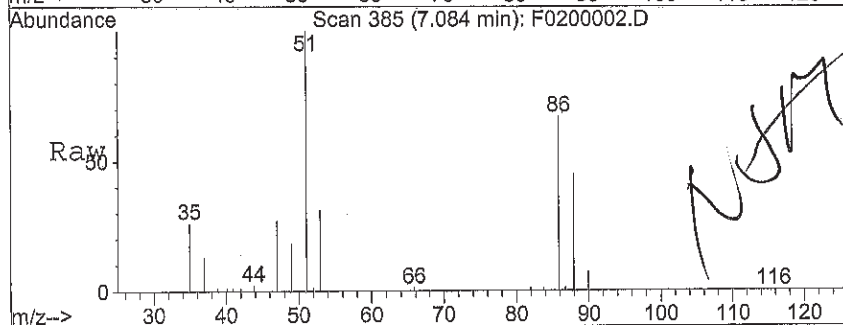
Tgt Ion: 76 Resp: 2687
 Ion Ratio Lower Upper
 76 100
 78 14.4 7.0 10.4#





#14
Methylene Chloride
Concen: 1.20 ug/L
RT: 7.08 min Scan# 385
Delta R.T. 0.00 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 84 Resp: 4498
Ion Ratio Lower Upper
84 100
49 2077.6 89.8 134.6#
86 7515.3 51.1 76.7#
51 11735.8 28.5 42.7#



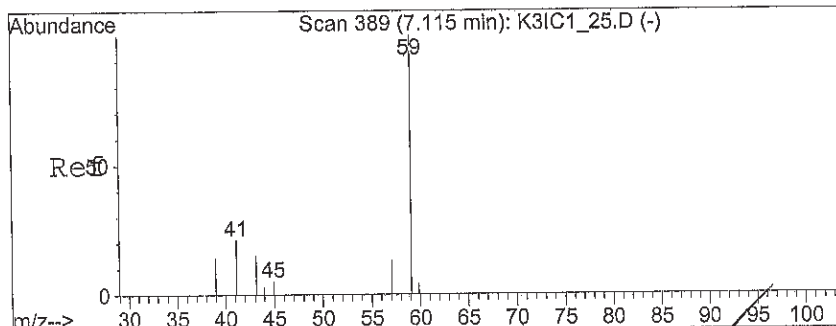
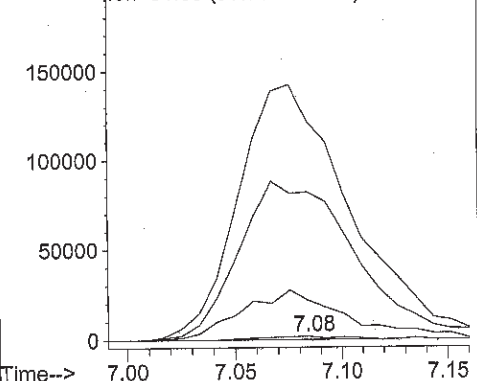
Abundance

Ion 83.95 (83.65 to 84.65): F0200002.D

Ion 48.95 (48.65 to 49.65): F0200002.D

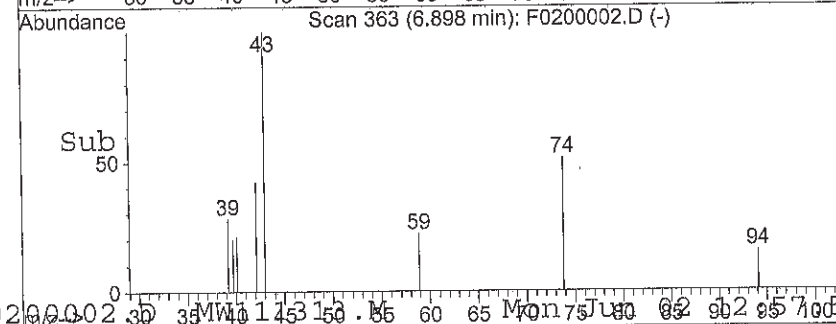
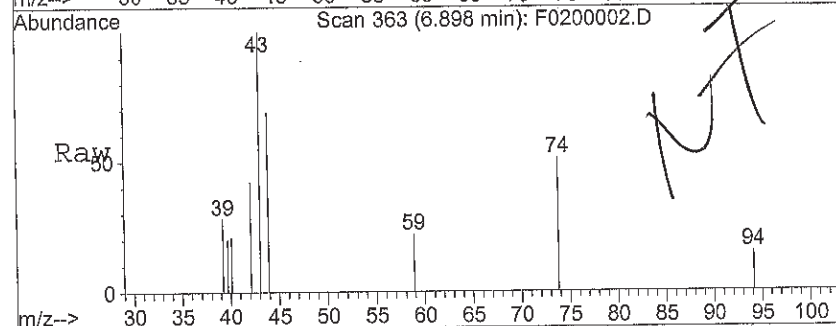
Ion 85.95 (85.65 to 86.65): F0200002.D

Ion 51.05 (50.75 to 51.75): F0200002.D



#15
(TBA) tert-Butanol
Concen: 5.85 ug/L
RT: 6.90 min Scan# 363
Delta R.T. -0.22 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

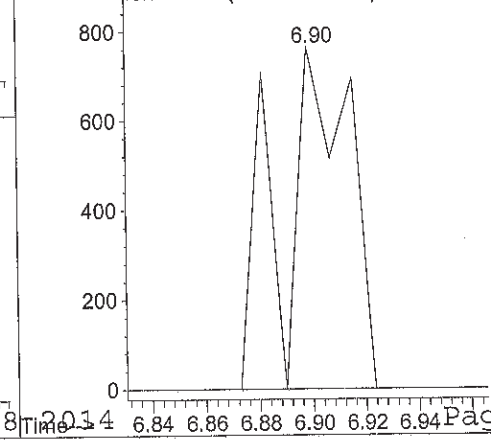
Tgt Ion: 59 Resp: 1358
Ion Ratio Lower Upper
59 100
57 0.0 6.4 9.6#

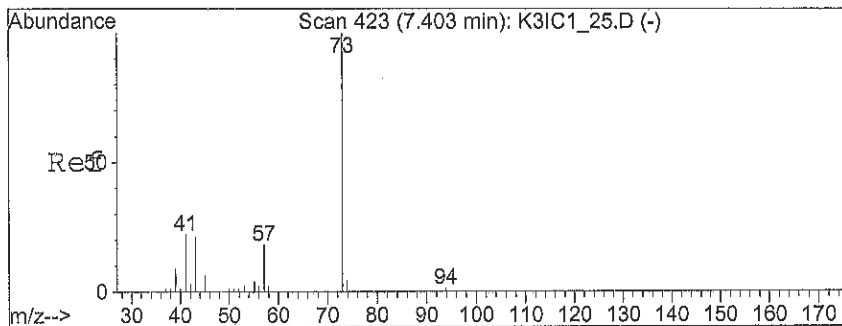


Abundance

Ion 59.00 (58.70 to 59.70): F0200002.D

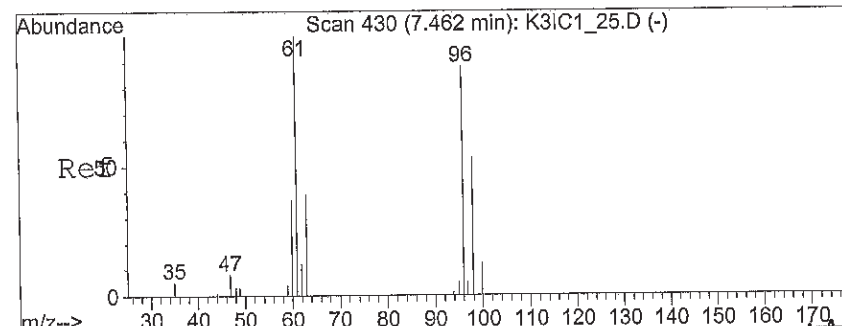
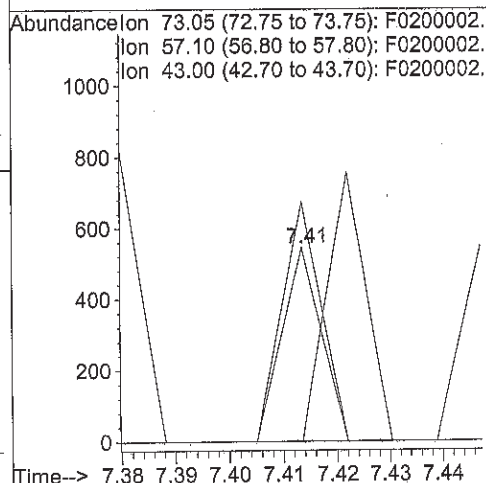
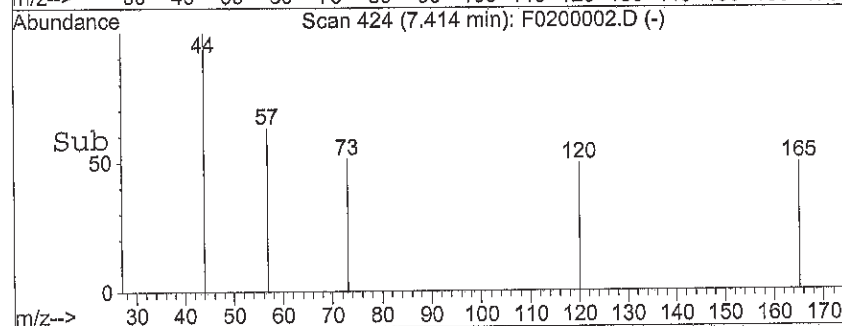
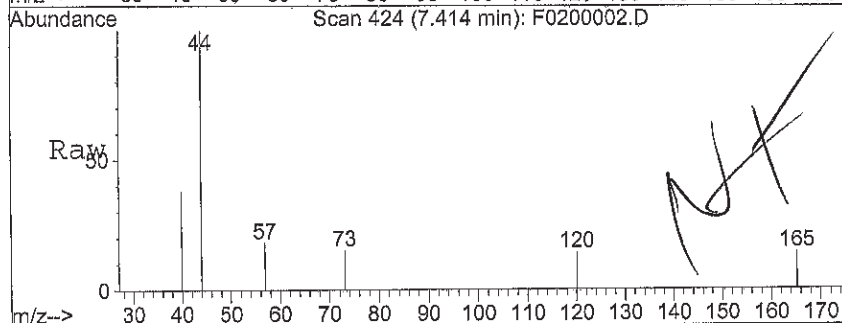
Ion 57.00 (56.70 to 57.70): F0200002.D





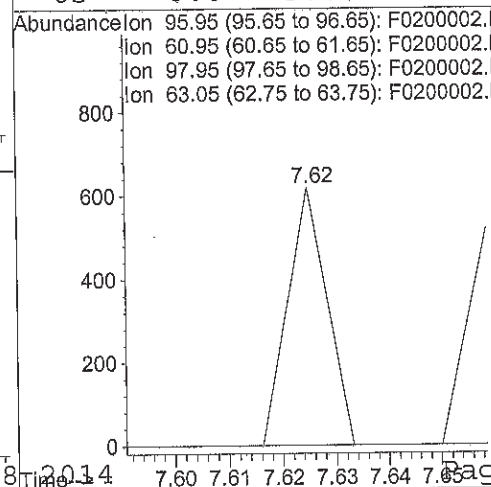
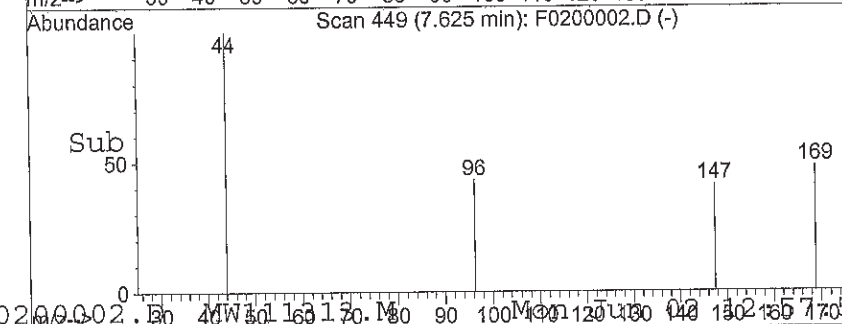
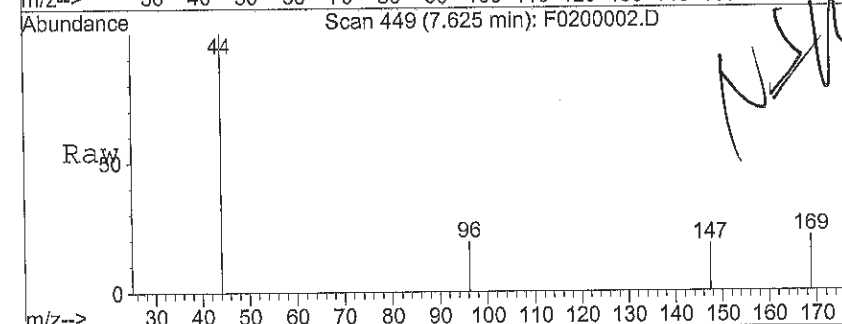
#16
 (MTBE) Methyl-t-butyl ether
 Concen: 0.04 ug/L
 RT: 7.41 min Scan# 424
 Delta R.T. 0.01 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

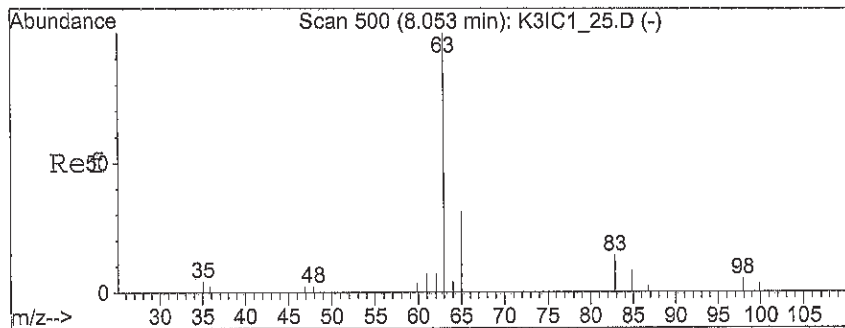
Tgt Ion: 73 Resp: 275
 Ion Ratio Lower Upper
 73 100
 57 124.4 15.8 23.8#
 43 139.6 18.4 27.6#



#17
 trans-1,2-Dichloroethene
 Concen: 0.09 ug/L
 RT: 7.62 min Scan# 449
 Delta R.T. 0.16 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

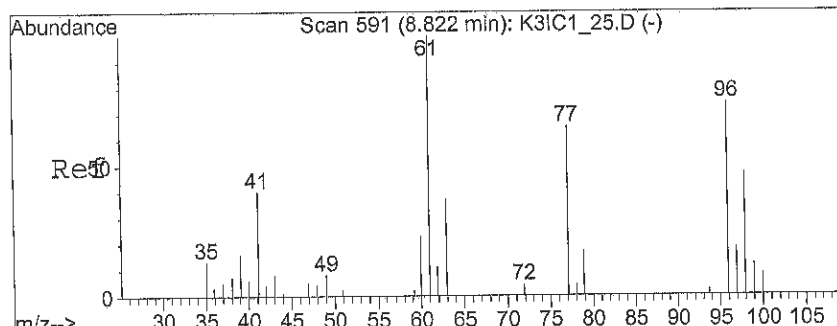
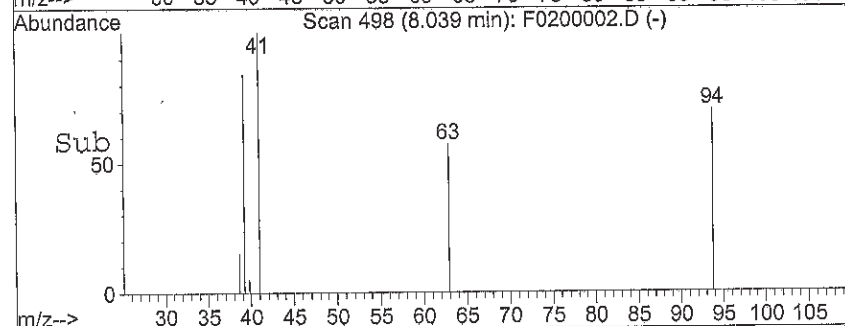
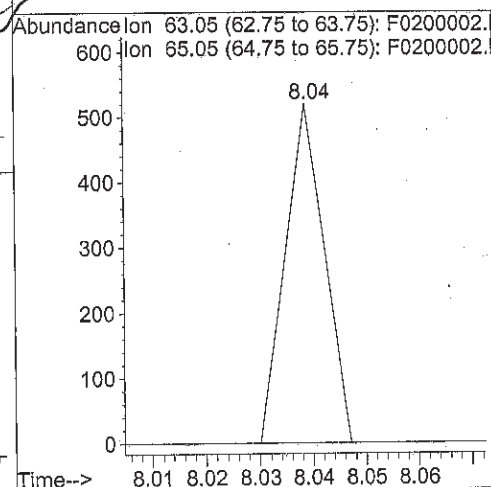
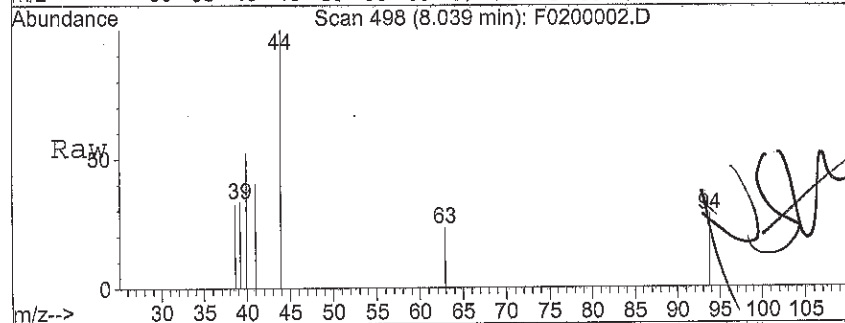
Tgt Ion: 96 Resp: 313
 Ion Ratio Lower Upper
 96 100
 61 0.0 104.2 156.2#
 98 0.0 50.2 75.4#
 63 0.0 37.5 56.3#





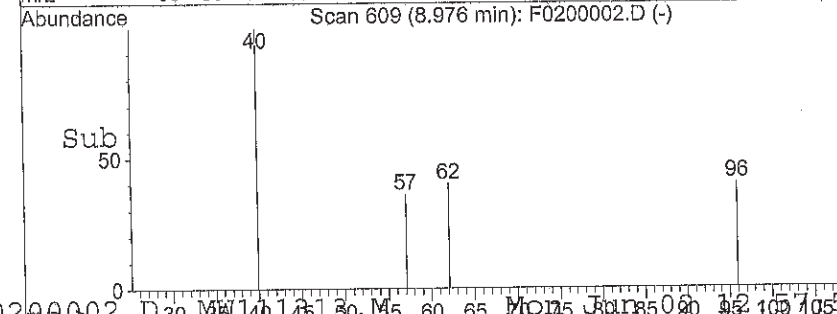
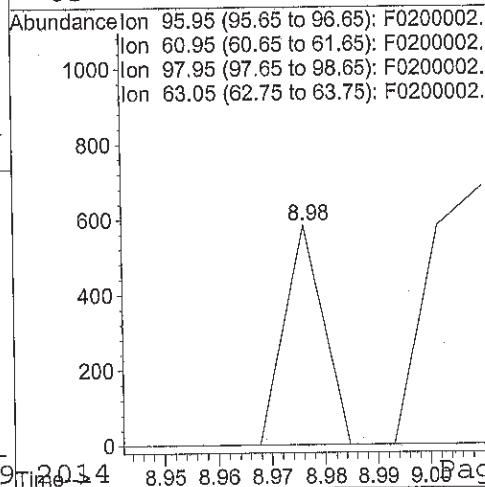
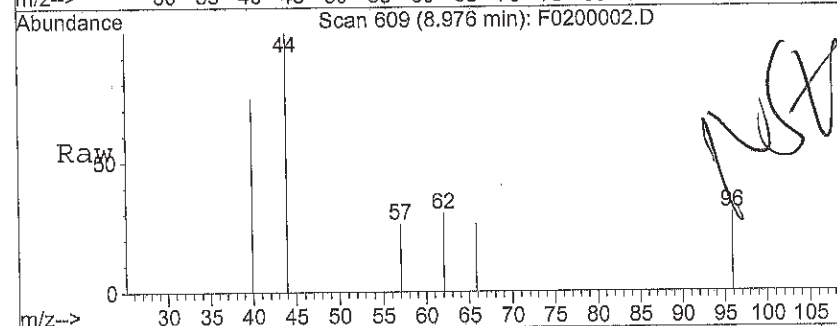
#18
 1,1-Dichloroethane
 Concen: 0.04 ug/L
 RT: 8.04 min Scan# 498
 Delta R.T. -0.01 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

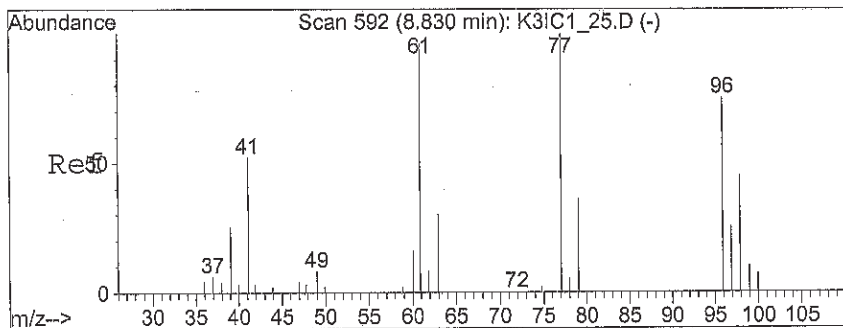
Tgt Ion: 63 Resp: 264
 Ion Ratio Lower Upper
 63 100
 65 0.0 25.8 38.8#



#19
 cis-1,2-Dichloroethene
 Concen: 0.07 ug/L
 RT: 8.98 min Scan# 609
 Delta R.T. 0.15 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

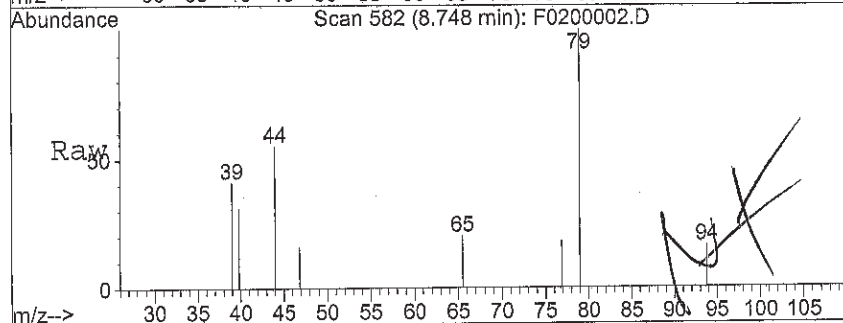
Tgt Ion: 96 Resp: 296
 Ion Ratio Lower Upper
 96 100
 61 0.0 110.3 165.5#
 98 0.0 49.8 74.6#
 63 0.0 36.7 55.1#



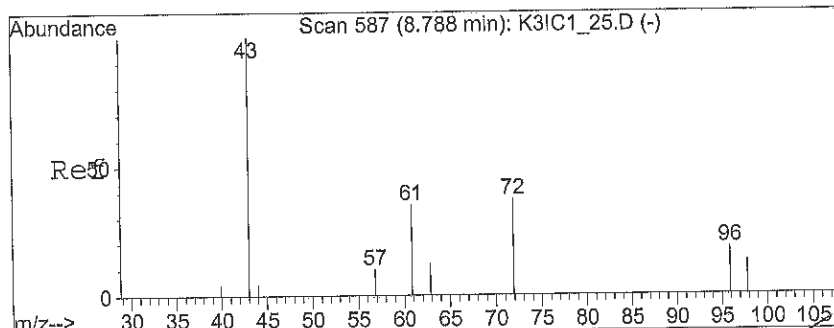
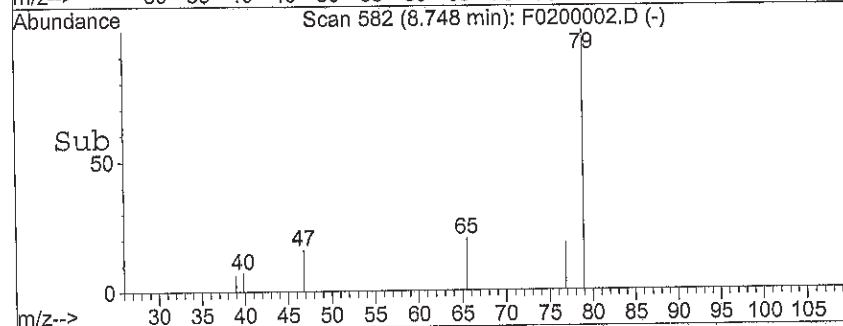
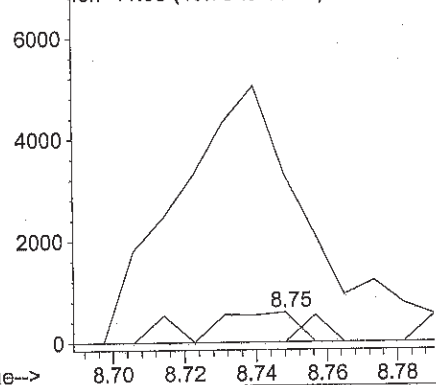


#20
 2,2-Dichloropropane
 Concen: 0.16 ug/L
 RT: 8.75 min Scan# 582
 Delta R.T. -0.08 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 77 Resp: 851
 Ion Ratio Lower Upper
 77 100
 79 1538.0 26.6 40.0#
 97 0.0 18.9 28.3#
 41 31.8 42.6 64.0#

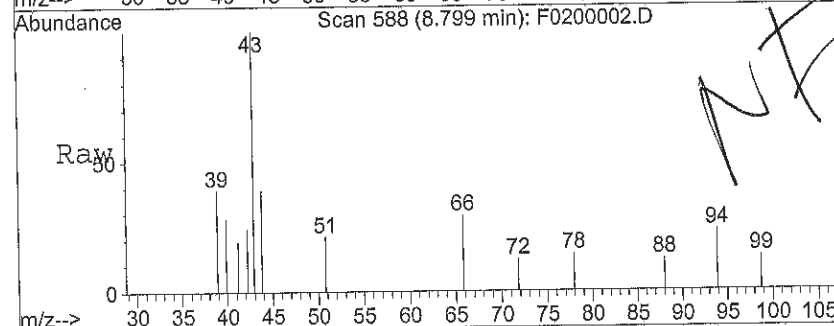


Abundance Ion 77.05 (76.75 to 77.75): F0200002.
 Ion 79.00 (78.70 to 79.70): F0200002.
 Ion 96.95 (96.65 to 97.65): F0200002.
 Ion 41.05 (40.75 to 41.75): F0200002.

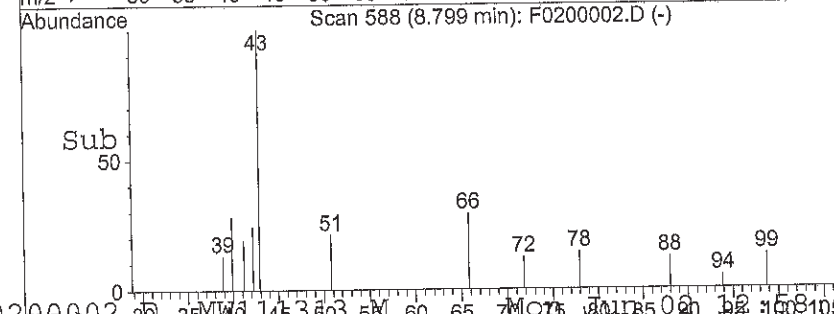
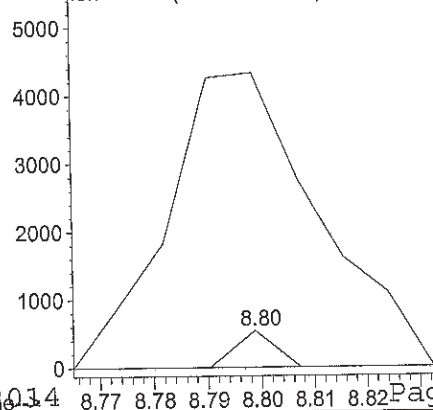


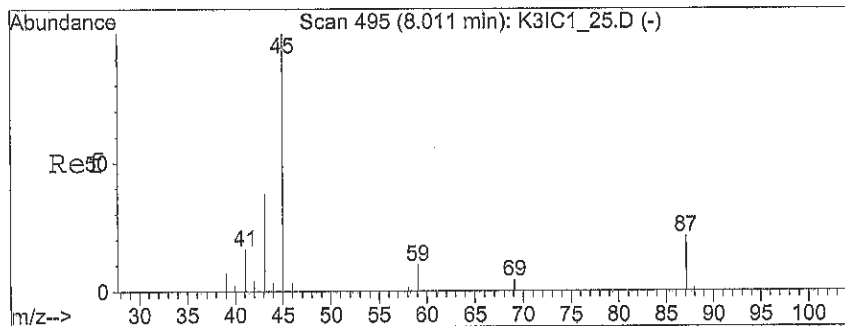
#21
 (MEK) 2-Butanone
 Concen: 0.71 ug/L
 RT: 8.80 min Scan# 588
 Delta R.T. 0.01 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 72 Resp: 272
 Ion Ratio Lower Upper
 72 100
 57 0.0 17.5 26.3#
 43 3122.4 314.2 471.2#



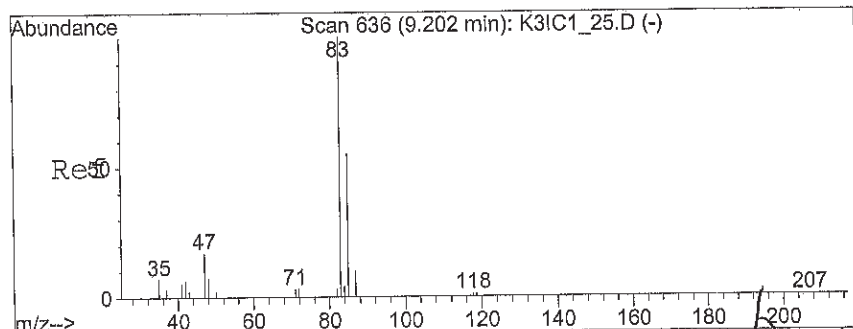
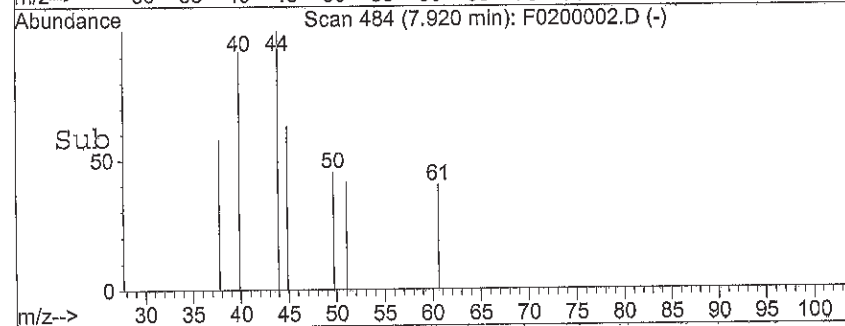
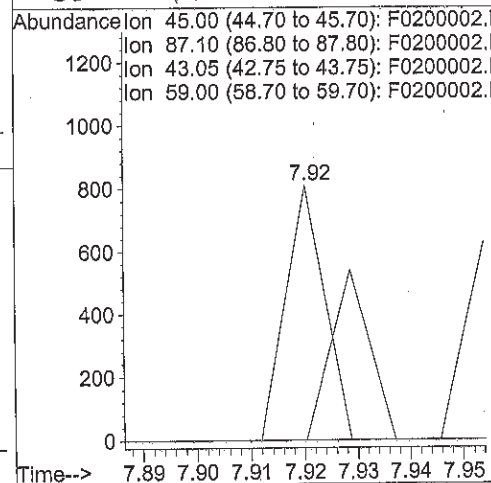
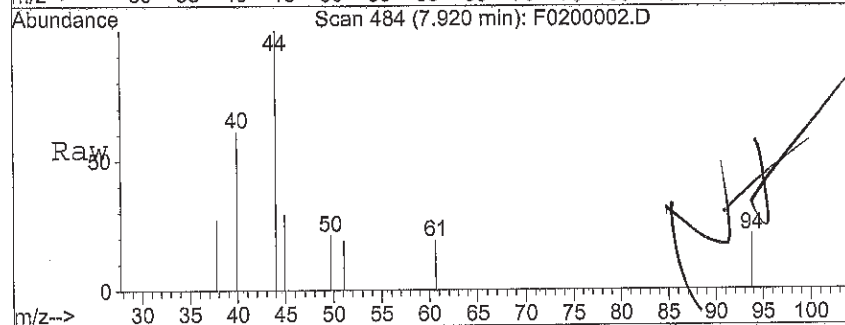
Abundance Ion 72.00 (71.70 to 72.70): F0200002.
 Ion 57.10 (56.80 to 57.80): F0200002.
 Ion 43.00 (42.70 to 43.70): F0200002.





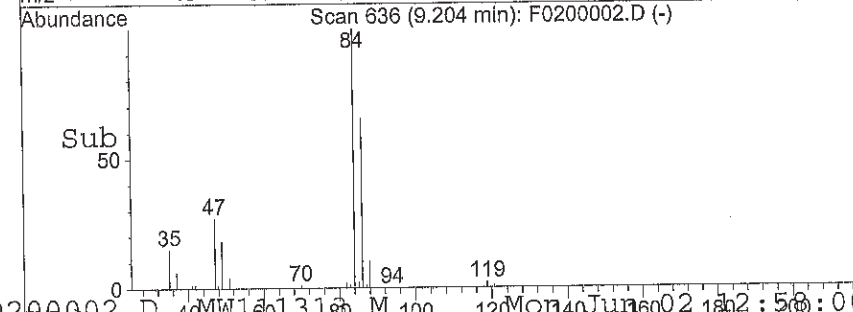
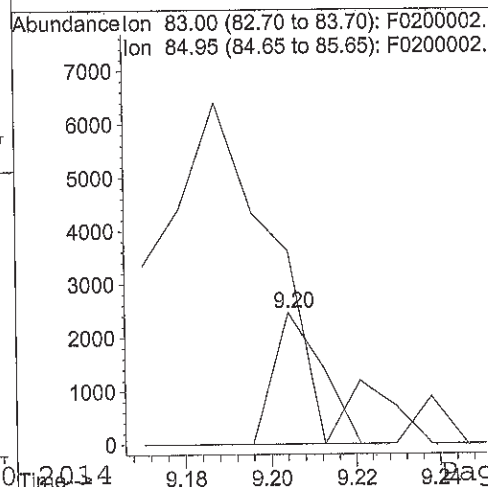
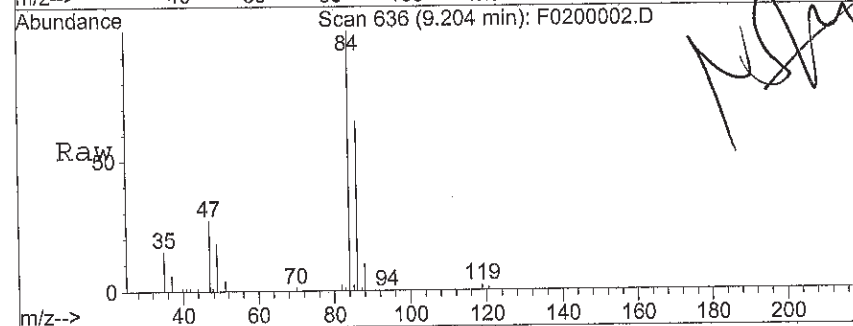
#22
 (DIPE) Diisopropyl Ether
 Concen: 0.04 ug/L
 RT: 7.92 min Scan# 484
 Delta R.T. -0.09 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

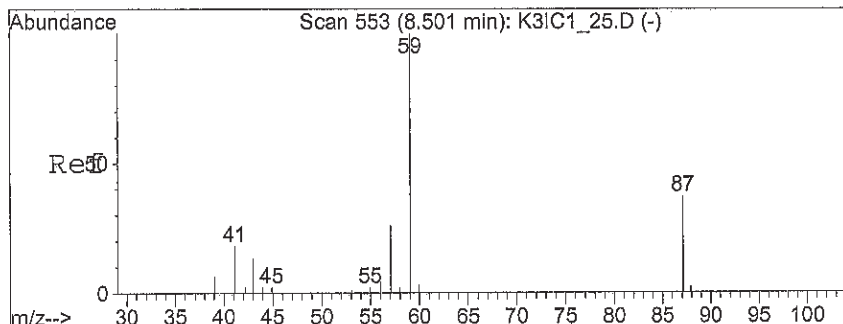
Tgt Ion:	45	Resp:	410
Ion	Ratio	Lower	Upper
45	100		
87	0.0	17.0	25.6#
43	66.6	30.5	45.7#
59	0.0	7.4	11.2#



#24
 Chloroform
 Concen: 0.27 ug/L
 RT: 9.20 min Scan# 636
 Delta R.T. 0.00 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

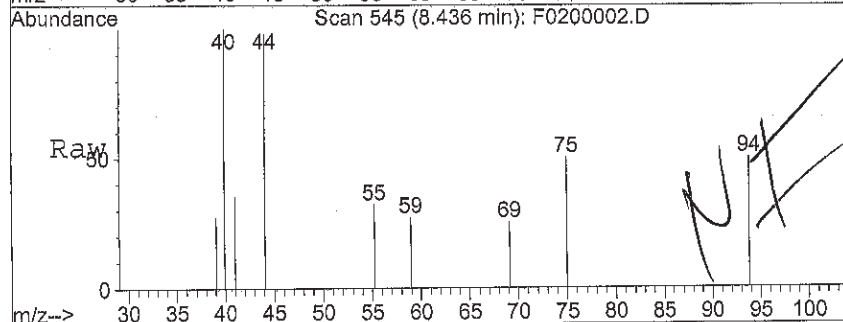
Tgt Ion:	83	Resp:	1955
Ion	Ratio	Lower	Upper
83	100		
85	621.9	51.8	77.6#





#25
 (ETBE) 2-ethoxy 2-methyl propan
 Concen: 0.03 ug/L
 RT: 8.44 min Scan# 545
 Delta R.T. -0.07 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

Tgt Ion:	59	Resp:	286
Ion Ratio	Lower	Upper	
59	100		
87	0.0	27.8	41.8#
57	114.3	19.8	29.6#
77	0.0	0.0	0.0



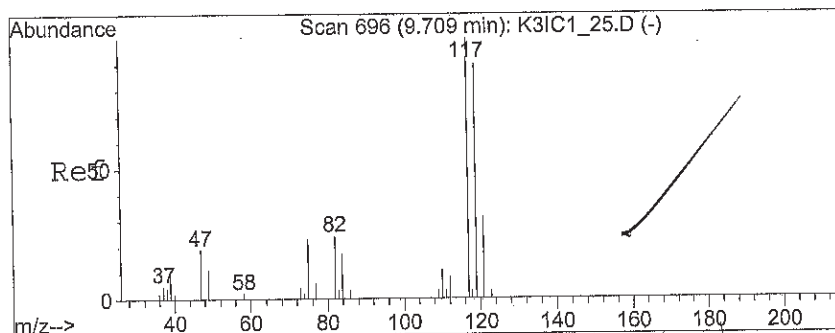
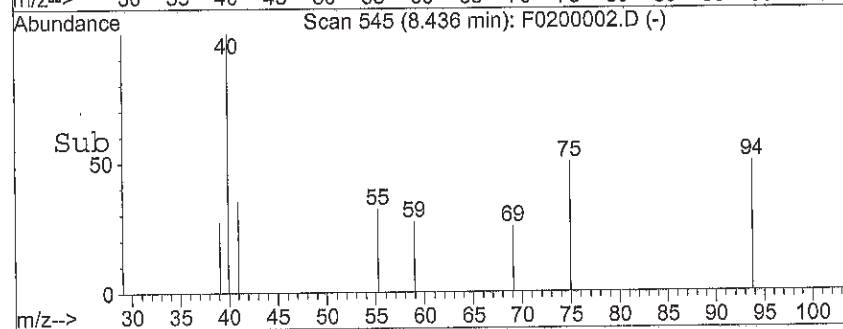
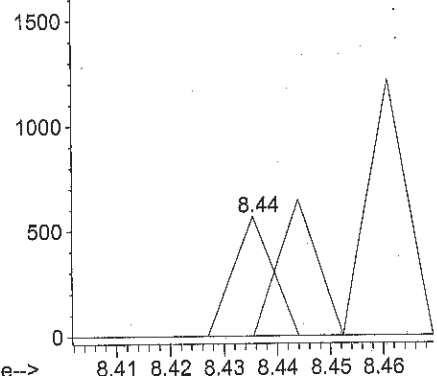
Abundance

Ion 59.00 (58.70 to 59.70): F0200002.D

Ion 87.10 (86.80 to 87.80): F0200002.D

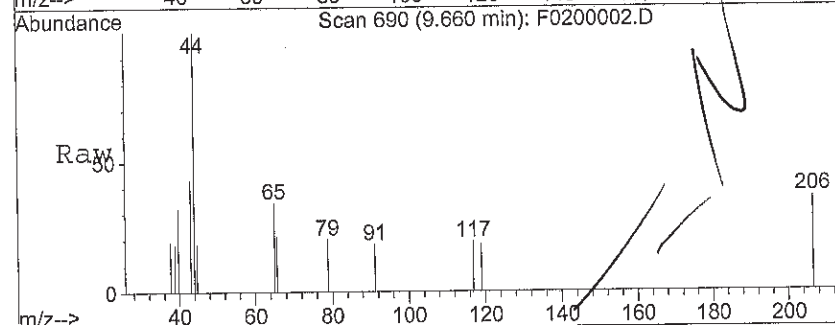
Ion 57.00 (56.70 to 57.70): F0200002.D

Ion 76.95 (76.65 to 77.65): F0200002.D



#30
 Carbon Tetrachloride
 Concen: 0.06 ug/L
 RT: 9.66 min Scan# 690
 Delta R.T. -0.05 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

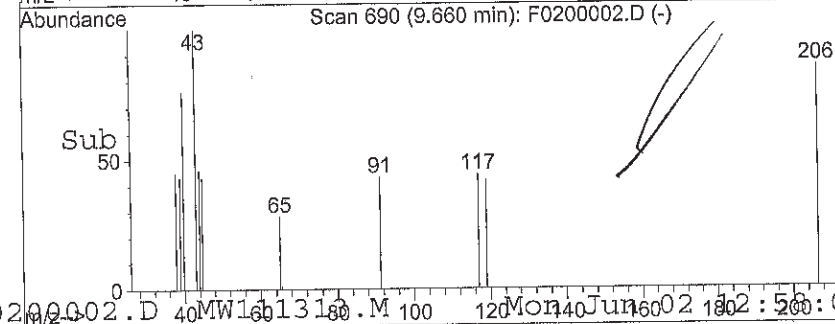
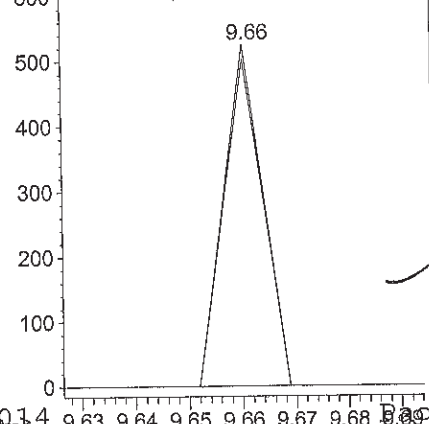
Tgt Ion:	117	Resp:	266
Ion Ratio	Lower	Upper	
117	100		
119	95.9	75.8	113.8

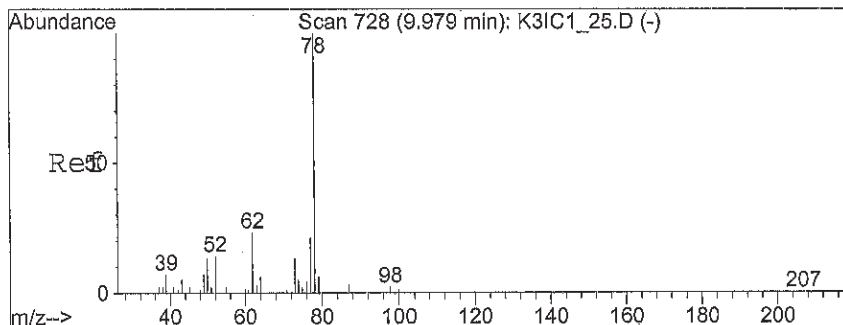


Abundance

Ion 117.00 (116.70 to 117.70): F0200002.D

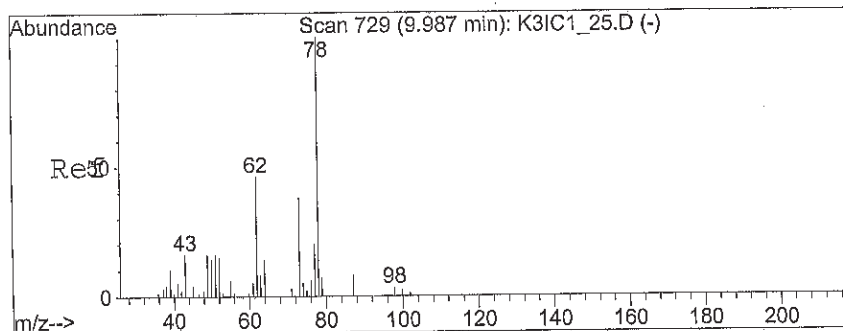
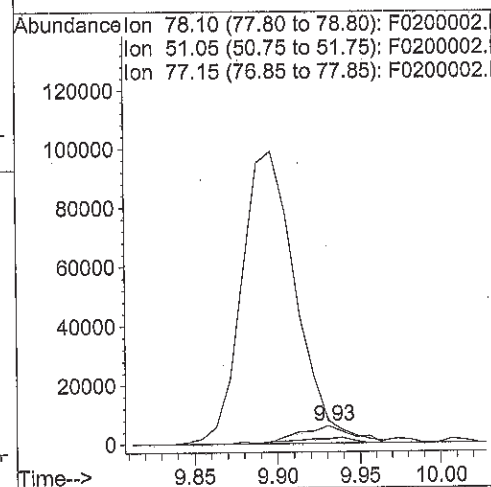
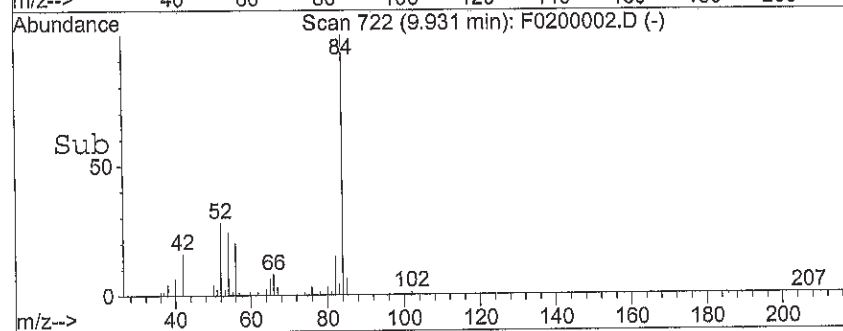
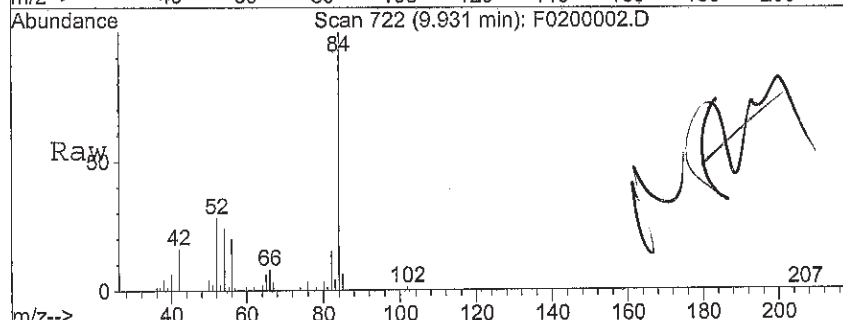
Ion 118.95 (118.65 to 119.65): F0200002.D





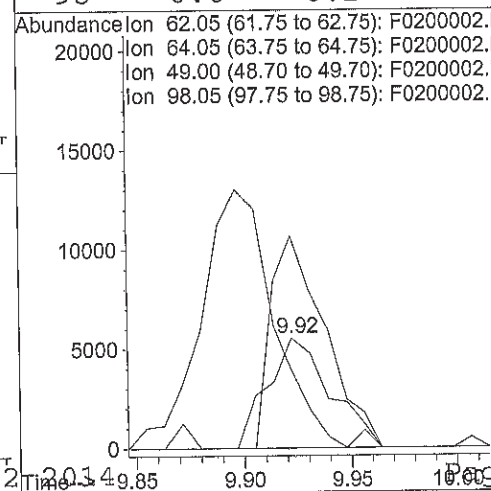
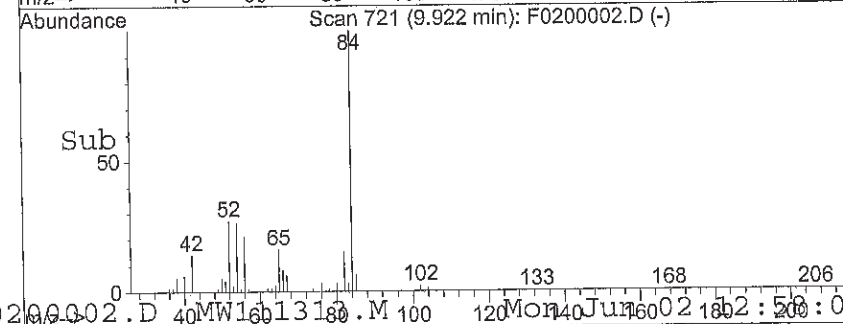
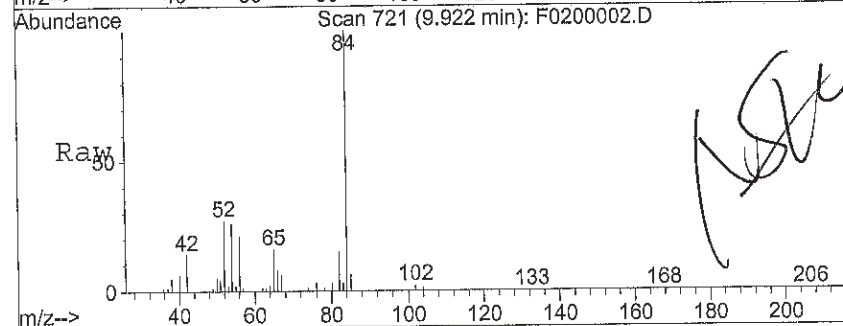
#31
Benzene
Concen: 1.02 ug/L
RT: 9.93 min Scan# 722
Delta R.T. -0.05 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

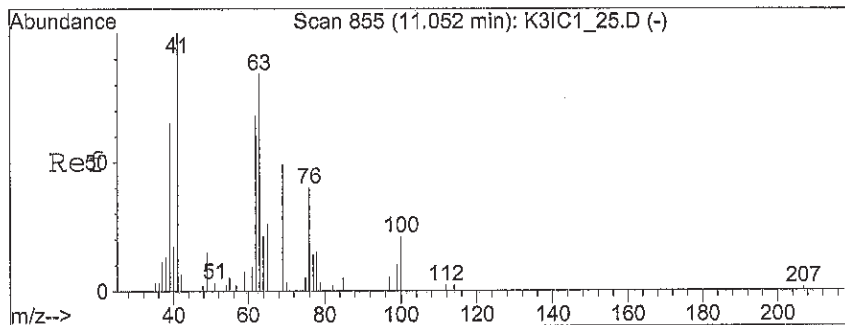
Tgt Ion: 78 Resp: 13109
Ion Ratio Lower Upper
78 100
51 0.0 14.2 21.2#
77 30.7 16.6 24.8#



#32
1,2-Dichloroethane
Concen: 2.48 ug/L
RT: 9.92 min Scan# 721
Delta R.T. -0.07 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

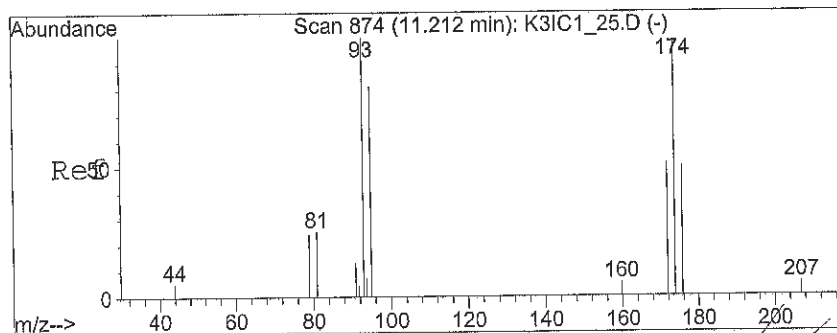
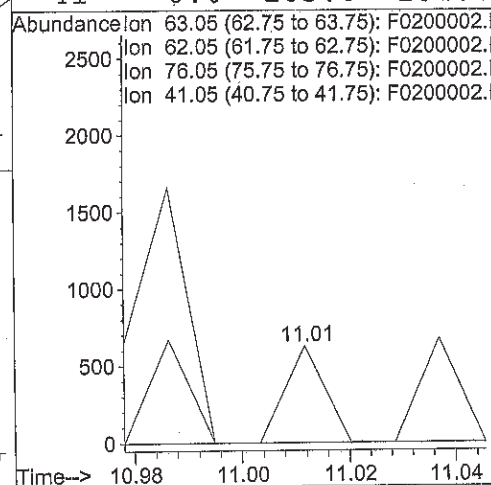
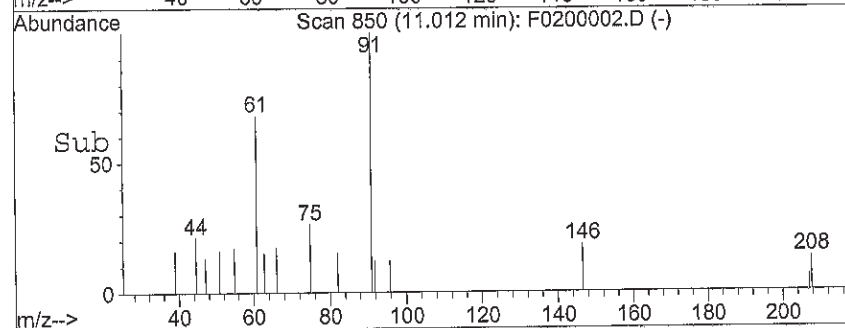
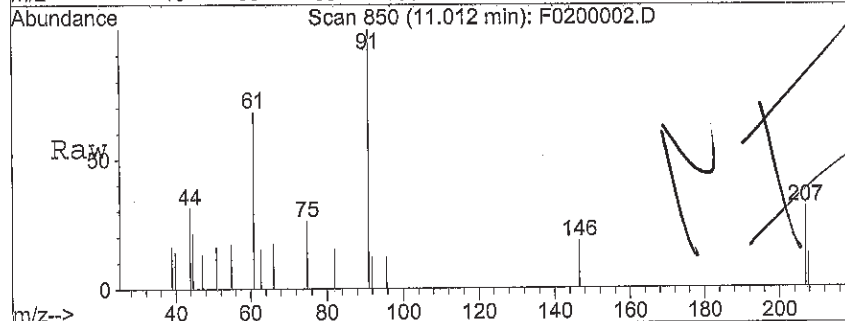
Tgt Ion: 62 Resp: 11263
Ion Ratio Lower Upper
62 100
64 166.7 28.0 42.0#
49 0.0 28.5 42.7#
98 0.0 6.2 9.4#





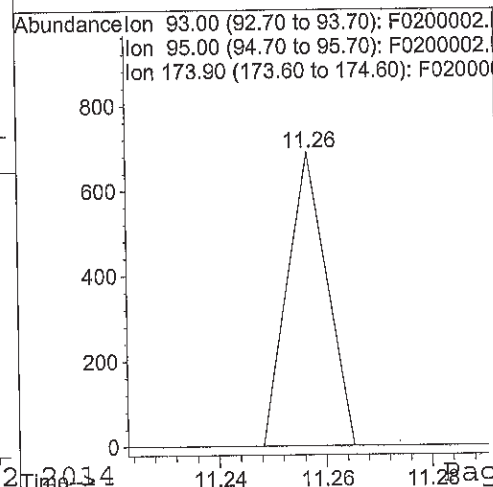
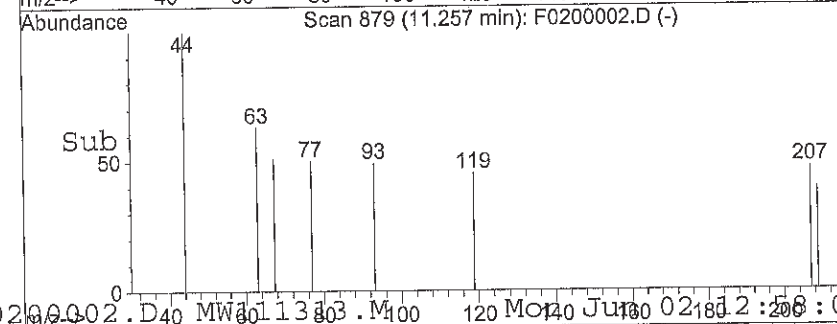
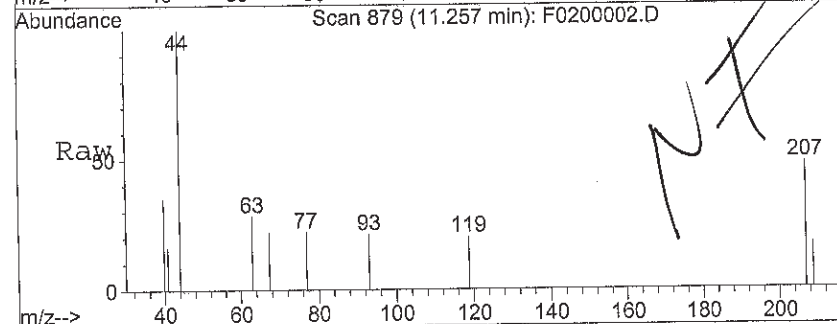
#34
1,2-Dichloropropane
Concen: 0.10 ug/L
RT: 11.01 min Scan# 850
Delta R.T. -0.04 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

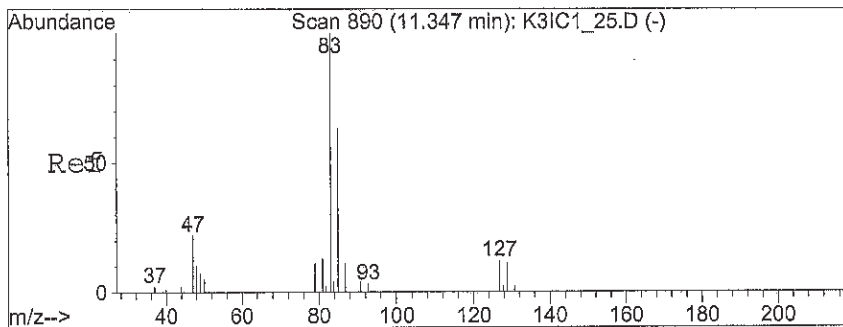
Tgt Ion: 63 Resp: 316
Ion Ratio Lower Upper
63 100
62 0.0 67.4 101.2#
76 0.0 40.3 60.5#
41 0.0 103.0 154.6#



#35
Dibromomethane
Concen: 0.15 ug/L
RT: 11.26 min Scan# 879
Delta R.T. 0.04 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

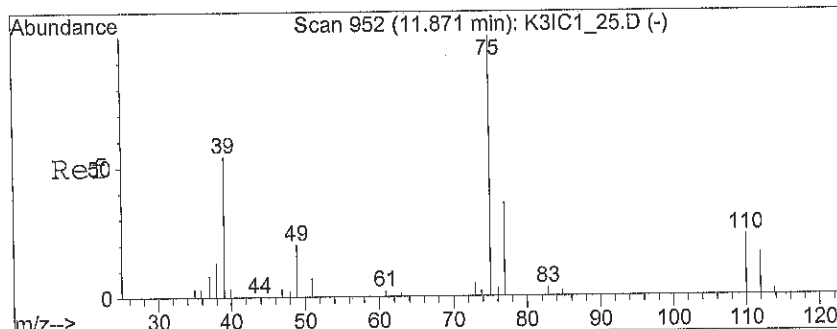
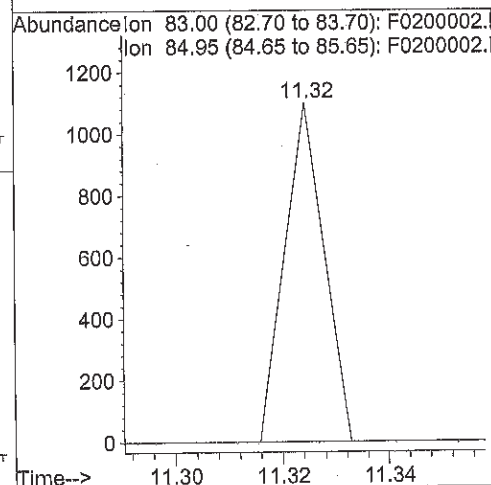
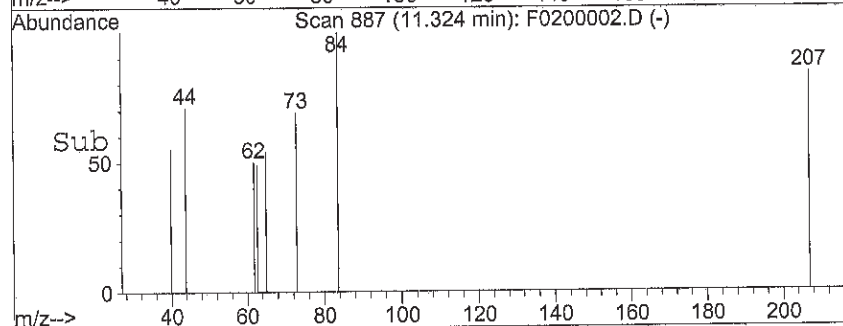
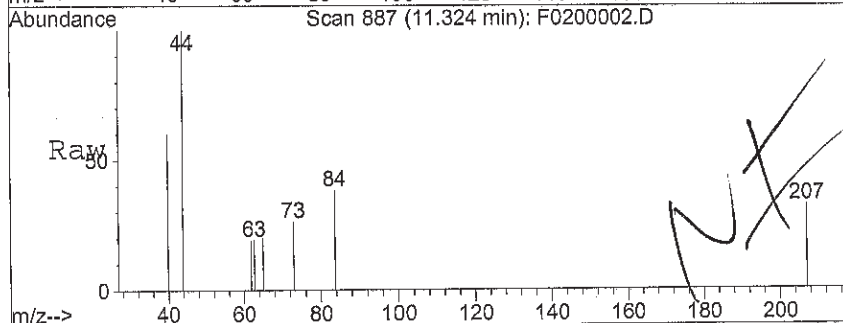
Tgt Ion: 93 Resp: 349
Ion Ratio Lower Upper
93 100
95 0.0 66.2 99.2#
174 0.0 75.5 113.3#





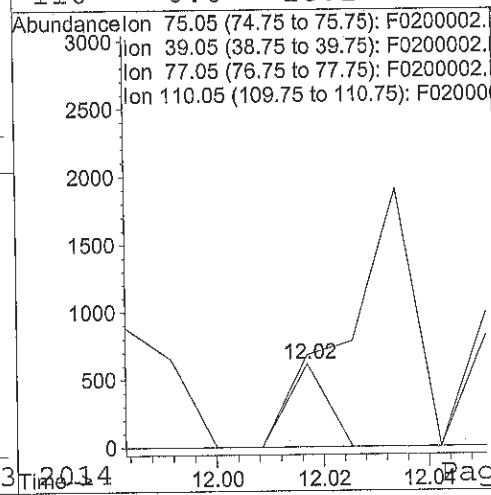
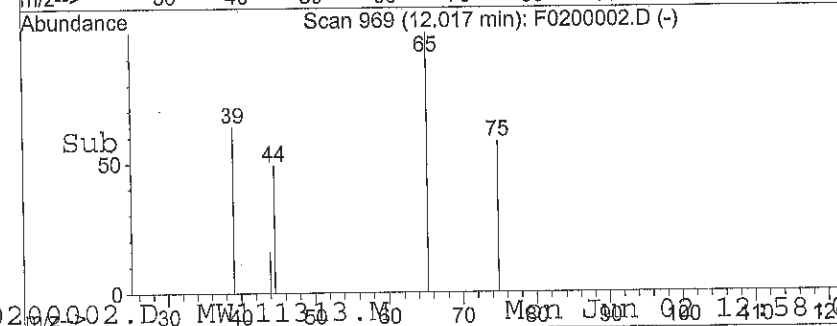
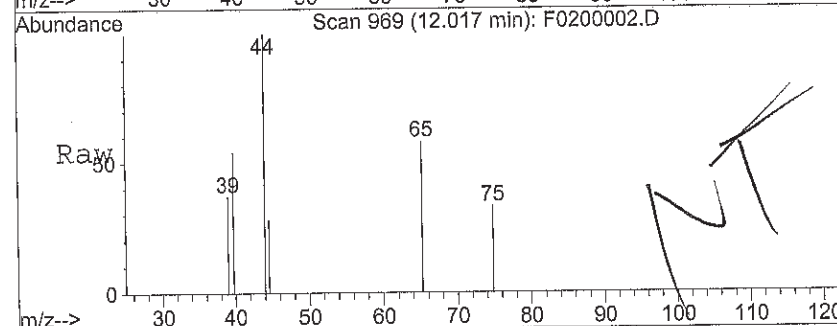
#36
 Bromodichloromethane
 Concen: 0.12 ug/L
 RT: 11.32 min Scan# 887
 Delta R.T. -0.02 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

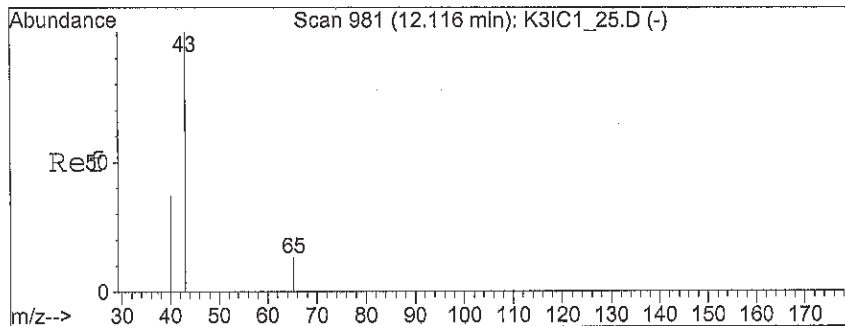
Tgt Ion: 83 Resp: 558
 Ion Ratio Lower Upper
 83 100
 85 0.0 48.2 72.2#



#37
 cis-1,3-Dichloropropene
 Concen: 0.06 ug/L
 RT: 12.02 min Scan# 969
 Delta R.T. 0.15 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

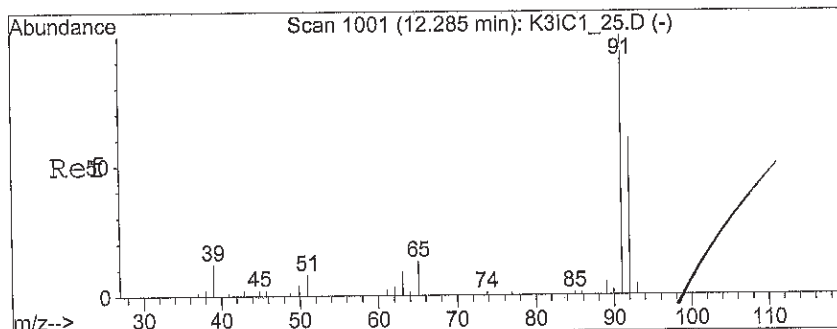
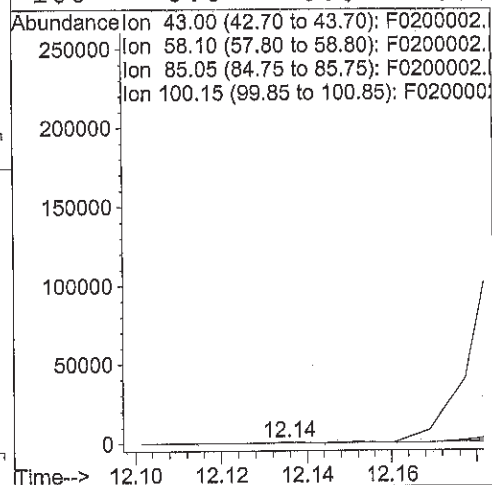
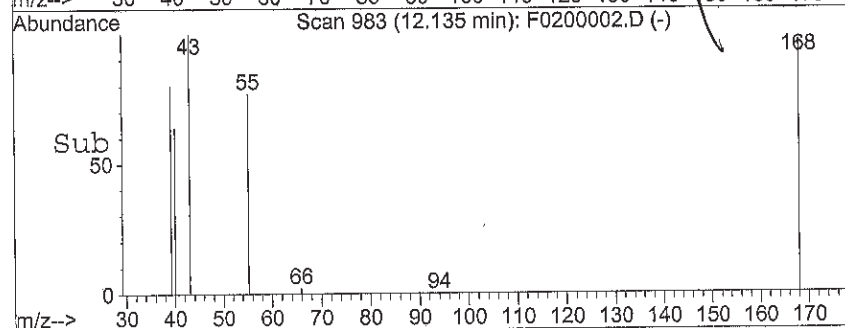
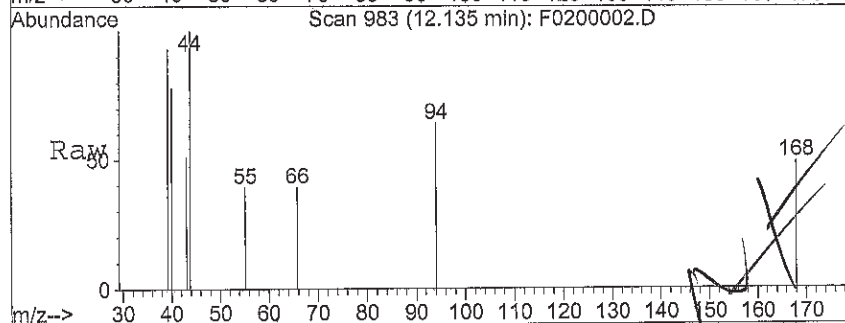
Tgt Ion: 75 Resp: 309
 Ion Ratio Lower Upper
 75 100
 39 0.0 40.7 61.1#
 77 0.0 28.8 43.2#
 110 0.0 18.1 27.1#





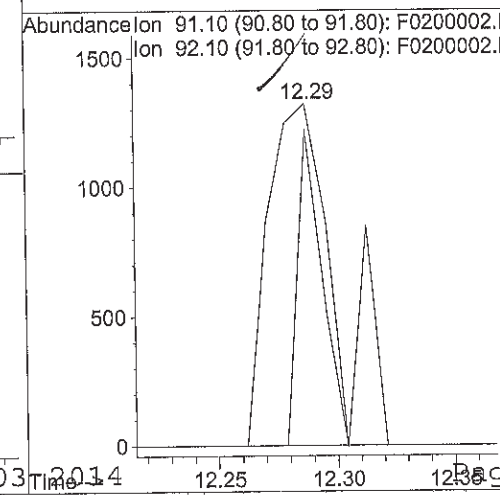
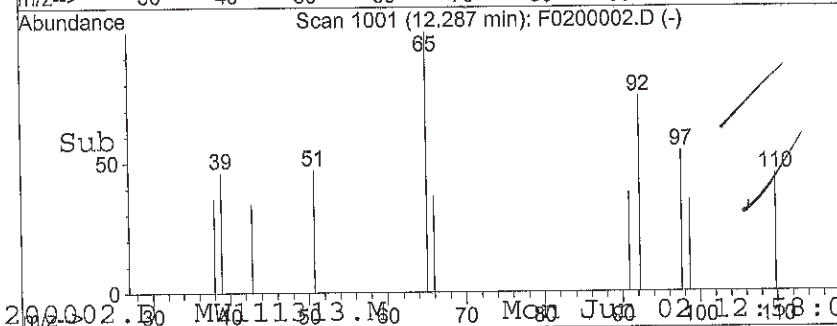
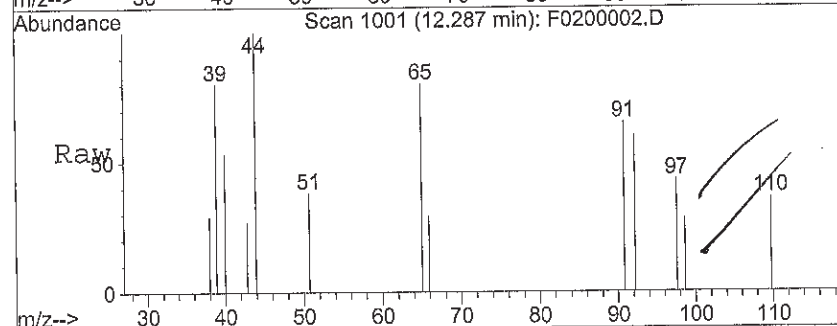
#40
 (MIBK) 4-Methyl-2-Pentanone
 Concen: 0.24 ug/L
 RT: 12.14 min Scan# 983
 Delta R.T. 0.02 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

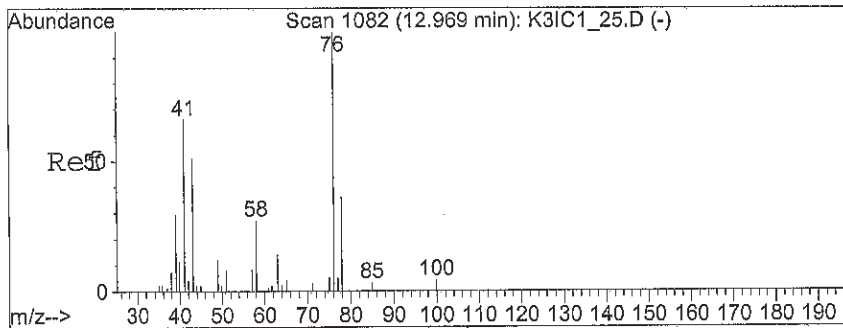
Tgt Ion:	43	Resp:	608
Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	0.0
85	0.0	0.0	0.0
100	0.0	0.0	0.0



#41
 Toluene
 Concen: 0.15 ug/L
 RT: 12.29 min Scan# 1001
 Delta R.T. 0.00 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

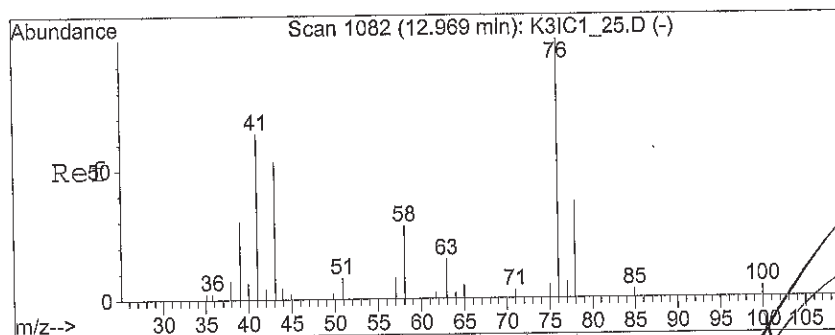
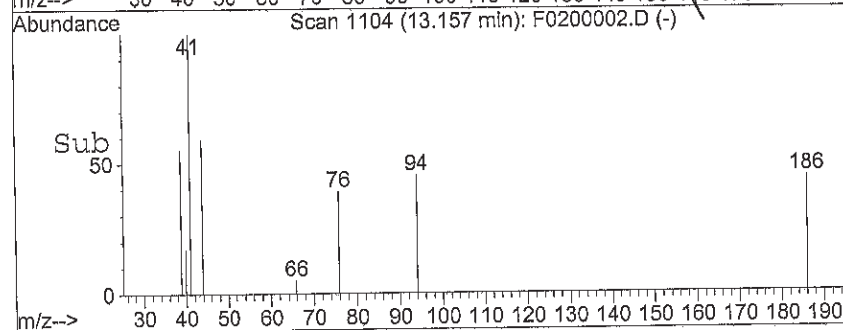
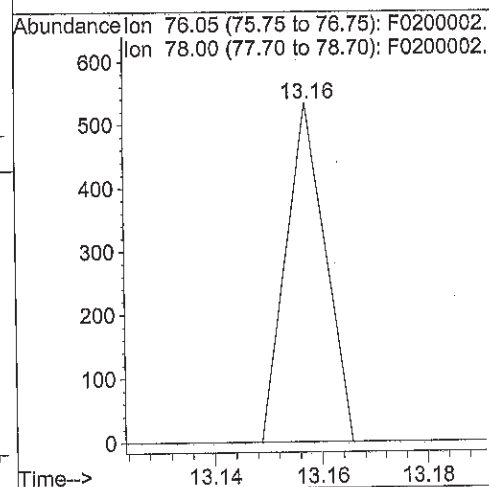
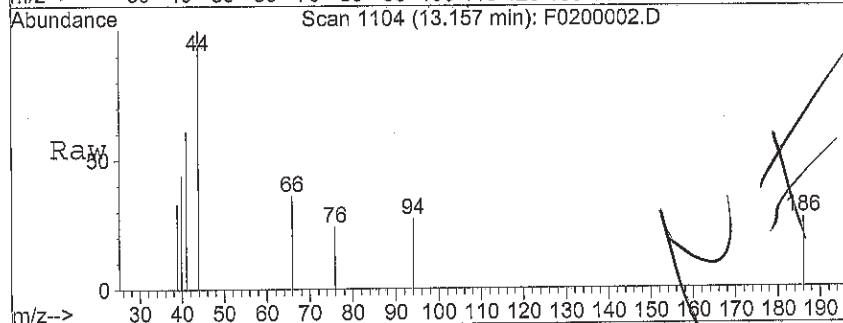
Tgt Ion:	91	Resp:	2610
Ion	Ratio	Lower	Upper
91	100		
92	33.5	47.4	71.0#





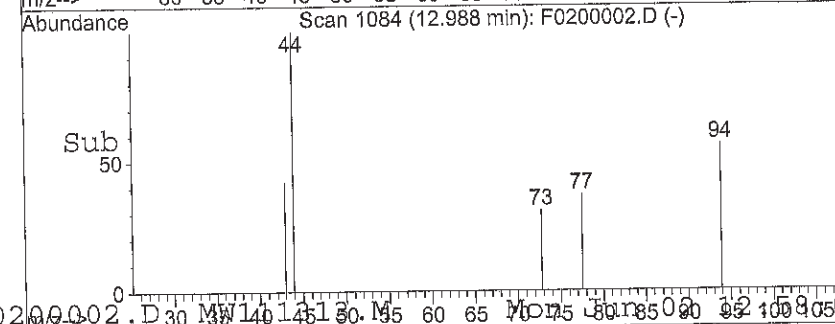
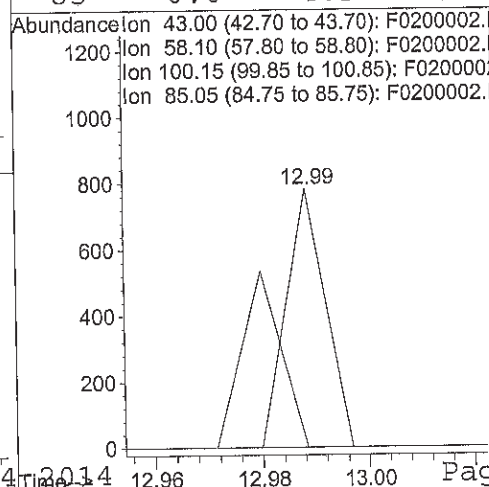
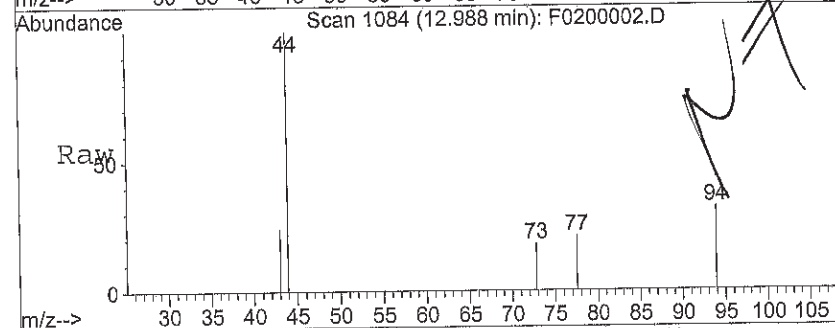
#45
 1,3-Dichloropropane
 Concen: 0.05 ug/L
 RT: 13.16 min Scan# 1104
 Delta R.T. 0.19 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

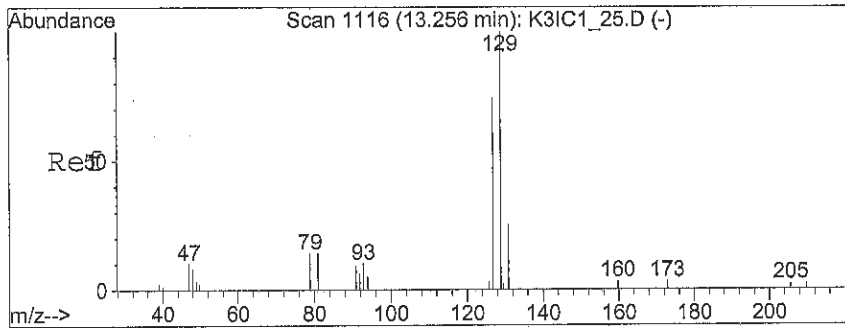
Tgt Ion: 76 Resp: 270
 Ion Ratio Lower Upper
 76 100
 78 0.0 26.9 40.3#



#46
 2-Hexanone
 Concen: 0.14 ug/L
 RT: 12.99 min Scan# 1084
 Delta R.T. 0.02 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

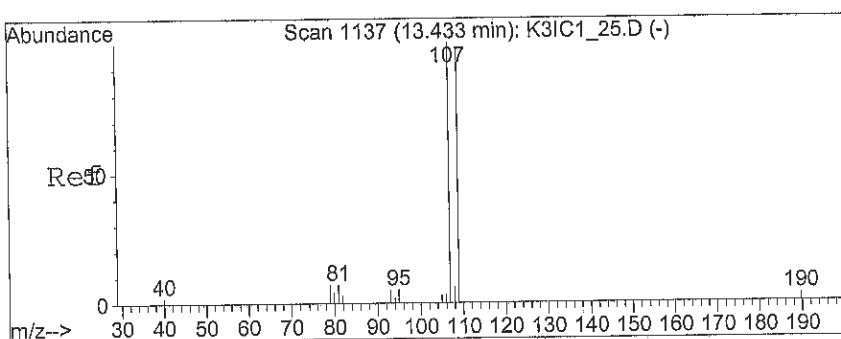
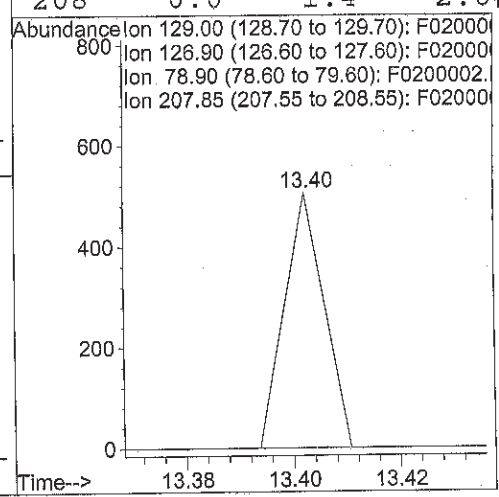
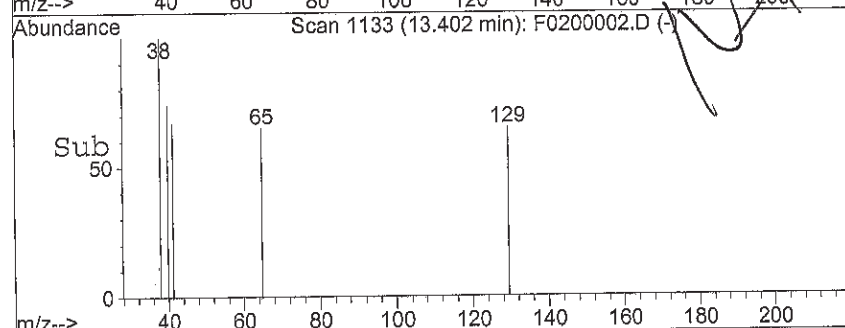
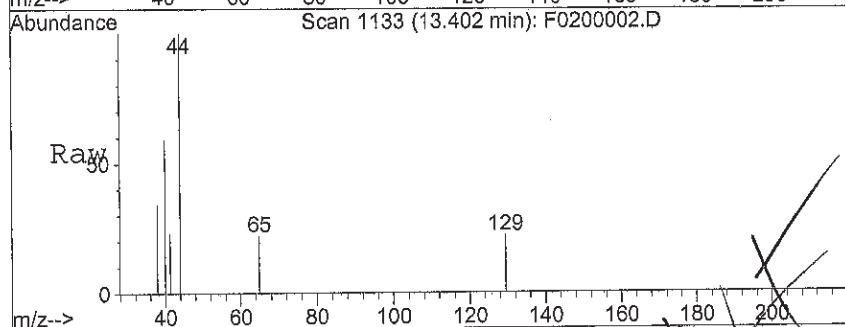
Tgt Ion: 43 Resp: 396
 Ion Ratio Lower Upper
 43 100
 58 68.4 40.9 61.3#
 100 0.0 5.5 8.3#
 85 0.0 4.3 6.5#





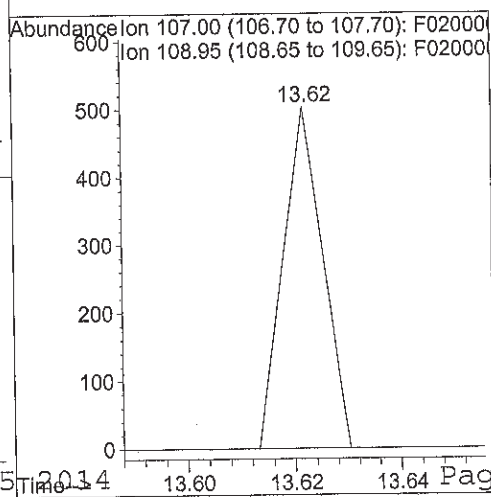
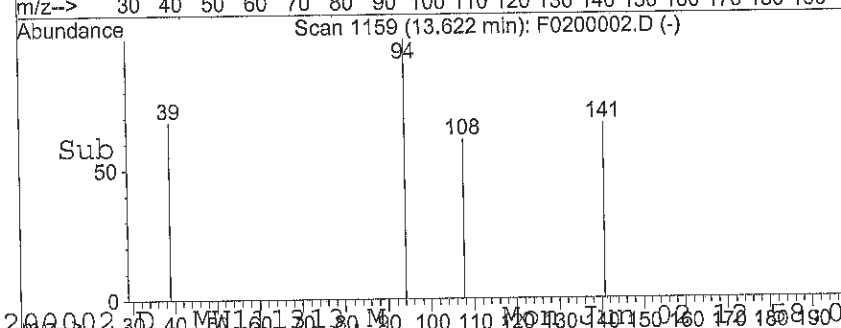
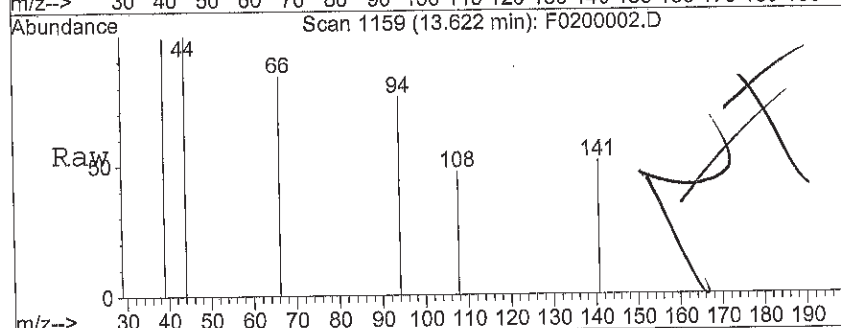
#47
 Dibromochloromethane
 Concen: 0.06 ug/L
 RT: 13.40 min Scan# 1133
 Delta R.T. 0.15 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

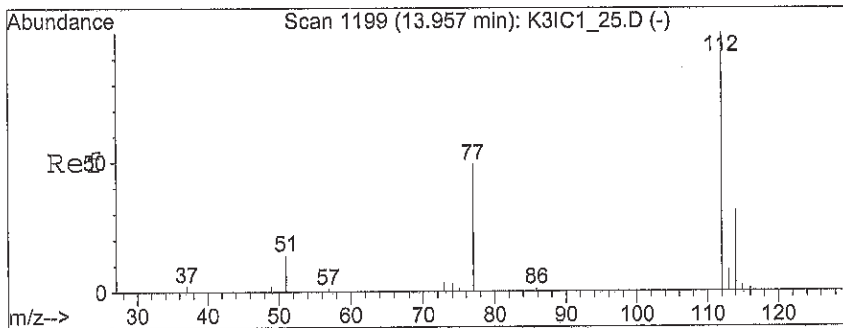
Tgt Ion:	129	Resp:	256
Ion Ratio	Lower	Upper	
129	100		
127	0.0	61.6	92.4#
79	0.0	10.7	16.1#
208	0.0	1.4	2.0#



#48
 1,2-Dibromoethane
 Concen: 0.06 ug/L
 RT: 13.62 min Scan# 1159
 Delta R.T. 0.19 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

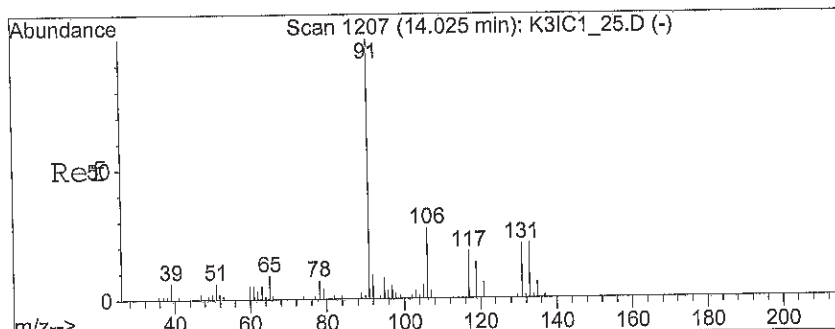
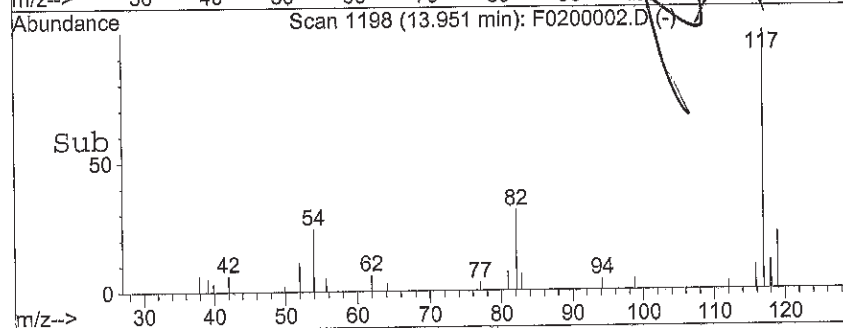
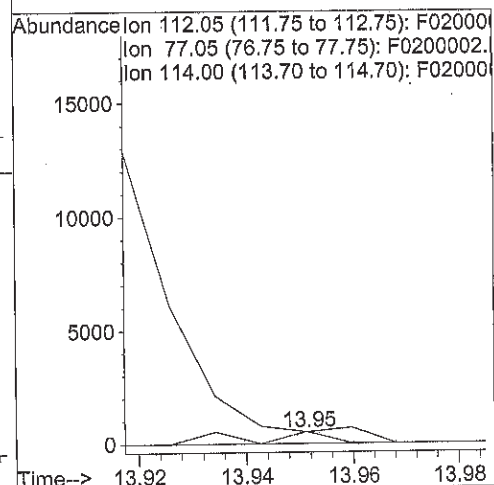
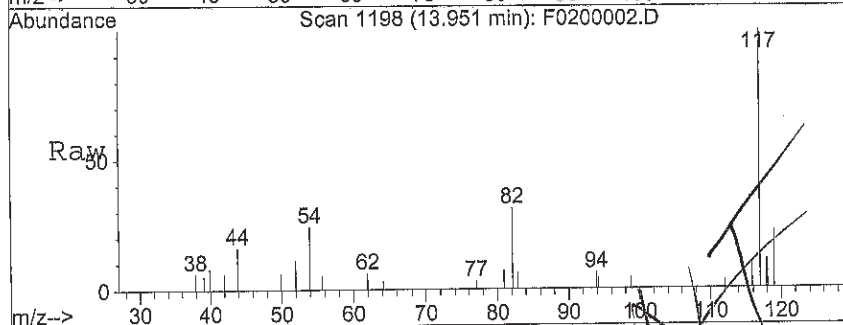
Tgt Ion:	107	Resp:	255
Ion Ratio	Lower	Upper	
107	100		
109	0.0	74.4	111.6#





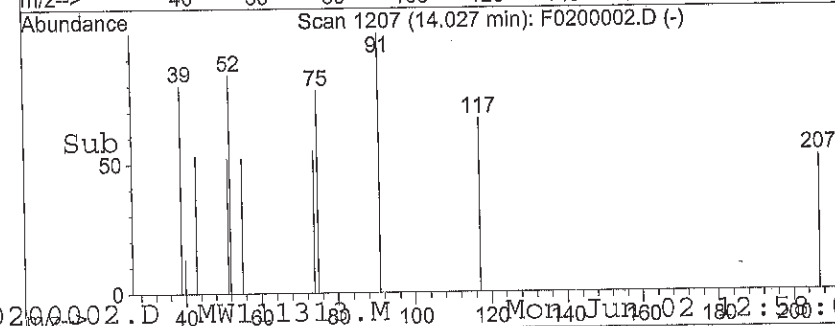
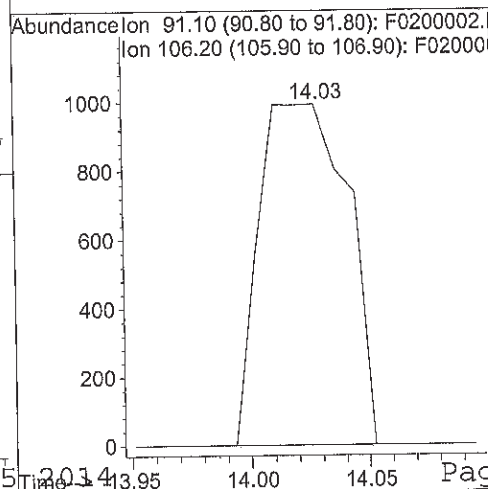
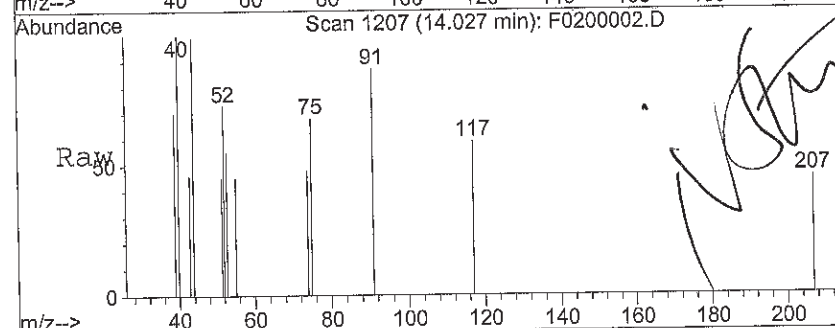
#49
Chlorobenzene
Concen: 0.02 ug/L
RT: 13.95 min Scan# 1198
Delta R.T. -0.01 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

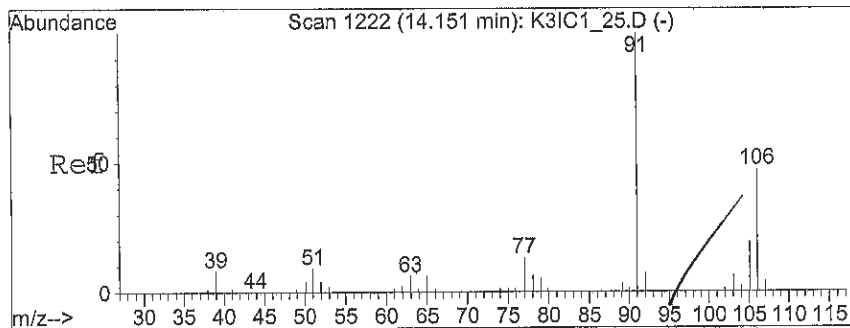
Tgt Ion	Ratio	Lower	Upper
112	100		
77	0.0	48.2	72.4#
114	0.0	24.4	36.6#



#51
Ethylbenzene
Concen: 0.13 ug/L
RT: 14.03 min Scan# 1207
Delta R.T. 0.00 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

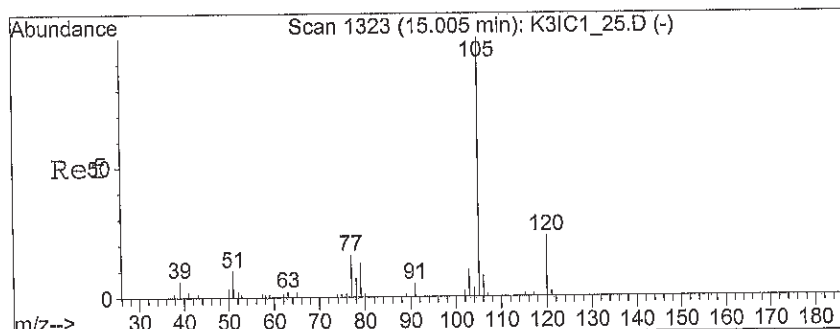
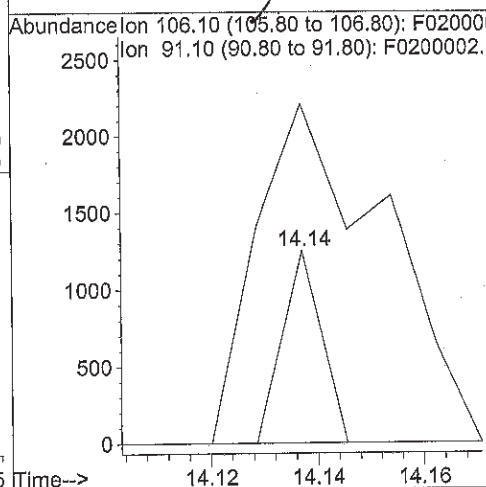
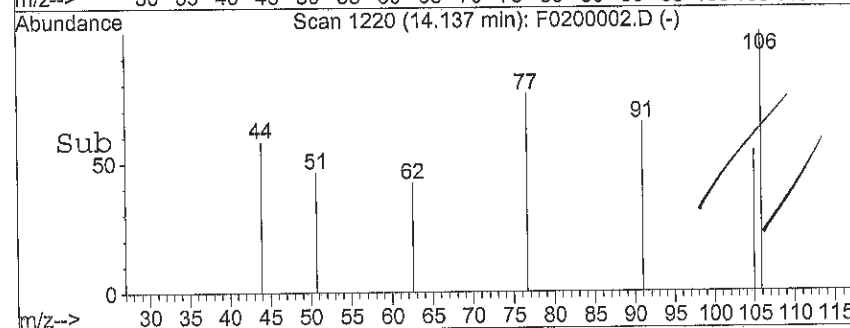
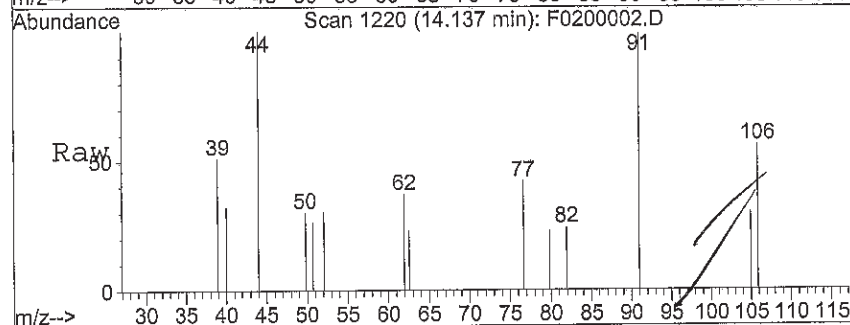
Tgt Ion	Ratio	Lower	Upper
91	100		
106	0.0	23.5	35.3#





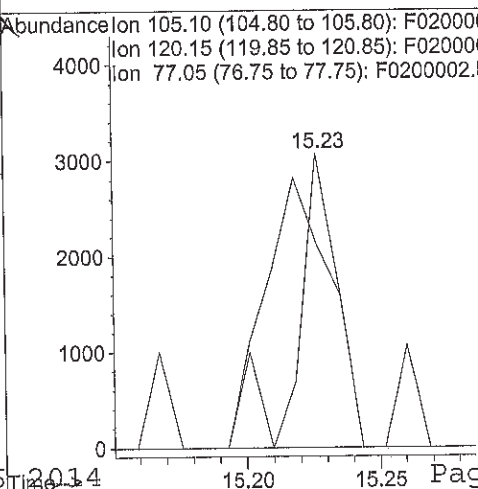
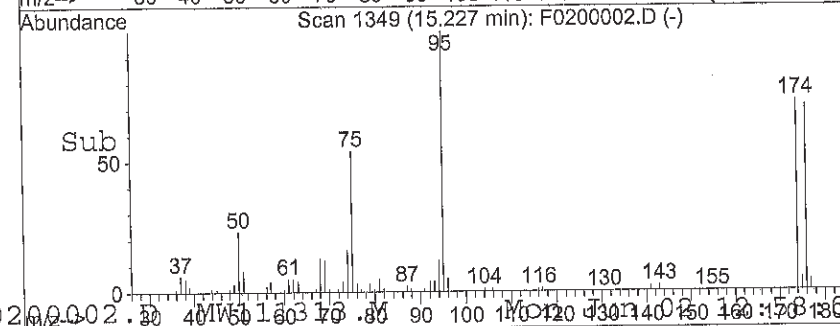
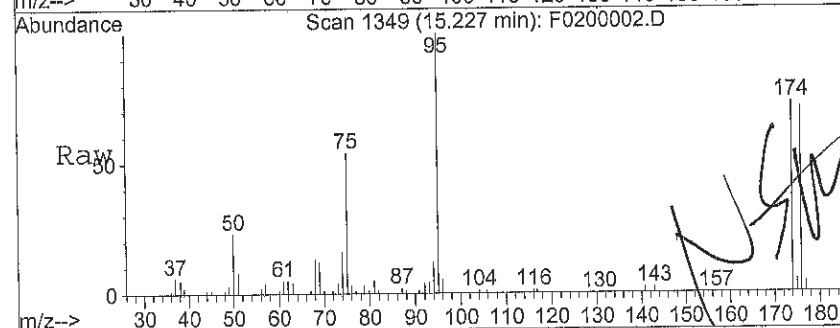
#52
m,p-Xylenes
Concen: 0.09 ug/L
RT: 14.14 min Scan# 1220
Delta R.T. -0.01 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

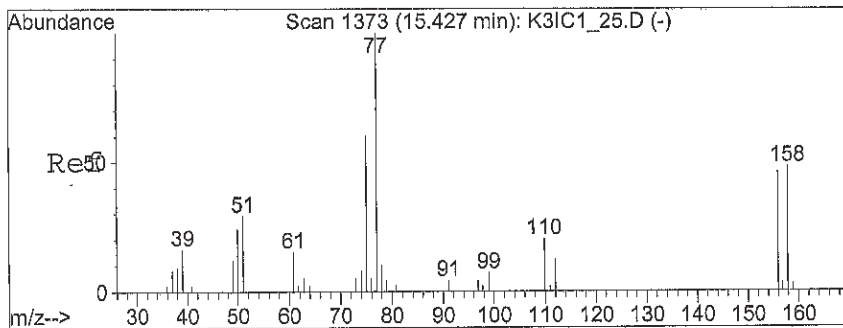
Tgt Ion:106 Resp: 632
Ion Ratio Lower Upper
106 100
91 581.3 177.1 265.7#



#56
Isopropylbenzene
Concen: 0.17 ug/L
RT: 15.23 min Scan# 1349
Delta R.T. 0.22 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

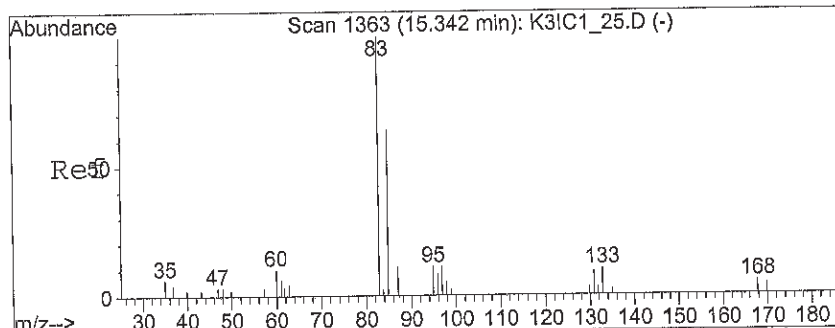
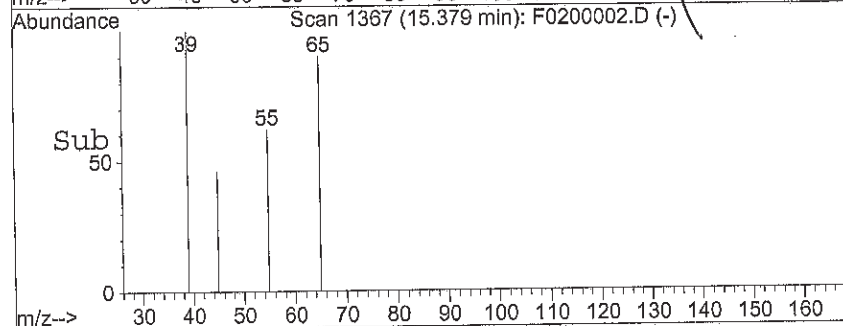
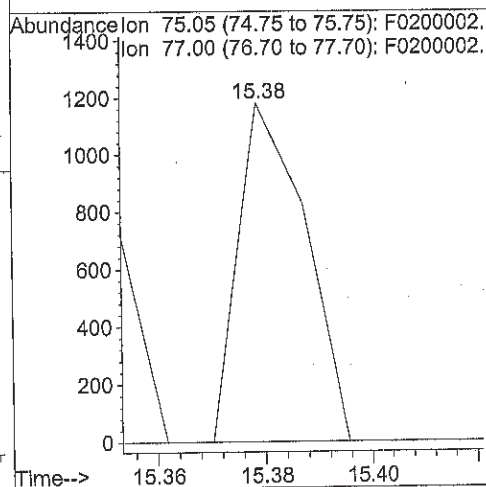
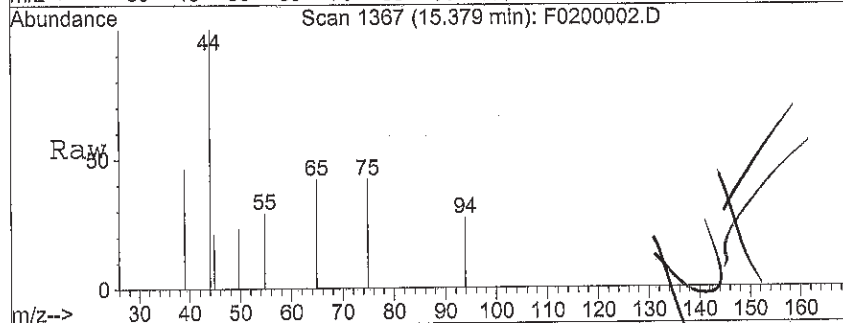
Tgt Ion:105 Resp: 3222
Ion Ratio Lower Upper
105 100
120 0.0 19.3 28.9#
77 149.5 13.1 19.7#





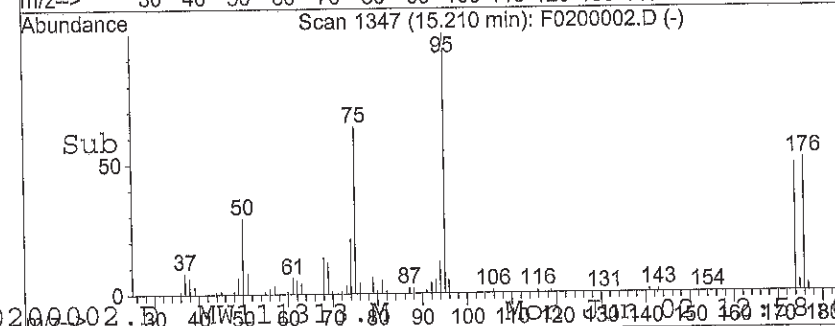
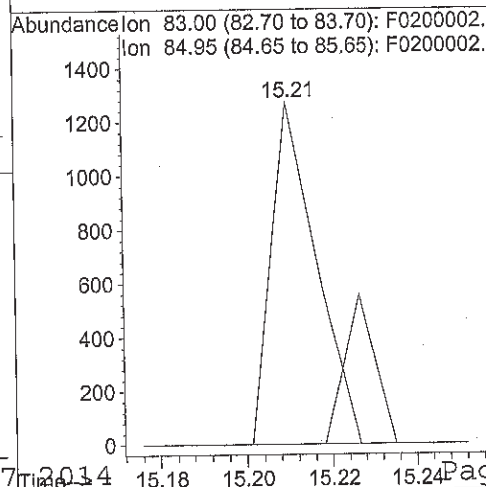
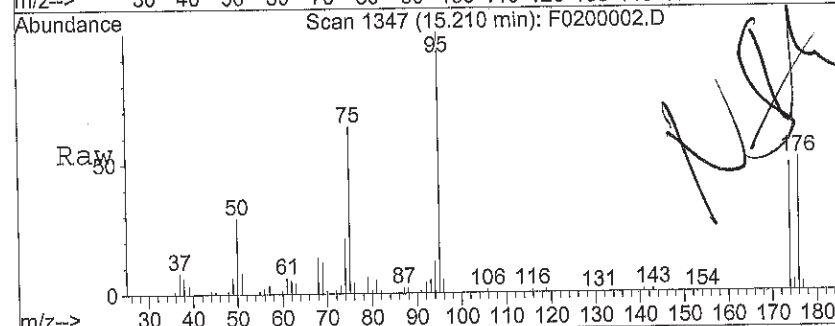
#57
 1,2,3-Trichloropropane
 Concen: 0.20 ug/L
 RT: 15.38 min Scan# 1367
 Delta R.T. -0.05 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

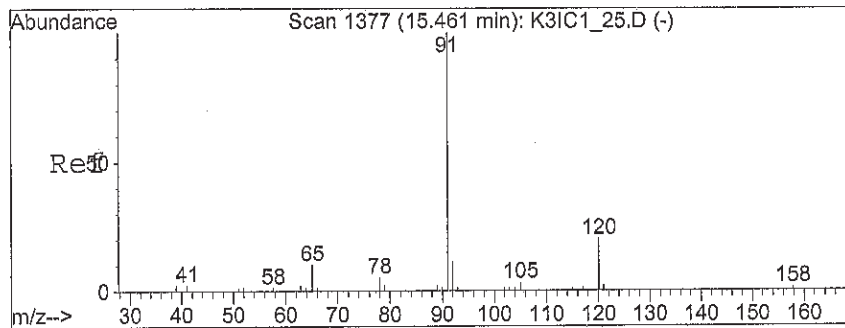
Tgt Ion: 75 Resp: 1018
 Ion Ratio Lower Upper
 75 100
 77 0.0 31.2 46.8#



#60
 1,1,2,2-Tetrachloroethane
 Concen: 0.21 ug/L
 RT: 15.21 min Scan# 1347
 Delta R.T. -0.13 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

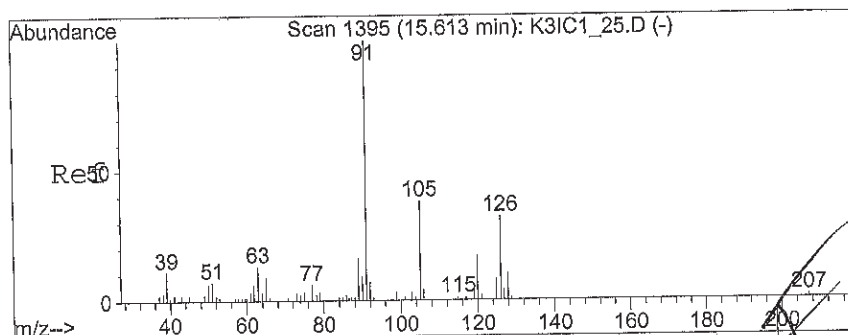
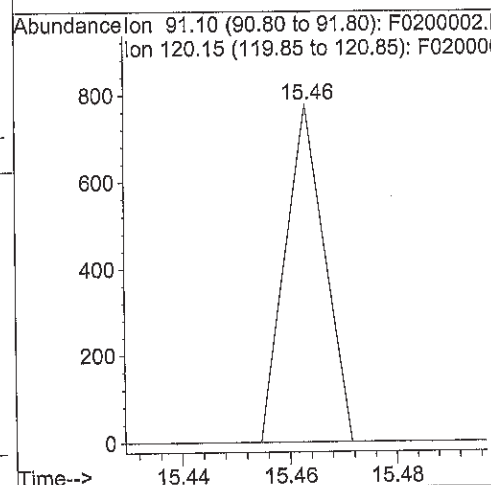
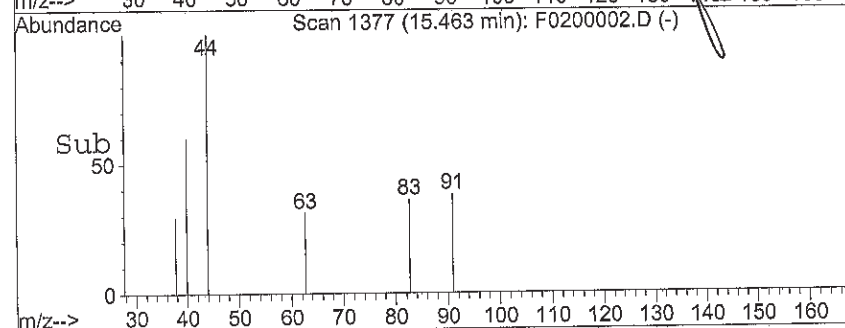
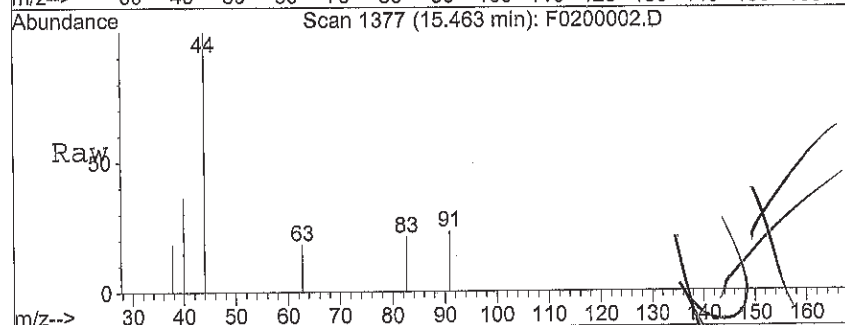
Tgt Ion: 83 Resp: 929
 Ion Ratio Lower Upper
 83 100
 85 30.4 51.2 76.8#





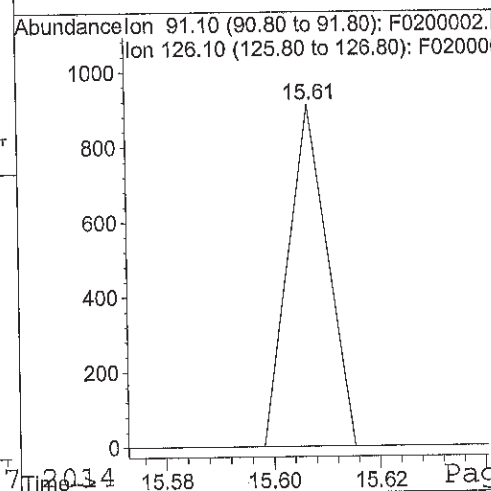
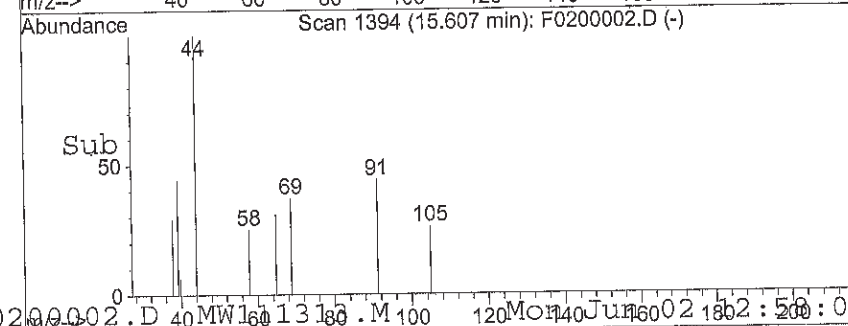
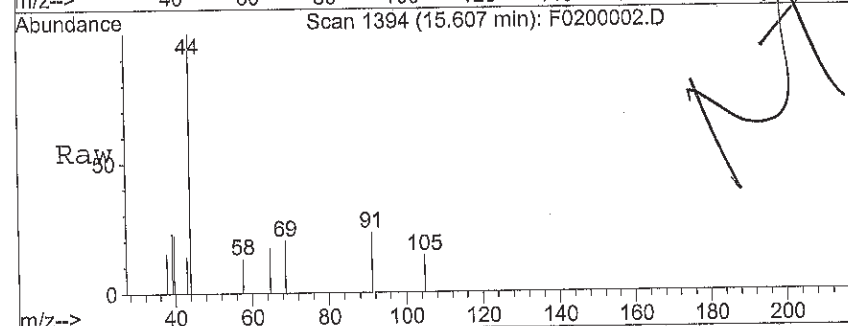
#62
 n-Propylbenzene
 Concen: 0.02 ug/L
 RT: 15.46 min Scan# 1377
 Delta R.T. 0.00 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

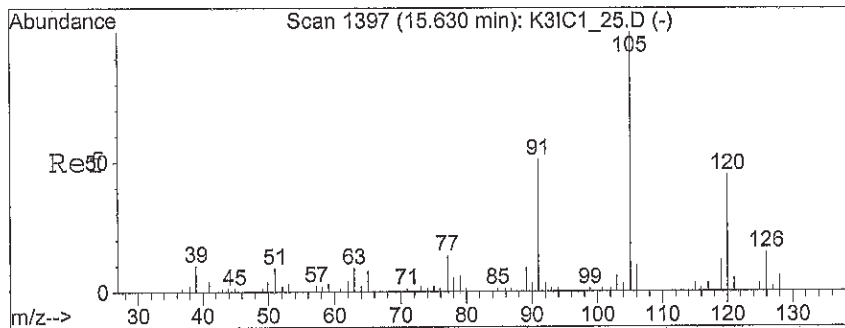
Tgt Ion: 91 Resp: 394
 Ion Ratio Lower Upper
 91 100
 120 0.0 16.1 24.1#



#63
 2-Chlorotoluene
 Concen: 0.03 ug/L
 RT: 15.61 min Scan# 1394
 Delta R.T. -0.01 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

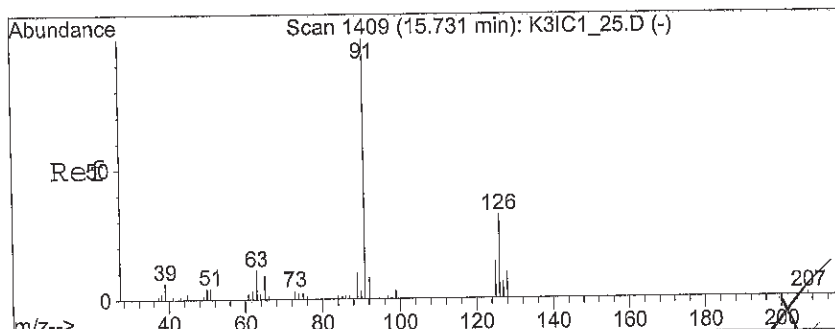
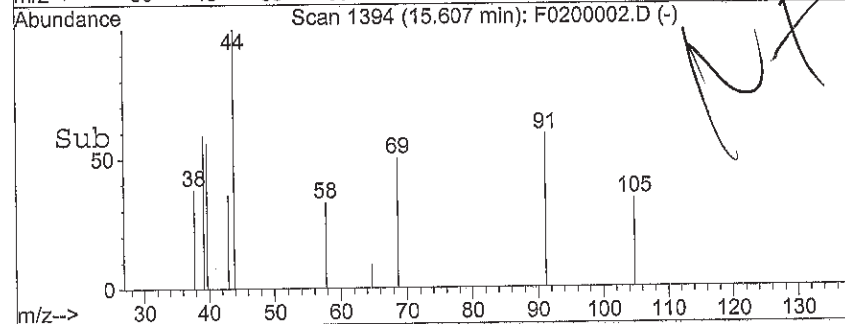
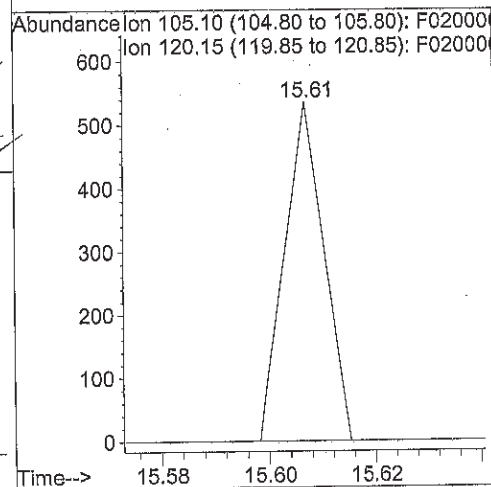
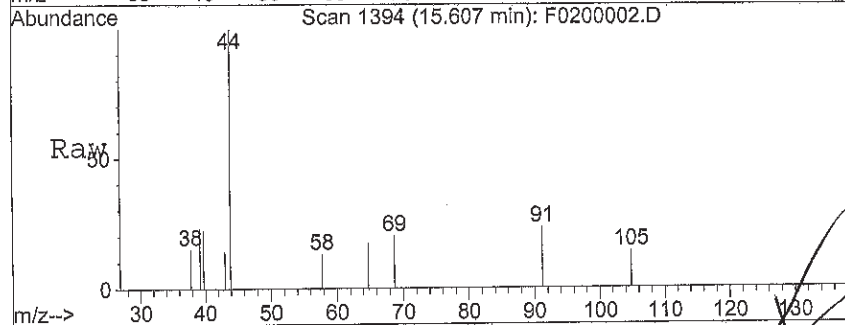
Tgt Ion: 91 Resp: 462
 Ion Ratio Lower Upper
 91 100
 126 0.0 24.0 36.0#





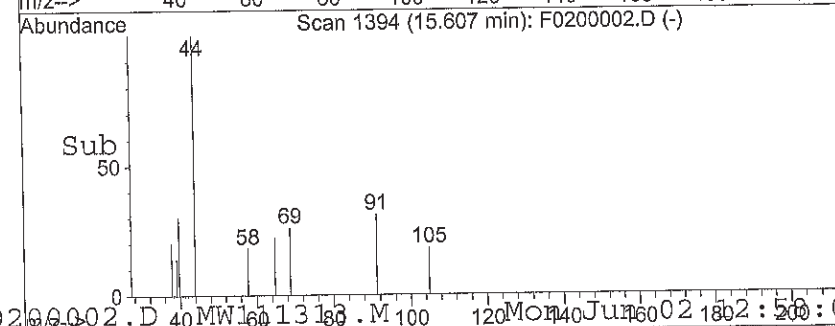
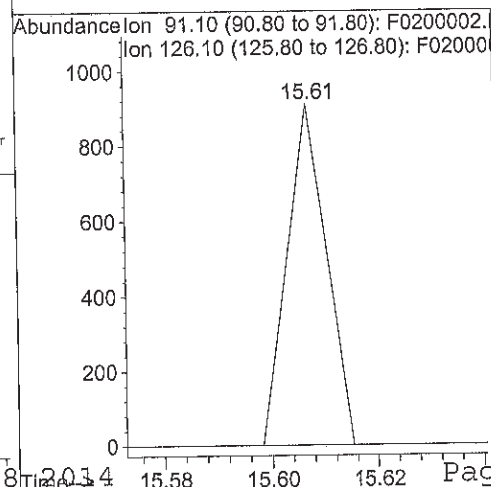
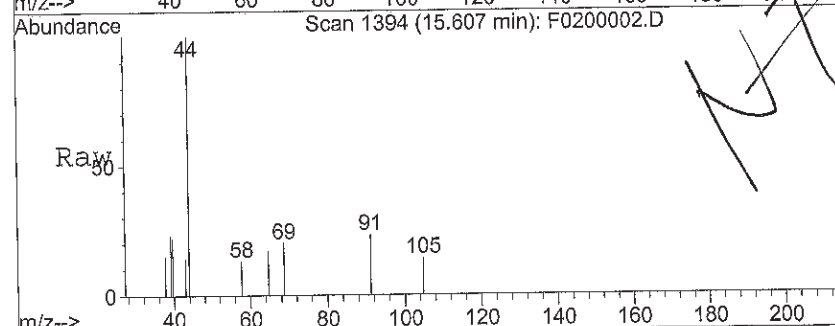
#64
 1,3,5-Trimethylbenzene
 Concen: 0.02 ug/L
 RT: 15.61 min Scan# 1394
 Delta R.T. -0.02 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

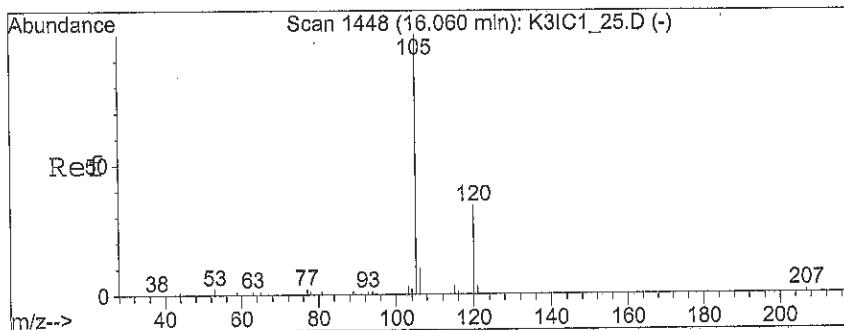
Tgt Ion: 105 Resp: 271
 Ion Ratio Lower Upper
 105 100
 120 0.0 36.4 54.6#



#65
 4-Chlorotoluene
 Concen: 0.03 ug/L
 RT: 15.61 min Scan# 1394
 Delta R.T. -0.12 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

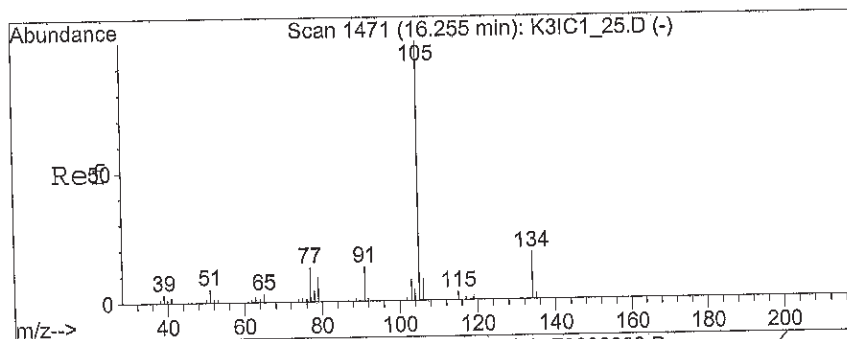
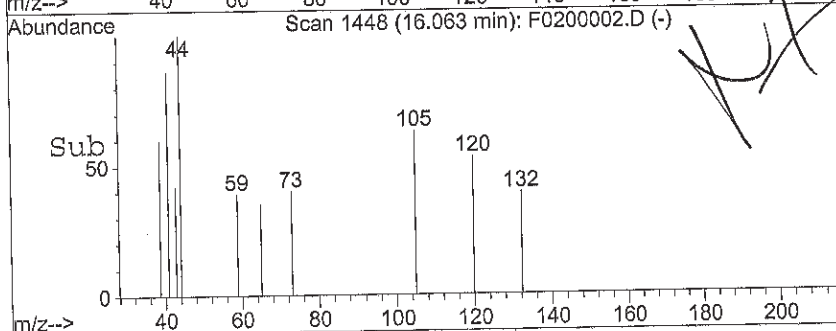
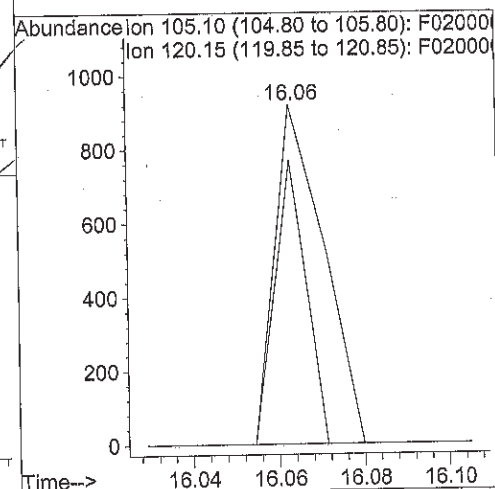
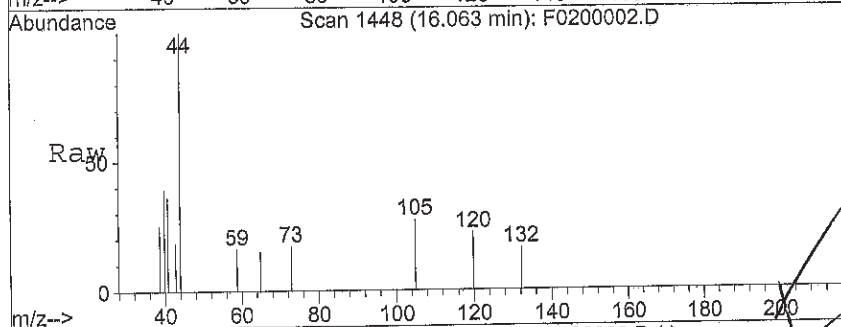
Tgt Ion: 91 Resp: 462
 Ion Ratio Lower Upper
 91 100
 126 0.0 24.6 36.8#





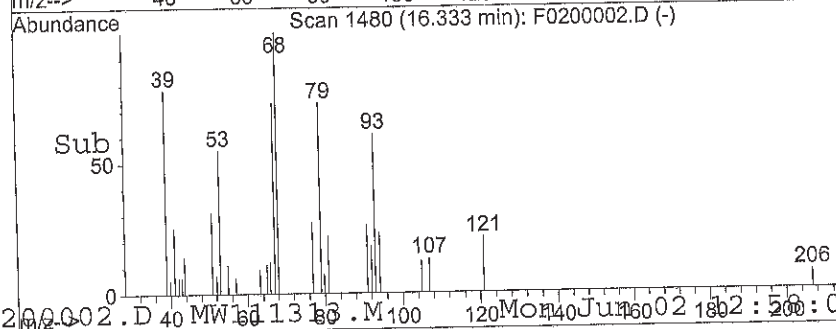
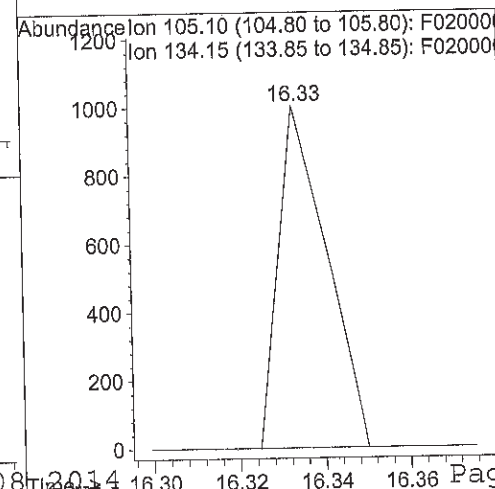
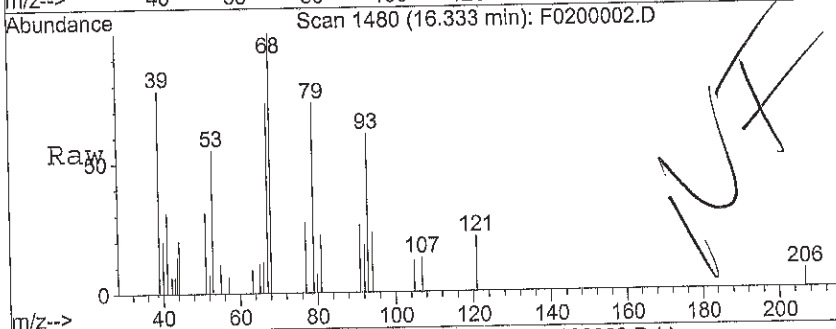
#67
1,2,4-Trimethylbenzene
Concen: 0.04 ug/L
RT: 16.06 min Scan# 1448
Delta R.T. 0.00 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

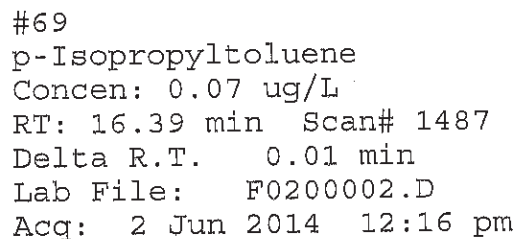
Tgt Ion:105 Resp: 728
Ion Ratio Lower Upper
105 100
120 53.4 33.8 50.8#



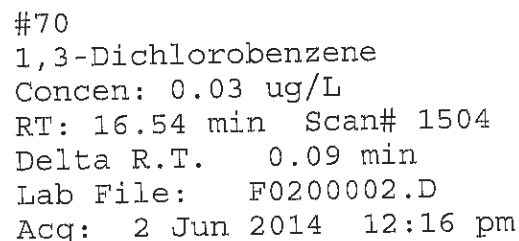
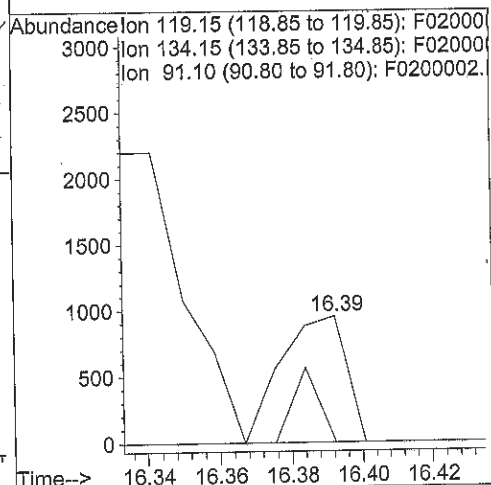
#68
sec-Butylbenzene
Concen: 0.04 ug/L
RT: 16.33 min Scan# 1480
Delta R.T. 0.08 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion:105 Resp: 781
Ion Ratio Lower Upper
105 100
134 0.0 13.0 19.6#

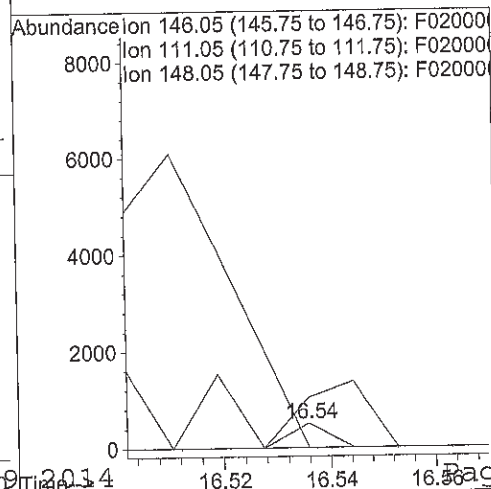


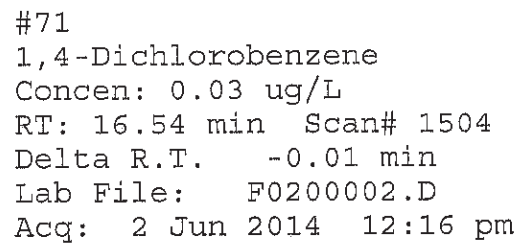


Tgt	Ion:119	Resp:	1205
Ion	Ratio	Lower	Upper
119	100		
134	0.0	17.4	26.2#
91	23.4	19.6	29.4

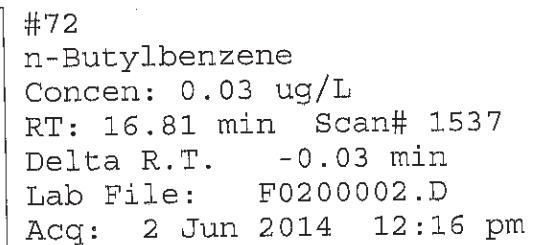
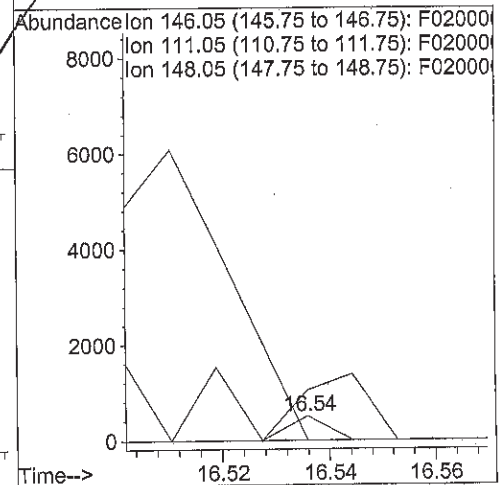


Tgt	Ion:146	Resp:	254
Ion	Ratio	Lower	Upper
146	100		
111	0.0	34.2	51.4#
148	480.7	50.9	76.3#

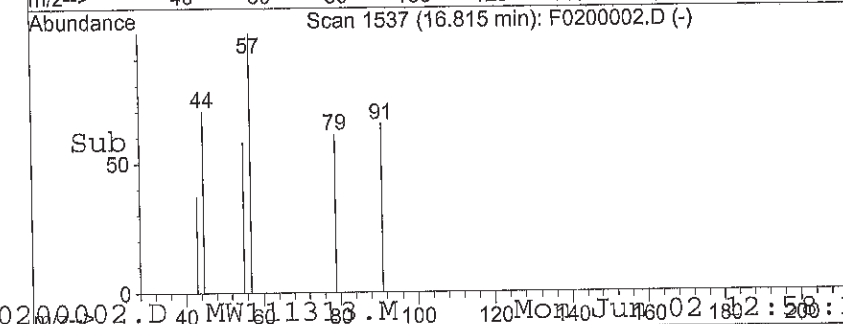
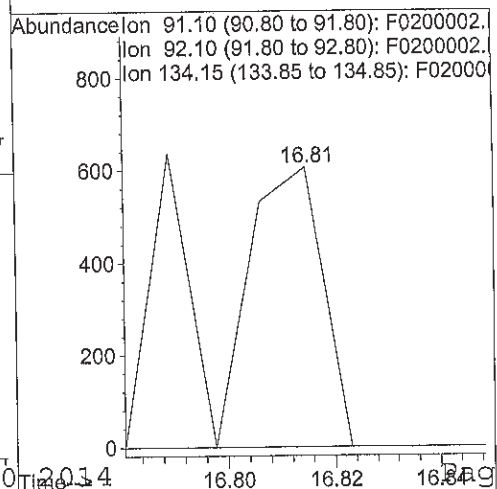


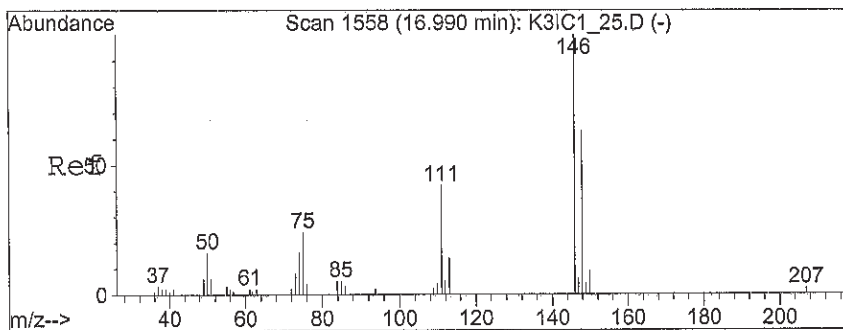


Tgt	Ion:146	Resp:	254
Ion	Ratio	Lower	Upper
146	100		
111	0.0	37.6	56.4#
148	480.7	52.6	78.8#



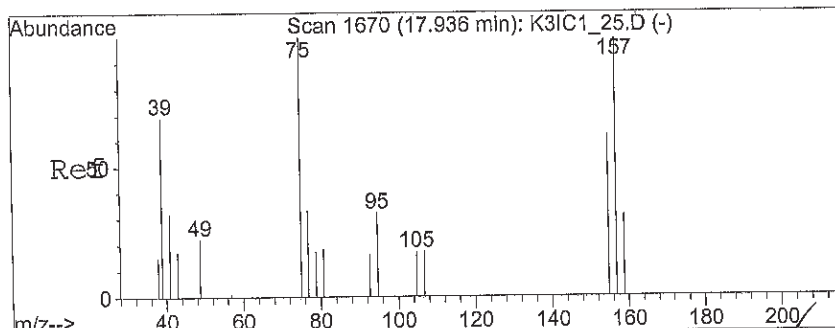
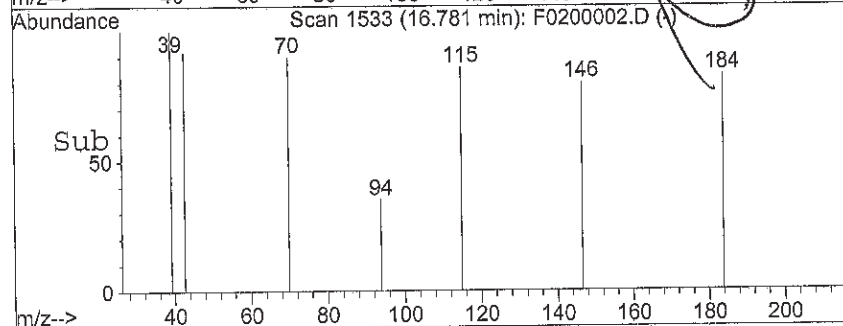
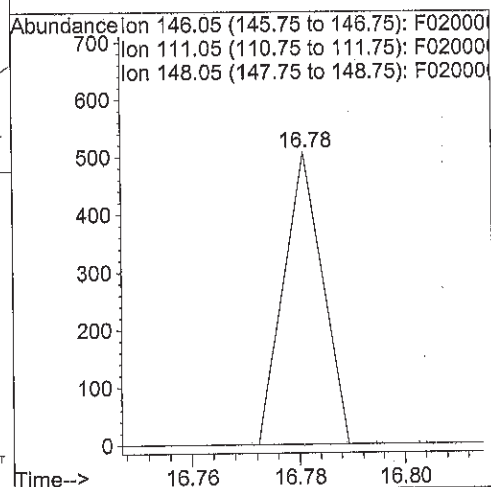
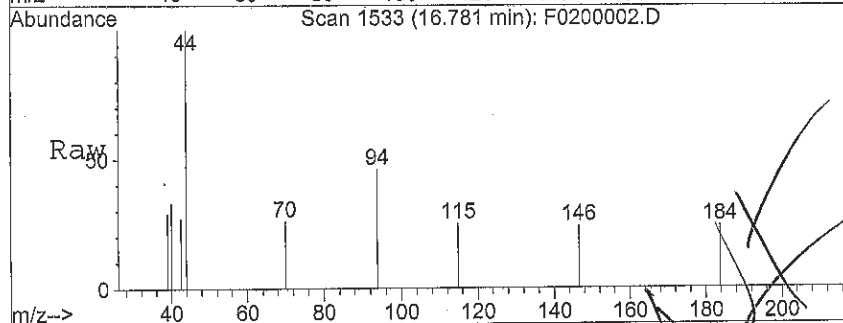
Tgt Ion: 91	Resp:	576
Ion Ratio	Lower	Upper
91	100	
92	0.0	47.0 70.4#
134	0.0	18.1 27.1#





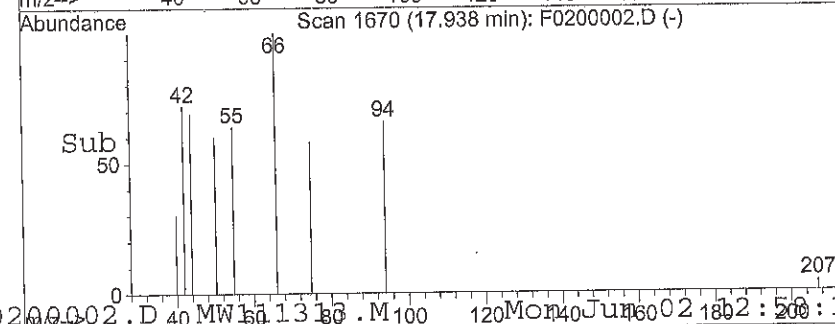
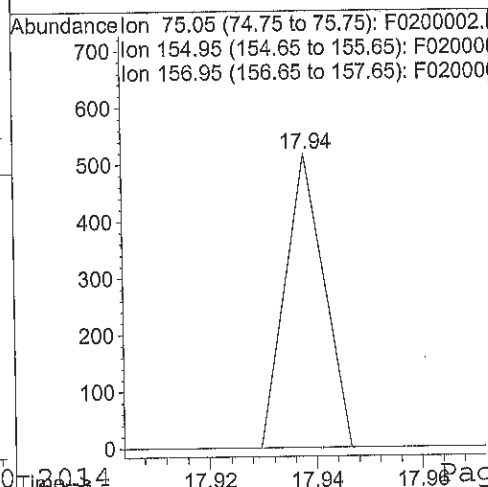
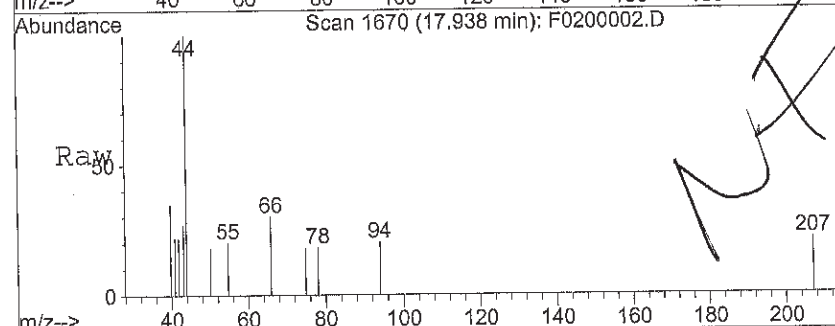
#73
 1,2-Dichlorobenzene
 Concen: 0.03 ug/L
 RT: 16.78 min Scan# 1533
 Delta R.T. -0.21 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

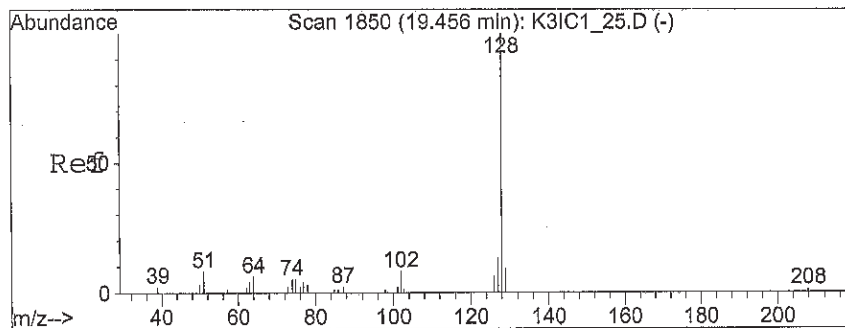
Tgt Ion: 146 Resp: 257
 Ion Ratio Lower Upper
 146 100
 111 0.0 34.7 52.1#
 148 0.0 51.7 77.5#



#74
 1,2-Dibromo-3-chloropropane
 Concen: 1.25 ug/L
 RT: 17.94 min Scan# 1670
 Delta R.T. 0.00 min
 Lab File: F0200002.D
 Acq: 2 Jun 2014 12:16 pm

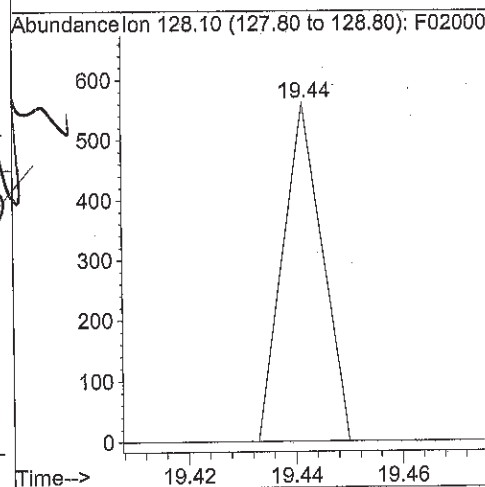
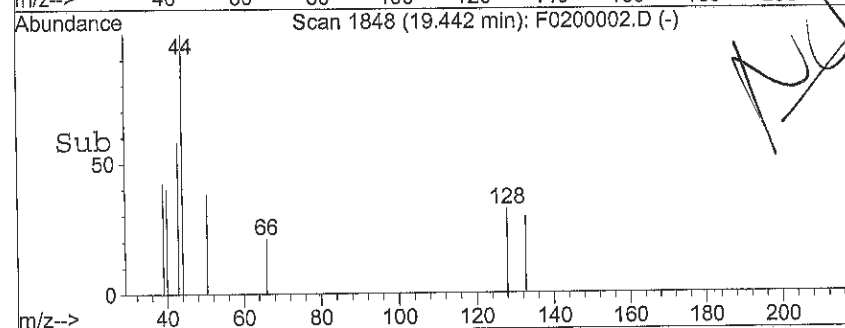
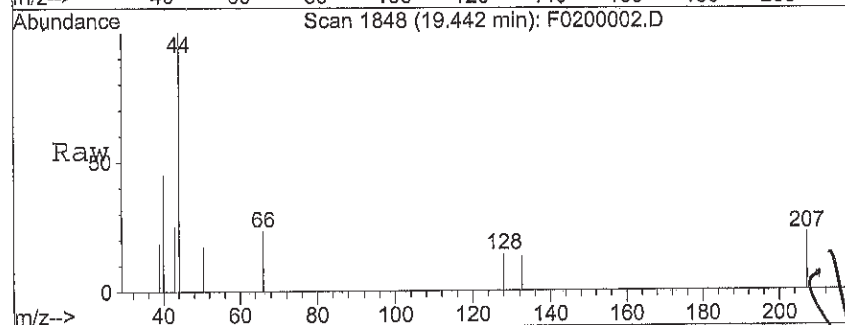
Tgt Ion: 75 Resp: 262
 Ion Ratio Lower Upper
 75 100
 155 0.0 59.2 88.8#
 157 0.0 77.0 115.6#





#77
Naphthalene
Concen: 0.02 ug/L
RT: 19.44 min Scan# 1848
Delta R.T. -0.01 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion:128 Resp: 285



Data File : C:\HPCHEM\1\DATA\060214L3\F0200002.D Vial: 1
 Acq On : 2 Jun 2014 12:16 pm Operator: DN
 Sample : 3F40201-02 Inst : GC/MS Ins
 Misc : 100cc SVL-528-SA8-SV-5.0-6.0 Multiplr: 10.00
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:29 19114 Quant Results File: SS072713.RES

Quant Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.29	96	1361744	12.50	ug/L	-0.03
7) Chlorobenzene-d5 (IS)	13.92	117	1269802	12.50	ug/L	-0.01
10) 1,4-Dichlorobenzene-d4 (IS)	16.50	152	624007	12.50	ug/L	-0.01

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.42	113	392573m	11.09	ug/L	-0.01
Spiked Amount	12.500	Range 75 - 125	Recovery	=	88.72%	
3) Chloroform-d (SU6)	9.19	84	602544m	11.86	ug/L	0.00
Spiked Amount	12.500	Range 70 - 140	Recovery	=	94.88%	
4) Methylene Chloride-d2 (SU5)	7.07	86	338037	11.38	ug/L	-0.01
Spiked Amount	12.500	Range 70 - 140	Recovery	=	91.04%	
5) 1,2-Dichloroethane-d4 (SU2)	9.89	65	357991m	14.79	ug/L	0.01
Spiked Amount	12.500	Range 75 - 125	Recovery	=	118.32%	
6) Benzene-d6 (SU7)	9.92	84	1223508	11.45	ug/L	-0.03
Spiked Amount	12.500	Range 70 - 140	Recovery	=	91.60%	
8) Toluene-d8 (SU3)	12.20	98	1339609	11.12	ug/L	-0.02
Spiked Amount	12.500	Range 75 - 125	Recovery	=	88.96%	
9) 4-Bromofluorobenzene (SU4)	15.22	95	592792m	11.92	ug/L	-0.01
Spiked Amount	12.500	Range 75 - 125	Recovery	=	95.36%	

Target Compounds

Qvalue

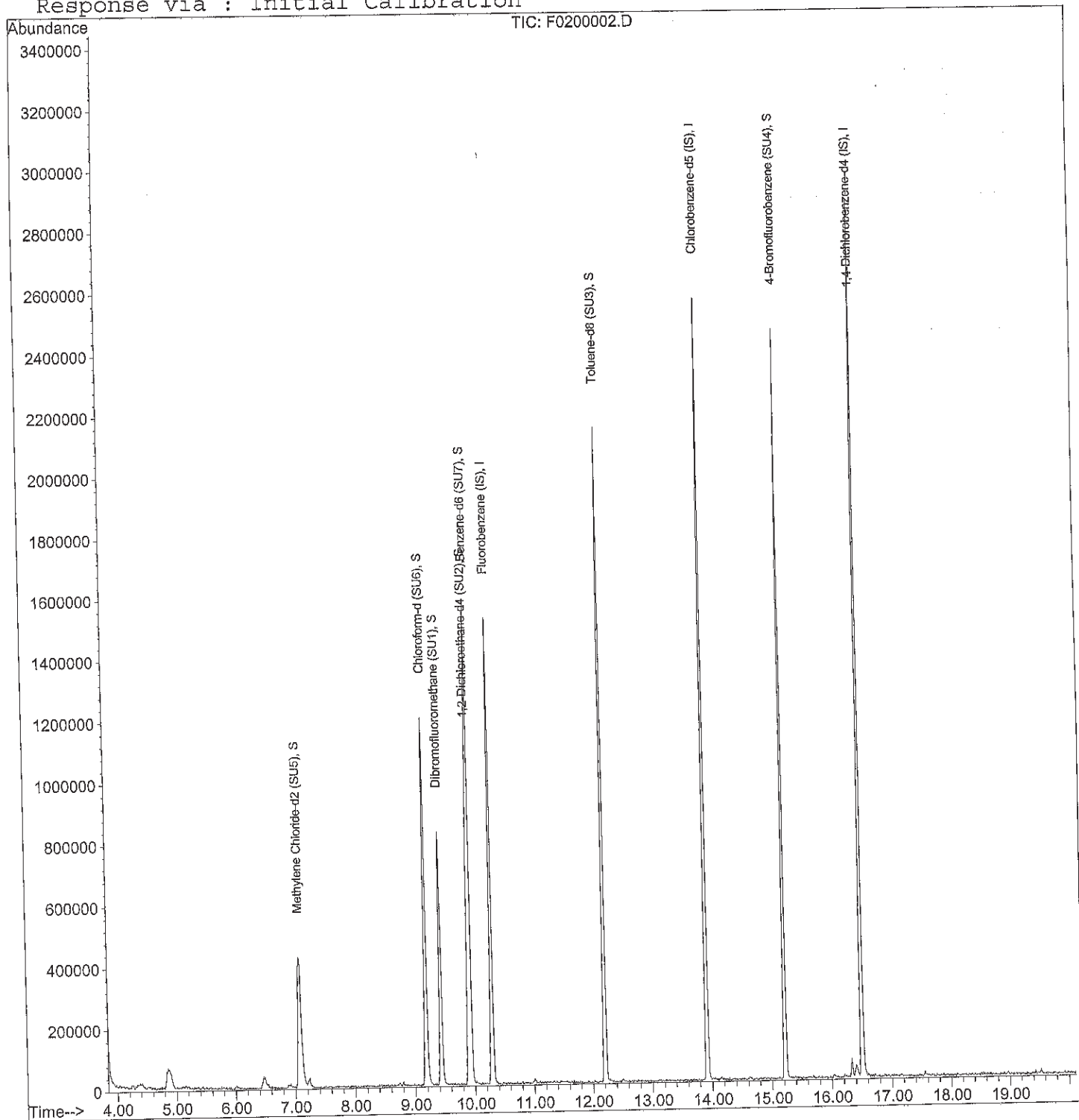
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200002.D
 Acq On : 2 Jun 2014 12:16 pm
 Sample : 3F40201-02
 Misc : 100cc SVL-528-SA8-SV-5.0-6.0
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:29 19114

Vial: 1
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration



Data File : C:\HPCHEM\1\DATA\060214L3\F0200004.D

Vial: 3

Acq On : 2 Jun 2014 1:21 pm

Operator: DN

Sample : 3F40201-03

Inst : GC/MS Ins

Misc : 100cc SVL-528-SA8-SV-11.0-12.0

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 13:44 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.29	96	1277102	12.50	ug/L	0.00
38) Chlorobenzene-d5 (IS)	13.91	117	1204182	12.50	ug/L	0.00
59) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	617289	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	443521m	13.92	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	111.36%
28) 1,2-Dichloroethane-d4 (SU2)	9.89	65	444869m	14.69	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	117.52%
39) Toluene-d8 (SU3)	12.21	98	1249266	11.12	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	88.96%
58) 4-Bromofluorobenzene (SU4)	15.21	95	658626m	13.37	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	106.96%

Target Compounds

					Qvalue
3) (F12) Dichlorodifluorometh	4.12	85	890	0.28 ug/L	# 44
4) Chloromethane	4.43	50	1438	-0.55 ug/L	# 94
5) Vinyl Chloride	4.45	62	314	0.14 ug/L	# 1
6) Bromomethane	5.11	96	4359	1.33 ug/L	# 81
7) Chloroethane	5.16	64	1770	2.35 ug/L	# 90
10) 1,1-Dichloroethene	6.49	96	379	0.13 ug/L	# 1
11) Acetone	6.46	58	5730	6.76 ug/L	# 1
12) (IPA) Leak Check Compound	6.49	45	104307	679.69 ug/L	# 82
13) Carbon disulfide	6.84	76	14548	1.37 ug/L	# 81
14) Methylene Chloride	7.08	84	4061	1.16 ug/L	# 1
15) (TBA) tert-Butanol	6.95	59	302	1.39 ug/L	# 77
16) (MTBE) Methyl-t-butyl ethe	7.39	73	270	0.04 ug/L	# 1
18) 1,1-Dichloroethane	8.10	63	271	0.05 ug/L	# 1
20) 2,2-Dichloropropane	8.81	77	395	0.08 ug/L	# 36
21) (MEK) 2-Butanone	8.80	72	330	0.92 ug/L	# 1
22) (DIPE) Diisopropyl Ether	8.06	45	258	0.03 ug/L	# 48
24) Chloroform	9.23	83	2471	0.37 ug/L	# 18
25) (ETBE) 2-ethoxy 2-methyl p	8.44	59	356	0.04 ug/L	# 44
26) 1,1,1-Trichloroethane	9.35	97	293	0.06 ug/L	# 23
29) 1,1-Dichloropropene	9.71	75	272	0.06 ug/L	# 6
31) Benzene	9.99	78	633	0.05 ug/L	# 57
32) 1,2-Dichloroethane	9.93	62	12568	2.96 ug/L	# 1

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060214L3\F0200004.D

Vial: 3

Acq On : 2 Jun 2014 1:21 pm

Operator: DN

Sample : 3F40201-03

Inst : GC/MS Ins

Misc : 100cc SVL-528-SA8-SV-11.0-12.0

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 13:44 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
33) Trichloroethene	10.59	130	259	0.07	ug/L	4
34) 1,2-Dichloropropane	11.09	63	398	0.14	ug/L	52
35) Dibromomethane	11.09	93	358	0.16	ug/L	5
36) Bromodichloromethane	11.34	83	254	0.06	ug/L	21
37) cis-1,3-Dichloropropene	12.00	75	264	0.05	ug/L	1
40) (MIBK) 4-Methyl-2-Pentanone	12.11	43	1090	0.45	ug/L	100
41) Toluene	12.30	91	6415	0.39	ug/L	62
43) 1,1,2-Trichloroethane	12.75	83	368	0.12	ug/L	10
45) 1,3-Dichloropropane	13.16	76	275	0.05	ug/L	41
46) 2-Hexanone	12.93	43	313	0.12	ug/L	37
51) Ethylbenzene	14.03	91	2741	0.15	ug/L	45
52) m,p-Xylenes	14.14	106	3584	0.54	ug/L	79
53) o-Xylene	14.63	106	259	0.04	ug/L	1
54) Styrene	14.61	104	1223	-0.75	ug/L	1
56) Isopropylbenzene	14.98	105	303	0.02	ug/L	1
57) 1,2,3-Trichloropropane	15.36	75	821	0.17	ug/L	37
60) 1,1,2,2-Tetrachloroethane	15.31	83	323	0.07	ug/L	18
62) n-Propylbenzene	15.46	91	958	0.04	ug/L	56
63) 2-Chlorotoluene	15.60	91	281	0.02	ug/L	45
64) 1,3,5-Trimethylbenzene	15.63	105	1099	0.07	ug/L	68
65) 4-Chlorotoluene	15.73	91	287	0.02	ug/L	44
67) 1,2,4-Trimethylbenzene	16.05	105	1977	0.12	ug/L	67
68) sec-Butylbenzene	16.34	105	1008	0.05	ug/L	62
69) p-Isopropyltoluene	16.38	119	465	0.03	ug/L	52
72) n-Butylbenzene	16.83	91	281	0.02	ug/L	30
74) 1,2-Dibromo-3-chloropropan	17.95	75	270	1.26	ug/L	6
76) Hexachlorobutadiene	19.15	225	254	0.24	ug/L	18
77) Naphthalene	19.45	128	269	0.02	ug/L	100

(#)=qualifier out of range (m)=manual integration

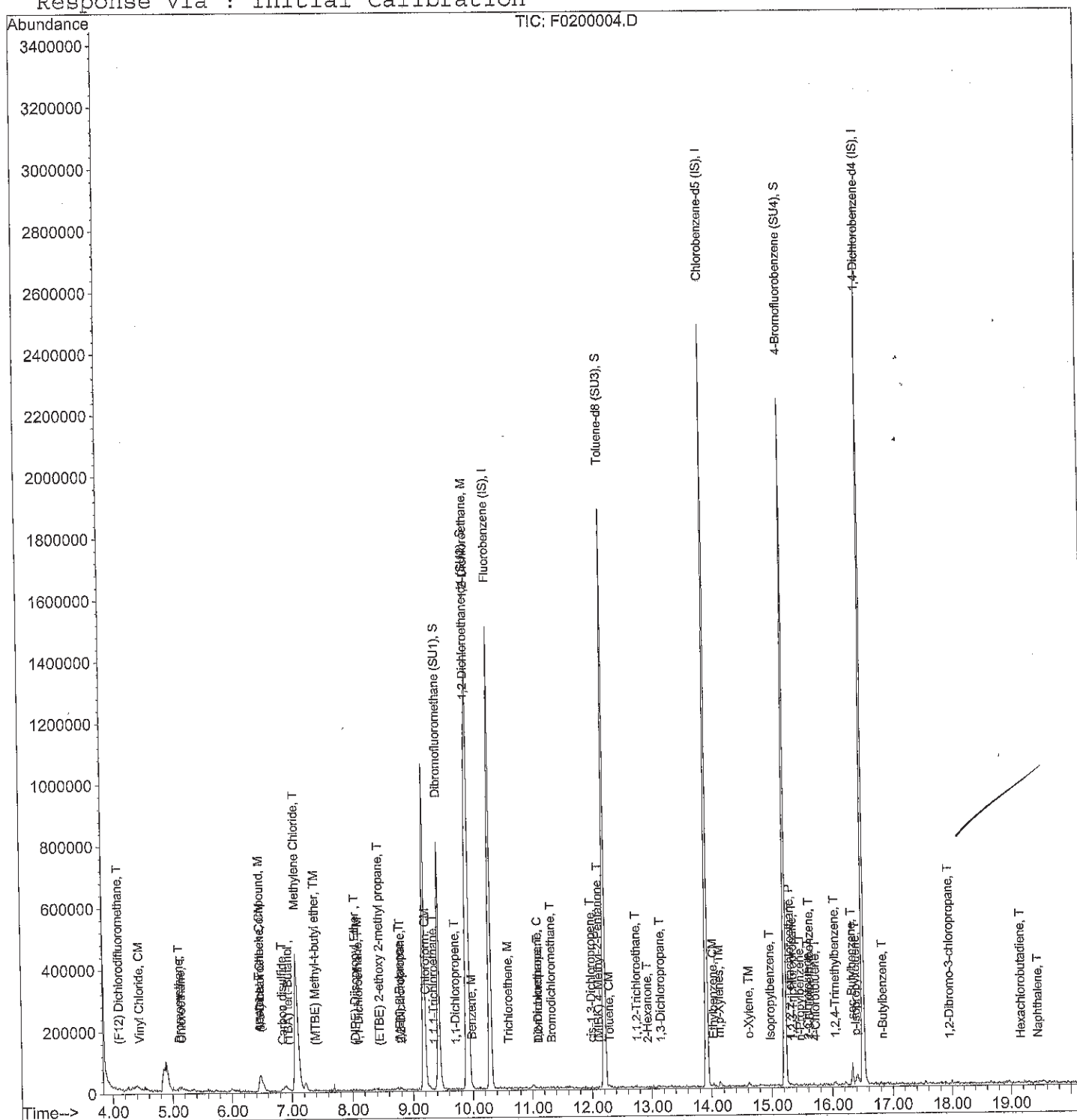
Quantitation Report

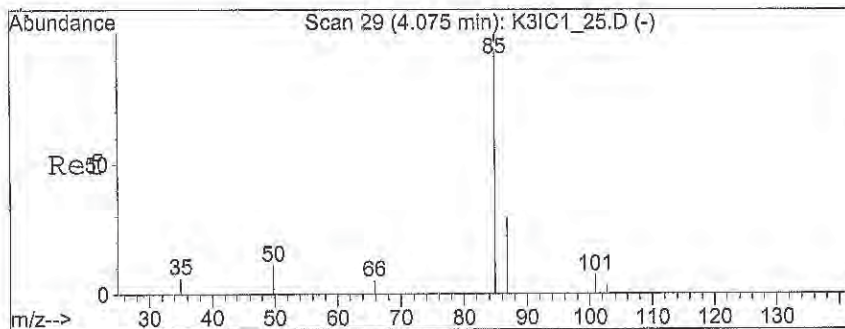
Data File : C:\HPCHEM\1\DATA\060214L3\F0200004.D
Acq On : 2 Jun 2014 1:21 pm
Sample : 3F40201-03
Misc : 100cc SVL-528-SA8-SV-11.0-12.0
MS Integration Params: rteint.p
Quant Time: Jun 2 13:44 19114 Quan

Vial: 3
Operator: DN
Inst : GC/MS Ins
Multiplr: 10.00

Quant Results File: MW111313.RES

```
Method       : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
Title        : 8260B      GC/MS #3      ICAL 11/13/13   DN
Last Update  : Wed Nov 13 19:38:32 2013
Response via : Initial Calibration
```





#3

(F12) Dichlorodifluoromethane

Concen: 0.28 ug/L

RT: 4.12 min Scan# 34

Delta R.T. 0.04 min

Lab File: F0200004.D

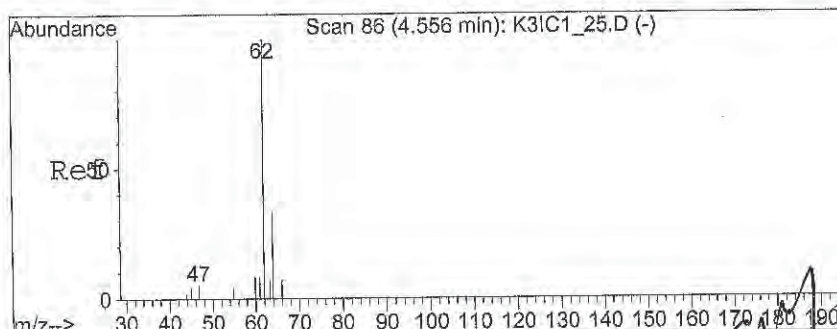
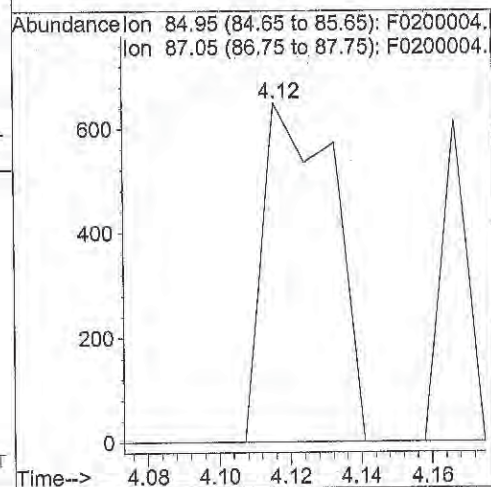
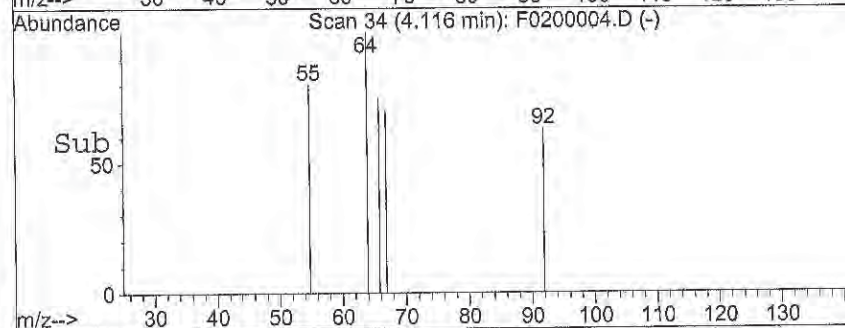
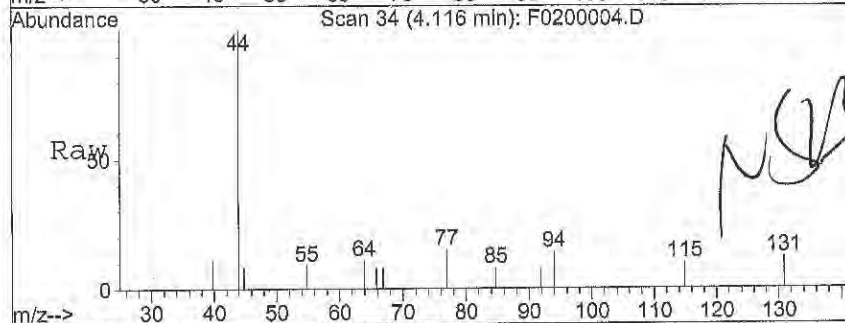
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 85 Resp: 890

Ion Ratio Lower Upper

85 100

87 0.0 24.6 37.0#



#5

Vinyl Chloride

Concen: 0.14 ug/L

RT: 4.45 min Scan# 74

Delta R.T. -0.10 min

Lab File: F0200004.D

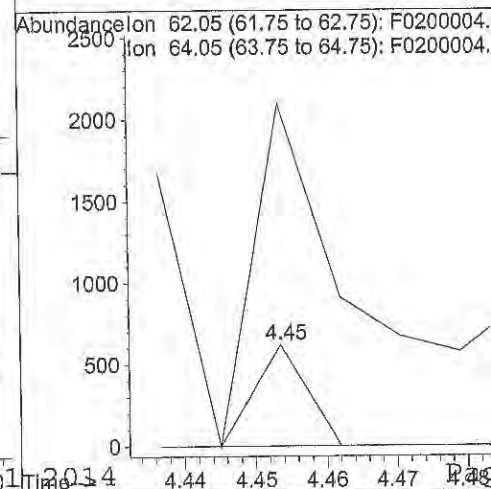
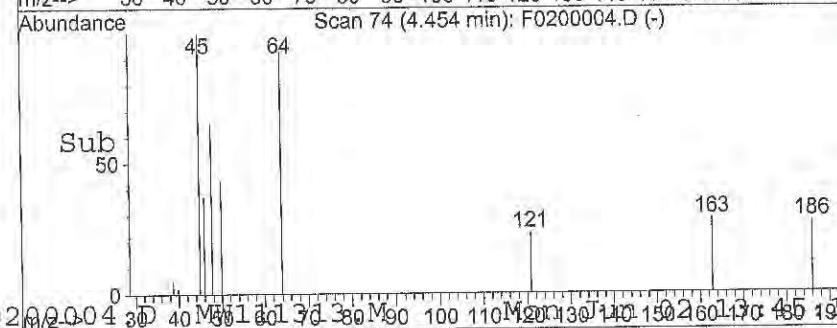
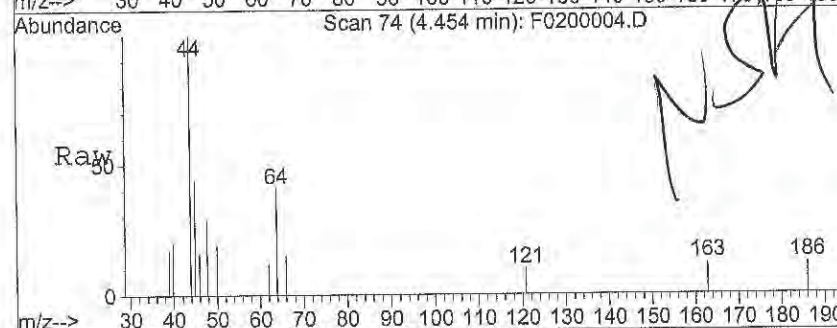
Acq: 2 Jun 2014 1:21 pm

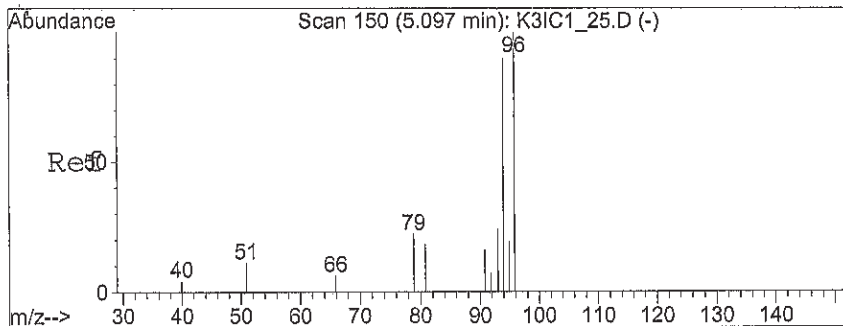
Tgt Ion: 62 Resp: 314

Ion Ratio Lower Upper

62 100

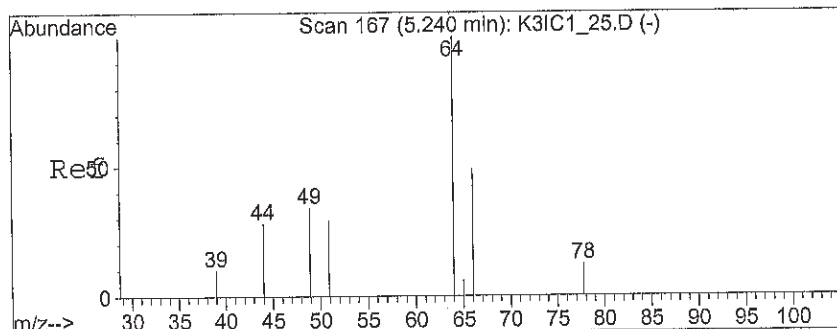
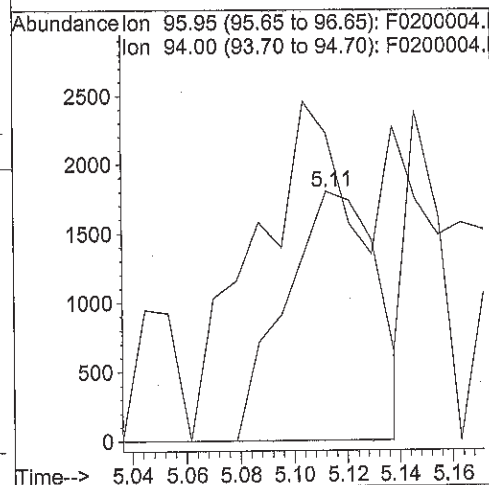
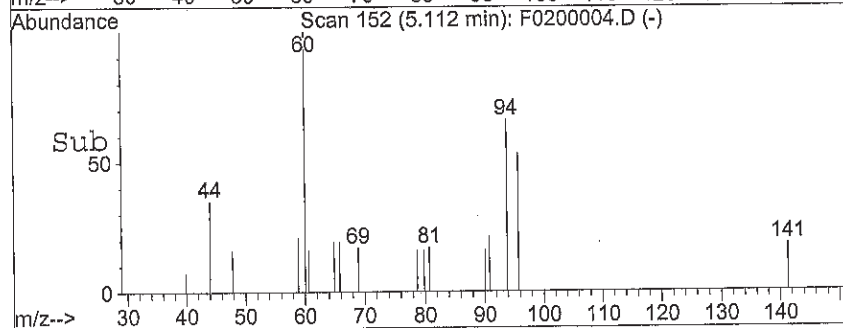
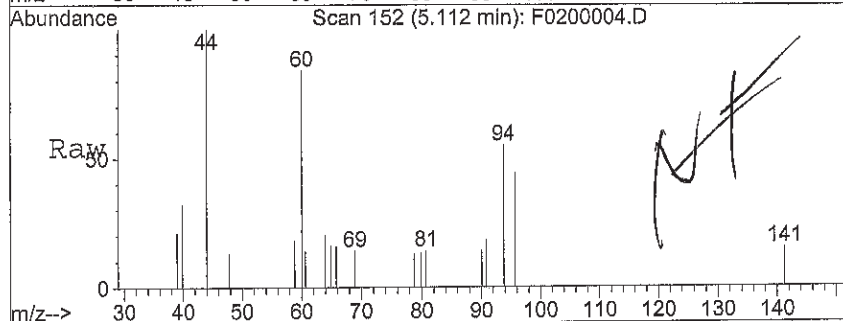
64 1093.3 25.6 38.4#





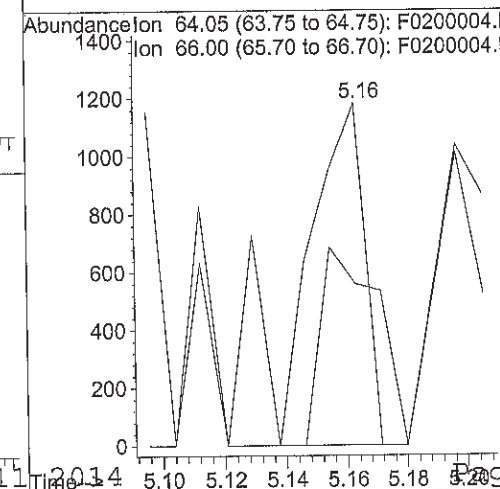
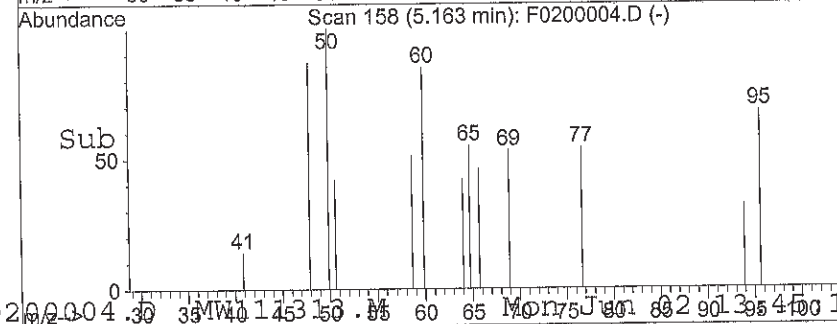
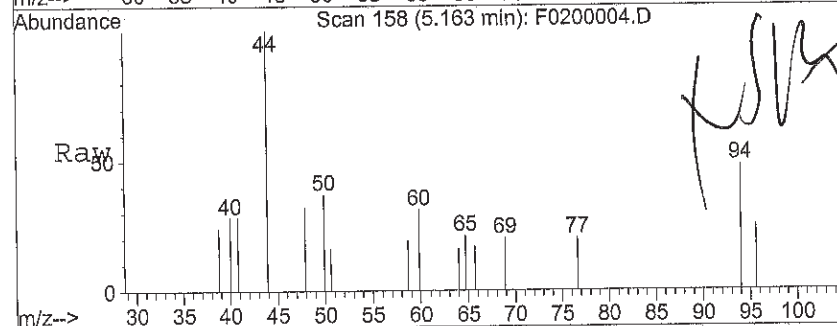
#6
 Bromomethane
 Concen: 1.33 ug/L
 RT: 5.11 min Scan# 152
 Delta R.T. 0.02 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

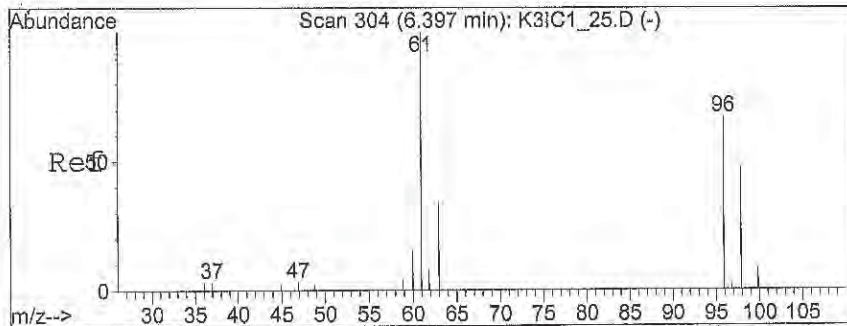
Tgt Ion: 96 Resp: 4359
 Ion Ratio Lower Upper
 96 100
 94 148.2 101.0 151.4



#7
 Chloroethane
 Concen: 2.35 ug/L
 RT: 5.16 min Scan# 158
 Delta R.T. -0.08 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

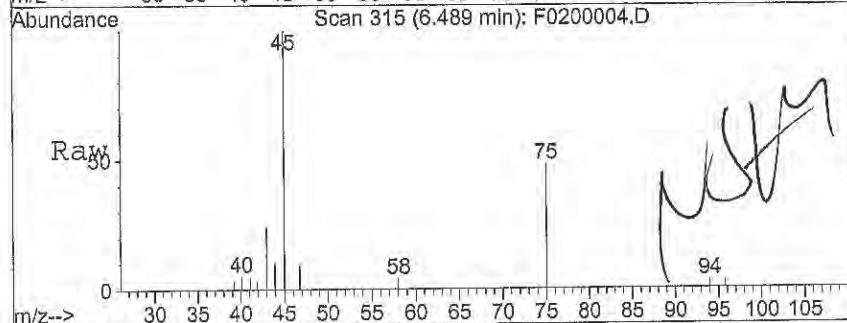
Tgt Ion: 64 Resp: 1770
 Ion Ratio Lower Upper
 64 100
 66 50.8 35.4 53.0





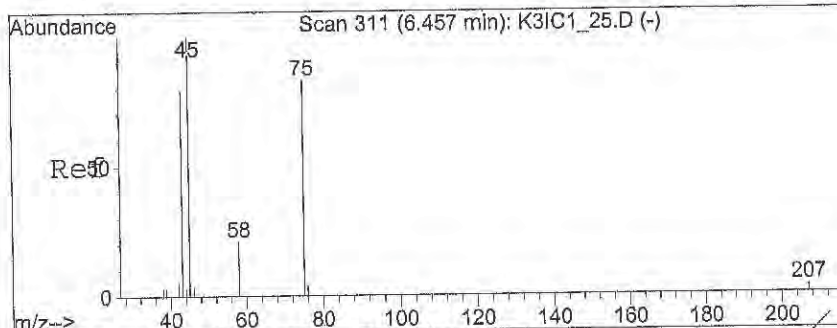
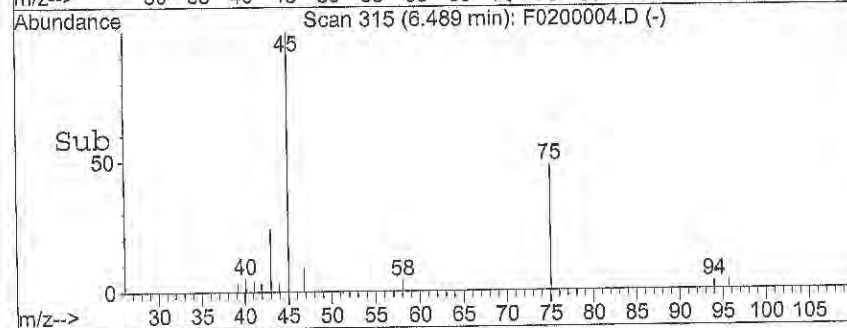
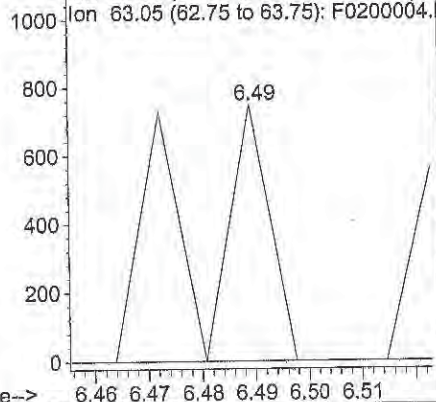
#10
1,1-Dichloroethene
Concen: 0.13 ug/L
RT: 6.49 min Scan# 315
Delta R.T. 0.09 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 96 Resp: 379
Ion Ratio Lower Upper
96 100
61 0.0 130.0 195.0#
98 0.0 56.2 84.4#
63 97.4 41.5 62.3#



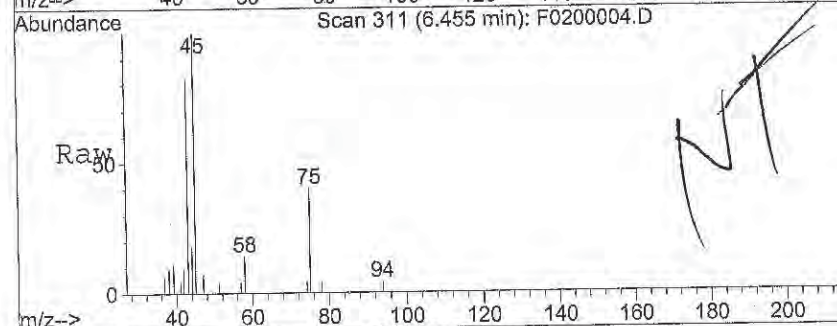
Abundance

Ion 95.95 (95.65 to 96.65): F0200004.
Ion 61.05 (60.75 to 61.75): F0200004.
Ion 97.95 (97.65 to 98.65): F0200004.
Ion 63.05 (62.75 to 63.75): F0200004.



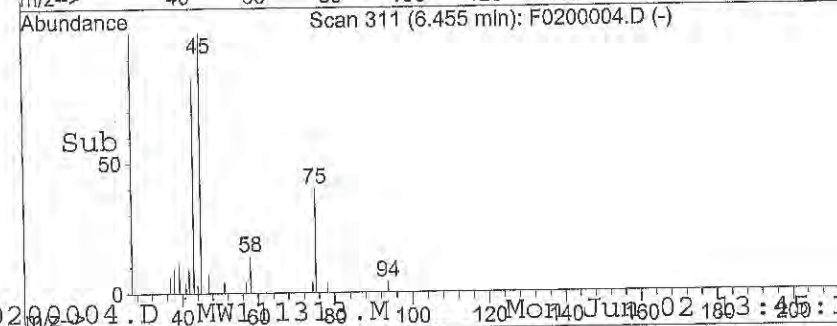
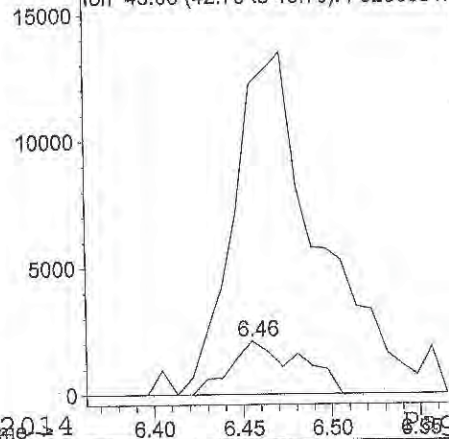
#11
Acetone
Concen: 6.76 ug/L
RT: 6.46 min Scan# 311
Delta R.T. -0.00 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

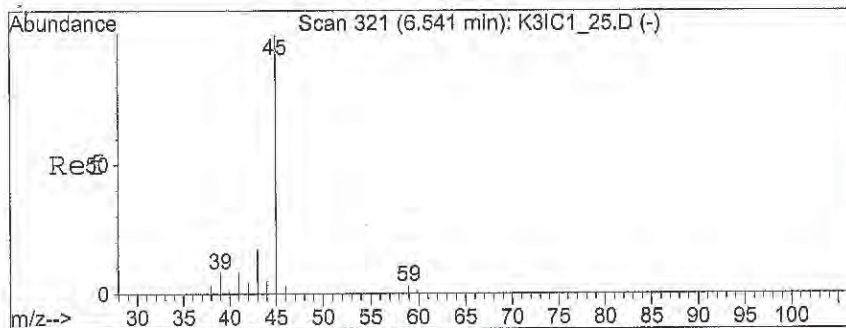
Tgt Ion: 58 Resp: 5730
Ion Ratio Lower Upper
58 100
43 815.3 360.9 541.3#



Abundance

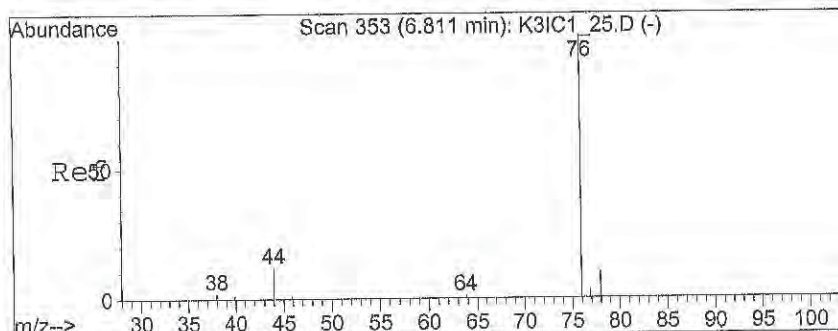
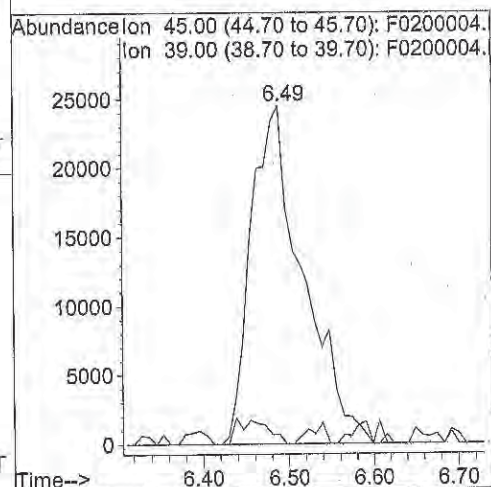
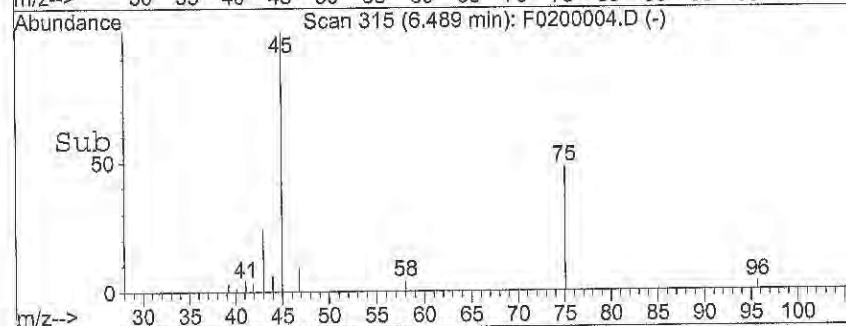
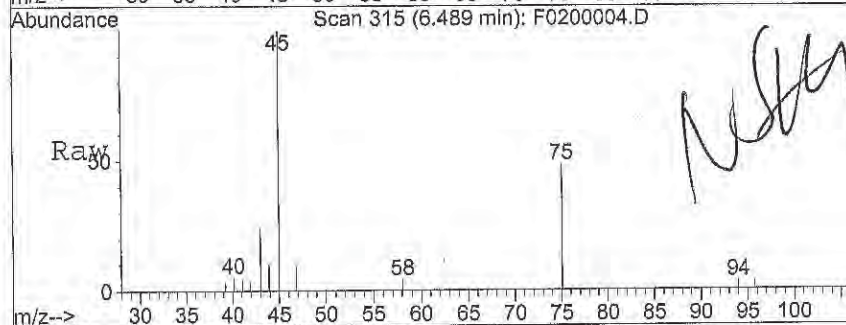
Ion 58.00 (57.70 to 58.70): F0200004.
Ion 43.00 (42.70 to 43.70): F0200004.





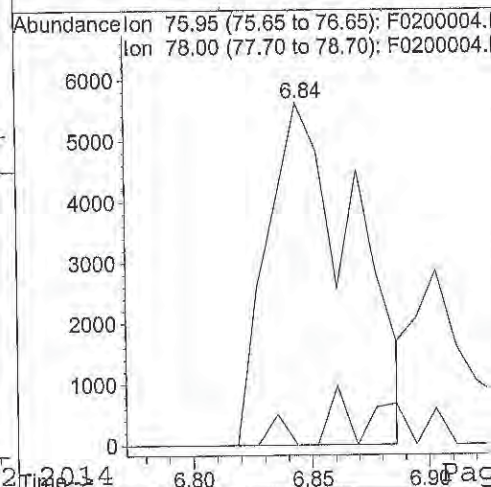
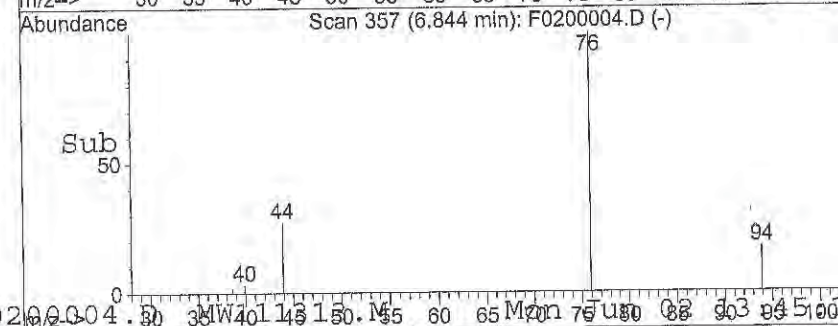
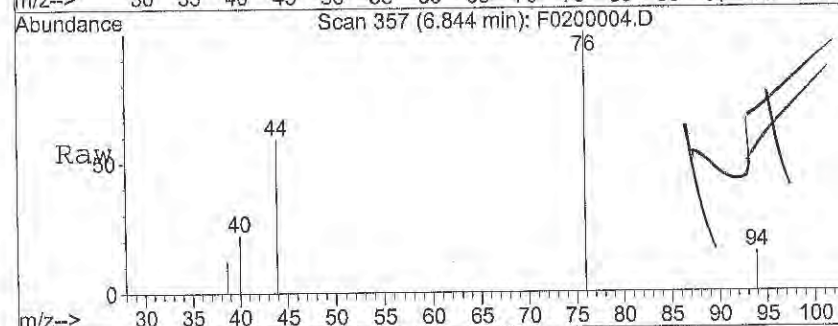
#12
 (IPA) Leak Check Compound
 Concen: 679.69 ug/L
 RT: 6.49 min Scan# 315
 Delta R.T. -0.05 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

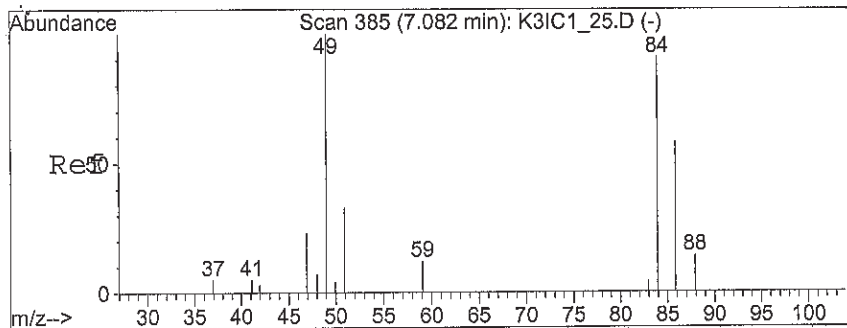
Tgt Ion: 45 Resp: 104307
 Ion Ratio Lower Upper
 45 100
 39 0.0 4.9 7.3#



#13
 Carbon disulfide
 Concen: 1.37 ug/L
 RT: 6.84 min Scan# 357
 Delta R.T. 0.03 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

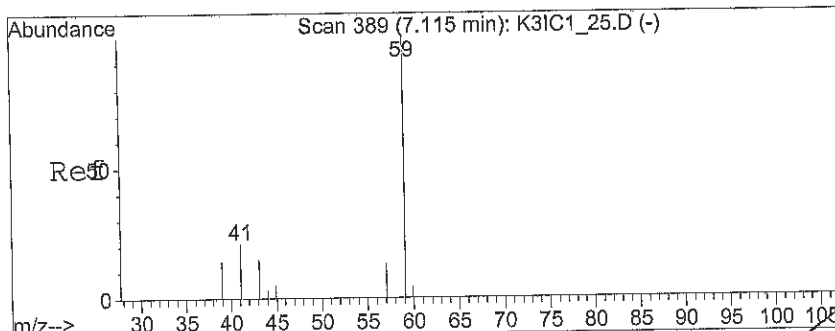
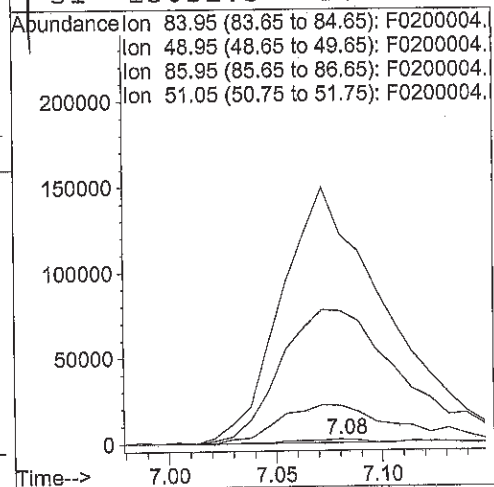
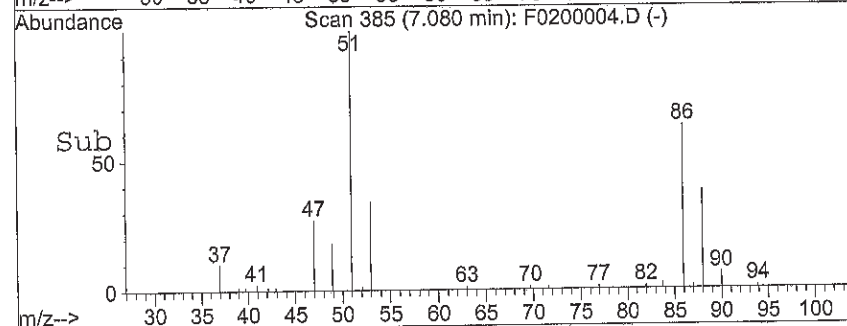
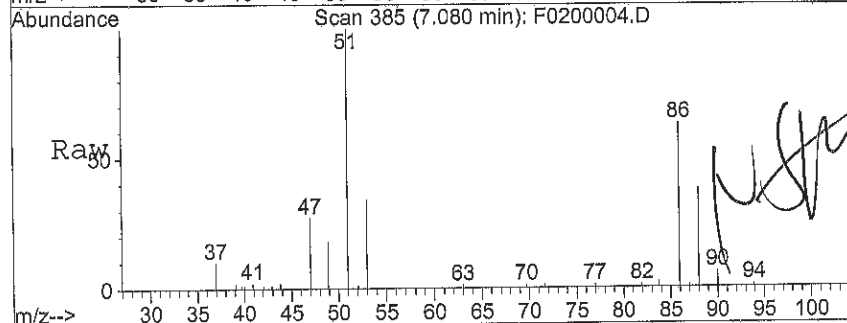
Tgt Ion: 76 Resp: 14548
 Ion Ratio Lower Upper
 76 100
 78 1.8 7.0 10.4#





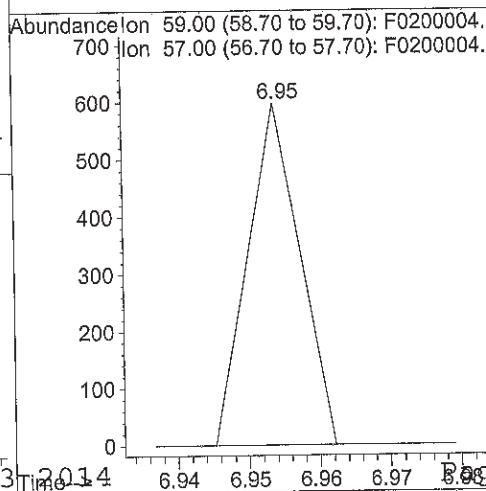
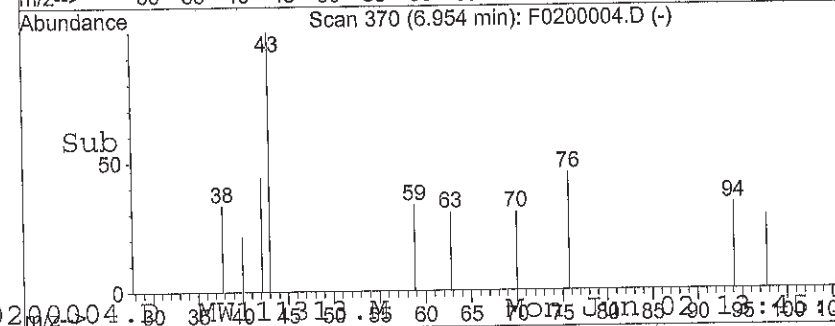
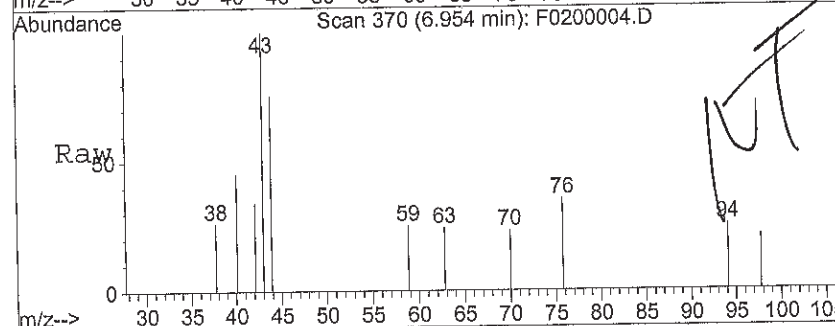
#14
Methylene Chloride
Concen: 1.16 ug/L
RT: 7.08 min Scan# 385
Delta R.T. -0.00 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

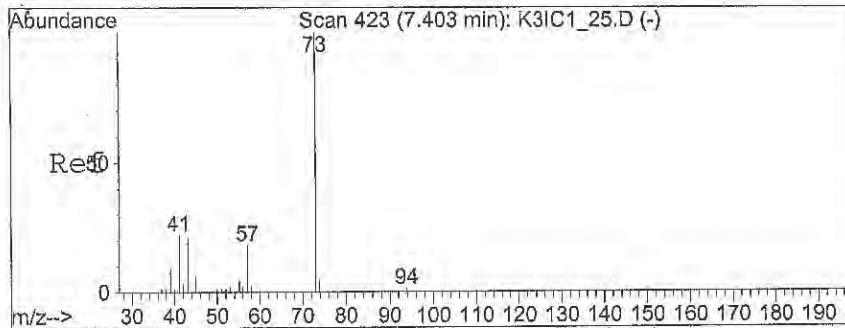
Tgt Ion: 84 Resp: 4061
Ion Ratio Lower Upper
84 100
49 2145.2 89.8 134.6#
86 7700.5 51.1 76.7#
51 13051.5 28.5 42.7#



#15
(TBA) tert-Butanol
Concen: 1.39 ug/L
RT: 6.95 min Scan# 370
Delta R.T. -0.16 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

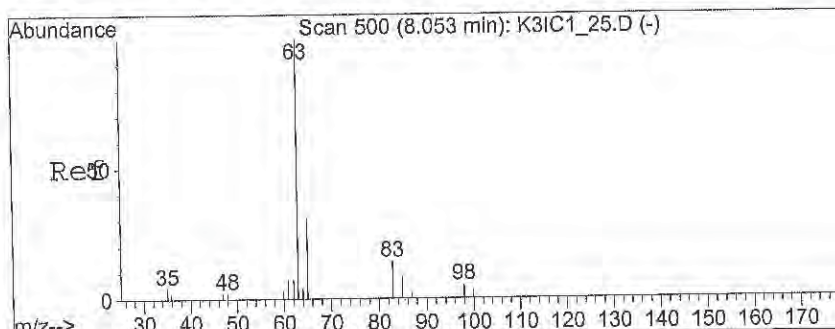
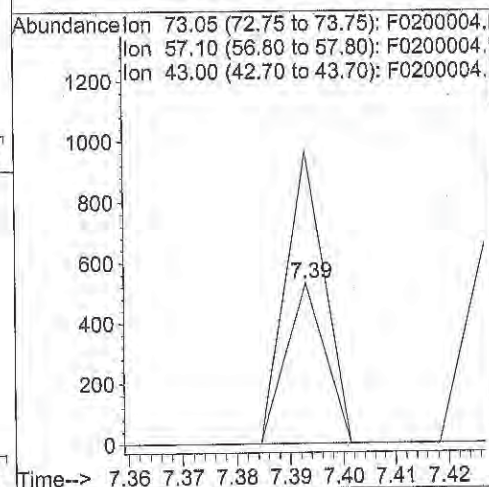
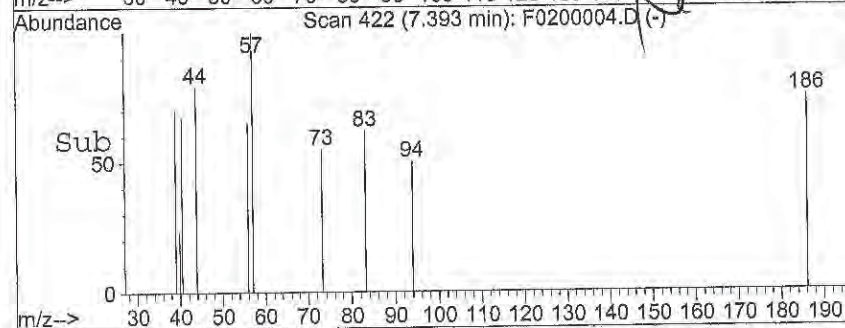
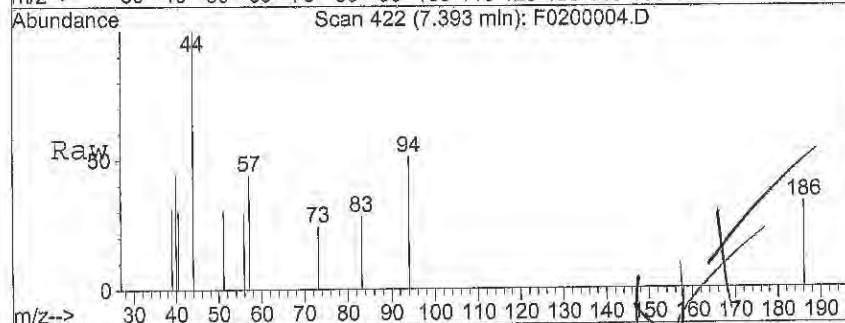
Tgt Ion: 59 Resp: 302
Ion Ratio Lower Upper
59 100
57 0.0 6.4 9.6#





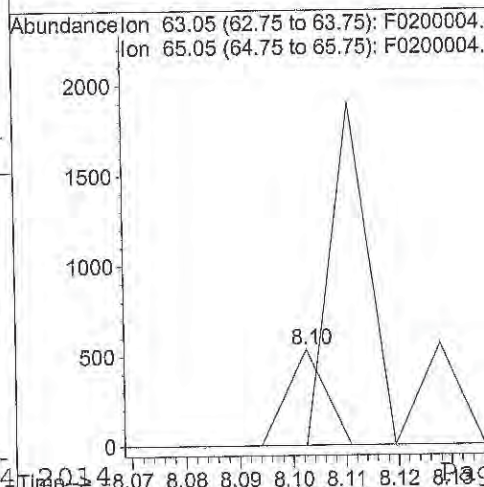
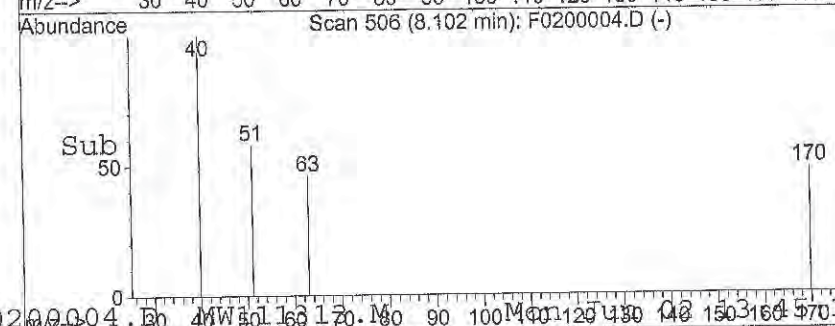
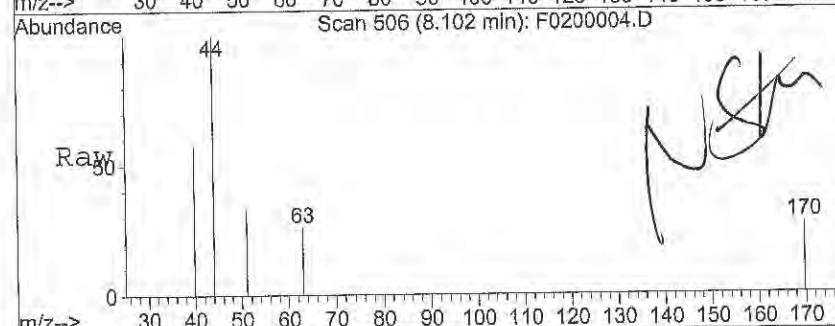
#16
 (MTBE) Methyl-t-butyl ether
 Concen: 0.04 ug/L
 RT: 7.39 min Scan# 422
 Delta R.T. -0.01 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

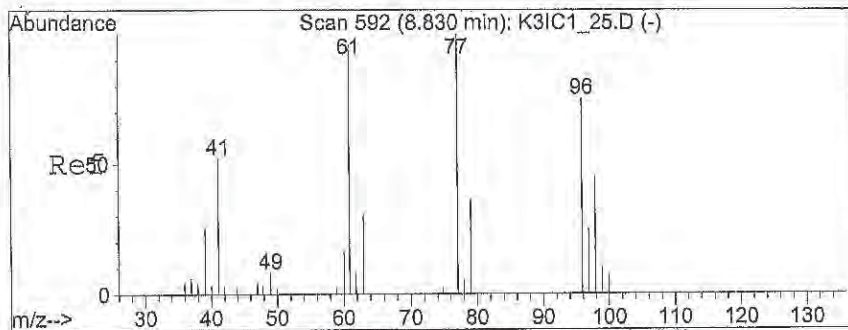
Tgt Ion: 73 Resp: 270
 Ion Ratio Lower Upper
 73 100
 57 181.1 15.8 23.8#
 43 0.0 18.4 27.6#



#18
 1,1-Dichloroethane
 Concen: 0.05 ug/L
 RT: 8.10 min Scan# 506
 Delta R.T. 0.05 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

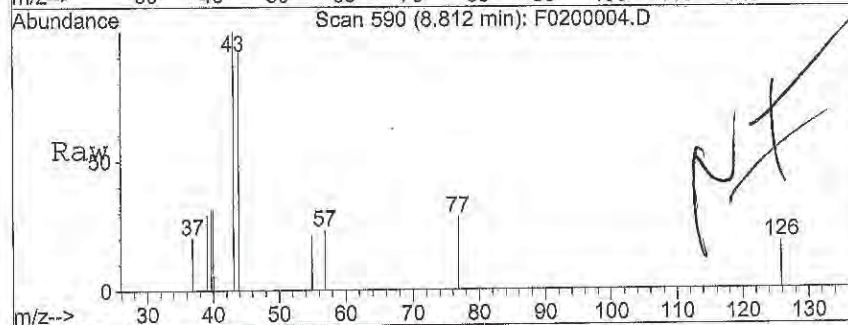
Tgt Ion: 63 Resp: 271
 Ion Ratio Lower Upper
 63 100
 65 460.5 25.8 38.8#





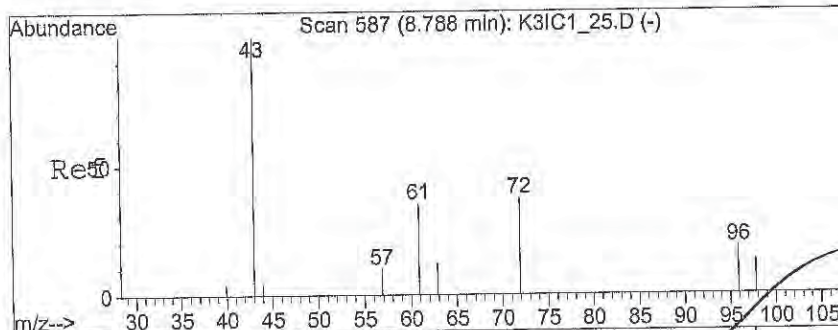
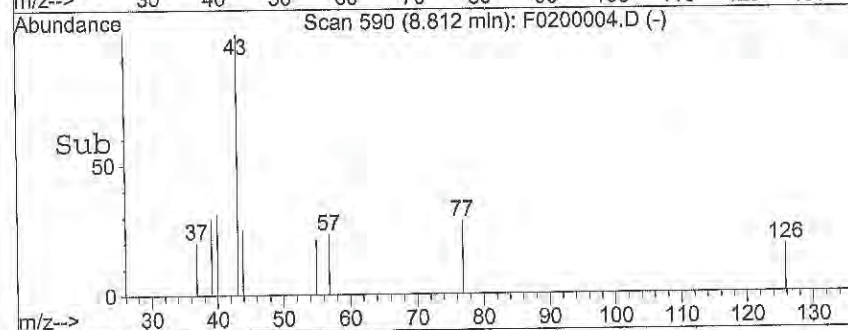
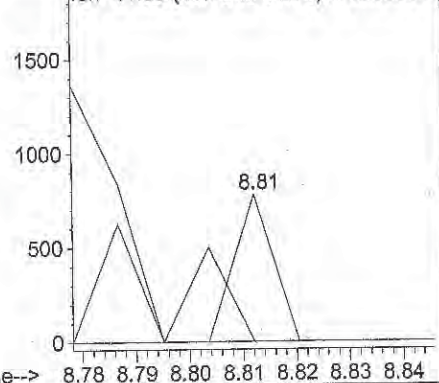
#20
 2,2-Dichloropropane
 Concen: 0.08 ug/L
 RT: 8.81 min Scan# 590
 Delta R.T. -0.02 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

Tgt Ion:	77	Resp:	395
Ion	Ratio	Lower	Upper
77	100		
79	0.0	26.6	40.0#
97	0.0	18.9	28.3#
41	0.0	42.6	64.0#



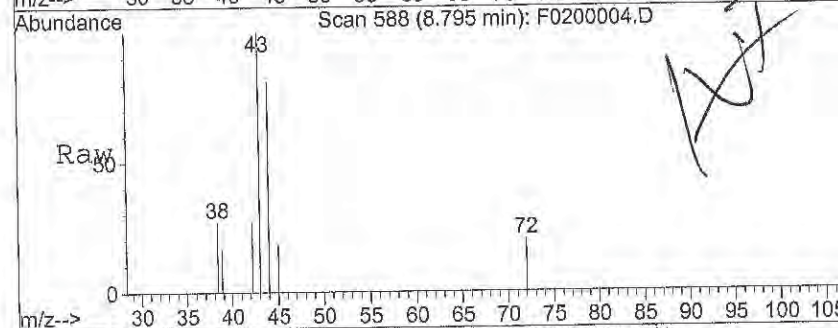
Abundance

Ion 77.05 (76.75 to 77.75): F0200004.
 Ion 79.00 (78.70 to 79.70): F0200004.
 Ion 96.95 (96.65 to 97.65): F0200004.
 Ion 41.05 (40.75 to 41.75): F0200004.



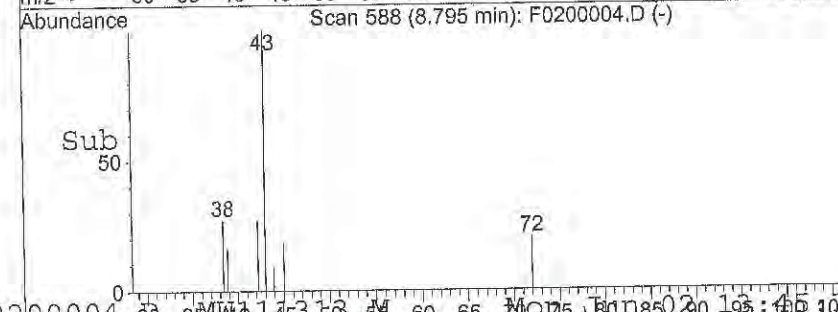
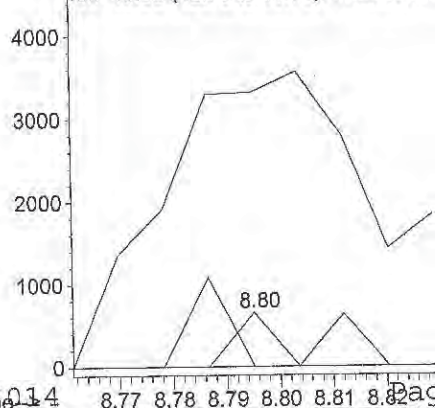
#21
 (MEK) 2-Butanone
 Concen: 0.92 ug/L
 RT: 8.80 min Scan# 588
 Delta R.T. 0.01 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

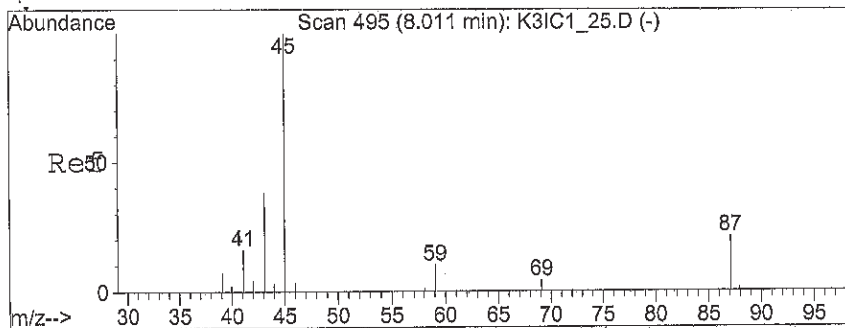
Tgt Ion:	72	Resp:	330
Ion	Ratio	Lower	Upper
72	100		
57	97.3	17.5	26.3#
43	3076.7	314.2	471.2#



Abundance

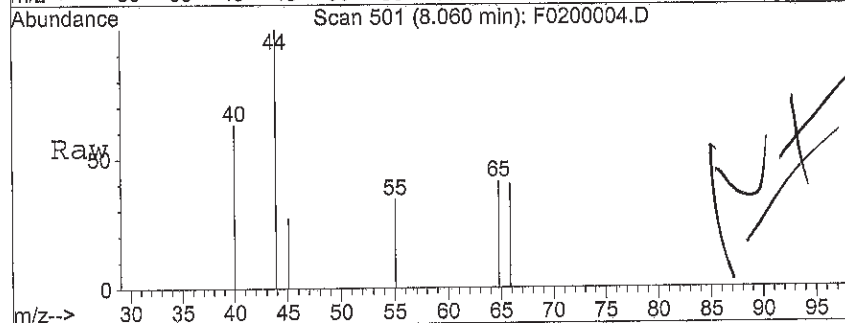
Ion 72.00 (71.70 to 72.70): F0200004.
 Ion 57.10 (56.80 to 57.80): F0200004.
 Ion 43.00 (42.70 to 43.70): F0200004.





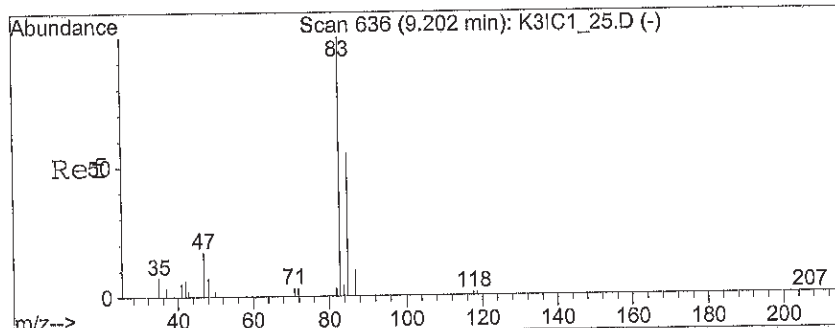
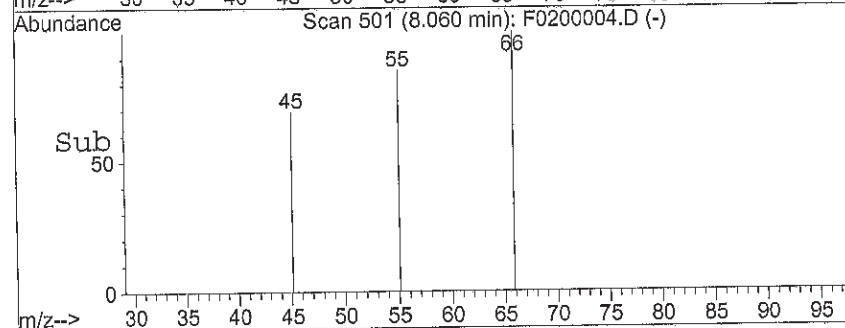
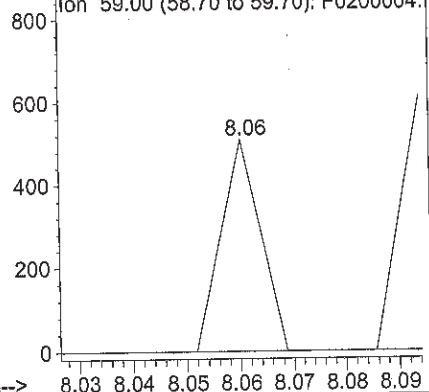
#22
 (DIPE) Diisopropyl Ether
 Concen: 0.03 ug/L
 RT: 8.06 min Scan# 501
 Delta R.T. 0.05 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

Tgt Ion:	45	Resp:	258
Ion	Ratio	Lower	Upper
45	100		
87	0.0	17.0	25.6#
43	0.0	30.5	45.7#
59	0.0	7.4	11.2#



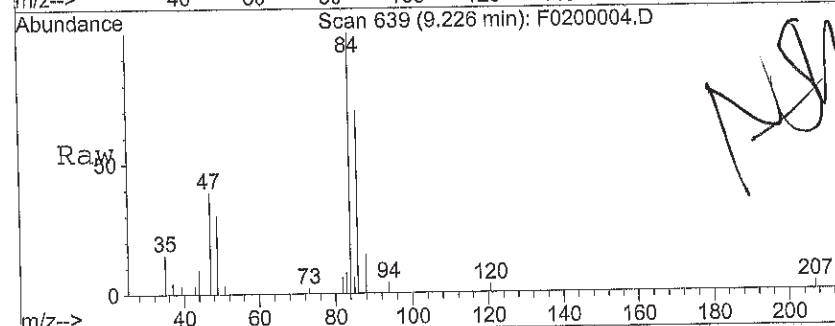
Abundance

Ion 45.00 (44.70 to 45.70): F0200004.
 Ion 87.10 (86.80 to 87.80): F0200004.
 Ion 43.05 (42.75 to 43.75): F0200004.
 Ion 59.00 (58.70 to 59.70): F0200004.



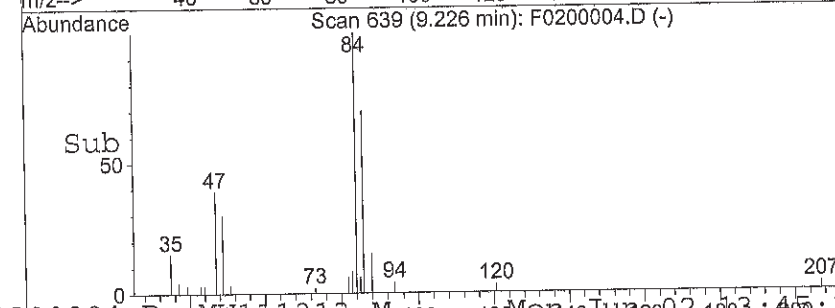
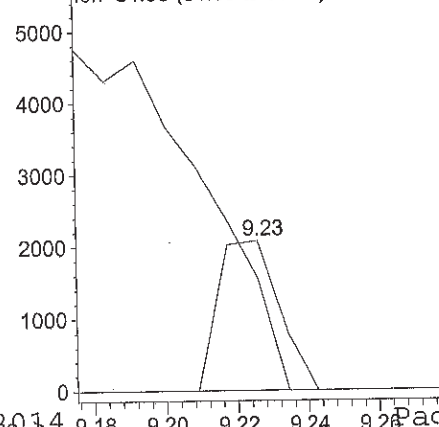
#24
 Chloroform
 Concen: 0.37 ug/L
 RT: 9.23 min Scan# 639
 Delta R.T. 0.02 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

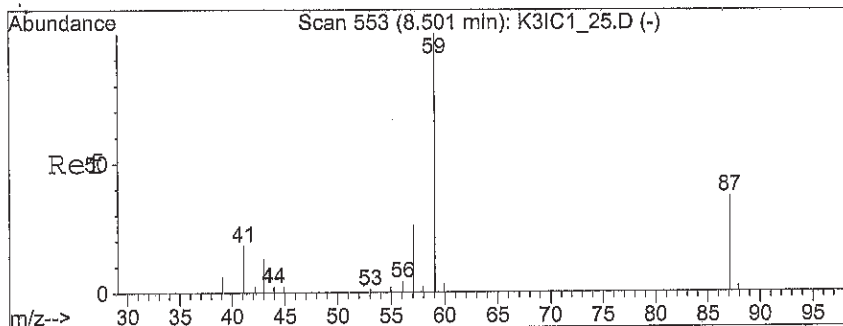
Tgt Ion:	83	Resp:	2471
Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.8	77.6#



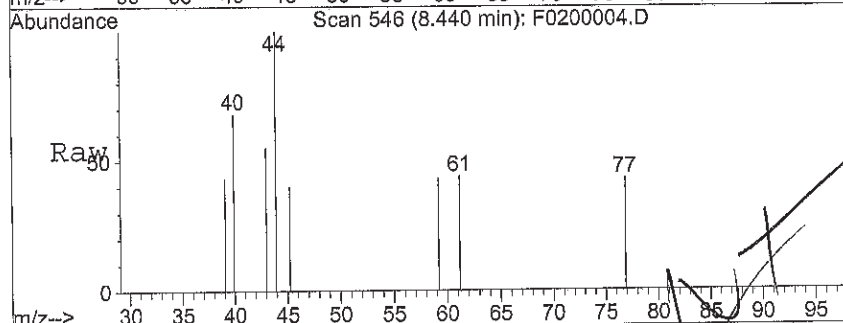
Abundance

Ion 83.00 (82.70 to 83.70): F0200004.
 Ion 84.95 (84.65 to 85.65): F0200004.

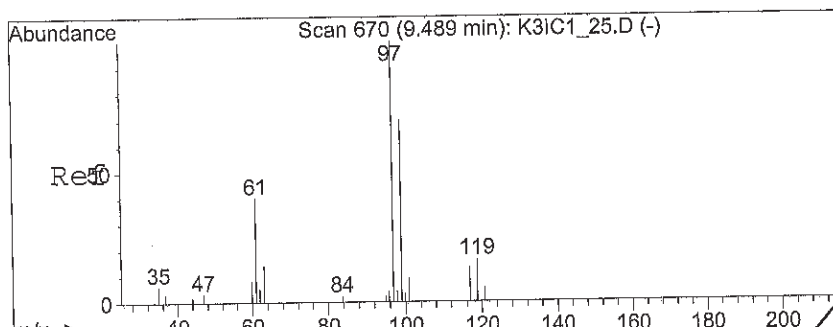
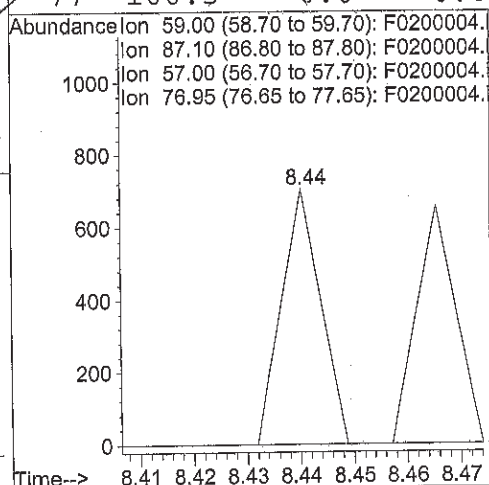
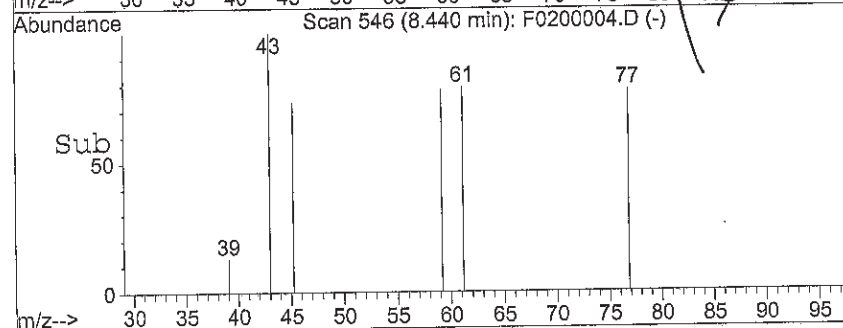




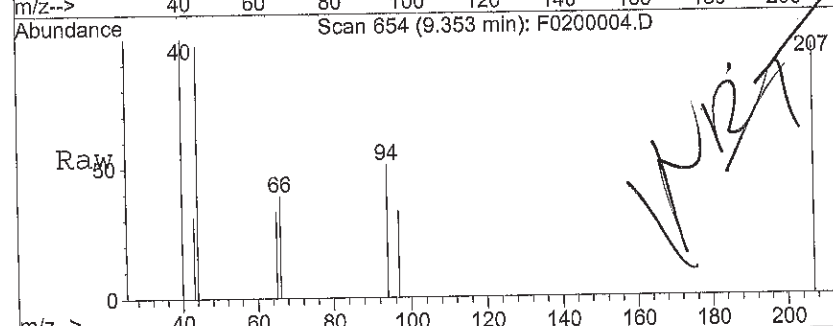
#25
 (ETBE) 2-ethoxy 2-methyl propan
 Concen: 0.04 ug/L
 RT: 8.44 min Scan# 546
 Delta R.T. -0.06 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm



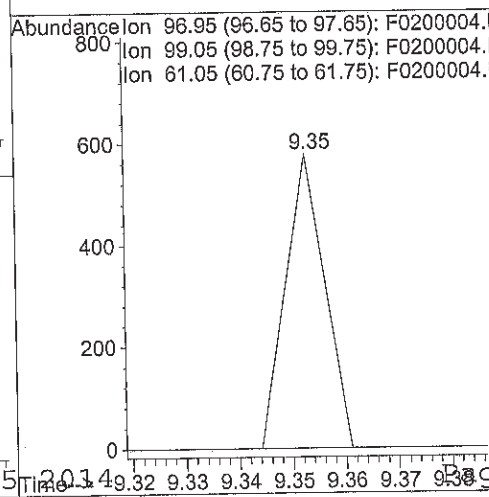
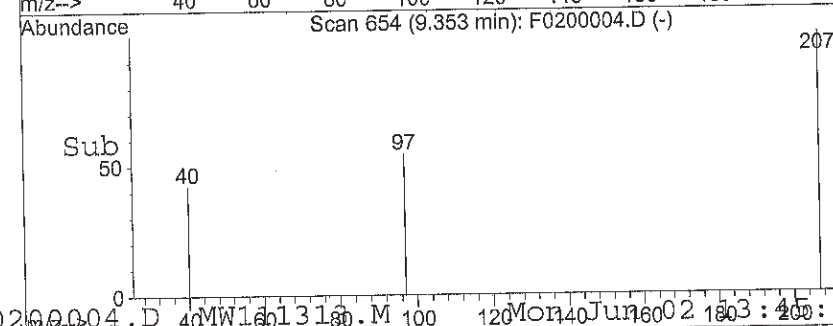
Tgt Ion: 59 Resp: 356
 Ion Ratio Lower Upper
 59 100
 87 0.0 27.8 41.8#
 57 0.0 19.8 29.6#
 77 100.3 0.0 0.0#

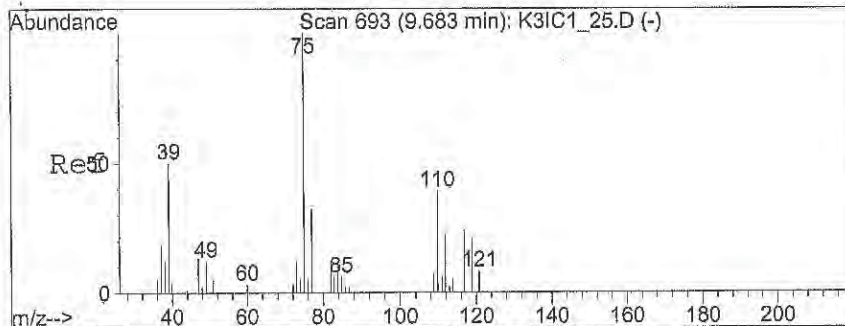


#26
 1,1,1-Trichloroethane
 Concen: 0.06 ug/L
 RT: 9.35 min Scan# 654
 Delta R.T. -0.14 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

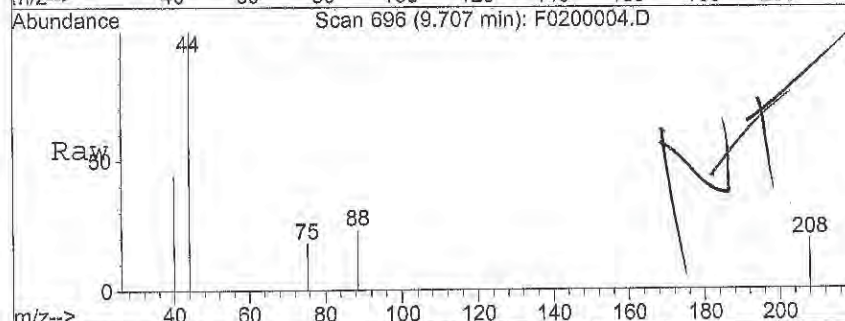


Tgt Ion: 97 Resp: 293
 Ion Ratio Lower Upper
 97 100
 99 0.0 54.7 82.1#
 61 0.0 32.3 48.5#

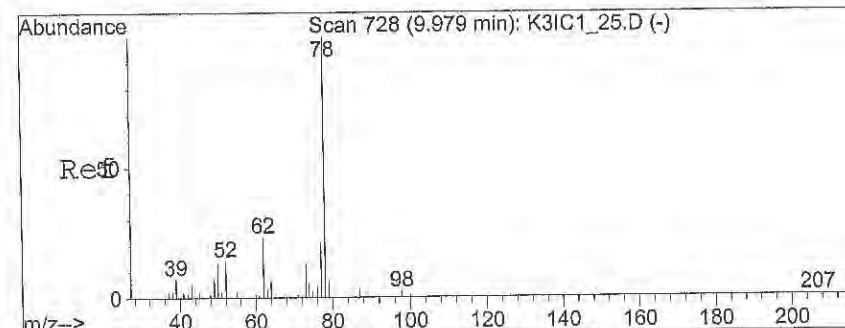
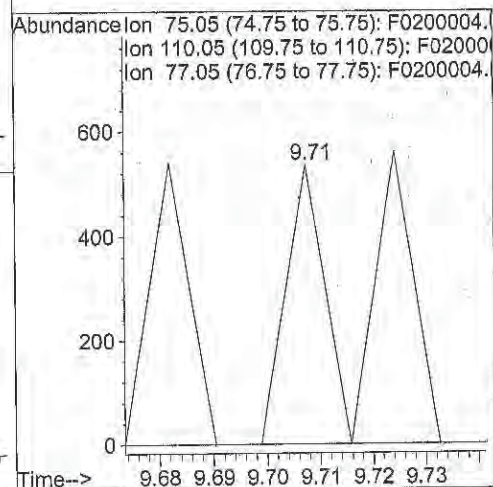
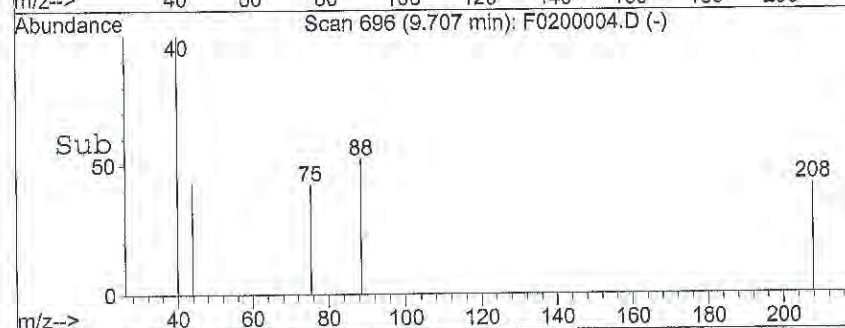




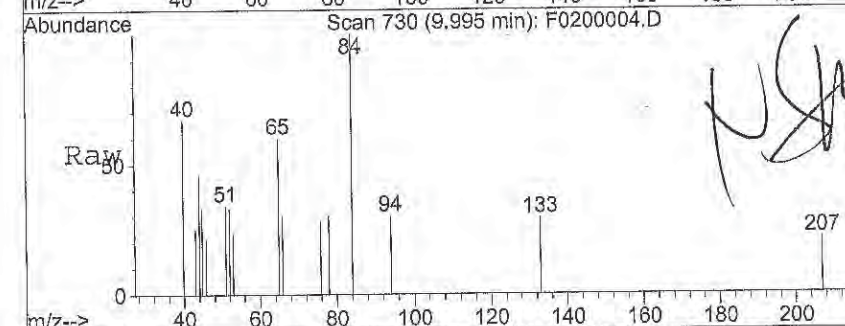
#29
 1,1-Dichloropropene
 Concen: 0.06 ug/L
 RT: 9.71 min Scan# 696
 Delta R.T. 0.02 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm



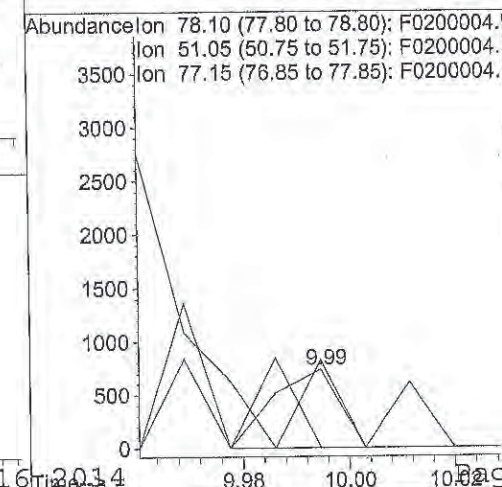
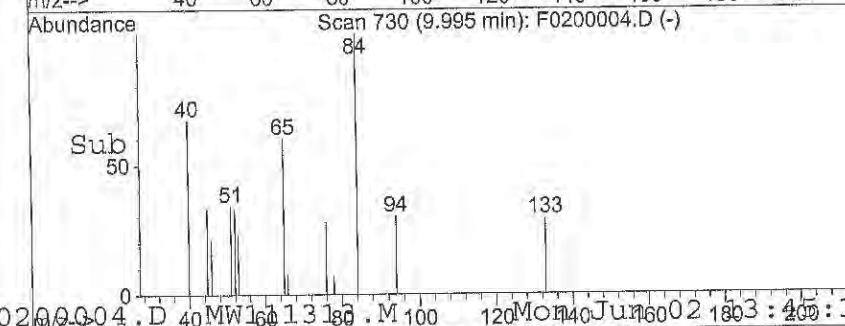
Tgt Ion: 75 Resp: 272
 Ion Ratio Lower Upper
 75 100
 110 0.0 29.0 43.6#
 77 104.4 25.0 37.4#

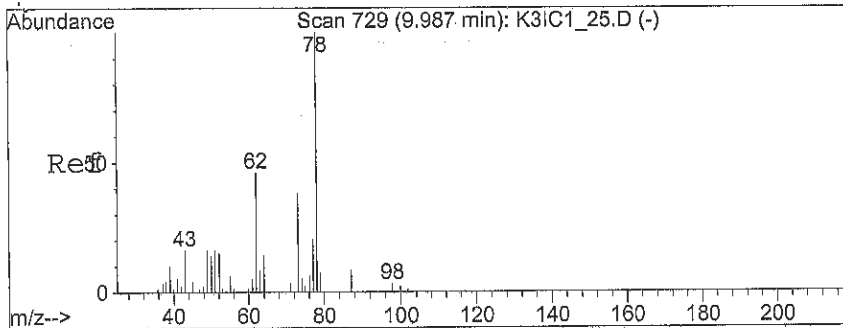


#31
 Benzene
 Concen: 0.05 ug/L
 RT: 9.99 min Scan# 730
 Delta R.T. 0.02 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm



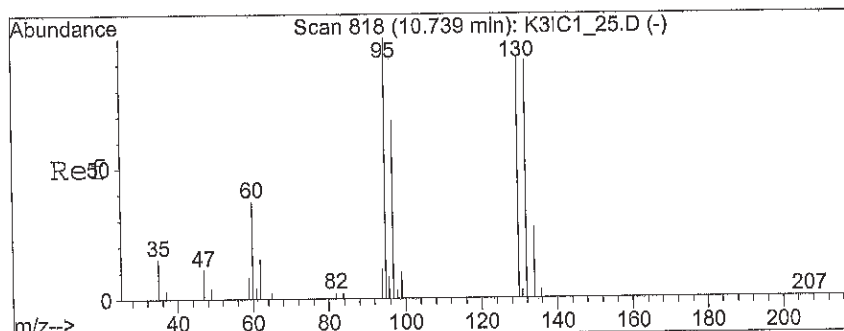
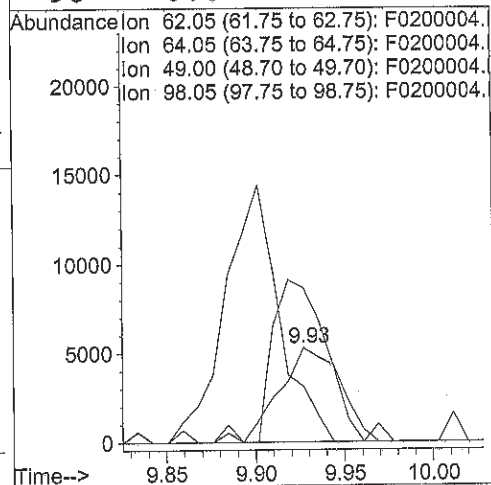
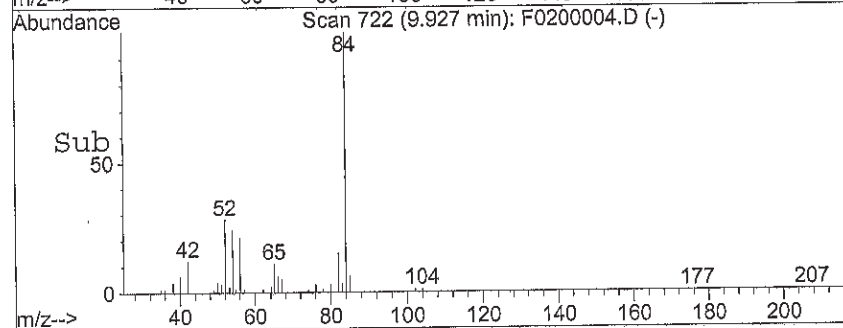
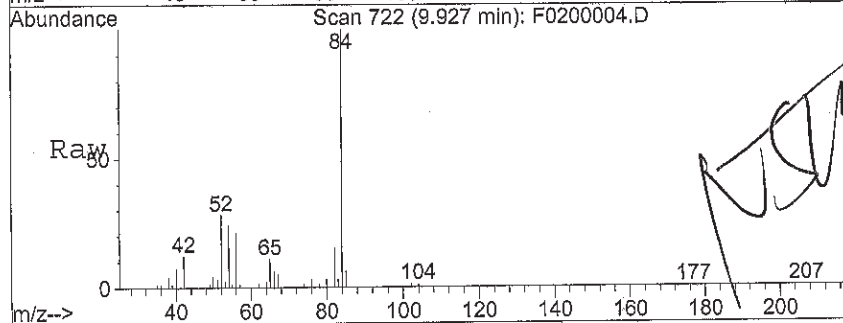
Tgt Ion: 78 Resp: 633
 Ion Ratio Lower Upper
 78 100
 51 0.0 14.2 21.2#
 77 0.0 16.6 24.8#





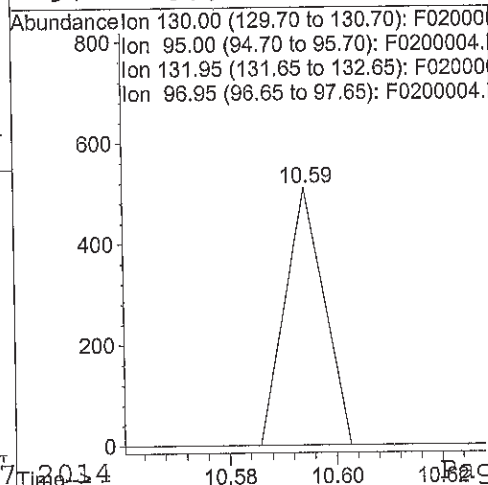
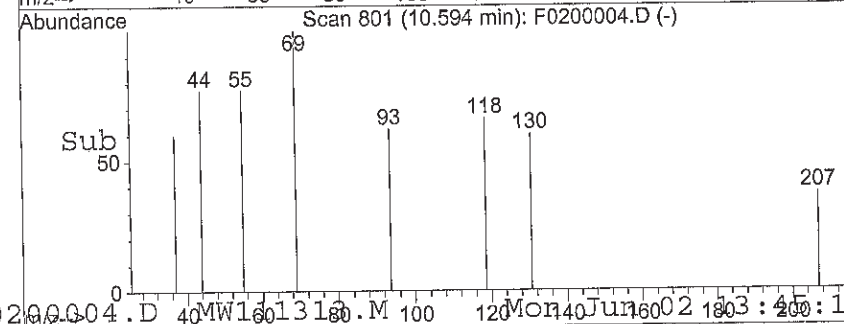
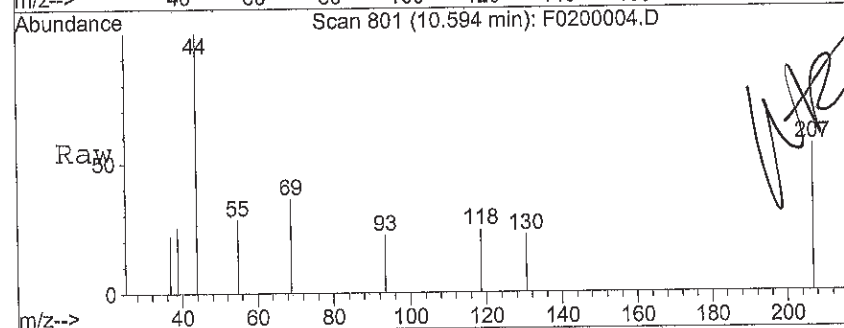
#32
1,2-Dichloroethane
Concen: 2.96 ug/L
RT: 9.93 min Scan# 722
Delta R.T. -0.06 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

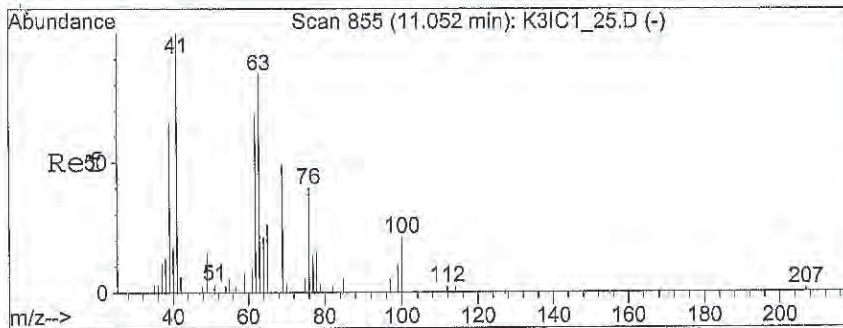
Tgt Ion:	62	Resp:	12568
Ion	Ratio	Lower	Upper
62	100		
64	155.5	28.0	42.0#
49	0.0	28.5	42.7#
98	0.0	6.2	9.4#



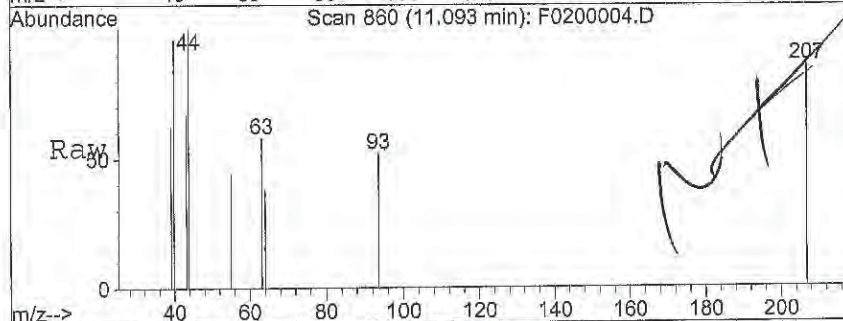
#33
Trichloroethene
Concen: 0.07 ug/L
RT: 10.59 min Scan# 801
Delta R.T. -0.14 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion:	130	Resp:	259
Ion	Ratio	Lower	Upper
130	100		
95	0.0	82.8	124.2#
132	0.0	77.4	116.2#
97	0.0	53.8	80.6#

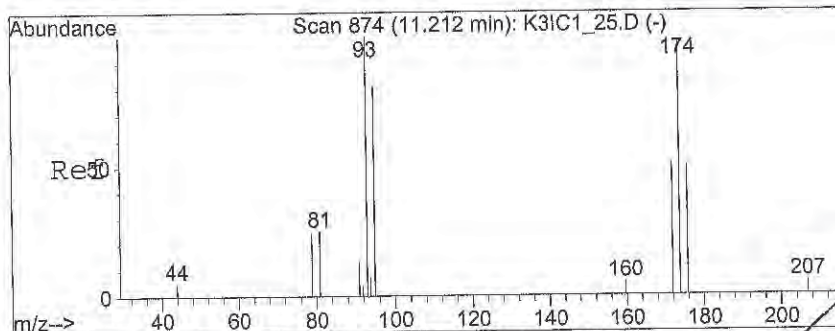
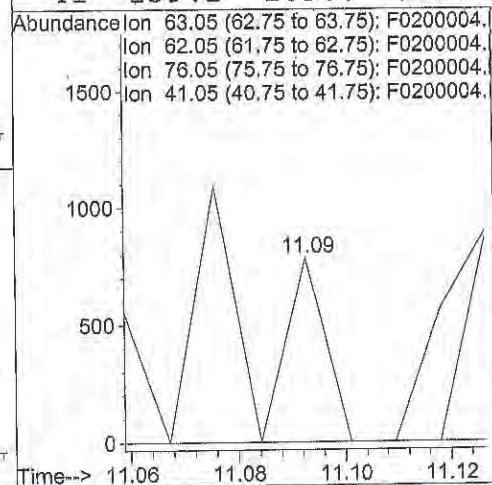
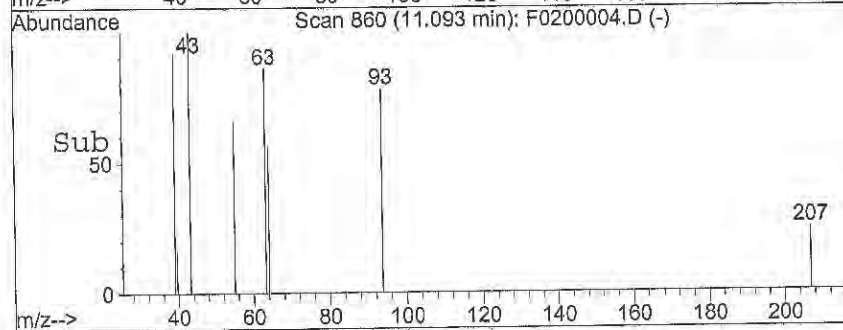




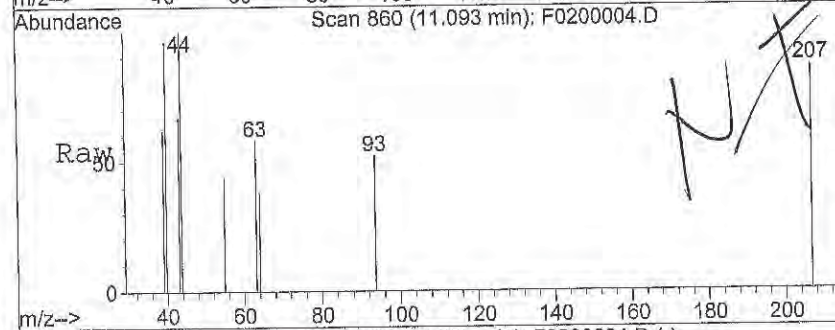
#34
 1,2-Dichloropropane
 Concen: 0.14 ug/L
 RT: 11.09 min Scan# 860
 Delta R.T. 0.04 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm



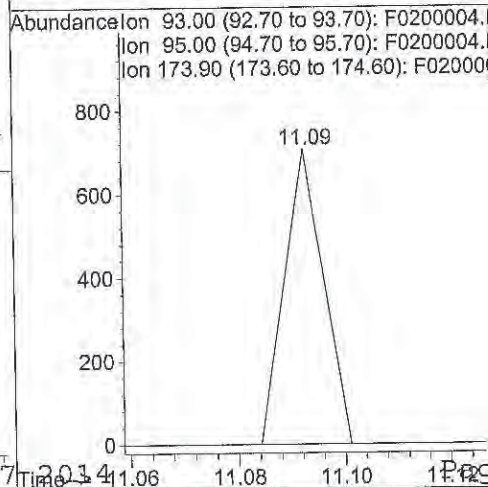
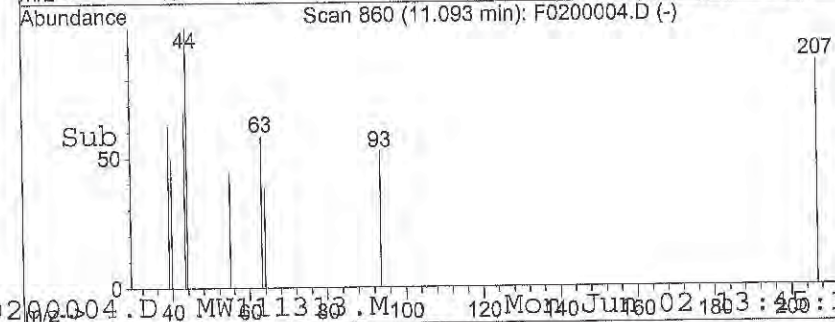
Tgt Ion: 63 Resp: 398
 Ion Ratio Lower Upper
 63 100
 62 0.0 67.4 101.2#
 76 0.0 40.3 60.5#
 41 139.2 103.0 154.6

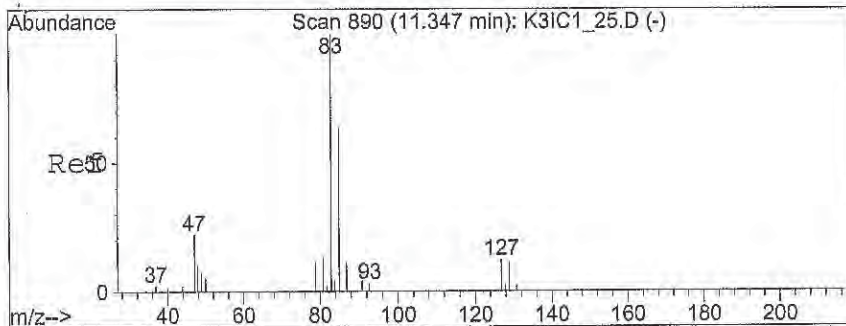


#35
 Dibromomethane
 Concen: 0.16 ug/L
 RT: 11.09 min Scan# 860
 Delta R.T. -0.12 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm



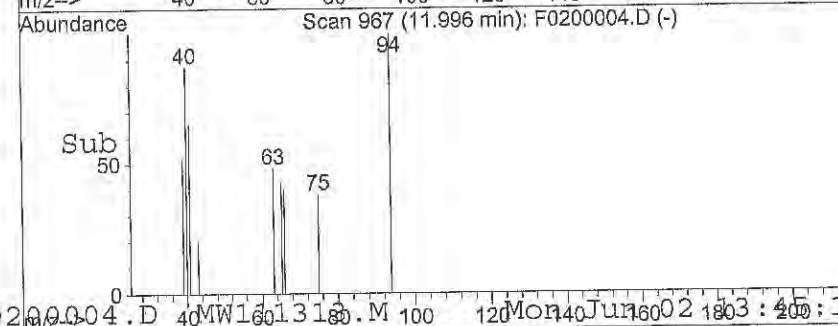
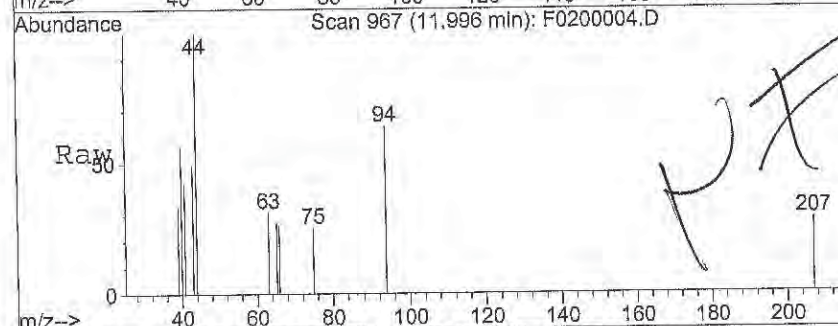
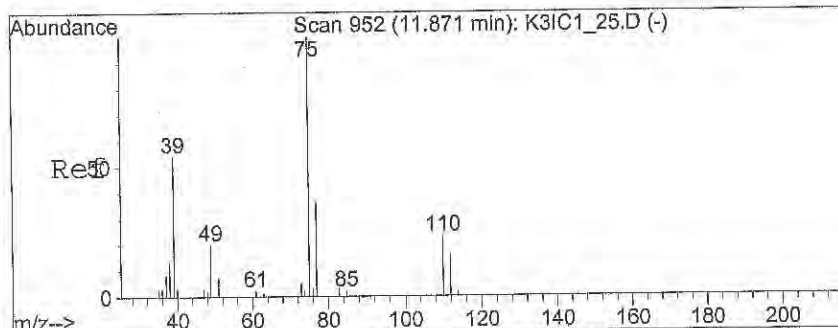
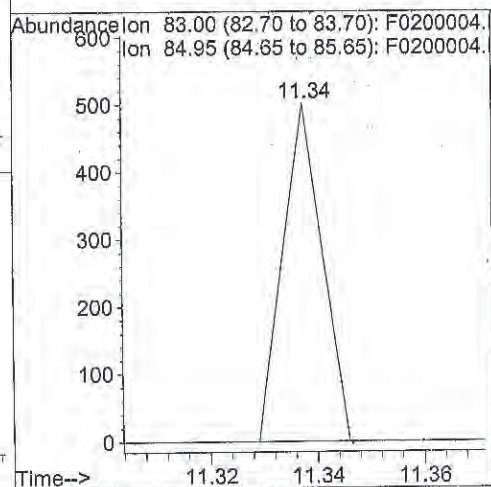
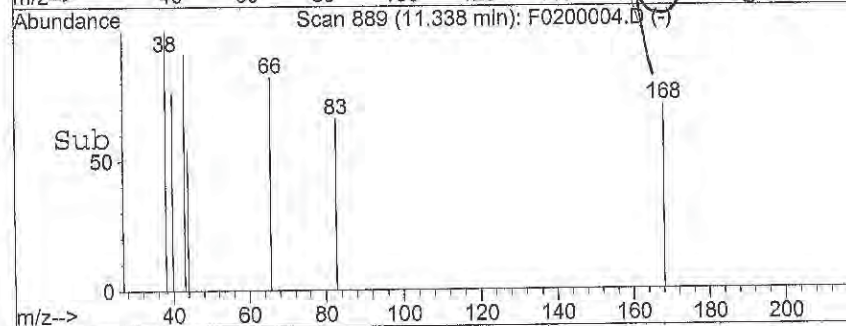
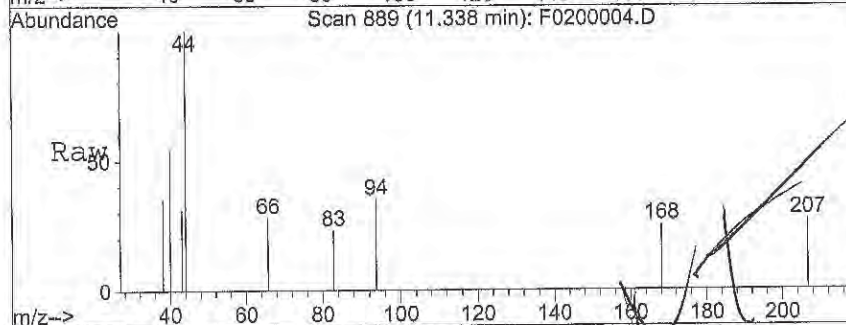
Tgt Ion: 93 Resp: 358
 Ion Ratio Lower Upper
 93 100
 95 0.0 66.2 99.2#
 174 0.0 75.5 113.3#





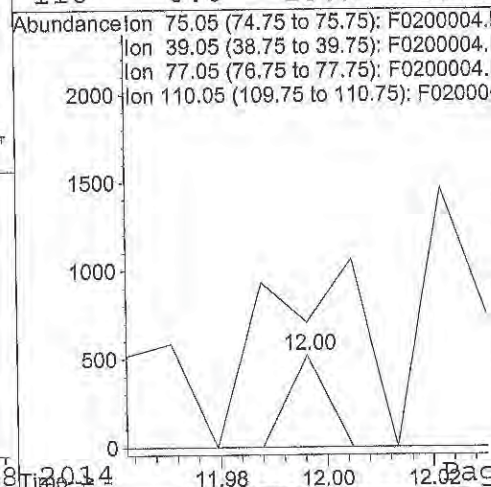
#36
 Bromodichloromethane
 Concen: 0.06 ug/L
 RT: 11.34 min Scan# 889
 Delta R.T. -0.01 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

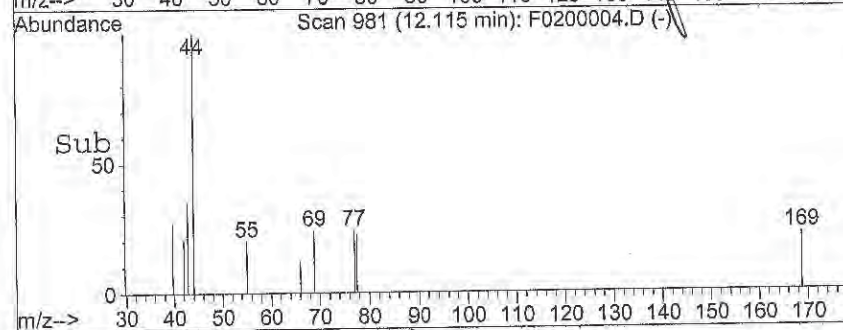
Tgt Ion: 83 Resp: 254
 Ion Ratio Lower Upper
 83 100
 85 0.0 48.2 72.2#



#37
 cis-1,3-Dichloropropene
 Concen: 0.05 ug/L
 RT: 12.00 min Scan# 967
 Delta R.T. 0.13 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

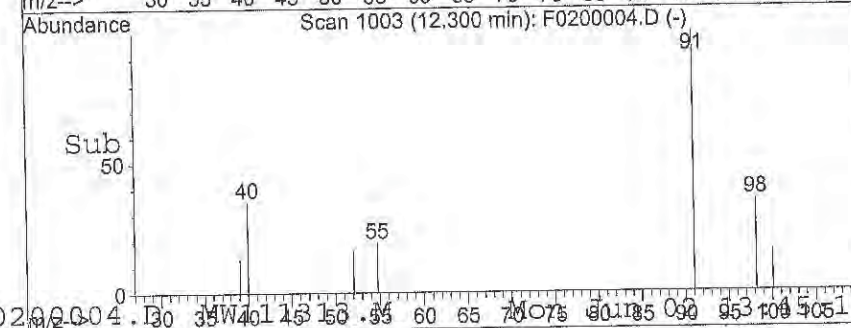
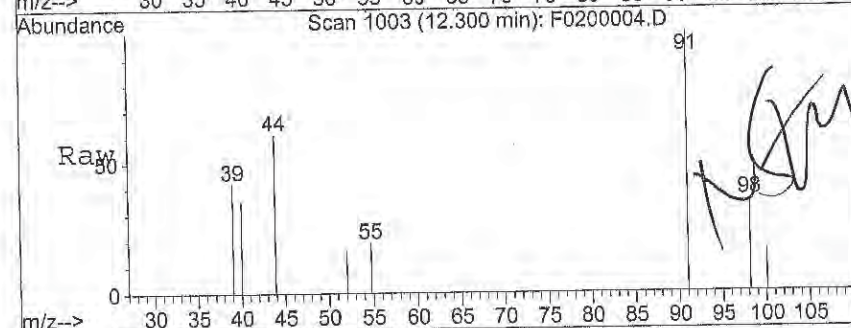
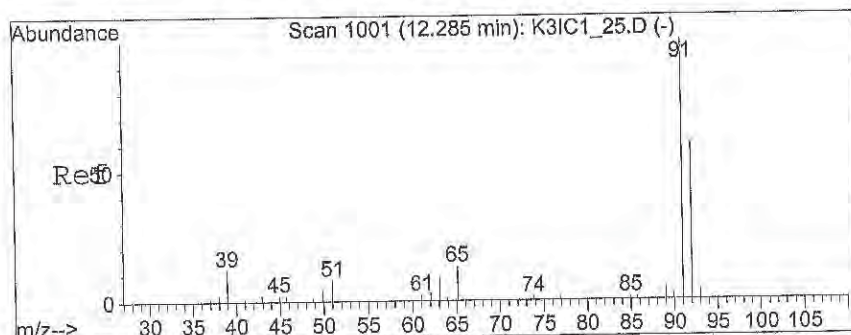
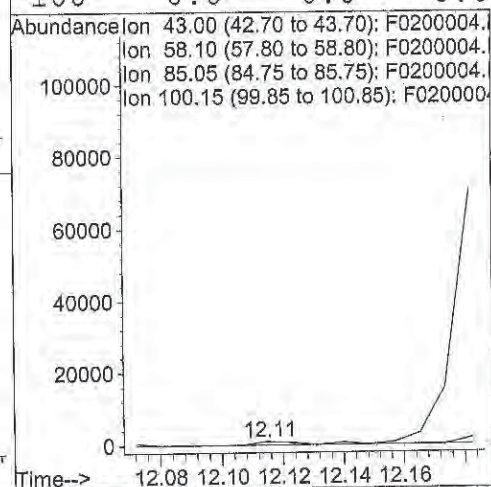
Tgt Ion: 75 Resp: 264
 Ion Ratio Lower Upper
 75 100
 39 517.8 40.7 61.1#
 77 0.0 28.8 43.2#
 110 0.0 18.1 27.1#





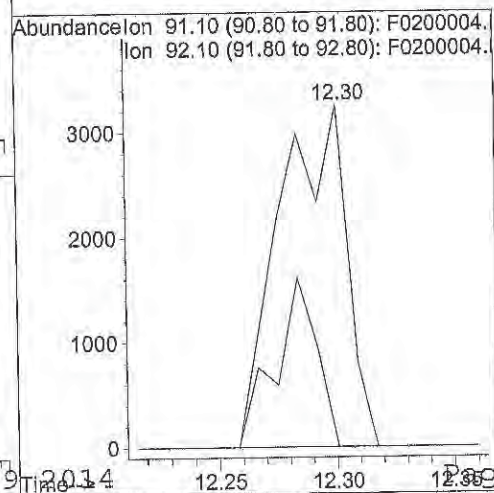
#40
(MIBK) 4-Methyl-2-Pentanone
Concen: 0.45 ug/L
RT: 12.11 min Scan# 981
Delta R.T. -0.00 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

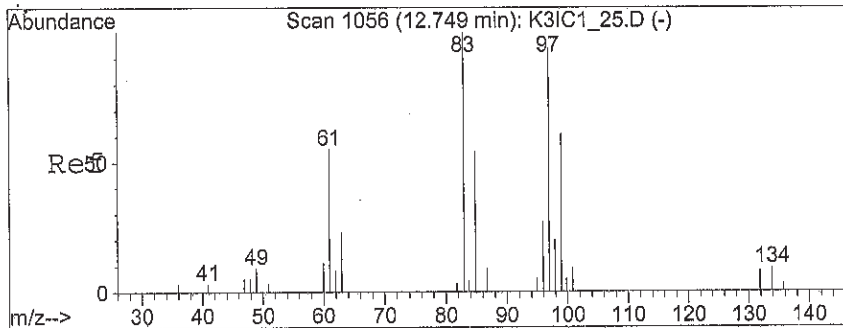
Tgt	Ion: 43	Resp:	1090
Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	0.0
85	0.0	0.0	0.0
100	0.0	0.0	0.0



```
#41
Toluene
Concen: 0.39 ug/L
RT: 12.30 min Scan# 1003
Delta R.T. 0.02 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm
```

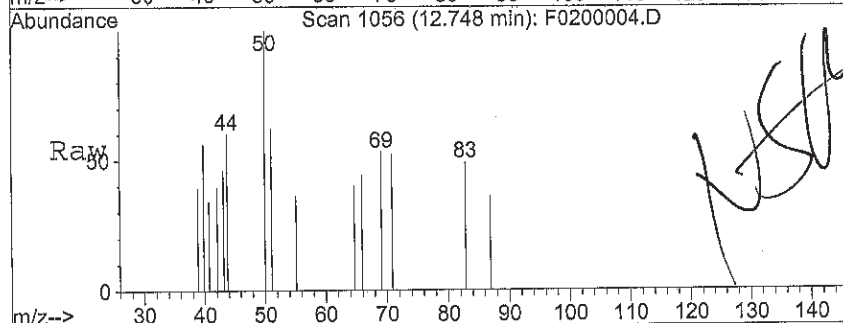
Tgt	Ion: 91	Resp:	6415
Ion	Ratio	Lower	Upper
91	100		
92	30.7	47.4	71.0#





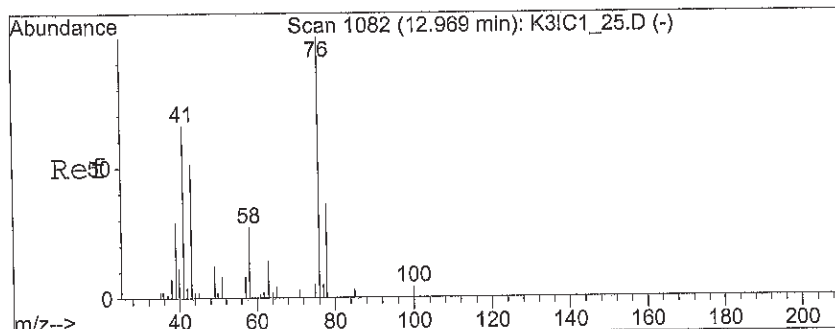
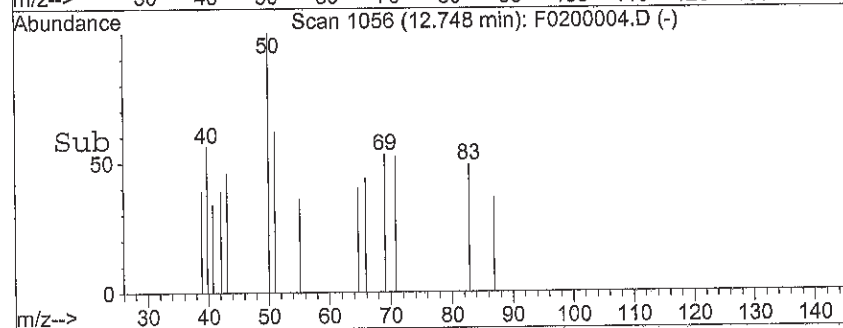
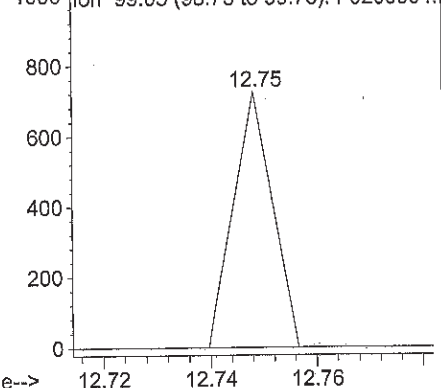
#43
 1,1,2-Trichloroethane
 Concen: 0.12 ug/L
 RT: 12.75 min Scan# 1056
 Delta R.T. -0.00 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

Tgt Ion:	83	Resp:	368
Ion Ratio	Lower	Upper	
83	100		
97	0.0	79.4	119.0#
61	0.0	47.4	71.2#
99	0.0	56.3	84.5#



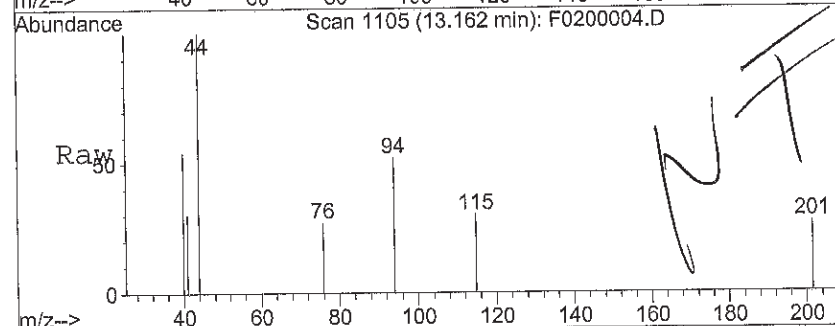
Abundance

Ion 83.00 (82.70 to 83.70): F0200004.
 Ion 96.95 (96.65 to 97.65): F0200004.
 Ion 61.05 (60.75 to 61.75): F0200004.
 Ion 99.05 (98.75 to 99.75): F0200004.



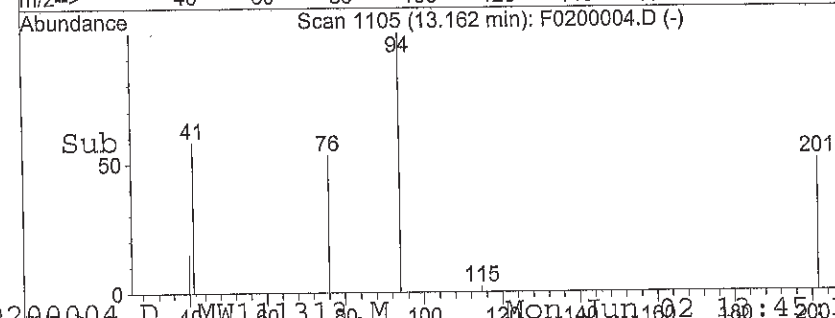
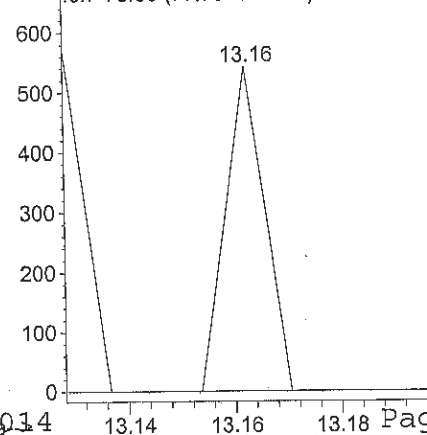
#45
 1,3-Dichloropropane
 Concen: 0.05 ug/L
 RT: 13.16 min Scan# 1105
 Delta R.T. 0.19 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

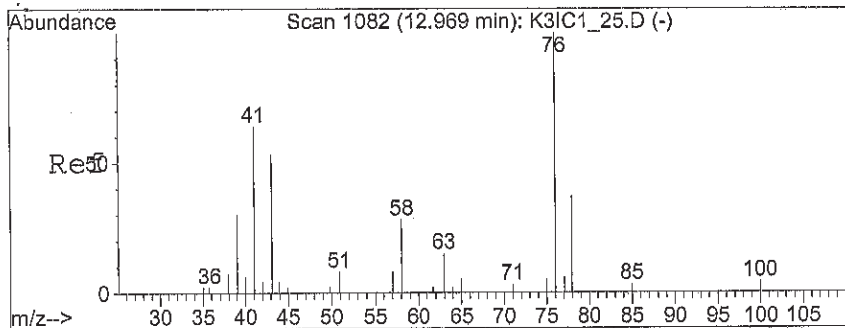
Tgt Ion:	76	Resp:	275
Ion Ratio	Lower	Upper	
76	100		
78	0.0	26.9	40.3#



Abundance

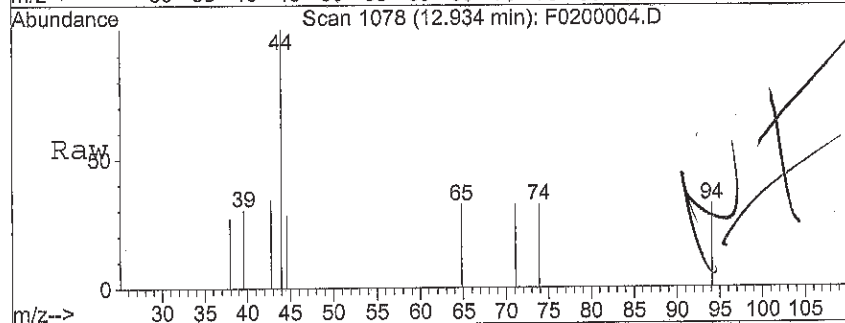
Ion 76.05 (75.75 to 76.75): F0200004.
 Ion 78.00 (77.70 to 78.70): F0200004.



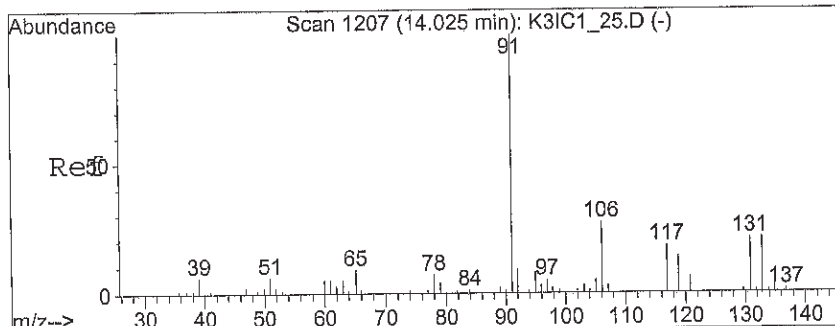
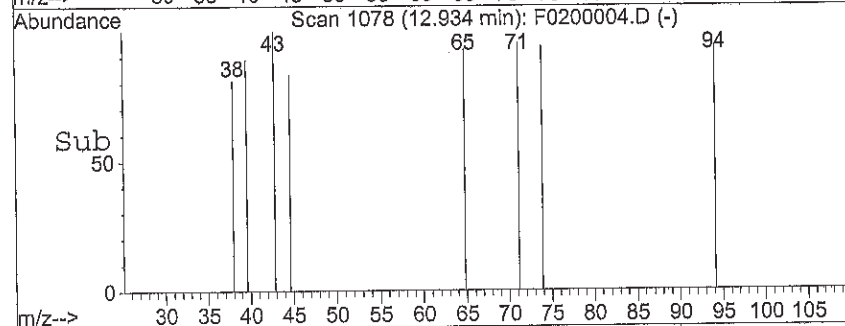
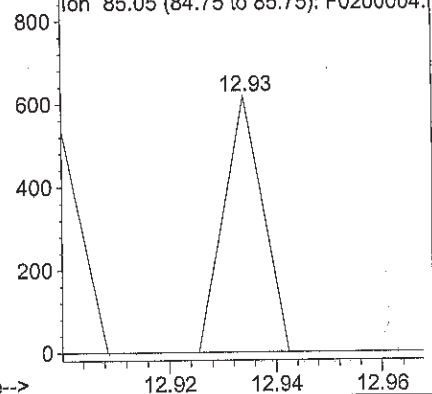


#46
2-Hexanone
Concen: 0.12 ug/L
RT: 12.93 min Scan# 1078
Delta R.T. -0.03 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion:	43	Resp:	313
Ion	Ratio	Lower	Upper
43	100		
58	0.0	40.9	61.3#
100	0.0	5.5	8.3#
85	0.0	4.3	6.5#

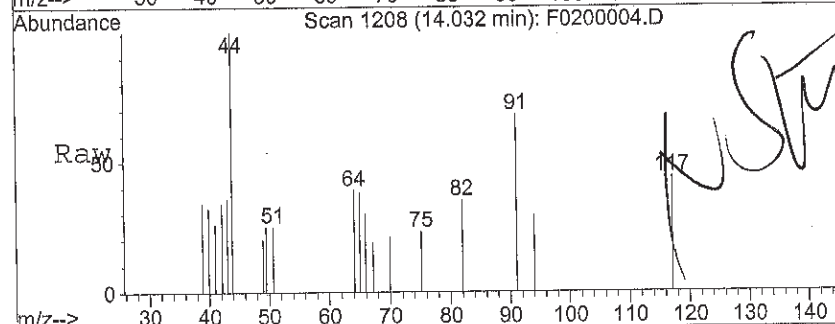


Abundance Ion 43.00 (42.70 to 43.70): F0200004.
Ion 58.10 (57.80 to 58.80): F0200004.
Ion 100.15 (99.85 to 100.85): F0200004.
Ion 85.05 (84.75 to 85.75): F0200004.

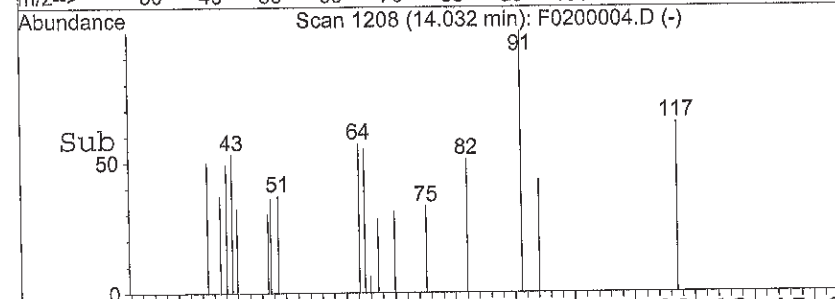
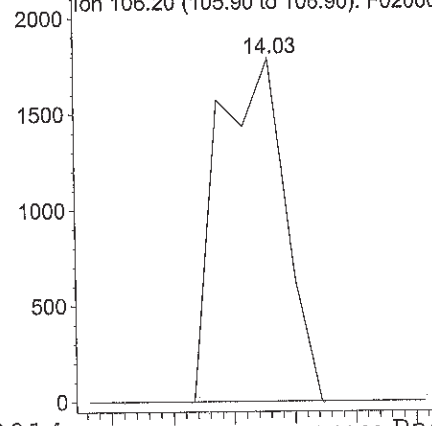


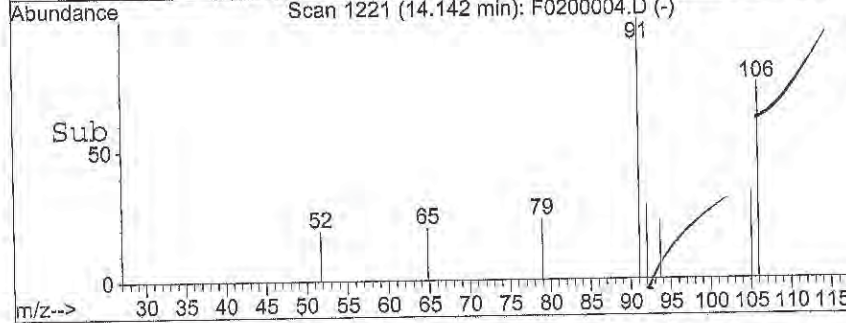
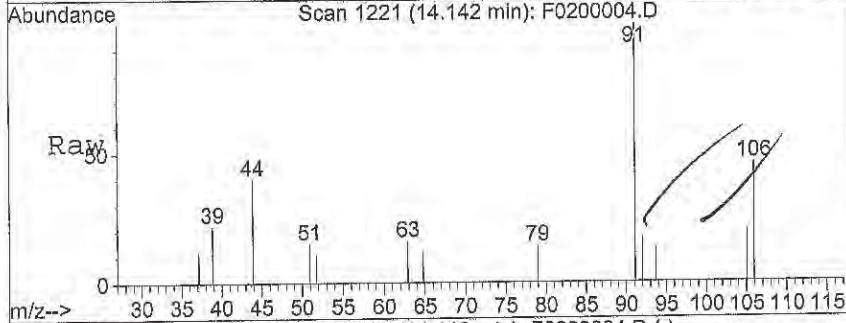
#51
Ethylbenzene
Concen: 0.15 ug/L
RT: 14.03 min Scan# 1208
Delta R.T. 0.01 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion:	91	Resp:	2741
Ion	Ratio	Lower	Upper
91	100		
106	0.0	23.5	35.3#

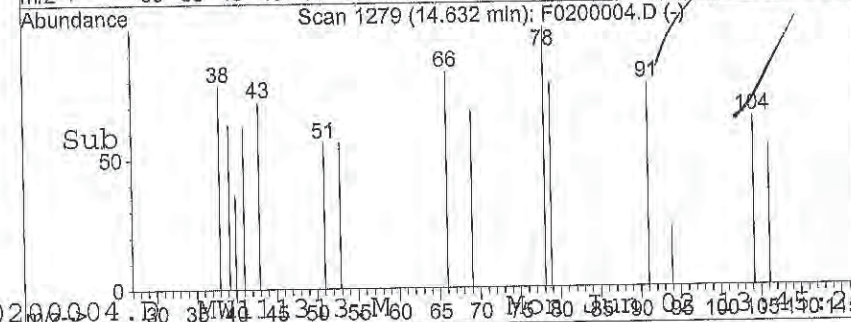
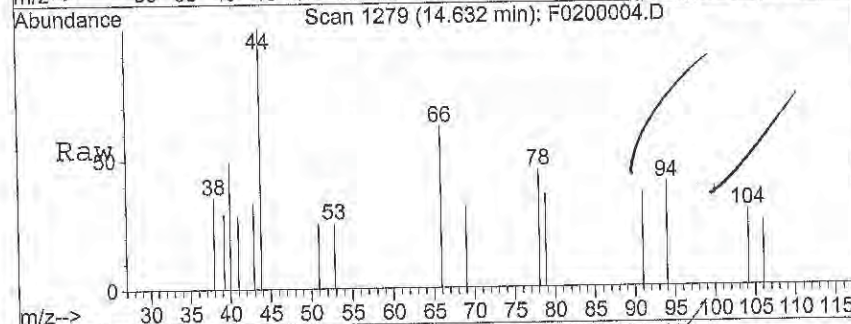
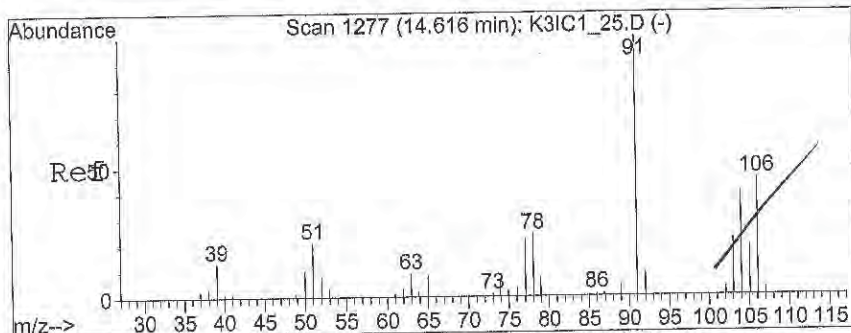
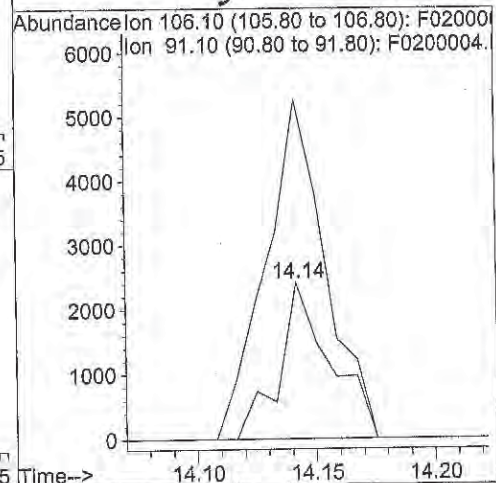


Abundance Ion 91.10 (90.80 to 91.80): F0200004.
Ion 106.20 (105.90 to 106.90): F0200004.

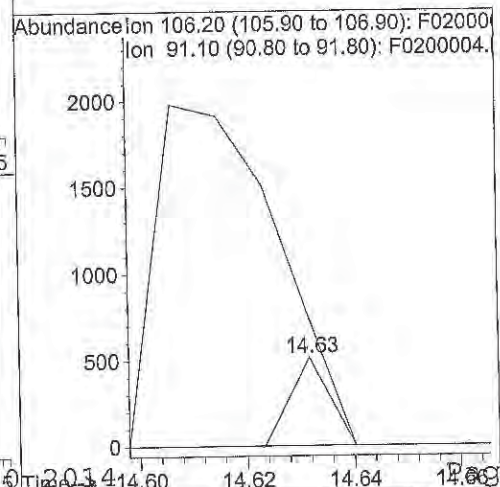


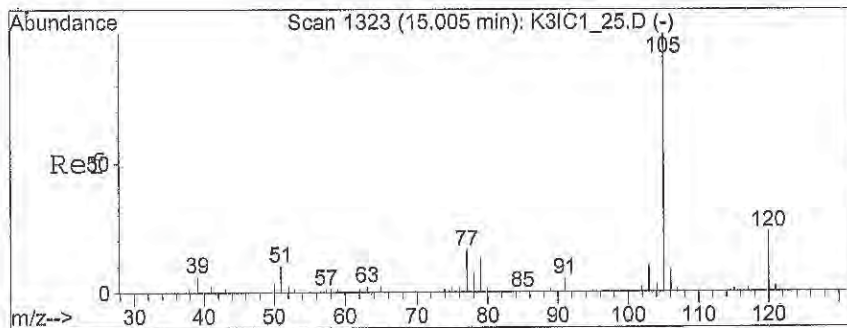


Tgt	Ion:106	Resp:	3584
Ion	Ratio	Lower	Upper
106	100		
91	254.9	177.1	265.7



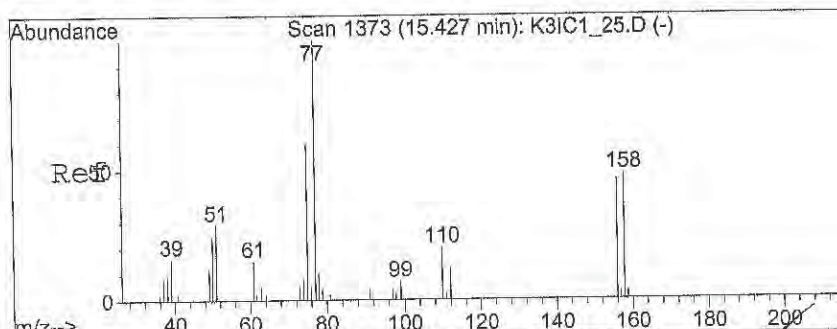
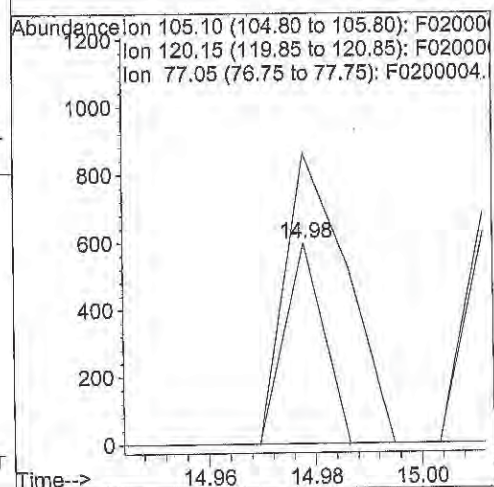
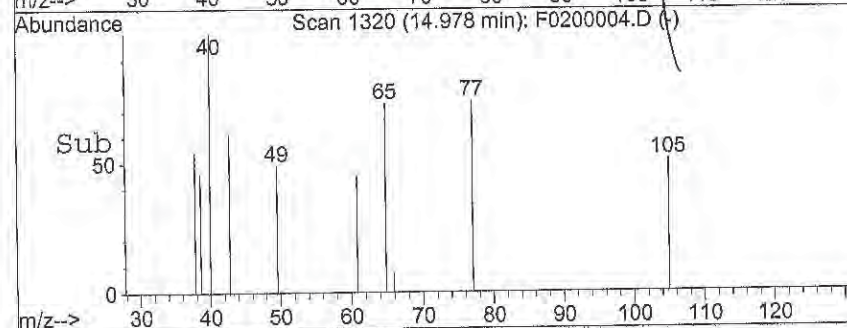
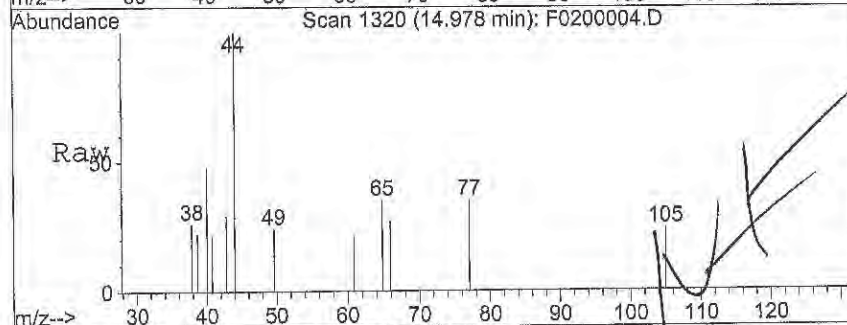
Tgt	Ion:106	Resp:	259
Ion	Ratio	Lower	Upper
106	100		
91	0.0	179.0	268.6#





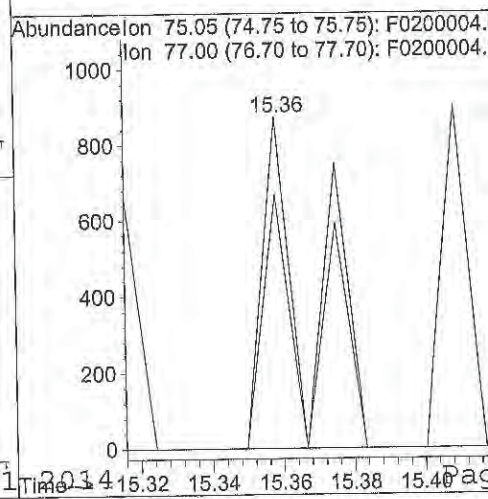
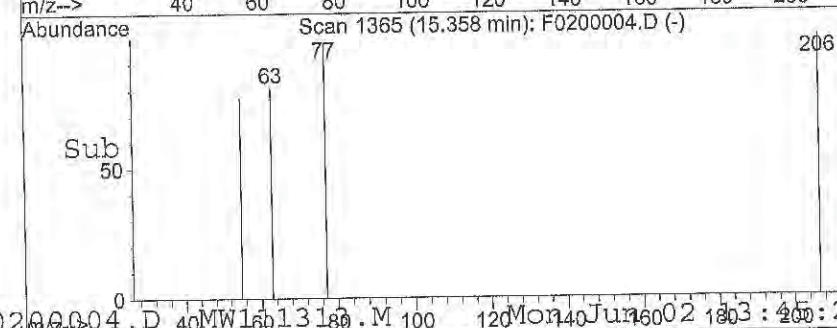
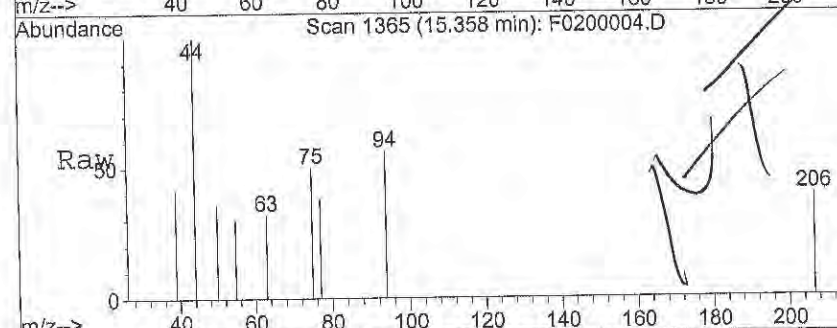
#56
Isopropylbenzene
Concen: 0.02 ug/L
RT: 14.98 min Scan# 1320
Delta R.T. -0.03 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

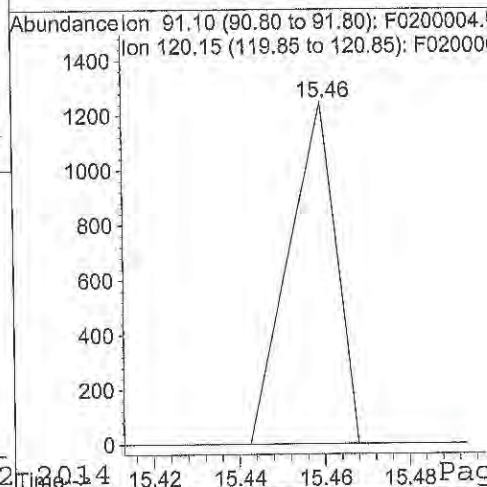
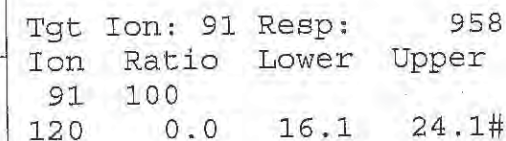
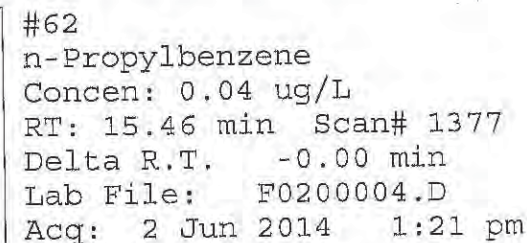
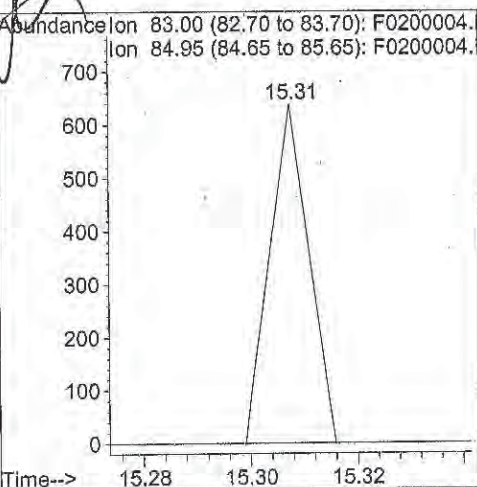
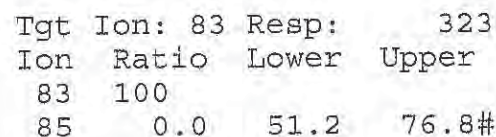
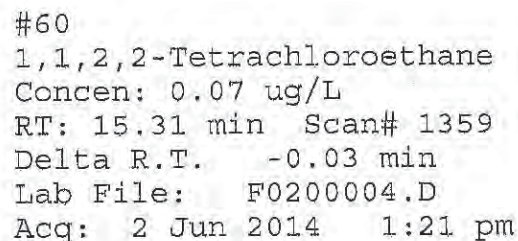
Tgt Ion: 105 Resp: 303
Ion Ratio Lower Upper
105 100
120 0.0 19.3 28.9#
77 231.0 13.1 19.7#

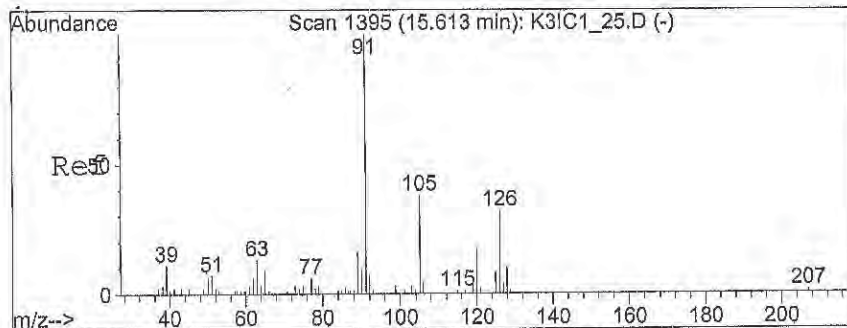


#57
1,2,3-Trichloropropane
Concen: 0.17 ug/L
RT: 15.36 min Scan# 1365
Delta R.T. -0.07 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 75 Resp: 821
Ion Ratio Lower Upper
75 100
77 77.5 31.2 46.8#

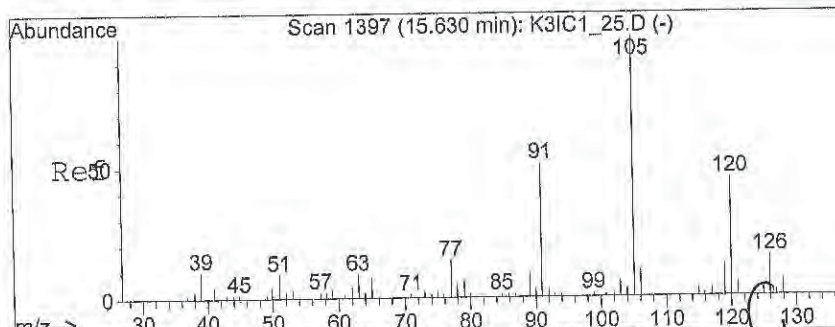
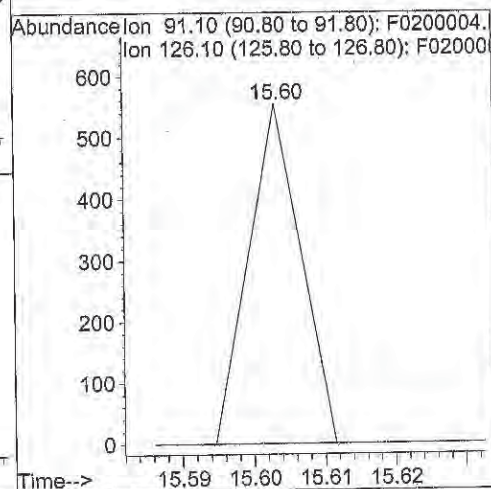
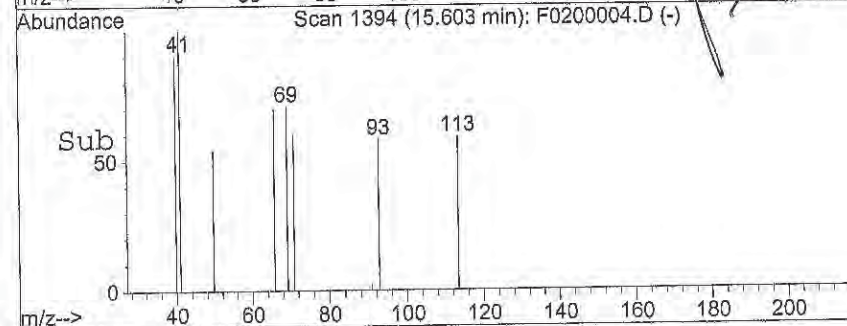
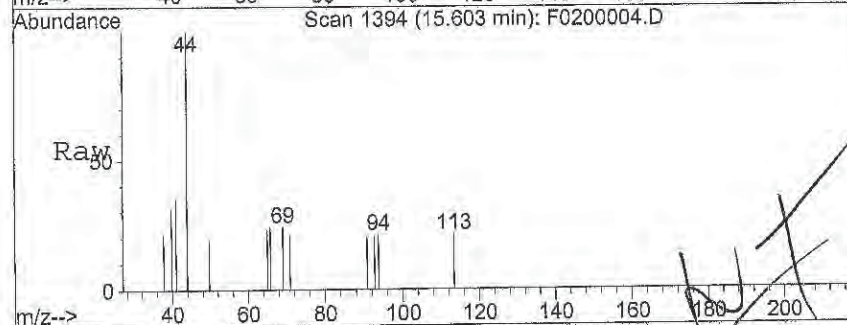






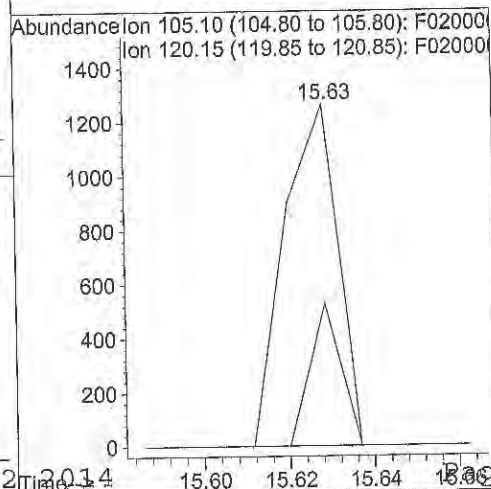
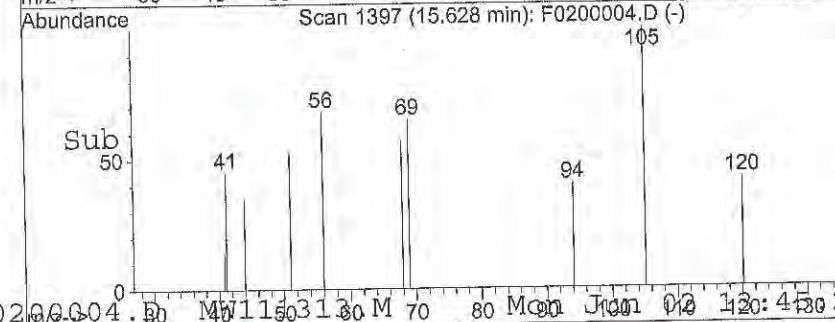
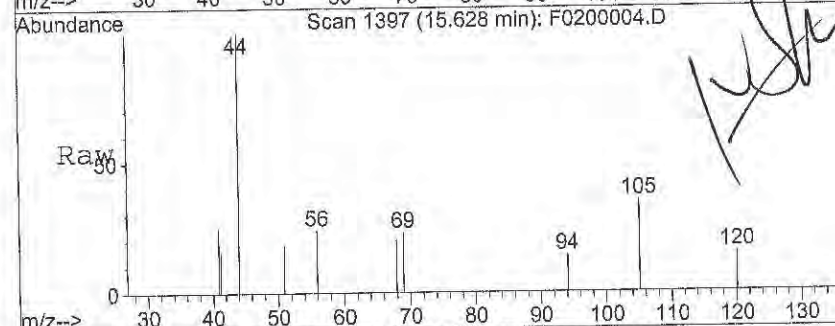
#63
 2-Chlorotoluene
 Concen: 0.02 ug/L
 RT: 15.60 min Scan# 1394
 Delta R.T. -0.01 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

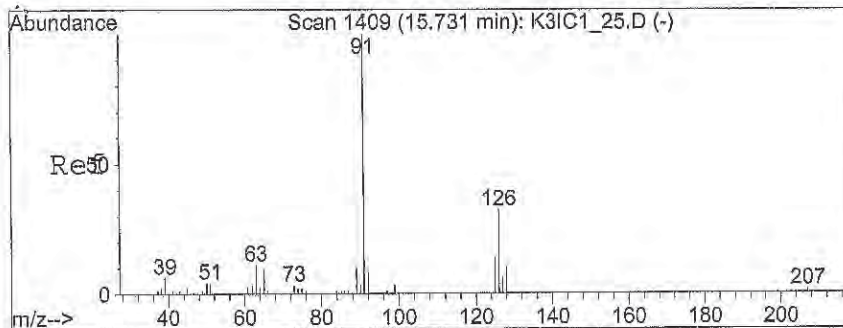
Tgt Ion: 91 Resp: 281
 Ion Ratio Lower Upper
 91 100
 126 0.0 24.0 36.0#



#64
 1,3,5-Trimethylbenzene
 Concen: 0.07 ug/L
 RT: 15.63 min Scan# 1397
 Delta R.T. -0.00 min
 Lab File: F0200004.D
 Acq: 2 Jun 2014 1:21 pm

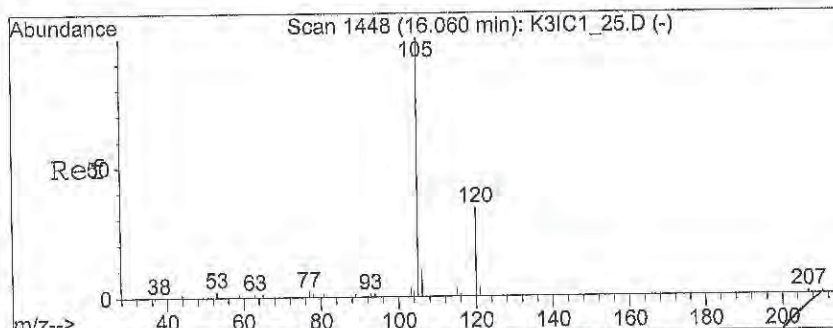
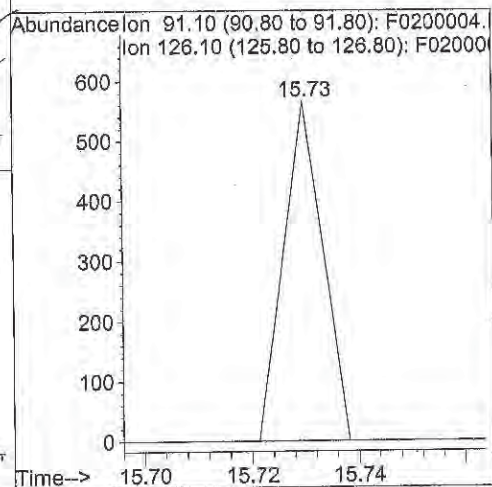
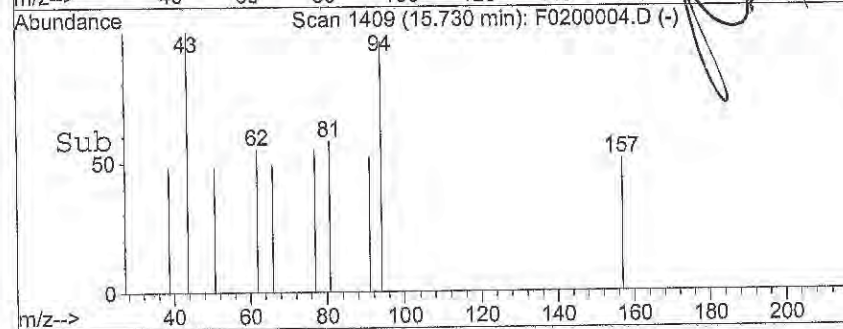
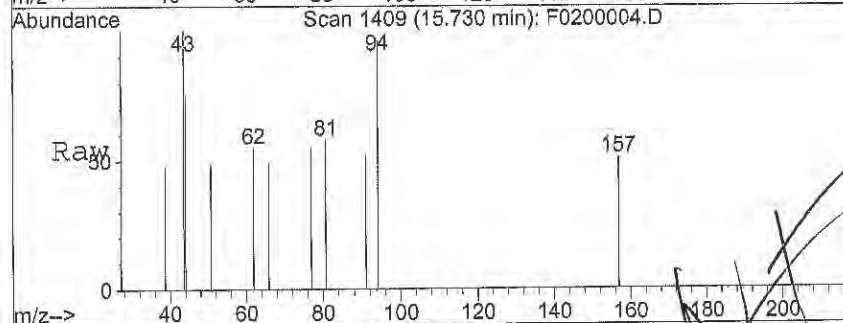
Tgt Ion: 105 Resp: 1099
 Ion Ratio Lower Upper
 105 100
 120 24.3 36.4 54.6#





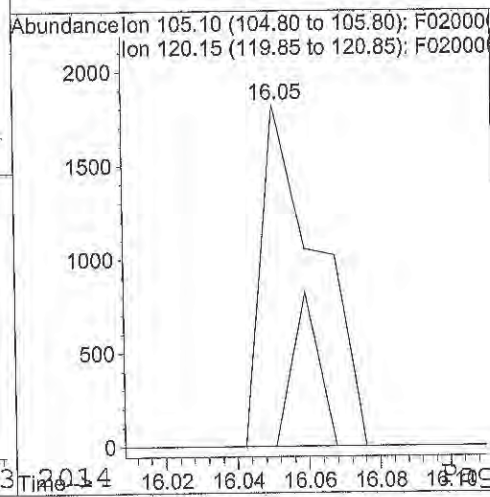
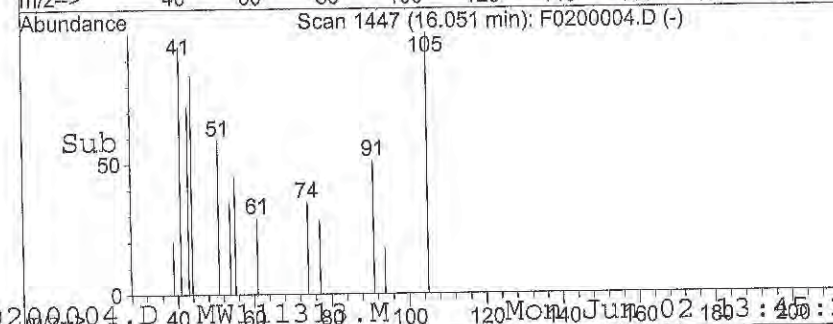
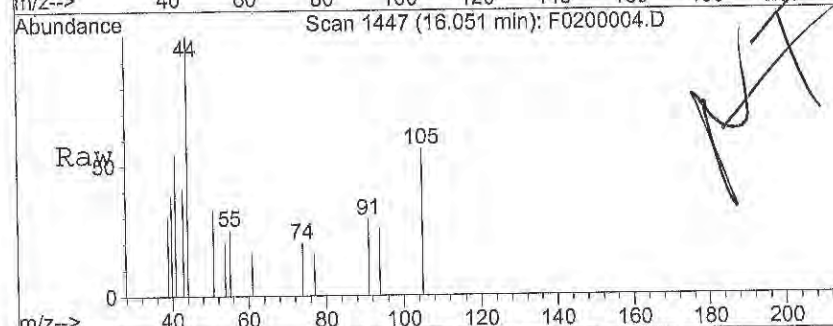
#65
4-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.73 min Scan# 1409
Delta R.T. -0.00 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

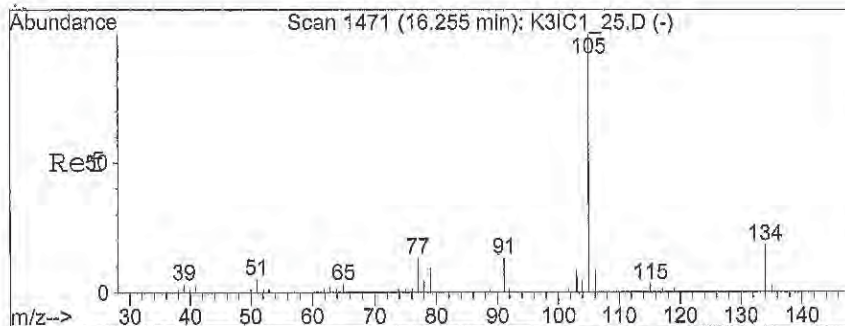
Tgt Ion: 91 Resp: 287
Ion Ratio Lower Upper
91 100
126 0.0 24.6 36.8#



#67
1,2,4-Trimethylbenzene
Concen: 0.12 ug/L
RT: 16.05 min Scan# 1447
Delta R.T. -0.01 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 105 Resp: 1977
Ion Ratio Lower Upper
105 100
120 21.1 33.8 50.8#





#68

sec-Butylbenzene

Concen: 0.05 ug/L

RT: 16.34 min Scan# 1481

Delta R.T. 0.08 min

Lab File: F0200004.D

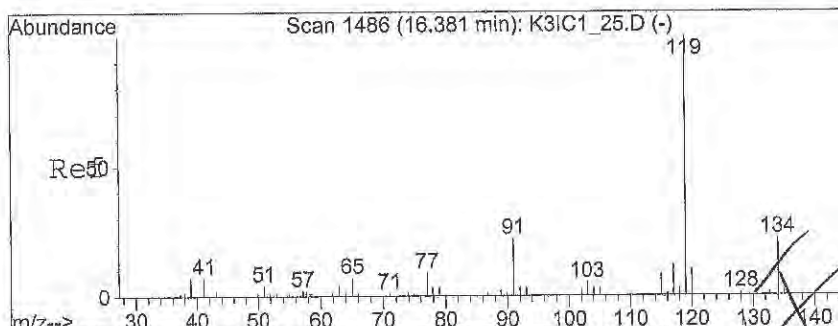
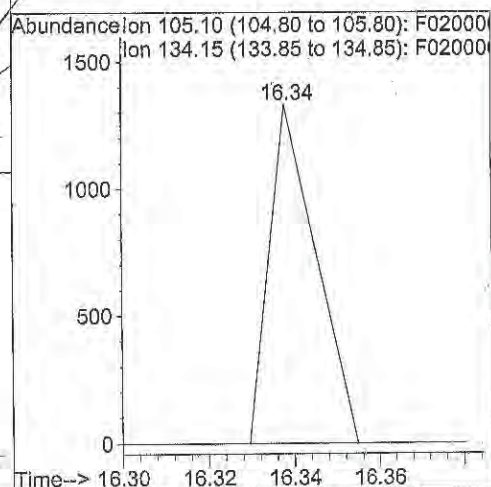
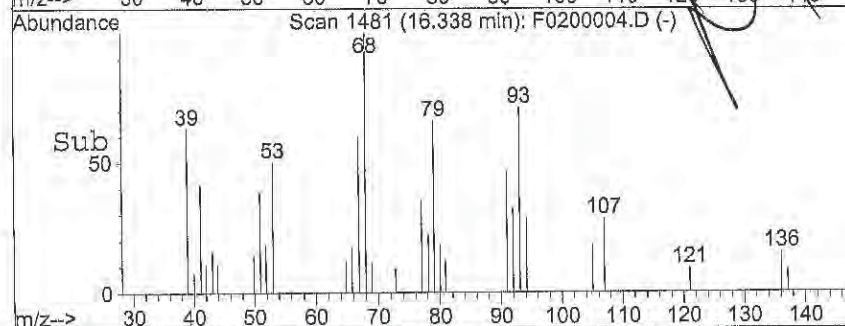
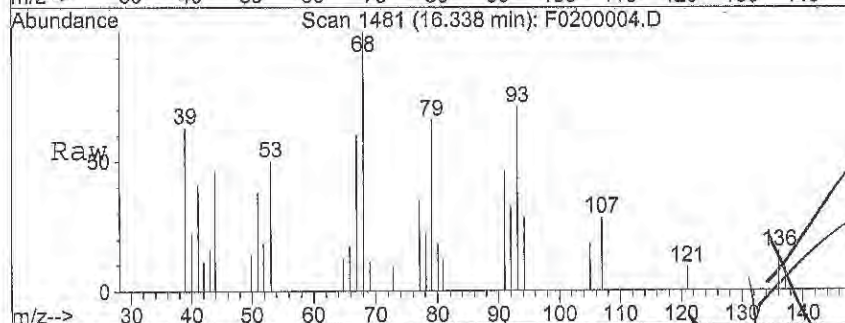
Acq: 2 Jun 2014 1:21 pm

Tgt Ion:105 Resp: 1008

Ion Ratio Lower Upper

105 100

134 0.0 13.0 19.6#



#69

p-Isopropyltoluene

Concen: 0.03 ug/L

RT: 16.38 min Scan# 1486

Delta R.T. -0.00 min

Lab File: F0200004.D

Acq: 2 Jun 2014 1:21 pm

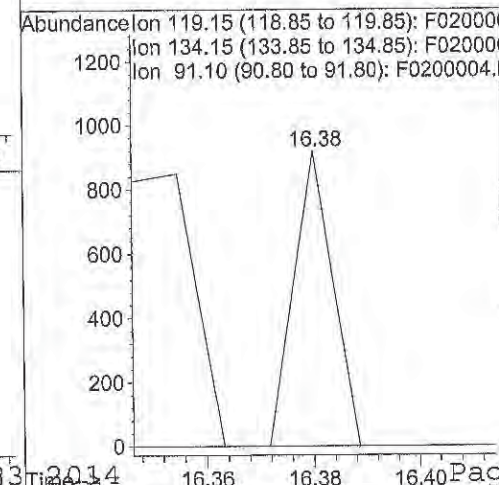
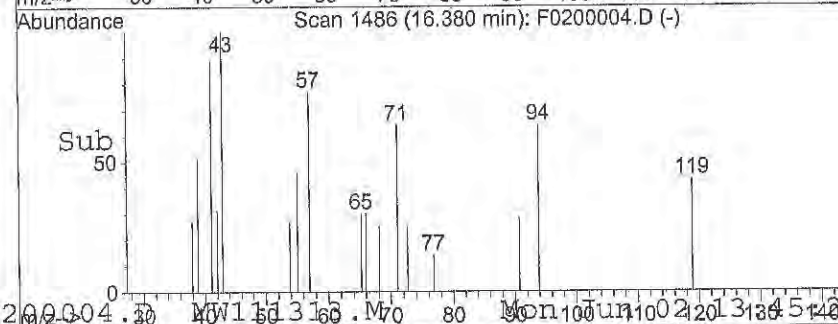
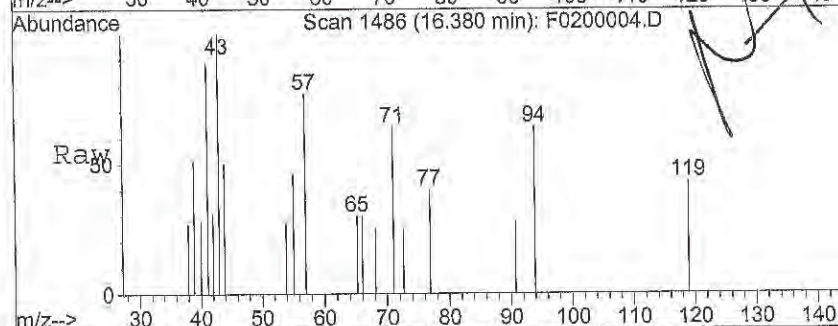
Tgt Ion:119 Resp: 465

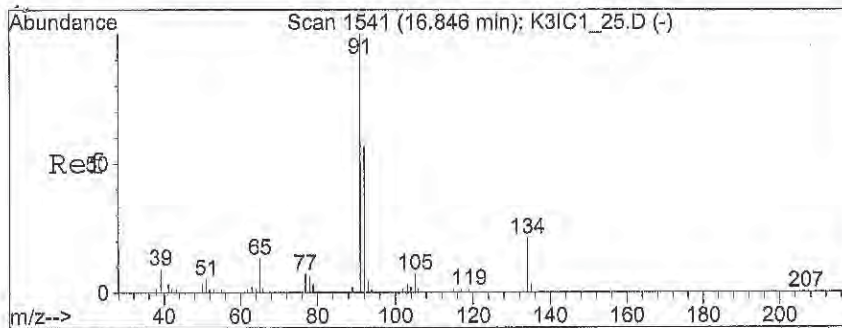
Ion Ratio Lower Upper

119 100

134 0.0 17.4 26.2#

91 0.0 19.6 29.4#





#72

n-Butylbenzene

Concen: 0.02 ug/L

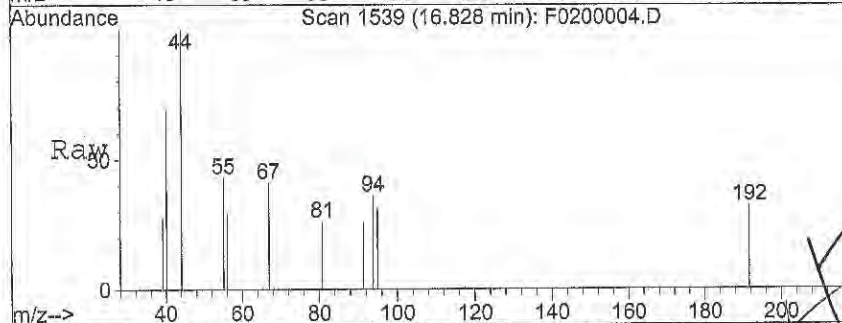
RT: 16.83 min Scan# 1539

Delta R.T. -0.02 min

Lab File: F0200004.D

Acq: 2 Jun 2014 1:21 pm

Tgt Ion:	91	Resp:	281
Ion Ratio	Lower	Upper	
91	100		
92	0.0	47.0	70.4#
134	0.0	18.1	27.1#

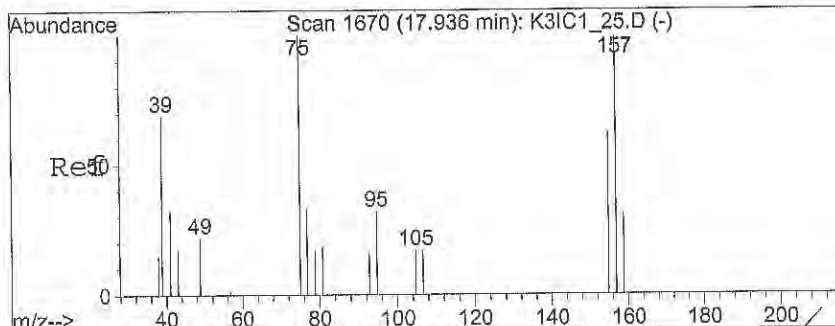
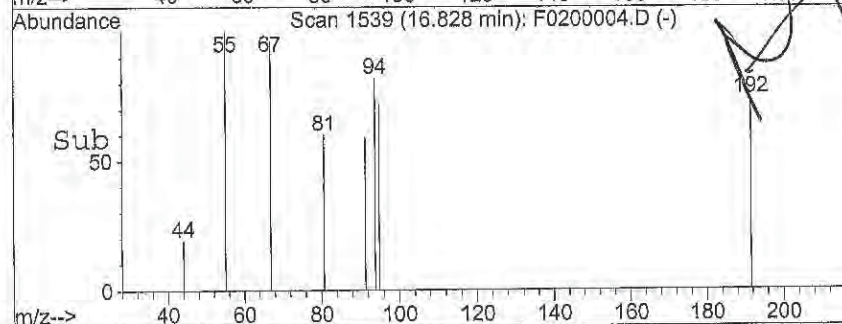
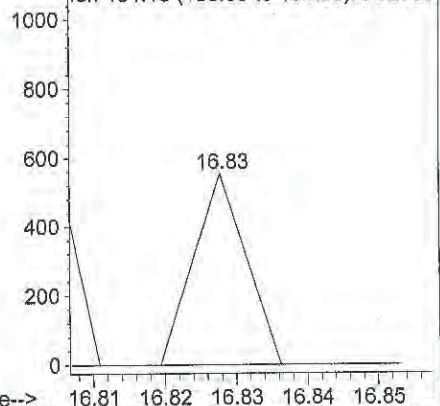


Abundance

Ion 91.10 (90.80 to 91.80): F0200004.D

Ion 92.10 (91.80 to 92.80): F0200004.D

Ion 134.15 (133.85 to 134.85): F0200004.D



#74

1,2-Dibromo-3-chloropropane

Concen: 1.26 ug/L

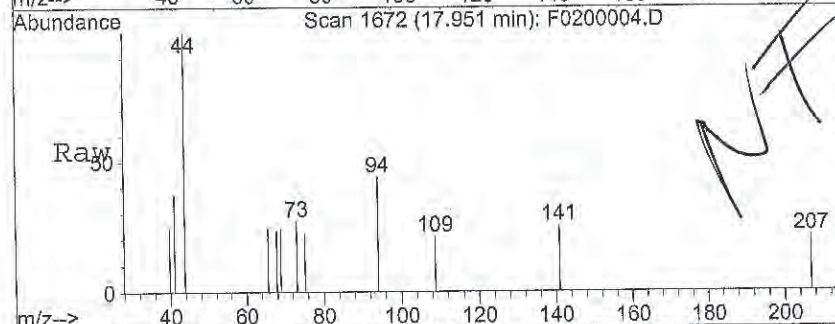
RT: 17.95 min Scan# 1672

Delta R.T. 0.02 min

Lab File: F0200004.D

Acq: 2 Jun 2014 1:21 pm

Tgt Ion:	75	Resp:	270
Ion Ratio	Lower	Upper	
75	100		
155	0.0	59.2	88.8#
157	0.0	77.0	115.6#

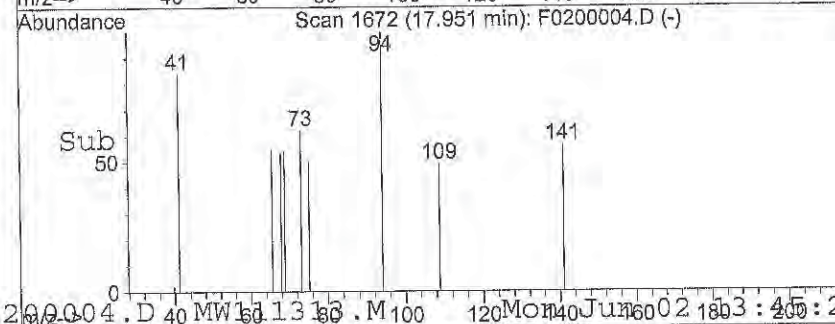
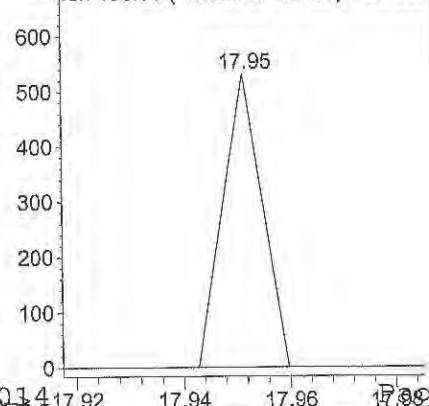


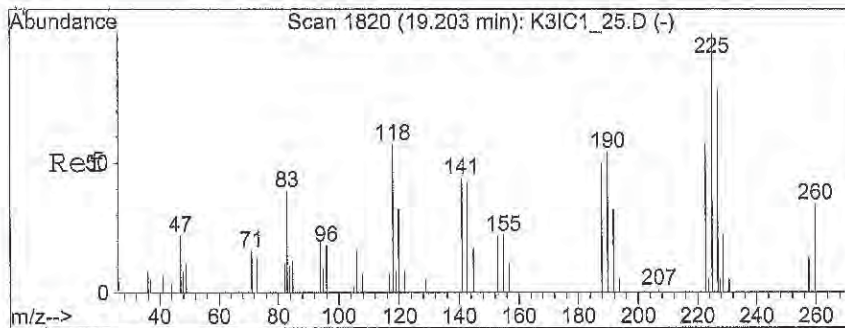
Abundance

Ion 75.05 (74.75 to 75.75): F0200004.D

Ion 154.95 (154.65 to 155.65): F0200004.D

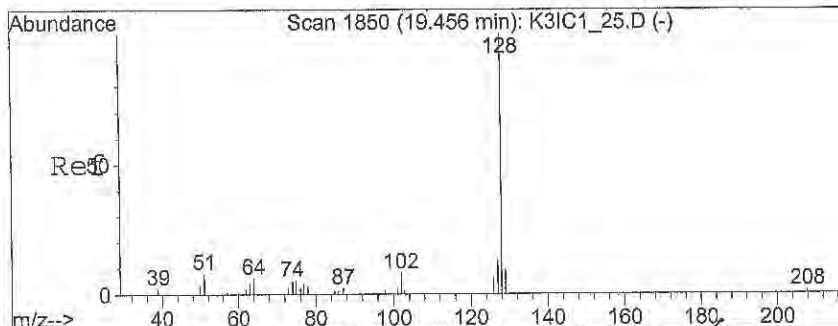
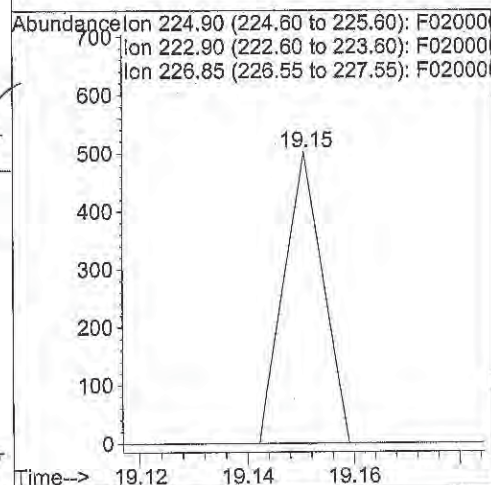
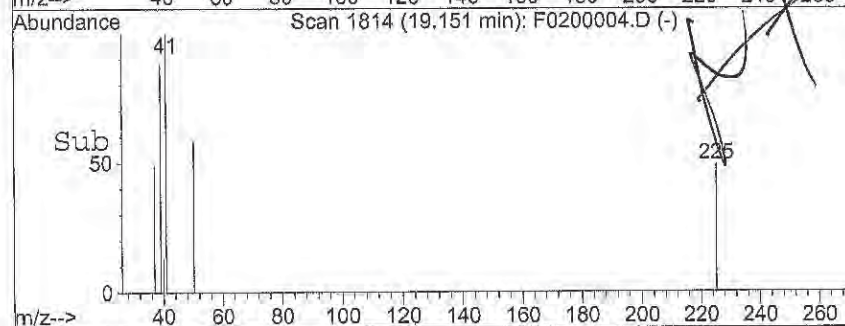
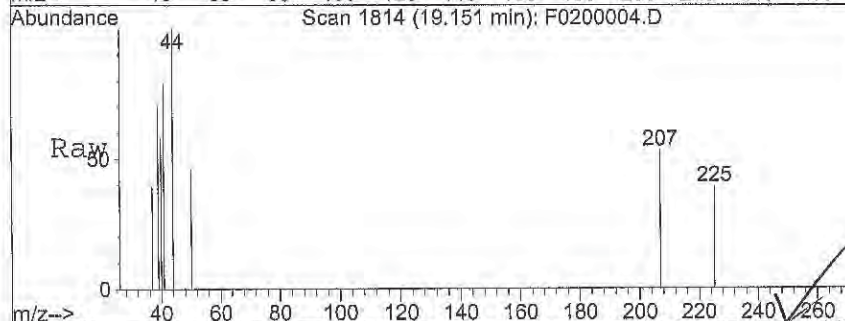
Ion 156.95 (156.65 to 157.65): F0200004.D





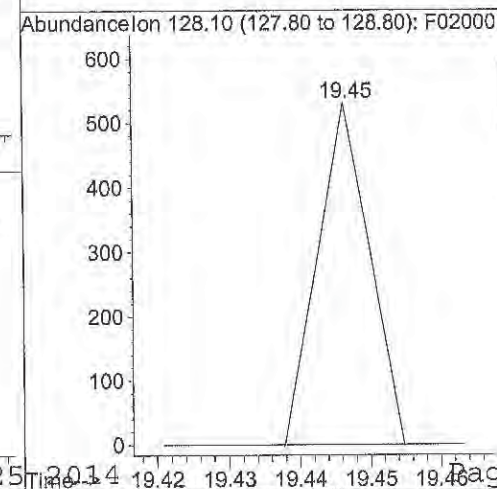
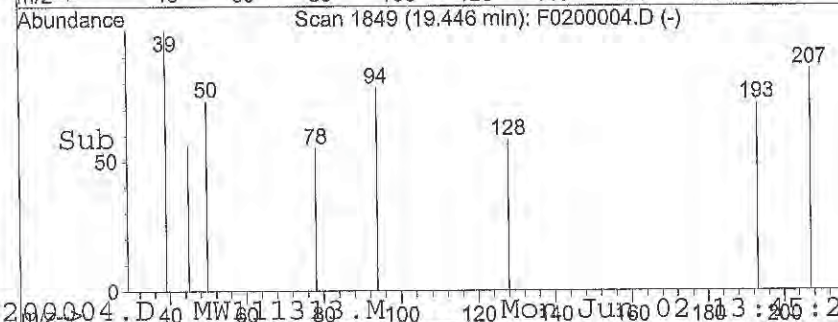
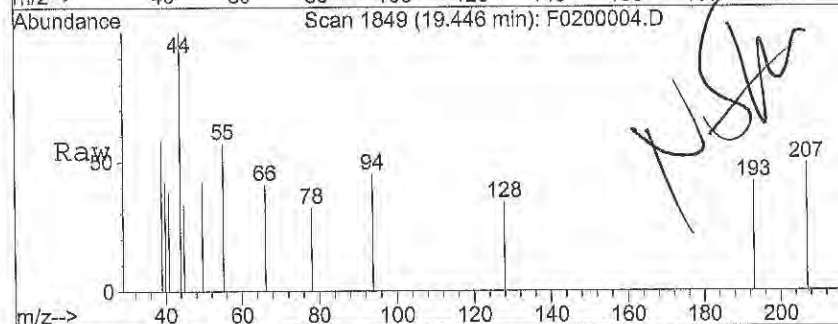
#76
Hexachlorobutadiene
Concen: 0.24 ug/L
RT: 19.15 min Scan# 1814
Delta R.T. -0.05 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 225 Resp: 254
Ion Ratio Lower Upper
225 100
223 0.0 52.0 78.0#
227 0.0 50.6 75.8#



#77
Naphthalene
Concen: 0.02 ug/L
RT: 19.45 min Scan# 1849
Delta R.T. -0.01 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 128 Resp: 269



Data File : C:\HPCHEM\1\DATA\060214L3\F0200004.D

Vial: 3

Acq On : 2 Jun 2014 1:21 pm

Operator: DN

Sample : 3F40201-03

Inst : GC/MS Ins

Misc : 100cc SVL-528-SA8-SV-11.0-12.0

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 3 7:36 19114

Quant Results File: SS072713.RES

Quant Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN

Last Update : Mon Nov 18 10:31:39 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.29	96	1277102	12.50	ug/L	-0.02
7) Chlorobenzene-d5 (IS)	13.91	117	1204182	12.50	ug/L	-0.01
10) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	617289	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	443521m	13.35	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	106.80%
3) Chloroform-d (SU6)	9.18	84	562313m	11.80	ug/L	0.00
Spiked Amount	12.500	Range	70 - 140	Recovery	=	94.40%
4) Methylene Chloride-d2 (SU5)	7.07	86	312718	11.23	ug/L	0.00
Spiked Amount	12.500	Range	70 - 140	Recovery	=	89.84%
5) 1,2-Dichloroethane-d4 (SU2)	9.88	65	235446m	10.37	ug/L	-0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	82.96%
6) Benzene-d6 (SU7)	9.93	84	1160099	11.58	ug/L	-0.02
Spiked Amount	12.500	Range	70 - 140	Recovery	=	92.64%
8) Toluene-d8 (SU3)	12.21	98	1249266	10.94	ug/L	-0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	87.52%
9) 4-Bromofluorobenzene (SU4)	15.21	95	659396m	13.98	ug/L	-0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	111.84%

Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration

F0200004.D SS072713.M

Tue Jun 03 07:36:25 2014

Page 1

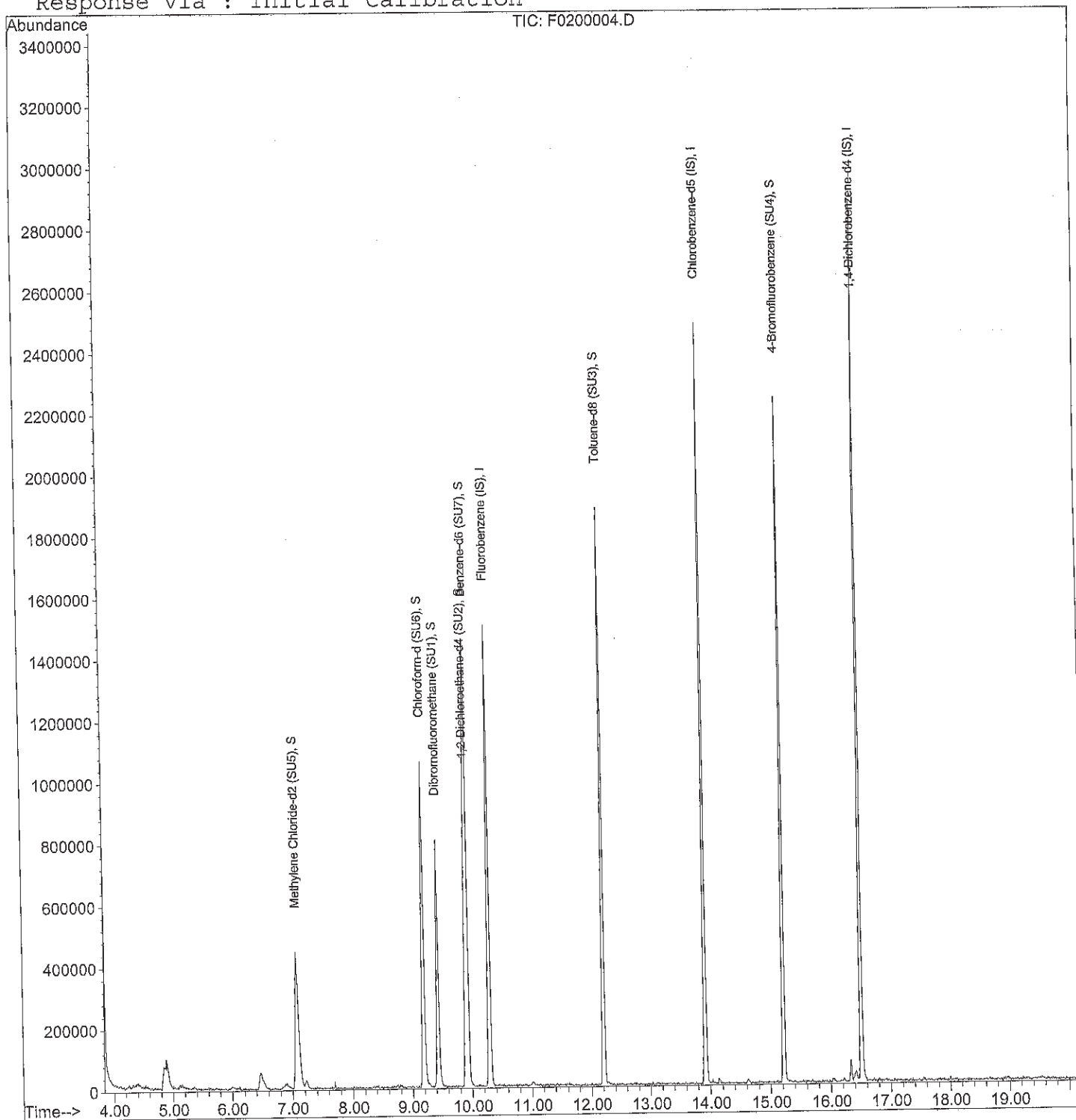
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200004.D
 Acq On : 2 Jun 2014 1:21 pm
 Sample : 3F40201-03
 Misc : 100cc SVL-528-SA8-SV-11.0-12.0
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:36 19114

Vial: 3
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration



Data File : C:\HPCHEM\1\DATA\060214L3\F0200005.D

Vial: 4

Acq On : 2 Jun 2014 1:50 pm

Operator: DN

Sample : 3F40201-04

Inst : GC/MS Ins

Misc : 100cc SVL-528-SA8-SV-18.5-19.5

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 14:18 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.30	96	1249356	12.50	ug/L	0.00
38) Chlorobenzene-d5 (IS)	13.92	117	1155970	12.50	ug/L	0.00
59) 1,4-Dichlorobenzene-d4 (IS)	16.50	152	626548	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	387681m	12.44	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	99.52%
28) 1,2-Dichloroethane-d4 (SU2)	9.89	65	347766m	11.74	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	93.92%
39) Toluene-d8 (SU3)	12.20	98	1220977	11.32	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	90.56%
58) 4-Bromofluorobenzene (SU4)	15.22	95	552359m	11.68	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	93.44%

Target Compounds

					Qvalue	
3) (F12) Dichlorodifluorometh	4.09	85	337	0.11 ug/L	#	44
4) Chloromethane	4.39	50	3615	0.50 ug/L	#	64
5) Vinyl Chloride	4.51	62	276	0.13 ug/L	#	1
6) Bromomethane	5.11	96	3887	1.05 ug/L	#	1
7) Chloroethane	5.35	64	836	1.49 ug/L	#	88
10) 1,1-Dichloroethene	6.54	96	297	0.10 ug/L	#	25
11) Acetone	6.47	58	7582	11.35 ug/L	#	53
12) (IPA) Leak Check Compound	6.49	45	122248	814.29 ug/L	#	93
13) Carbon disulfide	6.84	76	1405	0.14 ug/L	#	49
14) Methylene Chloride	7.07	84	4172	1.22 ug/L	#	1
15) (TBA) tert-Butanol	6.93	59	938	4.40 ug/L	#	25
16) (MTBE) Methyl-t-butyl ethe	7.21	73	323	0.05 ug/L	#	1
18) 1,1-Dichloroethane	8.05	63	282	0.05 ug/L	#	1
19) cis-1,2-Dichloroethene	8.75	96	264	0.07 ug/L	#	48
20) 2,2-Dichloropropane	8.83	77	367	0.07 ug/L	#	36
21) (MEK) 2-Butanone	8.79	72	396	1.13 ug/L	#	1
22) (DIPE) Diisopropyl Ether	8.10	45	328	0.03 ug/L	#	1
24) Chloroform	9.21	83	3380	0.52 ug/L	#	51
25) (ETBE) 2-ethoxy 2-methyl p	8.50	59	264	0.03 ug/L	#	44
29) 1,1-Dichloropropene	9.92	75	664	0.14 ug/L	#	1
31) Benzene	9.92	78	12822	1.09 ug/L	#	79
32) 1,2-Dichloroethane	9.93	62	12662	3.04 ug/L	#	1

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060214L3\F0200005.D

Vial: 4

Acq On : 2 Jun 2014 1:50 pm

Operator: DN

Sample : 3F40201-04

Inst : GC/MS Ins

Misc : 100cc SVL-528-SA8-SV-18.5-19.5

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 14:18 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
34) 1,2-Dichloropropane	11.09	63	299	0.11	ug/L #	39
35) Dibromomethane	11.22	93	268	0.12	ug/L #	5
37) cis-1,3-Dichloropropene	12.00	75	273	0.06	ug/L #	1
40) (MIBK) 4-Methyl-2-Pentanone	12.10	43	504	0.22	ug/L #	100
41) Toluene	12.29	91	1541	0.10	ug/L #	24
42) trans-1,3-Dichloropropene	12.49	75	259	0.05	ug/L #	1
45) 1,3-Dichloropropane	13.06	76	257	0.05	ug/L #	1
46) 2-Hexanone	12.95	43	417	0.16	ug/L #	64
51) Ethylbenzene	14.13	91	2396	0.13	ug/L #	95
52) m,p-Xylenes	14.15	106	1456	0.23	ug/L #	665
53) o-Xylene	14.64	106	258	0.04	ug/L #	72
54) Styrene	14.63	104	2536	-0.59	ug/L #	80
55) Bromoform	15.05	173	273	0.12	ug/L #	42
56) Isopropylbenzene	15.24	105	1646	0.10	ug/L #	1
57) 1,2,3-Trichloropropane	15.41	75	391	0.08	ug/L #	36
60) 1,1,2,2-Tetrachloroethane	15.22	83	475	0.11	ug/L #	18
61) Bromobenzene	15.22	156	397	0.08	ug/L #	1
62) n-Propylbenzene	15.47	91	470	0.02	ug/L #	56
63) 2-Chlorotoluene	15.60	91	561	0.04	ug/L #	45
65) 4-Chlorotoluene	15.71	91	606	0.04	ug/L #	44
67) 1,2,4-Trimethylbenzene	16.07	105	516	0.03	ug/L #	33
68) sec-Butylbenzene	16.19	105	271	0.01	ug/L #	62
69) p-Isopropyltoluene	16.37	119	438	0.03	ug/L #	52
72) n-Butylbenzene	16.98	91	307	0.02	ug/L #	30
74) 1,2-Dibromo-3-chloropropan	17.97	75	334	1.34	ug/L #	6
77) Naphthalene	19.45	128	257	0.02	ug/L #	100

(#)=qualifier out of range (m)=manual integration

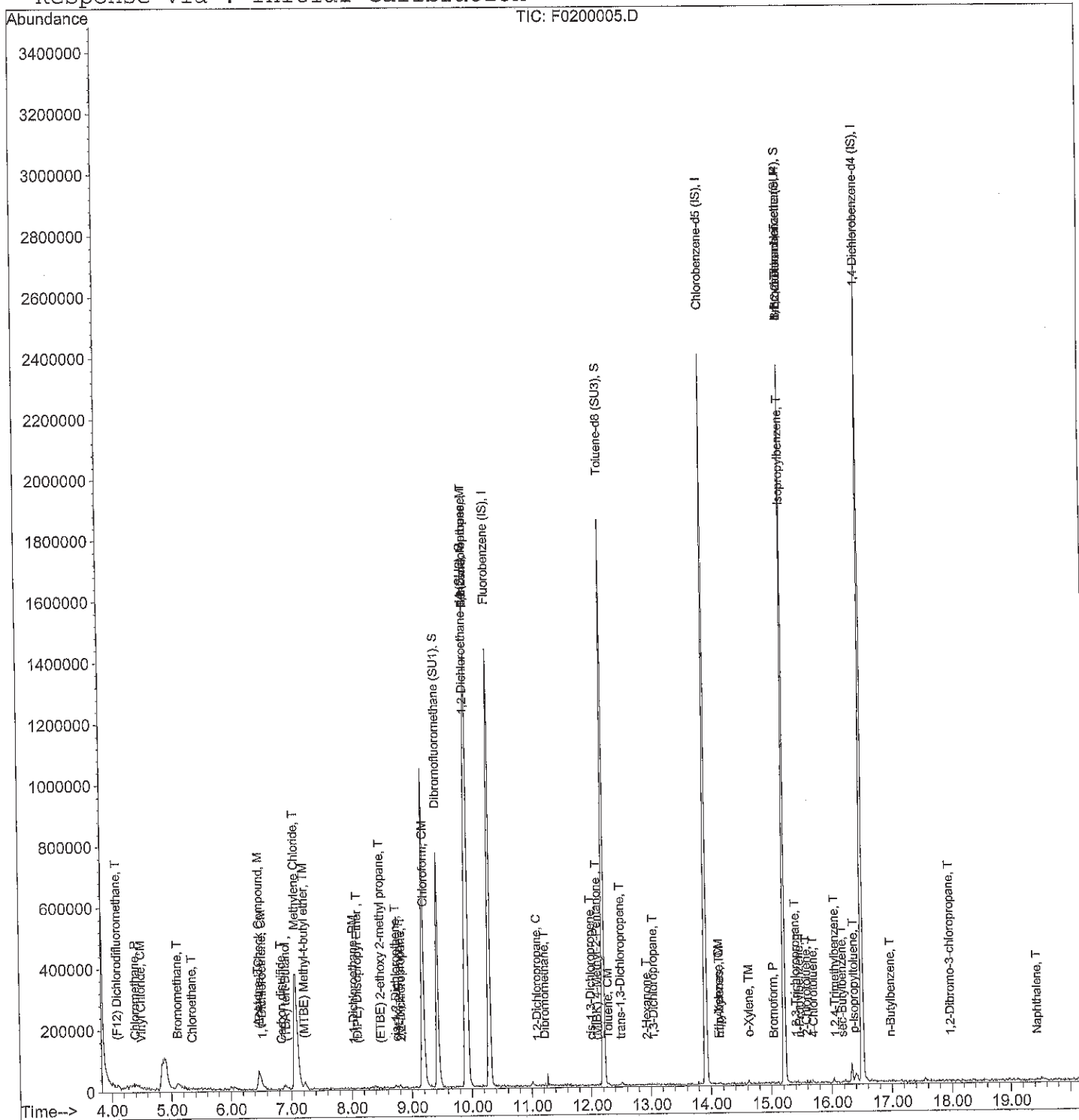
Quantitation Report

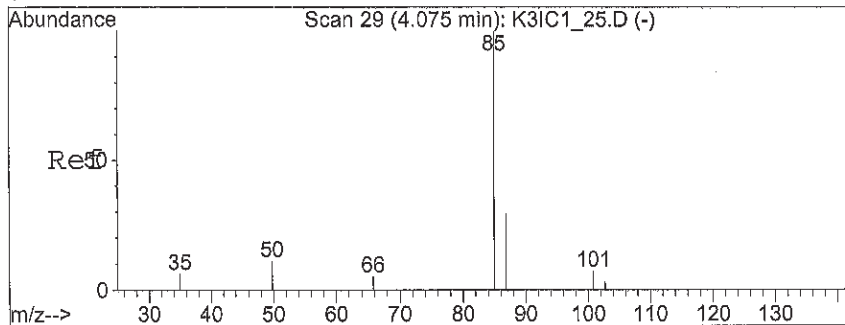
Data File : C:\HPCHEM\1\DATA\060214L3\F0200005.D
 Acq On : 2 Jun 2014 1:50 pm
 Sample : 3F40201-04
 Misc : 100cc SVL-528-SA8-SV-18.5-19.5
 MS Integration Params: rteint.p
 Quant Time: Jun 2 14:18 19114

Vial: 4
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: MW111313.RES

Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration





#3

(F12) Dichlorodifluoromethane

Concen: 0.11 ug/L

RT: 4.09 min Scan# 31

Delta R.T. 0.01 min

Lab File: F0200005.D

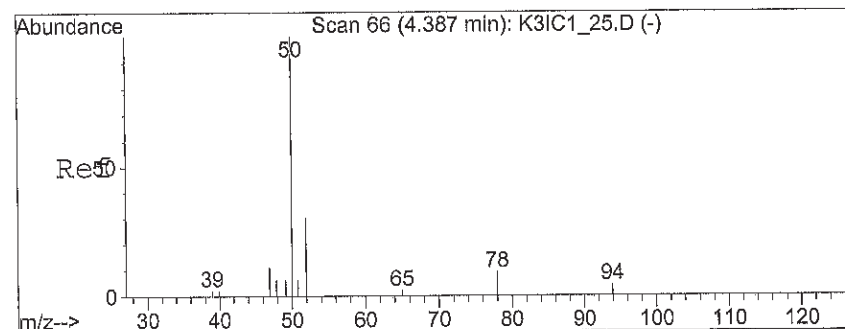
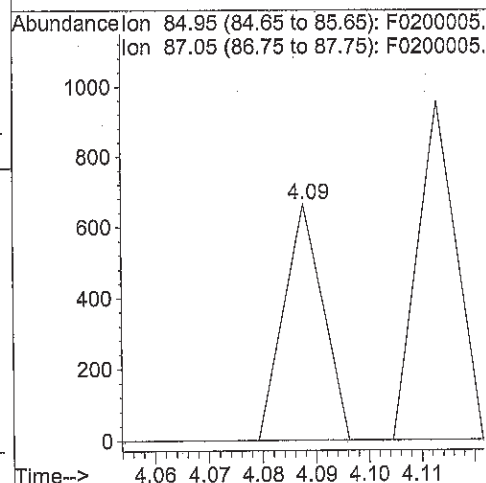
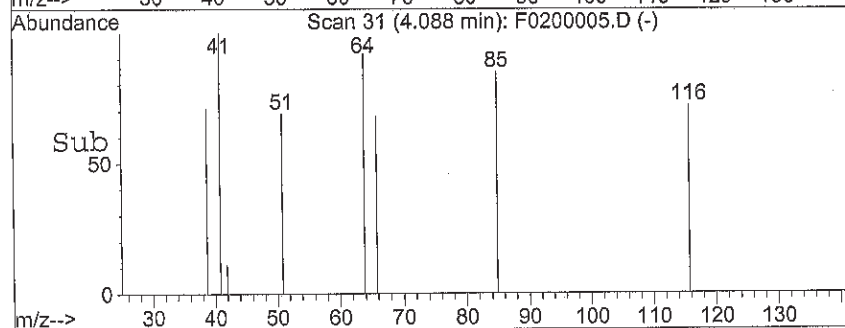
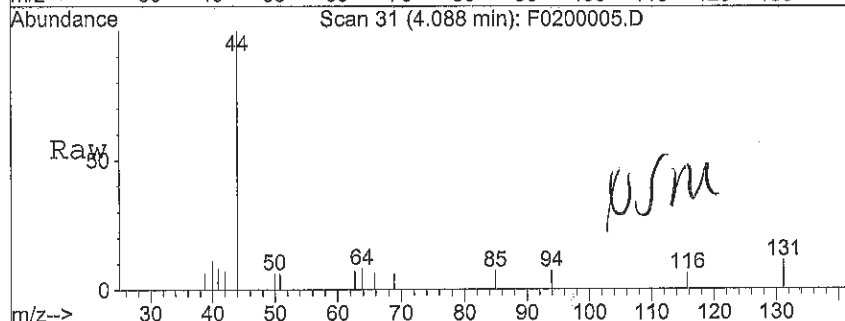
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 85 Resp: 337

Ion Ratio Lower Upper

85 100

87 0.0 24.6 37.0#



#4

Chloromethane

Concen: 0.50 ug/L

RT: 4.39 min Scan# 67

Delta R.T. 0.00 min

Lab File: F0200005.D

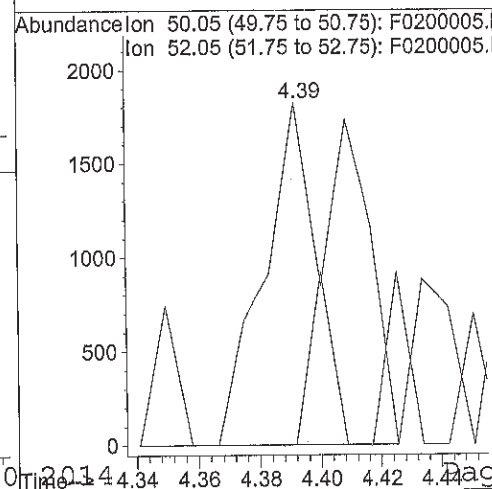
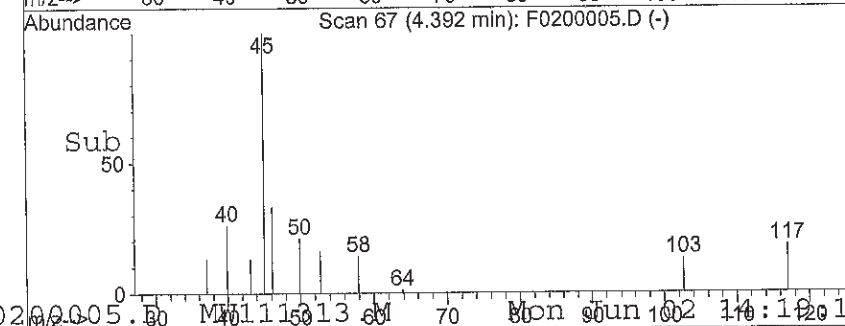
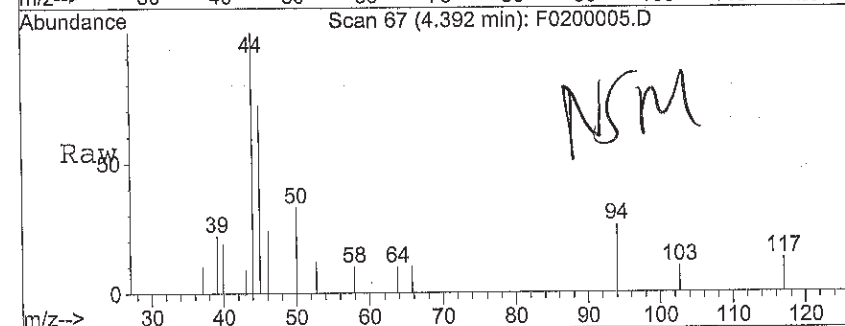
Acq: 2 Jun 2014 1:50 pm

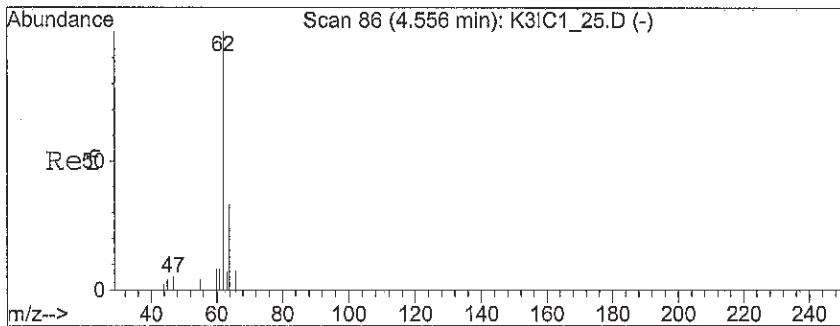
Tgt Ion: 50 Resp: 3615

Ion Ratio Lower Upper

50 100

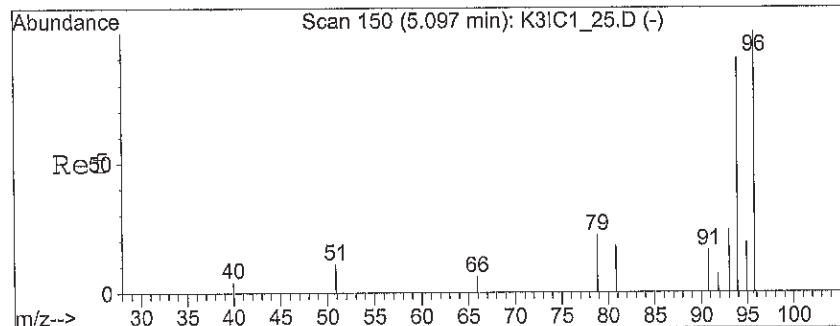
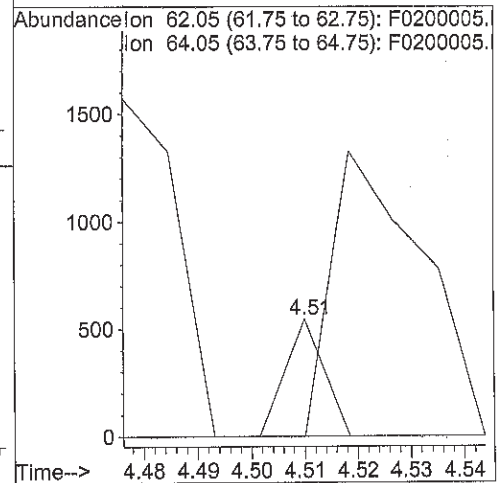
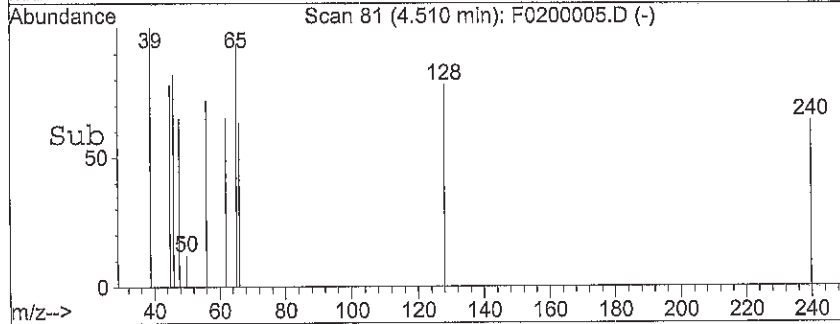
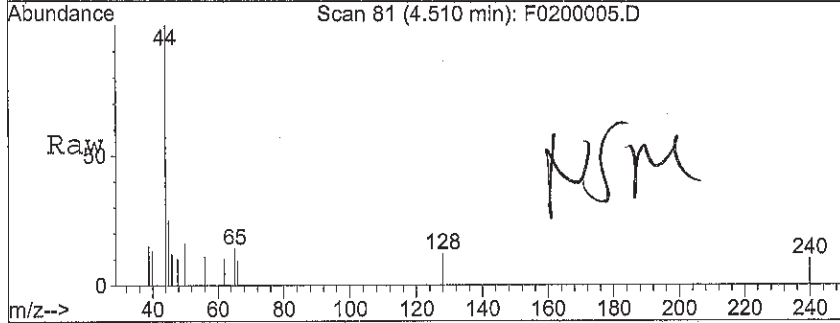
52 12.9 26.9 40.3#





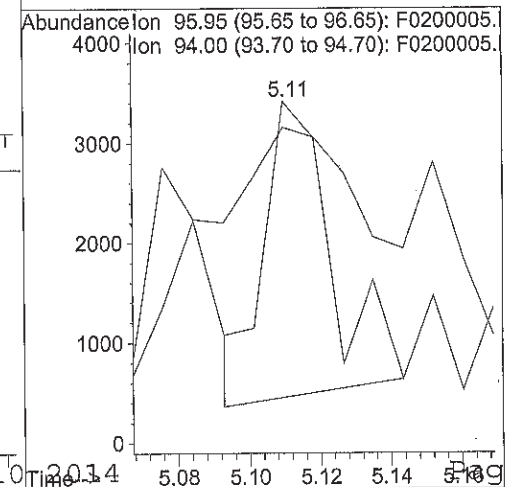
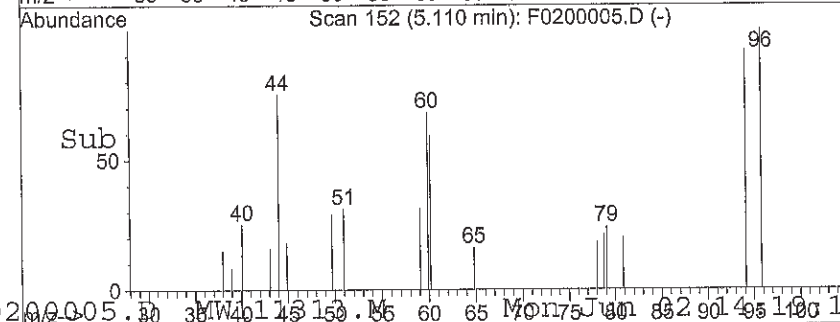
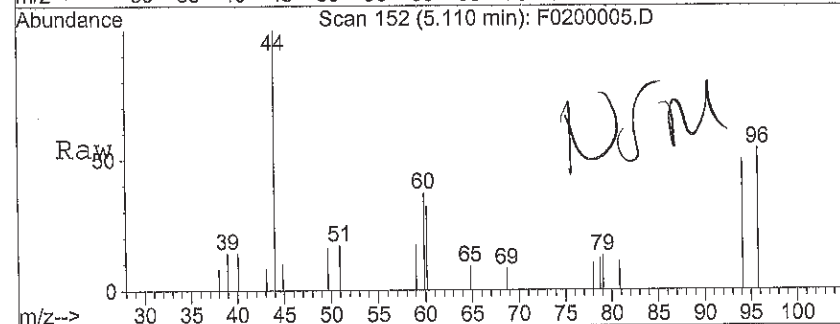
#5
 Vinyl Chloride
 Concen: 0.13 ug/L
 RT: 4.51 min Scan# 81
 Delta R.T. -0.05 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

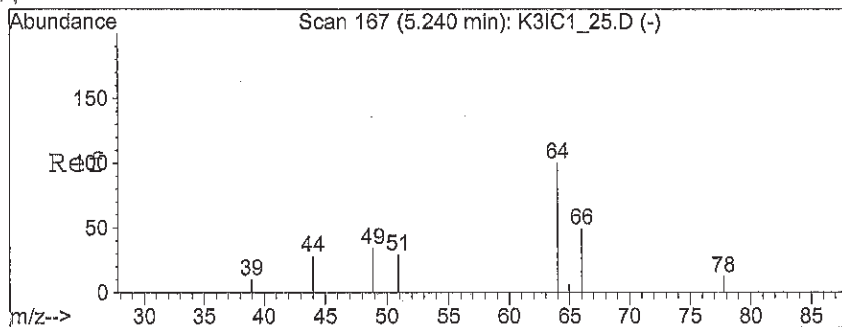
Tgt Ion: 62 Resp: 276
 Ion Ratio Lower Upper
 62 100
 64 570.7 25.6 38.4#



#6
 Bromomethane
 Concen: 1.05 ug/L
 RT: 5.11 min Scan# 152
 Delta R.T. 0.01 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

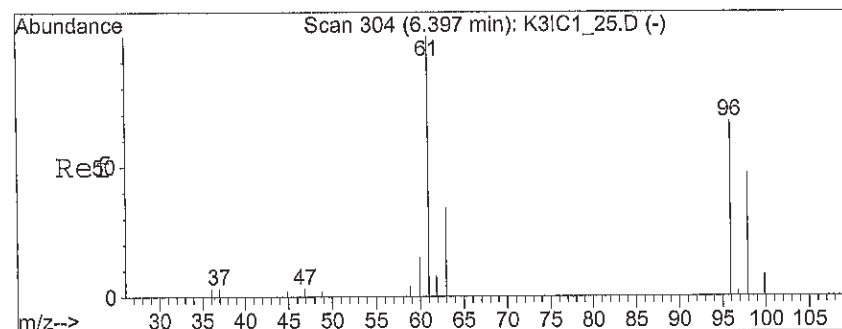
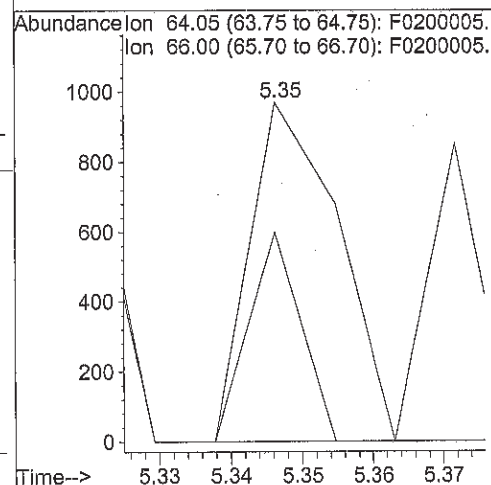
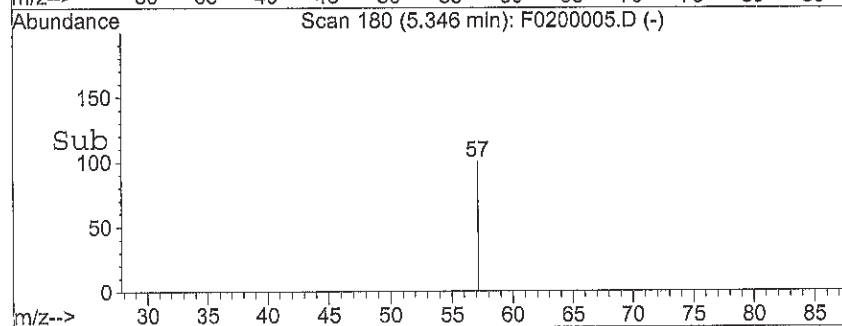
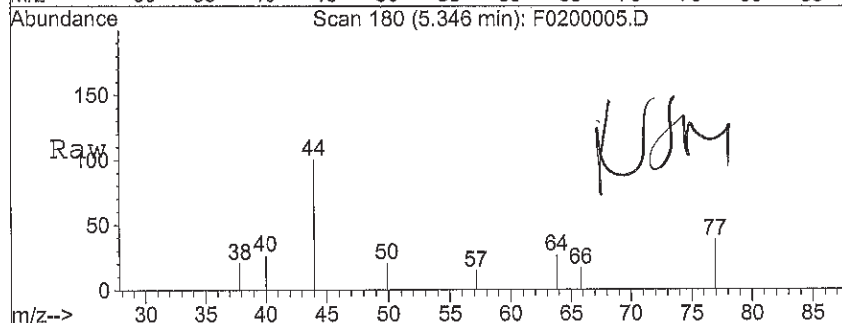
Tgt Ion: 96 Resp: 3887
 Ion Ratio Lower Upper
 96 100
 94 335.3 101.0 151.4#





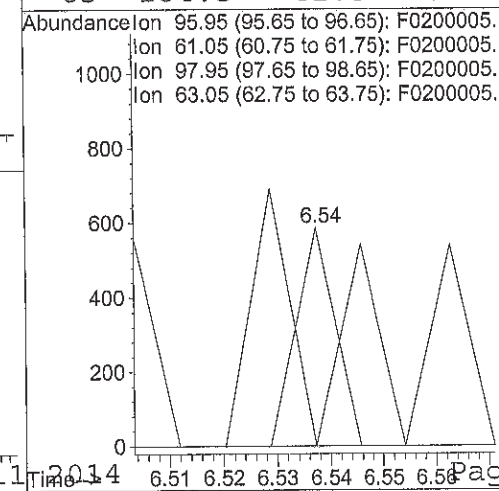
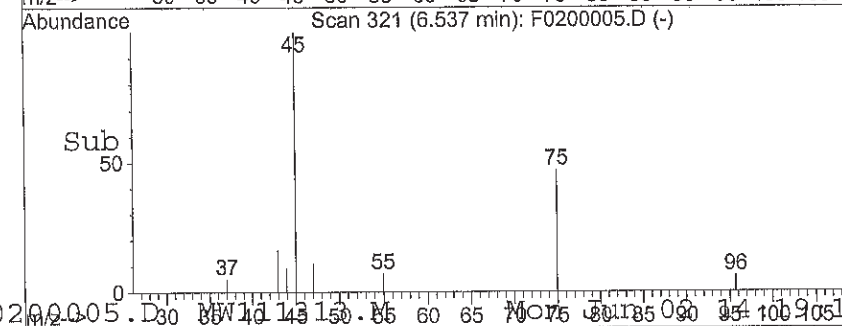
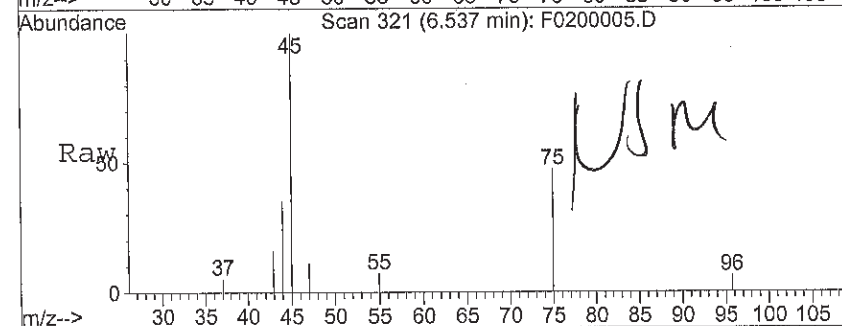
#7
 Chloroethane
 Concen: 1.49 ug/L
 RT: 5.35 min Scan# 180
 Delta R.T. 0.11 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

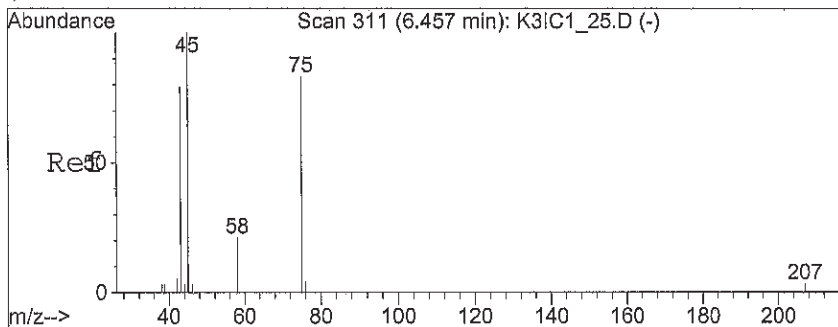
Tgt Ion: 64 Resp: 836
 Ion Ratio Lower Upper
 64 100
 66 36.2 35.4 53.0



#10
 1,1-Dichloroethene
 Concen: 0.10 ug/L
 RT: 6.54 min Scan# 321
 Delta R.T. 0.14 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

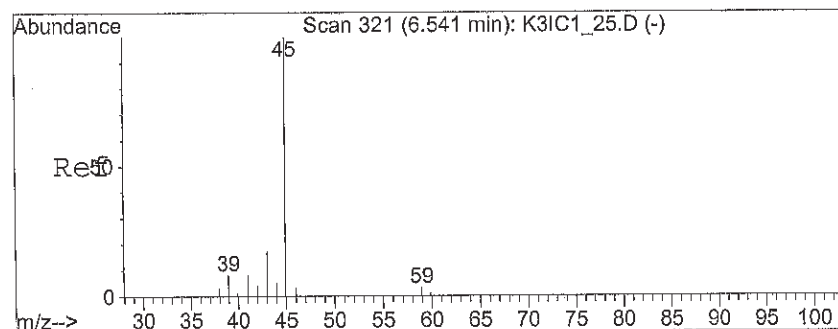
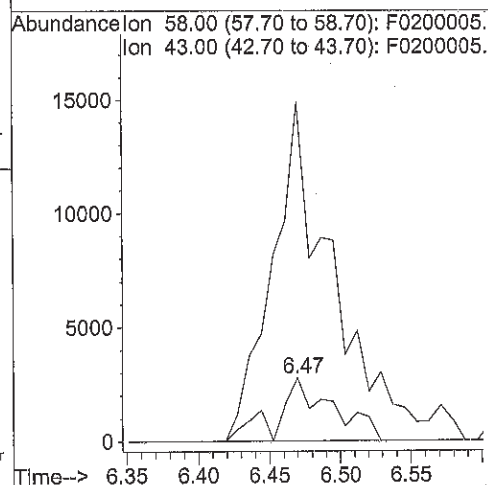
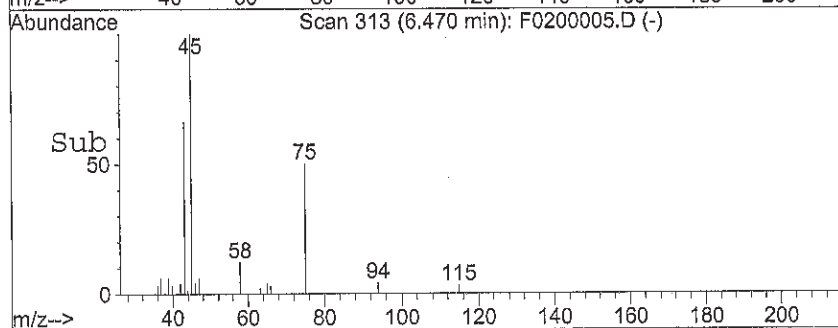
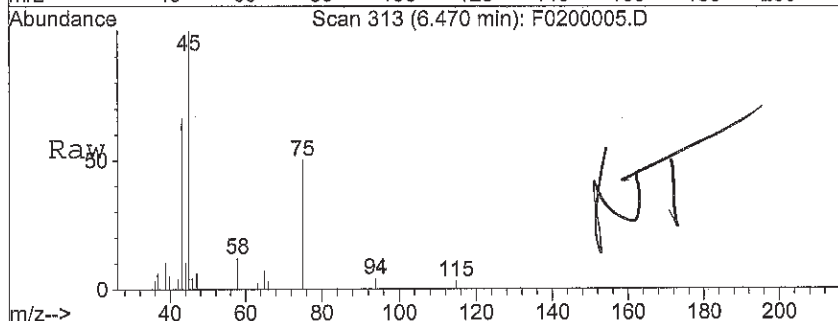
Tgt Ion: 96 Resp: 297
 Ion Ratio Lower Upper
 96 100
 61 117.8 130.0 195.0#
 98 0.0 56.2 84.4#
 63 184.5 41.5 62.3#





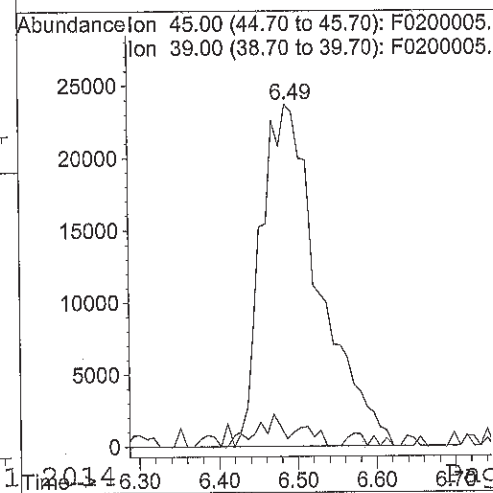
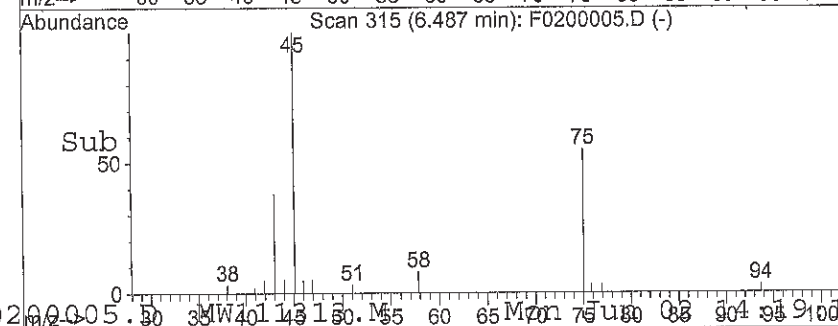
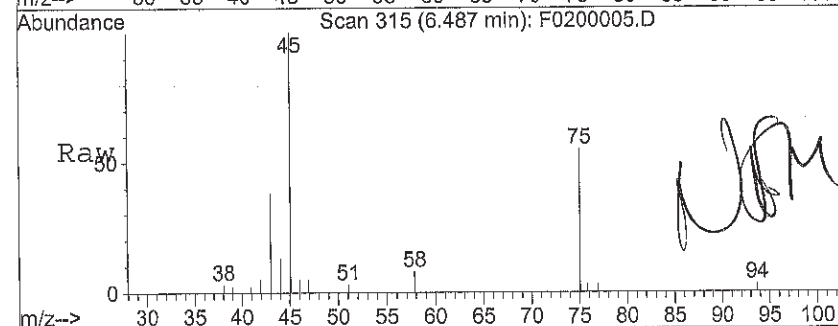
#11
Acetone
Concen: 11.35 ug/L
RT: 6.47 min Scan# 313
Delta R.T. 0.01 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

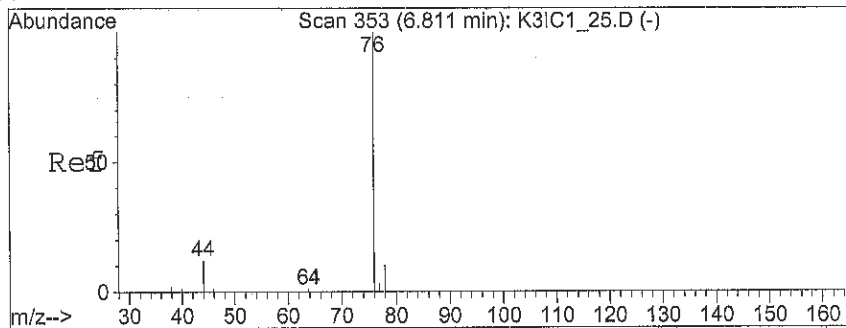
Tgt Ion: 58 Resp: 7582
Ion Ratio Lower Upper
58 100
43 572.8 360.9 541.3#



#12
(IPA) Leak Check Compound
Concen: 814.29 ug/L
RT: 6.49 min Scan# 315
Delta R.T. -0.05 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

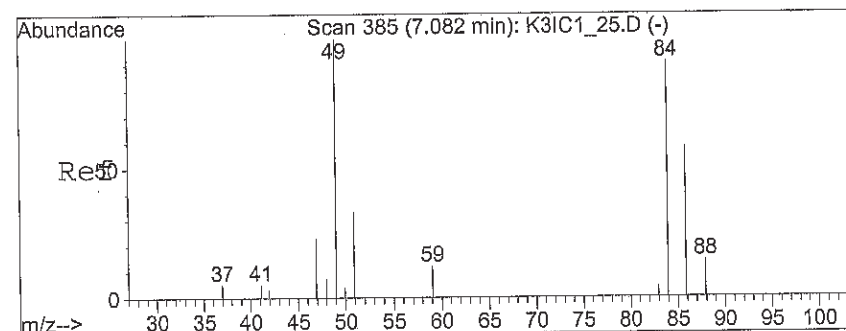
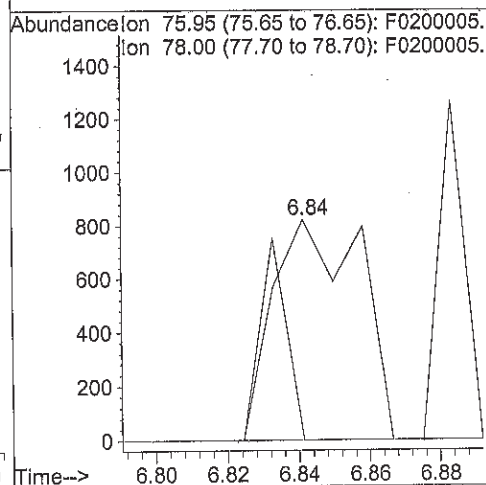
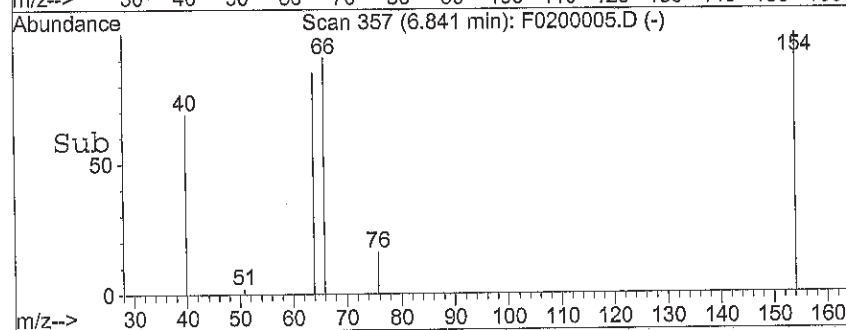
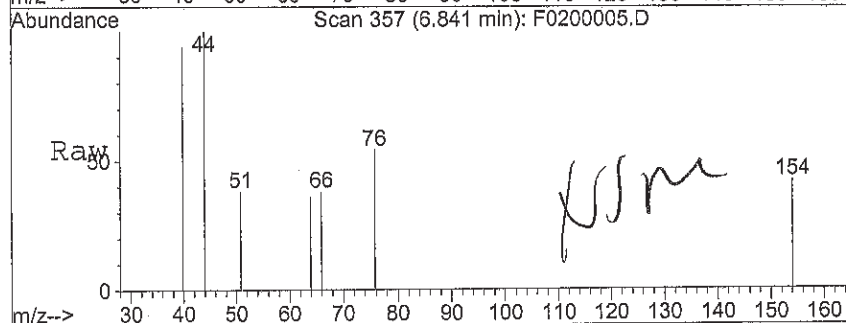
Tgt Ion: 45 Resp: 122248
Ion Ratio Lower Upper
45 100
39 3.7 4.9 7.3#





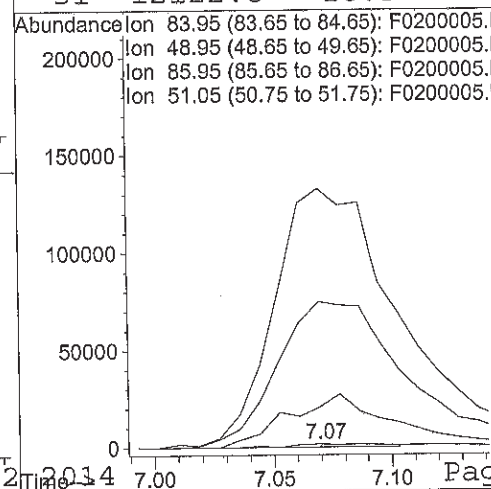
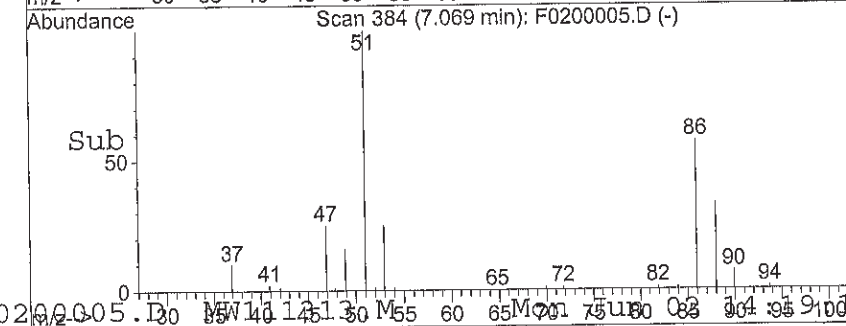
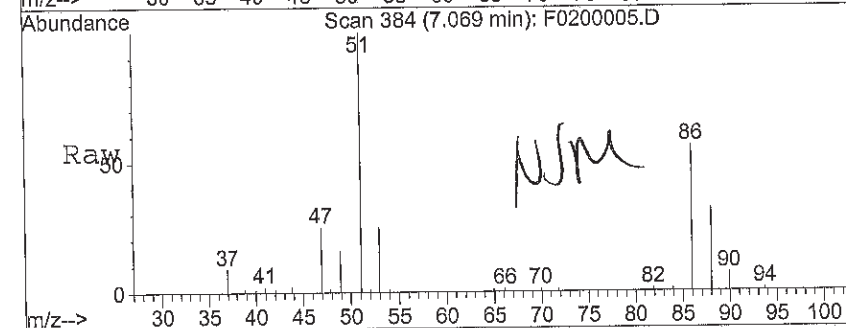
#13
Carbon disulfide
Concen: 0.14 ug/L
RT: 6.84 min Scan# 357
Delta R.T. 0.03 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

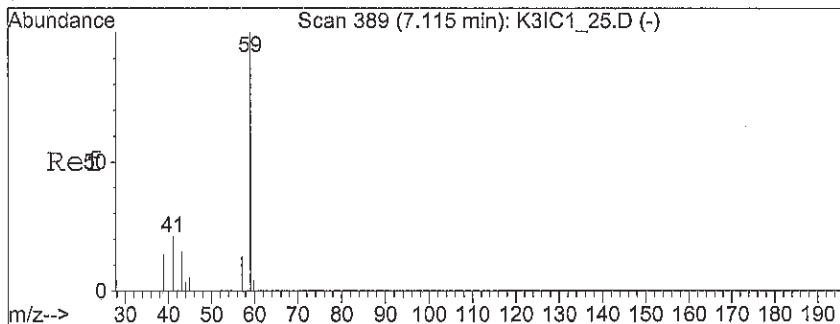
Tgt Ion: 76 Resp: 1405
Ion Ratio Lower Upper
76 100
78 27.1 7.0 10.4#



#14
Methylene Chloride
Concen: 1.22 ug/L
RT: 7.07 min Scan# 384
Delta R.T. -0.01 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

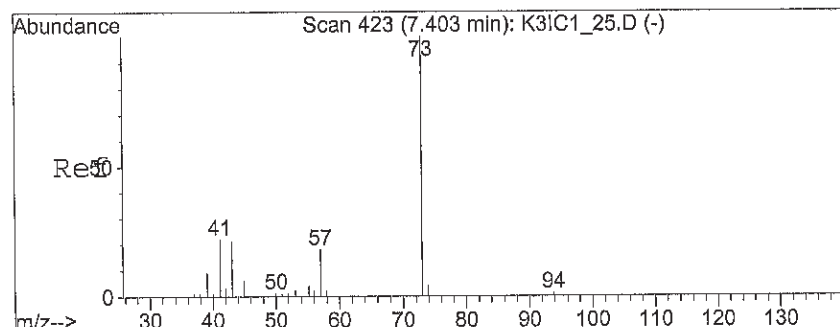
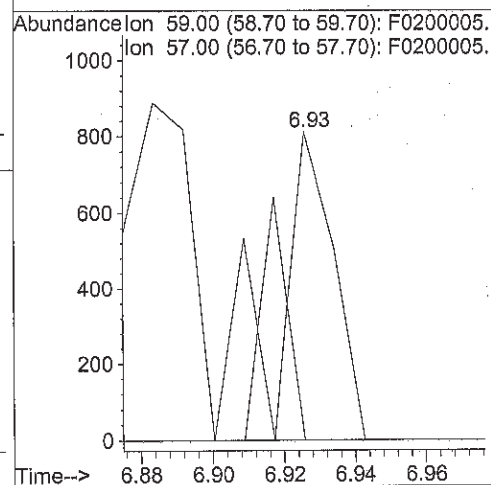
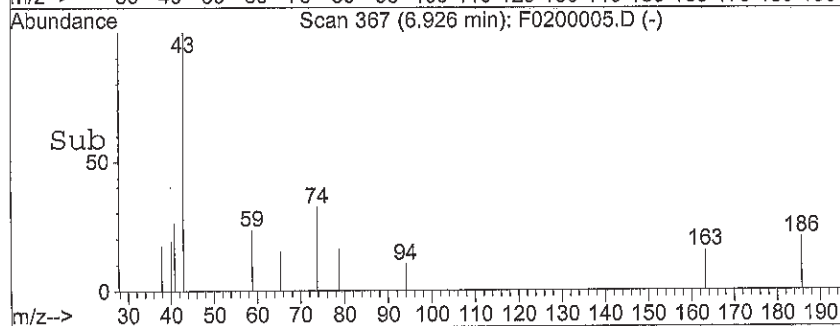
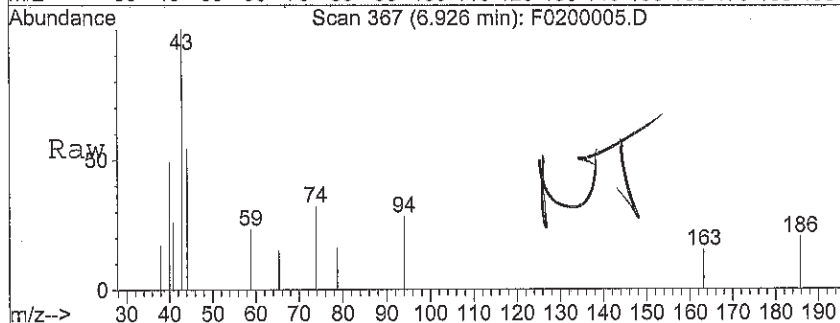
Tgt Ion: 84 Resp: 4172
Ion Ratio Lower Upper
84 100
49 2072.1 89.8 134.6#
86 6941.9 51.1 76.7#
51 12122.8 28.5 42.7#





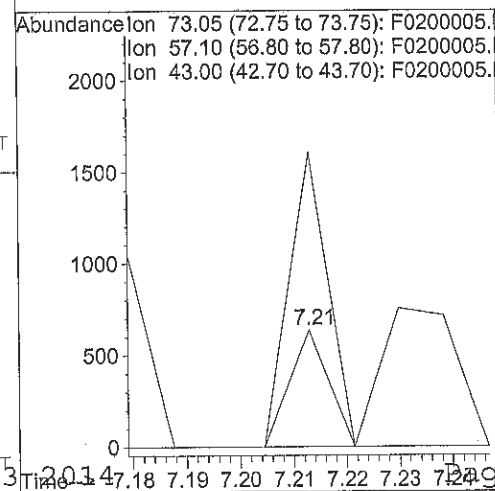
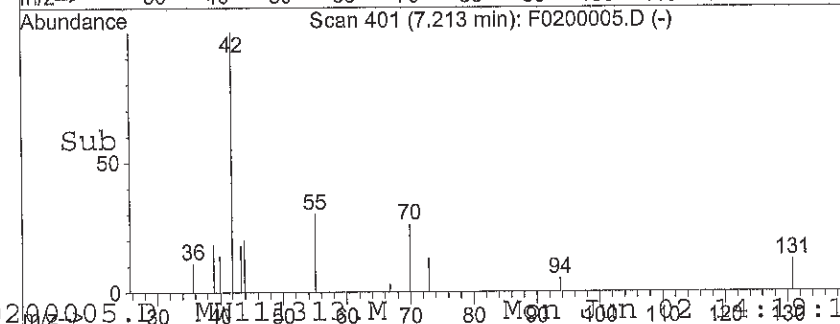
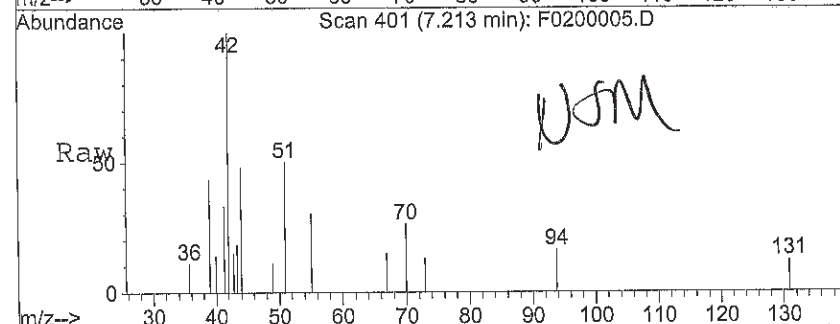
#15
 (TBA) tert-Butanol
 Concen: 4.40 ug/L
 RT: 6.93 min Scan# 367
 Delta R.T. -0.19 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

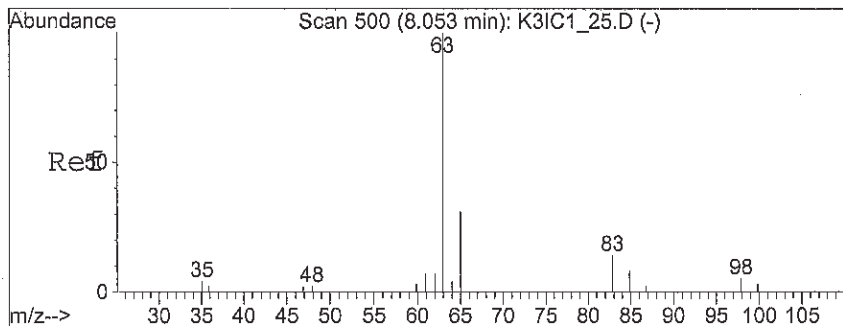
Tgt Ion: 59 Resp: 938
 Ion Ratio Lower Upper
 59 100
 57 34.5 6.4 9.6#



#16
 (MTBE) Methyl-t-butyl ether
 Concen: 0.05 ug/L
 RT: 7.21 min Scan# 401
 Delta R.T. -0.19 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

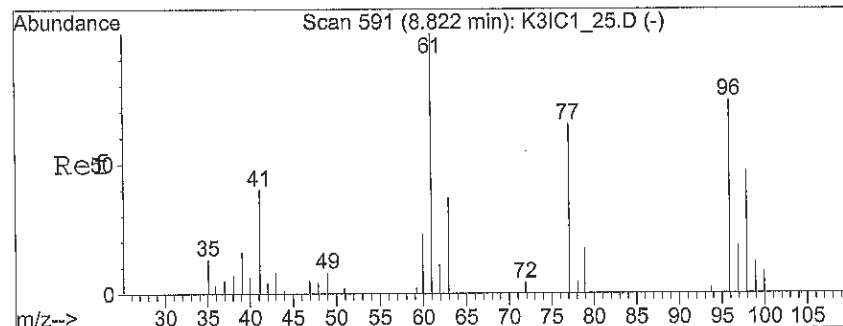
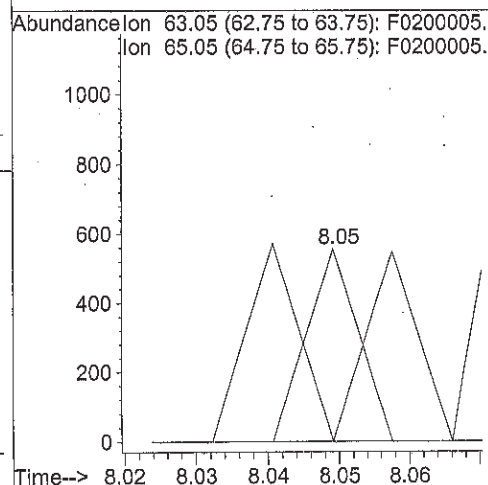
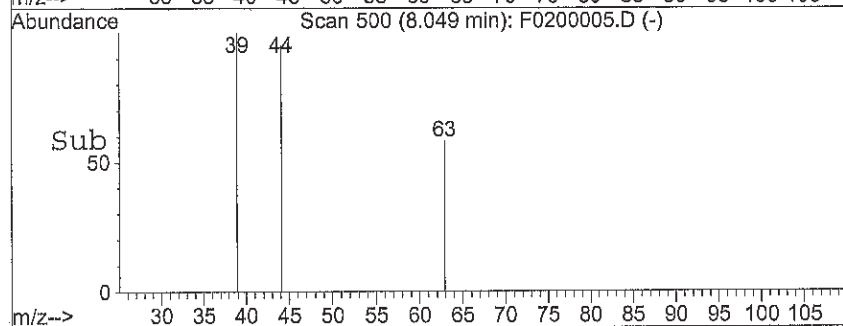
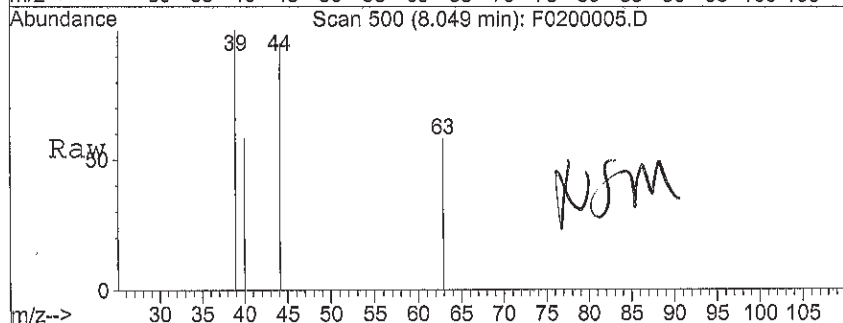
Tgt Ion: 73 Resp: 323
 Ion Ratio Lower Upper
 73 100
 57 0.0 15.8 23.8#
 43 481.7 18.4 27.6#





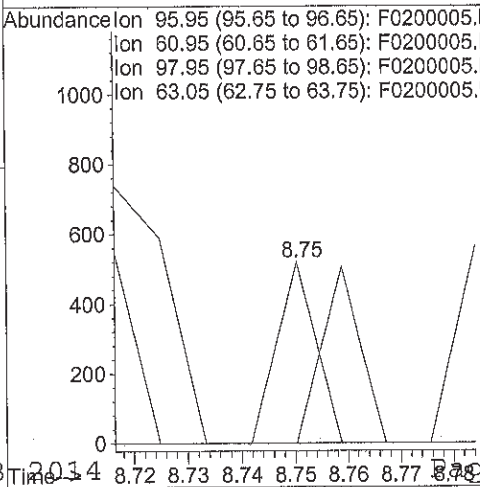
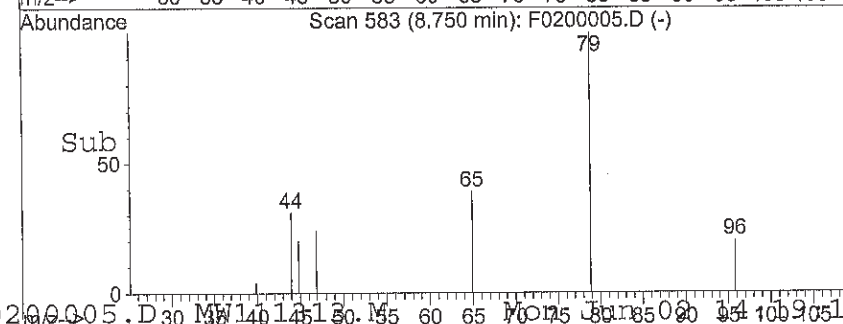
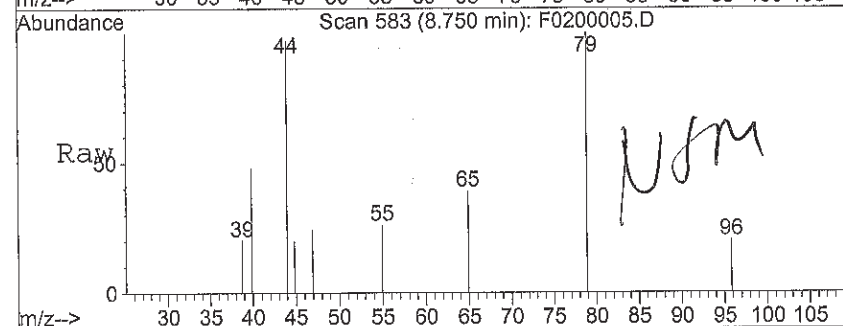
#18
 1,1-Dichloroethane
 Concen: 0.05 ug/L
 RT: 8.05 min Scan# 500
 Delta R.T. -0.00 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

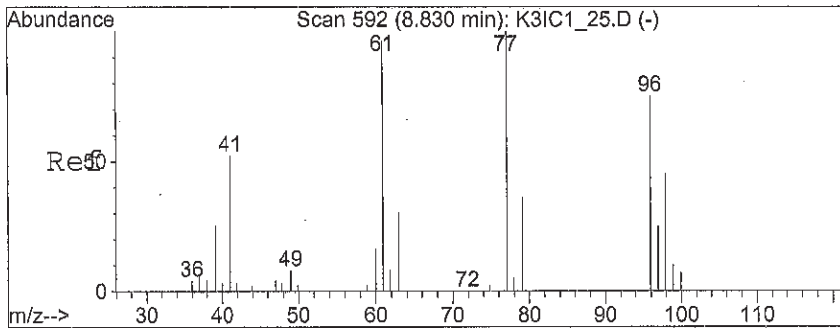
Tgt Ion: 63 Resp: 282
 Ion Ratio Lower Upper
 63 100
 65 201.1 25.8 38.8#



#19
 cis-1,2-Dichloroethene
 Concen: 0.07 ug/L
 RT: 8.75 min Scan# 583
 Delta R.T. -0.07 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 96 Resp: 264
 Ion Ratio Lower Upper
 96 100
 61 97.0 110.3 165.5#
 98 0.0 49.8 74.6#
 63 0.0 36.7 55.1#

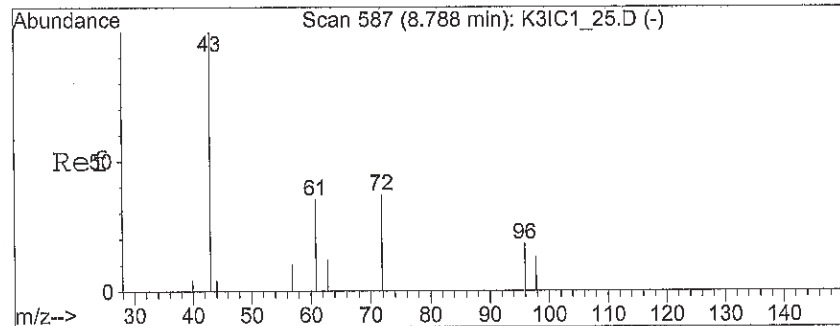
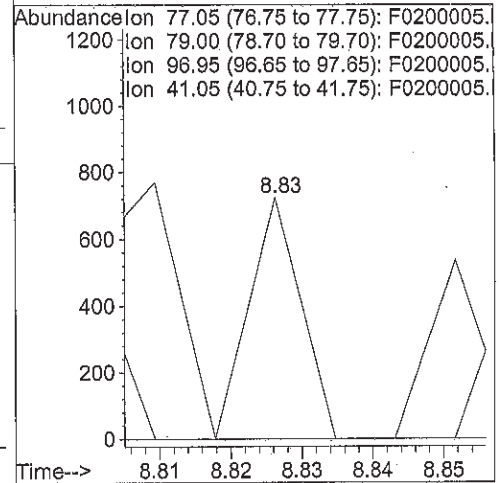
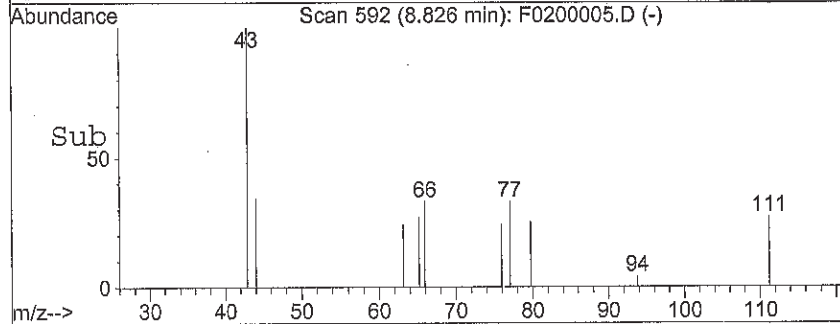
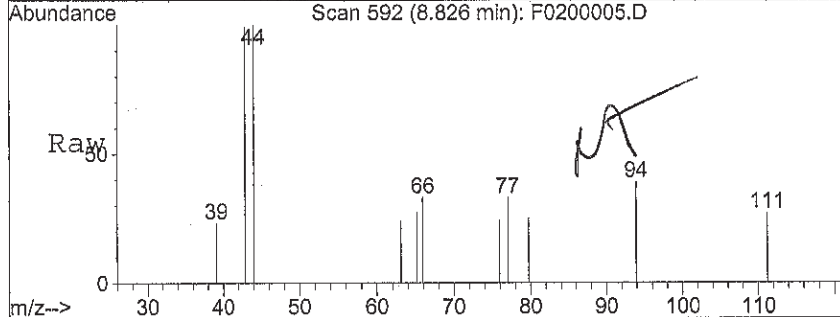




#20
 2,2-Dichloropropane
 Concen: 0.07 ug/L
 RT: 8.83 min Scan# 592
 Delta R.T. -0.00 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 77 Resp: 367

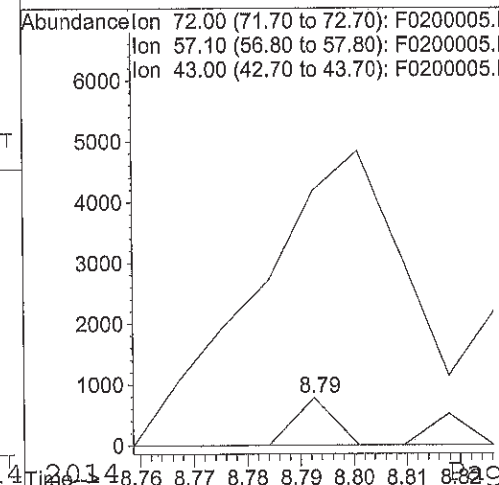
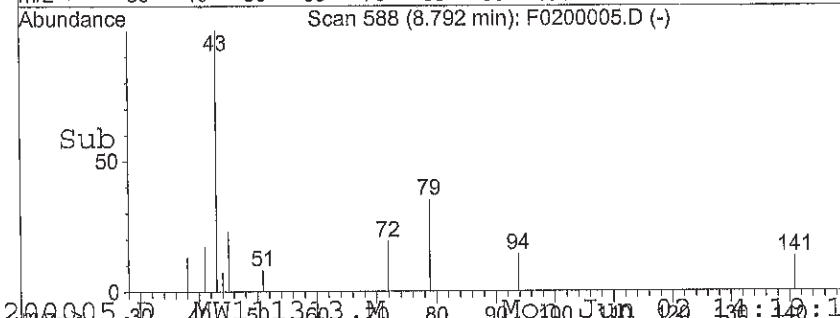
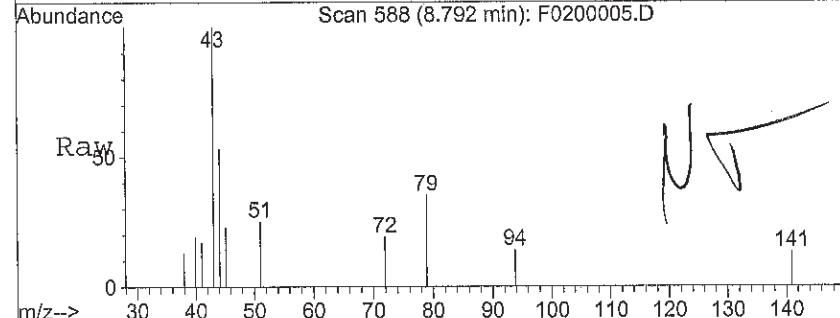
Ion	Ratio	Lower	Upper
77	100		
79	0.0	26.6	40.0#
97	0.0	18.9	28.3#
41	0.0	42.6	64.0#

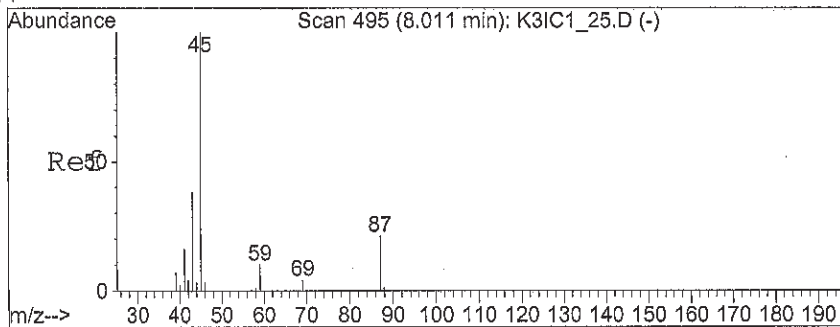


#21
 (MEK) 2-Butanone
 Concen: 1.13 ug/L
 RT: 8.79 min Scan# 588
 Delta R.T. 0.00 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 72 Resp: 396

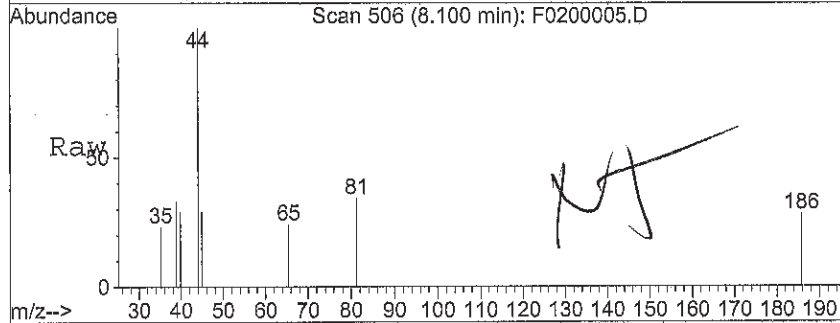
Ion	Ratio	Lower	Upper
72	100		
57	0.0	17.5	26.3#
43	2774.7	314.2	471.2#



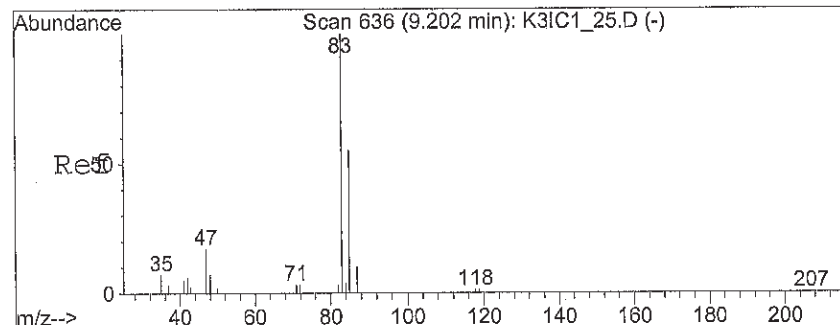
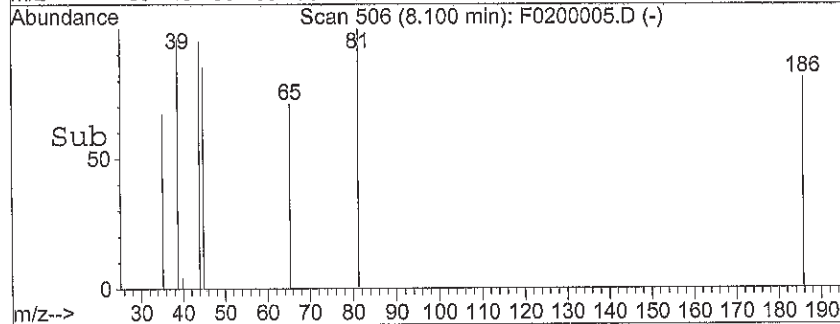
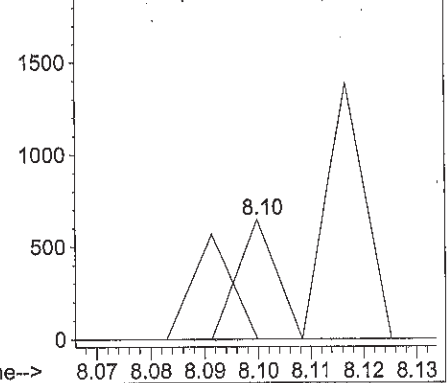


#22
 (DIPE) Diisopropyl Ether
 Concen: 0.03 ug/L
 RT: 8.10 min Scan# 506
 Delta R.T. 0.09 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 45 Resp: 328
 Ion Ratio Lower Upper
 45 100
 87 0.0 17.0 25.6#
 43 302.4 30.5 45.7#
 59 0.0 7.4 11.2#

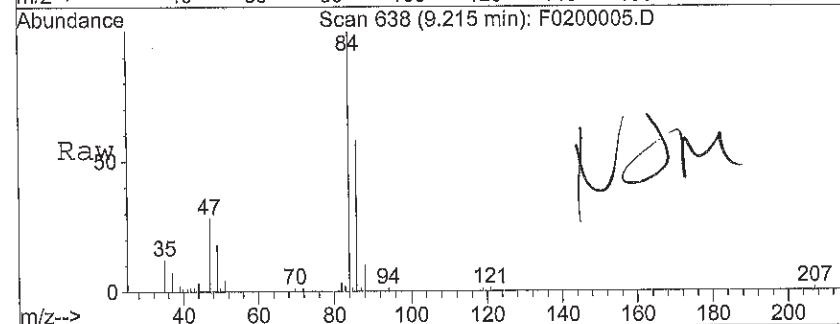


Abundance Ion 45.00 (44.70 to 45.70): F0200005.
 Ion 87.10 (86.80 to 87.80): F0200005.
 Ion 43.05 (42.75 to 43.75): F0200005.
 Ion 59.00 (58.70 to 59.70): F0200005.

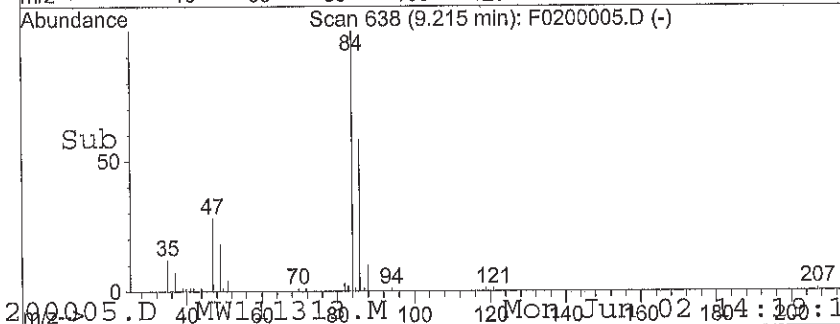
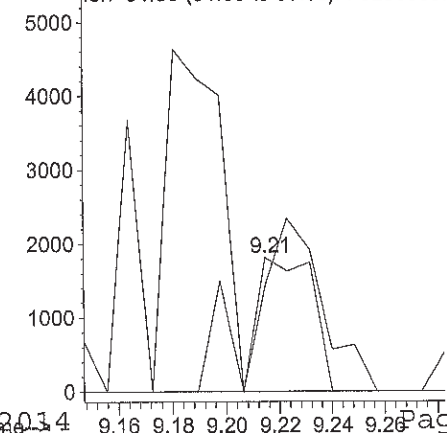


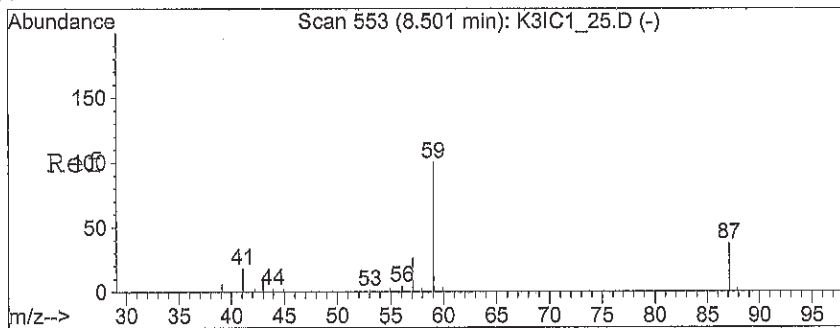
#24
 Chloroform
 Concen: 0.52 ug/L
 RT: 9.21 min Scan# 638
 Delta R.T. 0.01 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 83 Resp: 3380
 Ion Ratio Lower Upper
 83 100
 85 103.4 51.8 77.6#



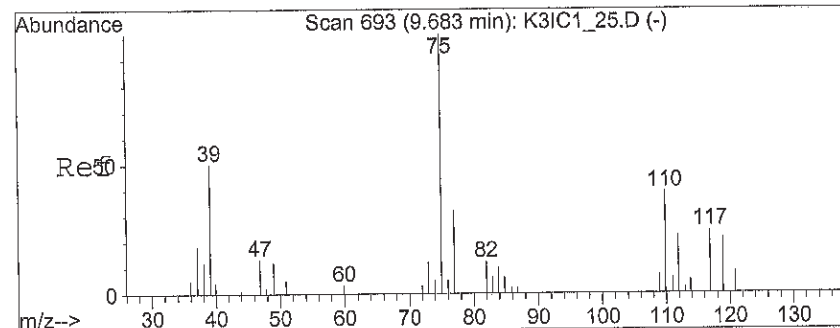
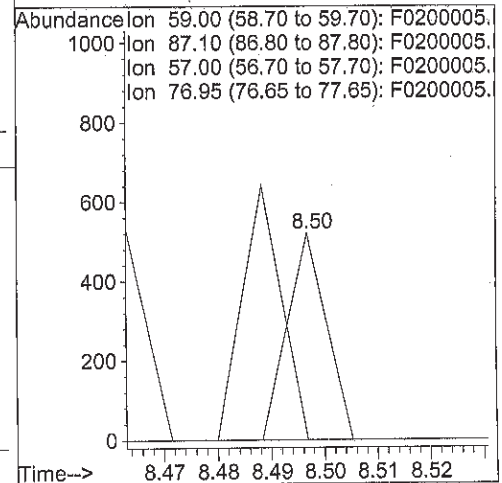
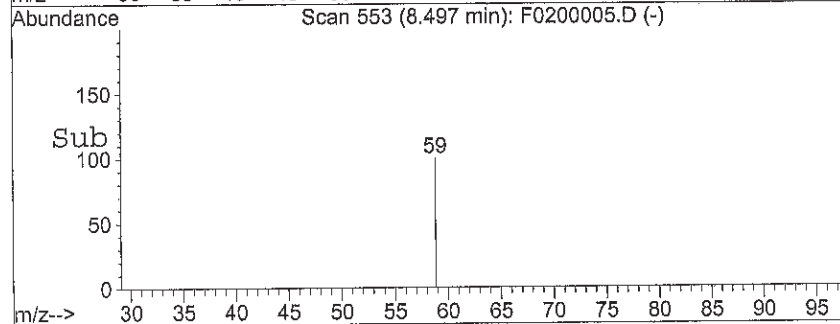
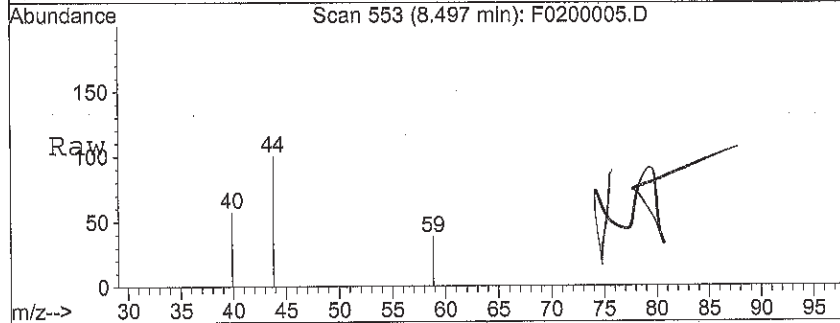
Abundance Ion 83.00 (82.70 to 83.70): F0200005.
 Ion 84.95 (84.65 to 85.65): F0200005.





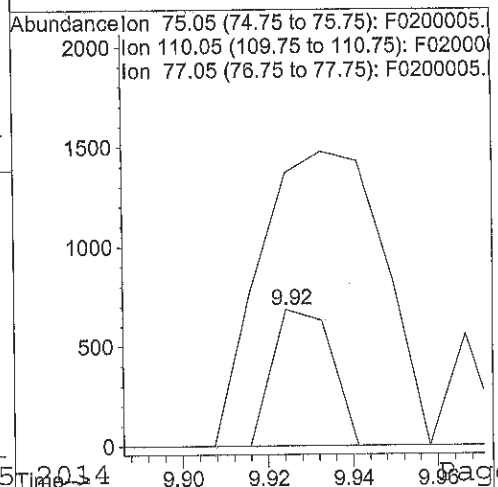
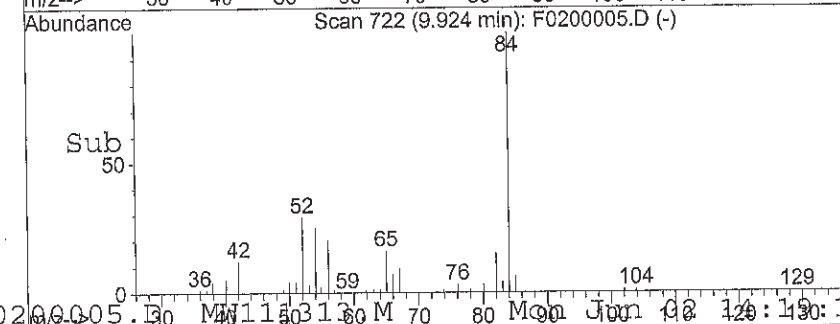
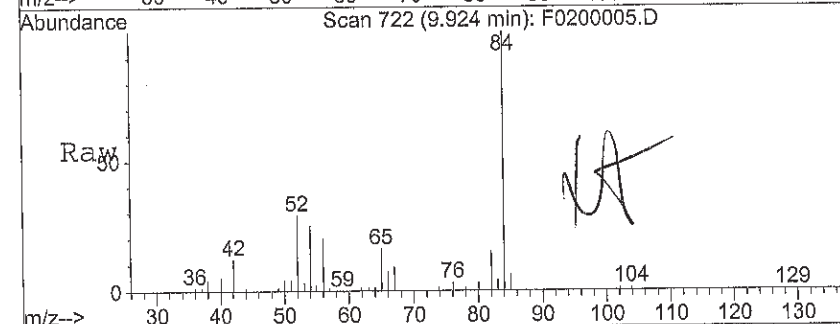
#25
 (ETBE) 2-ethoxy 2-methyl propan
 Concen: 0.03 ug/L
 RT: 8.50 min Scan# 553
 Delta R.T. -0.00 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

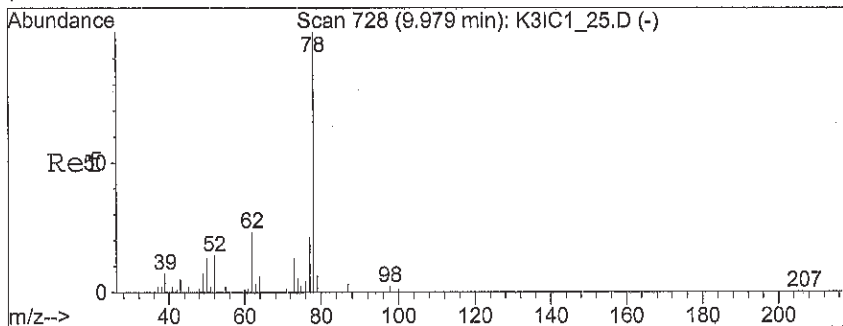
Tgt Ion: 59 Resp: 264
 Ion Ratio Lower Upper
 59 100
 87 0.0 27.8 41.8#
 57 0.0 19.8 29.6#
 77 123.5 0.0 0.0#



#29
 1,1-Dichloropropene
 Concen: 0.14 ug/L
 RT: 9.92 min Scan# 722
 Delta R.T. 0.24 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 75 Resp: 664
 Ion Ratio Lower Upper
 75 100
 110 0.0 29.0 43.6#
 77 447.6 25.0 37.4#





#31

Benzene

Concen: 1.09 ug/L

RT: 9.92 min Scan# 722

Delta R.T. -0.05 min

Lab File: F0200005.D

Acq: 2 Jun 2014 1:50 pm

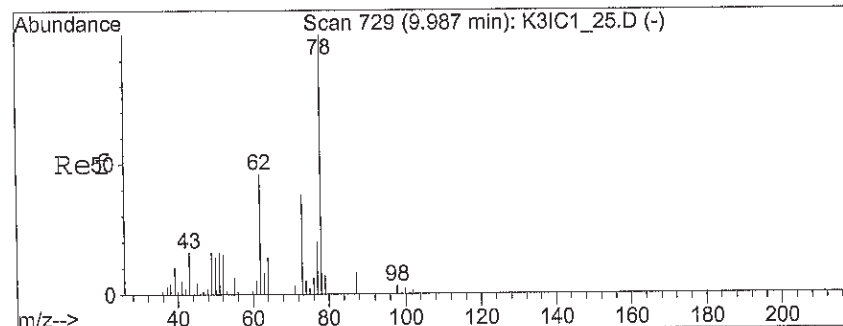
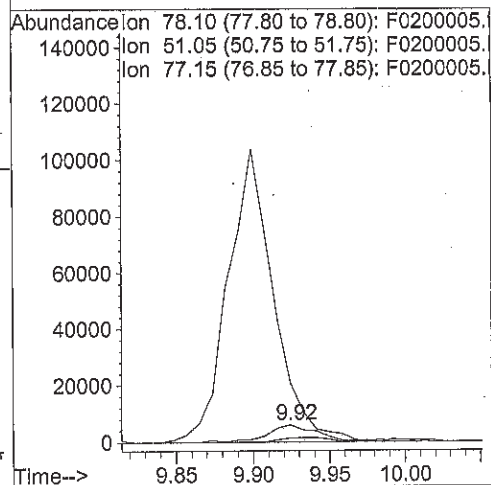
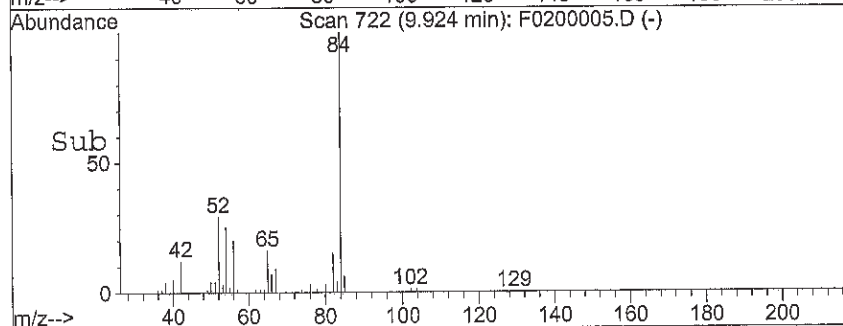
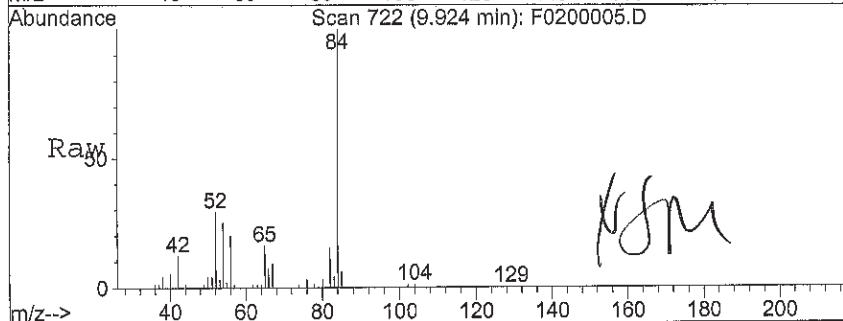
Tgt Ion: 78 Resp: 12822

Ion Ratio Lower Upper

78 100

51 0.0 14.2 21.2#

77 23.2 16.6 24.8



#32

1,2-Dichloroethane

Concen: 3.04 ug/L

RT: 9.93 min Scan# 723

Delta R.T. -0.05 min

Lab File: F0200005.D

Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 62 Resp: 12662

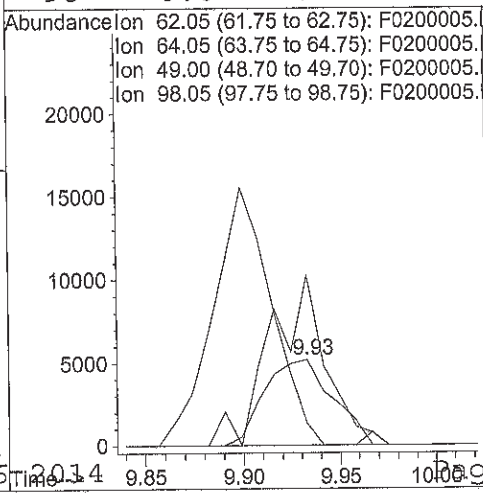
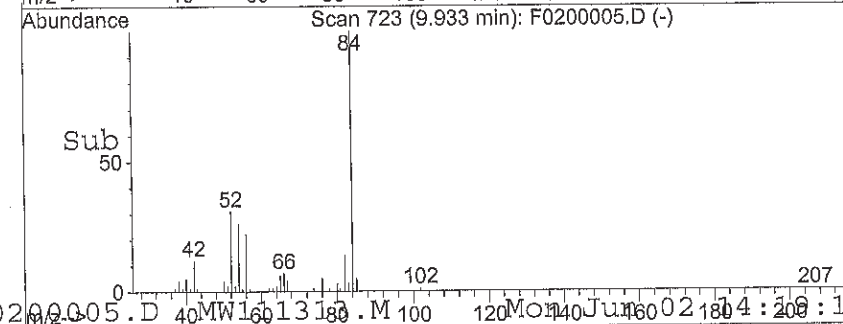
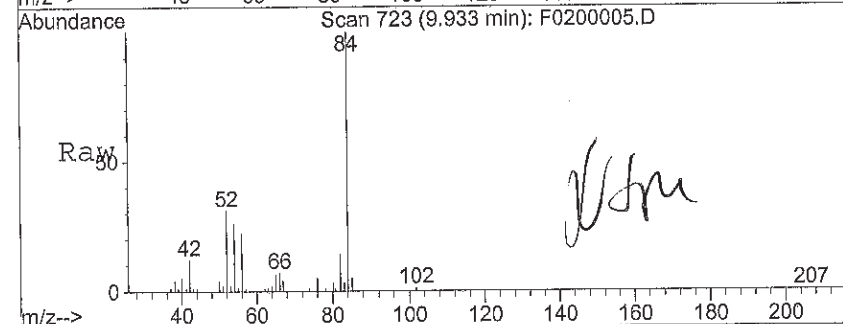
Ion Ratio Lower Upper

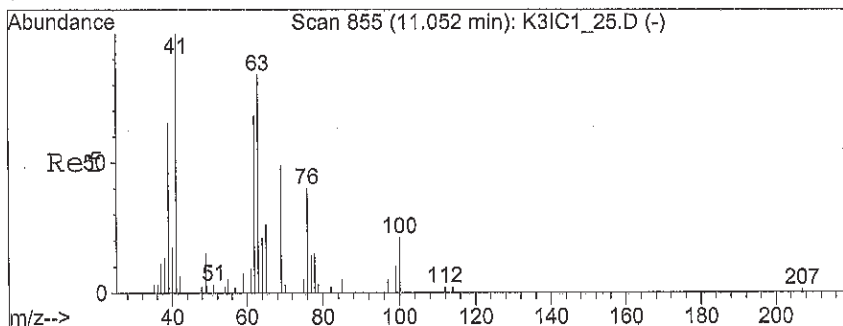
62 100

64 162.7 28.0 42.0#

49 0.0 28.5 42.7#

98 0.0 6.2 9.4#





#34

1,2-Dichloropropane

Concen: 0.11 ug/L

RT: 11.09 min Scan# 860

Delta R.T. 0.04 min

Lab File: F0200005.D

Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 63 Resp: 299

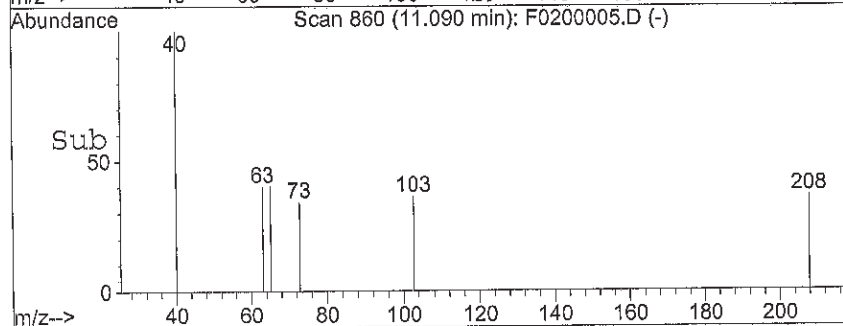
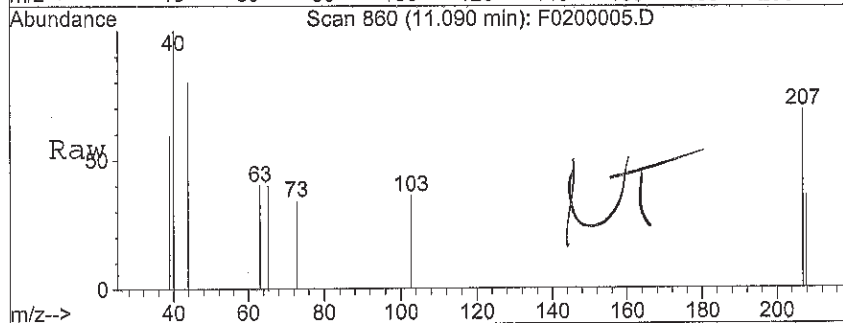
Ion Ratio Lower Upper

63 100

62 0.0 67.4 101.2#

76 0.0 40.3 60.5#

41 88.6 103.0 154.6#



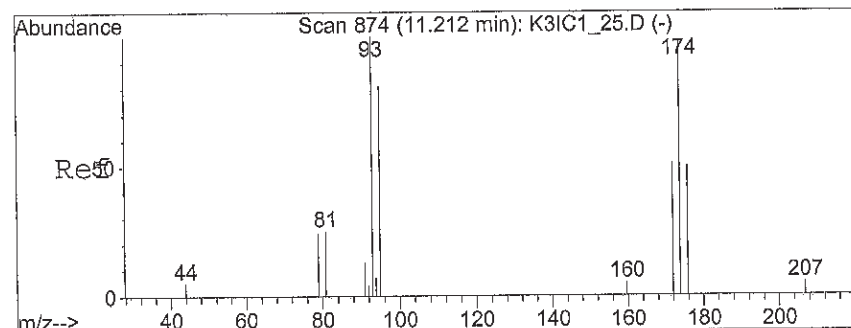
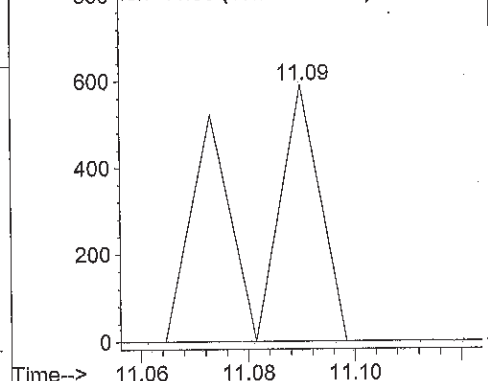
Abundance

Ion 63.05 (62.75 to 63.75): F0200005.D

Ion 62.05 (61.75 to 62.75): F0200005.D

Ion 76.05 (75.75 to 76.75): F0200005.D

Ion 41.05 (40.75 to 41.75): F0200005.D



#35

Dibromomethane

Concen: 0.12 ug/L

RT: 11.22 min Scan# 875

Delta R.T. 0.00 min

Lab File: F0200005.D

Acq: 2 Jun 2014 1:50 pm

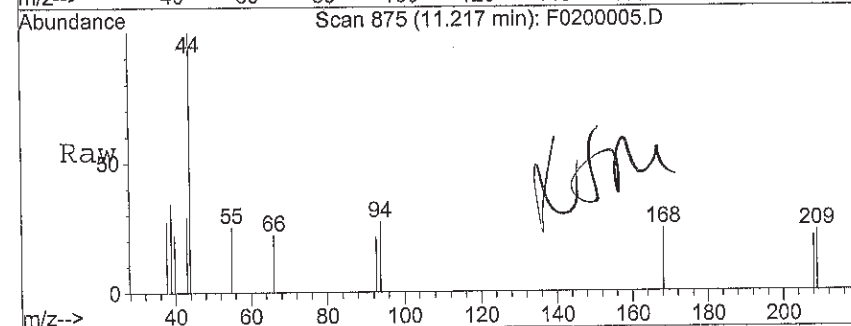
Tgt Ion: 93 Resp: 268

Ion Ratio Lower Upper

93 100

95 0.0 66.2 99.2#

174 0.0 75.5 113.3#

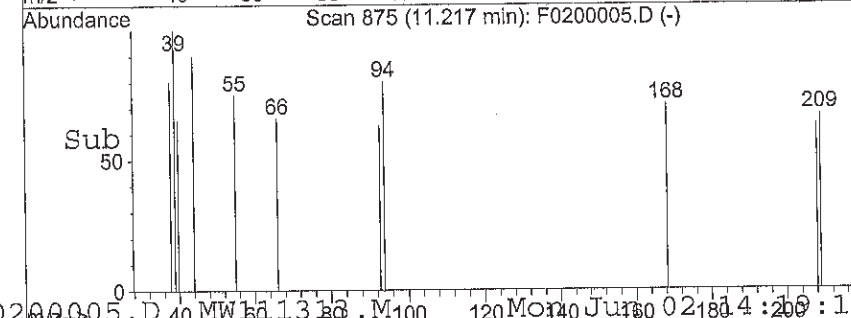
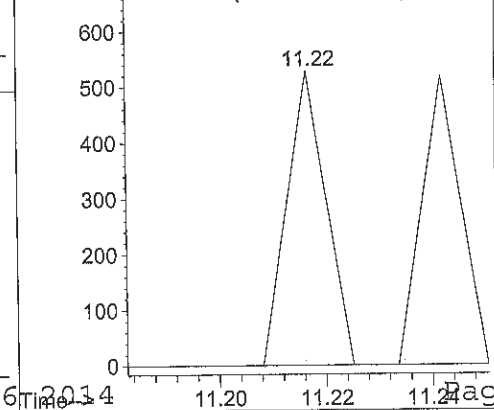


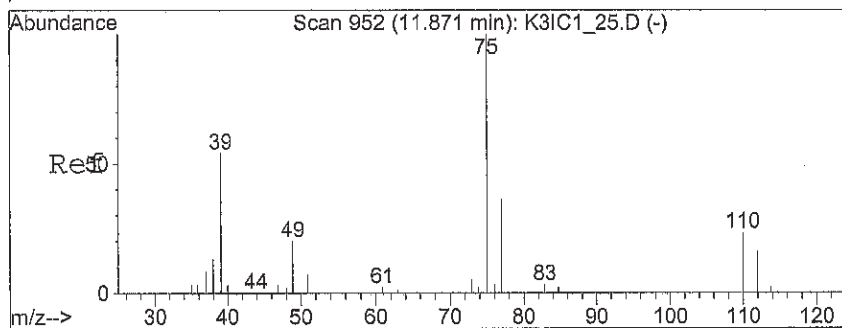
Abundance

Ion 93.00 (92.70 to 93.70): F0200005.D

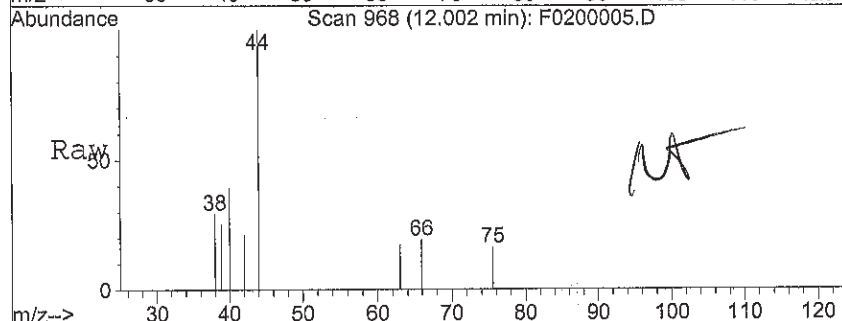
Ion 95.00 (94.70 to 95.70): F0200005.D

Ion 173.90 (173.60 to 174.60): F0200005.D

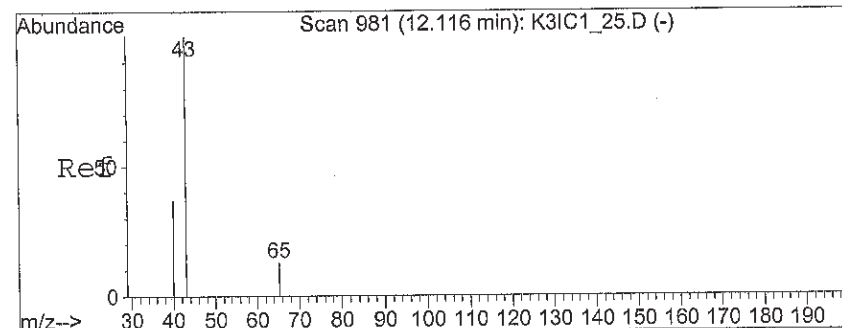
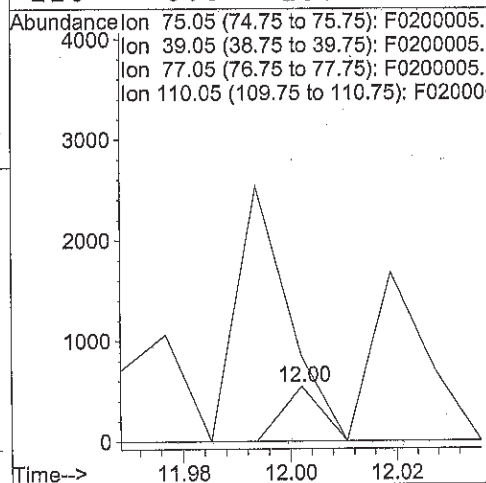
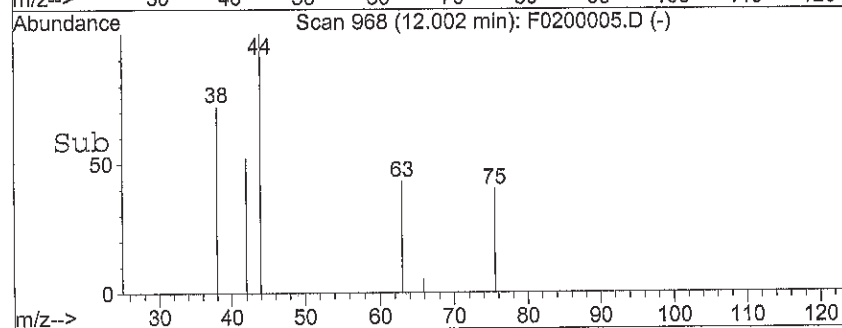




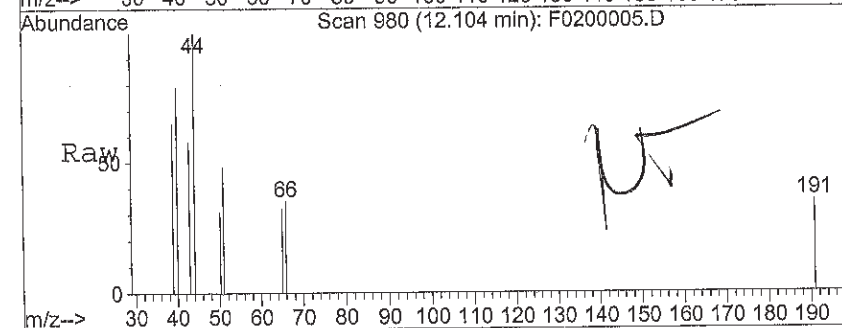
#37
 cis-1,3-Dichloropropene
 Concen: 0.06 ug/L
 RT: 12.00 min Scan# 968
 Delta R.T. 0.13 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm



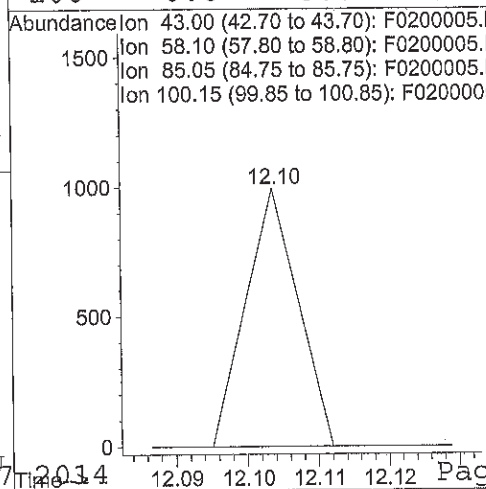
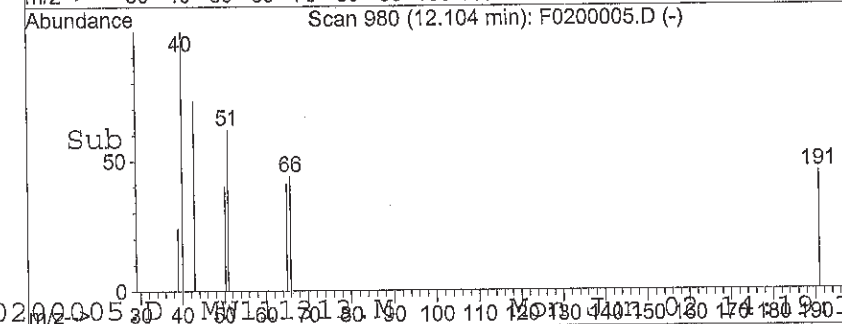
Tgt Ion: 75 Resp: 273
 Ion Ratio Lower Upper
 75 100
 39 953.5 40.7 61.1#
 77 0.0 28.8 43.2#
 110 0.0 18.1 27.1#

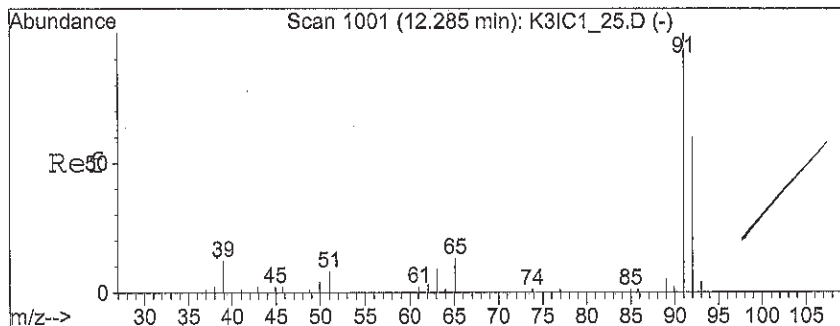


#40
 (MIBK) 4-Methyl-2-Pentanone
 Concen: 0.22 ug/L
 RT: 12.10 min Scan# 980
 Delta R.T. -0.01 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm



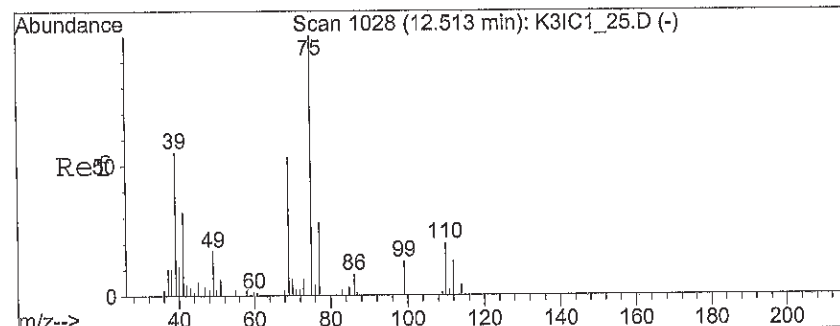
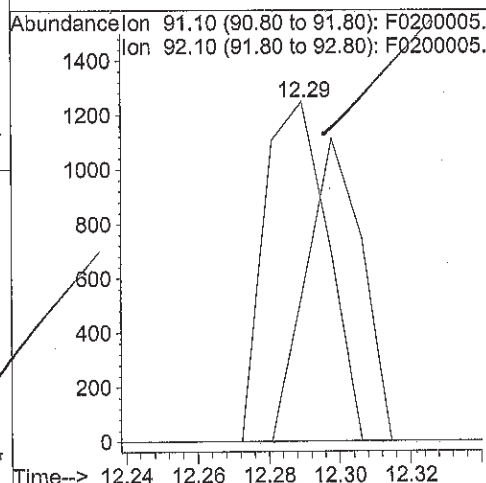
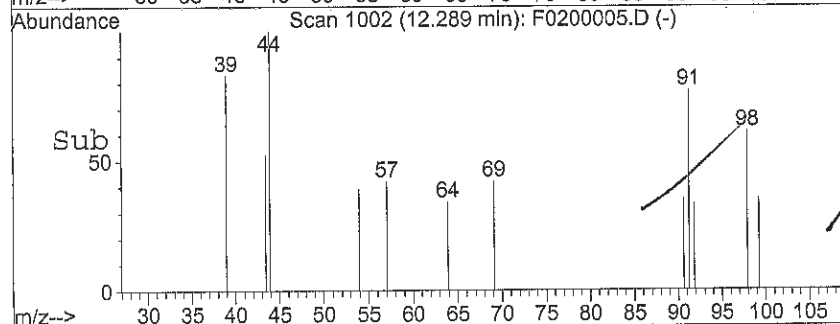
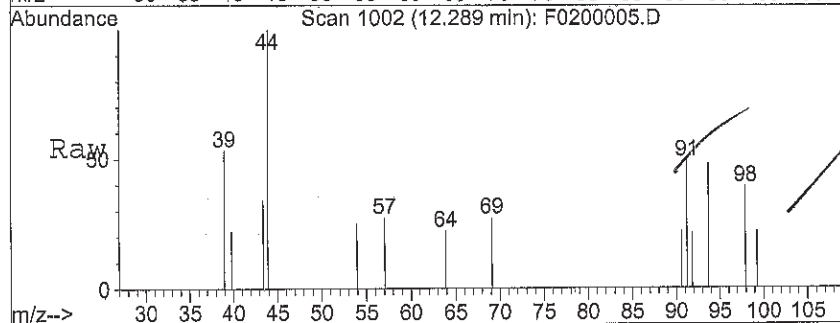
Tgt Ion: 43 Resp: 504
 Ion Ratio Lower Upper
 43 100
 58 0.0 0.0 0.0
 85 0.0 0.0 0.0
 100 0.0 0.0 0.0





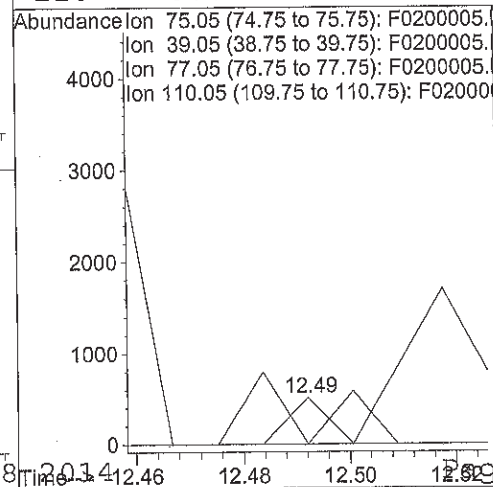
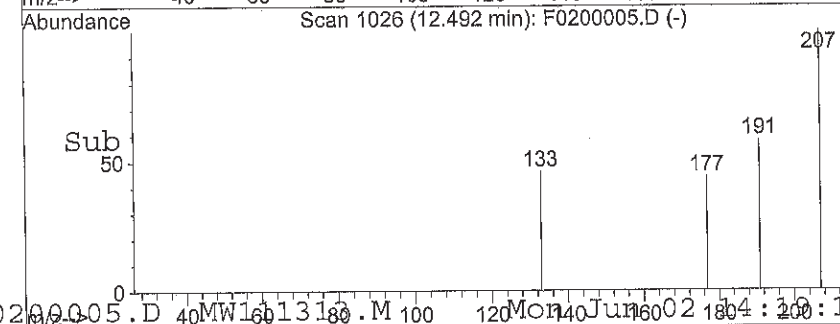
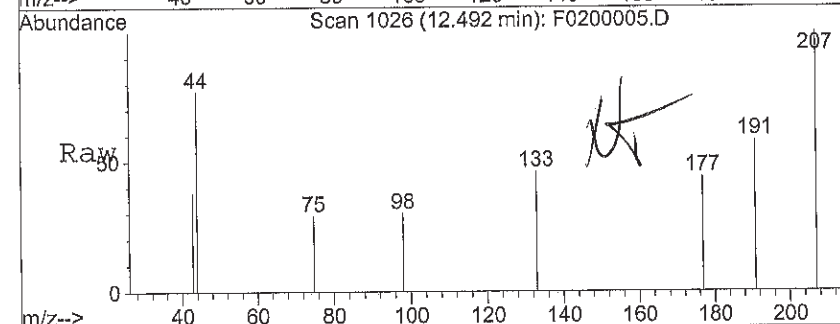
#41
Toluene
Concen: 0.10 ug/L
RT: 12.29 min Scan# 1002
Delta R.T. 0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

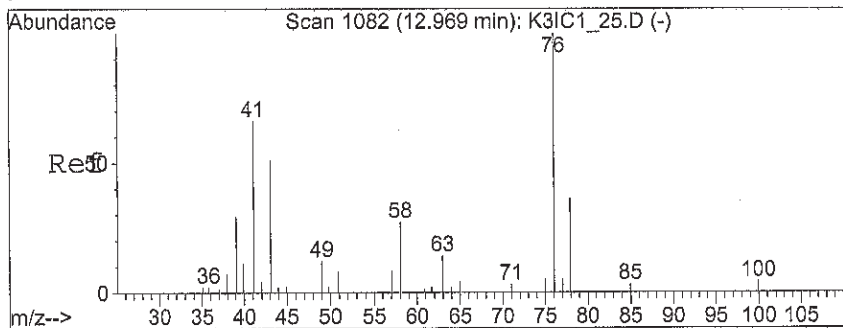
Tgt Ion: 91 Resp: 1541
Ion Ratio Lower Upper
91 100
92 78.7 47.4 71.0#



#42
trans-1,3-Dichloropropene
Concen: 0.05 ug/L
RT: 12.49 min Scan# 1026
Delta R.T. -0.02 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 75 Resp: 259
Ion Ratio Lower Upper
75 100
39 155.2 53.6 80.4#
77 113.5 25.4 38.2#
110 0.0 17.6 26.4#





#45

1,3-Dichloropropane

Concen: 0.05 ug/L

RT: 13.06 min Scan# 1093

Delta R.T. 0.09 min

Lab File: F0200005.D

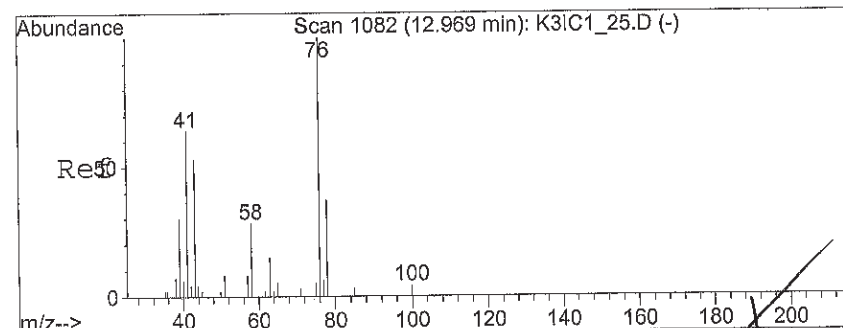
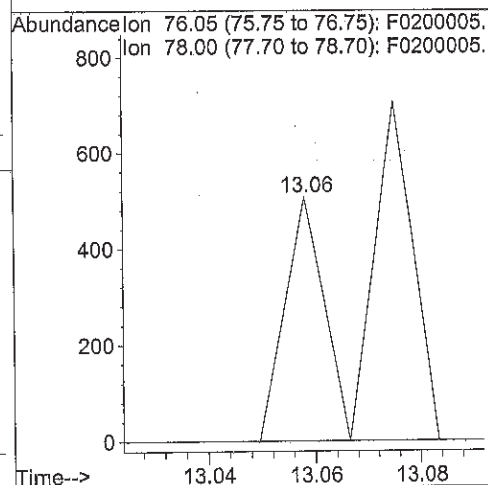
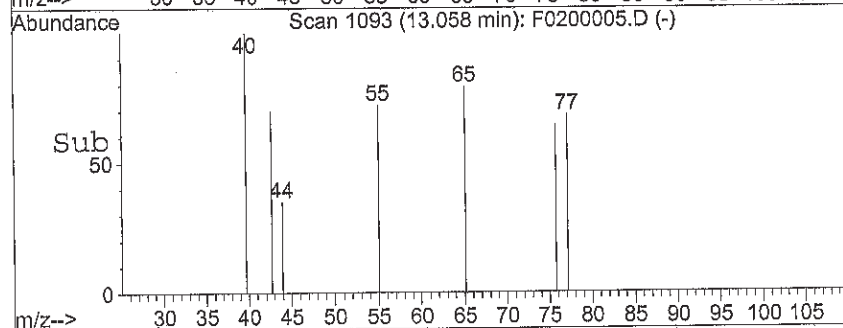
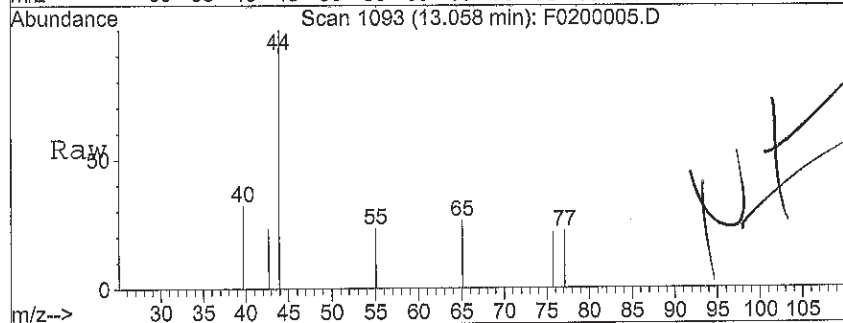
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 76 Resp: 257

Ion Ratio Lower Upper

76 100

78 139.3 26.9 40.3#



#46

2-Hexanone

Concen: 0.16 ug/L

RT: 12.95 min Scan# 1080

Delta R.T. -0.02 min

Lab File: F0200005.D

Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 43 Resp: 417

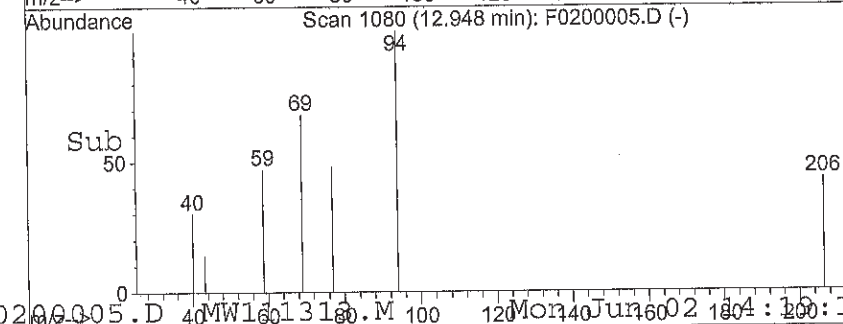
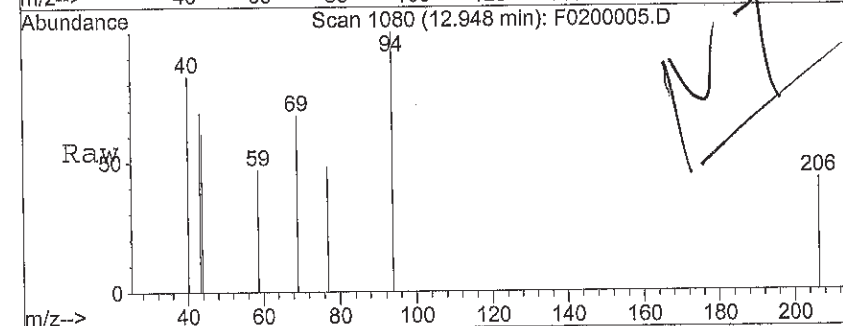
Ion Ratio Lower Upper

43 100

58 68.3 40.9 61.3#

100 0.0 5.5 8.3#

85 61.6 4.3 6.5#



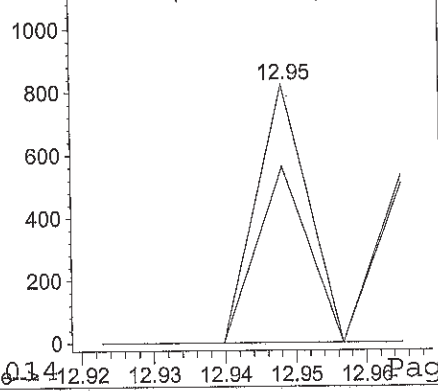
Abundance

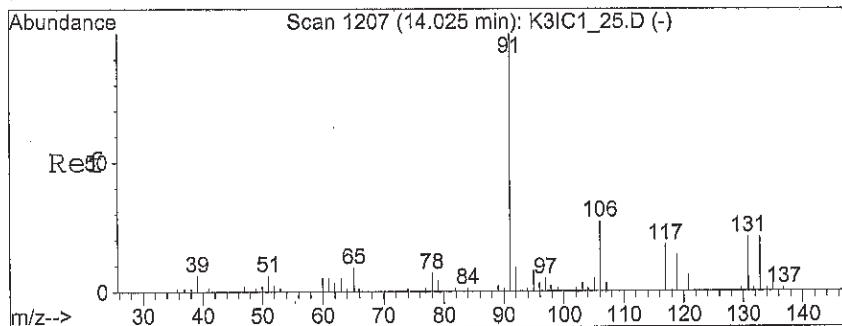
Ion 43.00 (42.70 to 43.70): F0200005.D

Ion 58.10 (57.80 to 58.80): F0200005.D

Ion 100.15 (99.85 to 100.85): F0200005.D

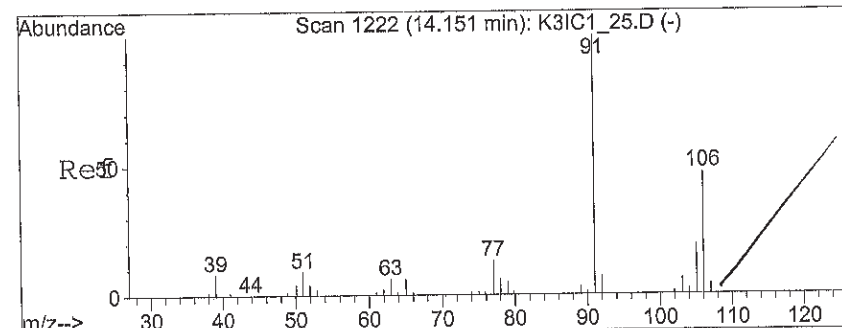
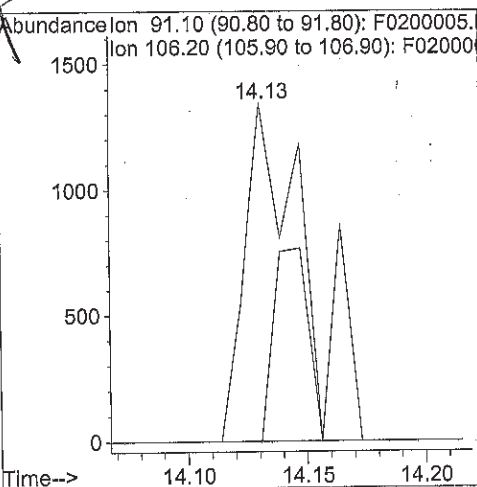
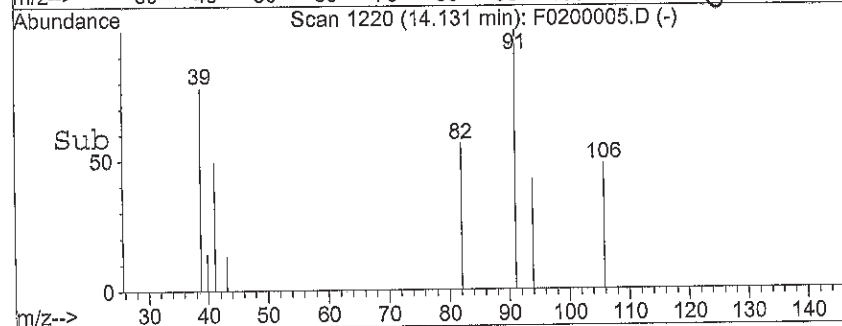
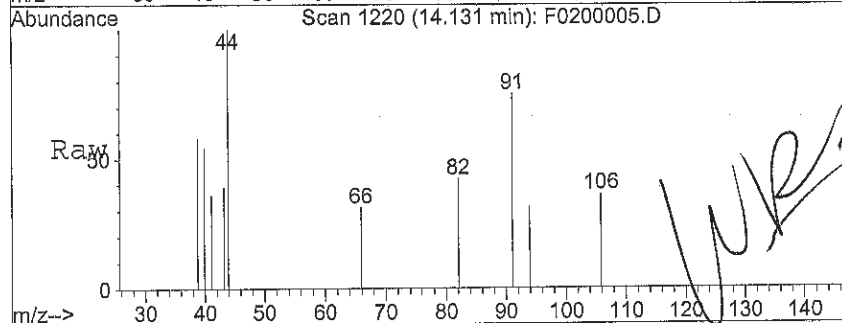
Ion 85.05 (84.75 to 85.75): F0200005.D





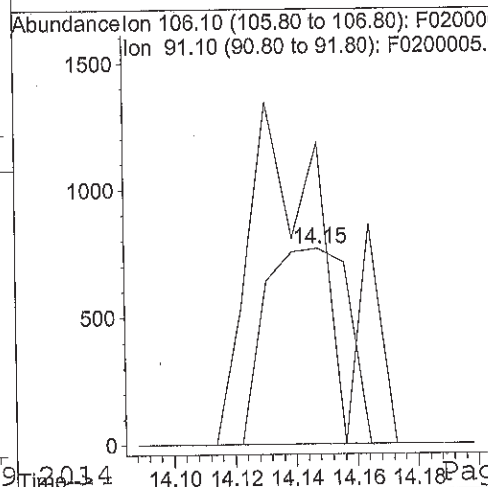
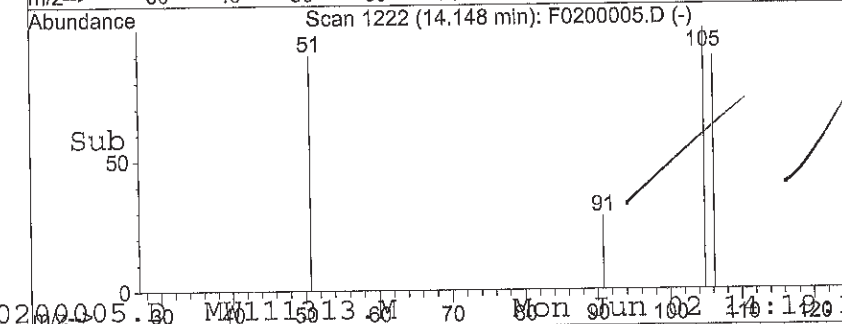
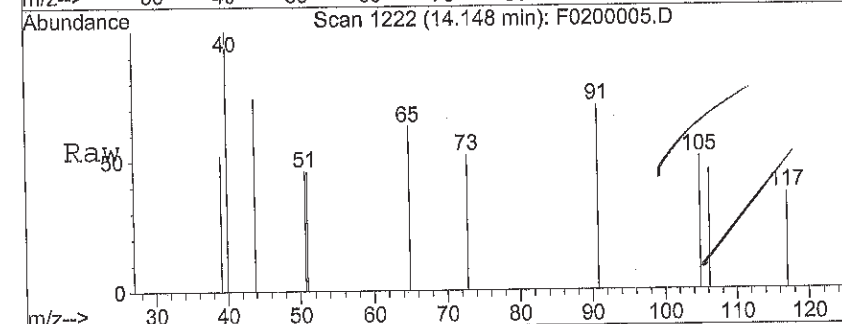
#51
Ethylbenzene
Concen: 0.13 ug/L
RT: 14.13 min Scan# 1220
Delta R.T. 0.11 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

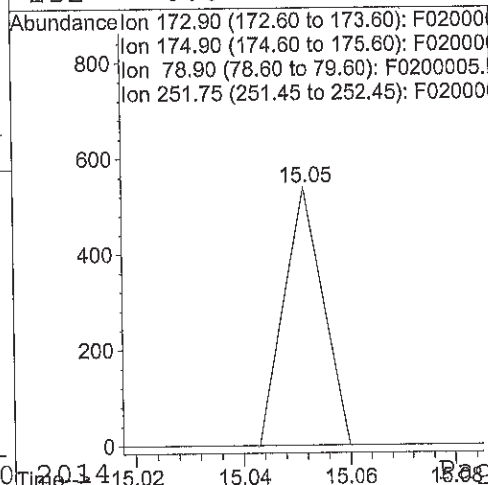
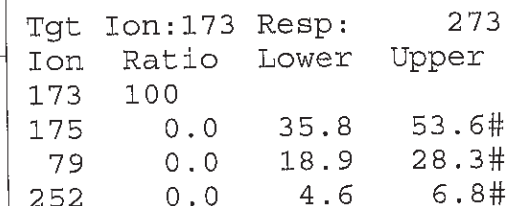
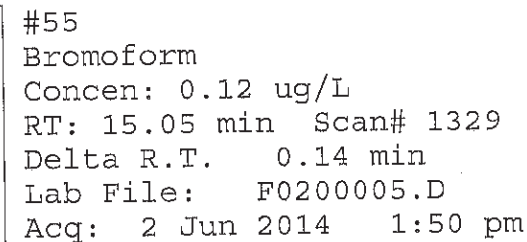
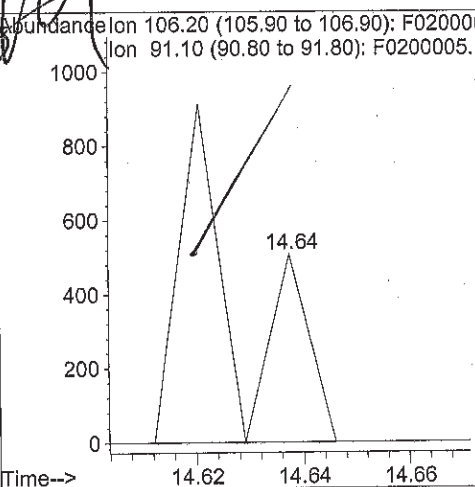
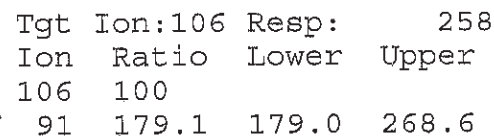
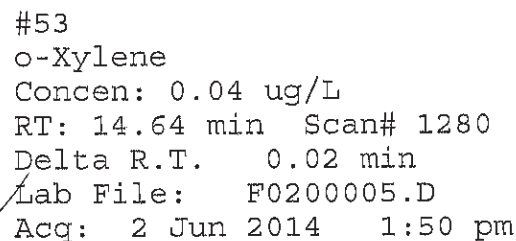
Tgt Ion: 91 Resp: 2396
Ion Ratio Lower Upper
91 100
106 32.1 23.5 35.3

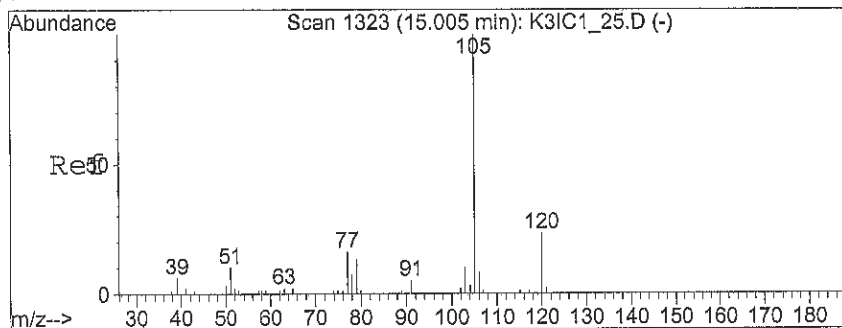


#52
m,p-Xylenes
Concen: 0.23 ug/L
RT: 14.15 min Scan# 1222
Delta R.T. -0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 106 Resp: 1456
Ion Ratio Lower Upper
106 100
91 164.6 177.1 265.7#

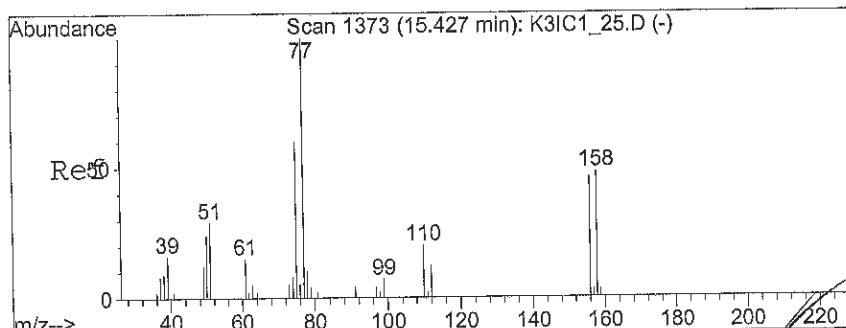
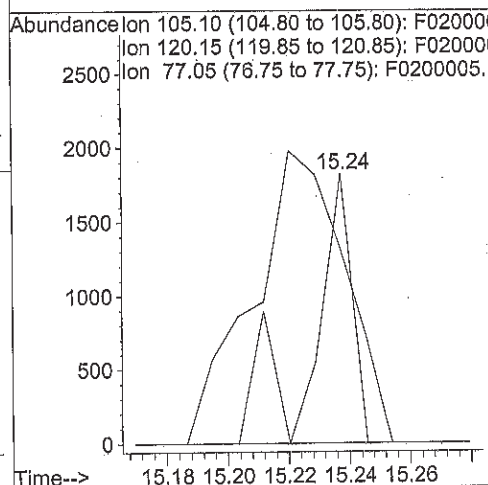
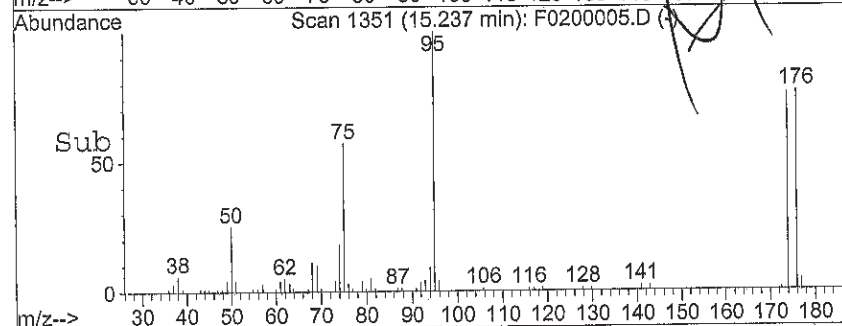
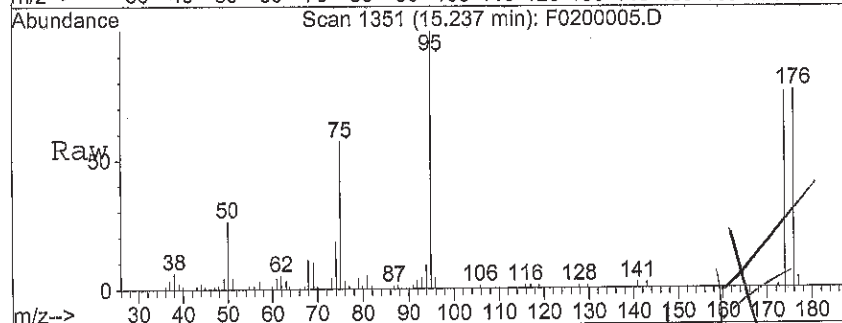






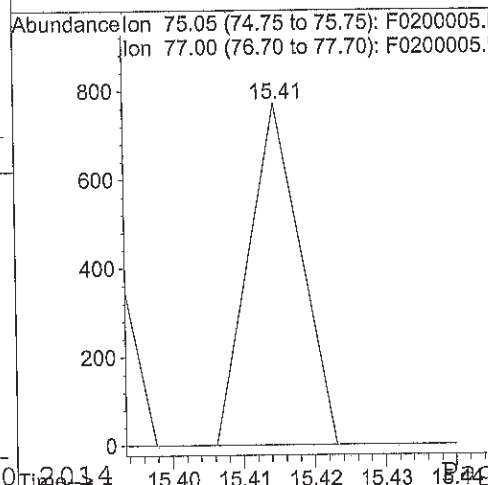
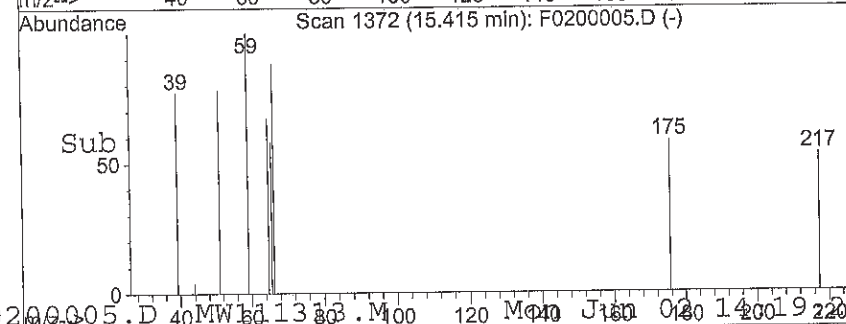
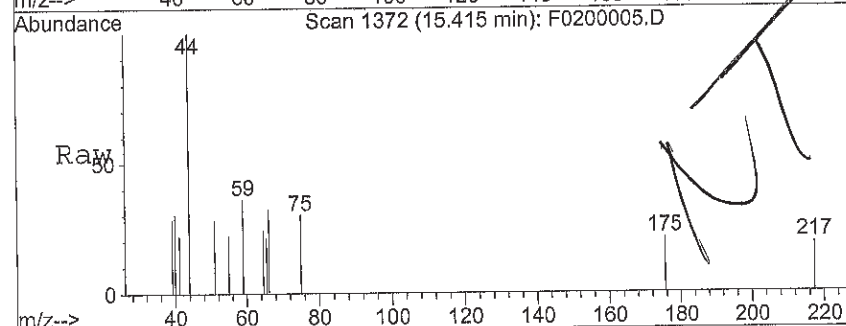
#56
Isopropylbenzene
Concen: 0.10 ug/L
RT: 15.24 min Scan# 1351
Delta R.T. 0.23 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

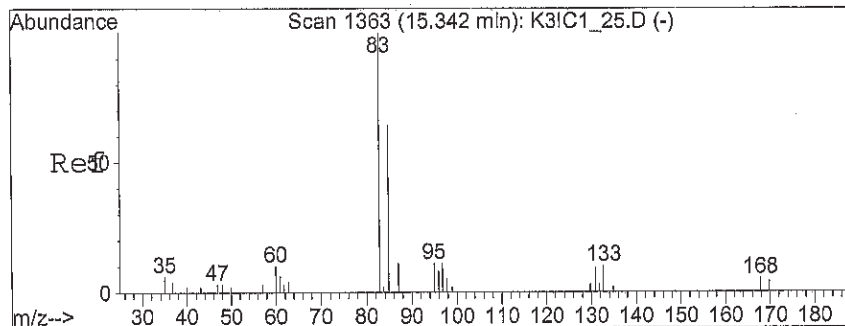
Tgt Ion: 105 Resp: 1646
Ion Ratio Lower Upper
105 100
120 0.0 19.3 28.9#
77 251.8 13.1 19.7#



#57
1,2,3-Trichloropropane
Concen: 0.08 ug/L
RT: 15.41 min Scan# 1372
Delta R.T. -0.01 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

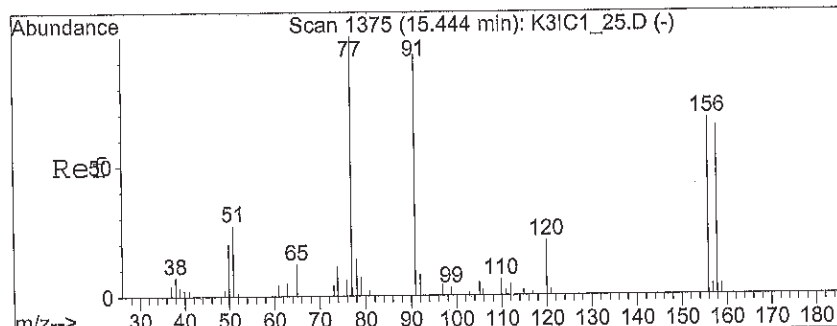
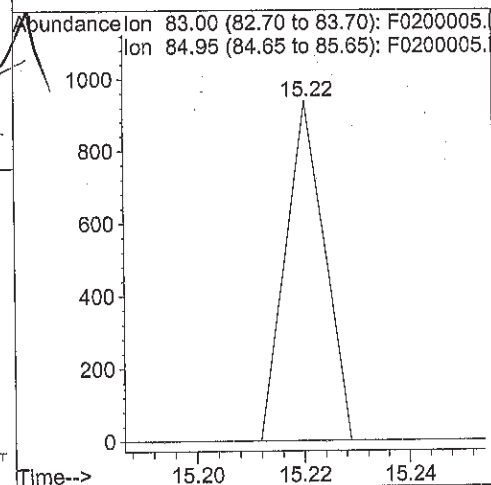
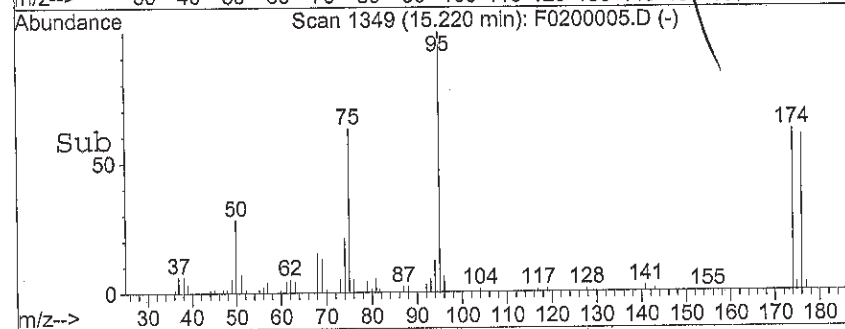
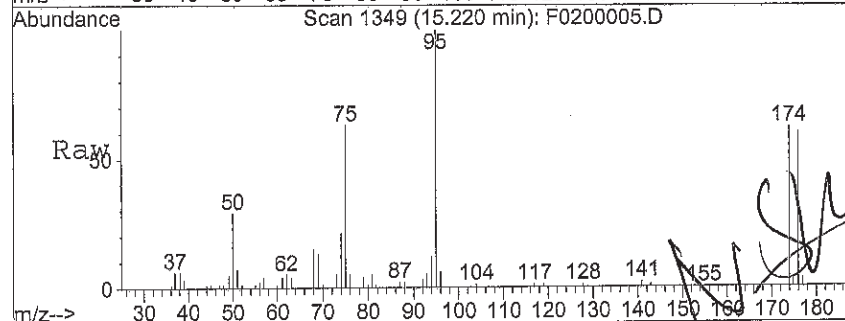
Tgt Ion: 75 Resp: 391
Ion Ratio Lower Upper
75 100
77 0.0 31.2 46.8#





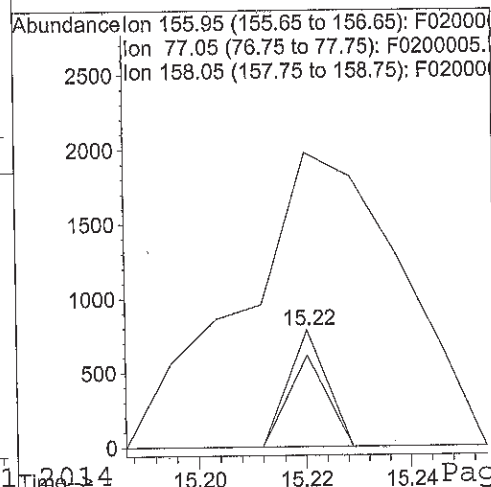
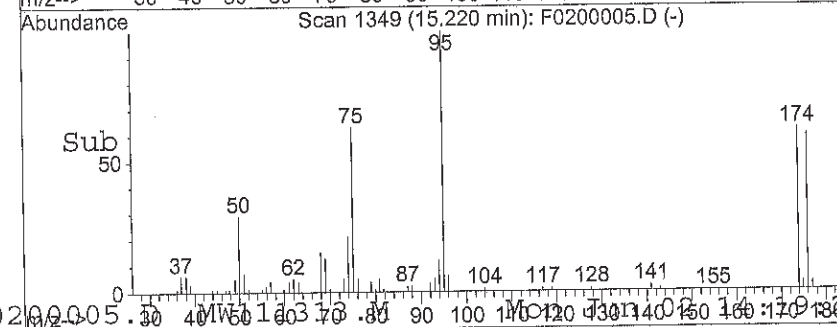
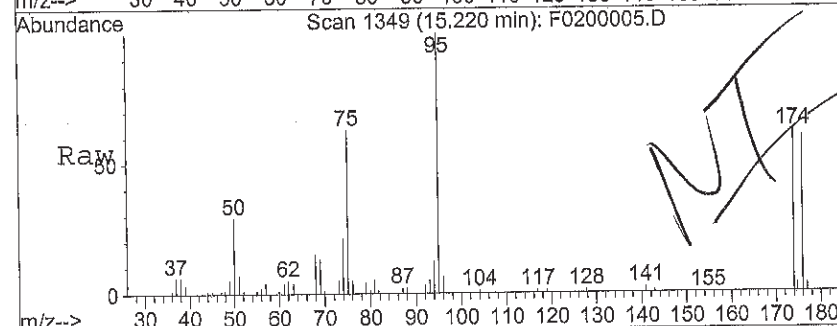
#60
 1,1,2,2-Tetrachloroethane
 Concen: 0.11 ug/L
 RT: 15.22 min Scan# 1349
 Delta R.T. -0.12 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

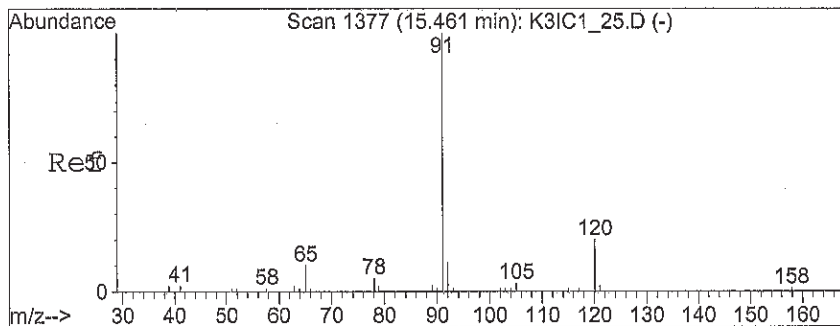
Tgt Ion: 83 Resp: 475
 Ion Ratio Lower Upper
 83 100
 85 0.0 51.2 76.8#



#61
 Bromobenzene
 Concen: 0.08 ug/L
 RT: 15.22 min Scan# 1349
 Delta R.T. -0.22 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

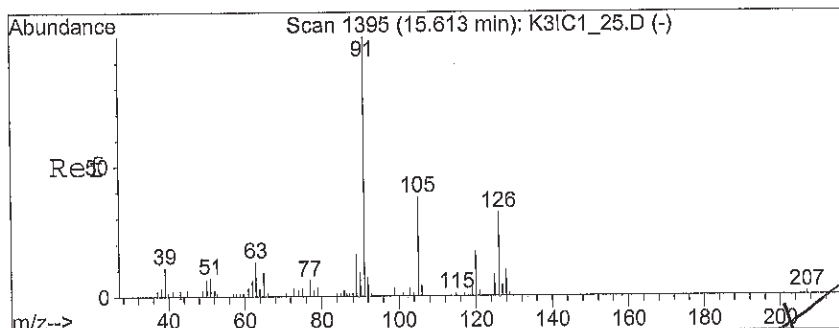
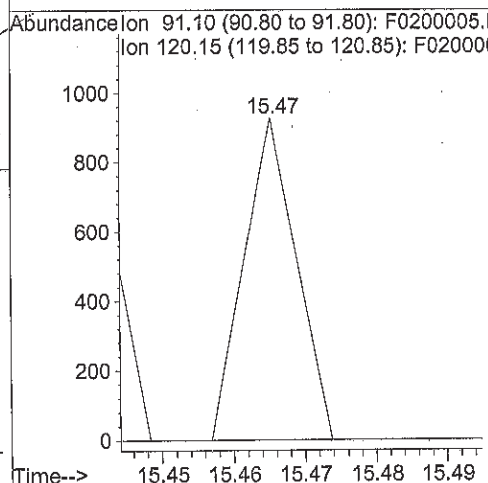
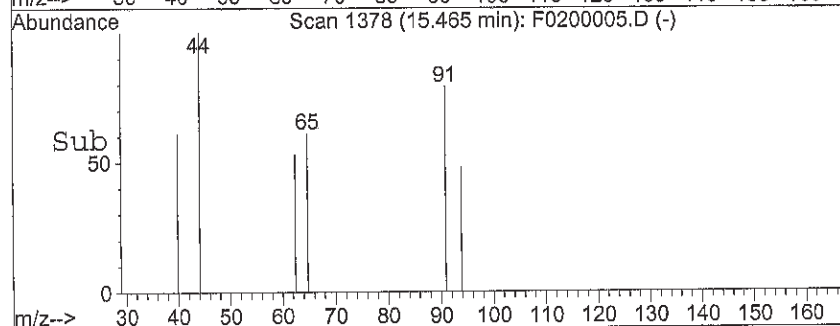
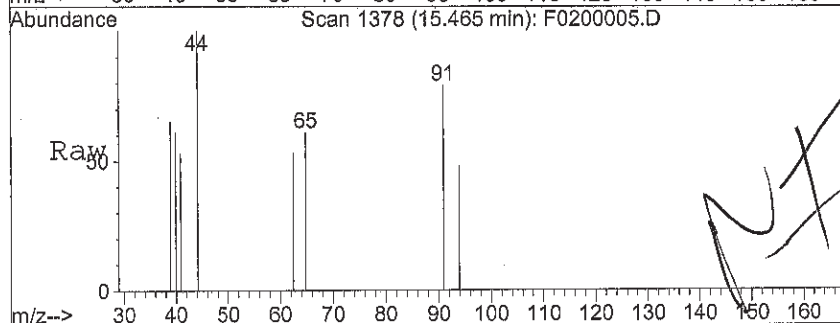
Tgt Ion: 156 Resp: 397
 Ion Ratio Lower Upper
 156 100
 77 1044.1 171.3 256.9#
 158 78.3 80.3 120.5#





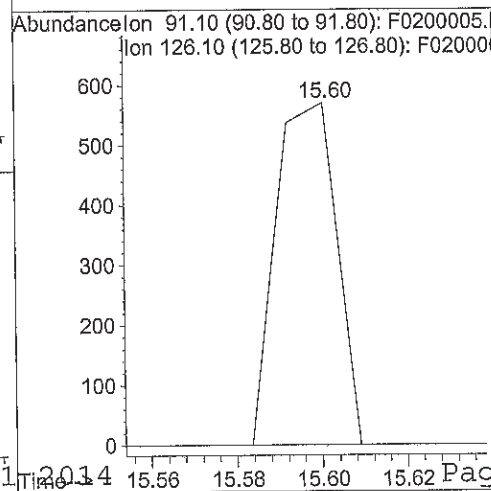
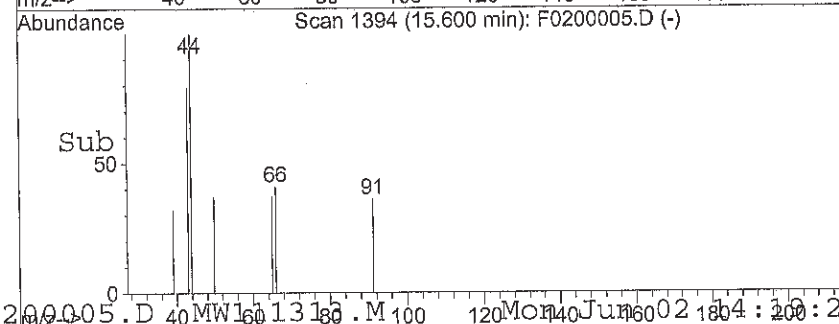
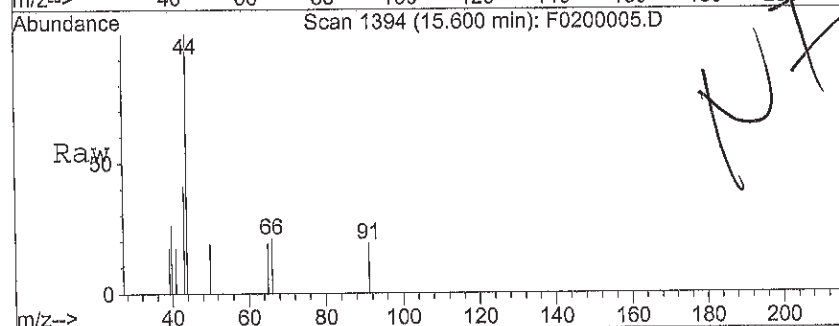
#62
 n-Propylbenzene
 Concen: 0.02 ug/L
 RT: 15.47 min Scan# 1378
 Delta R.T. 0.00 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

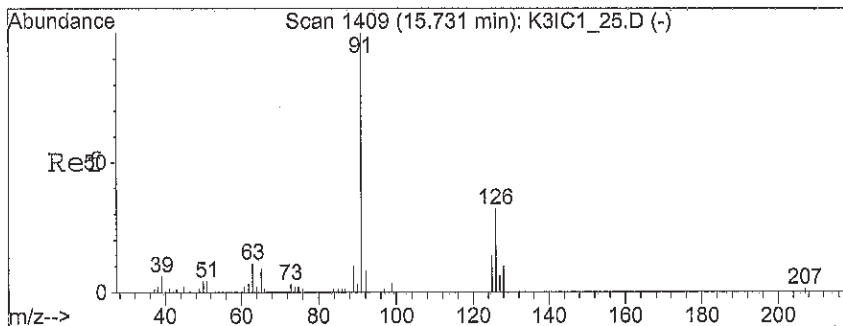
Tgt Ion: 91 Resp: 470
 Ion Ratio Lower Upper
 91 100
 120 0.0 16.1 24.1#



#63
 2-Chlorotoluene
 Concen: 0.04 ug/L
 RT: 15.60 min Scan# 1394
 Delta R.T. -0.01 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

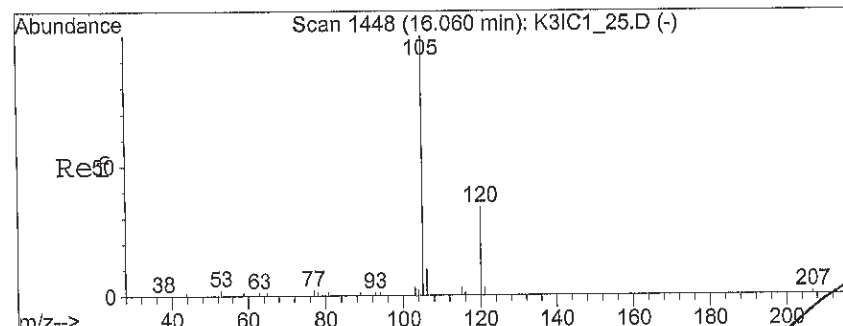
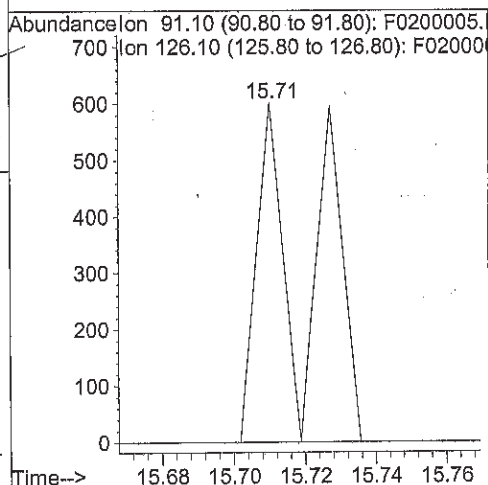
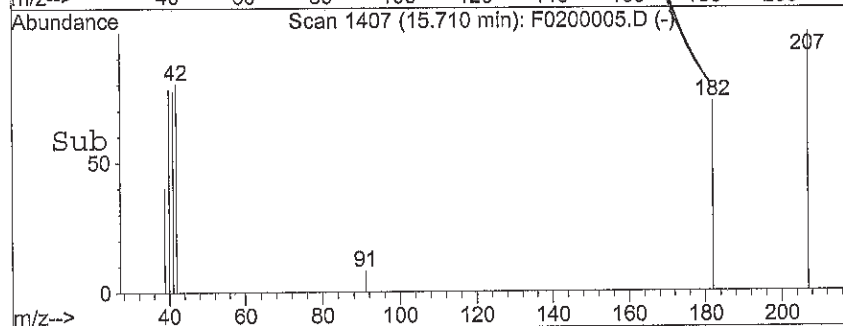
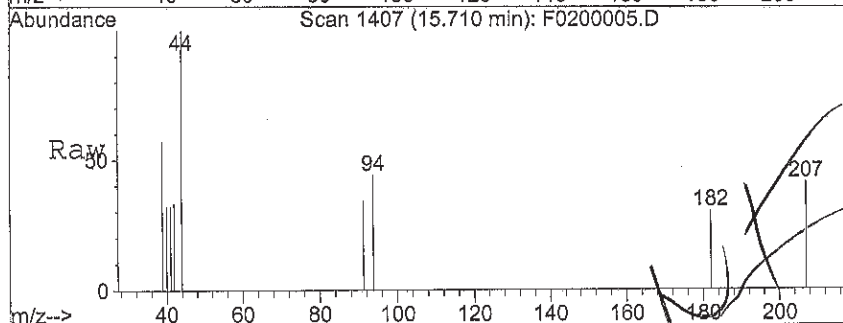
Tgt Ion: 91 Resp: 561
 Ion Ratio Lower Upper
 91 100
 126 0.0 24.0 36.0#





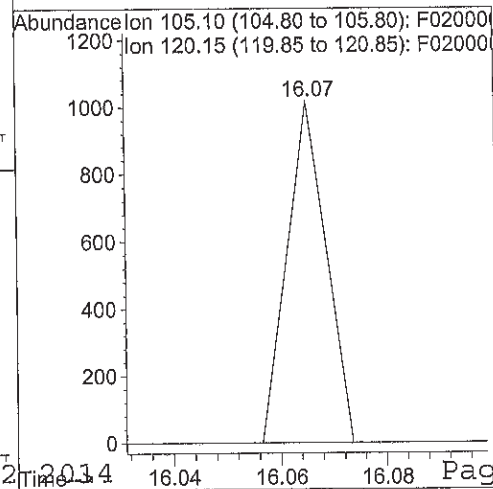
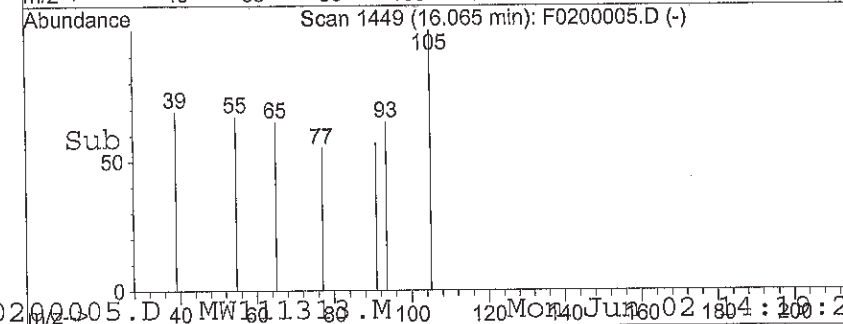
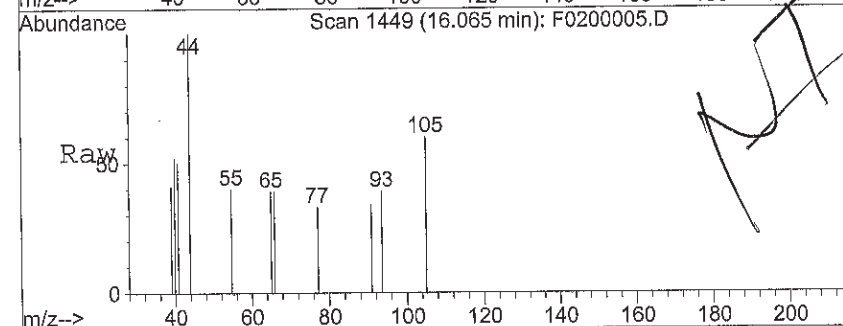
#65
4-Chlorotoluene
Concen: 0.04 ug/L
RT: 15.71 min Scan# 1407
Delta R.T. -0.02 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

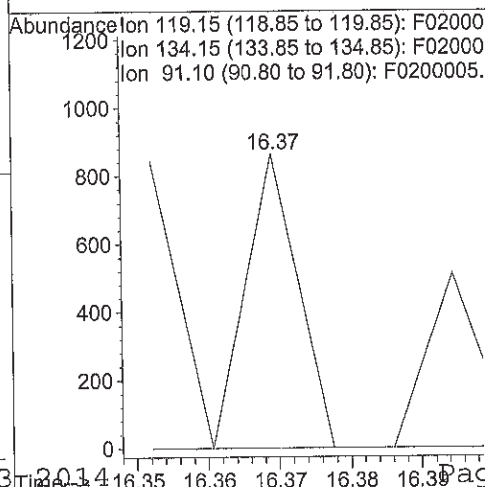
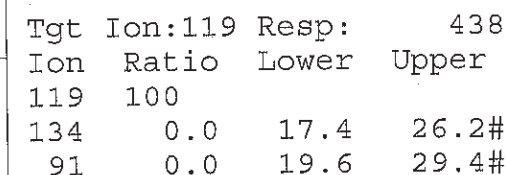
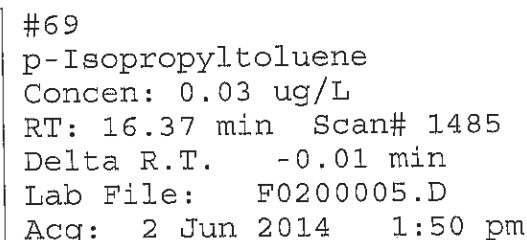
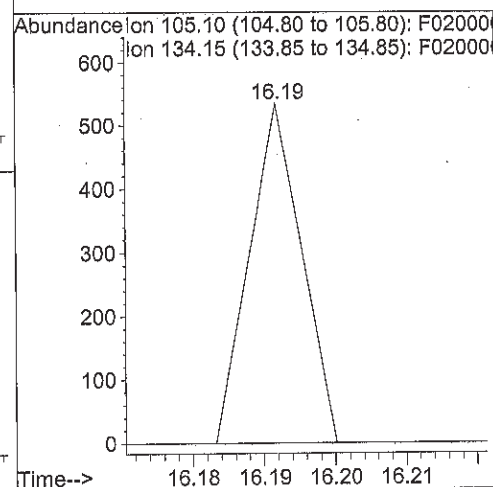
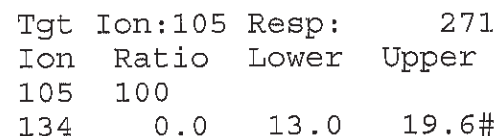
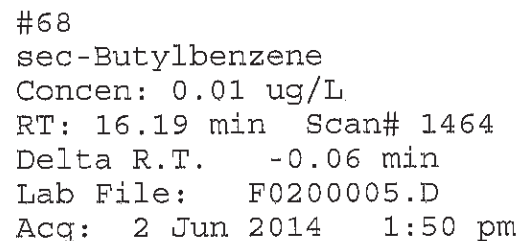
Tgt Ion: 91 Resp: 606
Ion Ratio Lower Upper
91 100
126 0.0 24.6 36.8#

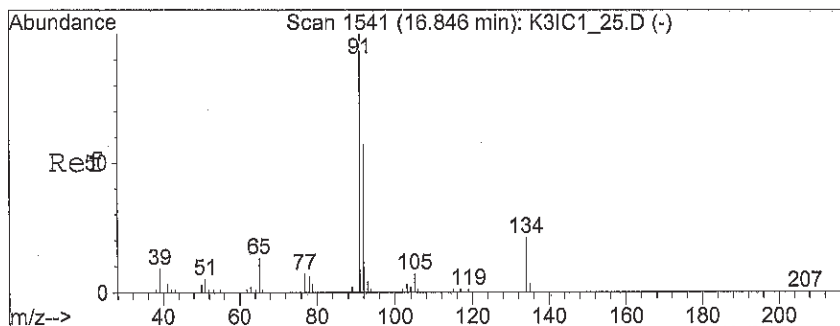


#67
1,2,4-Trimethylbenzene
Concen: 0.03 ug/L
RT: 16.07 min Scan# 1449
Delta R.T. 0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 105 Resp: 516
Ion Ratio Lower Upper
105 100
120 0.0 33.8 50.8#

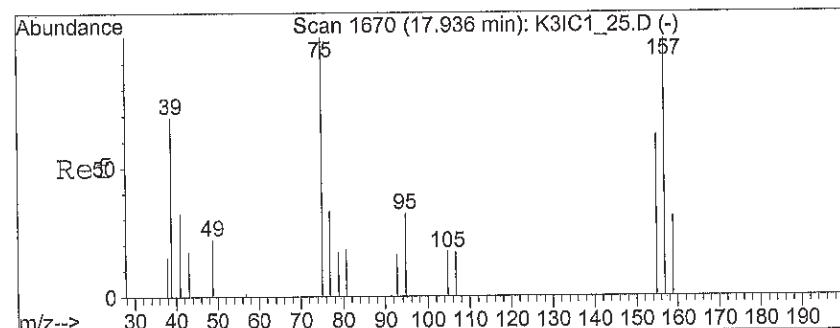
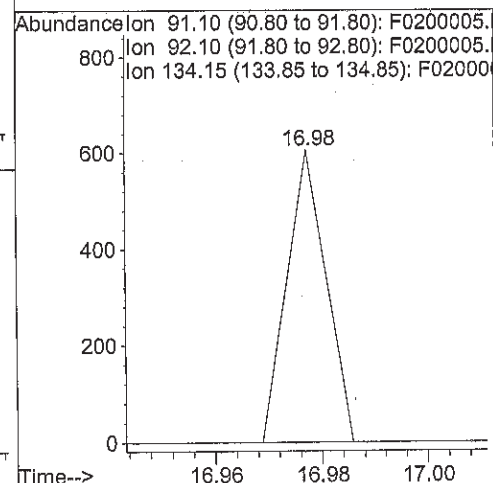
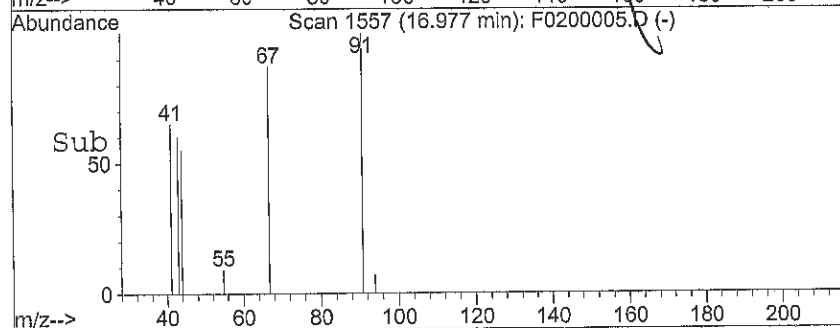
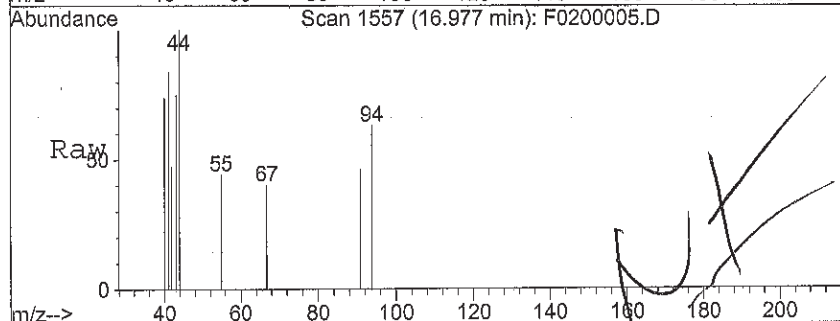






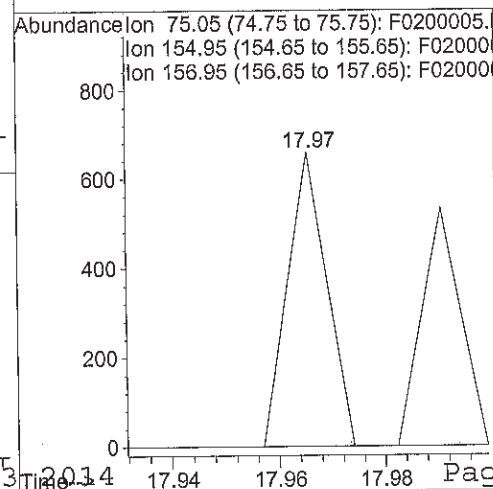
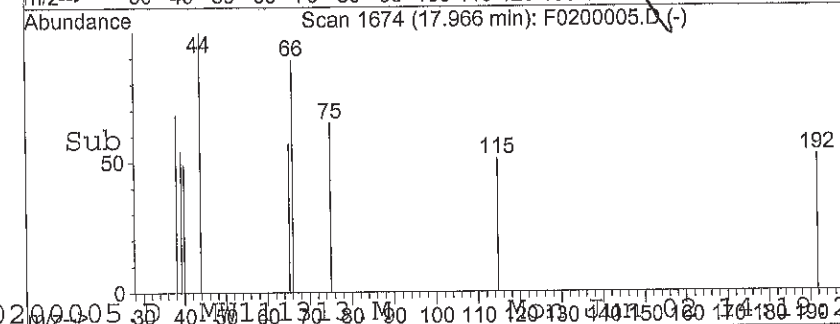
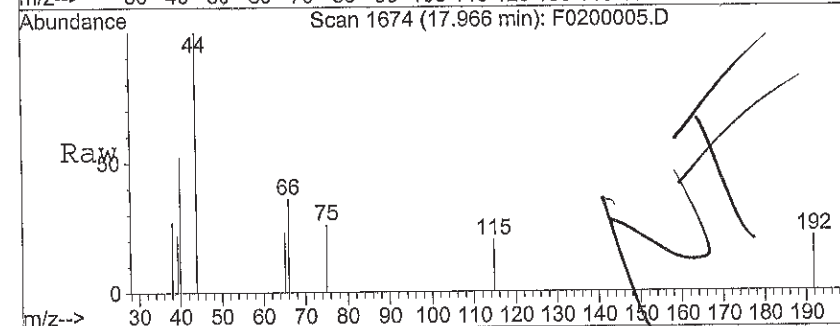
#72
 n-Butylbenzene
 Concen: 0.02 ug/L
 RT: 16.98 min Scan# 1557
 Delta R.T. 0.13 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

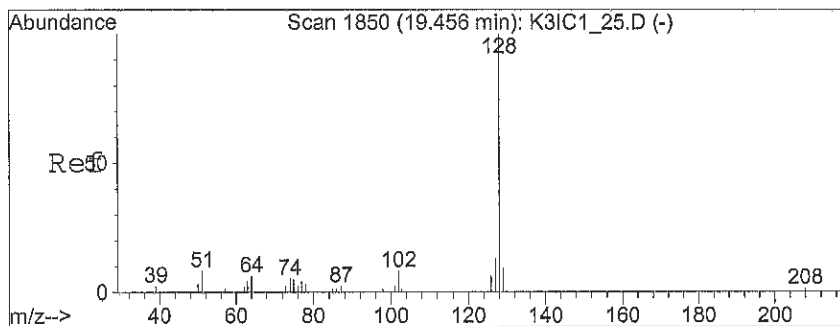
Tgt Ion: 91 Resp: 307
 Ion Ratio Lower Upper
 91 100
 92 0.0 47.0 70.4#
 134 0.0 18.1 27.1#



#74
 1,2-Dibromo-3-chloropropane
 Concen: 1.34 ug/L
 RT: 17.97 min Scan# 1674
 Delta R.T. 0.03 min
 Lab File: F0200005.D
 Acq: 2 Jun 2014 1:50 pm

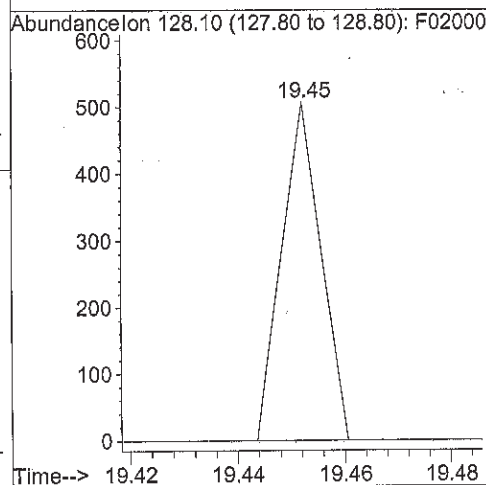
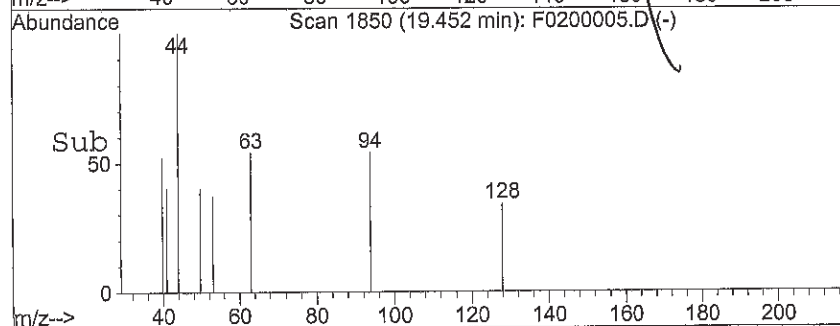
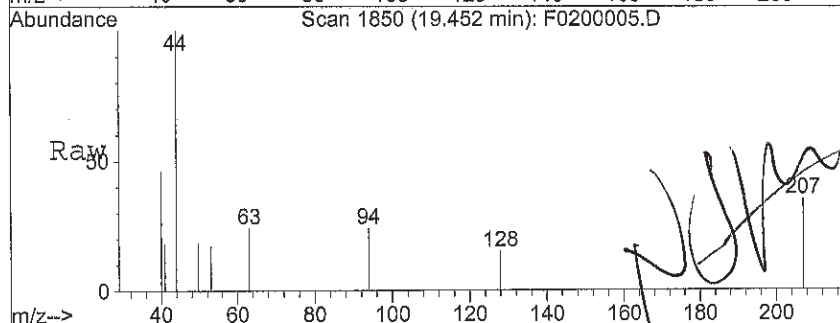
Tgt Ion: 75 Resp: 334
 Ion Ratio Lower Upper
 75 100
 155 0.0 59.2 88.8#
 157 0.0 77.0 115.6#





#77
Naphthalene
Concen: 0.02 ug/L
RT: 19.45 min Scan# 1850
Delta R.T. -0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion:128 Resp: 257



Data File : C:\HPCHEM\1\DATA\060214L3\F0200005.D

Vial: 4

Acq On : 2 Jun 2014 1:50 pm

Operator: DN

Sample : 3F40201-04

Inst : GC/MS Ins

Misc : 100cc SVL-528-SA8-SV-18.5-19.5

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 3 7:38 19114

Quant Results File: SS072713.RES

Quant Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN

Last Update : Mon Nov 18 10:31:39 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.30	96	1249356	12.50	ug/L	-0.02
7) Chlorobenzene-d5 (IS)	13.92	117	1155970	12.50	ug/L	0.00
10) 1,4-Dichlorobenzene-d4 (IS)	16.50	152	626548	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	387681m	11.93	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	95.44%
3) Chloroform-d (SU6)	9.19	84	666217m	14.29	ug/L	0.00
Spiked Amount	12.500	Range	70 - 140	Recovery	=	114.22%
4) Methylene Chloride-d2 (SU5)	7.07	86	289616	10.63	ug/L	0.00
Spiked Amount	12.500	Range	70 - 140	Recovery	=	85.04%
5) 1,2-Dichloroethane-d4 (SU2)	9.89	65	349457m	15.74	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	125.92%#
6) Benzene-d6 (SU7)	9.92	84	1120886	11.43	ug/L	-0.03
Spiked Amount	12.500	Range	70 - 140	Recovery	=	91.44%
8) Toluene-d8 (SU3)	12.20	98	1220977	11.13	ug/L	-0.02
Spiked Amount	12.500	Range	75 - 125	Recovery	=	89.04%
9) 4-Bromofluorobenzene (SU4)	15.22	95	552716m	12.21	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	97.68%

Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration

F0200005.D SS072713.M

Tue Jun 03 07:38:42 2014

Page 1

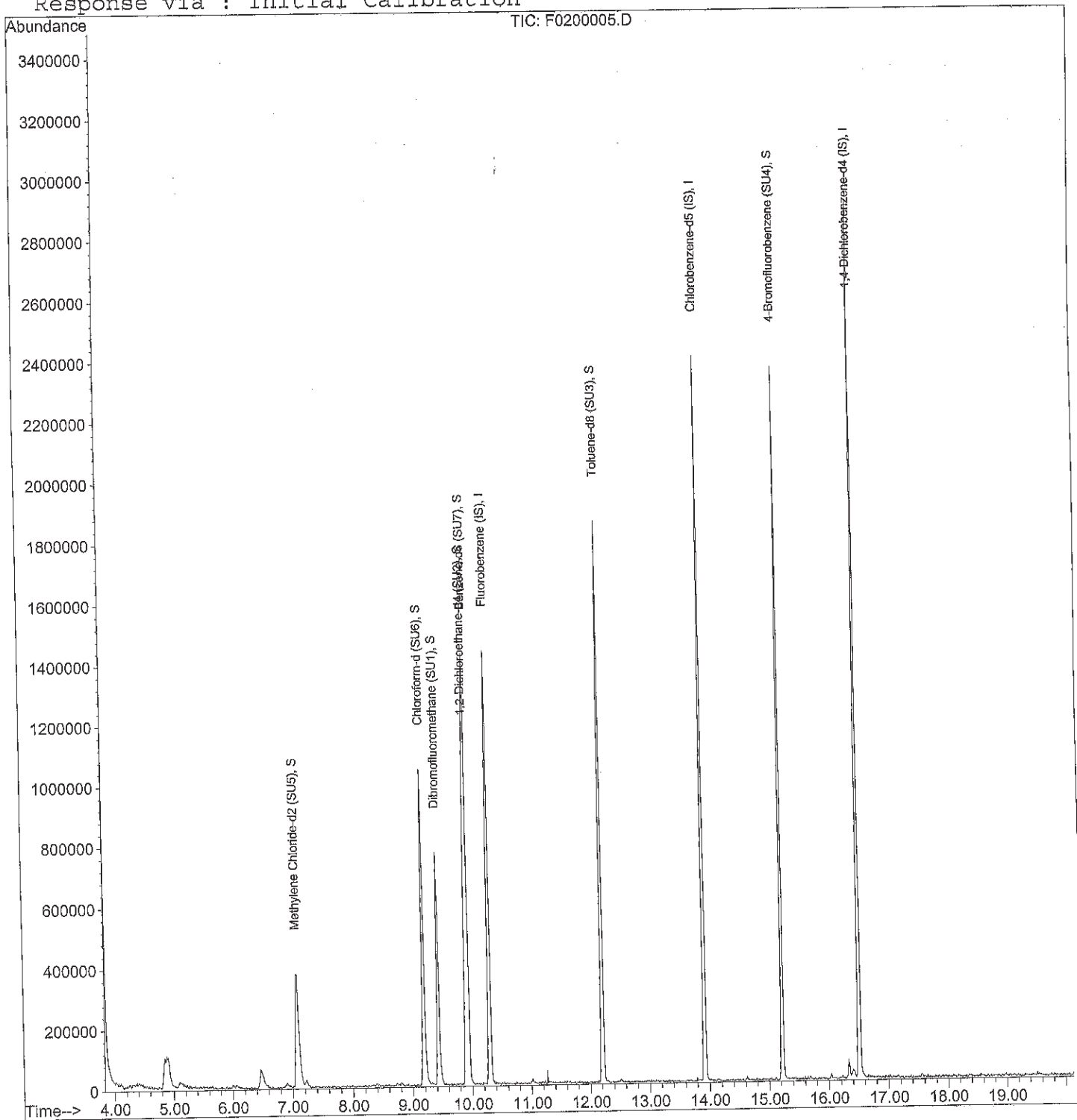
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200005.D
 Acq On : 2 Jun 2014 1:50 pm
 Sample : 3F40201-04
 Misc : 100cc SVL-528-SA8-SV-18.5-19.5
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:38 19114

Vial: 4
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration



Data File : C:\HPCHEM\1\DATA\060214L3\F0200006.D

Vial: 5

Acq On : 2 Jun 2014 2:21 pm

Operator: DN

Sample : 3F40201-05

Inst : GC/MS Ins

Misc : 100cc SVL-505-SA5C-SV-5.0-6.0

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 15:24 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.29	96	1187680	12.50	ug/L	0.00
38) Chlorobenzene-d5 (IS)	13.92	117	1116841	12.50	ug/L	0.00
59) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	592053	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	318116m	10.74	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	85.92%
28) 1,2-Dichloroethane-d4 (SU2)	9.89	65	434004m	15.41	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	123.28%
39) Toluene-d8 (SU3)	12.21	98	1192475	11.45	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	91.60%
58) 4-Bromofluorobenzene (SU4)	15.22	95	657296m	14.39	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	115.12%

Target Compounds

					Qvalue	
3) (F12) Dichlorodifluorometh	4.12	85	340	0.12	ug/L	44
4) Chloromethane	4.51	50	2094	-0.17	ug/L	95
5) Vinyl Chloride	4.56	62	260	0.12	ug/L	1
6) Bromomethane	5.10	96	1344	-0.75	ug/L	71
7) Chloroethane	5.24	64	814	1.51	ug/L	90
11) Acetone	6.45	58	2931	1.24	ug/L	1
12) (IPA) Leak Check Compound	6.52	45	36243	253.95	ug/L	82
13) Carbon disulfide	6.85	76	21407	2.17	ug/L	96
14) Methylene Chloride	7.07	84	5777	1.77	ug/L	1
15) (TBA) tert-Butanol	6.96	59	853	4.21	ug/L	77
16) (MTBE) Methyl-t-butyl ethe	7.25	73	277	0.04	ug/L	1
18) 1,1-Dichloroethane	8.01	63	353	0.07	ug/L	1
19) cis-1,2-Dichloroethene	8.63	96	322	0.09	ug/L	3
20) 2,2-Dichloropropane	8.80	77	341	0.07	ug/L	1
22) (DIPE) Diisopropyl Ether	8.01	45	359	0.04	ug/L	1
23) Bromochloromethane	9.21	128	543	0.34	ug/L	1
24) Chloroform	9.21	83	708	0.11	ug/L	18
25) (ETBE) 2-ethoxy 2-methyl p	8.36	59	291	0.03	ug/L	44
29) 1,1-Dichloropropene	9.64	75	268	0.06	ug/L	41
30) Carbon Tetrachloride	9.51	117	265	0.07	ug/L	2
31) Benzene	9.97	78	2517	0.23	ug/L	57
32) 1,2-Dichloroethane	9.93	62	12493	3.16	ug/L	1

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060214L3\F0200006.D

Vial: 5

Acq On : 2 Jun 2014 2:21 pm

Operator: DN

Sample : 3F40201-05

Inst : GC/MS Ins

Misc : 100cc SVL-505-SA5C-SV-5.0-6.0

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 15:24 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
34) 1,2-Dichloropropane	11.03	63	590	0.22 ug/L #	46
35) Dibromomethane	11.25	93	295	0.14 ug/L #	5
37) cis-1,3-Dichloropropene	11.75	75	281	0.06 ug/L #	1
40) (MIBK) 4-Methyl-2-Pentanone	12.05	43	560	0.25 ug/L #	100
41) Toluene	12.28	91	6909	0.45 ug/L #	80
42) trans-1,3-Dichloropropene	12.50	75	945	0.19 ug/L #	38
43) 1,1,2-Trichloroethane	12.74	83	265	0.10 ug/L #	10
45) 1,3-Dichloropropane	12.83	76	255	0.05 ug/L #	41
46) 2-Hexanone	12.92	43	328	0.13 ug/L #	37
48) 1,2-Dibromoethane	13.40	107	340	0.10 ug/L #	3
51) Ethylbenzene	14.15	91	8571	0.50 ug/L #	90
52) m,p-Xylenes	14.14	106	2067	0.34 ug/L #	1
53) o-Xylene	14.62	106	763	0.13 ug/L #	1
54) Styrene	14.62	104	1243	-0.73 ug/L #	8
56) Isopropylbenzene	15.11	105	332	0.02 ug/L #	55
57) 1,2,3-Trichloropropane	15.39	75	402	0.09 ug/L #	36
60) 1,1,2,2-Tetrachloroethane	15.45	83	388	0.09 ug/L #	18
62) n-Propylbenzene	15.32	91	270	0.01 ug/L #	56
63) 2-Chlorotoluene	15.63	91	368	0.02 ug/L #	45
64) 1,3,5-Trimethylbenzene	15.55	105	1346	0.09 ug/L #	61
65) 4-Chlorotoluene	15.70	91	585	0.04 ug/L #	44
66) tert-Butylbenzene	16.14	119	269	0.02 ug/L #	1
67) 1,2,4-Trimethylbenzene	16.07	105	2425	0.16 ug/L #	59
68) sec-Butylbenzene	16.33	105	1598	0.08 ug/L #	62
69) p-Isopropyltoluene	16.51	119	1944	0.12 ug/L #	1
72) n-Butylbenzene	16.71	91	281	0.02 ug/L #	55
74) 1,2-Dibromo-3-chloropropan	17.94	75	281	1.30 ug/L #	6
77) Naphthalene	19.46	128	257	0.02 ug/L #	100

(#)=qualifier out of range (m)=manual integration

F0200006.D MW111313.M

Mon Jun 02 15:25:18 2014

Page 2

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200006.D

Acq On : 2 Jun 2014 2:21 pm

Sample : 3F40201-05

Misc : 100cc SVL-505-SA5C-SV-5.0-6.0

MS Integration Params: rteint.p

Quant Time: Jun 2 15:24 19114

Vial: 5

Operator: DN

Inst : GC/MS Ins

Multiplr: 10.00

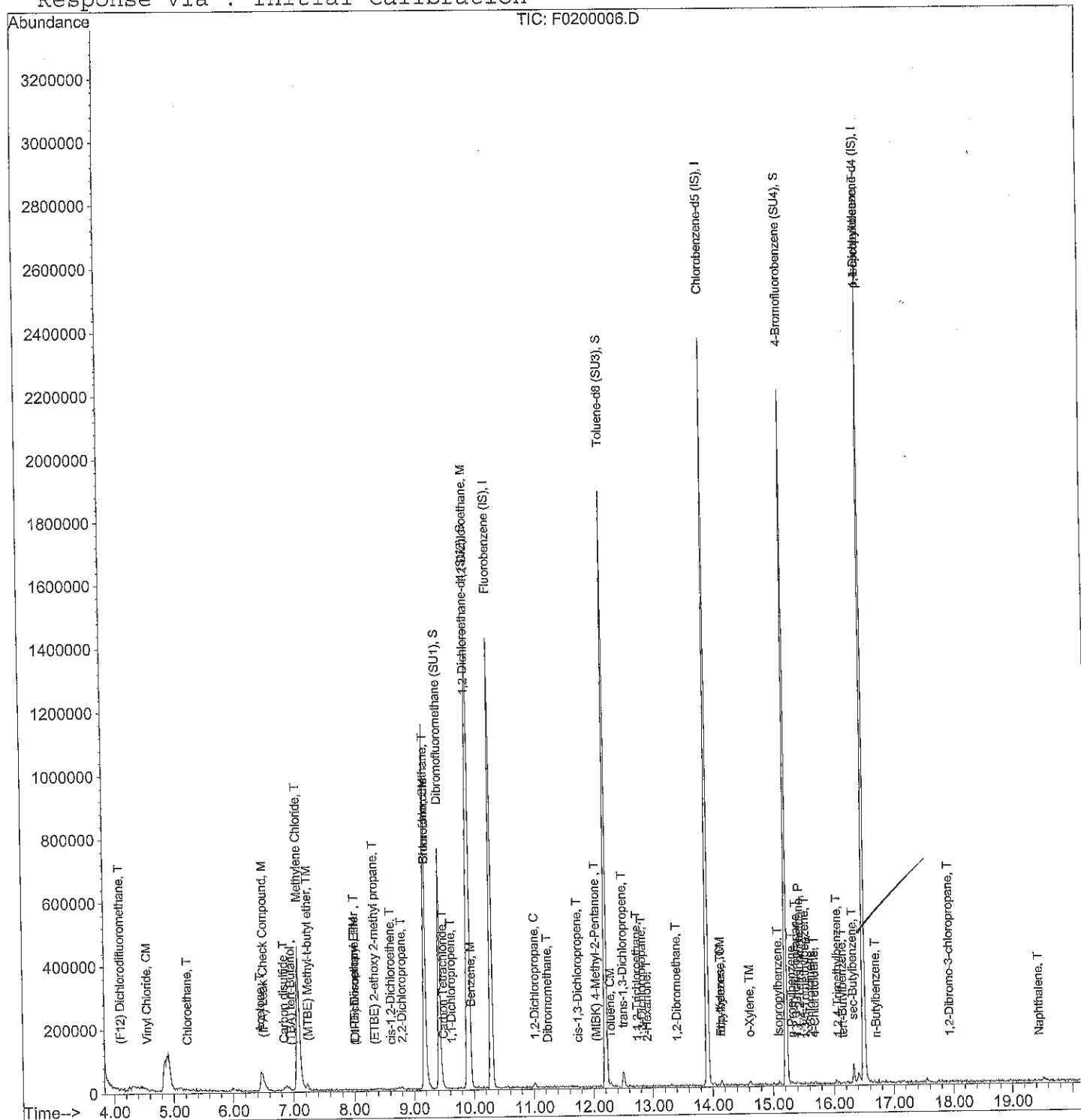
Quant Results File: MW111313.RES

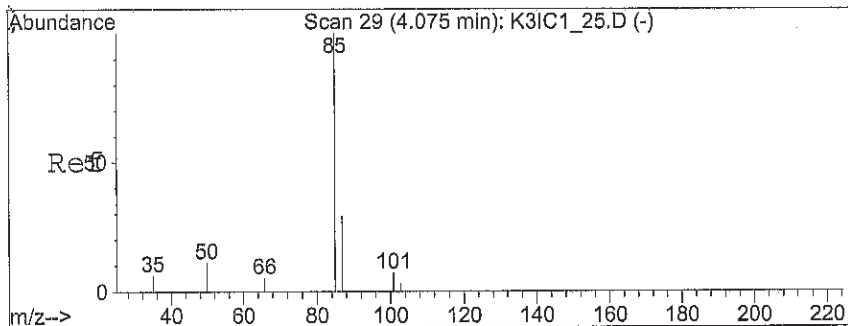
Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration





#3

(F12) Dichlorodifluoromethane

Concen: 0.12 ug/L

RT: 4.12 min Scan# 34

Delta R.T. 0.04 min

Lab File: F0200006.D

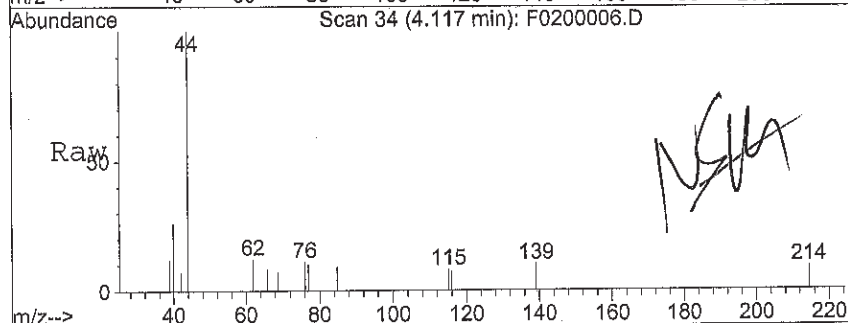
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 85 Resp: 340

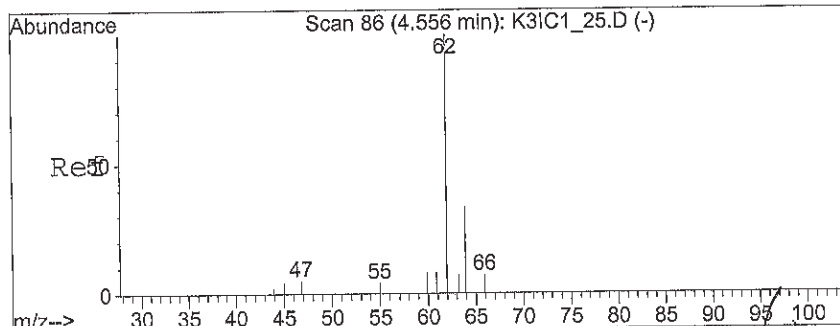
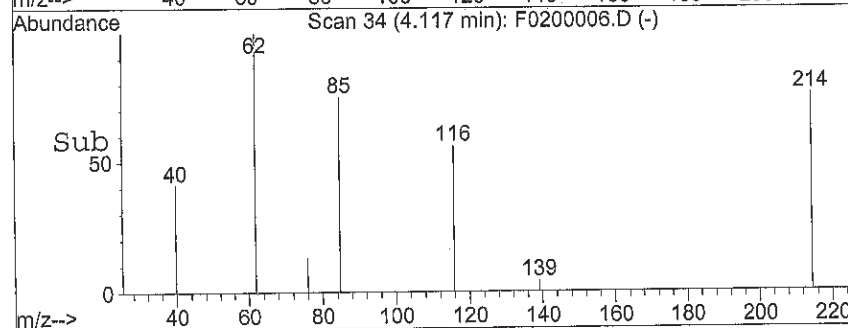
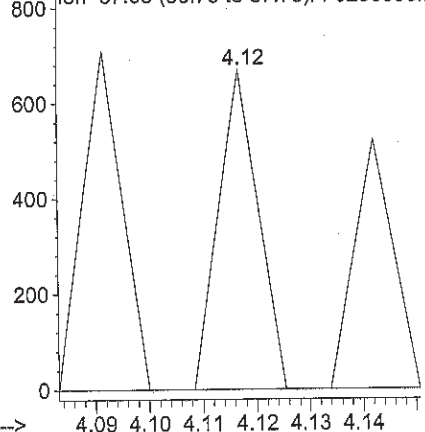
Ion Ratio Lower Upper

85 100

87 0.0 24.6 37.0#



Abundance Ion 84.95 (84.65 to 85.65): F0200006.D
Ion 87.05 (86.75 to 87.75): F0200006.D



#5

Vinyl Chloride

Concen: 0.12 ug/L

RT: 4.56 min Scan# 87

Delta R.T. 0.01 min

Lab File: F0200006.D

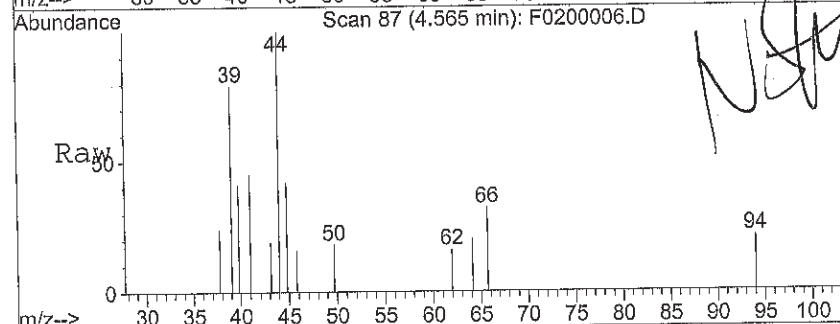
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 62 Resp: 260

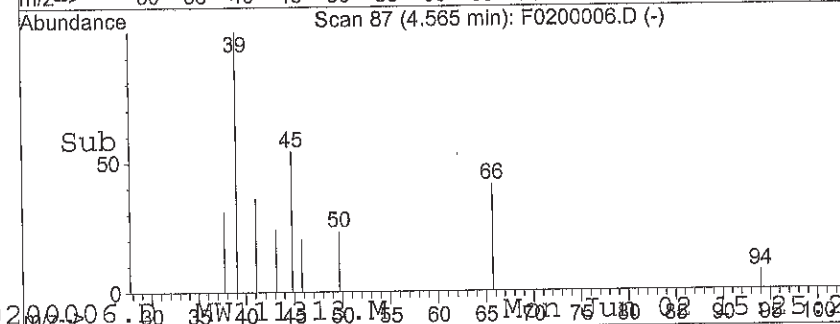
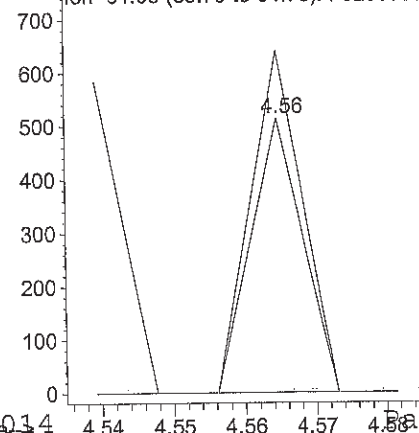
Ion Ratio Lower Upper

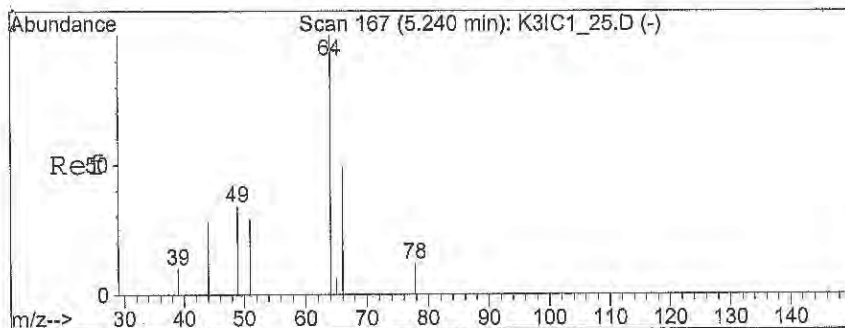
62 100

64 124.6 25.6 38.4#



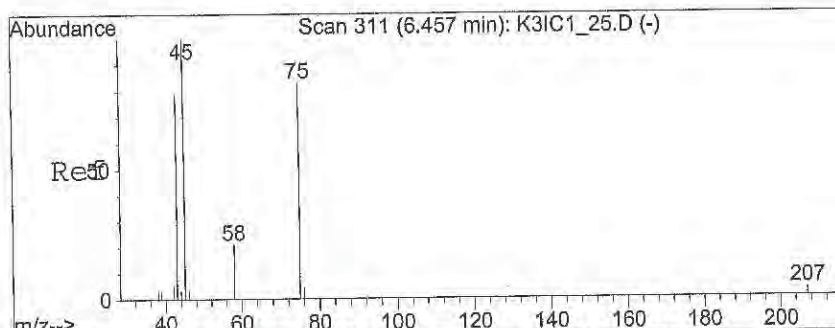
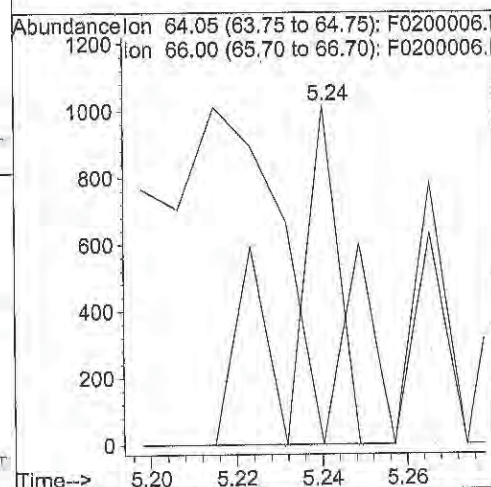
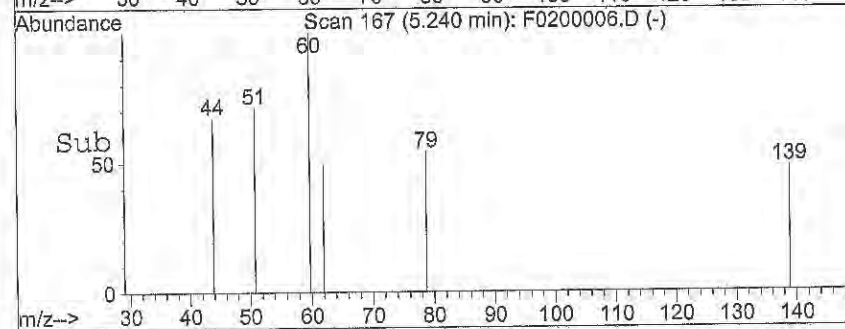
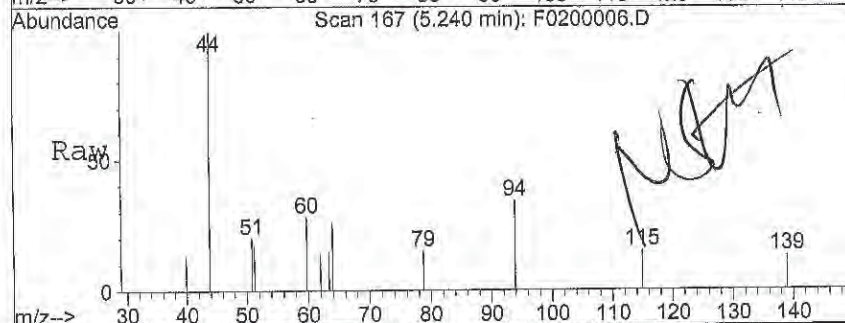
Abundance Ion 62.05 (61.75 to 62.75): F0200006.D
Ion 64.05 (63.75 to 64.75): F0200006.D





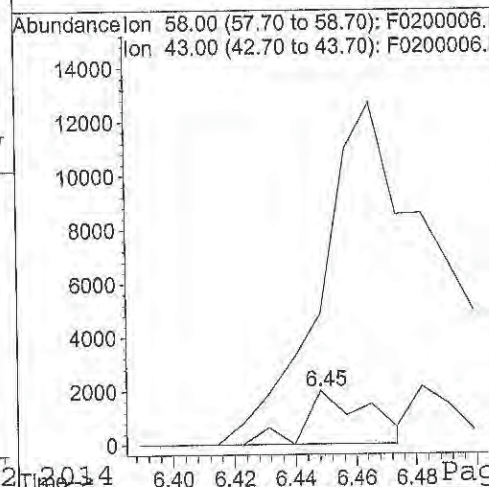
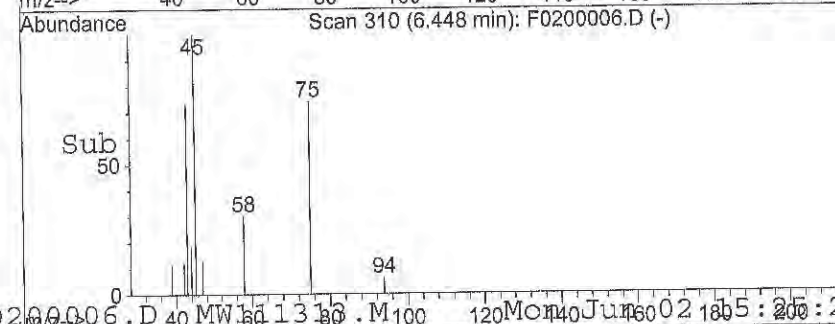
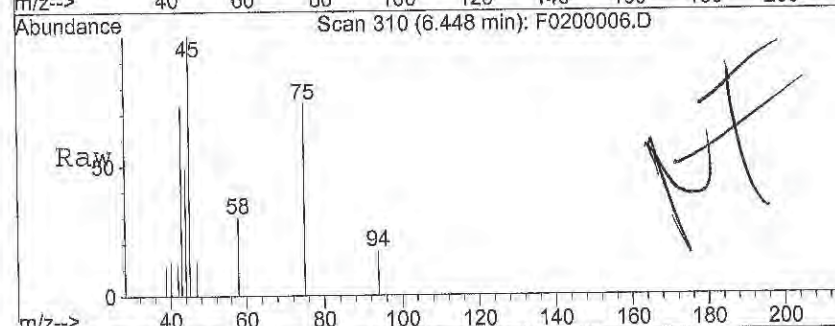
#7
Chloroethane
Concen: 1.51 ug/L
RT: 5.24 min Scan# 167
Delta R.T. 0.00 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

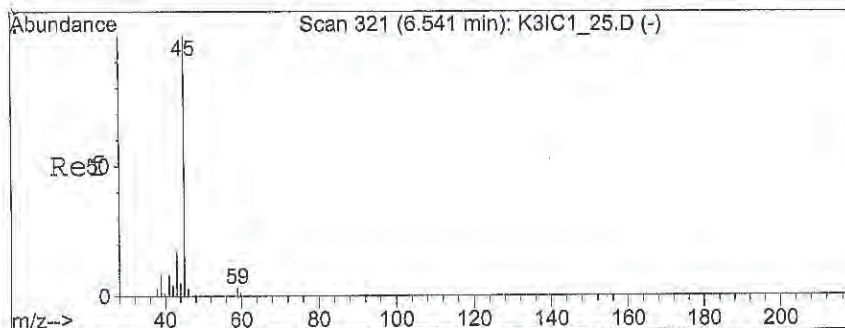
Tgt Ion: 64 Resp: 814
Ion Ratio Lower Upper
64 100
66 37.5 35.4 53.0



#11
Acetone
Concen: 1.24 ug/L
RT: 6.45 min Scan# 310
Delta R.T. -0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

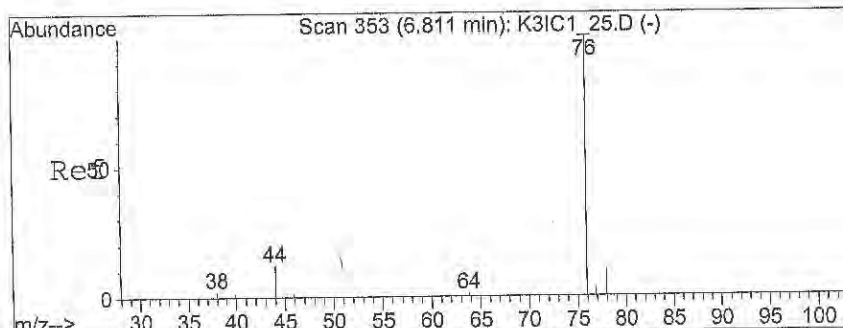
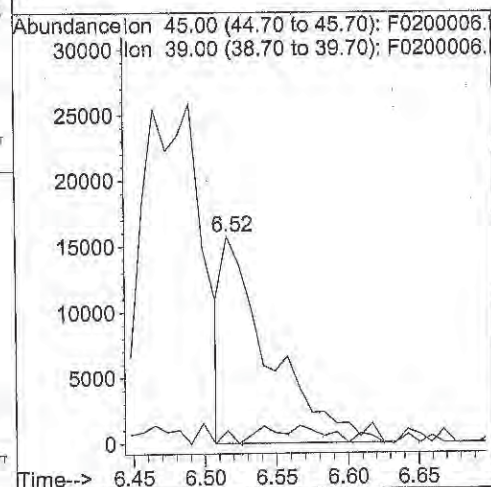
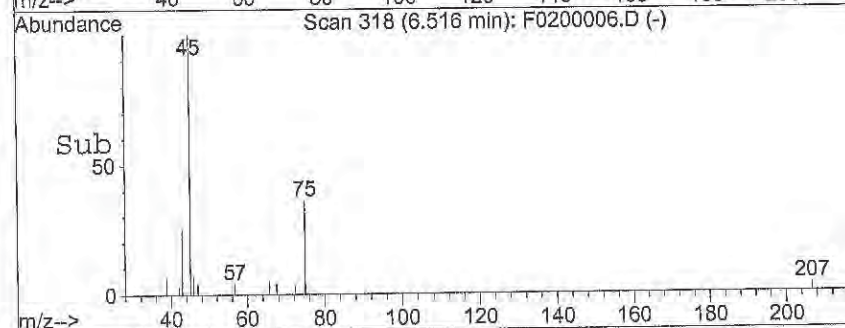
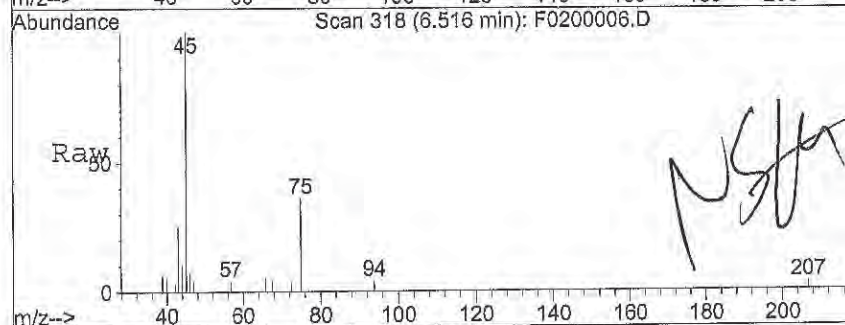
Tgt Ion: 58 Resp: 2931
Ion Ratio Lower Upper
58 100
43 0.0 360.9 541.3#





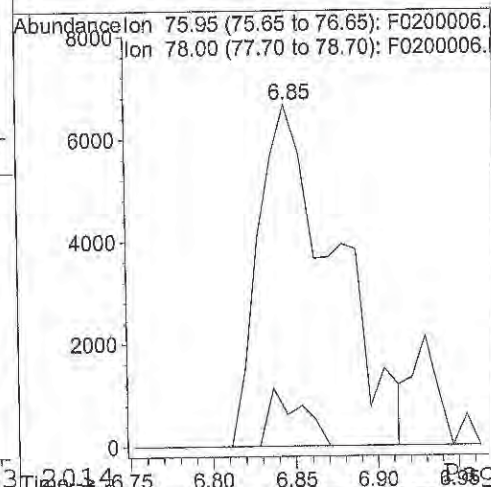
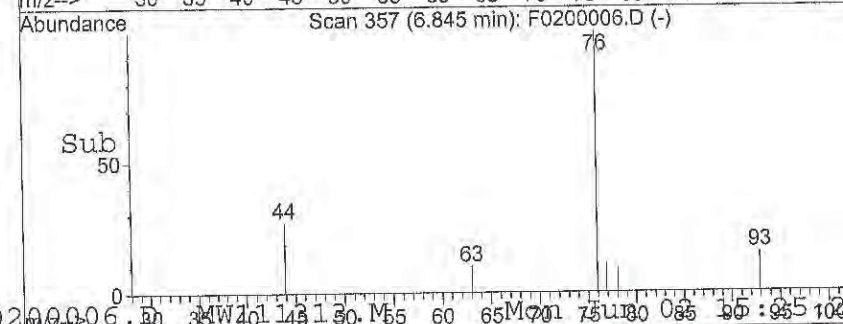
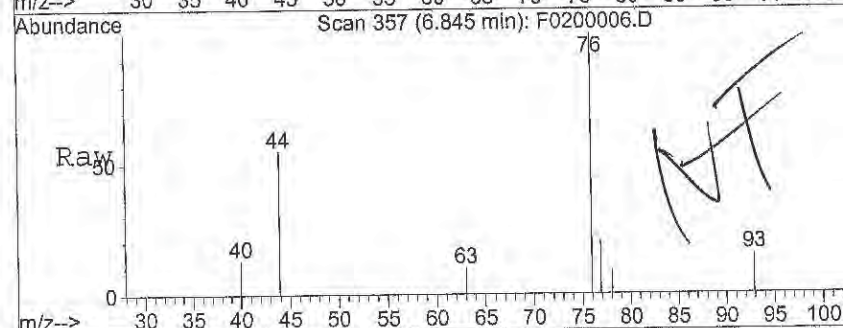
#12
 (IPA) Leak Check Compound
 Concen: 253.95 ug/L
 RT: 6.52 min Scan# 318
 Delta R.T. -0.03 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

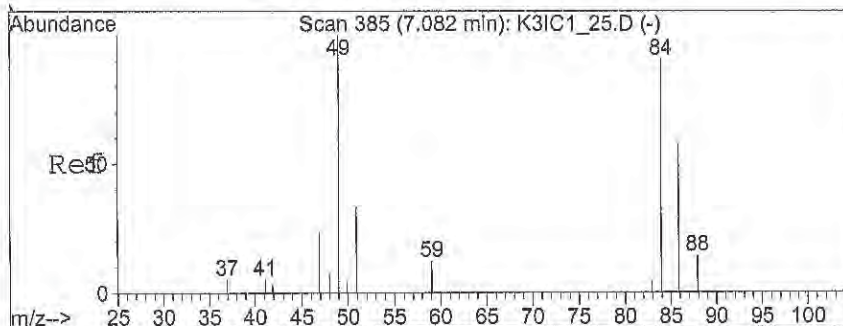
Tgt Ion: 45 Resp: 36243
 Ion Ratio Lower Upper
 45 100
 39 0.0 4.9 7.3#



#13
 Carbon disulfide
 Concen: 2.17 ug/L
 RT: 6.85 min Scan# 357
 Delta R.T. 0.03 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

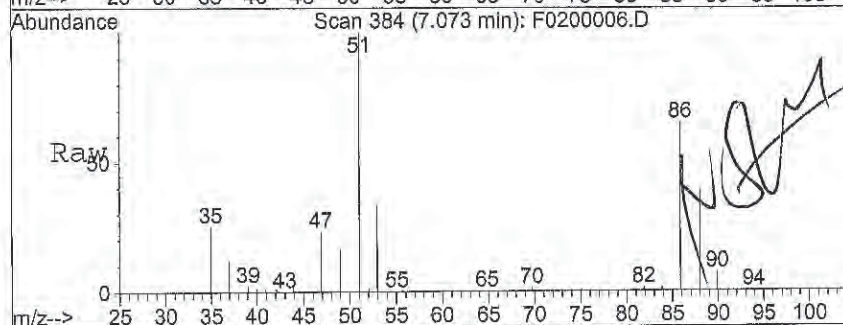
Tgt Ion: 76 Resp: 21407
 Ion Ratio Lower Upper
 76 100
 78 7.2 7.0 10.4



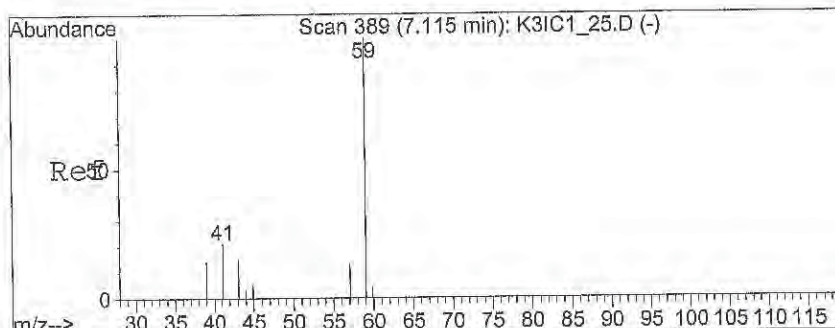
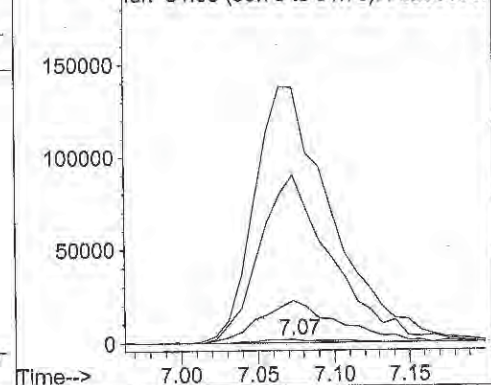
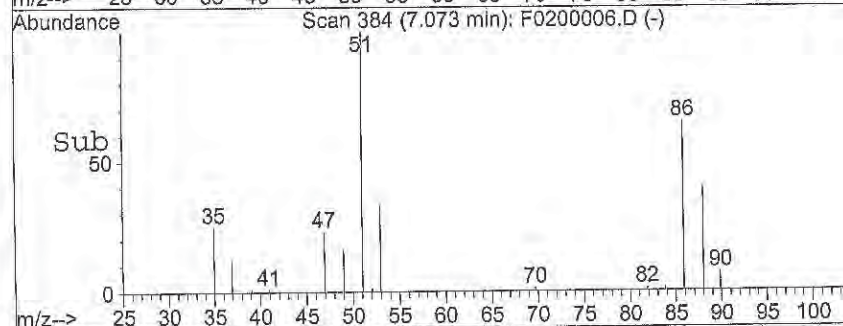


#14
Methylene Chloride
Concen: 1.77 ug/L
RT: 7.07 min Scan# 384
Delta R.T. -0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 84 Resp: 5777
Ion Ratio Lower Upper
84 100
49 1371.2 89.8 134.6#
86 5219.5 51.1 76.7#
51 8466.6 28.5 42.7#

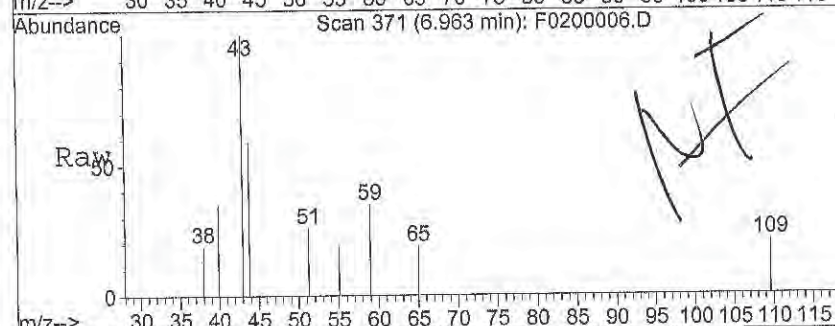


Abundance Ion 83.95 (83.65 to 84.65): F0200006.
Ion 48.95 (48.65 to 49.65): F0200006.
200000 Ion 85.95 (85.65 to 86.65): F0200006.
Ion 51.05 (50.75 to 51.75): F0200006.

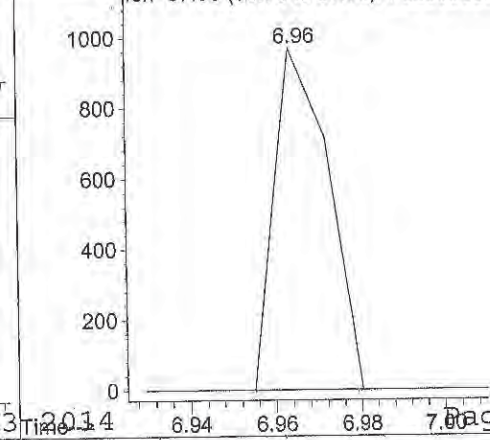
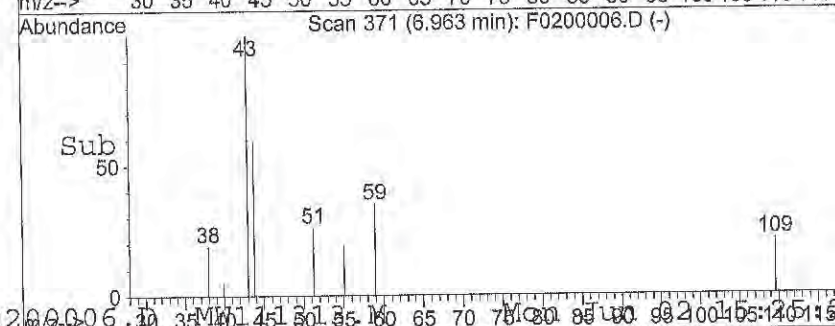


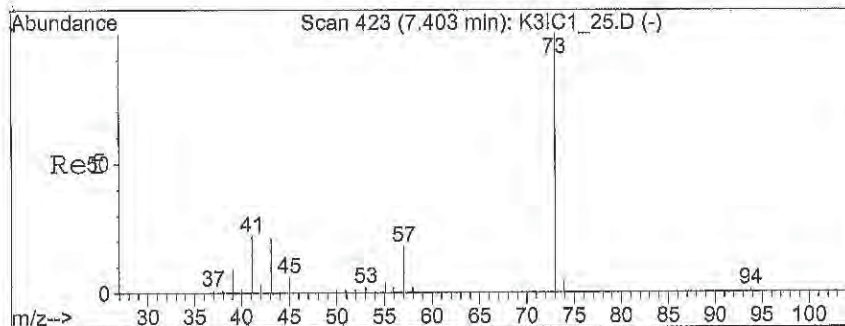
#15
(TBA) tert-Butanol
Concen: 4.21 ug/L
RT: 6.96 min Scan# 371
Delta R.T. -0.15 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 59 Resp: 853
Ion Ratio Lower Upper
59 100
57 0.0 6.4 9.6#



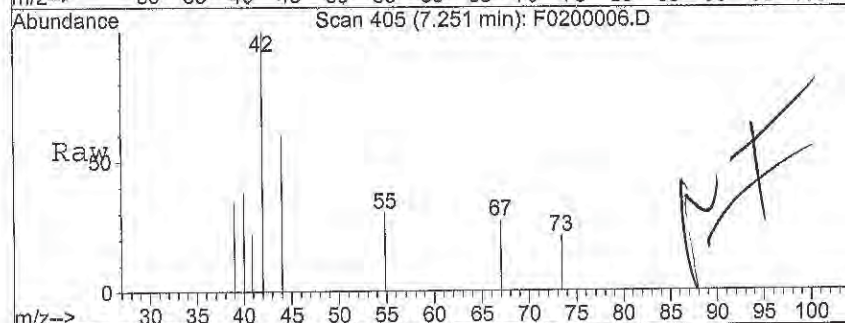
Abundance Ion 59.00 (58.70 to 59.70): F0200006.
Ion 57.00 (56.70 to 57.70): F0200006.



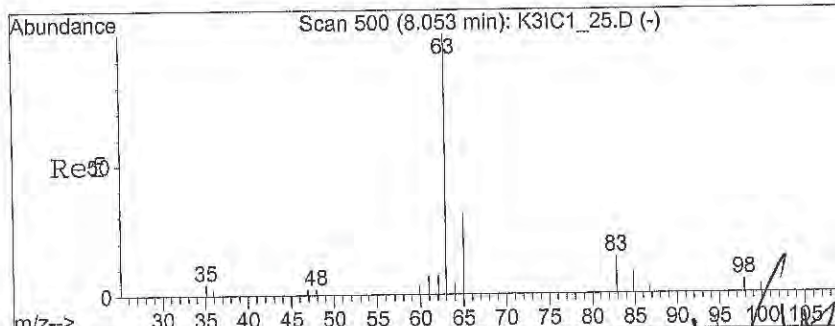
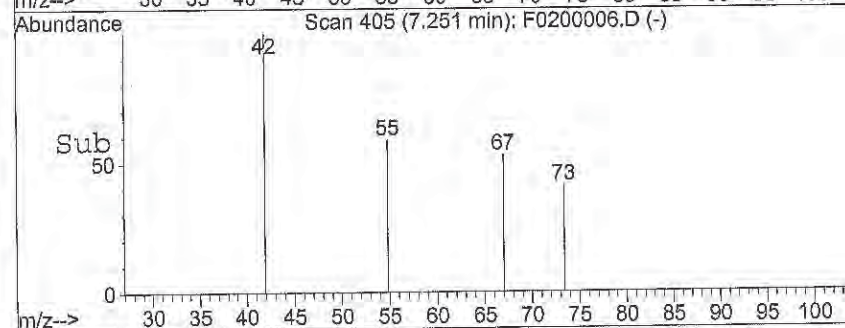
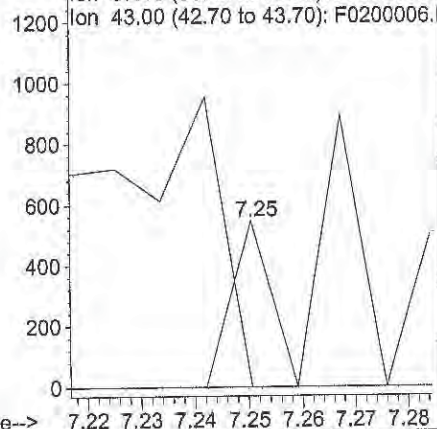


#16
 (MTBE) Methyl-t-butyl ether
 Concen: 0.04 ug/L
 RT: 7.25 min Scan# 405
 Delta R.T. -0.15 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

Tgt Ion:	73	Resp:	277
Ion Ratio	Lower	Upper	
73	100		
57	0.0	15.8	23.8#
43	546.9	18.4	27.6#

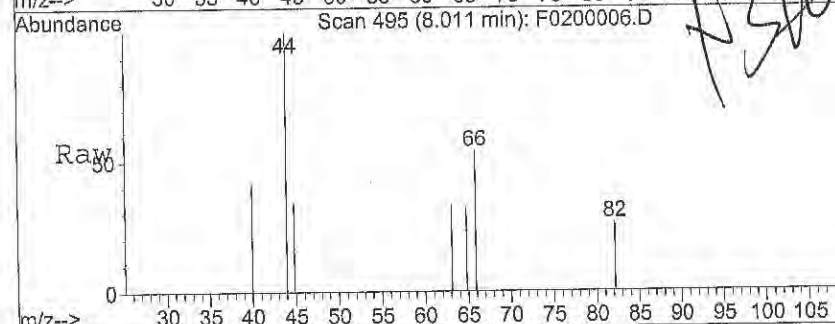


Abundance Ion 73.05 (72.75 to 73.75): F0200006.D
 Ion 57.10 (56.80 to 57.80): F0200006.D
 Ion 43.00 (42.70 to 43.70): F0200006.D

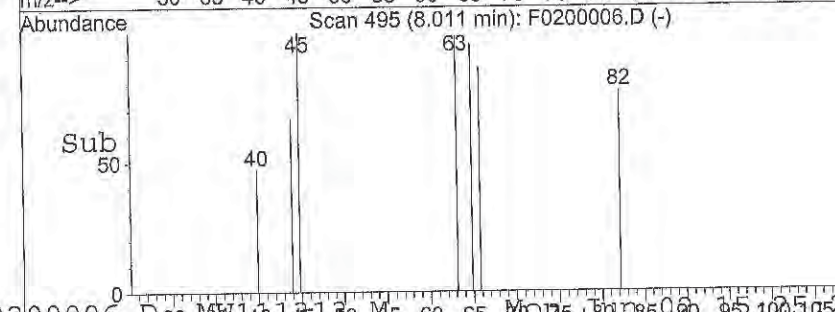
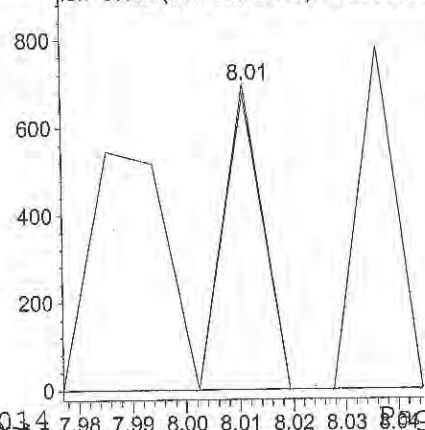


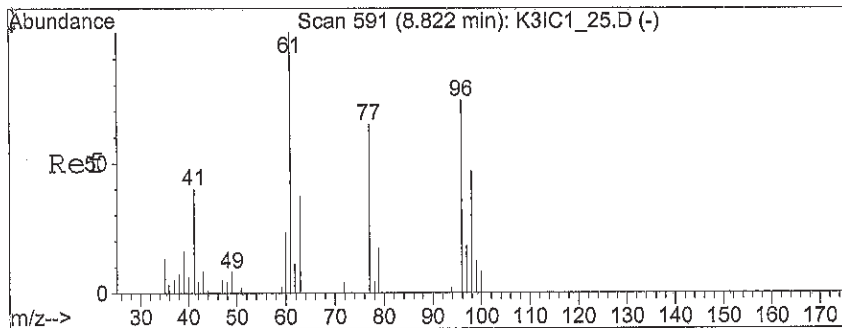
#18
 1,1-Dichloroethane
 Concen: 0.07 ug/L
 RT: 8.01 min Scan# 495
 Delta R.T. -0.04 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

Tgt Ion:	63	Resp:	353
Ion Ratio	Lower	Upper	
63	100		
65	96.6	25.8	38.8#

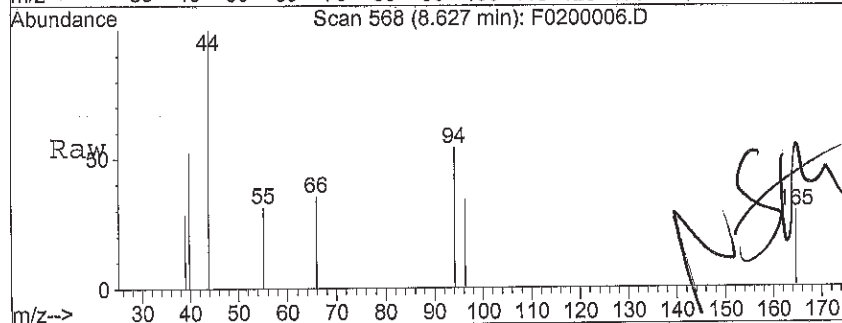


Abundance Ion 63.05 (62.75 to 63.75): F0200006.D
 Ion 65.05 (64.75 to 65.75): F0200006.D

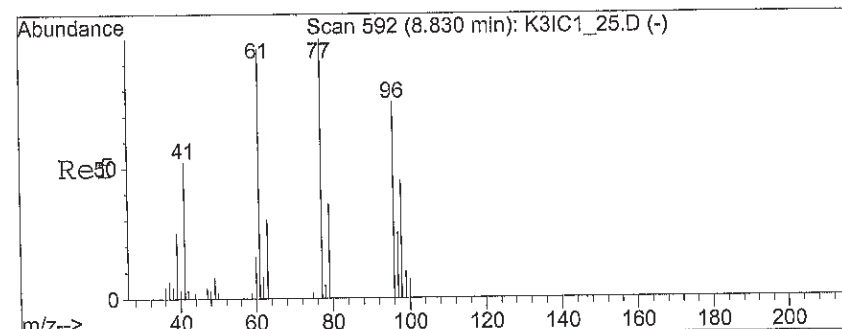
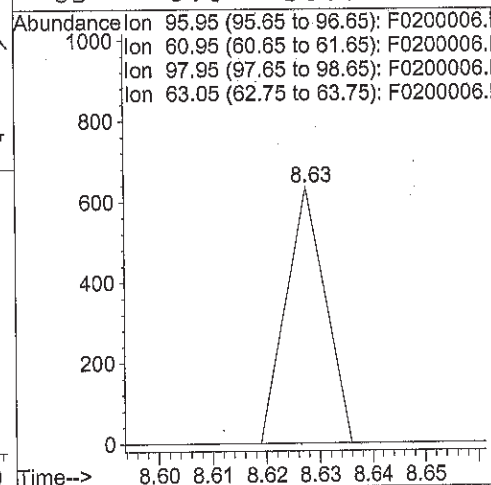
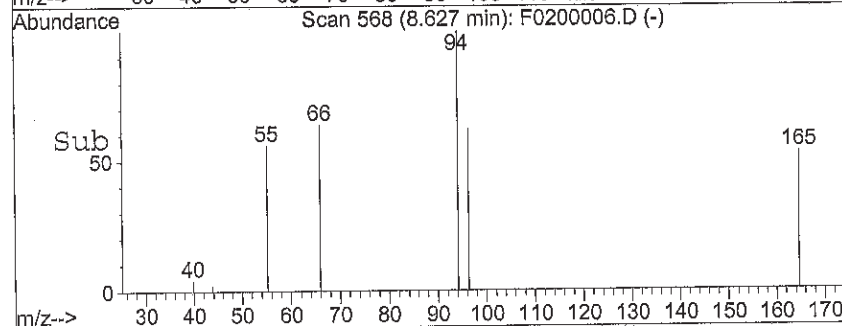




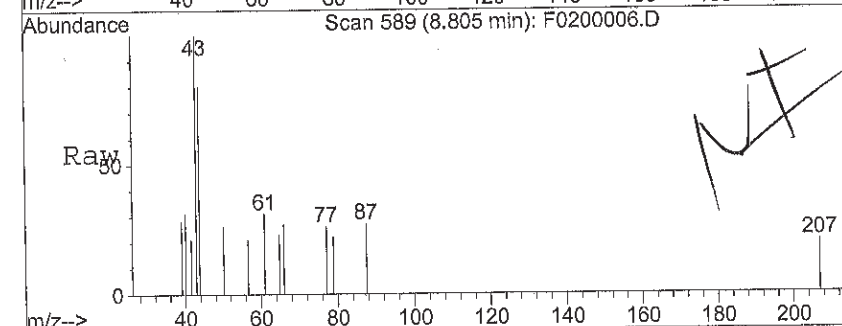
#19
 cis-1,2-Dichloroethene
 Concen: 0.09 ug/L
 RT: 8.63 min Scan# 568
 Delta R.T. -0.19 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm



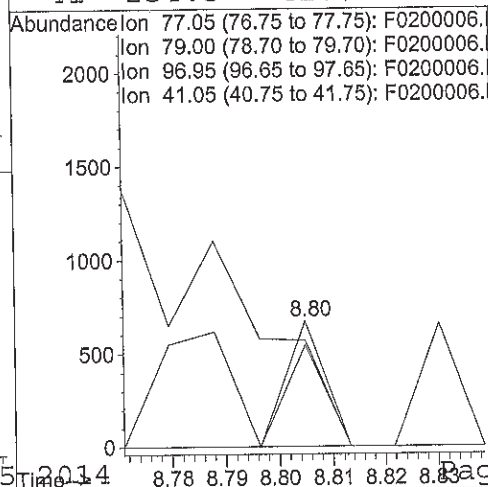
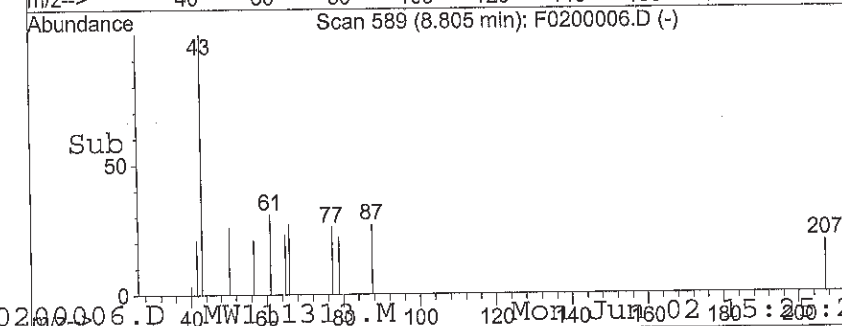
Tgt Ion: 96 Resp: 322
 Ion Ratio Lower Upper
 96 100
 61 0.0 110.3 165.5#
 98 0.0 49.8 74.6#
 63 0.0 36.7 55.1#

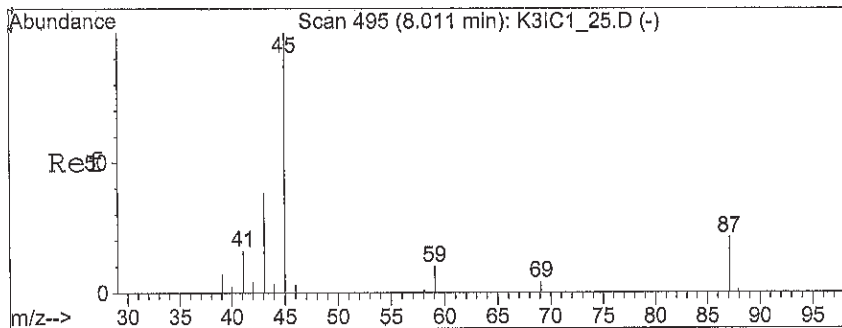


#20
 2,2-Dichloropropane
 Concen: 0.07 ug/L
 RT: 8.80 min Scan# 589
 Delta R.T. -0.03 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm



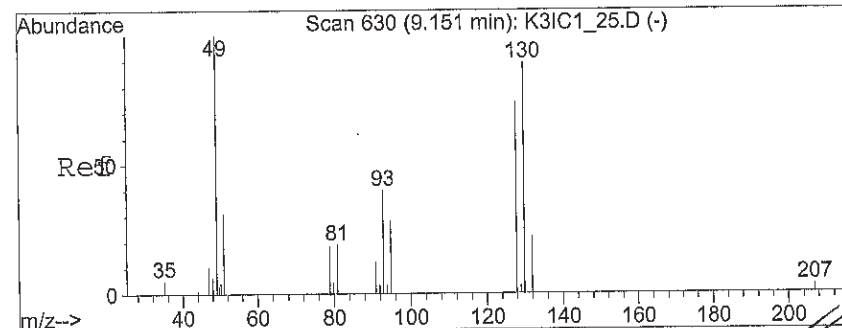
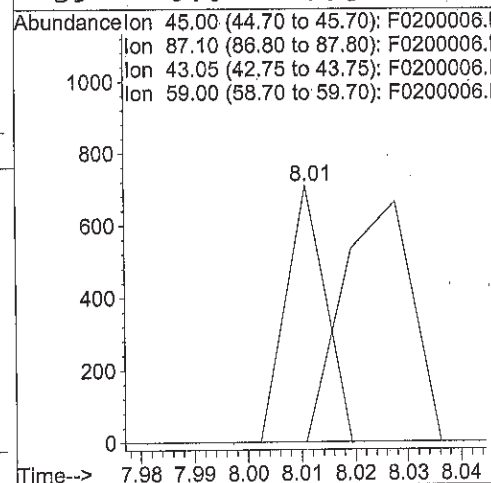
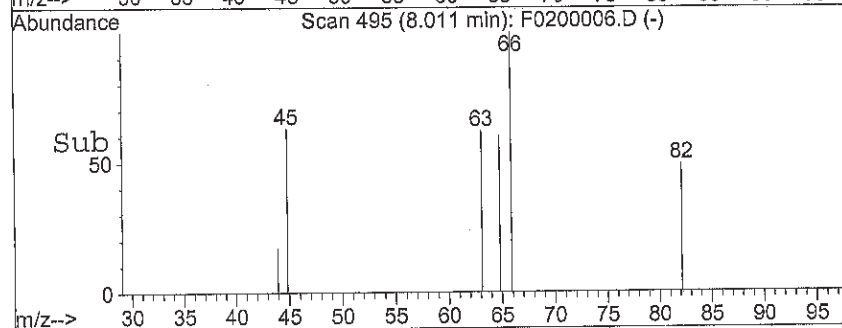
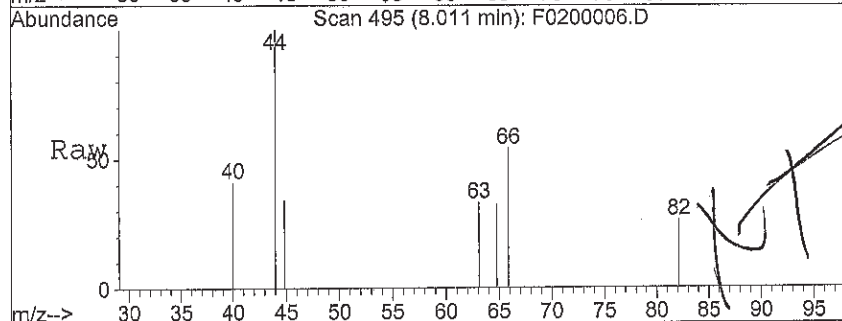
Tgt Ion: 77 Resp: 341
 Ion Ratio Lower Upper
 77 100
 79 0.0 26.6 40.0#
 97 0.0 18.9 28.3#
 41 254.5 42.6 64.0#





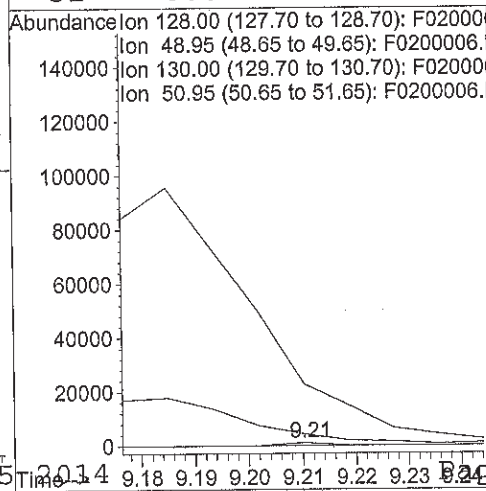
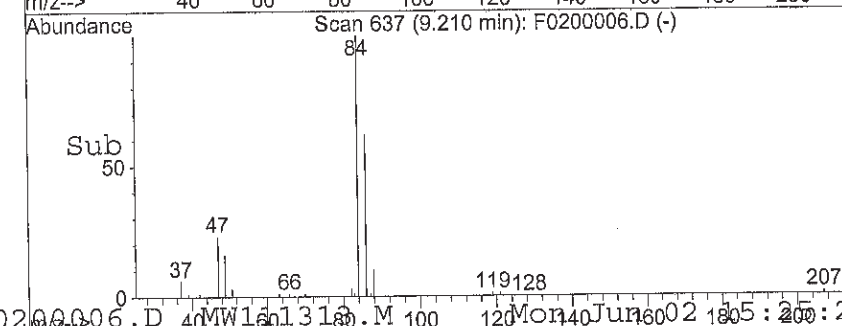
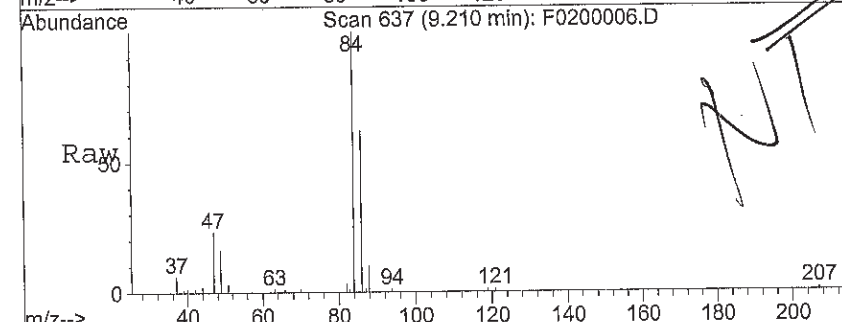
#22
 (DIPE) Diisopropyl Ether
 Concen: 0.04 ug/L
 RT: 8.01 min Scan# 495
 Delta R.T. 0.00 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

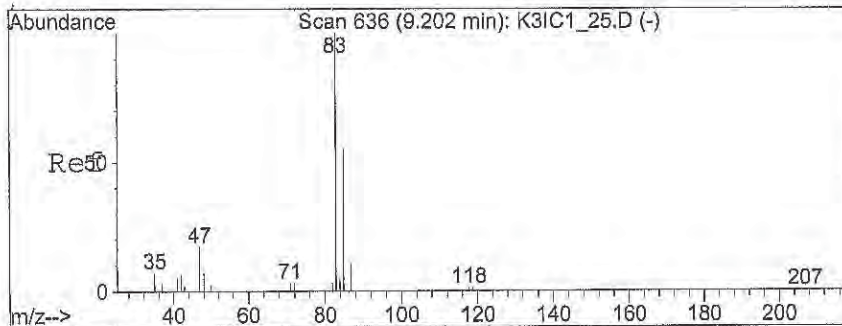
Tgt Ion: 45 Resp: 359
 Ion Ratio Lower Upper
 45 100
 87 0.0 17.0 25.6#
 43 169.1 30.5 45.7#
 59 0.0 7.4 11.2#



#23
 Bromochloromethane
 Concen: 0.34 ug/L
 RT: 9.21 min Scan# 637
 Delta R.T. 0.06 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 128 Resp: 543
 Ion Ratio Lower Upper
 128 100
 49 0.0 117.4 176.0#
 130 0.0 111.0 166.6#
 51 0.0 48.0 72.0#





#24

Chloroform

Concen: 0.11 ug/L

RT: 9.21 min Scan# 637

Delta R.T. 0.01 min

Lab File: F0200006.D

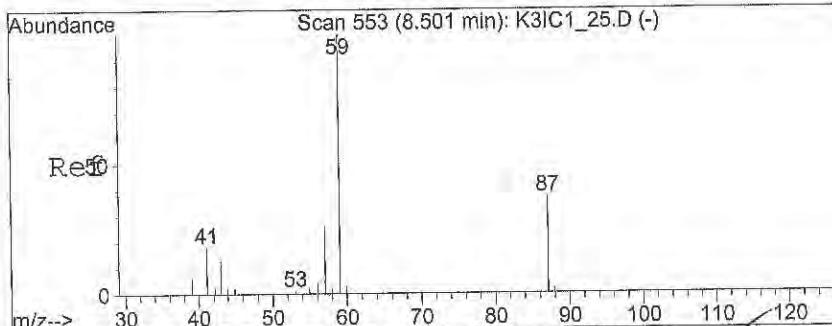
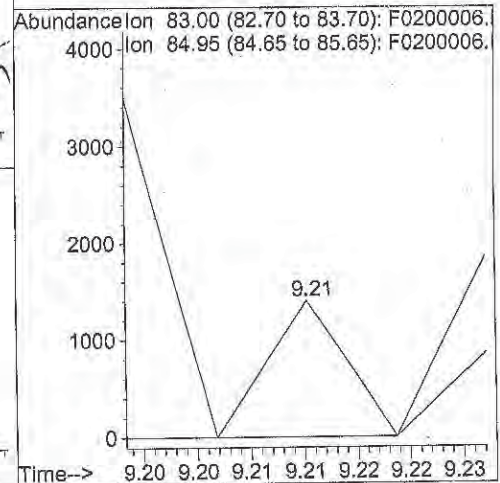
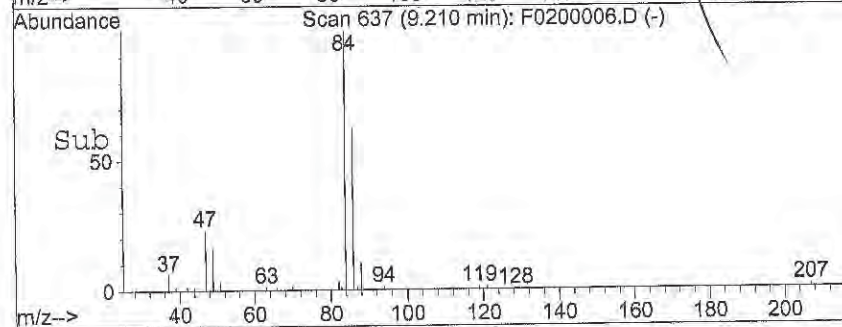
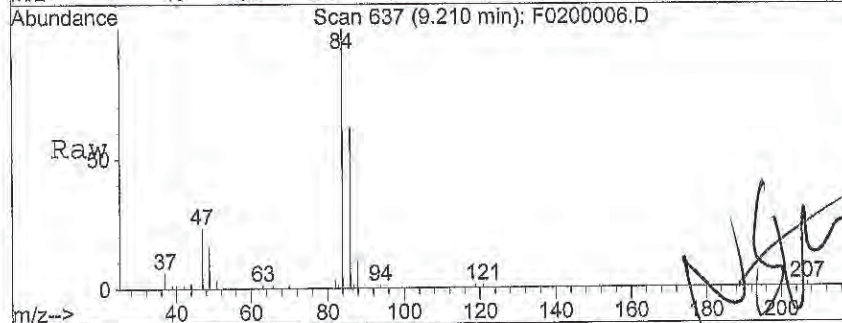
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 83 Resp: 708

Ion Ratio Lower Upper

83 100

85 0.0 51.8 77.6#



#25

(ETBE) 2-ethoxy 2-methyl propan

Concen: 0.03 ug/L

RT: 8.36 min Scan# 536

Delta R.T. -0.14 min

Lab File: F0200006.D

Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 59 Resp: 291

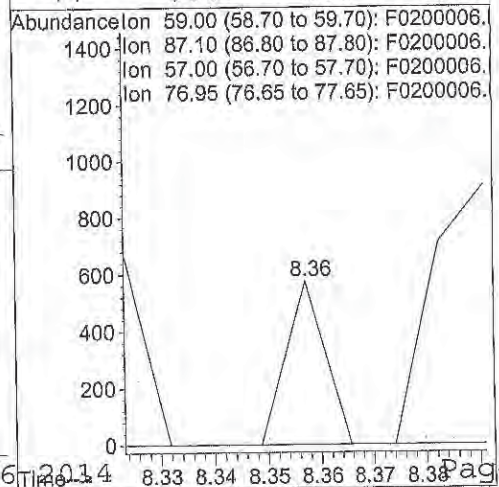
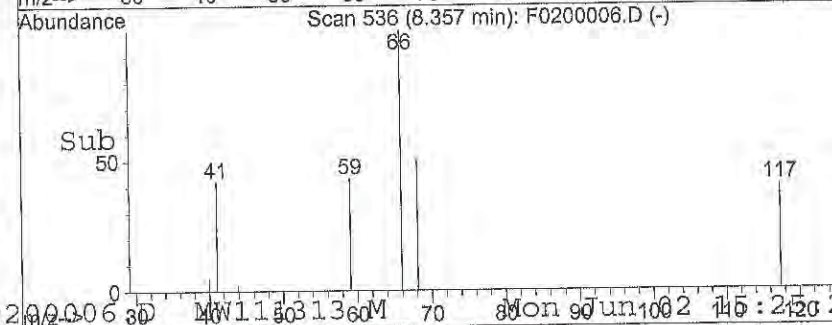
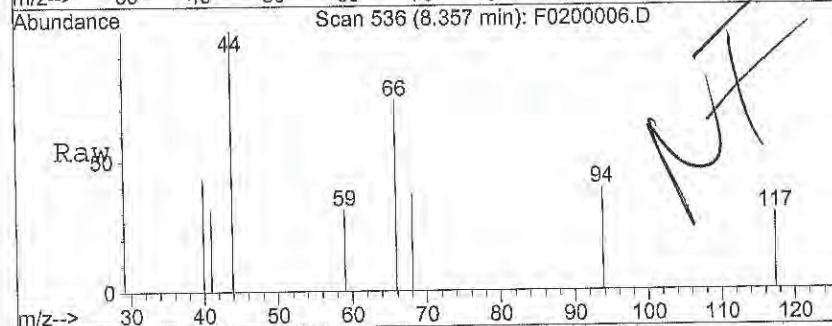
Ion Ratio Lower Upper

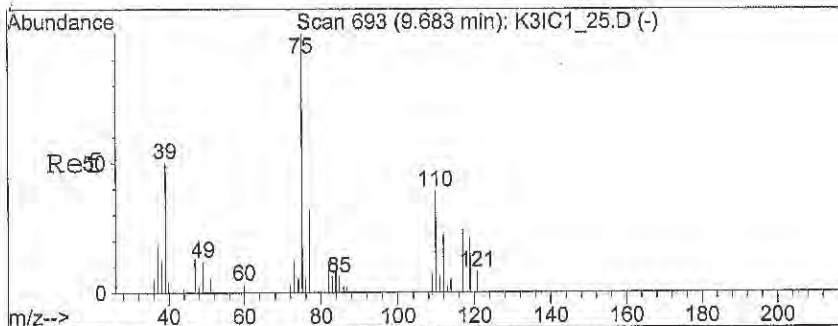
59 100

87 0.0 27.8 41.8#

57 0.0 19.8 29.6#

77 0.0 0.0 0.0





#29

1,1-Dichloropropene

Concen: 0.06 ug/L

RT: 9.64 min Scan# 688

Delta R.T. -0.04 min

Lab File: F0200006.D

Acq: 2 Jun 2014 2:21 pm

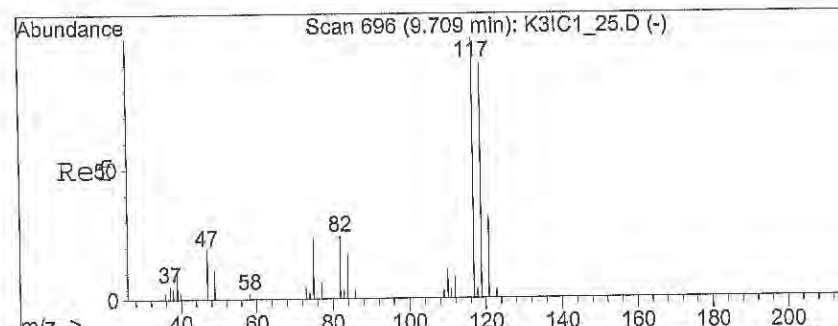
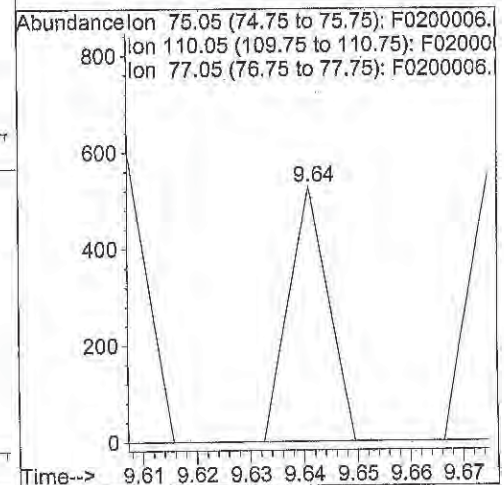
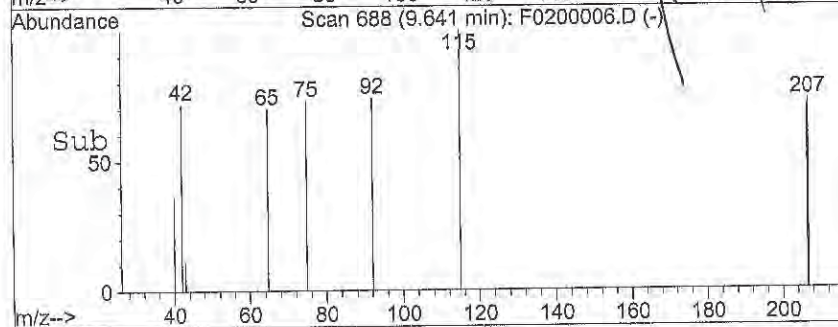
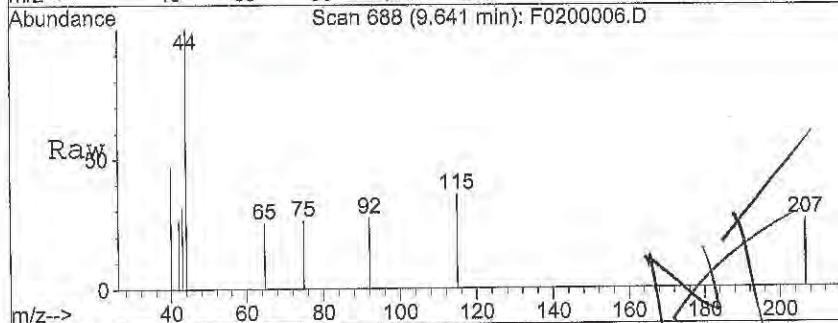
Tgt Ion: 75 Resp: 268

Ion Ratio Lower Upper

75 100

110 0.0 29.0 43.6#

77 0.0 25.0 37.4#



#30

Carbon Tetrachloride

Concen: 0.07 ug/L

RT: 9.51 min Scan# 672

Delta R.T. -0.20 min

Lab File: F0200006.D

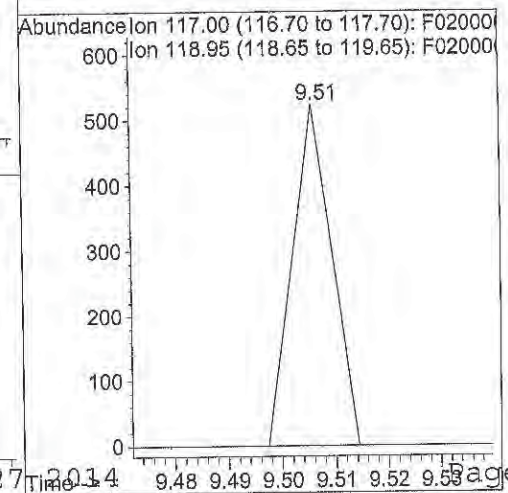
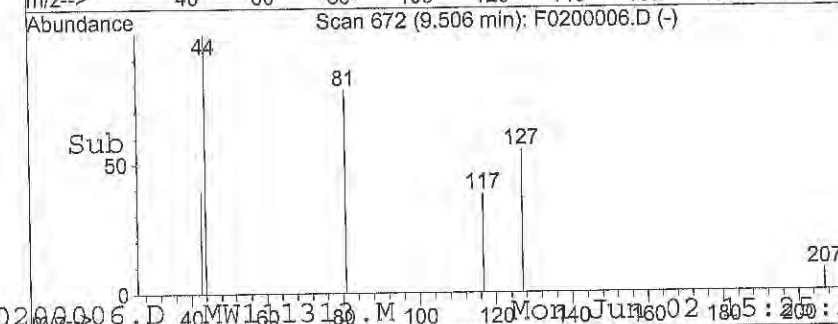
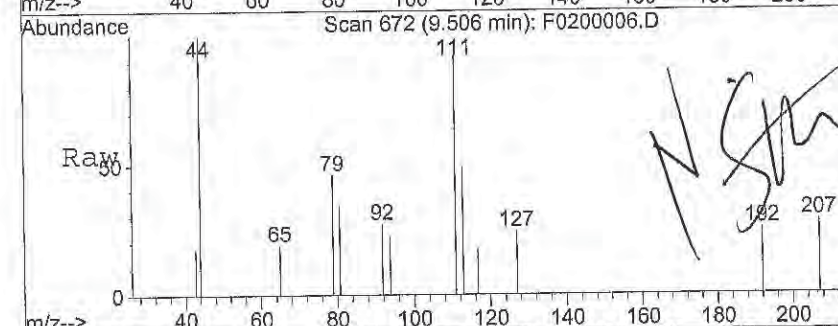
Acq: 2 Jun 2014 2:21 pm

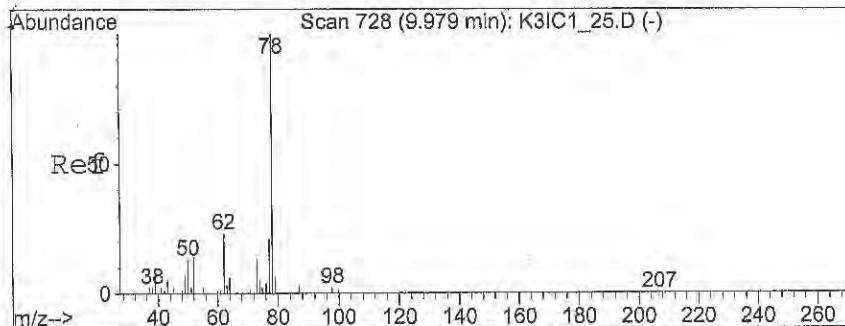
Tgt Ion: 117 Resp: 265

Ion Ratio Lower Upper

117 100

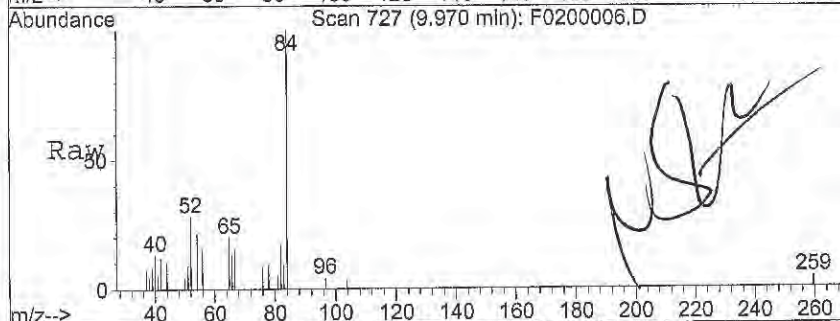
119 0.0 75.8 113.8#



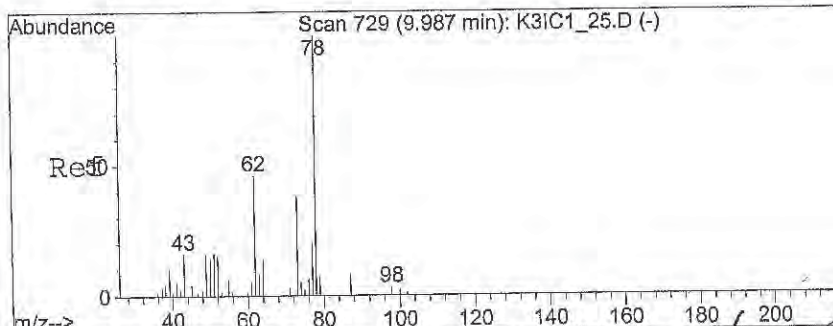
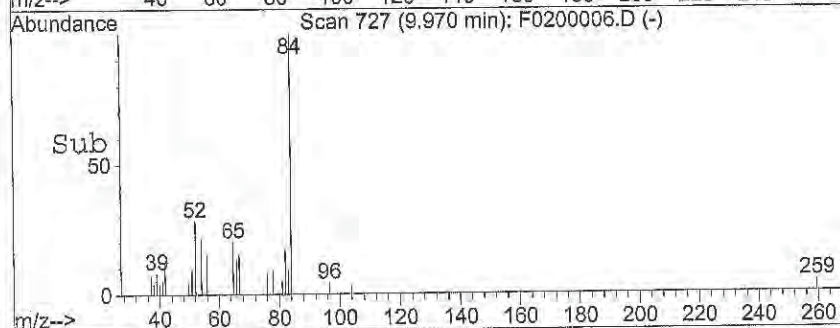
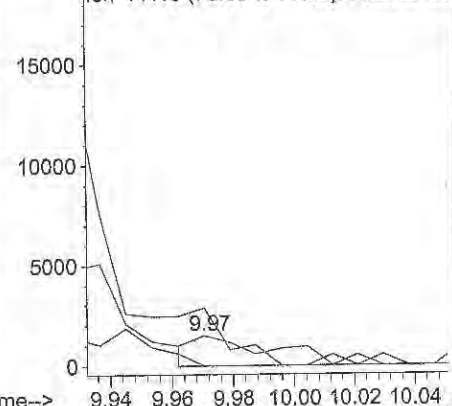


#31
Benzene
Concen: 0.23 ug/L
RT: 9.97 min Scan# 727
Delta R.T. -0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 78 Resp: 2517
Ion Ratio Lower Upper
78 100
51 0.0 14.2 21.2#
77 0.0 16.6 24.8#

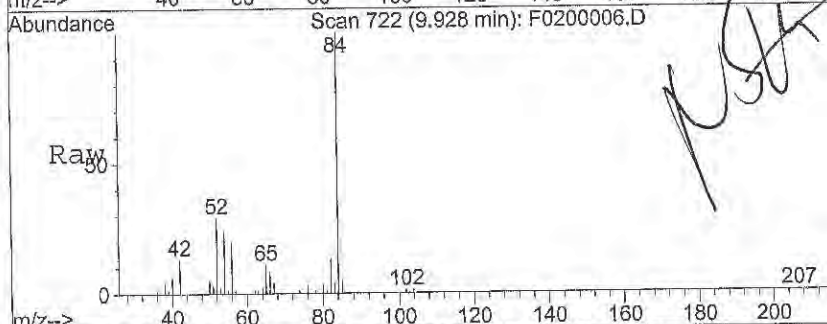


Abundance Ion 78.10 (77.80 to 78.80): F0200006.
20000 Ion 51.05 (50.75 to 51.75): F0200006.
Ion 77.15 (76.85 to 77.85): F0200006.

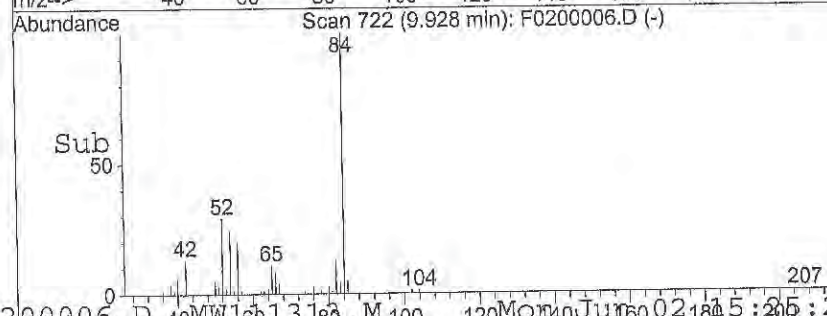
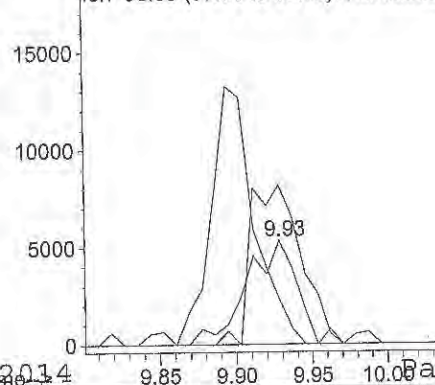


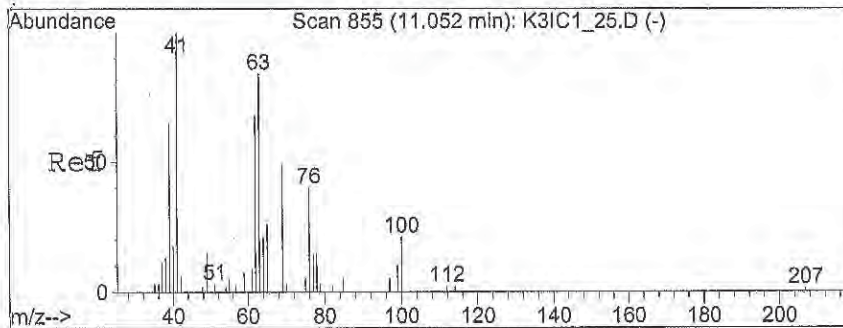
#32
1,2-Dichloroethane
Concen: 3.16 ug/L
RT: 9.93 min Scan# 722
Delta R.T. -0.06 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 62 Resp: 12493
Ion Ratio Lower Upper
62 100
64 148.4 28.0 42.0#
49 0.0 28.5 42.7#
98 0.0 6.2 9.4#



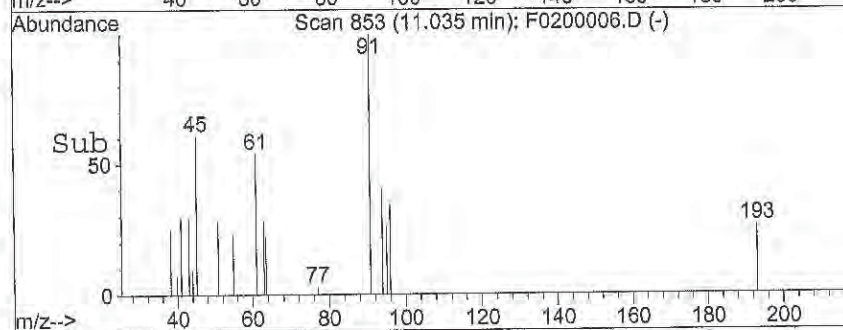
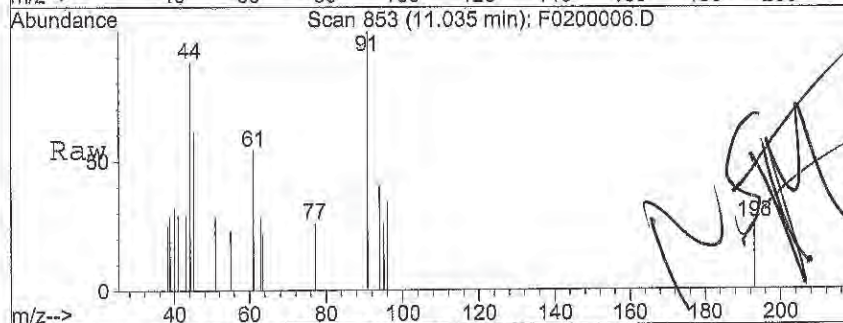
Abundance Ion 62.05 (61.75 to 62.75): F0200006.
20000 Ion 64.05 (63.75 to 64.75): F0200006.
Ion 49.00 (48.70 to 49.70): F0200006.
Ion 98.05 (97.75 to 98.75): F0200006.



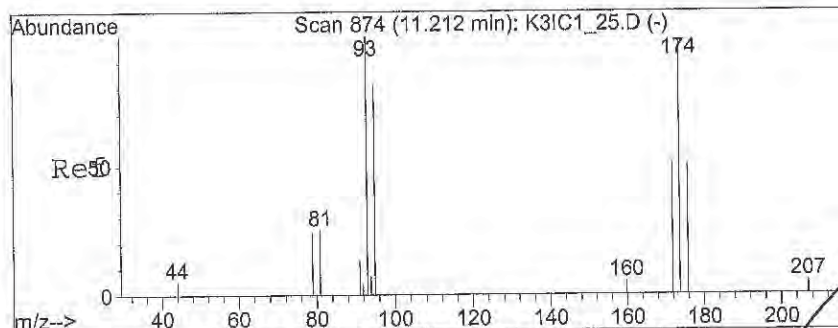
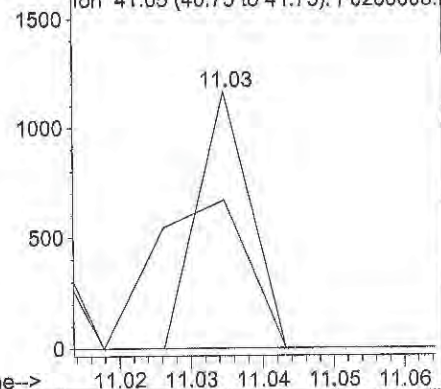


#34
1,2-Dichloropropane
Concen: 0.22 ug/L
RT: 11.03 min Scan# 853
Delta R.T. -0.02 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 63 Resp: 590
Ion Ratio Lower Upper
63 100
62 0.0 67.4 101.2#
76 0.0 40.3 60.5#
41 104.1 103.0 154.6

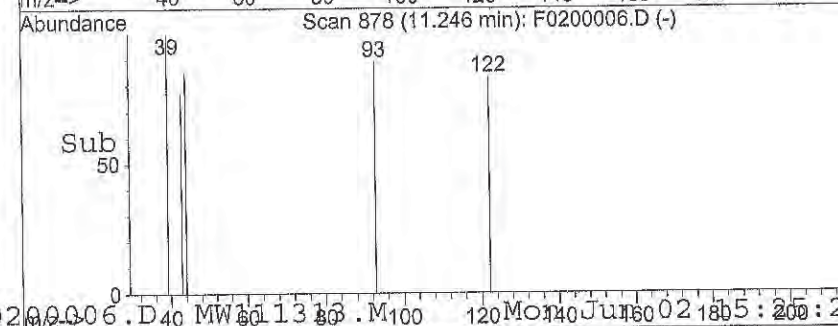
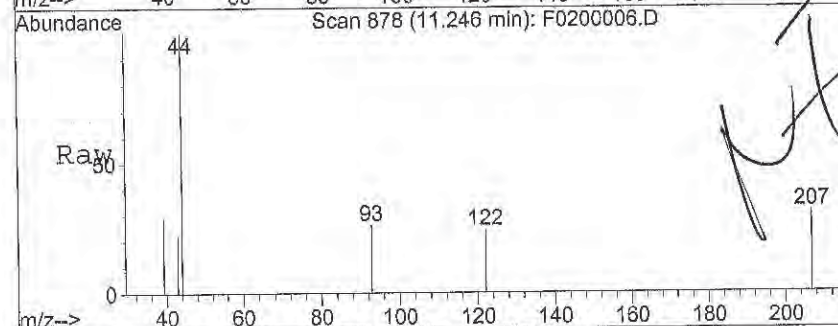


Abundance Ion 63.05 (62.75 to 63.75): F0200006.
Ion 62.05 (61.75 to 62.75): F0200006.
Ion 76.05 (75.75 to 76.75): F0200006.
Ion 41.05 (40.75 to 41.75): F0200006.

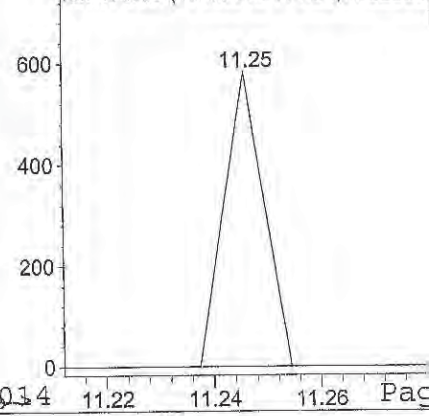


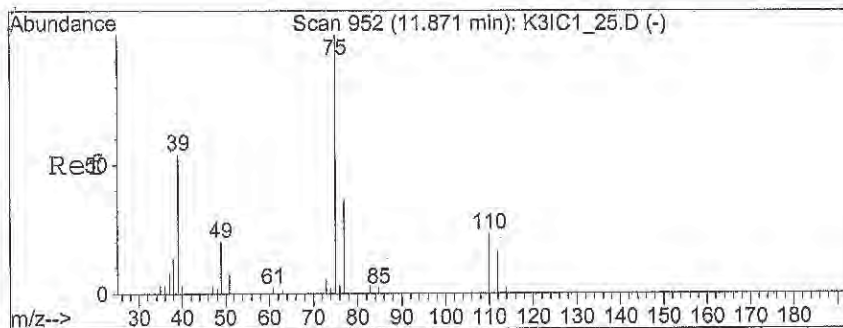
#35
Dibromomethane
Concen: 0.14 ug/L
RT: 11.25 min Scan# 878
Delta R.T. 0.03 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 93 Resp: 295
Ion Ratio Lower Upper
93 100
95 0.0 66.2 99.2#
174 0.0 75.5 113.3#



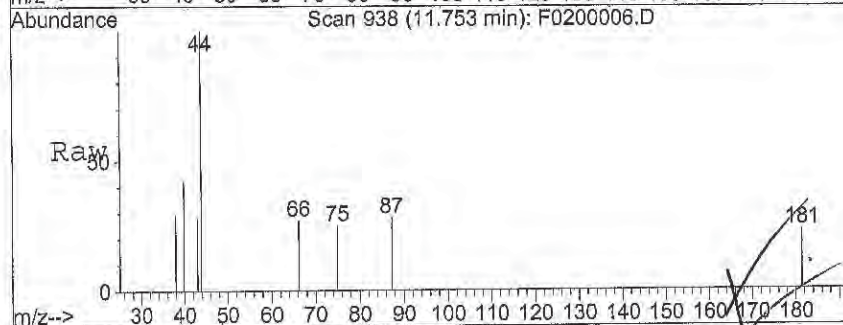
Abundance Ion 93.00 (92.70 to 93.70): F0200006.
Ion 95.00 (94.70 to 95.70): F0200006.
Ion 173.90 (173.60 to 174.60): F0200006.





#37
 cis-1,3-Dichloropropene
 Concen: 0.06 ug/L
 RT: 11.75 min Scan# 938
 Delta R.T. -0.12 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

Tgt Ion:	75	Resp:	281
Ion Ratio	Lower	Upper	
75	100		
39	117.8	40.7	61.1#
77	155.2	28.8	43.2#
110	0.0	18.1	27.1#



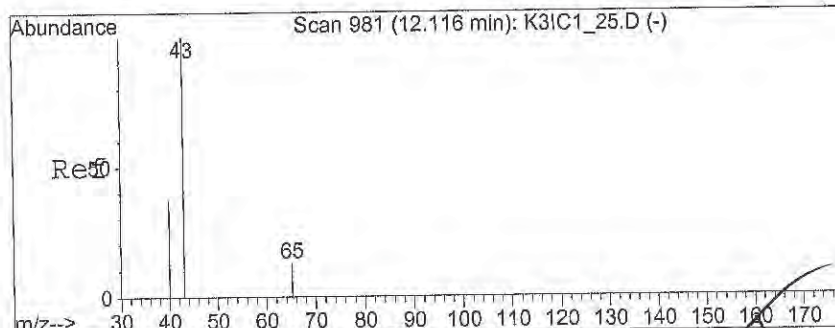
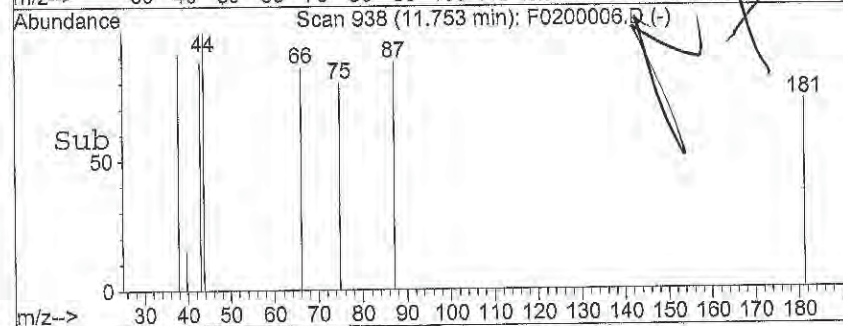
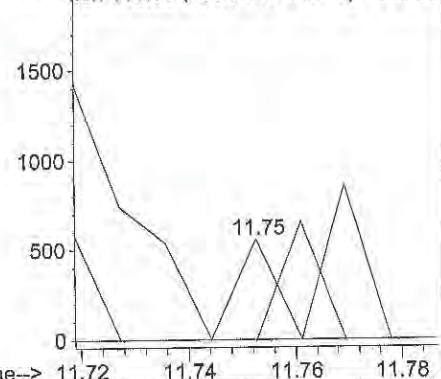
Abundance

Ion 75.05 (74.75 to 75.75): F0200006.D

Ion 39.05 (38.75 to 39.75): F0200006.D

Ion 77.05 (76.75 to 77.75): F0200006.D

Ion 110.05 (109.75 to 110.75): F0200006.D



#40
 (MIBK) 4-Methyl-2-Pentanone
 Concen: 0.25 ug/L
 RT: 12.05 min Scan# 973
 Delta R.T. -0.07 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

Tgt Ion:	43	Resp:	560
Ion Ratio	Lower	Upper	
43	100		
58	0.0	0.0	0.0
85	0.0	0.0	0.0
100	0.0	0.0	0.0

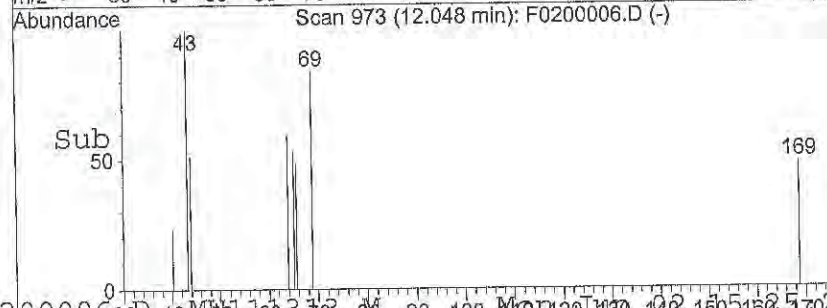
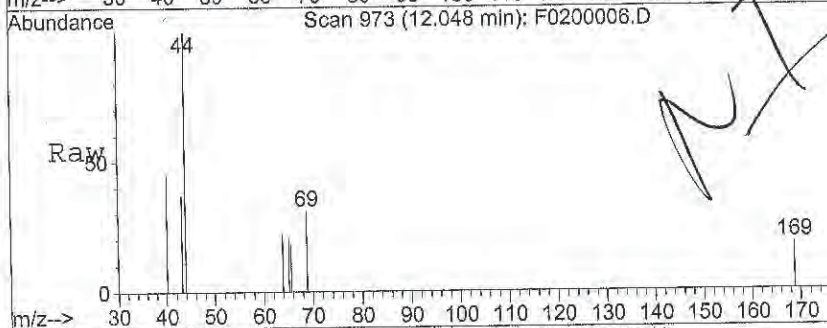
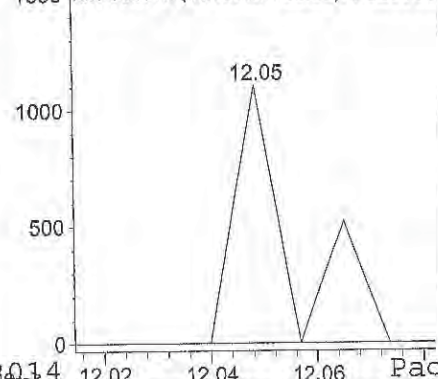
Abundance

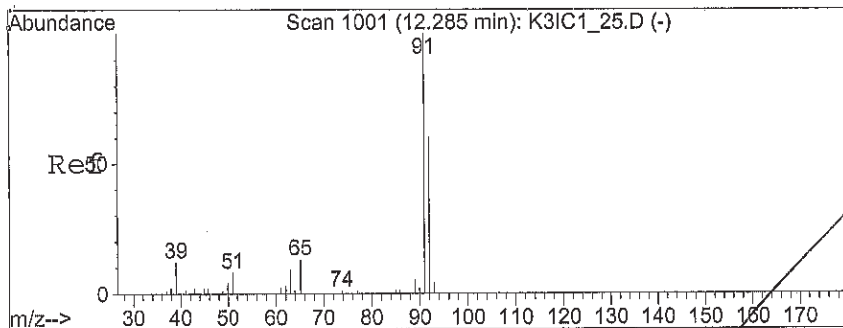
Ion 43.00 (42.70 to 43.70): F0200006.D

Ion 58.10 (57.80 to 58.80): F0200006.D

Ion 85.05 (84.75 to 85.75): F0200006.D

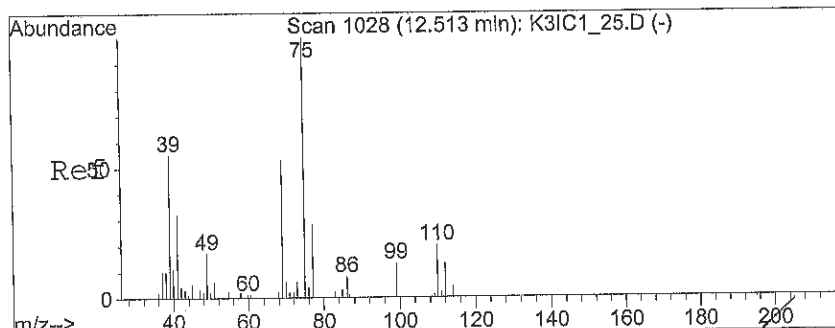
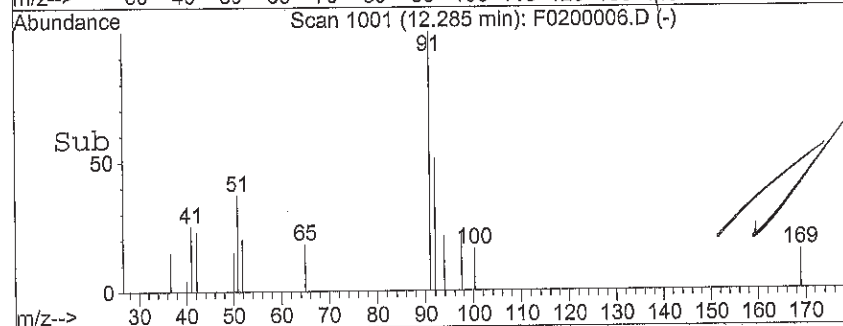
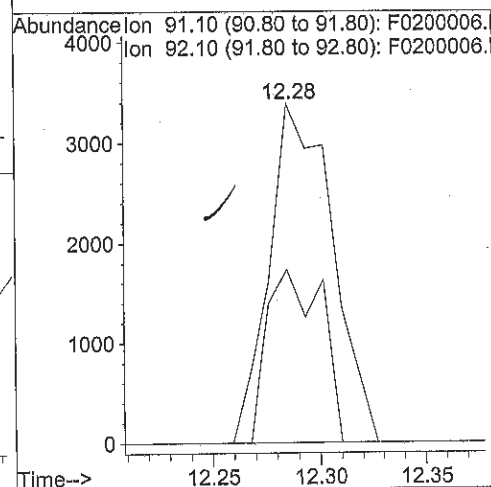
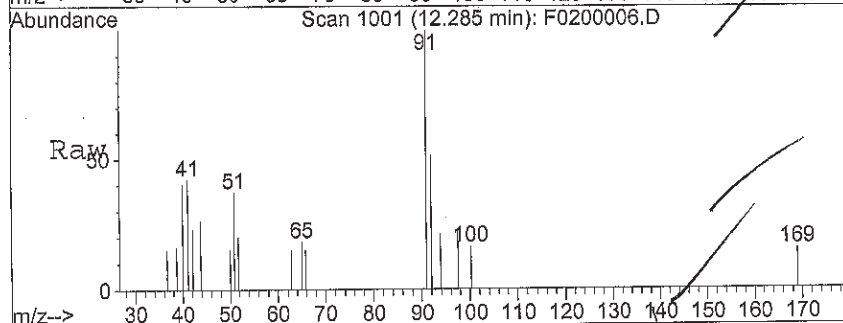
Ion 100.15 (99.85 to 100.85): F0200006.D





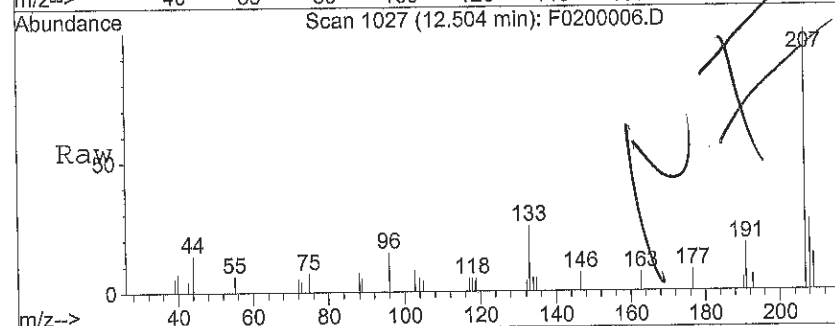
#41
Toluene
Concen: 0.45 ug/L
RT: 12.28 min Scan# 1001
Delta R.T. 0.00 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 91 Resp: 6909
Ion Ratio Lower Upper
91 100
92 44.1 47.4 71.0#



#42
trans-1,3-Dichloropropene
Concen: 0.19 ug/L
RT: 12.50 min Scan# 1027
Delta R.T. -0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 75 Resp: 945
Ion Ratio Lower Upper
75 100
39 122.1 53.6 80.4#
77 0.0 25.4 38.2#
110 0.0 17.6 26.4#



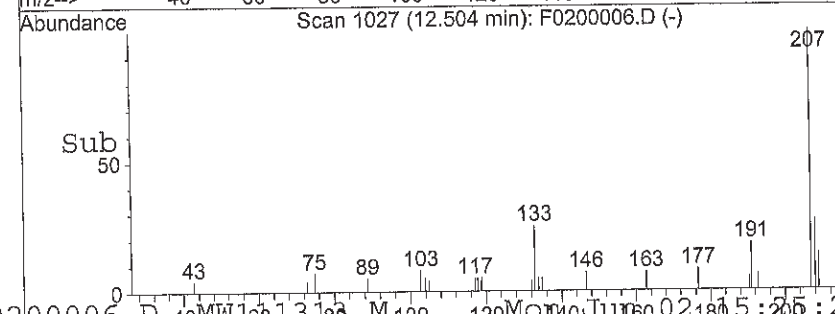
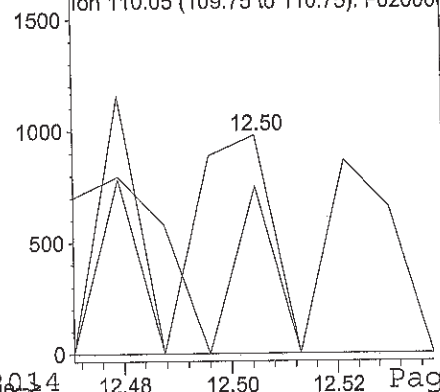
Abundance

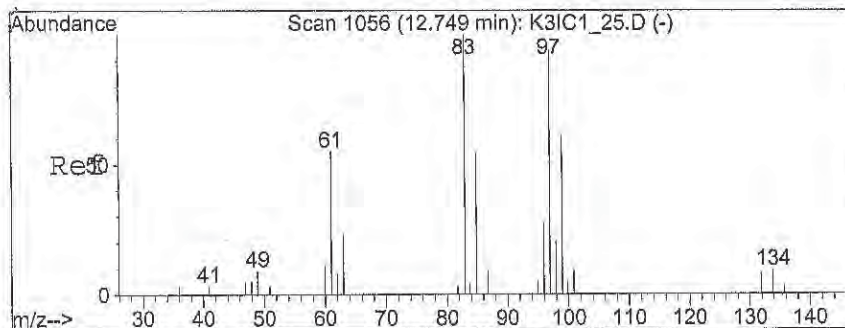
Ion 75.05 (74.75 to 75.75): F0200006.D

Ion 39.05 (38.75 to 39.75): F0200006.D

Ion 77.05 (76.75 to 77.75): F0200006.D

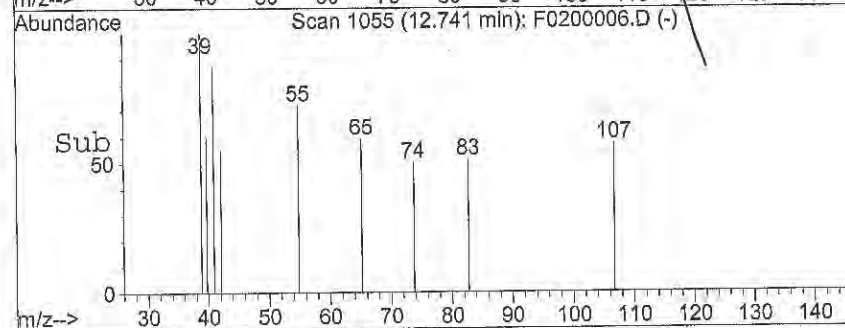
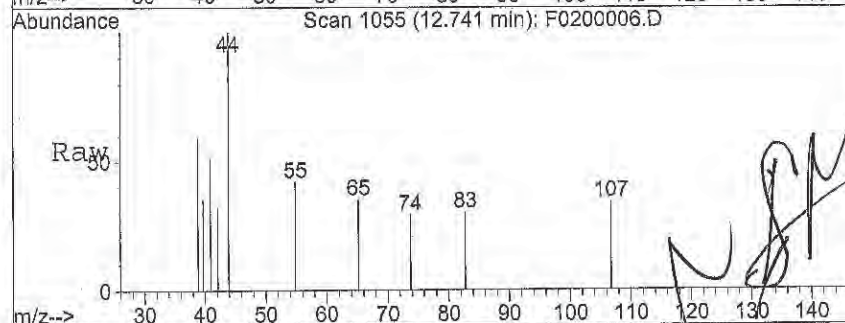
Ion 110.05 (109.75 to 110.75): F0200006.D



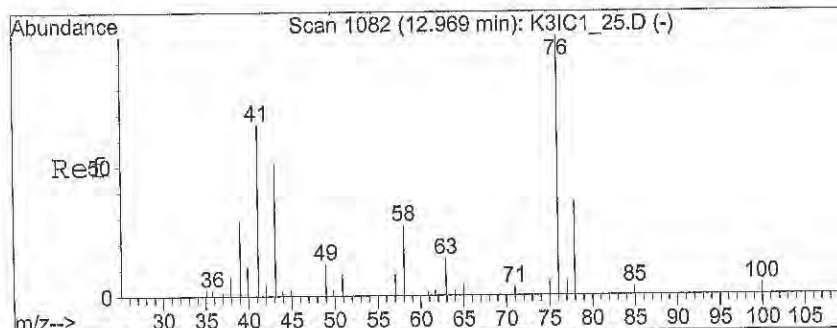
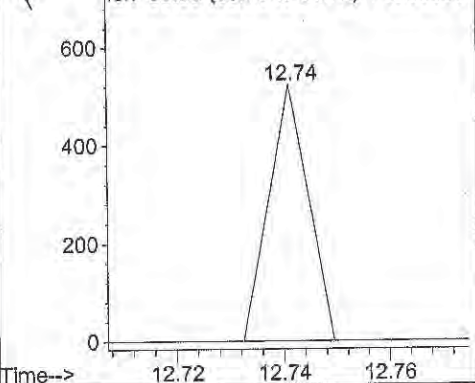


#43
 1,1,2-Trichloroethane
 Concen: 0.10 ug/L
 RT: 12.74 min Scan# 1055
 Delta R.T. -0.01 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

Tgt Ion:	83	Resp:	265
Ion Ratio	Lower	Upper	
83	100		
97	0.0	79.4	119.0#
61	0.0	47.4	71.2#
99	0.0	56.3	84.5#

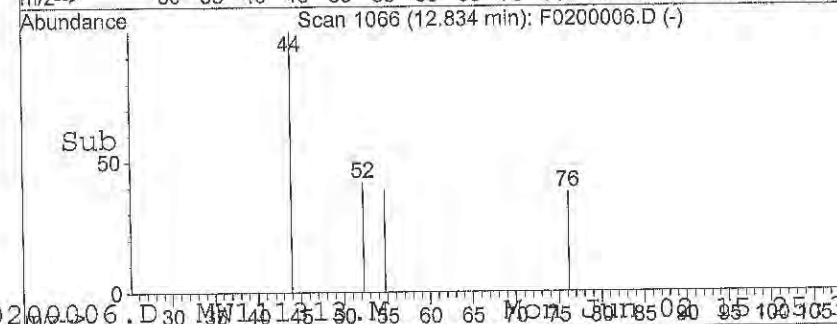
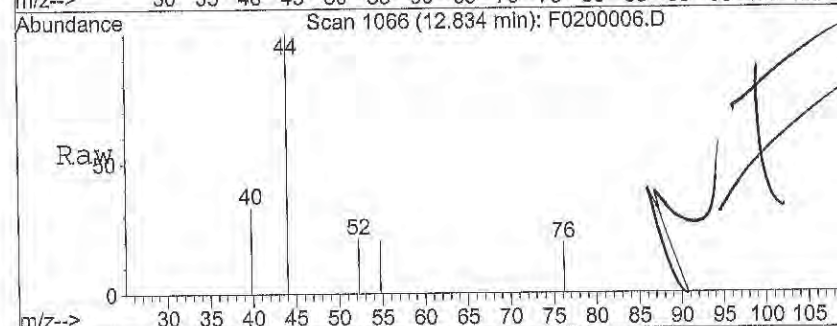


Abundance	Ion	83.00 (82.70 to 83.70): F0200006.
800	Ion	96.95 (96.65 to 97.65): F0200006.
	Ion	61.05 (60.75 to 61.75): F0200006.
	Ion	99.05 (98.75 to 99.75): F0200006.

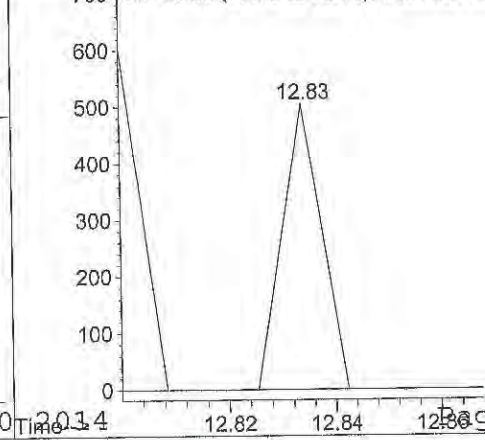


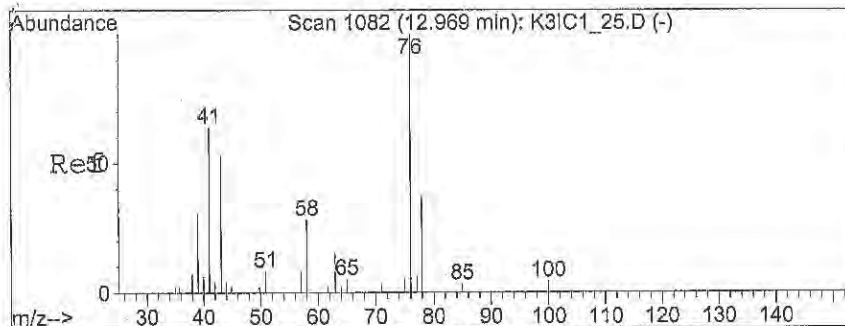
#45
 1,3-Dichloropropane
 Concen: 0.05 ug/L
 RT: 12.83 min Scan# 1066
 Delta R.T. -0.14 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

Tgt Ion:	76	Resp:	255
Ion Ratio	Lower	Upper	
76	100		
78	0.0	26.9	40.3#



Abundance	Ion	76.05 (75.75 to 76.75): F0200006.
700	Ion	78.00 (77.70 to 78.70): F0200006.





#46

2-Hexanone

Concen: 0.13 ug/L

RT: 12.92 min Scan# 1076

Delta R.T. -0.05 min

Lab File: F0200006.D

Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 43 Resp: 328

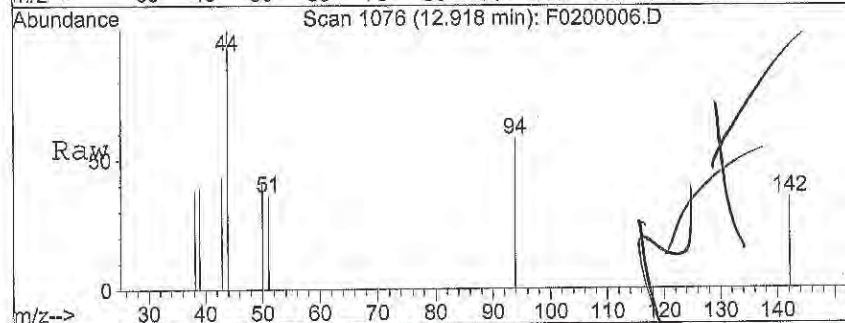
Ion Ratio Lower Upper

43 100

58 0.0 40.9 61.3#

100 0.0 5.5 8.3#

85 0.0 4.3 6.5#



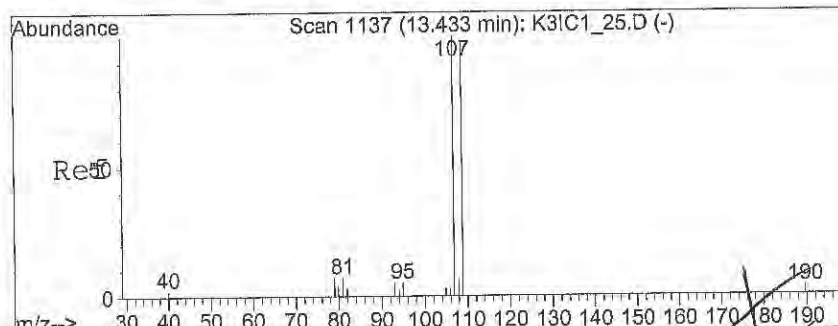
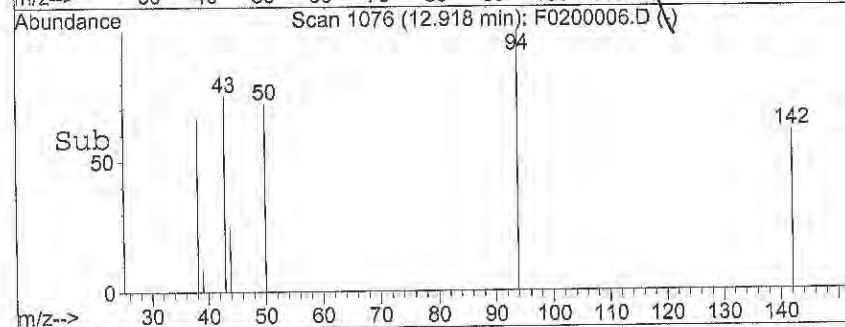
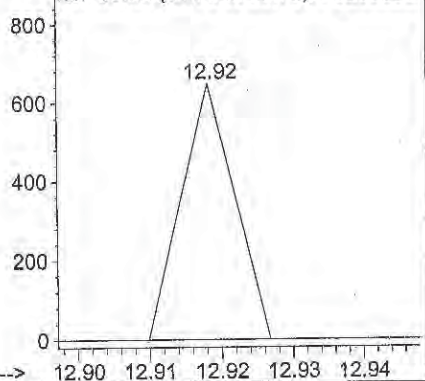
Abundance

Ion 43.00 (42.70 to 43.70): F0200006.D

Ion 58.10 (57.80 to 58.80): F0200006.D

Ion 100.15 (99.85 to 100.85): F0200006.D

Ion 85.05 (84.75 to 85.75): F0200006.D



#48

1,2-Dibromoethane

Concen: 0.10 ug/L

RT: 13.40 min Scan# 1133

Delta R.T. -0.03 min

Lab File: F0200006.D

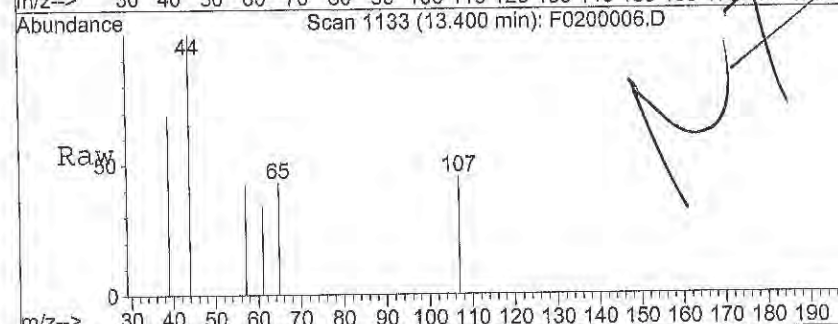
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 107 Resp: 340

Ion Ratio Lower Upper

107 100

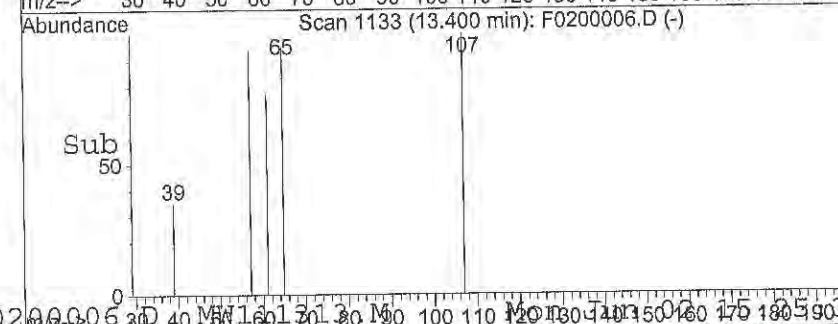
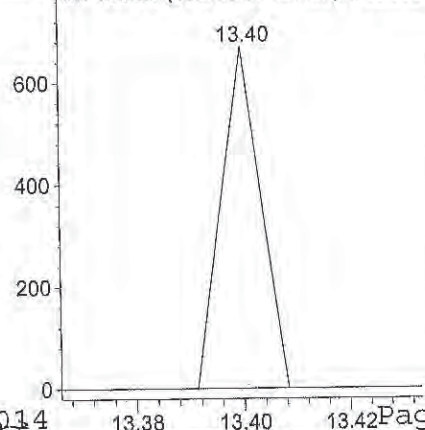
109 0.0 74.4 111.6#

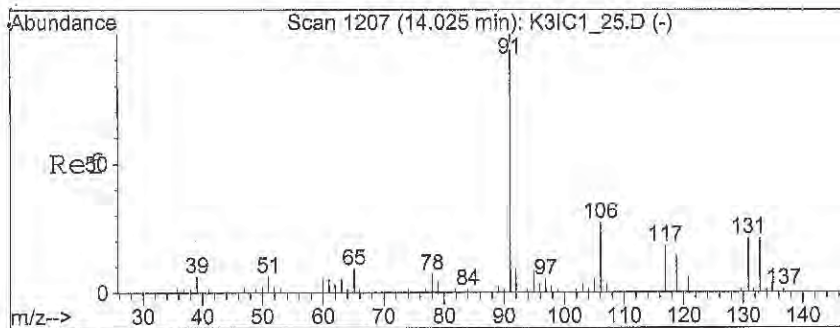


Abundance

Ion 107.00 (106.70 to 107.70): F0200006.D

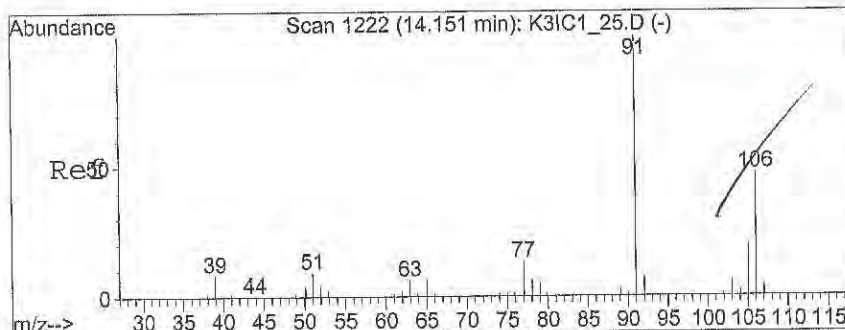
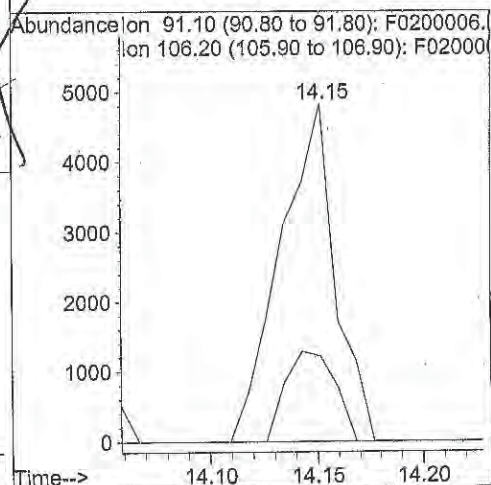
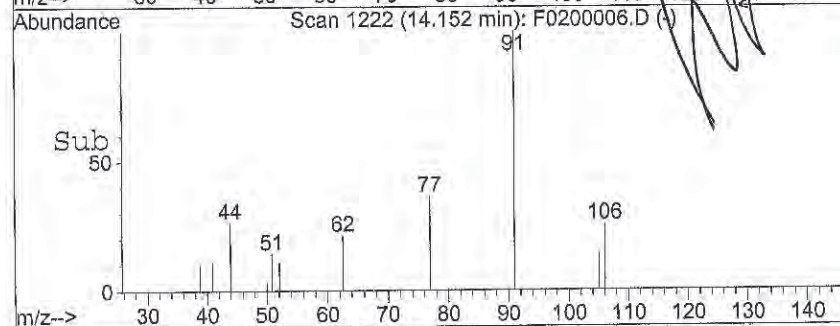
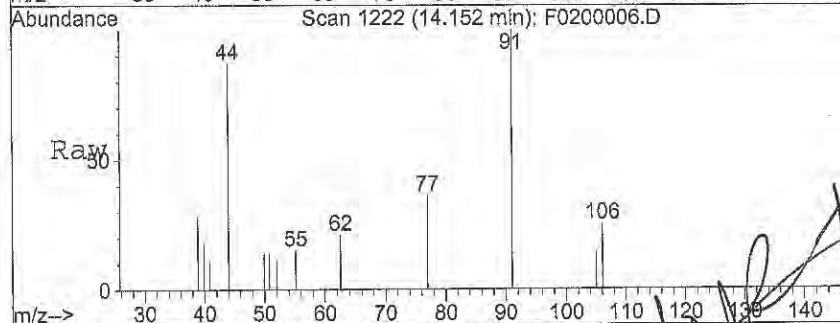
Ion 108.95 (108.65 to 109.65): F0200006.D





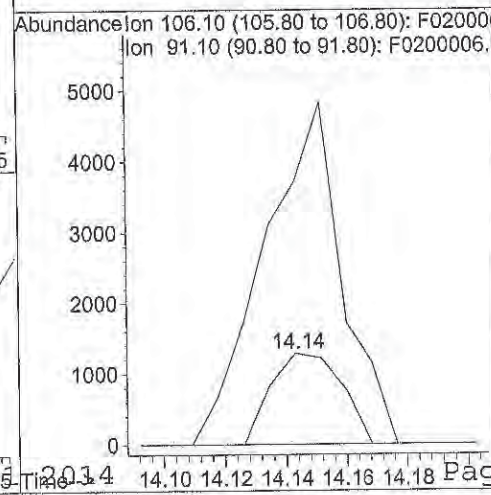
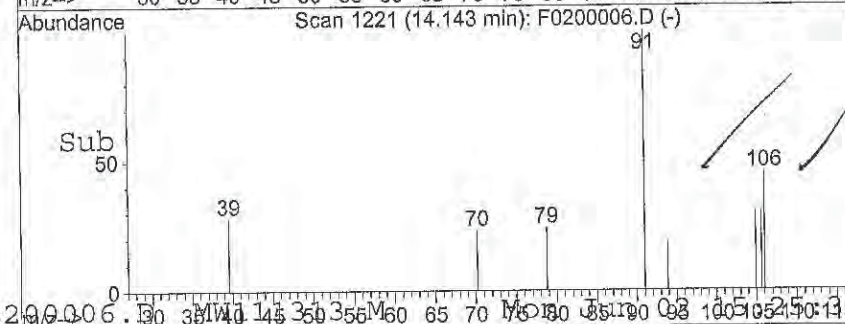
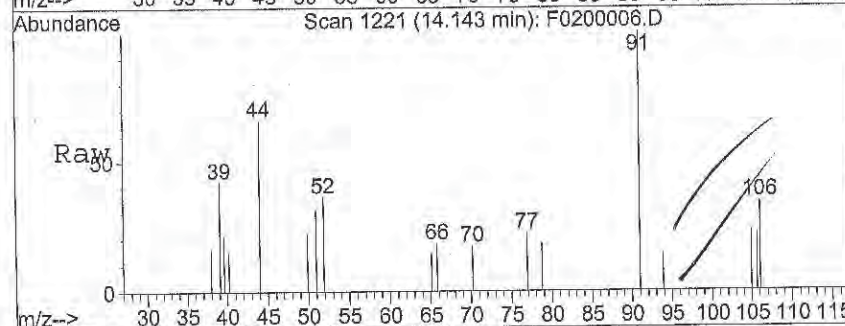
#51
Ethylbenzene
Concen: 0.50 ug/L
RT: 14.15 min Scan# 1222
Delta R.T. 0.13 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

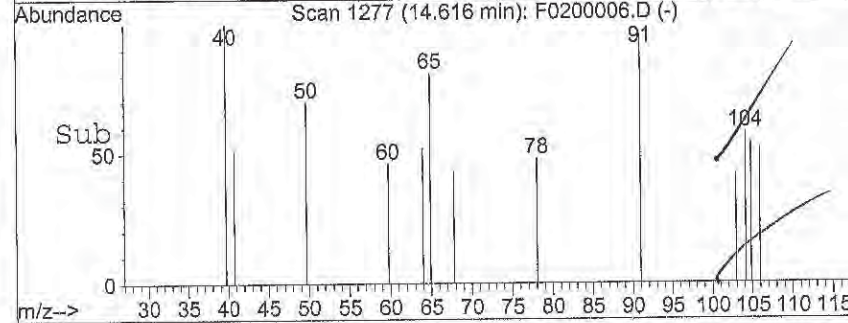
Tgt Ion: 91 Resp: 8571
Ion Ratio Lower Upper
91 100
106 24.1 23.5 35.3



#52
m,p-Xylenes
Concen: 0.34 ug/L
RT: 14.14 min Scan# 1221
Delta R.T. -0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

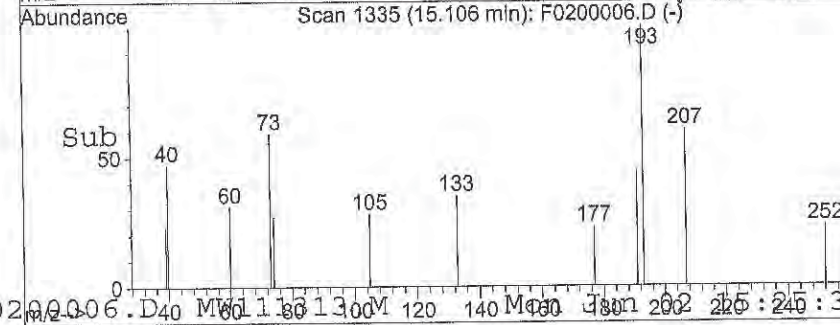
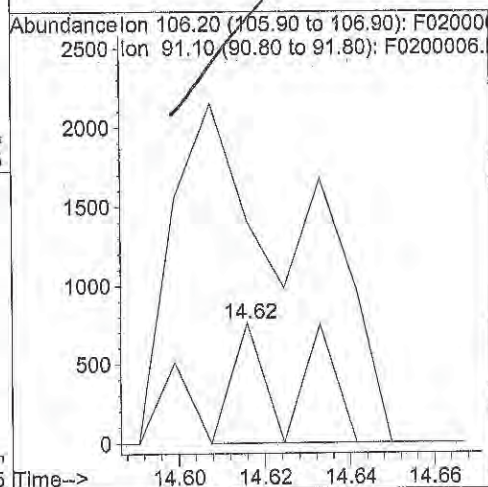
Tgt Ion: 106 Resp: 2067
Ion Ratio Lower Upper
106 100
91 414.7 177.1 265.7#





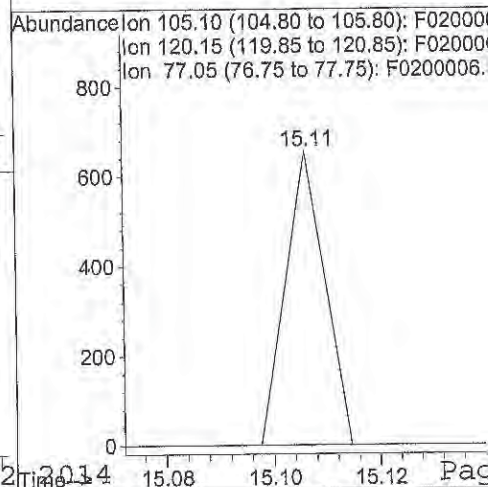
#53
o-Xylene
Concen: 0.13 ug/L
RT: 14.62 min Scan# 1277
Delta R.T. 0.00 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

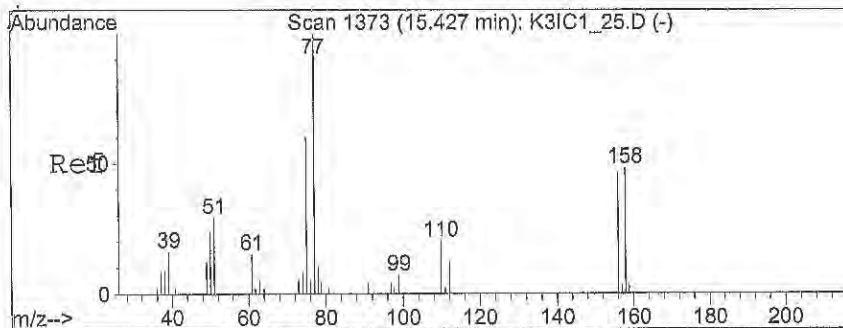
Tgt	Ion:106	Resp:	763
Ion	Ratio	Lower	Upper
106	100		
91	580.9	179.0	268.6#



```
#56
Isopropylbenzene
Concen: 0.02 ug/L
RT: 15.11 min Scan# 1335
Delta R.T. 0.10 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm
```

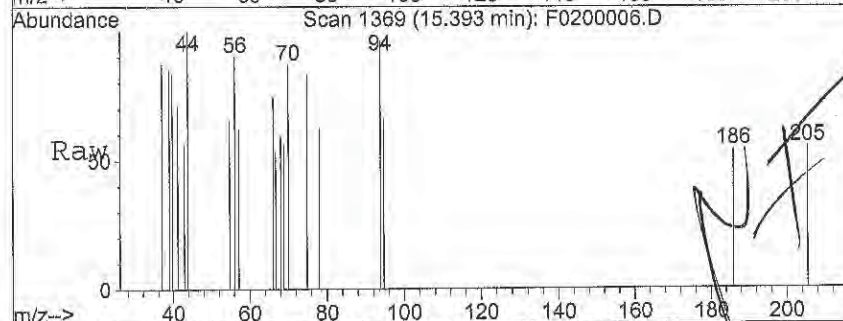
Tgt	Ion:105	Resp:	332
Ion	Ratio	Lower	Upper
105	100		
120	0.0	19.3	28.9#
77	0.0	13.1	19.7#



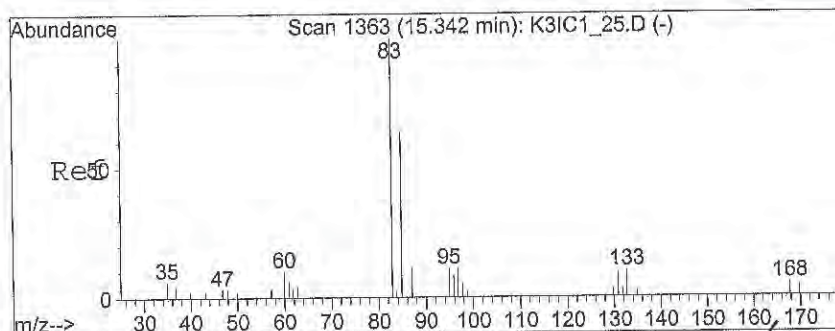
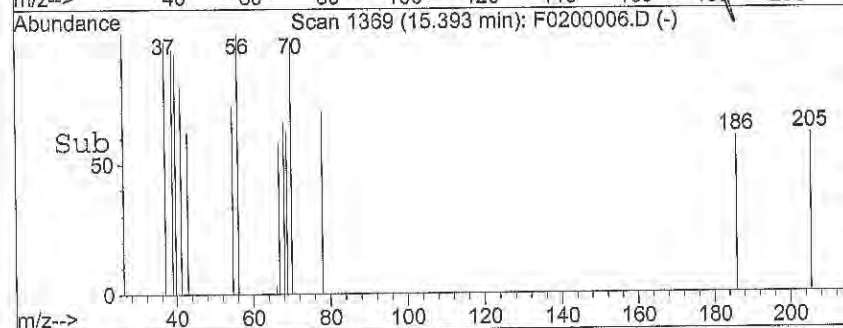
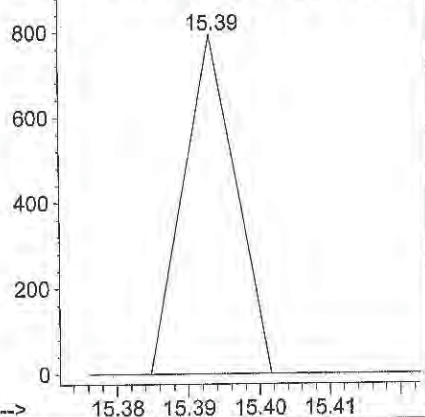


#57
 1,2,3-Trichloropropane
 Concen: 0.09 ug/L
 RT: 15.39 min Scan# 1369
 Delta R.T. -0.03 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 75 Resp: 402
 Ion Ratio Lower Upper
 75 100
 77 0.0 31.2 46.8#

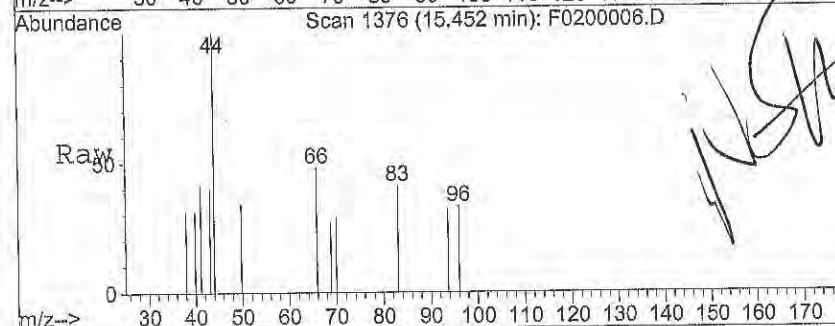


Abundance Ion 75.05 (74.75 to 75.75): F0200006.D
 Ion 77.00 (76.70 to 77.70): F0200006.D

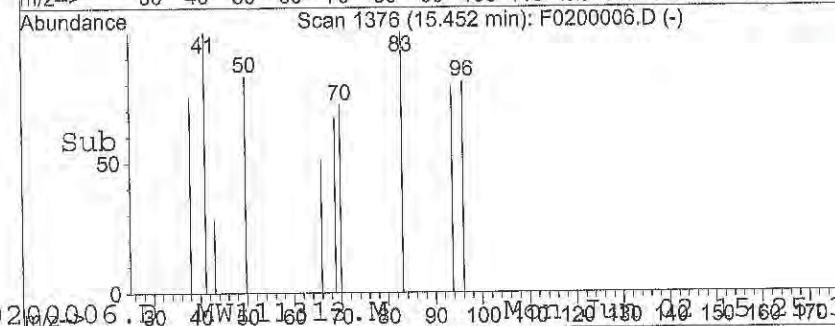
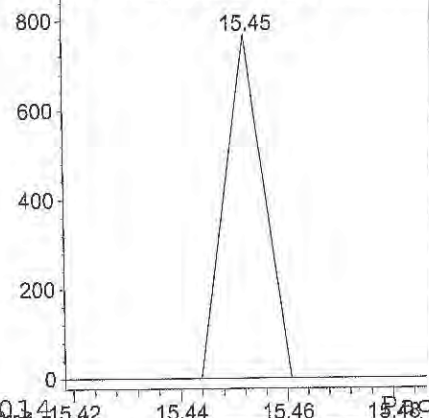


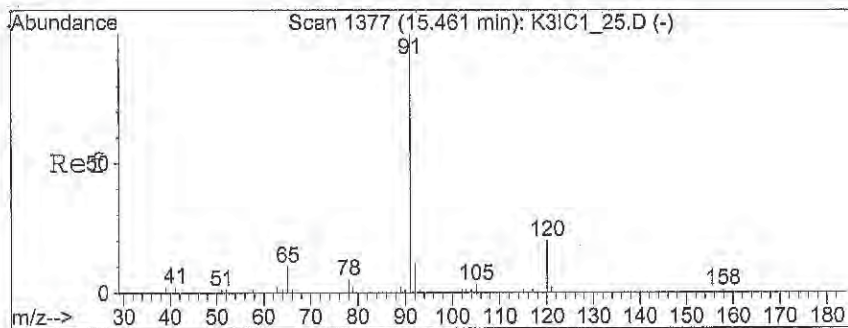
#60
 1,1,2,2-Tetrachloroethane
 Concen: 0.09 ug/L
 RT: 15.45 min Scan# 1376
 Delta R.T. 0.11 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 83 Resp: 388
 Ion Ratio Lower Upper
 83 100
 85 0.0 51.2 76.8#



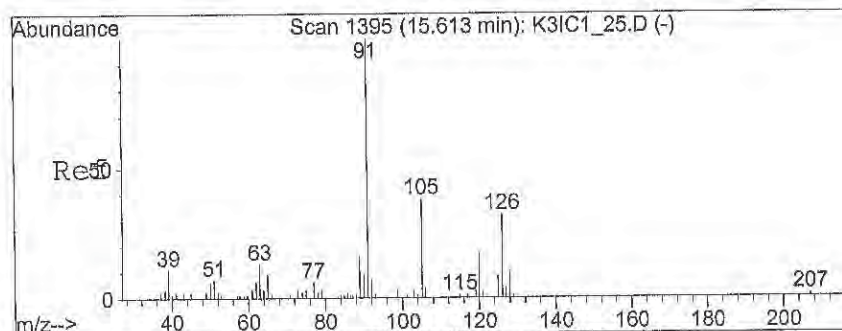
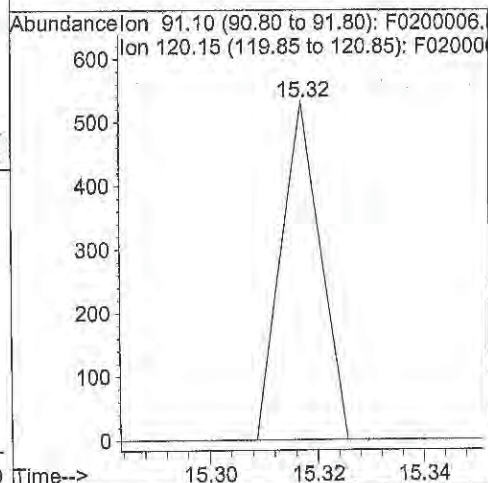
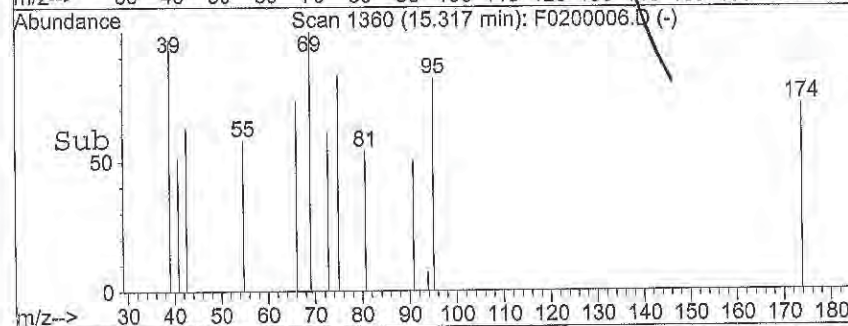
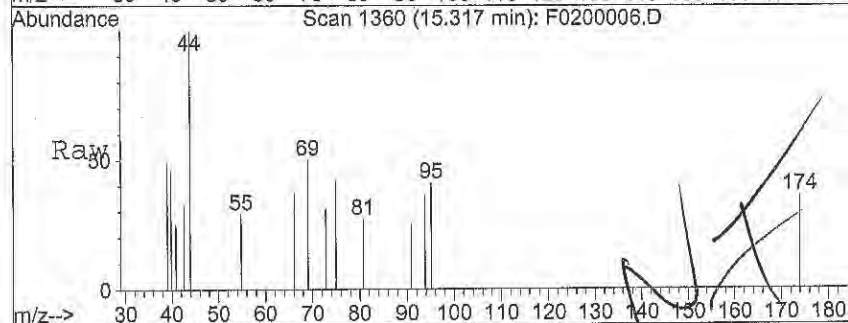
Abundance Ion 83.00 (82.70 to 83.70): F0200006.D
 Ion 84.95 (84.65 to 85.65): F0200006.D





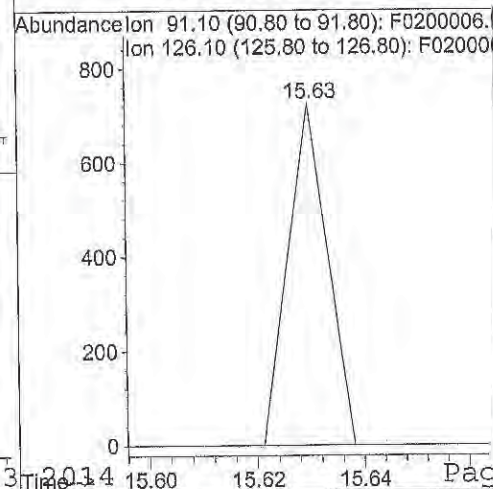
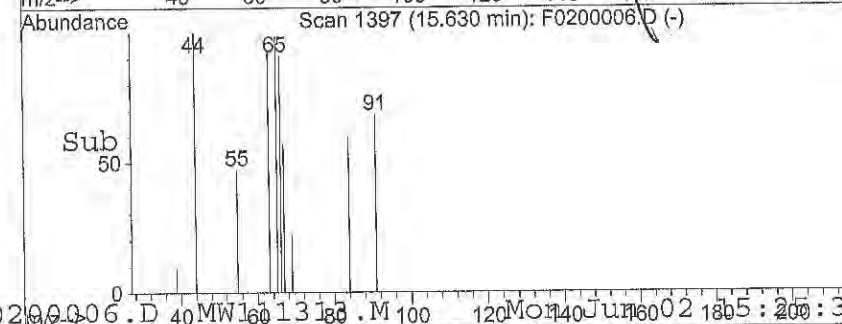
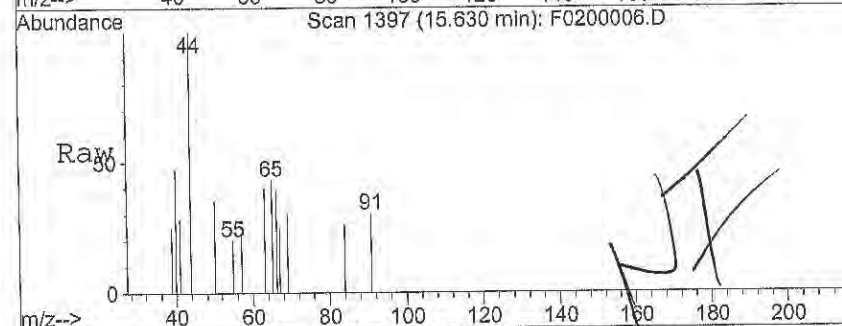
#62
 n-Propylbenzene
 Concen: 0.01 ug/L
 RT: 15.32 min Scan# 1360
 Delta R.T. -0.14 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

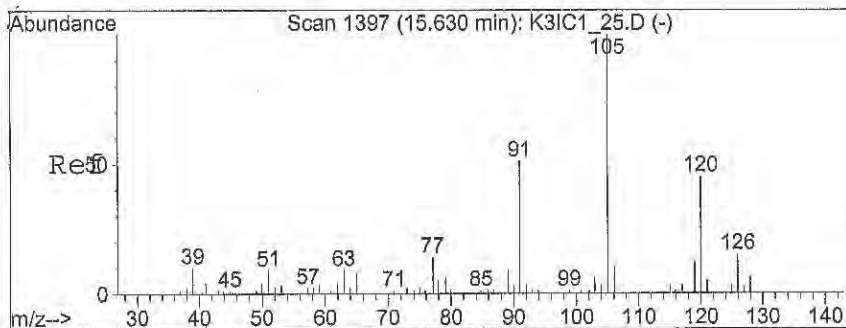
Tgt Ion: 91 Resp: 270
 Ion Ratio Lower Upper
 91 100
 120 0.0 16.1 24.1#



#63
 2-Chlorotoluene
 Concen: 0.02 ug/L
 RT: 15.63 min Scan# 1397
 Delta R.T. 0.02 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 91 Resp: 368
 Ion Ratio Lower Upper
 91 100
 126 0.0 24.0 36.0#





#64

1,3,5-Trimethylbenzene

Concen: 0.09 ug/L

RT: 15.55 min Scan# 1388

Delta R.T. -0.08 min

Lab File: F0200006.D

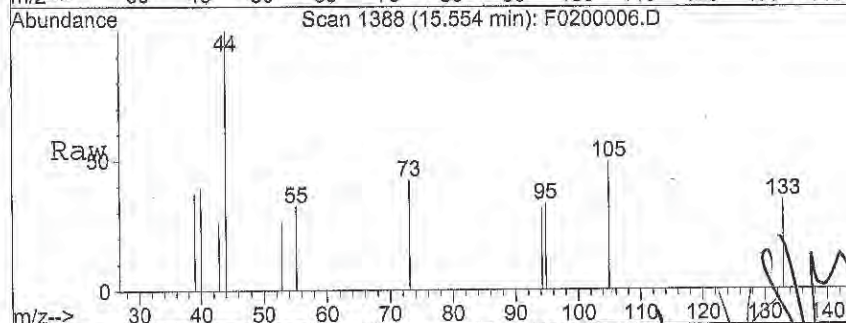
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 105 Resp: 1346

Ion Ratio Lower Upper

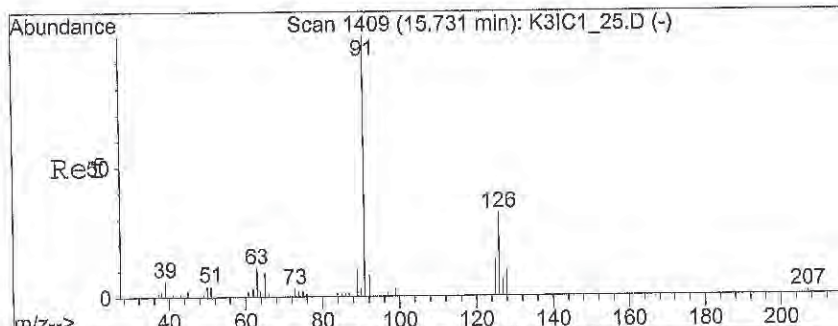
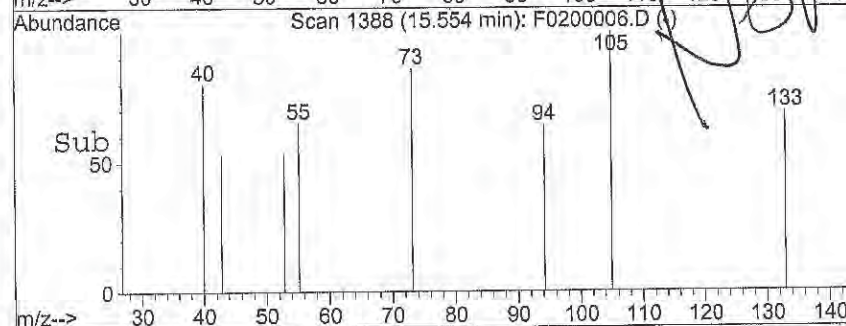
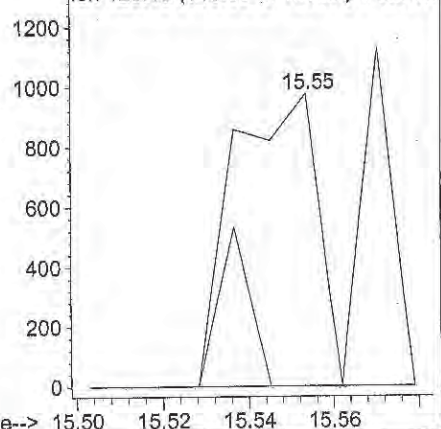
105 100

120 20.1 36.4 54.6#



Abundance

Ion 105.10 (104.80 to 105.80): F0200006.D



#65

4-Chlorotoluene

Concen: 0.04 ug/L

RT: 15.70 min Scan# 1405

Delta R.T. -0.03 min

Lab File: F0200006.D

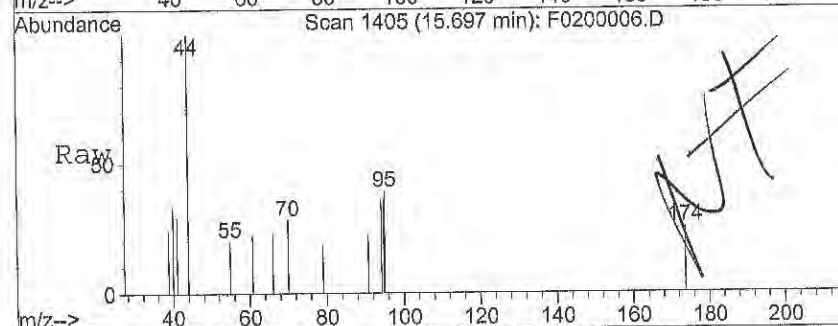
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 91 Resp: 585

Ion Ratio Lower Upper

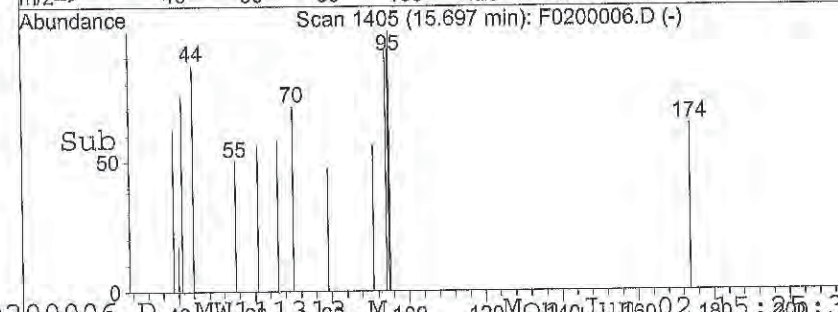
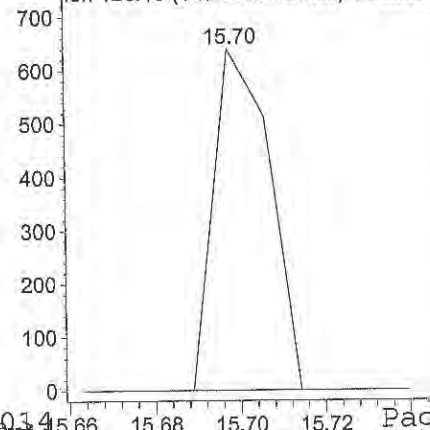
91 100

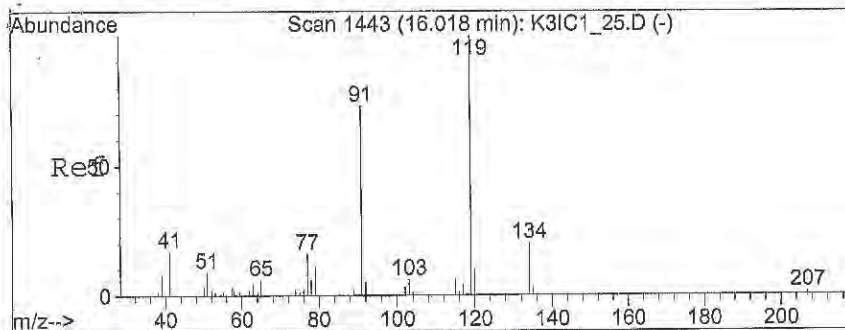
126 0.0 24.6 36.8#



Abundance

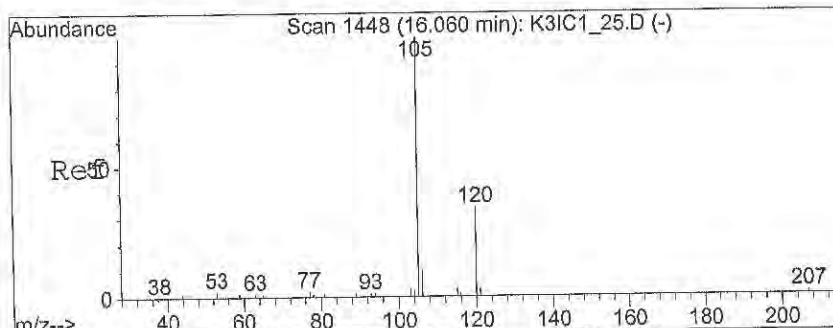
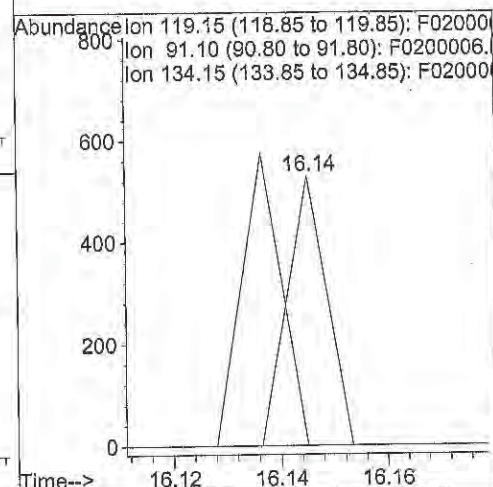
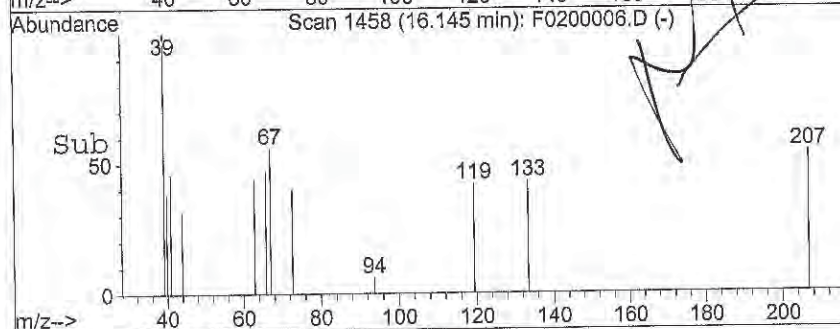
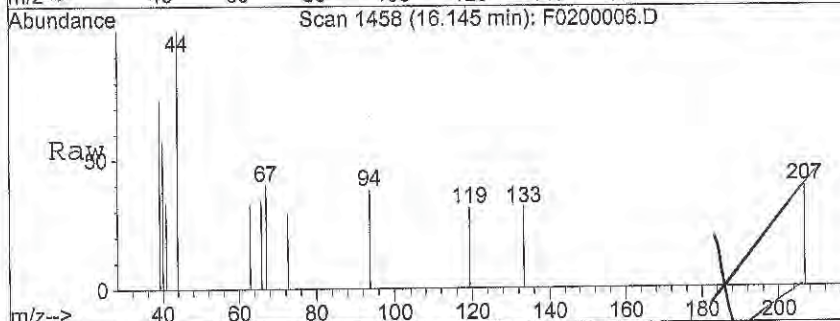
Ion 91.10 (90.80 to 91.80): F0200006.D





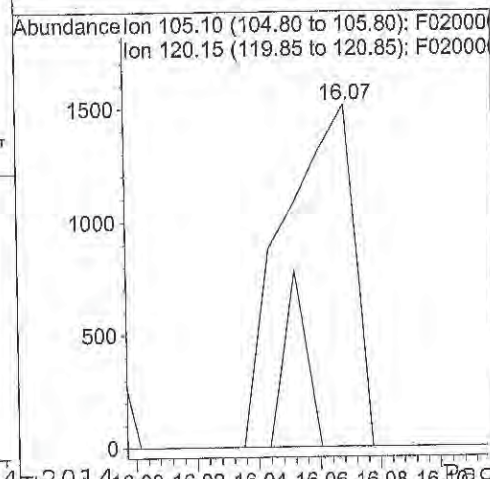
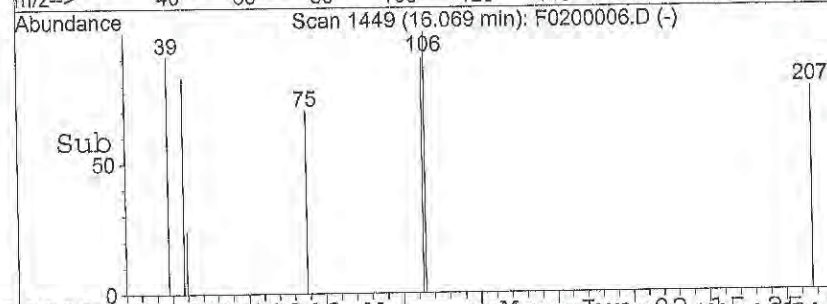
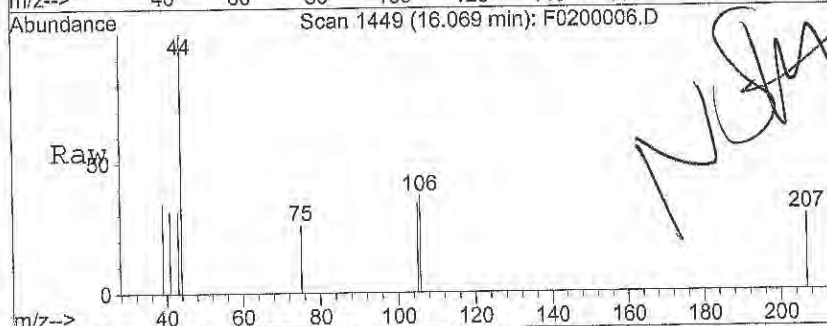
#66
tert-Butylbenzene
Concen: 0.02 ug/L
RT: 16.14 min Scan# 1458
Delta R.T. 0.13 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

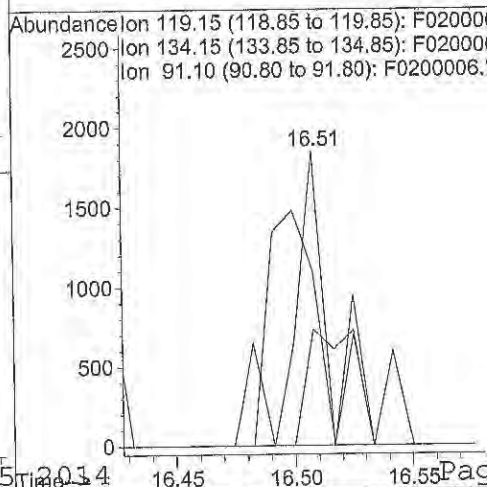
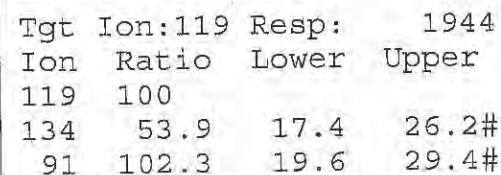
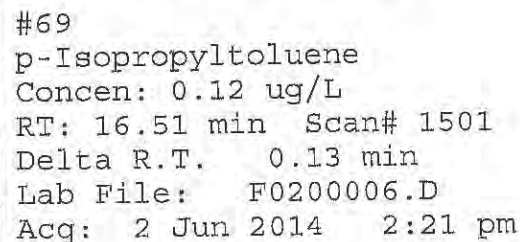
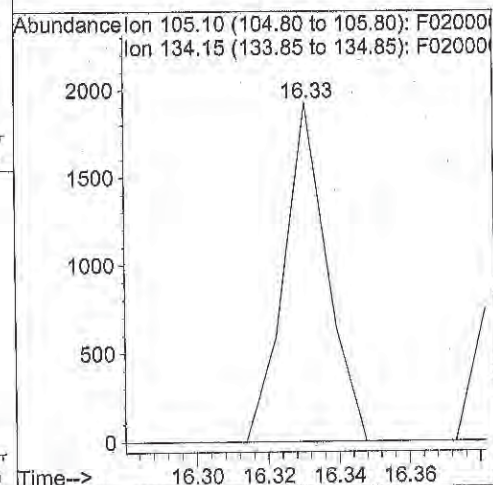
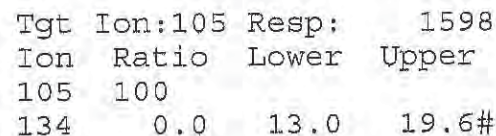
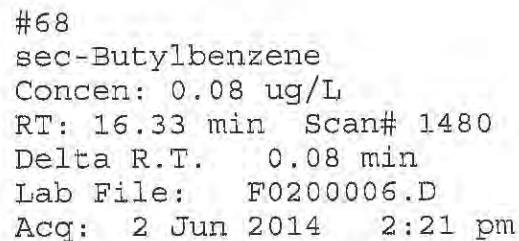
Tgt Ion:119 Resp: 269
Ion Ratio Lower Upper
119 100
91 0.0 56.3 84.5#
134 108.2 16.1 24.1#

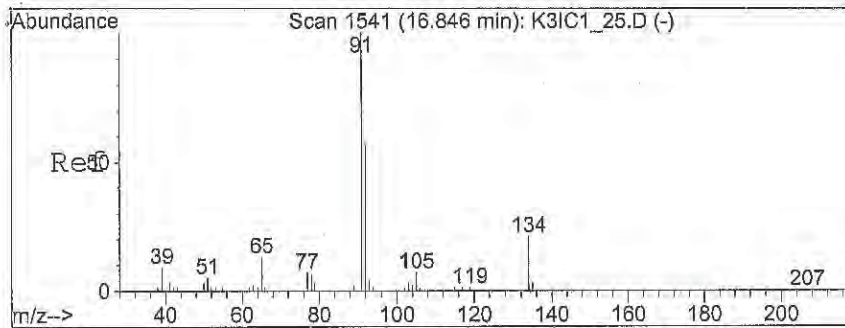


#67
1,2,4-Trimethylbenzene
Concen: 0.16 ug/L
RT: 16.07 min Scan# 1449
Delta R.T. 0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion:105 Resp: 2425
Ion Ratio Lower Upper
105 100
120 16.3 33.8 50.8#

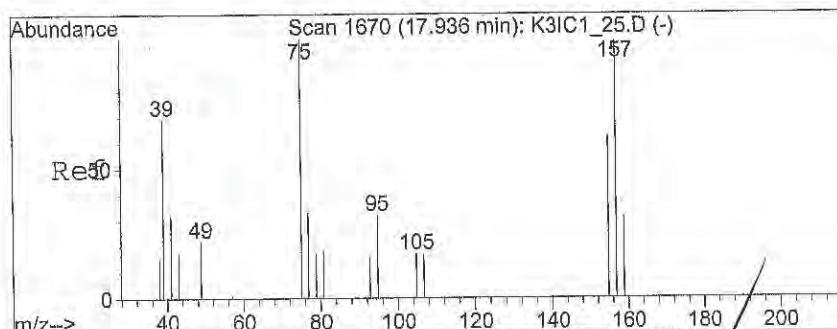
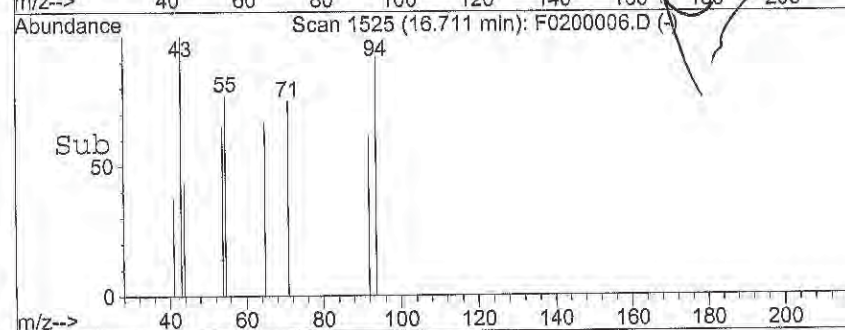
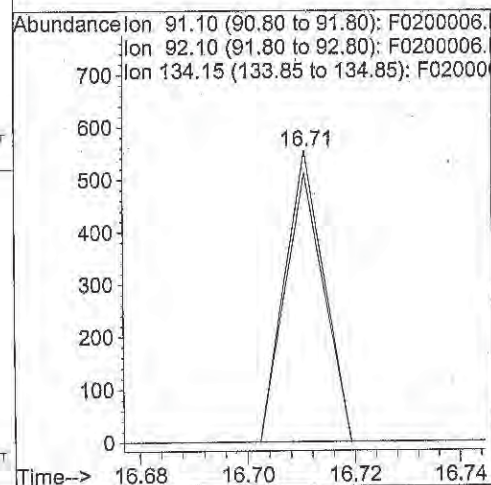
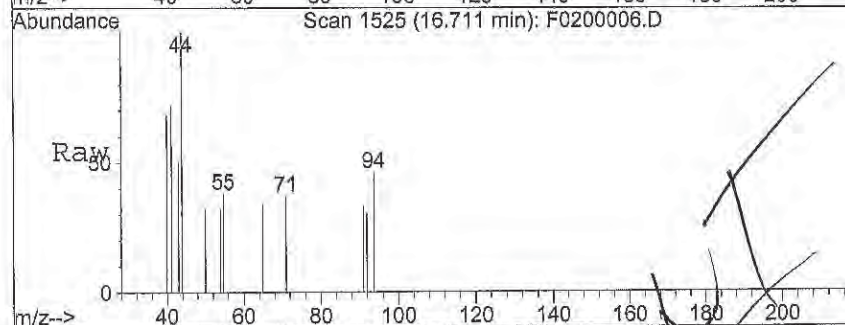






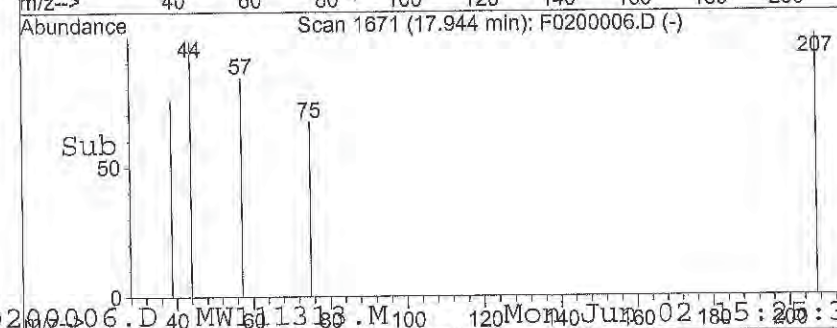
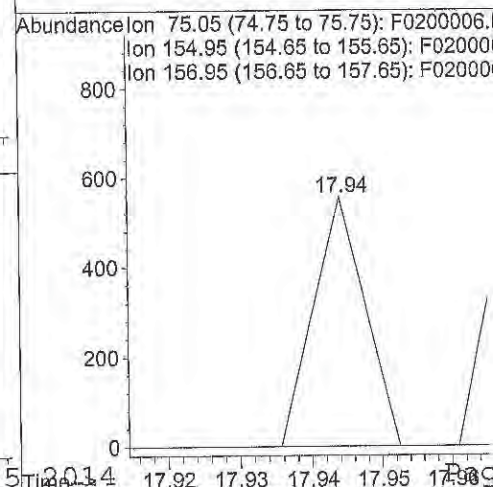
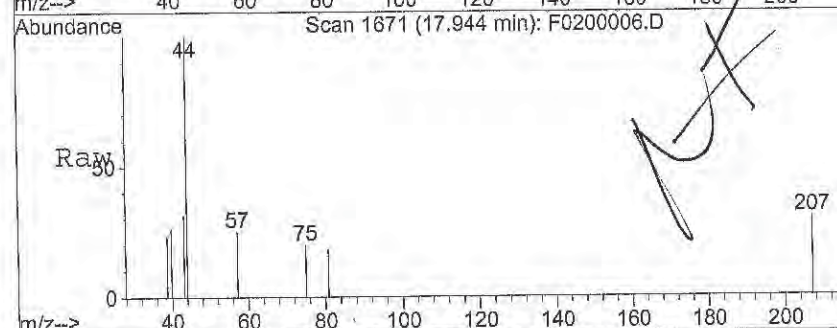
#72
 n-Butylbenzene
 Concen: 0.02 ug/L
 RT: 16.71 min Scan# 1525
 Delta R.T. -0.14 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

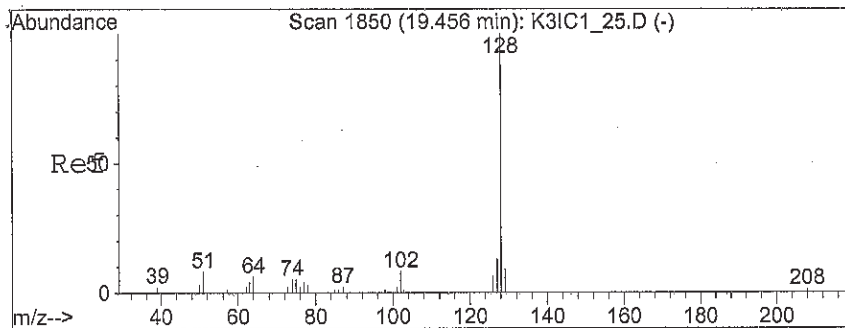
Tgt Ion:	91	Resp:	281
Ion	Ratio	Lower	Upper
91	100		
92	92.2	47.0	70.4#
134	0.0	18.1	27.1#



#74
 1,2-Dibromo-3-chloropropane
 Concen: 1.30 ug/L
 RT: 17.94 min Scan# 1671
 Delta R.T. 0.01 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

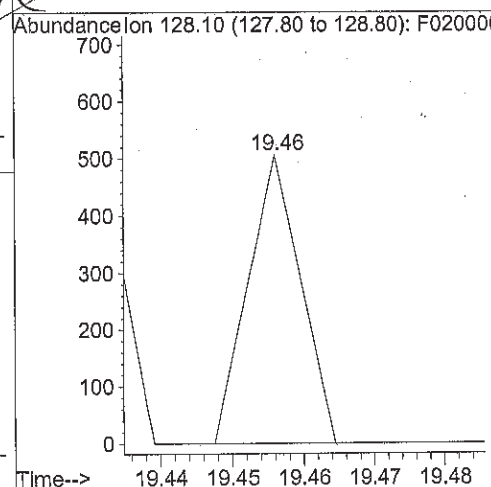
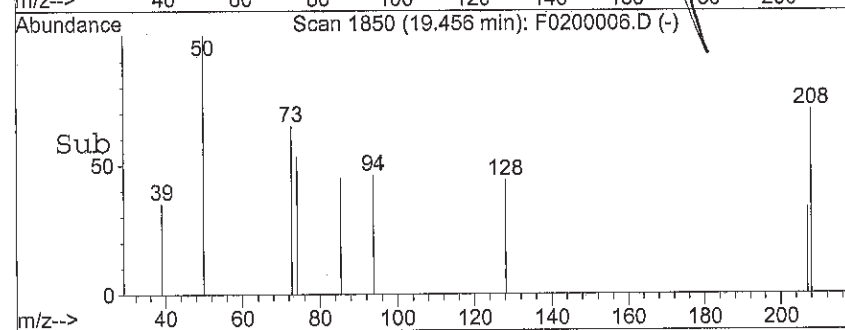
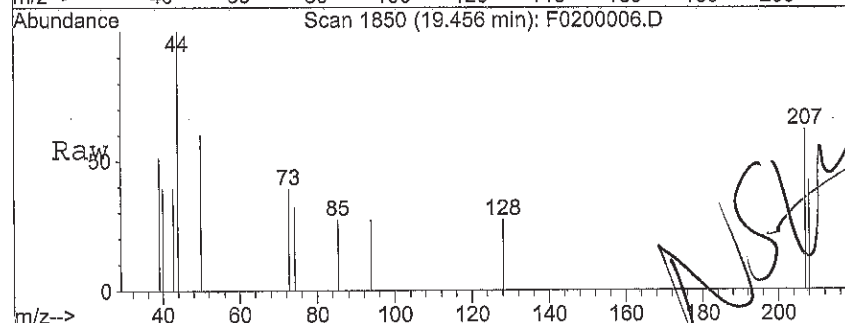
Tgt Ion:	75	Resp:	281
Ion	Ratio	Lower	Upper
75	100		
155	0.0	59.2	88.8#
157	0.0	77.0	115.6#





#77
 Naphthalene
 Concen: 0.02 ug/L
 RT: 19.46 min Scan# 1850
 Delta R.T. 0.00 min
 Lab File: F0200006.D
 Acq: 2 Jun 2014 2:21 pm

Tgt Ion:128 Resp: 257



Data File : C:\HPCHEM\1\DATA\060214L3\F0200006.D

Vial: 5

Acq On : 2 Jun 2014 2:21 pm

Operator: DN

Sample : 3F40201-05

Inst : GC/MS Ins

Misc : 100cc SVL-505-SA5C-SV-5.0-6.0

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 3 7:39 19114

Quant Results File: SS072713.RES

Quant Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN

Last Update : Mon Nov 18 10:31:39 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.29	96	1187680	12.50	ug/L	-0.02
7) Chlorobenzene-d5 (IS)	13.92	117	1116815	12.50	ug/L	-0.01
10) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	592053	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	421792m	13.66	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	109.28%
3) Chloroform-d (SU6)	9.18	84	599764m	13.53	ug/L	0.00
Spiked Amount	12.500	Range	70 - 140	Recovery	=	108.24%
4) Methylene Chloride-d2 (SU5)	7.07	86	301532	11.64	ug/L	0.00
Spiked Amount	12.500	Range	70 - 140	Recovery	=	93.12%
5) 1,2-Dichloroethane-d4 (SU2)	9.89	65	235924m	11.18	ug/L	-0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	89.44%
6) Benzene-d6 (SU7)	9.93	84	1171771	12.57	ug/L	-0.02
Spiked Amount	12.500	Range	70 - 140	Recovery	=	100.56%
8) Toluene-d8 (SU3)	12.21	98	1192475	11.25	ug/L	-0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	90.00%
9) 4-Bromofluorobenzene (SU4)	15.22	95	657296m	15.03	ug/L	-0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	120.24%

Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration

F0200006.D SS072713.M

Tue Jun 03 07:39:42 2014

Page 1

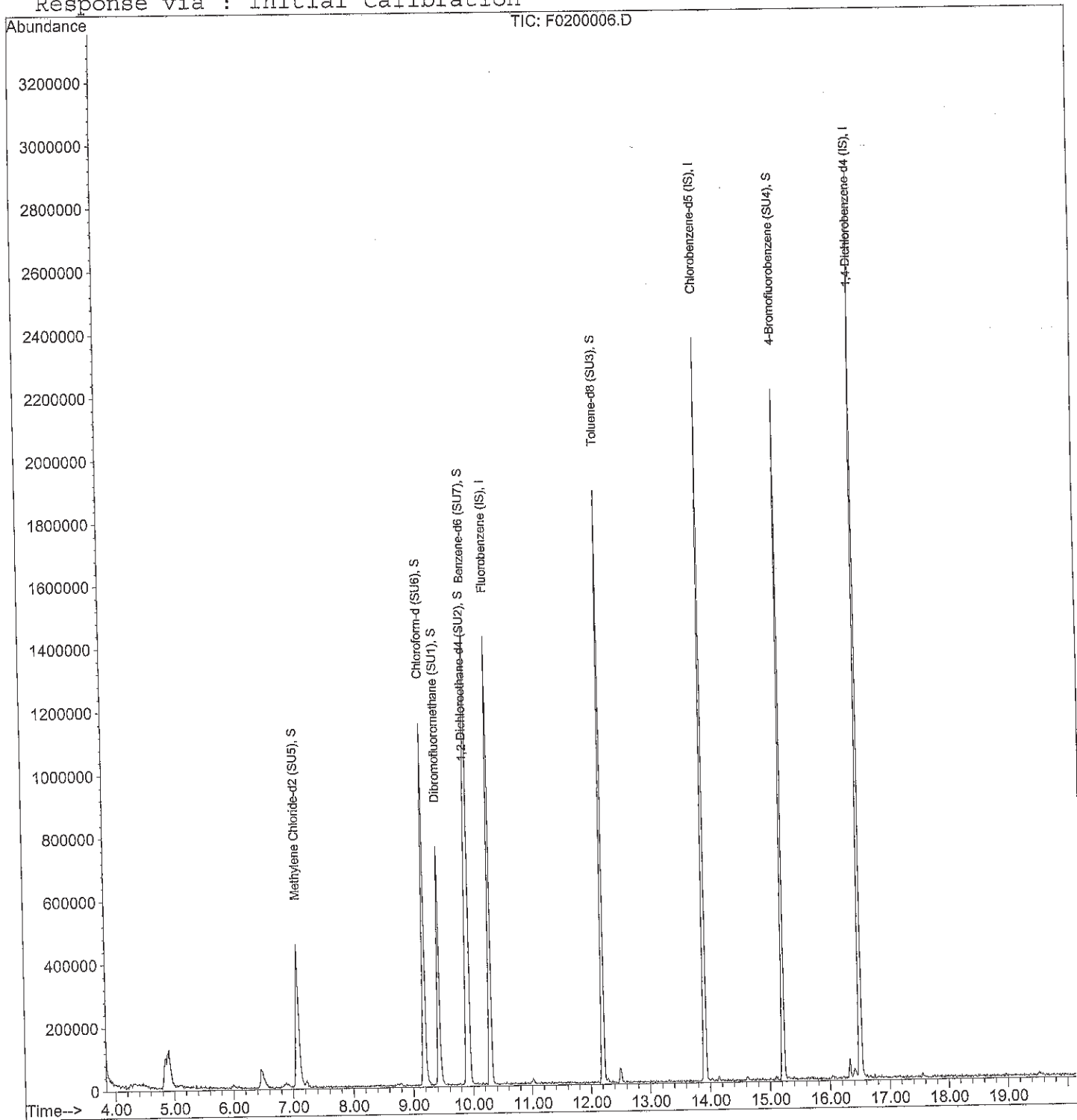
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200006.D
 Acq On : 2 Jun 2014 2:21 pm
 Sample : 3F40201-05
 Misc : 100cc SVL-505-SA5C-SV-5.0-6.0
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:39 19114

Vial: 5
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration



Data File : C:\HPCHEM\1\DATA\060214L3\F0200007.D
 Acq On : 2 Jun 2014 2:50 pm
 Sample : 3F40201-06
 Misc : 100cc SVL-505-SA5C-SV-10.0-11.0
 MS Integration Params: rteint.p
 Quant Time: Jun 2 15:42 19114

Vial: 6
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene (IS)	10.29	96	1178685	12.50	ug/L	0.00
38) Chlorobenzene-d5 (IS)	13.92	117	1115191	12.50	ug/L	0.00
59) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	566657	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	398228m	13.54	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	108.32%
28) 1,2-Dichloroethane-d4 (SU2)	9.89	65	381892m	13.67	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	109.36%
39) Toluene-d8 (SU3)	12.21	98	1167505	11.22	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	89.76%
58) 4-Bromofluorobenzene (SU4)	15.22	95	562049m	12.32	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	98.56%

Target Compounds

					Qvalue
3) (F12) Dichlorodifluorometh	4.10	85	2461	0.85 ug/L	#0.01796
4) Chloromethane	4.38	50	1497	-0.46 ug/L	NM 92
5) Vinyl Chloride	4.40	62	347	0.17 ug/L	# 24
6) Bromomethane	5.09	96	2458	0.12 ug/L	# 19
7) Chloroethane	5.31	64	1780	2.50 ug/L	# 97
8) (F11) Trichlorofluorometha	5.60	101	254	0.08 ug/L	# 46
10) 1,1-Dichloroethene	6.18	96	287	0.10 ug/L	# 1
11) Acetone	6.45	58	4266	4.34 ug/L	# 1
12) (IPA) Leak Check Compound	6.54	45	22773	160.79 ug/L	#NM 87
13) Carbon disulfide	6.83	76	5853	0.60 ug/L	# 91
14) Methylene Chloride	7.08	84	6500	2.01 ug/L	#NM 1
15) (TBA) tert-Butanol	7.15	59	264	1.31 ug/L	# 1
16) (MTBE) Methyl-t-butyl ethe	7.40	73	582	0.09 ug/L	#NM 42
17) trans-1,2-Dichloroethene	7.58	96	331	0.10 ug/L	# 1
18) 1,1-Dichloroethane	8.06	63	312	0.06 ug/L	# 42
19) cis-1,2-Dichloroethene	8.86	96	310	0.08 ug/L	# 3
20) 2,2-Dichloropropane	8.79	77	736	0.16 ug/L	# 2
22) (DIPE) Diisopropyl Ether	7.91	45	287	0.03 ug/L	#NM 21
23) Bromochloromethane	9.12	128	426	0.27 ug/L	# 1
24) Chloroform	9.20	83	3862	0.63 ug/L	# 64
25) (ETBE) 2-ethoxy 2-methyl p	8.37	59	944	0.11 ug/L	# 44
29) 1,1-Dichloropropene	9.78	75	297	0.07 ug/L	# 41

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060214L3\F0200007.D

Vial: 6

Acq On : 2 Jun 2014 2:50 pm

Operator: DN

Sample : 3F40201-06

Inst : GC/MS Ins

Misc : 100cc SVL-505-SA5C-SV-10.0-11.0

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 15:42 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
30) Carbon Tetrachloride	9.54	117	439	0.11	ug/L #	2
31) Benzene	9.99	78	862	0.08	ug/L #	57
32) 1,2-Dichloroethane	9.93	62	12462	3.18	ug/L #	1
33) Trichloroethene	10.88	130	305	0.09	ug/L #	4
34) 1,2-Dichloropropane	11.02	63	659	0.25	ug/L #	2
35) Dibromomethane	11.21	93	369	0.18	ug/L #	5
36) Bromodichloromethane	11.33	83	574	0.14	ug/L #	21
37) cis-1,3-Dichloropropene	11.95	75	256	0.06	ug/L #	1
40) (MIBK) 4-Methyl-2-Pentanone	12.04	43	392	0.18	ug/L #	100
41) Toluene	12.28	91	2946	0.19	ug/L #	80
42) trans-1,3-Dichloropropene	12.52	75	649	0.13	ug/L #	72
45) 1,3-Dichloropropane	12.76	76	289	0.06	ug/L #	1
46) 2-Hexanone	12.92	43	1121	0.46	ug/L #	37
47) Dibromochloromethane	13.45	129	289	0.07	ug/L #	1
51) Ethylbenzene	14.02	91	2441	0.14	ug/L #	45
52) m,p-Xylenes	14.15	106	1090	0.18	ug/L #	61
53) o-Xylene	14.62	106	557	0.09	ug/L #	40
54) Styrene	14.63	104	2596	-0.57	ug/L #	60
56) Isopropylbenzene	14.99	105	276	0.02	ug/L #	1
57) 1,2,3-Trichloropropane	15.42	75	325	0.07	ug/L #	1
60) 1,1,2,2-Tetrachloroethane	15.35	83	377	0.09	ug/L #	18
61) Bromobenzene	15.20	156	349	0.08	ug/L #	1
62) n-Propylbenzene	15.48	91	915	0.04	ug/L #	56
63) 2-Chlorotoluene	15.60	91	368	0.03	ug/L #	45
64) 1,3,5-Trimethylbenzene	15.62	105	629	0.04	ug/L #	96
65) 4-Chlorotoluene	15.80	91	368	0.03	ug/L #	44
66) tert-Butylbenzene	16.07	119	358	0.03	ug/L #	14
67) 1,2,4-Trimethylbenzene	16.07	105	2155	0.15	ug/L #	77
68) sec-Butylbenzene	16.24	105	309	0.02	ug/L #	62
69) p-Isopropyltoluene	16.39	119	1371	0.09	ug/L #	73
70) 1,3-Dichlorobenzene	16.55	146	387	0.05	ug/L #	24
71) 1,4-Dichlorobenzene	16.55	146	387	0.05	ug/L #	22
72) n-Butylbenzene	16.84	91	1590	0.10	ug/L #	30
74) 1,2-Dibromo-3-chloropropan	17.94	75	305	1.35	ug/L #	6
77) Naphthalene	19.46	128	286	0.03	ug/L	100

(#)=qualifier out of range (m)=manual integration

F0200007.D MW111313.M

Mon Jun 02 15:42:58 2014

Page 2

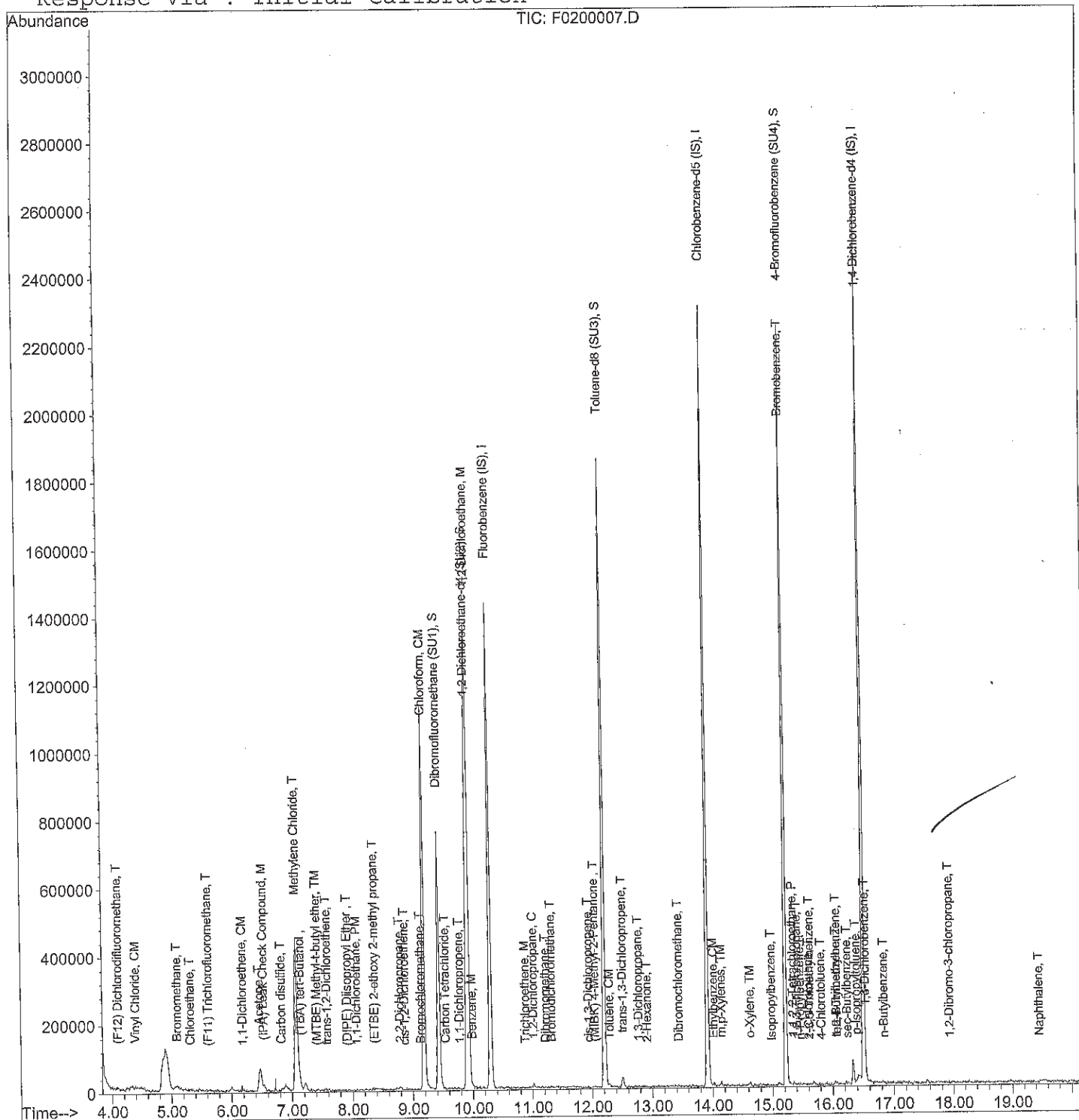
Quantitation Report

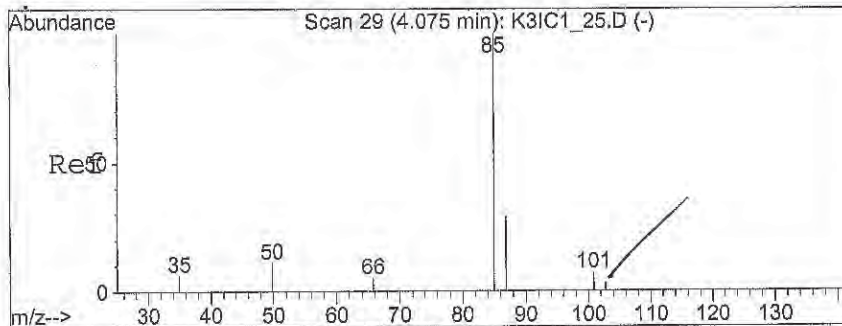
Data File : C:\HPCHEM\1\DATA\060214L3\F0200007.D
 Acq On : 2 Jun 2014 2:50 pm
 Sample : 3F40201-06
 Misc : 100cc SVL-505-SA5C-SV-10.0-11.0
 MS Integration Params: rteint.p
 Quant Time: Jun 2 15:42 19114

Vial: 6
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: MW111313.RES

Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration





#3

(F12) Dichlorodifluoromethane

Concen: 0.85 ug/L

RT: 4.10 min Scan# 32

Delta R.T. 0.02 min

Lab File: F0200007.D

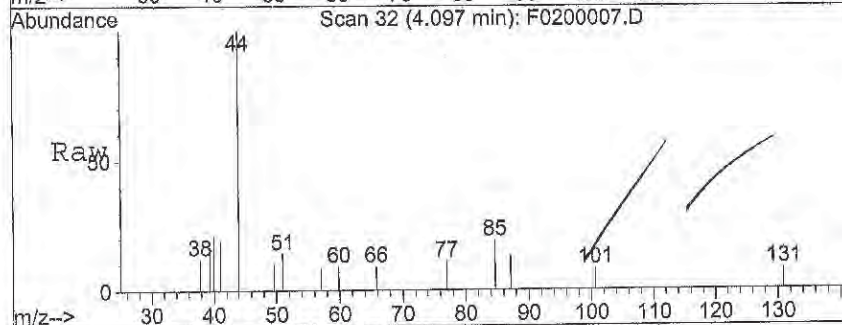
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 85 Resp: 2461

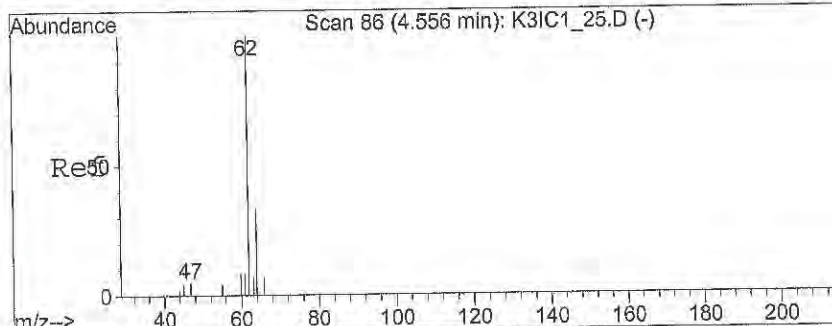
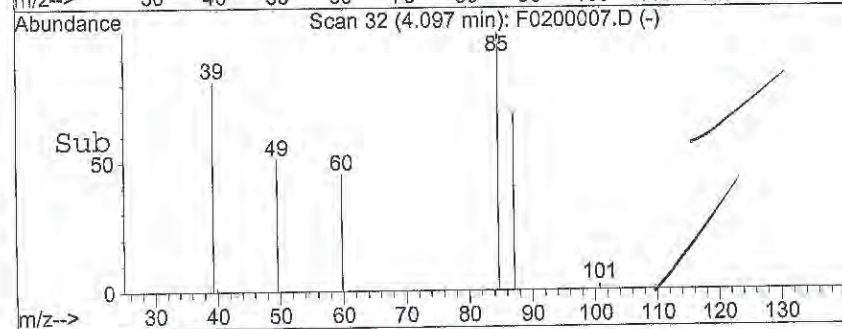
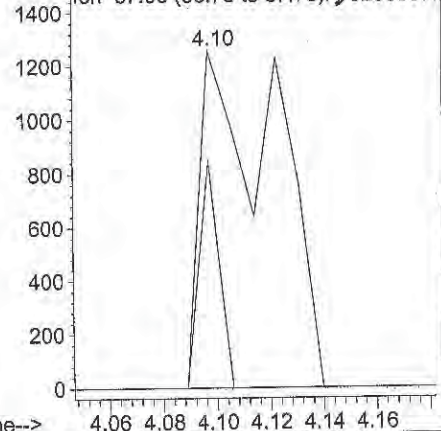
Ion Ratio Lower Upper

85 100

87 17.5 24.6 37.0#



Abundance Ion 84.95 (84.65 to 85.65): F0200007.D
Ion 87.05 (86.75 to 87.75): F0200007.D



#5

Vinyl Chloride

Concen: 0.17 ug/L

RT: 4.40 min Scan# 68

Delta R.T. -0.15 min

Lab File: F0200007.D

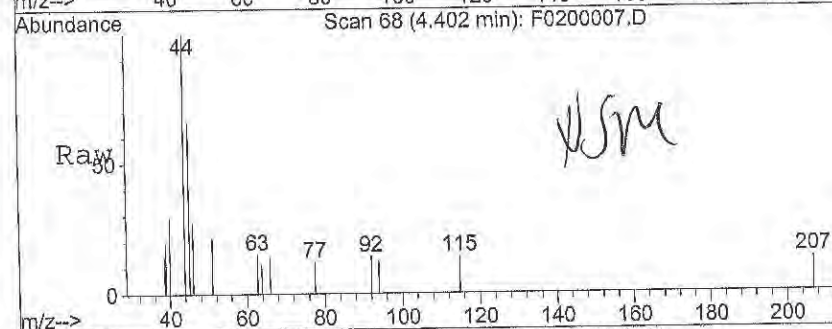
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 62 Resp: 347

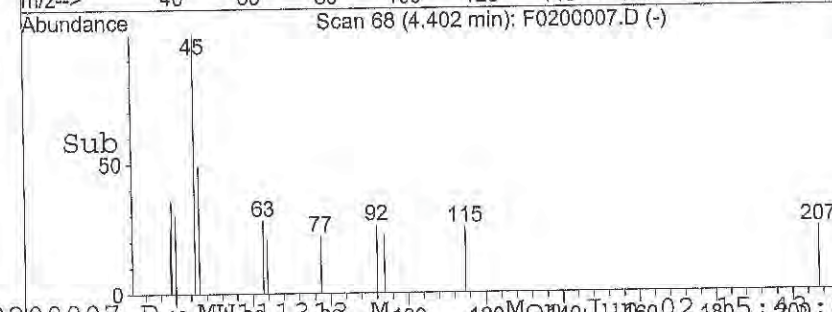
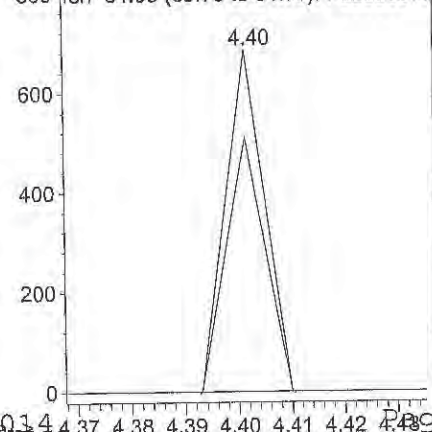
Ion Ratio Lower Upper

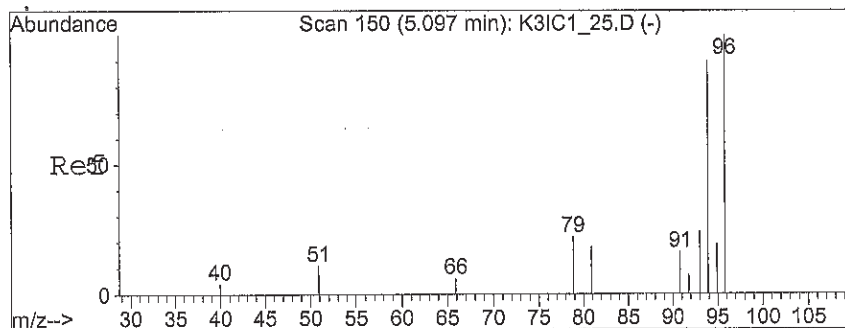
62 100

64 74.4 25.6 38.4#



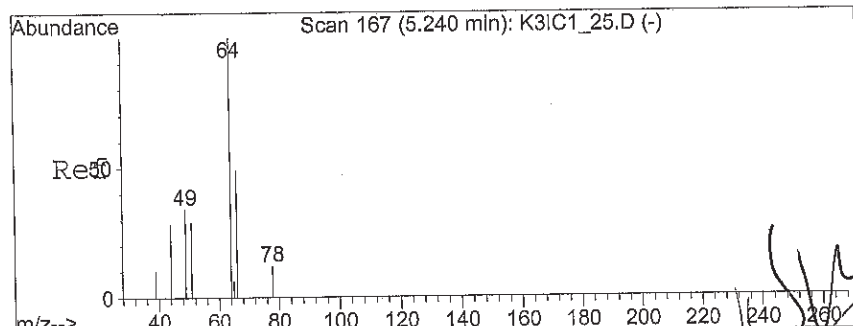
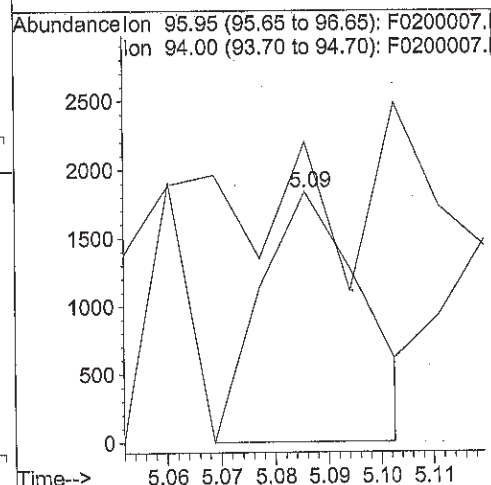
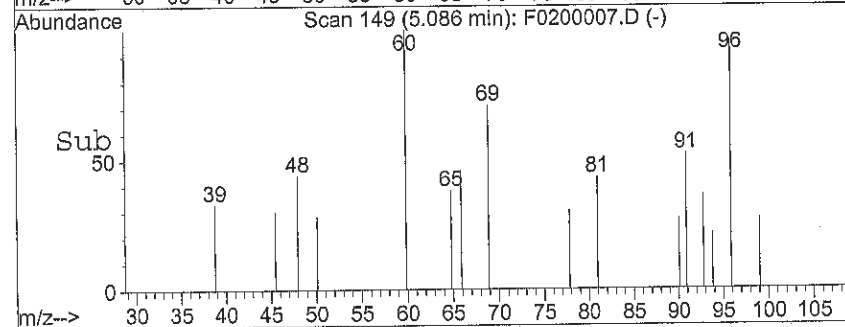
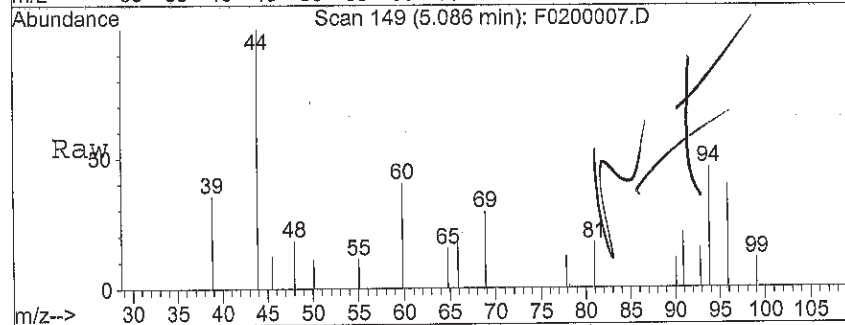
Abundance Ion 62.05 (61.75 to 62.75): F0200007.D
Ion 64.05 (63.75 to 64.75): F0200007.D





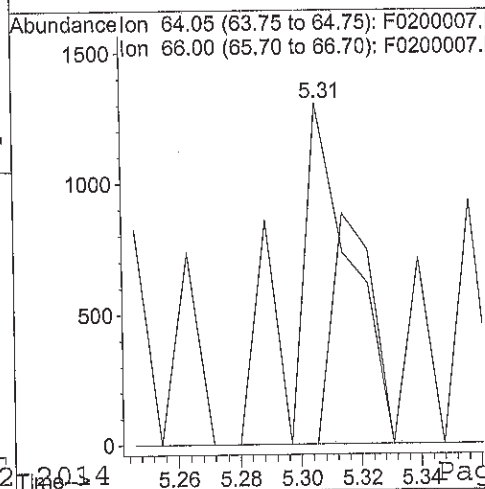
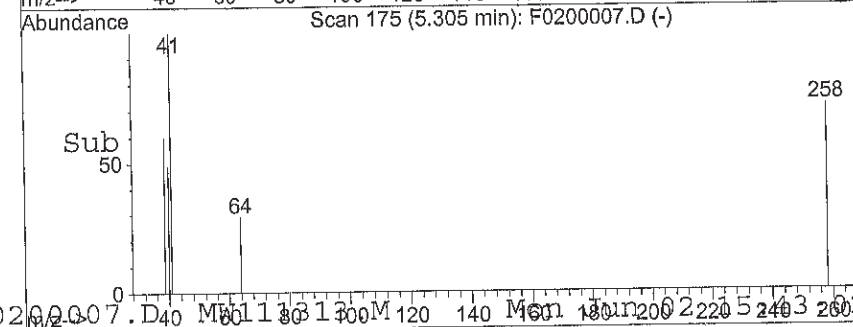
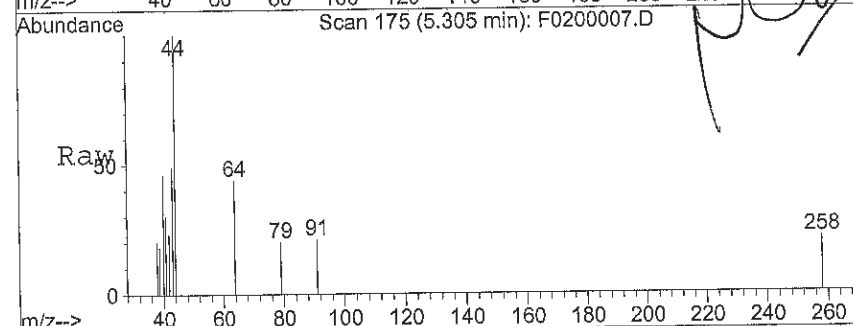
#6
Bromomethane
Concen: 0.12 ug/L
RT: 5.09 min Scan# 149
Delta R.T. -0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

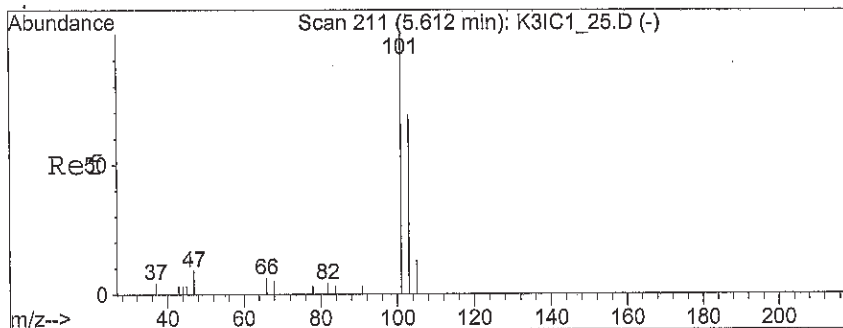
Tgt Ion: 96 Resp: 2458
Ion Ratio Lower Upper
96 100
94 33.6 101.0 151.4#



#7
Chloroethane
Concen: 2.50 ug/L
RT: 5.31 min Scan# 175
Delta R.T. 0.07 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 64 Resp: 1780
Ion Ratio Lower Upper
64 100
66 46.2 35.4 53.0





#8

(F11) Trichlorofluoromethane

Concen: 0.08 ug/L

RT: 5.60 min Scan# 210

Delta R.T. -0.01 min

Lab File: F0200007.D

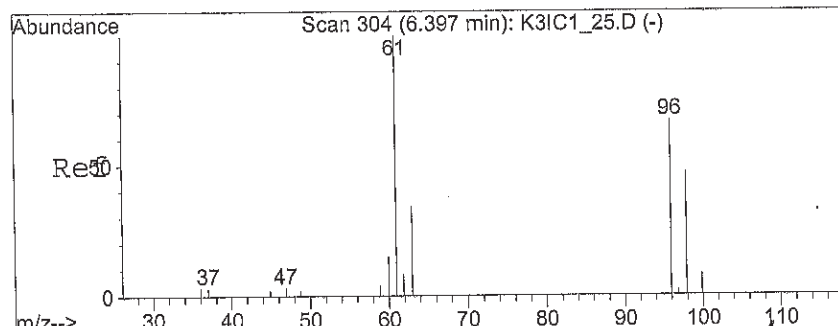
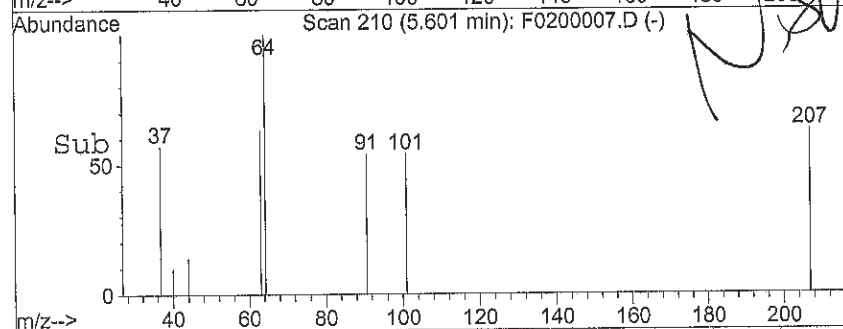
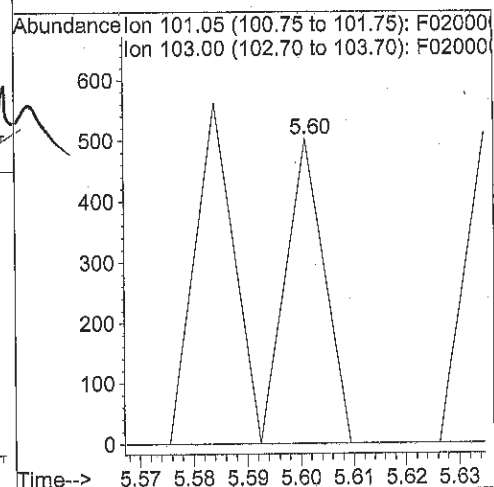
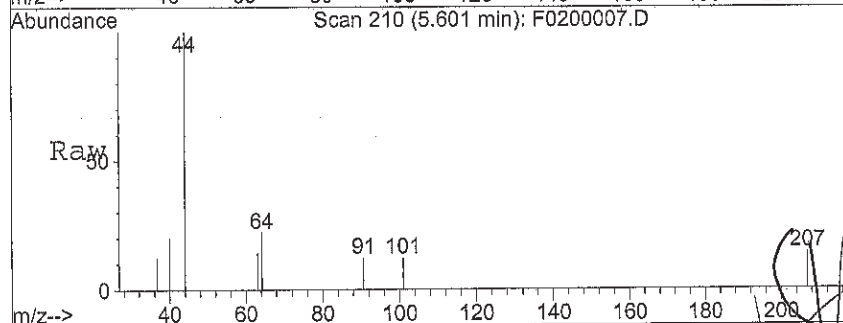
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 101 Resp: 254

Ion Ratio Lower Upper

101 100

103 111.8 54.5 81.7#



#10

1,1-Dichloroethene

Concen: 0.10 ug/L

RT: 6.18 min Scan# 279

Delta R.T. -0.21 min

Lab File: F0200007.D

Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 96 Resp: 287

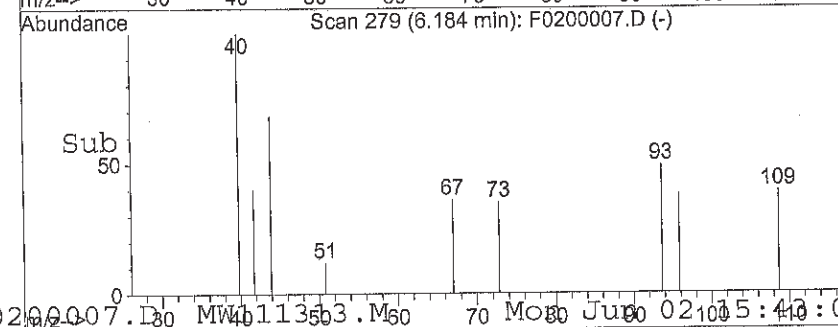
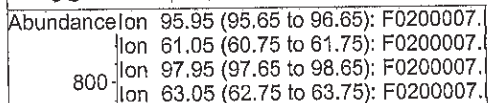
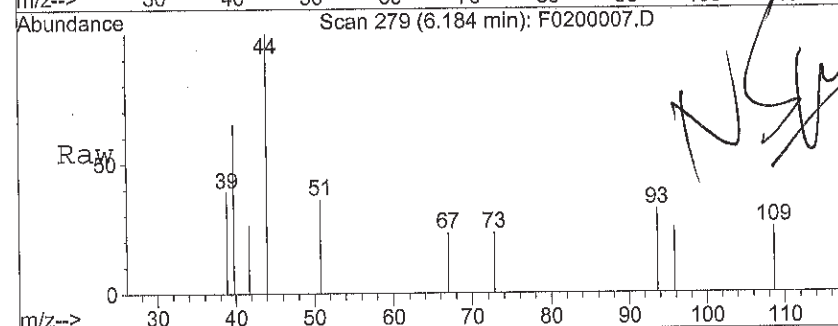
Ion Ratio Lower Upper

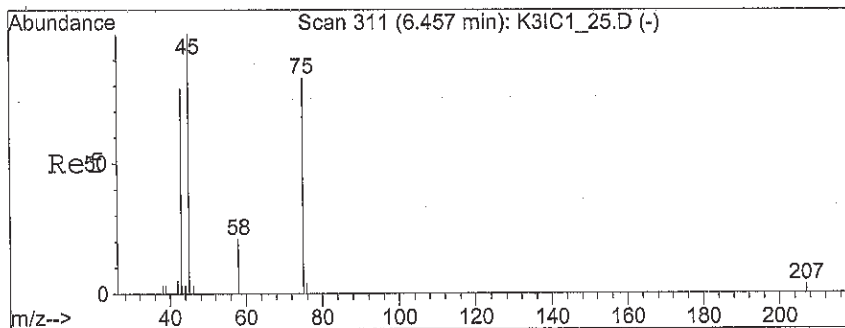
96 100

61 0.0 130.0 195.0#

98 0.0 56.2 84.4#

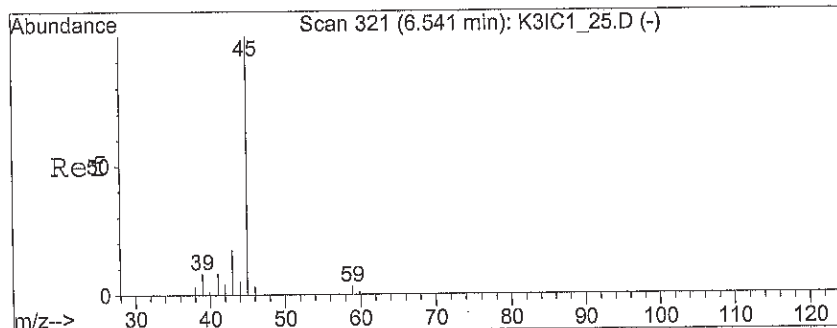
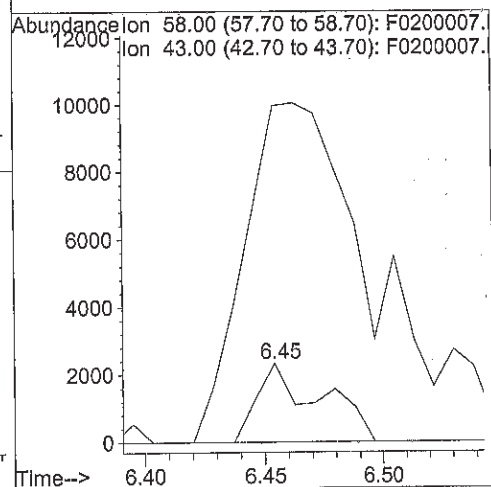
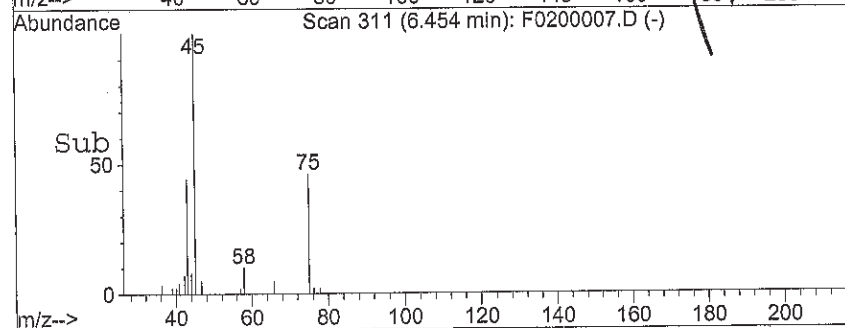
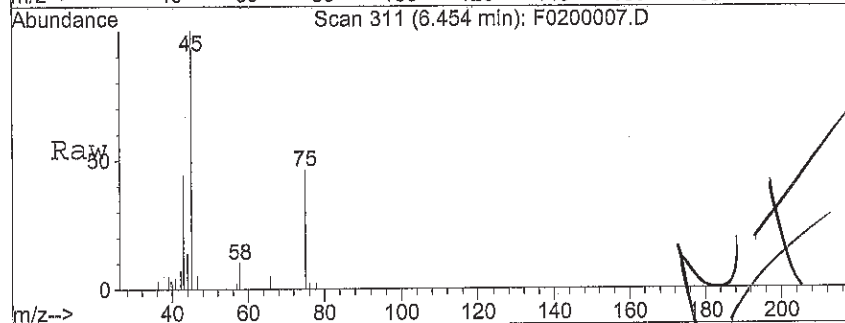
63 0.0 41.5 62.3#





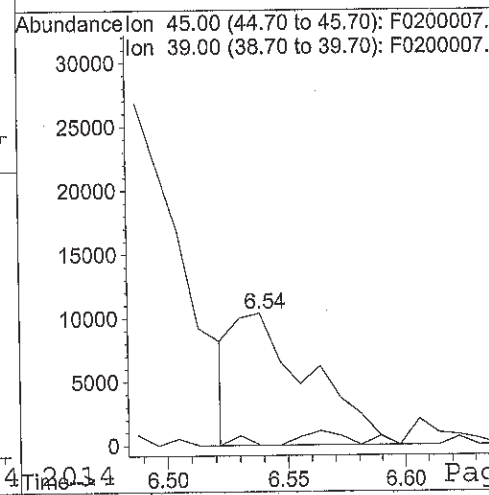
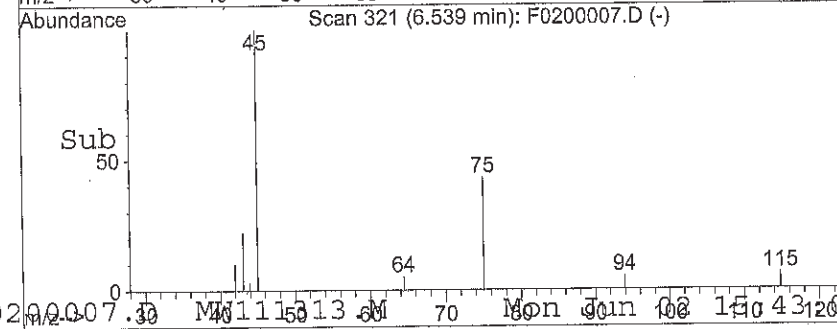
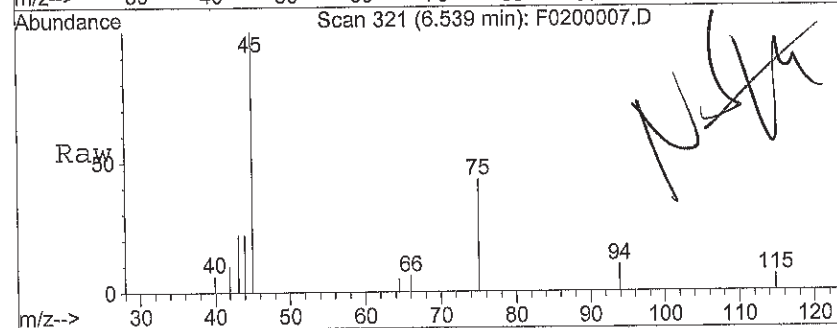
#11
Acetone
Concen: 4.34 ug/L
RT: 6.45 min Scan# 311
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

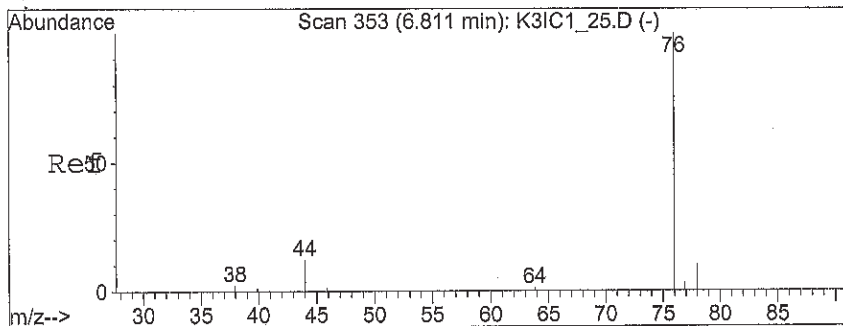
Tgt Ion: 58 Resp: 4266
Ion Ratio Lower Upper
58 100
43 937.8 360.9 541.3#



#12
(IPA) Leak Check Compound
Concen: 160.79 ug/L
RT: 6.54 min Scan# 321
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

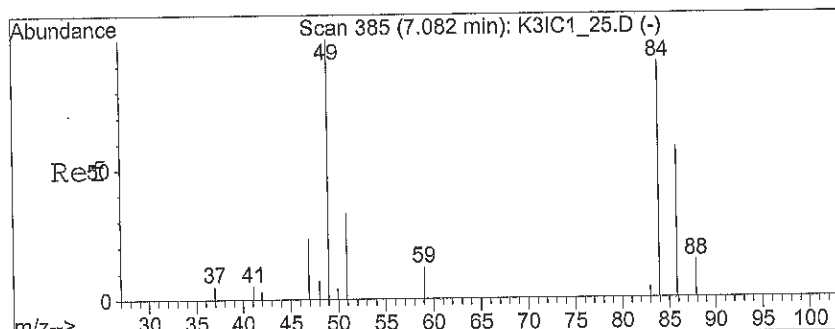
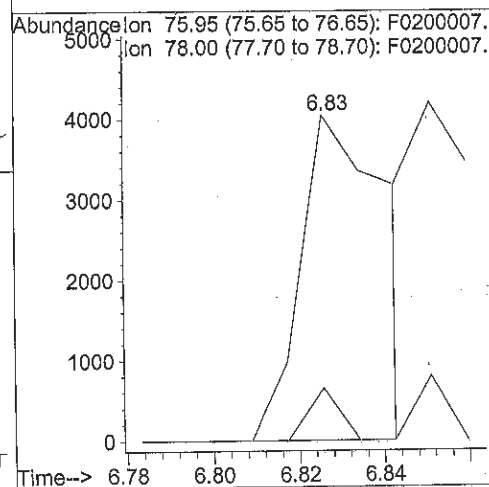
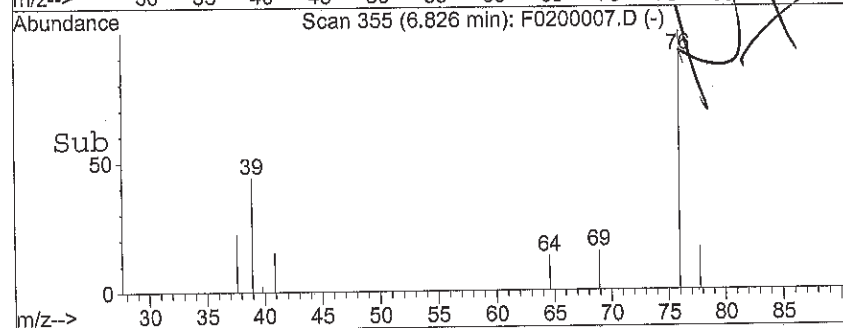
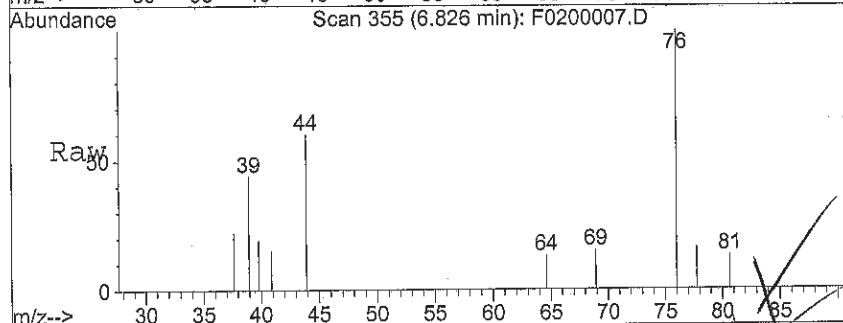
Tgt Ion: 45 Resp: 22773
Ion Ratio Lower Upper
45 100
39 1.7 4.9 7.3#





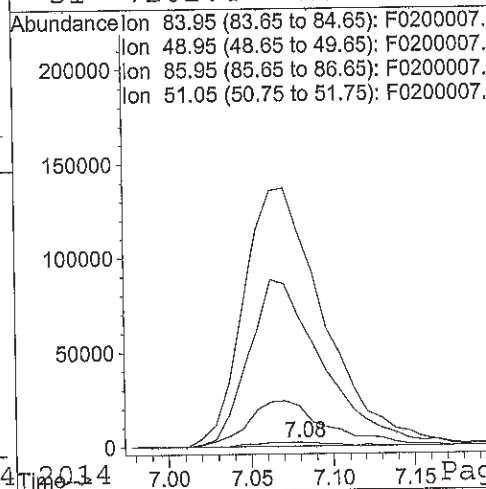
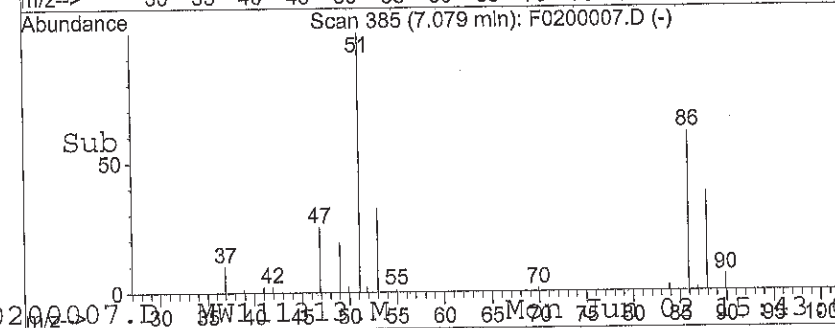
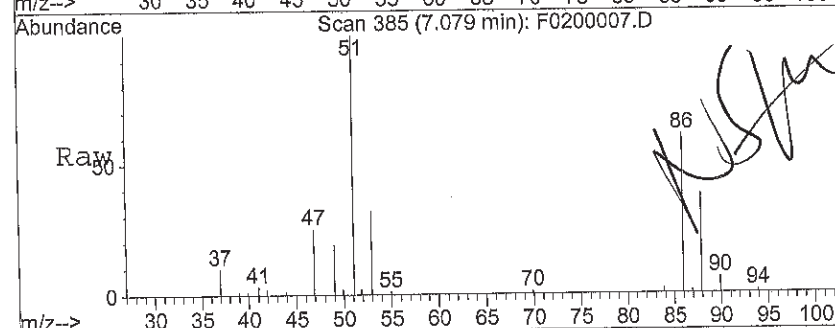
#13
Carbon disulfide
Concen: 0.60 ug/L
RT: 6.83 min Scan# 355
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

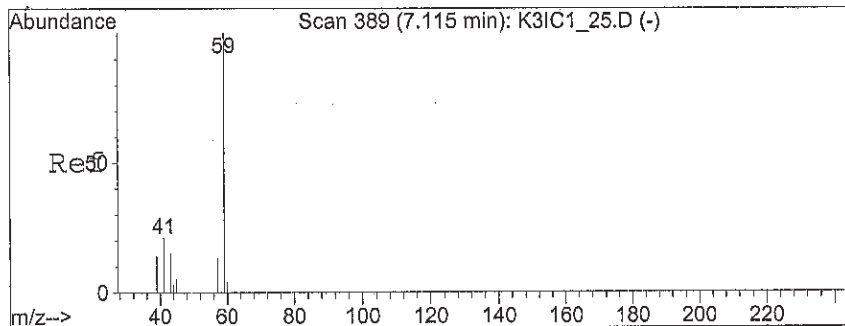
Tgt Ion: 76 Resp: 5853
Ion Ratio Lower Upper
76 100
78 5.6 7.0 10.4#



#14
Methylene Chloride
Concen: 2.01 ug/L
RT: 7.08 min Scan# 385
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

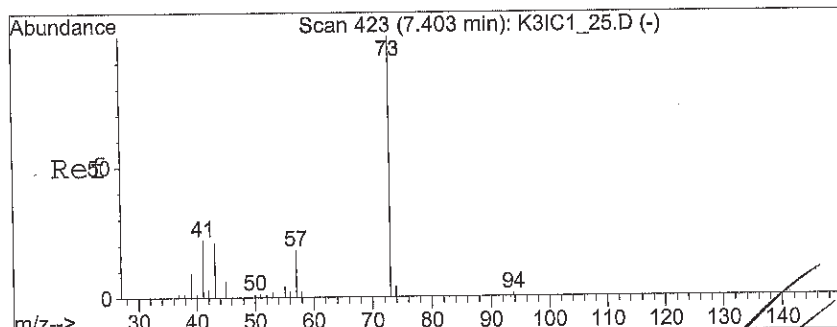
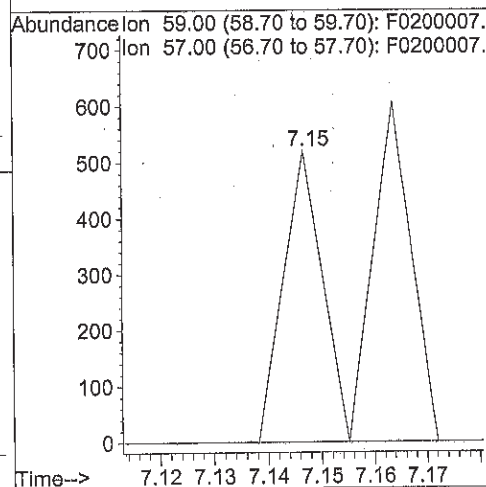
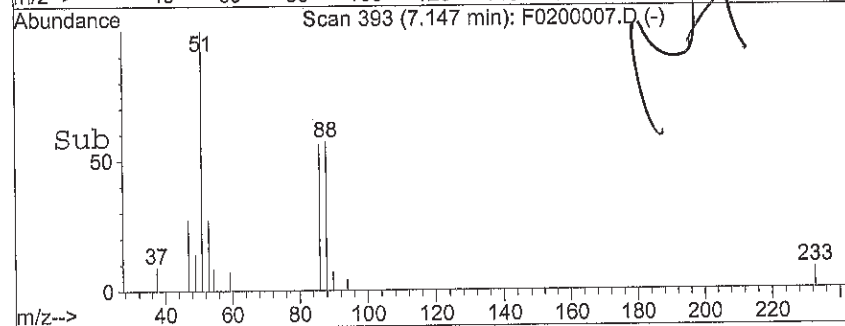
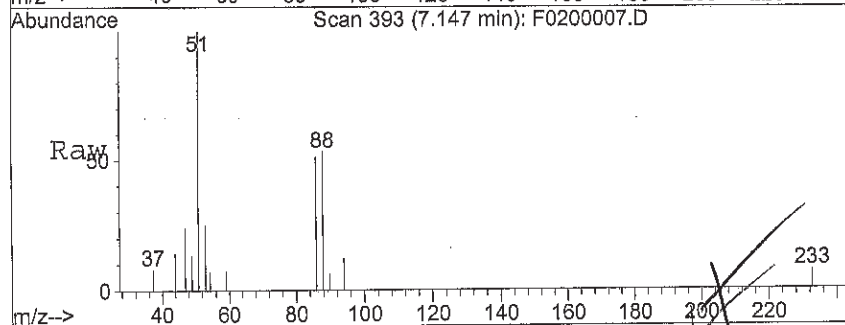
Tgt Ion: 84 Resp: 6500
Ion Ratio Lower Upper
84 100
49 1231.9 89.8 134.6#
86 4336.4 51.1 76.7#
51 7202.4 28.5 42.7#





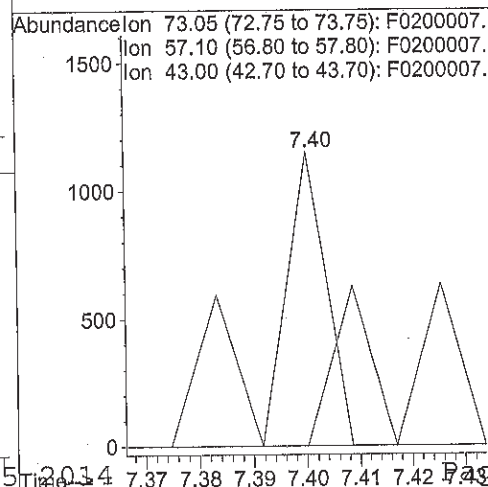
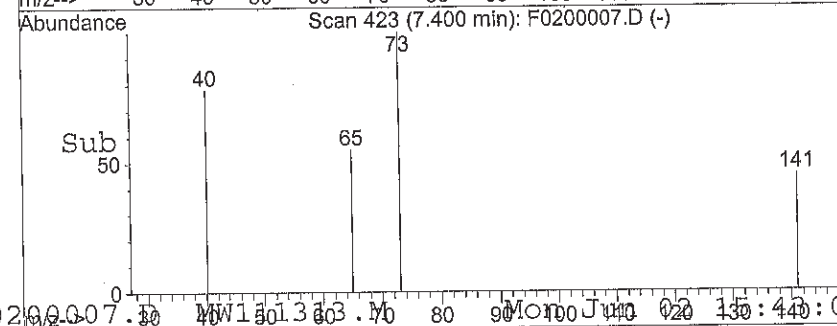
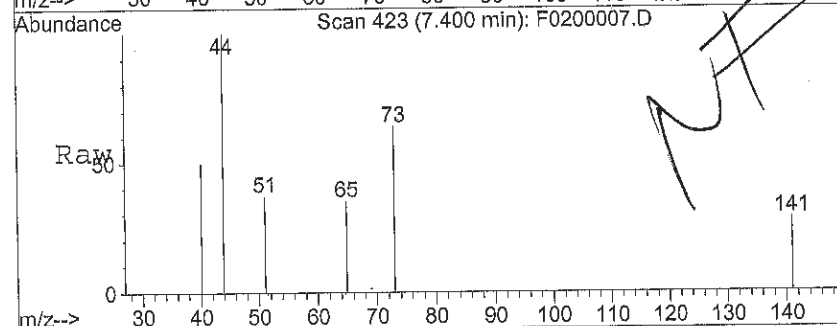
#15
 (TBA) tert-Butanol
 Concen: 1.31 ug/L
 RT: 7.15 min Scan# 393
 Delta R.T. 0.03 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

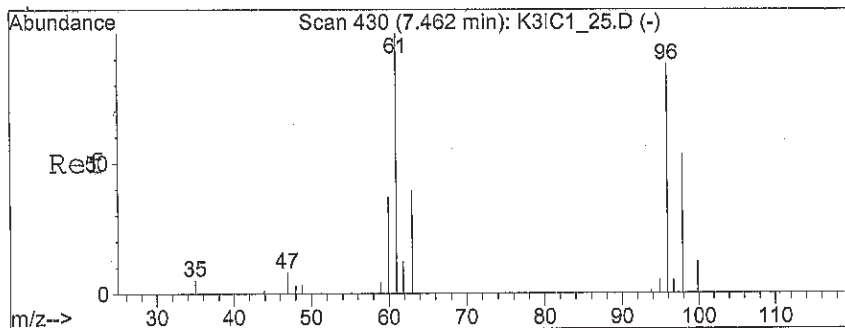
Tgt Ion: 59 Resp: 264
 Ion Ratio Lower Upper
 59 100
 57 116.3 6.4 9.6#



#16
 (MTBE) Methyl-t-butyl ether
 Concen: 0.09 ug/L
 RT: 7.40 min Scan# 423
 Delta R.T. -0.00 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 73 Resp: 582
 Ion Ratio Lower Upper
 73 100
 57 51.9 15.8 23.8#
 43 0.0 18.4 27.6#





#17

trans-1,2-Dichloroethene

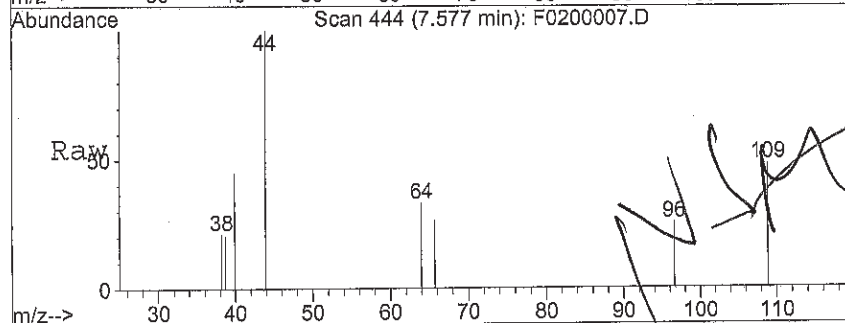
Concen: 0.10 ug/L

RT: 7.58 min Scan# 444

Delta R.T. 0.12 min

Lab File: F0200007.D

Acq: 2 Jun 2014 2:50 pm



Tgt Ion: 96 Resp: 331

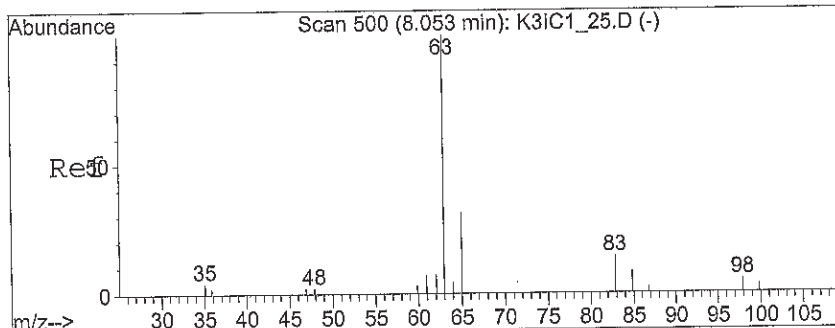
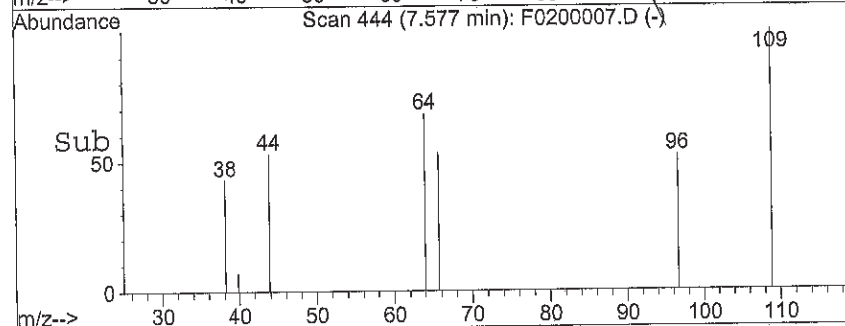
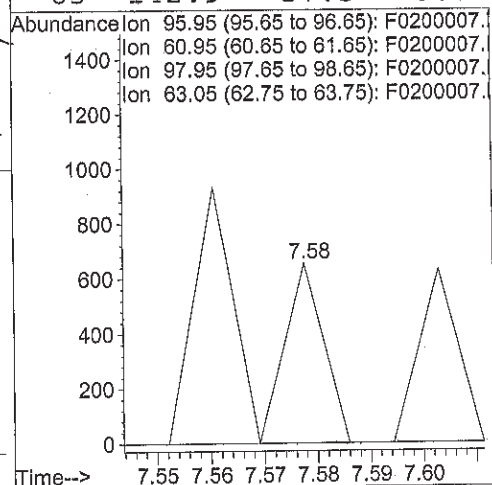
Ion Ratio Lower Upper

96 100

61 0.0 104.2 156.2#

98 0.0 50.2 75.4#

63 142.9 37.5 56.3#



#18

1,1-Dichloroethane

Concen: 0.06 ug/L

RT: 8.06 min Scan# 501

Delta R.T. 0.01 min

Lab File: F0200007.D

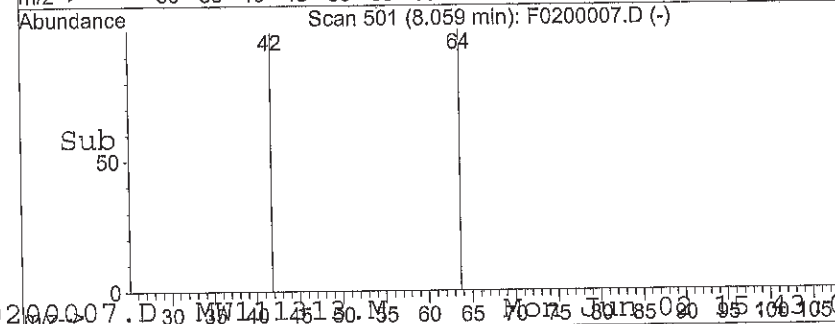
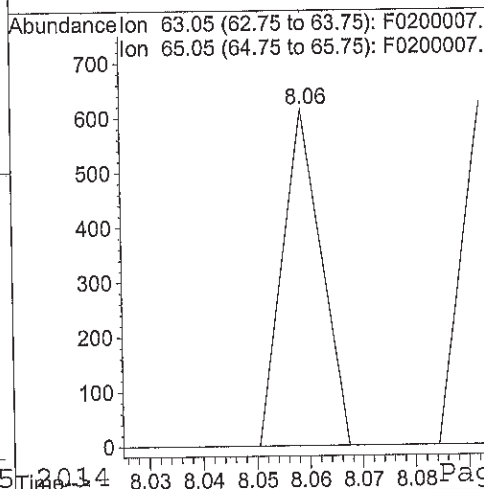
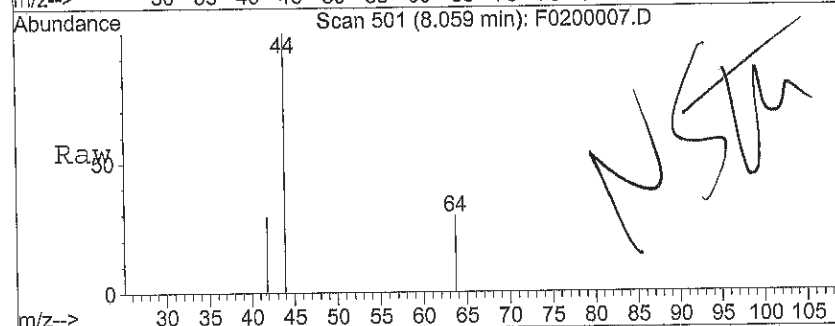
Acq: 2 Jun 2014 2:50 pm

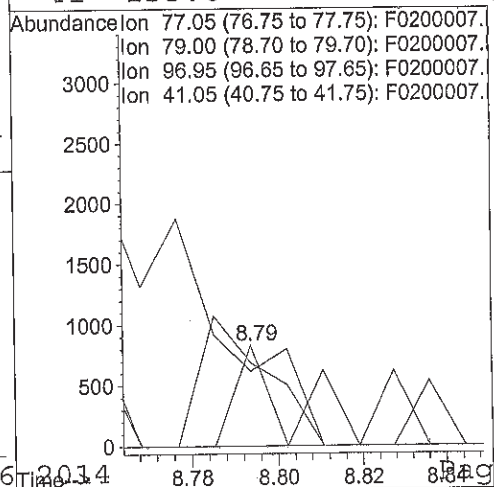
Tgt Ion: 63 Resp: 312

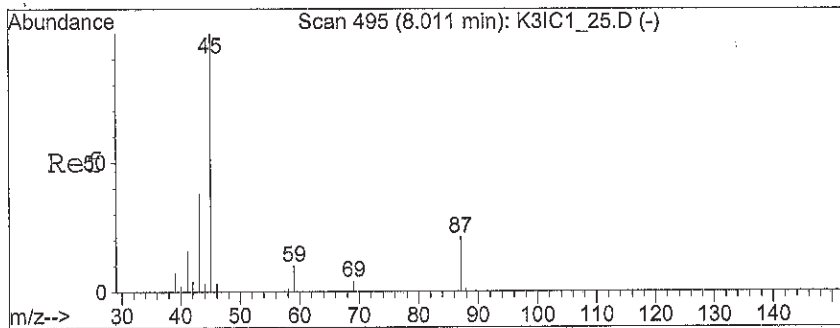
Ion Ratio Lower Upper

63 100

65 0.0 25.8 38.8#

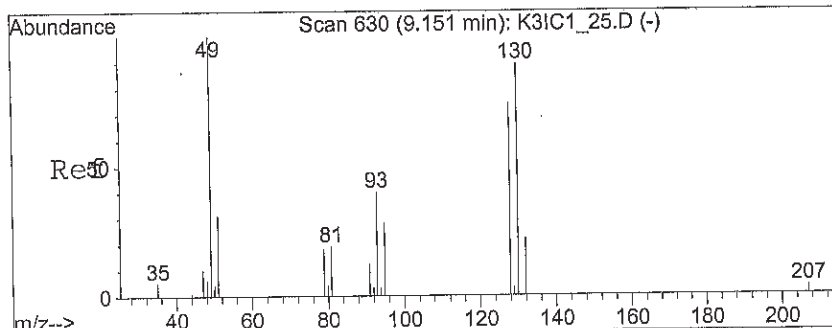
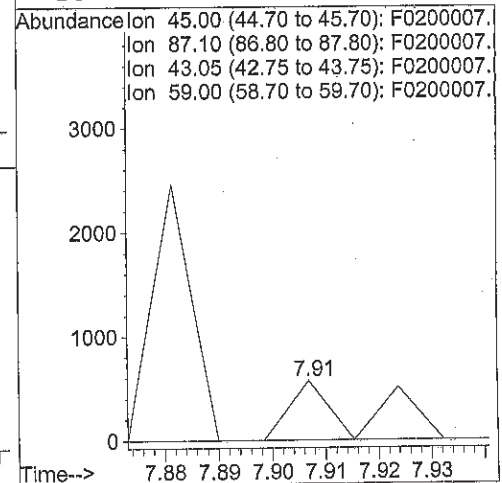
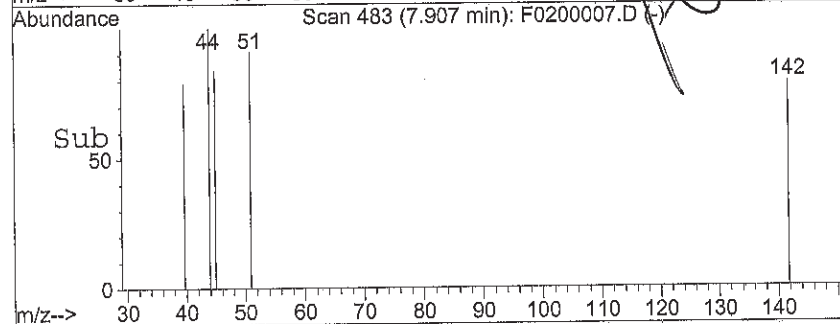
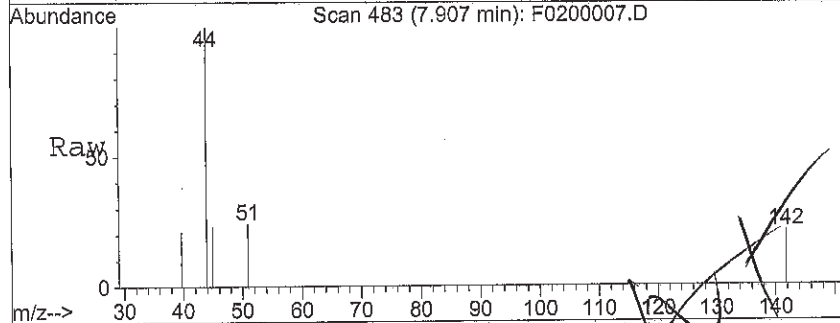






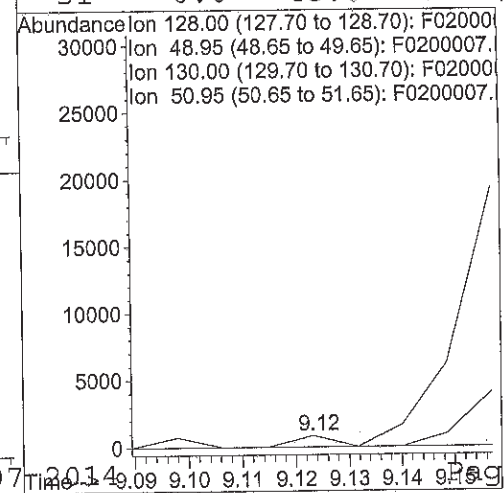
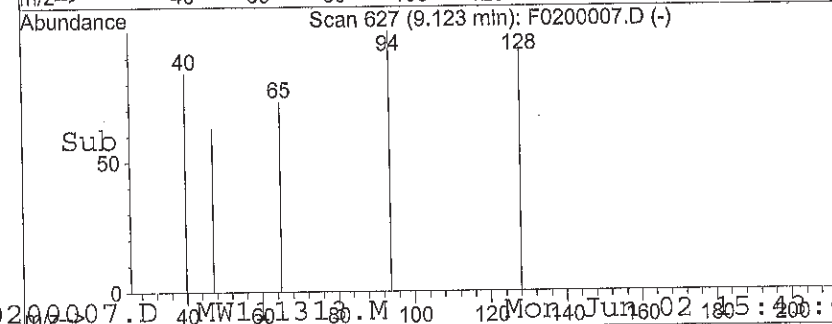
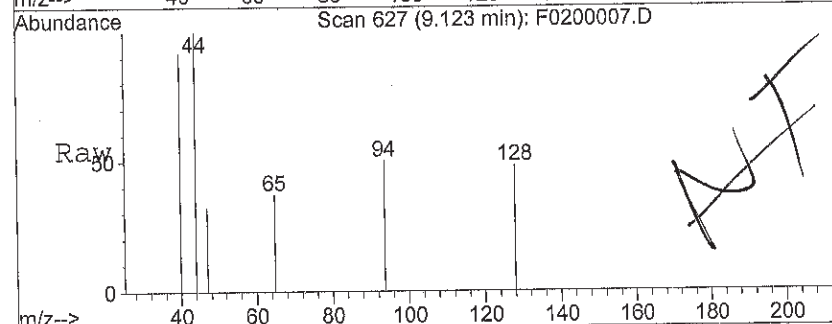
#22
 (DIPE) Diisopropyl Ether
 Concen: 0.03 ug/L
 RT: 7.91 min Scan# 483
 Delta R.T. -0.10 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

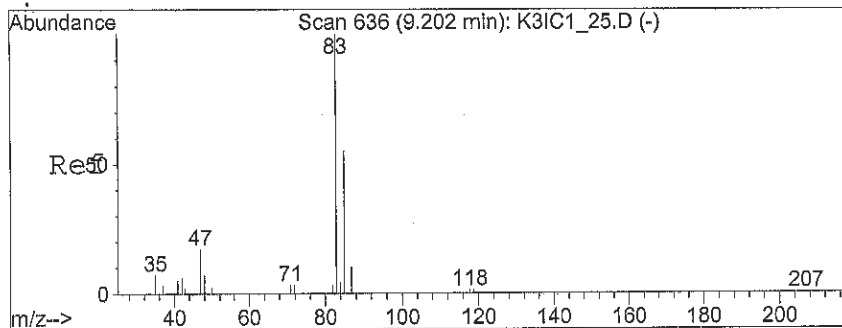
Tgt Ion: 45 Resp: 287
 Ion Ratio Lower Upper
 45 100
 87 0.0 17.0 25.6#
 43 0.0 30.5 45.7#
 59 88.9 7.4 11.2#



#23
 Bromochloromethane
 Concen: 0.27 ug/L
 RT: 9.12 min Scan# 627
 Delta R.T. -0.03 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

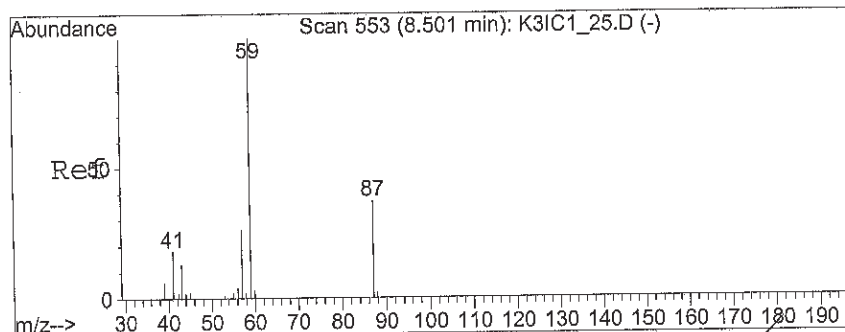
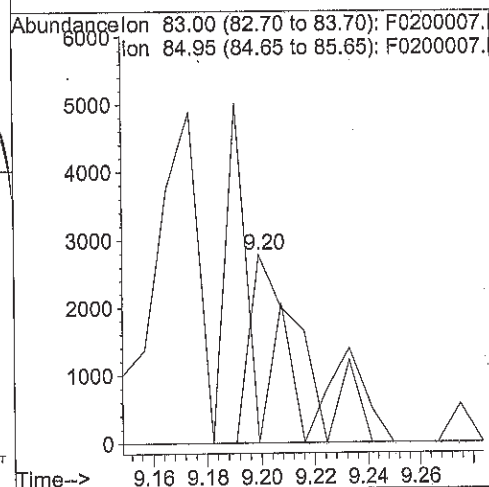
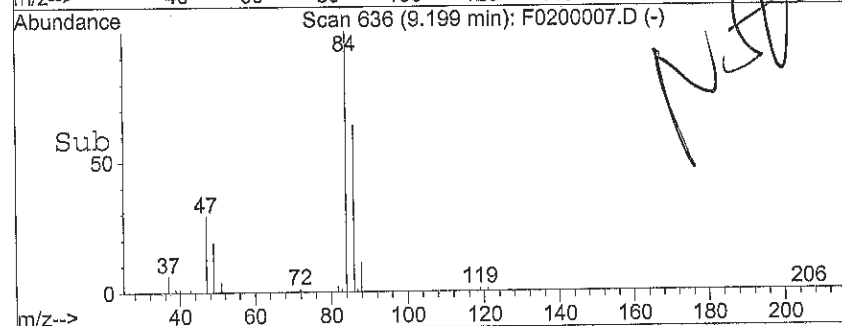
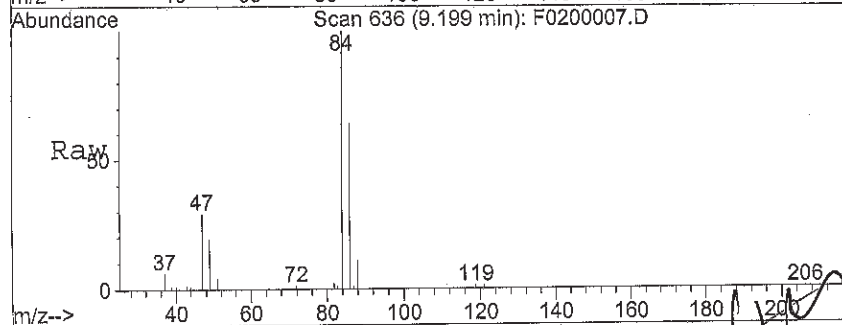
Tgt Ion: 128 Resp: 426
 Ion Ratio Lower Upper
 128 100
 49 0.0 117.4 176.0#
 130 0.0 111.0 166.6#
 51 0.0 48.0 72.0#





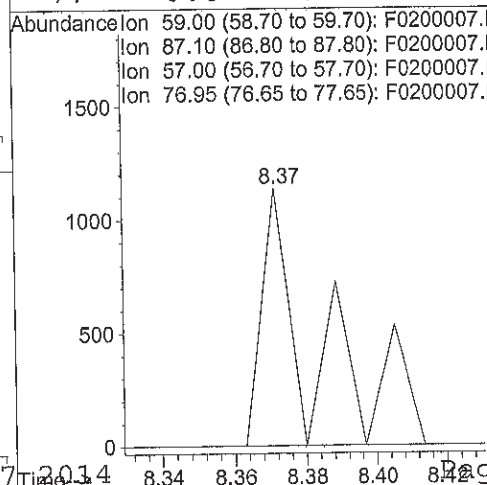
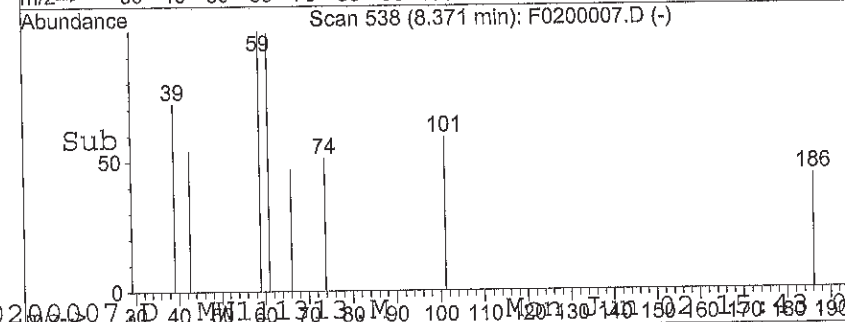
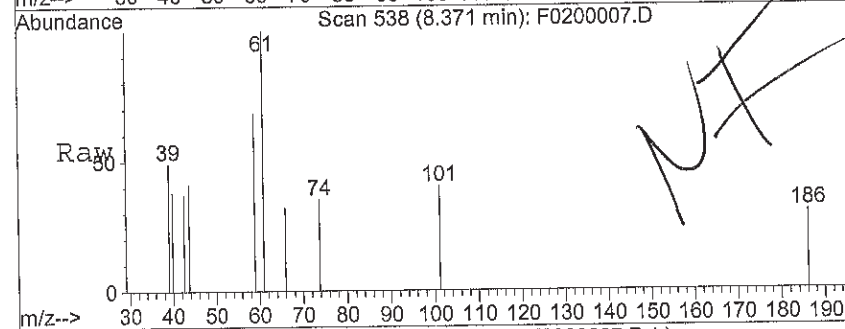
#24
 Chloroform
 Concen: 0.63 ug/L
 RT: 9.20 min Scan# 636
 Delta R.T. -0.00 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

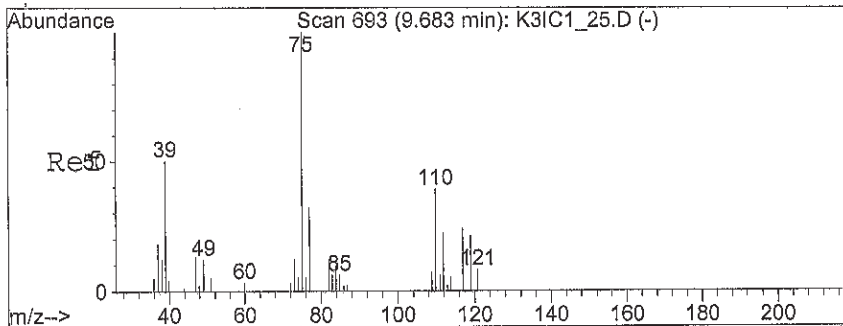
Tgt Ion: 83 Resp: 3862
 Ion Ratio Lower Upper
 83 100
 85 92.7 51.8 77.6#



#25
 (ETBE) 2-ethoxy 2-methyl propan
 Concen: 0.11 ug/L
 RT: 8.37 min Scan# 538
 Delta R.T. -0.13 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

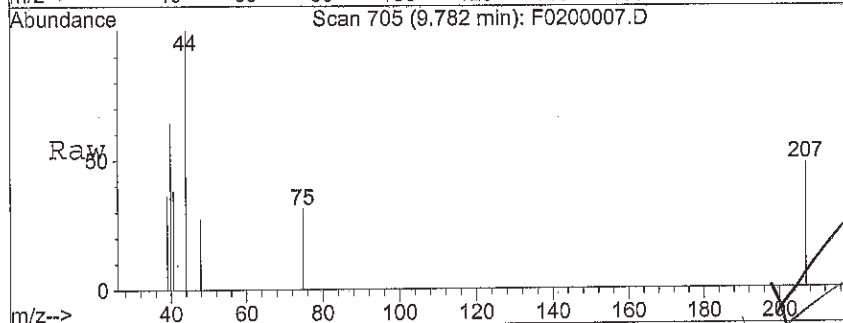
Tgt Ion: 59 Resp: 944
 Ion Ratio Lower Upper
 59 100
 87 0.0 27.8 41.8#
 57 0.0 19.8 29.6#
 77 0.0 0.0 0.0





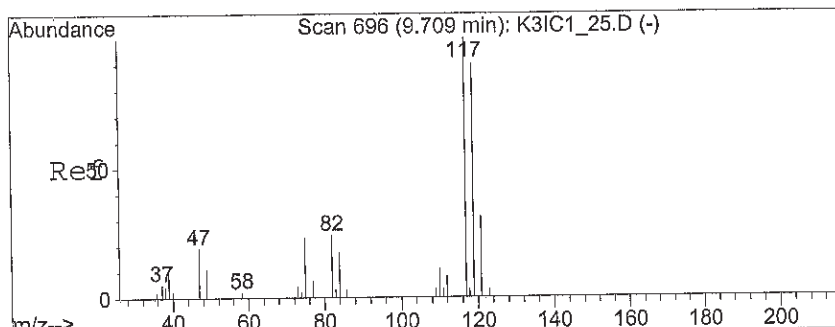
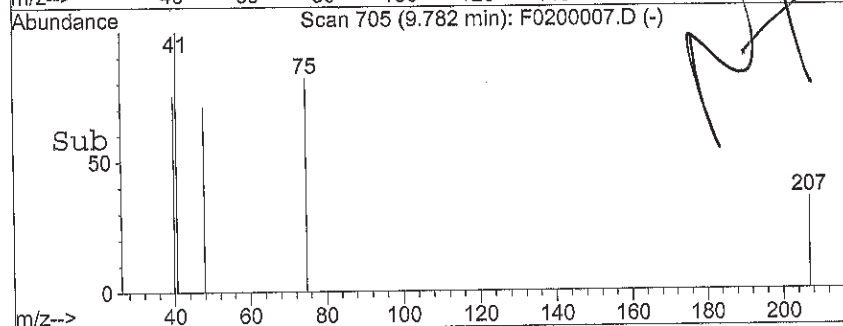
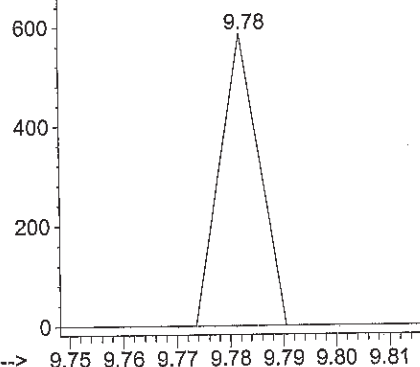
#29
 1,1-Dichloropropene
 Concen: 0.07 ug/L
 RT: 9.78 min Scan# 705
 Delta R.T. 0.10 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 75 Resp: 297
 Ion Ratio Lower Upper
 75 100
 110 0.0 29.0 43.6#
 77 0.0 25.0 37.4#



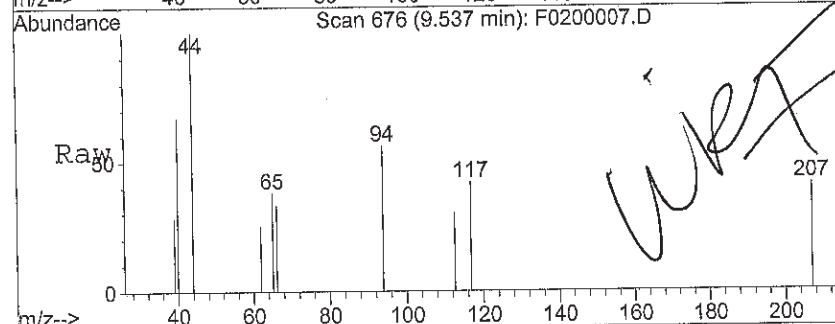
Abundance

Ion 75.05 (74.75 to 75.75): F0200007.
 Ion 110.05 (109.75 to 110.75): F0200007.
 Ion 77.05 (76.75 to 77.75): F0200007.



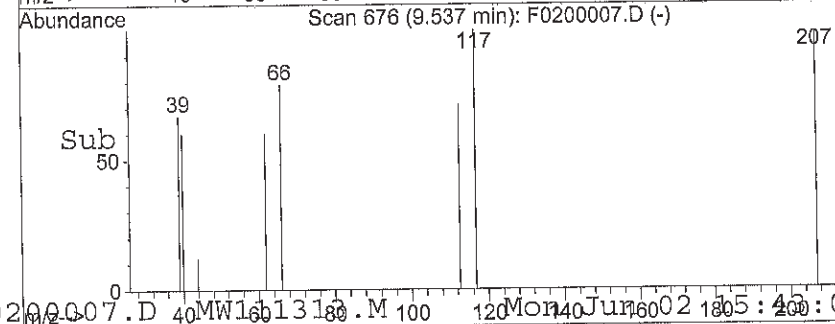
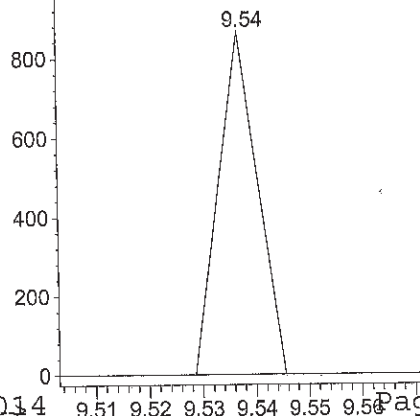
#30
 Carbon Tetrachloride
 Concen: 0.11 ug/L
 RT: 9.54 min Scan# 676
 Delta R.T. -0.17 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

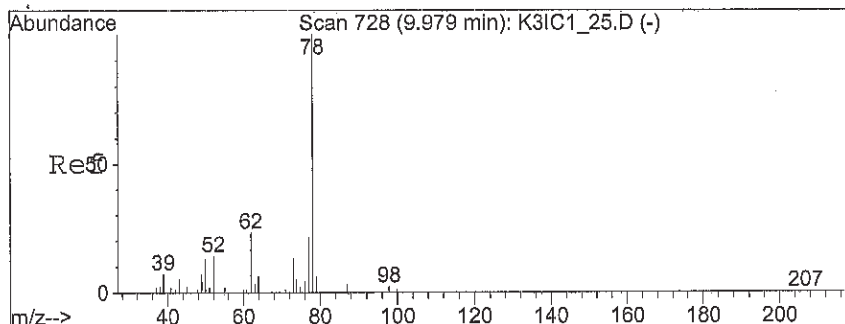
Tgt Ion: 117 Resp: 439
 Ion Ratio Lower Upper
 117 100
 119 0.0 75.8 113.8#



Abundance

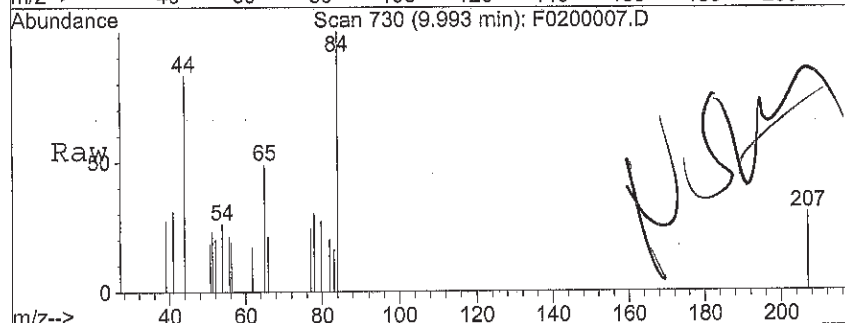
Ion 117.00 (116.70 to 117.70): F0200007.
 Ion 118.95 (118.65 to 119.65): F0200007.



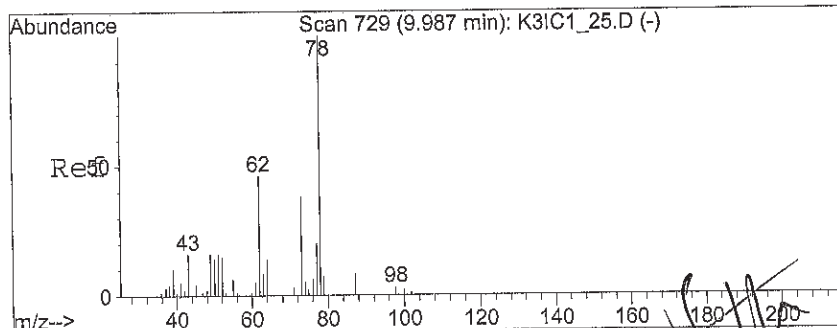
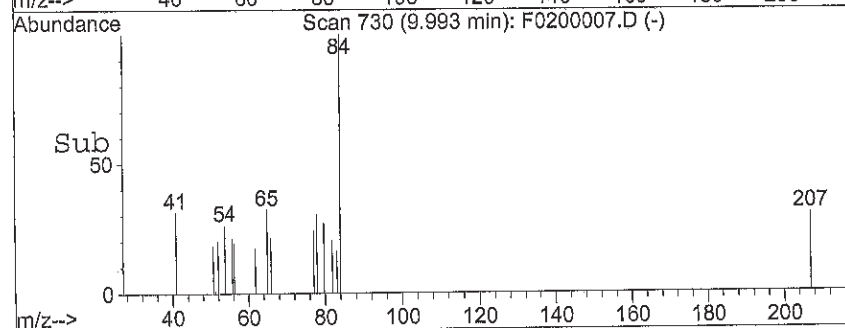
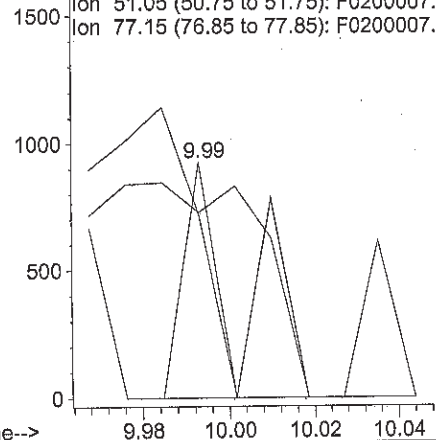


#31
Benzene
Concen: 0.08 ug/L
RT: 9.99 min Scan# 730
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 78 Resp: 862
Ion Ratio Lower Upper
78 100
51 0.0 14.2 21.2#
77 0.0 16.6 24.8#

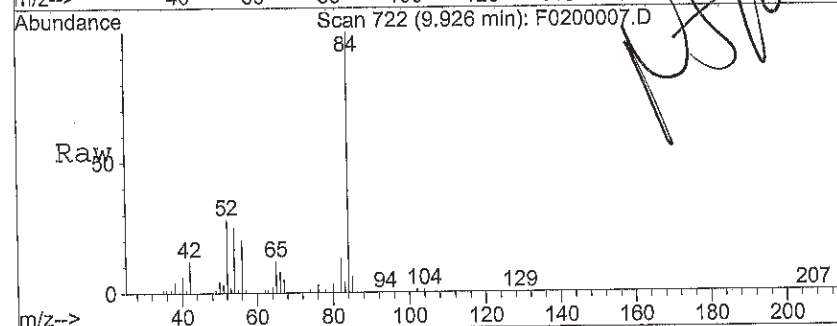


Abundance Ion 78.10 (77.80 to 78.80): F0200007.
Ion 51.05 (50.75 to 51.75): F0200007.
Ion 77.15 (76.85 to 77.85): F0200007.

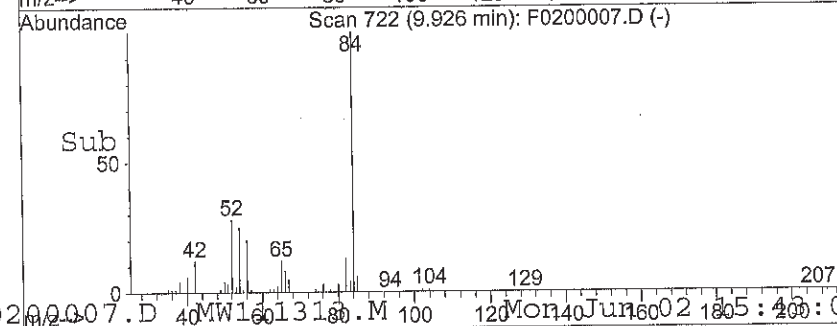
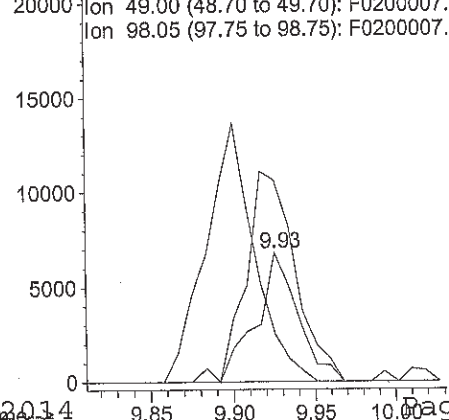


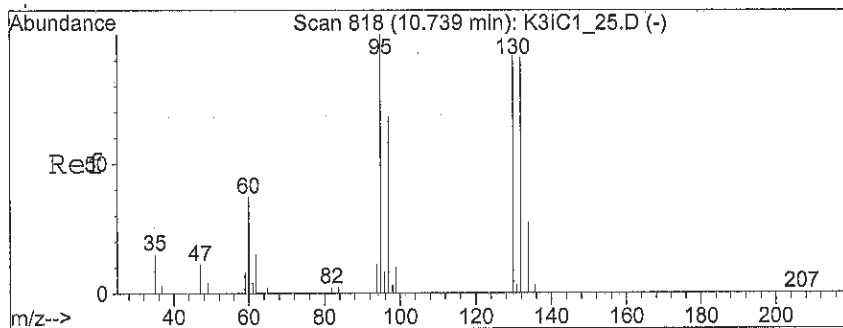
#32
1,2-Dichloroethane
Concen: 3.18 ug/L
RT: 9.93 min Scan# 722
Delta R.T. -0.06 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 62 Resp: 12462
Ion Ratio Lower Upper
62 100
64 183.7 28.0 42.0#
49 0.0 28.5 42.7#
98 0.0 6.2 9.4#



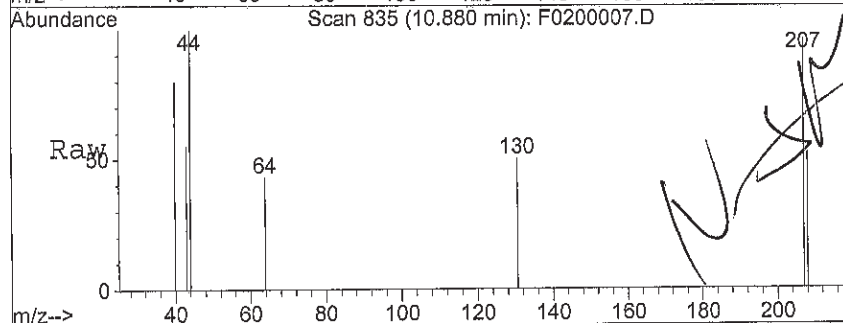
Abundance Ion 62.05 (61.75 to 62.75): F0200007.
Ion 64.05 (63.75 to 64.75): F0200007.
Ion 49.00 (48.70 to 49.70): F0200007.
Ion 98.05 (97.75 to 98.75): F0200007.





#33
 Trichloroethene
 Concen: 0.09 ug/L
 RT: 10.88 min Scan# 835
 Delta R.T. 0.14 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

Tgt	Ion:130	Resp:	305
Ion	Ratio	Lower	Upper
130	100		
95	0.0	82.8	124.2#
132	0.0	77.4	116.2#
97	0.0	53.8	80.6#



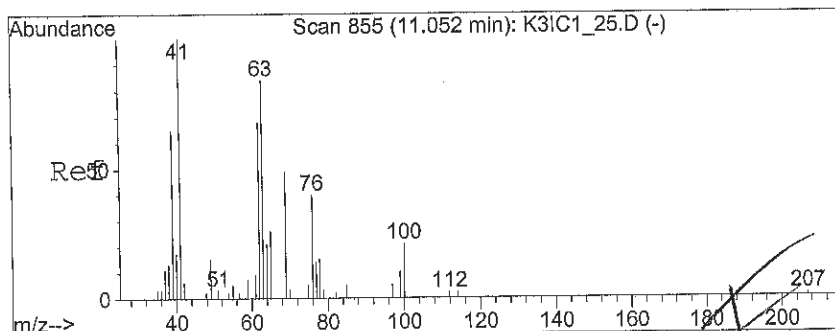
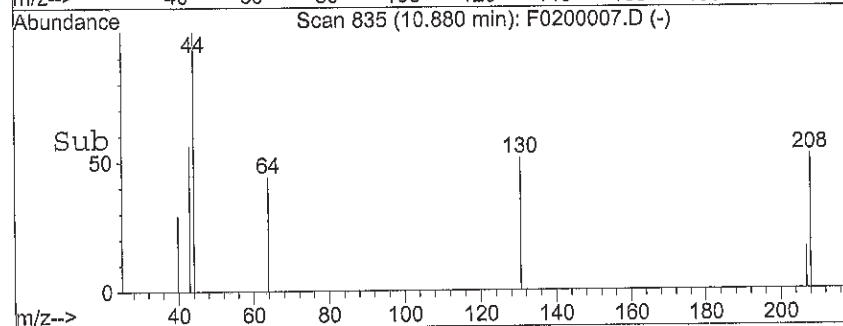
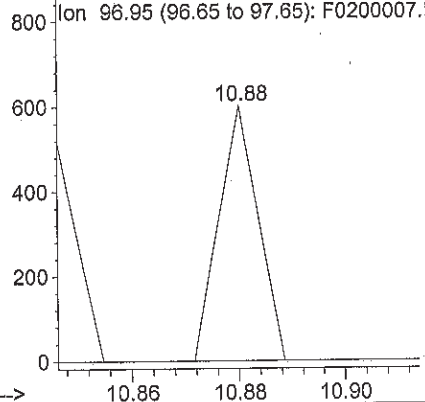
Abundance

Ion 130.00 (129.70 to 130.70): F0200007.D

Ion 95.00 (94.70 to 95.70): F0200007.D

Ion 131.95 (131.65 to 132.65): F0200007.D

Ion 96.95 (96.65 to 97.65): F0200007.D



#34
 1,2-Dichloropropane
 Concen: 0.25 ug/L
 RT: 11.02 min Scan# 851
 Delta R.T. -0.04 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 63	Resp: 659
Ion Ratio	Lower Upper
63 100	
62 0.0	67.4 101.2#
76 0.0	40.3 60.5#
41 0.0	103.0 154.6#

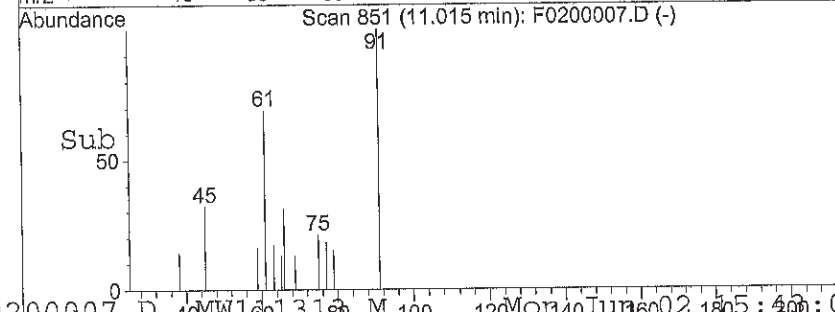
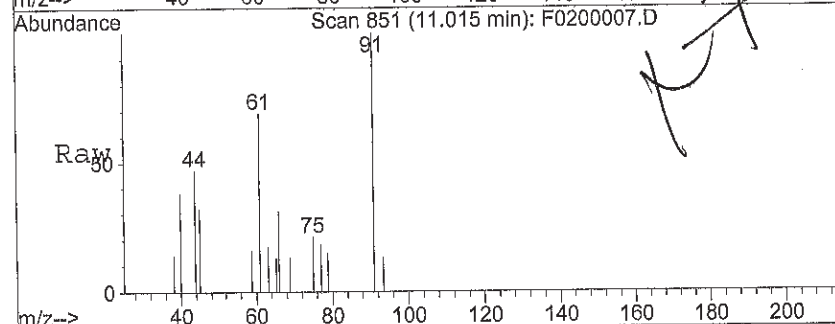
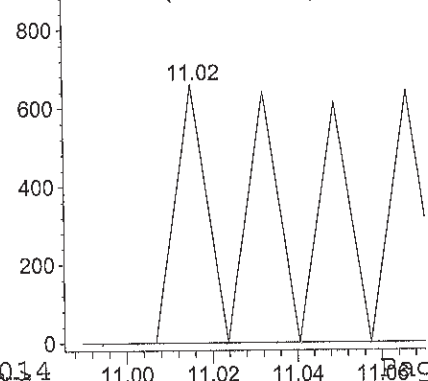
Abundance

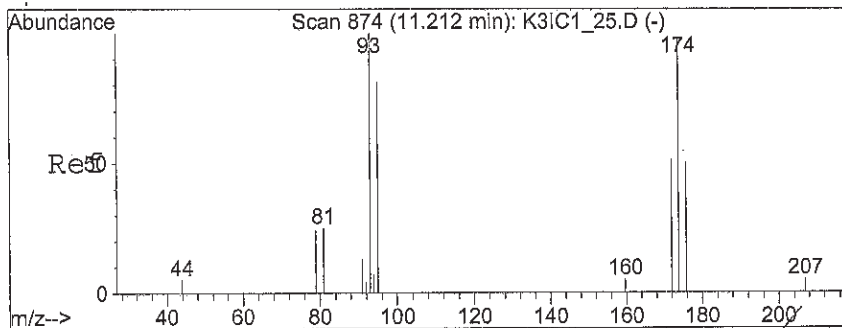
Ion 63.05 (62.75 to 63.75): F0200007.D

Ion 62.05 (61.75 to 62.75): F0200007.D

Ion 76.05 (75.75 to 76.75): F0200007.D

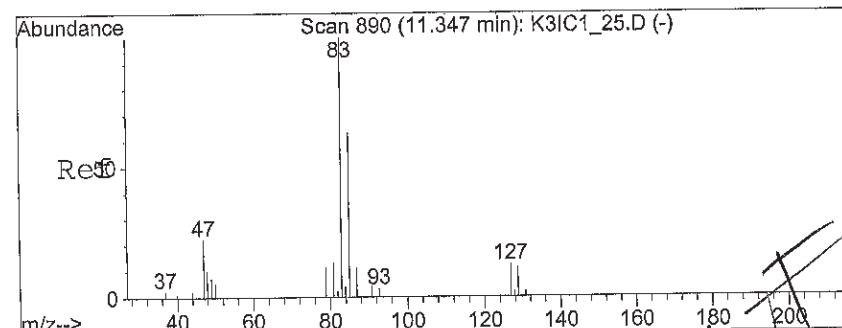
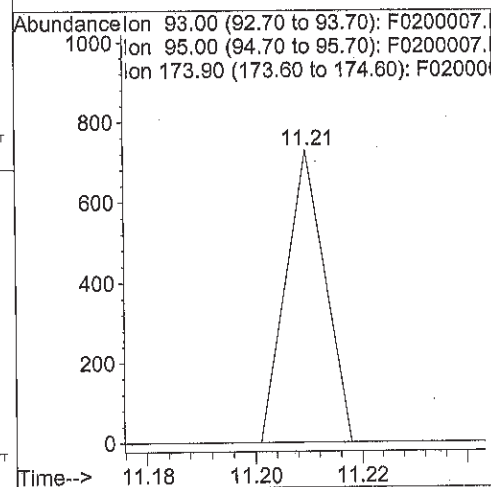
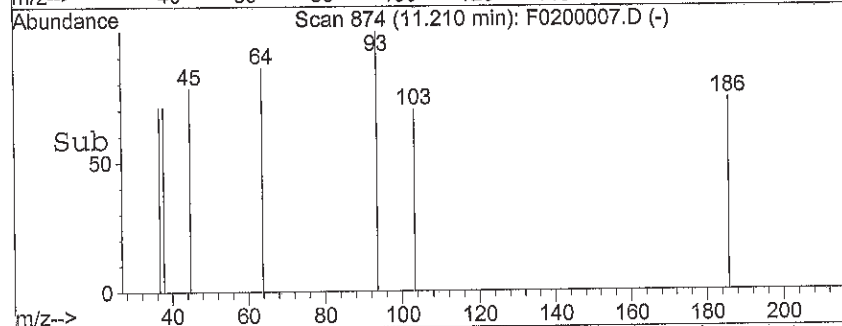
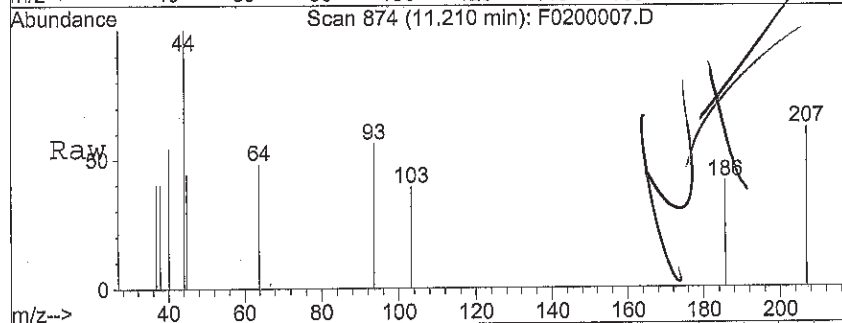
Ion 41.05 (40.75 to 41.75): F0200007.D





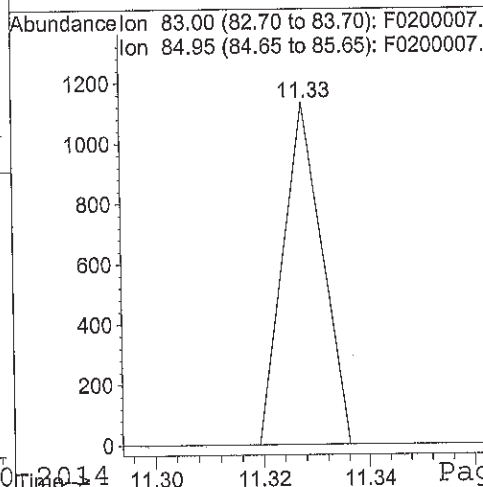
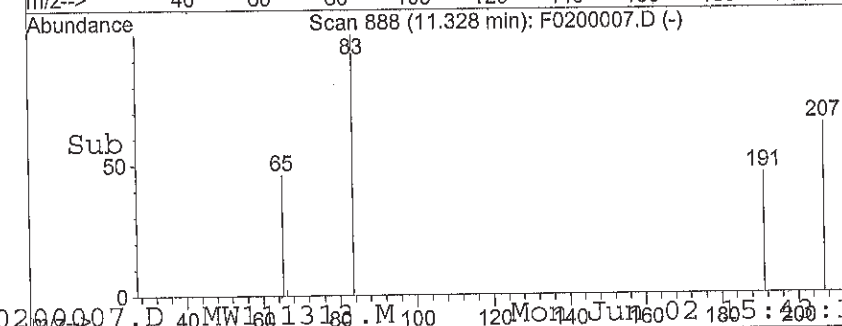
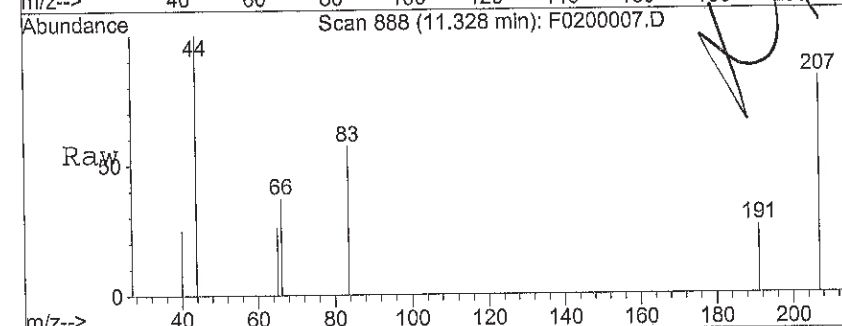
#35
 Dibromomethane
 Concen: 0.18 ug/L
 RT: 11.21 min Scan# 874
 Delta R.T. -0.00 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

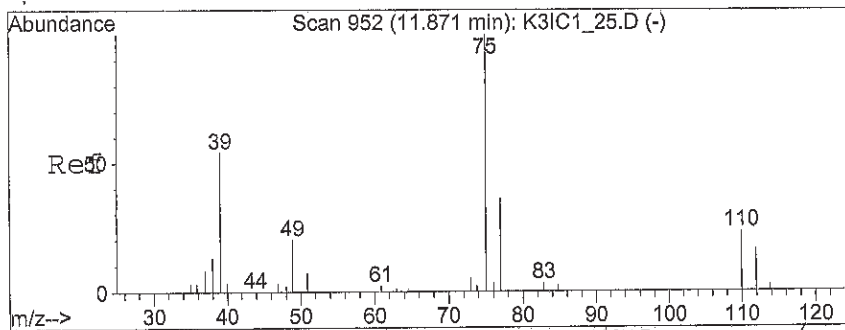
Tgt Ion: 93 Resp: 369
 Ion Ratio Lower Upper
 93 100
 95 0.0 66.2 99.2#
 174 0.0 75.5 113.3#



#36
 Bromodichloromethane
 Concen: 0.14 ug/L
 RT: 11.33 min Scan# 888
 Delta R.T. -0.02 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 83 Resp: 574
 Ion Ratio Lower Upper
 83 100
 85 0.0 48.2 72.2#





#37

cis-1,3-Dichloropropene

Concen: 0.06 ug/L

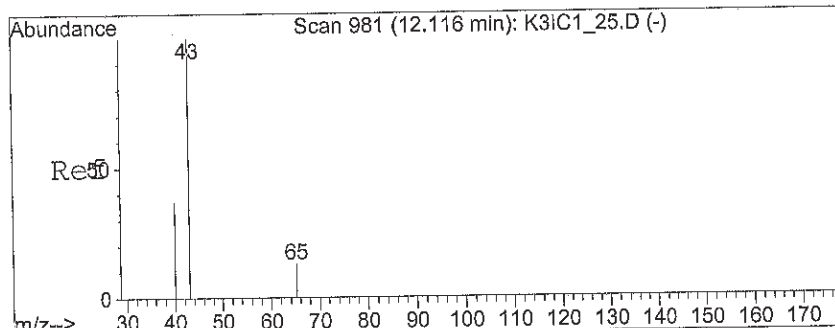
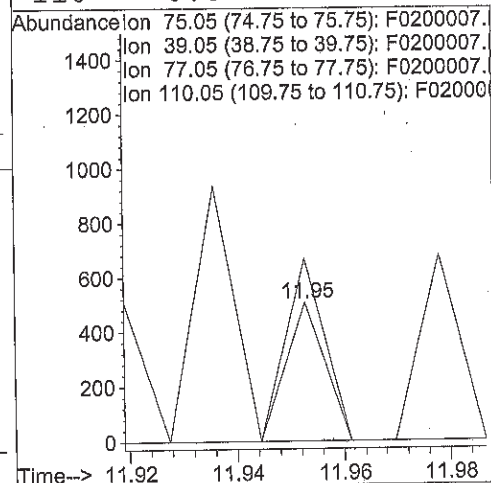
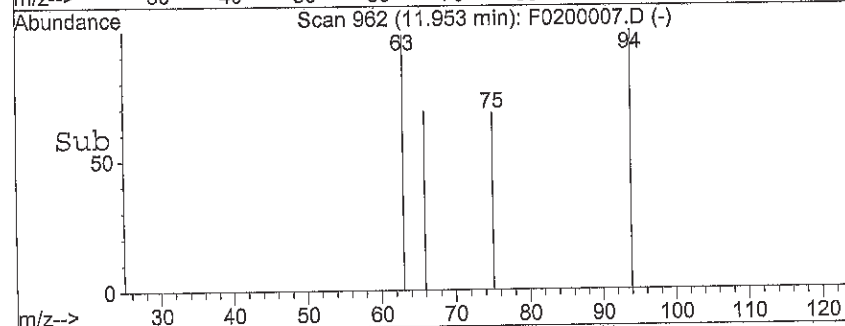
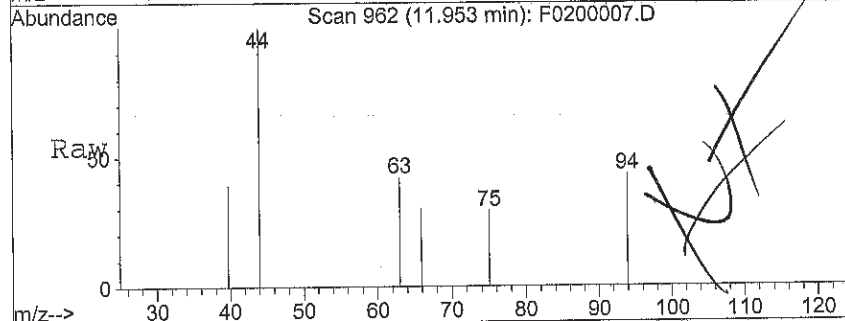
RT: 11.95 min Scan# 962

Delta R.T. 0.08 min

Lab File: F0200007.D

Acq: 2 Jun 2014 2:50 pm

Tgt Ion:	75	Resp:	256
Ion	Ratio	Lower	Upper
75	100		
39	132.4	40.7	61.1#
77	286.7	28.8	43.2#
110	0.0	18.1	27.1#



#40

(MIBK) 4-Methyl-2-Pentanone

Concen: 0.18 ug/L

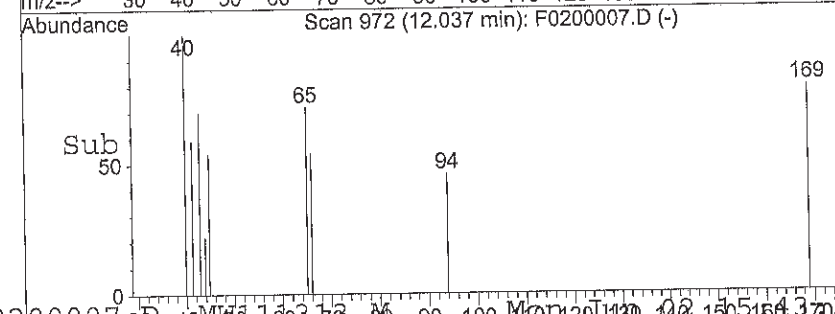
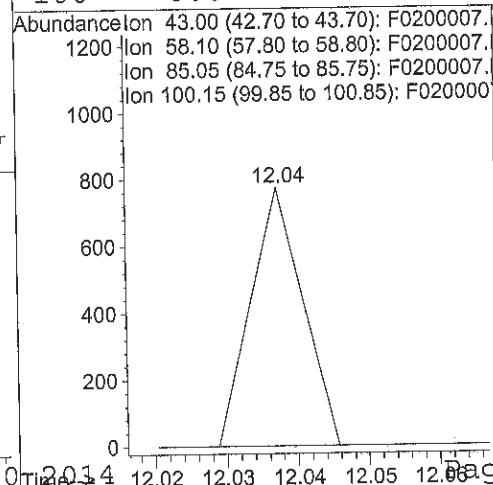
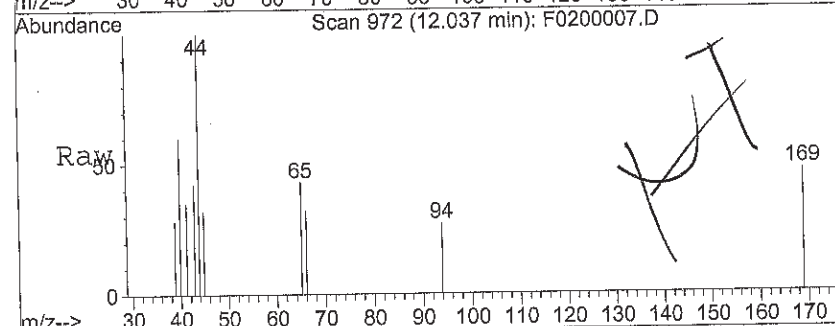
RT: 12.04 min Scan# 972

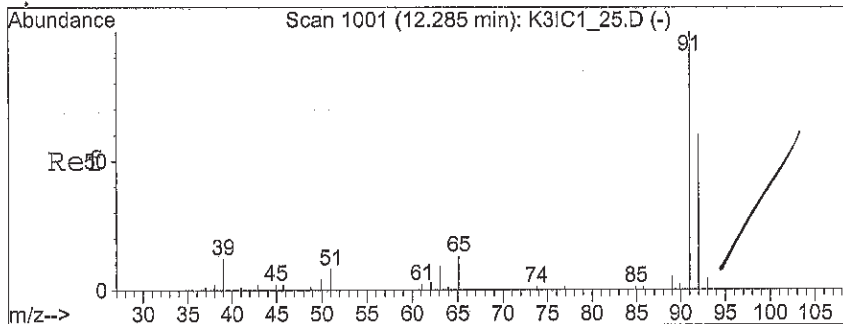
Delta R.T. -0.08 min

Lab File: F0200007.D

Acq: 2 Jun 2014 2:50 pm

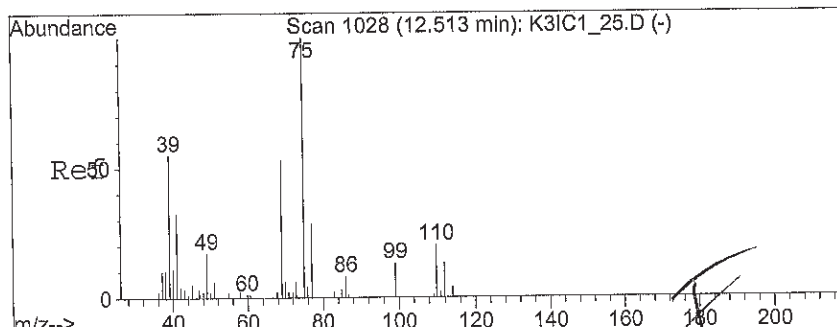
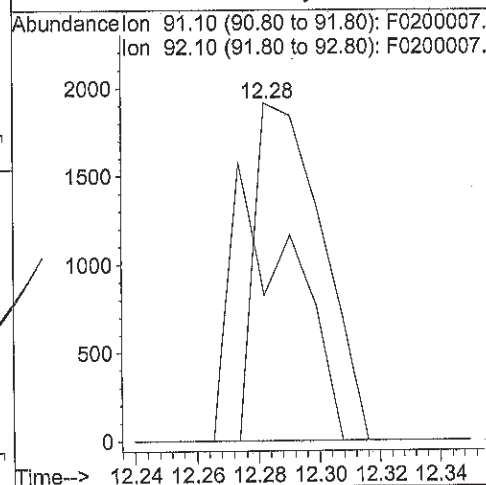
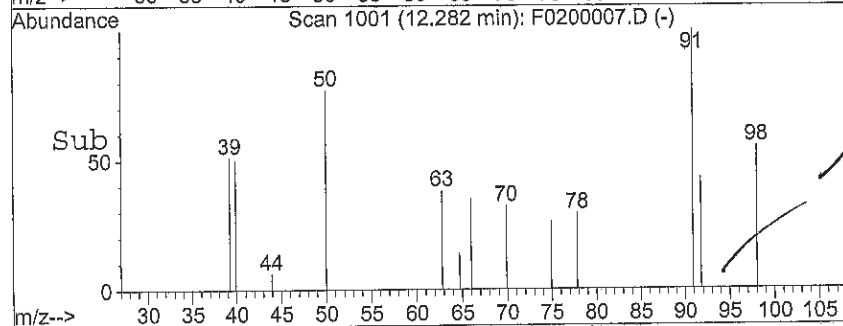
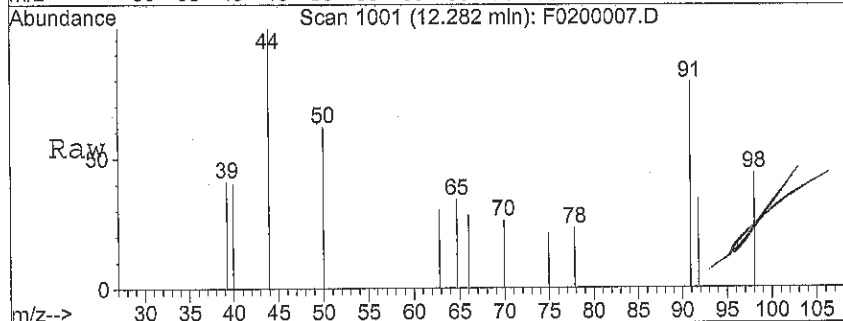
Tgt Ion:	43	Resp:	392
Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	0.0
85	0.0	0.0	0.0
100	0.0	0.0	0.0





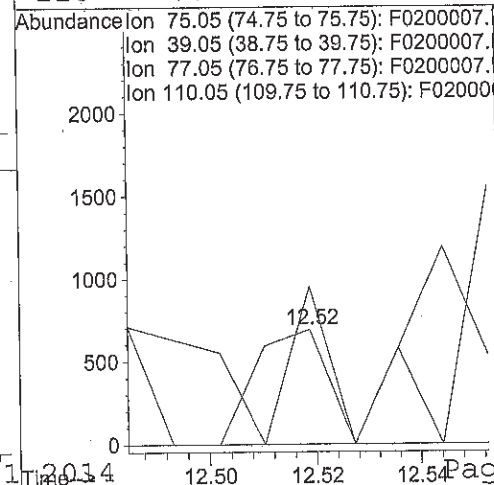
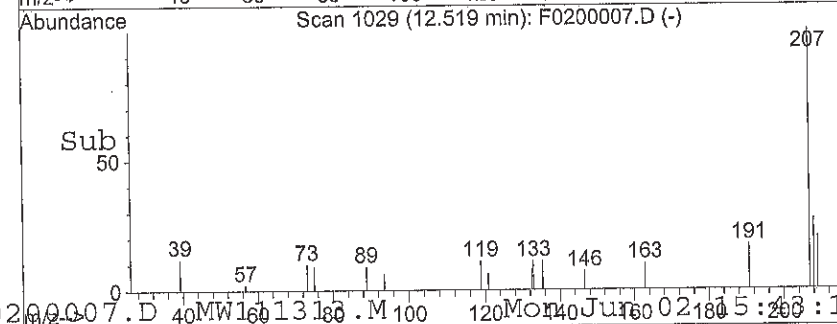
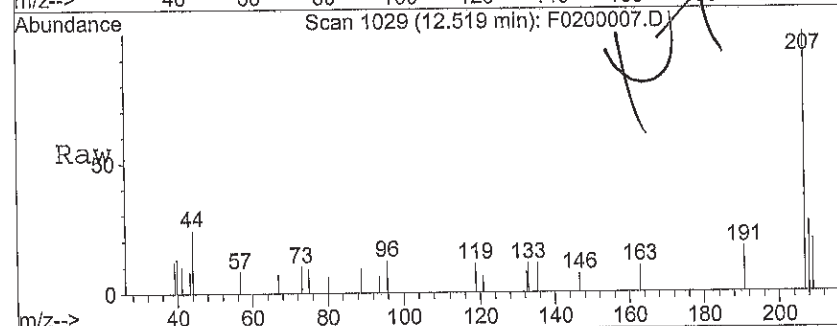
#41
Toluene
Concen: 0.19 ug/L
RT: 12.28 min Scan# 1001
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

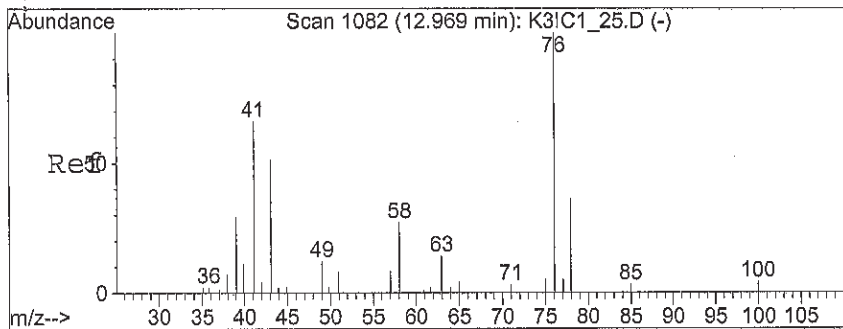
Tgt Ion: 91 Resp: 2946
Ion Ratio Lower Upper
91 100
92 74.4 47.4 71.0#



#42
trans-1,3-Dichloropropene
Concen: 0.13 ug/L
RT: 12.52 min Scan# 1029
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

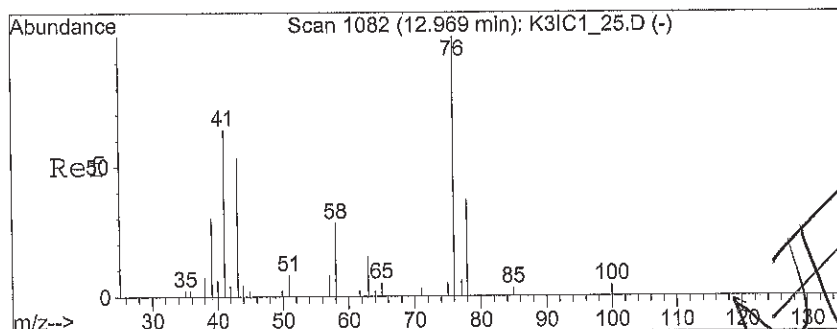
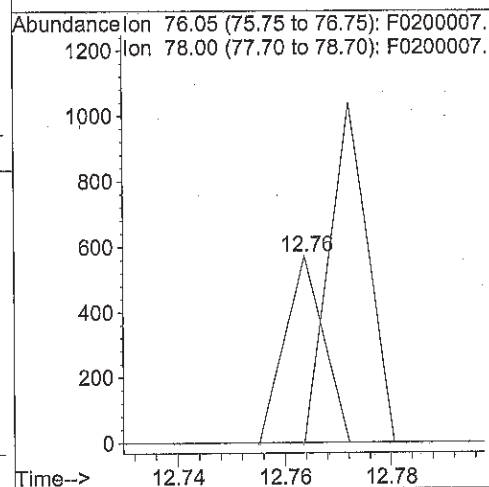
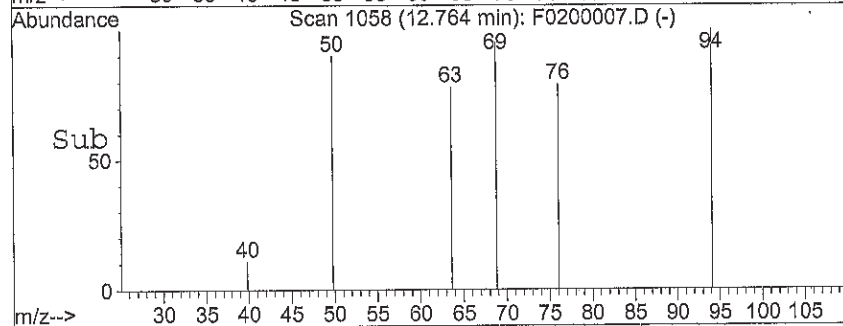
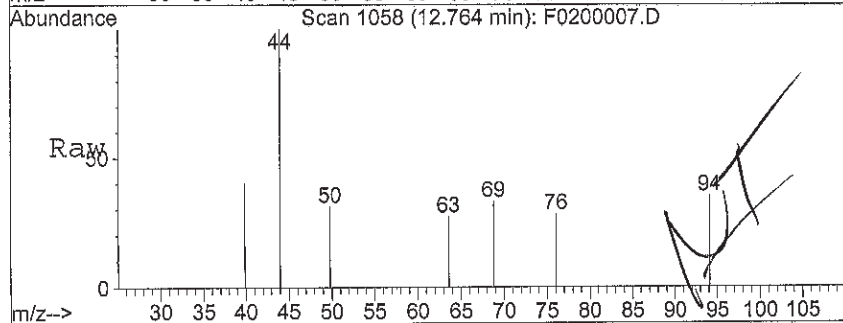
Tgt Ion: 75 Resp: 649
Ion Ratio Lower Upper
75 100
39 74.1 53.6 80.4
77 0.0 25.4 38.2#
110 0.0 17.6 26.4#





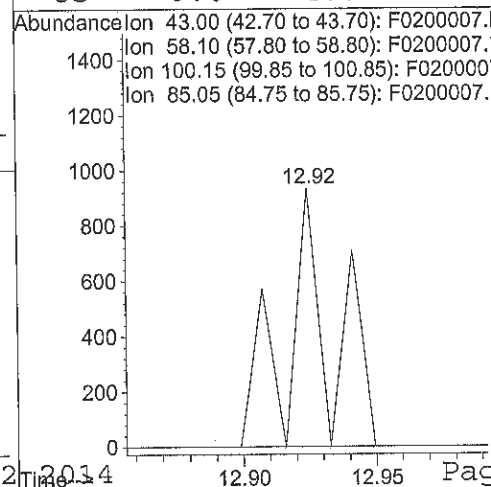
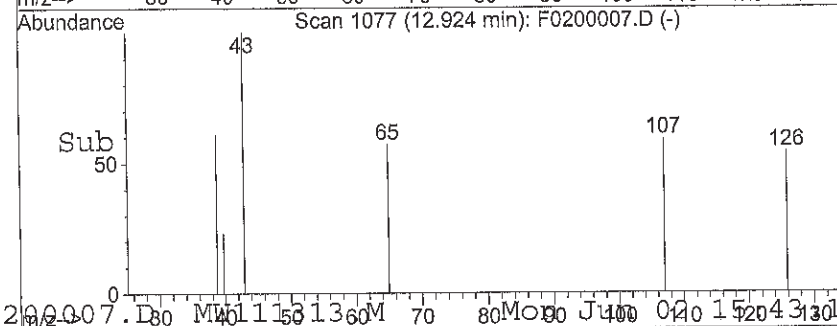
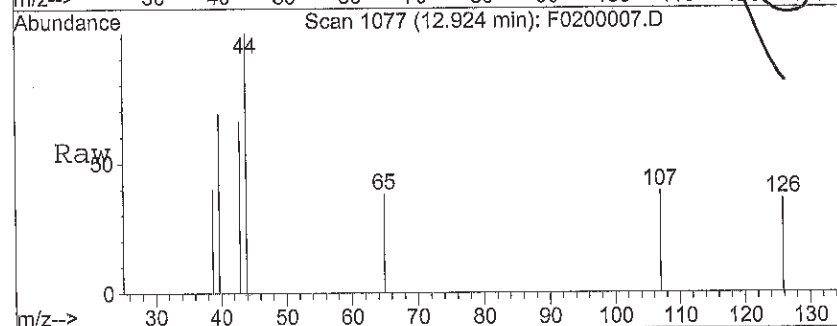
#45
 1,3-Dichloropropane
 Concen: 0.06 ug/L
 RT: 12.76 min Scan# 1058
 Delta R.T. -0.21 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

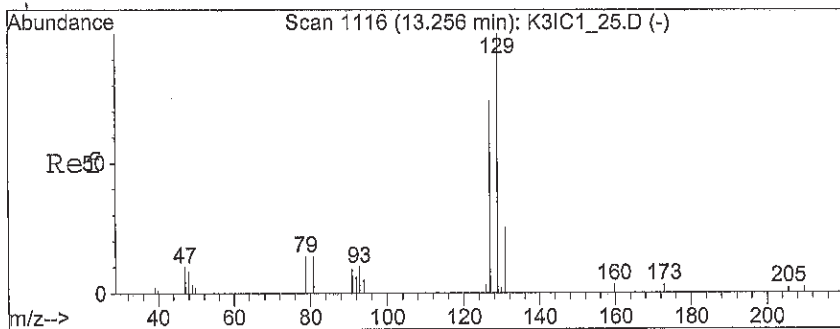
Tgt Ion: 76 Resp: 289
 Ion Ratio Lower Upper
 76 100
 78 182.0 26.9 40.3#



#46
 2-Hexanone
 Concen: 0.46 ug/L
 RT: 12.92 min Scan# 1077
 Delta R.T. -0.04 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

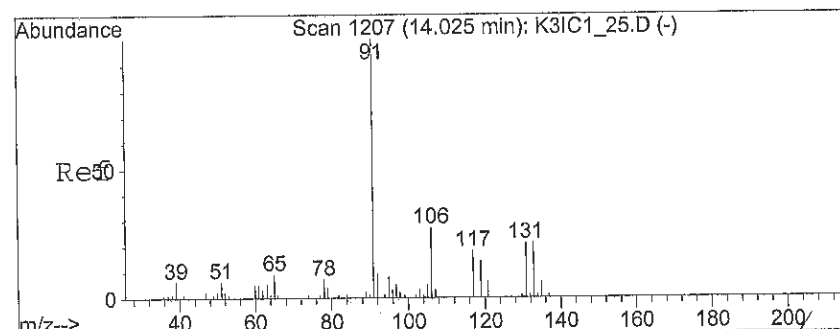
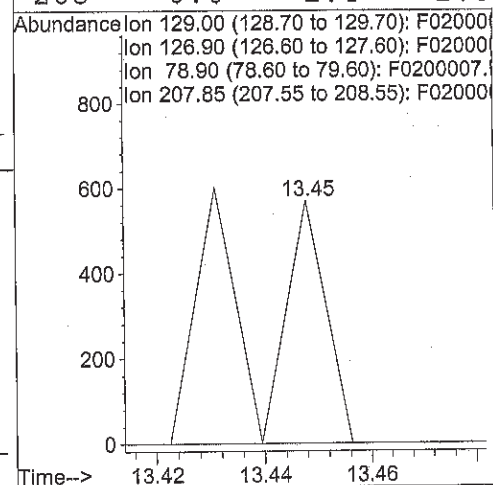
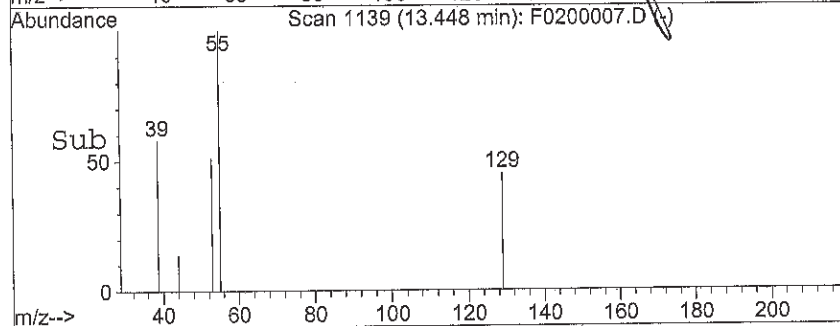
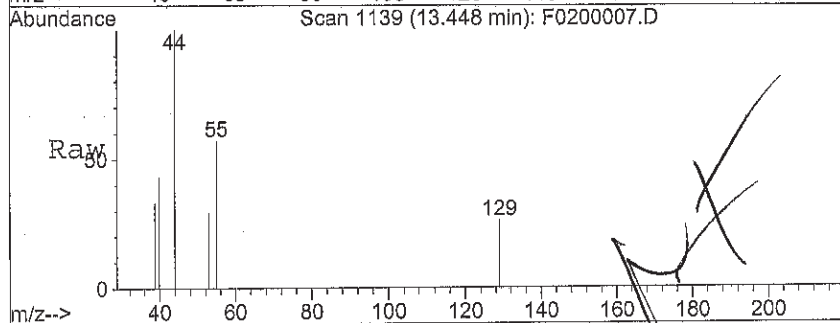
Tgt Ion: 43 Resp: 1121
 Ion Ratio Lower Upper
 43 100
 58 0.0 40.9 61.3#
 100 0.0 5.5 8.3#
 85 0.0 4.3 6.5#





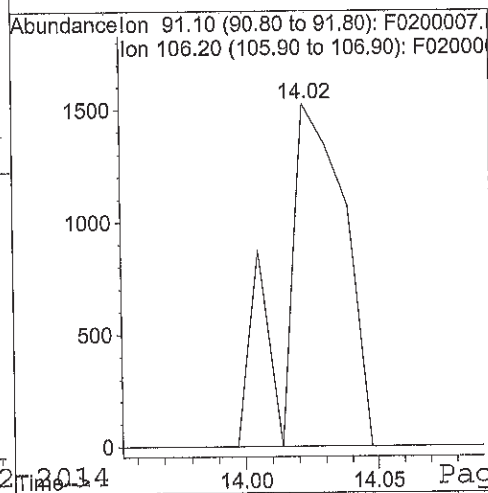
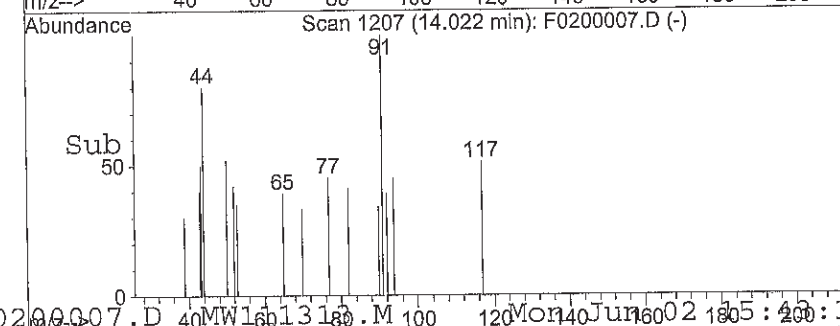
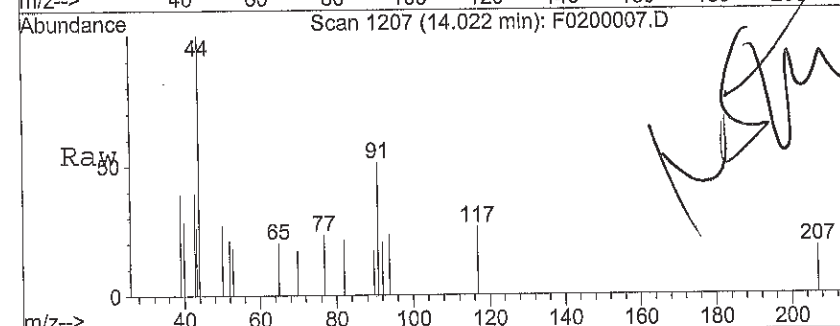
#47
Dibromochloromethane
Concen: 0.07 ug/L
RT: 13.45 min Scan# 1139
Delta R.T. 0.19 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

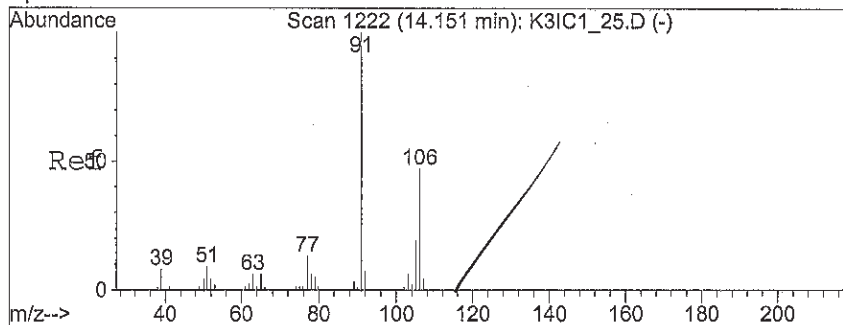
Tgt Ion: 129 Resp: 289
Ion Ratio Lower Upper
129 100
127 0.0 61.6 92.4#
79 105.5 10.7 16.1#
208 0.0 1.4 2.0#



#51
Ethylbenzene
Concen: 0.14 ug/L
RT: 14.02 min Scan# 1207
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 91 Resp: 2441
Ion Ratio Lower Upper
91 100
106 0.0 23.5 35.3#





#52

m,p-Xylenes

Concen: 0.18 ug/L

RT: 14.15 min Scan# 1222

Delta R.T. -0.00 min

Lab File: F0200007.D

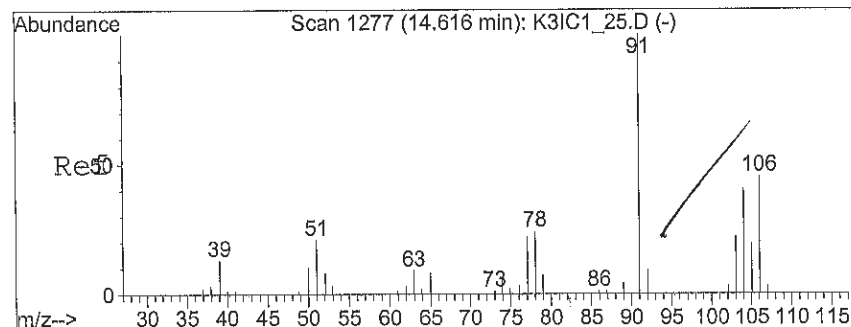
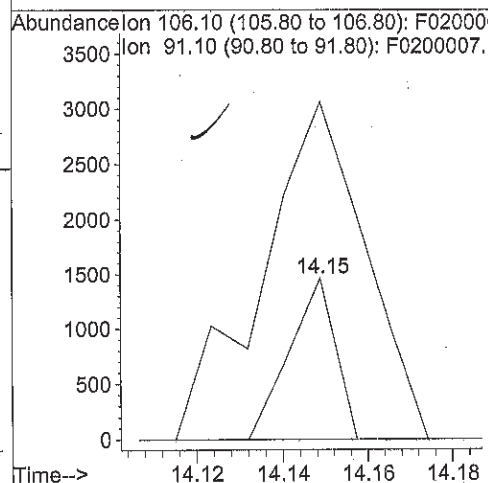
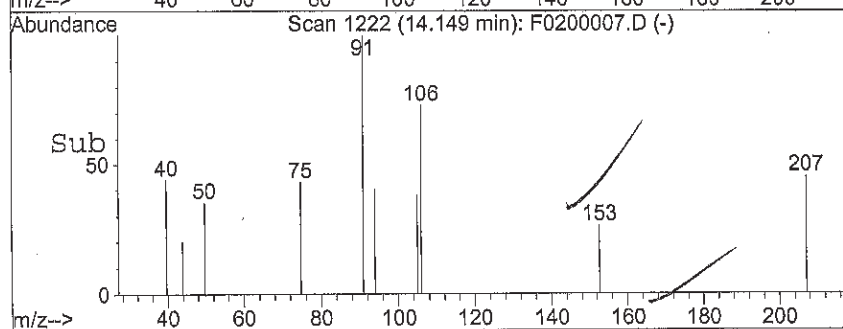
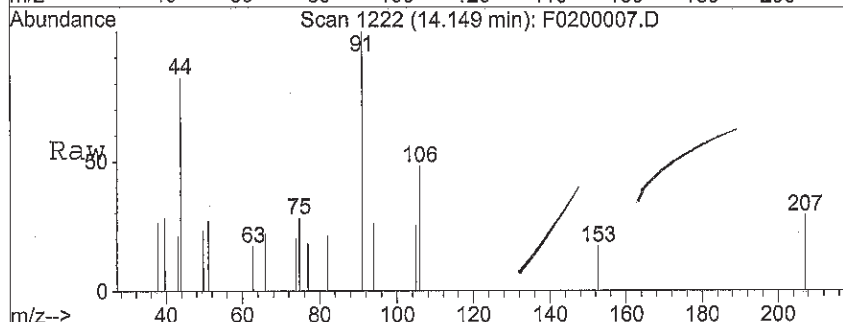
Acq: 2 Jun 2014 2:50 pm

Tgt Ion:106 Resp: 1090

Ion Ratio Lower Upper

106 100

91 473.0 177.1 265.7#



#53

o-Xylene

Concen: 0.09 ug/L

RT: 14.62 min Scan# 1278

Delta R.T. 0.01 min

Lab File: F0200007.D

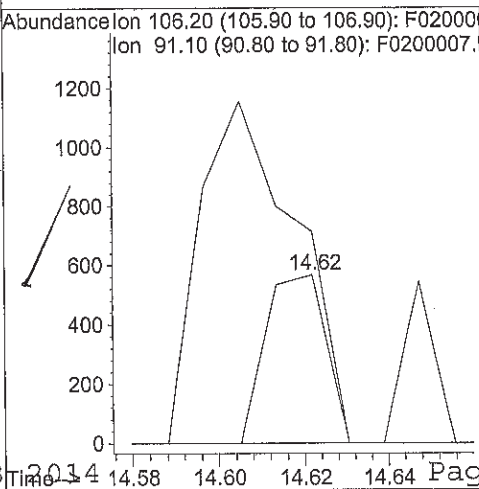
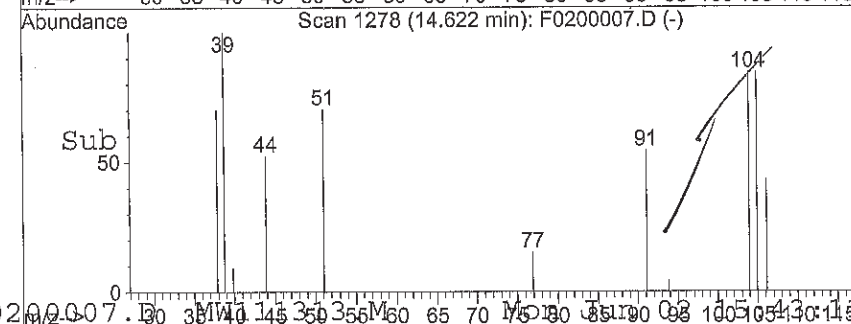
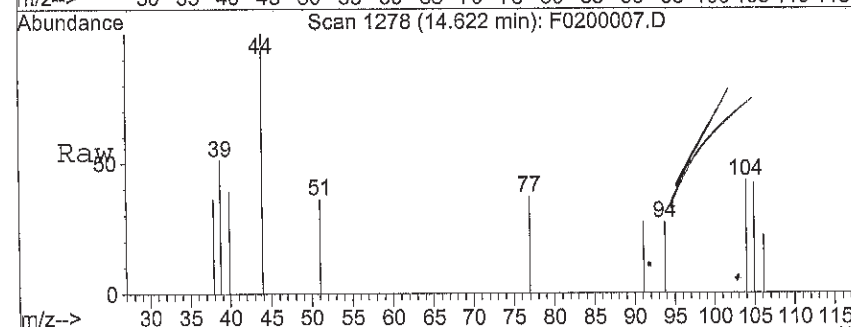
Acq: 2 Jun 2014 2:50 pm

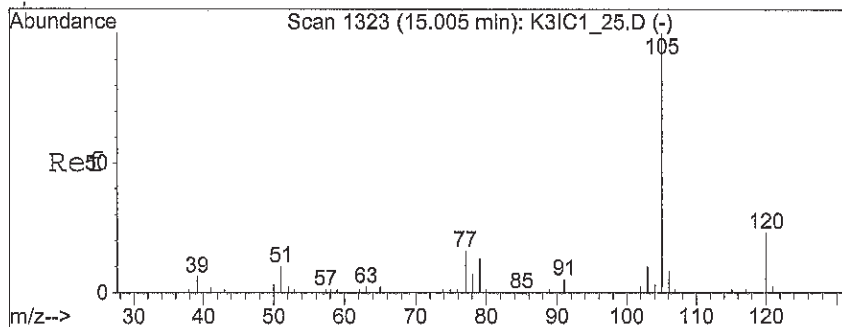
Tgt Ion:106 Resp: 557

Ion Ratio Lower Upper

106 100

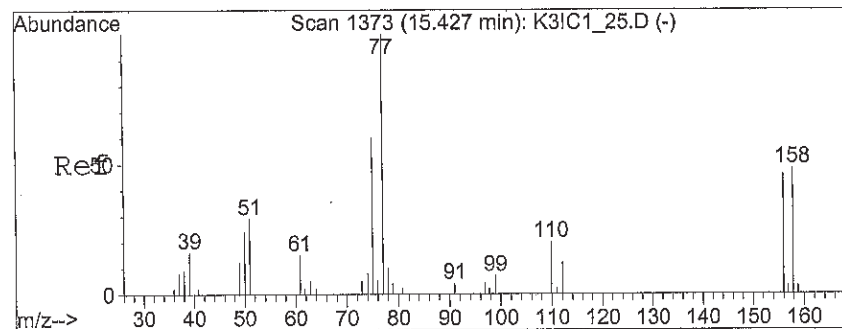
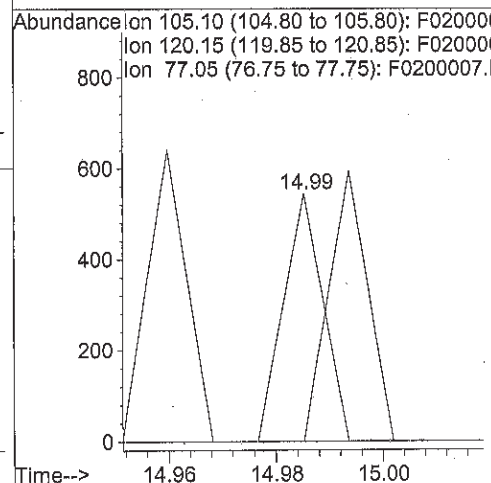
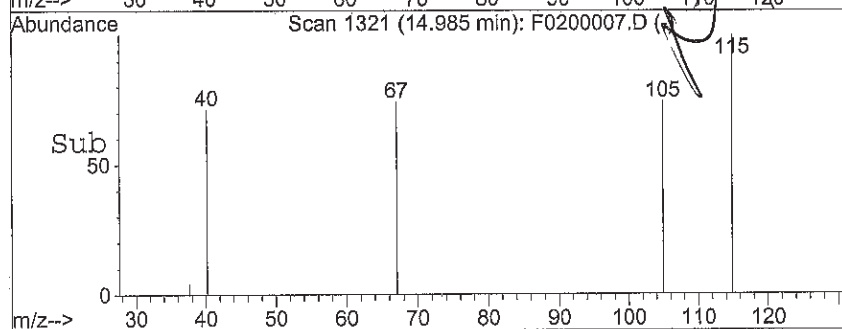
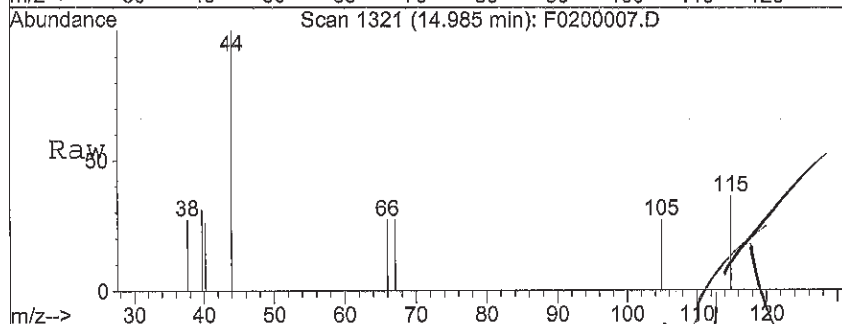
91 321.4 179.0 268.6#





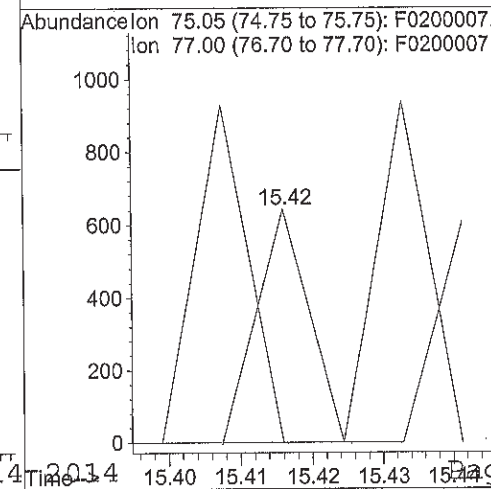
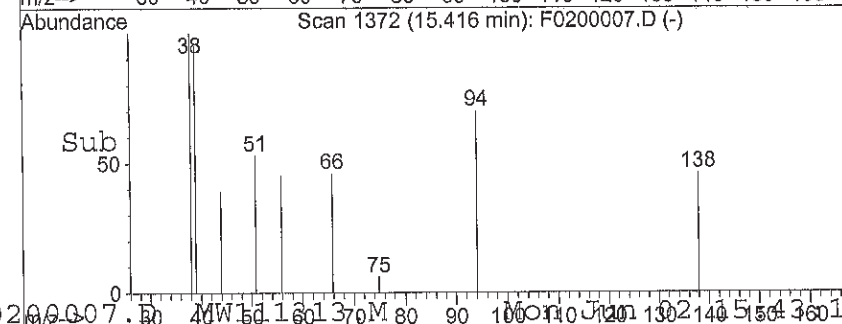
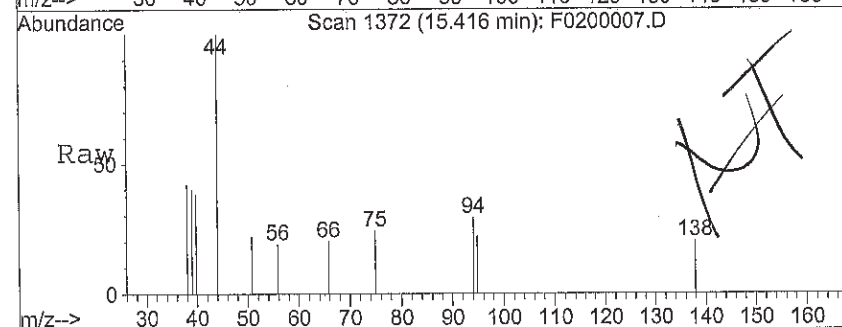
#56
Isopropylbenzene
Concen: 0.02 ug/L
RT: 14.99 min Scan# 1321
Delta R.T. -0.02 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

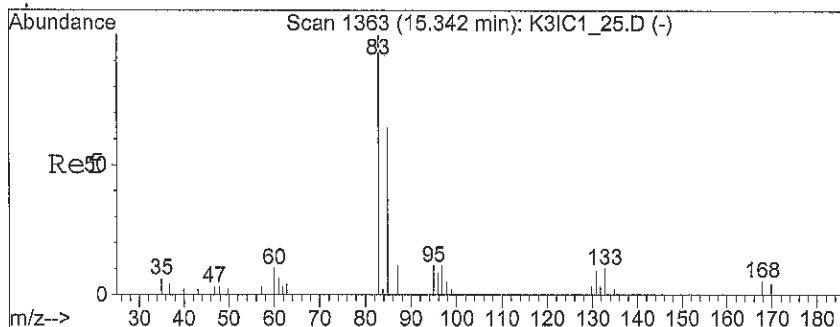
Tgt Ion:105 Resp: 276
Ion Ratio Lower Upper
105 100
120 0.0 19.3 28.9#
77 109.1 13.1 19.7#



#57
1,2,3-Trichloropropane
Concen: 0.07 ug/L
RT: 15.42 min Scan# 1372
Delta R.T. -0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

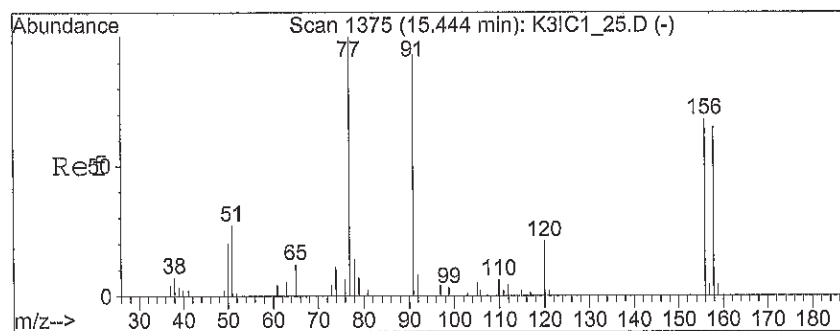
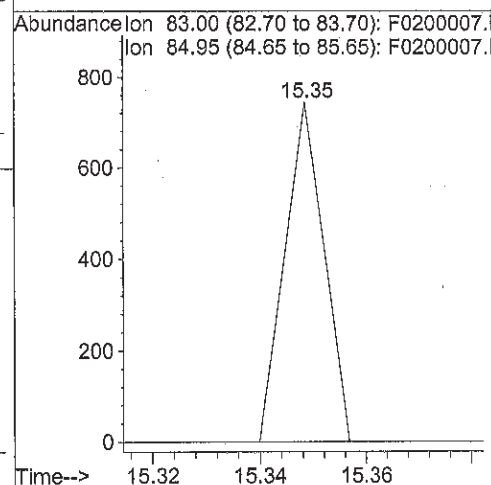
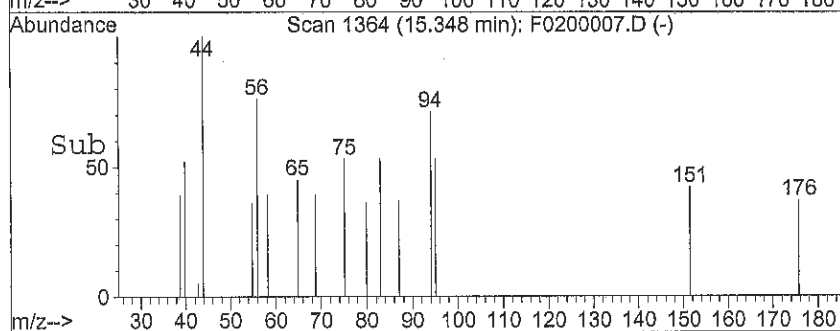
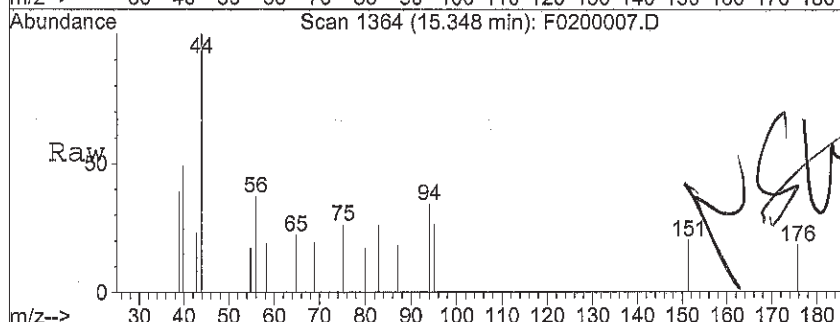
Tgt Ion: 75 Resp: 325
Ion Ratio Lower Upper
75 100
77 144.6 31.2 46.8#





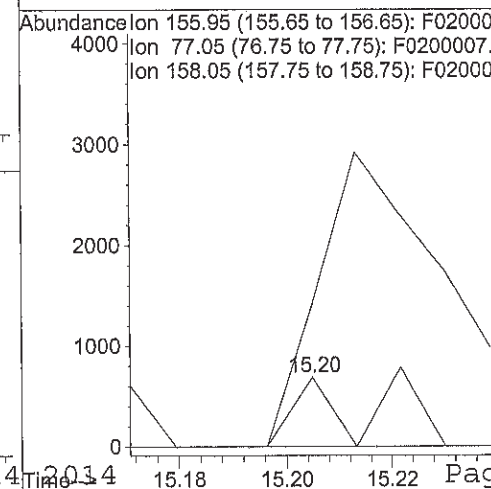
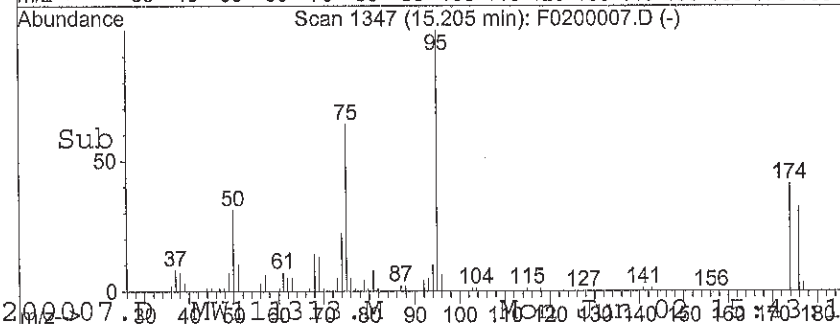
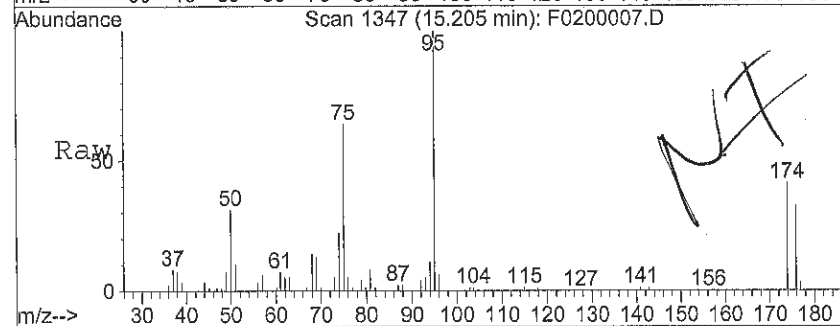
#60
 1,1,2,2-Tetrachloroethane
 Concen: 0.09 ug/L
 RT: 15.35 min Scan# 1364
 Delta R.T. 0.01 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

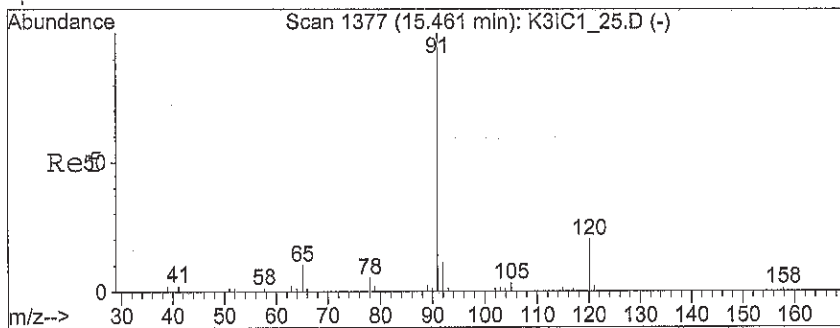
Tgt Ion: 83 Resp: 377
 Ion Ratio Lower Upper
 83 100
 85 0.0 51.2 76.8#



#61
 Bromobenzene
 Concen: 0.08 ug/L
 RT: 15.20 min Scan# 1347
 Delta R.T. -0.24 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 156 Resp: 349
 Ion Ratio Lower Upper
 156 100
 77 1359.6 171.3 256.9#
 158 114.0 80.3 120.5





#62

n-Propylbenzene

Concen: 0.04 ug/L

RT: 15.48 min Scan# 1379

Delta R.T. 0.01 min

Lab File: F0200007.D

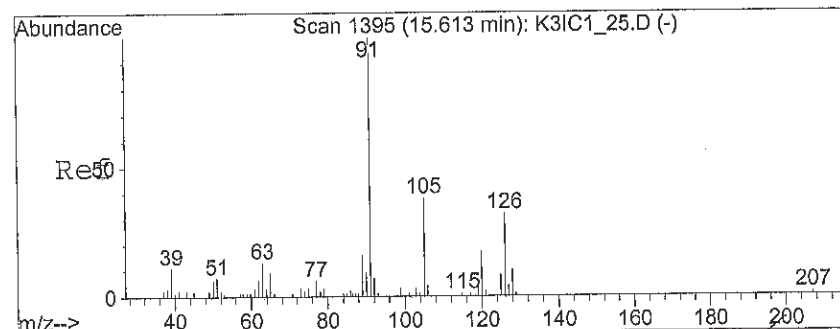
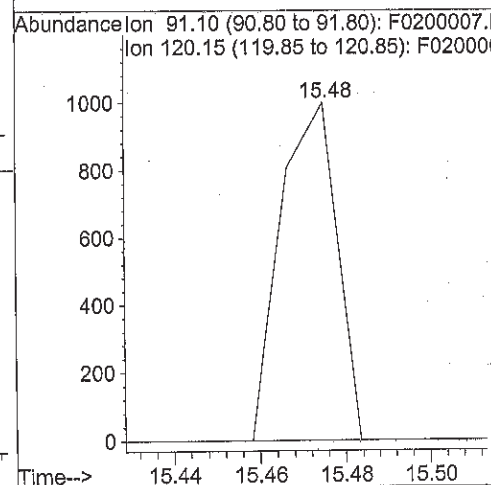
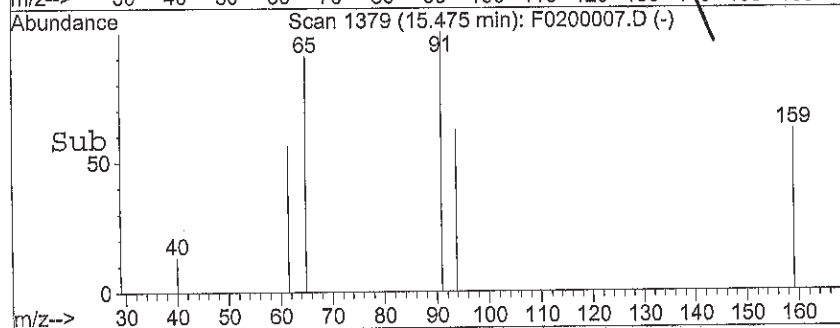
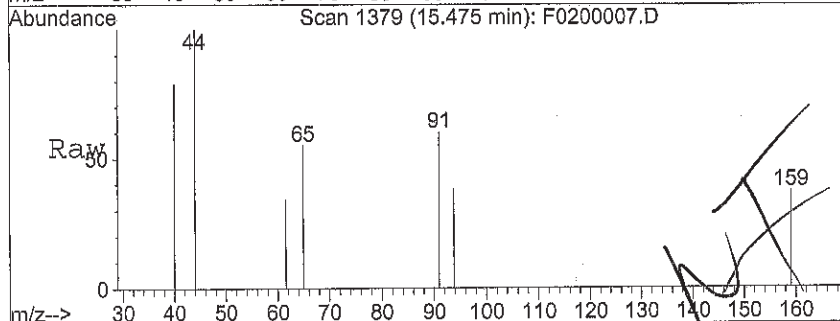
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 91 Resp: 915

Ion Ratio Lower Upper

91 100

120 0.0 16.1 24.1#



#63

2-Chlorotoluene

Concen: 0.03 ug/L

RT: 15.60 min Scan# 1394

Delta R.T. -0.01 min

Lab File: F0200007.D

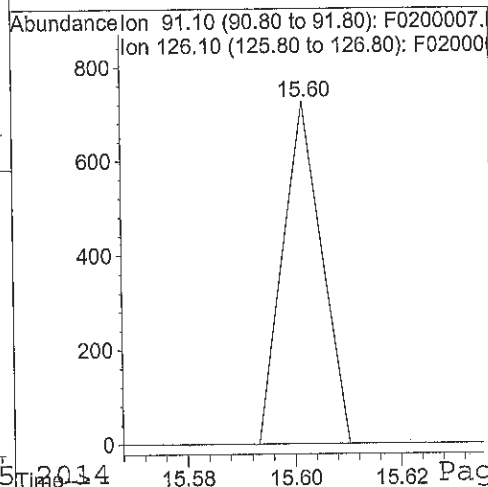
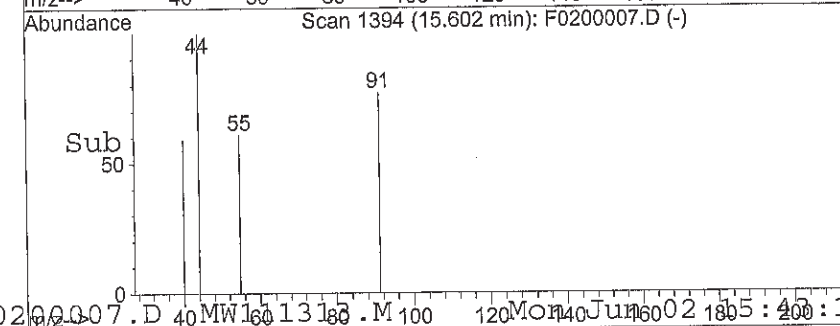
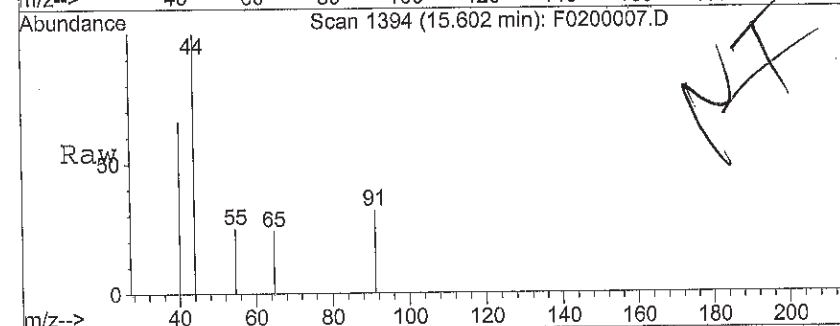
Acq: 2 Jun 2014 2:50 pm

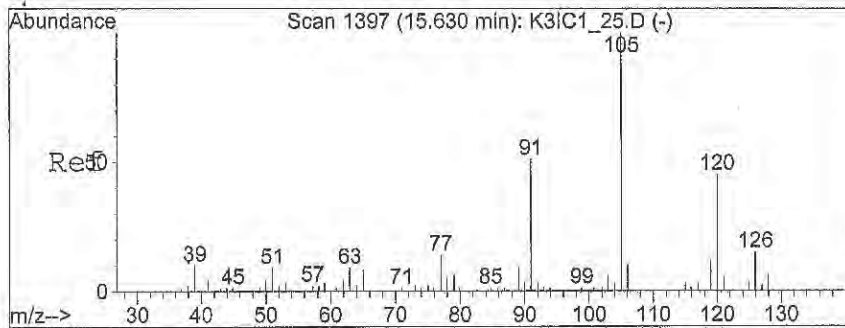
Tgt Ion: 91 Resp: 368

Ion Ratio Lower Upper

91 100

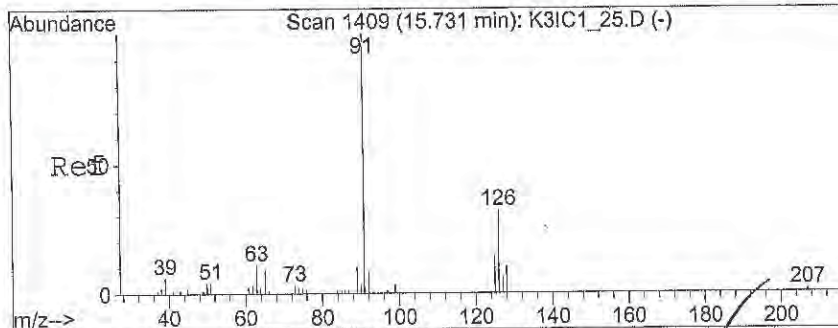
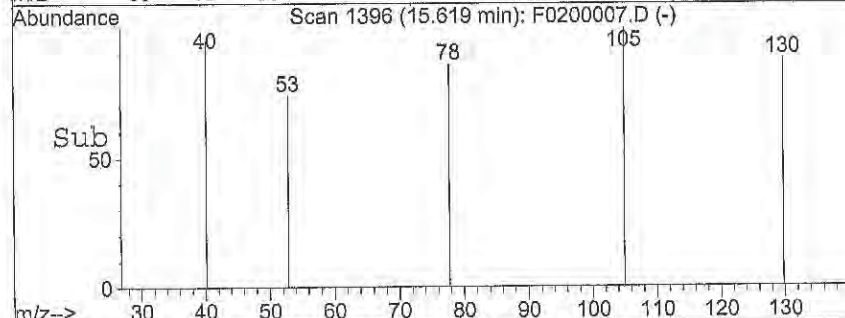
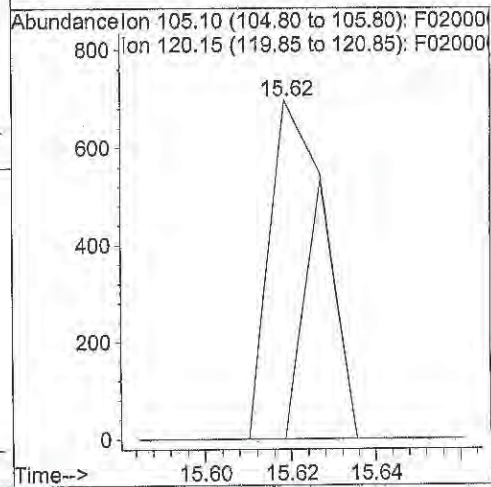
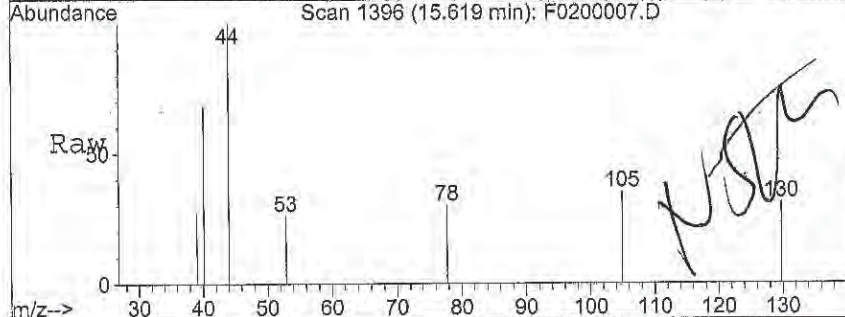
126 0.0 24.0 36.0#





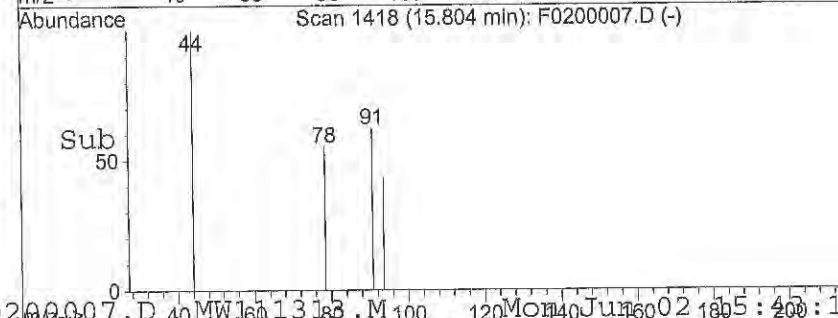
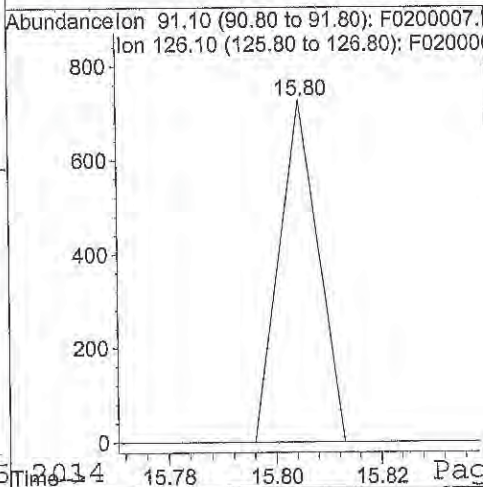
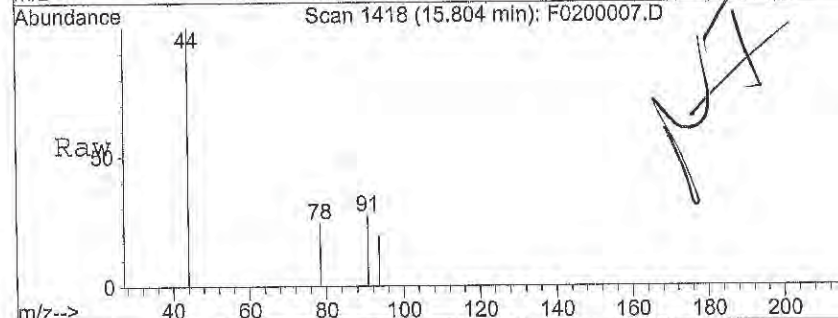
#64
 1,3,5-Trimethylbenzene
 Concen: 0.04 ug/L
 RT: 15.62 min Scan# 1396
 Delta R.T. -0.01 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

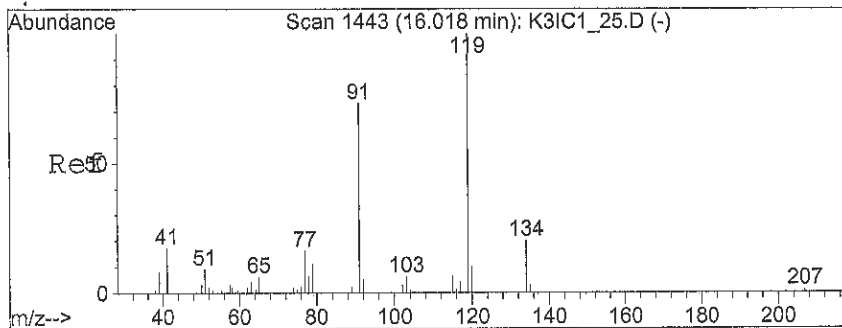
Tgt Ion: 105	Resp: 629
Ion Ratio	Lower Upper
105	100
120	42.8 36.4 54.6



#65
 4-Chlorotoluene
 Concen: 0.03 ug/L
 RT: 15.80 min Scan# 1418
 Delta R.T. 0.07 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

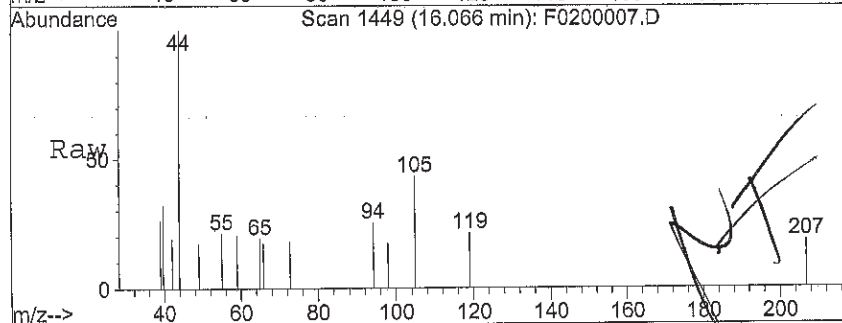
Tgt Ion: 91	Resp: 368
Ion Ratio	Lower Upper
91	100
126	0.0 24.6 36.8#





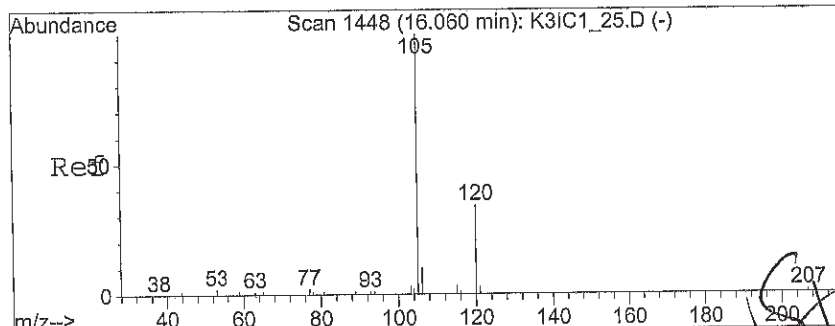
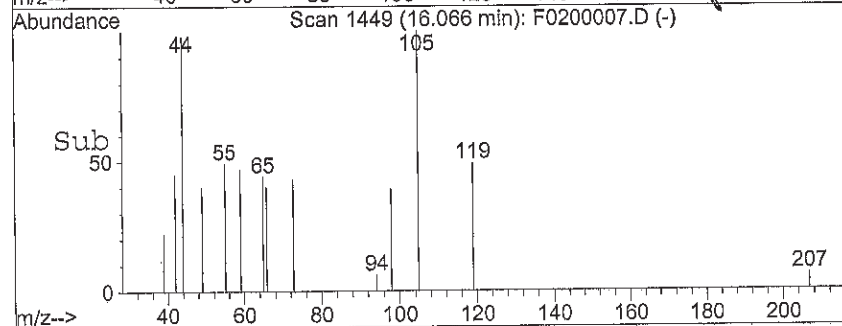
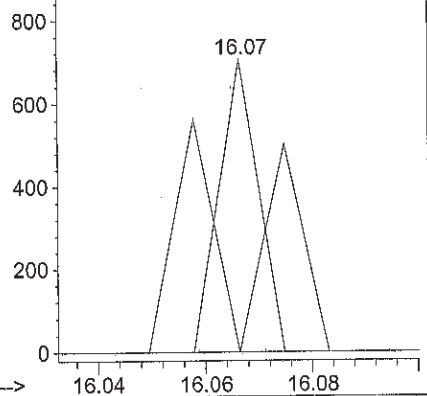
#66
 tert-Butylbenzene
 Concen: 0.03 ug/L
 RT: 16.07 min Scan# 1449
 Delta R.T. 0.05 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

Tgt Ion:119 Resp: 358
 Ion Ratio Lower Upper
 119 100
 91 150.8 56.3 84.5#
 134 0.0 16.1 24.1#



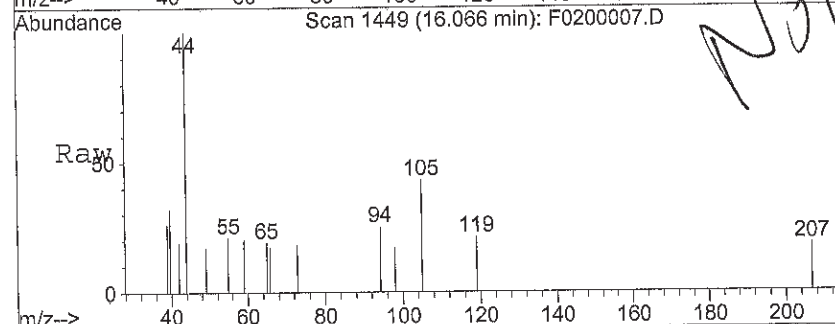
Abundance

Ion 119.15 (118.85 to 119.85): F0200007.D



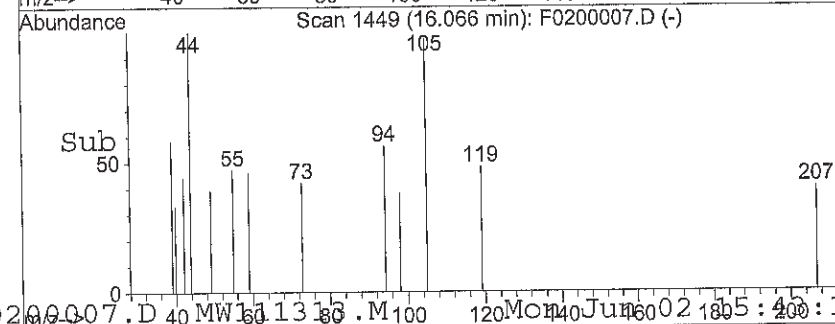
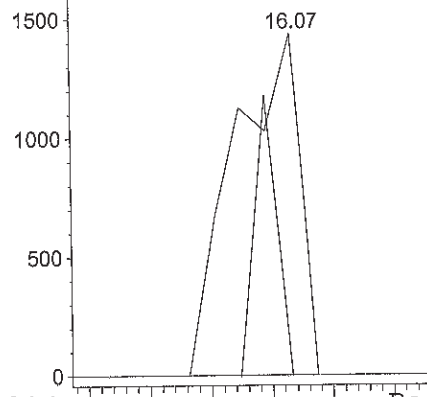
#67
 1,2,4-Trimethylbenzene
 Concen: 0.15 ug/L
 RT: 16.07 min Scan# 1449
 Delta R.T. 0.01 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

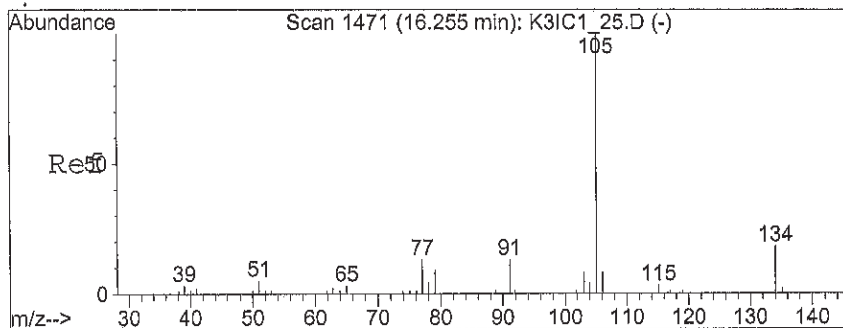
Tgt Ion:105 Resp: 2155
 Ion Ratio Lower Upper
 105 100
 120 27.7 33.8 50.8#



Abundance

Ion 105.10 (104.80 to 105.80): F0200007.D





#68

sec-Butylbenzene

Concen: 0.02 ug/L

RT: 16.24 min Scan# 1470

Delta R.T. -0.01 min

Lab File: F0200007.D

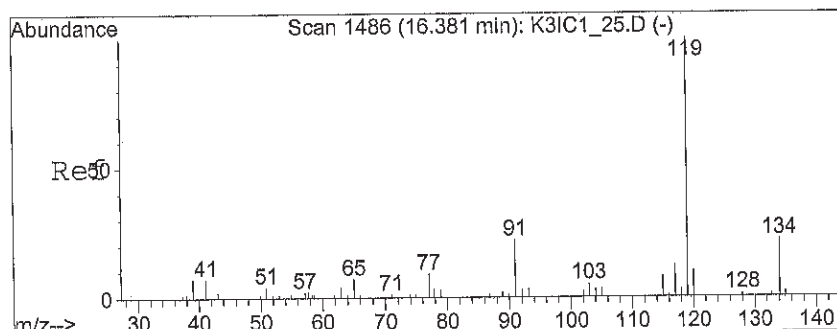
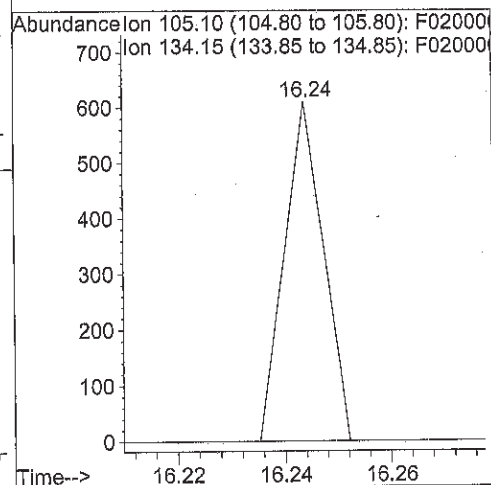
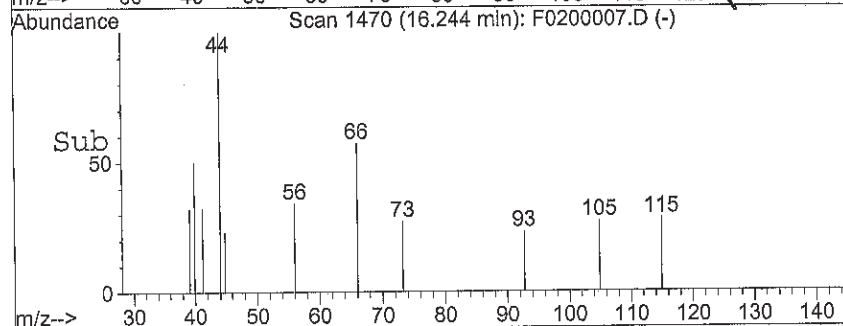
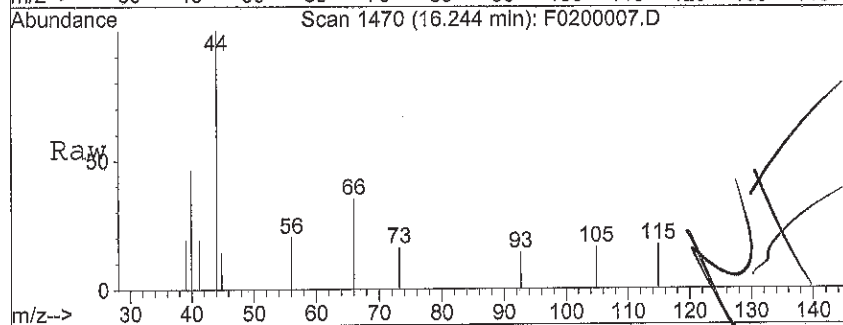
Acq: 2 Jun 2014 2:50 pm

Tgt Ion:105 Resp: 309

Ion Ratio Lower Upper

105 100

134 0.0 13.0 19.6#



#69

p-Isopropyltoluene

Concen: 0.09 ug/L

RT: 16.39 min Scan# 1487

Delta R.T. 0.01 min

Lab File: F0200007.D

Acq: 2 Jun 2014 2:50 pm

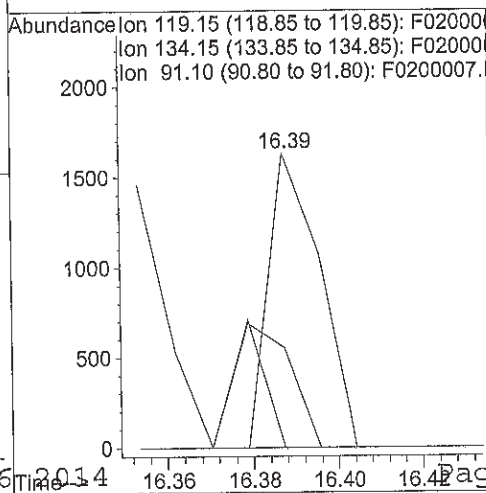
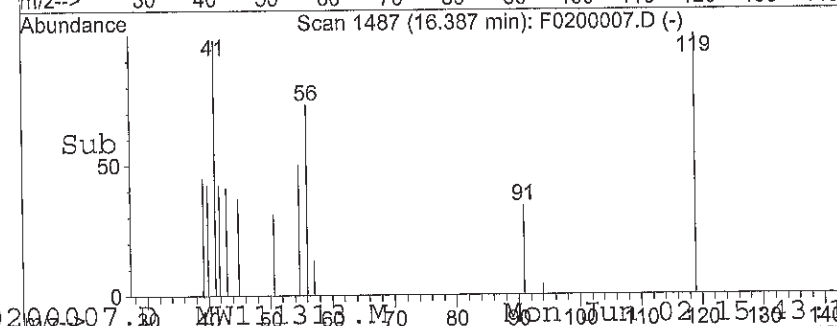
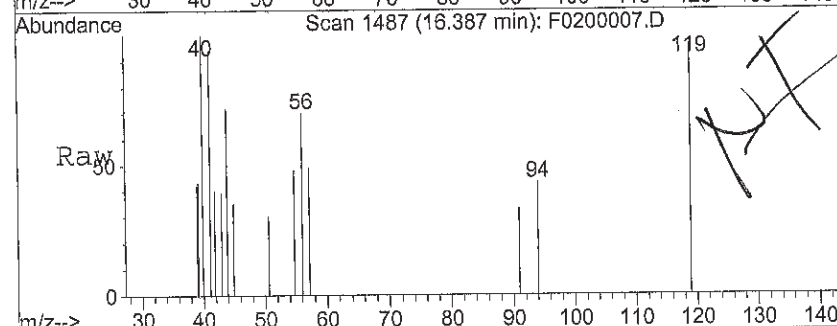
Tgt Ion:119 Resp: 1371

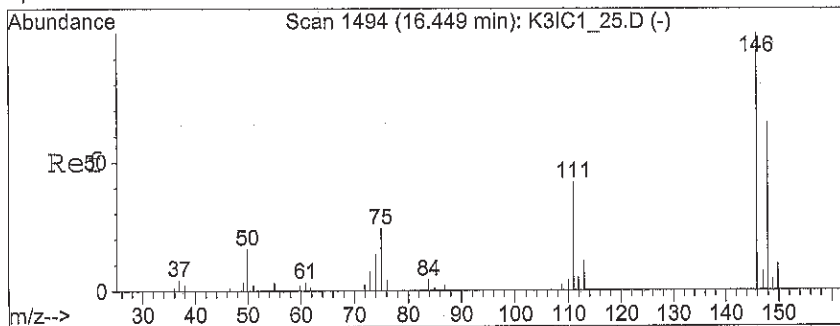
Ion Ratio Lower Upper

119 100

134 26.2 17.4 26.2#

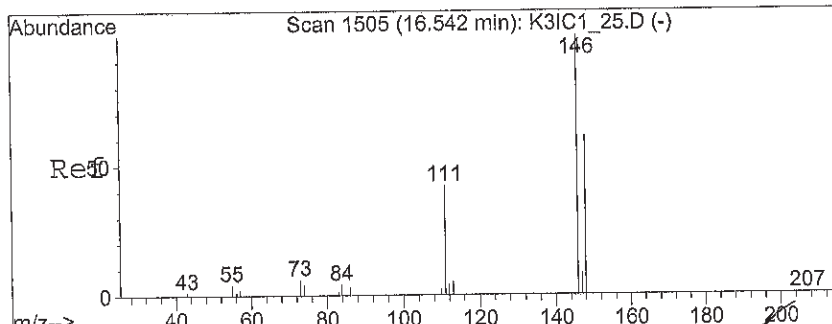
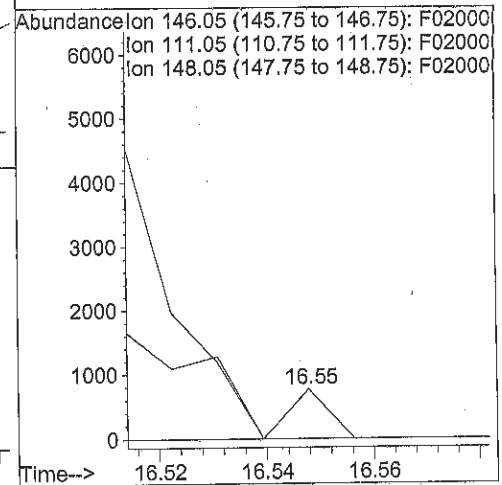
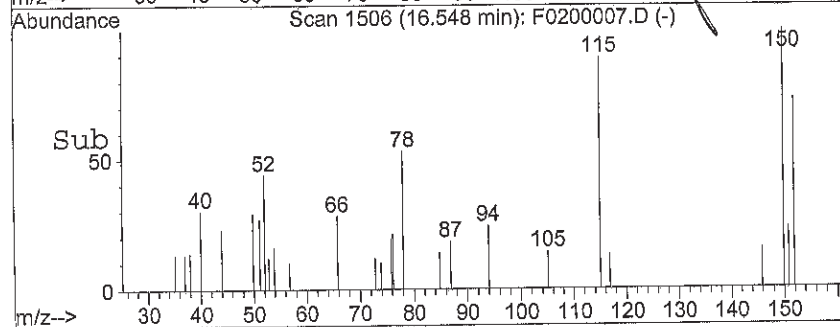
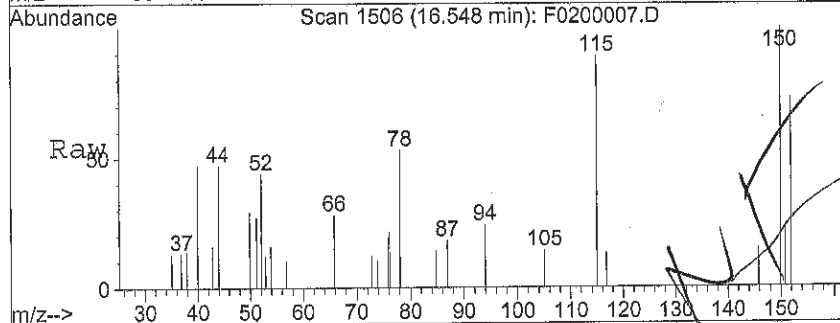
91 46.0 19.6 29.4#





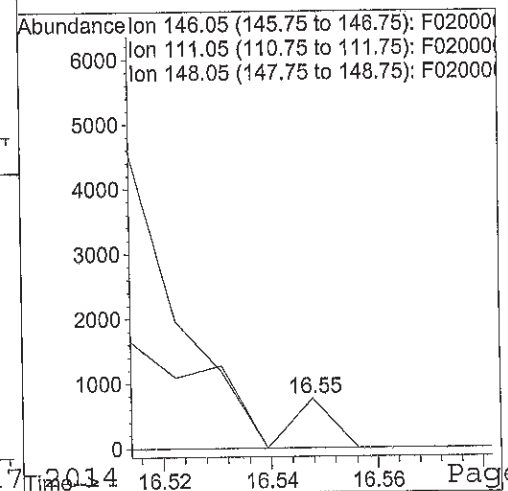
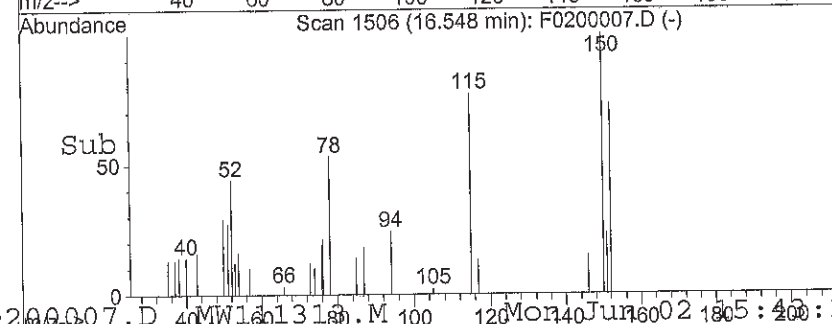
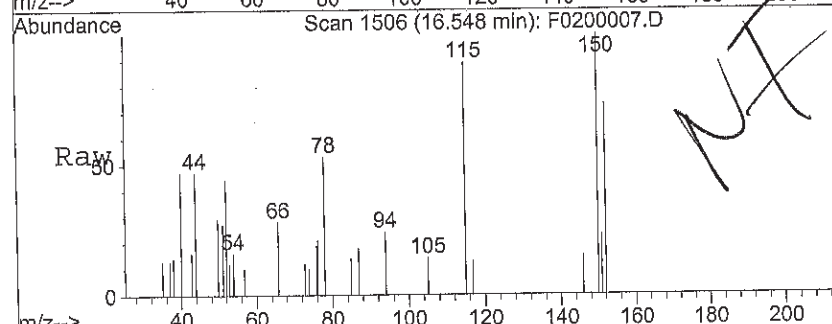
#70
 1,3-Dichlorobenzene
 Concen: 0.05 ug/L
 RT: 16.55 min Scan# 1506
 Delta R.T. 0.10 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

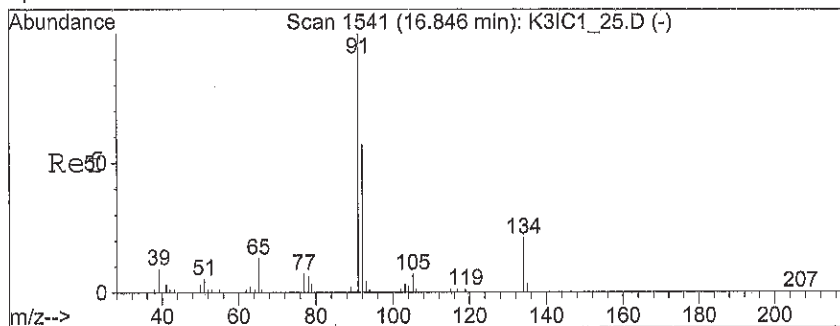
Tgt Ion:146 Resp: 387
 Ion Ratio Lower Upper
 146 100
 111 0.0 34.2 51.4#
 148 0.0 50.9 76.3#



#71
 1,4-Dichlorobenzene
 Concen: 0.05 ug/L
 RT: 16.55 min Scan# 1506
 Delta R.T. 0.01 min
 Lab File: F0200007.D
 Acq: 2 Jun 2014 2:50 pm

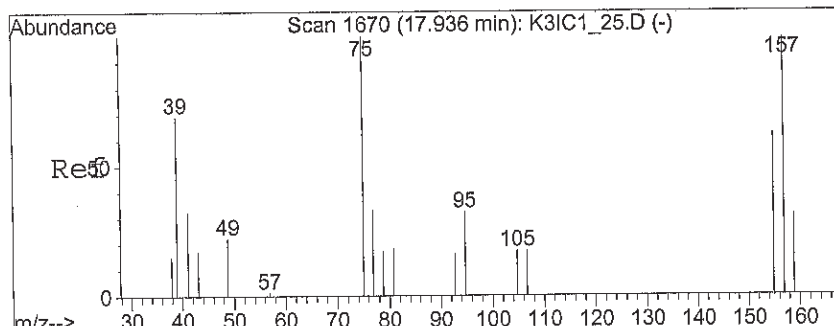
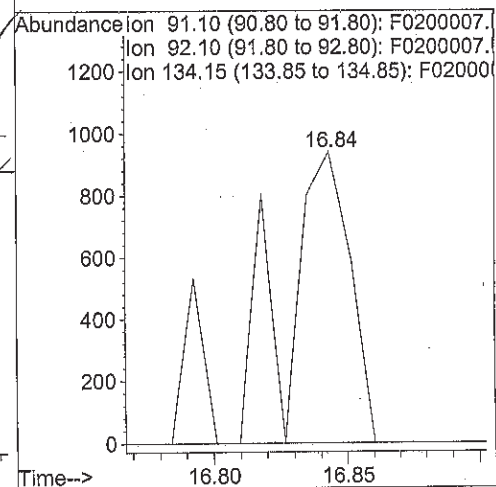
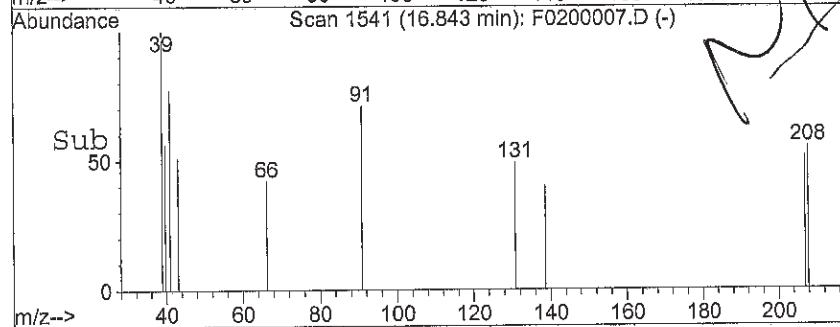
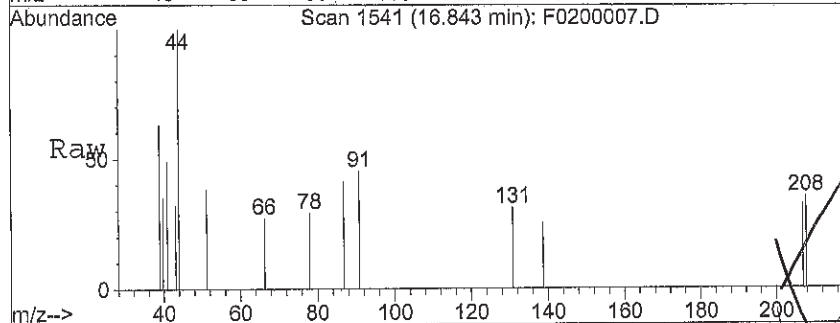
Tgt Ion:146 Resp: 387
 Ion Ratio Lower Upper
 146 100
 111 0.0 37.6 56.4#
 148 0.0 52.6 78.8#





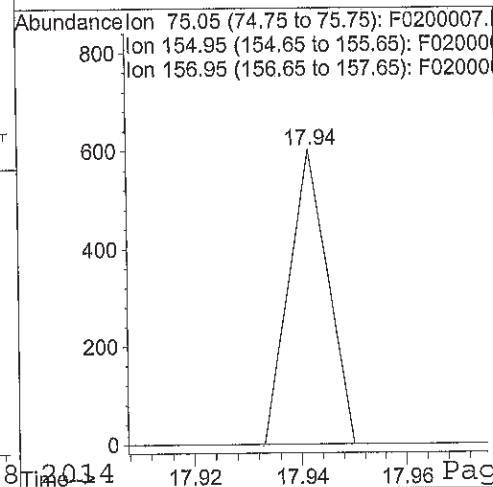
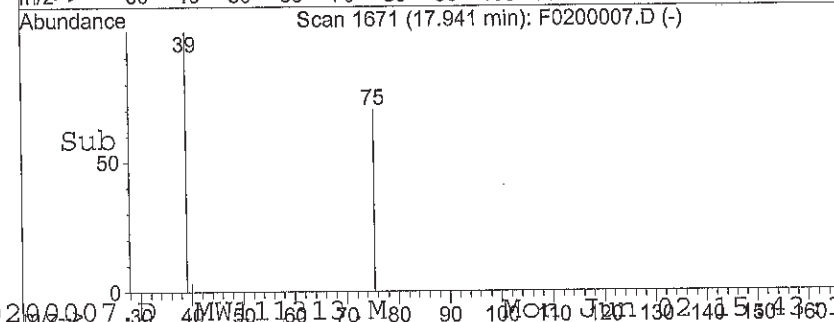
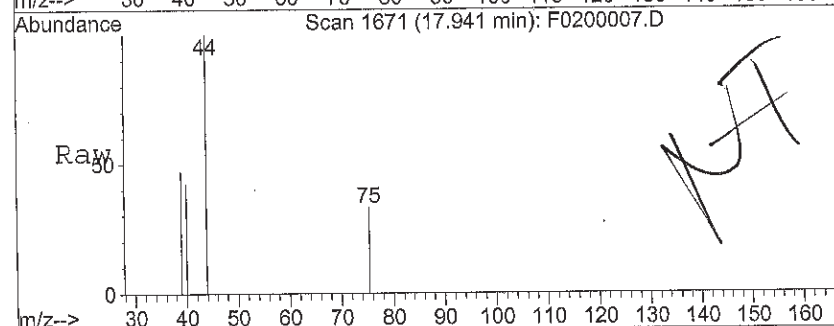
#72
n-Butylbenzene
Concen: 0.10 ug/L
RT: 16.84 min Scan# 1541
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

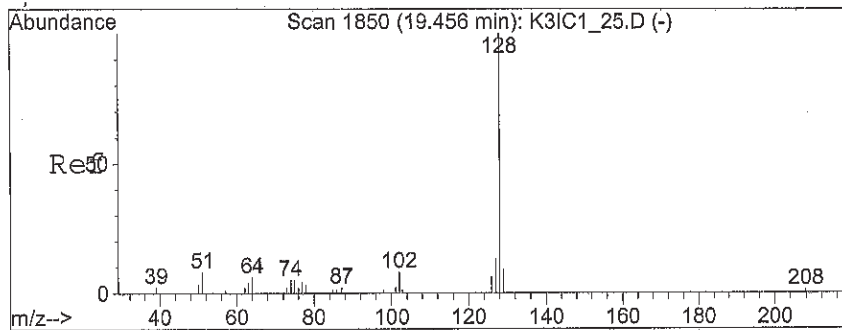
Tgt Ion: 91 Resp: 1590
Ion Ratio Lower Upper
91 100
92 0.0 47.0 70.4#
134 0.0 18.1 27.1#



#74
1,2-Dibromo-3-chloropropane
Concen: 1.35 ug/L
RT: 17.94 min Scan# 1671
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

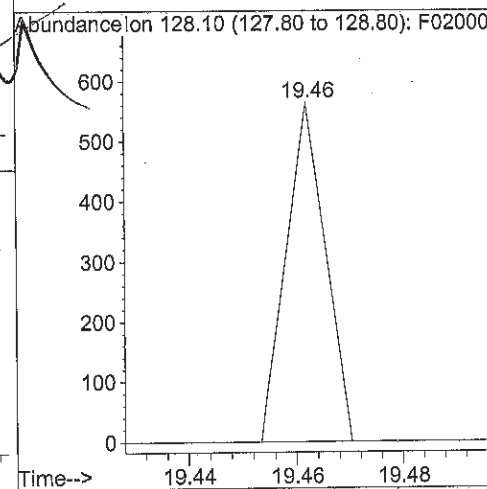
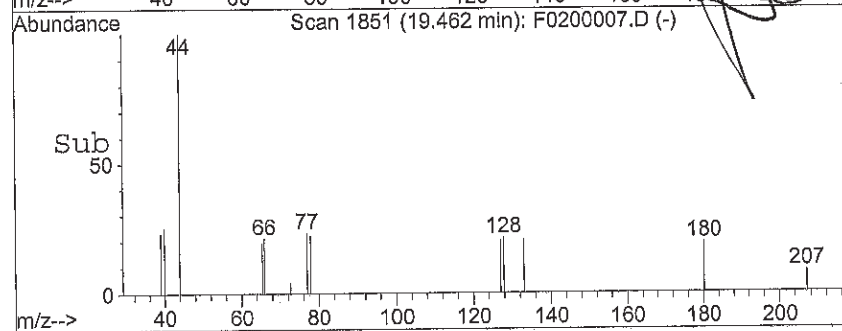
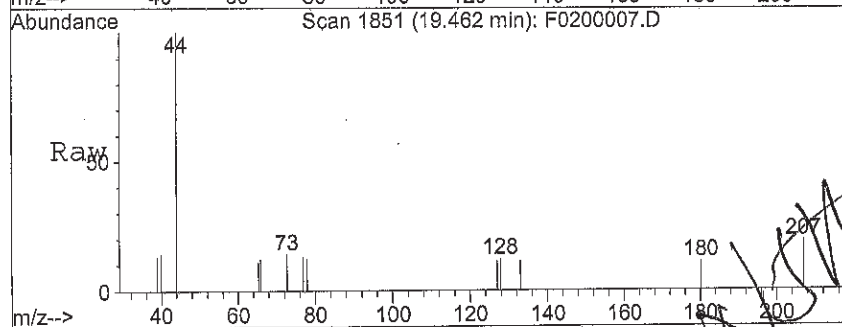
Tgt Ion: 75 Resp: 305
Ion Ratio Lower Upper
75 100
155 0.0 59.2 88.8#
157 0.0 77.0 115.6#





#77
Naphthalene
Concen: 0.03 ug/L
RT: 19.46 min Scan# 1851
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion:128 Resp: 286



Data File : C:\HPCHEM\1\DATA\060214L3\F0200007.D

Vial: 6

Acq On : 2 Jun 2014 2:50 pm

Operator: DN

Sample : 3F40201-06

Inst : GC/MS Ins

Misc : 100cc SVL-505-SA5C-SV-10.0-11.0

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 3 7:41 19114

Quant Results File: SS072713.RES

Quant Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN

Last Update : Mon Nov 18 10:31:39 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene (IS)	10.29	96	1178685	12.50	ug/L	-0.02
7) Chlorobenzene-d5 (IS)	13.92	117	1115191	12.50	ug/L	0.00
10) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	566657	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	398239m	12.99	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	103.92%
3) Chloroform-d (SU6)	9.18	84	546131m	12.42	ug/L	0.00
Spiked Amount	12.500	Range	70 - 140	Recovery	=	99.36%
4) Methylene Chloride-d2 (SU5)	7.06	86	281581	10.95	ug/L	0.02
Spiked Amount	12.500	Range	70 - 140	Recovery	=	87.60%
5) 1,2-Dichloroethane-d4 (SU2)	9.89	65	381892m	18.23	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	145.84%#
6) Benzene-d6 (SU7)	9.93	84	1072166	11.59	ug/L	-0.03
Spiked Amount	12.500	Range	70 - 140	Recovery	=	92.72%
8) Toluene-d8 (SU3)	12.21	98	1167505	11.03	ug/L	-0.02
Spiked Amount	12.500	Range	75 - 125	Recovery	=	88.24%
9) 4-Bromofluorobenzene (SU4)	15.22	95	562049m	12.87	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	102.96%

Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration

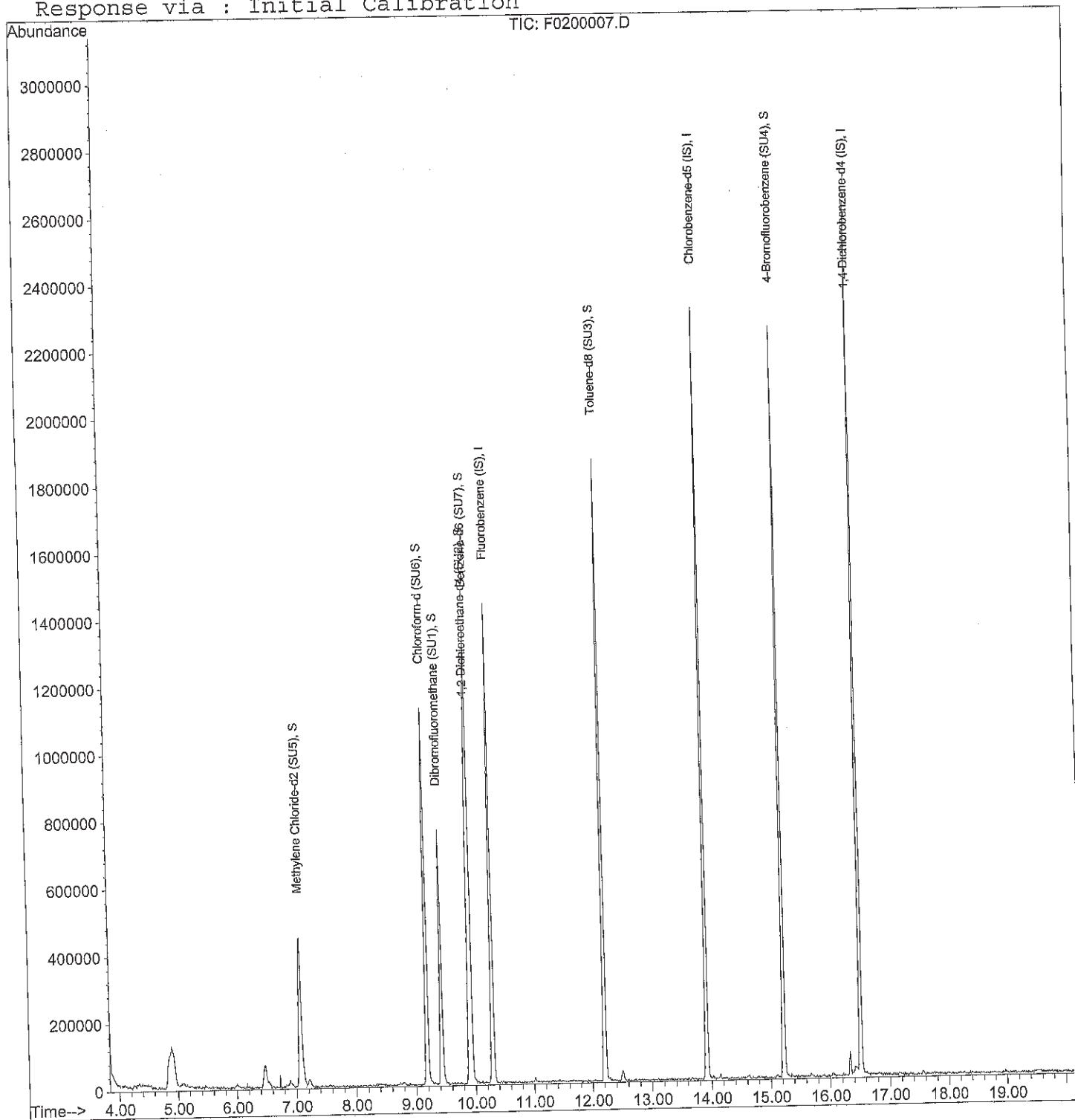
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200007.D
 Acq On : 2 Jun 2014 2:50 pm
 Sample : 3F40201-06
 Misc : 100cc SVL-505-SA5C-SV-10.0-11.0
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:41 19114

Vial: 6
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration



Data File : C:\HPCHEM\1\DATA\060214L3\F0200008.D

Vial: 7

Acq On : 2 Jun 2014 3:19 pm

Operator: DN

Sample : 3F40201-07

Inst : GC/MS Ins

Misc : 100cc SVL-805-SA5C-SV-10.0-11.0

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 15:55 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene (IS)	10.29	96	1193768	12.50	ug/L	0.00
38) Chlorobenzene-d5 (IS)	13.92	117	1078807	12.50	ug/L	0.00
59) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	575670	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	396044m	13.30	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	106.40%
28) 1,2-Dichloroethane-d4 (SU2)	9.89	65	356497m	12.60	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	100.80%
39) Toluene-d8 (SU3)	12.21	98	1144505	11.37	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	90.96%
58) 4-Bromofluorobenzene (SU4)	15.22	95	525064m	11.90	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	95.20%

Target Compounds

					Qvalue	
3) (F12) Dichlorodifluorometh	4.10	85	600	0.20 ug/L	#	44
4) Chloromethane	4.51	50	1126	-0.66 ug/L	#	93
5) Vinyl Chloride	4.49	62	394	0.19 ug/L	#	43
6) Bromomethane	5.09	96	5536	2.44 ug/L	#	47
7) Chloroethane	5.31	64	1559	2.26 ug/L	#	100
8) (F11) Trichlorofluorometha	5.64	101	544	0.17 ug/L	#	16
11) Acetone	6.46	58	5514	7.13 ug/L	#	1
12) (IPA) Leak Check Compound	6.47	45	139869	975.05 ug/L	#	88
13) Carbon disulfide	6.83	76	12553	1.26 ug/L	#	82
14) Methylene Chloride	7.08	84	7146	2.18 ug/L	#	1
15) (TBA) tert-Butanol	7.16	59	262	1.29 ug/L	#	77
16) (MTBE) Methyl-t-butyl ethe	7.42	73	607	0.09 ug/L	#	55
18) 1,1-Dichloroethane	7.91	63	343	0.06 ug/L	#	42
20) 2,2-Dichloropropane	8.82	77	294	0.06 ug/L	#	1
22) (DIPE) Diisopropyl Ether	8.08	45	320	0.03 ug/L	#	48
24) Chloroform	9.22	83	2741	0.44 ug/L	#	18
25) (ETBE) 2-ethoxy 2-methyl p	8.51	59	301	0.03 ug/L	#	44
26) 1,1,1-Trichloroethane	9.66	97	261	0.05 ug/L	#	1
29) 1,1-Dichloropropene	9.64	75	263	0.06 ug/L	#	1
30) Carbon Tetrachloride	9.71	117	346	0.09 ug/L	#	2
31) Benzene	9.98	78	1078	0.10 ug/L	#	57
32) 1,2-Dichloroethane	9.97	62	433	0.11 ug/L	#	43

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060214L3\F0200008.D

Vial: 7

Acq On : 2 Jun 2014 3:19 pm

Operator: DN

Sample : 3F40201-07

Inst : GC/MS Ins

Misc : 100cc SVL-805-SA5C-SV-10.0-11.0

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 15:55 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
34) 1,2-Dichloropropane	11.06	63	302	0.11 ug/L #SH	2
35) Dibromomethane	11.22	93	371	0.18 ug/L #	5
40) (MIBK) 4-Methyl-2-Pentanone	12.20	43	11349	5.27 ug/L #	100
41) Toluene	12.29	91	5602	0.38 ug/L #0.07	82
42) trans-1,3-Dichloropropene	12.45	75	254	0.05 ug/L #	4
45) 1,3-Dichloropropane	12.94	76	262	0.05 ug/L #	41
46) 2-Hexanone	12.96	43	1457	0.62 ug/L #	37
50) 1,1,1,2-Tetrachloroethane	14.06	131	274	0.08 ug/L #	6
51) Ethylbenzene	14.03	91	2351	0.14 ug/L #SH	74
52) m,p-Xylenes	14.16	106	1332	0.22 ug/L #0.004	28
54) Styrene	14.62	104	1712	-0.67 ug/L #	50
56) Isopropylbenzene	15.01	105	479	0.03 ug/L #SM	55
57) 1,2,3-Trichloropropane	15.45	75	686	0.16 ug/L #	36
60) 1,1,2,2-Tetrachloroethane	15.40	83	265	0.06 ug/L #	18
62) n-Propylbenzene	15.46	91	286	0.01 ug/L #	56
63) 2-Chlorotoluene	15.53	91	376	0.03 ug/L #	45
64) 1,3,5-Trimethylbenzene	15.63	105	777	0.05 ug/L #	31
65) 4-Chlorotoluene	15.53	91	376	0.03 ug/L #NT	44
66) tert-Butylbenzene	16.06	119	333	0.03 ug/L #	24
67) 1,2,4-Trimethylbenzene	16.07	105	2154	0.14 ug/L #	79
68) sec-Butylbenzene	16.33	105	938	0.05 ug/L #	62
69) p-Isopropyltoluene	16.39	119	3549	0.23 ug/L #	60
72) n-Butylbenzene	16.84	91	254	0.02 ug/L #	30
73) 1,2-Dichlorobenzene	17.16	146	317	0.04 ug/L #	24
74) 1,2-Dibromo-3-chloropropan	18.03	75	306	1.34 ug/L #	6
77) Naphthalene	19.47	128	439	0.04 ug/L #	100

(#) = qualifier out of range (m) = manual integration

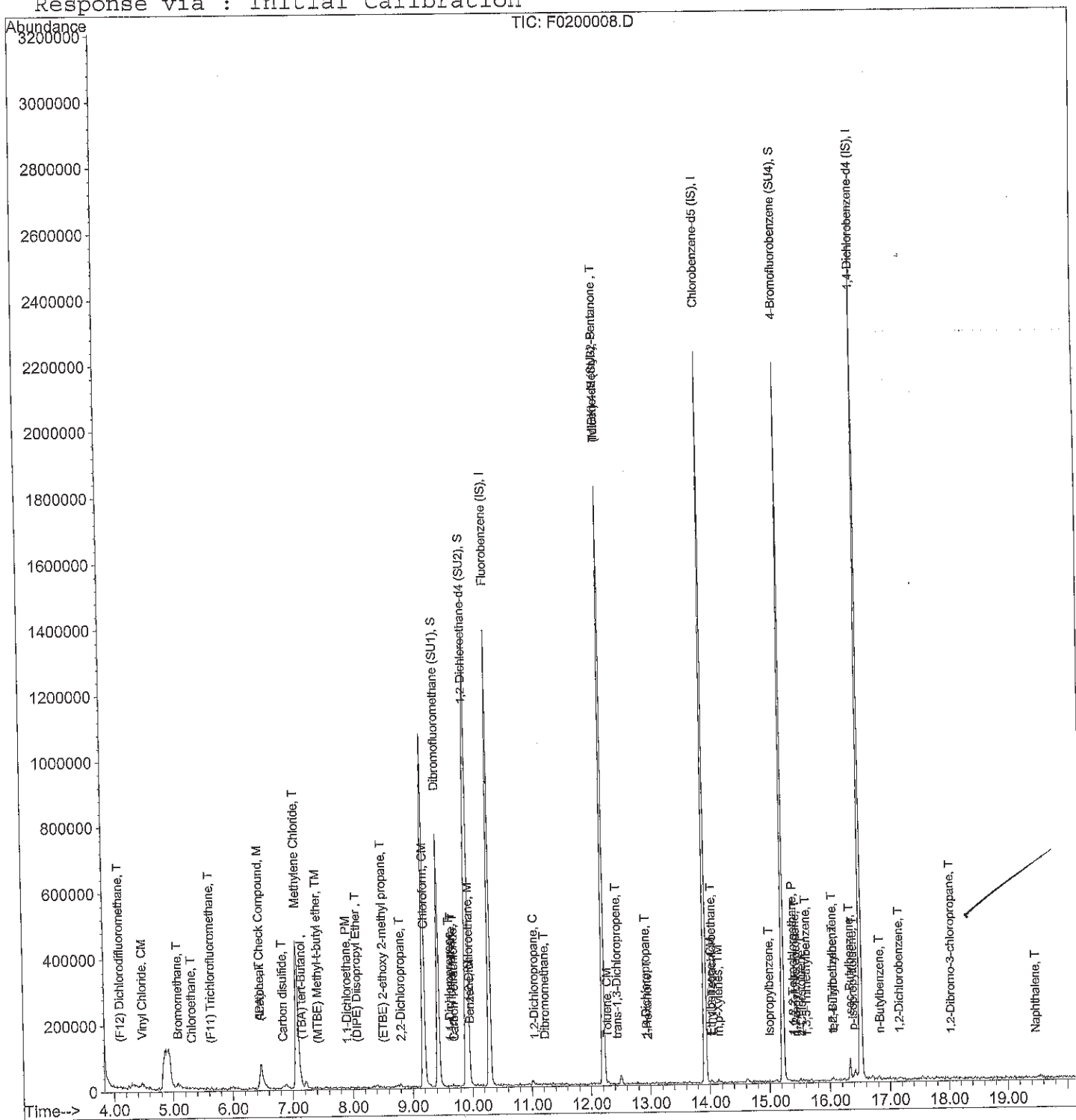
Quantitation Report

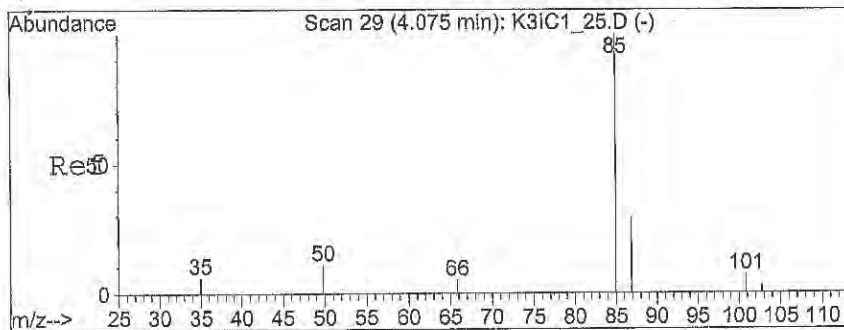
Data File : C:\HPCHEM\1\DATA\060214L3\F0200008.D
 Acq On : 2 Jun 2014 3:19 pm
 Sample : 3F40201-07
 Misc : 100cc SVL-805-SA5C-SV-10.0-11.0
 MS Integration Params: rteint.p
 Quant Time: Jun 2 15:55 19114

Vial: 7
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: MW111313.RES

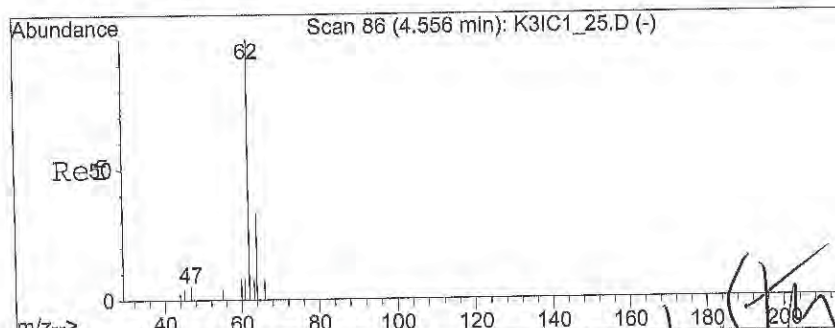
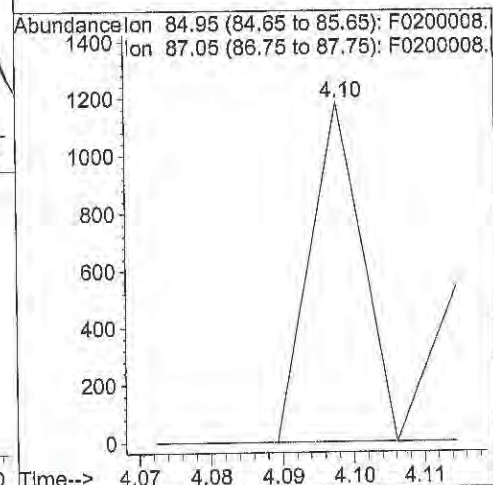
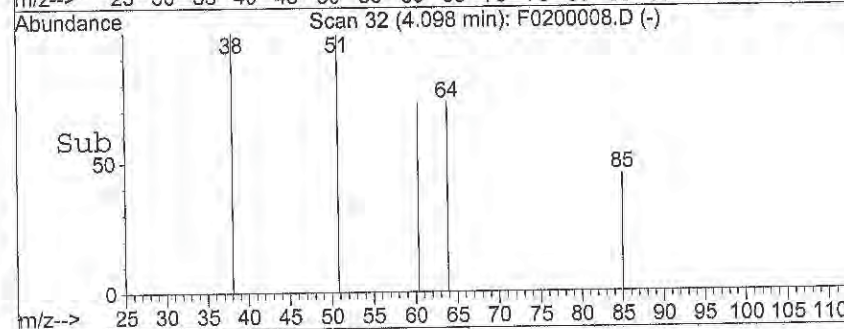
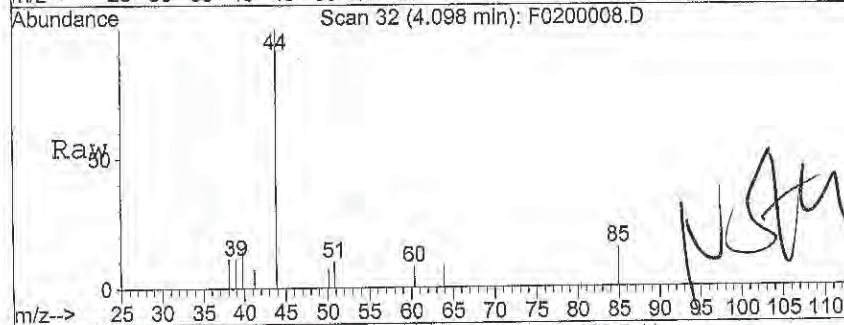
Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration





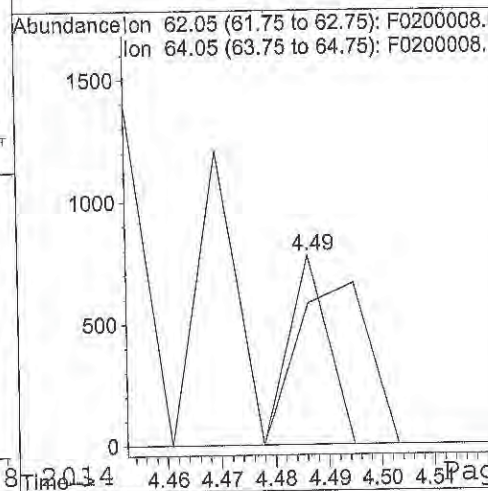
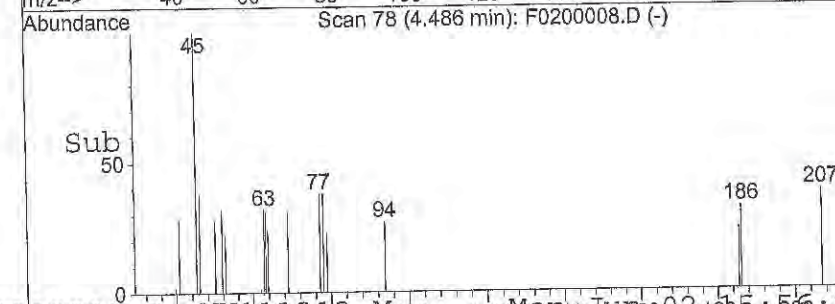
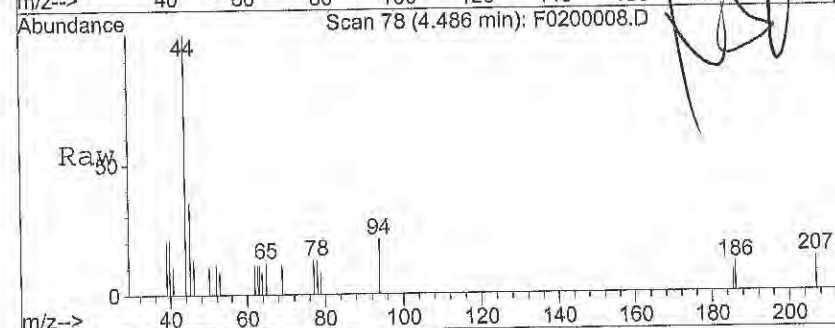
#3
 (F12) Dichlorodifluoromethane
 Concen: 0.20 ug/L
 RT: 4.10 min Scan# 32
 Delta R.T. 0.02 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

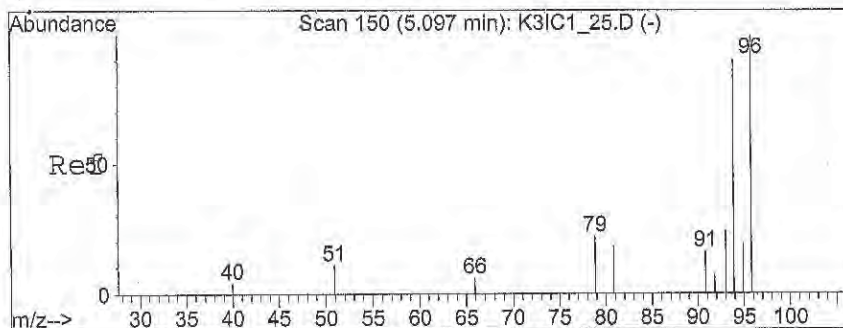
Tgt Ion: 85 Resp: 600
 Ion Ratio Lower Upper
 85 100
 87 0.0 24.6 37.0#



#5
 Vinyl Chloride
 Concen: 0.19 ug/L
 RT: 4.49 min Scan# 78
 Delta R.T. -0.07 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

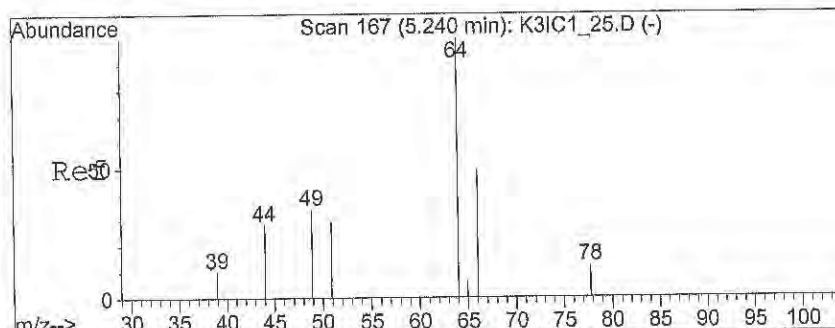
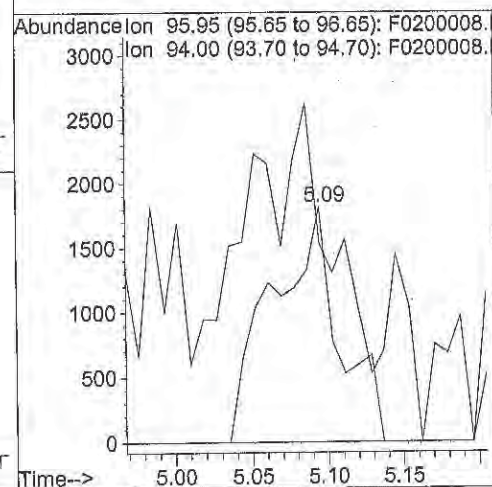
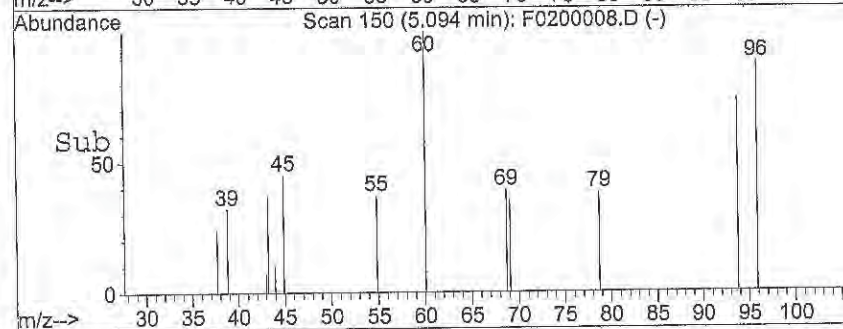
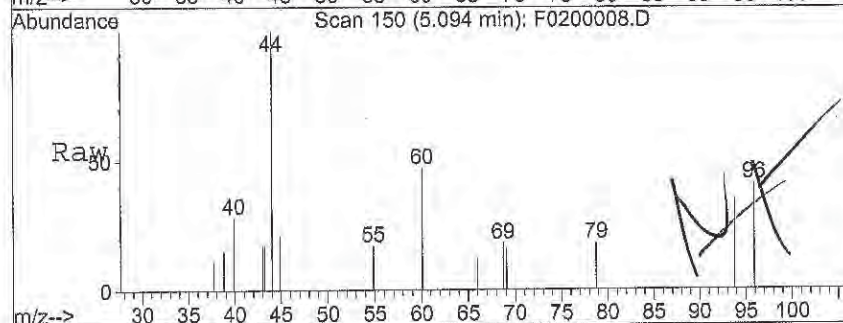
Tgt Ion: 62 Resp: 394
 Ion Ratio Lower Upper
 62 100
 64 0.0 25.6 38.4#





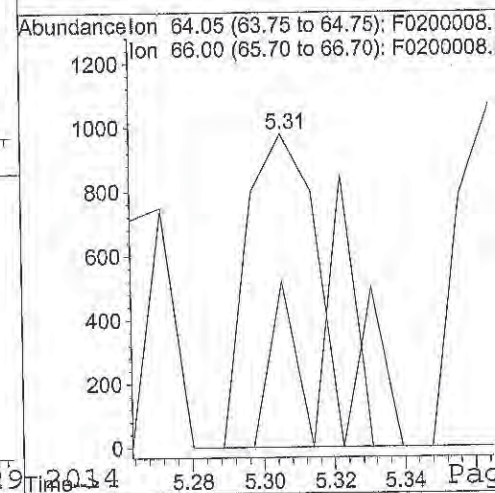
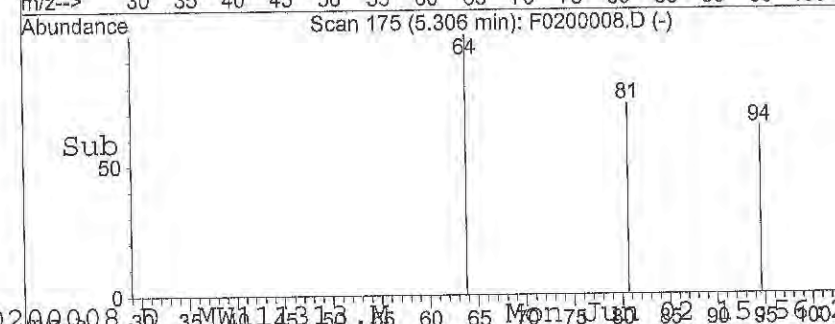
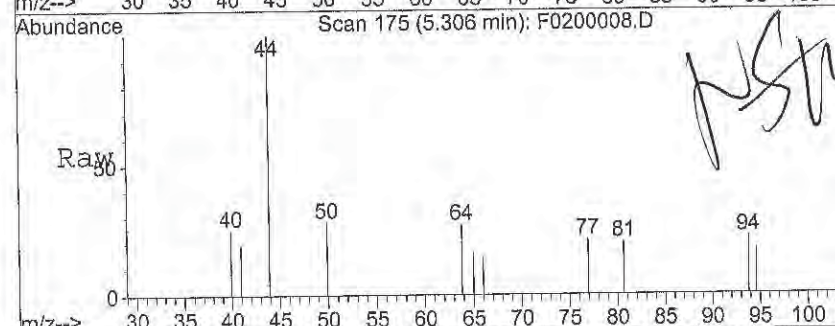
#6
Bromomethane
Concen: 2.44 ug/L
RT: 5.09 min Scan# 150
Delta R.T. -0.00 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

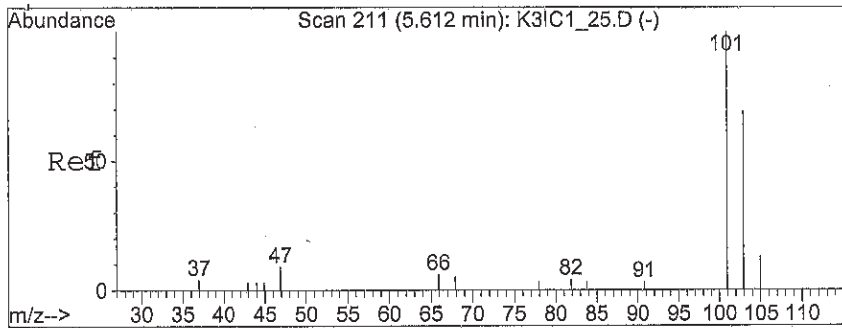
Tgt Ion: 96 Resp: 5536
Ion Ratio Lower Upper
96 100
94 65.6 101.0 151.4#



#7
Chloroethane
Concen: 2.26 ug/L
RT: 5.31 min Scan# 175
Delta R.T. 0.07 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 64 Resp: 1559
Ion Ratio Lower Upper
64 100
66 44.5 35.4 53.0





#8

(F11) Trichlorofluoromethane

Concen: 0.17 ug/L

RT: 5.64 min Scan# 214

Delta R.T. 0.02 min

Lab File: F0200008.D

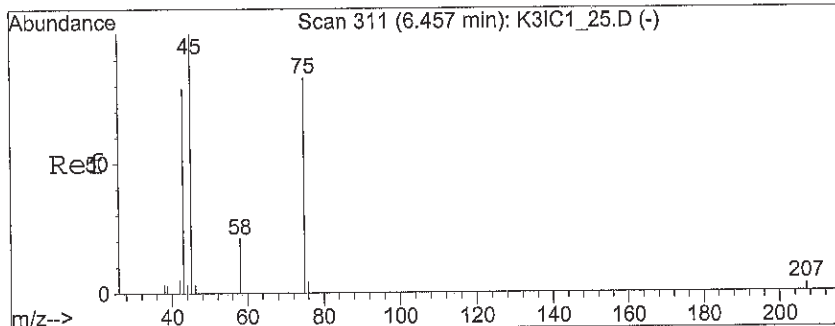
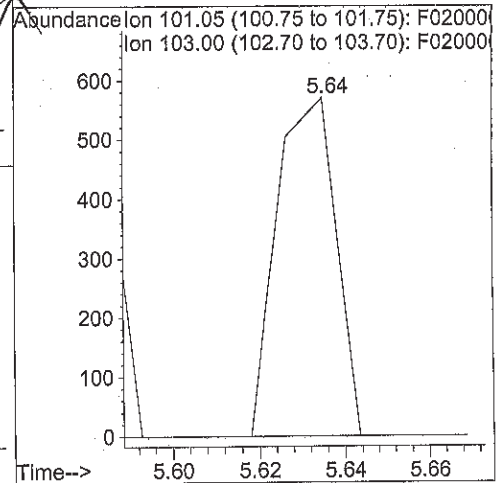
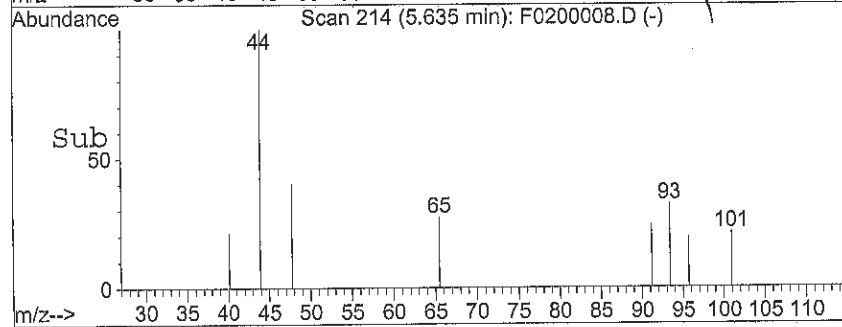
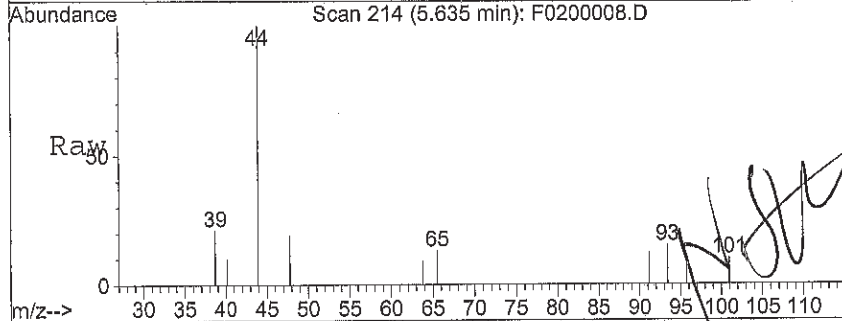
Acq: 2 Jun 2014 3:19 pm

Tgt Ion:101 Resp: 544

Ion Ratio Lower Upper

101 100

103 0.0 54.5 81.7#



#11

Acetone

Concen: 7.13 ug/L

RT: 6.46 min Scan# 312

Delta R.T. 0.01 min

Lab File: F0200008.D

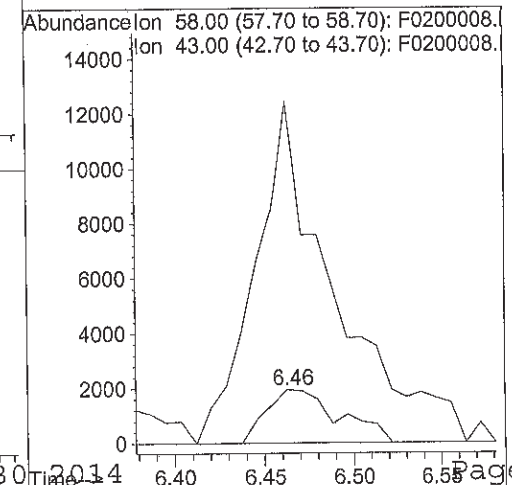
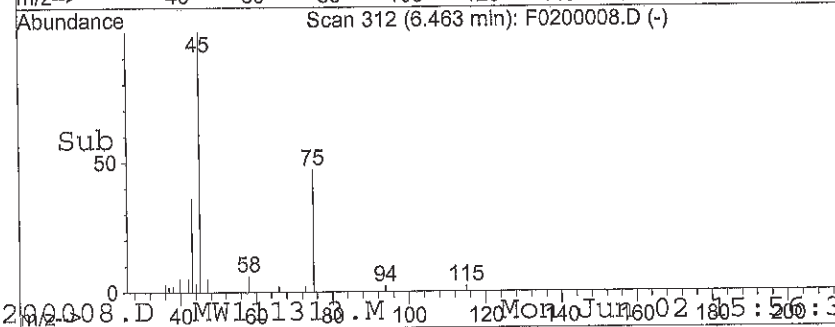
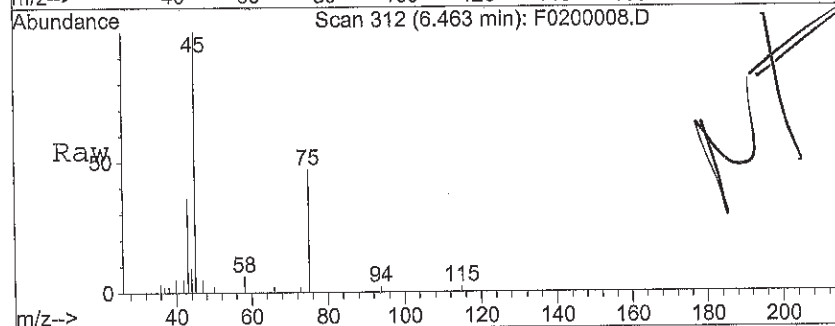
Acq: 2 Jun 2014 3:19 pm

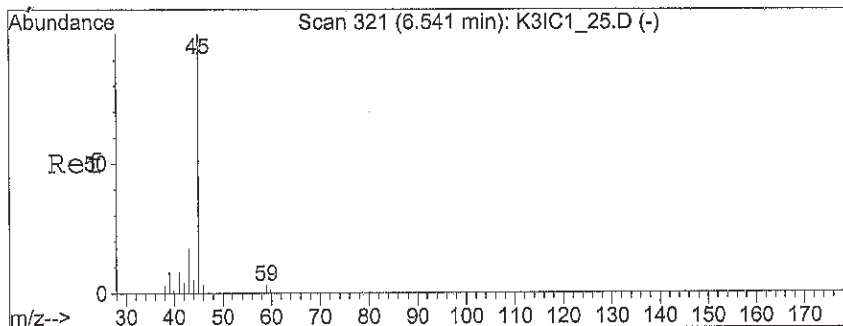
Tgt Ion: 58 Resp: 5514

Ion Ratio Lower Upper

58 100

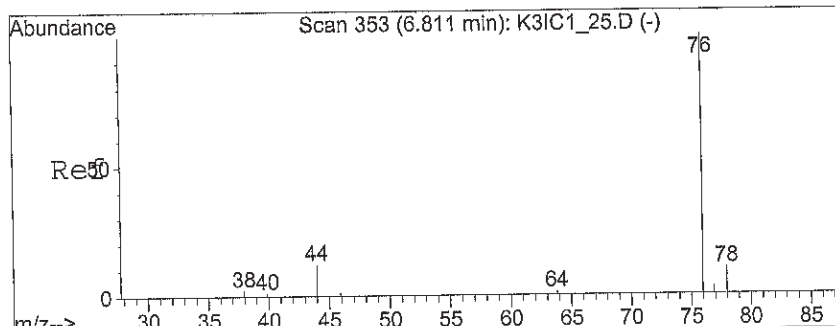
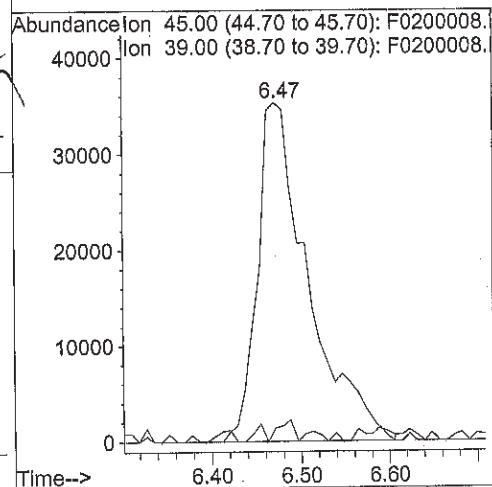
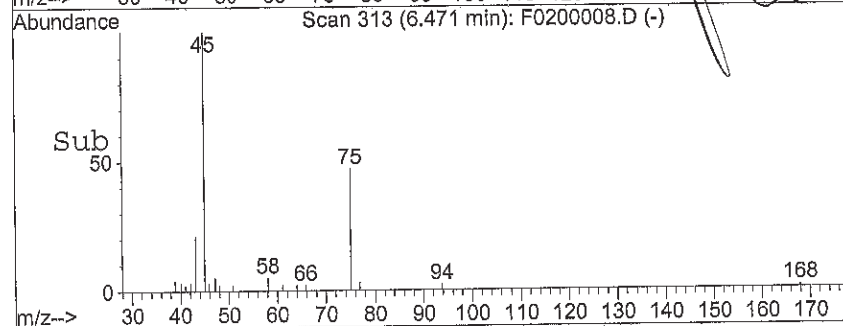
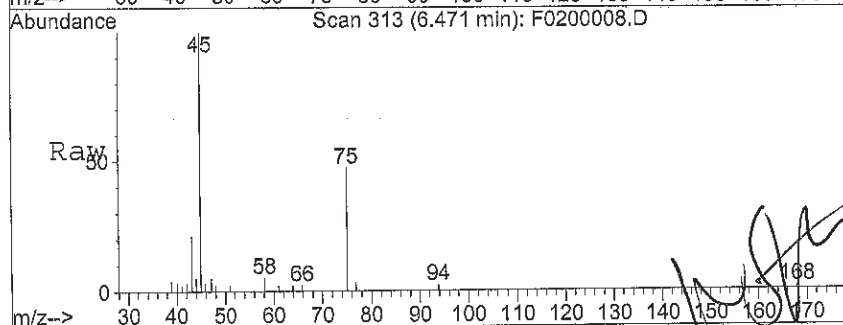
43 706.3 360.9 541.3#





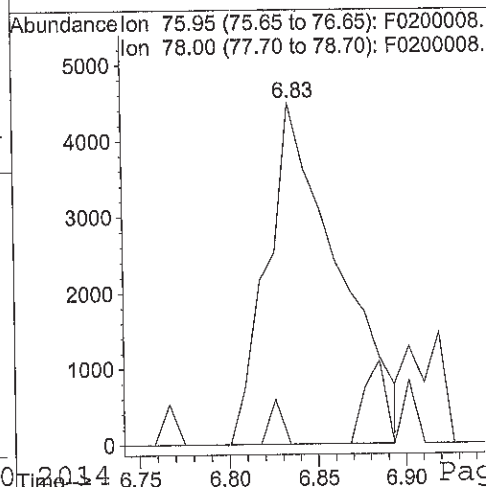
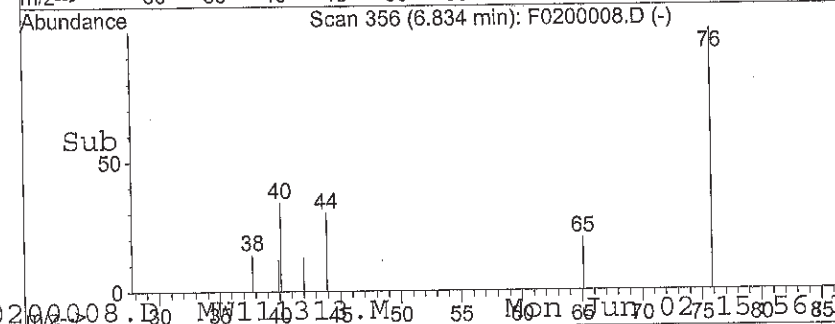
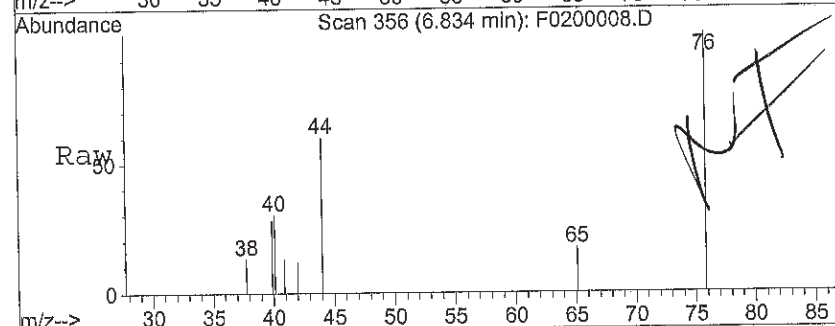
#12
 (IPA) Leak Check Compound
 Concen: 975.05 ug/L
 RT: 6.47 min Scan# 313
 Delta R.T. -0.07 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

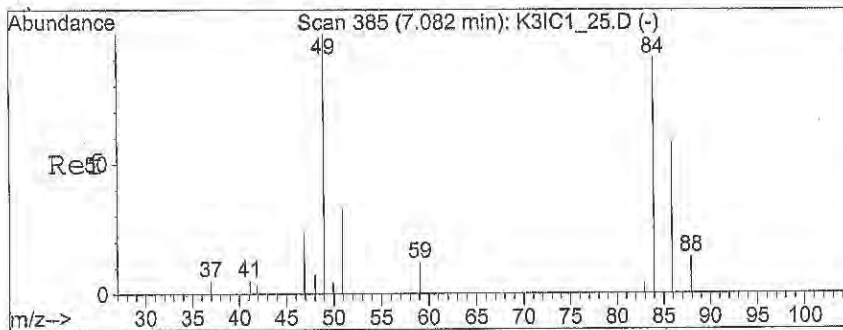
Tgt Ion: 45 Resp: 139869
 Ion Ratio Lower Upper
 45 100
 39 2.2 4.9 7.3#



#13
 Carbon disulfide
 Concen: 1.26 ug/L
 RT: 6.83 min Scan# 356
 Delta R.T. 0.02 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 76 Resp: 12553
 Ion Ratio Lower Upper
 76 100
 78 2.4 7.0 10.4#





#14

Methylene Chloride

Concen: 2.18 ug/L

RT: 7.08 min Scan# 385

Delta R.T. -0.00 min

Lab File: F0200008.D

Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 84 Resp: 7146

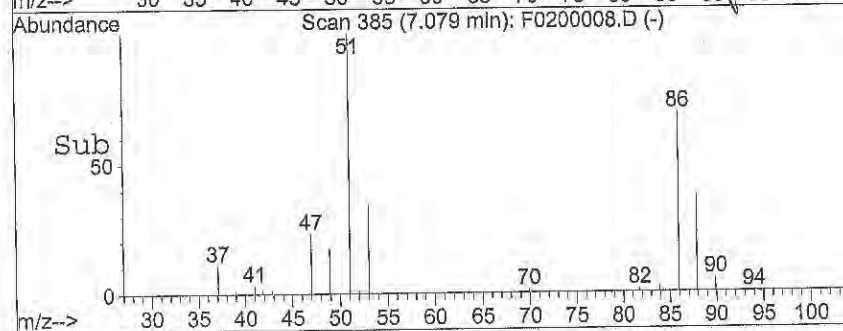
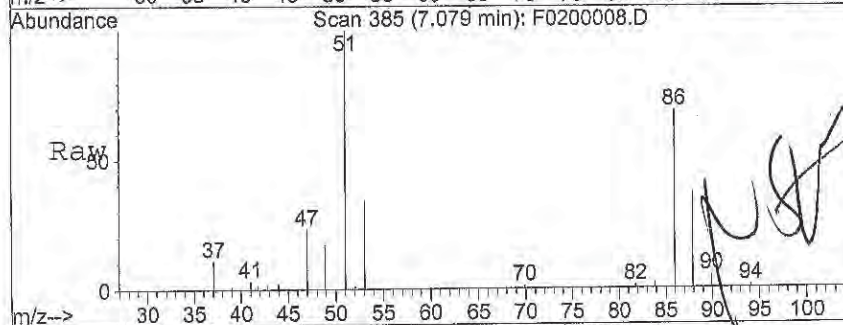
Ion Ratio Lower Upper

84 100

49 1186.8 89.8 134.6#

86 3955.7 51.1 76.7#

51 6621.2 28.5 42.7#



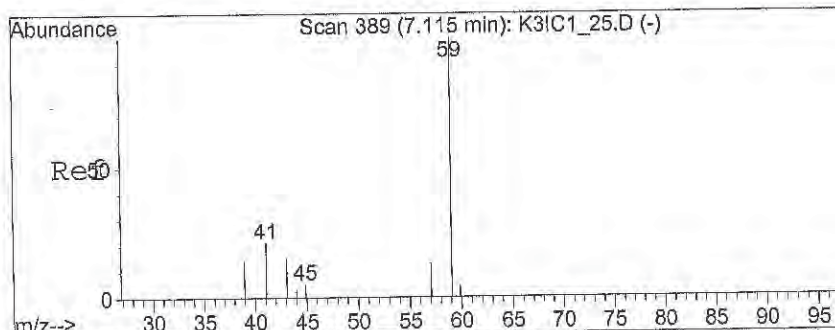
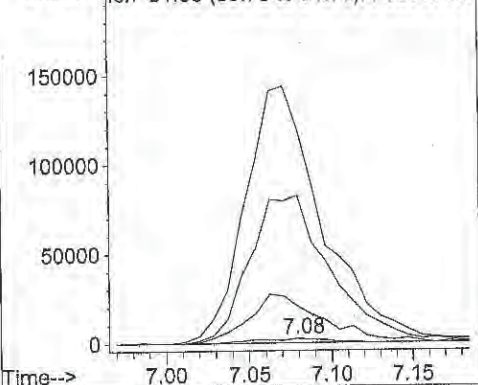
Abundance

Ion 83.95 (83.65 to 84.65): F0200008.D

Ion 48.95 (48.65 to 49.65): F0200008.D

Ion 85.95 (85.65 to 86.65): F0200008.D

Ion 51.05 (50.75 to 51.75): F0200008.D



#15

(TBA) tert-Butanol

Concen: 1.29 ug/L

RT: 7.16 min Scan# 395

Delta R.T. 0.05 min

Lab File: F0200008.D

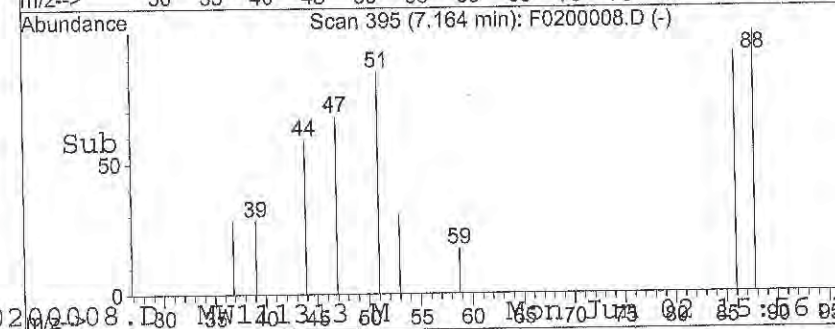
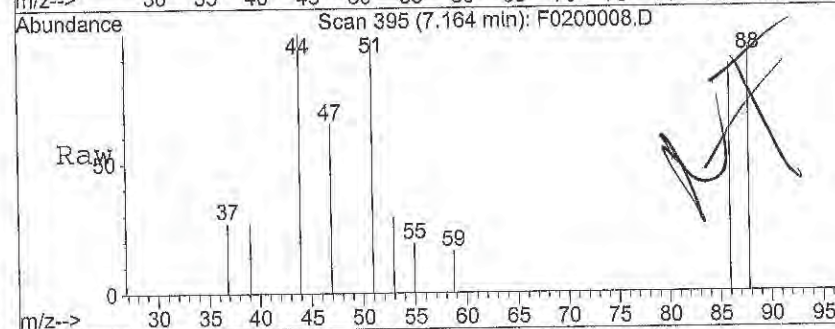
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 59 Resp: 262

Ion Ratio Lower Upper

59 100

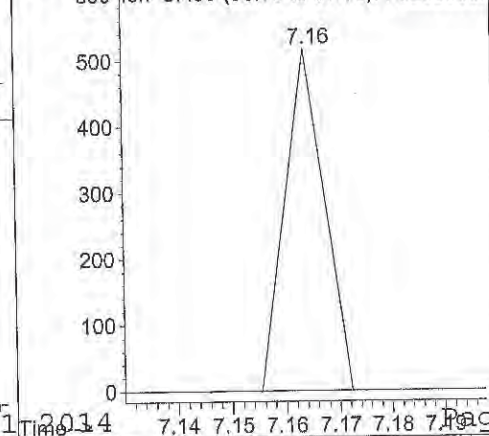
57 0.0 6.4 9.6#

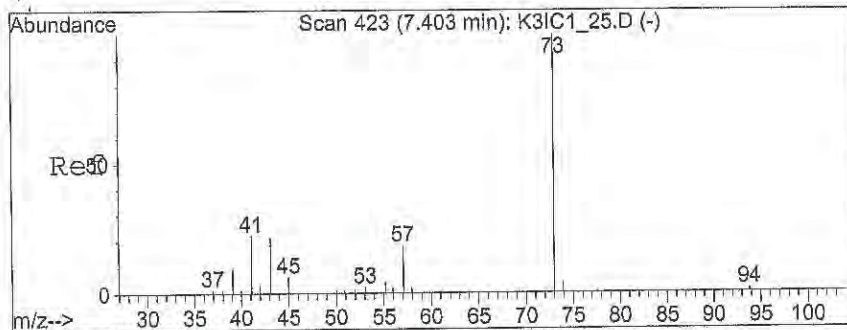


Abundance

Ion 59.00 (58.70 to 59.70): F0200008.D

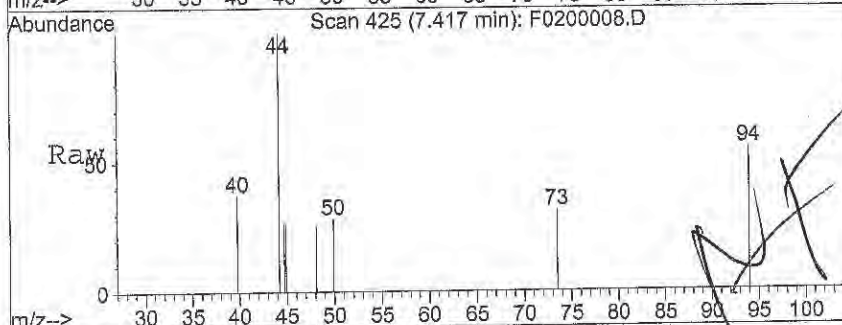
Ion 57.00 (56.70 to 57.70): F0200008.D





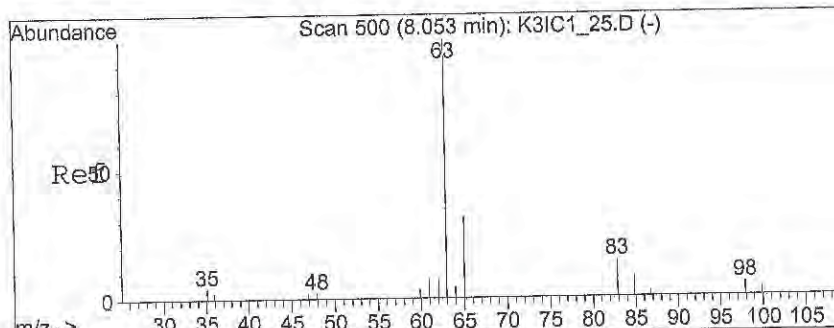
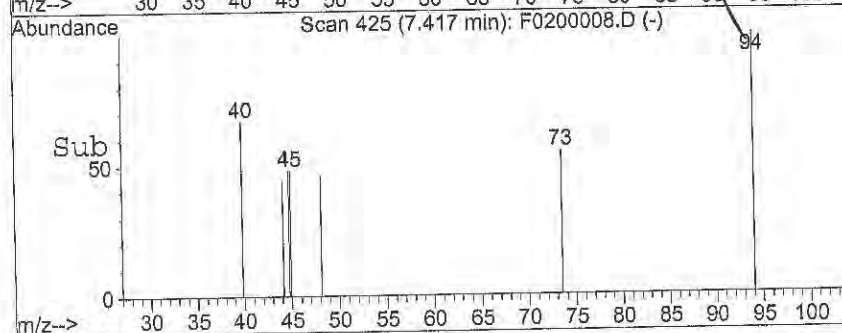
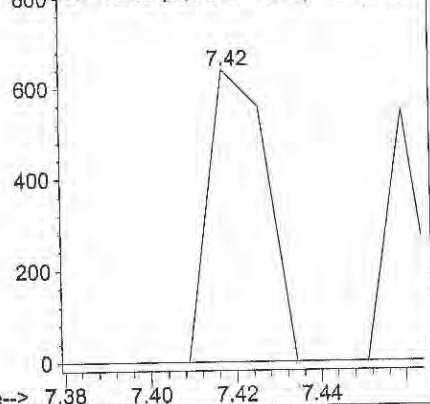
#16
 (MTBE) Methyl-t-butyl ether
 Concen: 0.09 ug/L
 RT: 7.42 min Scan# 425
 Delta R.T. 0.01 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 73 Resp: 607
 Ion Ratio Lower Upper
 73 100
 57 0.0 15.8 23.8#
 43 0.0 18.4 27.6#



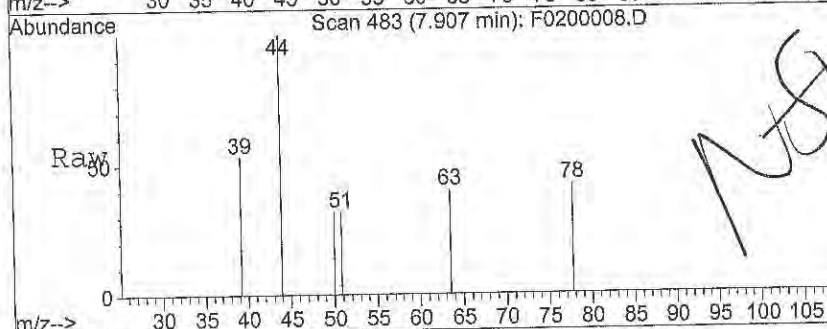
Abundance

Ion 73.05 (72.75 to 73.75): F0200008.D
 Ion 57.10 (56.80 to 57.80): F0200008.D
 Ion 43.00 (42.70 to 43.70): F0200008.D



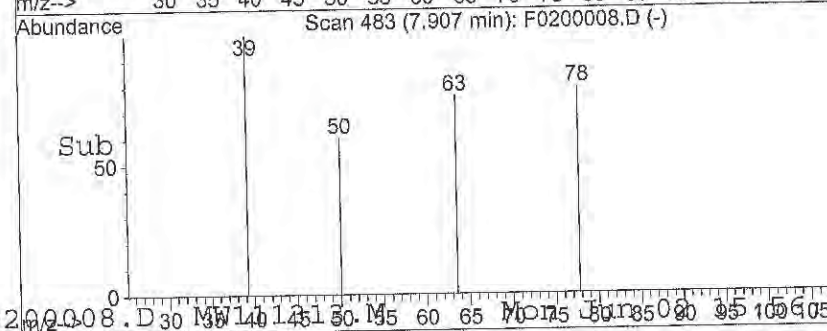
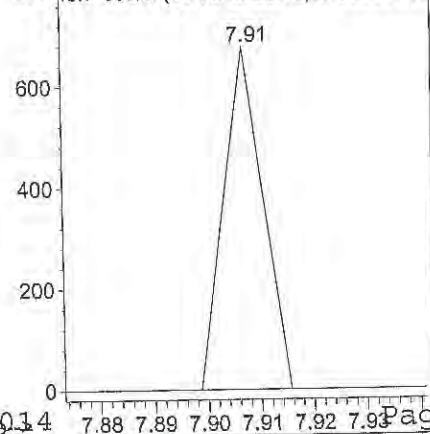
#18
 1,1-Dichloroethane
 Concen: 0.06 ug/L
 RT: 7.91 min Scan# 483
 Delta R.T. -0.15 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

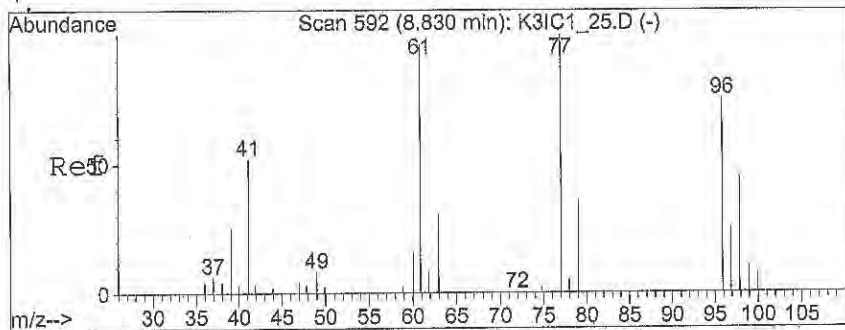
Tgt Ion: 63 Resp: 343
 Ion Ratio Lower Upper
 63 100
 65 0.0 25.8 38.8#



Abundance

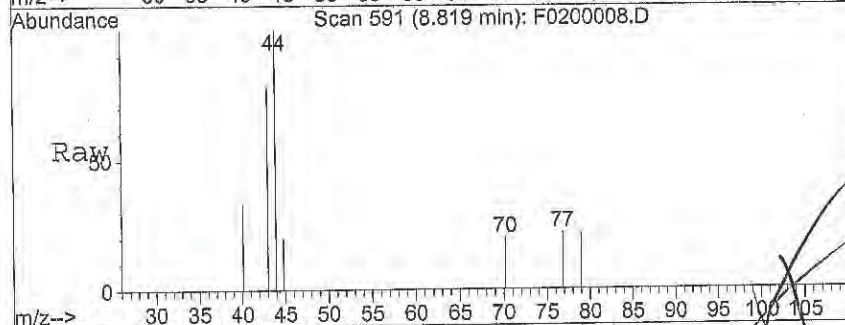
Ion 63.05 (62.75 to 63.75): F0200008.D
 Ion 65.05 (64.75 to 65.75): F0200008.D





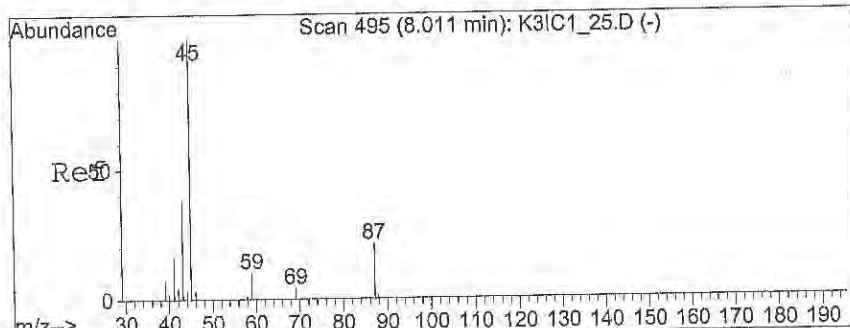
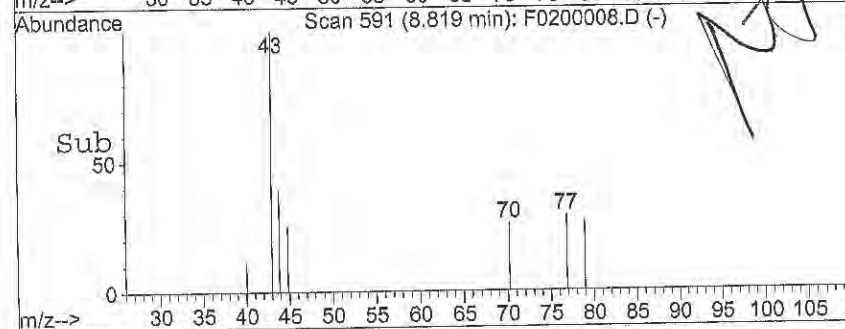
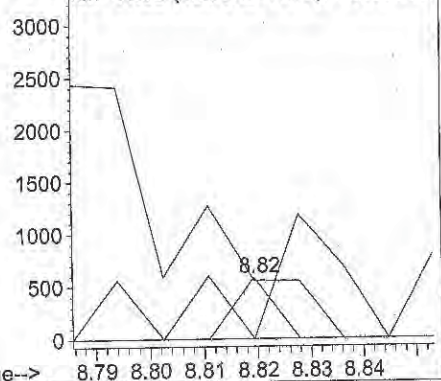
#20
 2,2-Dichloropropane
 Concen: 0.06 ug/L
 RT: 8.82 min Scan# 591
 Delta R.T. -0.01 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

Tgt Ion:	77	Resp:	294
Ion	Ratio	Lower	Upper
77	100		
79	0.0	26.6	40.0#
97	0.0	18.9	28.3#
41	425.2	42.6	64.0#



Abundance

Ion 77.05 (76.75 to 77.75): F0200008.
 Ion 79.00 (78.70 to 79.70): F0200008.
 Ion 96.95 (96.65 to 97.65): F0200008.
 Ion 41.05 (40.75 to 41.75): F0200008.

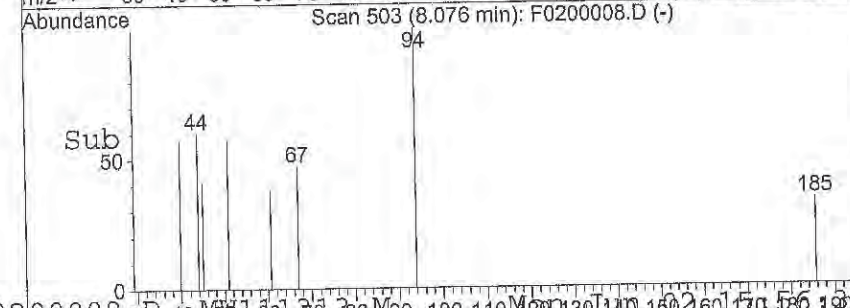
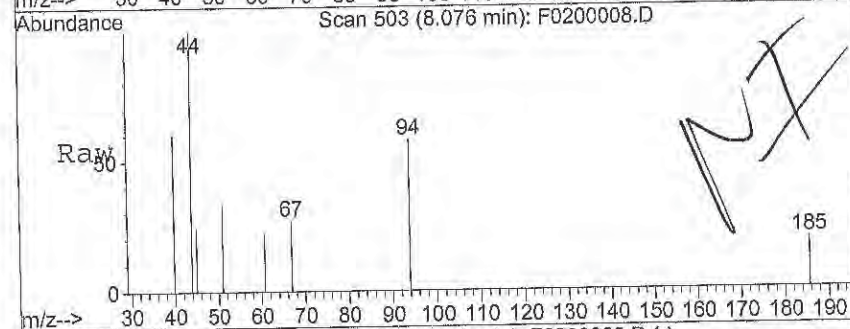
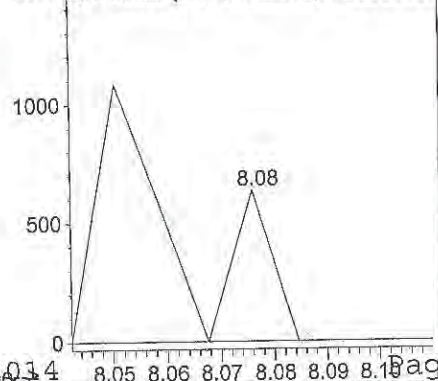


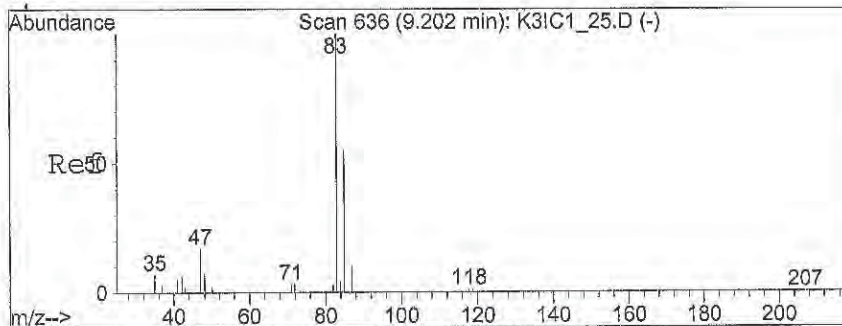
#22
 (DIPE) Diisopropyl Ether
 Concen: 0.03 ug/L
 RT: 8.08 min Scan# 503
 Delta R.T. 0.07 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

Tgt Ion:	45	Resp:	320
Ion	Ratio	Lower	Upper
45	100		
87	0.0	17.0	25.6#
43	0.0	30.5	45.7#
59	0.0	7.4	11.2#

Abundance

Ion 45.00 (44.70 to 45.70): F0200008.
 Ion 87.10 (86.80 to 87.80): F0200008.
 Ion 43.05 (42.75 to 43.75): F0200008.
 Ion 59.00 (58.70 to 59.70): F0200008.





#24

Chloroform

Concen: 0.44 ug/L

RT: 9.22 min Scan# 638

Delta R.T. 0.01 min

Lab File: F0200008.D

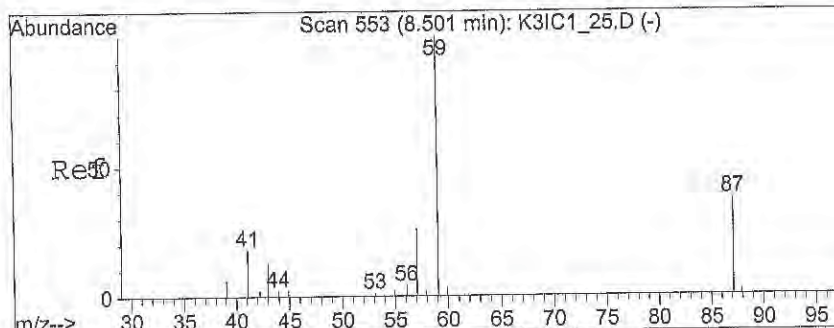
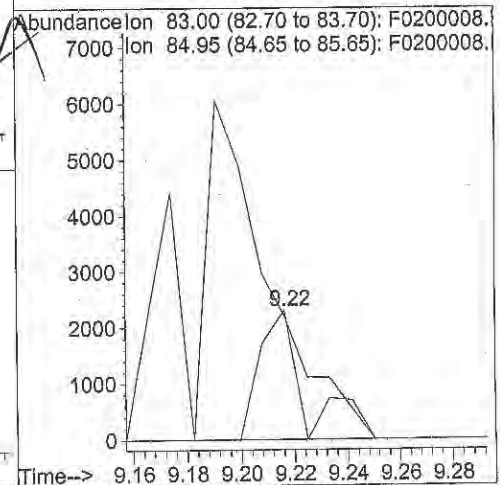
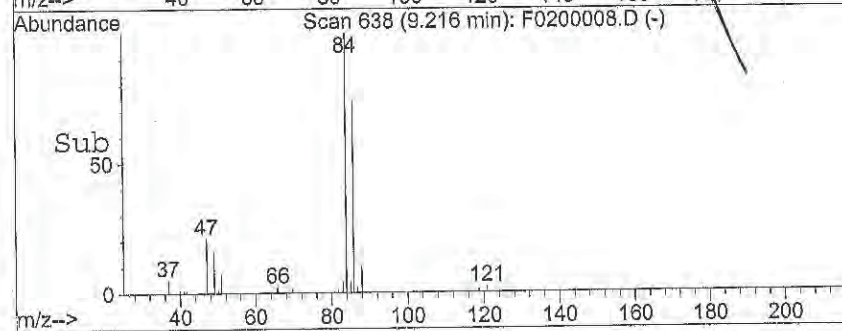
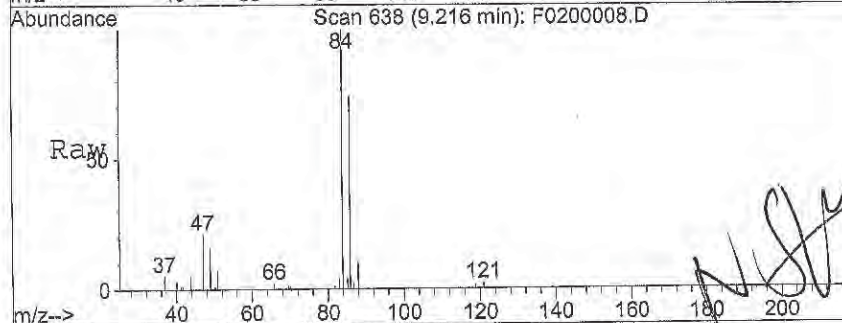
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 83 Resp: 2741

Ion Ratio Lower Upper

83 100

85 0.0 51.8 77.6#



#25

(ETBE) 2-ethoxy 2-methyl propan

Concen: 0.03 ug/L

RT: 8.51 min Scan# 554

Delta R.T. 0.01 min

Lab File: F0200008.D

Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 59 Resp: 301

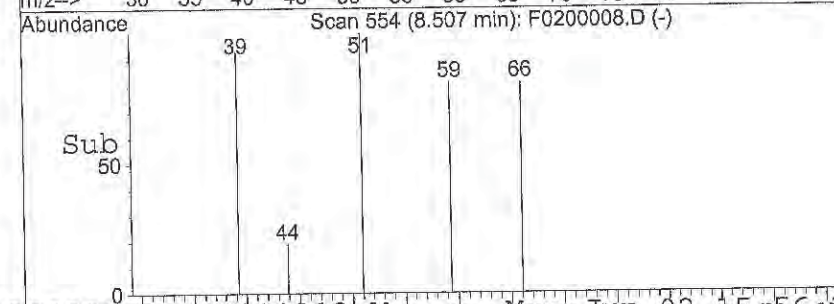
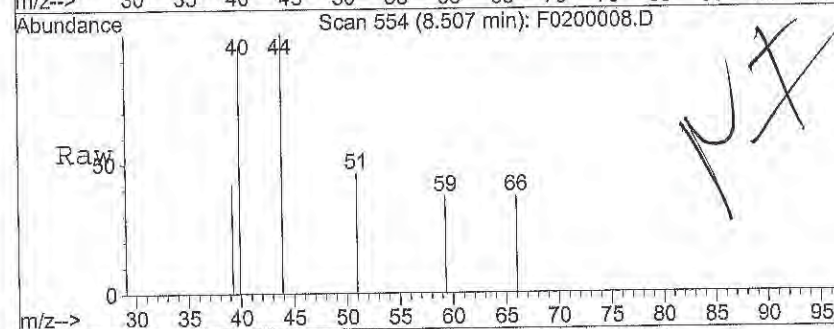
Ion Ratio Lower Upper

59 100

87 0.0 27.8 41.8#

57 0.0 19.8 29.6#

77 0.0 0.0 0.0



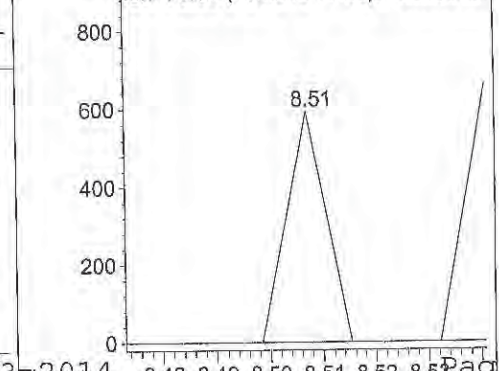
Abundance

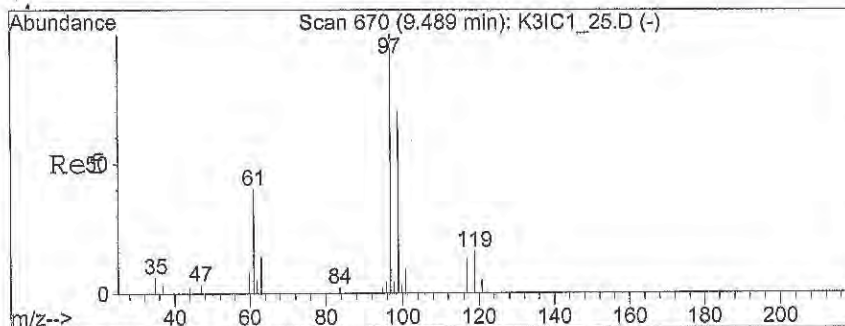
Ion 59.00 (58.70 to 59.70): F0200008.D

Ion 87.10 (86.80 to 87.80): F0200008.D

Ion 57.00 (56.70 to 57.70): F0200008.D

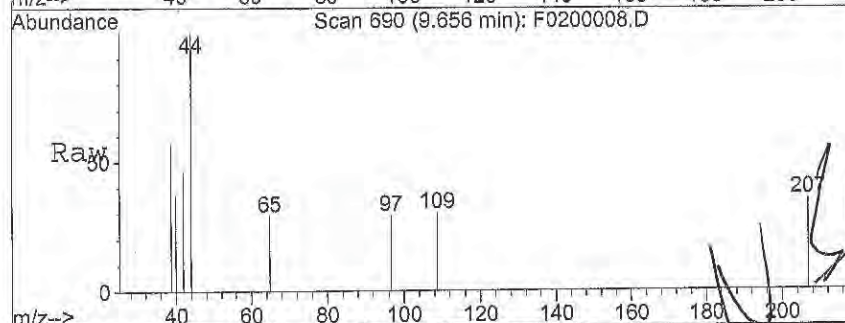
Ion 76.95 (76.65 to 77.65): F0200008.D





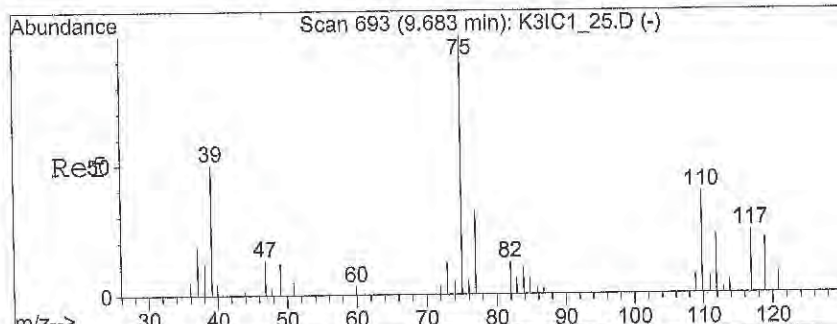
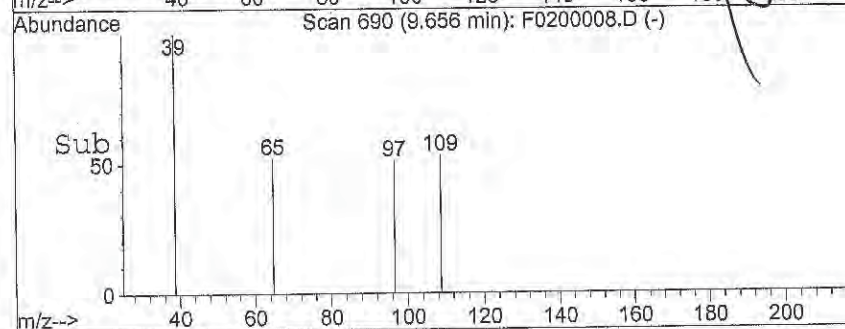
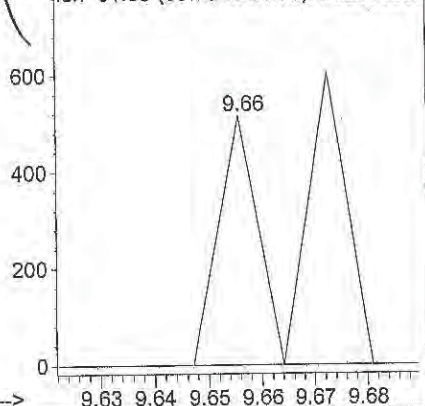
#26
 1,1,1-Trichloroethane
 Concen: 0.05 ug/L
 RT: 9.66 min Scan# 690
 Delta R.T. 0.17 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 97 Resp: 261
 Ion Ratio Lower Upper
 97 100
 99 0.0 54.7 82.1#
 61 117.6 32.3 48.5#



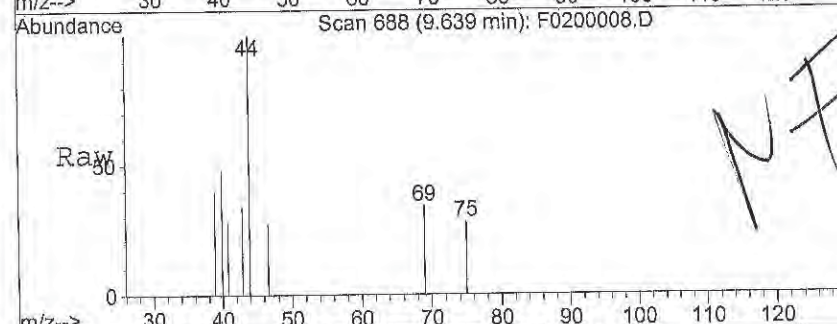
Abundance

Ion 96.95 (96.65 to 97.65): F0200008.D
 Ion 99.05 (98.75 to 99.75): F0200008.D
 Ion 61.05 (60.75 to 61.75): F0200008.D



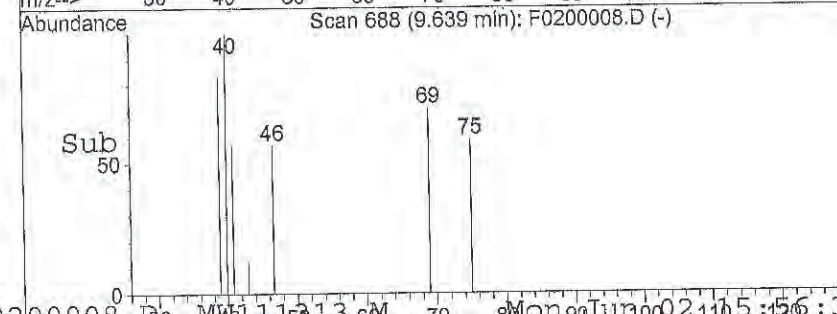
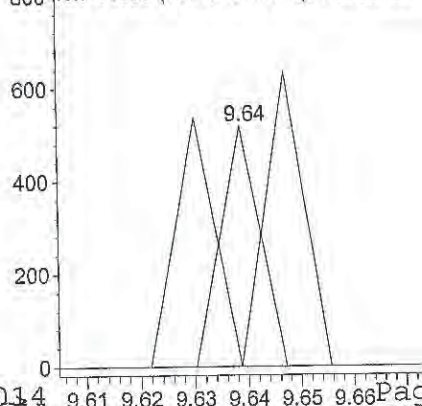
#29
 1,1-Dichloropropene
 Concen: 0.06 ug/L
 RT: 9.64 min Scan# 688
 Delta R.T. -0.04 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

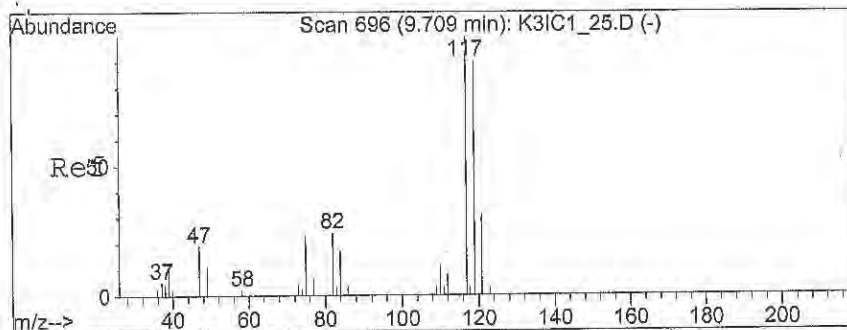
Tgt Ion: 75 Resp: 263
 Ion Ratio Lower Upper
 75 100
 110 103.4 29.0 43.6#
 77 122.4 25.0 37.4#



Abundance

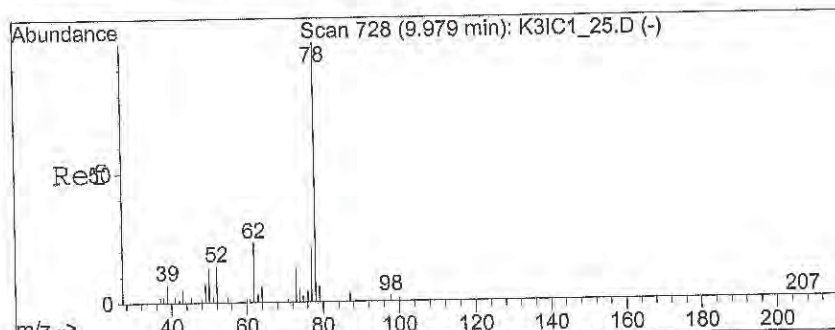
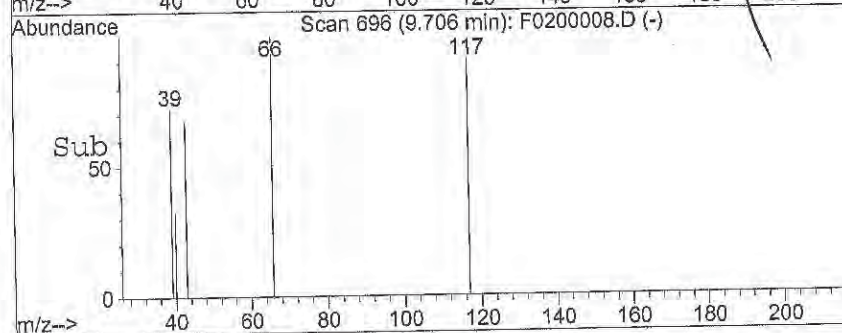
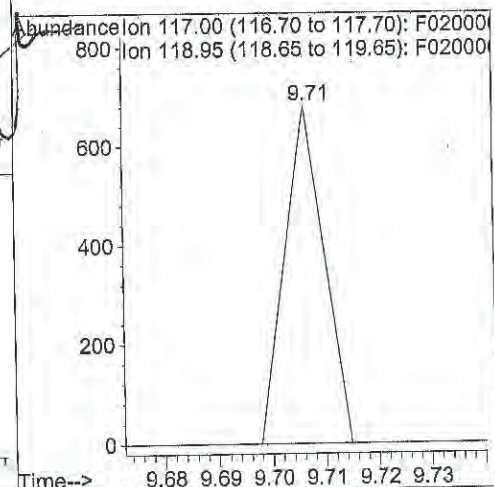
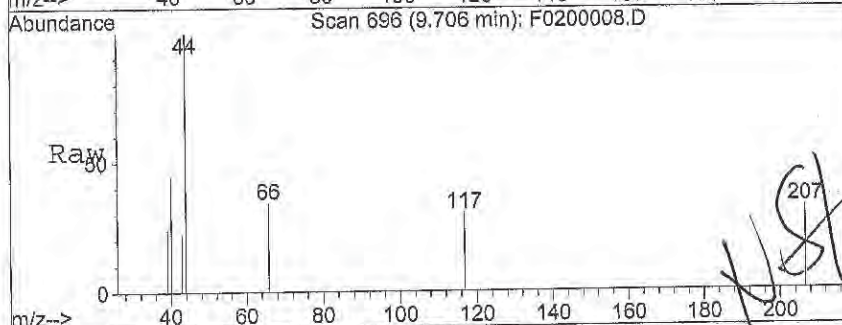
Ion 75.05 (74.75 to 75.75): F0200008.D
 Ion 110.05 (109.75 to 110.75): F0200008.D
 Ion 77.05 (76.75 to 77.75): F0200008.D





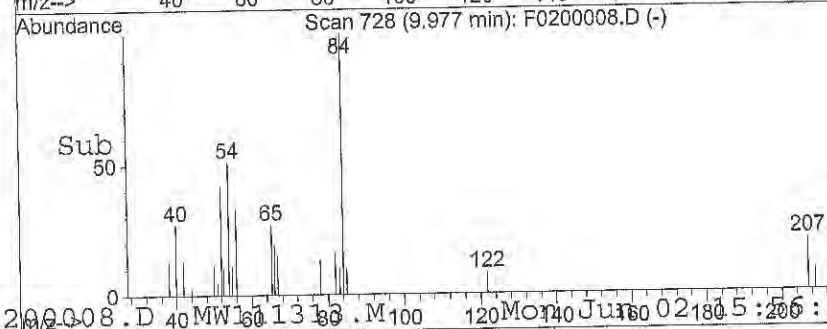
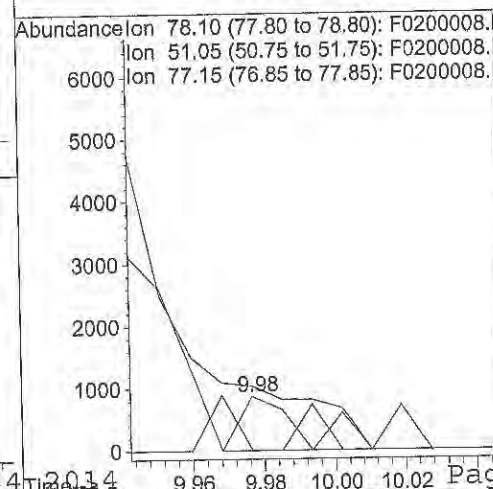
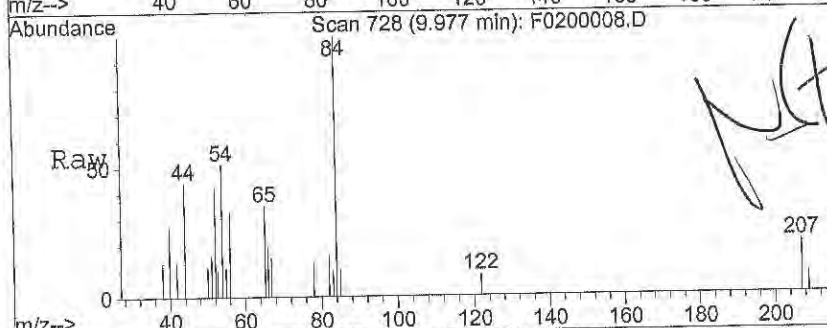
#30
Carbon Tetrachloride
Concen: 0.09 ug/L
RT: 9.71 min Scan# 696
Delta R.T. -0.00 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

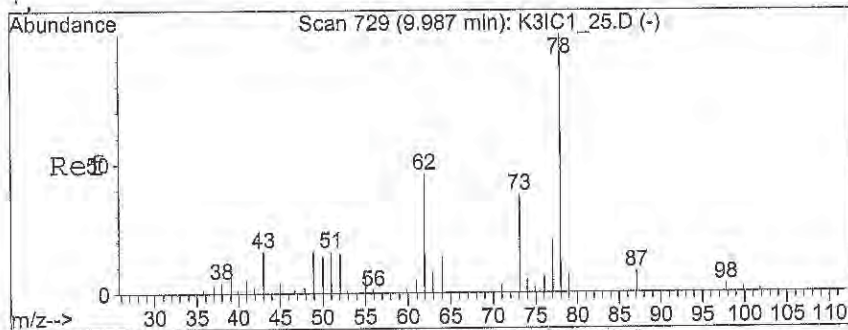
Tgt Ion: 117 Resp: 346
Ion Ratio Lower Upper
117 100
119 0.0 75.8 113.8#



#31
Benzene
Concen: 0.10 ug/L
RT: 9.98 min Scan# 728
Delta R.T. -0.00 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

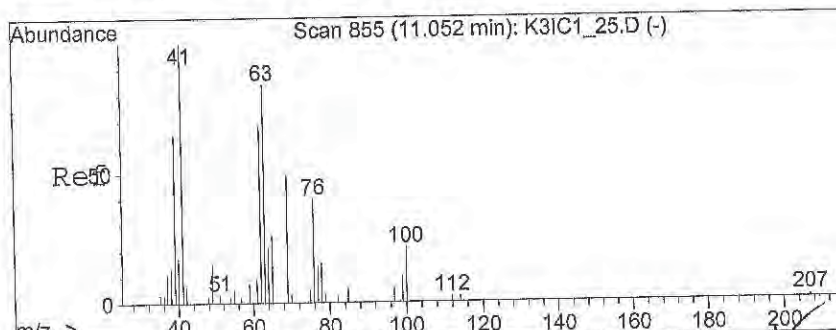
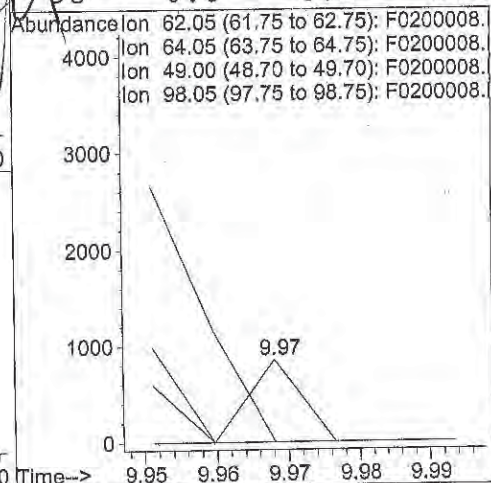
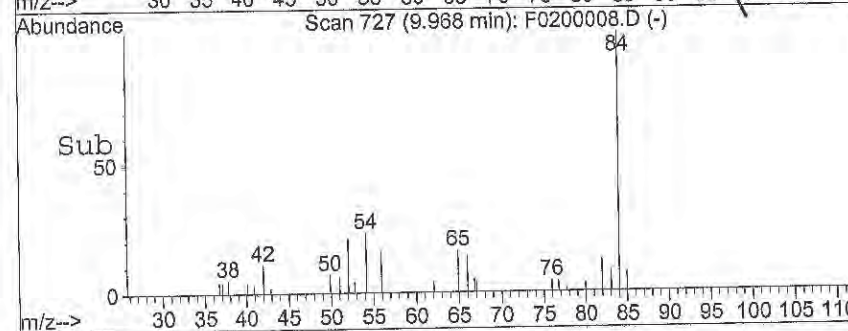
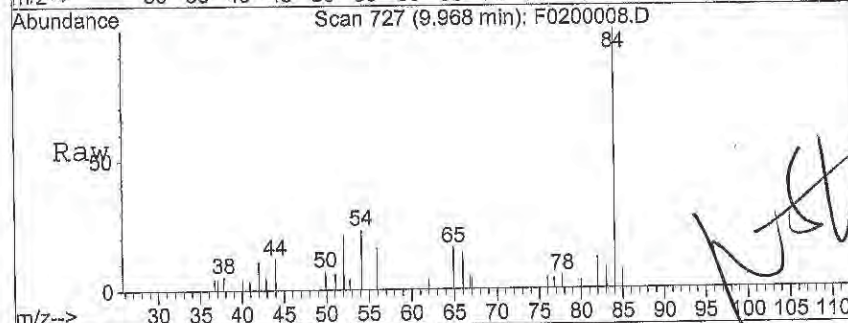
Tgt Ion: 78 Resp: 1078
Ion Ratio Lower Upper
78 100
51 0.0 14.2 21.2#
77 41.9 16.6 24.8#





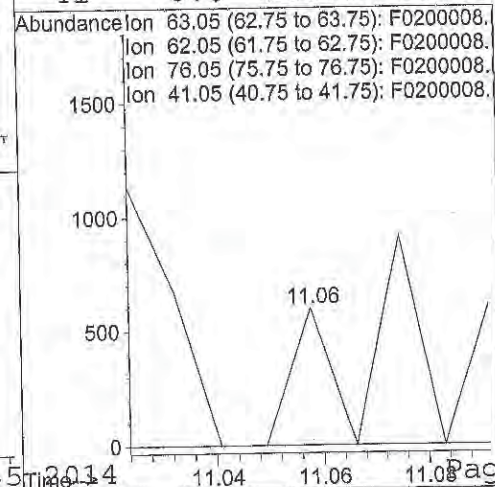
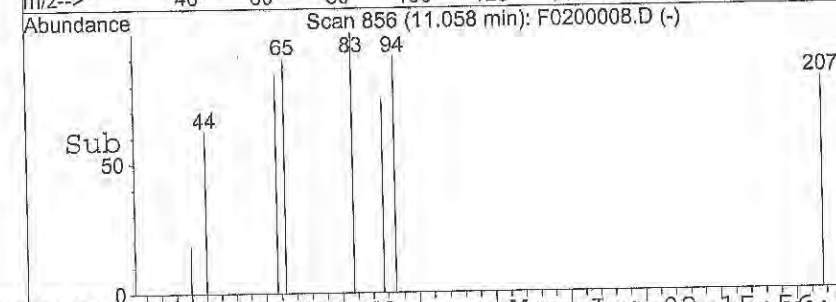
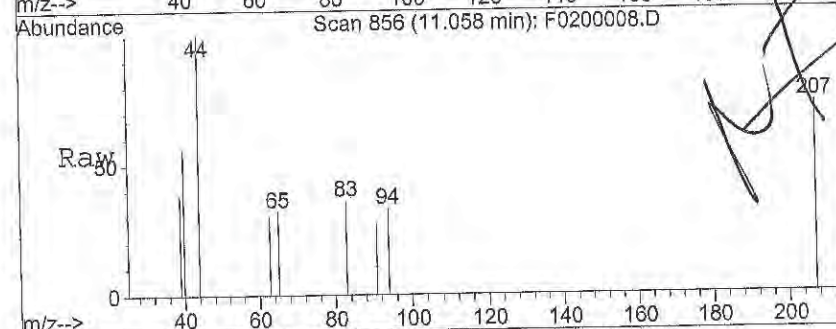
#32
1,2-Dichloroethane
Concen: 0.11 ug/L
RT: 9.97 min Scan# 727
Delta R.T. -0.02 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

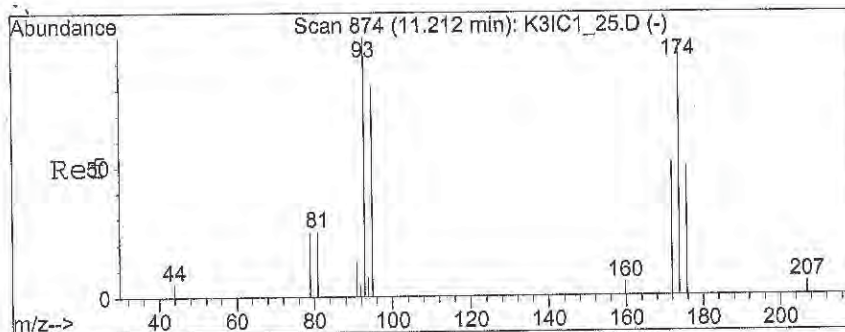
Tgt Ion:	62	Resp:	433
Ion	Ratio	Lower	Upper
62	100		
64	0.0	28.0	42.0#
49	0.0	28.5	42.7#
98	0.0	6.2	9.4#



#34
1,2-Dichloropropane
Concen: 0.11 ug/L
RT: 11.06 min Scan# 856
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

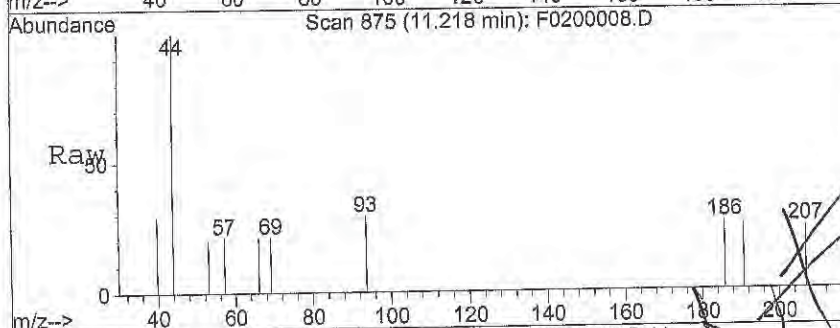
Tgt Ion:	63	Resp:	302
Ion	Ratio	Lower	Upper
63	100		
62	0.0	67.4	101.2#
76	0.0	40.3	60.5#
41	0.0	103.0	154.6#





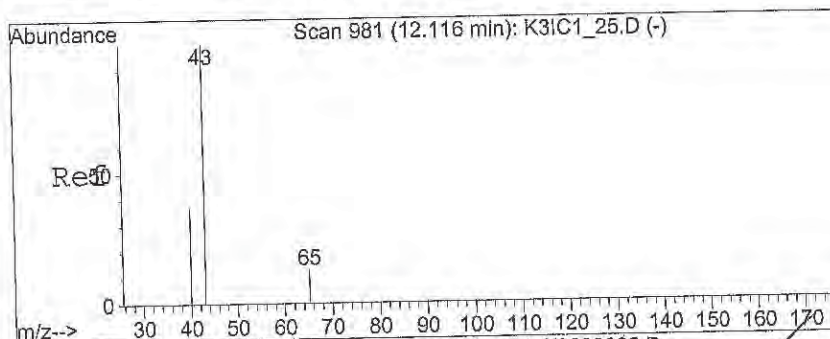
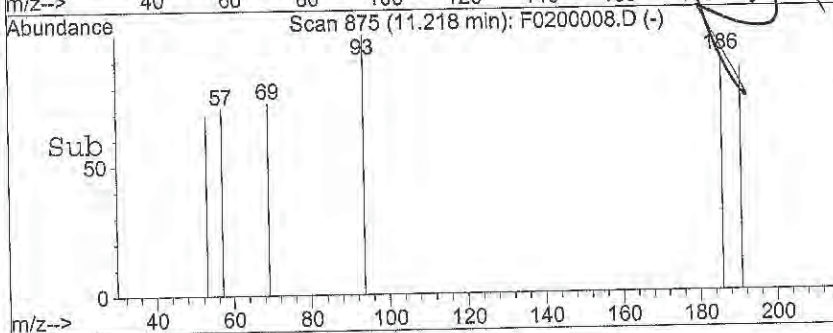
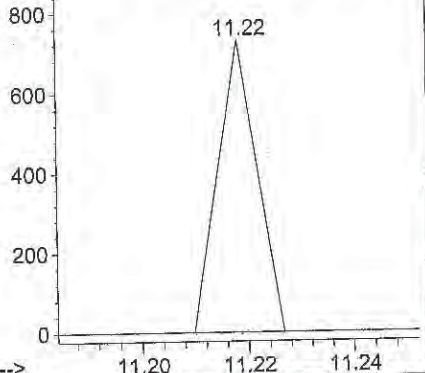
#35
 Dibromomethane
 Concen: 0.18 ug/L
 RT: 11.22 min Scan# 875
 Delta R.T. 0.01 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 93 Resp: 371
 Ion Ratio Lower Upper
 93 100
 95 0.0 66.2 99.2#
 174 0.0 75.5 113.3#



Abundance

Ion 93.00 (92.70 to 93.70): F0200008.D
 Ion 95.00 (94.70 to 95.70): F0200008.D
 Ion 173.90 (173.60 to 174.60): F0200008.D

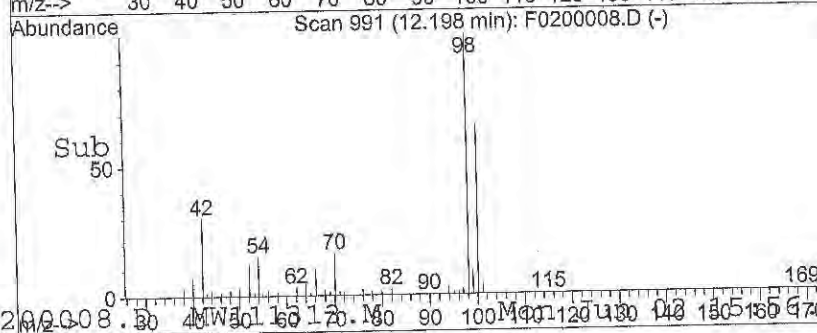
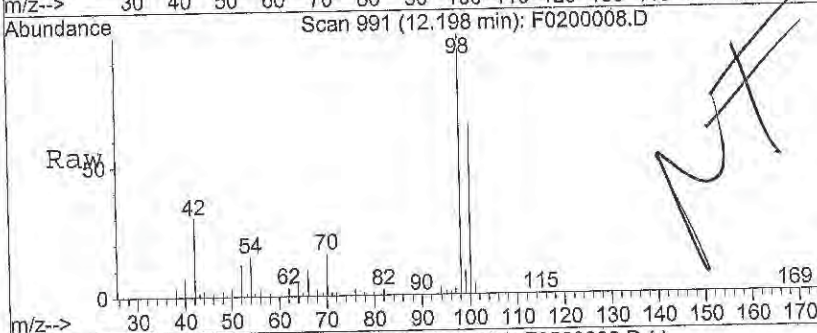
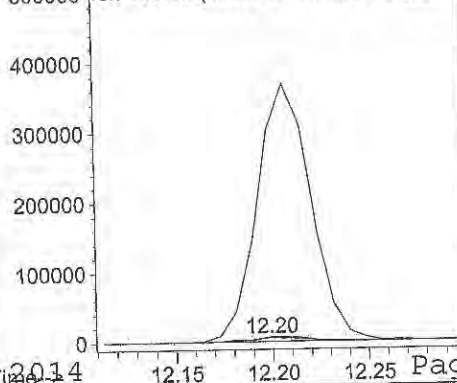


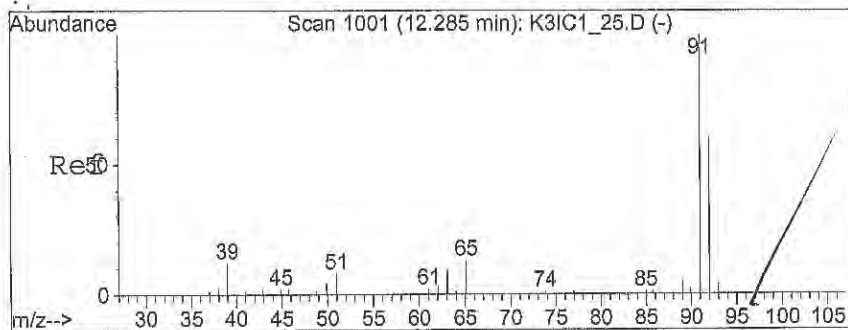
#40
 (MIBK) 4-Methyl-2-Pentanone
 Concen: 5.27 ug/L
 RT: 12.20 min Scan# 991
 Delta R.T. 0.08 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 43 Resp: 11349
 Ion Ratio Lower Upper
 43 100
 58 111.1 0.0 0.0#
 85 6.2 0.0 0.0#
 100 6292.3 0.0 0.0#

Abundance

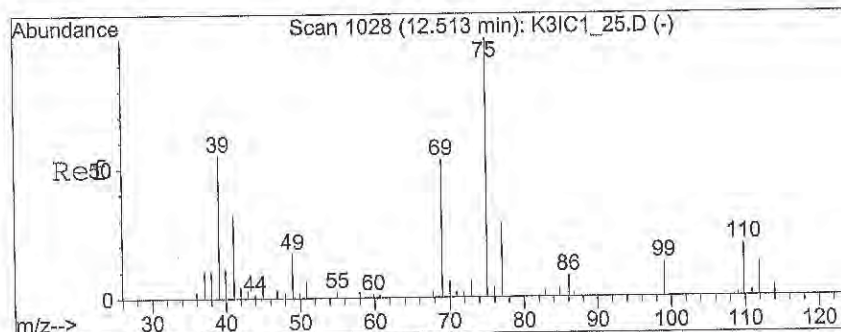
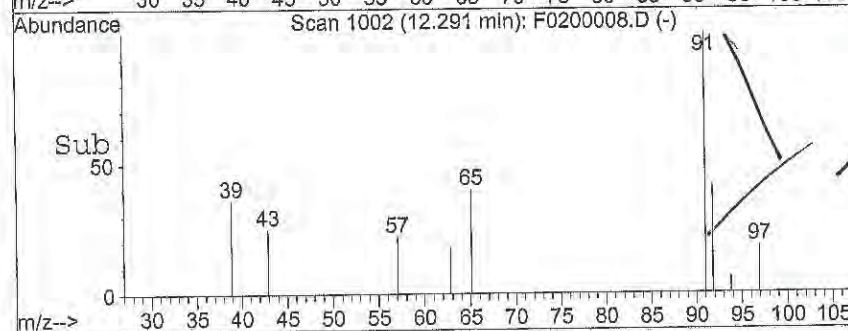
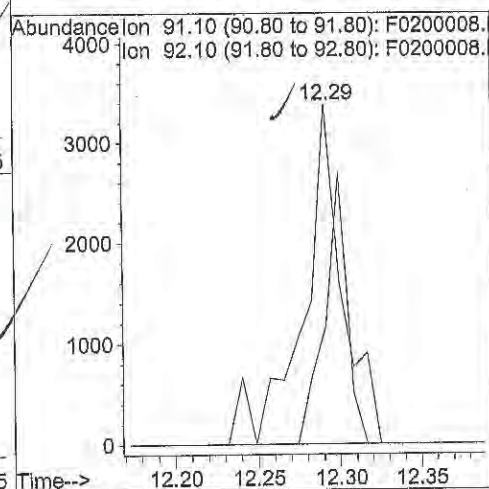
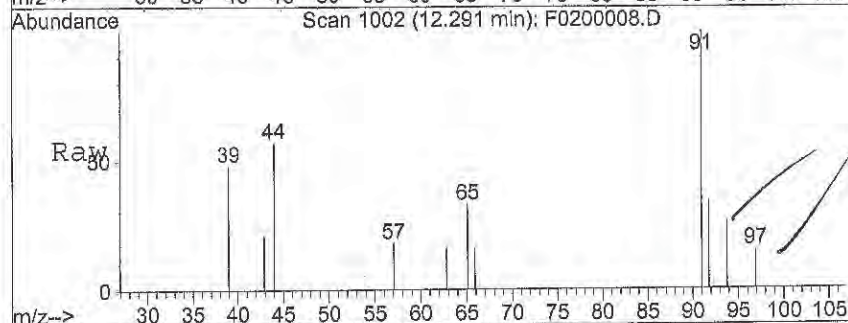
Ion 43.00 (42.70 to 43.70): F0200008.D
 Ion 58.10 (57.80 to 58.80): F0200008.D
 Ion 85.05 (84.75 to 85.75): F0200008.D
 Ion 100.15 (99.85 to 100.85): F0200008.D





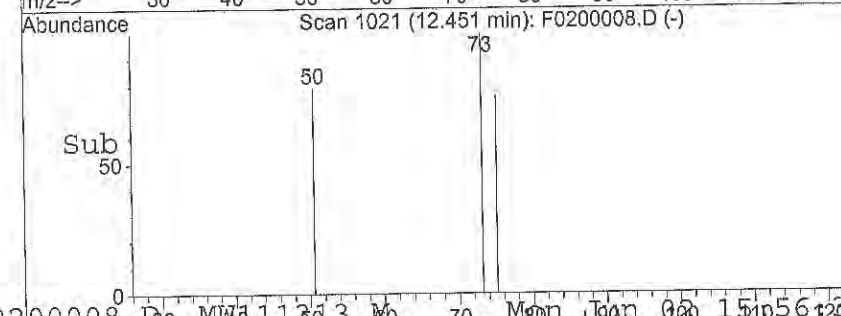
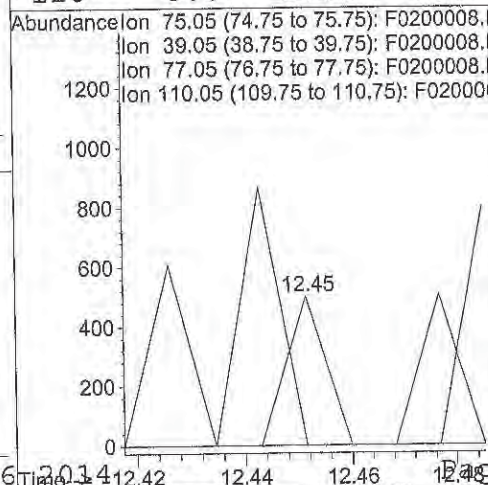
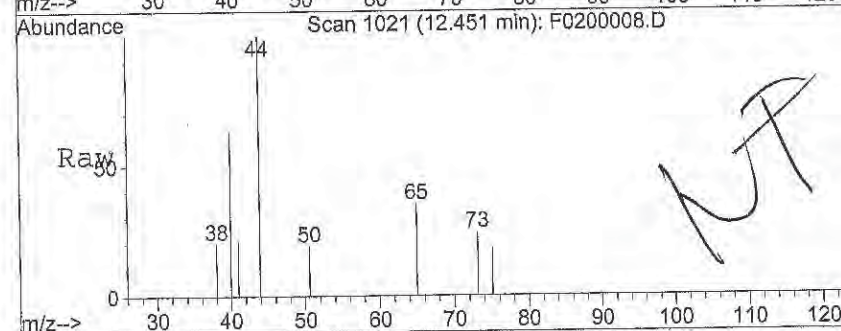
#41
Toluene
Concen: 0.38 ug/L
RT: 12.29 min Scan# 1002
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

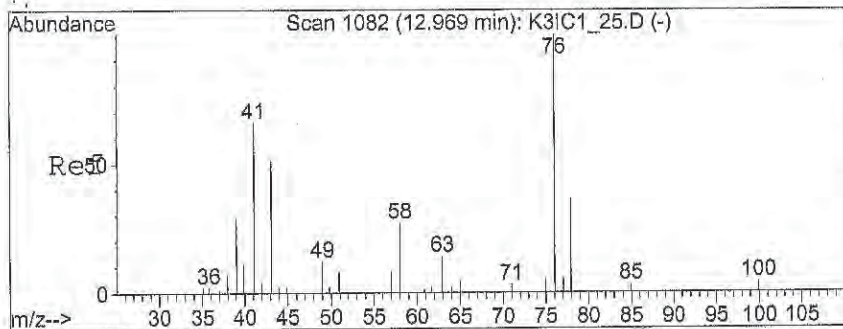
Tgt Ion: 91 Resp: 5602
Ion Ratio Lower Upper
91 100
92 45.4 47.4 71.0#



#42
trans-1,3-Dichloropropene
Concen: 0.05 ug/L
RT: 12.45 min Scan# 1021
Delta R.T. -0.06 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

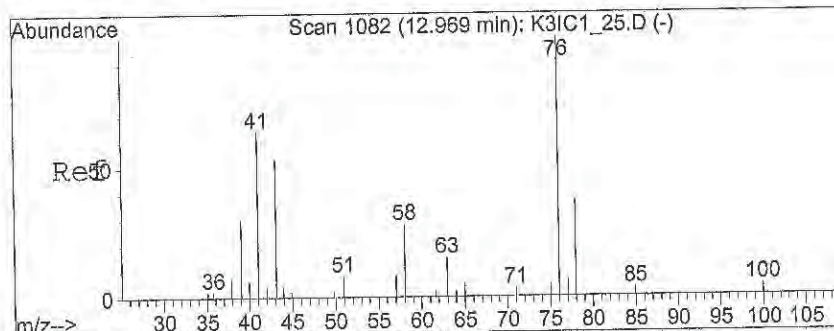
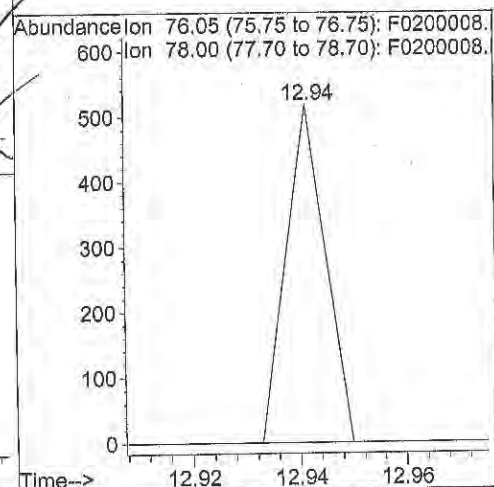
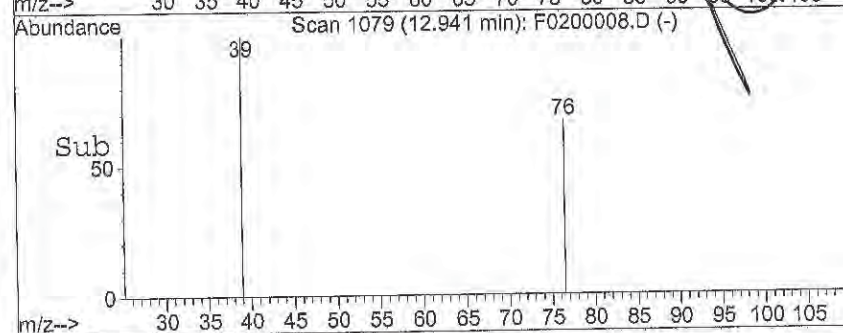
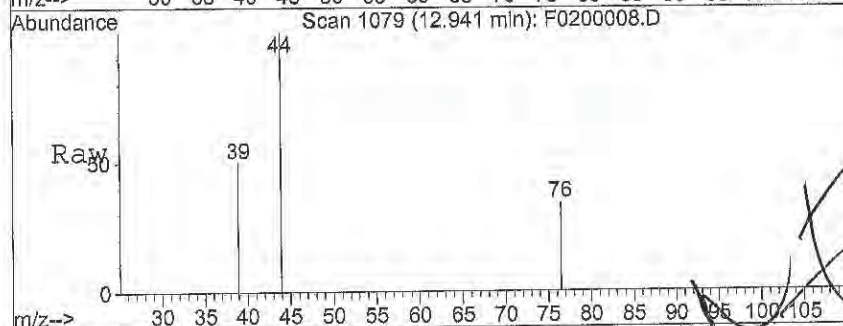
Tgt Ion: 75 Resp: 254
Ion Ratio Lower Upper
75 100
39 172.4 53.6 80.4#
77 0.0 25.4 38.2#
110 0.0 17.6 26.4#





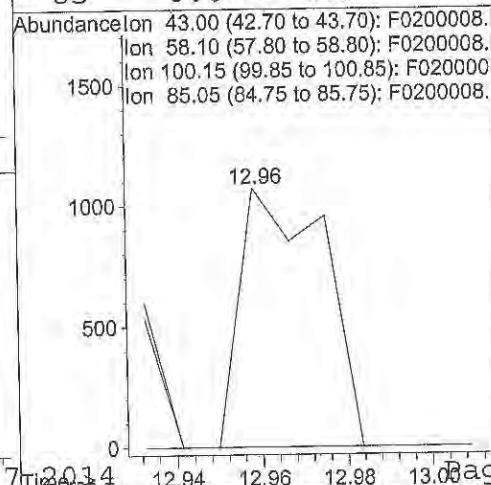
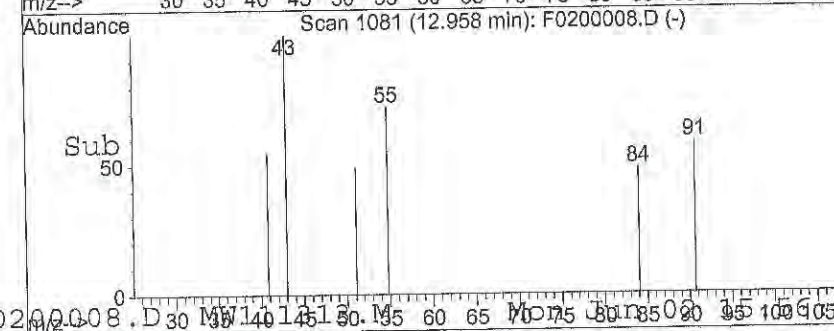
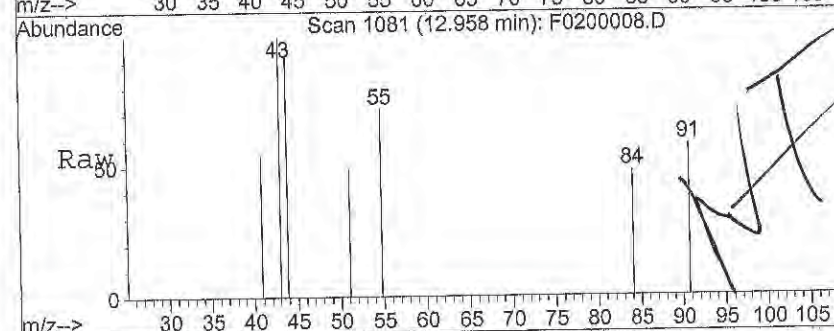
#45
 1,3-Dichloropropane
 Concen: 0.05 ug/L
 RT: 12.94 min Scan# 1079
 Delta R.T. -0.03 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

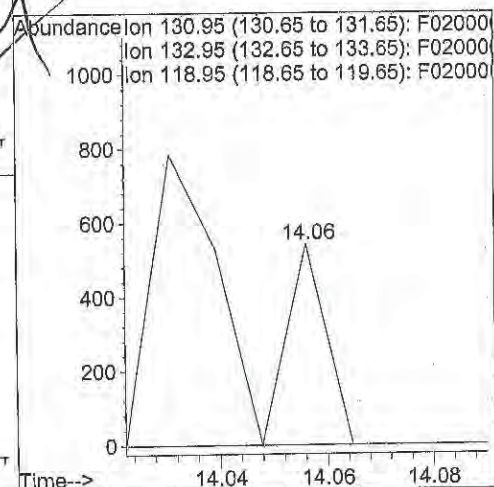
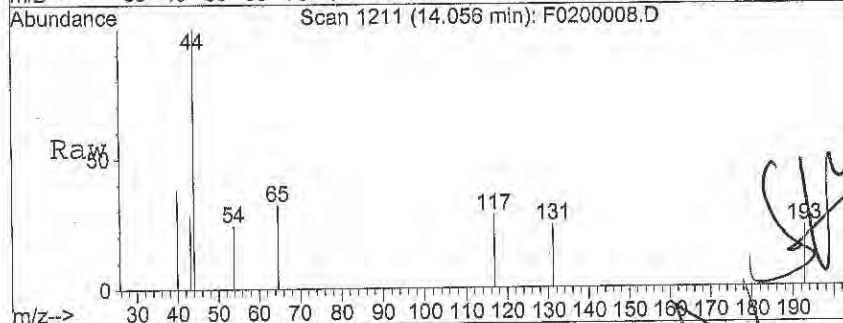
Tgt Ion: 76 Resp: 262
 Ion Ratio Lower Upper
 76 100
 78 0.0 26.9 40.3#



#46
 2-Hexanone
 Concen: 0.62 ug/L
 RT: 12.96 min Scan# 1081
 Delta R.T. -0.01 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

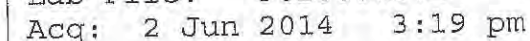
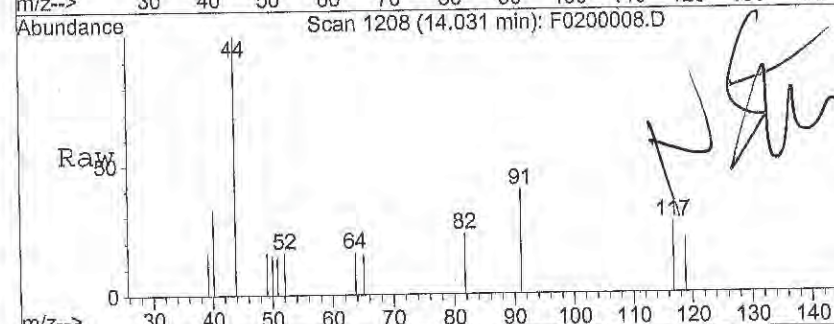
Tgt Ion: 43 Resp: 1457
 Ion Ratio Lower Upper
 43 100
 58 0.0 40.9 61.3#
 100 0.0 5.5 8.3#
 85 0.0 4.3 6.5#



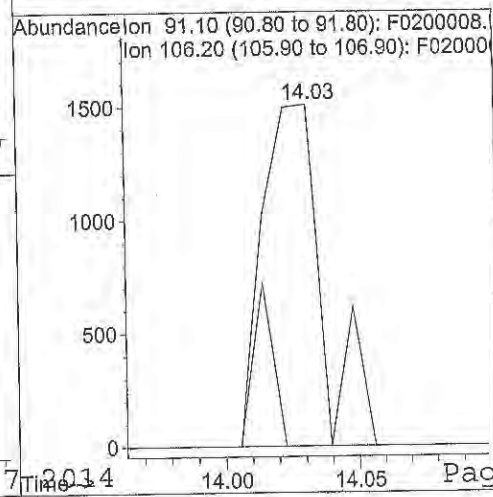


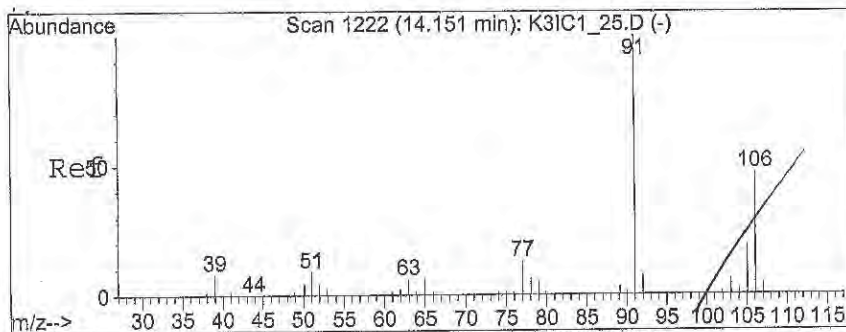
Acq: 2 Jun 2014 3:19 pm

119	0.0	56.1	84.1#
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106	15.6	23.5	35.3#
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#52

m,p-Xylenes

Concen: 0.22 ug/L

RT: 14.16 min Scan# 1223

Delta R.T. 0.01 min

Lab File: F0200008.D

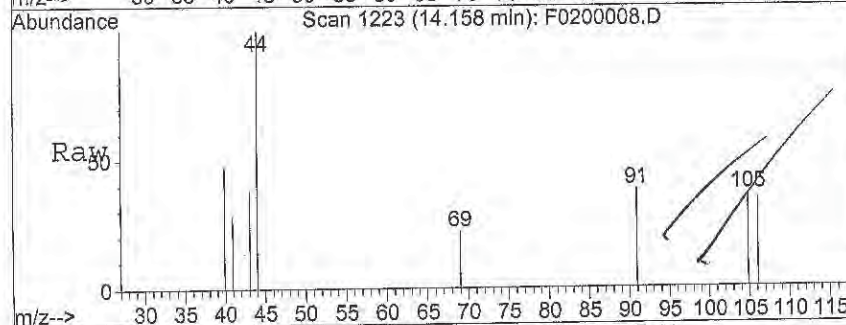
Acq: 2 Jun 2014 3:19 pm

Tgt Ion:106 Resp: 1332

Ion Ratio Lower Upper

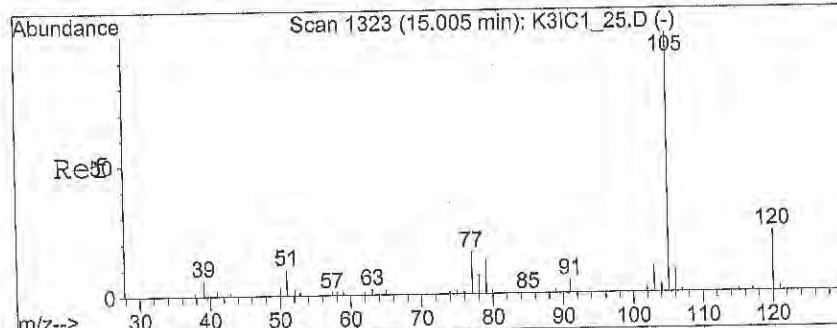
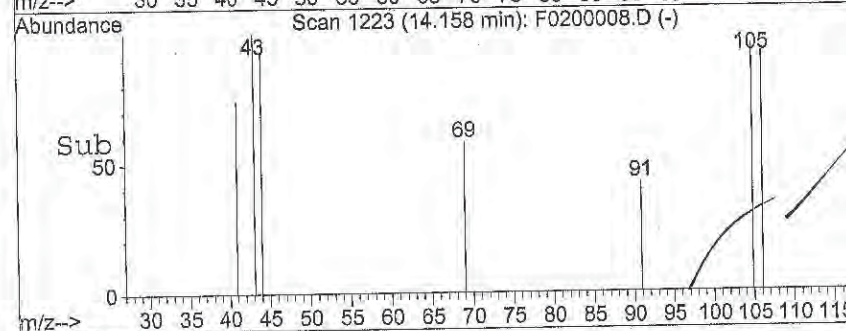
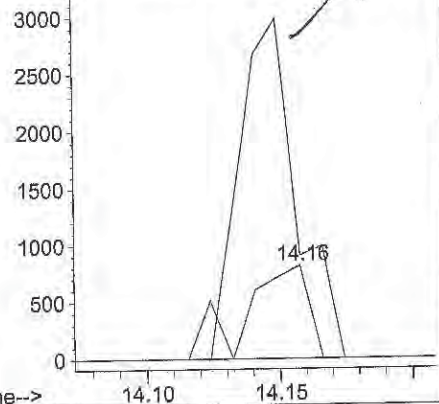
106 100

91 337.2 177.1 265.7#



Abundance Ion 106.10 (105.80 to 106.80): F0200008.D

Ion 91.10 (90.80 to 91.80): F0200008.D



#56

Isopropylbenzene

Concen: 0.03 ug/L

RT: 15.01 min Scan# 1324

Delta R.T. 0.01 min

Lab File: F0200008.D

Acq: 2 Jun 2014 3:19 pm

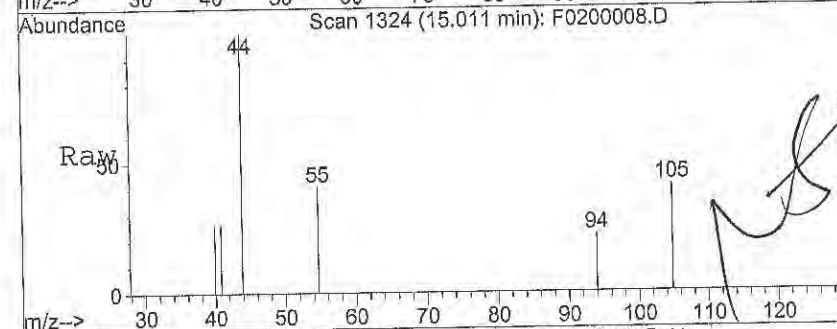
Tgt Ion:105 Resp: 479

Ion Ratio Lower Upper

105 100

120 0.0 19.3 28.9#

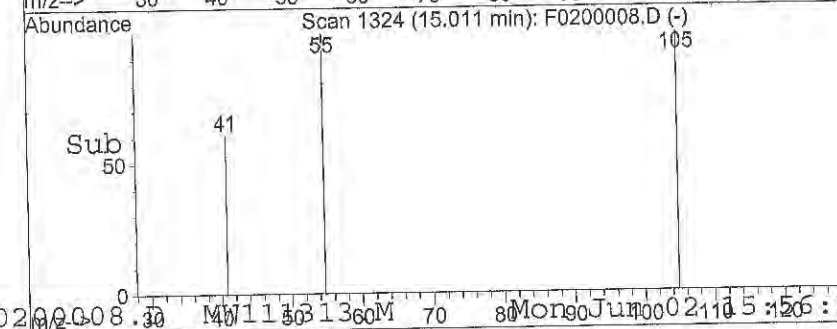
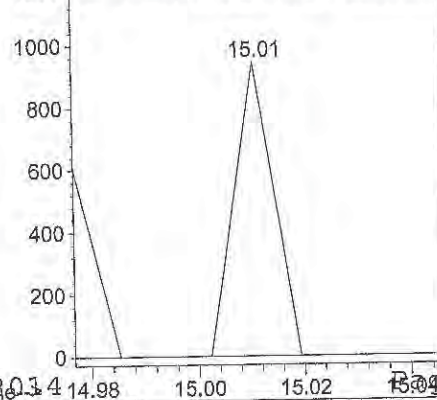
77 0.0 13.1 19.7#

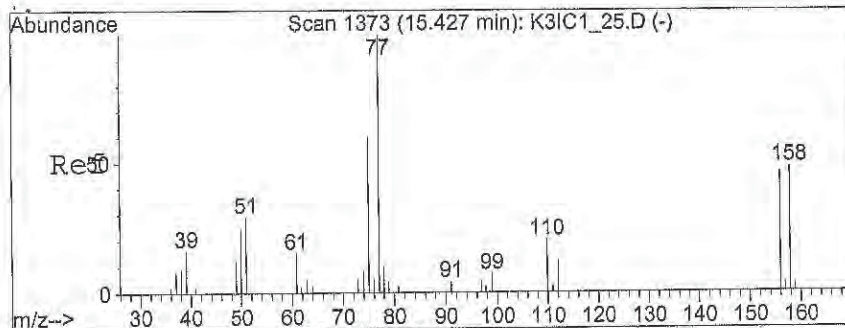


Abundance Ion 105.10 (104.80 to 105.80): F0200008.D

Ion 120.15 (119.85 to 120.85): F0200008.D

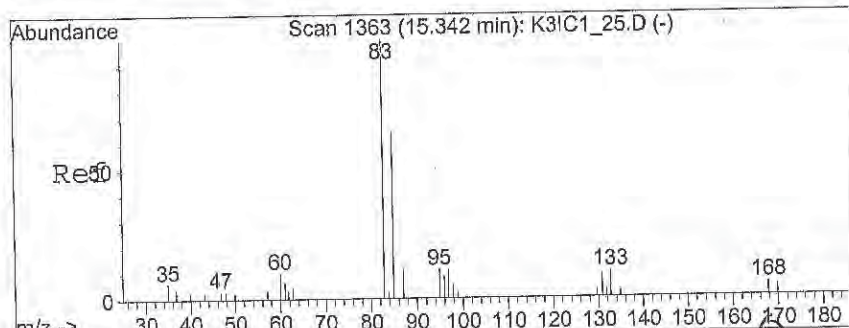
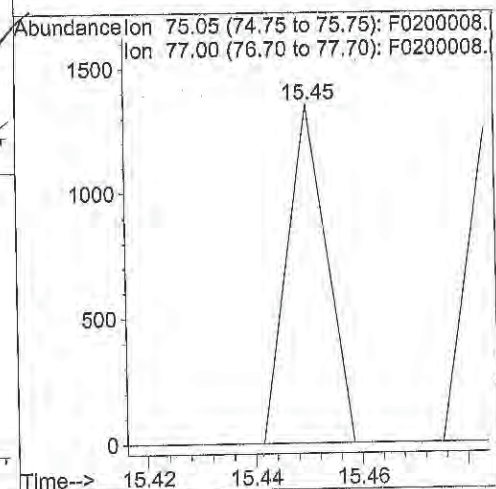
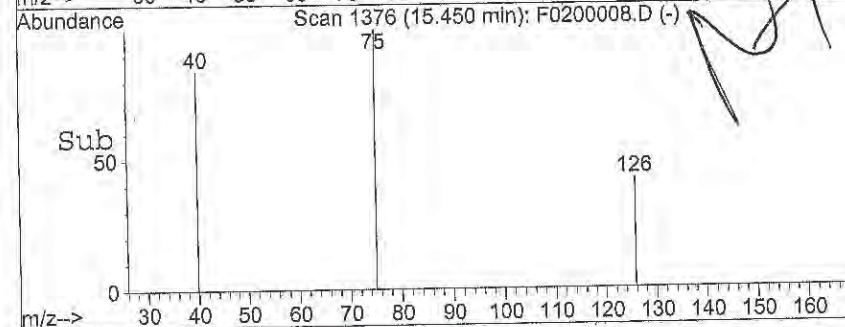
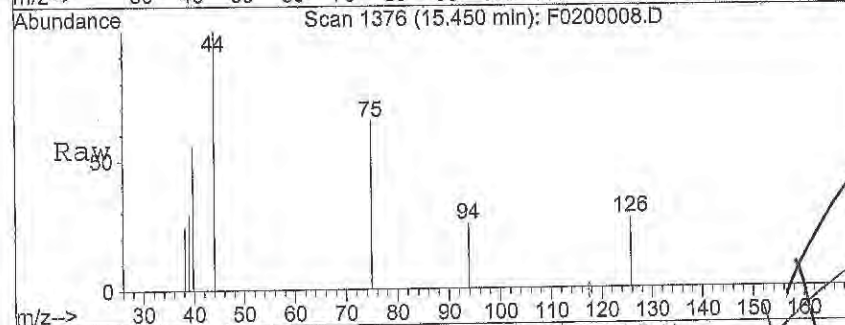
Ion 77.05 (76.75 to 77.75): F0200008.D





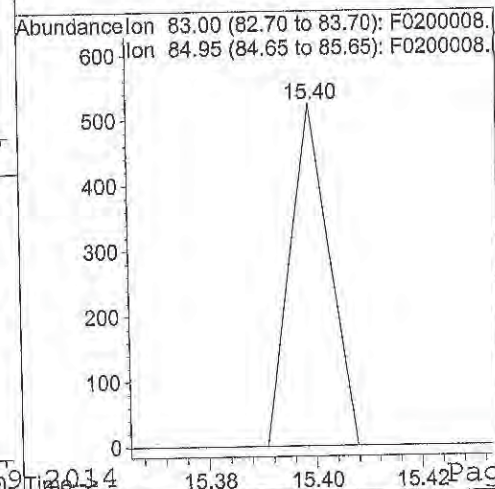
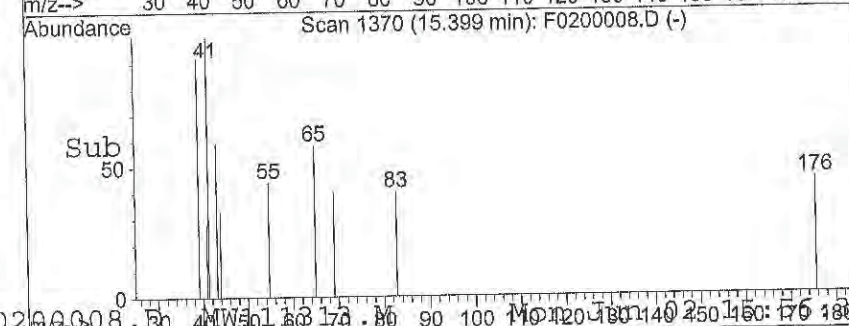
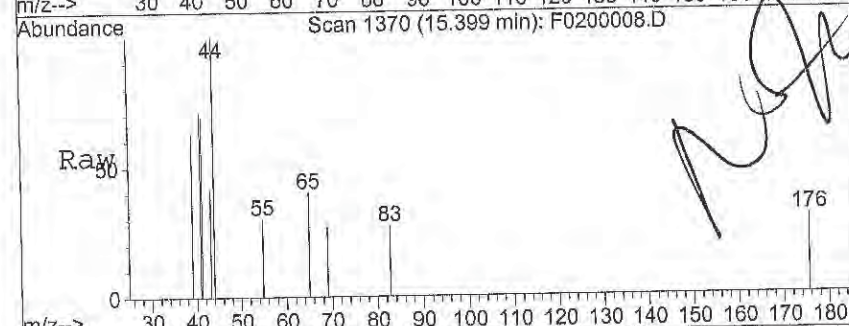
#57
 1,2,3-Trichloropropane
 Concen: 0.16 ug/L
 RT: 15.45 min Scan# 1376
 Delta R.T. 0.02 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

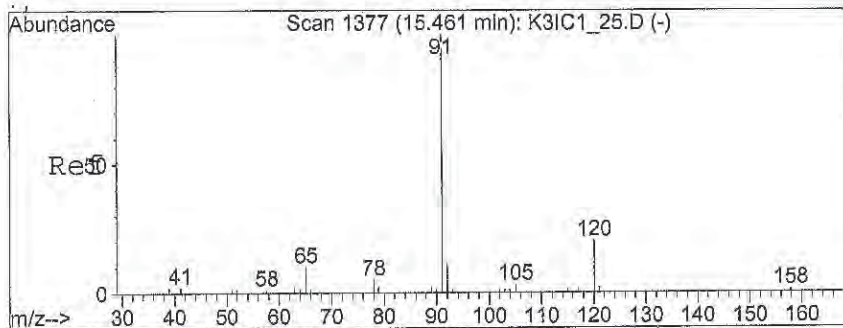
Tgt Ion: 75 Resp: 686
 Ion Ratio Lower Upper
 75 100
 77 0.0 31.2 46.8#



#60
 1,1,2,2-Tetrachloroethane
 Concen: 0.06 ug/L
 RT: 15.40 min Scan# 1370
 Delta R.T. 0.06 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

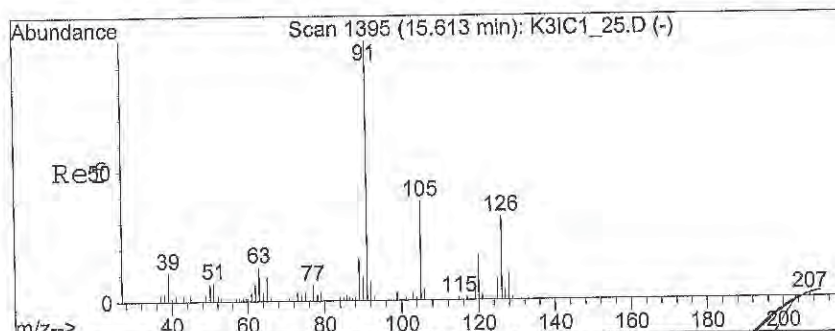
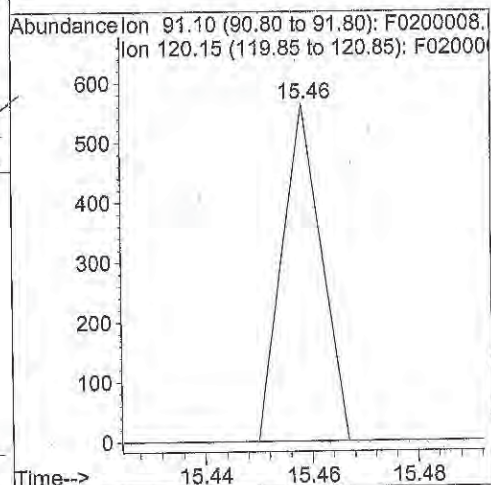
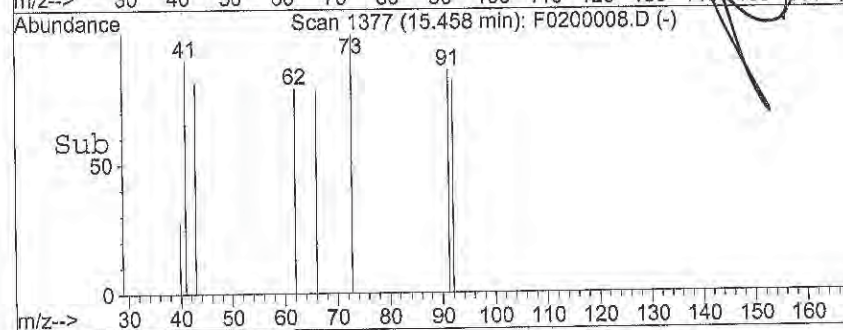
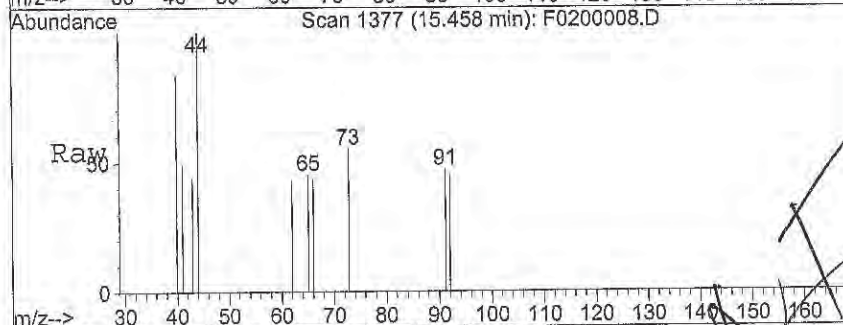
Tgt Ion: 83 Resp: 265
 Ion Ratio Lower Upper
 83 100
 85 0.0 51.2 76.8#





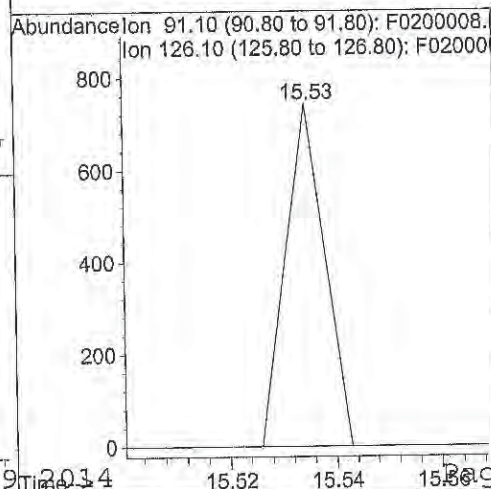
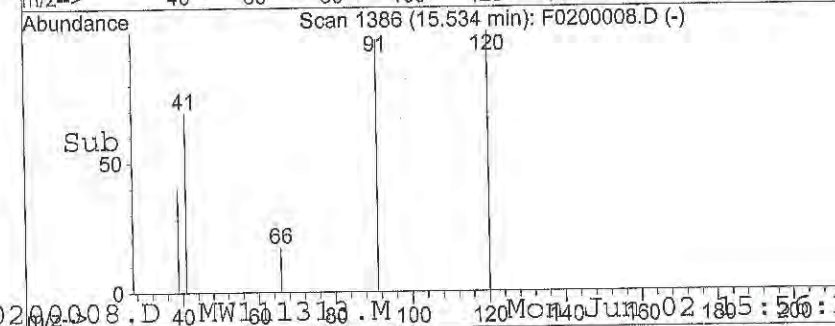
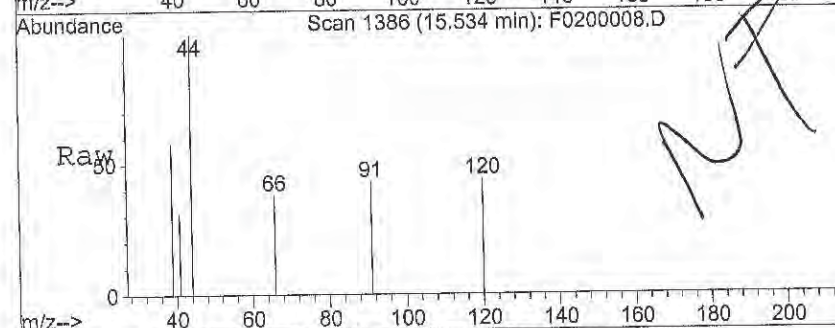
#62
n-Propylbenzene
Concen: 0.01 ug/L
RT: 15.46 min Scan# 1377
Delta R.T. -0.00 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

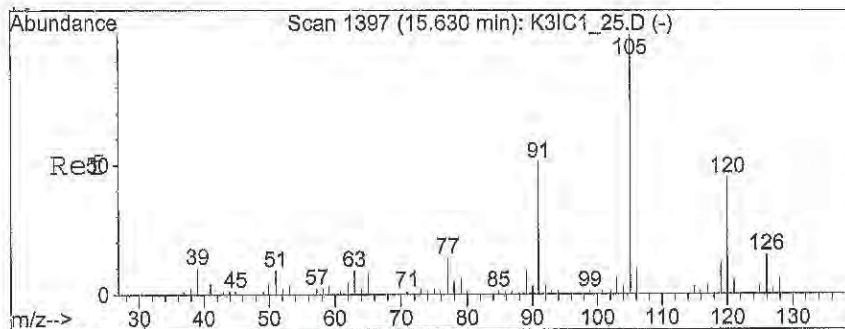
Tgt Ion: 91 Resp: 286
Ion Ratio Lower Upper
91 100
120 0.0 16.1 24.1#



#63
2-Chlorotoluene
Concen: 0.03 ug/L
RT: 15.53 min Scan# 1386
Delta R.T. -0.08 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

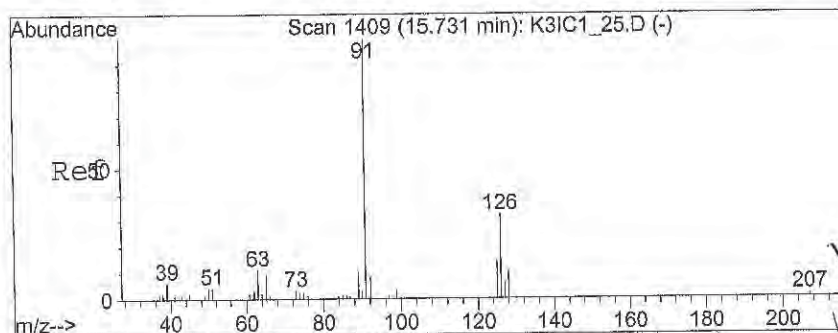
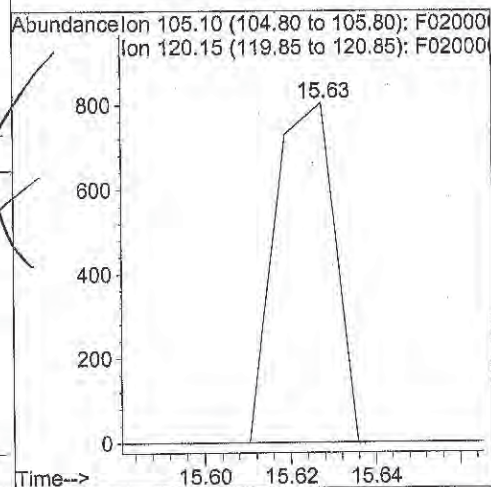
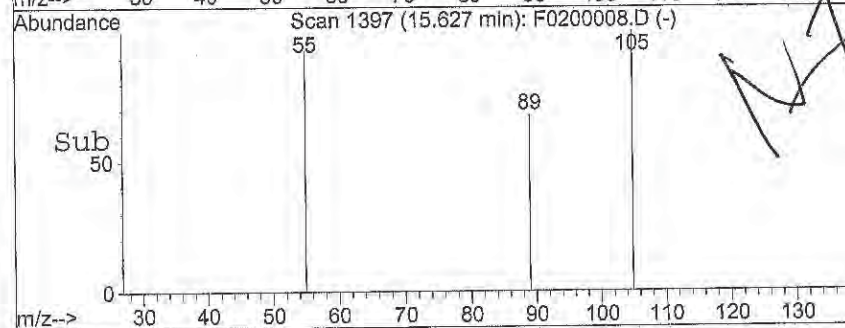
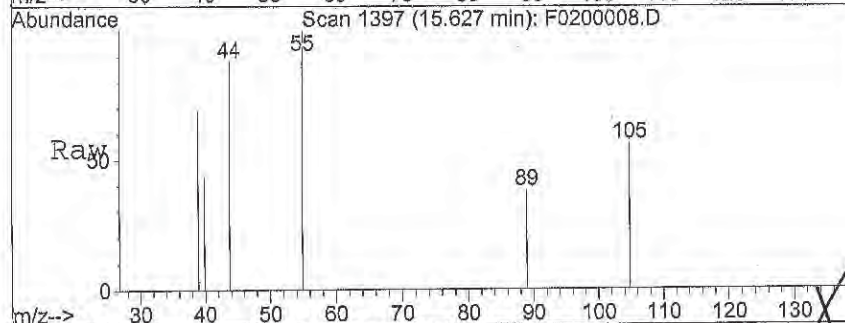
Tgt Ion: 91 Resp: 376
Ion Ratio Lower Upper
91 100
126 0.0 24.0 36.0#





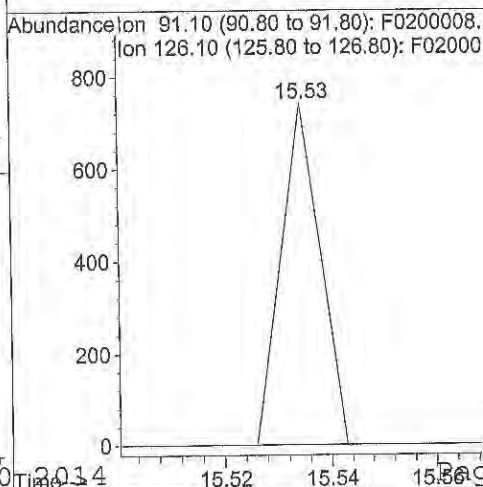
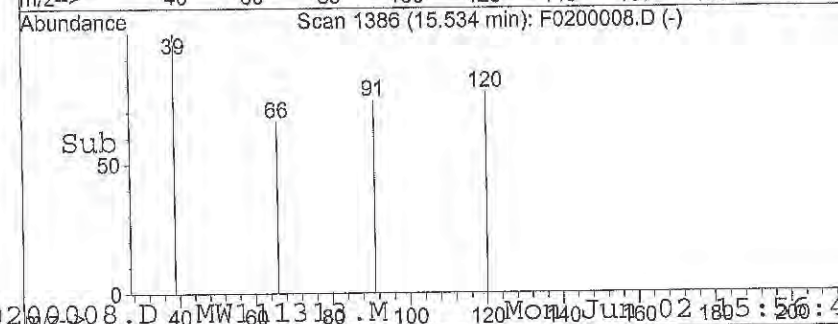
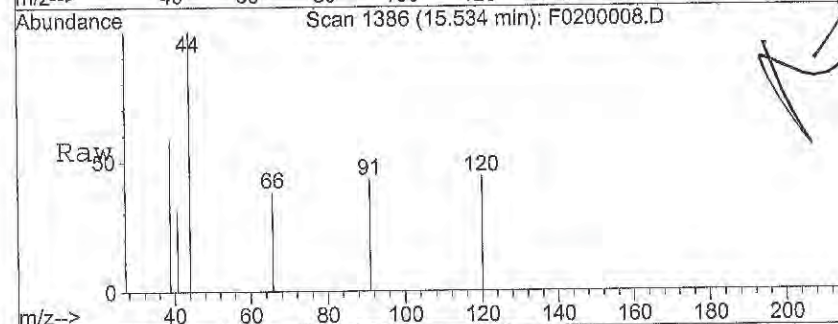
#64
 1,3,5-Trimethylbenzene
 Concen: 0.05 ug/L
 RT: 15.63 min Scan# 1397
 Delta R.T. -0.00 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

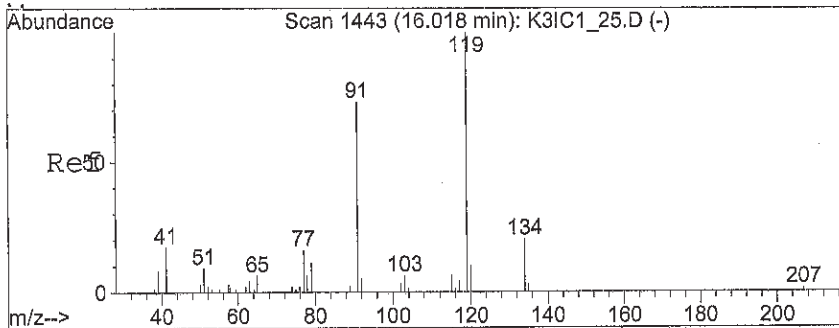
Tgt Ion: 105 Resp: 777
 Ion Ratio Lower Upper
 105 100
 120 0.0 36.4 54.6#



#65
 4-Chlorotoluene
 Concen: 0.03 ug/L
 RT: 15.53 min Scan# 1386
 Delta R.T. -0.20 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

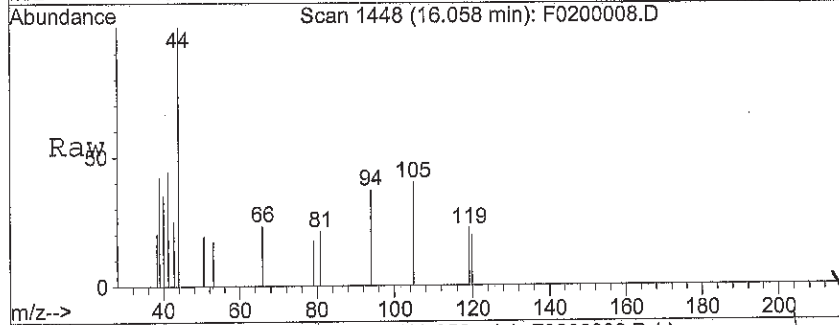
Tgt Ion: 91 Resp: 376
 Ion Ratio Lower Upper
 91 100
 126 0.0 24.6 36.8#





#66
 tert-Butylbenzene
 Concen: 0.03 ug/L
 RT: 16.06 min Scan# 1448
 Delta R.T. 0.04 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

Tgt Ion	Ratio	Lower	Upper
119	100		
91	0.0	56.3	84.5#
134	0.0	16.1	24.1#

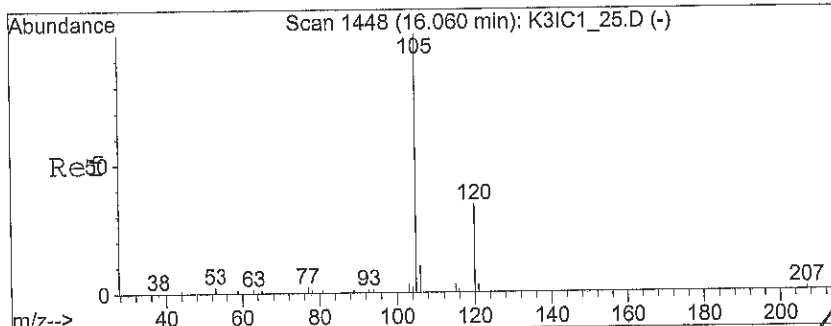
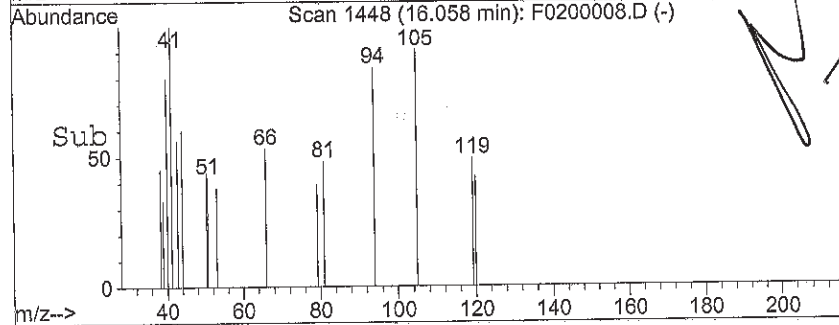
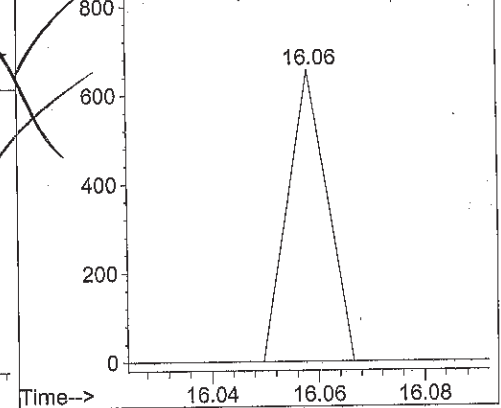


Abundance

Ion 119.15 (118.85 to 119.85): F0200008.D

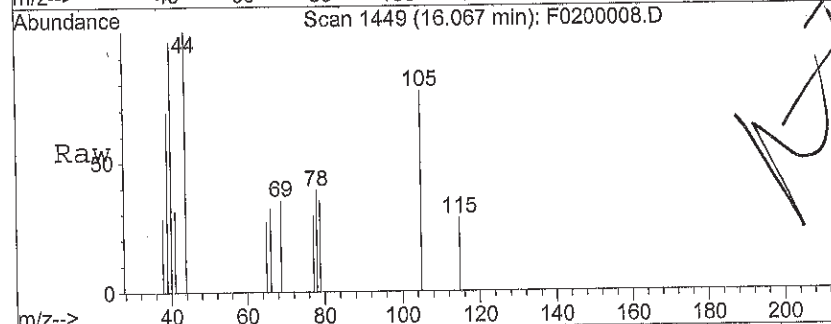
Ion 91.10 (90.80 to 91.80): F0200008.D

Ion 134.15 (133.85 to 134.85): F0200008.D



#67
 1,2,4-Trimethylbenzene
 Concen: 0.14 ug/L
 RT: 16.07 min Scan# 1449
 Delta R.T. 0.01 min
 Lab File: F0200008.D
 Acq: 2 Jun 2014 3:19 pm

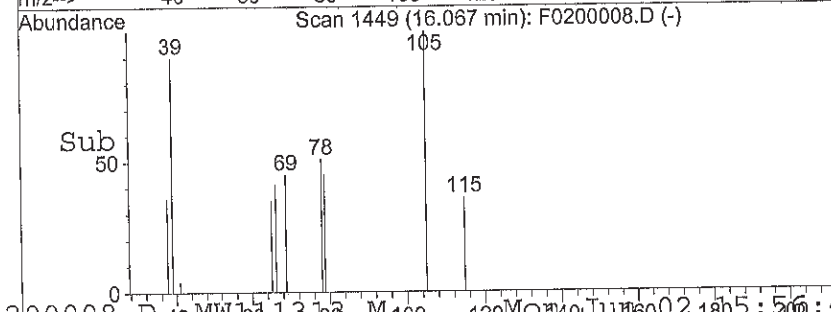
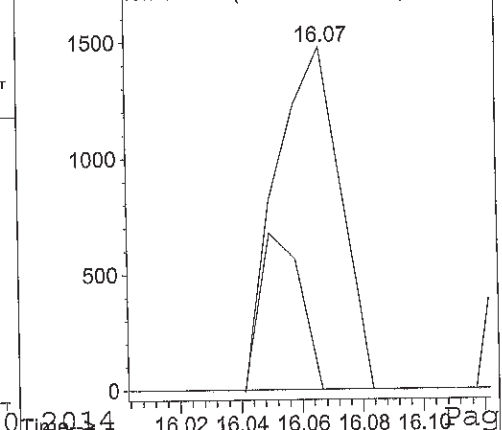
Tgt Ion	Ratio	Lower	Upper
105	100		
120	29.2	33.8	50.8#

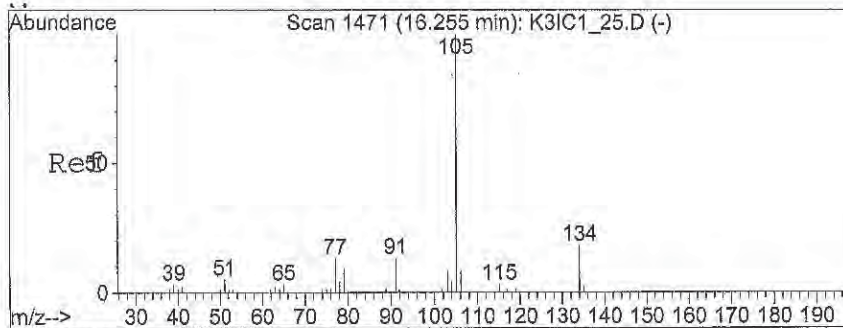


Abundance

Ion 105.10 (104.80 to 105.80): F0200008.D

Ion 120.15 (119.85 to 120.85): F0200008.D





#68

sec-Butylbenzene

Concen: 0.05 ug/L

RT: 16.33 min Scan# 1480

Delta R.T. 0.07 min

Lab File: F0200008.D

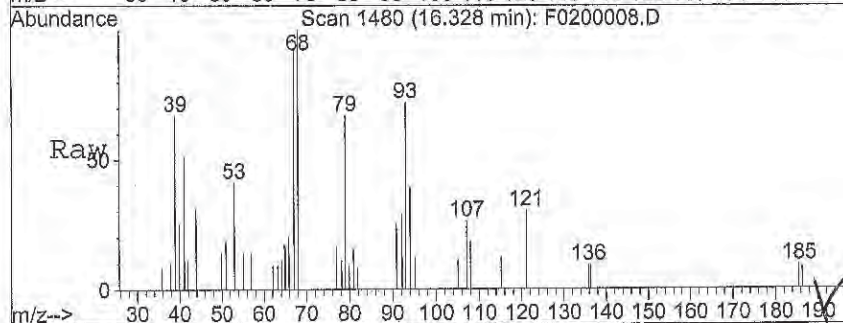
Acq: 2 Jun 2014 3:19 pm

Tgt Ion:105 Resp: 938

Ion Ratio Lower Upper

105 100

134 0.0 13.0 19.6#



Abundance Ion 105.10 (104.80 to 105.80): F0200008.D

Ion 134.15 (133.85 to 134.85): F0200008.D

800

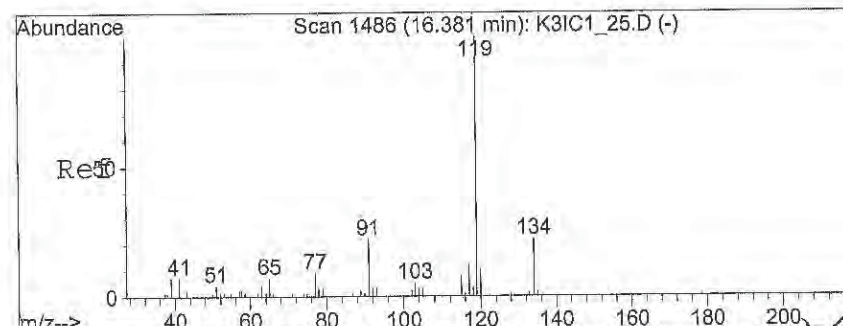
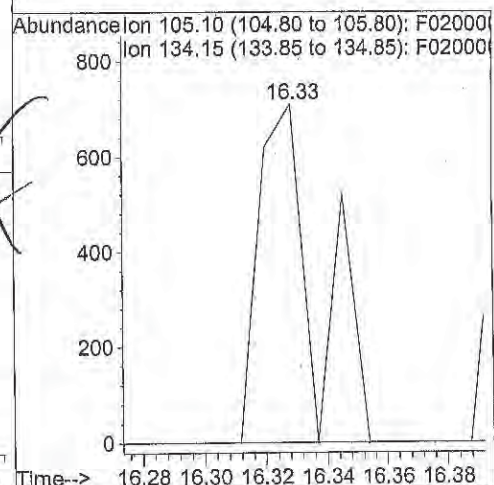
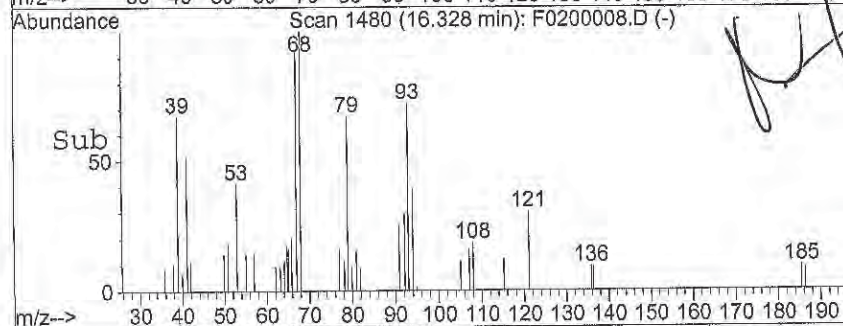
600

400

200

0

16.28 16.30 16.32 16.34 16.36 16.38



#69

p-Isopropyltoluene

Concen: 0.23 ug/L

RT: 16.39 min Scan# 1487

Delta R.T. 0.01 min

Lab File: F0200008.D

Acq: 2 Jun 2014 3:19 pm

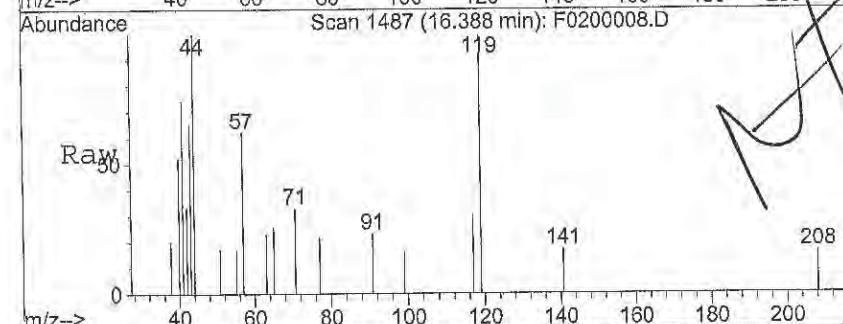
Tgt Ion:119 Resp: 3549

Ion Ratio Lower Upper

119 100

134 7.6 17.4 26.2#

91 0.0 19.6 29.4#



Abundance Ion 119.15 (118.85 to 119.85): F0200008.D

Ion 134.15 (133.85 to 134.85): F0200008.D

Ion 91.10 (90.80 to 91.80): F0200008.D

4000

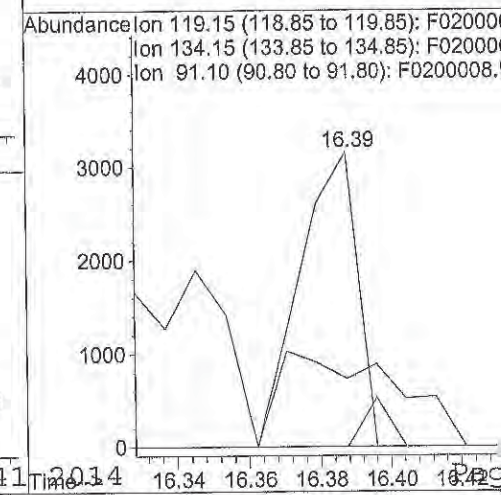
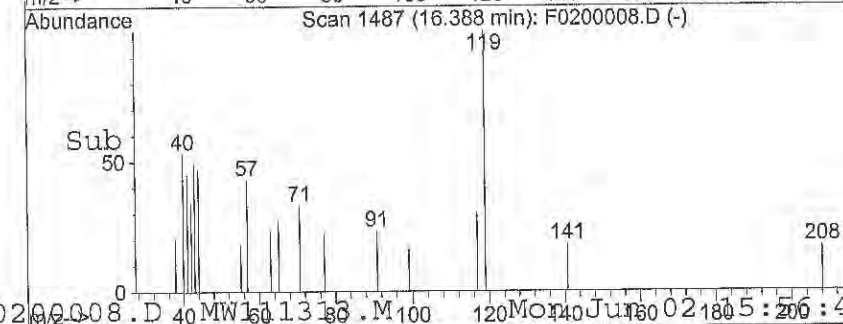
3000

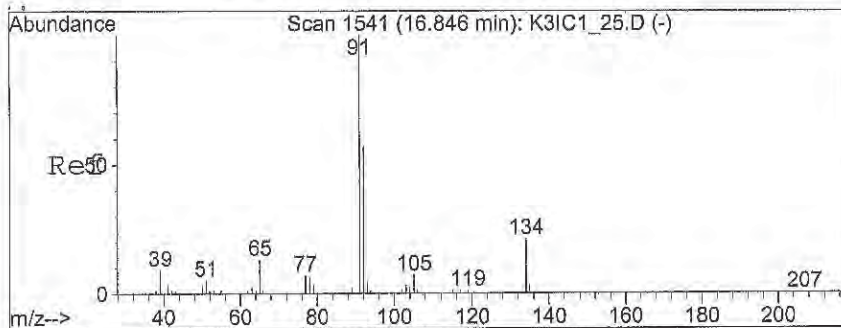
2000

1000

0

16.34 16.36 16.38 16.40 16.42





#72

n-Butylbenzene

Concen: 0.02 ug/L

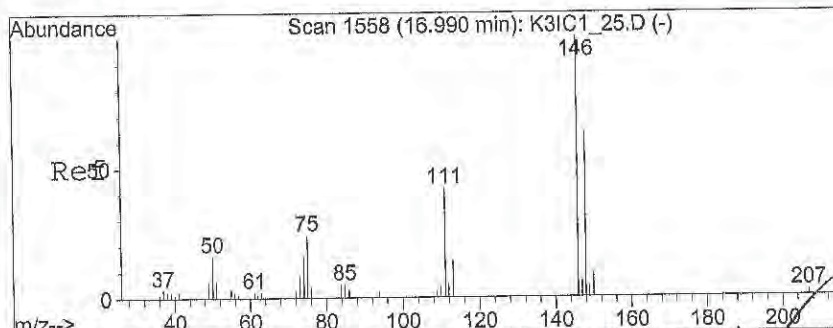
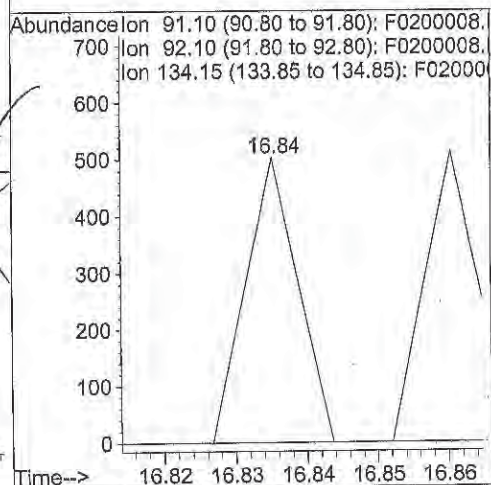
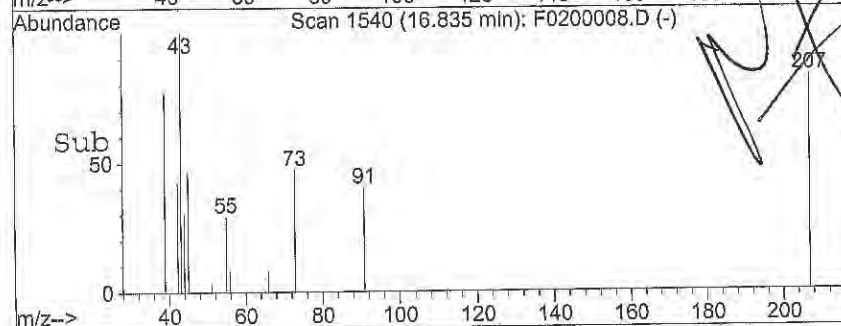
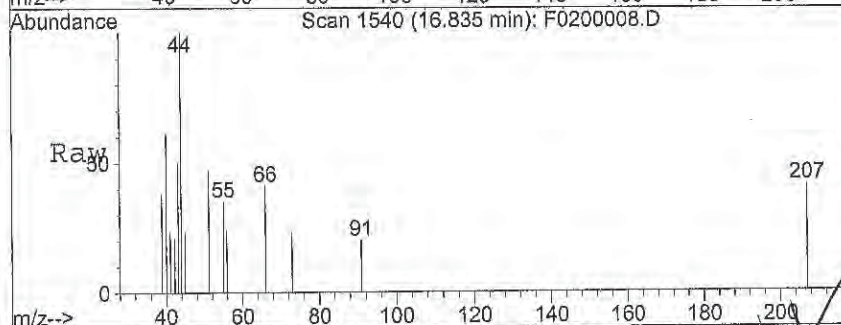
RT: 16.84 min Scan# 1540

Delta R.T. -0.01 min

Lab File: F0200008.D

Acq: 2 Jun 2014 3:19 pm

Tgt Ion:	91	Resp:	254
Ion Ratio	Lower	Upper	
91	100		
92	0.0	47.0	70.4#
134	0.0	18.1	27.1#



#73

1,2-Dichlorobenzene

Concen: 0.04 ug/L

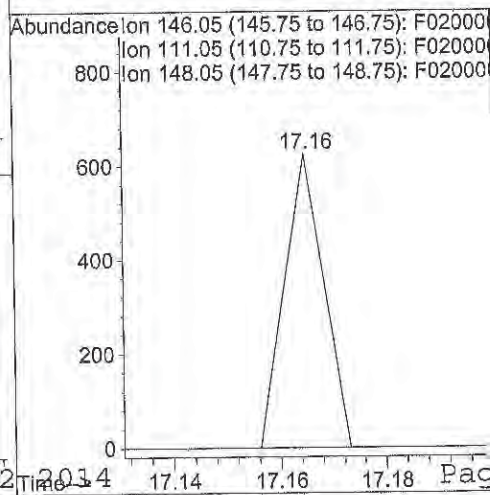
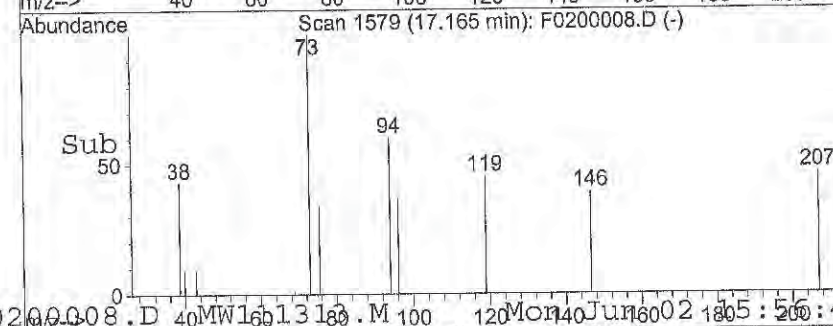
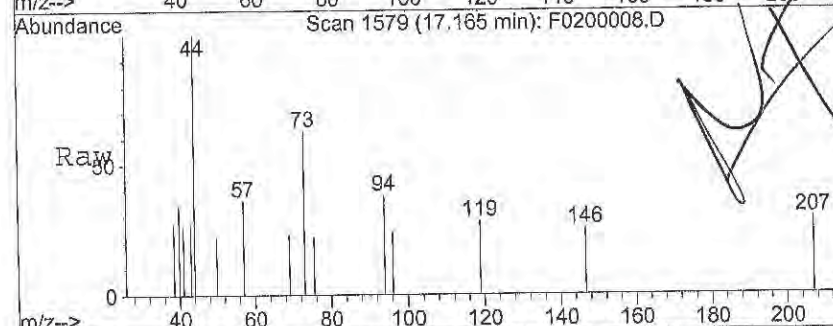
RT: 17.16 min Scan# 1579

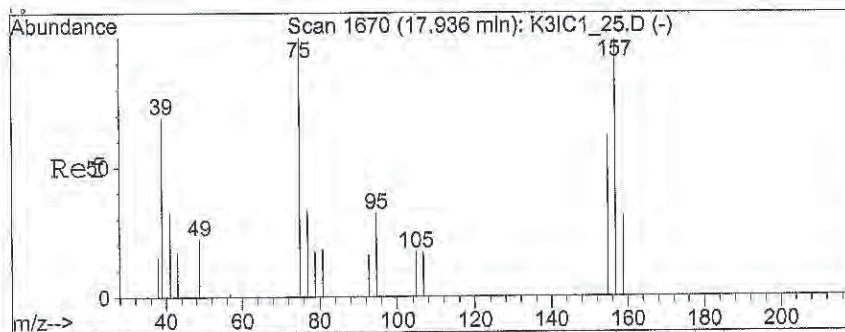
Delta R.T. 0.18 min

Lab File: F0200008.D

Acq: 2 Jun 2014 3:19 pm

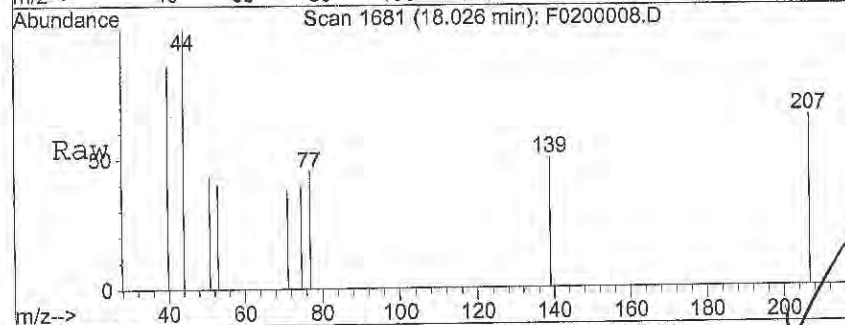
Tgt Ion:	146	Resp:	317
Ion Ratio	Lower	Upper	
146	100		
111	0.0	34.7	52.1#
148	0.0	51.7	77.5#



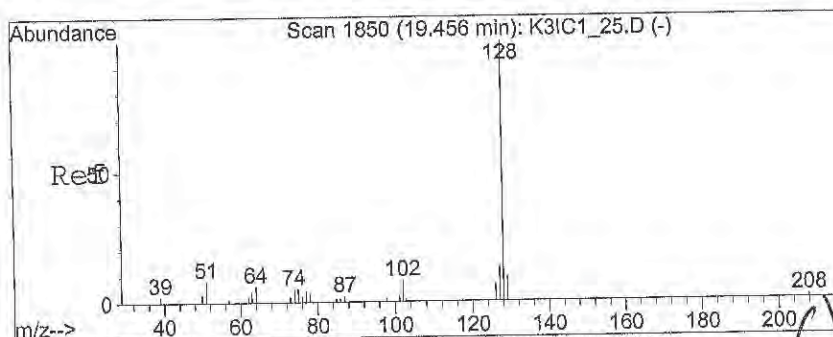
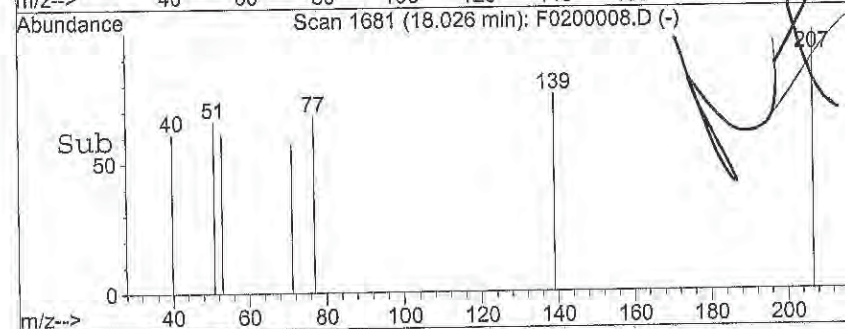
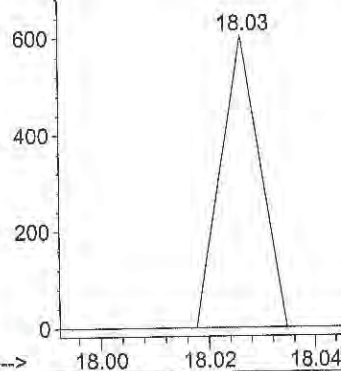


#74
1,2-Dibromo-3-chloropropane
Concen: 1.34 ug/L
RT: 18.03 min Scan# 1681
Delta R.T. 0.09 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 75 Resp: 306
Ion Ratio Lower Upper
75 100
155 0.0 59.2 88.8#
157 0.0 77.0 115.6#

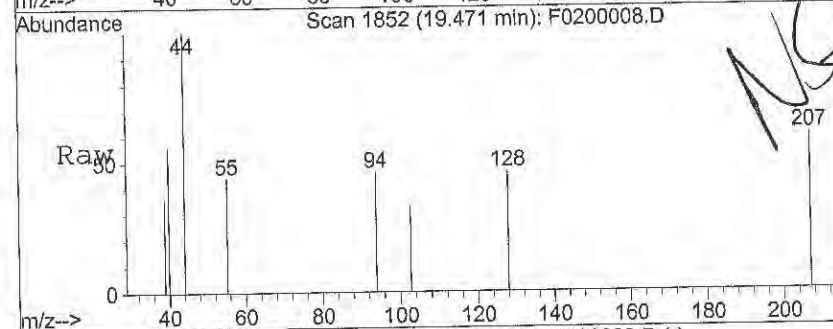


Abundance Ion 75.05 (74.75 to 75.75): F0200008.D
Ion 154.95 (154.65 to 155.65): F0200008.D
Ion 156.95 (156.65 to 157.65): F0200008.D

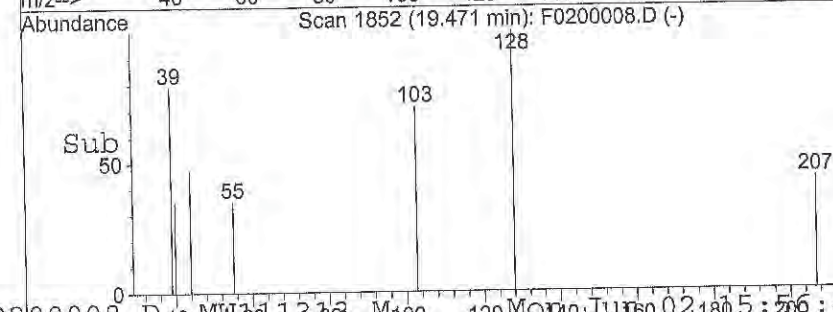
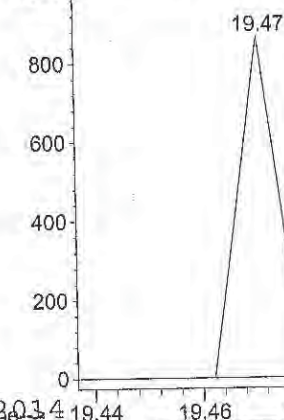


#77
Naphthalene
Concen: 0.04 ug/L
RT: 19.47 min Scan# 1852
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 128 Resp: 439



Abundance Ion 128.10 (127.80 to 128.80): F0200008.D



Data File : C:\HPCHEM\1\DATA\060214L3\F0200008.D

Vial: 7

Acq On : 2 Jun 2014 3:19 pm

Operator: DN

Sample : 3F40201-07

Inst : GC/MS Ins

Misc : 100cc SVL-805-SA5C-SV-10.0-11.0

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 3 7:41 19114

Quant Results File: SS072713.RES

Quant Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN

Last Update : Mon Nov 18 10:31:39 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene (IS)	10.29	96	1193768	12.50	ug/L	-0.02
7) Chlorobenzene-d5 (IS)	13.92	117	1078807	12.50	ug/L	0.00
10) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	575670	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	396044m	12.76	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	102.08%
3) Chloroform-d (SU6)	9.18	84	517834m	11.63	ug/L	0.00
Spiked Amount	12.500	Range	70 - 140	Recovery	=	93.04%
4) Methylene Chloride-d2 (SU5)	7.08	86	281905	10.83	ug/L	0.00
Spiked Amount	12.500	Range	70 - 140	Recovery	=	86.64%
5) 1,2-Dichloroethane-d4 (SU2)	9.89	65	356497m	16.80	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	134.40%#
6) Benzene-d6 (SU7)	9.93	84	1094931	11.69	ug/L	-0.03
Spiked Amount	12.500	Range	70 - 140	Recovery	=	93.52%
8) Toluene-d8 (SU3)	12.21	98	1144505	11.18	ug/L	-0.02
Spiked Amount	12.500	Range	75 - 125	Recovery	=	89.44%
9) 4-Bromofluorobenzene (SU4)	15.22	95	525113m	12.43	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	99.44%

Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration

F0200008.D SS072713.M

Tue Jun 03 07:41:41 2014

Page 1

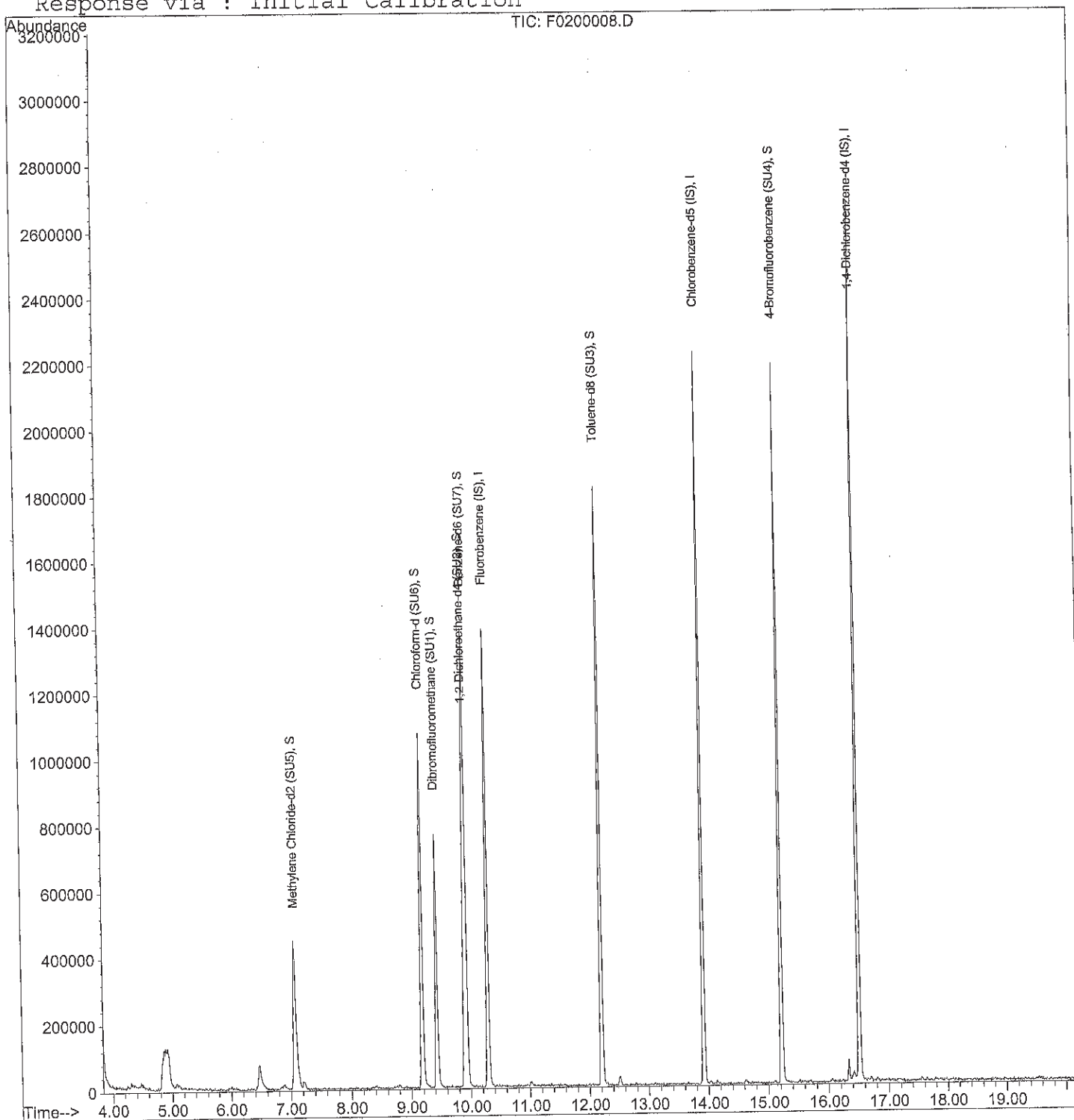
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200008.D
Acq On : 2 Jun 2014 3:19 pm
Sample : 3F40201-07
Misc : 100cc SVL-805-SA5C-SV-10.0-11.0
MS Integration Params: rteint.p
Quant Time: Jun 3 7:41 19114

Vial: 7
Operator: DN
Inst : GC/MS Ins
Multiplr: 10.00

Quant Results File: SS072713.RES

Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
Last Update : Mon Nov 18 10:31:39 2013
Response via : Initial Calibration



Data File : C:\HPCHEM\1\DATA\060214L3\F0200009.D
 Acq On : 2 Jun 2014 3:49 pm
 Sample : 3F40201-08
 Misc : 100cc SVL-505-SA5C-SV-15.0-16.0
 MS Integration Params: rteint.p
 Quant Time: Jun 2 16:17 19114

Vial: 8
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene (IS)	10.29	96	1125891	12.50	ug/L	0.00
38) Chlorobenzene-d5 (IS)	13.92	117	1087623	12.50	ug/L	0.00
59) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	587531	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.42	113	319239m	11.37	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	90.96%
28) 1,2-Dichloroethane-d4 (SU2)	9.90	65	439713m	16.47	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	131.76%#
39) Toluene-d8 (SU3)	12.21	98	1138471	11.22	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	89.76%
58) 4-Bromofluorobenzene (SU4)	15.23	95	603264m	13.56	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	108.48%

Target Compounds

					Qvalue	
3) (F12) Dichlorodifluorometh	4.09	85	385	0.14 ug/L	#SM	44
4) Chloromethane	4.37	50	3224	0.49 ug/L	#	58
5) Vinyl Chloride	4.52	62	312	0.16 ug/L	#	43
6) Bromomethane	5.23	96	836	-1.10 ug/L	#	79
7) Chloroethane	5.37	64	2778	3.66 ug/L	#	95
8) (F11) Trichlorofluorometha	5.50	101	279	0.09 ug/L	#	16
10) 1,1-Dichloroethene	6.57	96	281	0.11 ug/L	#	56
11) Acetone	6.48	58	4442	5.24 ug/L	#	1
12) (IPA) Leak Check Compound	6.47	45	201316	1488.01 ug/L	#SM	88
13) Carbon disulfide	6.84	76	15374	1.64 ug/L	#	83
14) Methylene Chloride	7.07	84	6603	2.14 ug/L	#	1
15) (TBA) tert-Butanol	7.13	59	977	5.09 ug/L	#	77
16) (MTBE) Methyl-t-butyl ethe	7.50	73	285	0.04 ug/L	#SM	1
18) 1,1-Dichloroethane	8.02	63	700	0.14 ug/L	#	79
20) 2,2-Dichloropropane	8.86	77	257	0.06 ug/L	#	1
22) (DIPE) Diisopropyl Ether	8.01	45	603	0.07 ug/L	#	78
23) Bromochloromethane	9.00	128	304	0.20 ug/L	#	1
24) Chloroform	9.20	83	633	0.11 ug/L	#	1
25) (ETBE) 2-ethoxy 2-methyl p	8.50	59	1085	0.13 ug/L	#	44
29) 1,1-Dichloropropene	9.59	75	320	0.07 ug/L	#	20
31) Benzene	9.98	78	754	0.07 ug/L	#	1
32) 1,2-Dichloroethane	9.93	62	11753	3.14 ug/L	#	1

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060214L3\F0200009.D
 Acq On : 2 Jun 2014 3:49 pm
 Sample : 3F40201-08
 Misc : 100cc SVL-505-SA5C-SV-15.0-16.0
 MS Integration Params: rteint.p
 Quant Time: Jun 2 16:17 19114

Vial: 8
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00
 Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
34) 1,2-Dichloropropane	10.91	63	362	0.14	ug/L #	2
35) Dibromomethane	11.24	93	395	0.20	ug/L #	5
36) Bromodichloromethane	11.53	83	264	0.07	ug/L #	21
37) cis-1,3-Dichloropropene	11.91	75	300	0.07	ug/L #	1
40) (MIBK) 4-Methyl-2-Pentanone	12.15	43	860	0.40	ug/L #	100
41) Toluene	12.29	91	4013	0.27	ug/L #	98
42) trans-1,3-Dichloropropene	12.50	75	1049	0.21	ug/L #	67
43) 1,1,2-Trichloroethane	12.95	83	254	0.09	ug/L #	10
45) 1,3-Dichloropropane	12.90	76	294	0.06	ug/L #	1
46) 2-Hexanone	12.98	43	281	0.12	ug/L #	37
47) Dibromochloromethane	13.19	129	316	0.08	ug/L #	21
51) Ethylbenzene	14.02	91	2743	0.16	ug/L #	45
52) m,p-Xylenes	14.14	106	349	0.06	ug/L #	1
53) o-Xylene	14.63	106	273	0.05	ug/L #	1
54) Styrene	14.63	104	2045	-0.63	ug/L #	62
56) Isopropylbenzene	15.01	105	292	0.02	ug/L #	1
57) 1,2,3-Trichloropropane	15.44	75	819	0.18	ug/L #	100
61) Bromobenzene	15.22	156	351	0.08	ug/L #	1
62) n-Propylbenzene	15.46	91	452	0.02	ug/L #	56
63) 2-Chlorotoluene	15.61	91	264	0.02	ug/L #	45
64) 1,3,5-Trimethylbenzene	15.62	105	647	0.04	ug/L #	94
65) 4-Chlorotoluene	15.70	91	314	0.02	ug/L #	44
66) tert-Butylbenzene	15.97	119	257	0.02	ug/L #	24
67) 1,2,4-Trimethylbenzene	16.06	105	3161	0.21	ug/L #	54
68) sec-Butylbenzene	16.34	105	724	0.04	ug/L #	62
69) p-Isopropyltoluene	16.38	119	2577	0.16	ug/L #	71
70) 1,3-Dichlorobenzene	16.45	146	266	0.03	ug/L #	24
71) 1,4-Dichlorobenzene	16.58	146	334	0.04	ug/L #	22
72) n-Butylbenzene	16.89	91	384	0.02	ug/L #	30
74) 1,2-Dibromo-3-chloropropane	17.73	75	387	1.45	ug/L #	6

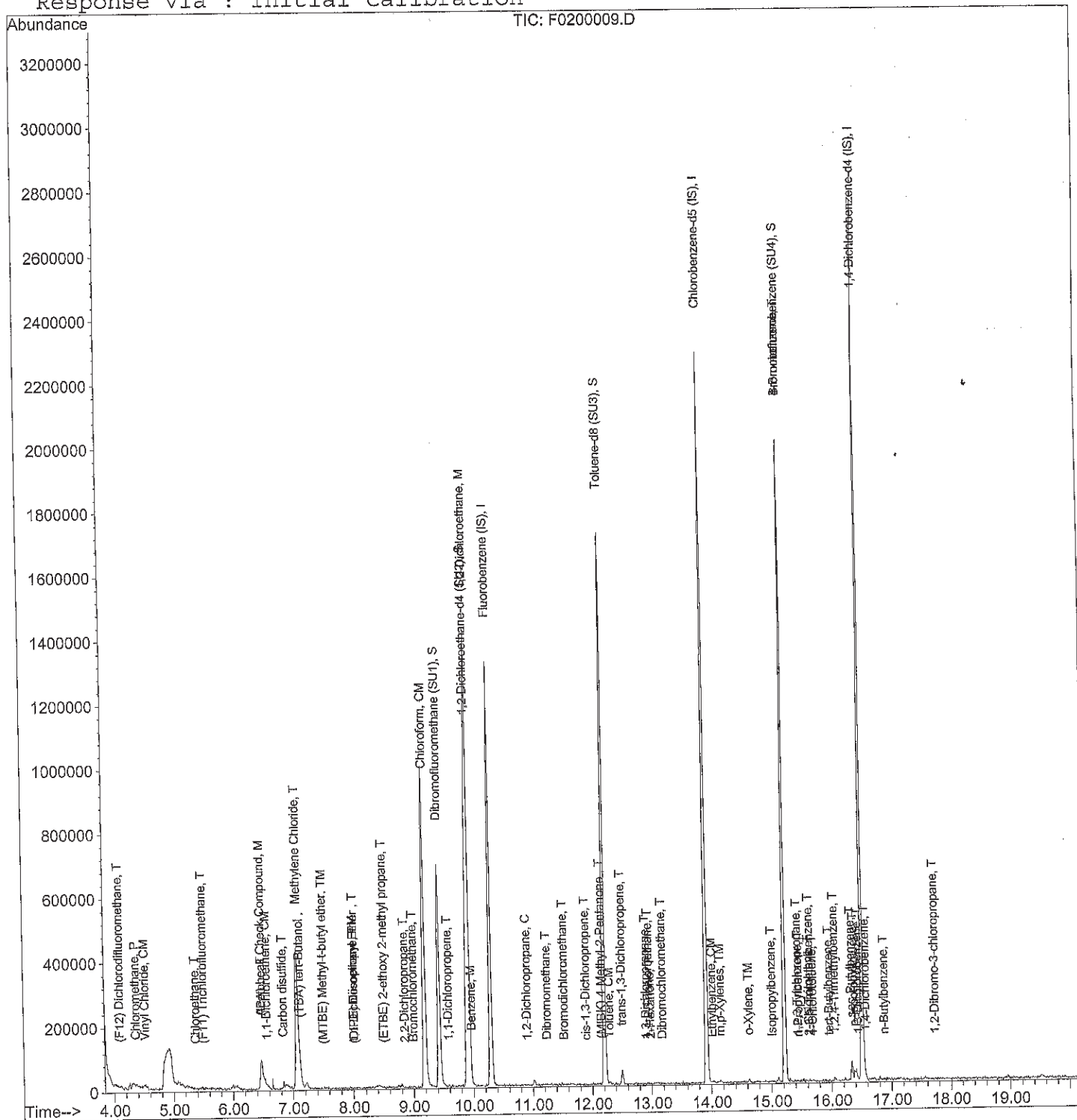
Quantitation Report

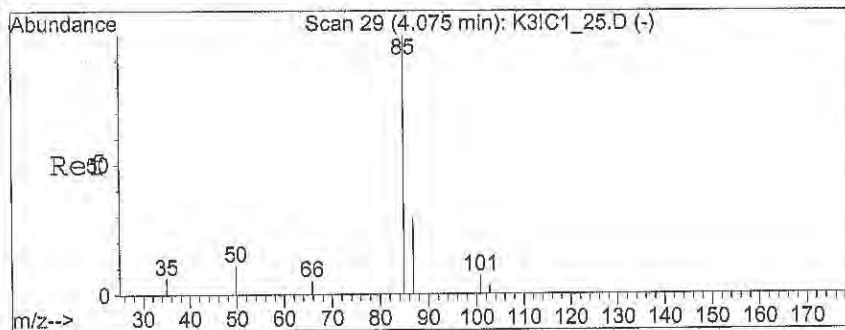
Data File : C:\HPCHEM\1\DATA\060214L3\F0200009.D
 Acq On : 2 Jun 2014 3:49 pm
 Sample : 3F40201-08
 Misc : 100cc SVL-505-SA5C-SV-15.0-16.0
 MS Integration Params: rteint.p
 Quant Time: Jun 2 16:17 19114

Vial: 8
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: MW111313.RES

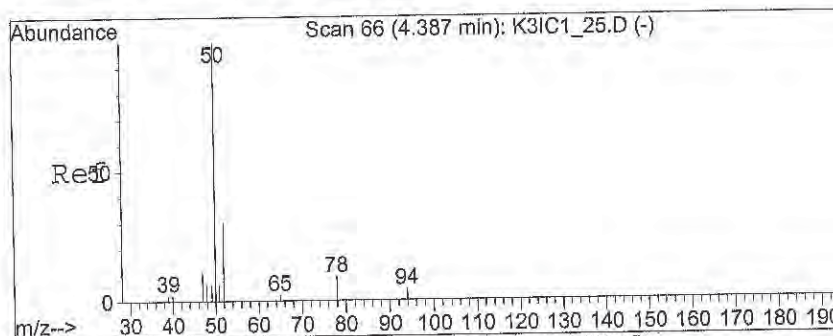
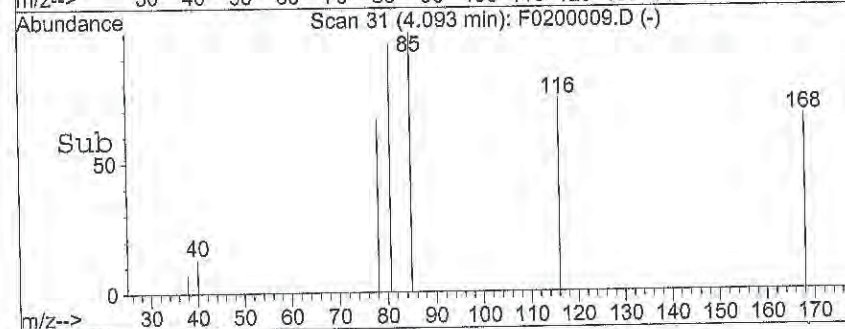
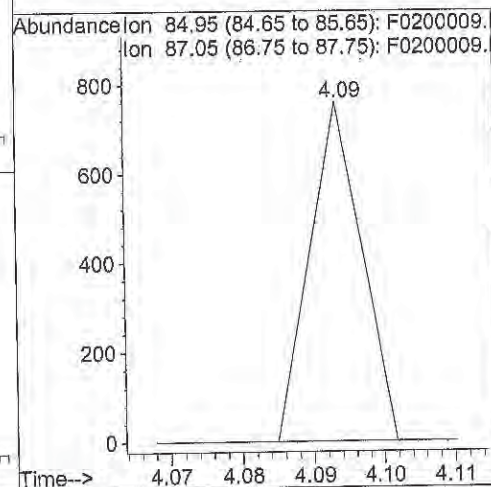
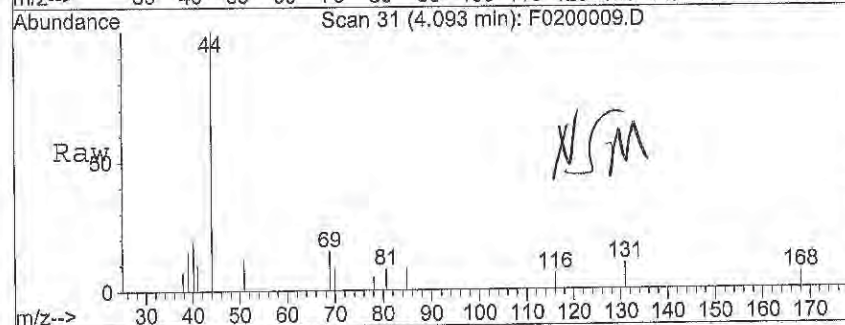
Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration





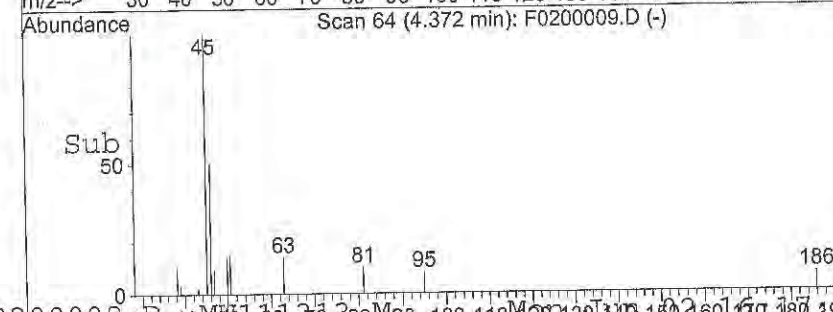
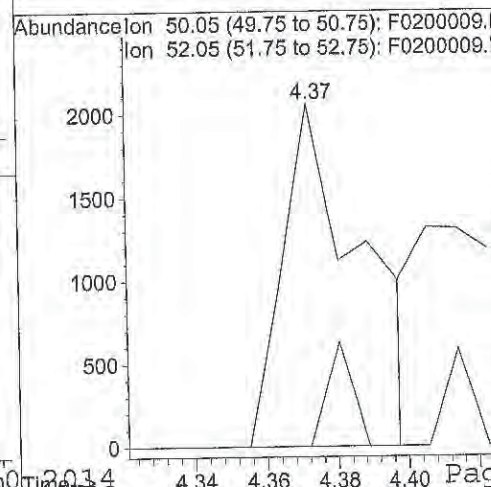
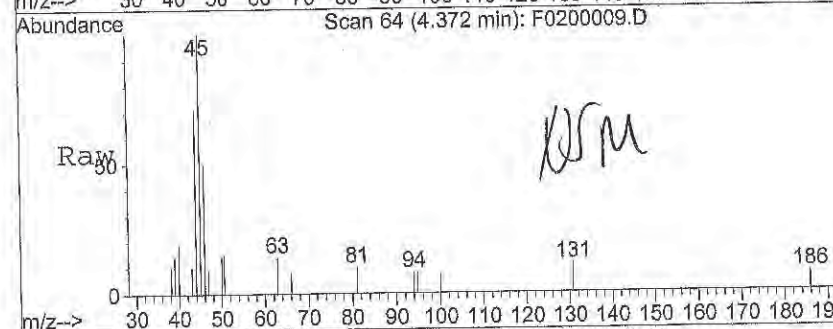
#3
 (F12) Dichlorodifluoromethane
 Concen: 0.14 ug/L
 RT: 4.09 min Scan# 31
 Delta R.T. 0.02 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

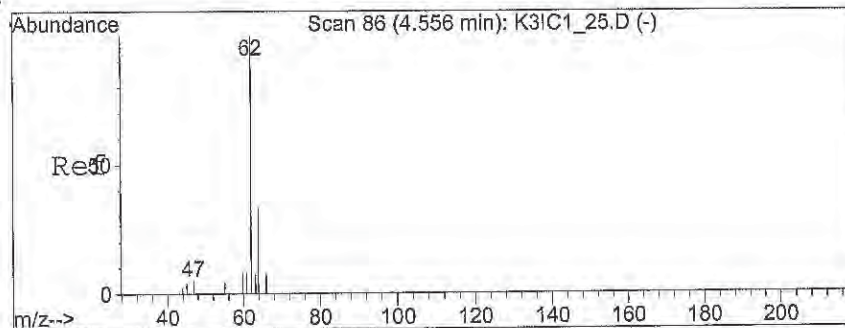
Tgt Ion: 85 Resp: 385
 Ion Ratio Lower Upper
 85 100
 87 0.0 24.6 37.0#



#4
 Chloromethane
 Concen: 0.49 ug/L
 RT: 4.37 min Scan# 64
 Delta R.T. -0.02 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

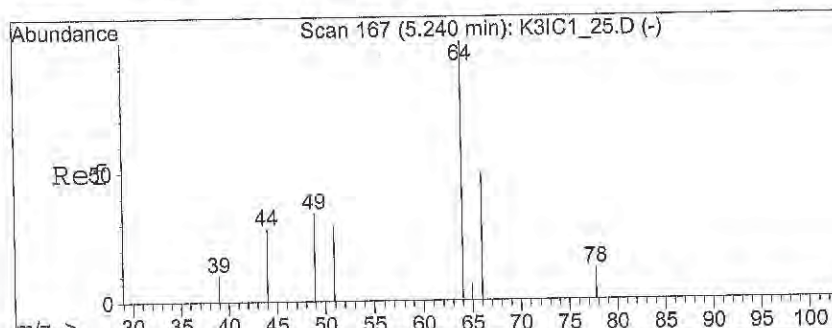
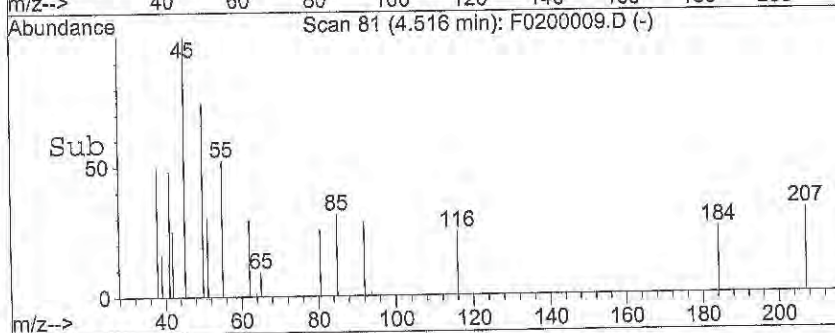
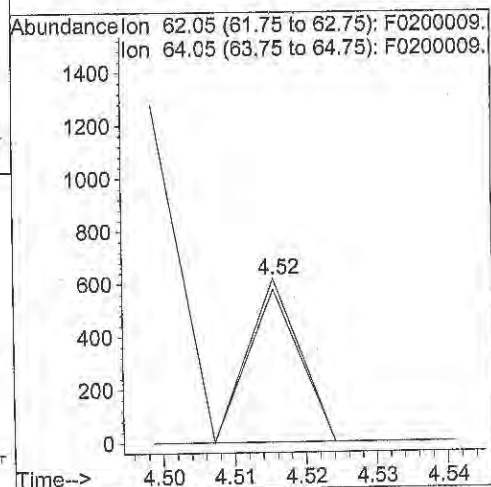
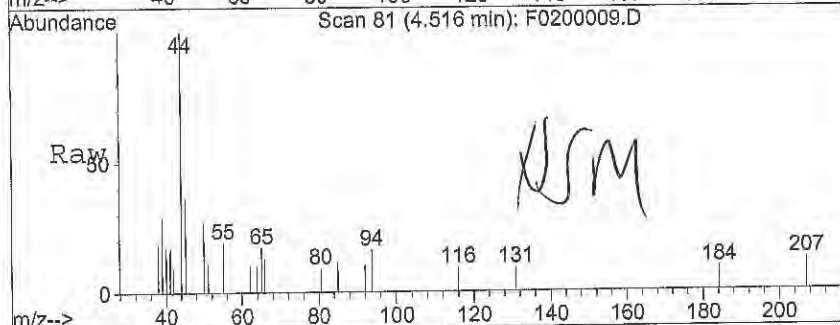
Tgt Ion: 50 Resp: 3224
 Ion Ratio Lower Upper
 50 100
 52 9.9 26.9 40.3#





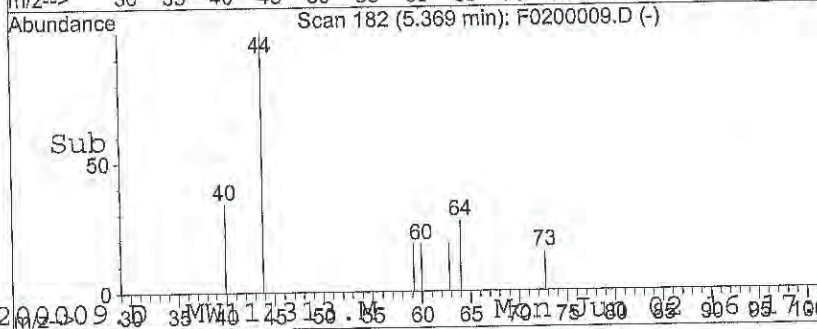
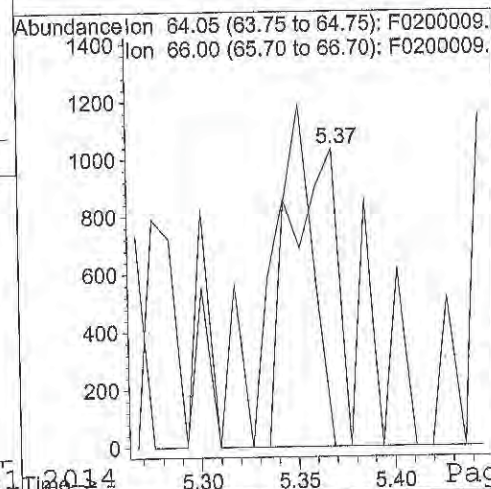
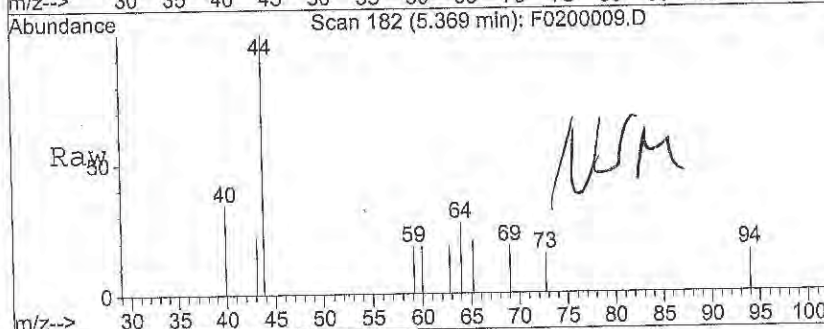
#5
 Vinyl Chloride
 Concen: 0.16 ug/L
 RT: 4.52 min Scan# 81
 Delta R.T. -0.04 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

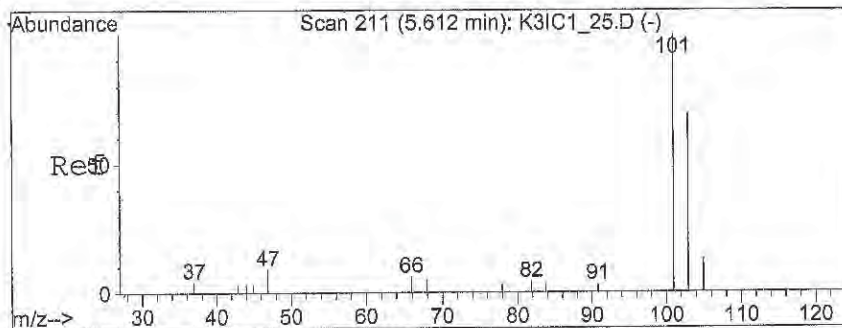
Tgt Ion: 62 Resp: 312
 Ion Ratio Lower Upper
 62 100
 64 0.0 25.6 38.4#



#7
 Chloroethane
 Concen: 3.66 ug/L
 RT: 5.37 min Scan# 182
 Delta R.T. 0.13 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 64 Resp: 2778
 Ion Ratio Lower Upper
 64 100
 66 47.3 35.4 53.0





#8

(F11) Trichlorofluoromethane

Concen: 0.09 ug/L

RT: 5.50 min Scan# 197

Delta R.T. -0.12 min

Lab File: F0200009.D

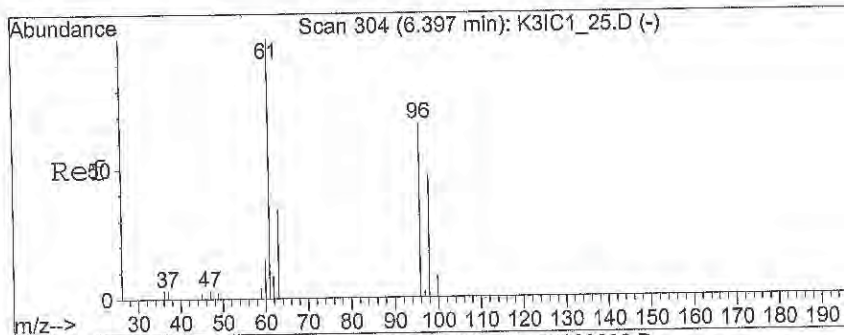
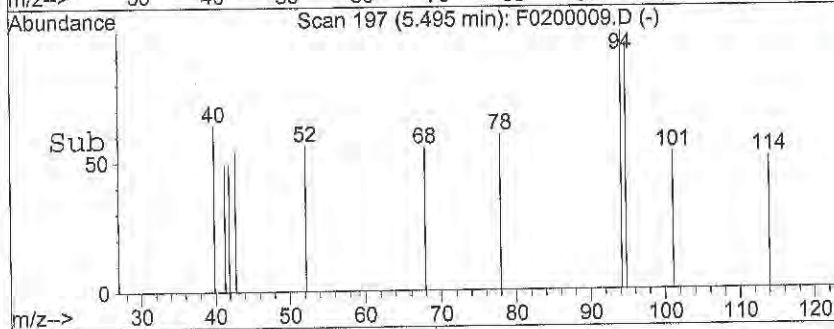
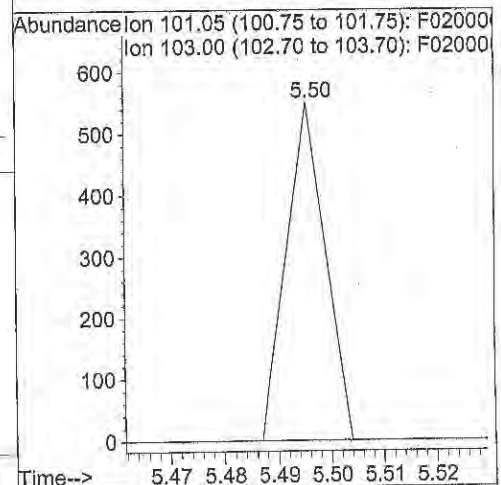
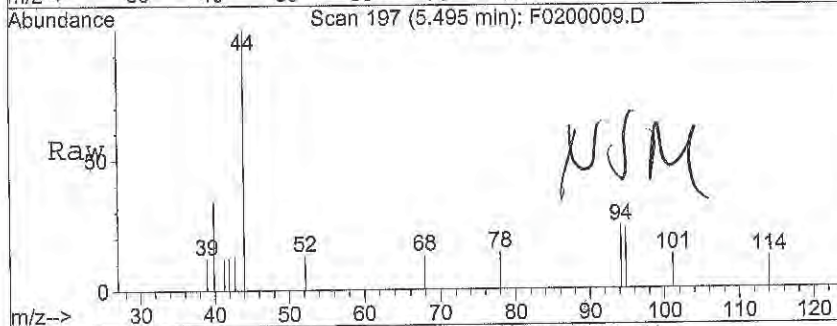
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 101 Resp: 279

Ion Ratio Lower Upper

101 100

103 0.0 54.5 81.7#



#10

1,1-Dichloroethene

Concen: 0.11 ug/L

RT: 6.57 min Scan# 324

Delta R.T. 0.17 min

Lab File: F0200009.D

Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 96 Resp: 281

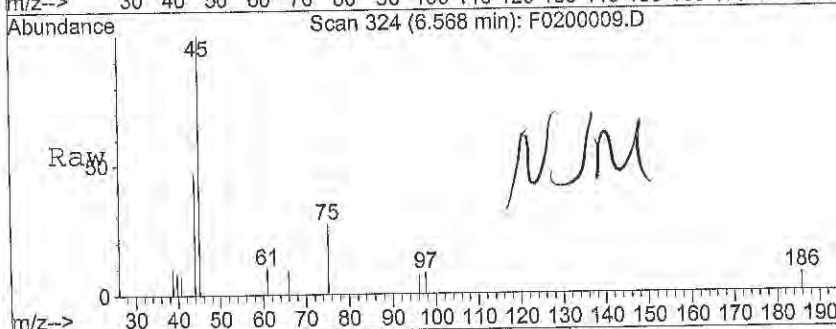
Ion Ratio Lower Upper

96 100

61 140.6 130.0 195.0

98 0.0 56.2 84.4#

63 0.0 41.5 62.3#



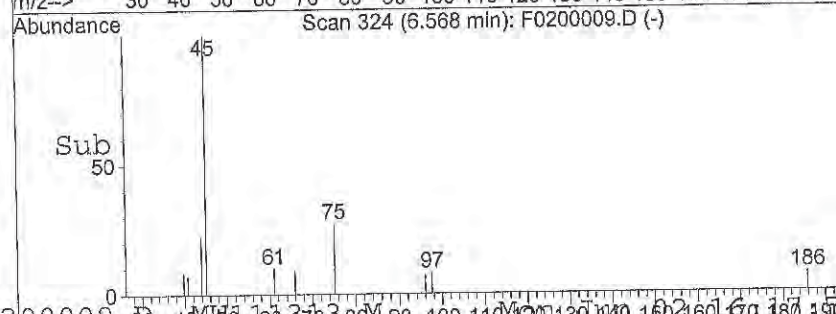
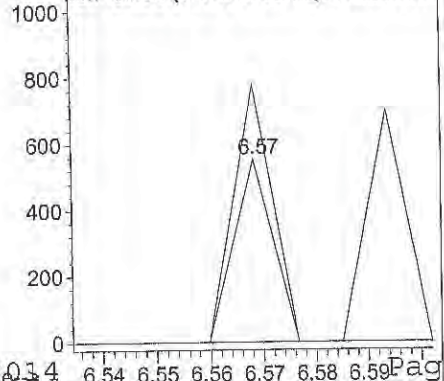
Abundance

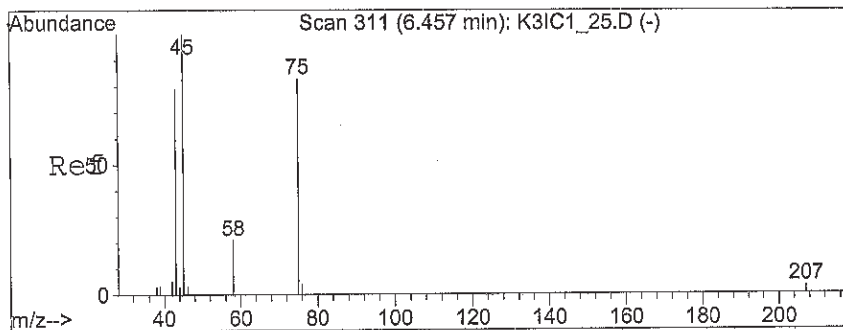
Ion 95.95 (95.65 to 96.65): F0200009.D

Ion 61.05 (60.75 to 61.75): F0200009.D

Ion 97.95 (97.65 to 98.65): F0200009.D

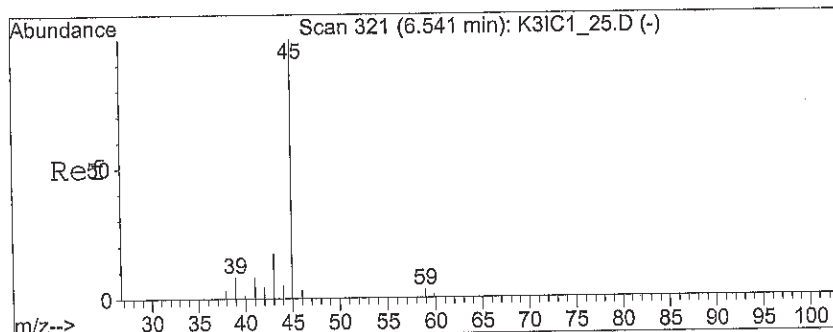
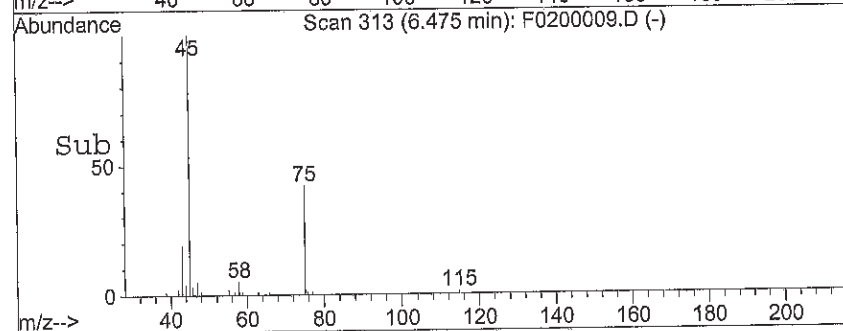
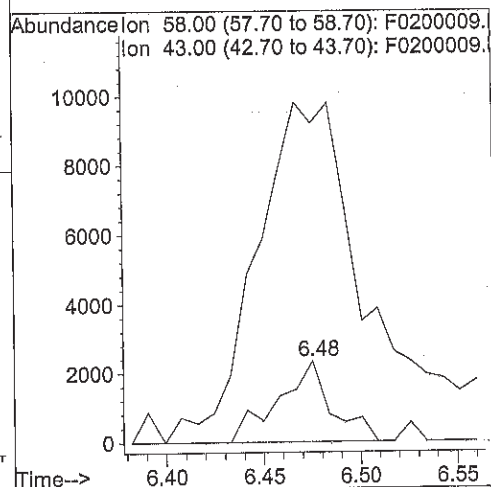
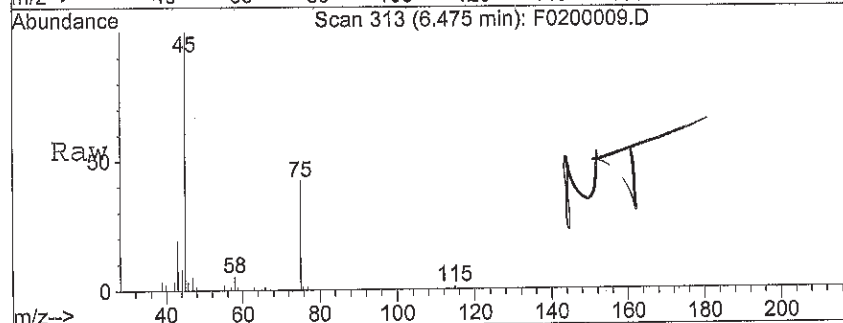
Ion 63.05 (62.75 to 63.75): F0200009.D





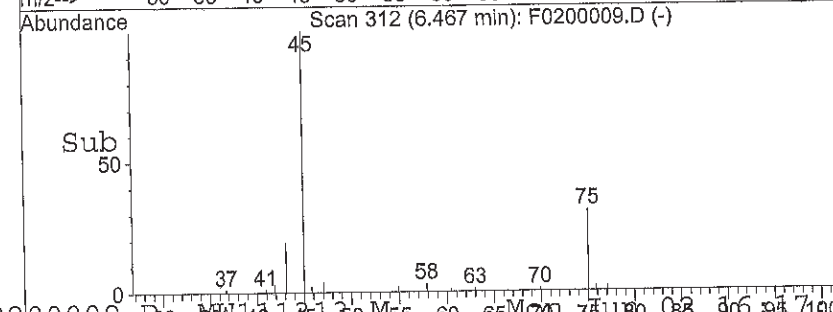
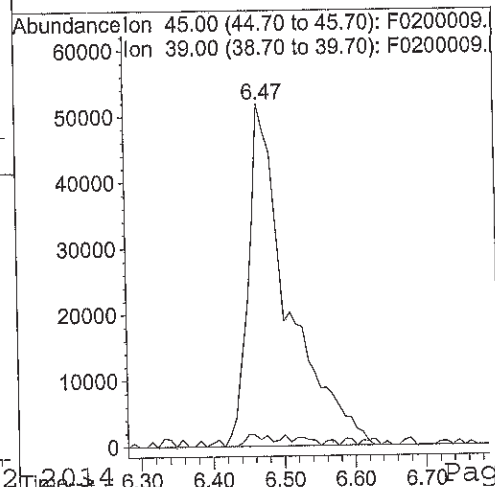
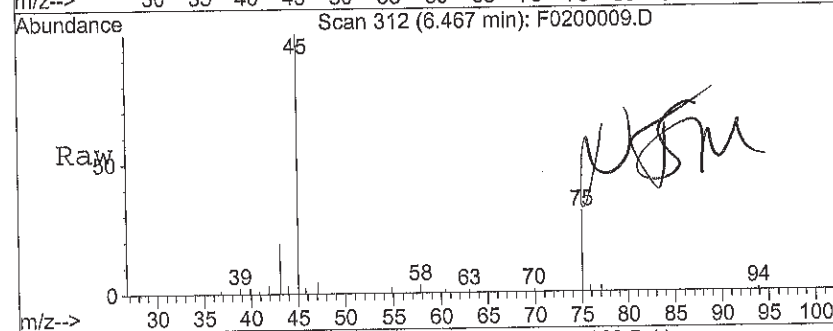
#11
Acetone
Concen: 5.24 ug/L
RT: 6.48 min Scan# 313
Delta R.T. 0.02 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

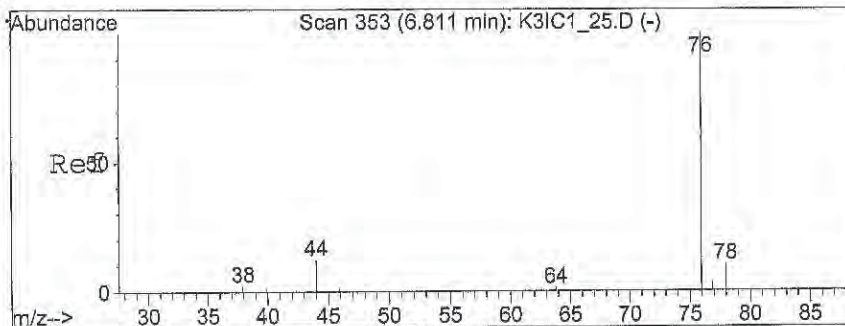
Tgt Ion: 58 Resp: 4442
Ion Ratio Lower Upper
58 100
43 894.4 360.9 541.3#



#12
(IPA) Leak Check Compound
Concen: 1488.01 ug/L
RT: 6.47 min Scan# 312
Delta R.T. -0.07 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

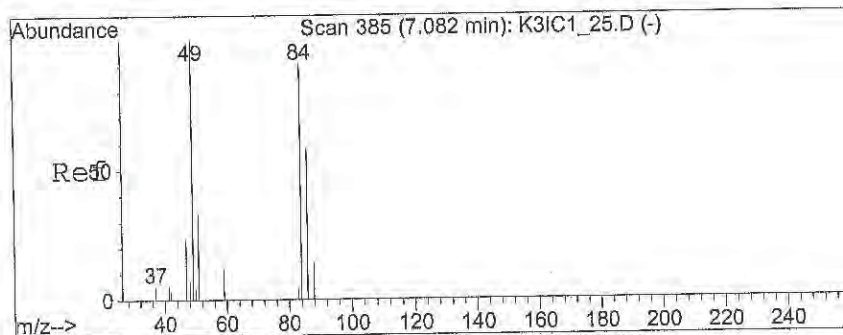
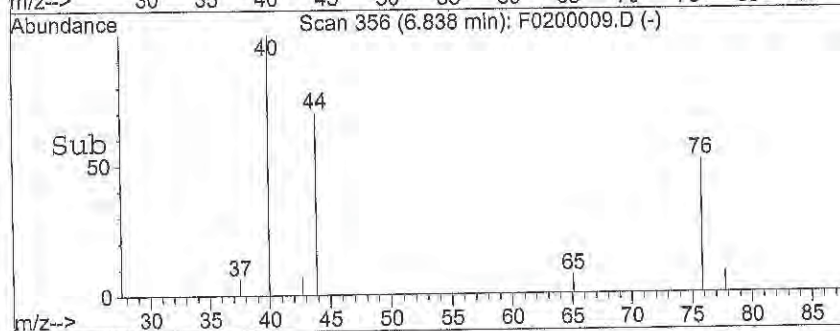
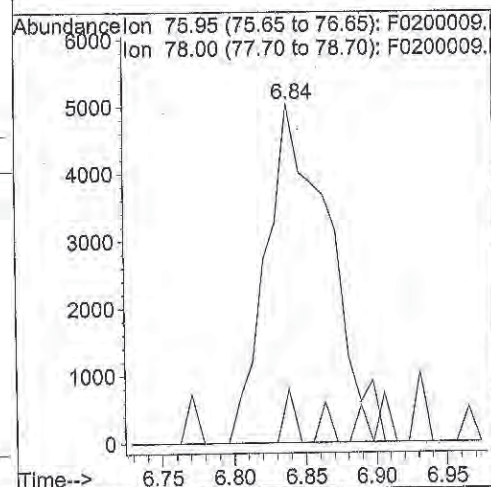
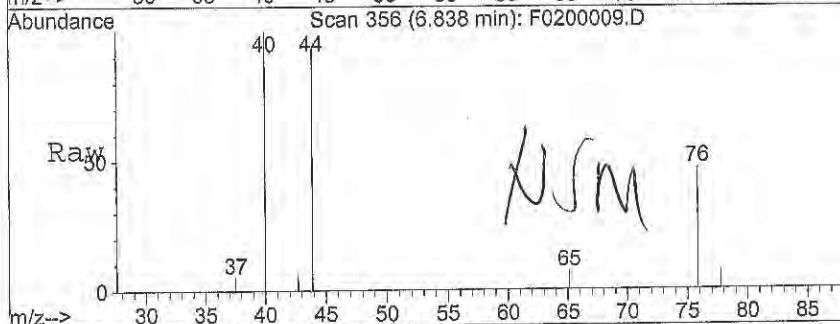
Tgt Ion: 45 Resp: 201316
Ion Ratio Lower Upper
45 100
39 2.1 4.9 7.3#





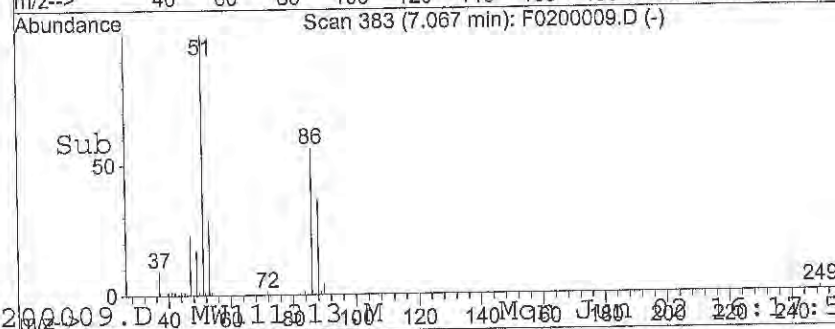
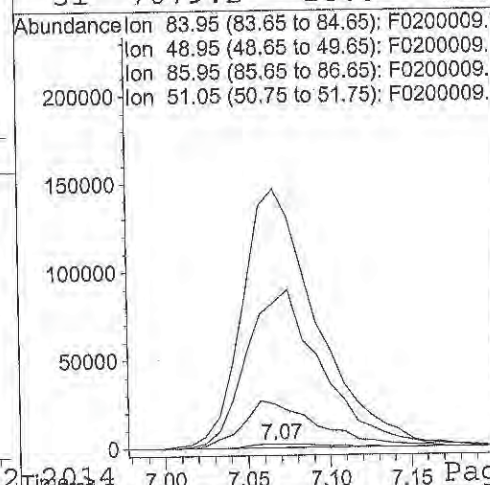
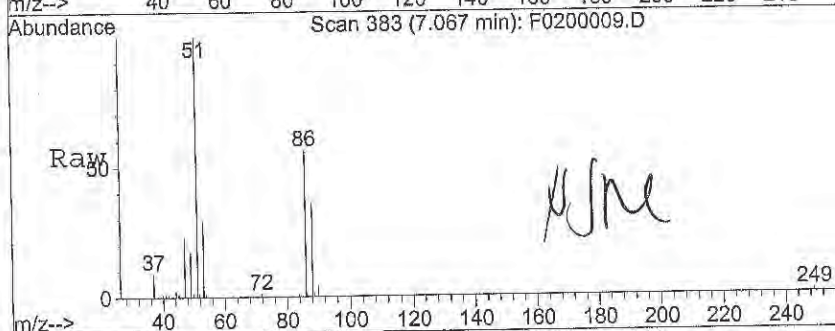
#13
Carbon disulfide
Concen: 1.64 ug/L
RT: 6.84 min Scan# 356
Delta R.T. 0.03 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

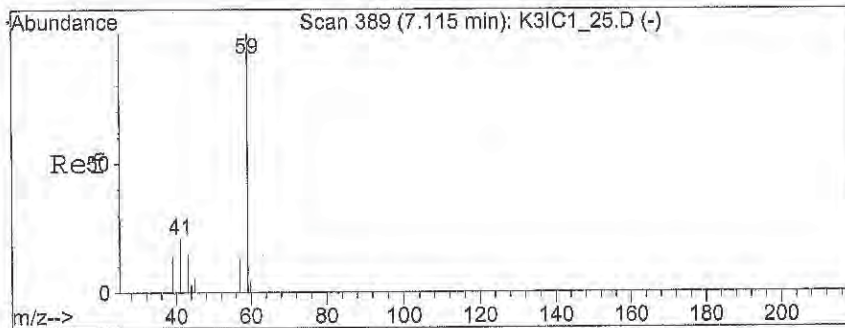
Tgt Ion: 76 Resp: 15374
Ion Ratio Lower Upper
76 100
78 2.6 7.0 10.4#



#14
Methylene Chloride
Concen: 2.14 ug/L
RT: 7.07 min Scan# 383
Delta R.T. -0.02 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

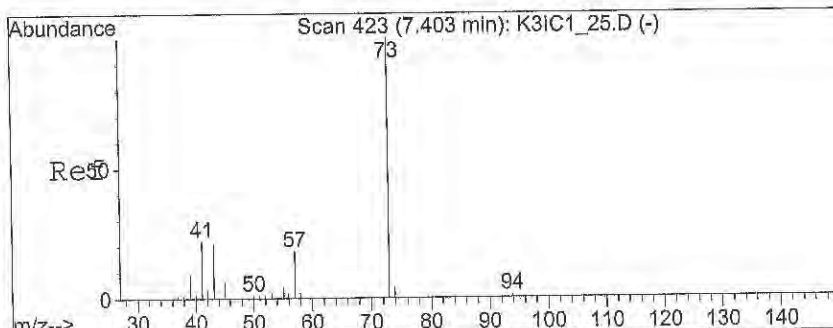
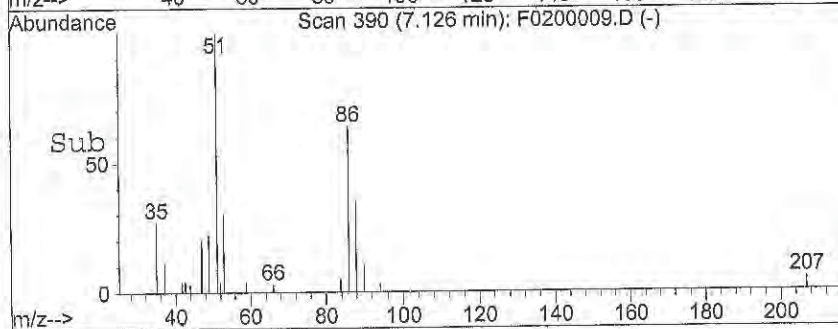
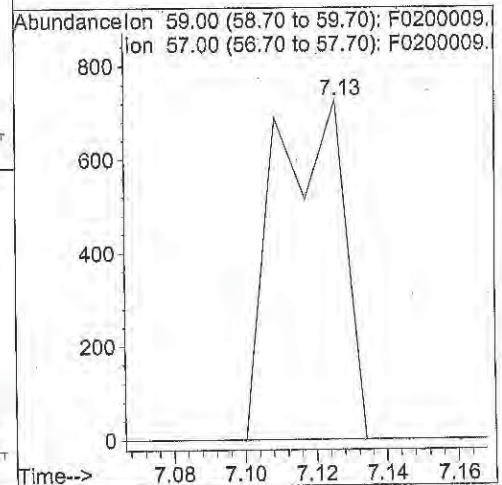
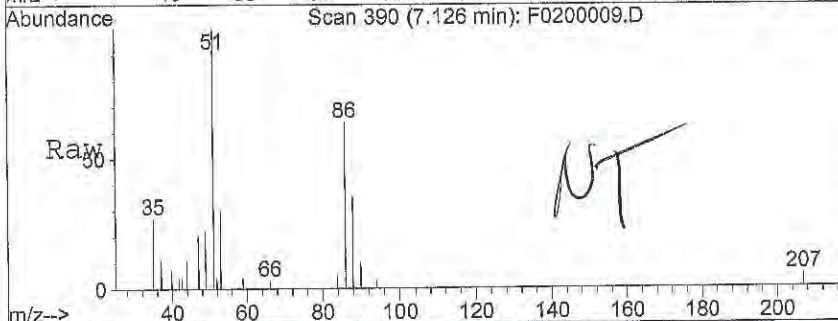
Tgt Ion: 84 Resp: 6603
Ion Ratio Lower Upper
84 100
49 1297.7 89.8 134.6#
86 4387.0 51.1 76.7#
51 7079.2 28.5 42.7#





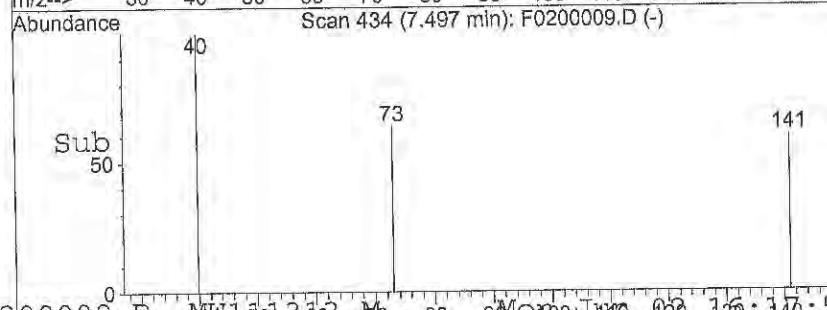
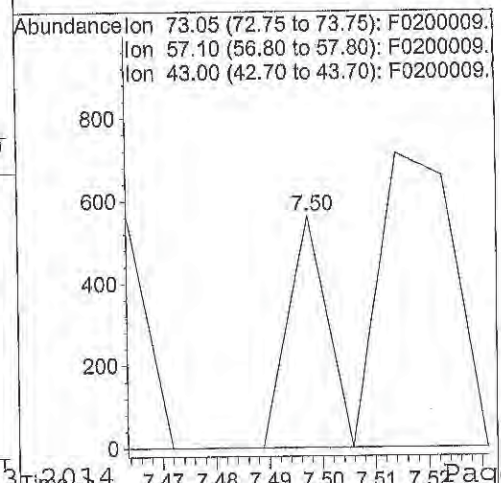
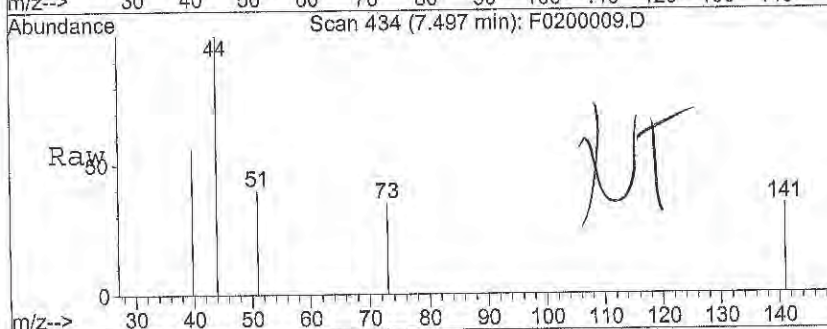
#15
 (TBA) tert-Butanol
 Concen: 5.09 ug/L
 RT: 7.13 min Scan# 390
 Delta R.T. 0.01 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

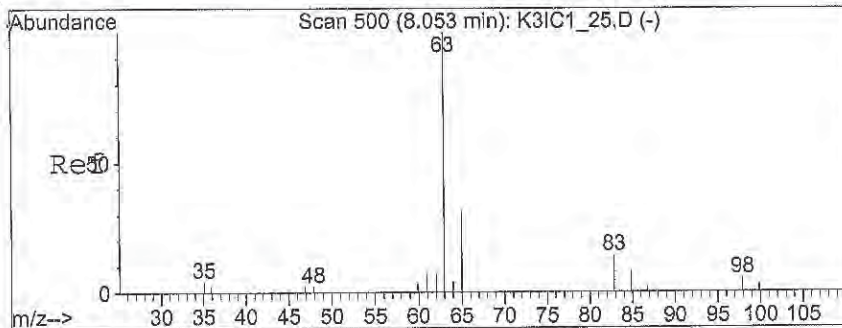
Tgt Ion: 59 Resp: 977
 Ion Ratio Lower Upper
 59 100
 57 0.0 6.4 9.6#



#16
 (MTBE) Methyl-t-butyl ether
 Concen: 0.04 ug/L
 RT: 7.50 min Scan# 434
 Delta R.T. 0.09 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

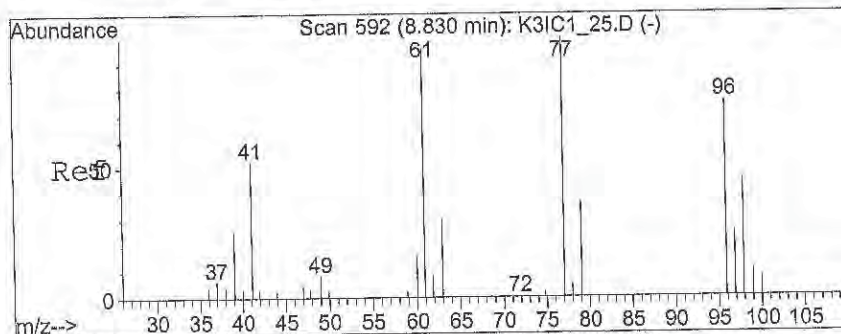
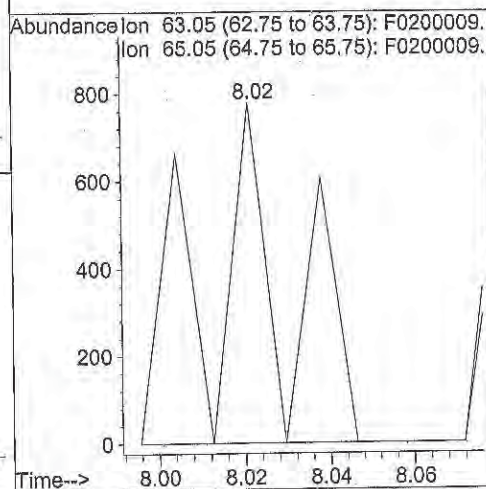
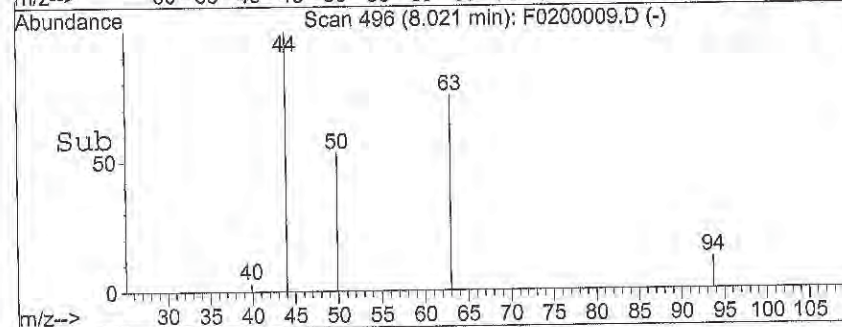
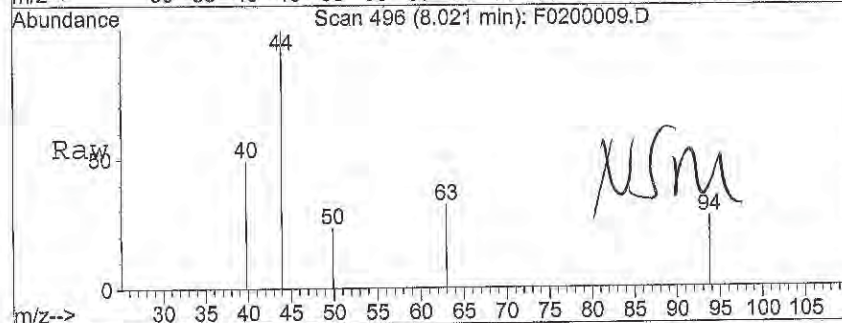
Tgt Ion: 73 Resp: 285
 Ion Ratio Lower Upper
 73 100
 57 0.0 15.8 23.8#
 43 243.9 18.4 27.6#





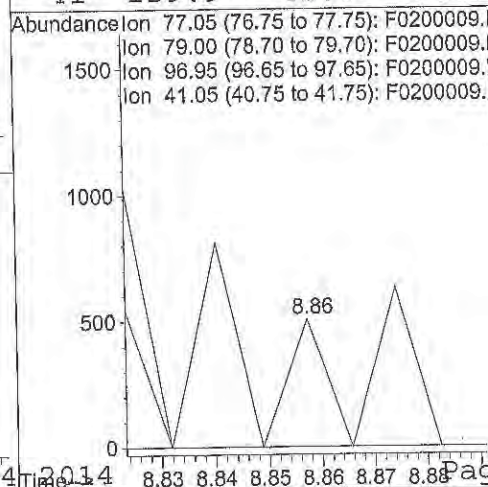
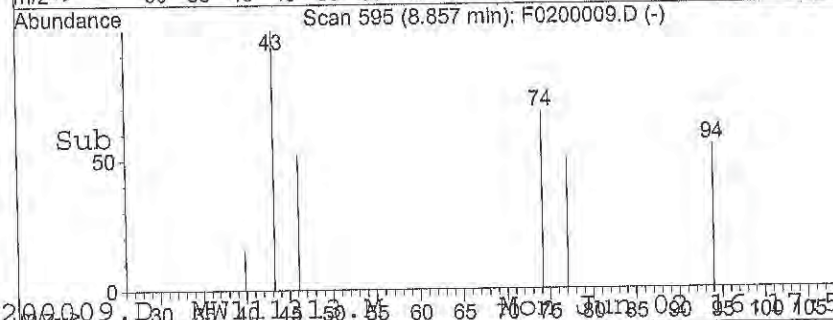
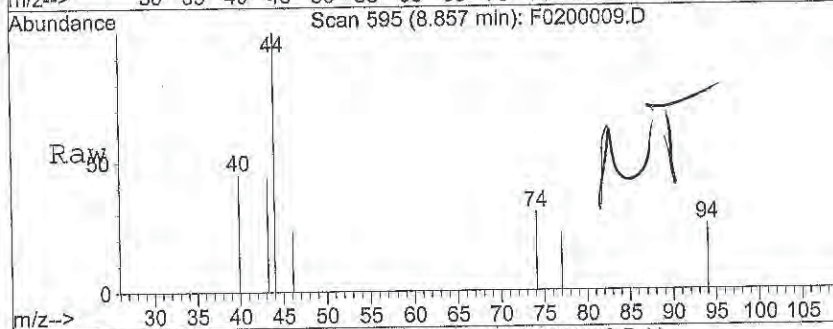
#18
 1,1-Dichloroethane
 Concen: 0.14 ug/L
 RT: 8.02 min Scan# 496
 Delta R.T. -0.03 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

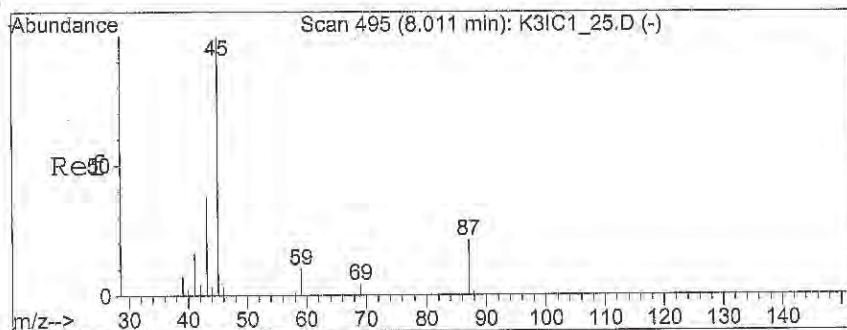
Tgt Ion: 63 Resp: 700
 Ion Ratio Lower Upper
 63 100
 65 43.9 25.8 38.8#



#20
 2,2-Dichloropropane
 Concen: 0.06 ug/L
 RT: 8.86 min Scan# 595
 Delta R.T. 0.03 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 77 Resp: 257
 Ion Ratio Lower Upper
 77 100
 79 0.0 26.6 40.0#
 97 0.0 18.9 28.3#
 41 159.9 42.6 64.0#





#22

(DIPE) Diisopropyl Ether

Concen: 0.07 ug/L

RT: 8.01 min Scan# 495

Delta R.T. 0.00 min

Lab File: F0200009.D

Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 45 Resp: 603

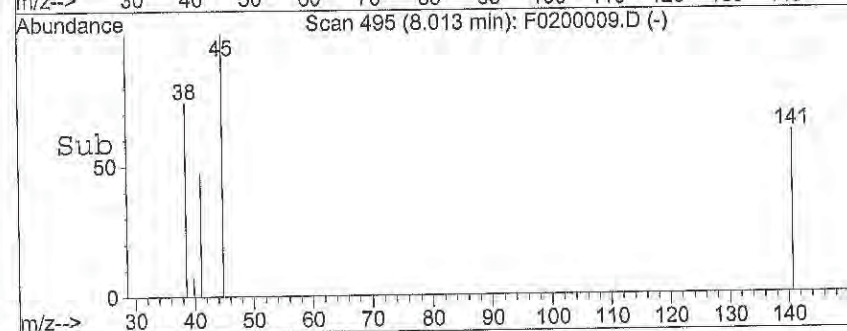
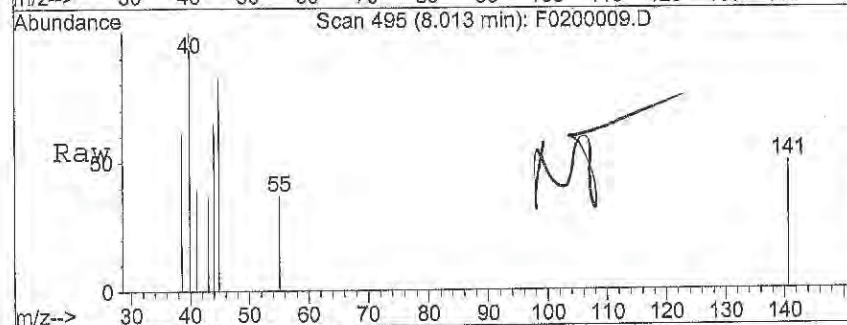
Ion Ratio Lower Upper

45 100

87 0.0 17.0 25.6#

43 43.4 30.5 45.7

59 0.0 7.4 11.2#



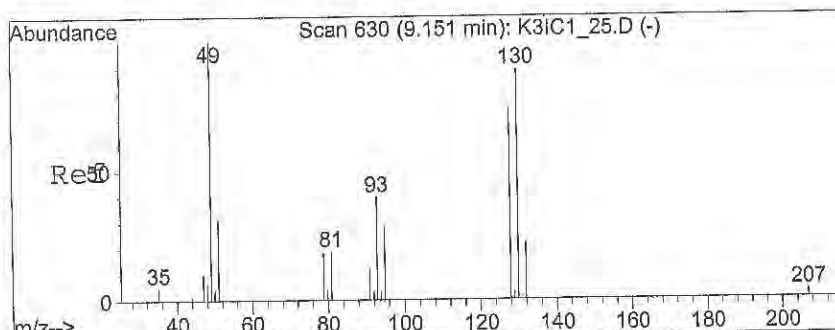
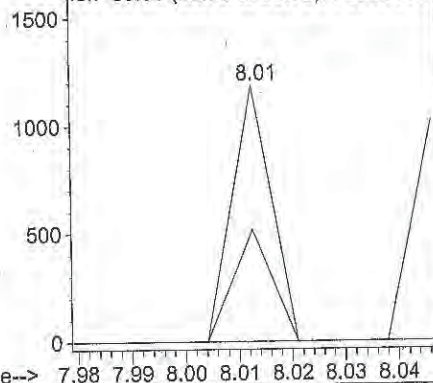
Abundance

Ion 45.00 (44.70 to 45.70): F0200009.D

Ion 87.10 (86.80 to 87.80): F0200009.D

Ion 43.05 (42.75 to 43.75): F0200009.D

Ion 59.00 (58.70 to 59.70): F0200009.D



#23

Bromochloromethane

Concen: 0.20 ug/L

RT: 9.00 min Scan# 612

Delta R.T. -0.15 min

Lab File: F0200009.D

Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 128 Resp: 304

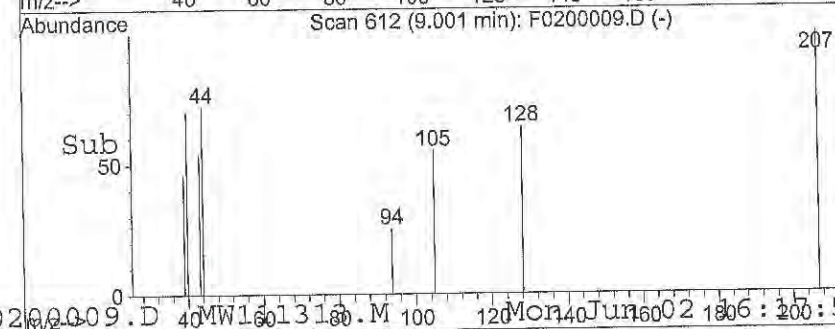
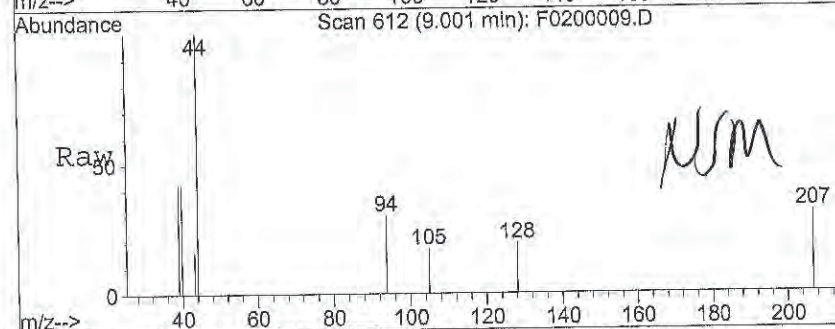
Ion Ratio Lower Upper

128 100

49 0.0 117.4 176.0#

130 0.0 111.0 166.6#

51 0.0 48.0 72.0#



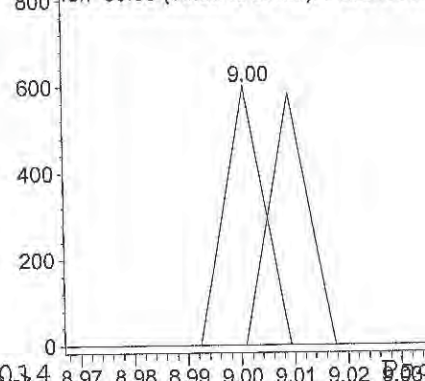
Abundance

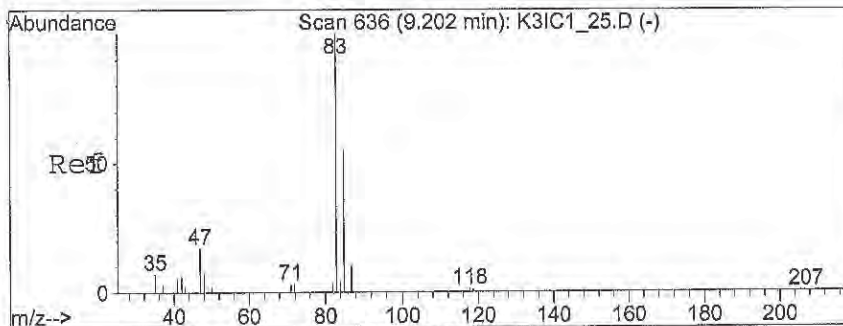
Ion 128.00 (127.70 to 128.70): F0200009.D

Ion 48.95 (48.65 to 49.65): F0200009.D

Ion 130.00 (129.70 to 130.70): F0200009.D

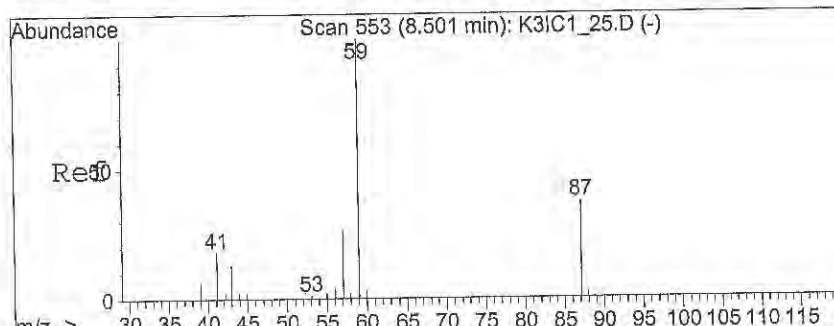
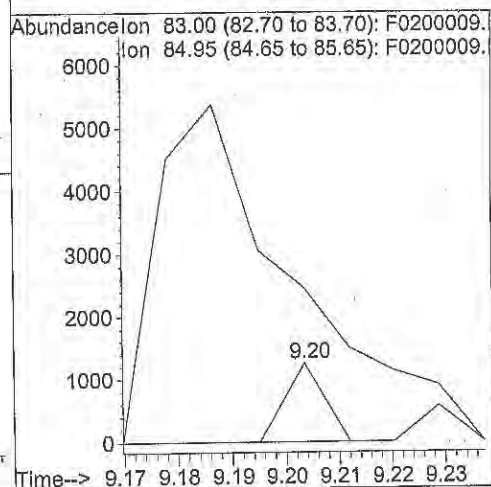
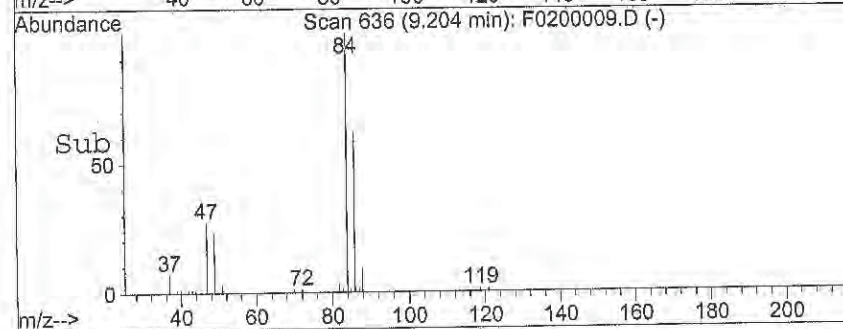
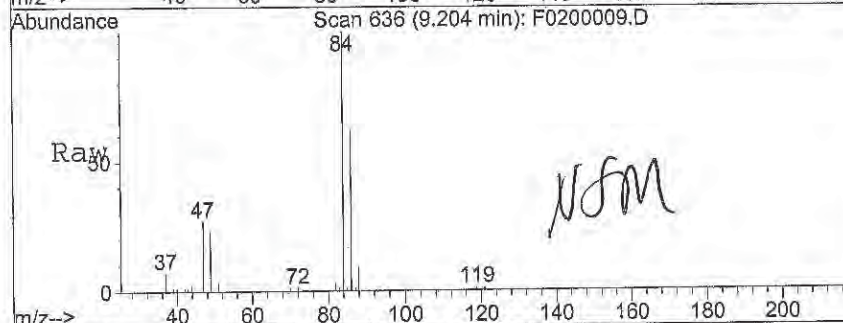
Ion 50.95 (50.65 to 51.65): F0200009.D





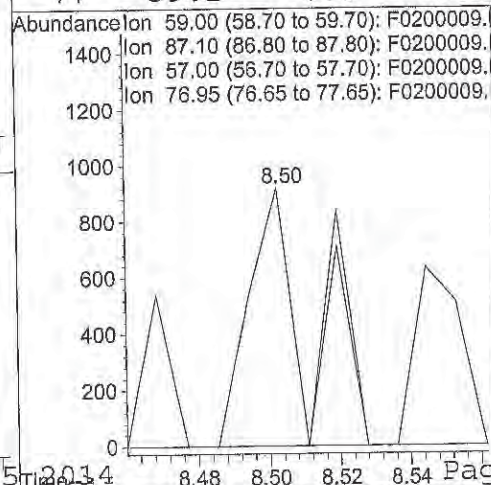
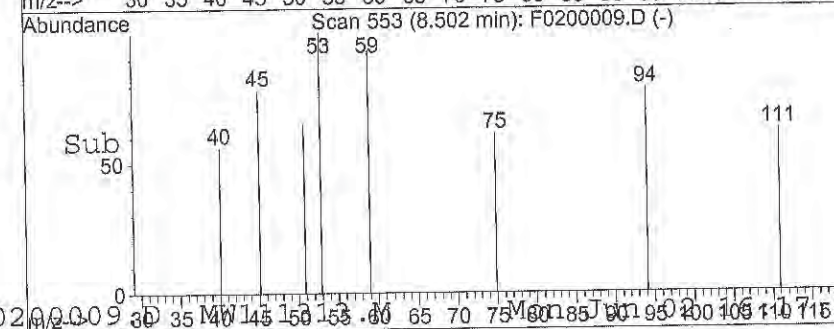
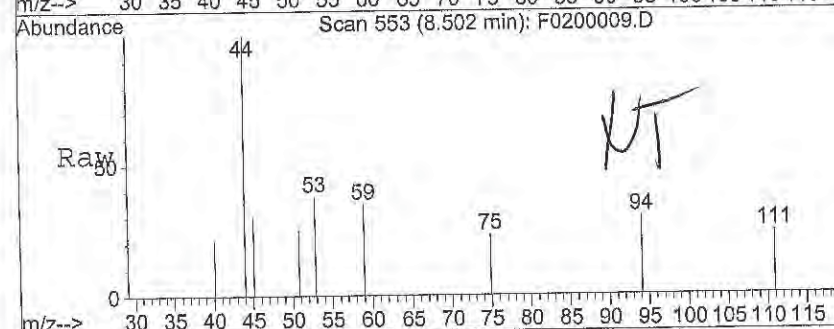
#24
Chloroform
Concen: 0.11 ug/L
RT: 9.20 min Scan# 636
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

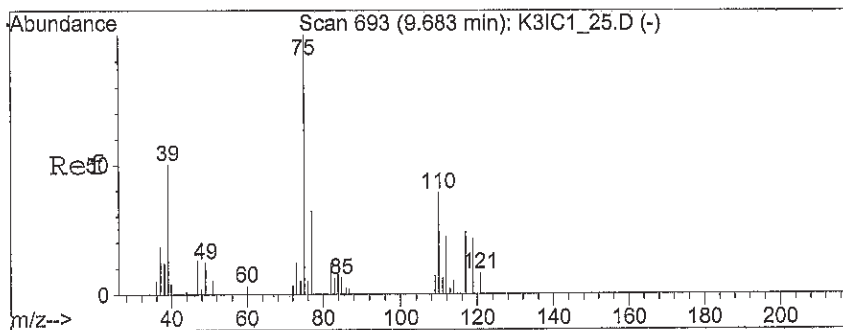
Tgt Ion: 83 Resp: 633
Ion Ratio Lower Upper
83 100
85 1808.7 51.8 77.6#



#25
(ETBE) 2-ethoxy 2-methyl propan
Concen: 0.13 ug/L
RT: 8.50 min Scan# 553
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

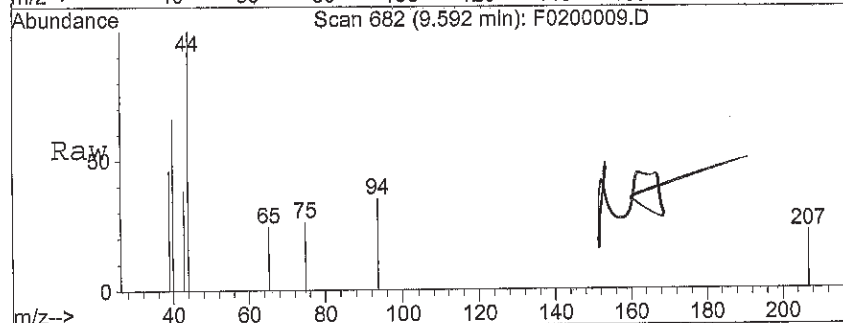
Tgt Ion: 59 Resp: 1085
Ion Ratio Lower Upper
59 100
87 0.0 27.8 41.8#
57 0.0 19.8 29.6#
77 39.2 0.0 0.0#





#29
1,1-Dichloropropene
Concen: 0.07 ug/L
RT: 9.59 min Scan# 682
Delta R.T. -0.09 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 75 Resp: 320
Ion Ratio Lower Upper
75 100
110 0.0 29.0 43.6#
77 87.5 25.0 37.4#

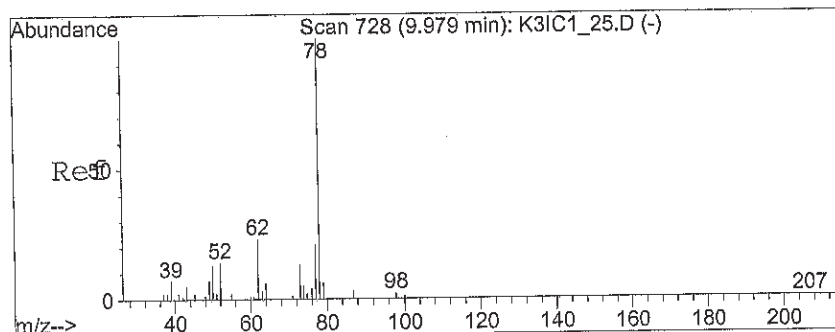
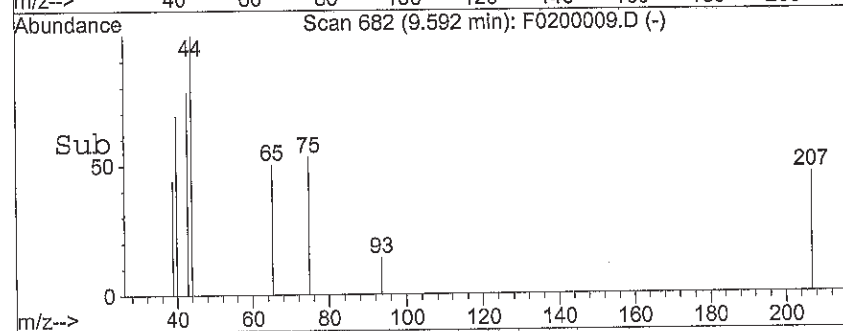
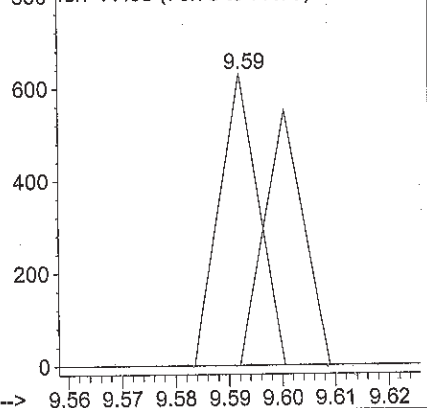


Abundance

Ion 75.05 (74.75 to 75.75): F0200009.D

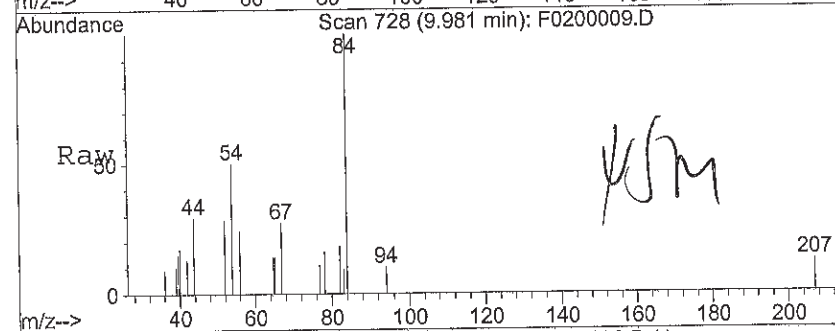
Ion 110.05 (109.75 to 110.75): F0200009.D

Ion 77.05 (76.75 to 77.75): F0200009.D



#31
Benzene
Concen: 0.07 ug/L
RT: 9.98 min Scan# 728
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 78 Resp: 754
Ion Ratio Lower Upper
78 100
51 0.0 14.2 21.2#
77 127.9 16.6 24.8#

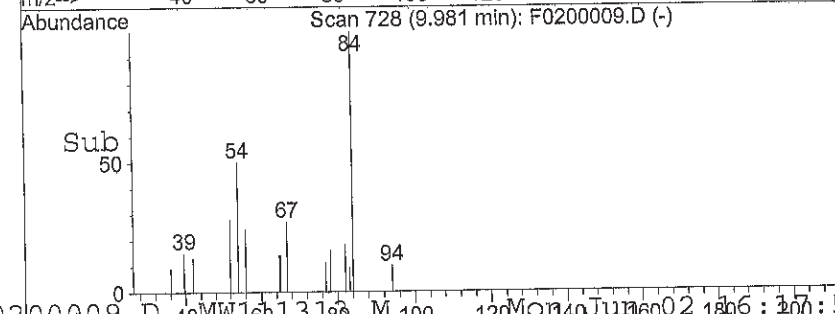
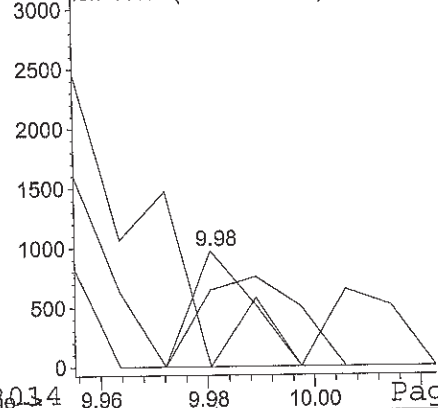


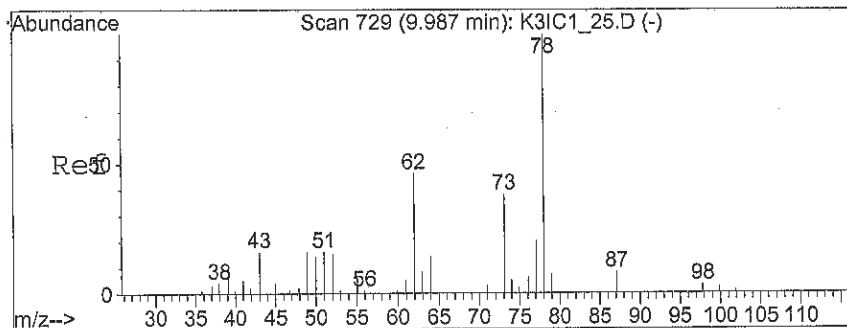
Abundance

Ion 78.10 (77.80 to 78.80): F0200009.D

Ion 51.05 (50.75 to 51.75): F0200009.D

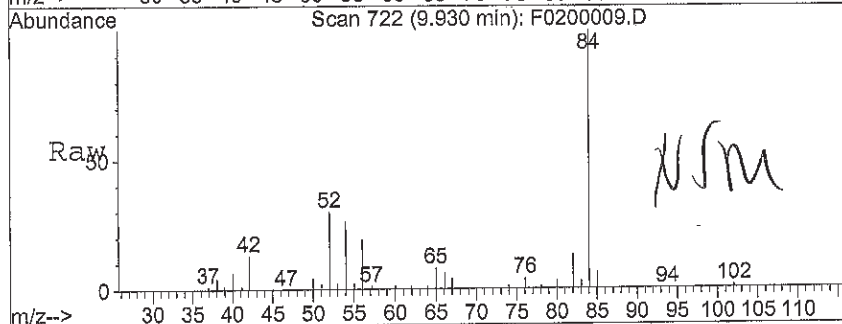
Ion 77.15 (76.85 to 77.85): F0200009.D





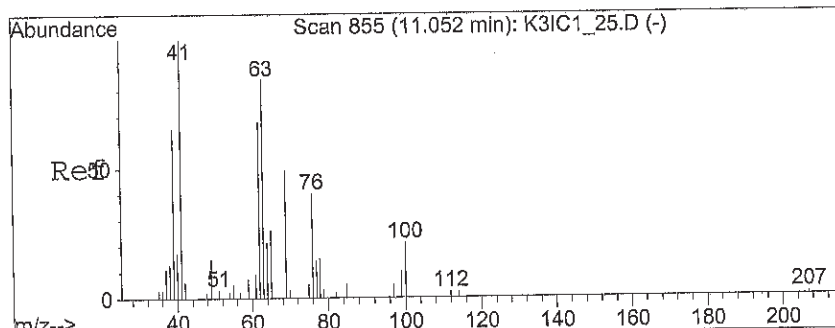
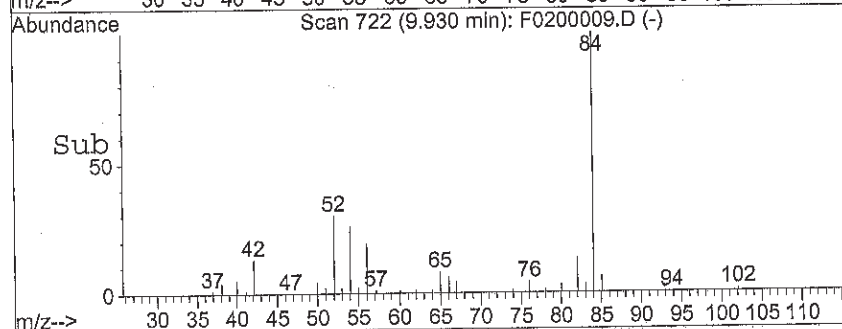
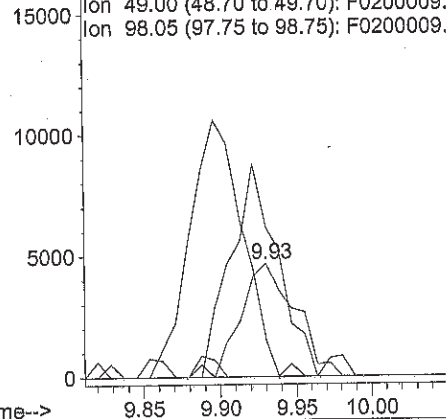
#32
 1,2-Dichloroethane
 Concen: 3.14 ug/L
 RT: 9.93 min Scan# 722
 Delta R.T. -0.06 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

Tgt Ion:	62	Resp:	11753
Ion	Ratio	Lower	Upper
62	100		
64	167.5	28.0	42.0#
49	0.0	28.5	42.7#
98	0.0	6.2	9.4#



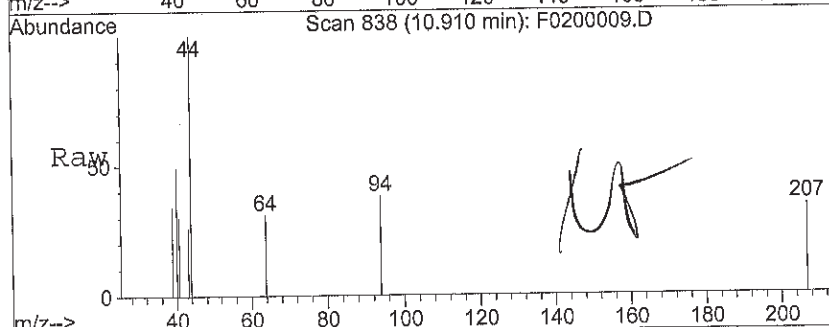
Abundance

Ion 62.05 (61.75 to 62.75): F0200009.
 Ion 64.05 (63.75 to 64.75): F0200009.
 Ion 49.00 (48.70 to 49.70): F0200009.
 Ion 98.05 (97.75 to 98.75): F0200009.



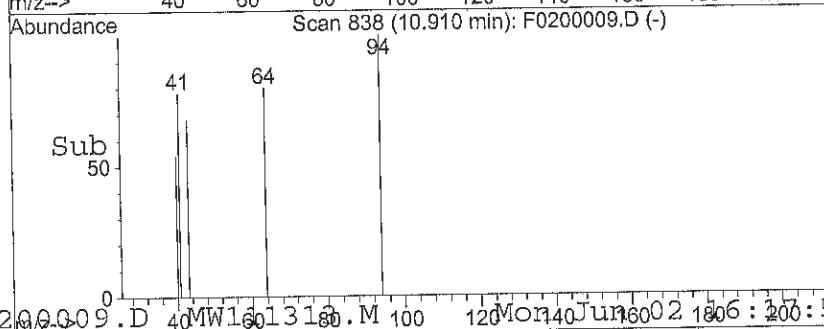
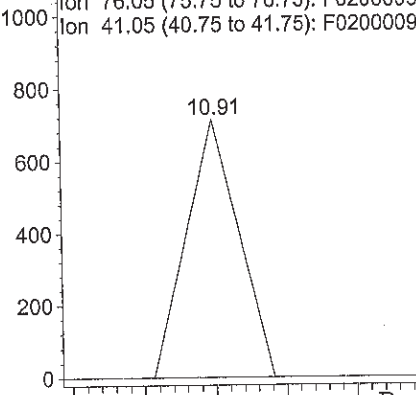
#34
 1,2-Dichloropropane
 Concen: 0.14 ug/L
 RT: 10.91 min Scan# 838
 Delta R.T. -0.14 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

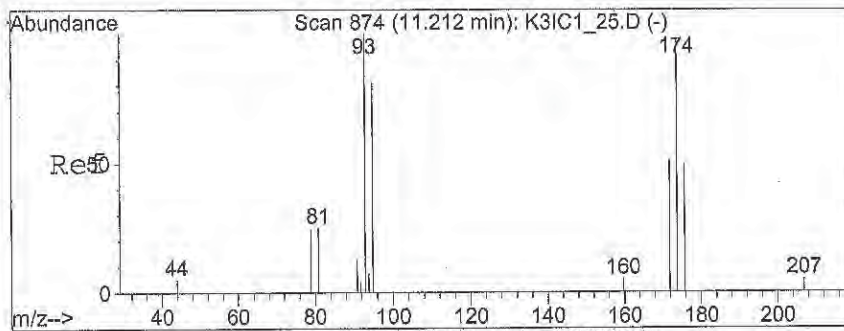
Tgt Ion:	63	Resp:	362
Ion	Ratio	Lower	Upper
63	100		
62	0.0	67.4	101.2#
76	0.0	40.3	60.5#
41	0.0	103.0	154.6#



Abundance

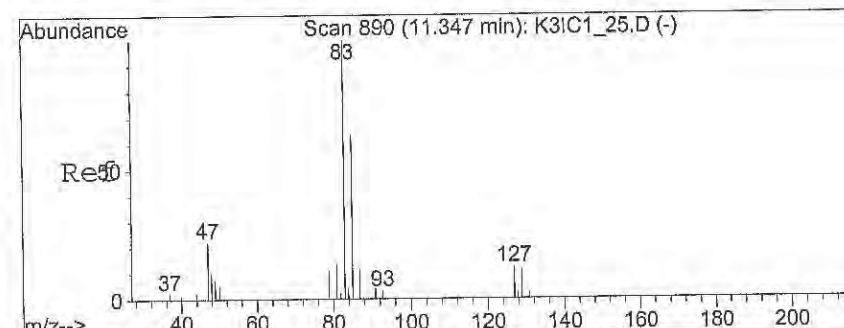
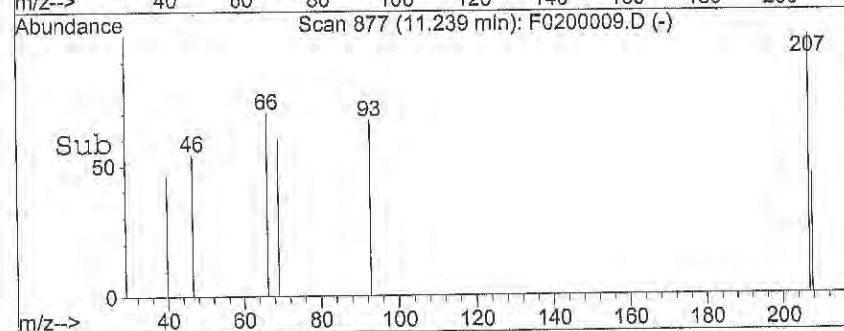
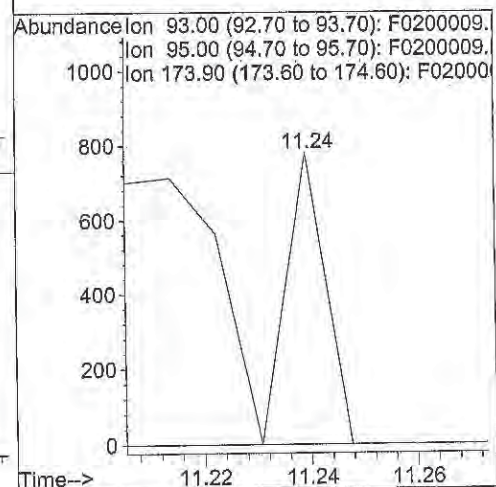
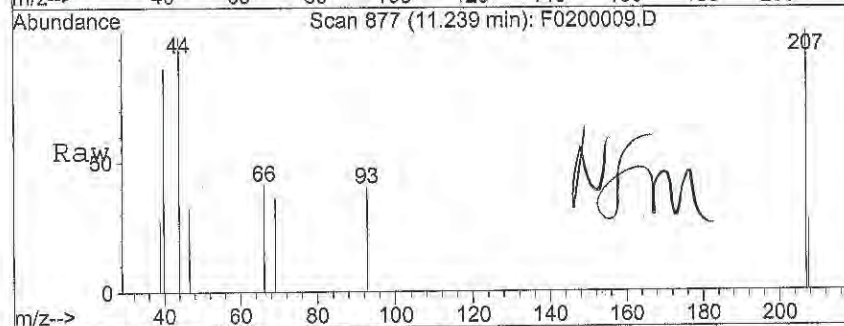
Ion 63.05 (62.75 to 63.75): F0200009.
 Ion 62.05 (61.75 to 62.75): F0200009.
 Ion 76.05 (75.75 to 76.75): F0200009.
 Ion 41.05 (40.75 to 41.75): F0200009.





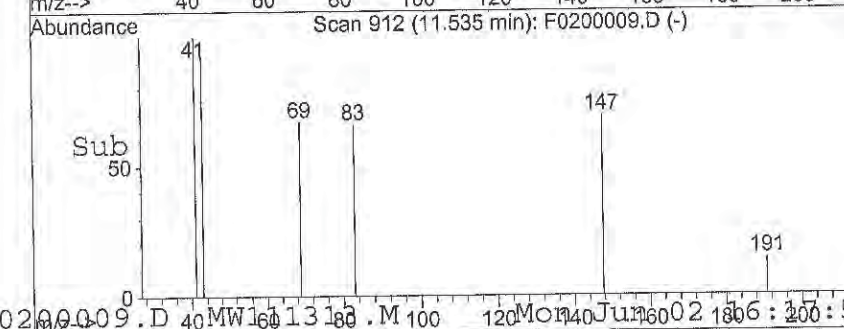
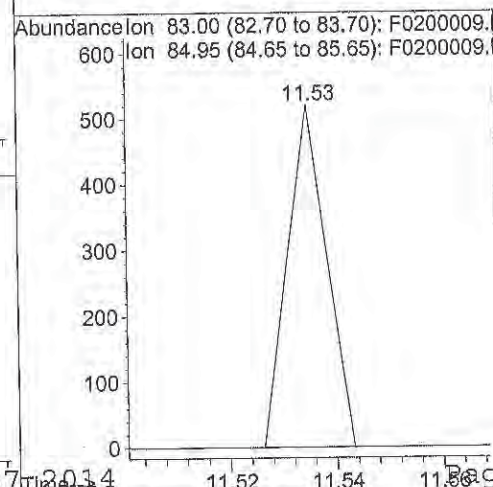
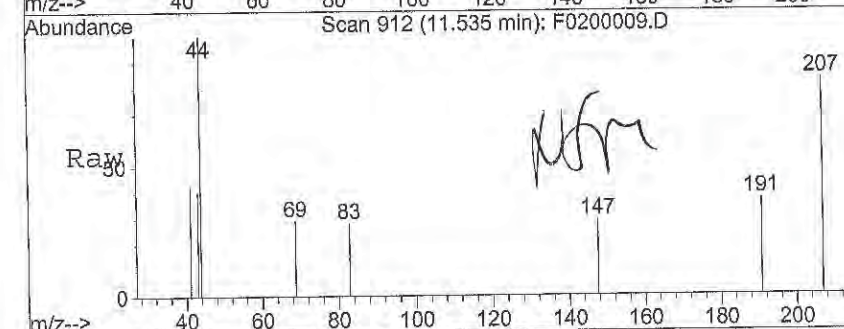
#35
 Dibromomethane
 Concen: 0.20 ug/L
 RT: 11.24 min Scan# 877
 Delta R.T. 0.03 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

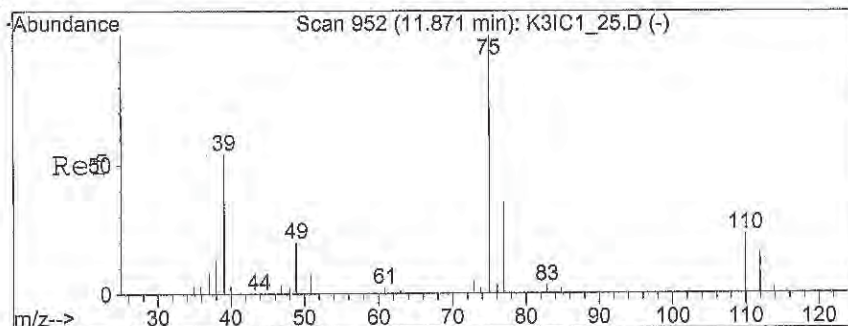
Tgt Ion: 93 Resp: 395
 Ion Ratio Lower Upper
 93 100
 95 0.0 66.2 99.2#
 174 0.0 75.5 113.3#



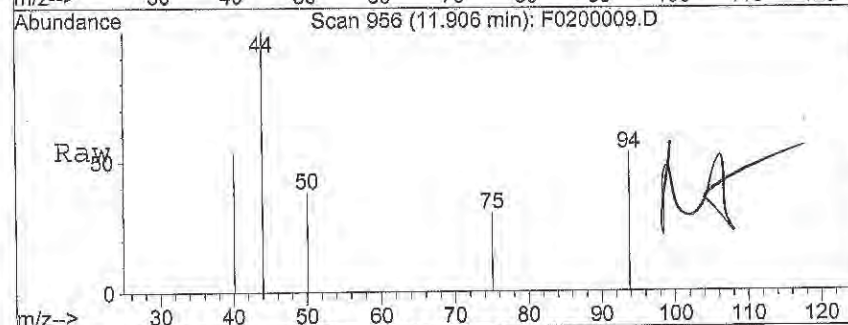
#36
 Bromodichloromethane
 Concen: 0.07 ug/L
 RT: 11.53 min Scan# 912
 Delta R.T. 0.19 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 83 Resp: 264
 Ion Ratio Lower Upper
 83 100
 85 0.0 48.2 72.2#





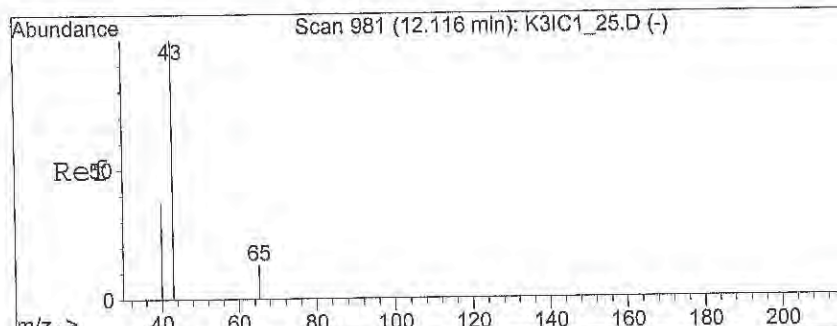
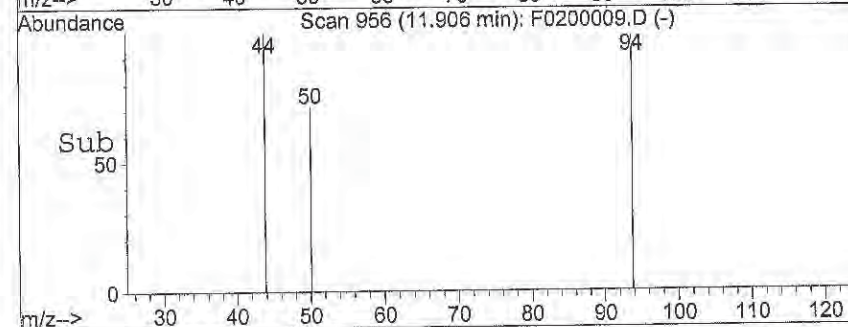
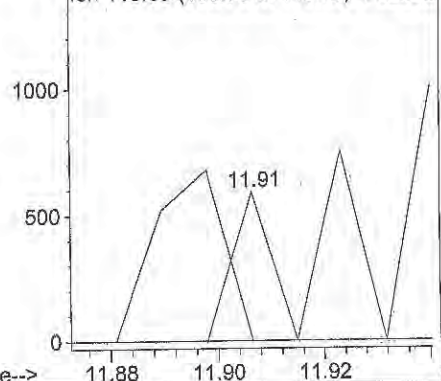
#37
 cis-1,3-Dichloropropene
 Concen: 0.07 ug/L
 RT: 11.91 min Scan# 956
 Delta R.T. 0.04 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm



Tgt Ion: 75 Resp: 300
 Ion Ratio Lower Upper
 75 100
 39 202.3 40.7 61.1#
 77 0.0 28.8 43.2#
 110 0.0 18.1 27.1#

Abundance

Ion 75.05 (74.75 to 75.75): F0200009.D
 Ion 39.05 (38.75 to 39.75): F0200009.D
 Ion 77.05 (76.75 to 77.75): F0200009.D
 Ion 110.05 (109.75 to 110.75): F0200009.D

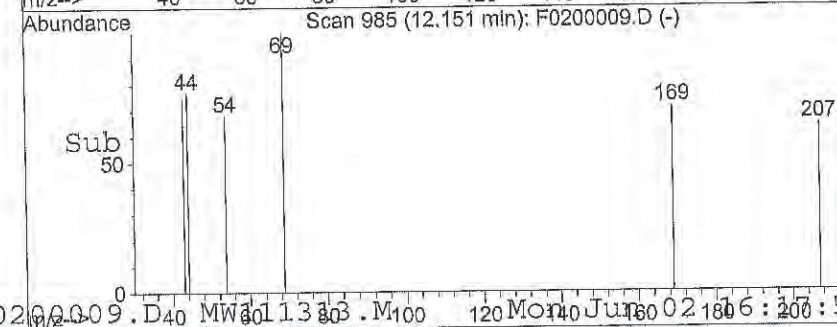
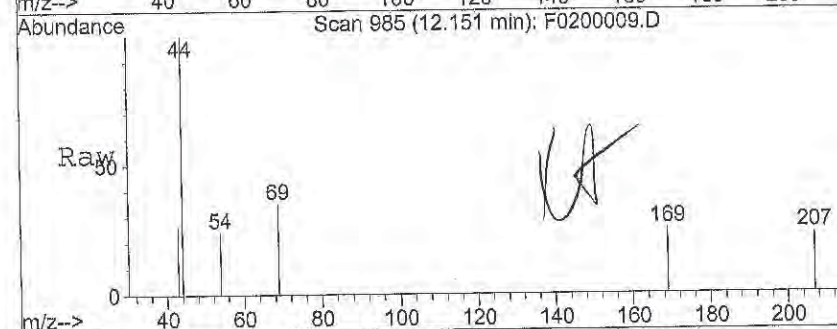
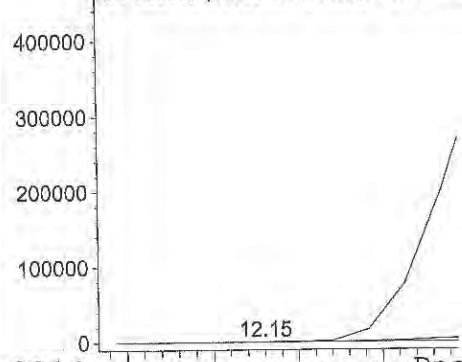


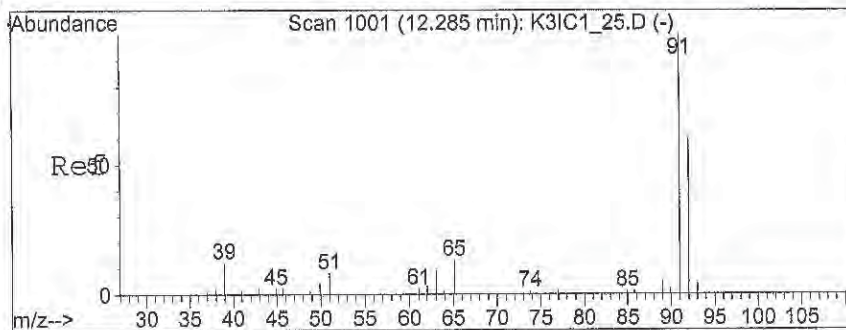
#40
 (MIBK) 4-Methyl-2-Pentanone
 Concen: 0.40 ug/L
 RT: 12.15 min Scan# 985
 Delta R.T. 0.04 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 43 Resp: 860
 Ion Ratio Lower Upper
 43 100
 58 0.0 0.0 0.0
 85 0.0 0.0 0.0
 100 0.0 0.0 0.0

Abundance

Ion 43.00 (42.70 to 43.70): F0200009.D
 Ion 58.10 (57.80 to 58.80): F0200009.D
 Ion 85.05 (84.75 to 85.75): F0200009.D
 Ion 100.15 (99.85 to 100.85): F0200009.D





#41

Toluene

Concen: 0.27 ug/L

RT: 12.29 min Scan# 1002

Delta R.T. 0.01 min

Lab File: F0200009.D

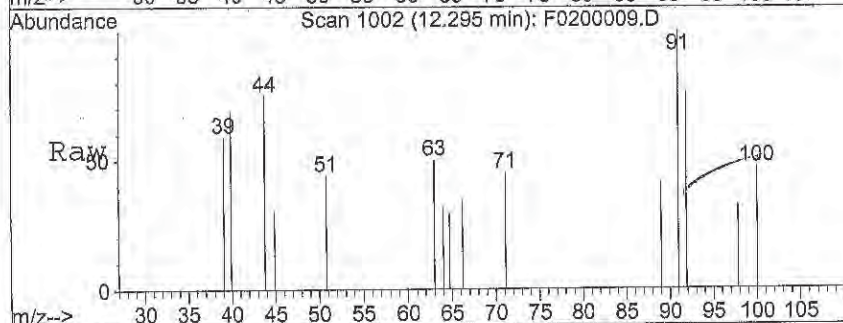
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 91 Resp: 4013

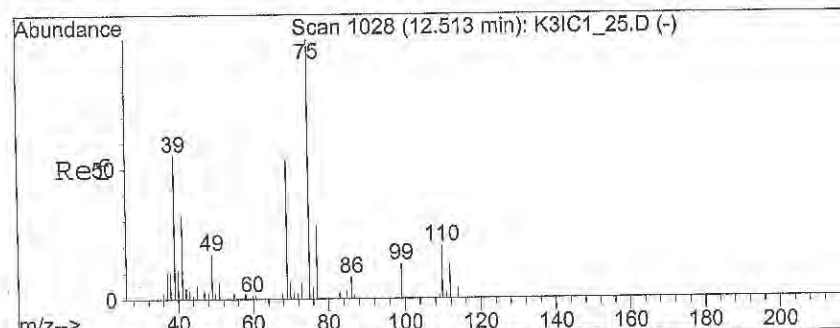
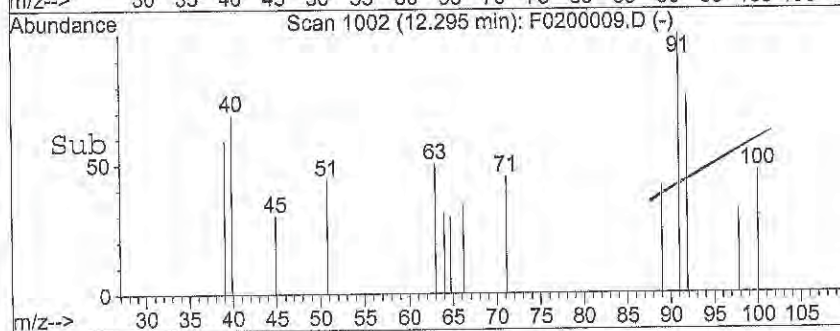
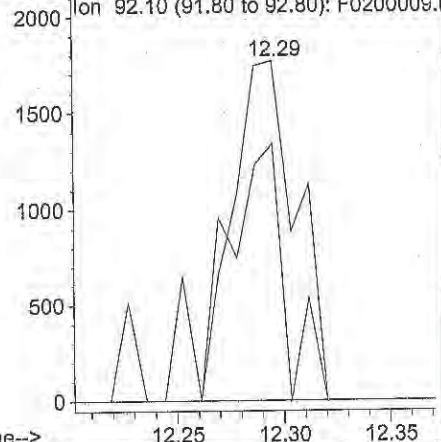
Ion Ratio Lower Upper

91 100

92 60.8 47.4 71.0



Abundance Ion 91.10 (90.80 to 91.80): F0200009.D
Ion 92.10 (91.80 to 92.80): F0200009.D



#42

trans-1,3-Dichloropropene

Concen: 0.21 ug/L

RT: 12.50 min Scan# 1026

Delta R.T. -0.02 min

Lab File: F0200009.D

Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 75 Resp: 1049

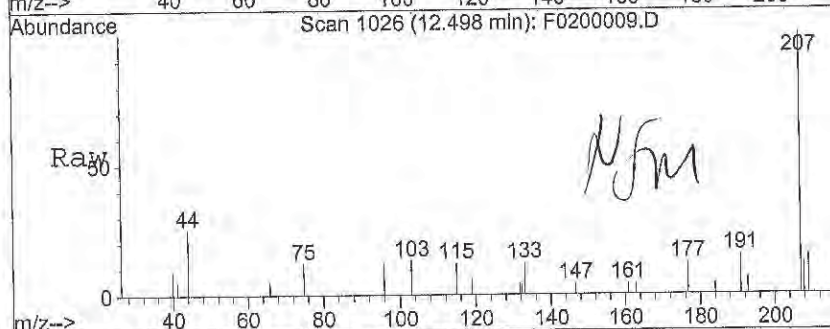
Ion Ratio Lower Upper

75 100

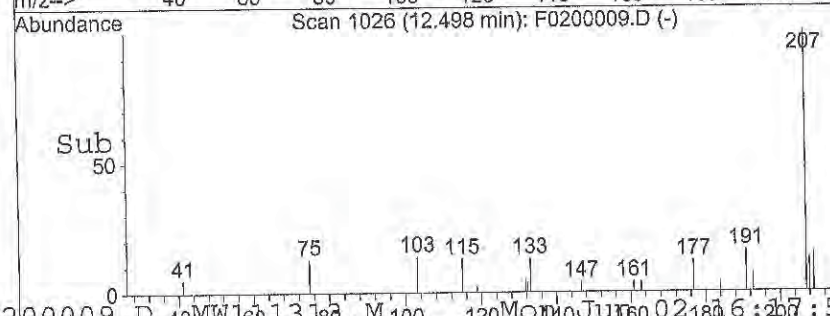
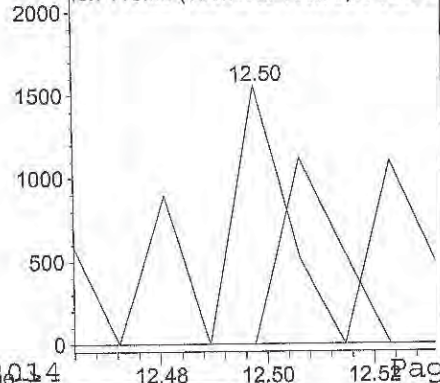
39 80.6 53.6 80.4#

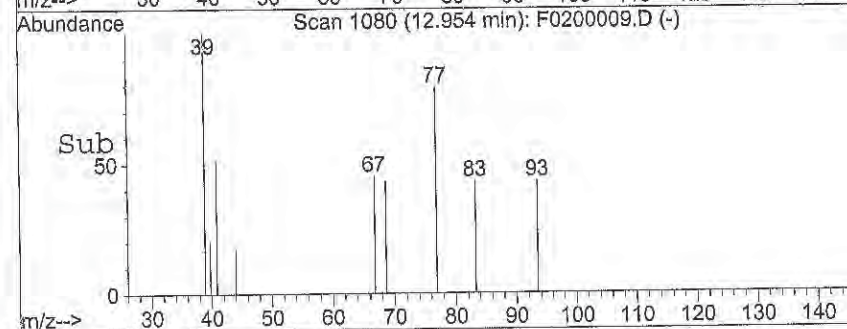
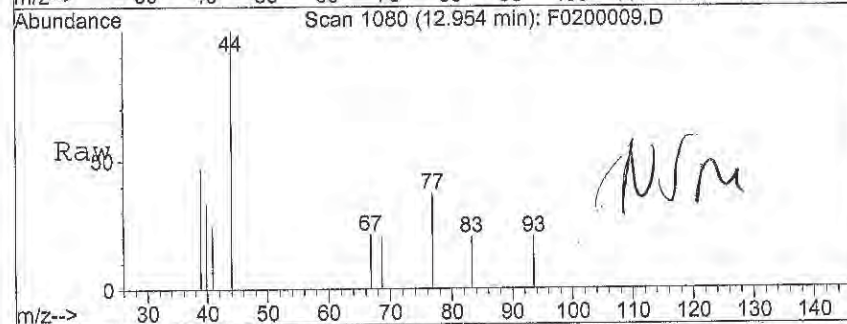
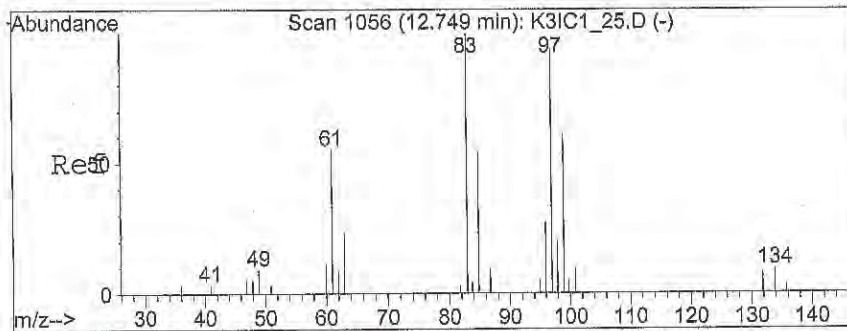
77 0.0 25.4 38.2#

110 0.0 17.6 26.4#



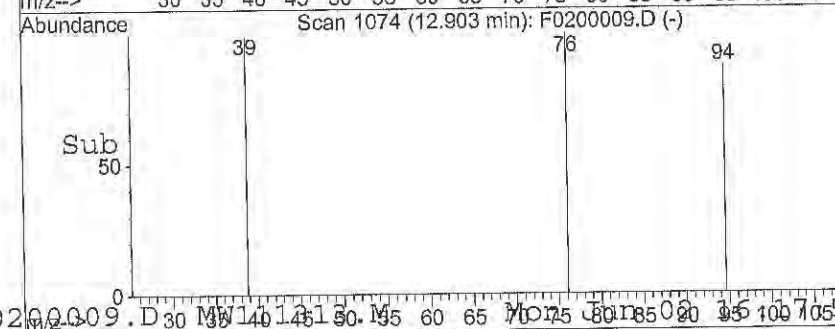
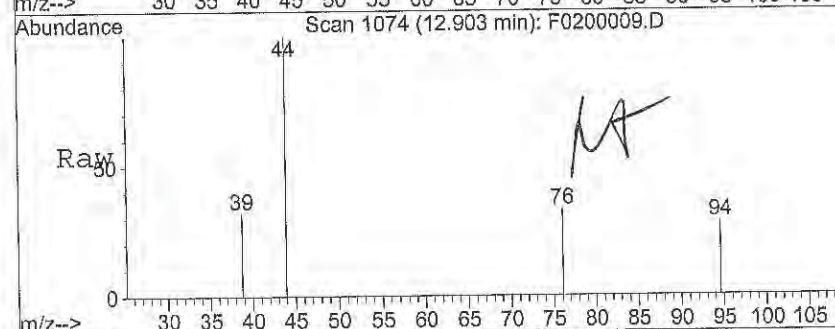
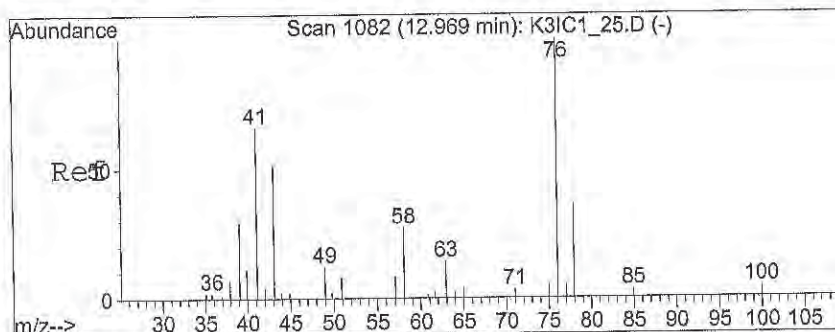
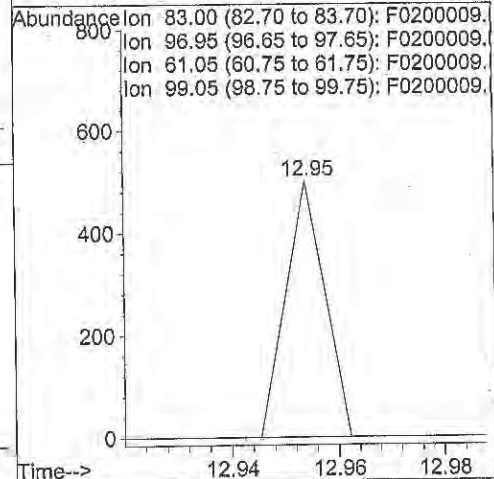
Abundance Ion 75.05 (74.75 to 75.75): F0200009.D
Ion 39.05 (38.75 to 39.75): F0200009.D
Ion 77.05 (76.75 to 77.75): F0200009.D
Ion 110.05 (109.75 to 110.75): F0200009.D





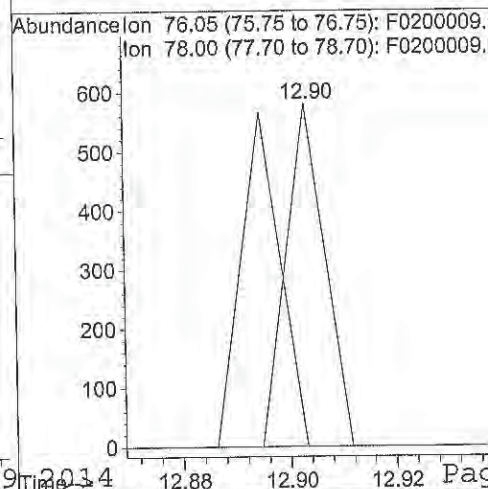
#43
 1,1,2-Trichloroethane
 Concen: 0.09 ug/L
 RT: 12.95 min Scan# 1080
 Delta R.T. 0.20 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

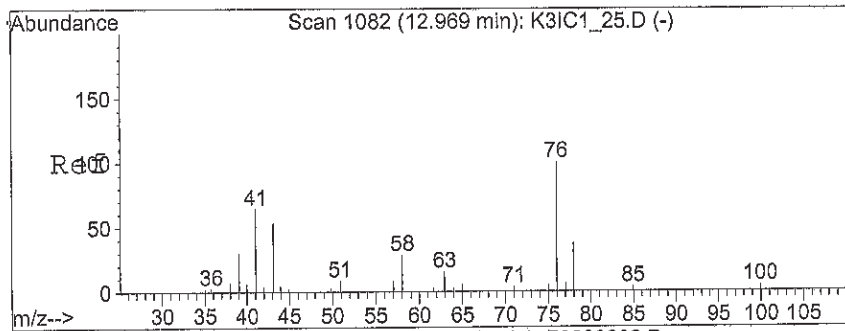
Tgt Ion: 83 Resp: 254
 Ion Ratio Lower Upper
 83 100
 97 0.0 79.4 119.0#
 61 0.0 47.4 71.2#
 99 0.0 56.3 84.5#



#45
 1,3-Dichloropropane
 Concen: 0.06 ug/L
 RT: 12.90 min Scan# 1074
 Delta R.T. -0.07 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

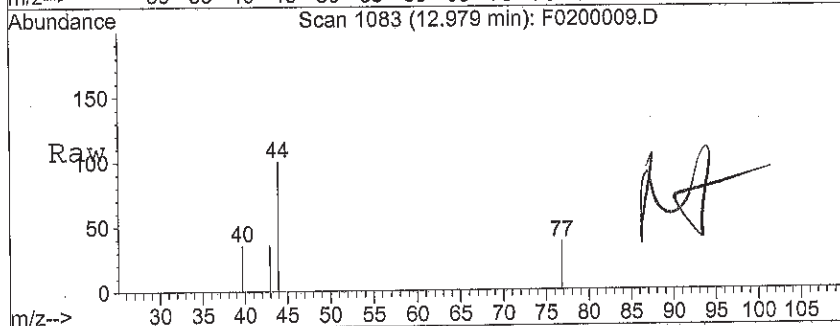
Tgt Ion: 76 Resp: 294
 Ion Ratio Lower Upper
 76 100
 78 97.3 26.9 40.3#





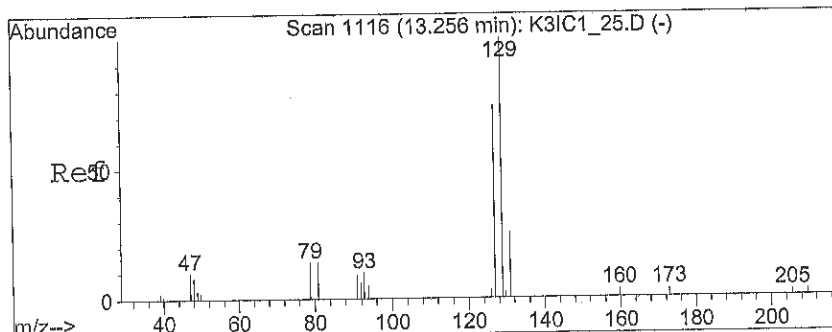
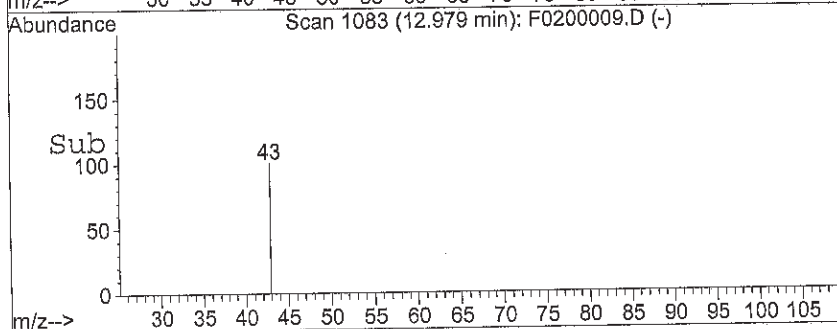
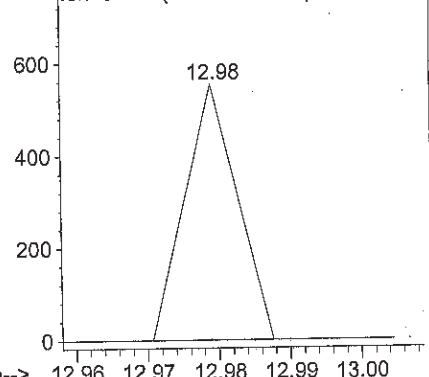
#46
2-Hexanone
Concen: 0.12 ug/L
RT: 12.98 min Scan# 1083
Delta R.T. 0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 43 Resp: 281
Ion Ratio Lower Upper
43 100
58 0.0 40.9 61.3#
100 0.0 5.5 8.3#
85 0.0 4.3 6.5#



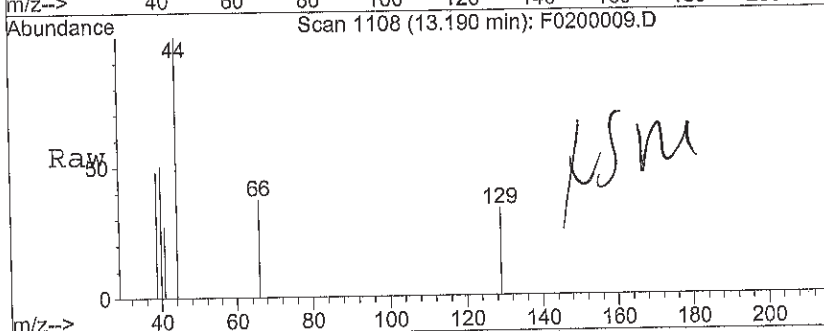
Abundance

Ion 43.00 (42.70 to 43.70): F0200009.D
Ion 58.10 (57.80 to 58.80): F0200009.D
Ion 100.15 (99.85 to 100.85): F0200009.D
Ion 85.05 (84.75 to 85.75): F0200009.D



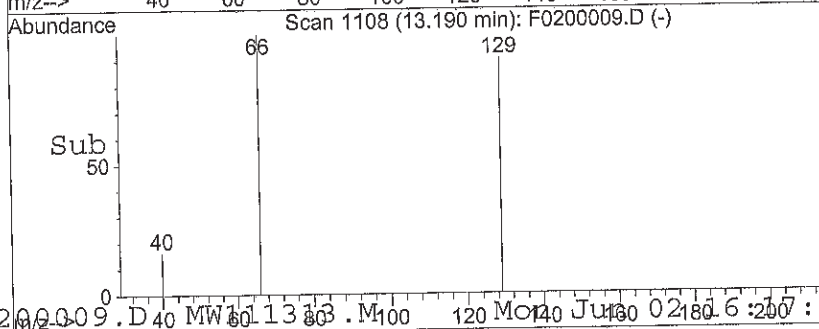
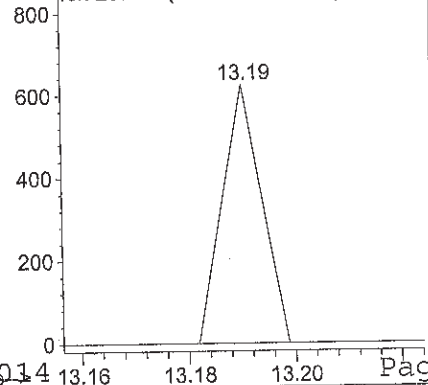
#47
Dibromochloromethane
Concen: 0.08 ug/L
RT: 13.19 min Scan# 1108
Delta R.T. -0.07 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

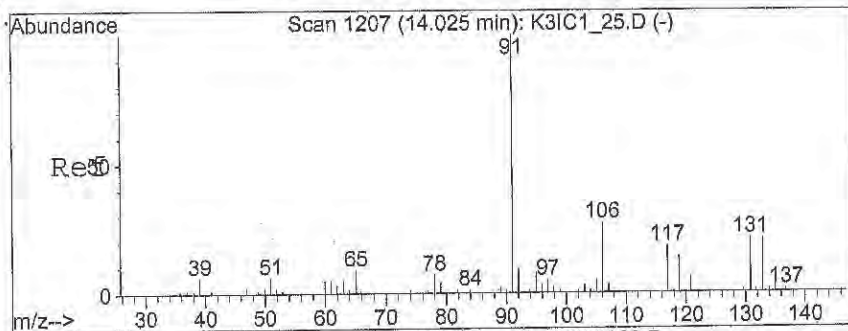
Tgt Ion: 129 Resp: 316
Ion Ratio Lower Upper
129 100
127 0.0 61.6 92.4#
79 0.0 10.7 16.1#
208 0.0 1.4 2.0#



Abundance

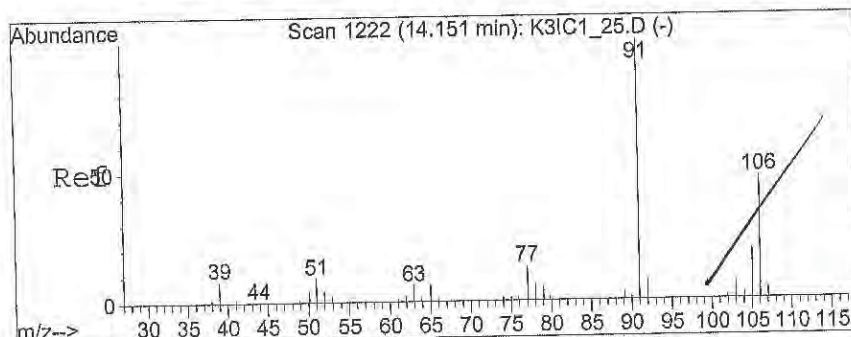
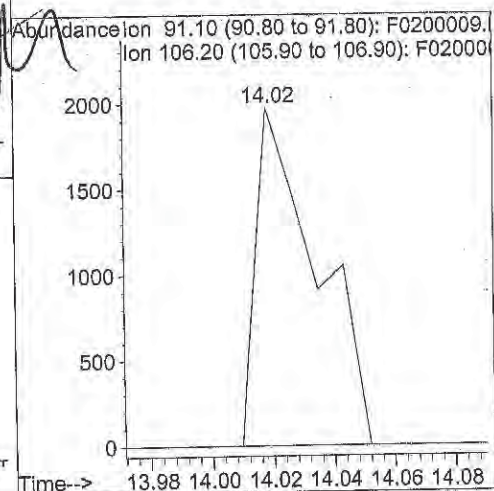
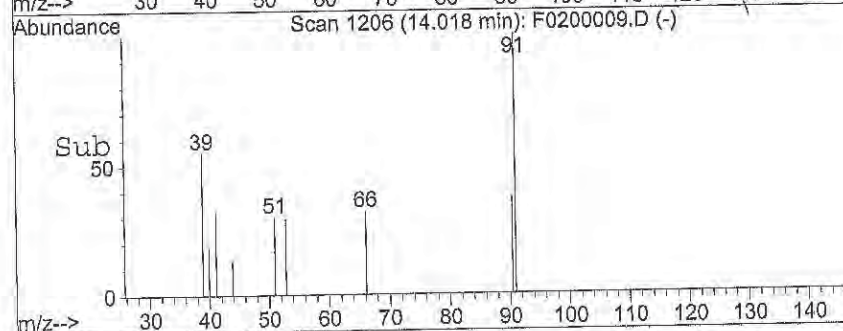
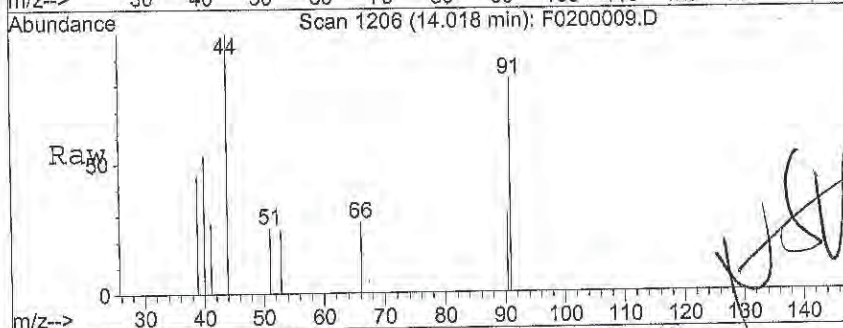
Ion 129.00 (128.70 to 129.70): F0200009.D
Ion 126.90 (126.60 to 127.60): F0200009.D
Ion 78.90 (78.60 to 79.60): F0200009.D
Ion 207.85 (207.55 to 208.55): F0200009.D





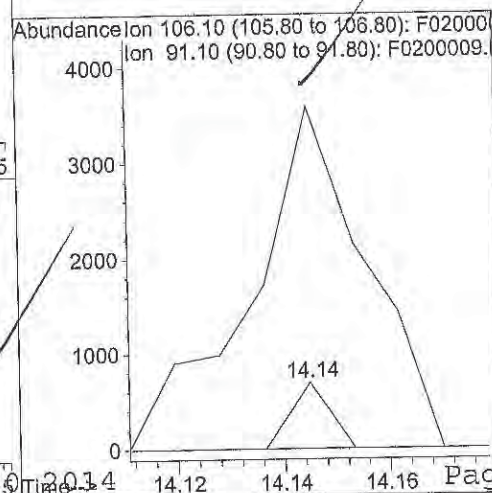
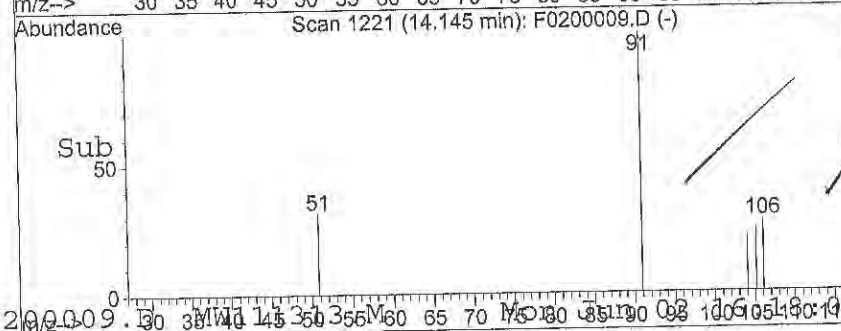
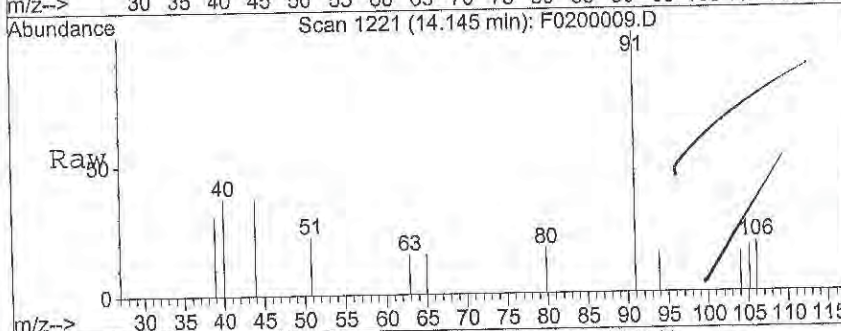
#51
Ethylbenzene
Concen: 0.16 ug/L
RT: 14.02 min Scan# 1206
Delta R.T. -0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

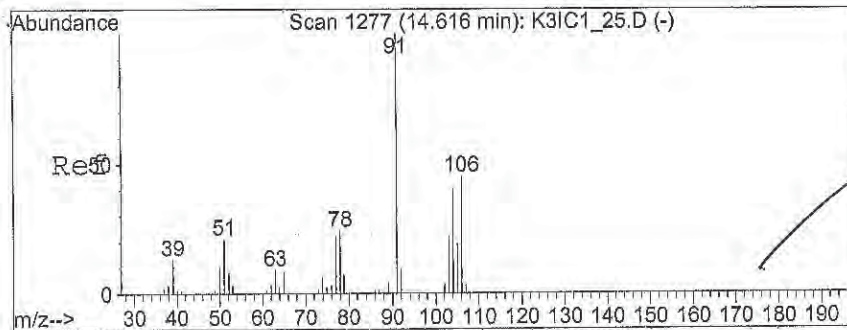
Tgt Ion: 91 Resp: 2743
Ion Ratio Lower Upper
91 100
106 0.0 23.5 35.3#



#52
m,p-Xylenes
Concen: 0.06 ug/L
RT: 14.14 min Scan# 1221
Delta R.T. -0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

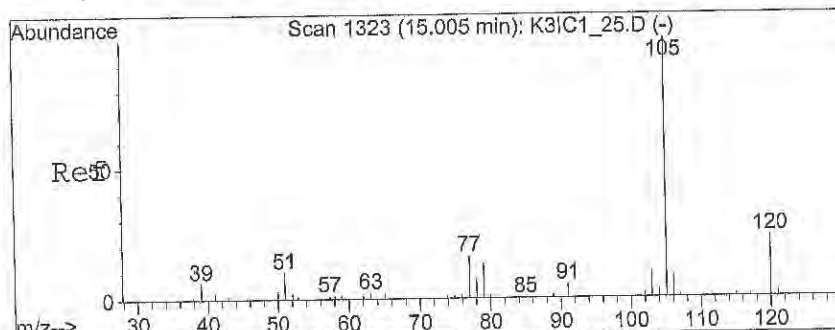
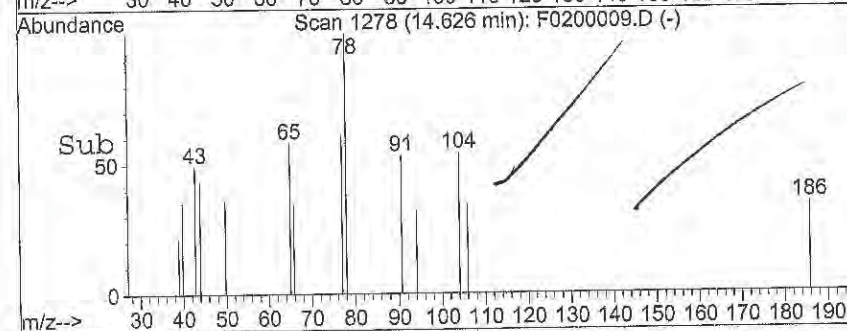
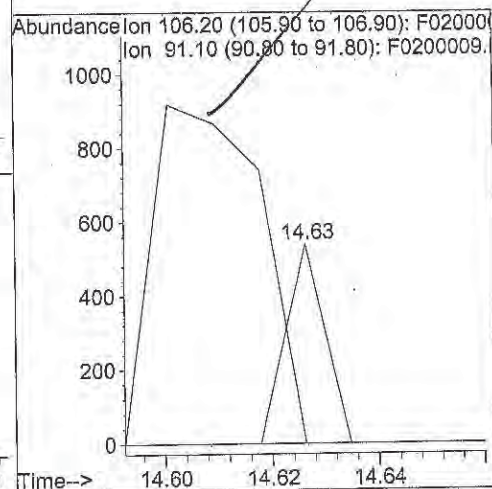
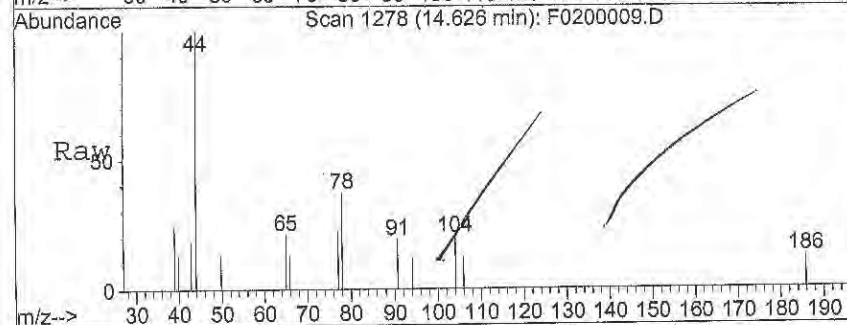
Tgt Ion: 106 Resp: 349
Ion Ratio Lower Upper
106 100
91 1563.0 177.1 265.7#





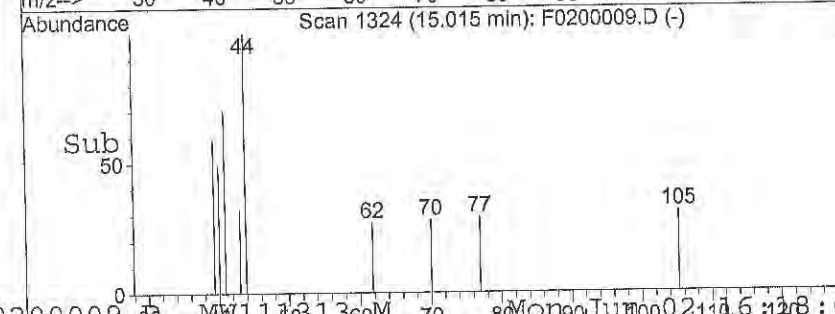
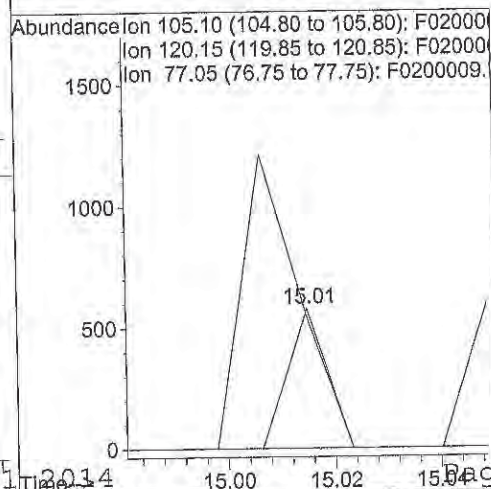
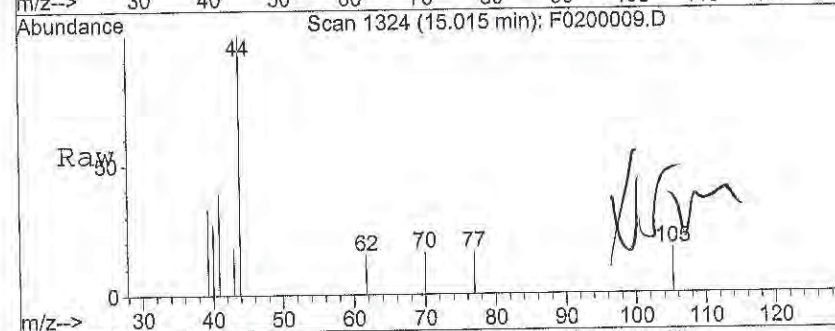
#53
o-Xylene
Concen: 0.05 ug/L
RT: 14.63 min Scan# 1278
Delta R.T. 0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

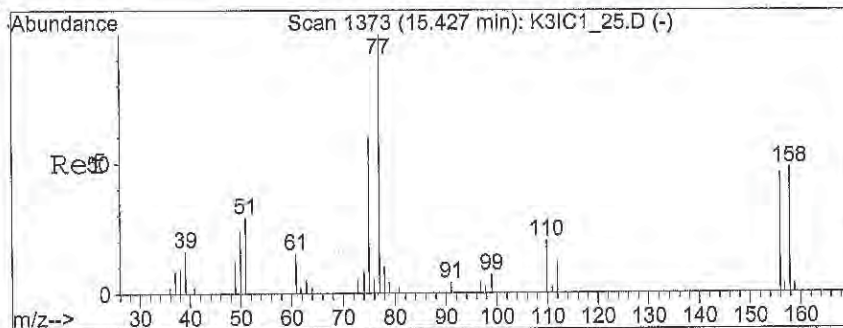
Tgt Ion:106 Resp: 273
Ion Ratio Lower Upper
106 100
91 0.0 179.0 268.6#



#56
Isopropylbenzene
Concen: 0.02 ug/L
RT: 15.01 min Scan# 1324
Delta R.T. 0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

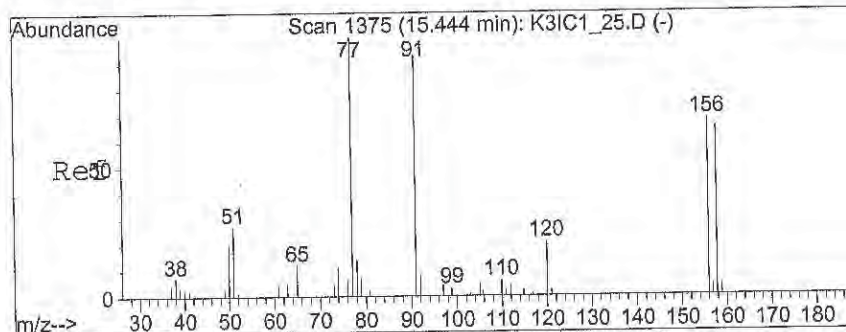
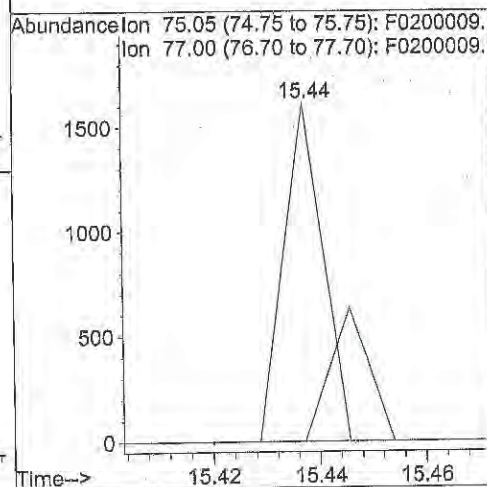
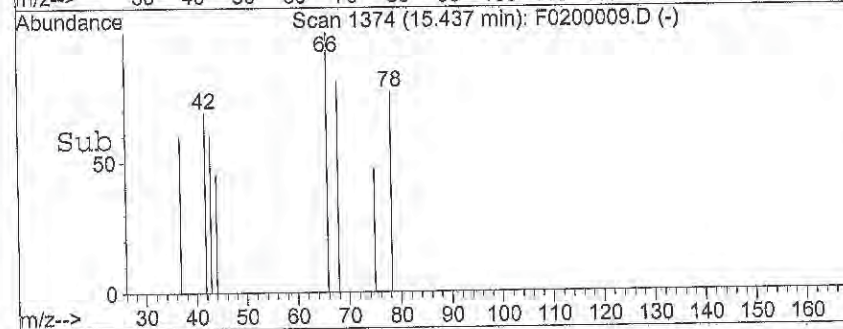
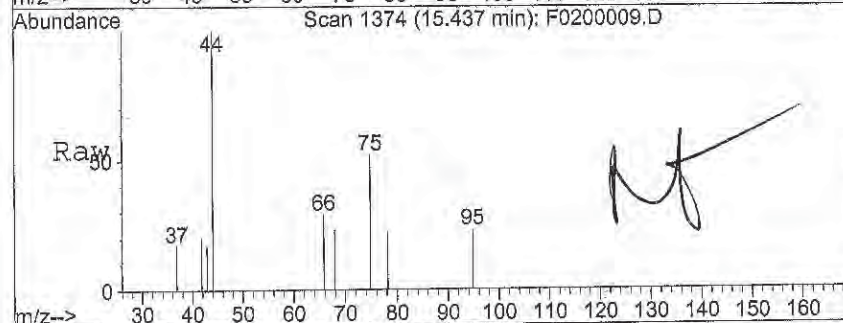
Tgt Ion:105 Resp: 292
Ion Ratio Lower Upper
105 100
120 0.0 19.3 28.9#
77 304.5 13.1 19.7#





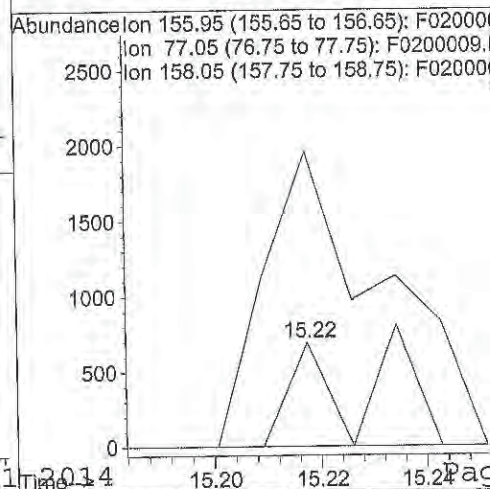
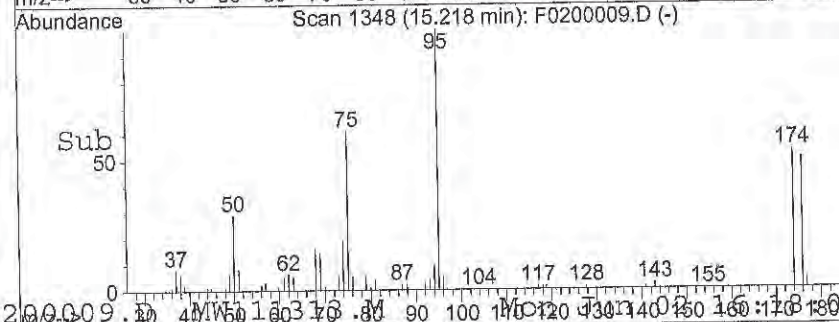
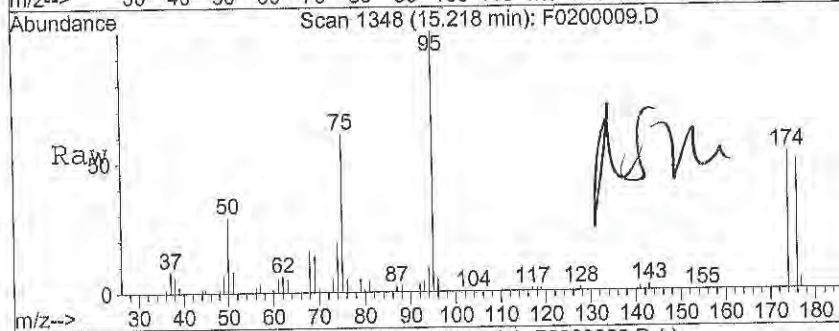
#57
1,2,3-Trichloropropane
Concen: 0.18 ug/L
RT: 15.44 min Scan# 1374
Delta R.T. 0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

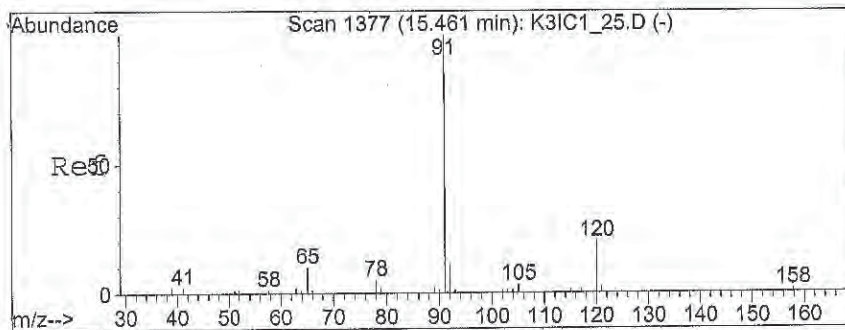
Tgt Ion: 75 Resp: 819
Ion Ratio Lower Upper
75 100
77 39.1 31.2 46.8



#61
Bromobenzene
Concen: 0.08 ug/L
RT: 15.22 min Scan# 1348
Delta R.T. -0.23 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

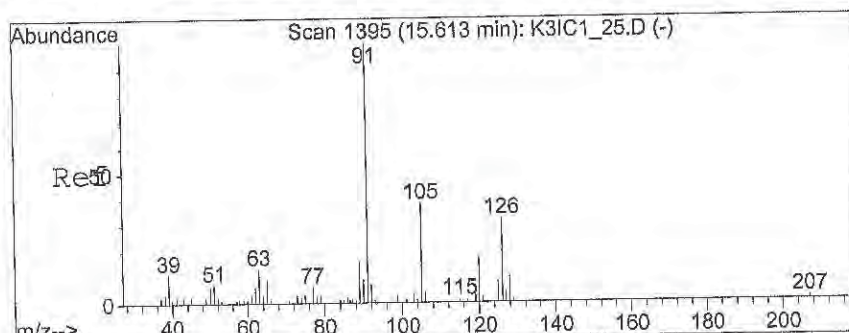
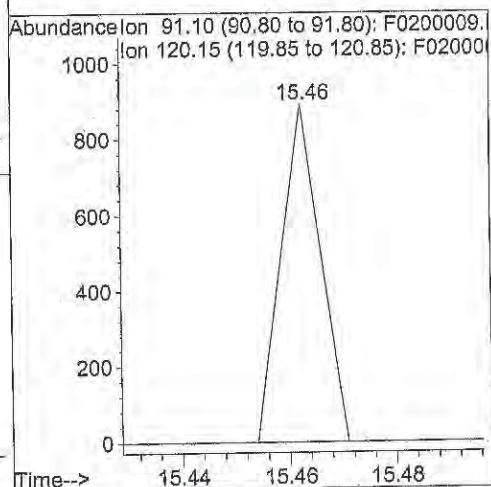
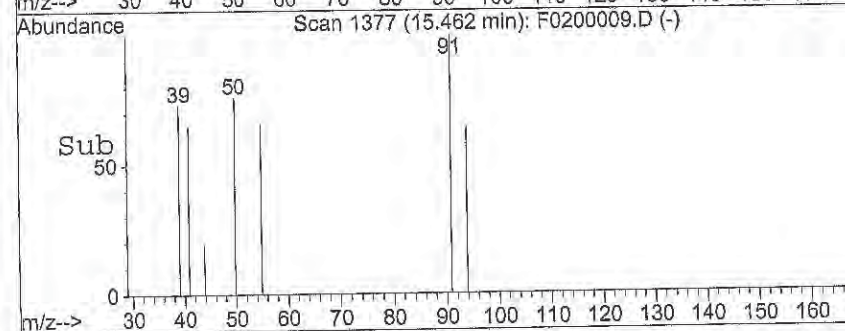
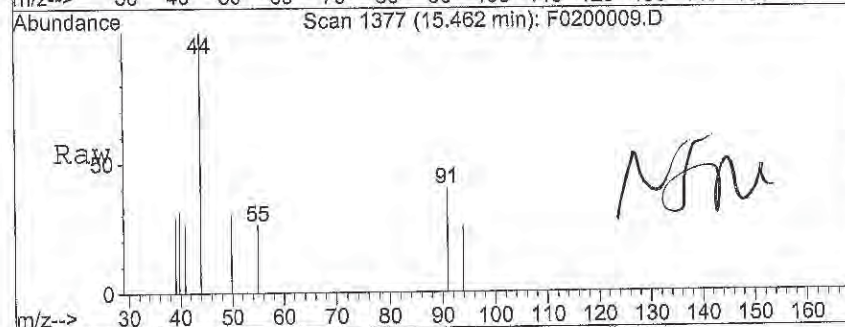
Tgt Ion: 156 Resp: 351
Ion Ratio Lower Upper
156 100
77 868.9 171.3 256.9#
158 116.5 80.3 120.5





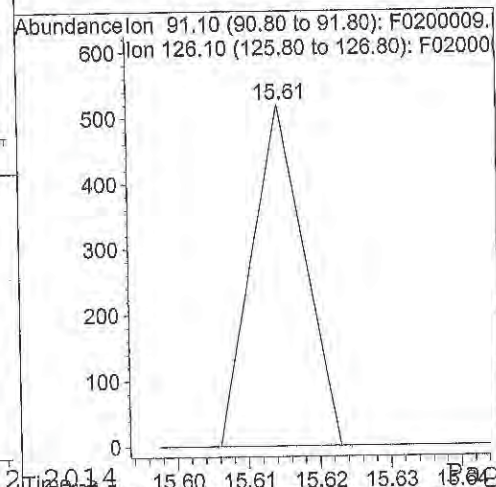
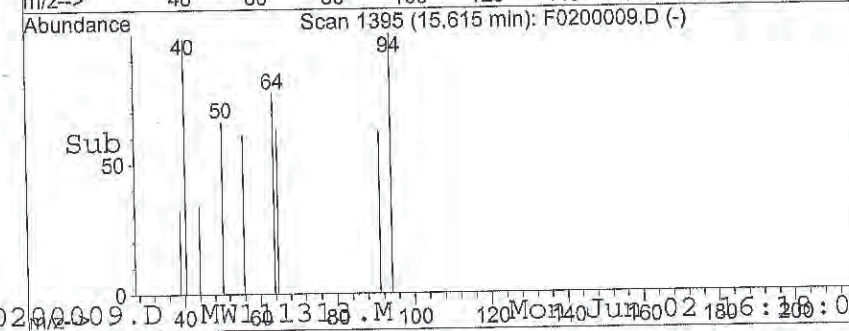
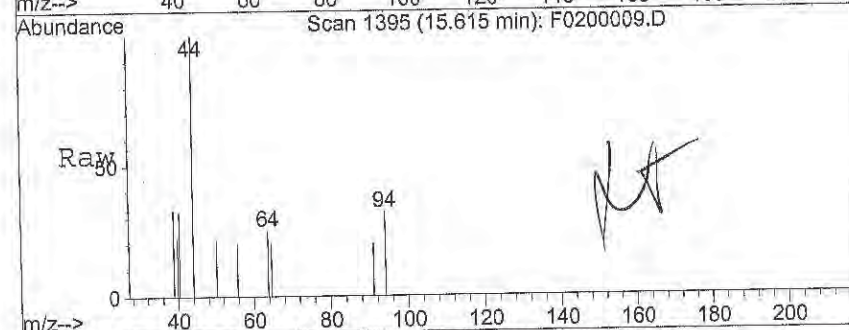
#62
 n-Propylbenzene
 Concen: 0.02 ug/L
 RT: 15.46 min Scan# 1377
 Delta R.T. 0.00 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

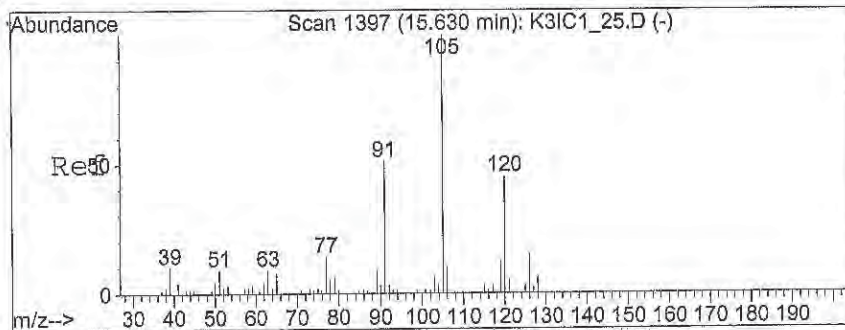
Tgt Ion: 91 Resp: 452
 Ion Ratio Lower Upper
 91 100
 120 0.0 16.1 24.1#



#63
 2-Chlorotoluene
 Concen: 0.02 ug/L
 RT: 15.61 min Scan# 1395
 Delta R.T. 0.00 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 91 Resp: 264
 Ion Ratio Lower Upper
 91 100
 126 0.0 24.0 36.0#





#64

1,3,5-Trimethylbenzene

Concen: 0.04 ug/L

RT: 15.62 min Scan# 1396

Delta R.T. -0.01 min

Lab File: F0200009.D

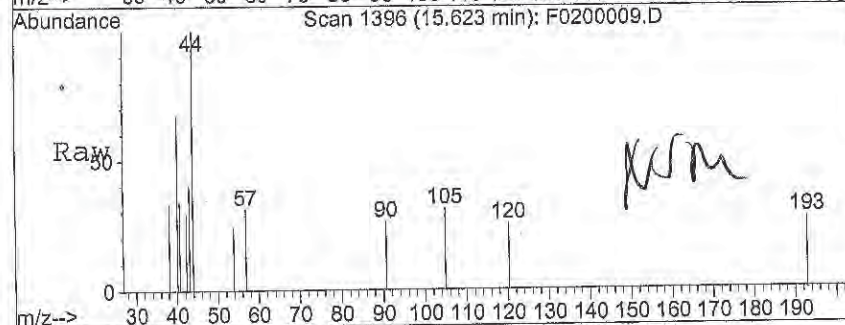
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 105 Resp: 647

Ion Ratio Lower Upper

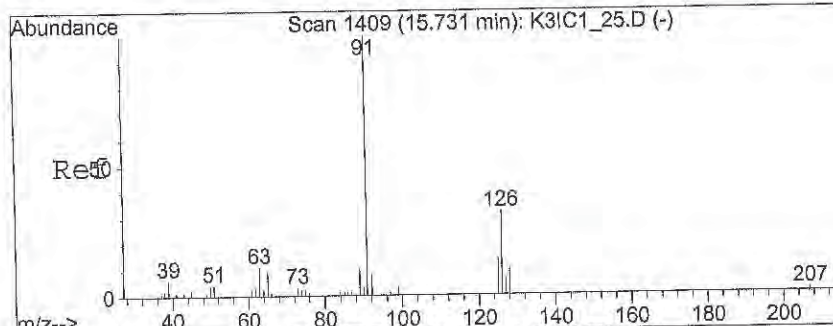
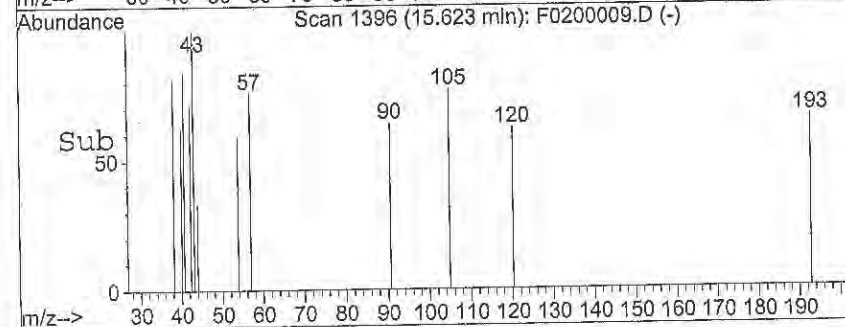
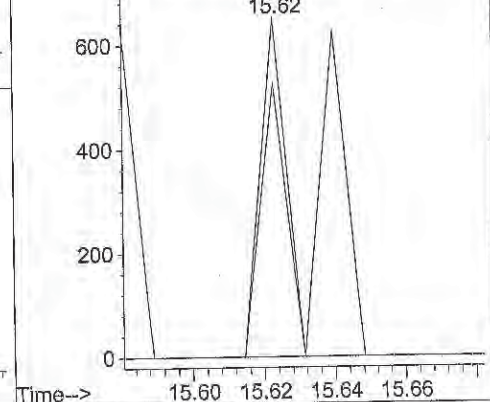
105 100

120 41.4 36.4 54.6



Abundance Ion 105.10 (104.80 to 105.80): F0200009.D

Ion 120.15 (119.85 to 120.85): F0200009.D



#65

4-Chlorotoluene

Concen: 0.02 ug/L

RT: 15.70 min Scan# 1405

Delta R.T. -0.03 min

Lab File: F0200009.D

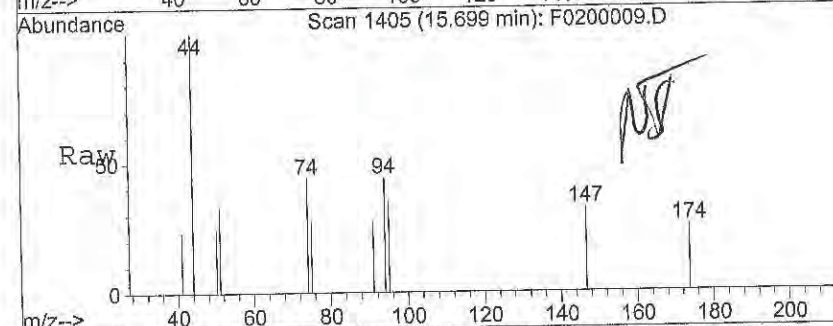
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 91 Resp: 314

Ion Ratio Lower Upper

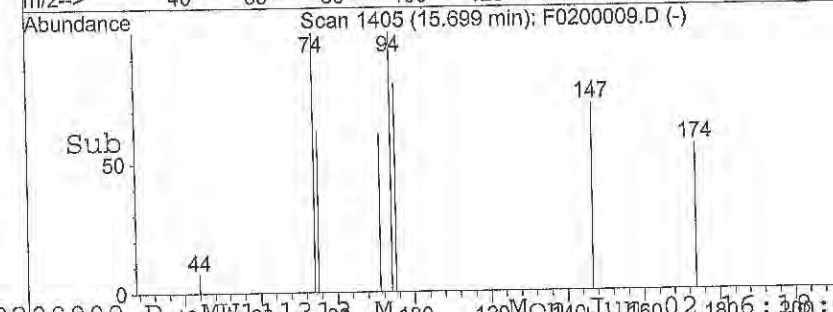
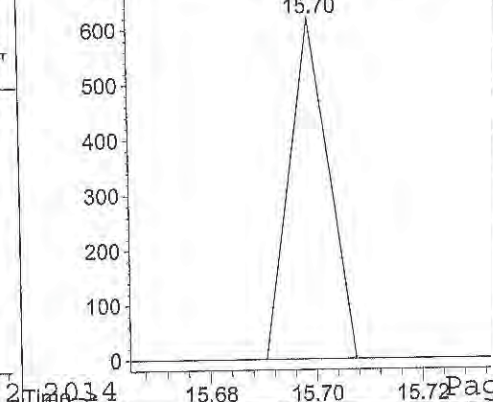
91 100

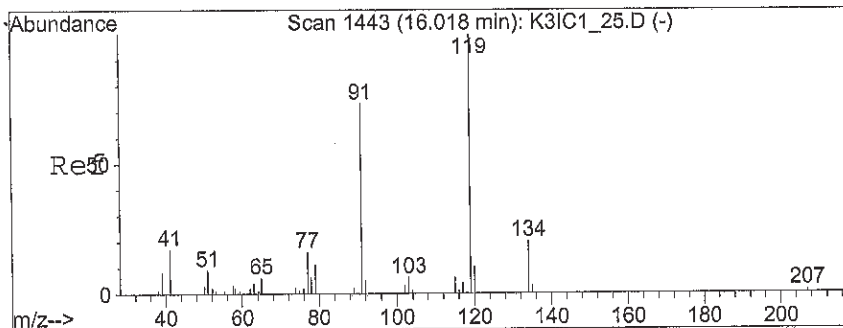
126 0.0 24.6 36.8#



Abundance Ion 91.10 (90.80 to 91.80): F0200009.D

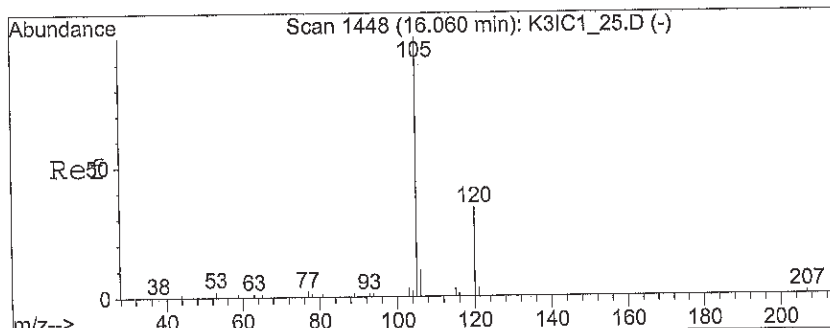
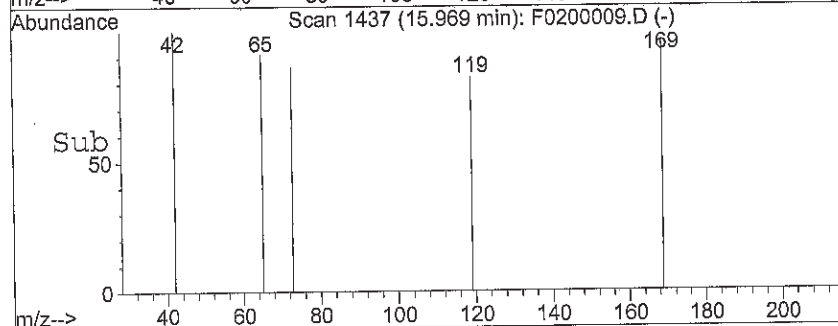
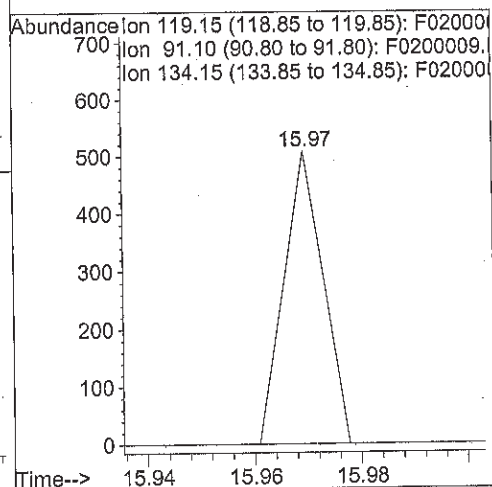
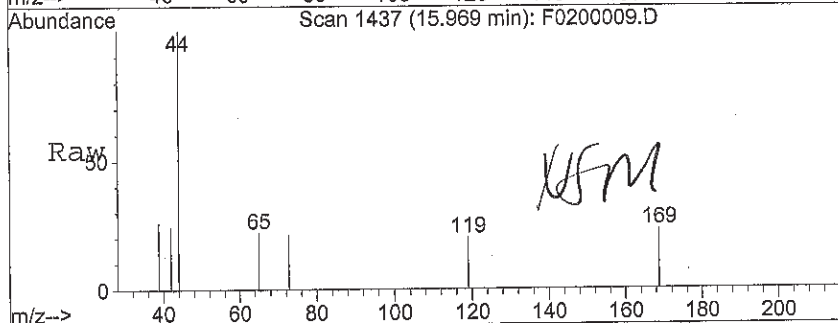
Ion 126.10 (125.80 to 126.80): F0200009.D





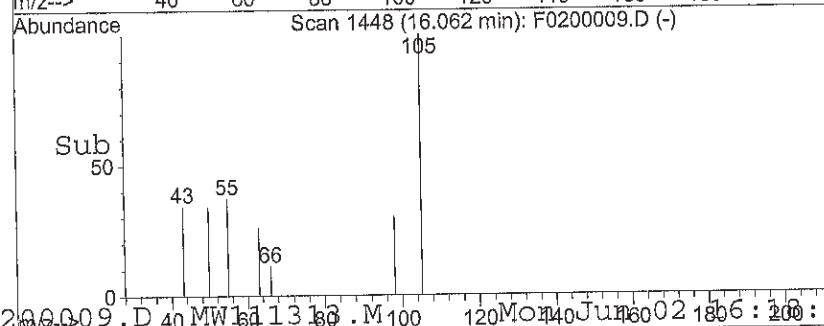
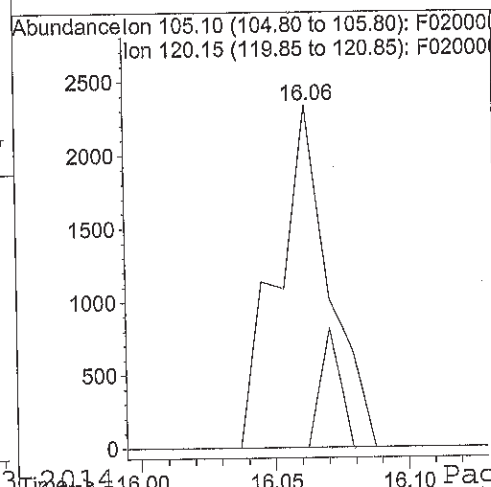
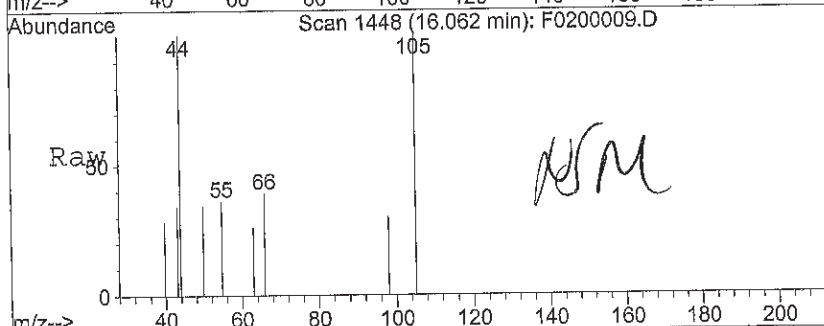
#66
tert-Butylbenzene
Concen: 0.02 ug/L
RT: 15.97 min Scan# 1437
Delta R.T. -0.05 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

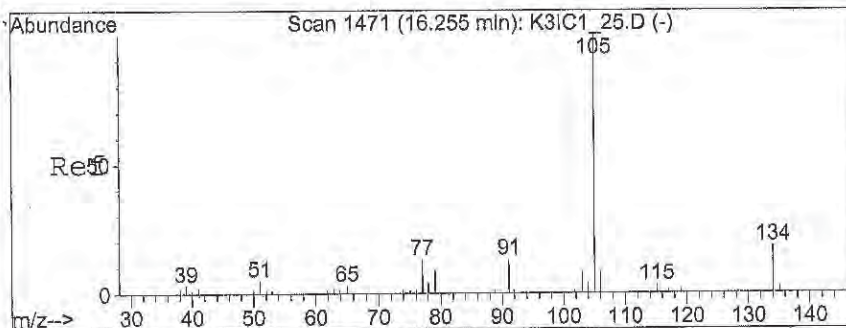
Tgt Ion: 119 Resp: 257
Ion Ratio Lower Upper
119 100
91 0.0 56.3 84.5#
134 0.0 16.1 24.1#



#67
1,2,4-Trimethylbenzene
Concen: 0.21 ug/L
RT: 16.06 min Scan# 1448
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 105 Resp: 3161
Ion Ratio Lower Upper
105 100
120 13.1 33.8 50.8#





#68

sec-Butylbenzene

Concen: 0.04 ug/L

RT: 16.34 min Scan# 1481

Delta R.T. 0.09 min

Lab File: F0200009.D

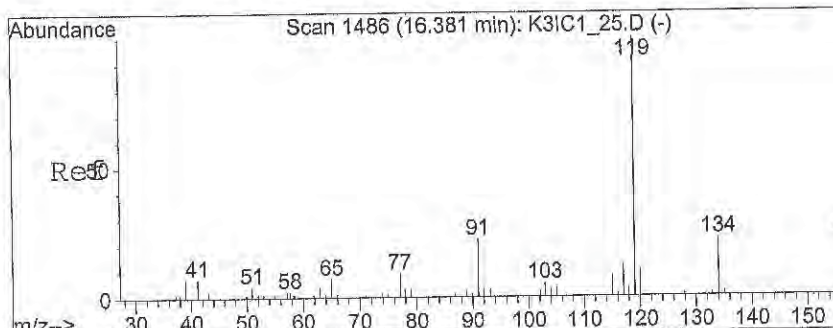
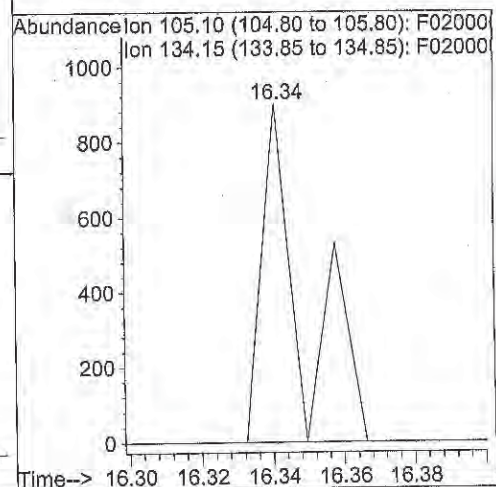
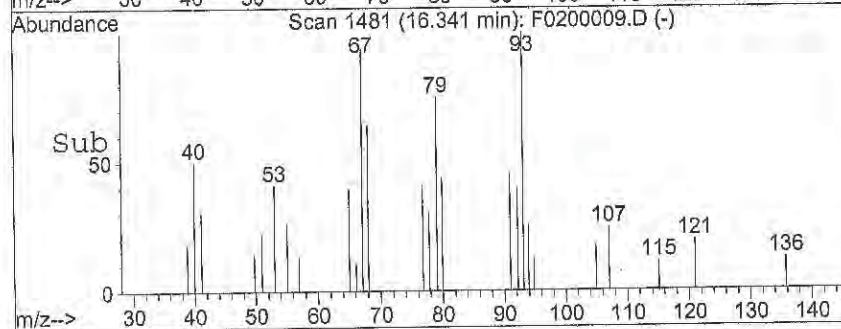
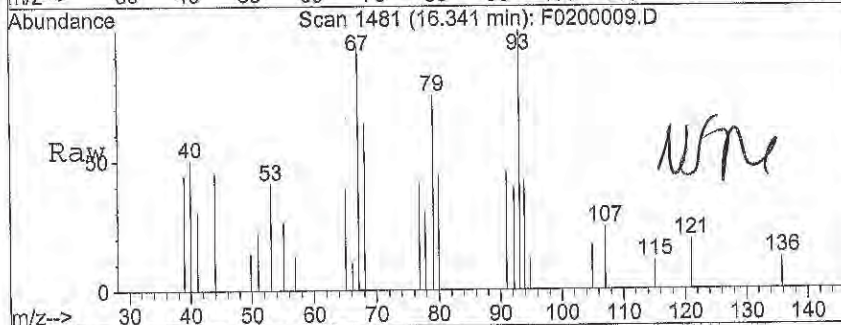
Acq: 2 Jun 2014 3:49 pm

Tgt Ion:105 Resp: 724

Ion Ratio Lower Upper

105 100

134 0.0 13.0 19.6#



#69

p-Isopropyltoluene

Concen: 0.16 ug/L

RT: 16.38 min Scan# 1486

Delta R.T. 0.00 min

Lab File: F0200009.D

Acq: 2 Jun 2014 3:49 pm

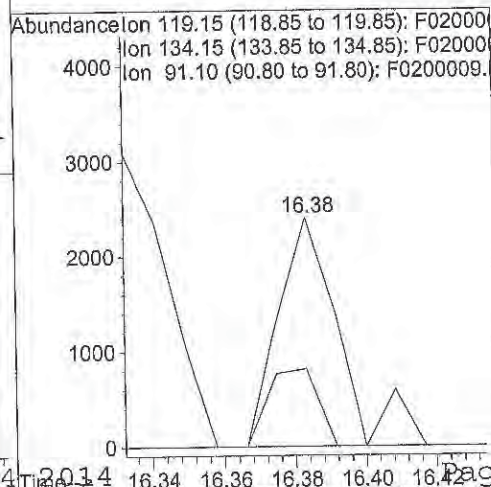
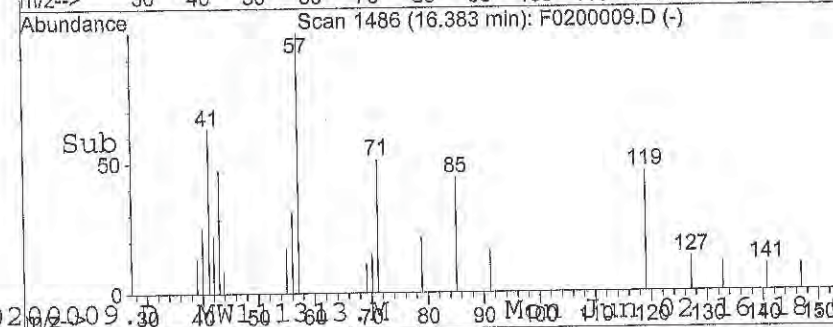
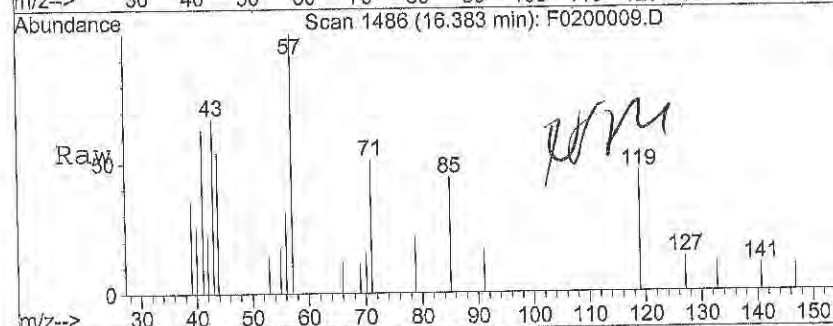
Tgt Ion:119 Resp: 2577

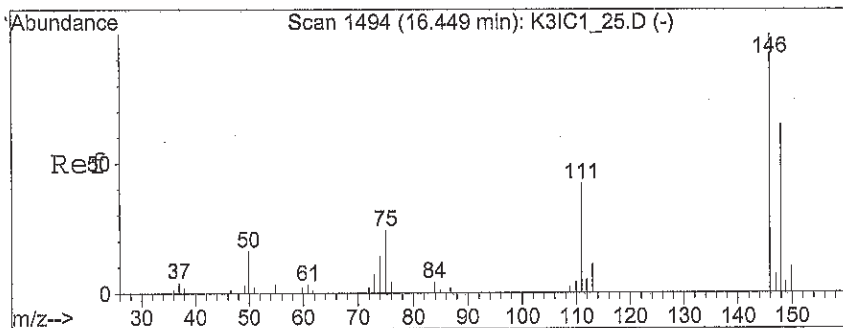
Ion Ratio Lower Upper

119 100

134 0.0 17.4 26.2#

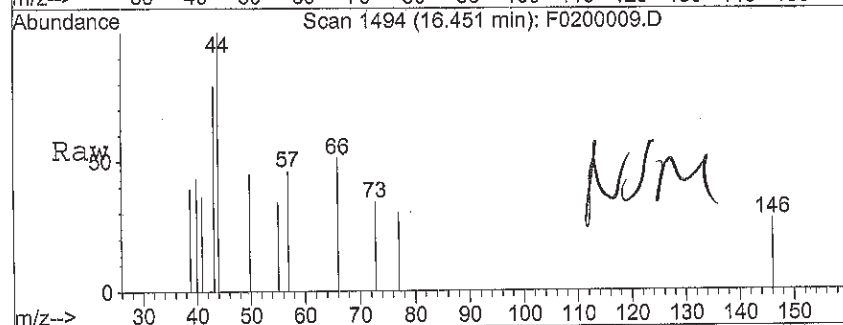
91 31.1 19.6 29.4#





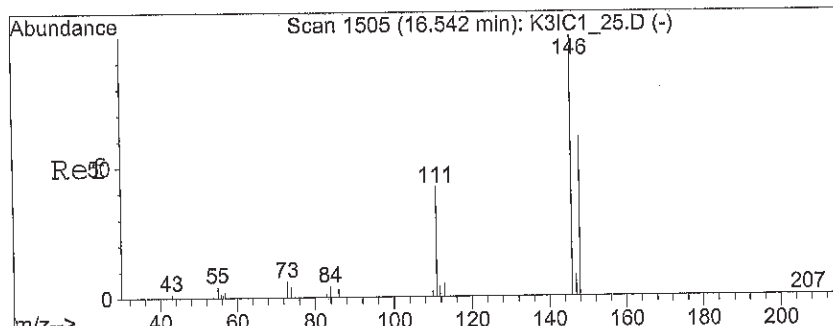
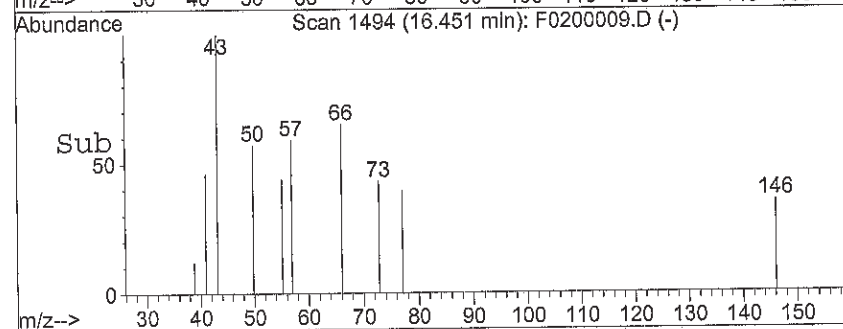
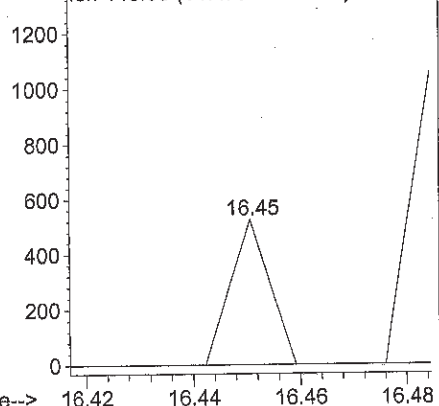
#70
 1,3-Dichlorobenzene
 Concen: 0.03 ug/L
 RT: 16.45 min Scan# 1494
 Delta R.T. 0.00 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

Tgt Ion:146 Resp: 266
 Ion Ratio Lower Upper
 146 100
 111 0.0 34.2 51.4#
 148 0.0 50.9 76.3#



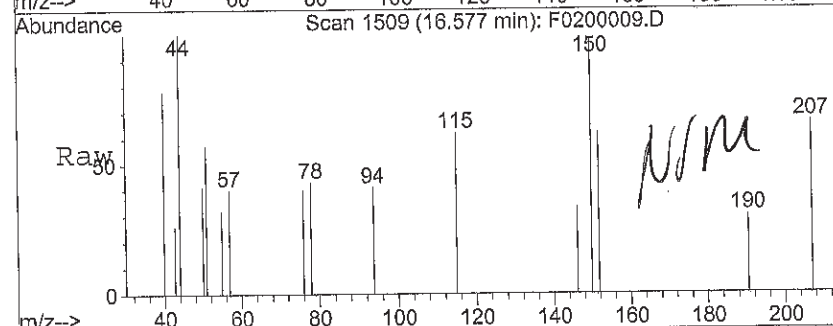
Abundance

Ion 146.05 (145.75 to 146.75): F0200009.D



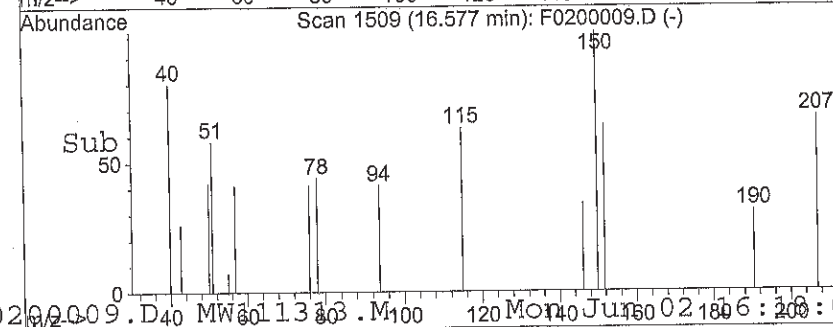
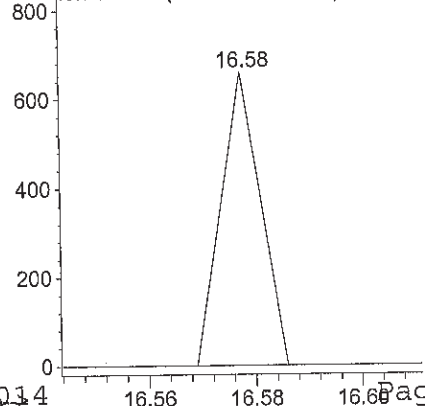
#71
 1,4-Dichlorobenzene
 Concen: 0.04 ug/L
 RT: 16.58 min Scan# 1509
 Delta R.T. 0.04 min
 Lab File: F0200009.D
 Acq: 2 Jun 2014 3:49 pm

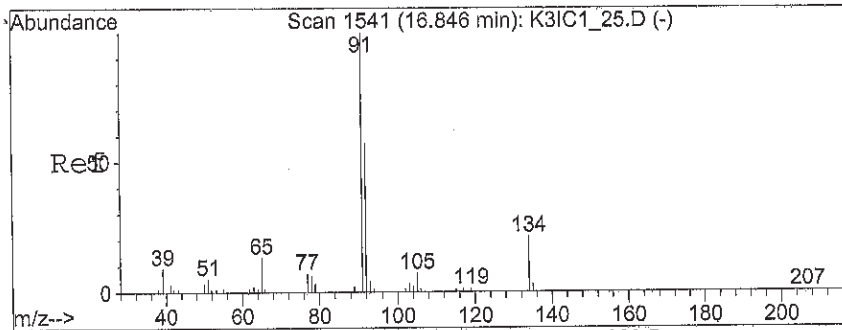
Tgt Ion:146 Resp: 334
 Ion Ratio Lower Upper
 146 100
 111 0.0 37.6 56.4#
 148 0.0 52.6 78.8#



Abundance

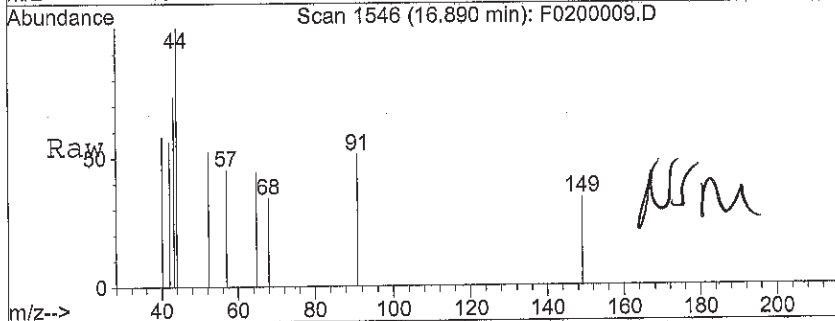
Ion 146.05 (145.75 to 146.75): F0200009.D





#72
n-Butylbenzene
Concen: 0.02 ug/L
RT: 16.89 min Scan# 1546
Delta R.T. 0.04 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 91 Resp: 384
Ion Ratio Lower Upper
91 100
92 0.0 47.0 70.4#
134 0.0 18.1 27.1#



Abundance

Ion 91.10 (90.80 to 91.80): F0200009.D

Ion 92.10 (91.80 to 92.80): F0200009.D

Ion 134.15 (133.85 to 134.85): F0200009.D

1000

800

600

400

200

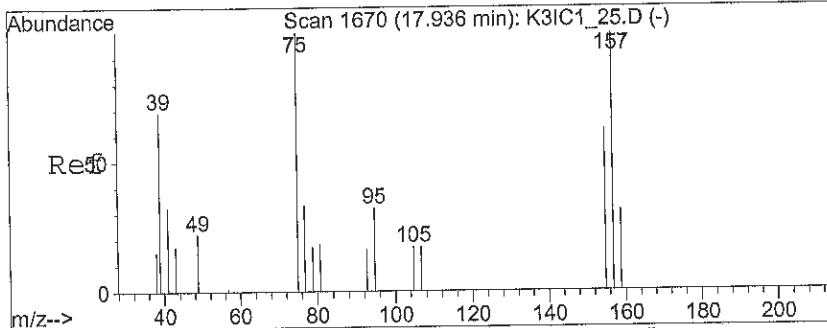
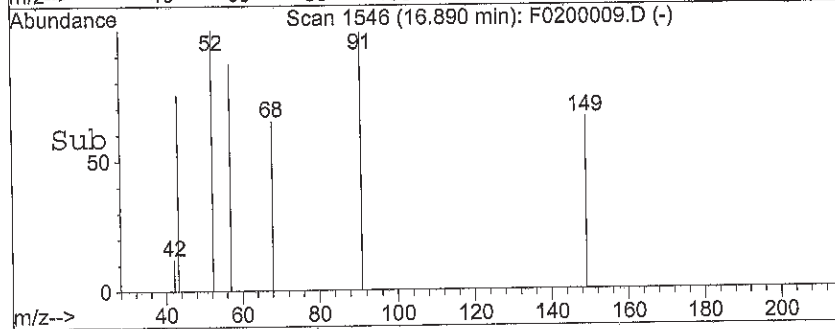
0

16.86

16.88

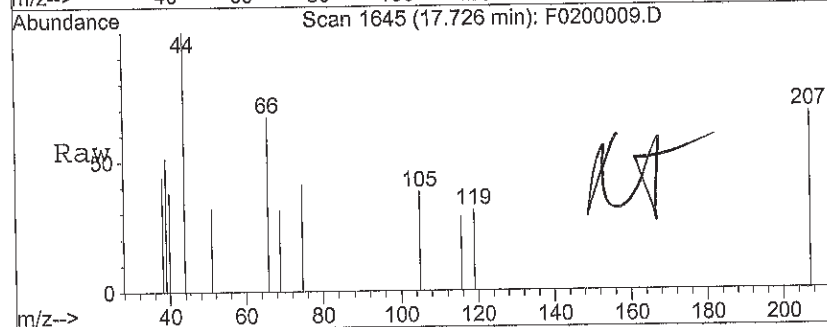
16.90

Time-->



#74
1,2-Dibromo-3-chloropropane
Concen: 1.45 ug/L
RT: 17.73 min Scan# 1645
Delta R.T. -0.21 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 75 Resp: 387
Ion Ratio Lower Upper
75 100
155 0.0 59.2 88.8#
157 0.0 77.0 115.6#



Abundance

Ion 75.05 (74.75 to 75.75): F0200009.D

Ion 154.95 (154.65 to 155.65): F0200009.D

Ion 156.95 (156.65 to 157.65): F0200009.D

1000

800

600

400

200

0

17.71

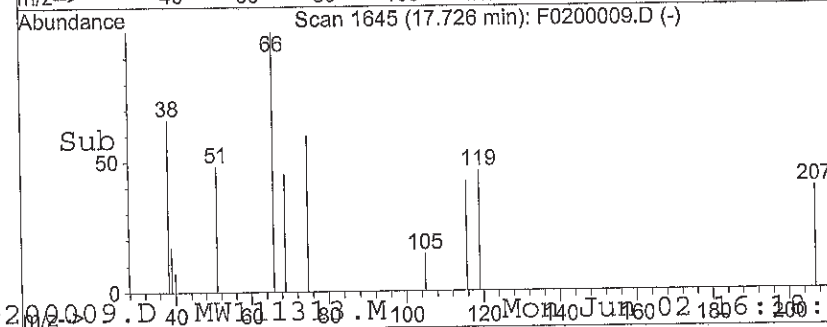
17.72

17.73

17.74

17.75

Time-->



Data File : C:\HPCHEM\1\DATA\060214L3\F0200009.D
 Acq On : 2 Jun 2014 3:49 pm
 Sample : 3F40201-08
 Misc : 100cc SVL-505-SA5C-SV-15.0-16.0
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:42 19114

Vial: 8
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Quant Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene (IS)	10.29	96	1125891	12.50	ug/L	-0.02
7) Chlorobenzene-d5 (IS)	13.92	117	1087598	12.50	ug/L	-0.01
10) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	587531	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.42	113	319251m	10.90	ug/L	-0.01
Spiked Amount	12.500	Range 75 - 125	Recovery	=	87.20%	
3) Chloroform-d (SU6)	9.19	84	609405m	14.51	ug/L	0.00
Spiked Amount	12.500	Range 70 - 140	Recovery	=	116.08%	
4) Methylene Chloride-d2 (SU5)	7.07	86	289162	11.78	ug/L	0.00
Spiked Amount	12.500	Range 70 - 140	Recovery	=	94.24%	
5) 1,2-Dichloroethane-d4 (SU2)	9.89	65	246515m	12.32	ug/L	-0.01
Spiked Amount	12.500	Range 75 - 125	Recovery	=	98.56%	
6) Benzene-d6 (SU7)	9.93	84	1128209	12.77	ug/L	-0.02
Spiked Amount	12.500	Range 70 - 140	Recovery	=	102.16%	
8) Toluene-d8 (SU3)	12.21	98	1138471	11.03	ug/L	-0.01
Spiked Amount	12.500	Range 75 - 125	Recovery	=	88.24%	
9) 4-Bromofluorobenzene (SU4)	15.23	95	603136m	14.16	ug/L	0.00
Spiked Amount	12.500	Range 75 - 125	Recovery	=	113.28%	

Target Compounds

Qvalue

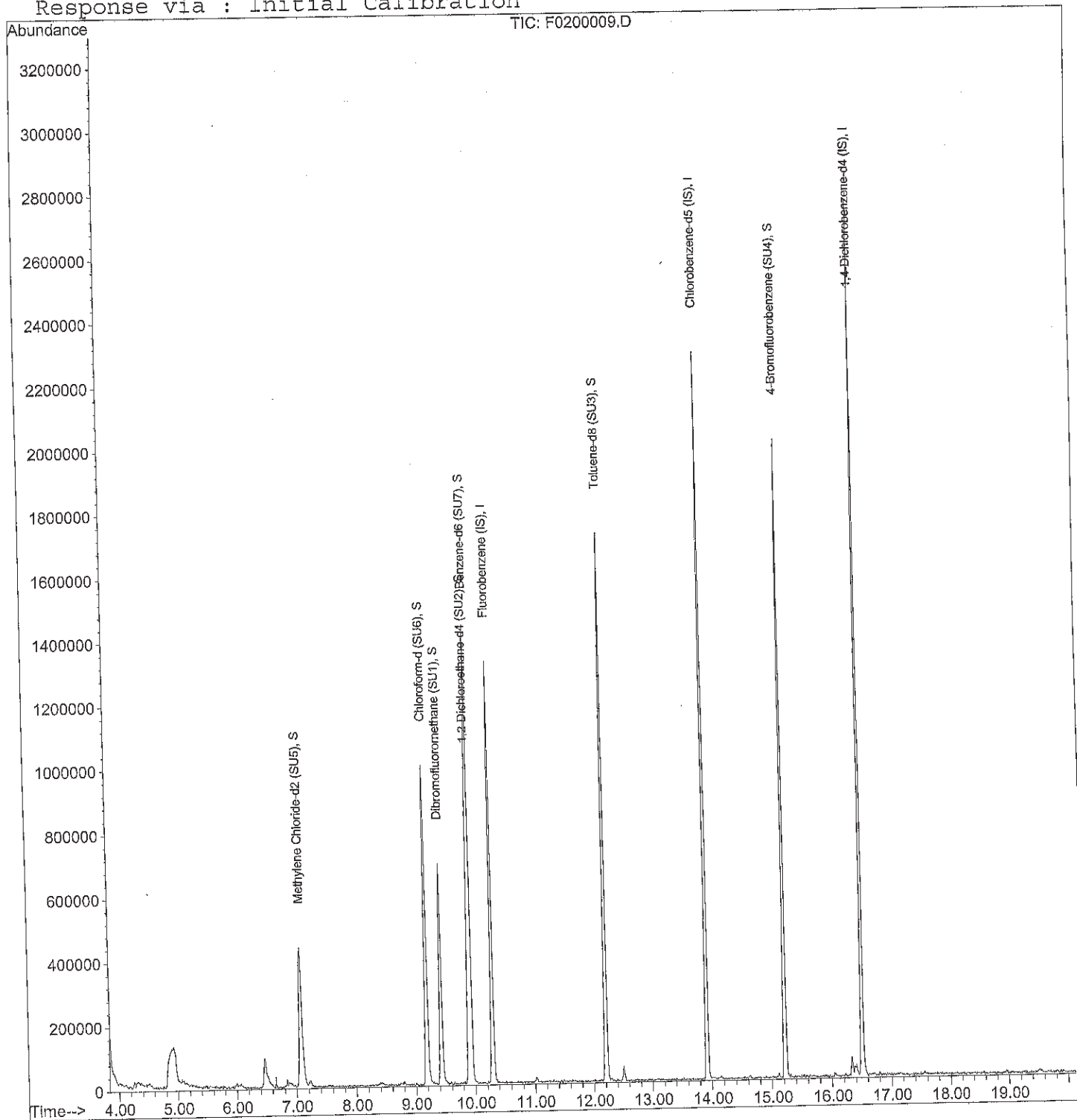
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200009.D
 Acq On : 2 Jun 2014 3:49 pm
 Sample : 3F40201-08
 Misc : 100cc SVL-505-SA5C-SV-15.0-16.0
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:42 19114

Vial: 8
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration



Data File : C:\HPCHEM\1\DATA\060214L3\F0200010.D

Vial: 1

Acq On : 2 Jun 2014 4:18 pm

Operator: DN

Sample : 3F40201-09

Inst : GC/MS Ins

Misc : 100cc FB-060214

Multiplr: 10.00

MS Integration Params: rteint.p

Quant Time: Jun 2 17:09 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.30	96	1105700	12.50	ug/L	0.00
38) Chlorobenzene-d5 (IS)	13.92	117	1086224	12.50	ug/L	0.00
59) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	590283	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	342143m	12.41	ug/L	0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	99.28%
28) 1,2-Dichloroethane-d4 (SU2)	9.89	65	318784m	12.16	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	97.28%
39) Toluene-d8 (SU3)	12.21	98	1093189	10.79	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	86.32%
58) 4-Bromofluorobenzene (SU4)	15.22	95	456512m	10.28	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	82.24%

Target Compounds

					Qvalue	
3) (F12) Dichlorodifluorometh	4.09	85	281	0.10	ug/L	44
4) Chloromethane	4.54	50	797	-0.79	ug/L	99
5) Vinyl Chloride	4.59	62	312	0.16	ug/L	# 1
6) Bromomethane	5.14	96	366	-1.48	ug/L	80
7) Chloroethane	5.35	64	1470	2.28	ug/L	96
8) (F11) Trichlorofluorometha	5.62	101	439	0.14	ug/L	98
10) 1,1-Dichloroethene	6.22	96	255	0.10	ug/L	# 1
11) Acetone	6.45	58	3776	3.78	ug/L	# 1
12) (IPA) Leak Check Compound	6.48	45	169105	1272.75	ug/L	# 85
13) Carbon disulfide	6.75	76	388	0.04	ug/L	# 1
14) Methylene Chloride	7.10	84	1828	0.60	ug/L	# 9
15) (TBA) tert-Butanol	6.96	59	283	1.50	ug/L	# 77
16) (MTBE) Methyl-t-butyl ethe	7.54	73	319	0.05	ug/L	# 55
18) 1,1-Dichloroethane	8.01	63	310	0.06	ug/L	# 1
20) 2,2-Dichloropropane	8.84	77	636	0.15	ug/L	# 39
21) (MEK) 2-Butanone	8.81	72	398	1.28	ug/L	# 1
22) (DIPE) Diisopropyl Ether	8.05	45	407	0.05	ug/L	# 48
23) Bromochloromethane	9.23	128	275	0.19	ug/L	# 1
24) Chloroform	9.22	83	1997	0.34	ug/L	# 37
25) (ETBE) 2-ethoxy 2-methyl p	8.67	59	289	0.04	ug/L	# 44
27) (TAME) tert-Amyl methyl et	9.90	73	1089	0.16	ug/L	# 48
29) 1,1-Dichloropropene	9.86	75	412	0.10	ug/L	# 41

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060214L3\F0200010.D
 Acq On : 2 Jun 2014 4:18 pm
 Sample : 3F40201-09
 Misc : 100cc FB-060214
 MS Integration Params: rteint.p
 Quant Time: Jun 2 17:09 19114

Vial: 1
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
31) Benzene	9.92	78	9790	0.94	ug/L #	65
32) 1,2-Dichloroethane	10.00	62	363	0.10	ug/L #	43
34) 1,2-Dichloropropane	11.12	63	272	0.11	ug/L #	50
35) Dibromomethane	11.18	93	409	0.21	ug/L #	5
37) cis-1,3-Dichloropropene	12.05	75	285	0.07	ug/L #	1
40) (MIBK) 4-Methyl-2-Pentanone	12.11	43	650	0.30	ug/L #	100
41) Toluene	12.27	91	2249	0.15	ug/L #	61
42) trans-1,3-Dichloropropene	12.58	75	647	0.13	ug/L #	74
46) 2-Hexanone	12.99	43	270	0.11	ug/L #	37
48) 1,2-Dibromoethane	13.57	107	261	0.08	ug/L #	3
51) Ethylbenzene	14.03	91	1668	0.10	ug/L #	45
52) m,p-Xylenes	14.16	106	348	0.06	ug/L #	121
54) Styrene	14.63	104	1245	-0.73	ug/L #	1
56) Isopropylbenzene	14.99	105	281	0.02	ug/L #	1
57) 1,2,3-Trichloropropane	15.30	75	1346	0.30	ug/L #	94
60) 1,1,2,2-Tetrachloroethane	15.21	83	419	0.10	ug/L #	18
62) n-Propylbenzene	15.45	91	384	0.02	ug/L #	56
63) 2-Chlorotoluene	15.59	91	375	0.03	ug/L #	45
64) 1,3,5-Trimethylbenzene	15.63	105	308	0.02	ug/L #	31
65) 4-Chlorotoluene	15.69	91	288	0.02	ug/L #	44
67) 1,2,4-Trimethylbenzene	16.06	105	1190	0.08	ug/L #	33
68) sec-Butylbenzene	16.33	105	551	0.03	ug/L #	62
69) p-Isopropyltoluene	16.39	119	656	0.04	ug/L #	32
72) n-Butylbenzene	16.85	91	253	0.01	ug/L #	30
74) 1,2-Dibromo-3-chloropropan	17.93	75	588	1.74	ug/L #	6
77) Naphthalene	19.46	128	413	0.04	ug/L #	100

(#) = qualifier out of range (m) = manual integration
 F0200010.D MW111313.M Mon Jun 02 17:10:14 2014

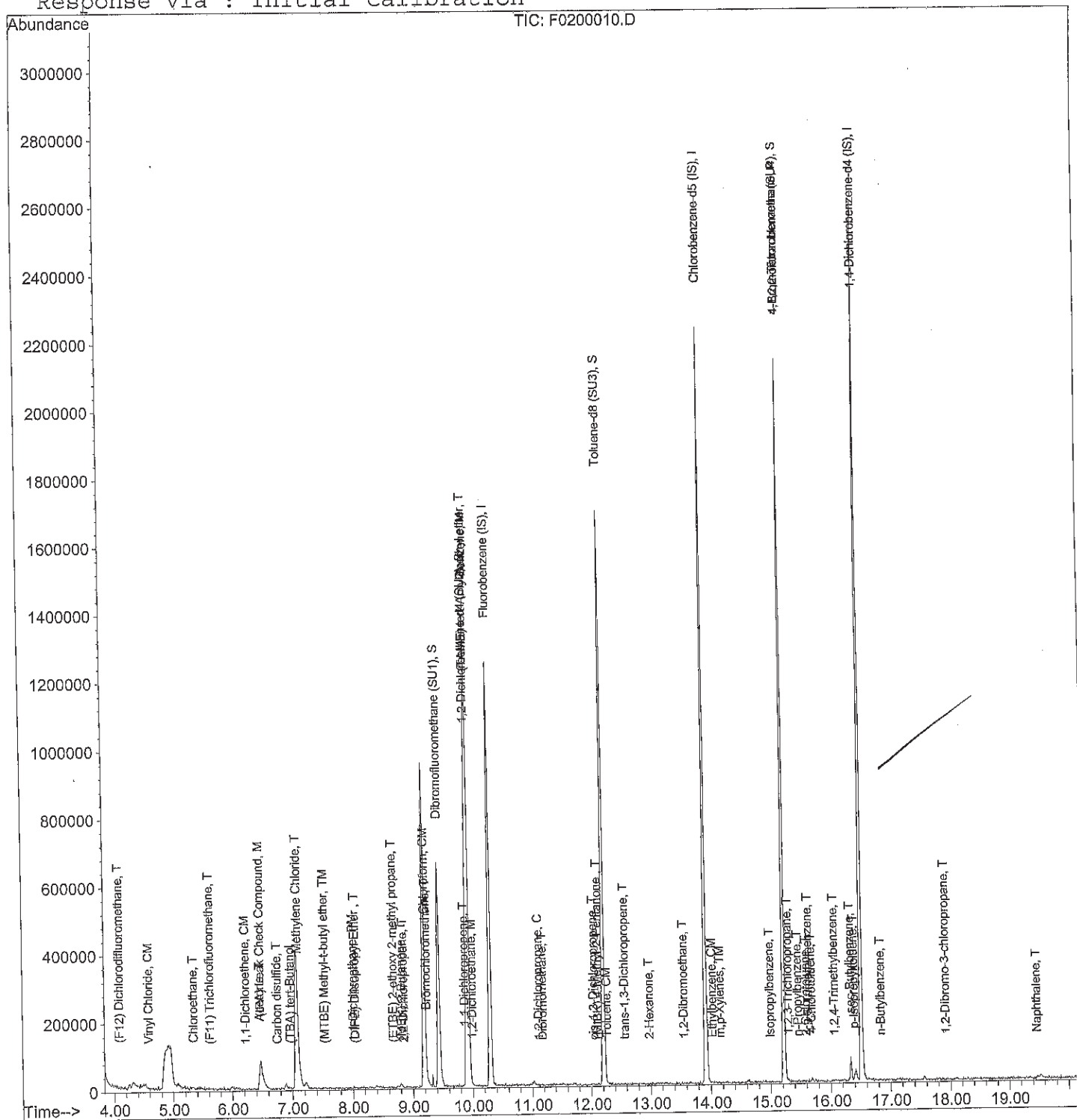
Quantitation Report

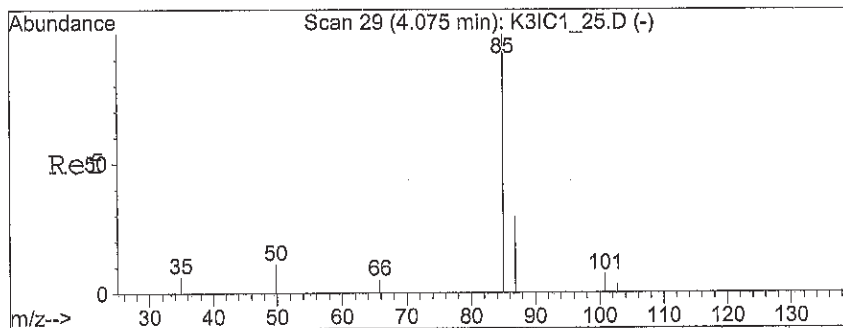
Data File : C:\HPCHEM\1\DATA\060214L3\F0200010.D
 Acq On : 2 Jun 2014 4:18 pm
 Sample : 3F40201-09
 Misc : 100cc FB-060214
 MS Integration Params: rteint.p
 Quant Time: Jun 2 17:09 19114

Vial: 1
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: MW111313.RES

Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:38:32 2013
 Response via : Initial Calibration





#3

(F12) Dichlorodifluoromethane

Concen: 0.10 ug/L

RT: 4.09 min Scan# 31

Delta R.T. 0.01 min

Lab File: F0200010.D

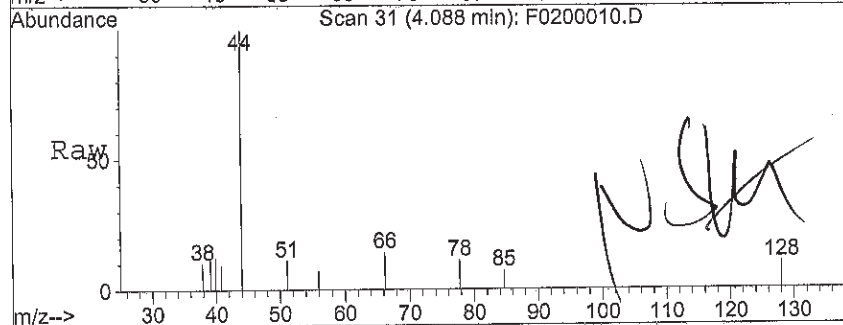
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 85 Resp: 281

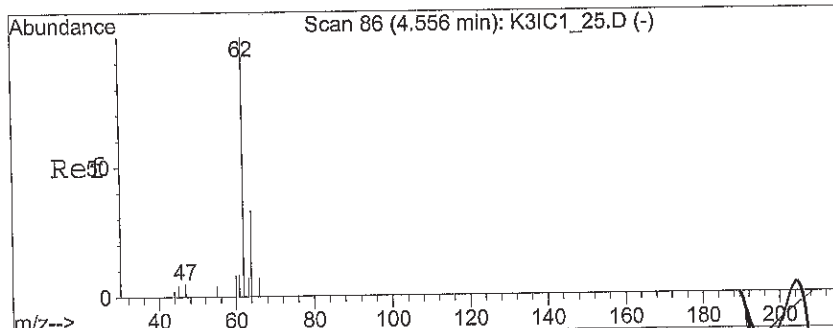
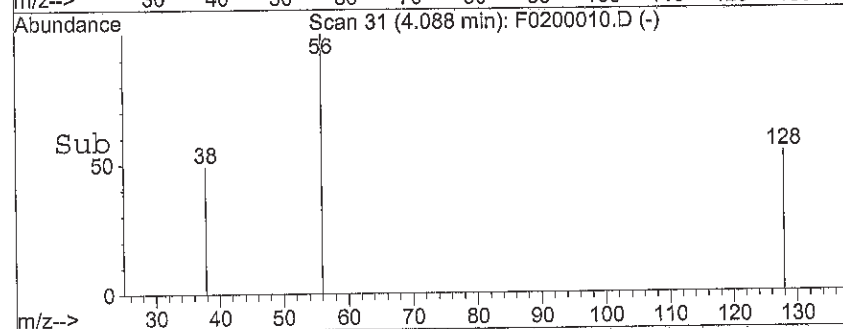
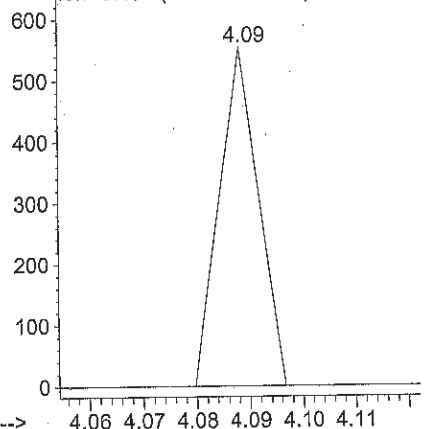
Ion Ratio Lower Upper

85 100

87 0.0 24.6 37.0#



Abundance Ion 84.95 (84.65 to 85.65): F0200010.D
Ion 87.05 (86.75 to 87.75): F0200010.D



#5

Vinyl Chloride

Concen: 0.16 ug/L

RT: 4.59 min Scan# 91

Delta R.T. 0.04 min

Lab File: F0200010.D

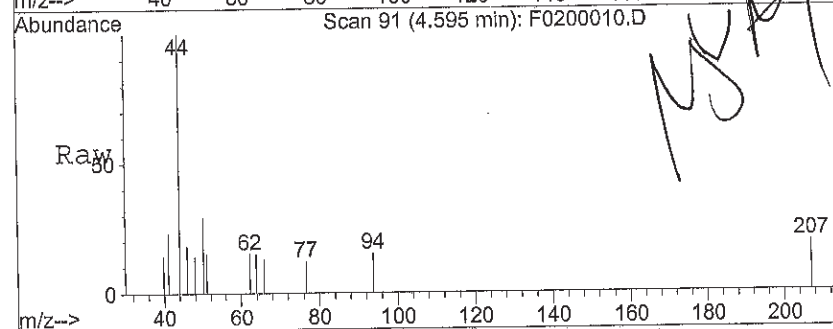
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 62 Resp: 312

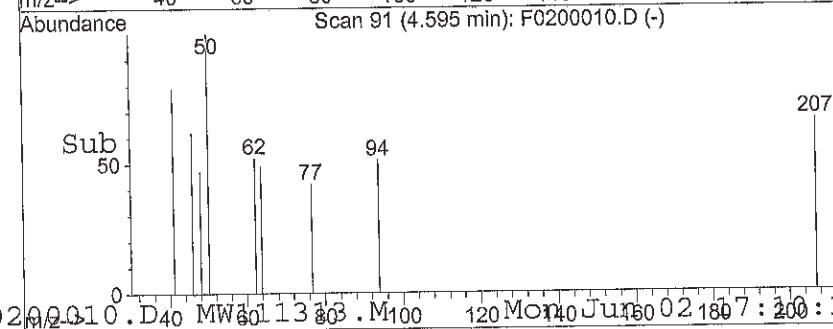
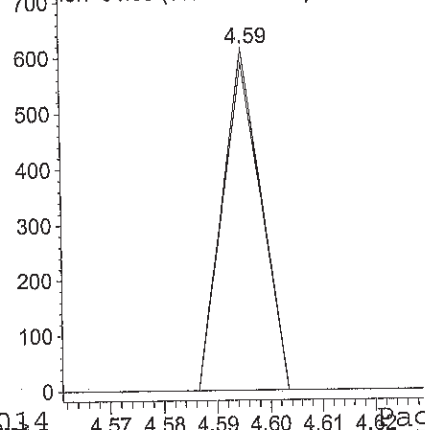
Ion Ratio Lower Upper

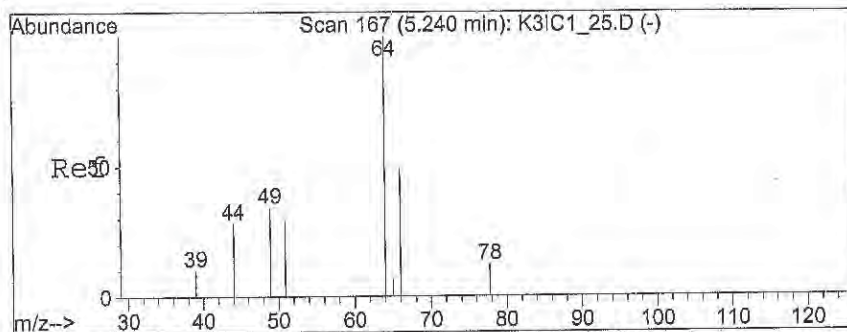
62 100

64 95.8 25.6 38.4#



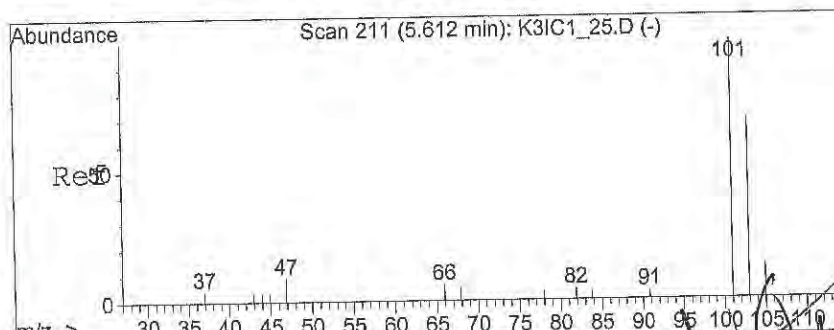
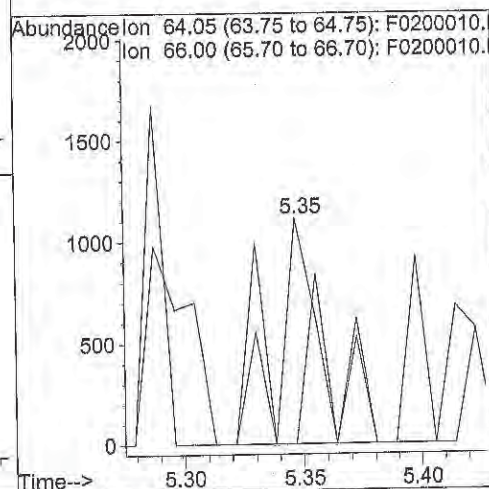
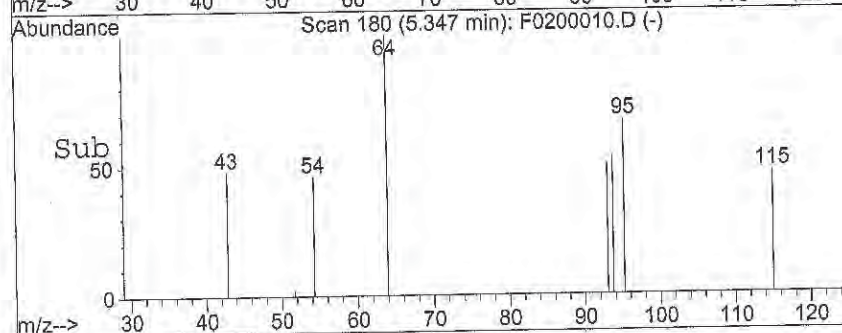
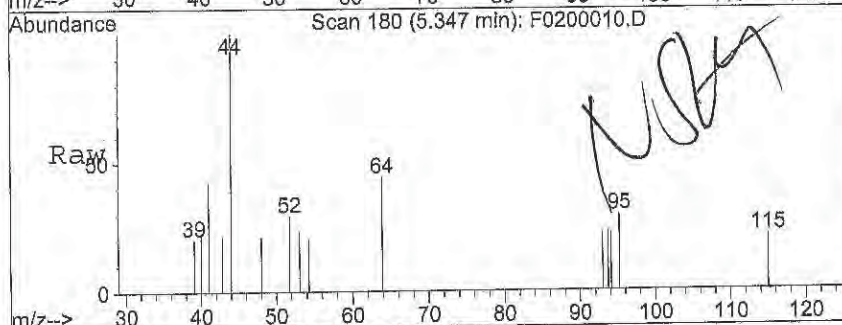
Abundance Ion 62.05 (61.75 to 62.75): F0200010.D
Ion 64.05 (63.75 to 64.75): F0200010.D





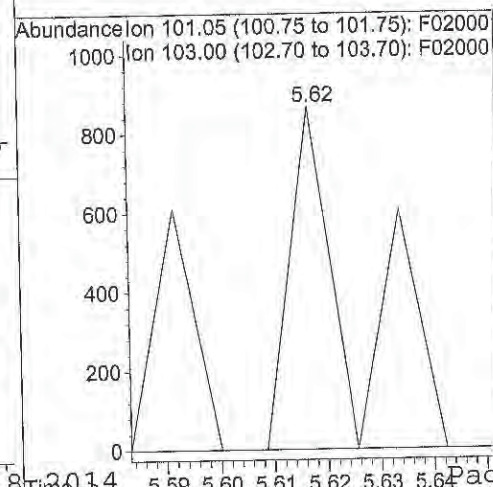
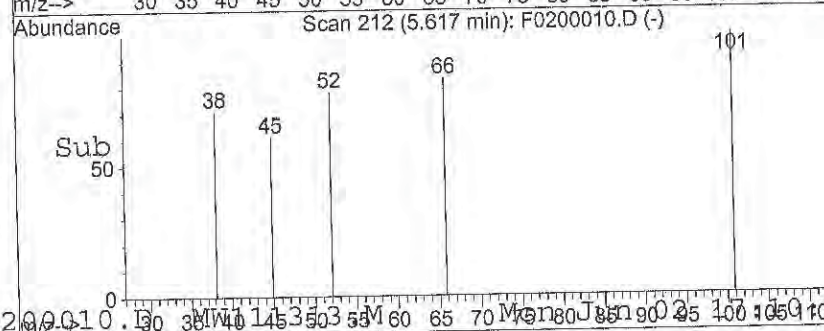
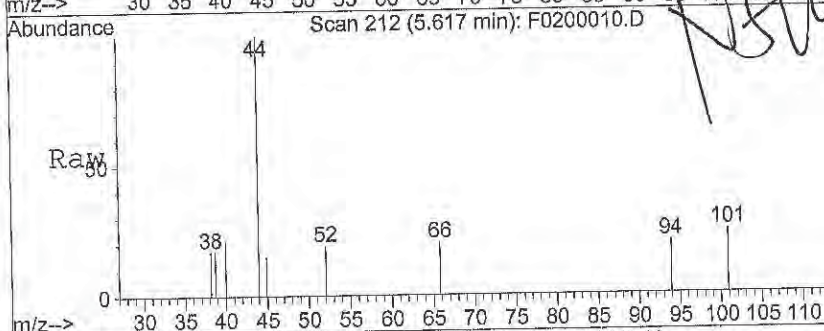
#7
 Chloroethane
 Concen: 2.28 ug/L
 RT: 5.35 min Scan# 180
 Delta R.T. 0.11 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

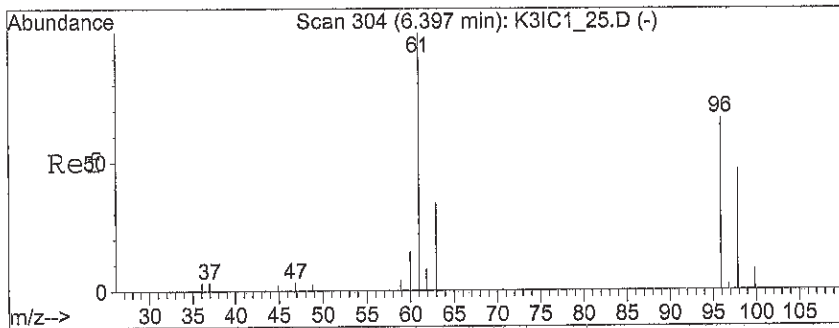
Tgt Ion: 64 Resp: 1470
 Ion Ratio Lower Upper
 64 100
 66 47.1 35.4 53.0



#8
 (F11) Trichlorofluoromethane
 Concen: 0.14 ug/L
 RT: 5.62 min Scan# 212
 Delta R.T. 0.01 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

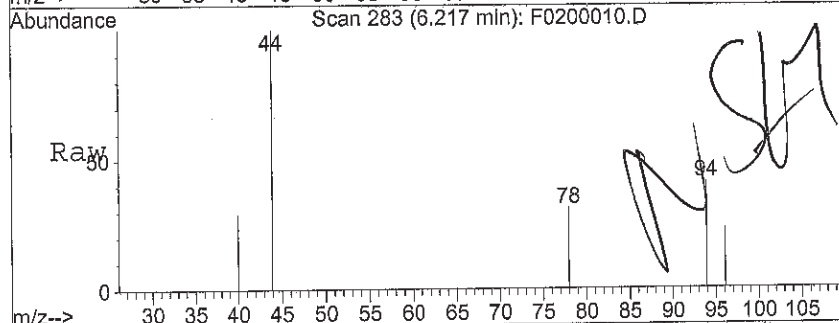
Tgt Ion: 101 Resp: 439
 Ion Ratio Lower Upper
 101 100
 103 69.9 54.5 81.7



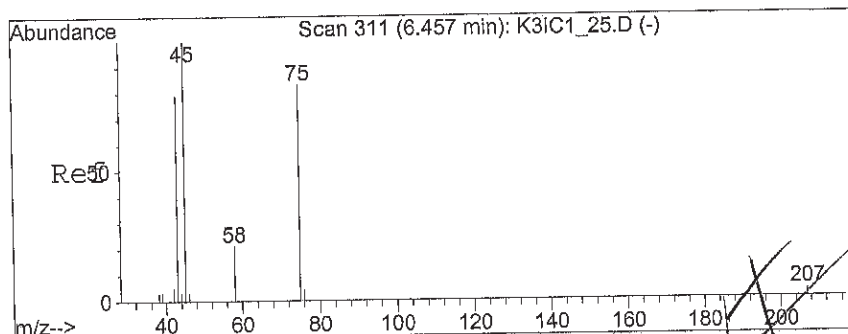
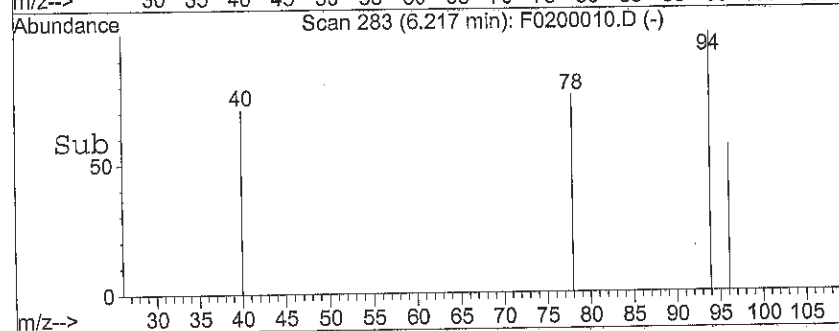
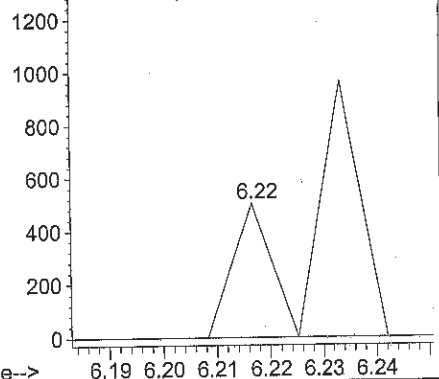


#10
1,1-Dichloroethene
Concen: 0.10 ug/L
RT: 6.22 min Scan# 283
Delta R.T. -0.18 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 96 Resp: 255
Ion Ratio Lower Upper
96 100
61 0.0 130.0 195.0#
98 0.0 56.2 84.4#
63 191.8 41.5 62.3#

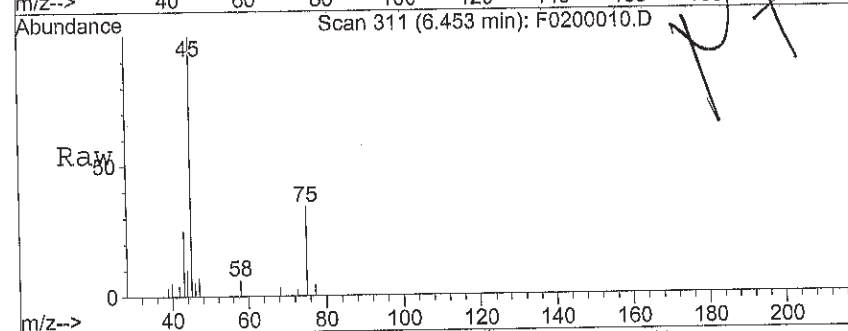


Abundance Ion 95.95 (95.65 to 96.65): F0200010.
Ion 61.05 (60.75 to 61.75): F0200010.
1400 Ion 97.95 (97.65 to 98.65): F0200010.
Ion 63.05 (62.75 to 63.75): F0200010.

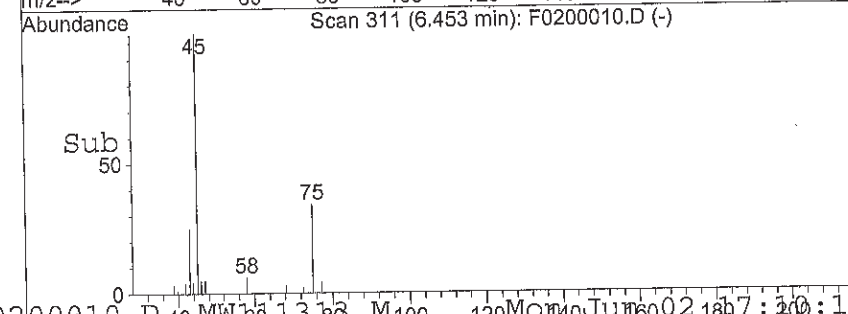
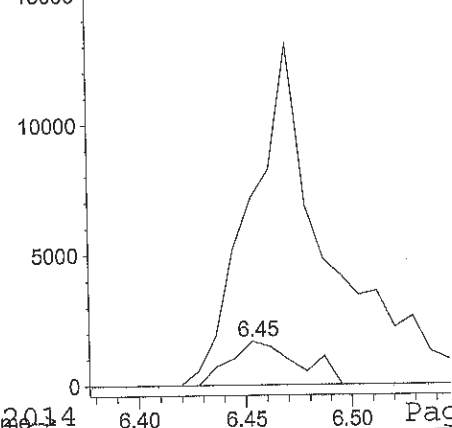


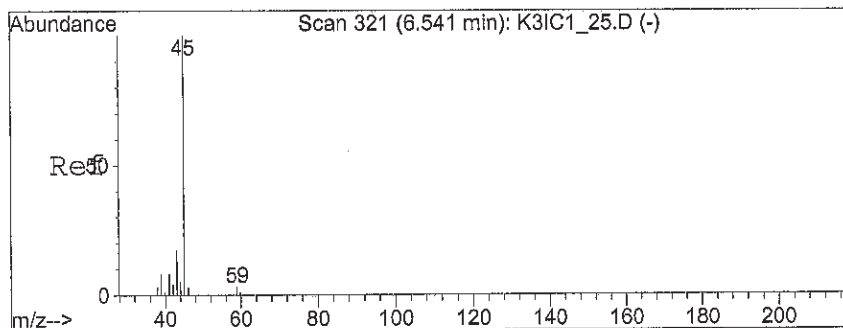
#11
Acetone
Concen: 3.78 ug/L
RT: 6.45 min Scan# 311
Delta R.T. -0.00 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 58 Resp: 3776
Ion Ratio Lower Upper
58 100
43 885.9 360.9 541.3#



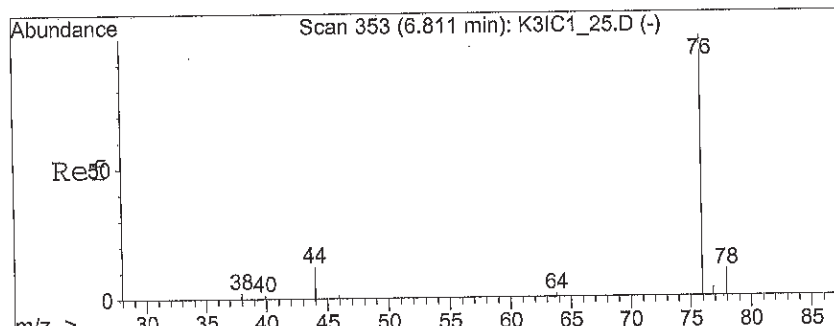
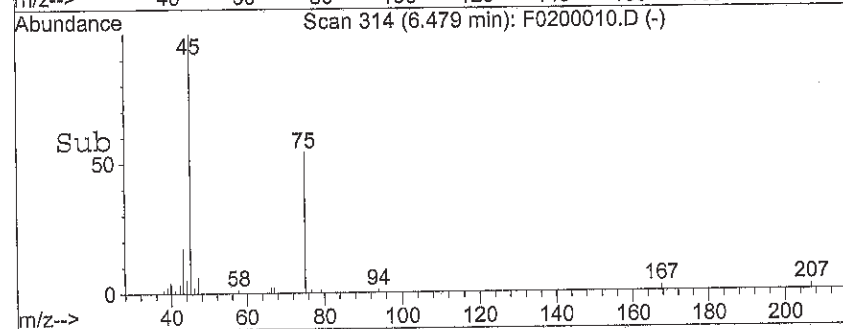
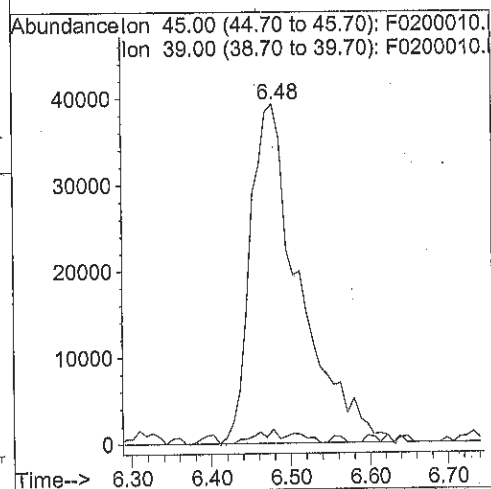
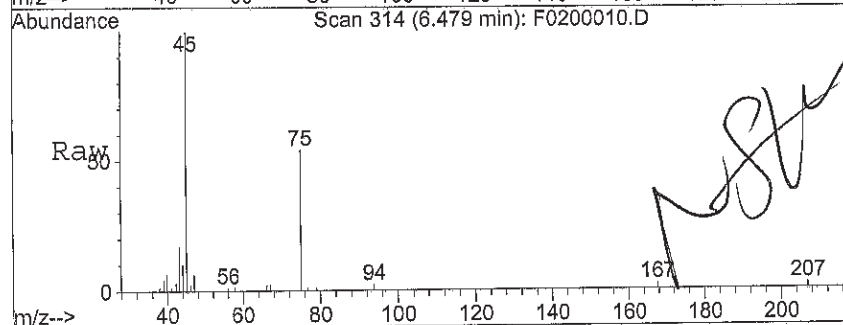
Abundance Ion 58.00 (57.70 to 58.70): F0200010.
15000 Ion 43.00 (42.70 to 43.70): F0200010.





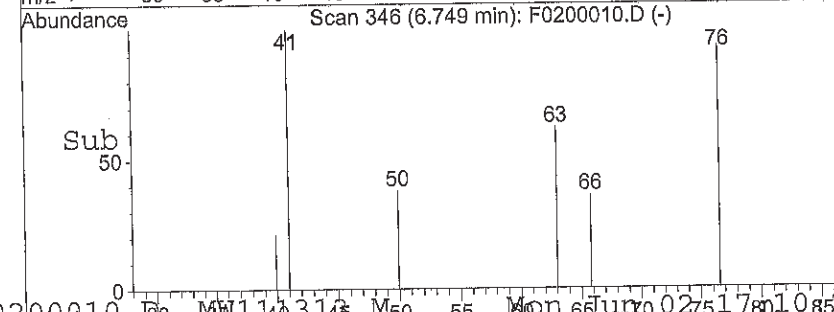
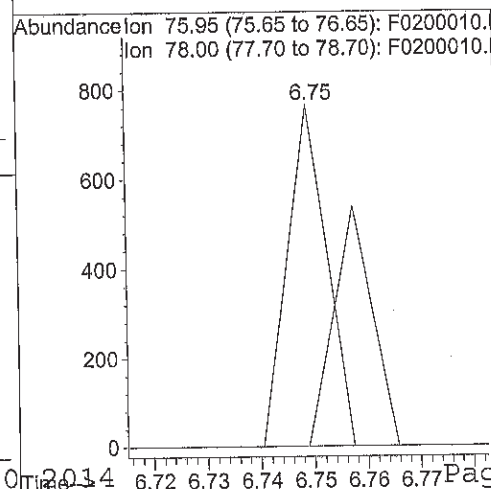
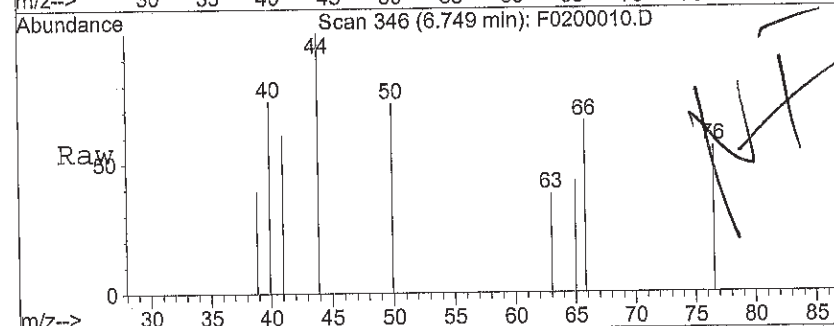
#12
 (IPA) Leak Check Compound
 Concen: 1272.75 ug/L
 RT: 6.48 min Scan# 314
 Delta R.T. -0.06 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

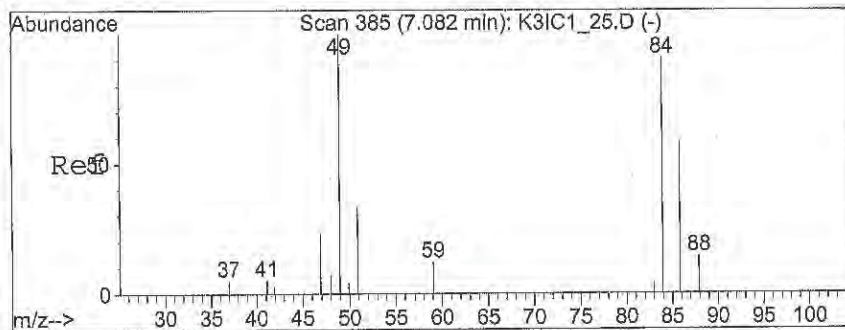
Tgt Ion: 45 Resp: 169105
 Ion Ratio Lower Upper
 45 100
 39 1.2 4.9 7.3#



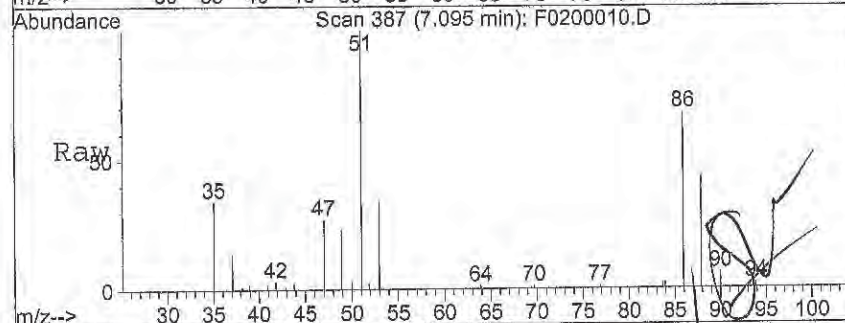
#13
 Carbon disulfide
 Concen: 0.04 ug/L
 RT: 6.75 min Scan# 346
 Delta R.T. -0.06 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 76 Resp: 388
 Ion Ratio Lower Upper
 76 100
 78 70.4 7.0 10.4#

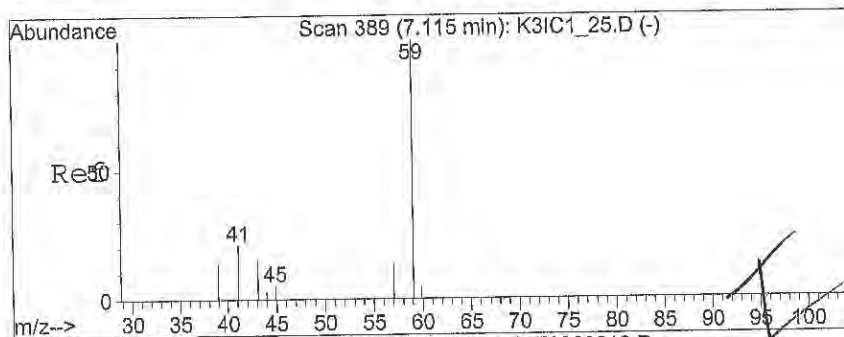
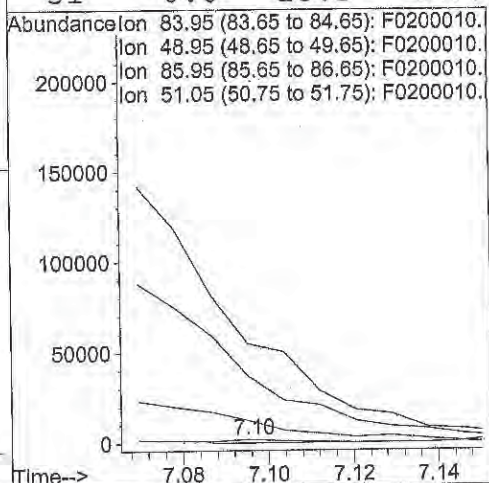
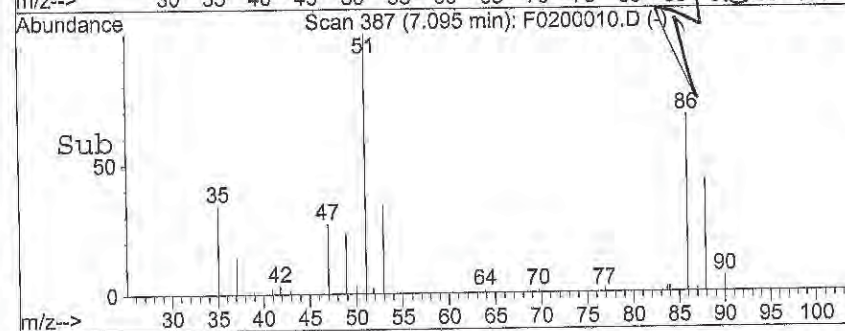




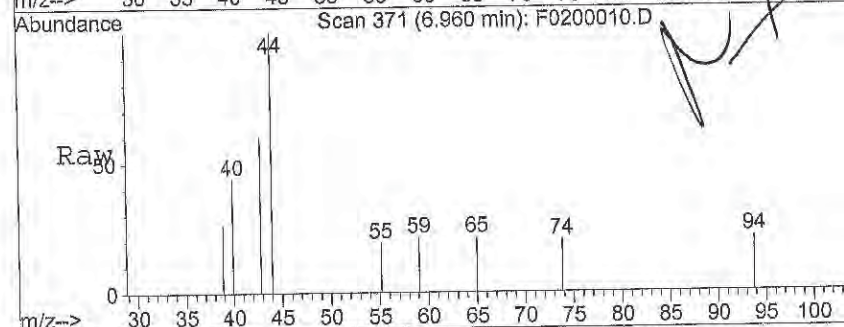
#14
Methylene Chloride
Concen: 0.60 ug/L
RT: 7.10 min Scan# 387
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm



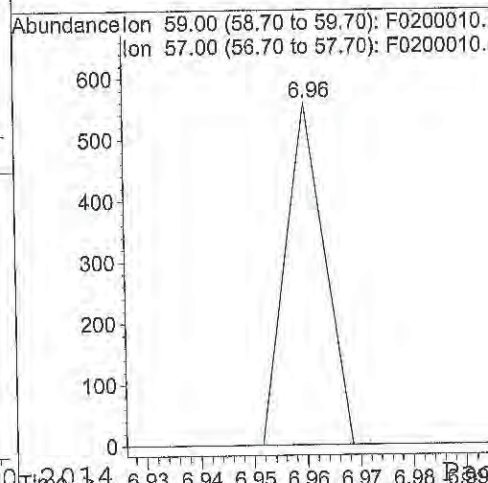
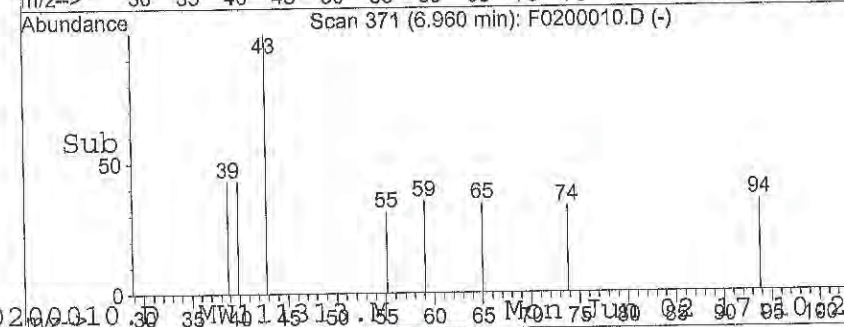
Tgt Ion: 84 Resp: 1828
Ion Ratio Lower Upper
84 100
49 0.0 89.8 134.6#
86 0.0 51.1 76.7#
51 0.0 28.5 42.7#

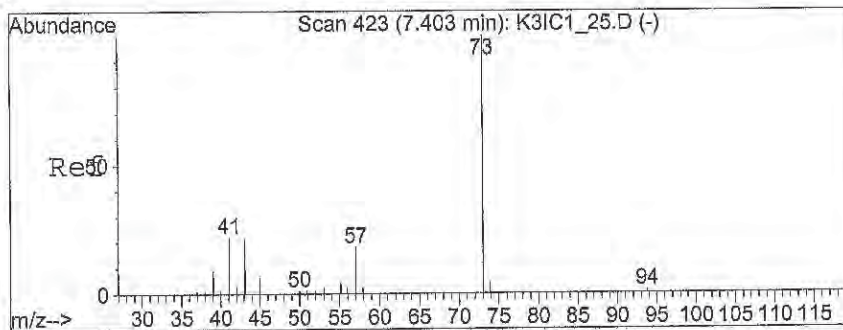


#15
(TBA) tert-Butanol
Concen: 1.50 ug/L
RT: 6.96 min Scan# 371
Delta R.T. -0.16 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm



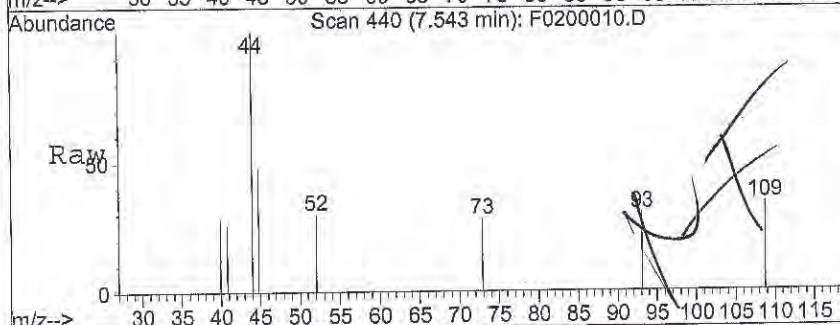
Tgt Ion: 59 Resp: 283
Ion Ratio Lower Upper
59 100
57 0.0 6.4 9.6#





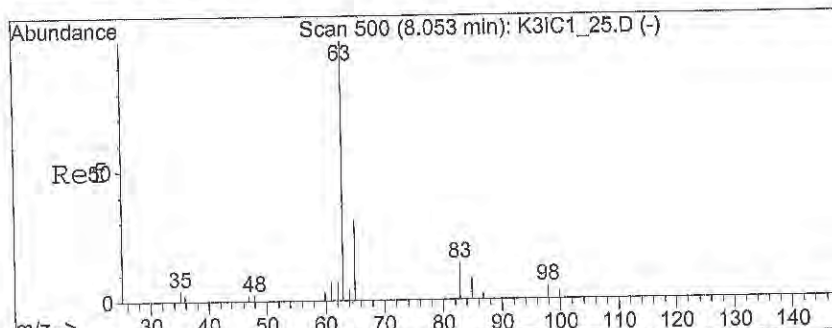
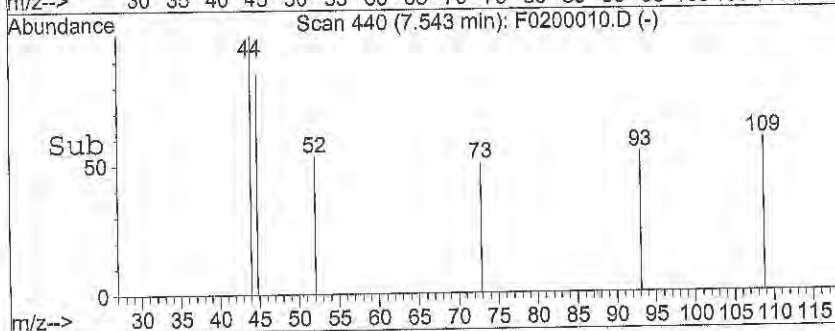
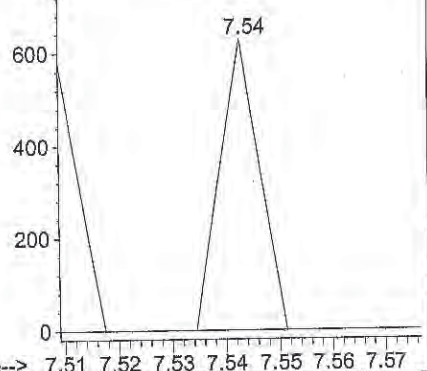
#16
 (MTBE) Methyl-t-butyl ether
 Concen: 0.05 ug/L
 RT: 7.54 min Scan# 440
 Delta R.T. 0.14 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 73 Resp: 319
 Ion Ratio Lower Upper
 73 100
 57 0.0 15.8 23.8#
 43 0.0 18.4 27.6#



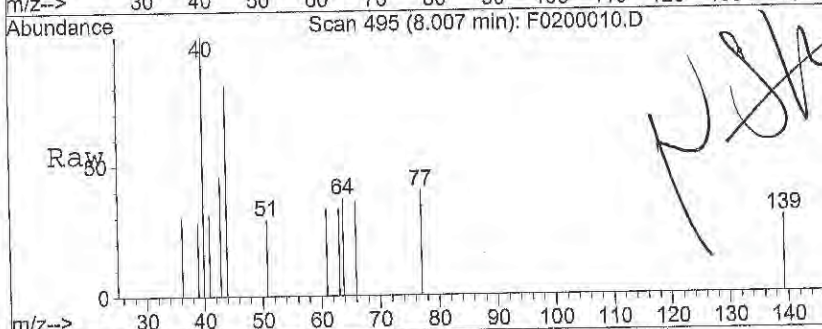
Abundance

Ion 73.05 (72.75 to 73.75): F0200010.D
 Ion 57.10 (56.80 to 57.80): F0200010.D
 Ion 43.00 (42.70 to 43.70): F0200010.D



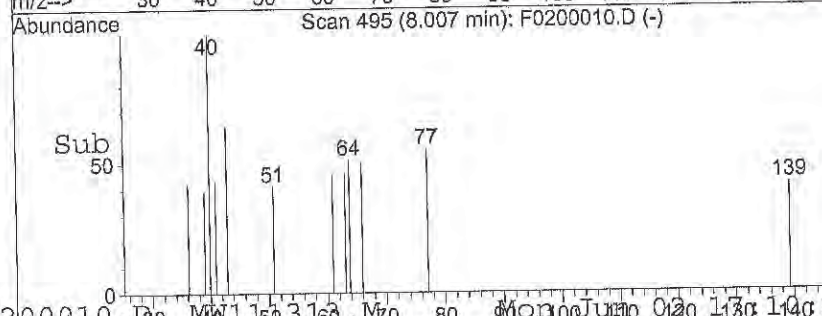
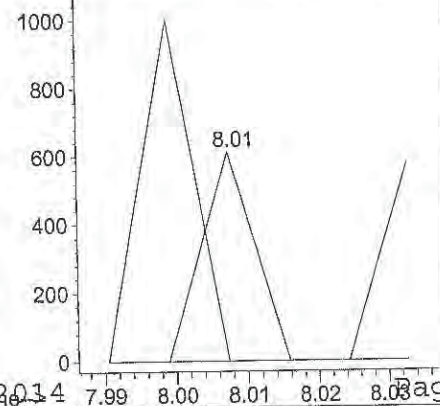
#18
 1,1-Dichloroethane
 Concen: 0.06 ug/L
 RT: 8.01 min Scan# 495
 Delta R.T. -0.05 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

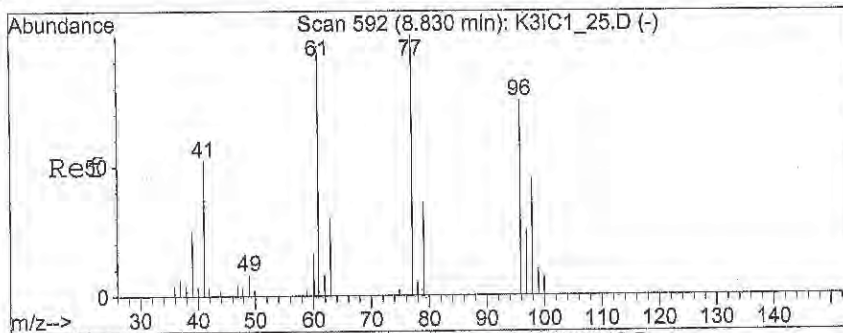
Tgt Ion: 63 Resp: 310
 Ion Ratio Lower Upper
 63 100
 65 163.5 25.8 38.8#



Abundance

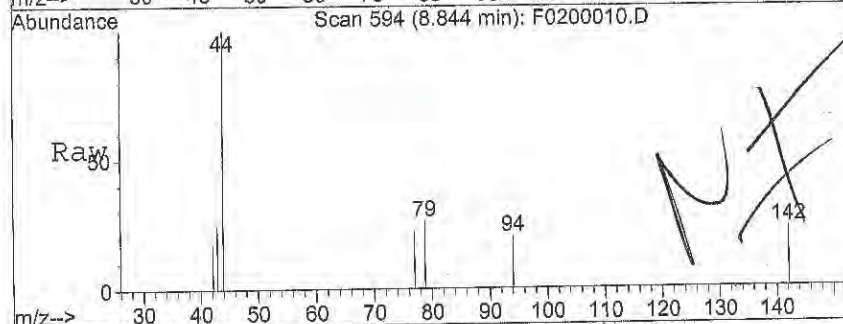
Ion 63.05 (62.75 to 63.75): F0200010.D
 Ion 65.05 (64.75 to 65.75): F0200010.D



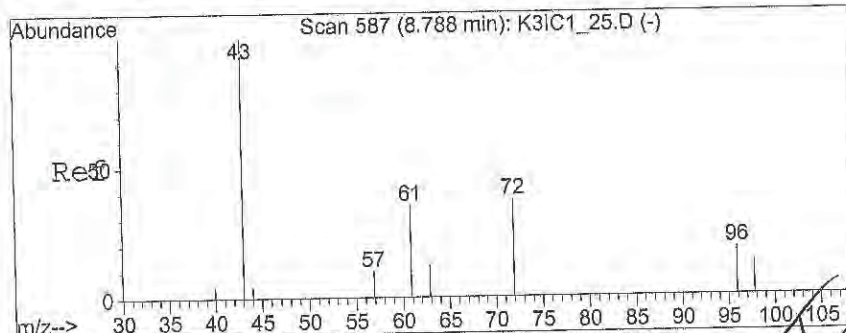
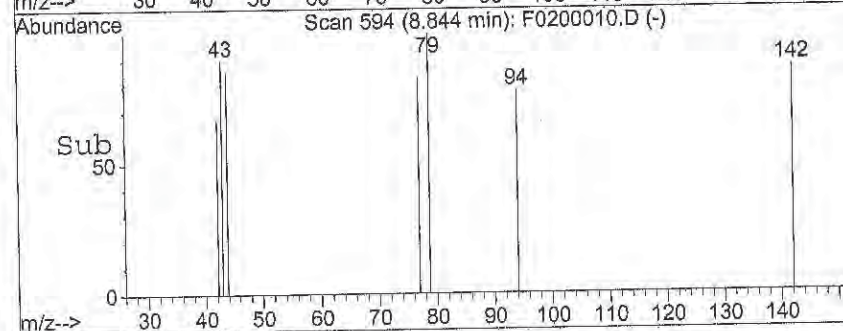
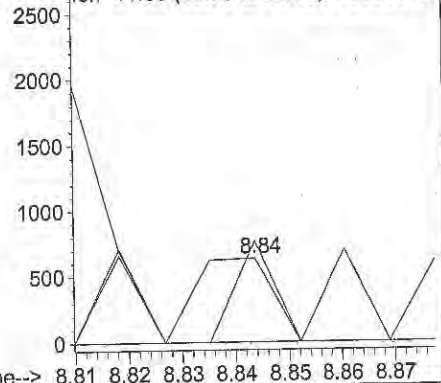


#20
 2,2-Dichloropropane
 Concen: 0.15 ug/L
 RT: 8.84 min Scan# 594
 Delta R.T. 0.01 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 77 Resp: 636
 Ion Ratio Lower Upper
 77 100
 79 60.7 26.6 40.0#
 97 0.0 18.9 28.3#
 41 0.0 42.6 64.0#

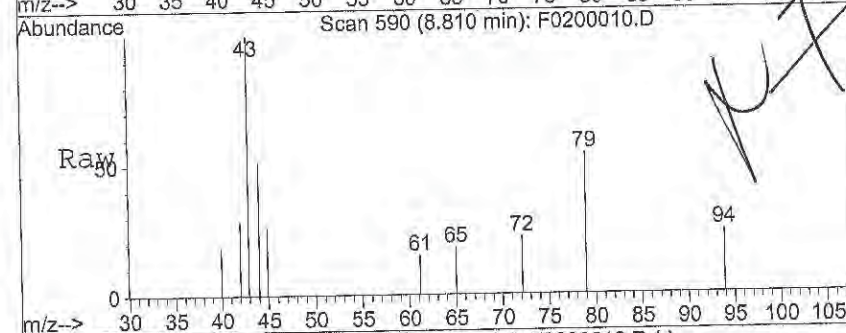


Abundance Ion 77.05 (76.75 to 77.75): F0200010.
 3000 Ion 79.00 (78.70 to 79.70): F0200010.
 2500 Ion 96.95 (96.65 to 97.65): F0200010.
 2000 Ion 41.05 (40.75 to 41.75): F0200010.

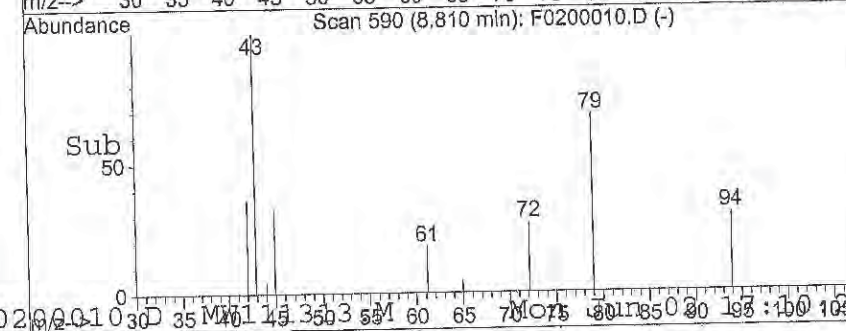
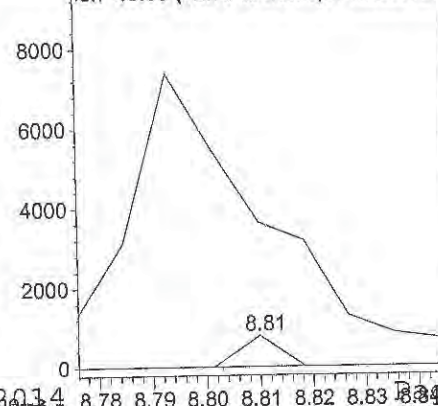


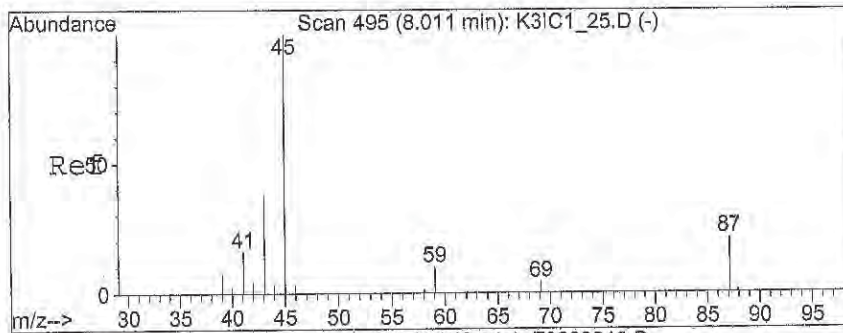
#21
 (MEK) 2-Butanone
 Concen: 1.28 ug/L
 RT: 8.81 min Scan# 590
 Delta R.T. 0.02 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 72 Resp: 398
 Ion Ratio Lower Upper
 72 100
 57 0.0 17.5 26.3#
 43 3428.4 314.2 471.2#



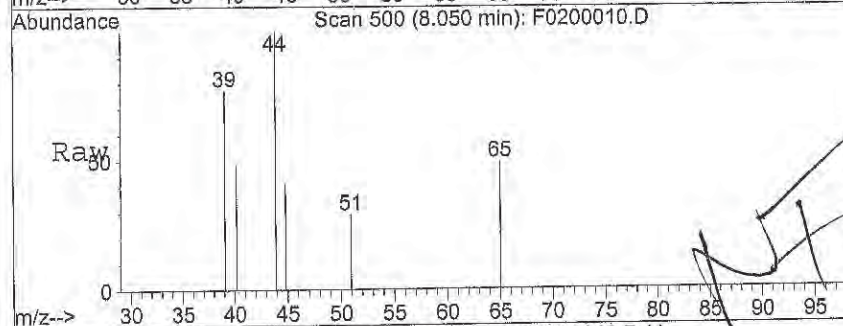
Abundance Ion 72.00 (71.70 to 72.70): F0200010.
 10000 Ion 57.10 (56.80 to 57.80): F0200010.
 8000 Ion 43.00 (42.70 to 43.70): F0200010.





#22
 (DIPE) Diisopropyl Ether
 Concen: 0.05 ug/L
 RT: 8.05 min Scan# 500
 Delta R.T. 0.04 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

Tgt Ion:	45	Resp:	407
Ion	Ratio	Lower	Upper
45	100		
87	0.0	17.0	25.6#
43	0.0	30.5	45.7#
59	0.0	7.4	11.2#



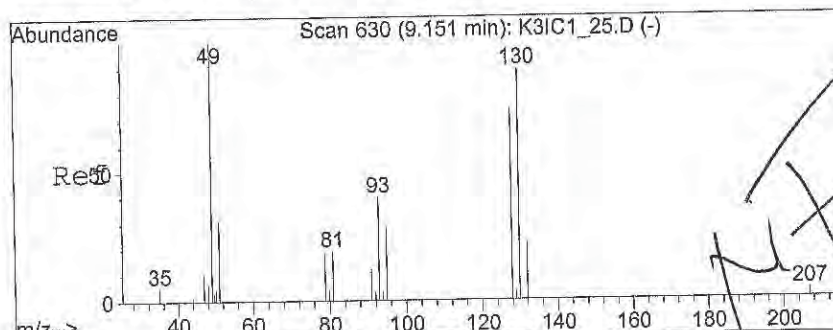
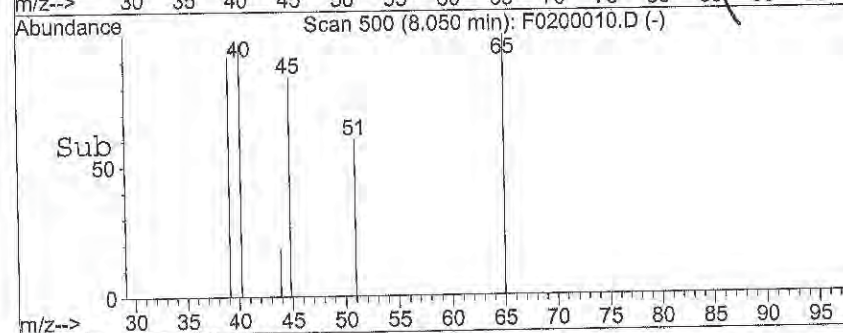
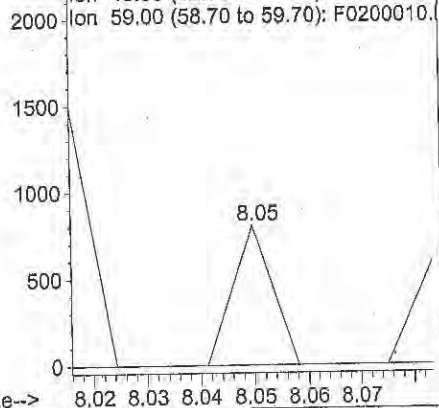
Abundance

Ion 45.00 (44.70 to 45.70): F0200010.D

Ion 87.10 (86.80 to 87.80): F0200010.D

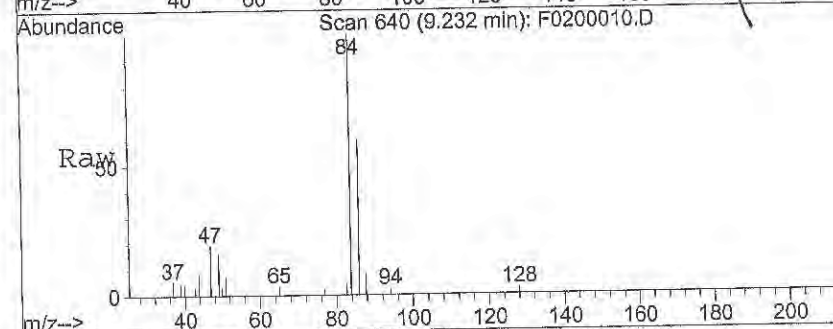
Ion 43.05 (42.75 to 43.75): F0200010.D

Ion 59.00 (58.70 to 59.70): F0200010.D



#23
 Bromochloromethane
 Concen: 0.19 ug/L
 RT: 9.23 min Scan# 640
 Delta R.T. 0.08 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

Tgt Ion:	128	Resp:	275
Ion	Ratio	Lower	Upper
128	100		
49	0.0	117.4	176.0#
130	0.0	111.0	166.6#
51	0.0	48.0	72.0#



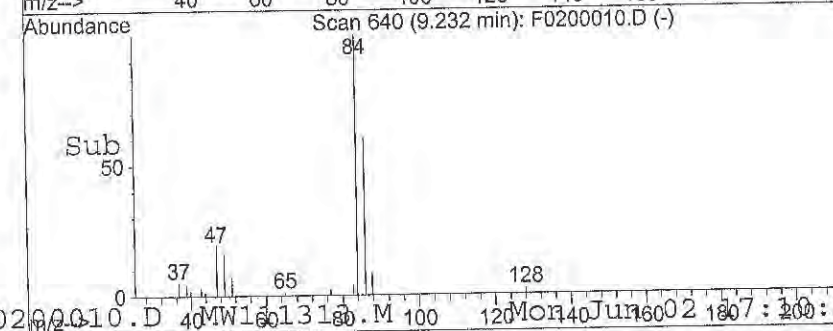
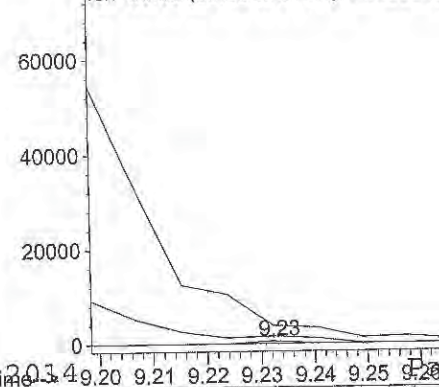
Abundance

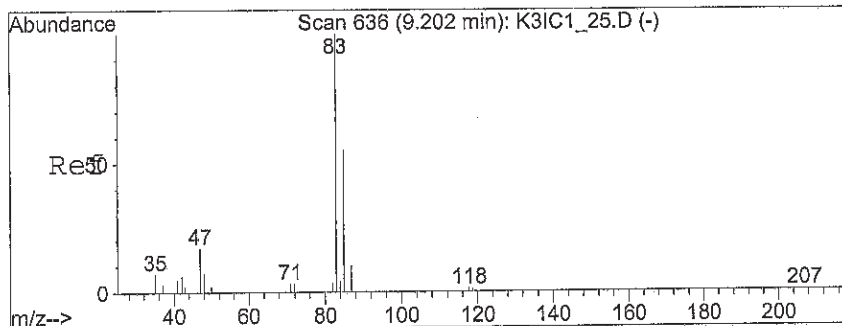
Ion 128.00 (127.70 to 128.70): F0200010.D

Ion 48.95 (48.65 to 49.65): F0200010.D

Ion 130.00 (129.70 to 130.70): F0200010.D

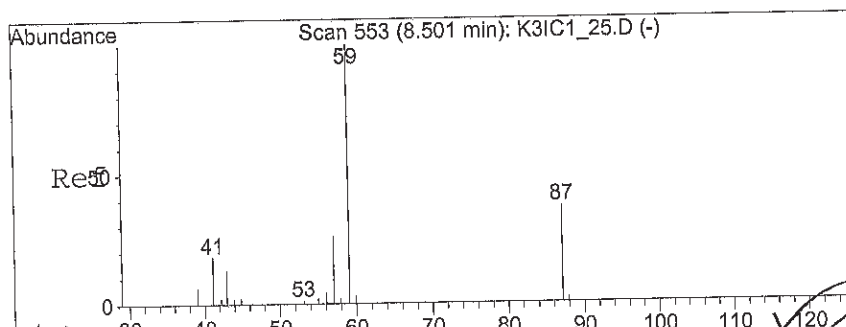
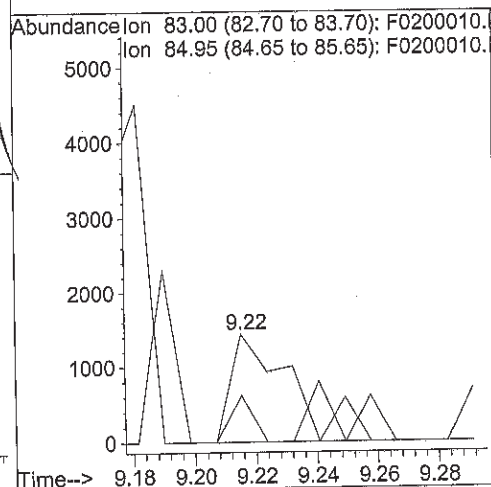
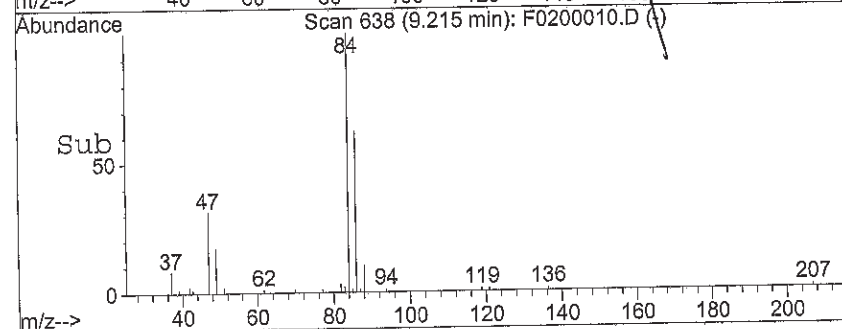
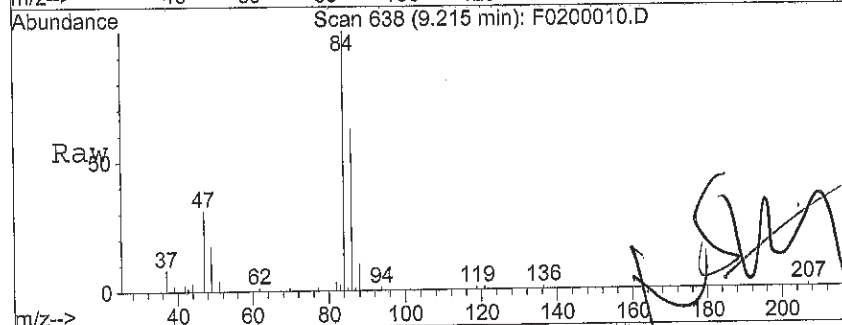
Ion 50.95 (50.65 to 51.65): F0200010.D





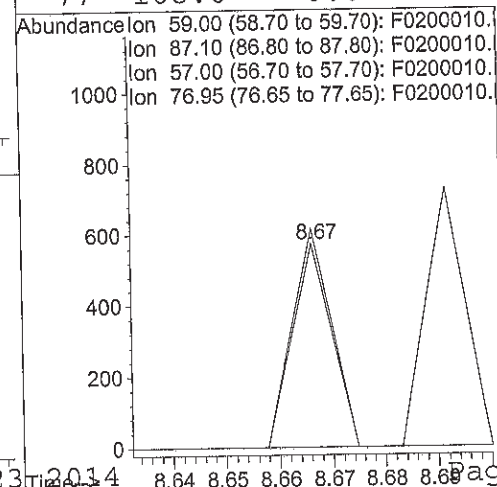
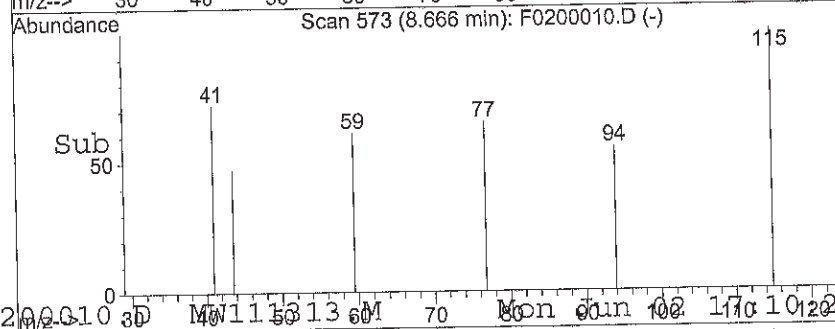
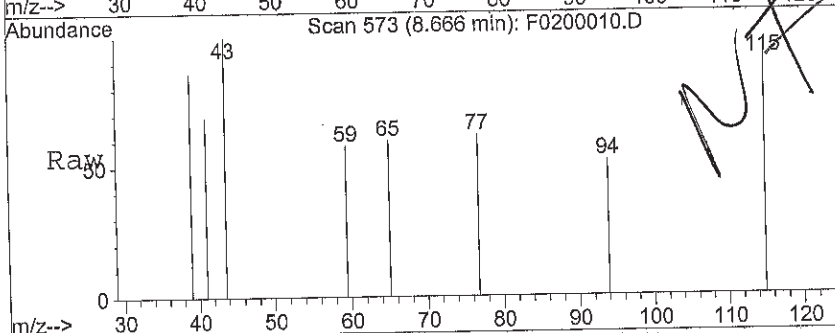
#24
 Chloroform
 Concen: 0.34 ug/L
 RT: 9.22 min Scan# 638
 Delta R.T. 0.01 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

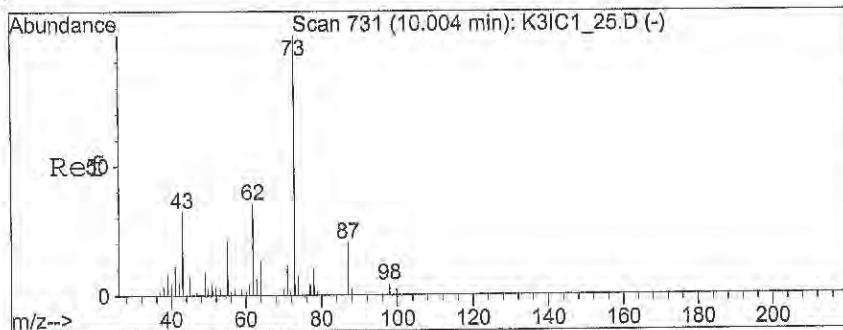
Tgt Ion: 83 Resp: 1997
 Ion Ratio Lower Upper
 83 100
 85 15.5 51.8 77.6#



#25
 (ETBE) 2-ethoxy 2-methyl propan
 Concen: 0.04 ug/L
 RT: 8.67 min Scan# 573
 Delta R.T. 0.17 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 59 Resp: 289
 Ion Ratio Lower Upper
 59 100
 87 0.0 27.8 41.8#
 57 0.0 19.8 29.6#
 77 108.0 0.0 0.0#





#27

(TAME) tert-Amyl methyl ether

Concen: 0.16 ug/L

RT: 9.90 min Scan# 719

Delta R.T. -0.10 min

Lab File: F0200010.D

Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 73 Resp: 1089

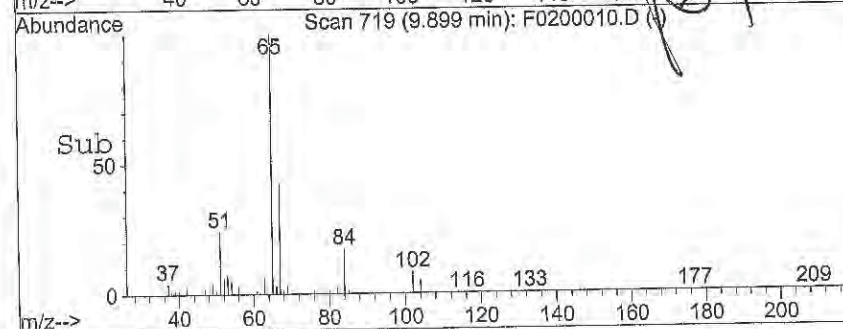
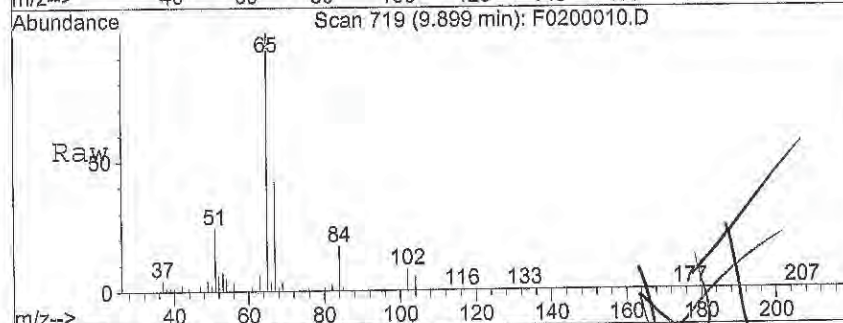
Ion Ratio Lower Upper

73 100

87 0.0 19.4 29.0#

43 0.0 27.0 40.6#

55 0.0 17.5 26.3#



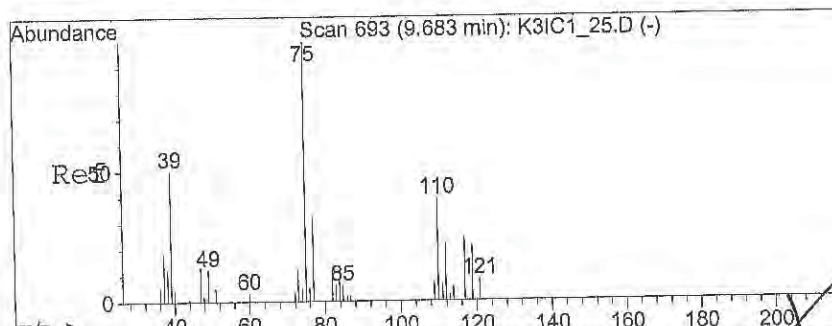
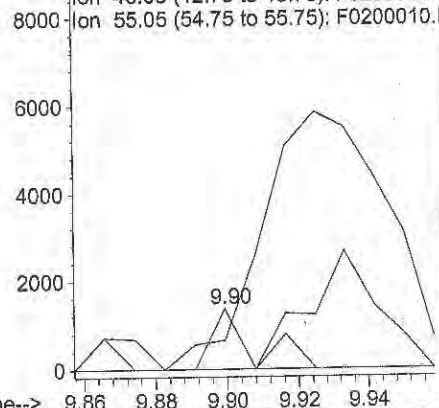
Abundance

Ion 73.10 (72.80 to 73.80): F0200010.D

Ion 87.10 (86.80 to 87.80): F0200010.D

Ion 43.05 (42.75 to 43.75): F0200010.D

Ion 55.05 (54.75 to 55.75): F0200010.D



#29

1,1-Dichloropropene

Concen: 0.10 ug/L

RT: 9.86 min Scan# 714

Delta R.T. 0.17 min

Lab File: F0200010.D

Acq: 2 Jun 2014 4:18 pm

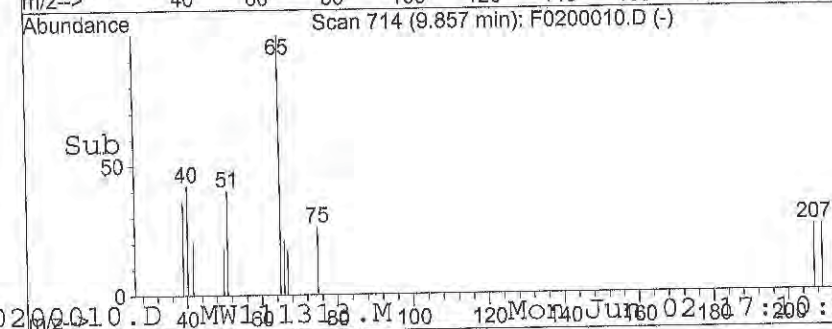
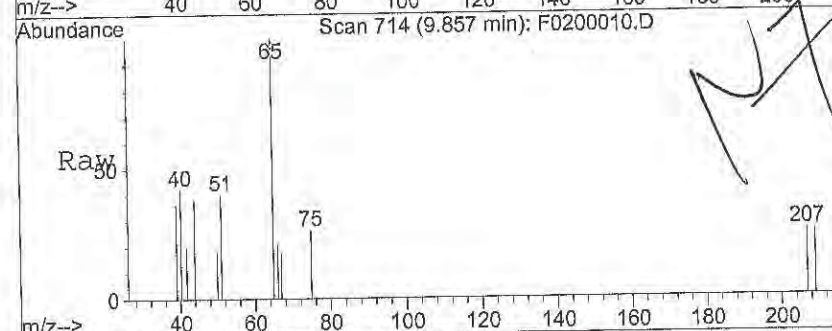
Tgt Ion: 75 Resp: 412

Ion Ratio Lower Upper

75 100

110 0.0 29.0 43.6#

77 0.0 25.0 37.4#

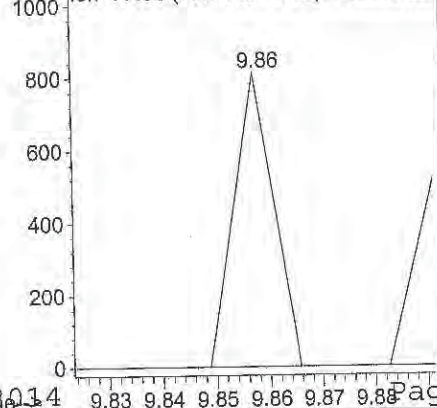


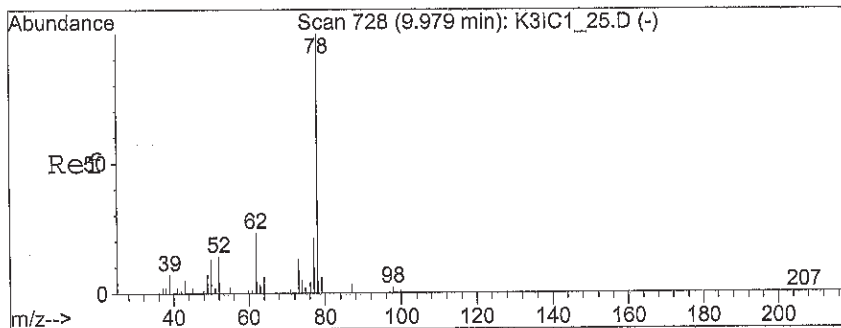
Abundance

Ion 75.05 (74.75 to 75.75): F0200010.D

Ion 110.05 (109.75 to 110.75): F0200010.D

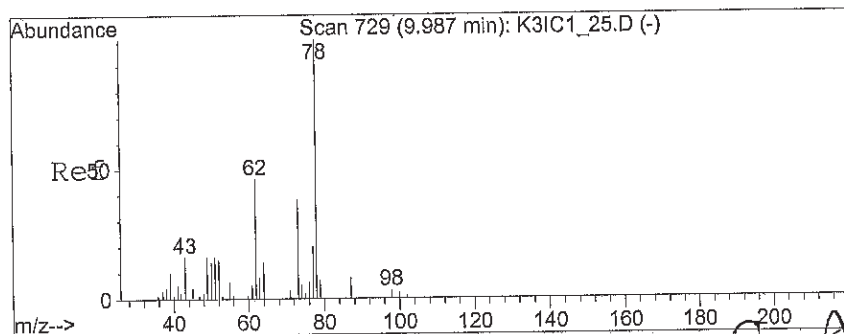
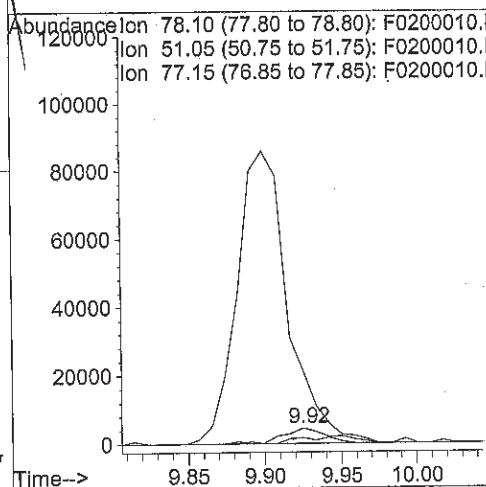
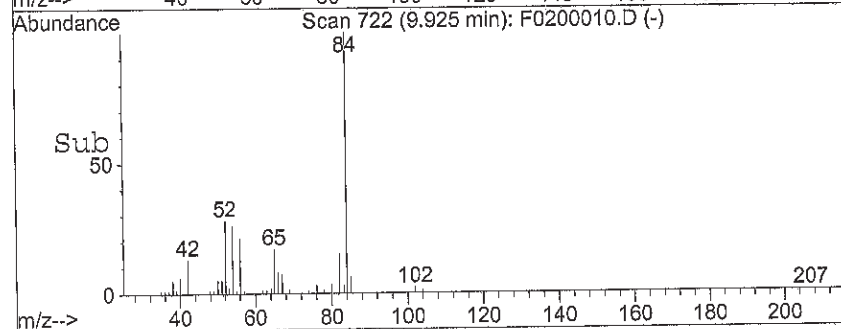
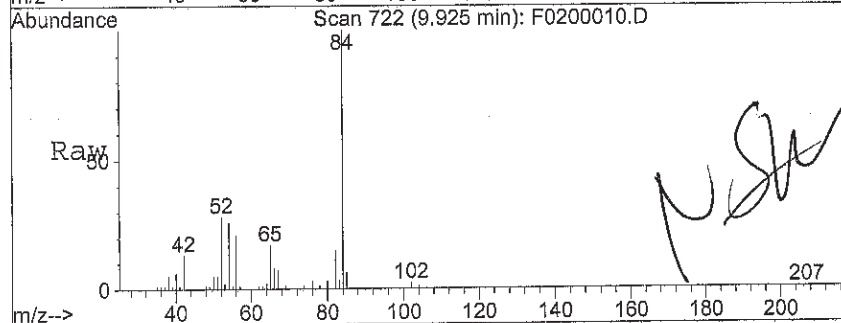
Ion 77.05 (76.75 to 77.75): F0200010.D





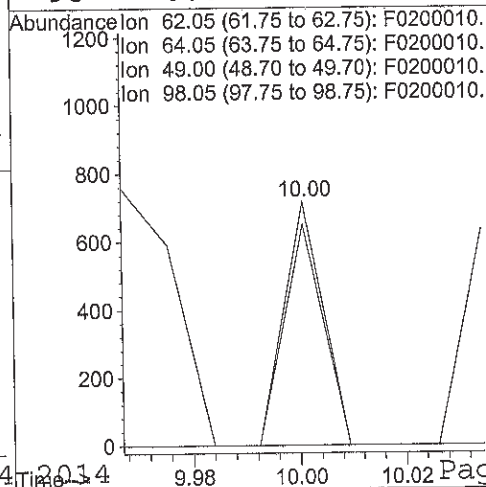
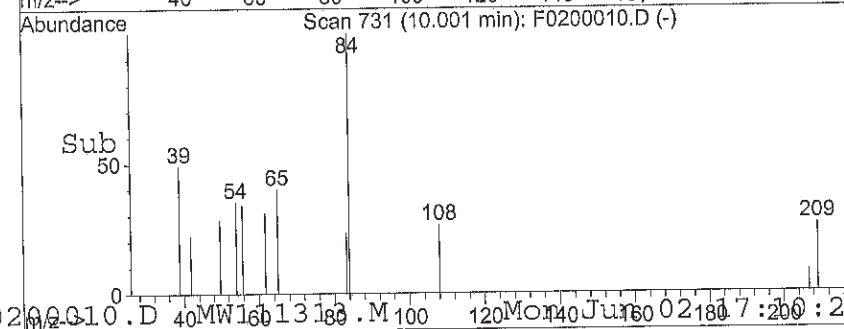
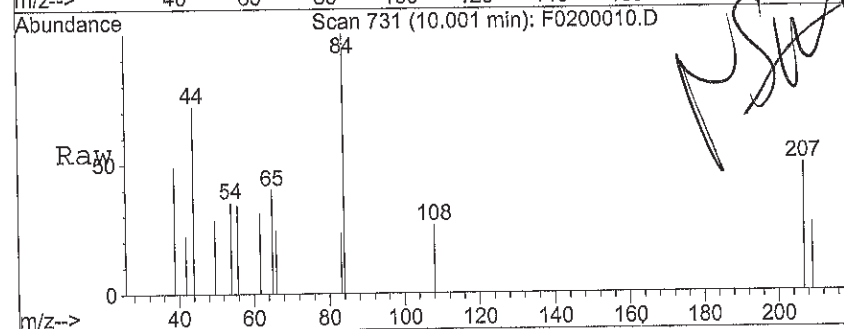
#31
Benzene
Concen: 0.94 ug/L
RT: 9.92 min Scan# 722
Delta R.T. -0.05 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

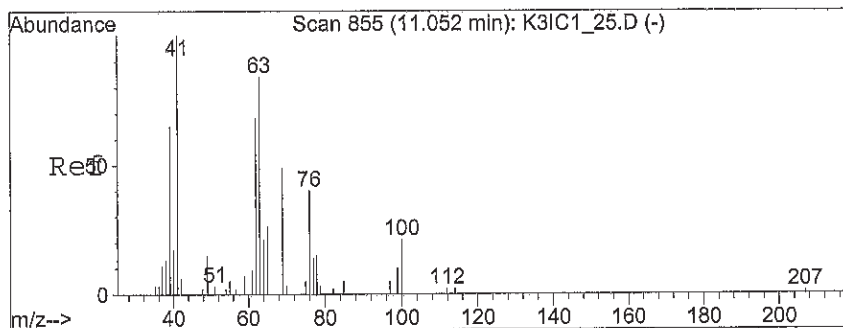
Tgt Ion: 78 Resp: 9790
Ion Ratio Lower Upper
78 100
51 0.0 14.2 21.2#
77 34.8 16.6 24.8#



#32
1,2-Dichloroethane
Concen: 0.10 ug/L
RT: 10.00 min Scan# 731
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

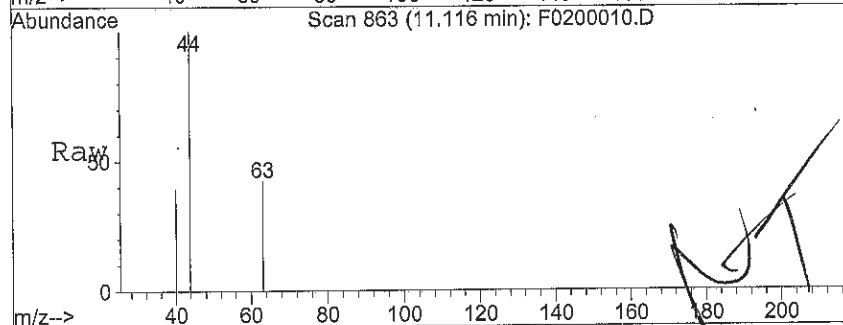
Tgt Ion: 62 Resp: 363
Ion Ratio Lower Upper
62 100
64 0.0 28.0 42.0#
49 0.0 28.5 42.7#
98 0.0 6.2 9.4#





#34
1,2-Dichloropropane
Concen: 0.11 ug/L
RT: 11.12 min Scan# 863
Delta R.T. 0.06 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion:	63	Resp:	272
Ion Ratio	Lower	Upper	
63	100		
62	0.0	67.4	101.2#
76	0.0	40.3	60.5#
41	112.9	103.0	154.6



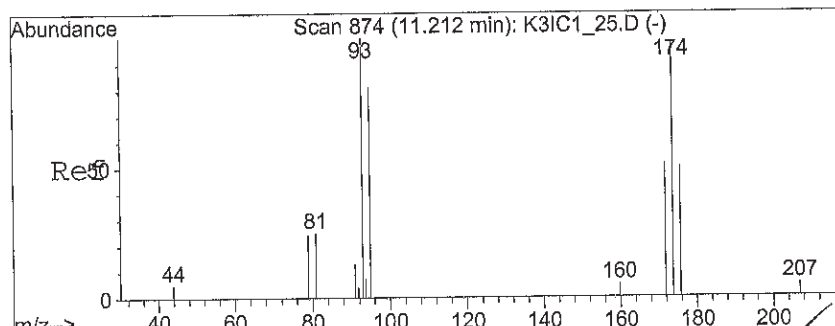
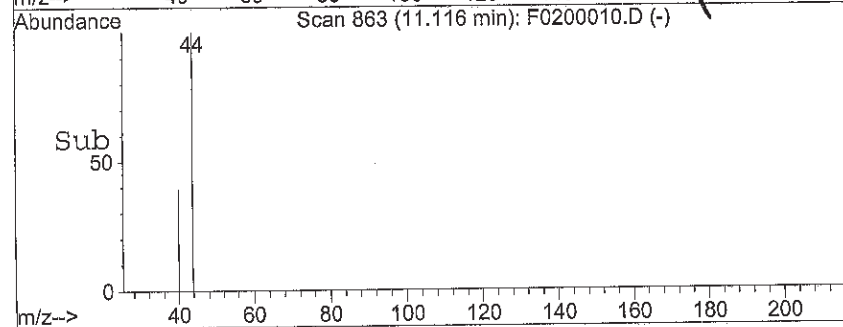
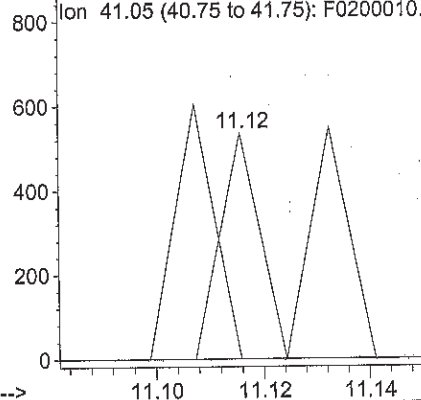
Abundance

Ion 63.05 (62.75 to 63.75): F0200010.D

Ion 62.05 (61.75 to 62.75): F0200010.D

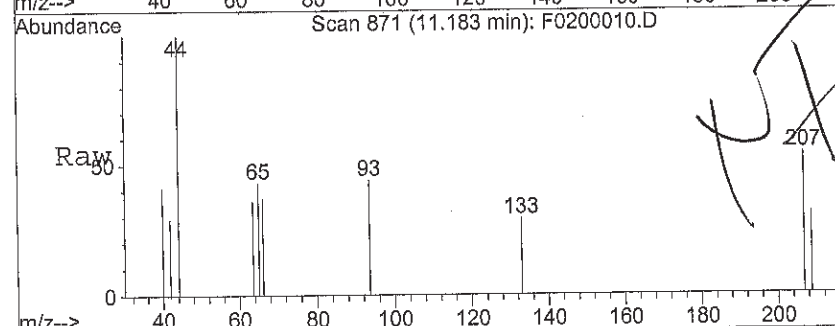
Ion 76.05 (75.75 to 76.75): F0200010.D

Ion 41.05 (40.75 to 41.75): F0200010.D



#35
Dibromomethane
Concen: 0.21 ug/L
RT: 11.18 min Scan# 871
Delta R.T. -0.03 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion:	93	Resp:	409
Ion Ratio	Lower	Upper	
93	100		
95	0.0	66.2	99.2#
174	0.0	75.5	113.3#

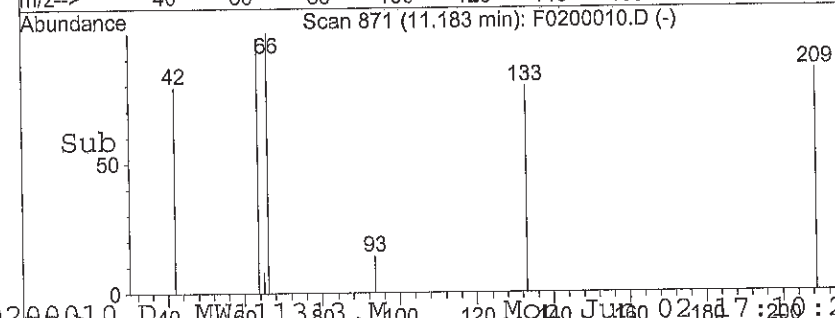
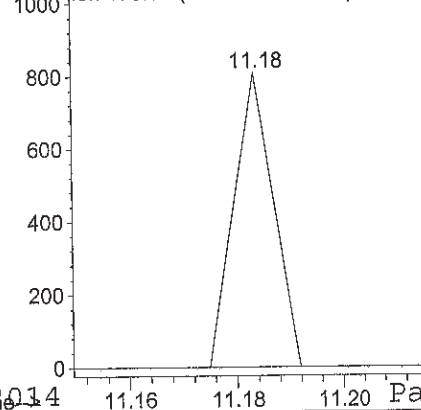


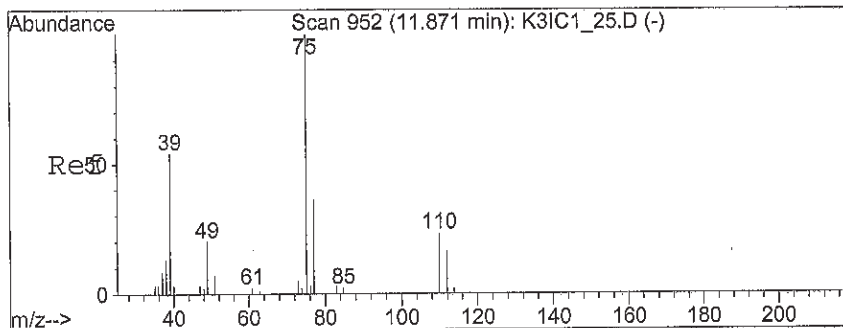
Abundance

Ion 93.00 (92.70 to 93.70): F0200010.D

Ion 95.00 (94.70 to 95.70): F0200010.D

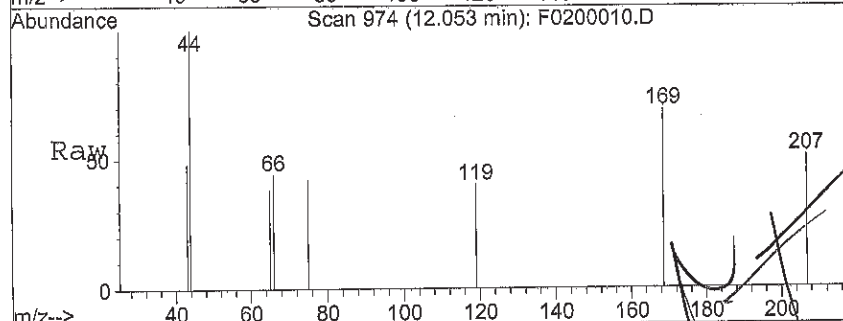
Ion 173.90 (173.60 to 174.60): F0200010.D





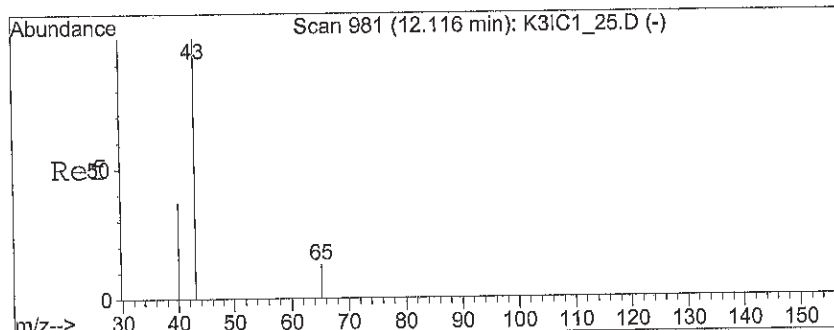
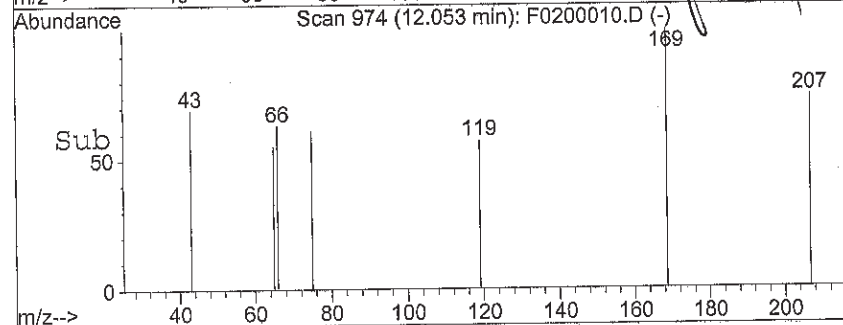
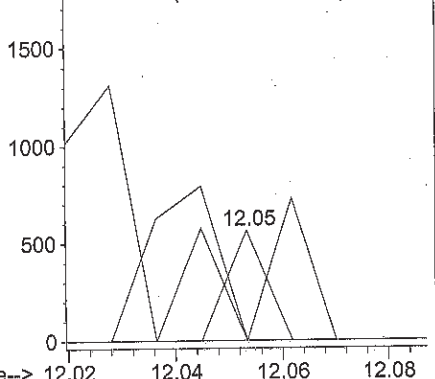
#37
 cis-1,3-Dichloropropene
 Concen: 0.07 ug/L
 RT: 12.05 min Scan# 974
 Delta R.T. 0.18 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 75 Resp: 285
 Ion Ratio Lower Upper
 75 100
 39 129.1 40.7 61.1#
 77 251.9 28.8 43.2#
 110 0.0 18.1 27.1#



Abundance

Ion 75.05 (74.75 to 75.75): F0200010.D
 Ion 39.05 (38.75 to 39.75): F0200010.D
 Ion 77.05 (76.75 to 77.75): F0200010.D
 Ion 110.05 (109.75 to 110.75): F0200010.D

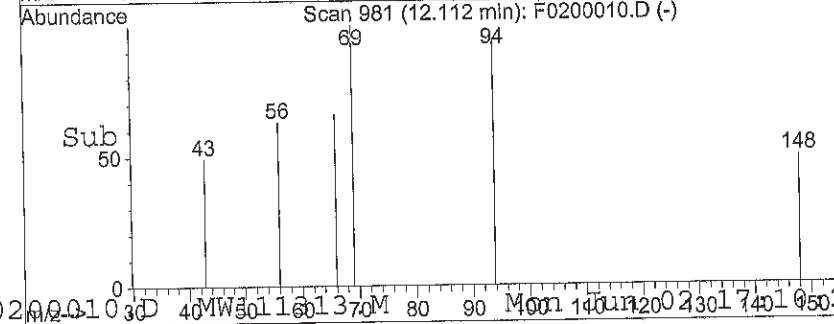
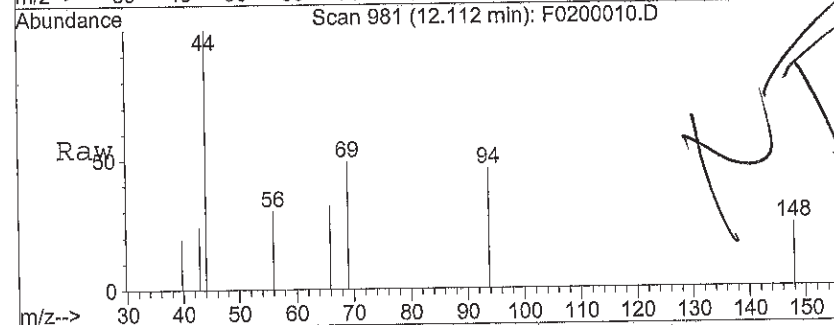
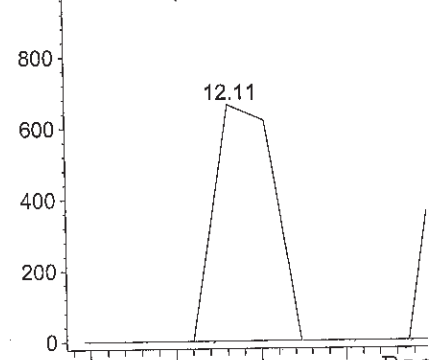


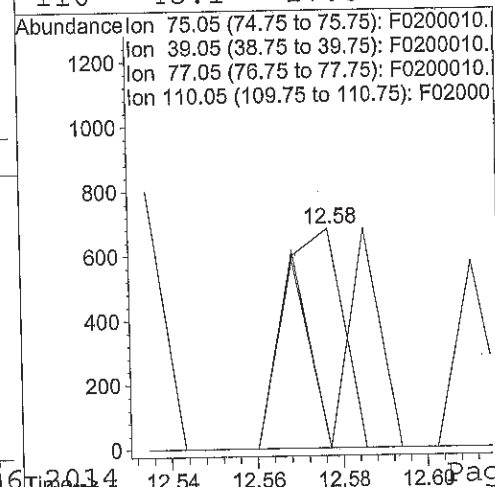
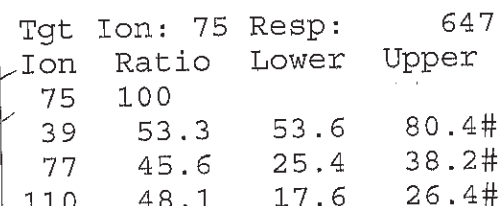
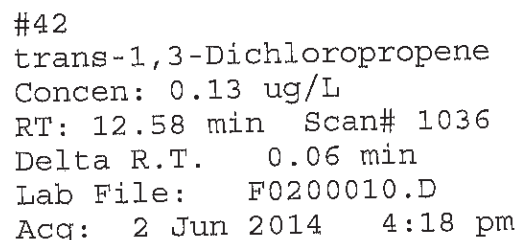
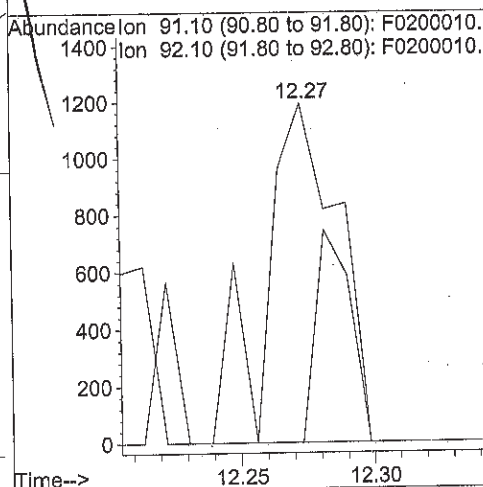
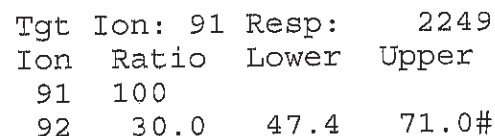
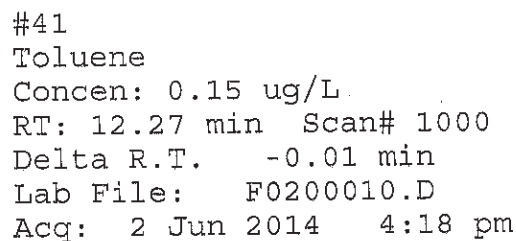
#40
 (MIBK) 4-Methyl-2-Pentanone
 Concen: 0.30 ug/L
 RT: 12.11 min Scan# 981
 Delta R.T. -0.00 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

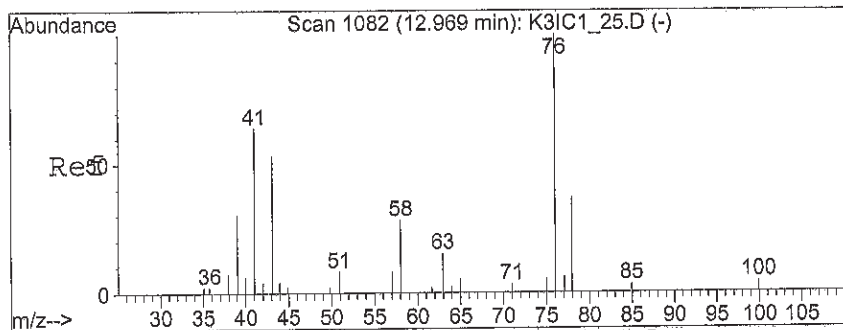
Tgt Ion: 43 Resp: 650
 Ion Ratio Lower Upper
 43 100
 58 0.0 0.0 0.0
 85 0.0 0.0 0.0
 100 0.0 0.0 0.0

Abundance

Ion 43.00 (42.70 to 43.70): F0200010.D
 Ion 58.10 (57.80 to 58.80): F0200010.D
 Ion 85.05 (84.75 to 85.75): F0200010.D
 Ion 100.15 (99.85 to 100.85): F0200010.D

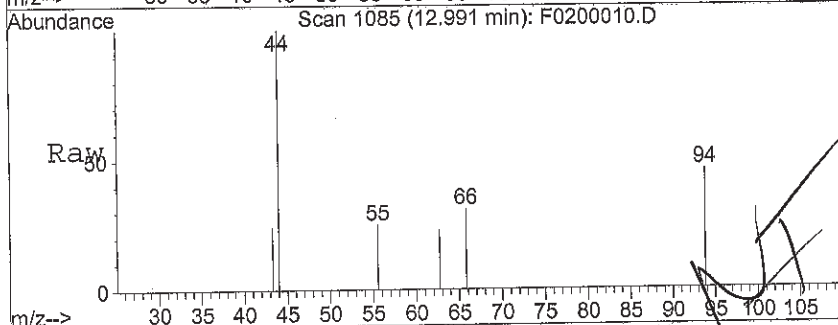




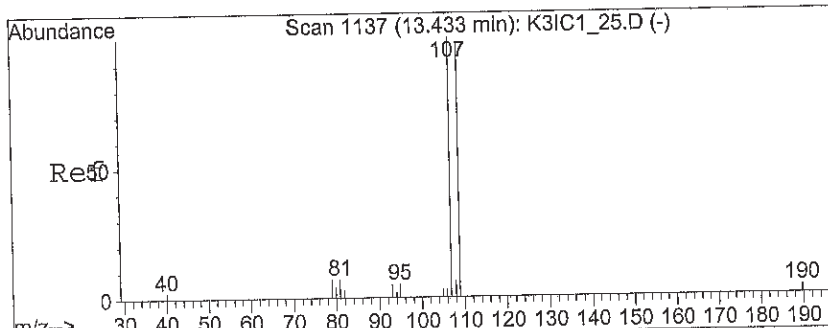
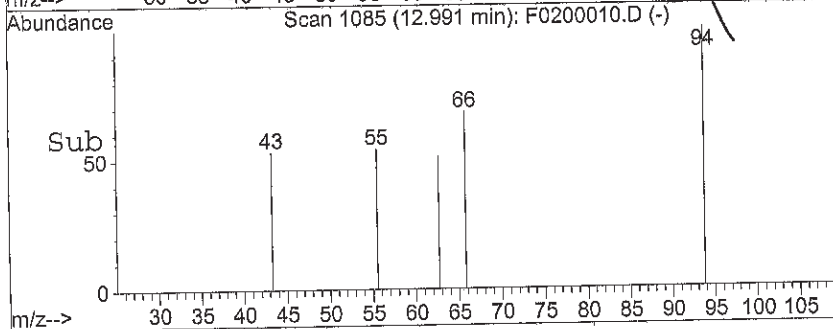
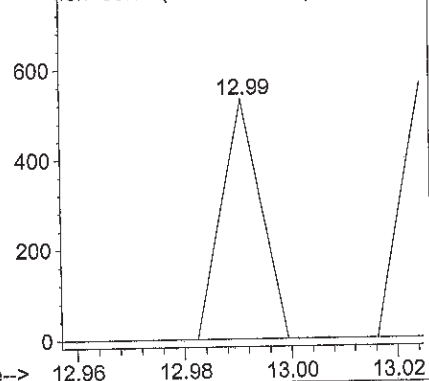


#46
2-Hexanone
Concen: 0.11 ug/L
RT: 12.99 min Scan# 1085
Delta R.T. 0.02 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion:	43	Resp:	270
Ion	Ratio	Lower	Upper
43	100		
58	0.0	40.9	61.3#
100	0.0	5.5	8.3#
85	0.0	4.3	6.5#

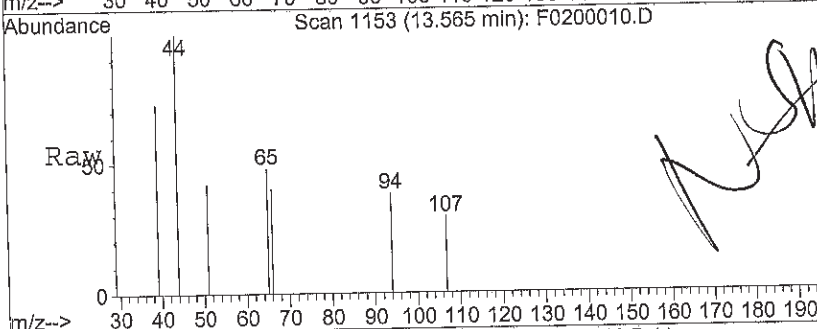


Abundance Ion 43.00 (42.70 to 43.70): F0200010.
Ion 58.10 (57.80 to 58.80): F0200010.
Ion 100.15 (99.85 to 100.85): F0200010.
Ion 85.05 (84.75 to 85.75): F0200010.

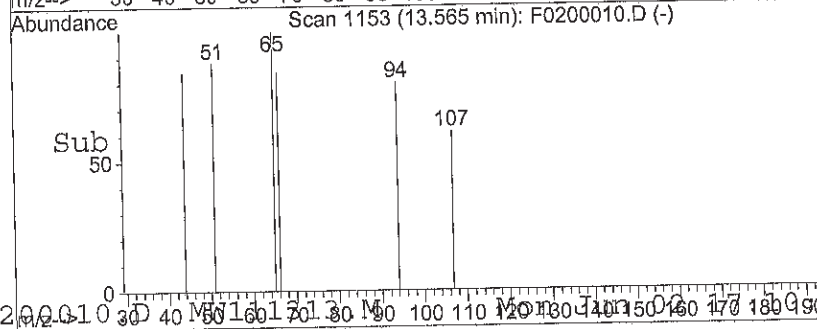
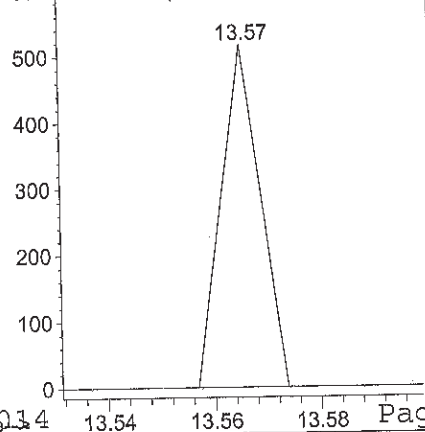


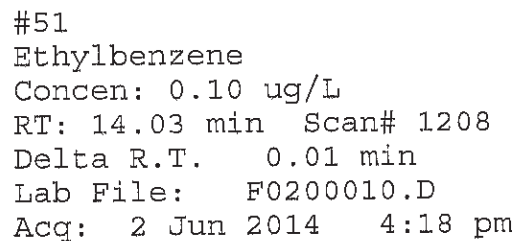
#48
1,2-Dibromoethane
Concen: 0.08 ug/L
RT: 13.57 min Scan# 1153
Delta R.T. 0.13 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion:	107	Resp:	261
Ion	Ratio	Lower	Upper
107	100		
109	0.0	74.4	111.6#

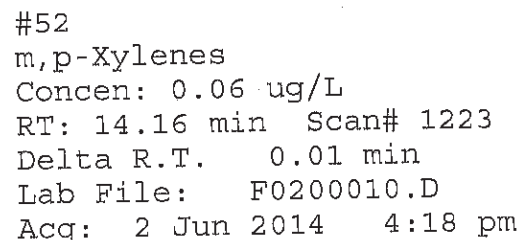
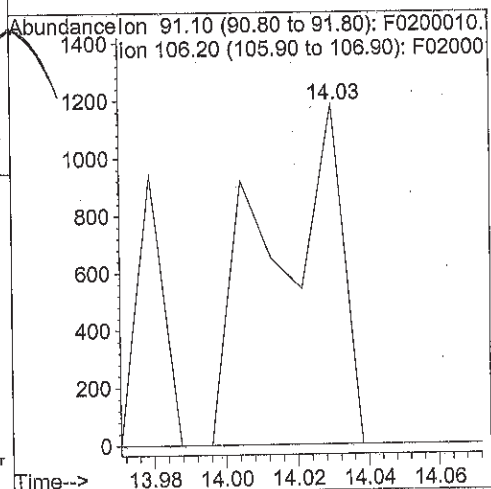


Abundance Ion 107.00 (106.70 to 107.70): F02000
Ion 108.95 (108.65 to 109.65): F02000

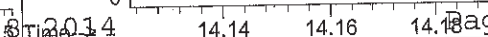
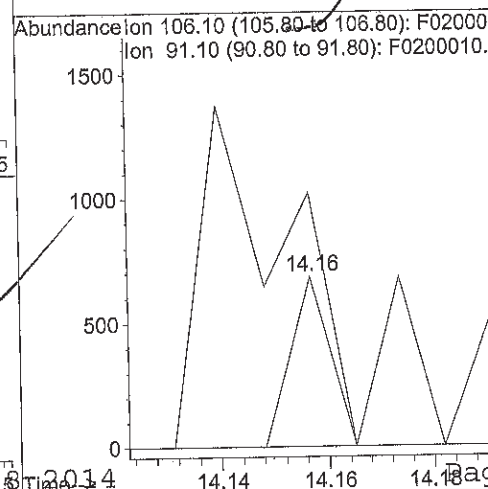


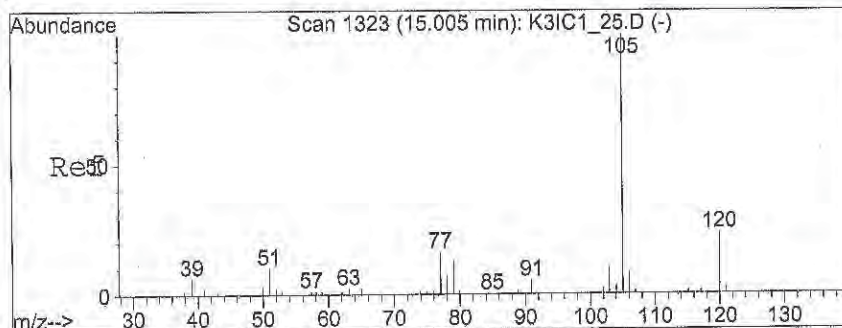


Tgt	Ion: 91	Resp:	1668
Ion	Ratio	Lower	Upper
91	100		
106	0.0	23.5	35.3#



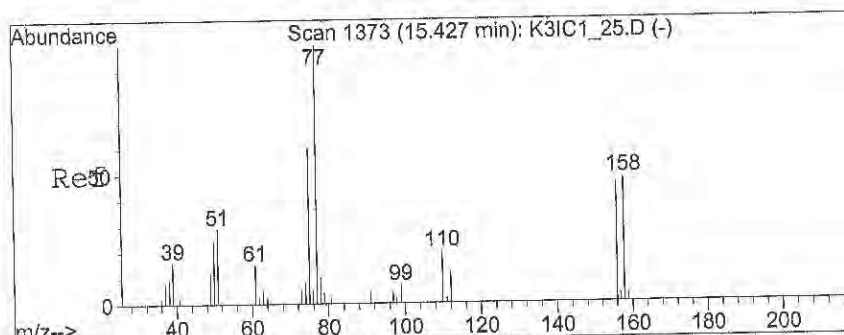
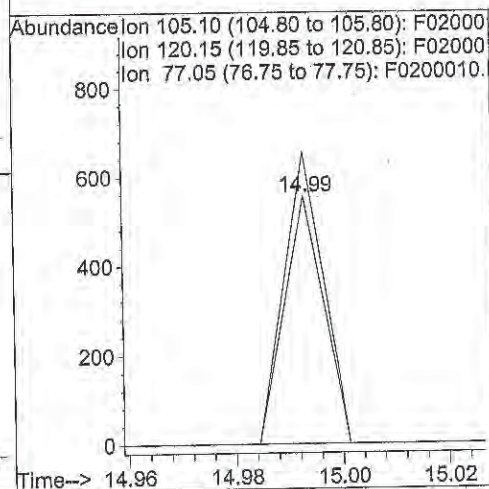
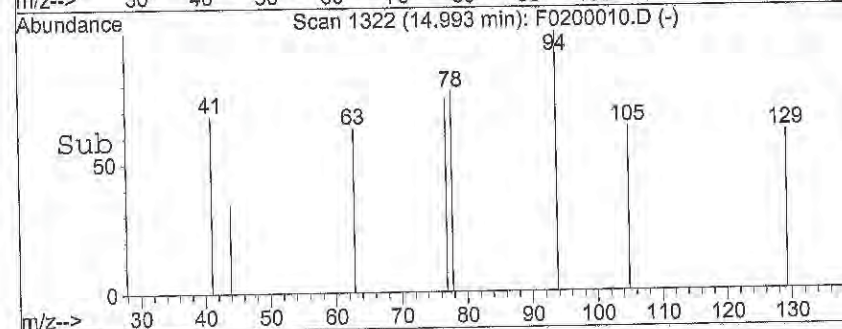
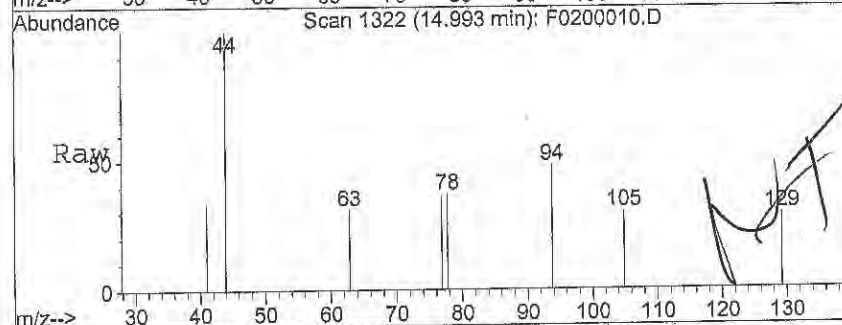
Tgt	Ion:106	Resp:	348
Ion	Ratio	Lower	Upper
106	100		
91	614.9	177.1	/265.7#





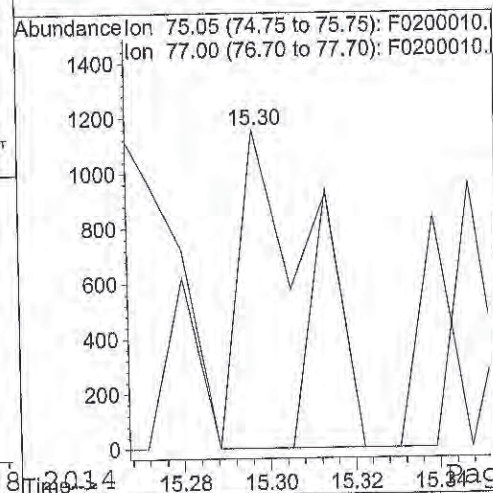
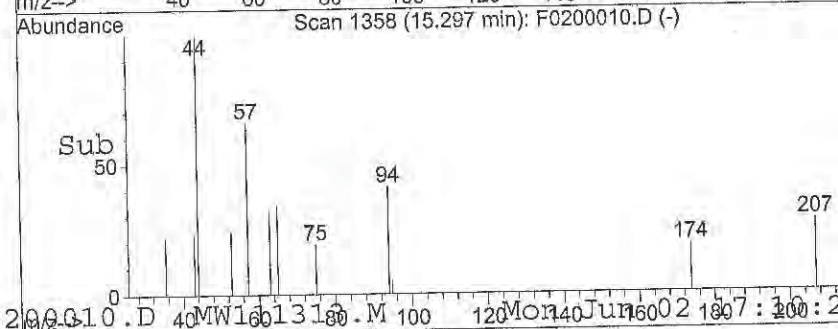
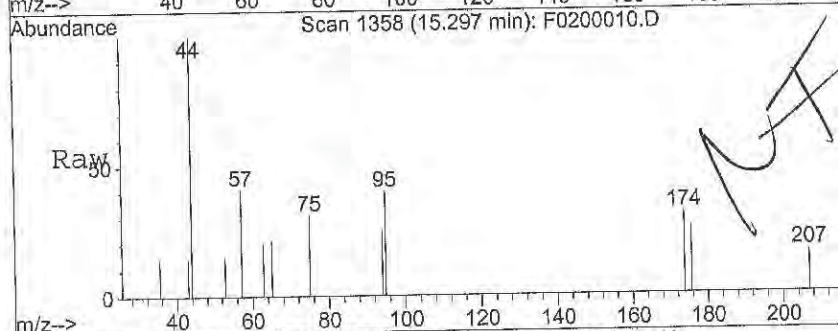
#56
Isopropylbenzene
Concen: 0.02 ug/L
RT: 14.99 min Scan# 1322
Delta R.T. -0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

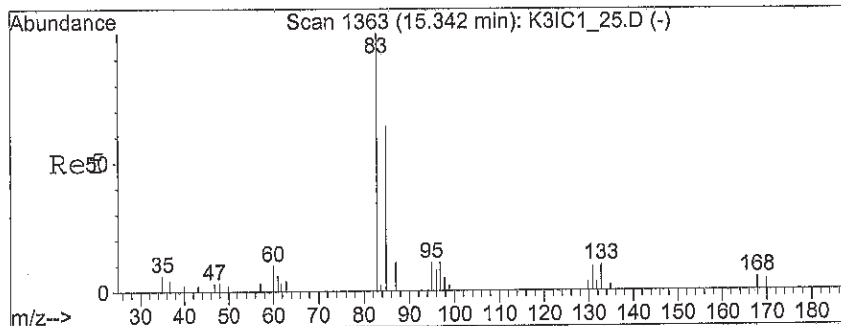
Tgt Ion: 105 Resp: 281
Ion Ratio Lower Upper
105 100
120 0.0 19.3 28.9#
77 118.1 13.1 19.7#



#57
1,2,3-Trichloropropane
Concen: 0.30 ug/L
RT: 15.30 min Scan# 1358
Delta R.T. -0.13 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 75 Resp: 1346
Ion Ratio Lower Upper
75 100
77 35.4 31.2 46.8





#60

1,1,2,2-Tetrachloroethane

Concen: 0.10 ug/L

RT: 15.21 min Scan# 1348

Delta R.T. -0.13 min

Lab File: F0200010.D

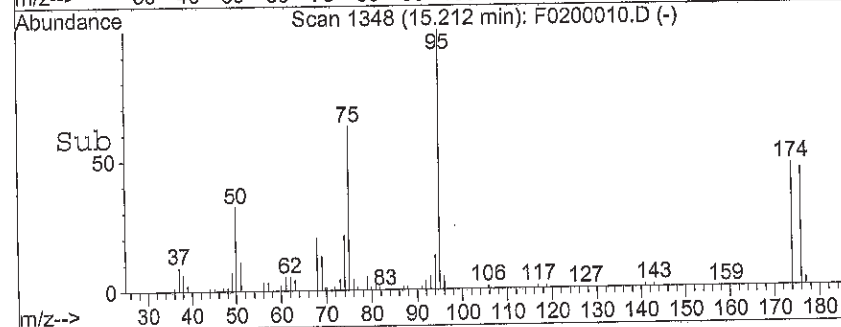
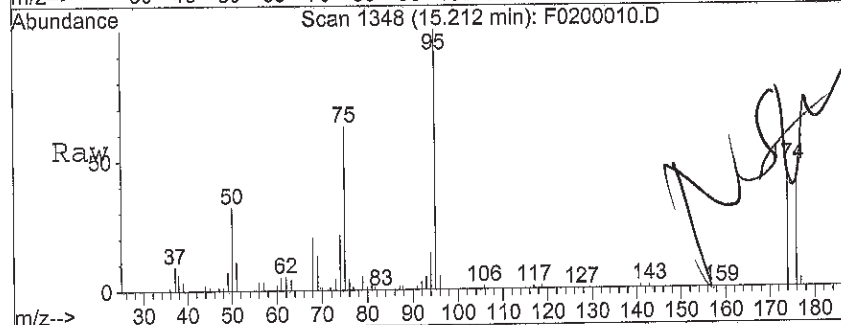
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 83 Resp: 419

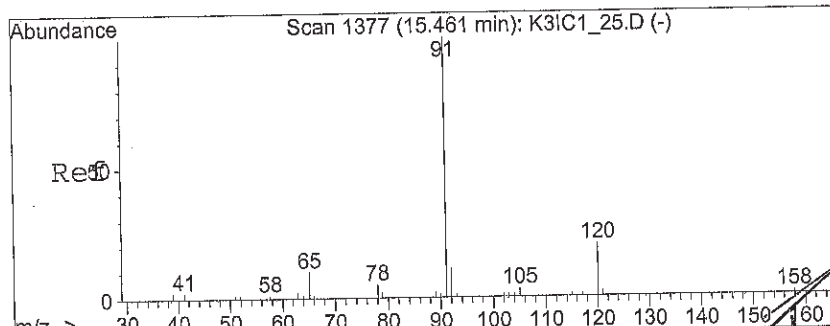
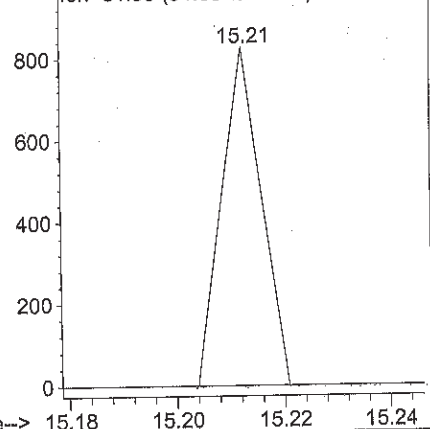
Ion Ratio Lower Upper

83 100

85 0.0 51.2 76.8#



Abundance Ion 83.00 (82.70 to 83.70): F0200010.D
Ion 84.95 (84.65 to 85.65): F0200010.D



#62

n-Propylbenzene

Concen: 0.02 ug/L

RT: 15.45 min Scan# 1376

Delta R.T. -0.01 min

Lab File: F0200010.D

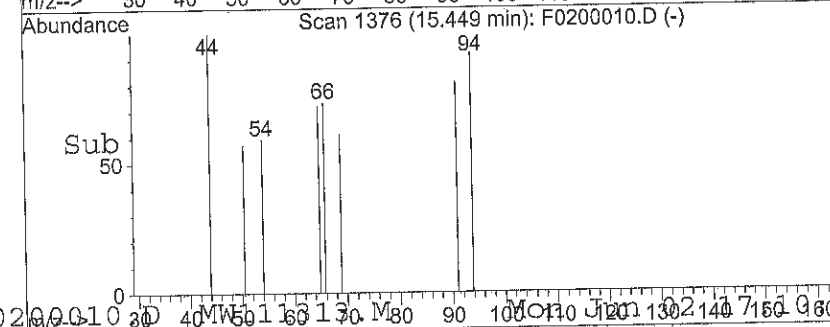
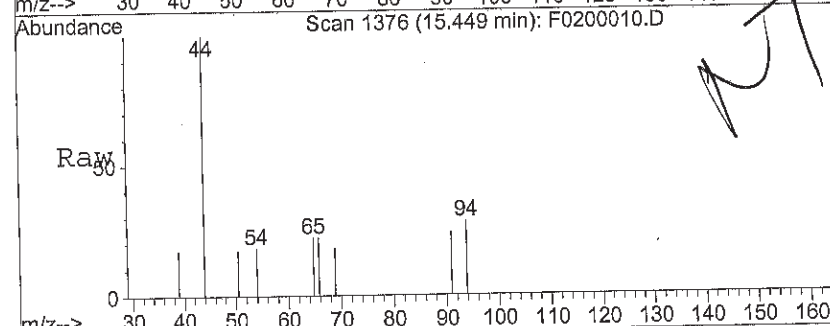
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 91 Resp: 384

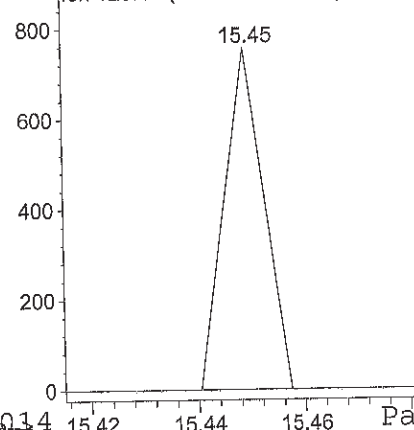
Ion Ratio Lower Upper

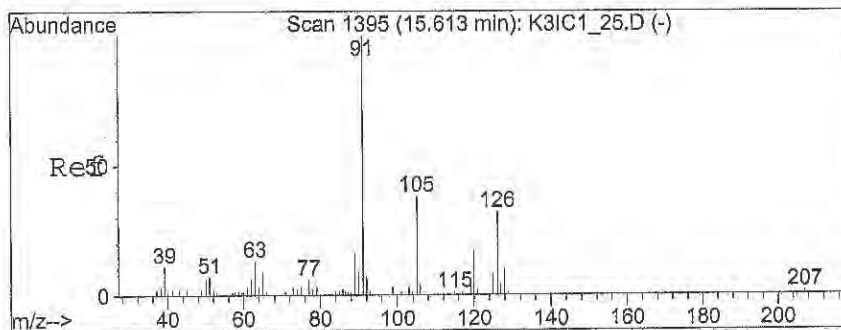
91 100

120 0.0 16.1 24.1#



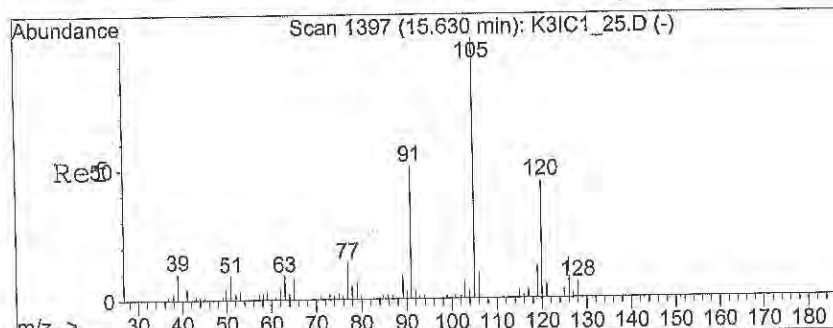
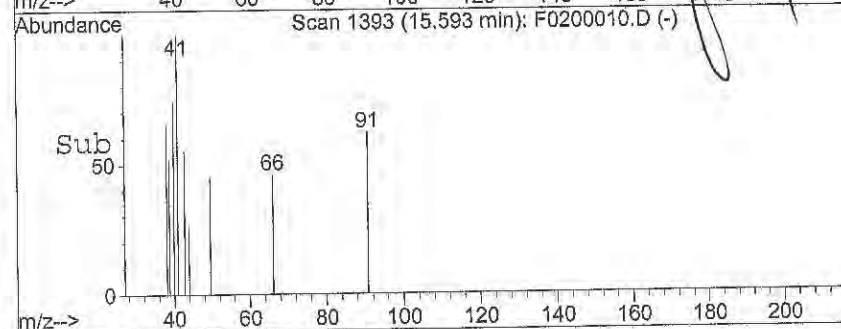
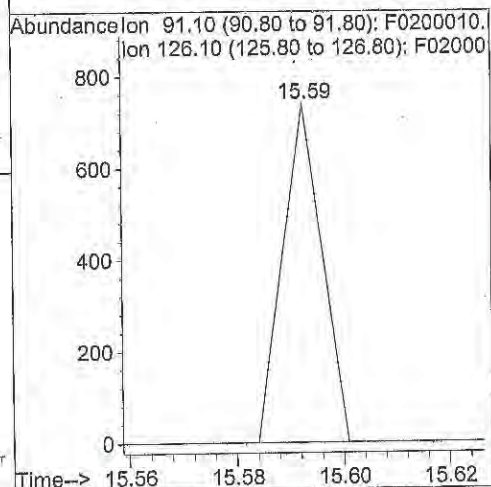
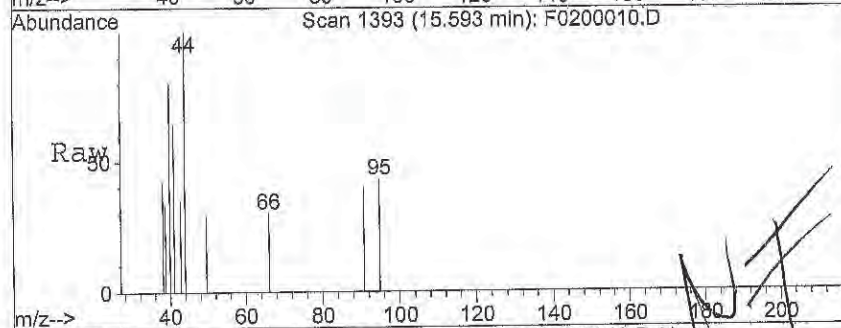
Abundance Ion 91.10 (90.80 to 91.80): F0200010.D
Ion 120.15 (119.85 to 120.85): F0200010.D





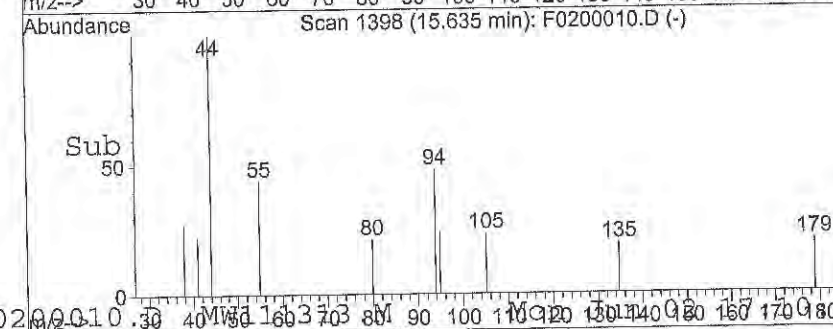
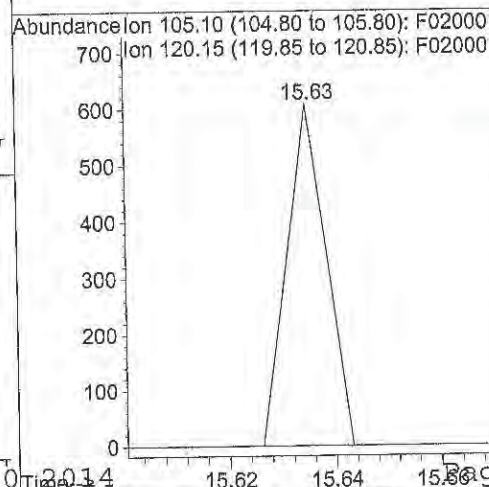
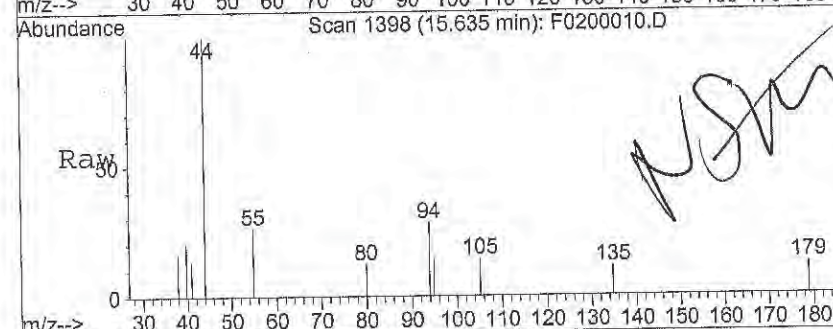
#63
 2-Chlorotoluene
 Concen: 0.03 ug/L
 RT: 15.59 min Scan# 1393
 Delta R.T. -0.02 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

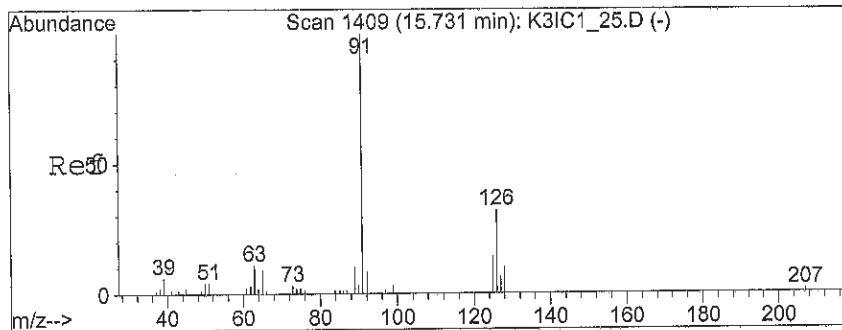
Tgt Ion: 91 Resp: 375
 Ion Ratio Lower Upper
 91 100
 126 0.0 24.0 36.0#



#64
 1,3,5-Trimethylbenzene
 Concen: 0.02 ug/L
 RT: 15.63 min Scan# 1398
 Delta R.T. 0.01 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

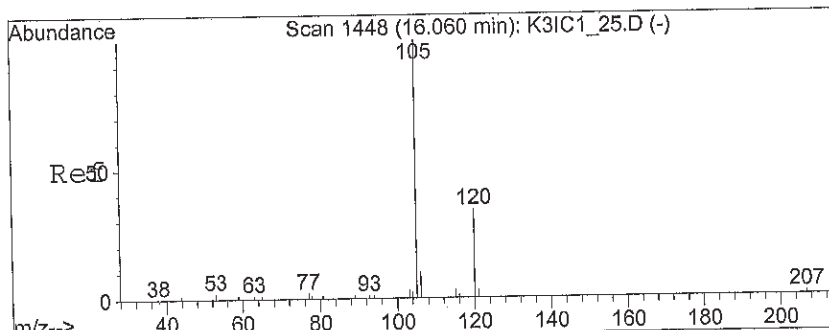
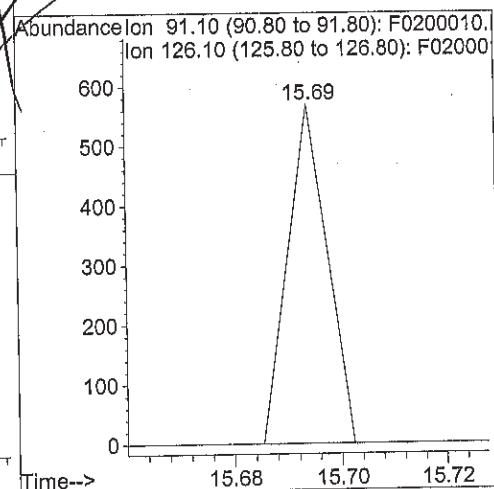
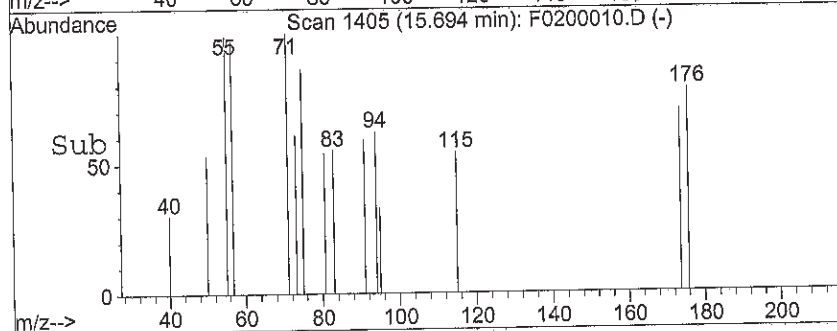
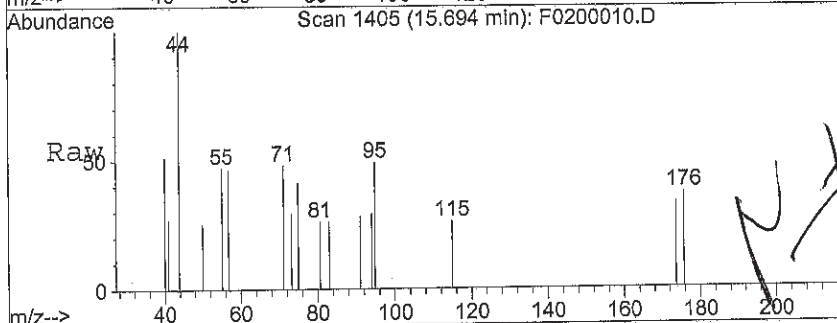
Tgt Ion: 105 Resp: 308
 Ion Ratio Lower Upper
 105 100
 120 0.0 36.4 54.6#





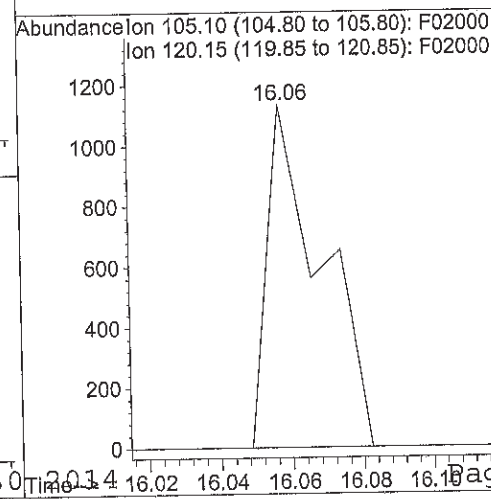
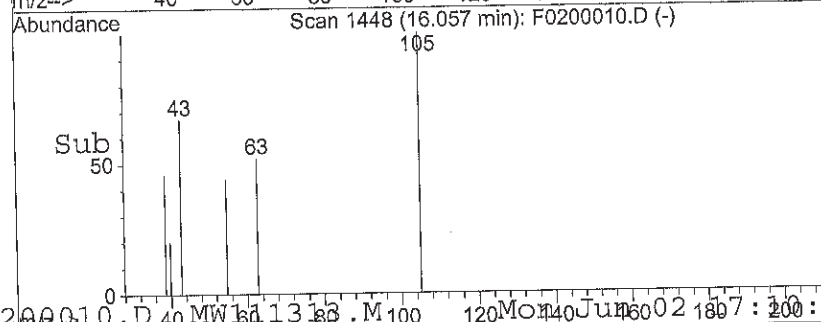
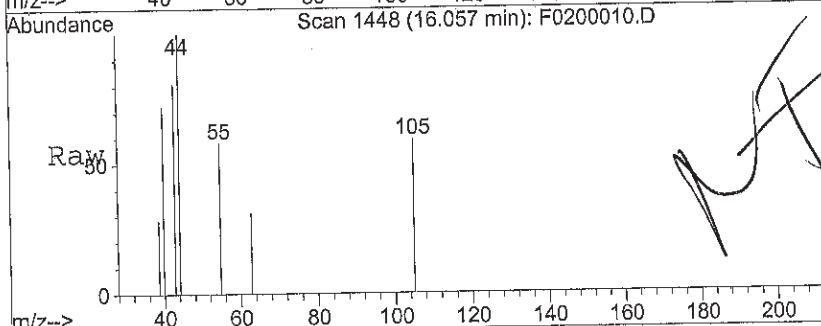
#65
 4-Chlorotoluene
 Concen: 0.02 ug/L
 RT: 15.69 min Scan# 1405
 Delta R.T. -0.04 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

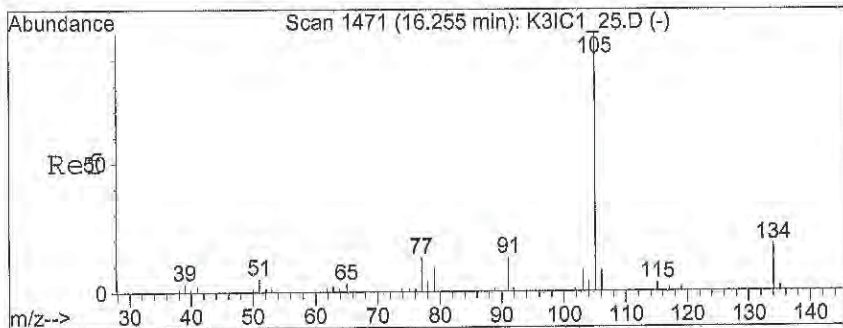
Tgt Ion: 91 Resp: 288
 Ion Ratio Lower Upper
 91 100
 126 0.0 24.6 36.8#



#67
 1,2,4-Trimethylbenzene
 Concen: 0.08 ug/L
 RT: 16.06 min Scan# 1448
 Delta R.T. -0.00 min
 Lab File: F0200010.D
 Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 105 Resp: 1190
 Ion Ratio Lower Upper
 105 100
 120 0.0 33.8 50.8#





#68

sec-Butylbenzene

Concen: 0.03 ug/L

RT: 16.33 min Scan# 1480

Delta R.T. 0.07 min

Lab File: F0200010.D

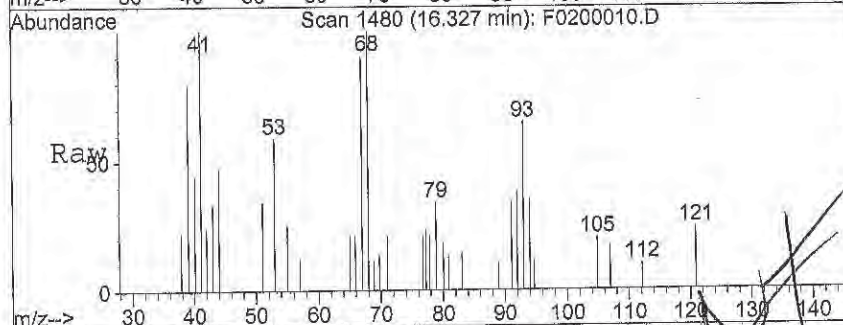
Acq: 2 Jun 2014 4:18 pm

Tgt Ion:105 Resp: 551

Ion Ratio Lower Upper

105 100

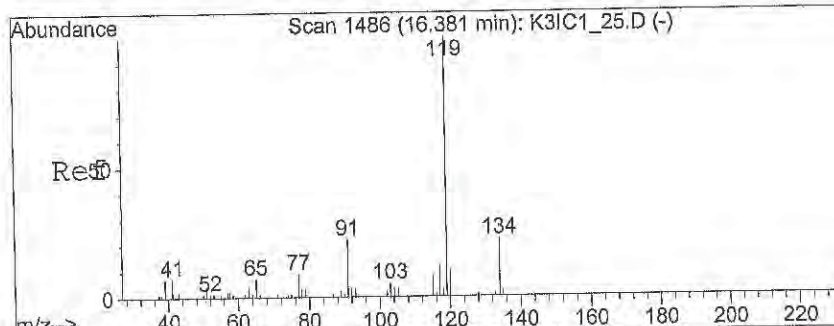
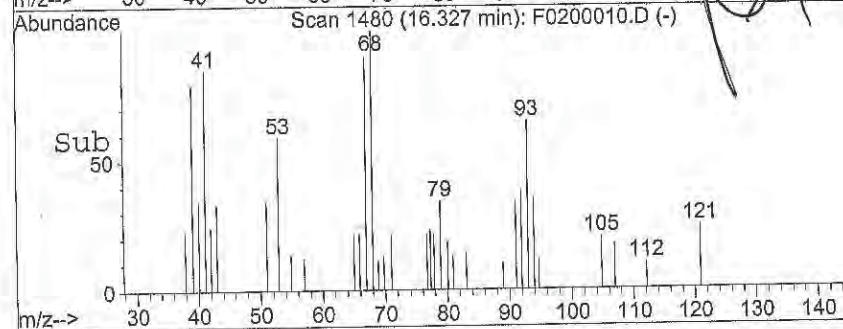
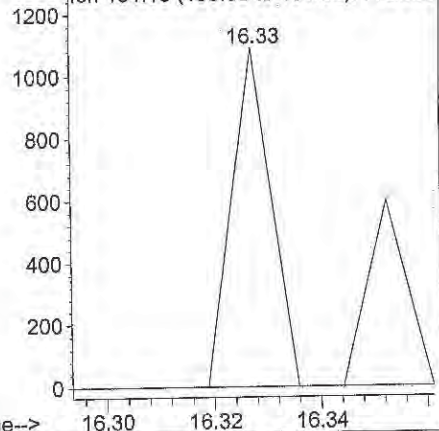
134 0.0 13.0 19.6#



Abundance

Ion 105.10 (104.80 to 105.80): F02000

Ion 134.15 (133.85 to 134.85): F02000



#69

p-Isopropyltoluene

Concen: 0.04 ug/L

RT: 16.39 min Scan# 1488

Delta R.T. 0.01 min

Lab File: F0200010.D

Acq: 2 Jun 2014 4:18 pm

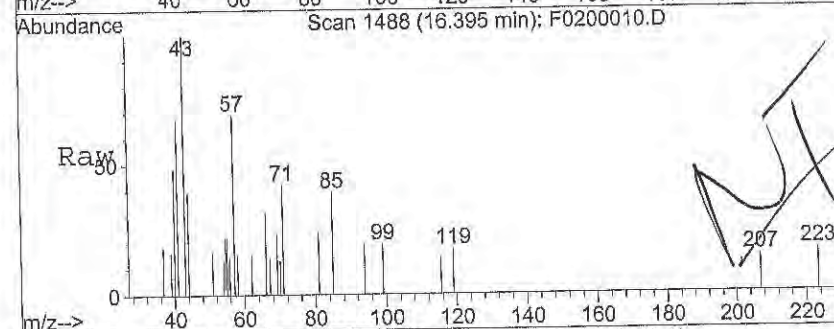
Tgt Ion:119 Resp: 656

Ion Ratio Lower Upper

119 100

134 0.0 17.4 26.2#

91 68.1 19.6 29.4#

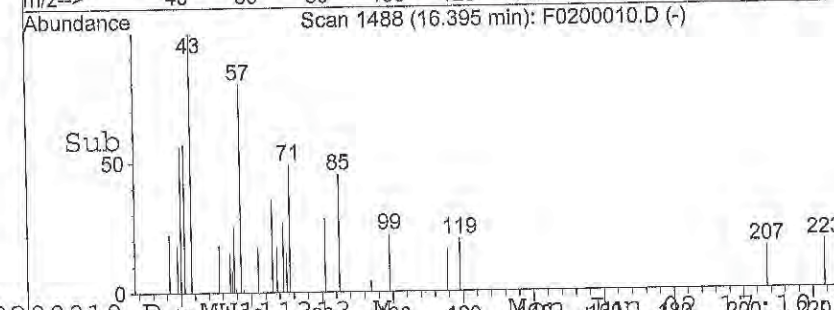
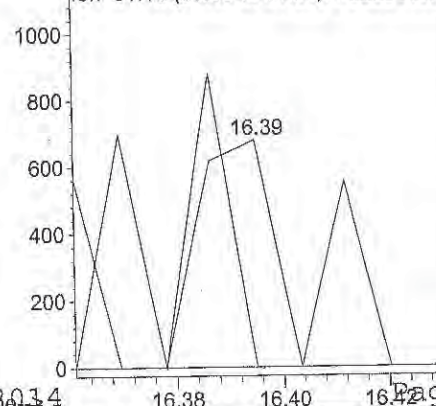


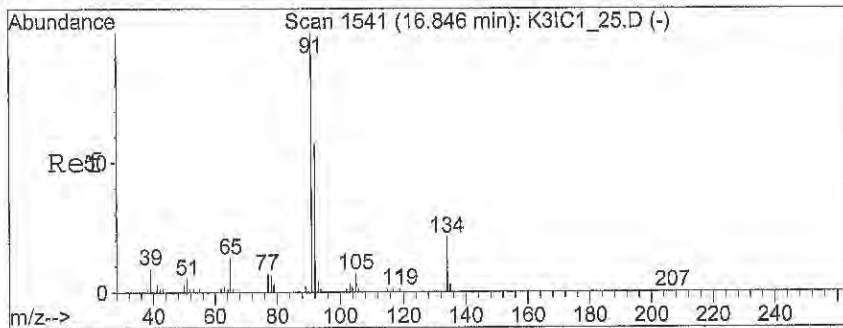
Abundance

Ion 119.15 (118.85 to 119.85): F02000

Ion 134.15 (133.85 to 134.85): F02000

Ion 91.10 (90.80 to 91.80): F0200010.





#72

n-Butylbenzene

Concen: 0.01 ug/L

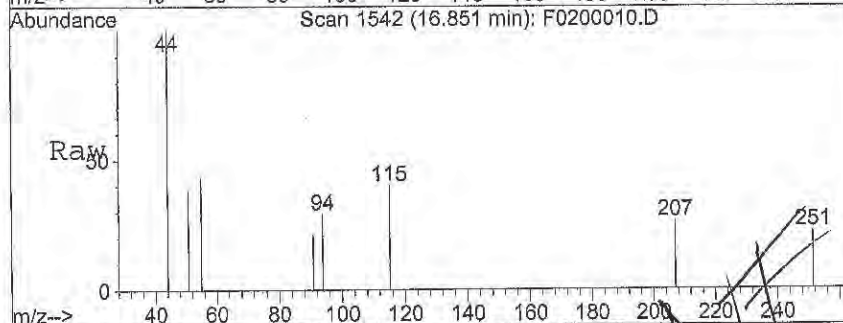
RT: 16.85 min Scan# 1542

Delta R.T. 0.01 min

Lab File: F0200010.D

Acq: 2 Jun 2014 4:18 pm

Tgt Ion:	91	Resp:	253
Ion Ratio	Lower	Upper	
91	100		
92	0.0	47.0	70.4#
134	0.0	18.1	27.1#

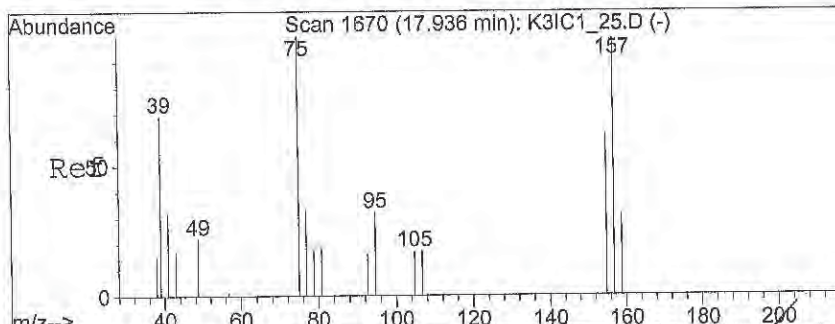
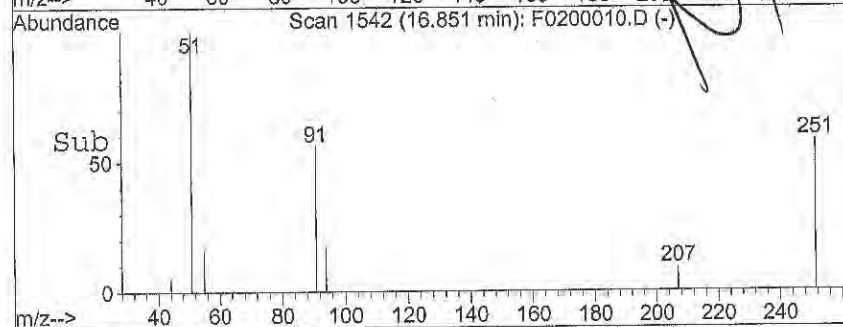
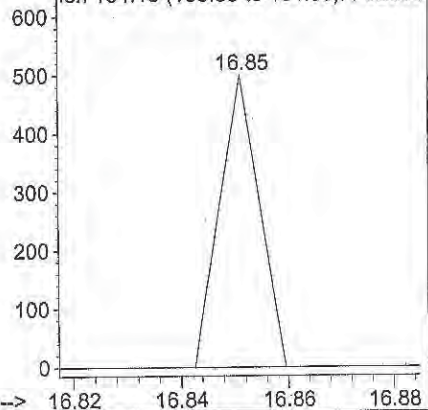


Abundance

Ion 91.10 (90.80 to 91.80): F0200010.D

Ion 92.10 (91.80 to 92.80): F0200010.D

Ion 134.15 (133.85 to 134.85): F0200010.D



#74

1,2-Dibromo-3-chloropropane

Concen: 1.74 ug/L

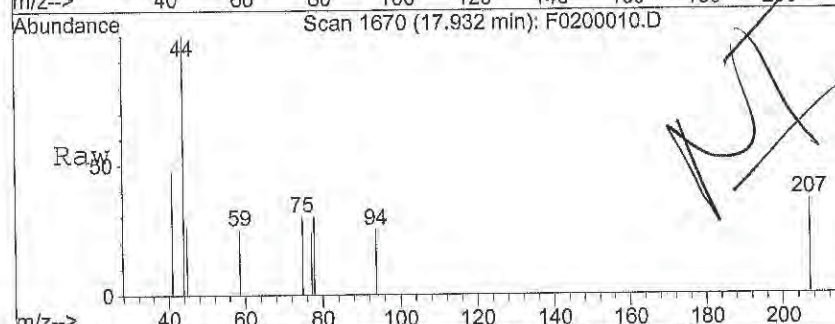
RT: 17.93 min Scan# 1670

Delta R.T. -0.00 min

Lab File: F0200010.D

Acq: 2 Jun 2014 4:18 pm

Tgt Ion:	75	Resp:	588
Ion Ratio	Lower	Upper	
75	100		
155	0.0	59.2	88.8#
157	0.0	77.0	115.6#

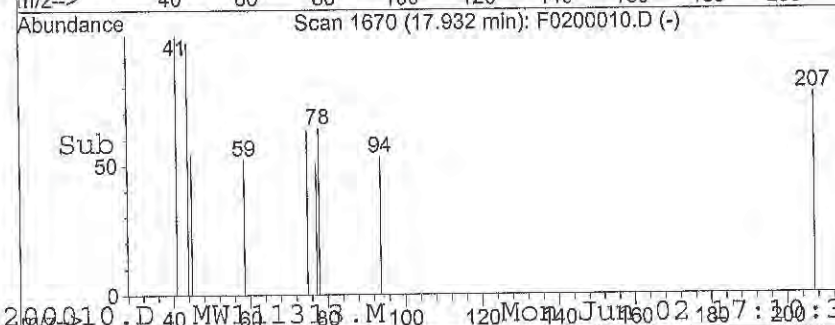
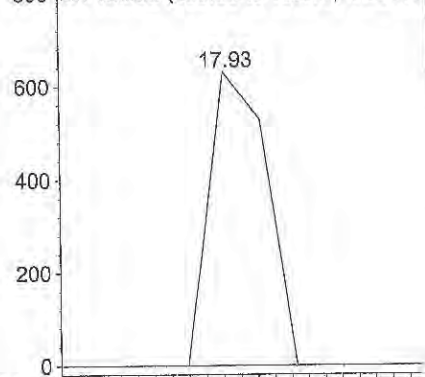


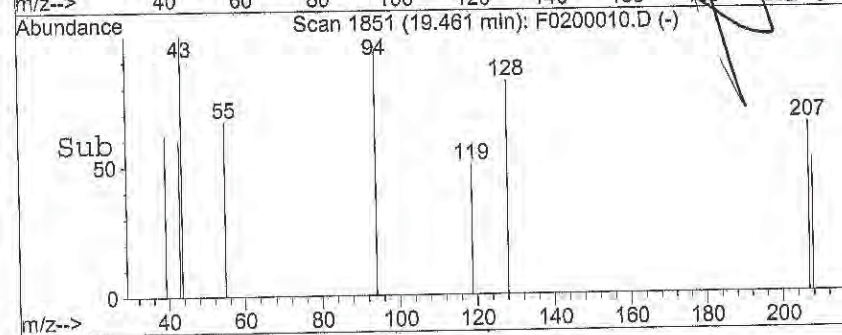
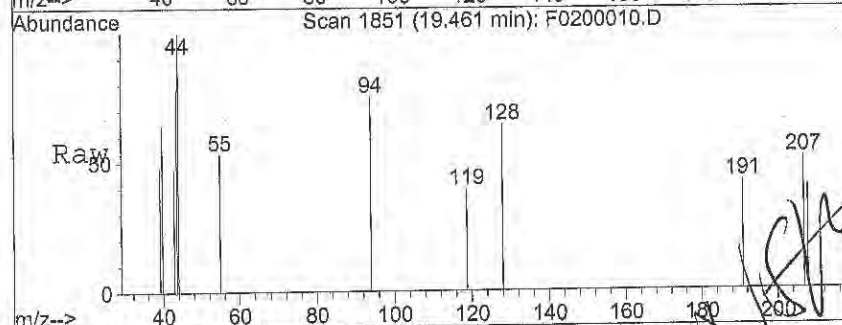
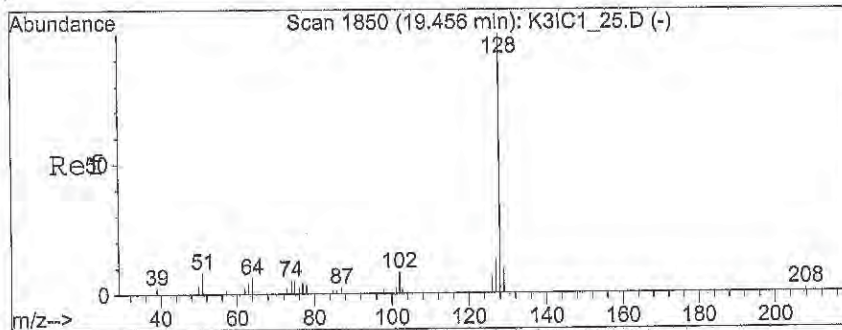
Abundance

Ion 75.05 (74.75 to 75.75): F0200010.D

Ion 154.95 (154.65 to 155.65): F0200010.D

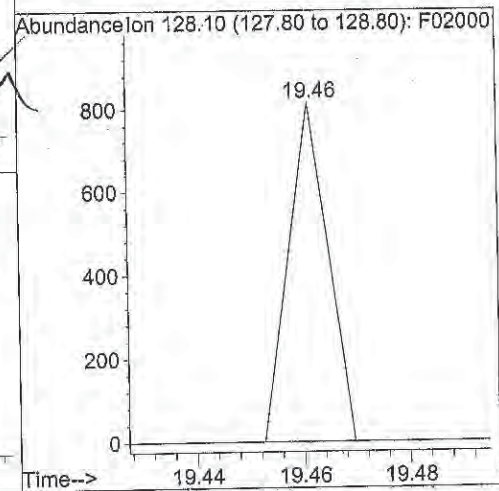
Ion 156.95 (156.65 to 157.65): F0200010.D





#77
Naphthalene
Concen: 0.04 ug/L
RT: 19.46 min Scan# 1851
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion:128 Resp: 413



Data File : C:\HPCHEM\1\DATA\060214L3\F0200010.D
 Acq On : 2 Jun 2014 4:18 pm
 Sample : 3F40201-09
 Misc : 100cc FB-060214
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:44 19114

Vial: 1
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Quant Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration
 DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene (IS)	10.30	96	1105700	12.50	ug/L	-0.02
7) Chlorobenzene-d5 (IS)	13.92	117	1086224	12.50	ug/L	0.00
10) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	590283	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.43	113	342143m	11.90	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	95.20%
3) Chloroform-d (SU6)	9.18	84	448608m	10.87	ug/L	0.00
Spiked Amount	12.500	Range	70 - 140	Recovery	=	86.96%
4) Methylene Chloride-d2 (SU5)	7.07	86	281595	11.68	ug/L	0.00
Spiked Amount	12.500	Range	70 - 140	Recovery	=	93.44%
5) 1,2-Dichloroethane-d4 (SU2)	9.89	65	318784m	16.22	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	129.76%#
6) Benzene-d6 (SU7)	9.93	84	1077454	12.42	ug/L	-0.02
Spiked Amount	12.500	Range	70 - 140	Recovery	=	99.36%
8) Toluene-d8 (SU3)	12.21	98	1093189	10.61	ug/L	-0.02
Spiked Amount	12.500	Range	75 - 125	Recovery	=	84.88%
9) 4-Bromofluorobenzene (SU4)	15.22	95	456435m	10.73	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	85.84%

Target Compounds

Qvalue

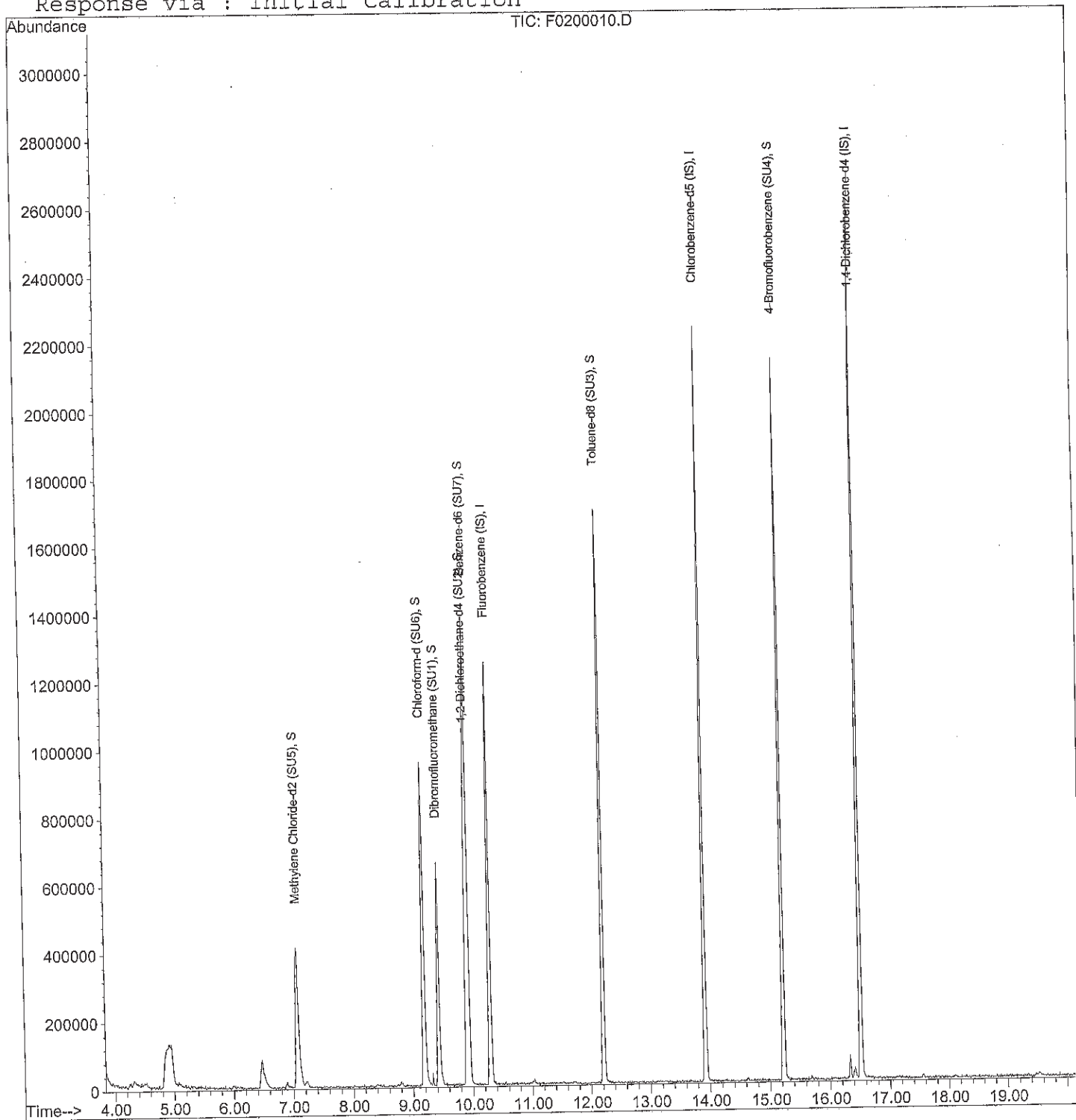
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200010.D
 Acq On : 2 Jun 2014 4:18 pm
 Sample : 3F40201-09
 Misc : 100cc FB-060214
 MS Integration Params: rteint.p
 Quant Time: Jun 3 7:44 19114

Vial: 1
 Operator: DN
 Inst : GC/MS Ins
 Multiplr: 10.00

Quant Results File: SS072713.RES

Method : C:\HPCHEM\1\METHODS\SS072713.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL SSSF 07/27/13 DN
 Last Update : Mon Nov 18 10:31:39 2013
 Response via : Initial Calibration



Data File : C:\HPCHEM\1\DATA\060214L3\F02LCS02.D

Vial: 9

Acq On : 2 Jun 2014 5:46 pm

Operator: DN

Sample : 34F0201-BSD1

Inst : GC/MS Ins

Misc : 20cc 0.1/0.2/1.0 ug/L LCS

Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Jun 3 6:13 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.30	96	1321855	12.50	ug/L	0.00
38) Chlorobenzene-d5 (IS)	13.92	117	1048189	12.50	ug/L	0.00
59) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	478089	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.44	113	342923	10.40	ug/L	0.01
Spiked Amount	12.500	Range	75 - 125	Recovery	=	83.20%
28) 1,2-Dichloroethane-d4 (SU2)	9.90	65	390671	12.47	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	99.76%
39) Toluene-d8 (SU3)	12.21	98	1233643	12.62	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	100.96%
58) 4-Bromofluorobenzene (SU4)	15.22	95	440296	10.27	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	82.16%

Target Compounds

					Qvalue
3) (F12) Dichlorodifluorometh	4.11	85	5170	0.16 ug/L	44
4) Chloromethane	4.44	50	5670	0.13 ug/L	100
5) Vinyl Chloride	4.60	62	3197	0.14 ug/L	65
6) Bromomethane	5.20	96	4673	0.14 ug/L	94
7) Chloroethane	5.19	64	751	0.14 ug/L	89
8) (F11) Trichlorofluorometha	5.65	101	3952	0.11 ug/L	99
9) (F113) 1,1,2-Trichloro-tri	6.37	151	2146	0.08 ug/L	89
10) 1,1-Dichloroethene	6.44	96	4141	0.13 ug/L	51
11) Acetone	6.46	58	10569	1.73 ug/L #	1
12) (IPA) Leak Check Compound	6.53	45	181808	114.46 ug/L #	87
13) Carbon disulfide	6.87	76	13357	0.12 ug/L	96
14) Methylene Chloride	7.13	84	5276	0.15 ug/L #	19
15) (TBA) tert-Butanol	7.09	59	271	0.12 ug/L #	1
16) (MTBE) Methyl-t-butyl ethe	7.41	73	10869	0.15 ug/L #	60
17) trans-1,2-Dichloroethene	7.47	96	4395	0.12 ug/L	83
18) 1,1-Dichloroethane	8.08	63	5402	0.09 ug/L #	7
19) cis-1,2-Dichloroethene	8.84	96	4848	0.12 ug/L	78
20) 2,2-Dichloropropane	8.81	77	379	0.01 ug/L #	1
21) (MEK) 2-Butanone	8.79	72	294	0.08 ug/L #	1
22) (DIPE) Diisopropyl Ether	8.01	45	20173	0.20 ug/L #	67
23) Bromochloromethane	9.17	128	2016	0.11 ug/L #	46
24) Chloroform	9.21	83	10260	0.15 ug/L	80

(#)=qualifier out of range (m)=manual integration

F02LCS02.D MW111313.M

Tue Jun 03 06:13:18 2014

Data File : C:\HPCHEM\1\DATA\060214L3\F02LCS02.D

Vial: 9

Acq On : 2 Jun 2014 5:46 pm

Operator: DN

Sample : 34F0201-BSD1

Inst : GC/MS Ins

Misc : 20cc 0.1/0.2/1.0 ug/L LCS

Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Jun 3 6:13 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
25) (ETBE) 2-ethoxy 2-methyl p	8.49	59	14611	0.15	ug/L #	64
26) 1,1,1-Trichloroethane	9.51	97	9166	0.17	ug/L	91
27) (TAME) tert-Amyl methyl et	10.00	73	14322	0.17	ug/L #	71
29) 1,1-Dichloropropene	9.69	75	11429	0.22	ug/L	90
30) Carbon Tetrachloride	9.71	117	4719	0.11	ug/L	64
31) Benzene	9.98	78	17942	0.14	ug/L #	52
32) 1,2-Dichloroethane	9.99	62	7344	0.17	ug/L	92
33) Trichloroethene	10.75	130	6570	0.16	ug/L #	72
34) 1,2-Dichloropropane	11.05	63	7416	0.25	ug/L #	34
35) Dibromomethane	11.22	93	4597	0.20	ug/L #	80
36) Bromodichloromethane	11.35	83	9316	0.20	ug/L #	62
37) cis-1,3-Dichloropropene	11.87	75	4745	0.09	ug/L #	32
40) (MIBK) 4-Methyl-2-Pentanone	12.11	43	3136	0.15	ug/L #	100
41) Toluene	12.29	91	25121	0.18	ug/L	86
42) trans-1,3-Dichloropropene	12.52	75	4471	0.09	ug/L #	1
43) 1,1,2-Trichloroethane	12.76	83	4820	0.19	ug/L #	70
44) Tetrachloroethene	12.94	164	6655	0.14	ug/L	92
45) 1,3-Dichloropropane	12.98	76	9586	0.20	ug/L	93
46) 2-Hexanone	12.98	43	10077	0.44	ug/L #	87
47) Dibromochloromethane	13.25	129	7849	0.21	ug/L #	83
48) 1,2-Dibromoethane	13.43	107	8628	0.26	ug/L	86
49) Chlorobenzene	13.96	112	16230	0.17	ug/L	97
50) 1,1,1,2-Tetrachloroethane	14.02	131	5272	0.15	ug/L #	53
51) Ethylbenzene	14.02	91	27553	0.17	ug/L	90
52) m,p-Xylenes	14.16	106	16513	0.29	ug/L #	42
53) o-Xylene	14.62	106	10096	0.18	ug/L	83
54) Styrene	14.63	104	13026	0.08	ug/L #	51
55) Bromoform	14.91	173	4159	0.20	ug/L #	73
56) Isopropylbenzene	15.01	105	28706	0.18	ug/L #	81
57) 1,2,3-Trichloropropane	15.42	75	12938	0.30	ug/L #	1
60) 1,1,2,2-Tetrachloroethane	15.33	83	7458	0.22	ug/L	90
61) Bromobenzene	15.43	156	7362	0.20	ug/L #	77
62) n-Propylbenzene	15.46	91	35001	0.18	ug/L	93
63) 2-Chlorotoluene	15.61	91	27855	0.23	ug/L	92
64) 1,3,5-Trimethylbenzene	15.63	105	23579	0.20	ug/L	93
65) 4-Chlorotoluene	15.72	91	24881	0.23	ug/L	92
66) tert-Butylbenzene	16.02	119	18622	0.18	ug/L #	50

(#) = qualifier out of range (m) = manual integration

F02LCS02.D MW111313.M

Tue Jun 03 06:13:20 2014

Page 2

Data File : C:\HPCHEM\1\DATA\060214L3\F02LCS02.D

Vial: 9

Acq On : 2 Jun 2014 5:46 pm

Operator: DN

Sample : 34F0201-BSD1

Inst : GC/MS Ins

Misc : 20cc 0.1/0.2/1.0 ug/L LCS

Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Jun 3 6:13 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
67) 1,2,4-Trimethylbenzene	16.06	105	25285	0.20	ug/L	89
68) sec-Butylbenzene	16.24	105	30195	0.19	ug/L #	91
69) p-Isopropyltoluene	16.38	119	27942	0.21	ug/L	92
70) 1,3-Dichlorobenzene	16.45	146	9722	0.14	ug/L #	76
71) 1,4-Dichlorobenzene	16.54	146	12785	0.18	ug/L #	57
72) n-Butylbenzene	16.84	91	24244	0.18	ug/L	92
73) 1,2-Dichlorobenzene	17.00	146	11592	0.18	ug/L #	84
74) 1,2-Dibromo-3-chloropropan	17.94	75	2119	0.47	ug/L #	45
75) 1,2,4-Trichlorobenzene	19.03	180	8134	0.19	ug/L #	82
76) Hexachlorobutadiene	19.19	225	5083	0.28	ug/L #	74
77) Naphthalene	19.45	128	18607	0.20	ug/L	100
78) Hexachloroethane	17.29	201	1366	0.10	ug/L #	79
79) 1,2,3-Trichlorobenzene	19.82	180	7695	0.19	ug/L #	70

(#) = qualifier out of range (m) = manual integration

F02LCS02.D MW111313.M

Tue Jun 03 06:13:20 2014

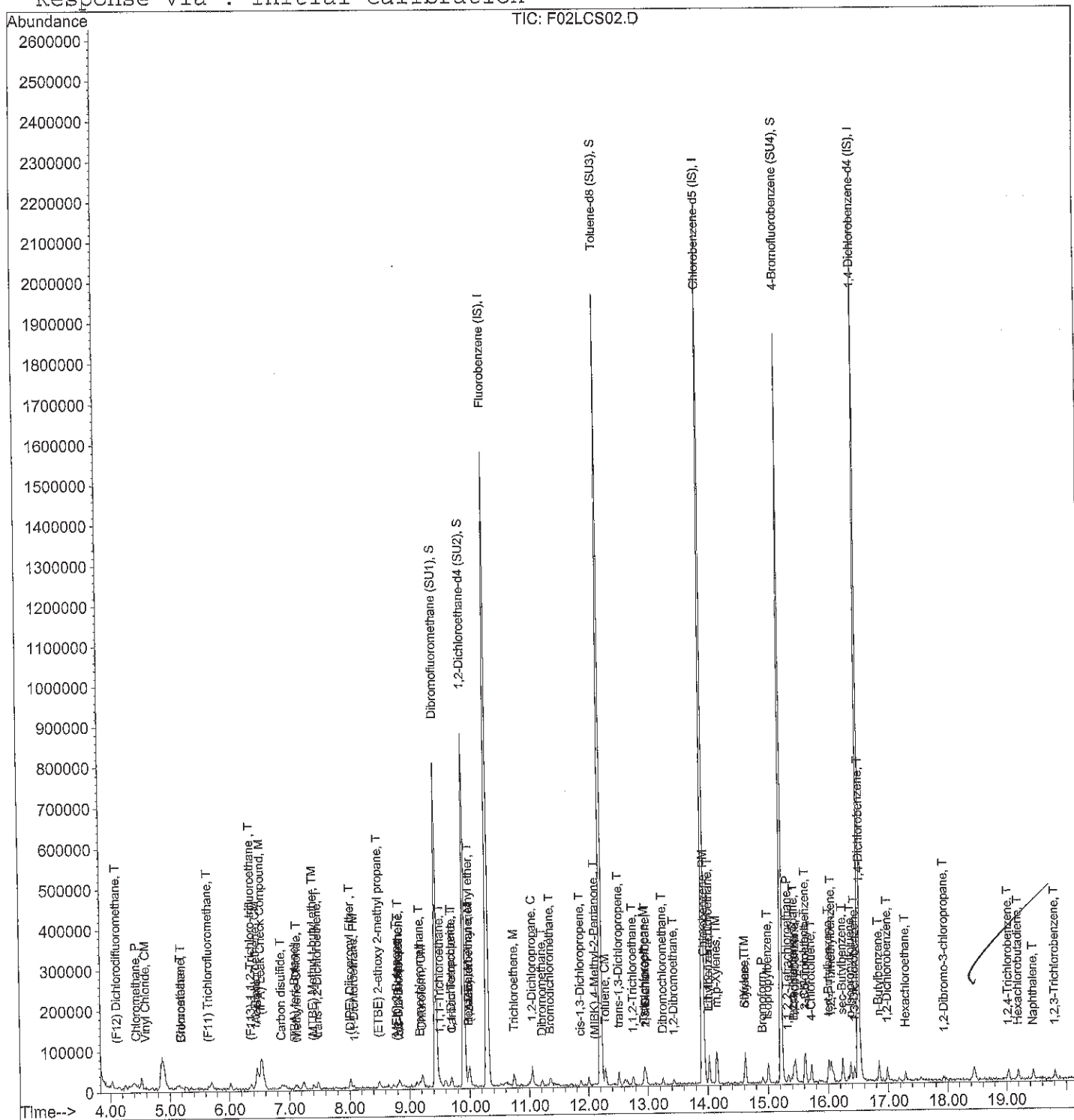
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F02LCS02.D
Acq On : 2 Jun 2014 5:46 pm
Sample : 34F0201-BSD1
Misc : 20cc 0.1/0.2/1.0 ug/L LCS
MS Integration Params: rteint.p
Quant Time: Jun 3 6:13 19114 Quan

Vial: 9
Operator: DN
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: MW111313.RES

```
Method       : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
Title        : 8260B      GC/MS #3      ICAL 11/13/13      DN
Last Update   : Wed Nov 13 19:38:32 2013
Response via  : Initial Calibration
```



ENVIRONMENTAL SUPPORT TECHNOLOGIES

16510 Aston St.
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Irvine, CA 92606
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www.est-inc.com

**SOIL GAS SURVEY
SANTA SUSANA FIELD LABORATORY:
DEPARTMENT OF ENERGY
5800 WOOLSEY CANYON ROAD
CANOGA PARK, CA**

LEVEL IV DATA PACKAGE

**MWH AMERICAS
2121 NORTH CALIFORNIA BLVD.
SUITE 600
WALNUT CREEK, CA**

**EST2754
June 3, 2014**

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CHAIN-OF-CUSTODY



CHAIN-OF-CUSTODY RECORD


Environmental Support Technologies

16510 Aston St., Irvine, CA 92606 • Tel (949) 679-9500 • Fax (949) 679-9501

Client: <u>MWH Americas</u>	Sampler Name: <u>Mike Marell</u>	Page: <u> </u> of <u> </u>
Address: <u>250 North Madison Avenue</u>	EST Project#: <u>EST2754</u>	Custody Seals: <u> </u>
<u>Pasadena, Ca</u>	Site Location: <u>SSFL</u>	
Project Manager: <u>Sarah Von Raesfield</u>	Phone: (<u> </u>) <u> </u>	Email: <u> </u>

Turnaround Time: (Check one)	Sample Receipt				Purge Volume (ml)	Vacuum (inches of H ₂ O)	8260B VOC's										
	Intact:	Yes: X	No:														
	Normal:	On Ice:	Yes:	No: X													N/A
	Rush: X	Custody Seals:	Yes:	No: X													

Sample Name	Sample Matrix	Container Type	# of Container	Sampling		Preservative Type	Purge Volume (ml)	Vacuum (inches of H ₂ O)	8260B VOC's								Special Instructions
				Date	Time												
Equipment Blank	Air	Glass Bulb	1	6/3/2014	750	Surr			X								Bulb # 3
SVL-503-SA8-SV-4.5-5.5	Air	Glass Bulb	1	6/3/2014	755	Surr			X								Bulb # 11
SVL-534-SA8-SV-6.0-7.0	Air	Glass Bulb	1	6/3/2014	834	Surr			X								Bulb # 6
SVL-834-SA8-SV-6.0-7.0	Air	Glass Bulb	1	6/3/2014	834	Surr			X								Bulb # 12
SVL-507-SA5C-SV-5.0-6.0	Air	Glass Bulb	1	6/3/2014	915	Surr			X								Bulb # 2
SVL-507-SA5C-SV-10.5-11.5	Air	Glass Bulb	1	6/3/2014	941	Surr			X								Bulb # 13
SVL-508-SA5C-SV-8.25-9.25	Air	Glass Bulb	1	6/3/2014	1014	Surr			X								Bulb # 1
SVL-535-SA5C-SV-5.0-6.0	Air	Glass Bulb	1	6/3/2014	1059	Surr			X								Bulb # 10
SVL-535-SA5C-SV-10.0-11.0	Air	Glass Bulb	1	6/3/2014	1122	Surr			X								Bulb # 7
SVL-535-SA5C-SV-15.0-16.0	Air	Glass Bulb	1	6/3/2014	1150	Surr			X								Bulb # 4
SVL-543-SA5C-SV-5.0-6.0	Air	Glass Bulb	1	6/3/2014	1256	Surr			X								Bulb # 5
SVL-543-SA5C-SV-11.0-12.0	Air	Glass Bulb	1	6/3/2014	1315	Surr			X								Bulb # 9
FB-060314	Air	Glass Bulb	1	6/3/2014	1338	Surr			X								Bulb # 8

Relinquished by: (Signature) 	Date/Time: <u>06/03/14</u>	Received by:	Date/Time:
Relinquished by: (Signature)	Date/Time:	Received by:	Date/Time:

**SAMPLE RESULTS WITH ANALYSIS AND
EXTRACTIONS PREPARATION DATES**



June 17, 2014

Sarah Von Raesfield
MWH Americas, Inc.
250 No. Madison Avenue
Pasadena, CA 91107
RE: Santa Susana Field Laboratory, Canoga Park

Enclosed are the results of analyses for soil gas samples received by Environmental Support Technologies laboratory on 06/03/14 15:15. The analyses were performed according to the prescribed method as outlined by EPA 8260B. A shut in test was performed, leak test was performed, equipment blank was run, and selected purge volume was 3PV. If you have any questions concerning this report, please feel free to contact Project Manager.

Sincerely,

Ashley Flores

Ashley Flores
Project Manager

Environmental Support Technologies laboratories are certified by the California Department of Health Services (CDHS),
Environmental Laboratory Accreditation Program (ELAP) No's. 2772, 2773, and 2767.

16510 Aston Street, Irvine, California 92606
Telephone: (949) 679-9500 Fax: (949) 679-9501



MWH Americas, Inc.
250 No. Madison Avenue
Pasadena, CA 91107

Project: Santa Susana Field Laboratory, Canoga Park
Project Number: EST2754
Project Manager: Sarah Von Raesfield

Reported:
17-Jun-14 08:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Analyzed
Equipment Blank	3F40301-01	Air	03-Jun-14 07:50	03-Jun-14 08:00
SVL-503-SA8-SV-4.5-5.5	3F40301-02	Air	03-Jun-14 07:55	03-Jun-14 08:29
SVL-534-SA8-SV-6.0-7.0	3F40301-03	Air	03-Jun-14 08:34	03-Jun-14 09:29
SVL-834-SA8-SV-6.0-7.0	3F40301-04	Air	03-Jun-14 08:34	03-Jun-14 09:59
SVL-507-SA5C-SV-5.0-6.0	3F40301-05	Air	03-Jun-14 09:15	03-Jun-14 10:27
SVL-507-SA5C-SV-10.5-11.5	3F40301-06	Air	03-Jun-14 09:41	03-Jun-14 10:56
SVL-508-SA5C-SV-8.28-9.25	3F40301-07	Air	03-Jun-14 10:14	03-Jun-14 11:25
SVL-535-SA5C-SV-5.0-6.0	3F40301-08	Air	03-Jun-14 10:59	03-Jun-14 11:54
SVL-535-SA5C-SV-10.0-11.0	3F40301-09	Air	03-Jun-14 11:22	03-Jun-14 12:27
SVL-535-SA5C-SV-15.0-16.0	3F40301-10	Air	03-Jun-14 11:50	03-Jun-14 12:56
SVL-543-SA5C-SV-5.0-6.0	3F40301-11	Air	03-Jun-14 12:56	03-Jun-14 13:25
SVL-543-SA5C-SV-11.0-12.0	3F40301-12	Air	03-Jun-14 13:15	03-Jun-14 13:54
FB-060314	3F40301-13	Air	03-Jun-14 13:38	03-Jun-14 14:23

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



MWH Americas, Inc.
250 No. Madison Avenue
Pasadena, CA 91107

Project: Santa Susana Field Laboratory, Canoga Park
Project Number: EST2754
Project Manager: Sarah Von Raesfield

Reported:
17-Jun-14 08:54

Volatile Organic Compounds Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Equipment Blank (3F423270271 Air Sampled: 2-)23)74 25:/ 2 Analyzed: 2-)23)74 29:22									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
1,1,1-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloro-trifluoroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	ND	0.020	"	"	"	"	"	"	
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta- and para-Xylenes	ND	0.020	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	ND	0.020	"	"	"	"	"	"	
Trichloroethene	ND	0.020	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		98.4 %	75-125		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		95.4 %	75-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		107 %	75-125		"	"	"	"	
<i>Surrogate: Benzene-d6</i>		89.0 %	70-140		"	"	"	"	
<i>Surrogate: Chloroform-d</i>		116 %	70-140		"	"	"	"	
<i>Surrogate: Methylene chloride-d2</i>		79.8 %	70-140		"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



MWH Americas, Inc.
250 No. Madison Avenue
Pasadena, CA 91107

Project: Santa Susana Field Laboratory, Canoga Park
Project Number: EST2754
Project Manager: Sarah Von Raesfield

Reported:
17-Jun-14 08:54

Volatile Organic Compounds Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SVL0230SA90SV04/ 0 / (3F423270261 Air Sampled: 2-)23)74 25:/ / Analyzed: 2-)23)74 29:68									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
7X00 Trichloroethane	2.77	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
7X00 Trichloroethane	2. / 4	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
7X00 Dichloroethene	2.7-	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	ND	0.020	"	"	"	"	"	"	
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta- and para-Xylenes	ND	0.020	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	ND	0.020	"	"	"	"	"	"	
Trichloroethene	2.44	0.020	"	"	"	"	"	"	
Trichloro,luoromethane	2.258	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		105 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		91.4 %	75-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	75-125		"	"	"	"	
Surrogate: Benzene-d6		90.2 %	70-140		"	"	"	"	
Surrogate: Chloroform-d		87.0 %	70-140		"	"	"	"	
Surrogate: Methylene chloride-d2		86.4 %	70-140		"	"	"	"	

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MWH Americas, Inc.
250 No. Madison Avenue
Pasadena, CA 91107

Project: Santa Susana Field Laboratory, Canoga Park
Project Number: EST2754
Project Manager: Sarah Von Raesfield

Reported:
17-Jun-14 08:54

Volatile Organic Compounds
Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SVL0340SA90SV0-.205.2 (3F423270231 Air Sampled: 2-)23)74 29:34 Analyzed: 2-)23)74 28:68									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
1,1,1-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloro-trifluoroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	ND	0.020	"	"	"	"	"	"	
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta- and para-Xylenes	ND	0.020	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	ND	0.020	"	"	"	"	"	"	
Trichloroethene	ND	0.020	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		98.1 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		92.7 %	75-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	75-125		"	"	"	"	
Surrogate: Benzene-d6		88.0 %	70-140		"	"	"	"	
Surrogate: Chloroform-d		87.8 %	70-140		"	"	"	"	
Surrogate: Methylene chloride-d2		77.5 %	70-140		"	"	"	"	

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MWH Americas, Inc.
250 No. Madison Avenue
Pasadena, CA 91107

Project: Santa Susana Field Laboratory, Canoga Park
Project Number: EST2754
Project Manager: Sarah Von Raesfield

Reported:
17-Jun-14 08:54

Volatile Organic Compounds Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SVL093406A90SV0-.205.2 (3F423270241 Air Sampled: 2-)23)74 29:34 Analyzed: 2-)23)74 28:/ 8									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
1,1,1-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloro-trifluoroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	ND	0.020	"	"	"	"	"	"	
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta- and para-Xylenes	ND	0.020	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	ND	0.020	"	"	"	"	"	"	
Trichloroethene	ND	0.020	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		87.0 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		89.0 %	75-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.7 %	75-125		"	"	"	"	
Surrogate: Benzene-d6		96.7 %	70-140		"	"	"	"	
Surrogate: Chloroform-d		114 %	70-140		"	"	"	"	
Surrogate: Methylene chloride-d2		84.1 %	70-140		"	"	"	"	

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MWH Americas, Inc.
250 No. Madison Avenue
Pasadena, CA 91107

Project: Santa Susana Field Laboratory, Canoga Park
Project Number: EST2754
Project Manager: Sarah Von Raesfield

Reported:
17-Jun-14 08:54

Volatile Organic Compounds
Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SVL0250SA/C06SV02.02 (3F4232702/ 1 Air) Sampled: 2-)23)74 28:7/ Analyzed: 2-)23)74 72:65									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
1,1,1-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloro-trifluoroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	ND	0.020	"	"	"	"	"	"	
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta- and para-Xylenes	ND	0.020	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	2.22/ 6	0.020	"	"	"	"	"	"	J
Trichloroethene	ND	0.020	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		98.4 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		87.6 %	75-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	75-125		"	"	"	"	
Surrogate: Benzene-d6		91.0 %	70-140		"	"	"	"	
Surrogate: Chloroform-d		87.0 %	70-140		"	"	"	"	
Surrogate: Methylene chloride-d2		81.1 %	70-140		"	"	"	"	

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Project: Santa Susana Field Laboratory, Canoga Park
Project Number: EST2754
Project Manager: Sarah Von Raesfield

Reported:
17-Jun-14 08:54

Volatile Organic Compounds

Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SVL0 250SA/ C0SV072./ 077./ (3F4232702-1 Air Sampled: 2-)23)74 28:47 Analyzed: 2-)23)74 72:/ -									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
1,1,1-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloro-trifluoroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	ND	0.020	"	"	"	"	"	"	
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta- and para-Xylenes	ND	0.020	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	ND	0.020	"	"	"	"	"	"	
Trichloroethene	ND	0.020	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		94.4 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		89.9 %	75-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	75-125		"	"	"	"	
Surrogate: Benzene-d6		92.1 %	70-140		"	"	"	"	
Surrogate: Chloroform-d		91.2 %	70-140		"	"	"	"	
Surrogate: Methylene chloride-d2		79.0 %	70-140		"	"	"	"	

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Project Manager: Sarah Von Raesfield

Reported:
17-Jun-14 08:54

Volatile Organic Compounds
Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SVL07 290SA/ C0SV09.6908.6/ (3F423270251 Air Sampled: 2-)23)74 72:74 Analyzed: 2-)23)74 77:6/									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
1,1,1-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloro-trifluoroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	ND	0.020	"	"	"	"	"	"	
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta0 and para0f ylenes	2.274	0.020	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	2.277	0.020	"	"	"	"	"	"	J
Trichloroethene	ND	0.020	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		112 %		75-125	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.0 %		75-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		97.9 %		75-125	"	"	"	"	
<i>Surrogate: Benzene-d6</i>		77.5 %		70-140	"	"	"	"	
<i>Surrogate: Chloroform-d</i>		106 %		70-140	"	"	"	"	
<i>Surrogate: Methylene chloride-d2</i>		65.5 %		70-140	"	"	"	"	S-GC

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Reported:
17-Jun-14 08:54

Volatile Organic Compounds
Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SVL03/05A/C05V0.20.2 (3F423270291 Air Sampled: 2-)23)74 72:/ 8 Analyzed: 2-)23)74 77:/ 4									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
1,1,1-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloro-trifluoroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	ND	0.020	"	"	"	"	"	"	
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta- and para-Xylenes	ND	0.020	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	2.277	0.020	"	"	"	"	"	"	J
Trichloroethene	ND	0.020	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		86.6 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		86.0 %	75-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.4 %	75-125		"	"	"	"	
Surrogate: Benzene-d6		88.2 %	70-140		"	"	"	"	
Surrogate: Chloroform-d		106 %	70-140		"	"	"	"	
Surrogate: Methylene chloride-d2		76.2 %	70-140		"	"	"	"	

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Project: Santa Susana Field Laboratory, Canoga Park
Project Number: EST2754
Project Manager: Sarah Von Raesfield

Reported:
17-Jun-14 08:54

Volatile Organic Compounds
Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SVL03/05A/C05V072.2077.2 (3F423270281 Air Sampled: 2-)23)74 77:66 Analyzed: 2-)23)74 76:65									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
1,1,1-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloro-trifluoroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	ND	0.020	"	"	"	"	"	"	
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta- and para-Xylenes	ND	0.020	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	2.22/-	0.020	"	"	"	"	"	"	J
Trichloroethene	ND	0.020	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		89.8 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		91.0 %	75-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	75-125		"	"	"	"	
Surrogate: Benzene-d6		91.7 %	70-140		"	"	"	"	
Surrogate: Chloroform-d		111 %	70-140		"	"	"	"	
Surrogate: Methylene chloride-d2		76.6 %	70-140		"	"	"	"	

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Project: Santa Susana Field Laboratory, Canoga Park
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Project Manager: Sarah Von Raesfield

Reported:
17-Jun-14 08:54

Volatile Organic Compounds Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SVL03/05A/C05V07/.207-.2 (3F423270721 Air Sampled: 2-)23)74 77:/ 2 Analyzed: 2-)23)74 76:/ -									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
1,1,1-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloro-trifluoroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	ND	0.020	"	"	"	"	"	"	
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta and para Xylenes	2.272	0.020	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	2.2252	0.020	"	"	"	"	"	"	J
Trichloroethene	ND	0.020	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		87.8 %		75-125	"	"	"	"	
Surrogate: Toluene-d8		91.4 %		75-125	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.3 %		75-125	"	"	"	"	
Surrogate: Benzene-d6		93.5 %		70-140	"	"	"	"	
Surrogate: Chloroform-d		86.1 %		70-140	"	"	"	"	
Surrogate: Methylene chloride-d2		77.9 %		70-140	"	"	"	"	

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Project Manager: Sarah Von Raesfield

Reported:
17-Jun-14 08:54

Volatile Organic Compounds

Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SVL0430SA/ C0SV0.20.2 (3F42327071 Air Sampled: 2-)23)74 76:/ - Analyzed: 2-)23)74 73:6/									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
1,1,1-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloro-trifluoroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	2.22-2	0.020	"	"	"	"	"	"	J
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta0 and para0f ylenes	2.2289	0.020	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	2.228-	0.020	"	"	"	"	"	"	J
Trichloroethene	ND	0.020	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		103 %	75-125		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		90.5 %	75-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		112 %	75-125		"	"	"	"	
<i>Surrogate: Benzene-d6</i>		103 %	70-140		"	"	"	"	
<i>Surrogate: Chloroform-d</i>		109 %	70-140		"	"	"	"	
<i>Surrogate: Methylene chloride-d2</i>		95.8 %	70-140		"	"	"	"	

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MWH Americas, Inc.
250 No. Madison Avenue
Pasadena, CA 91107

Project: Santa Susana Field Laboratory, Canoga Park
Project Number: EST2754
Project Manager: Sarah Von Raesfield

Reported:
17-Jun-14 08:54

Volatile Organic Compounds
Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SVL0 430SA/ C0SV077.2076.2 (3F423270761 Air Sampled: 2-)23)74 73:7/ Analyzed: 2-)23)74 73:/ 4									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
1,1,1-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloro-trifluoroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	2.2249	0.020	"	"	"	"	"	"	J
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta- and para-Xylenes	ND	0.020	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	2.272	0.020	"	"	"	"	"	"	J
Trichloroethene	2.23/	0.020	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		87.8 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		86.3 %	75-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.7 %	75-125		"	"	"	"	
Surrogate: Benzene-d6		99.4 %	70-140		"	"	"	"	
Surrogate: Chloroform-d		83.3 %	70-140		"	"	"	"	
Surrogate: Methylene chloride-d2		95.8 %	70-140		"	"	"	"	

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17-Jun-14 08:54

Volatile Organic Compounds

Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FB02- 2374 (3F423270731 Air Sampled: 2-)23)74 73:39 Analyzed: 2-)23)74 74:63									
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l	1	34F0301	06/03/14	06/03/14	EPA 8260B	
1,1,1-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane 2.26/		0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	"	"	"	"	"	"	
Benzene	ND	0.020	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.020	"	"	"	"	"	"	
Chloroethane	ND	0.020	"	"	"	"	"	"	
Chloroform	ND	0.020	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.020	"	"	"	"	"	"	
Ethylbenzene	ND	0.020	"	"	"	"	"	"	
Methylene Chloride	ND	0.020	"	"	"	"	"	"	
ortho-Xylene	ND	0.020	"	"	"	"	"	"	
meta- and para-Xylenes	ND	0.020	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	"	"	"	"	"	"	
Tetrachloroethene	ND	0.020	"	"	"	"	"	"	
Toluene	ND	0.020	"	"	"	"	"	"	
Trichloroethene	ND	0.020	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.020	"	"	"	"	"	"	
Vinyl Chloride	ND	0.020	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		101 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		87.8 %	75-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	75-125		"	"	"	"	
Surrogate: Benzene-d6		101 %	70-140		"	"	"	"	
Surrogate: Chloroform-d		107 %	70-140		"	"	"	"	
Surrogate: Methylene chloride-d2		93.0 %	70-140		"	"	"	"	

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17-Jun-14 08:54

Volatile Organic Compounds Quality Control

Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 34F2327 0 Volatiles										
Blank (34F23270BLK71)				Prepared & Analyzed: 06/03/14						
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l							
1,1,1-Trichloroethane	ND	0.020	"							
1,1,2,2-Tetrachloroethane	ND	0.020	"							
1,1,2-Trichloro-trifluoroethane	ND	0.020	"							
1,1,2-Trichloroethane	ND	0.020	"							
1,1-Dichloroethane	ND	0.020	"							
1,1-Dichloroethene	ND	0.020	"							
1,2-Dichloroethane	ND	0.020	"							
Benzene	ND	0.020	"							
cis-1,2-Dichloroethene	ND	0.020	"							
Carbon tetrachloride	ND	0.020	"							
Chloroethane	ND	0.020	"							
Chloroform	ND	0.020	"							
Dichlorodifluoromethane	ND	0.020	"							
Ethylbenzene	ND	0.020	"							
Methylene Chloride	ND	0.020	"							
ortho-Xylene	ND	0.020	"							
meta- and para-Xylenes	ND	0.020	"							
trans-1,2-Dichloroethene	ND	0.020	"							
Tetrachloroethene	ND	0.020	"							
Toluene	ND	0.020	"							
Trichloroethene	ND	0.020	"							
Trichlorofluoromethane	ND	0.020	"							
Vinyl Chloride	ND	0.020	"							
Surrogate: Dibromofluoromethane	2.47		"	2.50		98.7	75-125			
Surrogate: Toluene-d8	2.27		"	2.50		90.6	75-125			
Surrogate: 4-Bromofluorobenzene	2.93		"	2.50		117	75-125			
Surrogate: Benzene-d6	2.12		"	2.50		84.6	70-140			
Surrogate: Chloroform-d	2.81		"	2.50		113	70-140			
Surrogate: Methylene chloride-d2	1.98		"	2.50		79.1	70-140			

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17-Jun-14 08:54

Volatile Organic Compounds Quality Control
Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 34F2327 0Volatiles										
LCS (34F2327)BS71				Prepared & Analyzed: 06/03/14						
1,1,1,2-Tetrachloroethane	1.32	0.020	ug/l	1.25		106	75-136			
1,1,1-Trichloroethane	1.05	0.020	"	1.25		84.0	73-134			
1,1,2,2-Tetrachloroethane	1.63	0.020	"	1.25		130	56-149			
1,1,2-Trichloro-trifluoroethane	1.19	0.020	"	1.25		95.2	83-125			
1,1,2-Trichloroethane	1.23	0.020	"	1.25		98.4	67-137			
1,1-Dichloroethane	1.23	0.020	"	1.25		98.4	80-121			
1,1-Dichloroethene	1.19	0.020	"	1.25		95.2	73-137			
1,2-Dichloroethane	1.36	0.020	"	1.25		109	75-131			
Benzene	1.04	0.020	"	1.25		83.2	79-118			
cis-1,2-Dichloroethene	1.12	0.020	"	1.25		89.6	85-116			
Carbon tetrachloride	1.39	0.020	"	1.25		111	74-143			
Chloroethane	1.28	0.020	"	1.25		102	60-137			
Chloroform	1.15	0.020	"	1.25		92.0	82-140			
Dichlorodifluoromethane	1.28	0.020	"	1.25		102	47-129			
Ethylbenzene	1.29	0.020	"	1.25		103	83-125			
Methylene Chloride	1.07	0.020	"	1.25		85.6	81-126			
ortho-Xylene	1.26	0.020	"	1.25		101	85-115			
meta- and para-Xylenes	2.40	0.020	"	2.50		96.0	83-115			
trans-1,2-Dichloroethene	1.09	0.020	"	1.25		87.2	72-133			
Tetrachloroethene	0.980	0.020	"	1.25		78.4	60-144			
Toluene	0.960	0.020	"	1.25		76.8	70-115			
Trichloroethene	1.09	0.020	"	1.25		87.2	68-132			
Trichlorofluoromethane	1.04	0.020	"	1.25		83.2	62-144			
Vinyl Chloride	1.23	0.020	"	1.25		98.4	66-137			
Surrogate: Dibromofluoromethane	12.2		"	12.5		97.4	75-125			
Surrogate: Toluene-d8	12.9		"	12.5		103	75-125			
Surrogate: 4-Bromofluorobenzene	12.3		"	12.5		98.1	75-125			

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17-Jun-14 08:54

Volatile Organic Compounds Quality Control
Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 34F2327 0Volatiles										
LCS Dup (34F23270BSD71)				Prepared & Analyzed: 06/03/14						
1,1,1,2-Tetrachloroethane	1.34	0.020	ug/l	1.25		107	75-136	1.50	20	
1,1,1-Trichloroethane	1.33	0.020	"	1.25		106	73-134	23.5	20	QR-04
1,1,2,2-Tetrachloroethane	1.02	0.020	"	1.25		81.6	56-149	46.0	20	QR-04
1,1,2-Trichloro-trifluoroethane	1.09	0.020	"	1.25		87.2	83-125	8.77	20	
1,1,2-Trichloroethane	1.12	0.020	"	1.25		89.6	67-137	9.36	20	
1,1-Dichloroethane	1.23	0.020	"	1.25		98.4	80-121	0.00	20	
1,1-Dichloroethene	1.30	0.020	"	1.25		104	73-137	8.84	20	
1,2-Dichloroethane	1.17	0.020	"	1.25		93.6	75-131	15.0	20	
Benzene	1.05	0.020	"	1.25		84.0	79-118	0.957	20	
cis-1,2-Dichloroethene	1.14	0.020	"	1.25		91.2	85-116	1.77	20	
Carbon tetrachloride	1.11	0.020	"	1.25		88.8	74-143	22.4	20	QR-04
Chloroethane	1.23	0.020	"	1.25		98.4	60-137	3.98	20	
Chloroform	1.29	0.020	"	1.25		103	82-140	11.5	20	
Dichlorodifluoromethane	1.41	0.020	"	1.25		113	47-129	9.67	20	
Ethylbenzene	1.25	0.020	"	1.25		100	83-125	3.15	20	
Methylene Chloride	1.31	0.020	"	1.25		105	81-126	20.2	20	QR-04
ortho-Xylene	1.34	0.020	"	1.25		107	85-115	6.15	20	QR-04
meta- and para-Xylenes	2.23	0.020	"	2.50		89.2	83-115	7.34	20	
trans-1,2-Dichloroethene	1.07	0.020	"	1.25		85.6	72-133	1.85	20	
Tetrachloroethene	1.08	0.020	"	1.25		86.4	60-144	9.71	20	
Toluene	1.01	0.020	"	1.25		80.8	70-115	5.08	20	
Trichloroethene	1.07	0.020	"	1.25		85.6	68-132	1.85	20	
Trichlorofluoromethane	1.42	0.020	"	1.25		114	62-144	30.9	20	QR-04
Vinyl Chloride	1.34	0.020	"	1.25		107	66-137	8.56	20	
Surrogate: Dibromofluoromethane	13.0		"	12.5		104	75-125			
Surrogate: Toluene-d8	12.6		"	12.5		101	75-125			
Surrogate: 4-Bromofluorobenzene	12.4		"	12.5		99.4	75-125			

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17-Jun-14 08:54

Volatile Organic Compounds Quality Control

Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 34F2327 0Volatiles

Duplicate (34F2327) DUP71		Source: 3F42327026		Prepared & Analyzed: 06/03/14						
1,1,1,2-Tetrachloroethane	ND	0.020	ug/l		ND				50	
1,1,1-Trichloroethane	0.0876	0.020	"		0.111			23.7	50	
1,1,2,2-Tetrachloroethane	ND	0.020	"		ND				50	
1,1,2-Trichloro-trifluoroethane	0.496	0.020	"		0.543			8.97	50	
1,1,2-Trichloroethane	ND	0.020	"		ND				50	
1,1-Dichloroethane	ND	0.020	"		ND				50	
1,1-Dichloroethene	0.138	0.020	"		0.164			17.1	50	
1,2-Dichloroethane	ND	0.020	"		ND				50	
Benzene	ND	0.020	"		ND				50	
cis-1,2-Dichloroethene	ND	0.020	"		ND				50	
Carbon tetrachloride	ND	0.020	"		ND				50	
Chloroethane	ND	0.020	"		ND				50	
Chloroform	ND	0.020	"		ND				50	
Dichlorodifluoromethane	ND	0.020	"		ND				50	
Ethylbenzene	ND	0.020	"		ND				50	
Methylene Chloride	ND	0.020	"		ND				50	
ortho-Xylene	ND	0.020	"		ND				50	
meta- and para-Xylenes	ND	0.020	"		ND				50	
trans-1,2-Dichloroethene	ND	0.020	"		ND				50	
Tetrachloroethene	ND	0.020	"		ND				50	
Toluene	ND	0.020	"		ND				50	
Trichloroethene	0.352	0.020	"		0.439			21.9	50	
Trichlorofluoromethane	0.0668	0.020	"		0.0786			16.2	50	
Vinyl Chloride	ND	0.020	"		ND				50	
Surrogate: Dibromofluoromethane	2.63		"	2.50		105	75-125			
Surrogate: Toluene-d8	2.30		"	2.50		91.9	75-125			
Surrogate: 4-Bromofluorobenzene	2.09		"	2.50		83.6	75-125			
Surrogate: Benzene-d6	2.33		"	2.50		93.2	70-140			
Surrogate: Chloroform-d	2.55		"	2.50		102	70-140			
Surrogate: Methylene chloride-d2	2.06		"	2.50		82.2	70-140			

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17-Jun-14 08:54

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogates.
QR-04	The RPD result for this analyte in the sample exceeded the QC control limits; however, the RPD for other analytes were within the QC control limits.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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SUMMARY OF INITIAL CALIBRATION

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
 Title : 8260B GC/MS #3 ICAL 11/13/13 DN
 Last Update : Wed Nov 13 19:24:09 2013
 Response via : Initial Calibration

Calibration Files

1 =K3IC00_1.D 2 =K3IC0_25.D 3 =K07LCS01.D
 4 =K3IC1_25.D 5 =K3IC02_5.D 6 =K3IC12_5.D

Compound	1	2	3	4	5	6	Avg	%RSD
1) I Fluorobenzene (IS)	-----ISTD-----							
2) S Dibromofluoromethan	0.311	0.300	0.318	0.319	0.312	0.311	0.312	2.10
3) T (F12) Dichlorodiflu	0.320	0.284	0.302	0.292	0.321	0.321	0.307	5.36
4) P Chloromethane	0.422	0.302	0.293	0.219	0.221	0.212	0.278	29.02
5) CM Vinyl Chloride	0.276	0.224	0.211	0.207	0.207	0.199	0.221	12.88
6) T Bromomethane	0.338	0.225	0.179	0.162	0.150	0.139	0.199	37.55
7) T Chloroethane	0.030	0.106	0.066	0.102	0.098	0.089	0.082	35.53
8) T (F11) Trichlorofluo	0.379	0.365	0.327	0.337	0.323	0.326	0.343	6.87
9) T (F113) 1,1,2-Trichl	0.291	0.221	0.227	0.267	0.239	0.229	0.246	11.15
10) CM 1,1-Dichloroethene	0.277	0.287	0.322	0.307	0.291	0.286	0.295	5.61
11) T Acetone	0.267	0.136	0.115	0.061	0.051	0.016	0.108	82.94
12) M (IPA) Leak Check Co	0.012	0.022	0.014	0.013	0.014	0.016	0.015	27.59
13) T Carbon disulfide	1.178	1.037	1.080	1.042	0.958	0.941	1.039	8.28
14) T Methylene Chloride	0.418	0.313	0.349	0.339	0.327	0.314	0.343	11.47
15) (TBA) tert-Butanol	0.022	0.019	0.027	0.022	0.018	0.020	0.021	16.39
16) TM (MTBE) Methyl-t-but	0.789	0.678	0.760	0.729	0.655	0.638	0.708	8.56
17) T trans-1,2-Dichloroe	0.331	0.360	0.342	0.357	0.310	0.318	0.336	6.07
18) PM 1,1-Dichloroethane	0.582	0.580	0.586	0.585	0.521	0.518	0.562	5.90
19) T cis-1,2-Dichloroeth	0.442	0.415	0.416	0.387	0.339	0.345	0.390	10.66
20) T 2,2-Dichloropropane	0.561	0.489	0.520	0.497	0.440	0.435	0.490	9.80
21) T (MEK) 2-Butanone	0.036	0.041	0.042	0.021	0.440	0.435	0.035	26.97
22) T (DIPE) Diisopropyl	1.055	1.006	1.006	1.025	0.901	0.867	0.977	7.64
23) T Bromochloromethane	0.110	0.155	0.185	0.189	0.182	0.184	0.167	18.39
24) CM Chloroform	0.723	0.654	0.684	0.676	0.594	0.598	0.655	7.70
25) T (ETBE) 2-ethoxy 2-m	1.034	0.874	0.941	0.927	0.821	0.823	0.903	9.00
26) T 1,1,1-Trichloroetha	0.516	0.540	0.535	0.523	0.496	0.488	0.517	4.07
27) T (TAME) tert-Amyl me	1.000	0.749	0.821	0.764	0.701	0.680	0.786	14.75
28) S 1,2-Dichloroethane-	0.309	0.278	0.303	0.299	0.296	0.293	0.296	3.50
29) T 1,1-Dichloropropene	0.547	0.492	0.502	0.489	0.439	0.427	0.482	9.13
30) T Carbon Tetrachlorid	0.401	0.388	0.449	0.460	0.412	0.416	0.421	6.66
31) M Benzene	1.374	1.155	1.267	1.217	1.042	1.008	1.177	11.75
32) M 1,2-Dichloroethane	0.501	0.382	0.445	0.419	0.385	0.365	0.416	12.20
33) M Trichloroethene	0.480	0.355	0.386	0.399	0.336	0.324	0.380	14.87
34) C 1,2-Dichloropropane	0.298	0.297	0.277	0.290	0.264	0.258	0.281	6.17
35) T Dibromomethane	0.207	0.209	0.227	0.244	0.215	0.216	0.220	6.33
36) T Bromodichloromethan	0.459	0.407	0.479	0.446	0.428	0.433	0.442	5.69
37) T cis-1,3-Dichloropro	0.508	0.451	0.526	0.493	0.447	0.467	0.482	6.63
38) I Chlorobenzene-d5 (IS)	-----ISTD-----							
39) S Toluene-d8 (SU3)	1.209	1.139	1.193	1.149	1.157	1.149	1.166	2.42
40) T (MIBK) 4-Methyl-2-P	0.545	0.324	0.388	0.078	0.072	0.088	0.249	79.95
41) CM Toluene	2.231	1.790	1.660	1.584	1.518	1.441	1.704	16.71

Linear

Linear
Quadratic

Quadratic

Not in use.

Not in use.

42) T	trans-1,3-Dichlorop	0.601	0.493	0.586	0.607	0.528	0.560	0.563	7.97	
43) T	1,1,2-Trichloroetha	0.310	0.285	0.355	0.328	0.286	0.281	0.308	9.58	
44) M	Tetrachloroethene	0.462	0.392	0.677	0.635	0.590	0.281	0.551	21.81	Linear
45) T	1,3-Dichloropropane	0.710	0.578	0.592	0.569	0.532	0.529	0.585	11.33	
46) T	2-Hexanone	0.333	0.186	0.340	0.266	0.333	0.182	0.273	27.20	
47) T	Dibromochloromethan	0.426	0.363	0.496	0.458	0.432	0.459	0.439	10.18	
48) T	1,2-Dibromoethane	0.412	0.355	0.430	0.402	0.394	0.396	0.398	6.27	
49) PM	Chlorobenzene	1.366	1.154	1.110	1.134	1.086	1.043	1.149	9.84	
50) T	1,1,1,2-Tetrachloro	0.449	0.384	0.437	0.407	0.388	0.387	0.409	6.91	
51) CM	Ethylbenzene	2.333	2.080	1.968	1.851	1.736	1.654	1.937	12.77	
52) TM	m,p-Xylenes	0.809	0.711	0.727	0.669	0.615	0.602	0.689	11.20	
53) TM	o-Xylene	0.867	0.664	0.674	0.671	0.615	0.594	0.681	14.25	
54) T	Styrene	1.563	1.015	1.078	1.049	0.973	0.934	1.102	21.01	Linear
55) P	Bromoform	0.237	0.199	0.286	0.259	0.238	0.276	0.249	12.69	
56) T	Isopropylbenzene	2.188	1.855	1.900	1.811	1.764	1.674	1.865	9.44	
57) T	1,2,3-Trichloroprop	0.505	0.491	0.593	0.516	0.480	0.472	0.509	8.58	
58) S	4-Bromofluorobenzen	0.518	0.507	0.527	0.511	0.510	0.495	0.511	2.08	

59) I	1,4-Dichlorobenzene-d	-----ISTD-----								
60) P	1,1,2,2-Tetrachloro	1.020	0.822	1.013	0.870	0.774	0.905	0.901	11.13	
61) T	Bromobenzene	1.079	1.003	1.043	0.946	0.914	0.907	0.982	7.20	
62) T	n-Propylbenzene	6.721	5.112	5.219	4.601	4.392	4.279	5.054	17.82	
63) T	2-Chlorotoluene	3.644	2.948	3.362	3.044	2.868	2.805	3.112	10.48	
64) T	1,3,5-Trimethylbenz	3.612	3.208	3.247	3.017	2.832	2.775	3.115	9.93	
65) T	4-Chlorotoluene	3.315	2.950	2.942	2.812	2.597	2.623	2.873	9.19	
66) T	tert-Butylbenzene	2.817	2.666	3.007	2.633	2.430	2.371	2.654	8.96	
67) T	1,2,4-Trimethylbenz	3.774	3.331	3.421	3.050	2.968	2.953	3.250	9.91	
68) T	sec-Butylbenzene	4.837	3.956	4.522	4.187	3.865	3.852	4.203	9.54	
69) T	p-Isopropyltoluene	3.974	3.475	3.582	3.347	3.061	3.060	3.417	10.13	
70) T	1,3-Dichlorobenzene	2.120	1.740	1.888	1.871	1.734	1.744	1.850	8.06	
71) T	1,4-Dichlorobenzene	2.120	1.740	1.974	1.864	1.658	1.729	1.847	9.43	
72) T	n-Butylbenzene	4.391	3.645	3.644	3.397	3.264	3.192	3.589	12.14	
73) T	1,2-Dichlorobenzene	1.716	1.534	1.764	1.657	1.614	1.583	1.645	5.20	
74) T	1,2-Dibromo-3-chlor	0.082	0.104	0.111	0.148	0.133	0.146	0.121	21.61	Linear
75) T	1,2,4-Trichlorobenz	1.184	1.091	1.244	1.074	1.050	1.044	1.115	7.28	
76) T	Hexachlorobutadiene	0.297	0.477	0.596	0.481	0.499	0.507	0.476	20.56	Linear
77) T	Naphthalene	2.690	2.294	3.052	2.312	2.176	2.294	2.470	13.55	
78) T	Hexachloroethane	0.306	0.301	0.391	0.362	0.374	0.435	0.361	14.24	
79) T	1,2,3-Trichlorobenz	1.346	0.926	1.173	0.993	0.940	0.968	1.058	15.82	

(#) = Out of Range

MW111313.M

Wed Nov 13 19:25:18 2013

CONTINUING CALIBRATION VERIFICATION

Data File : C:\HPCHEM\1\DATA\060314L3\F03CCV01.D

Vial: 9

Acq On : 3 Jun 2014 6:04 am

Operator: DN

Sample : 1.25/2.5/12.5 ug/L 8260B std

Inst : GC/MS Ins

Misc : 20mL 8260 CCV

Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Jun 3 8:11 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene (IS)	10.30	96	1318361	12.50	ug/L	0.01
38) Chlorobenzene-d5 (IS)	13.93	117	1010775	12.50	ug/L	0.00
59) 1,4-Dichlorobenzene-d4 (IS)	16.51	152	479912	12.50	ug/L	0.00

System Monitoring Compounds

2) Dibromofluoromethane (SU1)	9.44	113	372852	11.34	ug/L	0.02
Spiked Amount	12.500	Range	75 - 125	Recovery	=	90.72%
28) 1,2-Dichloroethane-d4 (SU2)	9.90	65	331075	10.59	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	84.72%
39) Toluene-d8 (SU3)	12.21	98	1226080	13.01	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	104.08%
58) 4-Bromofluorobenzene (SU4)	15.23	95	483948	11.71	ug/L	0.00
Spiked Amount	12.500	Range	75 - 125	Recovery	=	93.68%

Target Compounds

					Qvalue
3) (F12) Dichlorodifluorometh	4.11	85	41939	1.30 ug/L	86
4) Chloromethane	4.47	50	30741	1.27 ug/L	96
5) Vinyl Chloride	4.60	62	31485	1.35 ug/L	80
6) Bromomethane	5.13	96	22783	1.39 ug/L	62
7) Chloroethane	5.27	64	10852	1.07 ug/L	90
8) (F11) Trichlorofluorometha	5.66	101	37145	1.03 ug/L	96
9) (F113) 1,1,2-Trichloro-tri	6.36	151	34995	1.35 ug/L	93
10) 1,1-Dichloroethene	6.44	96	42509	1.37 ug/L #	38
11) Acetone	6.48	58	26778	-12.50 ug/L #	1
12) (IPA) Leak Check Compound	6.53	45	114877	72.51 ug/L	93
13) Carbon disulfide	6.87	76	130998	1.20 ug/L	98
14) Methylene Chloride	7.12	84	43909	1.21 ug/L #	72
15) (TBA) tert-Butanol	7.11	59	5445	2.42 ug/L #	77
16) (MTBE) Methyl-t-butyl ethe	7.41	73	100827	1.35 ug/L #	84
17) trans-1,2-Dichloroethene	7.48	96	35947	1.01 ug/L #	53
18) 1,1-Dichloroethane	8.08	63	72116	1.22 ug/L	99
19) cis-1,2-Dichloroethene	8.84	96	42031	1.02 ug/L #	65
20) 2,2-Dichloropropane	8.85	77	2756	0.05 ug/L #	49
21) (MEK) 2-Butanone	8.80	72	4894	1.32 ug/L #	1
22) (DIPE) Diisopropyl Ether	8.02	45	143122	1.39 ug/L #	86
23) Bromochloromethane	9.18	128	16644	0.94 ug/L #	51
24) Chloroform	9.22	83	75008	1.09 ug/L	98

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060314L3\F03CCV01.D

Vial: 9

Acq On : 3 Jun 2014 6:04 am

Operator: DN

Sample : 1.25/2.5/12.5 ug/L 8260B std

Inst : GC/MS Ins

Misc : 20mL 8260 CCV

Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Jun 3 8:11 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
25) (ETBE) 2-ethoxy 2-methyl p	8.51	59	124926	1.31	ug/L #	87
26) 1,1,1-Trichloroethane	9.50	97	73964	1.36	ug/L	96
27) (TAME) tert-Amyl methyl et	10.02	73	96550	1.16	ug/L #	90
29) 1,1-Dichloropropene	9.70	75	83119	1.63	ug/L #	82
30) Carbon Tetrachloride	9.72	117	59121	1.33	ug/L	87
31) Benzene	9.99	78	142755	1.15	ug/L #	82
32) 1,2-Dichloroethane	10.00	62	52013	1.19	ug/L	88
33) Trichloroethene	10.75	130	45309	1.13	ug/L #	84
34) 1,2-Dichloropropane	11.06	63	34622	1.17	ug/L #	31
35) Dibromomethane	11.23	93	37045	1.60	ug/L	90
36) Bromodichloromethane	11.36	83	86396	1.85	ug/L	98
37) cis-1,3-Dichloropropene	11.88	75	65592	1.29	ug/L #	67
40) (MIBK) 4-Methyl-2-Pentanone	12.12	43	14197	0.70	ug/L #	100
41) Toluene	12.30	91	166096	1.21	ug/L	98
42) trans-1,3-Dichloropropene	12.52	75	59682	1.31	ug/L #	63
43) 1,1,2-Trichloroethane	12.76	83	30020	1.21	ug/L #	74
44) Tetrachloroethene	12.95	164	56440	1.17	ug/L	92
45) 1,3-Dichloropropane	12.97	76	58522	1.24	ug/L	97
46) 2-Hexanone	12.98	43	35784	1.62	ug/L #	96
47) Dibromochloromethane	13.26	129	59006	1.66	ug/L #	94
48) 1,2-Dibromoethane	13.44	107	46528	1.44	ug/L	97
49) Chlorobenzene	13.95	112	98088	1.06	ug/L #	68
50) 1,1,1,2-Tetrachloroethane	14.03	131	50633	1.53	ug/L	90
51) Ethylbenzene	14.03	91	206543	1.32	ug/L #	87
52) m,p-Xylenes	14.16	106	128926	2.32	ug/L #	62
53) o-Xylene	14.62	106	59300	1.08	ug/L #	45
54) Styrene	14.63	104	98920	1.23	ug/L #	75
55) Bromoform	14.92	173	34446	1.71	ug/L #	84
56) Isopropylbenzene	15.01	105	212905	1.41	ug/L #	88
57) 1,2,3-Trichloropropane	15.43	75	62762	1.52	ug/L #	1
60) 1,1,2,2-Tetrachloroethane	15.34	83	44214	1.28	ug/L	98
61) Bromobenzene	15.44	156	41448	1.10	ug/L #	60
62) n-Propylbenzene	15.47	91	259387	1.34	ug/L #	89
63) 2-Chlorotoluene	15.62	91	188681	1.58	ug/L #	81
64) 1,3,5-Trimethylbenzene	15.63	105	190755	1.59	ug/L #	78
65) 4-Chlorotoluene	15.73	91	182322	1.65	ug/L #	85
66) tert-Butylbenzene	16.02	119	137901	1.35	ug/L #	68

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\060314L3\F03CCV01.D

Vial: 9

Acq On : 3 Jun 2014 6:04 am

Operator: DN

Sample : 1.25/2.5/12.5 ug/L 8260B std

Inst : GC/MS Ins

Misc : 20mL 8260 CCV

Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Jun 3 8:11 19114

Quant Results File: MW111313.RES

Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Initial Calibration

DataAcq Meth : MW111313

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
67) 1,2,4-Trimethylbenzene	16.07	105	208343	1.67	ug/L #	84
68) sec-Butylbenzene	16.25	105	214514	1.33	ug/L #	92
69) p-Isopropyltoluene	16.39	119	202847	1.55	ug/L #	77
70) 1,3-Dichlorobenzene	16.45	146	88499	1.25	ug/L #	86
71) 1,4-Dichlorobenzene	16.45	146	88499	1.25	ug/L	87
72) n-Butylbenzene	16.85	91	209276	1.52	ug/L #	88
73) 1,2-Dichlorobenzene	16.99	146	73935	1.17	ug/L #	88
74) 1,2-Dibromo-3-chloropropan	17.94	75	11228	2.08	ug/L #	77
75) 1,2,4-Trichlorobenzene	19.04	180	51609	1.21	ug/L #	95
76) Hexachlorobutadiene	19.21	225	31481	1.63	ug/L	96
77) Naphthalene	19.46	128	150927	1.59	ug/L	100
78) Hexachloroethane	17.31	201	19141	1.38	ug/L	92
79) 1,2,3-Trichlorobenzene	19.82	180	45204	1.11	ug/L #	92

(#) = qualifier out of range (m) = manual integration

F03CCV01.D MW111313.M

Tue Jun 03 08:11:49 2014

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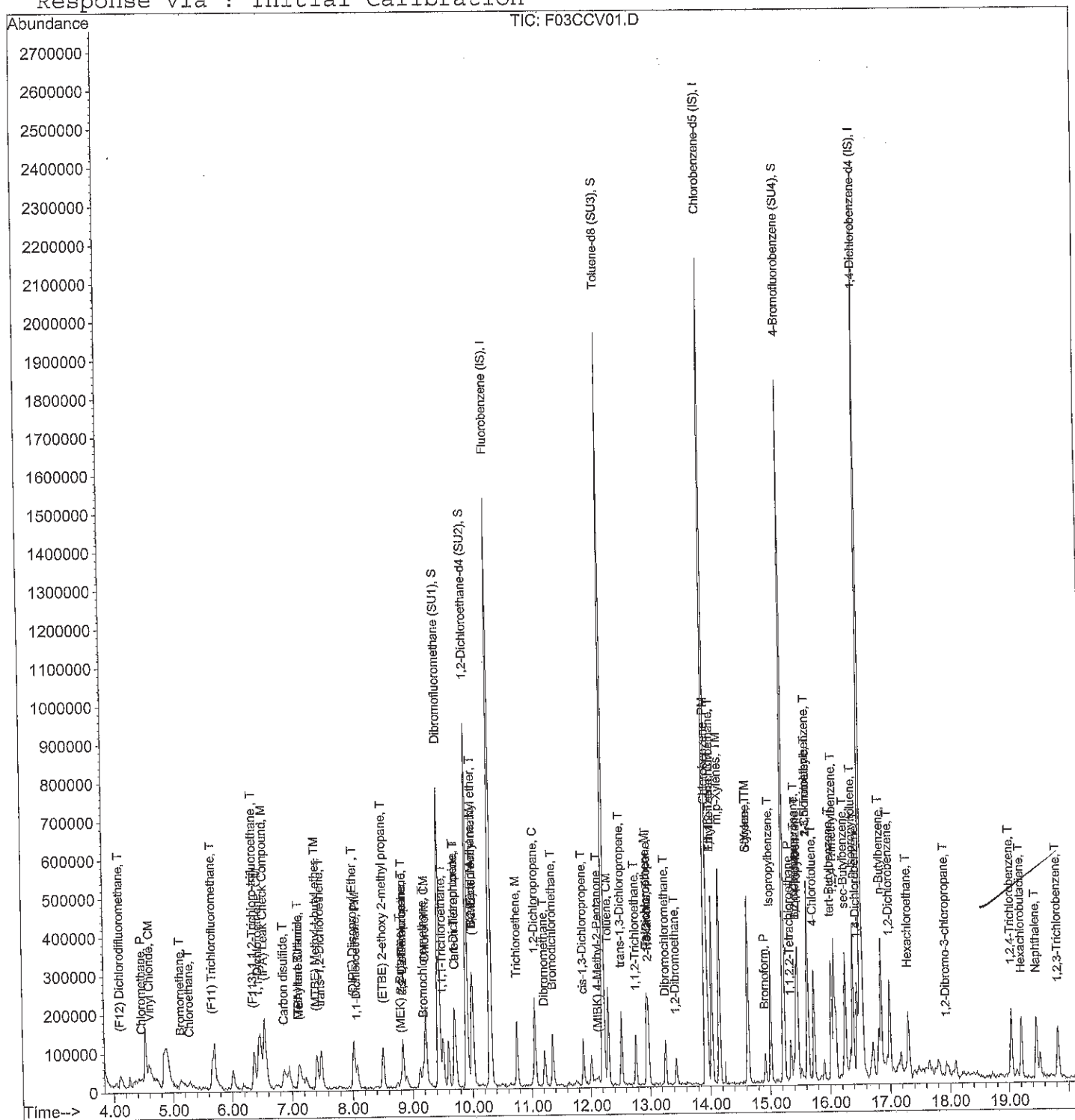
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060314L3\F03CCV01.D
Acq On : 3 Jun 2014 6:04 am
Sample : 1.25/2.5/12.5 ug/L 8260B std
Misc : 20mL 8260 CCV
MS Integration Params: rteint.p
Quant Time: Jun 3 8:11 19114 Quan

Vial: 9
Operator: DN
Inst: GC/MS Ins
Multiplr: 1.00

Quant Results File: MW111313.RES

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Method       : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
Title        : 8260B      GC/MS #3      ICAL 11/13/13      DN
Last Update   : Wed Nov 13 19:38:32 2013
Response via  : Initial Calibration
```



Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\060314L3\F03CCV01.D

Vial: 9

Acq On : 3 Jun 2014 6:04 am

Operator: DN

Sample : 1.25/2.5/12.5 ug/L 8260B std

Inst : GC/MS Ins

Misc : 20mL 8260 CCV

Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	Fluorobenzene (IS)	12.500	12.500	0.0	99	0.01
2 S	Dibromofluoromethane (SU1)	12.500	11.338	9.3	88	0.02
3 T	(F12) Dichlorodifluorometha	1.250	1.297	-3.8	108	0.04
4 P	Chloromethane	1.250	1.269	-1.5	106	0.08
5 CM	Vinyl Chloride	1.250	1.353	-8.2	115	0.05
6 T	Bromomethane	1.250	1.393	-11.4	106	0.03
7 T	Chloroethane	1.250	1.067	14.6	80	0.03
8 T	(F11) Trichlorofluoromethan	1.250	1.027	17.8	83	0.05
9 T	(F113) 1,1,2-Trichloro-trif	1.250	1.350	-8.0	99	0.04
10 CM	1,1-Dichloroethene	1.250	1.366	-9.3	104	0.04
11 T	Acetone	1.250	-12.500	1100.0#	329	0.02
12 M	(IPA) Leak Check Compound	62.500	72.514	-16.0	124	-0.01
13 T	Carbon disulfide	1.250	1.195	4.4	95	0.06
14 T	Methylene Chloride	1.250	1.213	3.0	98	0.04
15	(TBA) tert-Butanol	12.500	2.422	80.6#	18	0.00
16 TM	(MTBE) Methyl-t-butyl ether	2.500	1.350	46.0#	52	0.00
17 T	trans-1,2-Dichloroethene	1.250	1.013	19.0	76	0.02
18 PM	1,1-Dichloroethane	1.250	1.217	2.8	93	0.03
19 T	cis-1,2-Dichloroethene	1.250	1.021	18.3	82	0.02
20 T	2,2-Dichloropropane	1.250	0.053	95.8#	4	0.02
21 T	(MEK) 2-Butanone	1.250	1.320	-5.6	90	0.01
22 T	(DIPE) Diisopropyl Ether	1.250	1.390	-11.2	105	0.00
23 T	Bromochloromethane	1.250	0.943	24.6	66	0.03
24 CM	Chloroform	1.250	1.086	13.1	84	0.02
25 T	(ETBE) 2-ethoxy 2-methyl pr	1.250	1.311	-4.9	102	0.00
26 T	1,1,1-Trichloroethane	1.250	1.358	-8.6	106	0.01
27 T	(TAME) tert-Amyl methyl eth	1.250	1.165	6.8	95	0.01
28 S	1,2-Dichloroethane-d4 (SU2)	12.500	10.593	15.3	83	0.00
29 T	1,1-Dichloropropene	1.250	1.634	-30.7#	128	0.02
30 T	Carbon Tetrachloride	1.250	1.332	-6.6	97	0.01
31 M	Benzene	1.250	1.150	8.0	88	0.01
32 M	1,2-Dichloroethane	1.250	1.185	5.2	94	0.01
33 M	Trichloroethene	1.250	1.131	9.5	86	0.01
34 C	1,2-Dichloropropane	1.250	1.169	6.5	90	0.00
35 T	Dibromomethane	1.250	1.599	-27.9	114	0.01
36 T	Bromodichloromethane	1.250	1.853	-48.2#	146	0.01
37 T	cis-1,3-Dichloropropene	1.250	1.290	-3.2	100	0.00

(#) = Out of Range

F03CCV01.D MW111313.M

Tue Jun 03 08:12:32 2014

Page 1

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\060314L3\F03CCV01.D

Vial: 9

Acq On : 3 Jun 2014 6:04 am

Operator: DN

Sample : 1.25/2.5/12.5 ug/L 8260B std

Inst : GC/MS Ins

Misc : 20mL 8260 CCV

Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
38 I	Chlorobenzene-d5 (IS)	12.500	12.500	0.0	98	0.00
39 S	Toluene-d8 (SU3)	12.500	13.005	-4.0	103	0.00
40 T	(MIBK) 4-Methyl-2-Pentanone	1.250	0.704	43.7#	175	0.00
41 CM	Toluene	1.250	1.205	3.6	101	0.01
42 T	trans-1,3-Dichloropropene	1.250	1.312	-5.0	95	0.00
43 T	1,1,2-Trichloroethane	1.250	1.207	3.4	88	0.01
44 M	Tetrachloroethene	1.250	1.166	6.7	86	0.00
45 T	1,3-Dichloropropane	1.250	1.237	1.0	100	0.00
46 T	2-Hexanone	1.250	1.618	-29.4	130	0.01
47 T	Dibromochloromethane	1.250	1.662	-33.0#	125	0.00
48 T	1,2-Dibromoethane	1.250	1.445	-15.6	112	0.00
49 PM	Chlorobenzene	1.250	1.056	15.5	84	0.00
50 T	1,1,1,2-Tetrachloroethane	1.250	1.532	-22.6	120	0.00
51 CM	Ethylbenzene	1.250	1.319	-5.5	108	0.00
52 TM	m,p-Xylenes	2.500	2.315	7.4	93	0.00
53 TM	o-Xylene	1.250	1.077	13.8	85	0.00
54 T	Styrene	1.250	1.229	1.7	91	0.00
55 P	Bromoform	1.250	1.709	-36.7#	129	0.00
56 T	Isopropylbenzene	1.250	1.411	-12.9	114	0.00
57 T	1,2,3-Trichloropropane	1.250	1.524	-21.9	118	0.00
58 S	4-Bromofluorobenzene (SU4)	12.500	11.706	6.4	92	0.00
59 I	1,4-Dichlorobenzene-d4 (IS)	12.500	12.500	0.0	96	0.00
60 P	1,1,2,2-Tetrachloroethane	1.250	1.279	-2.3	101	0.00
61 T	Bromobenzene	1.250	1.100	12.0	87	0.00
62 T	n-Propylbenzene	1.250	1.337	-7.0	112	0.00
63 T	2-Chlorotoluene	1.250	1.579	-26.3	123	0.00
64 T	1,3,5-Trimethylbenzene	1.250	1.595	-27.6	126	0.00
65 T	4-Chlorotoluene	1.250	1.653	-32.2#	129	0.00
66 T	tert-Butylbenzene	1.250	1.353	-8.2	104	0.00
67 T	1,2,4-Trimethylbenzene	1.250	1.670	-33.6#	136	0.00
68 T	sec-Butylbenzene	1.250	1.329	-6.3	102	0.00
69 T	p-Isopropyltoluene	1.250	1.546	-23.7	121	0.00
70 T	1,3-Dichlorobenzene	1.250	1.246	0.3	94	0.00
71 T	1,4-Dichlorobenzene	1.250	1.248	0.2	95	-0.09
72 T	n-Butylbenzene	1.250	1.519	-21.5	123	0.00
73 T	1,2-Dichlorobenzene	1.250	1.171	6.3	89	0.00

(#)= Out of Range

F03CCV01.D MW111313.M

Tue Jun 03 08:12:33 2014

Page 2

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\060314L3\F03CCV01.D

Vial: 9

Acq On : 3 Jun 2014 6:04 am

Operator: DN

Sample : 1.25/2.5/12.5 ug/L 8260B std

Inst : GC/MS Ins

Misc : 20mL 8260 CCV

Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN

Last Update : Wed Nov 13 19:38:32 2013

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
74 T	1,2-Dibromo-3-chloropropane	1.250	2.078	-66.2#	151	0.00
75 T	1,2,4-Trichlorobenzene	1.250	1.206	3.5	96	0.00
76 T	Hexachlorobutadiene	1.250	1.630	-30.4#	130	0.00
77 T	Naphthalene	1.250	1.592	-27.4	130	0.00
78 T	Hexachloroethane	1.250	1.379	-10.3	105	0.00
79 T	1,2,3-Trichlorobenzene	1.250	1.113	11.0	91	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

F03CCV01.D MW111313.M

Tue Jun 03 08:12:34 2014

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SUMMARY OF INTERNAL STANDARDS

GC/MS QA-QC Check Report

Tune File : C:\HPCHEM\1\DATA\060314L3\F03BFB01.D

Tune Time : 3 Jun 14 5:46 am

Daily Calibration File : C:\HPCHEM\1\DATA\013014L3\A30CCV01.D

(PFB)	(CLBD)	(1,4-
1590180	1163370	587649

File	Sample	Surrogate Recovery %				Internal Standard Responses		
F0300001.D	3F40301-	98	118	95	107	1206346	1091625	590337
F0300002.D	3F40301-	105	90	91	117	1131382	1087567	626278
F0300003.D	34F0301-	105	109	92	84	1163616	1107383	628920
F0300004.D	3F40301-	98	91	93	107	1303867	1159703	653946
F0300005.D	3F40301-	87	117	89	86	1163509	1155665	644534
F0300006.D	3F40301-	98	87	88	100	1272104	1236372	663356
F0300007.D	3F40301-	94	90	90	99	1218544	1157967	647693
F0300008.D	3F40301-	112	83	99	98	715293	594656	321641
F0300009.D	3F40301-	87	108	86	92	1772886	1763205	880477
F0300010.D	3F40301-	90	103	91	96	1313669	1264130	678991
F0300011.D	3F40301-	88	90	91	85	1210996	1140417	602028
F0300012.D	3F40301-	103	107	91	112	1277151	1208600	630216
F0300013.D	3F40301-	88	88	86	99	1269688	1232987	646113
F0300014.D	3F40301-	101	110	88	112	1252733	1213245	642740
F03BLK01.D	34F0301-	99	89	91	117	1332104	1266796	698370
F03LCS01.D	34F0301-	97	95	103	98	1293171	999567	441496
F03LCS02.D	34F0301-	104	83	101	99	1492408	1126848	541470

t - fails 12hr time check * - fails criteria

Created: Sun Jun 08 11:49:37 2014 GC

MS Ins

SUMMARY OF INSTRUMENT TUNING

BFB

Data File : C:\HPCHEM\1\DATA\060314L3\F03BFB01.D

Vial: 1

Acq On : 3 Jun 2014 5:46 am

Operator: DN

Sample : 50 ng BFB tune

Inst : GC/MS Ins

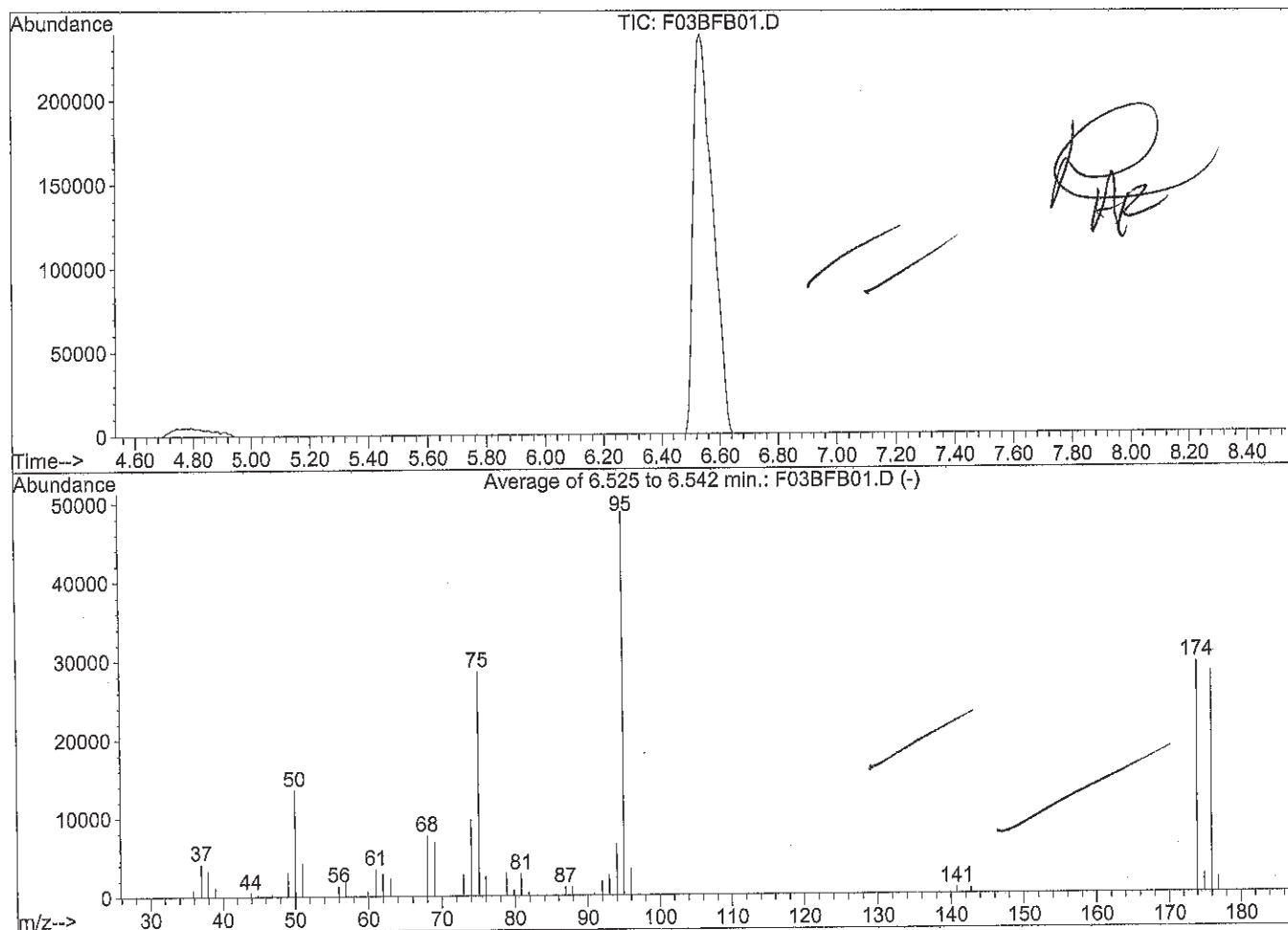
Misc : 12HRS SYSTEM BFB TUNING

Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)

Title : 8260B GC/MS #3 ICAL 11/13/13 DN



AutoFind: Scans 320, 321, 322; Background Corrected with Scan 313

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	27.6	13466	PASS
75	95	30	60	58.6	28541	PASS
95	95	100	100	100.0	48744	PASS
96	95	5	9	6.7	3246	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	60.2	29320	PASS
175	174	5	9	7.8	2284	PASS
176	174	95	101	95.9	28123	PASS
177	176	5	9	6.6	1859	PASS

INJECTION LOG

Injection Log

Directory: c:\hpchem\1\data\060314\3

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	11	f0300001.d	10.	3F40301-01	100cc Equipment Blank	3 Jun 14 08:00
2	1	f0300002.d	10.	3F40301-02	100cc SVL-503-SA8-SV-4.5-5.5	3 Jun 14 08:29
3	2	f0300003.d	10.	34F0301-DUP1	100cc SVL-503-SA8-SV-4.5-5.5	3 Jun 14 08:59
4	3	f0300004.d	10.	3F40301-03	100cc SVL-534-SA8-SV-6.0-7.0	3 Jun 14 09:29
5	4	f0300005.d	10.	3F40301-04	100cc SVL-834-SA8-SV-6.0-7.0	3 Jun 14 09:59
6	5	f0300006.d	10.	3F40301-05	100cc SVL-507-SA5C-SV-6.0-7.0	3 Jun 14 10:27
7	6	f0300007.d	10.	3F40301-06	100cc SVL-507-SA5C-SV-10.5-11.5	3 Jun 14 10:56
8	7	f0300008.d	10.	3F40301-07	100cc SVL-508-SA5C-SV-8.25-9.25	3 Jun 14 11:25
9	8	f0300009.d	10.	3F40301-08	100cc SVL-535-SA5C-SV-5.0-6.0	3 Jun 14 11:54
10	1	f0300010.d	10.	3F40301-09	100cc SVL-535-SA5C-SV-10.0-11.0	3 Jun 14 12:27
11	2	f0300011.d	10.	3F40301-10	100cc SVL-535-SA5C-SV-15.0-16.0	3 Jun 14 12:56
12	3	f0300012.d	10.	3F40301-11	100cc SVL-543-SA5C-SV-5.0-6.0	3 Jun 14 13:25
13	4	f0300013.d	10.	3F40301-12	100cc SVL-543-SA5C-SV-11.0-12.0	3 Jun 14 13:54
14	5	f0300014.d	10.	3F40301-13	100cc FB-060314	3 Jun 14 14:23
15	1	f03bfb01.d	1.	50 ng BFB tune	12HRS SYSTEM BFB TUNING	3 Jun 14 05:46
16	11	f03blk01.d	10.	34F0301-BLK1	100cc AMBIENT AIR/H2O	3 Jun 14 07:31
17	9	f03ccv01.d	1.	1.25/2.5/12.5 ug/L 8260B std	20mL 8260 CCV	3 Jun 14 06:04
18	10	f03lcs01.d	1.	34F0301-BS1	20cc 1.25/2.5/12.5 ug/L LCS	3 Jun 14 06:34
19	9	f03lcs02.d	1.	34F0301-BSD1	20cc 1.25/2.5/12.5 ug/L LCS	3 Jun 14 14:52

SAMPLE LOG SHEET

Environmental Support Technologies, Inc.
SOIL GAS - FIELD ANALYSIS
Sample Log Sheet

Date: 06/03/2014_____

Analyst: DN

Lab ID: #3

Batch Number: 34F0301

Project Number: EST2754

EPA Method: 8260B CHHSLS 0.02 RL GILAN AIR5 PUMP

Initial Calibration: MW111313.MTH FLOW RATE @ 200ml/min

Cal Std Lot No.: 4D14009

LCS Std Lot No.: 4D14008 Glass Bulb Bake @

IS/SS Lot No.: 4D14001 130 degree for 30 min

MWV SSFL, CA

[illegible]

APPENDIX D

DATA USABILITY AND VALIDATION REPORTS

Data Usability Assessment Report,
DOE Phase 3 Soil Vapors,
Santa Susana Field Laboratory,
Ventura County, California

Prepared for:

Department of Energy

September 2014

Prepared by:

MEC^x

12269 East Vassar Drive
Aurora, Colorado 80014

www.mecx.net





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ATTACHMENTS

- Appendix A Laboratory Data Summary Reports
- Appendix B Data Validation Reports



ACRONYMS

%	Percent
%D	Percent Different
Calscience	Calscience Environmental Laboratories, Inc.
DOE	Department of Energy
DUA	Data Usability Assessment
EST	Environmental Support Technologies
FB	Field Blank
FD	Field duplicate
Lancaster	Eurofins' Lancaster Laboratories Environmental
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MDL	Method Detection Limit
MEC ^x	MEC ^x , Inc.
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RL	Reporting Limit
RPD	Relative Percent Difference
SDG	Sample Delivery Group
SSFL	Santa Susana Field Laboratory
TA-Denver	TestAmerica Laboratories, Inc.
TIC	Tentatively Identified Compound
VOC	Volatile Organic Compounds



1. Introduction

The objective of this data usability assessment (DUA) report is to assess the quality of the analytical results of the soil vapor samples collected during the chemical sampling activities in Area IV for Department of Energy (DOE) at the Santa Susana Field Laboratory (SSFL) in Ventura County, California. Samples were collected and analyzed to provide additional characterization data. The data may also be used to support future activities such as feasibility studies, risk assessments, fate-and-transport modeling, and remedial actions.

Individual method requirements and guidelines from the Quality Assurance Project Plan, SSFL RFI Surficial Media Operable Unit, Revision 5, March 2013 (SSFL QAPP) were used in this assessment. The SSFL QAPP includes the quality assurance/quality control procedures to confirm the quality of field and laboratory data. This report is intended as a general data quality evaluation designed to summarize data issues and to provide an overall data usability assessment.



2. Analytical Data

This DUA report covers 177 soil vapor samples, 19 soil vapor field duplicate (FD) samples, 16 field/equipment blanks (FB), and 23 ambient blanks (AB) and 19 soil vapor split samples. The samples were collected between May 21, 2014 and June 30, 2014 and were reported in 31 sample delivery groups (SDG). Analyses were performed by the on-site mobile laboratory Environmental Support Technologies (EST), based in Santa Ana, California and off-site laboratories TestAmerica Laboratories, Inc.-Denver (TA-Denver) located in Arvada, Colorado, Calscience Environmental Laboratories (Calscience) located in Garden Grove, California, and Eurofins' Lancaster Laboratories Environmental (Lancaster), located in Lancaster, Pennsylvania. All samples were collected under chain-of-custody. Samples were delivered to the off-site laboratories via overnight carrier. Analyses performed are listed in Table 1.

TABLE 1: ANALYTICAL PARAMETERS BY LABORATORY

Parameter	Analysis Method	Lab Name
VOCs	8260B	EST
VOCs	TO-15	Calscience, Lancaster, TA-Denver

VOC = volatile organic compound

The chains-of-custody and case narratives associated with each SDG are included in the laboratory data summary reports provided in Appendix A.

All data was validated at Level V by MEC^x chemists, as specified in the SSFL QAPP. Validation included an assessment of:

- sample management - chain-of-custody documentation and sample receipt conditions;
- holding-time compliance;
- blanks – method, ambient blank, and field blank;
- laboratory control sample accuracy or laboratory control sample/laboratory control sample duplicate (LCS/LCSD) accuracy and precision;
- surrogate accuracy;
- laboratory duplicate precision;
- field duplicate precision;
- calibration;
- compound identification;
- compound quantification; and
- other method-specific criteria defined by the SSFL QAPP.

Data qualifiers were assigned according to the SSFL QAPP and qualified data were assigned reason code(s), which describe the reason for qualification. The qualifiers and reason codes are described in the data validation reports and were uploaded into the Boeing electronic



database. The data validation reports are provided in Appendix B. The data qualifiers listed in the SSFL QAPP are defined below:

- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.
- J - Analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
- NJ - Analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.
- UJ - The analyte was not deemed above the reported sample quantitation limit; however, the reported quantitation limit is approximate.
- R - The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.



3. Findings

3.1. Sample Preservation

The soil vapor samples did not require any physical or chemical preservation.

3.2. Holding Times

Analytical holding times were assessed against the criteria listed in Table 5-1 of the SSFL QAPP. The holding time was from the time of sampling to the start of the analysis. All samples were analyzed within the prescribed holding times. Bulb surrogates were added within 15 minutes of collection and all samples were analyzed within six hours of collection for samples analyzed on site. All samples collected in Summa canisters and analyzed at a fixed laboratory were analyzed within 30 days of collection. No data were qualified for holding time exceedances.

3.3. Calibration

Calibrations are established by the laboratory to ensure proper identification and quantitation of target compounds. Although Level V validation does not include the assessment of calibration data, calibration was reviewed as part of the soil vapor validation. Eight compounds had calibration outliers. Toluene was qualified in all samples analyzed on-site for an initial calibration outlier.

TABLE 2: CALIBRATION QUALIFICATION SUMMARY

Method	Total Number of Samples	Total Number of Sample Results	Number of Results Qualified as Estimated Nondetects or Estimated Detects	
			UJ-Flag	J-Flag
8260B – VOCs	127	3048	160	33
TO-15 - VOCs	50	1200	15	0

Approximately 4.9% of the results were qualified (208 of 4,248 results) as estimated detects or nondetects. Sample results that have been qualified as estimated due to calibration criteria are usable for project decisions; however, data users should consider the impact to any result that is qualified as estimated as it may contain a bias that should be accounted for during the decision-making process.



3.4. Method Blanks

Method blanks are used to monitor each preparation or analytical batch for contamination from glassware, reagents, and other potential sources of laboratory contamination. A method blank is an analyte-free matrix (ambient air for soil vapor samples) to which all reagents are added in the same amounts as are added to samples. The method blank is processed through the same analytical procedures, at the same time, as the site samples in the batch. At least one method blank is prepared for each analytical batch, containing a maximum of 20 site samples.

Blank qualifications were assigned using the SSFL QAPP 5x and 10x rules. Target compound detects less than or equal to 5x a blank detect and common laboratory contaminant compound detects less than or equal to 10x a blank detect were qualified as nondetected, "U." Nondetected results were reported at the reporting limit (RL) if the original detect was less than or equal to the RL or reported at the level of contamination if the original detect was greater than the RL.

Method blanks were analyzed at the required frequency and were generally free of contamination that would affect the sample results, with some exceptions as listed in Table 3.

TABLE 2: ANALYTICAL BLANK QUALIFICATION SUMMARY

Method	Total Number of Samples	Total Number of Sample Results	Number of Results Qualified as Nondetected or Estimated Nondetects
8260B – VOCs	127	3048	18
TO-15 - VOCs	50	1200	0

Approximately 0.4% of the results (18 of 4,248 results) were qualified as nondetected. The nature and level of qualifications for method blanks was considered acceptable and the data are usable.

3.5. Field Blanks and Ambient Blanks

Field blanks (air passed through the sampling equipment) and ambient air blanks are collected to monitor contamination from sources associated with field collection activities. Field blanks and ambient blanks are collected during each day of air sampling to assess the presence of potential contaminants in the ambient air or for breakthrough of ambient surface air into the sample train.

Qualifications were assigned using the SSFL QAPP 5x and 10x rules described in Section 3.4.

Field blanks and ambient blanks were collected and analyzed at the required frequency and were generally free of contamination that would affect the sample results, with some exceptions as listed in Table 4.



TABLE 3: FIELD BLANK AND AMBIENT BLANK QUALIFICATION SUMMARY

Method	Total Number of Samples	Total Number of Sample Results	Number of Results Qualified as Nondetected
8260B – VOCs	127	3048	12
TO-15 - VOCs	50	1200	133

Approximately 3.4% of the results (145 of 4,248 results) were qualified as nondetected. The qualification of these results as nondetect does not adversely affect the identification of site related contaminants.

For the air matrix TO-15 VOC analyses, approximately 11% of the results were qualified as nondetected. Detects in the ambient blanks were usually between the MDL and the RL as were the majority of the detects that were qualified as nondetected. Since the majority of VOCs detected in the ambient blanks were below the RLs, the resulting qualification of associated sample results as nondetect does not adversely affect the identification of site-related contaminants. The nature and level of qualifications for field and ambient blanks was considered acceptable and the data are usable.

3.6. Field Duplicate and Split Samples

A field duplicate, or collocated sample, is an independent sample collected immediately after the original sample, to the extent practicable. Field duplicates were collected at an approximate rate of 10% and are used to document sampling and analytical precision and representativeness. Precision is expressed in terms of the relative percent difference (RPD) between the parent (original) and field duplicate results. The RPD criterion is 50% for soil vapor samples. The RPD criterion is general applied only to common detects above the RL. Primary and field duplicate outliers are presented in Table 5.

The nature and level of qualifications for field duplicates was considered acceptable and the data are considered usable.

TABLE 4: PRIMARY/FIELD DUPLICATE PRECISION OUTLIER SUMMARY

Method	Total Number of Samples	Total Number of Sample Results	Total Number of RPD Outliers
8260B - VOCs	16	384	0
TO-15 – VOCs	3	72	1

Split samples are independent samples, collected as quickly as possible after the original sample, to the extent practicable. These samples are sent to a different off-site laboratory in order to check the performance of the primary laboratory. Split samples were collected at an approximate rate of 10%. Precision is expressed in terms of the RPD between the parent



(original) and split sample result. As an initial evaluation, an RPD criterion of 50% for soil vapor samples was used in assessing data usability. The comparability of the data was evaluated and outliers compared to look for trends in the accuracy and precision of reporting the data so that a bias or error is not laboratory dependent.

Split sample results with RPDs exceeding these criteria are not routinely qualified. The comparability between results reported by the split laboratories did not indicate overall greater than typical variability of the data and the data are considered usable. Primary and split sample outliers are presented in Table 6.

TABLE 5: PRIMARY/SPLIT DUPLICATE PRECISION OUTLIER SUMMARY

Method	Total Number of Samples	Total Number of Sample Results	Total Number of RPD Outliers
TO-15 – VOCs	19	456	3

3.7. Laboratory Duplicates

Laboratory duplicate samples are environmental samples analyzed in duplicate by the laboratory as an assessment of method precision. Laboratory duplicate samples were analyzed by the on-site mobile laboratory. Precision is expressed in terms of the RPD between the parent (original) and laboratory duplicate results. The RPD criterion is 25%. All laboratory duplicates met the QC criterion of 25% RPD with the exception of two results (0.1% of the 4,248 results) were qualified as estimated detects, “J,” for laboratory duplicate outliers.

3.8. Surrogates

Surrogates are organic analytes that behave similarly as the analytes of interest, or have been deuterated, but are not expected to occur naturally in the samples. They are spiked into the standards, field samples, and laboratory quality control samples prior to sample preparation. The surrogate recoveries provide additional information about the possible influence of the matrix on the accuracy of the measurements. All of the surrogates were recovered within the established control limits.

Overall, the nature and lack of qualifications for surrogate outliers was considered acceptable and the data are usable.

3.9. Laboratory Control Samples

LCSs are used to monitor method performance. An LCS is an analyte-free matrix (humidified laboratory grade ultrapure air) spiked with known amounts of analytes that come from a source different than that used for calibration standards. The LCS is processed through the same



preparation and analytical procedures, at the same time, as the site samples in the batch. At least one LCS or LCSD/LCSD pair is prepared for each analytical batch, containing a maximum of 20 samples. Accuracy and precision criteria are listed in Appendix D of the SSFL QAPP.

LCS/LCSDs were analyzed at the required frequency. Accuracy and precision limits were generally met, with some exceptions as listed in Table 7.

TABLE 7: LABORATORY CONTROL SAMPLE QUALIFICATION SUMMARY

Method	Total Number of Samples	Total Number of Results	Number of Results Estimated for Recovery or Precision		Number of Results Rejected
			J Flag	UJ Flag	R Flag
8260B – VOCs	127	3048	3	206	0
To-15 VOCs	50	1200	7	0	0

No data were rejected for LCS/LCSD outliers.

Approximately 5.0% of the results were qualified (216 of 4,248 results) as estimated detects or nondetects. Sample results that have been qualified as estimated due to accuracy or precision criteria are usable for project decisions; however, data users should consider the impact to any result that is qualified as estimated as it may contain a bias that should be accounted for during the decision-making process.

Overall, the nature and level of qualifications for LCS/LCSD outliers was considered acceptable and the data are usable.

3.10. Tentatively Identified Compounds

Tentatively identified compound (TIC) were not evaluated in the soil vapor analysis.

3.11. Other

Toluene in one sample was reported above the calibration range due to limited sample volume which precluded a reanalysis of the sample. This results was qualified as an estimated detect, “J.”

3.12. Chain of Custody

All chain of custodies were reviewed in the data validation process. Although there were minor issues such as overwritten text and cross-outs without signatures and dates, none were sufficient to warrant qualification or rejection of the data. The chains-of-custody are provided in



the laboratory analytical data packages in Attachment A. The detailed review of all chain of custodies can be found in the Sample Handling Section of the Data Validation Reports found in Appendix B.

3.13. Overall Assessment

The final activity in the DUA is an assessment of whether the data met the data quality objectives. The goal of this assessment is to demonstrate that a sufficient number of representative samples were collected and the resulting analytical data can be used to support the decision-making process. Precision, accuracy, representativeness, completeness, comparability and sensitivity are addressed in the SSFL QAPP. The following summary highlights the data evaluation findings for the above defined event.

- Precision of the data was verified through the review of field and laboratory data quality indicators: field duplicate, laboratory duplicate, and LCS/LCSD RPDs. Precision was generally acceptable with the exception of several analytes which were qualified as estimated due to laboratory duplicate, FD, or LCS/LCSD RPD issues. Overall, 220 results out of 4,248 total results (5.2% percent) were qualified for precision exceptions.
- Accuracy of the data was verified through the review of the LCS/LCSD and surrogate standard recoveries, as well as the evaluation of the blank data. Accuracy was generally acceptable with the exception of some analytes being qualified as estimated detects and nondetects due to LCS/LCSD recovery outliers. Overall, 33 results out of 4,248 total results (0.8%) were qualified for accuracy exceptions. Analytical/field blank data were generally free of contamination with some analytes being qualified as non-detected. Overall, 177 results out of 4,248 total results (4.2%) were qualified for blank contamination.
- Representativeness of the data was verified through the samples' collection, storage, and verification of holding-time compliance. The laboratory did not note any issues related to sample collection or storage of the samples. All samples data were reported from analyses within the holding times listed in the SSFL QAPP.
- Comparability of the data was verified through the use of standard analytical procedures and standard units for reporting. Results obtained are comparable to industry standards as the collection and analytical techniques followed approved, documented procedures.
- Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Completeness is expressed as the percentage of valid or usable measurements compared to the planned measurements. Valid data are defined as all data that are not rejected for project use. The completeness goal of 90 percent was met for all analyte/methods, as indicated in Table 8. (Note: Table 8 does not include data rejected for duplicate analyses; it is the total number of validated results reported to the electronic database.) No soil vapor data were rejected.



TABLE 8: SITE COMPLETENESS SUMMARY

Method	Total Number of Samples	Total Number of Results	Results Qualified as Nondetected		Results Qualified as Estimated		Rejected Results		Completeness	
			Number	%	Number	%	Number	%	Number	%
8260B – VOCs	127	3048	400	13	38	1.2	0	0	1498	100
TO-15 - VOCs	50	1200	148	12	7	0.6	0	0	1836	100



4. References

MEC^X. 2013. *Quality Assurance Project Plan, SSFL RFI Surficial Media Operable Unit*, Revision 5, March.

U.S. Environmental Protection Agency (USEPA) 1984. *Guidelines Establishing Test Procedures for the Analysis of Pollutants*. Code of Federal Regulations. Title 40, Part 136, Appendix B. Government Printing Office. Washington, D.C. March.





DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3E42701

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3E42701
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 12
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB-3E42701	3E42701-01	N/A	Soil Vapor	5/27/2014	8260B
SVL-502-SA5D-SV-5.0-6.0	3E42701-02	N/A	Soil Vapor	5/27/2014	8260B
SVL-802-SA5D-SV-5.0-6.0	3E42701-03	N/A	Soil Vapor	5/27/2014	8260B
SVL-502-SA5D-SV-13.0-14.0	3E42701-04	N/A	Soil Vapor	5/27/2014	8260B
SVL-502-SA5D-SV-18.0-19.0	3E42701-05	N/A	Soil Vapor	5/27/2014	8260B
SVL-513-SA5D-SV-5.0-6.0	3E42701-06	N/A	Soil Vapor	5/27/2014	8260B
SVL-513-SA5D-SV-10.0-11.0	3E42701-07	N/A	Soil Vapor	5/27/2014	8260B
SVL-513-SA5D-SV-15.5-16.5	3E42701-08	N/A	Soil Vapor	5/27/2014	8260B
SVL-512-SA5D-SV-5.0-6.0	3E42701-09	N/A	Soil Vapor	5/27/2014	8260B
SVL-512-SA5D-SV-11.0-12.0	3E42701-10	N/A	Soil Vapor	5/27/2014	8260B
SVL-512-SA5D-SV-16.75-17.75	3E42701-11	N/A	Soil Vapor	5/27/2014	8260B
FB-052714	3E42701-12	N/A	Soil Vapor	5/27/2014	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3E42701 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 10, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene were qualified as estimated, "UJ," for nondetects and, "J," for detects. The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 . The %D for 1,1,1-trichloroethane in the continuing calibration was 19.4%; therefore, results for 1,1,1-trichloroethane, all nondetects, were qualified as estimated, "UJ," in the samples. The %D exceeded 15% for 1,1,2-trichloroethane also; however, as the outlier was associated with a high recovery and the analyte was not detected in the samples, no further qualifications were applied. All remaining continuing calibration %Ds were $\leq 15\%$.
- **Blanks:** The ambient air method blank had a detect for m,p-xylene reported at 0.0080(J) $\mu\text{g/L}$. Sample detects less than five times the method blank concentration were qualified as nondetected, "U," at the reporting limit if detected below the reporting limit, or at the level of contamination if detected at or above the reporting limit. The method blank had no other target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on SVL-502-SA5D-SV-5.0-6.0. RPDs were 24% for ethylbenzene, 20% for m,p-xylene, 19% for o-xylene, and 17% for toluene. No other detects were present in the parent or duplicate sample.
- **Blank Spikes and Laboratory Control Samples:** Recoveries affecting sample data were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining



compounds. RPDs were within the control limit of $\leq 20\%$, with the exception of RPDs of 64.0% and 23.9% for dichlorofluoromethane and tetrachloroethene, respectively. Sample results for both compounds were qualified as estimated, "J," for detects and "UJ," for nondetects.

- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks:** Sample FB-052714 was the field blank and EB-3E42701 was the equipment rinsate associated with the site samples in this SDG. The field QC samples had no reported detects.
 - **Field Duplicates:** Samples SVL-502-SA5D-SV-5.0-6.0 and SVL-802-SA5D-SV-5.0-6.0 were identified as field duplicate samples. The samples had four common detects. RPDs were 22% for ethylbenzene, 32% for m,p-xylene, 40% for o-xylene, and 18% for toluene.
- **Internal Standards:** Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- **Compound Identification:** Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- **Compound Quantification and Reported Detection Limits:** Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. Sample SVL-513-SA5D-SV-10.0-11.0 was analyzed and reported at a 20x dilution for a high concentration of 1,1,2-trichloro-1,2,2-trifluoroethane.

Validated Sample Result Forms: 3E42701

Analysis Method 8260B

Sample Name EB-3E42701 Matrix Type: Soil Vapor Result Type: Primary Result

Lab Sample Name: 3E42701-01 Sample Date: 5/27/2014 9:09:00 AM Validation Level: V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	UJ	*III
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-052714 Matrix Type: Soil Vapor Result Type: Primary Result

Lab Sample Name: 3E42701-12 Sample Date: 5/27/2014 2:00:00 PM Validation Level: V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	UJ	*III
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-502-SA5D-SV-13.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42701-04 **Sample Date:** 5/27/2014 9:09:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.0044	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	J	U	B, result changed from 0.011
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	UJ	*III
Toluene	108883	0.011	0.02	0.0043	ug/L	J	J	C

Analysis Method 8260B

trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-502-SA5D-SV-18.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42701-05 **Sample Date:** 5/27/2014 9:42:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.054	0.02	0.016	ug/L			
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.004	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	J	U	B, result changed from 0.012
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	UJ	*III
Toluene	108883	0.007	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-502-SA5D-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42701-02 **Sample Date:** 5/27/2014 8:32:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.025	0.02	0.003	ug/L			
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.079	0.02	0.008	ug/L			
o-Xylene	95476	0.036	0.02	0.0089	ug/L			
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	UJ	*III
Toluene	108883	0.12	0.02	0.0043	ug/L		J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-512-SA5D-SV-11.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42701-10 **Sample Date:** 5/27/2014 1:03:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.099	0.02	0.012	ug/L			
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.071	0.02	0.008	ug/L			
o-Xylene	95476	0.018	0.02	0.0089	ug/L	J	J	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	UJ	*III

Analysis Method 8260B

Toluene	108883	0.16	0.02	0.0043	ug/L		J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-512-SA5D-SV-16.75 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42701-11 **Sample Date:** 5/27/2014 1:34:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.026	0.02	0.012	ug/L			
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	UJ	*III
Toluene	108883	0.015	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-512-SA5D-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42701-09 **Sample Date:** 5/27/2014 12:32:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.11	0.02	0.012	ug/L			

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.01	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.041	0.02	0.008	ug/L			
o-Xylene	95476	0.014	0.02	0.0089	ug/L	J	J	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	UJ	*III
Toluene	108883	0.035	0.02	0.0043	ug/L		J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-513-SA5D-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42701-07 **Sample Date:** 5/27/2014 10:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.4	0.4	0.18	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.4	0.4	0.11	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.4	0.4	0.18	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	86	0.4	0.24	ug/L			
1,1,2-Trichloroethane	79005	0.4	0.4	0.13	ug/L	U	U	
1,1-Dichloroethane	75343	0.4	0.4	0.12	ug/L	U	U	
1,1-Dichloroethene	75354	0.4	0.4	0.14	ug/L	U	U	
1,2-Dichloroethane	107062	0.4	0.4	0.21	ug/L	U	U	
Benzene	71432	0.4	0.4	0.081	ug/L	U	U	
Carbon Tetrachloride	56235	0.4	0.4	0.23	ug/L	U	U	
Chloroethane	75003	0.4	0.4	0.32	ug/L	U	U	
Chloroform	67663	0.4	0.4	0.12	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.4	0.4	0.19	ug/L	U	U	
Dichlorodifluoromethane	75718	0.4	0.4	0.22	ug/L	U	UJ	*III
Ethylbenzene	100414	0.4	0.4	0.06	ug/L	U	U	
Methylene chloride	75092	0.4	0.4	0.21	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.4	0.4	0.16	ug/L	U	U	
o-Xylene	95476	0.4	0.4	0.18	ug/L	U	U	

Analysis Method 8260B

Tetrachloroethene	127184	0.12	0.4	0.11 ug/L	J	J	*III
Toluene	108883	0.088	0.4	0.085 ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.4	0.4	0.078 ug/L	U	U	
Trichloroethene	79016	0.4	0.4	0.23 ug/L	U	U	
Trichlorofluoromethane	75694	0.4	0.4	0.11 ug/L	U	U	
Vinyl chloride	75014	0.4	0.4	0.2 ug/L	U	U	

Sample Name SVL-513-SA5D-SV-15.5- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42701-08 **Sample Date:** 5/27/2014 11:22:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009 ug/L	U	U		
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054 ug/L	U	UJ	C	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089 ug/L	U	U		
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.4	0.02	0.012 ug/L				
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063 ug/L	U	U		
1,1-Dichloroethane	75343	0.02	0.02	0.0062 ug/L	U	U		
1,1-Dichloroethene	75354	0.023	0.02	0.0072 ug/L				
1,2-Dichloroethane	107062	0.02	0.02	0.011 ug/L	U	U		
Benzene	71432	0.02	0.02	0.0041 ug/L	U	U		
Carbon Tetrachloride	56235	0.02	0.02	0.012 ug/L	U	U		
Chloroethane	75003	0.02	0.02	0.016 ug/L	U	U		
Chloroform	67663	0.02	0.02	0.006 ug/L	U	U		
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094 ug/L	U	U		
Dichlorodifluoromethane	75718	0.02	0.02	0.011 ug/L	U	UJ	*III	
Ethylbenzene	100414	0.0078	0.02	0.003 ug/L	J	J		
Methylene chloride	75092	0.02	0.02	0.01 ug/L	U	U		
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008 ug/L		U	B, RL=result	
o-Xylene	95476	0.01	0.02	0.0089 ug/L	J	J		
Tetrachloroethene	127184	0.02	0.02	0.0053 ug/L	U	UJ	*III	
Toluene	108883	0.024	0.02	0.0043 ug/L		J	C	
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039 ug/L	U	U		
Trichloroethene	79016	0.02	0.02	0.012 ug/L	U	U		
Trichlorofluoromethane	75694	0.02	0.02	0.0053 ug/L	U	U		
Vinyl chloride	75014	0.02	0.02	0.01 ug/L	U	U		

Sample Name SVL-513-SA5D-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42701-06 **Sample Date:** 5/27/2014 10:15:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009 ug/L	U	U		
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054 ug/L	U	UJ	C	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089 ug/L	U	U		

Analysis Method 8260B

1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.0072	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.023	0.023	0.008	ug/L		U	B, RL changed from 0.02
o-Xylene	95476	0.012	0.02	0.0089	ug/L	J	J	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	UJ	*III
Toluene	108883	0.016	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-802-SA5D-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42701-03 **Sample Date:** 5/27/2014 8:32:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	

Analysis Method *8260B*

m-Xylene & p-Xylene	179601231	0.057	0.02	0.008	ug/L			
o-Xylene	95476	0.024	0.02	0.0089	ug/L			
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	UJ	*III
Toluene	108883	0.1	0.02	0.0043	ug/L		J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3E42801

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3E42801
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 11
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB-3E42801	3E42801-01	N/A	Soil Vapor	5/27/2014	8260B
SVL-515-SA5D-SV-5.0-6.0	3E42801-02	N/A	Soil Vapor	5/28/2014	8260B
SVL-815-SA5D-SV-5.0-6.0	3E42801-03	N/A	Soil Vapor	5/28/2014	8260B
SVL-515-SA5D-SV-12.5-13.8	3E42801-04	N/A	Soil Vapor	5/28/2014	8260B
SVL-511-SA5D-SV-4.5-5.5	3E42801-05	N/A	Soil Vapor	5/28/2014	8260B
SVL-511-SA5D-SV-9.5-10.5	3E42801-06	N/A	Soil Vapor	5/28/2014	8260B
SVL-516-SA5D-SV-6.0-7.0	3E42801-07	N/A	Soil Vapor	5/28/2014	8260B
SVL-516-SA5D-SV-14.0-15.0	3E42801-08	N/A	Soil Vapor	5/28/2014	8260B
SVL-510-SA5D-SV-7.5-8.5	3E42801-09	N/A	Soil Vapor	5/28/2014	8260B
SVL-544-SA5D-SV-4.5-5.5	3E42801-10	N/A	Soil Vapor	5/28/2014	8260B
FB-052814	3E42801-11	N/A	Soil Vapor	5/28/2014	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3E42801 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 10, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene were qualified as estimated, "UJ," for nondetects and, "J," for detects. The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 . The continuing calibration %D exceeded 15% toluene, at -16.9%. As the outlier was associated with a high recovery, only sample detects for toluene were qualified as estimated, "J." The %Ds for chloroethane, 1,1,2-trichloroethane and 1,1,2,2-tetrachloroethane also exceeded 15%; however, as the outliers were associated with high recoveries and the analytes were not detected in the samples, no further qualifications were applied. All remaining continuing calibration %Ds were $\leq 15\%$.
- **Blanks:** The ambient air method blank had a detect for toluene reported at 0.013(J) $\mu\text{g/L}$. Sample detects less than five times the method blank concentration were qualified as nondetected, "U," at the reporting limit. The method blank had no other target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on SVL-515-SA5D-SV-5.0-6.0. No reportable detects were present in the parent or duplicate sample.
- **Blank Spikes and Laboratory Control Samples:** Recoveries were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds. RPDs were within the control limit of $\leq 20\%$, with the exception of the RPD of 40.5% for 1,1,2,2-tetrachloroethene.



Sample results for 1,1,2,2-tetrachloroethene, all nondetects, were qualified as estimated, "UJ."

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Sample FB-052814 was the field blank and EB-3E42801 was the equipment rinsate associated with the site samples in this SDG. The field blank had a reportable detect for 1,1,2-trichloro-1,2,2-trifluoroethane at 0.017(J) µg/L. Site sample detects less than five times the field blank concentration were qualified as nondetected, "U," at the level of contamination. The field QC samples had no other reportable detects.
 - Field Duplicates: Samples SVL-515-SA5D-SV-5.0-6.0 and SVL-815-SA5D-SV-5.0-6.0 were identified as field duplicate samples. Neither sample had reportable detects.
- Internal Standards: Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- Compound Identification: Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3E42801

Analysis Method 8260B

Sample Name EB-3E42801 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42801-01 **Sample Date:** 5/27/2014 9:42:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-052814 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42801-11 **Sample Date:** 5/28/2014 1:56:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.017	0.02	0.012	ug/L	J	J	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.008
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-510-SA5D-SV-7.5-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42801-09 **Sample Date:** 5/28/2014 12:50:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.024	0.024	0.012	ug/L		U	F, RL changed from 0.02
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.0088

Analysis Method 8260B

trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-511-SA5D-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42801-05 **Sample Date:** 5/28/2014 9:46:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-511-SA5D-SV-9.5-1 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42801-06 **Sample Date:** 5/28/2014 10:19:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

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1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-515-SA5D-SV-12.5- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42801-04 **Sample Date:** 5/28/2014 8:57:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.0086	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.028	0.02	0.008	ug/L			
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

Analysis Method 8260B

Toluene	108883	0.055	0.055	0.0043	ug/L		UJ	B, C, RL changed from 0.02
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-515-SA5D-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42801-02 **Sample Date:** 5/28/2014 8:16:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.0052
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-516-SA5D-SV-14.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42801-08 **Sample Date:** 5/28/2014 11:26:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.024	0.024	0.012	ug/L		U	F, RL changed from 0.02

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1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ B, C, result changed from 0.0046
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-516-SA5D-SV-6.0-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42801-07 **Sample Date:** 5/28/2014 10:55:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

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Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-544-SA5D-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42801-10 **Sample Date:** 5/28/2014 1:25:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.019	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.052	0.02	0.008	ug/L			
o-Xylene	95476	0.029	0.02	0.0089	ug/L			
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.07	0.02	0.0043	ug/L		J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-815-SA5D-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42801-03 **Sample Date:** 5/28/2014 8:16:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III

Analysis Method 8260B

1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.0074
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3E42901

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3E42901
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 12
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB-3E42901	3E42901-01	N/A	Soil Vapor	5/27/2014	8260B
SVL-544-SA5D-SV-10.0-11.0	3E42901-02	N/A	Soil Vapor	5/29/2014	8260B
SVL-844-SA5D-SV-10.0-11.0	3E42901-03	N/A	Soil Vapor	5/29/2014	8260B
SVL-530-SA5C-SV-6.5-7.5	3E42901-04	N/A	Soil Vapor	5/29/2014	8260B
SVL-519-SA5D-SV-8.5-9.5	3E42901-05	N/A	Soil Vapor	5/29/2014	8260B
SVL-526-SA5D-SV-7.5-8.5	3E42901-06	N/A	Soil Vapor	5/29/2014	8260B
SVL-530-SA5D-SV-5.0-6.0	3E42901-07	N/A	Soil Vapor	5/29/2014	8260B
SVL-531-SA5D-SV-5.0-6.0	3E42901-08	N/A	Soil Vapor	5/29/2014	8260B
SVL-539-SA5D-SV-4.5-5.5	3E42901-09	N/A	Soil Vapor	5/29/2014	8260B
SVL-539-SA5D-SV-8.5-9.5	3E42901-10	N/A	Soil Vapor	5/29/2014	8260B
SVL-572-SA5C-SV-6.8-7.8	3E42901-11	N/A	Soil Vapor	5/29/2014	8260B
FB-052914	3E42901-12	N/A	Soil Vapor	5/29/2014	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3E42901 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 11, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene, all nondetects, were qualified as estimated, "UJ." The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 . Continuing calibration %Ds for 1,1,2-trichloroethane and 1,1,2,2-tetrachloroethane exceeded 15%; however, as the outliers were associated with high recoveries and the analytes were not detected in the samples, no further qualifications were applied. All remaining continuing calibration %Ds were $\leq 15\%$.
- **Blanks:** The ambient air method blank had a detect for toluene reported at 0.0118(J) $\mu\text{g/L}$. Sample detects less than five times the method blank concentration were qualified as nondetected, "U," at the reporting limit if detected below the reporting limit, or at the level of contamination if detected above. The method blank had no other target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on SVL-544-SA5D-SV-10.0-11.0. The analyses had three common reportable detects. RPDs were 1.3% for ethylbenzene, 19% for m,p-xylene, and 6.9% for o-xylene.
- **Blank Spikes and Laboratory Control Samples:** Recoveries affecting sample data were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds. RPDs were within the control limit of $\leq 20\%$, with the exception of RPDs for



1,1,1-trichloroethane of 21.2%, 1,1-dichloroethene of 23.4%, and 1,1,2,2-tetrachloroethane of 25.3%. Sample results for those compounds, all nondetects, were qualified as estimated, "J," for detects and "UJ," for nondetects.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Sample FB-052914 was the field blank and EB-3E42901 was the equipment rinsate associated with the site samples in this SDG. The field QC samples had no reported detects.
 - Field Duplicates: Samples SVL-544-SA5D-SV-10.0-11.0 and SVL-844-SA5D-SV-10.0-11.0 were identified as field duplicate samples. The samples had three common detects. RPDs were 14% for ethylbenzene, 25% for m,p-xylene, and 59% for o-xylene.
- Internal Standards: Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- Compound Identification: Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3E42901

Analysis Method 8260B

Sample Name	EB-3E42901	Matrix Type:	Soil Vapor	Result Type:	Primary Result			
Lab Sample Name:	3E42901-01	Sample Date:	5/27/2014 10:45:00 AM	Validation Level:	V			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name	FB-052914	Matrix Type:	Soil Vapor			Result Type:	Primary Result	
Lab Sample Name:	3E42901-12	Sample Date:	5/29/2014 1:59:00 PM			Validation Level:	V	
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-519-SA5D-SV-8.5-9. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42901-05 **Sample Date:** 5/29/2014 9:30:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	3	0.02	0.012	ug/L			
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.008	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.027	0.02	0.008	ug/L			
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.03	0.03	0.0043	ug/L		UJ	B, C, RL changed from 0.02

Analysis Method 8260B

trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-526-SA5D-SV-7.5-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42901-06 **Sample Date:** 5/29/2014 10:12:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.011	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.031	0.02	0.008	ug/L			
o-Xylene	95476	0.01	0.02	0.0089	ug/L	J	J	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.044	0.044	0.0043	ug/L		UJ	B, C, RL changed from 0.02
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-530-SA5C-SV-6.5-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42901-04 **Sample Date:** 5/29/2014 8:42:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-530-SA5D-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42901-07 **Sample Date:** 5/29/2014 10:46:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

Analysis Method 8260B

Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-531-SA5D-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42901-08 **Sample Date:** 5/29/2014 11:20:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-539-SA5D-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42901-09 **Sample Date:** 5/29/2014 12:29:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.0048
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-539-SA5D-SV-8.5-9. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42901-10 **Sample Date:** 5/29/2014 1:00:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.0052	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.014	0.02	0.008	ug/L	J	J	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

Analysis Method 8260B

Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.0072
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-544-SA5D-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42901-02 **Sample Date:** 5/29/2014 7:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.015	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.06	0.02	0.008	ug/L			
o-Xylene	95476	0.024	0.02	0.0089	ug/L			
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.039	0.039	0.0043	ug/L		UJ	B, C, RL changed from 0.02
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-572-SA5C-SV-6.8-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42901-11 **Sample Date:** 5/29/2014 1:39:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III

Analysis Method 8260B

1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.011
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-844-SA5D-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E42901-03 **Sample Date:** 5/29/2014 7:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.013	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	

Analysis Method 8260B

m-Xylene & p-Xylene	179601231	0.047	0.02	0.008	ug/L		
o-Xylene	95476	0.013	0.02	0.0089	ug/L	J	J
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.034	0.034	0.0043	ug/L		UJ B, C, RL changed from 0.02
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3E43001

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3E43001
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 9
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB-3E43001	3E43001-01	N/A	Soil Vapor	5/27/2014	8260B
SVL-546-SA5D-SV-5.0-6.0	3E43001-02	N/A	Soil Vapor	5/30/2014	8260B
SVL-846-SA5D-SV-5.0-6.0	3E43001-03	N/A	Soil Vapor	5/30/2014	8260B
SVL-546-SA5D-SV-10.0-11.0	3E43001-04	N/A	Soil Vapor	5/30/2014	8260B
SVL-546-SA5D-SV-16.0-17.0	3E43001-05	N/A	Soil Vapor	5/30/2014	8260B
SVL-550-SA5D-SV-5.0-6.0	3E43001-06	N/A	Soil Vapor	5/30/2014	8260B
SVL-550-SA5D-SV-11.0-12.0	3E43001-07	N/A	Soil Vapor	5/30/2014	8260B
SVL-550-SA5D-SV-17.0-18.0	3E43001-08	N/A	Soil Vapor	5/30/2014	8260B
FB-053014	3E43001-09	N/A	Soil Vapor	5/30/2014	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3E43001 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.

**Data Qualifier Reference Table**

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 11, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene were qualified as estimated, "UJ," for nondetects and, "J," for detects. The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 . Continuing calibration %Ds for 1,1-dichloroethane and 1,1,1-trichloroethane exceeded 15% at 17.7% and 16.8%; therefore, sample results for both compounds, all nondetects, were qualified as estimated, "UJ." The %Ds for 1,1,2-trichloroethane, 1,1,2,2-tetrachloroethane, and trichlorofluoromethane also exceeded 15%; however, as the outliers were associated with high recoveries and the analytes were not detected in the samples, no further qualifications were applied. All remaining continuing calibration %Ds were $\leq 15\%$.
- **Blanks:** The ambient air method blank had a detect for toluene reported at 0.0048(J) $\mu\text{g/L}$. Sample detects less than five times the method blank concentration were qualified as nondetected, "U," at the reporting limit. The method blank had no other target compound detects above the reporting limit. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on SVL-546-SA5D-SV-5.0-6.0. The analyses had one common reportable detect below the reporting limit for m,p-xylene, with an RPD of 21%.
- **Blank Spikes and Laboratory Control Samples:** Recoveries affecting sample data were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane,



trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds. RPDs were within the control limit of $\leq 20\%$, with the exception of the RPD for 1,1,2,2-tetrachloroethane, of 33.8%. Sample results for 1,1,2,2-tetrachloroethane, all nondetects, were qualified as estimated, "UJ."

- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks:** Sample FB-053014 was the field blank and EB-3E43001 was the equipment rinsate associated with the site samples in this SDG. The field QC samples had no reportable detects.
 - **Field Duplicates:** Samples SVL-546-SA5D-SV-5.0-6.0 and SVL-846-SA5D-SV-5.0-6.0 were identified as field duplicate samples. The samples had a common detect below the reporting limit for m,p-xylene with an RPD of 7.2%.
- **Internal Standards:** Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- **Compound Identification:** Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- **Compound Quantification and Reported Detection Limits:** Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3E43001

Analysis Method 8260B

Sample Name EB-3E43001 Matrix Type: Soil Vapor Result Type: Primary Result
Lab Sample Name: 3E43001-01 Sample Date: 5/27/2014 8:32:00 AM Validation Level: V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	C
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-053014 Matrix Type: Soil Vapor Result Type: Primary Result
Lab Sample Name: 3E43001-09 Sample Date: 5/30/2014 11:09:00 AM Validation Level: V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	C

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.012
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-546-SA5D-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E43001-04 **Sample Date:** 5/30/2014 8:19:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	C
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.01

Analysis Method 8260B

trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-546-SA5D-SV-16.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E43001-05 **Sample Date:** 5/30/2014 11:21:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	C
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.0044
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-546-SA5D-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E43001-02 **Sample Date:** 5/30/2014 7:46:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	C
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.011	0.02	0.008	ug/L	J	J	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.013
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-550-SA5D-SV-11.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E43001-07 **Sample Date:** 5/30/2014 10:07:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	C
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.0088	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.03	0.02	0.008	ug/L			
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

Analysis Method 8260B

Toluene	108883	0.028	0.02	0.0043	ug/L		J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-550-SA5D-SV-17.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E43001-08 **Sample Date:** 5/30/2014 10:42:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	C
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.006	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.023	0.02	0.008	ug/L			
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.011
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-550-SA5D-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E43001-06 **Sample Date:** 5/30/2014 9:39:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	C
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-846-SA5D-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3E43001-03 **Sample Date:** 5/30/2014 7:46:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	C
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	C
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0094	0.02	0.008	ug/L	J	J	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

Analysis Method *8260B*

Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	B, C, result changed from 0.013
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3F40201

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3F40201
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 9
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB_3F40201	3F40201-01	N/A	Soil Vapor	6/2/2014	8260B
SVL-528-SA8-SV-5.0-6.0	3F40201-02	N/A	Soil Vapor	6/2/2014	8260B
SVL-528-SA8-SV-11.0-12.0	3F40201-03	N/A	Soil Vapor	6/2/2014	8260B
SVL-528-SA8-SV-18.5-19.5	3F40201-04	N/A	Soil Vapor	6/2/2014	8260B
SVL-505-SA5C-SV-5.0-6.0	3F40201-05	N/A	Soil Vapor	6/2/2014	8260B
SVL-505-SA5C-SV-10.0-11.0	3F40201-06	N/A	Soil Vapor	6/2/2014	8260B
SVL-805-SA5C-SV-10.0-11.0	3F40201-07	N/A	Soil Vapor	6/2/2014	8260B
SVL-505-SA5C-SV-15.0-16.0	3F40201-08	N/A	Soil Vapor	6/2/2014	8260B
FB-060214	3F40201-09	N/A	Soil Vapor	6/2/2014	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3F40201 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 15, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene were qualified as estimated, "UJ," for nondetects and, "J," for detects. The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 . The continuing calibration %D for cis-1,2-dichloroethene exceeded 15% at 17.4%; therefore, sample results for cis-1,2-dichloroethene, all nondetects, were qualified as estimated, "UJ." The %D for 1,1,2,2-tetrachloroethane also exceeded 15%; however, as the outlier was associated with a high recovery and the analyte was not detected in the samples, no further qualifications were assigned. All remaining continuing calibration %Ds were $\leq 15\%$.
- **Blanks:** The ambient air method blank had no reported target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on sample SVL-528-SA8-SV-5.0-6.0. The analyses had no reported detects.
- **Blank Spikes and Laboratory Control Samples:** The laboratory analyzed two LCSs at two different spiking levels. Recoveries were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds, with the exception of the following recoveries affecting sample data: 1,1,2-trichloro-1,2,2-trifluoroethane at 64.0%, 1,1-dichloroethane at 72.0%, toluene at 144%, and dichlorodifluoromethane at 128%. Sample results for 1,1,2-trichloro-1,2,2-trifluoroethane and 1,1-dichloroethane, all nondetects, were



qualified as estimated, "UJ." Sample detects for toluene and dichlorodifluoromethane were qualified as estimated, "J." Several other recoveries were above the control limits; however, as the analytes were not detected in the samples, no further qualifications were assigned.

- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks:** Sample FB-060214 was the field blank and EB-3F40201 was the equipment rinsate associated with the site samples in this SDG. The field QC samples had no reportable detects.
 - **Field Duplicates:** Samples SVL-505-SA5C-SV-10.0-11.0 and SVL-805-SA5C-SV-10.0-11.0 were identified as field duplicate samples. Sample SVL-505-SA5C-SV-10.0-11.0 had a detect below the reporting limit for dichlorodifluoromethane, and SVL-805-SA5C-SV-10.0-11.0 had a detect below the reporting limit for toluene. The samples had no other reported detects.
- **Internal Standards:** Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- **Compound Identification:** Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- **Compound Quantification and Reported Detection Limits:** Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3F40201

Analysis Method 8260B

Sample Name EB_3F40201 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40201-01 **Sample Date:** 6/2/2014 11:24:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	UJ	L
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	L
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-060214 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40201-09 **Sample Date:** 6/2/2014 1:31:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	UJ	L
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	L

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-505-SA5C-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40201-06 **Sample Date:** 6/2/2014 11:24:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	UJ	L
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	L
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.017	0.02	0.011	ug/L	J	J	L
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C

Analysis Method 8260B

trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-505-SA5C-SV-15.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40201-08 **Sample Date:** 6/2/2014 11:59:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	UJ	L
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	L
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.0054	0.02	0.0043	ug/L	J	J	C, L
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-505-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40201-05 **Sample Date:** 6/2/2014 10:52:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	UJ	L
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	L
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.009	0.02	0.0043	ug/L	J	J	C, L
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-528-SA8-SV-11.0-12 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40201-03 **Sample Date:** 6/2/2014 9:35:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	UJ	L
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	L
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.011	0.02	0.008	ug/L	J	J	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

Analysis Method 8260B

Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-528-SA8-SV-18.5-19 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40201-04 **Sample Date:** 6/2/2014 9:58:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	UJ	L
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	L
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-528-SA8-SV-5.0-6.0 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40201-02 **Sample Date:** 6/2/2014 9:08:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	UJ	L

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	L
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-805-SA5C-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40201-07 **Sample Date:** 6/2/2014 11:24:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	UJ	L
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	UJ	L
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

Analysis Method *8260B*

Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.0076	0.02	0.0043	ug/L	J	J	C, L
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3F40301

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3F40301
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 13
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB_3F40301	3F40301-01	N/A	Soil Vapor	6/3/14 7:55 AM	8260B
SVL-503-SA8-SV-4.5-5.5	3F40301-02	N/A	Soil Vapor	6/3/14 7:55 AM	8260B
SVL-534-SA8-SV-6.0-7.0	3F40301-03	N/A	Soil Vapor	6/3/14 8:35 AM	8260B
SVL-834-SA8-SV-6.0-7.0	3F40301-04	N/A	Soil Vapor	6/3/14 8:35 AM	8260B
SVL-507-SA5C-SV-5.0-6.0	3F40301-05	N/A	Soil Vapor	6/3/14 9:15 AM	8260B
SVL-507-SA5C-SV-10.5-11.5	3F40301-06	N/A	Soil Vapor	6/3/14 9:41 AM	8260B
SVL-508-SA5C-SV-8.25-9.25	3F40301-07	N/A	Soil Vapor	6/3/14 10:14 AM	8260B
SVL-535-SA5C-SV-5.0-6.0	3F40301-08	N/A	Soil Vapor	6/3/14 10:59 AM	8260B
SVL-535-SA5C-SV-10.0-11.0	3F40301-09	N/A	Soil Vapor	6/3/14 11:22 AM	8260B
SVL-535-SA5C-SV-15.0-16.0	3F40301-10	N/A	Soil Vapor	6/3/14 11:50 AM	8260B
SVL-543-SA5C-SV-5.0-6.0	3F40301-11	N/A	Soil Vapor	6/3/14 12:56 PM	8260B
SVL-543-SA5C-SV-11.0-12.0	3F40301-12	N/A	Soil Vapor	6/3/14 1:15 PM	8260B
FB-060314	3F40301-13	N/A	Soil Vapor	6/3/14 1:38 PM	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3F40301 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 24, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene were qualified as estimated, "UJ," for nondetects and, "J," for detects. The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 .

The continuing calibration %Ds for cis-1,2-dichloroethene and trans-1,2-dichloroethene exceeded the control limit of $\leq 15\%$; therefore sample results for both compounds, all nondetects, were qualified as estimated, "UJ." The %D for 1,1,1,2-tetrachloroethane also exceeded 15%; however, as the outlier was associated with a high recovery and the analyte was not detected in the samples, no further qualifications were assigned. All remaining continuing calibration %Ds were $\leq 15\%$.

- **Blanks:** The ambient air method blank had no reported target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on sample SVL-503-SA8-SV-4.5-5.5. RPDs for the five common detects were $\leq 25\%$.
- **Blank Spikes and Laboratory Control Samples:** Recoveries were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds, with the exception of a recovery above the control limits for 1,1,2,2-tetrachloroethane in the LCS only. Qualifications were not applied unless recovery outliers occurred in both the LCS and LCSD. The following RPDs exceeded the control limit of $\leq 20\%$: 1,1,1-trichloroethane



(23.5%), 1,1,2,2-tetrachloroethane (46.0%), carbon tetrachloride (22.4%), methylene chloride (20.2%), and trichlorofluoromethane (30.9%). Sample results for the RPD outliers were qualified as estimated, "J," for detects, and "UJ," for nondetects.

- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks:** Sample FB-060314 was the field blank and EB-3F40301 was the equipment rinsate associated with the site samples in this SDG. The field blank had a detect for 1,1,2-trichloro-1,2,2-trifluoroethane below the reporting limit at 0.025 µg/L; however, the concentration was not sufficient to qualify the detect in site sample SVL-503-SA8-SV-4.5-5.5. The field QC samples had no other reported detects.
 - **Field Duplicates:** Samples SVL-534-SA5C-SV-6.0-7.0 and SVL-834-SA5C-SV-6.0-7.0 were identified as field duplicate samples. Neither sample had reported detects, and the pair was considered to be in reasonable agreement.
- **Internal Standards:** Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- **Compound Identification:** Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- **Compound Quantification and Reported Detection Limits:** Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3F40301

Analysis Method 8260B

Sample Name EB_3F40301 Matrix Type: Soil Vapor Result Type: Primary Result

Lab Sample Name: 3F40301-01 Sample Date: 6/3/2014 7:55:00 AM Validation Level: V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-060314 Matrix Type: Soil Vapor Result Type: Primary Result

Lab Sample Name: 3F40301-13 Sample Date: 6/3/2014 1:38:00 PM Validation Level: V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.025	0.02	0.012	ug/L			
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-503-SA8-SV-4.5-5.5 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40301-02 **Sample Date:** 6/3/2014 7:55:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.11	0.02	0.0054	ug/L		J	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.54	0.02	0.012	ug/L			
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.16	0.02	0.0072	ug/L			
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C

Analysis Method 8260B

trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.44	0.02	0.012	ug/L			
Trichlorofluoromethane	75694	0.079	0.02	0.0053	ug/L		J	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-507-SA5C-SV-10.5- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40301-06 **Sample Date:** 6/3/2014 9:41:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-507-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40301-05 **Sample Date:** 6/3/2014 9:15:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.0052	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-508-SA5C-SV-8.25- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40301-07 **Sample Date:** 6/3/2014 10:14:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III
m-Xylene & p-Xylene	179601231	0.014	0.02	0.008	ug/L	J	J	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

Analysis Method 8260B

Toluene	108883	0.011	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-534-SA8-SV-6.0-7.0 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40301-03 **Sample Date:** 6/3/2014 8:35:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-535-SA5C-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40301-09 **Sample Date:** 6/3/2014 11:22:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.0056	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-535-SA5C-SV-15.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40301-10 **Sample Date:** 6/3/2014 11:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III
m-Xylene & p-Xylene	179601231	0.01	0.02	0.008	ug/L	J	J	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

Analysis Method 8260B

Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.007	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-535-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40301-08 **Sample Date:** 6/3/2014 10:59:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.011	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-543-SA5C-SV-11.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40301-12 **Sample Date:** 6/3/2014 1:15:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III

Analysis Method 8260B

1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.0048	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.01	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.035	0.02	0.012	ug/L			
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-543-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40301-11 **Sample Date:** 6/3/2014 12:56:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.006	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III

Analysis Method 8260B

m-Xylene & p-Xylene	179601231	0.0098	0.02	0.008	ug/L	J	J	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.0096	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-834-SA8-SV-6.0-7.0 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40301-04 **Sample Date:** 6/3/2014 8:35:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	UJ	*III
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	*III
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	UJ	C
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	UJ	*III
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	UJ	C
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3F40401

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3F40401
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 13
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB_3F40401	3F40401-01	N/A	Soil Vapor	6/2/2014	8260B
SVL-543-SA5C-SV-18.0-19.0	3F40401-02	N/A	Soil Vapor	6/4/2014	8260B
SVL-570-SA5C-SV-5.0-6.0	3F40401-03	N/A	Soil Vapor	6/4/2014	8260B
SVL-870-SA5C-SV-5.0-6.0	3F40401-04	N/A	Soil Vapor	6/4/2014	8260B
SVL-570-SA5C-SV-10.0-11.0	3F40401-05	N/A	Soil Vapor	6/4/2014	8260B
SVL-570-SA5C-SV-15.0-16.0	3F40401-06	N/A	Soil Vapor	6/4/2014	8260B
SVL-570-SA5C-SV-20.0-21.0	3F40401-07	N/A	Soil Vapor	6/4/2014	8260B
SVL-570-SA5C-SV-30.0-31.0	3F40401-08	N/A	Soil Vapor	6/4/2014	8260B
SVL-570-SA5C-SV-40.0-41.0	3F40401-09	N/A	Soil Vapor	6/4/2014	8260B
SVL-531-SA5B-SV-5.0-6.0	3F40401-10	N/A	Soil Vapor	6/4/2014	8260B
SVL-531-SA5B-SV-10.0-11.0	3F40401-11	N/A	Soil Vapor	6/4/2014	8260B
SVL-531-SA5B-SV-16.75-17.75	3F40401-12	N/A	Soil Vapor	6/4/2014	8260B
FB-060414	3F40401-13	N/A	Soil Vapor	6/4/2014	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3F40401 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 16, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene were qualified as estimated, "UJ," for nondetects and, "J," for detects. The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 . The continuing calibration %D for 1,1,2,2-tetrachloroethane exceeded 15%; however, as the outlier was associated with a high recovery and the analyte was not detected in the samples, no further qualifications were assigned. All remaining continuing calibration %Ds were $\leq 15\%$.
- **Blanks:** The ambient air method blank had no reported target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on sample SVL-543-SA5C-SV-18.0-19.0. RPDs for m,p-xylenes and trichloroethene were 10.5% and 12.6%, respectively. The analyses had no other reported detects.
- **Blank Spikes and Laboratory Control Samples:** Recoveries affecting sample data were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds. RPDs were within the control limit of $\leq 20\%$, with the exception of RPDs for 1,1,2,2-tetrachloroethane of 40.8% and chloroform of 20.8%. Sample results for those compounds, all nondetects, were qualified as estimated, "J," for detects and "UJ," for nondetects.



- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks:** Sample FB-060414 was the field blank and EB-3F40401 was the equipment rinsate associated with the site samples in this SDG. Toluene was detected in the field blank at 0.0048 µg/L. Site sample results for toluene, all less than five times the field blank concentration, were qualified as nondetected, "U," at the reporting limit. The field QC samples had no other reportable detects.
 - **Field Duplicates:** Samples SVL-570-SA5C-SV-5.0-6.0 and SVL-870-SA5C-SV-5.0-6.0 were identified as field duplicate samples. Neither sample had reported detects.
- **Internal Standards:** Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- **Compound Identification:** Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- **Compound Quantification and Reported Detection Limits:** Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. Sample SVL-531-SA5B-SV-16.75-17.75 was analyzed at a 10× dilution for high concentrations of 1,1,2-trichloro-1,2,2-trifluoroethane and trichlorofluoromethane.

Validated Sample Result Forms: 3F40401

Analysis Method 8260B

Sample Name EB_3F40401 Matrix Type: Soil Vapor Result Type: Primary Result

Lab Sample Name: 3F40401-01 Sample Date: 6/2/2014 11:24:00 AM Validation Level: V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-060414 Matrix Type: Soil Vapor Result Type: Primary Result

Lab Sample Name: 3F40401-13 Sample Date: 6/4/2014 1:44:00 PM Validation Level: V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

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1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.0048	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-531-SA5B-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40401-11 **Sample Date:** 6/4/2014 12:53:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.2	0.02	0.012	ug/L			
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C

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trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	1.1	0.02	0.0053	ug/L		
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-531-SA5B-SV-16.75 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40401-12 **Sample Date:** 6/4/2014 1:20:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.2	0.2	0.09	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.2	0.2	0.054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.2	0.2	0.089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	7.9	0.2	0.12	ug/L			
1,1,2-Trichloroethane	79005	0.2	0.2	0.063	ug/L	U	U	
1,1-Dichloroethane	75343	0.2	0.2	0.062	ug/L	U	U	
1,1-Dichloroethene	75354	0.2	0.2	0.072	ug/L	U	U	
1,2-Dichloroethane	107062	0.2	0.2	0.11	ug/L	U	U	
Benzene	71432	0.2	0.2	0.041	ug/L	U	U	
Carbon Tetrachloride	56235	0.2	0.2	0.12	ug/L	U	U	
Chloroethane	75003	0.2	0.2	0.16	ug/L	U	U	
Chloroform	67663	0.2	0.2	0.06	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.2	0.2	0.094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.2	0.2	0.11	ug/L	U	U	
Ethylbenzene	100414	0.2	0.2	0.03	ug/L	U	U	
Methylene chloride	75092	0.2	0.2	0.1	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.2	0.2	0.08	ug/L	U	U	
o-Xylene	95476	0.2	0.2	0.089	ug/L	U	U	
Tetrachloroethene	127184	0.2	0.2	0.053	ug/L	U	U	
Toluene	108883	0.2	0.2	0.043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.2	0.2	0.039	ug/L	U	U	
Trichloroethene	79016	0.2	0.2	0.12	ug/L	U	U	
Trichlorofluoromethane	75694	10	0.2	0.053	ug/L			
Vinyl chloride	75014	0.2	0.2	0.1	ug/L	U	U	

Sample Name SVL-531-SA5B-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40401-10 **Sample Date:** 6/4/2014 11:40:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.21	0.02	0.012	ug/L			
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

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1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	1.1	0.02	0.0053	ug/L			
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-543-SA5C-SV-18.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40401-02 **Sample Date:** 6/4/2014 7:28:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.009	0.02	0.008	ug/L	J	J	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

Analysis Method 8260B

Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	C, F, result changed from 0.016
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.19	0.02	0.012	ug/L			
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-570-SA5C-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40401-05 **Sample Date:** 6/4/2014 8:51:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	C, F, result changed from 0.0054
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-570-SA5C-SV-15.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40401-06 **Sample Date:** 6/4/2014 9:09:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ *III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ C, F, result changed from 0.0052
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.017	0.02	0.0053	ug/L	J	J
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-570-SA5C-SV-20.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40401-07 **Sample Date:** 6/4/2014 9:29:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

Analysis Method 8260B

Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	C, F, result changed from 0.0066
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-570-SA5C-SV-30.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40401-08 **Sample Date:** 6/4/2014 9:49:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	C, F, result changed from 0.0084
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-570-SA5C-SV-40.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40401-09 **Sample Date:** 6/4/2014 10:10:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III

Analysis Method 8260B

1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	C, F, result changed from 0.0078
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-570-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40401-03 **Sample Date:** 6/4/2014 8:32:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	

Analysis Method 8260B

m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-870-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40401-04 **Sample Date:** 6/4/2014 8:32:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3F40501

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3F40501
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 13
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB_3F40501	3F40501-01	N/A	Soil Vapor	6/5/2014	8260B
SVL-554-SA5C-SV-5.0-6.0	3F40501-02	N/A	Soil Vapor	6/5/2014	8260B
SVL-554-SA5C-SV-13.0-14.0	3F40501-03	N/A	Soil Vapor	6/5/2014	8260B
SVL-518-SA5C-SV-5.0-6.0	3F40501-04	N/A	Soil Vapor	6/5/2014	8260B
SVL-518-SA5C-SV-10.5-11.5	3F40501-05	N/A	Soil Vapor	6/5/2014	8260B
SVL-528-SA5C-SV-5.5-6.5	3F40501-06	N/A	Soil Vapor	6/5/2014	8260B
SVL-828-SA5C-SV-5.5-6.5	3F40501-07	N/A	Soil Vapor	6/5/2014	8260B
SVL-516-SA5C-SV-5.0-6.0	3F40501-08	N/A	Soil Vapor	6/5/2014	8260B
SVL-516-SA5C-SV-11.0-12.0	3F40501-09	N/A	Soil Vapor	6/5/2014	8260B
SVL-552-SA5B-SV-5.3-6.3	3F40501-10	N/A	Soil Vapor	6/5/2014	8260B
SVL-555-SA5B-SV-7.2-8.2	3F40501-11	N/A	Soil Vapor	6/5/2014	8260B
SVL-525-SA5C-SV-5.0-6.0	3F40501-12	N/A	Soil Vapor	6/5/2014	8260B
FB-060514	3F40501-13	N/A	Soil Vapor	6/5/2014	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3F40501 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 16, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene were qualified as estimated, "UJ," for nondetects and, "J," for detects. The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 . The continuing calibration %Ds for 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2-dichloroethane, carbon tetrachloride, and trichlorofluoromethane exceeded 15%; however, as the outliers were associated with high recoveries and the analytes were not detected in the samples, no further qualifications were assigned. All remaining continuing calibration %Ds were $\leq 15\%$.
- **Blanks:** The ambient air method blank had no reported target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on sample SVL-554-SA5C-SV-5.0-6.0. The analyses had no reported detects.
- **Blank Spikes and Laboratory Control Samples:** Recoveries affecting sample data were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds. RPDs were within the control limit of $\leq 20\%$, with the exception of the RPD for 1,1,2,2-tetrachloroethane of 20.8%. Sample results for 1,1,2,2-tetrachloroethane, all nondetects, were qualified as estimated, "UJ."



- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks:** Sample FB-060514 was the field blank and EB-3F40501 was the equipment rinsate associated with the site samples in this SDG. The field QC samples had no reported detects.
 - **Field Duplicates:** Samples SVL-528-SA5C-SV-5.5-6.5 and SVL-828-SA5C-SV-5.5-6.5 were identified as field duplicate samples. Both samples had a common detect for toluene below the reporting limit with an RPD of 0%. Sample SVL-828-SA5C-SV-5.5-6.5 also had a detect reported at the MDL for m,p-xylenes. The samples had no other reported detects.
- **Internal Standards:** Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- **Compound Identification:** Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- **Compound Quantification and Reported Detection Limits:** Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3F40501

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Sample Name EB_3F40501 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-01 **Sample Date:** 6/5/2014 11:08:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-060514 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-13 **Sample Date:** 6/5/2014 2:08:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

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1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-516-SA5C-SV-11.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-09 **Sample Date:** 6/5/2014 11:08:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C

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trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-516-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-08 **Sample Date:** 6/5/2014 10:43:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-518-SA5C-SV-10.5- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-05 **Sample Date:** 6/5/2014 9:06:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

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1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.0036	0.02	0.003	ug/L	J	J
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.008	0.02	0.0043	ug/L	J	J C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-518-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-04 **Sample Date:** 6/5/2014 8:41:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.014	0.02	0.008	ug/L	J	J	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

Analysis Method 8260B

Toluene	108883	0.012	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-525-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-12 **Sample Date:** 6/5/2014 1:41:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.017	0.02	0.0094	ug/L	J	J	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.068	0.02	0.008	ug/L			
o-Xylene	95476	0.025	0.02	0.0089	ug/L			
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.04	0.02	0.0043	ug/L		J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-528-SA5C-SV-5.5-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-06 **Sample Date:** 6/5/2014 10:02:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.005	0.02	0.0043	ug/L	J	J C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-552-SA5B-SV-5.3-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-10 **Sample Date:** 6/5/2014 11:53:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

Analysis Method 8260B

Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-554-SA5C-SV-13.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-03 **Sample Date:** 6/5/2014 7:58:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-554-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-02 **Sample Date:** 6/5/2014 7:39:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III

Analysis Method 8260B

1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-555-SA5B-SV-7.2-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-11 **Sample Date:** 6/5/2014 1:02:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	

Analysis Method 8260B

m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-828-SA5C-SV-5.5-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40501-07 **Sample Date:** 6/5/2014 10:02:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.008	0.02	0.008	ug/L	J	J	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.005	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3F40601

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3F40601
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 12
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB_3F40601	3F40601-01	N/A	Soil Vapor	6/6/2014	8260B
SVL-525-SA5C-SV-10.0-11.0	3F40601-02	N/A	Soil Vapor	6/6/2014	8260B
SVL-525-SA5C-SV-15.0-16.0	3F40601-03	N/A	Soil Vapor	6/6/2014	8260B
SVL-525-SA5C-SV-20.0-21.0	3F40601-04	N/A	Soil Vapor	6/6/2014	8260B
SVL-825-SA5C-SV-20.0-21.0	3F40601-05	N/A	Soil Vapor	6/6/2014	8260B
SVL-590-SA5B-SV-6.0-7.0	3F40601-06	N/A	Soil Vapor	6/6/2014	8260B
SVL-594-SA5B-SV-5.0-6.0	3F40601-07	N/A	Soil Vapor	6/6/2014	8260B
SVL-606-SA5B-SV-5.5-6.5	3F40601-08	N/A	Soil Vapor	6/6/2014	8260B
SVL-612-SA5B-SV-4.5-5.5	3F40601-09	N/A	Soil Vapor	6/6/2014	8260B
SVL-516-SA5C-SV-18.0-19.0	3F40601-10	N/A	Soil Vapor	6/6/2014	8260B
SVL-578-SA5B-SV-8.0-9.0	3F40601-11	N/A	Soil Vapor	6/6/2014	8260B
FB-060614	3F40601-12	N/A	Soil Vapor	6/6/2014	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 23, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.71%; therefore, the results for toluene were qualified as estimated, "UJ," for nondetects and, "J," for detects. The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 .

The continuing calibration %Ds for 1,1,1,2-tetrachloroethane, ethylbenzene, and 1,1,2,2-, exceeded 15%; however, as the outliers were associated with high recoveries and the analytes were not detected in the samples, no qualifications were assigned. All remaining continuing calibration %Ds were $\leq 15\%$.

- **Blanks:** The ambient air method blank had no target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on sample SVL-525-SA5C-SV-10.0-11.0. There were three common detects, all with RPDs $\leq 20\%$. Ethylbenzene was detected below the reporting limit in the parent sample only.
- **Blank Spikes and Laboratory Control Samples:** The LCS recovery for 1,1,2,2-tetrachloroethane was above the control limit; however, qualifications are only applied for recoveries outside the control limits in both the LCS and LCSD. The remaining recoveries affecting sample data were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds. RPDs were within the control limit of $\leq 20\%$, with the exception of the RPDs for 1,1,2,2-tetrachloroethane (51%) and 1,1,2-trichloroethane (25%). Sample



results for 1,1,2,2-tetrachloroethane and 1,1,2-trichloroethane, all nondetects, were qualified as estimated, "UJ."

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Sample FB-060614 was the field blank and EB_3F40601 was the equipment rinsate associated with the site samples in this SDG. Toluene was detected in FB-060614 at 0.0056 µg/L; therefore, toluene detected in all samples except SVL-525-SA5C-10.0-11.0 was qualified as nondetected, "U," at the reporting limit if detected above the reporting limit or at the level of contamination if detected above. The detect was insufficient to qualify SVL-525-SA5C-10.0-11.0. The field QC samples had no other detects.
 - Field Duplicates: Samples SVL-525-SA5C-SV-20.0-21.0 and SVL-825-SA5C-SV-20.0-21.0 were identified as field duplicate samples. There were no reportable detects in these samples.
- Internal Standards: Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- Compound Identification: Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3F40601

Analysis Method 8260B

Sample Name EB_3F40601 **Matrix Type:** Soil Vapor **Result Type:** Primary Result
Lab Sample Name: 3F40601-01 **Sample Date:** 6/6/2014 12:02:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	UJ	*III
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-060614 **Matrix Type:** Soil Vapor **Result Type:** Primary Result
Lab Sample Name: 3F40601-12 **Sample Date:** 6/6/2014 12:49:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	UJ	*III
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.0056	0.02	0.0043	ug/L	J	J C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-516-SA5C-SV-18.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40601-10 **Sample Date:** 6/6/2014 12:02:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	UJ	*III
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.021	0.02	0.0053	ug/L			
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	C, F, result changed from 0.0046

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trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.034	0.02	0.012	ug/L		
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-525-SA5C-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40601-02 **Sample Date:** 6/6/2014 7:46:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	UJ	*III
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.01	0.02	0.003	ug/L	J	J	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.089	0.02	0.008	ug/L			
o-Xylene	95476	0.029	0.02	0.0089	ug/L			
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.099	0.02	0.0043	ug/L		J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-525-SA5C-SV-15.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40601-03 **Sample Date:** 6/6/2014 8:22:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	UJ	*III

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1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.035	0.02	0.008	ug/L		
o-Xylene	95476	0.014	0.02	0.0089	ug/L	J	J
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.026	0.026	0.0043	ug/L		UJ C, F, RL changed from 0.02
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-525-SA5C-SV-20.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40601-04 **Sample Date:** 6/6/2014 8:49:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	UJ	*III
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

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Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-578-SA5B-SV-8.0-9. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40601-11 **Sample Date:** 6/6/2014 12:30:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	UJ	*III
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	C, F, result changed from 0.016
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-590-SA5B-SV-6.0-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40601-06 **Sample Date:** 6/6/2014 9:27:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	UJ	*III
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0088	0.02	0.008	ug/L	J	J	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-594-SA5B-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40601-07 **Sample Date:** 6/6/2014 10:18:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	UJ	*III
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

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Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-606-SA5B-SV-5.5-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40601-08 **Sample Date:** 6/6/2014 10:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	UJ	*III
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	J	UJ	C, F, result changed from 0.005
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-612-SA5B-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40601-09 **Sample Date:** 6/6/2014 11:19:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III

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1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	UJ	*III
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-825-SA5C-SV-20.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40601-05 **Sample Date:** 6/6/2014 8:49:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	UJ	*III
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	

Analysis Method *8260B*

m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3F40901

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3F40901
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 12
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB_3F40901	3F40901-01	N/A	Soil Vapor	6/9/14 9:50 AM	8260B
SVL-553-SA5D-SV-4.5-5.5	3F40901-02	N/A	Soil Vapor	6/9/14 8:28 AM	8260B
SVL-853-SA5D-SV-4.5-5.5	3F40901-03	N/A	Soil Vapor	6/9/14 8:28 AM	8260B
SVL-553-SA5D-SV-9.0-10.0	3F40901-04	N/A	Soil Vapor	6/9/14 9:08 AM	8260B
SVL-553-SA5D-SV-14.0-15.0	3F40901-05	N/A	Soil Vapor	6/9/14 9:50 AM	8260B
SVL-553-SA5D-SV-19.0-20.0	3F40901-06	N/A	Soil Vapor	6/9/14 10:27 AM	8260B
SVL-584-SA5B-SV-5.0-6.0	3F40901-07	N/A	Soil Vapor	6/9/14 11:03 AM	8260B
SVL-584-SA5B-SV-10.0-11.0	3F40901-08	N/A	Soil Vapor	6/9/14 11:31 AM	8260B
SVL-584-SA5B-SV-15.0-16.0	3F40901-09	N/A	Soil Vapor	6/9/14 12:25 PM	8260B
SVL-584-SA5B-SV-20.0-21.0	3F40901-10	N/A	Soil Vapor	6/9/14 12:49 PM	8260B
SVL-556-SA5D-SV-4.5-5.5	3F40901-11	N/A	Soil Vapor	6/9/14 1:40 PM	8260B
FB-060914	3F40901-12	N/A	Soil Vapor	6/9/14 1:57 PM	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3F40901 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 24, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene were qualified as estimated, "UJ," for nondetects and, "J," for detects. The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 . The continuing calibration %Ds for 1,1,1,2-tetrachloroethane and 1,1,2,2-tetrachloroethane exceeded 15%; however, as the outliers were associated with high recoveries and the analytes were not detected in the samples, no qualifications were assigned. All remaining continuing calibration %Ds were $\leq 15\%$.
- **Blanks:** The ambient air method blank had no reported target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on sample SVL-553-SA5D-SV-4.5-5.5. The analyses had no reported detects.
- **Blank Spikes and Laboratory Control Samples:** Recoveries were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds, with the exception of 121% for 1,1,2,2-tetrachloroethane in the LCSD only. Qualifications were not applied unless outliers occurred in both the LCS and LCSD. RPDs were within the control limit of $\leq 20\%$, with the exception of the RPDs for chloroform and dichlorodifluoromethane of 23.3% and 20.4%, respectively. Sample results for both compounds, all nondetects, were qualified as estimated, "UJ."



- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks:** Sample FB-060914 was the field blank and EB-3F40901 was the equipment rinsate associated with the site samples in this SDG. The field QC samples had no reported detects.
 - **Field Duplicates:** Samples SVL-553-SA5D-SV-4.5-5.5 and SVL-853-SA5D-SV-4.5-5.5 were identified as field duplicate samples. The samples had no reported detects, and were considered to be in good agreement.
- **Internal Standards:** Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- **Compound Identification:** Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- **Compound Quantification and Reported Detection Limits:** Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3F40901

Analysis Method 8260B

Sample Name EB_3F40901 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40901-01 **Sample Date:** 6/9/2014 9:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-060914 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40901-12 **Sample Date:** 6/9/2014 1:57:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-553-SA5D-SV-14.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40901-05 **Sample Date:** 6/9/2014 9:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C

Analysis Method 8260B

trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.037	0.02	0.0053	ug/L		
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-553-SA5D-SV-19.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40901-06 **Sample Date:** 6/9/2014 10:27:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-553-SA5D-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40901-02 **Sample Date:** 6/9/2014 8:28:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-553-SA5D-SV-9.0-1 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40901-04 **Sample Date:** 6/9/2014 9:08:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.021	0.02	0.016	ug/L			
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

Analysis Method 8260B

Toluene	108883	0.011	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-556-SA5D-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40901-11 **Sample Date:** 6/9/2014 1:40:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.0076	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-584-SA5B-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40901-08 **Sample Date:** 6/9/2014 11:31:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ *III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ *III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-584-SA5B-SV-15.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40901-09 **Sample Date:** 6/9/2014 12:25:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

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Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-584-SA5B-SV-20.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40901-10 **Sample Date:** 6/9/2014 12:49:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.0054	0.02	0.0053	ug/L	J	J	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-584-SA5B-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40901-07 **Sample Date:** 6/9/2014 11:03:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-853-SA5D-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F40901-03 **Sample Date:** 6/9/2014 8:28:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	UJ	*III
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	*III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	

Analysis Method *8260B*

m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3F41001

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3F41001
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 12
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB_3F41001	3F41001-01	N/A	Soil Vapor	6/10/14 9:10 AM	8260B
SVL-515-SA5C-SV-5.0-6.0	3F41001-02	N/A	Soil Vapor	6/10/14 8:28 AM	8260B
SVL-815-SA5C-SV-5.0-6.0	3F41001-03	N/A	Soil Vapor	6/10/14 8:28 AM	8260B
SVL-515-SA5C-SV-12.5-13.5	3F41001-04	N/A	Soil Vapor	6/10/14 9:10 AM	8260B
SVL-561-SA5C-SV-5.5-6.0	3F41001-05	N/A	Soil Vapor	6/10/14 9:44 AM	8260B
SVL-537-SA5A-SV-4.5-5.5	3F41001-06	N/A	Soil Vapor	6/10/14 10:23 AM	8260B
SVL-540-SA5A-SV-4.5-5.5	3F41001-07	N/A	Soil Vapor	6/10/14 10:57 AM	8260B
SVL-540-SA5A-SV-8.5-9.5	3F41001-08	N/A	Soil Vapor	6/10/14 11:24 AM	8260B
SVL-543-SA5A-SV-5.0-6.0	3F41001-09	N/A	Soil Vapor	6/10/14 12:26 PM	8260B
SVL-546-SA5A-SV-6.0-7.0	3F41001-10	N/A	Soil Vapor	6/10/14 12:57 PM	8260B
SVL-547-SA5A-SV-6.0-7.0	3F41001-11	N/A	Soil Vapor	6/10/14 1:42 PM	8260B
FB-061014	3F41001-12	N/A	Soil Vapor	6/10/14 2:01 PM	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3F41001 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 24, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene were qualified as estimated, "UJ," for nondetects and, "J," for detects. The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 . The %D for 1,1,2,2-tetrachloroethane exceeded the control limit of $\leq 15\%$; however, as the outlier was associated with a high recovery, and the analyte was not detected in the associated samples, no qualification was assigned. Remaining continuing calibration %Ds were $\leq 15\%$.
- **Blanks:** The ambient air method blank had no reported target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on sample SVL-515-SA5C-SV-5.0-6.0. The analyses had no reported detects.
- **Blank Spikes and Laboratory Control Samples:** The laboratory analyzed two LCSs at two different spiking levels. Recoveries were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds, with the exception of the recovery of 32% for carbon tetrachloride. Sample results for carbon tetrachloride, all nondetects, were qualified as estimated, "UJ." Recoveries for 1,1,2,2-tetrachloroethane and m,p-xylenes were above the control limits; however, as the analytes were not detected in the samples, no further qualifications were assigned.



- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks:** Sample FB-061014 was the field blank and EB-3F41001 was the equipment rinsate associated with the site samples in this SDG. The field QC samples had no reported detects.
 - **Field Duplicates:** Samples SVL-515-SA5C-SV-5.0-6.0 and SVL-815-SA5C-SV-5.0-6.0 were identified as field duplicate samples. The samples had no reported detects, and were considered to be in good agreement.
- **Internal Standards:** Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- **Compound Identification:** Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- **Compound Quantification and Reported Detection Limits:** Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3F41001

Analysis Method 8260B

Sample Name EB_3F41001 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41001-01 **Sample Date:** 6/10/2014 9:10:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-061014 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41001-12 **Sample Date:** 6/10/2014 2:01:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-515-SA5C-SV-12.5- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41001-04 **Sample Date:** 6/10/2014 9:10:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C

Analysis Method 8260B

trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-515-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41001-02 **Sample Date:** 6/10/2014 8:28:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-537-SA5A-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41001-06 **Sample Date:** 6/10/2014 10:23:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-540-SA5A-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41001-07 **Sample Date:** 6/10/2014 10:57:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

Analysis Method 8260B

Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-540-SA5A-SV-8.5-9. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41001-08 **Sample Date:** 6/10/2014 11:24:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.0058	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-543-SA5A-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41001-09 **Sample Date:** 6/10/2014 12:26:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.0062	0.02	0.0043	ug/L	J	J C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-546-SA5A-SV-6.0-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41001-10 **Sample Date:** 6/10/2014 12:57:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ L	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

Analysis Method 8260B

Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-547-SA5A-SV-6.0-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41001-11 **Sample Date:** 6/10/2014 1:42:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-561-SA5C-SV-5.5-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41001-05 **Sample Date:** 6/10/2014 9:44:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.012	0.02	0.0053	ug/L	J	J	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-815-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41001-03 **Sample Date:** 6/10/2014 8:28:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	

Analysis Method *8260B*

m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3F41101

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3F41101
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 12
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB_3F41101	3F41101-01	N/A	Soil Vapor	6/11/14 8:08 AM	8260B
SVL-557-SA5B-SV-4.5-5.5	3F41101-02	N/A	Soil Vapor	6/11/14 8:08 AM	8260B
SVL-857-SA5B-SV-4.5-5.5	3F41101-03	N/A	Soil Vapor	6/11/14 8:08 AM	8260B
SVL-567-SA5B-SV-4.5-5.5	3F41101-04	N/A	Soil Vapor	6/11/14 8:56 AM	8260B
SVL-579-SA5B-SV-6.5-7.5	3F41101-05	N/A	Soil Vapor	6/11/14 9:36 AM	8260B
SVL-593-SA5B-SV-5.0-6.0	3F41101-06	N/A	Soil Vapor	6/11/14 10:21 AM	8260B
SVL-577-SA5B-SV-5.2-6.2	3F41101-07	N/A	Soil Vapor	6/11/14 10:56 AM	8260B
SVL-568-SA5A-SV-6.0-7.0	3F41101-08	N/A	Soil Vapor	6/11/14 11:24 AM	8260B
SVL-570-SA5A-SV-7.0-8.0	3F41101-09	N/A	Soil Vapor	6/11/14 12:34 PM	8260B
SVL-582-SA5A-SV-5.0-6.0	3F41101-10	N/A	Soil Vapor	6/11/14 1:03 PM	8260B
SVL-592-SA5A-SV-5.0-6.0	3F41101-11	N/A	Soil Vapor	6/11/14 1:43 PM	8260B
FB-061114	3F41101-12	N/A	Soil Vapor	6/11/14 1:56 PM	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3F41101 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 24, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene, all nondetects, were qualified as estimated, "UJ." The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 . The %D for 1,1,1,2-tetrachloroethane exceeded the control limit of $\leq 15\%$; however, as the outlier was associated with a high recovery, and the analyte was not detected in the associated samples, no qualification was assigned. Remaining continuing calibration %Ds were $\leq 15\%$.
- **Blanks:** The ambient air method blank had no reported target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on sample SVL-557-SA5B-SV-4.5-5.5. The RPD for chloroethane exceeded the control limit of $\leq 25\%$ at 42.4%; therefore, the sample result was qualified as estimated, "J." The analyses had no other reported detects.
- **Blank Spikes and Laboratory Control Samples:** Recoveries were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds, with the exception of a recovery above the control limits for 1,1,2,2-tetrachloroethane in the LCSD only. Qualifications were not applied unless outliers occurred in both the LCS and LCSD. RPDs were within the control limit of $\leq 20\%$, with the exception of the RPDs for 1,1,2,2-



tetrachloroethane and trichlorotrifluoromethane of 33.0% and 23.9%, respectively. Sample results for both compounds, all nondetects, were qualified as estimated, "UJ."

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Sample FB-061114 was the field blank and EB-3F41101 was the equipment rinsate associated with the site samples in this SDG. The field QC samples had no reported detects.
 - Field Duplicates: Samples SVL-557-SA5B-SV-4.5-5.5 and SVL-857-SA5B-SV-4.5-5.5 were identified as field duplicate samples. Sample SVL-557-SA5B-SV-4.5-5.5 had a detect above the reporting limit for chloroethane not present in the duplicate. The samples had no other reported detects.
- Internal Standards: Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- Compound Identification: Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3F41101

Analysis Method 8260B

Sample Name EB_3F41101 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41101-01 **Sample Date:** 6/11/2014 8:08:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-061114 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41101-12 **Sample Date:** 6/11/2014 1:56:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-557-SA5B-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41101-02 **Sample Date:** 6/11/2014 8:08:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.048	0.02	0.016	ug/L		J	*III
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C

Analysis Method 8260B

trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-567-SA5B-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41101-04 **Sample Date:** 6/11/2014 8:56:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.015	0.02	0.0054	ug/L	J	J	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-568-SA5A-SV-6.0-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41101-08 **Sample Date:** 6/11/2014 11:24:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ *III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-570-SA5A-SV-7.0-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41101-09 **Sample Date:** 6/11/2014 12:34:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

Analysis Method 8260B

Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-577-SA5B-SV-5.2-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41101-07 **Sample Date:** 6/11/2014 10:56:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-579-SA5B-SV-6.5-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41101-05 **Sample Date:** 6/11/2014 9:36:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ *III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-582-SA5A-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41101-10 **Sample Date:** 6/11/2014 1:03:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

Analysis Method 8260B

Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-592-SA5A-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41101-11 **Sample Date:** 6/11/2014 1:43:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-593-SA5B-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41101-06 **Sample Date:** 6/11/2014 10:21:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III

Analysis Method 8260B

1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ *III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-857-SA5B-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41101-03 **Sample Date:** 6/11/2014 8:08:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	

Analysis Method 8260B

m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	UJ	*III
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3F41201

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3F41201
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 9
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB_3F41201	3F41201-01	N/A	Soil Vapor	6/12/14 10:36 AM	8260B
SVL-626-SA5A-SV-5.5-6.5	3F41201-02	N/A	Soil Vapor	6/12/14 7:48 AM	8260B
SVL-926-SA5A-SV-5.5-6.5	3F41201-03	N/A	Soil Vapor	6/12/14 7:48 AM	8260B
SVL-528-SA6-SV-5.5-6.5	3F41201-04	N/A	Soil Vapor	6/12/14 8:38 AM	8260B
SVL-515-SA6-SV-7.9-8.9	3F41201-05	N/A	Soil Vapor	6/12/14 9:28 AM	8260B
SVL-509-SA6-SV-5.0-6.0	3F41201-06	N/A	Soil Vapor	6/12/14 10:04 AM	8260B
SVL-509-SA6-SV-10.0-11.0	3F41201-07	N/A	Soil Vapor	6/12/14 10:36 AM	8260B
SVL-509-SA6-SV-15.0-16.0	3F41201-08	N/A	Soil Vapor	6/12/14 11:07 AM	8260B
FB-061214	3F41201-09	N/A	Soil Vapor	6/12/14 12:30 PM	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3F41201 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 24, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- Calibration: The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene were qualified as estimated, "J," for detects, and "UJ," for nondetects. The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 .

The continuing calibration %D exceeded the control limit of $\leq 15\%$ for dichlorodifluoromethane, at 15.7%; therefore, results for dichlorodifluoromethane were qualified as estimated, "J," for detects, and "UJ," for nondetects. The %D for trichlorofluoromethane exceeded the control limit with a high recovery, at -17.1%; therefore, sample detects for trichlorofluoromethane were qualified as estimated, "J." The %D for 1,1,1,2-tetrachloroethane also exceeded 15%; however, as the outlier was associated with a high recovery and the analyte was not detected in the samples, no further qualifications were assigned. All remaining continuing calibration %Ds were $\leq 15\%$.

- Blanks: The ambient air method blank had no reported target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- Surrogate Recovery: Recoveries were within the control limits of 75-125%.
- Laboratory Duplicate: A laboratory duplicate analysis was performed on sample SVL-626-SA5A-SV-5.5-6.5. The analyses had no reported detects.
- Blank Spikes and Laboratory Control Samples: Recoveries were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds, with the exception of a recovery above the control limits for 1,1,2,2-tetrachloroethane in the LCS only.



Qualifications were not applied unless outliers occurred in both the LCS and LCSD. RPDs were within the control limit of $\leq 20\%$, with the exception of the RPD for 1,1,2,2-tetrachloroethane of 45.3%. Sample results for 1,1,2,2-tetrachloroethane, all nondetects, were qualified as estimated, "UJ."

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Sample FB-061214 was the field blank and EB-3F41201 was the equipment rinsate associated with the site samples in this SDG. The field QC samples had no reported detects.
 - Field Duplicates: Samples SVL-626-SA5A-SV-5.5-6.5 and SVL-926-SA5A-SV-5.5-6.5 were identified as field duplicate samples. Sample SVL-926-SA5A-SV-5.5-6.5 had a detect below the reporting limit for dichlorodifluoromethane not present in the parent sample. The samples had no other reported detects. The pair was considered to be in reasonable agreement.
- Internal Standards: Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- Compound Identification: Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. Sample SVL-509-SA6-SV-15.0-16.0 was analyzed at a 5x dilution for a high concentration of trichlorofluoromethane.

Validated Sample Result Forms: 3F41201

Analysis Method 8260B

Sample Name EB_3F41201 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41201-01 **Sample Date:** 6/12/2014 10:36:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-061214 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41201-09 **Sample Date:** 6/12/2014 12:30:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

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1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-509-SA6-SV-10.0-11 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41201-07 **Sample Date:** 6/12/2014 10:36:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.041	0.02	0.0054	ug/L			
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.0066	0.02	0.0043	ug/L	J	J	C

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trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	2.9	2.9	0.0053	ug/L		UJ	C, RL changed from 0.02
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-509-SA6-SV-15.0-16 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41201-08 **Sample Date:** 6/12/2014 11:07:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.1	0.1	0.045	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.062	0.1	0.027	ug/L	J	J	
1,1,2,2-Tetrachloroethane	79345	0.1	0.1	0.045	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.1	0.1	0.059	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.1	0.1	0.031	ug/L	U	U	
1,1-Dichloroethane	75343	0.1	0.1	0.031	ug/L	U	U	
1,1-Dichloroethene	75354	0.1	0.1	0.036	ug/L	U	U	
1,2-Dichloroethane	107062	0.1	0.1	0.053	ug/L	U	U	
Benzene	71432	0.1	0.1	0.02	ug/L	U	U	
Carbon Tetrachloride	56235	0.1	0.1	0.058	ug/L	U	U	
Chloroethane	75003	0.1	0.1	0.08	ug/L	U	U	
Chloroform	67663	0.1	0.1	0.03	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.1	0.1	0.047	ug/L	U	U	
Dichlorodifluoromethane	75718	0.1	0.1	0.055	ug/L	U	UJ	C
Ethylbenzene	100414	0.1	0.1	0.015	ug/L	U	U	
Methylene chloride	75092	0.1	0.1	0.052	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.1	0.1	0.04	ug/L	U	U	
o-Xylene	95476	0.1	0.1	0.044	ug/L	U	U	
Tetrachloroethene	127184	0.1	0.1	0.027	ug/L	U	U	
Toluene	108883	0.1	0.1	0.021	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.1	0.1	0.019	ug/L	U	U	
Trichloroethene	79016	0.1	0.1	0.058	ug/L	U	U	
Trichlorofluoromethane	75694	4.5	4.5	0.027	ug/L		UJ	C, RL changed from 0.1
Vinyl chloride	75014	0.1	0.1	0.051	ug/L	U	U	

Sample Name SVL-509-SA6-SV-5.0-6.0 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41201-06 **Sample Date:** 6/12/2014 10:04:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.031	0.02	0.0054	ug/L			
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

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1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	1.1	1.1	0.0053	ug/L		UJ C, RL changed from 0.02
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-515-SA6-SV-7.9-8.9 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41201-05 **Sample Date:** 6/12/2014 9:28:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

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Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-528-SA6-SV-5.5-6.5 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41201-04 **Sample Date:** 6/12/2014 8:38:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-626-SA5A-SV-5.5-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41201-02 **Sample Date:** 6/12/2014 7:48:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-926-SA5A-SV-5.5-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41201-03 **Sample Date:** 6/12/2014 7:48:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.011	0.02	0.011	ug/L	J	J	C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

Analysis Method *8260B*

Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3F41301

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3F41301
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 8
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB_3F41301	3F41301-01	N/A	Soil Vapor	6/13/14 8:59 AM	8260B
SVL-525-SA5B-SV-8.0-9.0	3F41301-02	N/A	Soil Vapor	6/13/14 8:35 AM	8260B
SVL-825-SA5B-SV-8.0-9.0	3F41301-03	N/A	Soil Vapor	6/13/14 8:35 AM	8260B
SVL-525-SA5B-SV-13.0-14.0	3F41301-04	N/A	Soil Vapor	6/13/14 8:59 AM	8260B
SVL-561-SA5B-SV-9.0-10.0	3F41301-05	N/A	Soil Vapor	6/13/14 9:35 AM	8260B
SVL-562-SA5B-SV-8.0-9.0	3F41301-06	N/A	Soil Vapor	6/13/14 10:05 AM	8260B
SVL-549-SA5C-SV-6.0-7.0	3F41301-07	N/A	Soil Vapor	6/13/14 10:34 AM	8260B
FB-061314	3F41301-08	N/A	Soil Vapor	6/13/14 11:08 AM	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3F41301 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 24, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene were qualified as estimated, "J," for detects, and "UJ," for nondetects. The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 .

The continuing calibration %D exceeded the control limit of $\leq 15\%$ for dichlorodifluoromethane, at 17.8%; therefore, results for dichlorodifluoromethane were qualified as estimated, "J," for detects, and "UJ," for nondetects. The %Ds for 1,1,2,2-tetrachloroethane and 1,1,2-trichloro-1,2,2-trifluoroethane exceeded 15%; however, as the outliers were associated with high recoveries and the analytes were not detected in the samples, no further qualifications were assigned. All remaining continuing calibration %Ds were $\leq 15\%$.

- **Blanks:** The ambient air method blank had no reported target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on sample SVL-525-SA5B-SV-8.0-9.0. The RPDs were $\leq 25\%$ for 1,1,1-trichloroethane and trichlorotrifluoroethane, but exceeded the control limit at 41.8% for dichlorodifluoromethane. The parent sample result for dichlorodifluoromethane was qualified as estimated, "J."
- **Blank Spikes and Laboratory Control Samples:** Recoveries were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and



vinyl chloride and within 80-120% for the remaining compounds, with the exception of a recovery above the control limits for 1,1,2,2-tetrachloroethane in the LCS only. Qualifications were not applied unless outliers occurred in both the LCS and LCSD. RPDs were within the control limit of $\leq 20\%$, with the exception of the RPD for 1,1,2,2-tetrachloroethane of 45.2%. Sample results for 1,1,2,2-tetrachloroethane, all nondetects, were qualified as estimated, "UJ."

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Sample FB-061314 was the field blank and EB-3F41301 was the equipment rinsate associated with the site samples in this SDG. The field QC samples had no reported detects.
 - Field Duplicates: Samples SVL-525-SA5B-SV-8.0-9.0 and SVL-825-SA5B-SV-8.0-9.0 were identified as field duplicate samples. The samples had common detects for 1,1,1-trichloroethane and trichlorotrifluoroethane with RPDs of 29% and 12%, respectively. Sample SVL-525-SA5B-SV-8.0-9.0 had a detect below the reporting limit for dichlorodifluoromethane not present in the parent sample. The samples had no other reported detects. The pair was considered to be in reasonable agreement.
- Internal Standards: Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- Compound Identification: Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3F41301

Analysis Method 8260B

Sample Name	EB_3F41301	Matrix Type:	Soil Vapor	Result Type:	Primary Result			
Lab Sample Name:	3F41301-01	Sample Date:	6/13/2014 8:59:00 AM	Validation Level:	V			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name	FB-061314	Matrix Type:	Soil Vapor			Result Type:	Primary Result	
Lab Sample Name:	3F41301-08	Sample Date:	6/13/2014 11:08:00 AM			Validation Level: V		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-525-SA5B-SV-13.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41301-04 **Sample Date:** 6/13/2014 8:59:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.057	0.02	0.0054	ug/L			
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C

Analysis Method 8260B

trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.03	0.02	0.012	ug/L		
Trichlorofluoromethane	75694	2.7	0.02	0.0053	ug/L		
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-525-SA5B-SV-8.0-9. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41301-02 **Sample Date:** 6/13/2014 8:35:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.071	0.02	0.0054	ug/L			
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.014	0.02	0.011	ug/L	J	J	C, *III
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	2.7	0.02	0.0053	ug/L			
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-549-SA5C-SV-6.0-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41301-07 **Sample Date:** 6/13/2014 10:34:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.014	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.036	0.02	0.0053	ug/L			
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-561-SA5B-SV-9.0-1 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41301-05 **Sample Date:** 6/13/2014 9:35:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

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Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.023	0.02	0.0053	ug/L			
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-562-SA5B-SV-8.0-9. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41301-06 **Sample Date:** 6/13/2014 10:05:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.021	0.02	0.016	ug/L			
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ	C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.0064	0.02	0.0043	ug/L	J	J	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-825-SA5B-SV-8.0-9. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41301-03 **Sample Date:** 6/13/2014 8:35:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.053	0.02	0.0054	ug/L			
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	UJ C
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	2.4	0.02	0.0053	ug/L		
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3F41801

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3F41801
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 10
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB_3F41801	3F41801-01	N/A	Soil Vapor	6/18/14 10:20 AM	8260B
SVL-580-SA5B-SV-7.0-8.0	3F41801-02	N/A	Soil Vapor	6/18/14 8:09 AM	8260B
SVL-880-SA5B-SV-7.0-8.0	3F41801-03	N/A	Soil Vapor	6/18/14 8:09 AM	8260B
SVL-599-SA5B-SV-8.0-9.0	3F41801-04	N/A	Soil Vapor	6/18/14 9:10 AM	8260B
SVL-513-SA5C-SV-5.0-6.0	3F41801-05	N/A	Soil Vapor	6/18/14 10:20 AM	8260B
SVL-511-SA5C-SV-7.0-8.0	3F41801-06	N/A	Soil Vapor	6/18/14 11:08 AM	8260B
SVL-511-SA5C-SV-13.0-14.0	3F41801-07	N/A	Soil Vapor	6/18/14 11:53 AM	8260B
SVL-529-SA8-SV-4.5-5.5	3F41801-08	N/A	Soil Vapor	6/18/14 12:57 PM	8260B
SVL-529-SA8-SV-8.5-9.5	3F41801-09	N/A	Soil Vapor	6/18/14 1:34 PM	8260B
FB-061814	3F41801-10	N/A	Soil Vapor	6/18/14 1:42 PM	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3F41801 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 24, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- **Holding Times:** Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- **GC/MS Tuning:** The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- **Calibration:** The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene, all nondetects, were qualified as estimated, "UJ." The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 . All continuing calibration %Ds were $\leq 15\%$.
- **Blanks:** The ambient air method blank had no reported target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- **Surrogate Recovery:** Recoveries were within the control limits of 75-125%.
- **Laboratory Duplicate:** A laboratory duplicate analysis was performed on sample SVL-580-SA5B-SV-7.0-8.0. The analyses had no reported detects.
- **Blank Spikes and Laboratory Control Samples:** The laboratory analyzed two LCSs at two different spiking levels. Recoveries were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds, with the exception of the recovery of 64% for carbon tetrachloride. Sample results for carbon tetrachloride, all nondetects, were qualified as estimated, "UJ." Recoveries for 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,1,1-trichloroethane, and 1,1,2-trichloroethane were above the control limits; however, as the analytes were not detected in the samples, no further qualifications were assigned.
- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC



data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Field Blanks: Sample FB-061814 was the field blank and EB-3F41801 was the equipment rinsate associated with the site samples in this SDG. The field QC samples had no reported detects.
- Field Duplicates: Samples SVL-580-SA5B-SV-7.0-8.0 and SVL-880-SA5B-SV-7.0-8.0 were identified as field duplicate samples. The samples had no reported detects, and the pair was considered to be in good agreement.
- Internal Standards: Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- Compound Identification: Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3F41801

Analysis Method 8260B

Sample Name EB_3F41801 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41801-01 **Sample Date:** 6/18/2014 10:20:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-061814 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41801-10 **Sample Date:** 6/18/2014 1:42:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-511-SA5C-SV-13.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41801-07 **Sample Date:** 6/18/2014 11:53:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.0098	0.02	0.0053	ug/L	J	J	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C

Analysis Method 8260B

trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-511-SA5C-SV-7.0-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41801-06 **Sample Date:** 6/18/2014 11:08:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-513-SA5C-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41801-05 **Sample Date:** 6/18/2014 10:20:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-529-SA8-SV-4.5-5.5 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41801-08 **Sample Date:** 6/18/2014 12:57:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

Analysis Method 8260B

Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-529-SA8-SV-8.5-9.5 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41801-09 **Sample Date:** 6/18/2014 1:34:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-580-SA5B-SV-7.0-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41801-02 **Sample Date:** 6/18/2014 8:09:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-599-SA5B-SV-8.0-9. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41801-04 **Sample Date:** 6/18/2014 9:10:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ L	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	

Analysis Method 8260B

Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-880-SA5B-SV-7.0-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41801-03 **Sample Date:** 6/18/2014 8:09:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	UJ	L
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	U	
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 3F41901

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 3F41901
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 8
No. of Reanalyses/Dilutions: 0
Laboratory: Environmental Support Technologies

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
EB_3F41901	3F41901-01	N/A	Soil Vapor	6/19/14 11:35 AM	8260B
SVL-543-SA8-SV-6.25-7.25	3F41901-02	N/A	Soil Vapor	6/19/14 8:34 AM	8260B
SVL-843-SA8-SV-6.25-7.25	3F41901-03	N/A	Soil Vapor	6/19/14 8:34 AM	8260B
SVL-531-SA8-SV-4.5-5.5	3F41901-04	N/A	Soil Vapor	6/19/14 9:28 AM	8260B
SVL-545-SA8-SV-6.75-7.25	3F41901-05	N/A	Soil Vapor	6/19/14 10:37 AM	8260B
SVL-502-SA8-SV-4.45-5.45	3F41901-06	N/A	Soil Vapor	6/19/14 11:09 AM	8260B
SVL-543-SA6-SV-7.5-8.5	3F41901-07	N/A	Soil Vapor	6/19/14 11:35 AM	8260B
FB-061914	3F41901-08	N/A	Soil Vapor	6/19/14 11:41 AM	8260B

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. Sample EB_3F41901 was listed on the COC as "Equipment Blank." Field sampling personnel verbally requested EST to revise equipment blank ID. The COC was appropriately signed and dated as relinquished by field personnel; however, the COC was not signed and dated as received by the laboratory. Custody seals were not utilized, as the mobile laboratory was located at the field site.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD 8260B—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 25, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 8260B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. Surrogates were added within 15 minutes of collection and the samples were analyzed within six hours of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.
- Calibration: The %RSD for toluene exceeded the control limit at 16.7%; therefore, the results for toluene, all nondetects, were qualified as estimated, "UJ." The remaining initial calibration %RSDs were $\leq 15\%$ or the correlation coefficients ≥ 0.995 .

The continuing calibration %D exceeded the control limit of $\leq 15\%$ for m,p-xylenes, at 16.6%; therefore, results for m,p-xylenes were qualified as estimated, "J," for detects, and "UJ," for nondetects. All remaining continuing calibration %Ds were $\leq 15\%$.

- Blanks: The ambient air method blank had no reported target compound detects. This blank is best associated with the site and date of collection but is also a measure of bulb contamination and was, therefore, associated with all samples in this SDG.
- Surrogate Recovery: Recoveries were within the control limits of 75-125%.
- Laboratory Duplicate: A laboratory duplicate analysis was performed on sample SVL-543-SA8-SV-6.25-7.25. The analyses had no reported detects.
- Blank Spikes and Laboratory Control Samples: Recoveries were within 70-130% for chloroethane, dichlorodifluoromethane, trichlorofluoromethane, trichlorotrifluoroethane, and vinyl chloride and within 80-120% for the remaining compounds, with the exception of a recovery above the control limits for 1,1,2,2-tetrachloroethane in the LCS only. Qualifications were not applied unless outliers occurred in both the LCS and LCSD. RPDs were within the control limit of $\leq 20\%$, with the exception of the RPD for 1,1,2,2-tetrachloroethane of 35.0%. Sample results for 1,1,2,2-tetrachloroethane, all nondetects, were qualified as estimated, "UJ."



- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks:** Sample FB-061914 was the field blank and EB-3F41901 was the equipment rinsate associated with the site samples in this SDG. The field QC samples had no reported detects.
 - **Field Duplicates:** Samples SVL-543-SA8-SV-6.25-7.25 and SVL-843-SA8-SV-6.25-7.25 were identified as field duplicate samples. The samples had no reported detects, and the pair was considered to be in good agreement.
- **Internal Standards:** Internal standard recoveries were within 50-200% of the continuing calibration and retention times were 0.80-1.20, relative to the continuing calibration.
- **Compound Identification:** Compound identification was verified. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.
- **Compound Quantification and Reported Detection Limits:** Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit. None of the samples required dilution.

Validated Sample Result Forms: 3F41901

Analysis Method 8260B

Sample Name EB_3F41901 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41901-01 **Sample Date:** 6/19/2014 11:35:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	UJ	C
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name FB-061914 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41901-08 **Sample Date:** 6/19/2014 11:41:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	

Analysis Method 8260B

1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	UJ	C
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-502-SA8-SV-4.45-5, **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41901-06 **Sample Date:** 6/19/2014 11:09:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	UJ	C
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C

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trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.032	0.02	0.012	ug/L		
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-531-SA8-SV-4.5-5.5 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41901-04 **Sample Date:** 6/19/2014 9:28:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	UJ	C
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-543-SA6-SV-7.5-8.5 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41901-07 **Sample Date:** 6/19/2014 11:35:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	

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1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	UJ C
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U

Sample Name SVL-543-SA8-SV-6.25-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41901-02 **Sample Date:** 6/19/2014 8:34:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	UJ	C
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	

Analysis Method 8260B

Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-545-SA8-SV-6.75-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41901-05 **Sample Date:** 6/19/2014 10:37:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	UJ	C
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	

Sample Name SVL-843-SA8-SV-6.25-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 3F41901-03 **Sample Date:** 6/19/2014 8:34:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.02	0.02	0.009	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.02	0.02	0.0054	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.02	0.02	0.0089	ug/L	U	UJ	*III
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.02	0.02	0.012	ug/L	U	U	

Analysis Method 8260B

1,1,2-Trichloroethane	79005	0.02	0.02	0.0063	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.0062	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.0072	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.011	ug/L	U	U	
Benzene	71432	0.02	0.02	0.0041	ug/L	U	U	
Carbon Tetrachloride	56235	0.02	0.02	0.012	ug/L	U	U	
Chloroethane	75003	0.02	0.02	0.016	ug/L	U	U	
Chloroform	67663	0.02	0.02	0.006	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.0094	ug/L	U	U	
Dichlorodifluoromethane	75718	0.02	0.02	0.011	ug/L	U	U	
Ethylbenzene	100414	0.02	0.02	0.003	ug/L	U	U	
Methylene chloride	75092	0.02	0.02	0.01	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.02	0.02	0.008	ug/L	U	UJ	C
o-Xylene	95476	0.02	0.02	0.0089	ug/L	U	U	
Tetrachloroethene	127184	0.02	0.02	0.0053	ug/L	U	U	
Toluene	108883	0.02	0.02	0.0043	ug/L	U	UJ	C
trans-1,2-Dichloroethene	156605	0.02	0.02	0.0039	ug/L	U	U	
Trichloroethene	79016	0.02	0.02	0.012	ug/L	U	U	
Trichlorofluoromethane	75694	0.02	0.02	0.0053	ug/L	U	U	
Vinyl chloride	75014	0.02	0.02	0.01	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 14-05-1846

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 14-05-1846
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Laboratory: Calscience

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
SVL-916-SA5B-SV-12.5-13.5	14051846-1	N/A	Soil Vapor	5/21/14 12:55 PM	TO-15
SVL-960-SA5B-SV-7.0-8.0	14051846-2	N/A	Soil Vapor	5/22/14 2:38 PM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. The COC was appropriately signed and dated by field and laboratory personnel. As the samples were transported directly to the laboratory, custody seals were not utilized.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 15, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: Calibration criteria were met. Initial calibration %RSDs were $\leq 30\%$. Continuing calibration %Ds were $\leq 30\%$.
- Blanks: Methylene chloride was detected in the method blank at 0.0020 $\mu\text{g/L}$; therefore, methylene chloride detected in the samples was qualified as nondetected, "U," at the reporting limit. There were no other detects in the method blank.
- Surrogate Recovery: Recoveries were within the laboratory-established control limits.
- Blank Spikes and Laboratory Control Samples: The recoveries and RPDs were within the laboratory control limits.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy and precision were evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blank FB-052114 (1476964) was associated with SVL-916-SA5B-SV-12.5-13.5 and ambient blank FB-052214 (1476965) was associated with SVL-960-SA5B-SV-7.0-8.0. Ethylbenzene (0.00096 $\mu\text{g/L}$) and o-xylene (0.0018 $\mu\text{g/L}$) were detected in FB-052114; therefore, detects for these compounds in SVL-916-SA5B-SV-12.5-13.5 were qualified as nondetected, "U," at the levels of contamination. Dichlorodifluoromethane (0.0023 $\mu\text{g/L}$), ethylbenzene (0.0021



µg/L), toluene (0.0056 µg/L), trichlorofluoromethane (0.0012 µg/L), m,p-xylene (0.0060 µg/L), and o-xylene (0.0038 µg/L) were detected in FB-052214; therefore, detects for these compounds in SVL-960-SA5B-SV-7.0-8.0 were qualified as nondetected, "U," at the reporting limit if detected below the reporting limit or at the level of contamination if detected above.

- Field Duplicates: There were no field duplicate samples identified in this SDG.
- Internal Standards: The internal standards were acceptably recovered. The areas were within 40% of the continuing calibration and the retention times were within 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. The aliquots analyzed for 1,1,2,2-tetrachloroethane were concentrated by approximately 2x. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 14-05-1846

Analysis Method TO-15

Sample Name SVL-916-SA5B-SV-12.5- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14051846-1 **Sample Date:** 5/21/2014 12:55:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0014	0.0075	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00047	0.003	0.00047	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.001	0.0076	0.001	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0061	0.013	0.00059	ug/L	J	J	
1,1,2-Trichloroethane	79005	0.0011	0.003	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.00028	0.0022	0.00028	ug/L	U	U	
1,1-Dichloroethene	75354	0.00087	0.0022	0.00087	ug/L	U	U	
1,2-Dichloroethane	107062	0.00031	0.0022	0.00031	ug/L	U	U	
Benzene	71432	0.0003	0.0018	0.0003	ug/L	U	U	
Carbon Tetrachloride	56235	0.00043	0.0035	0.00043	ug/L	U	U	
Chloroethane	75003	0.0007	0.0015	0.0007	ug/L	U	U	
Chloroform	67663	0.00037	0.0027	0.00037	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00038	0.0022	0.00038	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00032	0.0027	0.00032	ug/L	U	U	
Ethylbenzene	100414	0.0038	0.0038	0.00069	ug/L		U	F, RL changed from 0.0024
Methylene chloride	75092	0.019	0.019	0.00095	ug/L	B,J	U	B, result changed from 0.002
m-Xylene & p-Xylene	179601231	0.017	0.0096	0.0016	ug/L			
o-Xylene	95476	0.0076	0.0076	0.00075	ug/L		U	F, RL changed from 0.0024
Tetrachloroethene	127184	0.025	0.0037	0.0005	ug/L			
Toluene	108883	0.0068	0.0021	0.00056	ug/L			
trans-1,2-Dichloroethene	156605	0.00055	0.0022	0.00055	ug/L	U	U	
Trichloroethene	79016	0.00041	0.003	0.00041	ug/L	U	U	
Trichlorofluoromethane	75694	0.0033	0.0062	0.0011	ug/L	J	J	
Vinyl chloride	75014	0.00062	0.0014	0.00062	ug/L	U	U	

Sample Name SVL-960-SA5B-SV-7.0-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14051846-2 **Sample Date:** 5/22/2014 2:38:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0013	0.0069	0.0013	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00043	0.0028	0.00043	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.00095	0.0069	0.00095	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0044	0.012	0.00054	ug/L	J	J	
1,1,2-Trichloroethane	79005	0.001	0.0028	0.001	ug/L	U	U	
1,1-Dichloroethane	75343	0.00026	0.002	0.00026	ug/L	U	U	

Analysis Method TO-15

1,1-Dichloroethene	75354	0.0008	0.002	0.0008	ug/L	U	U	
1,2-Dichloroethane	107062	0.00028	0.002	0.00028	ug/L	U	U	
Benzene	71432	0.0019	0.0016	0.00027	ug/L			
Carbon Tetrachloride	56235	0.00039	0.0032	0.00039	ug/L	U	U	
Chloroethane	75003	0.00064	0.0013	0.00064	ug/L	U	U	
Chloroform	67663	0.00034	0.0025	0.00034	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00035	0.002	0.00035	ug/L	U	U	
Dichlorodifluoromethane	75718	0.004	0.004	0.0003	ug/L		U	F, RL changed from 0.0025
Ethylbenzene	100414	0.0059	0.0059	0.00064	ug/L		U	F, RL changed from 0.0022
Methylene chloride	75092	0.018	0.018	0.00087	ug/L	B,J	U	B, result changed from 0.0024
m-Xylene & p-Xylene	179601231	0.02	0.02	0.0015	ug/L		U	F, RL changed from 0.0088
o-Xylene	95476	0.011	0.011	0.00069	ug/L		U	F, RL changed from 0.0022
Tetrachloroethene	127184	0.0062	0.0034	0.00046	ug/L			
Toluene	108883	0.006	0.006	0.00051	ug/L		U	F, RL changed from 0.0019
trans-1,2-Dichloroethene	156605	0.00051	0.002	0.00051	ug/L	U	U	
Trichloroethene	79016	0.0043	0.0027	0.00038	ug/L			
Trichlorofluoromethane	75694	0.0057	0.0057	0.00097	ug/L	J	U	F, result changed from 0.0046
Vinyl chloride	75014	0.00057	0.0013	0.00057	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 14-06-0002

Prepared by

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Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 14-06-0002
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 3
No. of Reanalyses/Dilutions: 0
Laboratory: Calscience

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
SVL-915-SA5D-SV-12.5-13.8	14060002-1	N/A	Soil Vapor	5/28/14 9:05 AM	TO-15
SVL-930-SA5C-SV-6.5-7.5	14060002-2	N/A	Soil Vapor	5/29/14 8:49 AM	TO-15
SVL-946-SA5D-SV-10.0-11.0	14060002-3	N/A	Soil Vapor	5/30/14 8:25 AM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. The COCs were appropriately signed and dated by field and laboratory personnel. Custody seals were not utilized.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 15, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: Calibration criteria were met. Initial calibration %RSDs were $\leq 30\%$. Continuing calibration %Ds were $\leq 30\%$.
- Blanks: Methylene chloride was detected in the method blank at 0.0021 $\mu\text{g/L}$; therefore, methylene chloride detected in the samples was qualified as nondetected, "U," at the reporting limit. There were no other detects in the method blank.
- Surrogate Recovery: Recoveries were within the laboratory-established control limits.
- Blank Spikes and Laboratory Control Samples: The recoveries and RPDs were within the laboratory control limits.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy and precision were evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blank FB-052814 (3E42801) was associated with SVL-915-SA5D-SV-12.5-13.8, ambient blank FB-052914 (3E42901) was associated with SVL-930-SA5C-SV-6.5-7.5, and ambient blank FB-053014 (3E43001) was associated with SVL-946-SA5D-SV-10.0-11.0. Target compound 1,1,2-trichloro-1,2,2-trifluoroethane (0.017 $\mu\text{g/L}$) was detected in FB-052814; therefore, the detect for this compound in SVL-915-SA5D-SV-12.5-13.8 was qualified as nondetected,



“U,” at the reporting limit. There were no other ambient blank detects affecting sample results.

- Field Duplicates: There were no field duplicate samples identified in this SDG.
- Internal Standards: The internal standards were acceptably recovered. The areas were within 40% of the continuing calibration and the retention times were within 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. The aliquots analyzed for 1,1,2,2-tetrachloroethane were concentrated by approximately 2x. Any result reported between the MDL and the reporting limit was qualified as estimated, “J.” Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 14-06-0002

Analysis Method TO-15

Sample Name SVL-915-SA5D-SV-12.5- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14060002-1 **Sample Date:** 5/28/2014 9:05:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0013	0.0069	0.0013	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00043	0.0027	0.00043	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.00095	0.0069	0.00095	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.011	0.011	0.00054	ug/L	J	U	F, result changed from 0.0044
1,1,2-Trichloroethane	79005	0.001	0.0027	0.001	ug/L	U	U	
1,1-Dichloroethane	75343	0.00026	0.002	0.00026	ug/L	U	U	
1,1-Dichloroethene	75354	0.00079	0.002	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.00028	0.002	0.00028	ug/L	U	U	
Benzene	71432	0.0027	0.0016	0.00027	ug/L			
Carbon Tetrachloride	56235	0.00039	0.0031	0.00039	ug/L	U	U	
Chloroethane	75003	0.00064	0.0013	0.00064	ug/L	U	U	
Chloroform	67663	0.00034	0.0024	0.00034	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00035	0.002	0.00035	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0029	0.0025	0.00029	ug/L			
Ethylbenzene	100414	0.01	0.0022	0.00063	ug/L			
Methylene chloride	75092	0.017	0.017	0.00086	ug/L	B,J	U	B, result changed from 0.0013
m-Xylene & p-Xylene	179601231	0.035	0.0087	0.0014	ug/L			
o-Xylene	95476	0.01	0.0022	0.00068	ug/L			
Tetrachloroethene	127184	0.00046	0.0034	0.00046	ug/L	U	U	
Toluene	108883	0.082	0.0019	0.00051	ug/L			
trans-1,2-Dichloroethene	156605	0.0005	0.002	0.0005	ug/L	U	U	
Trichloroethene	79016	0.00037	0.0027	0.00037	ug/L	U	U	
Trichlorofluoromethane	75694	0.0024	0.0056	0.00096	ug/L	J	J	
Vinyl chloride	75014	0.00057	0.0013	0.00057	ug/L	U	U	

Sample Name SVL-930-SA5C-SV-6.5-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14060002-2 **Sample Date:** 5/29/2014 8:49:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0016	0.0088	0.0016	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00055	0.0035	0.00055	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0012	0.0089	0.0012	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.00069	0.015	0.00069	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0013	0.0035	0.0013	ug/L	U	U	
1,1-Dichloroethane	75343	0.00033	0.0026	0.00033	ug/L	U	U	

Analysis Method TO-15

1,1-Dichloroethene	75354	0.001	0.0026	0.001	ug/L	U	U
1,2-Dichloroethane	107062	0.00036	0.0026	0.00036	ug/L	U	U
Benzene	71432	0.00085	0.0021	0.00035	ug/L	J	J
Carbon Tetrachloride	56235	0.0005	0.0041	0.0005	ug/L	U	U
Chloroethane	75003	0.00082	0.0017	0.00082	ug/L	U	U
Chloroform	67663	0.00044	0.0031	0.00044	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.026	0.0026	0.00045	ug/L		
Dichlorodifluoromethane	75718	0.00038	0.0032	0.00038	ug/L	U	U
Ethylbenzene	100414	0.0037	0.0028	0.00081	ug/L		
Methylene chloride	75092	0.022	0.022	0.0011	ug/L	B,J	U B, result changed from 0.0027
m-Xylene & p-Xylene	179601231	0.0054	0.011	0.0019	ug/L	J	J
o-Xylene	95476	0.0024	0.0028	0.00088	ug/L	J	J
Tetrachloroethene	127184	0.017	0.0044	0.00059	ug/L		
Toluene	108883	0.0037	0.0024	0.00065	ug/L		
trans-1,2-Dichloroethene	156605	0.00065	0.0026	0.00065	ug/L	U	U
Trichloroethene	79016	0.084	0.0035	0.00048	ug/L		
Trichlorofluoromethane	75694	0.0012	0.0072	0.0012	ug/L	U	U
Vinyl chloride	75014	0.00073	0.0016	0.00073	ug/L	U	U

Sample Name SVL-946-SA5D-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14060002-3 **Sample Date:** 5/30/2014 8:25:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0013	0.0069	0.0013	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00043	0.0027	0.00043	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.00095	0.0069	0.00095	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0032	0.011	0.00054	ug/L	J	J	
1,1,2-Trichloroethane	79005	0.001	0.0027	0.001	ug/L	U	U	
1,1-Dichloroethane	75343	0.00026	0.002	0.00026	ug/L	U	U	
1,1-Dichloroethene	75354	0.00079	0.002	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.00028	0.002	0.00028	ug/L	U	U	
Benzene	71432	0.018	0.0016	0.00027	ug/L			
Carbon Tetrachloride	56235	0.0011	0.0031	0.00039	ug/L	J	J	
Chloroethane	75003	0.00064	0.0013	0.00064	ug/L	U	U	
Chloroform	67663	0.00034	0.0024	0.00034	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00035	0.002	0.00035	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0031	0.0025	0.00029	ug/L			
Ethylbenzene	100414	0.0031	0.0022	0.00063	ug/L			
Methylene chloride	75092	0.017	0.017	0.00086	ug/L	B,J	U	B, result changed from 0.0048
m-Xylene & p-Xylene	179601231	0.0075	0.0087	0.0014	ug/L	J	J	
o-Xylene	95476	0.0033	0.0022	0.00068	ug/L			
Tetrachloroethene	127184	0.00088	0.0034	0.00046	ug/L	J	J	
Toluene	108883	0.019	0.0019	0.00051	ug/L			

Analysis Method *TO-15*

trans-1,2-Dichloroethene	156605	0.0005	0.002	0.0005	ug/L	U	U
Trichloroethene	79016	0.00037	0.0027	0.00037	ug/L	U	U
Trichlorofluoromethane	75694	0.0068	0.0056	0.00096	ug/L		
Vinyl chloride	75014	0.00057	0.0013	0.00057	ug/L	U	U



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 14-06-0556

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 14-06-0556
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 5
No. of Reanalyses/Dilutions: 0
Laboratory: Calscience

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
SVL-905-SA5C-SV-15.0-16.0	14060556-1	N/A	Soil Vapor	6/2/14 12:08 PM	TO-15
SVL-925-SA5C-SV-10.0-11.0	14060556-2	N/A	Soil Vapor	6/6/14 7:56 AM	TO-15
SVL-935-SA5C-SV-15.0-16.0	14060556-3	N/A	Soil Vapor	6/3/14 11:56 AM	TO-15
SVL-952-SA5B-SV-5.3-6.3	14060556-4	N/A	Soil Vapor	6/5/14 12:00 PM	TO-15
SVL-970-SA5C-SV-40.0-41.0	14060556-5	N/A	Soil Vapor	6/4/14 10:16 AM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. The COC was appropriately signed and dated by field and laboratory personnel. As the samples were delivered directly to the laboratory, custody seals were not utilized.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 15, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: Calibration criteria were met. Initial calibration %RSDs were $\leq 30\%$. Continuing calibration %Ds were $\leq 30\%$.
- Blanks: Methylene chloride was detected in the method blank at 0.0016 $\mu\text{g/L}$; therefore, methylene chloride detected in the samples was qualified as nondetected, "U," at the reporting limits. There were no other detects in the method blank.
- Surrogate Recovery: Recoveries were within the laboratory-established control limits.
- Blank Spikes and Laboratory Control Samples: The recoveries and RPDs were within the laboratory control limits.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy and precision were evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blanks FB-060214 (3F40201), FB-060314 (3F40301), FB-060414 (3F40401), FB-060514 (3F40501), and FB-060614 (3F040601) were associated with the samples in this SDG. Target compound 1,1,2-trichloro-1,2,2-trifluoroethane (0.025 $\mu\text{g/L}$) was detected in FB-060314; therefore, the detect for this compound in associated sample SVL-935-SA5C-SV-15.0-16.0 was qualified as nondetected, "U," at the level of contamination. Toluene (0.0048 $\mu\text{g/L}$) was



detected in FB-060414; therefore, toluene detected in SVL-970-SA5C-SV-40.0-41.0 was qualified as nondetected, "U," at the level of contamination. There were no other ambient blank detects affecting sample results.

- Field Duplicates: There were no field duplicate samples identified in this SDG.
- Internal Standards: The internal standards were acceptably recovered. The areas were within 40% of the continuing calibration and the retention times were within 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. The aliquots analyzed for 1,1,2,2-tetrachloroethane were concentrated by approximately 2x. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 14-06-0556

Analysis Method TO-15

Sample Name SVL-905-SA5C-SV-15.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14060556-1 **Sample Date:** 6/2/2014 12:08:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0014	0.0076	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00047	0.003	0.00047	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.001	0.0076	0.001	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.00086	0.013	0.00059	ug/L	J	J	
1,1,2-Trichloroethane	79005	0.0011	0.003	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.00028	0.0022	0.00028	ug/L	U	U	
1,1-Dichloroethene	75354	0.00087	0.0022	0.00087	ug/L	U	U	
1,2-Dichloroethane	107062	0.00031	0.0022	0.00031	ug/L	U	U	
Benzene	71432	0.0021	0.0018	0.0003	ug/L			
Carbon Tetrachloride	56235	0.00043	0.0035	0.00043	ug/L	U	U	
Chloroethane	75003	0.0007	0.0015	0.0007	ug/L	U	U	
Chloroform	67663	0.00037	0.0027	0.00037	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00038	0.0022	0.00038	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0026	0.0027	0.00032	ug/L	J	J	
Ethylbenzene	100414	0.0031	0.0024	0.00069	ug/L			
Methylene chloride	75092	0.019	0.019	0.00095	ug/L	B,J	U	B, result changed from 0.002
m-Xylene & p-Xylene	179601231	0.01	0.0096	0.0016	ug/L			
o-Xylene	95476	0.0035	0.0024	0.00075	ug/L			
Tetrachloroethene	127184	0.00051	0.0037	0.0005	ug/L	J	J	
Toluene	108883	0.0069	0.0021	0.00056	ug/L			
trans-1,2-Dichloroethene	156605	0.00055	0.0022	0.00055	ug/L	U	U	
Trichloroethene	79016	0.00075	0.003	0.00041	ug/L	J	J	
Trichlorofluoromethane	75694	0.0016	0.0062	0.0011	ug/L	J	J	
Vinyl chloride	75014	0.00062	0.0014	0.00062	ug/L	U	U	

Sample Name SVL-925-SA5C-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14060556-2 **Sample Date:** 6/6/2014 7:56:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0015	0.0078	0.0015	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00049	0.0031	0.00049	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0011	0.0078	0.0011	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.00061	0.013	0.00061	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0011	0.0031	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.00029	0.0023	0.00029	ug/L	U	U	

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1,1-Dichloroethene	75354	0.0009	0.0023	0.0009	ug/L	U	U
1,2-Dichloroethane	107062	0.00032	0.0023	0.00032	ug/L	U	U
Benzene	71432	0.041	0.0018	0.00031	ug/L		
Carbon Tetrachloride	56235	0.00044	0.0036	0.00044	ug/L	U	U
Chloroethane	75003	0.00073	0.0015	0.00073	ug/L	U	U
Chloroform	67663	0.00039	0.0028	0.00039	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.0058	0.0023	0.00039	ug/L		
Dichlorodifluoromethane	75718	0.00034	0.0028	0.00034	ug/L	U	U
Ethylbenzene	100414	0.028	0.0025	0.00072	ug/L		
Methylene chloride	75092	0.00098	0.02	0.00098	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.29	0.0099	0.0017	ug/L		
o-Xylene	95476	0.1	0.0025	0.00077	ug/L		
Tetrachloroethene	127184	0.0031	0.0039	0.00052	ug/L	J	J
Toluene	108883	0.32	0.0021	0.00058	ug/L		
trans-1,2-Dichloroethene	156605	0.00058	0.0023	0.00058	ug/L	U	U
Trichloroethene	79016	0.0027	0.0031	0.00043	ug/L	J	J
Trichlorofluoromethane	75694	0.0011	0.0064	0.0011	ug/L	U	U
Vinyl chloride	75014	0.00065	0.0015	0.00065	ug/L	U	U

Sample Name SVL-935-SA5C-SV-15.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14060556-3 **Sample Date:** 6/3/2014 11:56:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0017	0.0089	0.0017	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.001	0.0035	0.00055	ug/L	J	J	
1,1,2,2-Tetrachloroethane	79345	0.0012	0.0089	0.0012	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.00069	ug/L		U	F, RL changed from 0.015
1,1,2-Trichloroethane	79005	0.0013	0.0035	0.0013	ug/L	U	U	
1,1-Dichloroethane	75343	0.00033	0.0026	0.00033	ug/L	U	U	
1,1-Dichloroethene	75354	0.001	0.0026	0.001	ug/L	U	U	
1,2-Dichloroethane	107062	0.00084	0.0026	0.00036	ug/L	J	J	
Benzene	71432	0.011	0.0021	0.00035	ug/L			
Carbon Tetrachloride	56235	0.0019	0.0041	0.0005	ug/L	J	J	
Chloroethane	75003	0.00082	0.0017	0.00082	ug/L	U	U	
Chloroform	67663	0.0021	0.0031	0.00044	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.00048	0.0026	0.00045	ug/L	J	J	
Dichlorodifluoromethane	75718	0.0034	0.0032	0.00038	ug/L			
Ethylbenzene	100414	0.0063	0.0028	0.00081	ug/L			
Methylene chloride	75092	0.022	0.022	0.0011	ug/L	B,J	U	B, result changed from 0.0035
m-Xylene & p-Xylene	179601231	0.02	0.011	0.0019	ug/L			
o-Xylene	95476	0.0071	0.0028	0.00088	ug/L			
Tetrachloroethene	127184	0.0085	0.0044	0.00059	ug/L			
Toluene	108883	0.017	0.0024	0.00065	ug/L			

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trans-1,2-Dichloroethene	156605	0.00065	0.0026	0.00065	ug/L	U	U
Trichloroethene	79016	0.0018	0.0035	0.00048	ug/L	J	J
Trichlorofluoromethane	75694	0.0062	0.0072	0.0012	ug/L	J	J
Vinyl chloride	75014	0.00074	0.0016	0.00073	ug/L	J	J

Sample Name SVL-952-SA5B-SV-5.3-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14060556-4 **Sample Date:** 6/5/2014 12:00:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0013	0.0069	0.0013	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00043	0.0027	0.00043	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.00095	0.0069	0.00095	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.00054	0.011	0.00054	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.001	0.0027	0.001	ug/L	U	U	
1,1-Dichloroethane	75343	0.00026	0.002	0.00026	ug/L	U	U	
1,1-Dichloroethene	75354	0.00079	0.002	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.00028	0.002	0.00028	ug/L	U	U	
Benzene	71432	0.00027	0.0016	0.00027	ug/L	U	U	
Carbon Tetrachloride	56235	0.00039	0.0031	0.00039	ug/L	U	U	
Chloroethane	75003	0.00064	0.0013	0.00064	ug/L	U	U	
Chloroform	67663	0.0019	0.0024	0.00034	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.00035	0.002	0.00035	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0026	0.0025	0.00029	ug/L			
Ethylbenzene	100414	0.00063	0.0022	0.00063	ug/L	U	U	
Methylene chloride	75092	0.017	0.017	0.00086	ug/L	B,J	U	B, result changed from 0.0017
m-Xylene & p-Xylene	179601231	0.0014	0.0087	0.0014	ug/L	U	U	
o-Xylene	95476	0.00068	0.0022	0.00068	ug/L	U	U	
Tetrachloroethene	127184	0.0011	0.0034	0.00046	ug/L	J	J	
Toluene	108883	0.00082	0.0019	0.00051	ug/L	J	J	
trans-1,2-Dichloroethene	156605	0.0005	0.002	0.0005	ug/L	U	U	
Trichloroethene	79016	0.00037	0.0027	0.00037	ug/L	U	U	
Trichlorofluoromethane	75694	0.00096	0.0056	0.00096	ug/L	U	U	
Vinyl chloride	75014	0.00057	0.0013	0.00057	ug/L	U	U	

Sample Name SVL-970-SA5C-SV-40.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14060556-5 **Sample Date:** 6/4/2014 10:16:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0015	0.0082	0.0015	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0014	0.0033	0.00052	ug/L	J	J	
1,1,2,2-Tetrachloroethane	79345	0.0011	0.0082	0.0011	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0022	0.014	0.00065	ug/L	J	J	
1,1,2-Trichloroethane	79005	0.0029	0.0033	0.0012	ug/L	J	J	

Analysis Method TO-15

1,1-Dichloroethane	75343	0.0011	0.0024	0.00031	ug/L	J	J	
1,1-Dichloroethene	75354	0.00095	0.0024	0.00095	ug/L	U	U	
1,2-Dichloroethane	107062	0.0011	0.0024	0.00033	ug/L	J	J	
Benzene	71432	0.011	0.0019	0.00032	ug/L			
Carbon Tetrachloride	56235	0.0017	0.0038	0.00047	ug/L	J	J	
Chloroethane	75003	0.00076	0.0016	0.00076	ug/L	U	U	
Chloroform	67663	0.0018	0.0029	0.00041	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.00093	0.0024	0.00042	ug/L	J	J	
Dichlorodifluoromethane	75718	0.0036	0.003	0.00035	ug/L			
Ethylbenzene	100414	0.0064	0.0026	0.00075	ug/L			
Methylene chloride	75092	0.021	0.021	0.001	ug/L	B,J	U	B, result changed from 0.0032
m-Xylene & p-Xylene	179601231	0.02	0.01	0.0017	ug/L			
o-Xylene	95476	0.0085	0.0026	0.00081	ug/L			
Tetrachloroethene	127184	0.0027	0.0041	0.00055	ug/L	J	J	
Toluene	108883	0.011	0.011	0.00061	ug/L		U	F, RL changed from 0.0023
trans-1,2-Dichloroethene	156605	0.00075	0.0024	0.00061	ug/L	J	J	
Trichloroethene	79016	0.0018	0.0032	0.00045	ug/L	J	J	
Trichlorofluoromethane	75694	0.0019	0.0067	0.0012	ug/L	J	J	
Vinyl chloride	75014	0.0009	0.0015	0.00068	ug/L	J	J	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 14-06-1132

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 14-06-1132
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Laboratory: Calscience

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
SVL-915-SA5C-SV-12.5-13.5	14061132-1	N/A	Soil Vapor	6/10/14 9:16 AM	TO-15
SVL-925-SA5B-SV-13.0-14.0	14061132-2	N/A	Soil Vapor	6/13/14 9:05 AM	TO-15
SVL-953-SA5D-SV-9.0-10.0	14061132-3	N/A	Soil Vapor	6/9/14 9:14 AM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. The COC was appropriately signed and dated by field and/or laboratory personnel. As the samples were transported directly to the laboratory, custody seals were not utilized.

There were ID discrepancies for two of the samples, as the COC did not match the container label. The laboratory was instructed by S. Von Raesfeld of MWH to use the IDs on the COC.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 15, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: Calibration criteria were met. Initial calibration %RSDs were $\leq 30\%$. Initial and continuing calibration %Ds were $\leq 30\%$.
- Blanks: Methylene chloride was detected in the method blank at 0.0017 $\mu\text{g/L}$; therefore, methylene chloride detected in the samples was qualified as nondetected, "U," at the reporting limits. There were no other detects in the method blank.
- Surrogate Recovery: Recoveries were within the laboratory-established control limits.
- Blank Spikes and Laboratory Control Samples: The recoveries and RPDs were within the laboratory control limits.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy and precision were evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blanks FB-060914 (3F40901) was associated with SVL-953-SA5D-SV-9.0-10.0, FB1-061014 (1481734) was associated with SVL-915-SA5C-SV-12.5-13.5, and FB1-061314 (1482105) was associated with SVL-925-SA5B-SV-13.0-14.0. Results listed in the table below were qualified as nondetected, "U," at the reporting limit if detected below the reporting limit or at the



level of contamination if detected above. There were other detects in the ambient blanks, but these did not affect the sample results.

Ambient Blank	Analyte	Ambient Blank (µg/L)	Qualified Samples
FB1-061014	Toluene	0.0015	SVL-915-SA5C-SV-12.5-13.5
	Trichlorofluoromethane	0.0013	
	m,p-Xylene	0.0057	
	o-Xylene	0.0033	
FB1-061314	Dichlorodifluoromethane	0.0025	SVL-925-SA5B-SV-13.0-14.0
	m,p-Xylene	0.0013	
	Toluene	0.00077	

- Field Duplicates: There were no field duplicate samples identified in this SDG.
- Internal Standards: The internal standards were acceptably recovered. The areas were within 40% of the continuing calibration and the retention times were within 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. The aliquots analyzed for 1,1,2,2-tetrachloroethane were concentrated by approximately 2x. In order to report trichlorofluoromethane within the linear range of the calibration, the compound was reported from a 4.4x dilution. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 14-06-1132

Analysis Method TO-15

Sample Name SVL-915-SA5C-SV-12.5- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14061132-1 **Sample Date:** 6/10/2014 9:16:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0014	0.0073	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00045	0.0029	0.00045	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.00099	0.0072	0.00099	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.018	0.012	0.00057	ug/L			
1,1,2-Trichloroethane	79005	0.001	0.0029	0.001	ug/L	U	U	
1,1-Dichloroethane	75343	0.00027	0.0021	0.00027	ug/L	U	U	
1,1-Dichloroethene	75354	0.00083	0.0021	0.00083	ug/L	U	U	
1,2-Dichloroethane	107062	0.00029	0.0021	0.00029	ug/L	U	U	
Benzene	71432	0.00081	0.0017	0.00028	ug/L	J	J	
Carbon Tetrachloride	56235	0.00041	0.0033	0.00041	ug/L	U	U	
Chloroethane	75003	0.00067	0.0014	0.00067	ug/L	U	U	
Chloroform	67663	0.00035	0.0026	0.00035	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00036	0.0021	0.00036	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00031	0.0026	0.00031	ug/L	U	U	
Ethylbenzene	100414	0.00066	0.0023	0.00066	ug/L	U	U	
Methylene chloride	75092	0.018	0.018	0.0009	ug/L	B,J	U	B, result changed from 0.0016
m-Xylene & p-Xylene	179601231	0.0091	0.0091	0.0015	ug/L	J	U	F, result changed from 0.0022
o-Xylene	95476	0.0023	0.0023	0.00071	ug/L	J	U	F, result changed from 0.0012
Tetrachloroethene	127184	0.012	0.0036	0.00048	ug/L			
Toluene	108883	0.002	0.002	0.00053	ug/L	J	U	F, result changed from 0.0015
trans-1,2-Dichloroethene	156605	0.00053	0.0021	0.00053	ug/L	U	U	
Trichloroethene	79016	0.00039	0.0028	0.00039	ug/L	U	U	
Trichlorofluoromethane	75694	0.0059	0.0059	0.001	ug/L	J	U	F, result changed from 0.0019
Vinyl chloride	75014	0.0006	0.0013	0.0006	ug/L	U	U	

Sample Name SVL-925-SA5B-SV-13.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14061132-2 **Sample Date:** 6/13/2014 9:05:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0014	0.0074	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.076	0.0029	0.00046	ug/L			
1,1,2,2-Tetrachloroethane	79345	0.001	0.0074	0.001	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0046	0.012	0.00058	ug/L	J	J	
1,1,2-Trichloroethane	79005	0.0011	0.0029	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.0022	0.0022	0.00028	ug/L			

Analysis Method TO-15

1,1-Dichloroethene	75354	0.00085	0.0021	0.00085	ug/L	U	U
1,2-Dichloroethane	107062	0.0003	0.0022	0.0003	ug/L	U	U
Benzene	71432	0.0028	0.0017	0.00029	ug/L		
Carbon Tetrachloride	56235	0.00042	0.0034	0.00042	ug/L	U	U
Chloroethane	75003	0.00069	0.0014	0.00069	ug/L	U	U
Chloroform	67663	0.00036	0.0026	0.00036	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.00037	0.0021	0.00037	ug/L	U	U
Dichlorodifluoromethane	75718	0.0074	0.0074	0.00032	ug/L		U F, RL changed from 0.0027
Ethylbenzene	100414	0.0027	0.0023	0.00068	ug/L		
Methylene chloride	75092	0.019	0.019	0.00093	ug/L	B,J	U B, result changed from 0.0022
m-Xylene & p-Xylene	179601231	0.0094	0.0094	0.0016	ug/L	J	U F, result changed from 0.0032
o-Xylene	95476	0.0011	0.0023	0.00073	ug/L	J	J
Tetrachloroethene	127184	0.0067	0.0037	0.00049	ug/L		
Toluene	108883	0.002	0.002	0.00055	ug/L	J	U F, result changed from 0.0018
trans-1,2-Dichloroethene	156605	0.00054	0.0021	0.00054	ug/L	U	U
Trichloroethene	79016	0.044	0.0029	0.0004	ug/L		
Trichlorofluoromethane	75694	1.2	0.025	0.0042	ug/L		
Vinyl chloride	75014	0.00061	0.0014	0.00061	ug/L	U	U

Sample Name SVL-953-SA5D-SV-9.0-1 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 14061132-3 **Sample Date:** 6/9/2014 9:14:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0013	0.0069	0.0013	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00043	0.0028	0.00043	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.00095	0.0069	0.00095	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.00054	0.012	0.00054	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.001	0.0028	0.001	ug/L	U	U	
1,1-Dichloroethane	75343	0.00026	0.002	0.00026	ug/L	U	U	
1,1-Dichloroethene	75354	0.0008	0.002	0.0008	ug/L	U	U	
1,2-Dichloroethane	107062	0.00028	0.002	0.00028	ug/L	U	U	
Benzene	71432	0.029	0.0016	0.00027	ug/L			
Carbon Tetrachloride	56235	0.00039	0.0032	0.00039	ug/L	U	U	
Chloroethane	75003	0.00064	0.0013	0.00064	ug/L	U	U	
Chloroform	67663	0.017	0.0025	0.00034	ug/L			
cis-1,2-Dichloroethene	156592	0.00035	0.002	0.00035	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0029	0.0025	0.0003	ug/L			
Ethylbenzene	100414	0.0045	0.0022	0.00064	ug/L			
Methylene chloride	75092	0.018	0.018	0.00087	ug/L	B,J	U	B, result changed from 0.0022
m-Xylene & p-Xylene	179601231	0.01	0.0088	0.0015	ug/L			
o-Xylene	95476	0.0049	0.0022	0.00069	ug/L			
Tetrachloroethene	127184	0.0037	0.0034	0.00046	ug/L			
Toluene	108883	0.023	0.0019	0.00051	ug/L			

Analysis Method *TO-15*

trans-1,2-Dichloroethene	156605	0.00051	0.002	0.00051	ug/L	U	U
Trichloroethene	79016	0.00038	0.0027	0.00038	ug/L	U	U
Trichlorofluoromethane	75694	0.0019	0.0057	0.00097	ug/L	J	J
Vinyl chloride	75014	0.00057	0.0013	0.00057	ug/L	U	U



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 280-56665-1

Prepared by

MEC^x
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Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 280-56665-1
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Laboratory: TestAmerica

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
SVL-1009-SA5A-SV-7.0-8.0	280-56665-1	N/A	Soil Vapor	6/12/14 1:20 PM	TO-15
SVL-909-SA5A-SV-25.0-26.0	280-56665-2	N/A	Soil Vapor	6/10/14 2:19 PM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. The laboratory receipt checklist was not completed; however, according to the case narrative for this SDG, the samples were received intact. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were not utilized.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 16, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: Initial calibration %RSDs were $\leq 30\%$. The %D for 1,1-dichloroethene in the initial calibration verification exceeded the control limit at -30.8%; therefore, results for 1,1-dichloroethene, both nondetects, were qualified as estimated, "UJ," in the samples. The remaining initial calibration verification and continuing calibration %Ds were $\leq 30\%$.
- Blanks: The method blank had no reported detects.
- Surrogate Recovery: Recoveries were within the control limits of 70-130%.
- Blank Spikes and Laboratory Control Samples: The recoveries were within the control limits of 70-130%.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on a sample in this SDG. Method accuracy was evaluated based on LCS results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blanks FB-061014 (3F41001) and FB-061214 (3F41201) were associated with the site samples in this SDG. The ambient blanks had no detects affecting sample results.
 - Field Duplicates: This SDG had no identified field duplicate samples.



- Internal Standards: The internal standards areas were within $\pm 40\%$ of the continuing calibration and the retention times were within ± 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms, retention times, and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 280-56665-1

Analysis Method TO-15

Sample Name SVL-1009-SA5A-SV-7.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 280-56665-1 **Sample Date:** 6/12/2014 1:20:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0137	0.0137	0.00103	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00818	0.00818	0.00177	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0137	0.0137	0.00237	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0177	0.0153	0.00625	ug/L			
1,1,2-Trichloroethane	79005	0.0109	0.0109	0.00183	ug/L	U	U	
1,1-Dichloroethane	75343	0.00607	0.00607	0.00146	ug/L	U	U	
1,1-Dichloroethene	75354	0.0159	0.0159	0.00143	ug/L	U	UJ	C
1,2-Dichloroethane	107062	0.0162	0.0162	0.00178	ug/L	U	U	
Benzene	71432	0.00639	0.00639	0.00126	ug/L	U	U	
Carbon Tetrachloride	56235	0.0252	0.0252	0.00201	ug/L	U	U	
Chloroethane	75003	0.0106	0.0106	0.00406	ug/L	U	U	
Chloroform	67663	0.00732	0.00732	0.00232	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00793	0.00793	0.00176	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00989	0.00989	0.00359	ug/L	U	U	
Ethylbenzene	100414	0.00868	0.00868	0.00137	ug/L	U	U	
Methylene chloride	75092	0.00695	0.00695	0.00125	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.00218	0.0174	0.00217	ug/L	J	J	
o-Xylene	95476	0.00868	0.00868	0.00117	ug/L	U	U	
Tetrachloroethene	127184	0.0136	0.0136	0.00173	ug/L	U	U	
Toluene	108883	0.00131	0.00754	0.000961	ug/L	J	J	
trans-1,2-Dichloroethene	156605	0.00793	0.00793	0.00198	ug/L	U	U	
Trichloroethene	79016	0.0107	0.0107	0.00282	ug/L	U	U	
Trichlorofluoromethane	75694	0.0112	0.0112	0.00551	ug/L	U	U	
Vinyl chloride	75014	0.00511	0.00511	0.00153	ug/L	U	U	

Sample Name SVL-909-SA5A-SV-25.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 280-56665-2 **Sample Date:** 6/10/2014 2:19:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0137	0.0137	0.00103	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00818	0.00818	0.00177	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0137	0.0137	0.00237	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0153	0.0153	0.00625	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0109	0.0109	0.00183	ug/L	U	U	
1,1-Dichloroethane	75343	0.00607	0.00607	0.00146	ug/L	U	U	

Analysis Method TO-15

1,1-Dichloroethene	75354	0.0159	0.0159	0.00143	ug/L	U	UJ	C
1,2-Dichloroethane	107062	0.0162	0.0162	0.00178	ug/L	U	U	
Benzene	71432	0.00639	0.00639	0.00126	ug/L	U	U	
Carbon Tetrachloride	56235	0.0252	0.0252	0.00201	ug/L	U	U	
Chloroethane	75003	0.0106	0.0106	0.00406	ug/L	U	U	
Chloroform	67663	0.00732	0.00732	0.00232	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00793	0.00793	0.00176	ug/L	U	U	
Dichlorodifluoromethane	75718	0.056	0.00989	0.00359	ug/L			
Ethylbenzene	100414	0.00868	0.00868	0.00137	ug/L	U	U	
Methylene chloride	75092	0.00695	0.00695	0.00125	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.00371	0.0174	0.00217	ug/L	J	J	
o-Xylene	95476	0.00195	0.00868	0.00117	ug/L	J	J	
Tetrachloroethene	127184	0.00337	0.0136	0.00173	ug/L	J	J	
Toluene	108883	0.00754	0.00754	0.000961	ug/L	U	U	
trans-1,2-Dichloroethene	156605	0.00793	0.00793	0.00198	ug/L	U	U	
Trichloroethene	79016	0.0107	0.0107	0.00282	ug/L	U	U	
Trichlorofluoromethane	75694	0.0112	0.0112	0.00551	ug/L	U	U	
Vinyl chloride	75014	0.00511	0.00511	0.00153	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 280-56666-1

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 280-56666-1
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Laboratory: TestAmerica

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
SVL-928-SA6-SV-5.5-6.5	280-56666-1	N/A	Soil Vapor	6/12/14 8:48 AM	TO-15
SVL-967-SA5B-SV-4.5-5.5	280-56666-2	N/A	Soil Vapor	6/11/14 9:01 AM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. The laboratory receipt checklist was not completed; however, according to the case narrative for this SDG, the samples were received intact. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were not utilized.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 16, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: Initial calibration %RSDs were $\leq 30\%$. The %D for 1,1-dichloroethene in the initial calibration verification exceeded the control limit at -30.8%; therefore, results for 1,1-dichloroethene, both nondetects, were qualified as estimated, "UJ," in the associated samples. The remaining initial calibration verification and continuing calibration %Ds were $\leq 30\%$.
- Blanks: The method blank had no reported detects.
- Surrogate Recovery: Recoveries were within the control limits of 70-130%.
- Blank Spikes and Laboratory Control Samples: The recoveries were within the control limits of 70-130%.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on a sample in this SDG. Method accuracy was evaluated based on LCS results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blanks FB-061114 (3F41101) and FB-061214 (3F41201) were associated with the site samples in this SDG. The ambient blanks had no detects affecting sample results.
 - Field Duplicates: This SDG had no identified field duplicate samples.



- Internal Standards: The internal standards areas were within $\pm 40\%$ of the continuing calibration and the retention times were within ± 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms, retention times, and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 280-56666-1

Analysis Method TO-15

Sample Name SVL-928-SA6-SV-5.5-6.5 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 280-56666-1 **Sample Date:** 6/12/2014 8:48:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0137	0.0137	0.00103	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00818	0.00818	0.00177	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0137	0.0137	0.00237	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0111	0.0153	0.00625	ug/L	J	J	
1,1,2-Trichloroethane	79005	0.0109	0.0109	0.00183	ug/L	U	U	
1,1-Dichloroethane	75343	0.00607	0.00607	0.00146	ug/L	U	U	
1,1-Dichloroethene	75354	0.0159	0.0159	0.00143	ug/L	U	UJ	C
1,2-Dichloroethane	107062	0.0162	0.0162	0.00178	ug/L	U	U	
Benzene	71432	0.00639	0.00639	0.00126	ug/L	U	U	
Carbon Tetrachloride	56235	0.0252	0.0252	0.00201	ug/L	U	U	
Chloroethane	75003	0.0106	0.0106	0.00406	ug/L	U	U	
Chloroform	67663	0.00732	0.00732	0.00232	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00793	0.00793	0.00176	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00989	0.00989	0.00359	ug/L	U	U	
Ethylbenzene	100414	0.00868	0.00868	0.00137	ug/L	U	U	
Methylene chloride	75092	0.00695	0.00695	0.00125	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.00278	0.0174	0.00217	ug/L	J	J	
o-Xylene	95476	0.00141	0.00868	0.00117	ug/L	J	J	
Tetrachloroethene	127184	0.0136	0.0136	0.00173	ug/L	U	U	
Toluene	108883	0.00182	0.00754	0.000961	ug/L	J	J	
trans-1,2-Dichloroethene	156605	0.00793	0.00793	0.00198	ug/L	U	U	
Trichloroethene	79016	0.0107	0.0107	0.00282	ug/L	U	U	
Trichlorofluoromethane	75694	0.0112	0.0112	0.00551	ug/L	U	U	
Vinyl chloride	75014	0.00511	0.00511	0.00153	ug/L	U	U	

Sample Name SVL-967-SA5B-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 280-56666-2 **Sample Date:** 6/11/2014 9:01:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0137	0.0137	0.00103	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0104	0.00818	0.00177	ug/L			
1,1,2,2-Tetrachloroethane	79345	0.0137	0.0137	0.00237	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0153	0.0153	0.00625	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0109	0.0109	0.00183	ug/L	U	U	
1,1-Dichloroethane	75343	0.00607	0.00607	0.00146	ug/L	U	U	

Analysis Method TO-15

1,1-Dichloroethene	75354	0.0159	0.0159	0.00143	ug/L	U	UJ	C
1,2-Dichloroethane	107062	0.0162	0.0162	0.00178	ug/L	U	U	
Benzene	71432	0.00639	0.00639	0.00126	ug/L	U	U	
Carbon Tetrachloride	56235	0.0252	0.0252	0.00201	ug/L	U	U	
Chloroethane	75003	0.0106	0.0106	0.00406	ug/L	U	U	
Chloroform	67663	0.00732	0.00732	0.00232	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00793	0.00793	0.00176	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00989	0.00989	0.00359	ug/L	U	U	
Ethylbenzene	100414	0.00868	0.00868	0.00137	ug/L	U	U	
Methylene chloride	75092	0.00695	0.00695	0.00125	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.00229	0.0174	0.00217	ug/L	J	J	
o-Xylene	95476	0.00129	0.00868	0.00117	ug/L	J	J	
Tetrachloroethene	127184	0.0136	0.0136	0.00173	ug/L	U	U	
Toluene	108883	0.00189	0.00754	0.000961	ug/L	J	J	
trans-1,2-Dichloroethene	156605	0.00793	0.00793	0.00198	ug/L	U	U	
Trichloroethene	79016	0.0107	0.0107	0.00282	ug/L	U	U	
Trichlorofluoromethane	75694	0.0112	0.0112	0.00551	ug/L	U	U	
Vinyl chloride	75014	0.00511	0.00511	0.00153	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 280-56667-1

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 280-56667-1
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Laboratory: TestAmerica

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
SVL-503-SA7-SV-12.0-13.0	280-56667-1	N/A	Soil Vapor	6/13/14 9:24 AM	TO-15
SVL-503-SA7-SV-7.0-8.0	280-56667-2	N/A	Soil Vapor	6/13/14 8:53 AM	TO-15
SVL-544-SA6-SV-10.0-11.0	280-56667-3	N/A	Soil Vapor	6/13/14 11:22 AM	TO-15
SVL-544-SA6-SV-5.0-6.0	280-56667-4	N/A	Soil Vapor	6/13/14 10:56 AM	TO-15
SVL-551-SA6-SV-4.5-5.5	280-56667-5	N/A	Soil Vapor	6/13/14 10:16 AM	TO-15
SVL-844-SA6-SV-10.0-11.0	280-56667-6	N/A	Soil Vapor	6/13/14 11:22 AM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. The laboratory receipt checklist was not completed; however, according to the case narrative for this SDG, the samples were received intact. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were not utilized.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin

Date Reviewed: July 16, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: Initial calibration %RSDs were $\leq 30\%$. The %D for 1,1-dichloroethene in the initial calibration verification exceeded the control limit at -30.8%; therefore, results for 1,1-dichloroethene, all nondetects, were qualified as estimated, "UJ," in the associated samples. The remaining initial calibration verification and continuing calibration %Ds were $\leq 30\%$.
- Blanks: The method blank had no reported detects.
- Surrogate Recovery: Recoveries were within the control limits of 70-130%.
- Blank Spikes and Laboratory Control Samples: The recoveries were within the control limits of 70-130%.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on a sample in this SDG. Method accuracy was evaluated based on LCS results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blank FB-061314 (3F41301) was associated with the site samples in this SDG. The ambient blank had no detects affecting sample results.



- Field Duplicates: Samples SVL-544-SA6-SV-10.0-11.0 and SVL-844-SA6-SV-10.0-11.0 were identified as field duplicate samples. Neither sample had reported detects.
- Internal Standards: The internal standards areas were within $\pm 40\%$ of the continuing calibration and the retention times were within ± 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms, retention times, and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 280-56667-1

Analysis Method TO-15

Sample Name SVL-503-SA7-SV-12.0-13 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 280-56667-1 **Sample Date:** 6/13/2014 9:24:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0137	0.0137	0.00103	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00818	0.00818	0.00177	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0137	0.0137	0.00237	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0153	0.0153	0.00625	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0109	0.0109	0.00183	ug/L	U	U	
1,1-Dichloroethane	75343	0.00607	0.00607	0.00146	ug/L	U	U	
1,1-Dichloroethene	75354	0.0159	0.0159	0.00143	ug/L	U	UJ	C
1,2-Dichloroethane	107062	0.0162	0.0162	0.00178	ug/L	U	U	
Benzene	71432	0.00639	0.00639	0.00126	ug/L	U	U	
Carbon Tetrachloride	56235	0.0252	0.0252	0.00201	ug/L	U	U	
Chloroethane	75003	0.0106	0.0106	0.00406	ug/L	U	U	
Chloroform	67663	0.00732	0.00732	0.00232	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00793	0.00793	0.00176	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00989	0.00989	0.00359	ug/L	U	U	
Ethylbenzene	100414	0.00868	0.00868	0.00137	ug/L	U	U	
Methylene chloride	75092	0.00695	0.00695	0.00125	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0174	0.0174	0.00217	ug/L	U	U	
o-Xylene	95476	0.00868	0.00868	0.00117	ug/L	U	U	
Tetrachloroethene	127184	0.0136	0.0136	0.00173	ug/L	U	U	
Toluene	108883	0.00145	0.00754	0.000961	ug/L	J	J	
trans-1,2-Dichloroethene	156605	0.00793	0.00793	0.00198	ug/L	U	U	
Trichloroethene	79016	0.0107	0.0107	0.00282	ug/L	U	U	
Trichlorofluoromethane	75694	0.0112	0.0112	0.00551	ug/L	U	U	
Vinyl chloride	75014	0.00511	0.00511	0.00153	ug/L	U	U	

Sample Name SVL-503-SA7-SV-7.0-8.0 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 280-56667-2 **Sample Date:** 6/13/2014 8:53:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0137	0.0137	0.00103	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00818	0.00818	0.00177	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0137	0.0137	0.00237	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0153	0.0153	0.00625	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0109	0.0109	0.00183	ug/L	U	U	
1,1-Dichloroethane	75343	0.00607	0.00607	0.00146	ug/L	U	U	

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1,1-Dichloroethene	75354	0.0159	0.0159	0.00143	ug/L	U	UJ	C
1,2-Dichloroethane	107062	0.0162	0.0162	0.00178	ug/L	U	U	
Benzene	71432	0.00639	0.00639	0.00126	ug/L	U	U	
Carbon Tetrachloride	56235	0.0252	0.0252	0.00201	ug/L	U	U	
Chloroethane	75003	0.0106	0.0106	0.00406	ug/L	U	U	
Chloroform	67663	0.00732	0.00732	0.00232	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00793	0.00793	0.00176	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00989	0.00989	0.00359	ug/L	U	U	
Ethylbenzene	100414	0.00868	0.00868	0.00137	ug/L	U	U	
Methylene chloride	75092	0.00695	0.00695	0.00125	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0174	0.0174	0.00217	ug/L	U	U	
o-Xylene	95476	0.00868	0.00868	0.00117	ug/L	U	U	
Tetrachloroethene	127184	0.0136	0.0136	0.00173	ug/L	U	U	
Toluene	108883	0.00754	0.00754	0.000961	ug/L	U	U	
trans-1,2-Dichloroethene	156605	0.00793	0.00793	0.00198	ug/L	U	U	
Trichloroethene	79016	0.0107	0.0107	0.00282	ug/L	U	U	
Trichlorofluoromethane	75694	0.0112	0.0112	0.00551	ug/L	U	U	
Vinyl chloride	75014	0.00511	0.00511	0.00153	ug/L	U	U	

Sample Name SVL-544-SA6-SV-10.0-11 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 280-56667-3 **Sample Date:** 6/13/2014 11:22:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0137	0.0137	0.00103	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00818	0.00818	0.00177	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0137	0.0137	0.00237	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0153	0.0153	0.00625	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0109	0.0109	0.00183	ug/L	U	U	
1,1-Dichloroethane	75343	0.00607	0.00607	0.00146	ug/L	U	U	
1,1-Dichloroethene	75354	0.0159	0.0159	0.00143	ug/L	U	UJ	C
1,2-Dichloroethane	107062	0.0162	0.0162	0.00178	ug/L	U	U	
Benzene	71432	0.00639	0.00639	0.00126	ug/L	U	U	
Carbon Tetrachloride	56235	0.0252	0.0252	0.00201	ug/L	U	U	
Chloroethane	75003	0.0106	0.0106	0.00406	ug/L	U	U	
Chloroform	67663	0.00732	0.00732	0.00232	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00793	0.00793	0.00176	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00989	0.00989	0.00359	ug/L	U	U	
Ethylbenzene	100414	0.00868	0.00868	0.00137	ug/L	U	U	
Methylene chloride	75092	0.00695	0.00695	0.00125	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0174	0.0174	0.00217	ug/L	U	U	
o-Xylene	95476	0.00868	0.00868	0.00117	ug/L	U	U	
Tetrachloroethene	127184	0.0136	0.0136	0.00173	ug/L	U	U	
Toluene	108883	0.00754	0.00754	0.000961	ug/L	U	U	

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trans-1,2-Dichloroethene	156605	0.00793	0.00793	0.00198	ug/L	U	U
Trichloroethene	79016	0.0107	0.0107	0.00282	ug/L	U	U
Trichlorofluoromethane	75694	0.0112	0.0112	0.00551	ug/L	U	U
Vinyl chloride	75014	0.00511	0.00511	0.00153	ug/L	U	U

Sample Name SVL-544-SA6-SV-5.0-6.0 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 280-56667-4 **Sample Date:** 6/13/2014 10:56:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0137	0.0137	0.00103	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00818	0.00818	0.00177	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0137	0.0137	0.00237	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0153	0.0153	0.00625	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0109	0.0109	0.00183	ug/L	U	U	
1,1-Dichloroethane	75343	0.00607	0.00607	0.00146	ug/L	U	U	
1,1-Dichloroethene	75354	0.0159	0.0159	0.00143	ug/L	U	UJ	C
1,2-Dichloroethane	107062	0.0162	0.0162	0.00178	ug/L	U	U	
Benzene	71432	0.00639	0.00639	0.00126	ug/L	U	U	
Carbon Tetrachloride	56235	0.0252	0.0252	0.00201	ug/L	U	U	
Chloroethane	75003	0.0106	0.0106	0.00406	ug/L	U	U	
Chloroform	67663	0.00732	0.00732	0.00232	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00793	0.00793	0.00176	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00989	0.00989	0.00359	ug/L	U	U	
Ethylbenzene	100414	0.00868	0.00868	0.00137	ug/L	U	U	
Methylene chloride	75092	0.00695	0.00695	0.00125	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0174	0.0174	0.00217	ug/L	U	U	
o-Xylene	95476	0.00868	0.00868	0.00117	ug/L	U	U	
Tetrachloroethene	127184	0.0136	0.0136	0.00173	ug/L	U	U	
Toluene	108883	0.00754	0.00754	0.000961	ug/L	U	U	
trans-1,2-Dichloroethene	156605	0.00793	0.00793	0.00198	ug/L	U	U	
Trichloroethene	79016	0.0107	0.0107	0.00282	ug/L	U	U	
Trichlorofluoromethane	75694	0.0112	0.0112	0.00551	ug/L	U	U	
Vinyl chloride	75014	0.00511	0.00511	0.00153	ug/L	U	U	

Sample Name SVL-551-SA6-SV-4.5-5.5 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 280-56667-5 **Sample Date:** 6/13/2014 10:16:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0137	0.0137	0.00103	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00818	0.00818	0.00177	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0137	0.0137	0.00237	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0153	0.0153	0.00625	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0109	0.0109	0.00183	ug/L	U	U	

Analysis Method TO-15

1,1-Dichloroethane	75343	0.00607	0.00607	0.00146	ug/L	U	U	
1,1-Dichloroethene	75354	0.0159	0.0159	0.00143	ug/L	U	UJ	C
1,2-Dichloroethane	107062	0.0162	0.0162	0.00178	ug/L	U	U	
Benzene	71432	0.00871	0.00639	0.00126	ug/L			
Carbon Tetrachloride	56235	0.0252	0.0252	0.00201	ug/L	U	U	
Chloroethane	75003	0.0106	0.0106	0.00406	ug/L	U	U	
Chloroform	67663	0.00732	0.00732	0.00232	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00793	0.00793	0.00176	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00989	0.00989	0.00359	ug/L	U	U	
Ethylbenzene	100414	0.00256	0.00868	0.00137	ug/L	J	J	
Methylene chloride	75092	0.00695	0.00695	0.00125	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0067	0.0174	0.00217	ug/L	J	J	
o-Xylene	95476	0.00277	0.00868	0.00117	ug/L	J	J	
Tetrachloroethene	127184	0.0136	0.0136	0.00173	ug/L	U	U	
Toluene	108883	0.0112	0.00754	0.000961	ug/L			
trans-1,2-Dichloroethene	156605	0.00793	0.00793	0.00198	ug/L	U	U	
Trichloroethene	79016	0.0107	0.0107	0.00282	ug/L	U	U	
Trichlorofluoromethane	75694	0.0112	0.0112	0.00551	ug/L	U	U	
Vinyl chloride	75014	0.00511	0.00511	0.00153	ug/L	U	U	

Sample Name SVL-844-SA6-SV-10.0-11 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 280-56667-6 **Sample Date:** 6/13/2014 11:22:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0137	0.0137	0.00103	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00818	0.00818	0.00177	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0137	0.0137	0.00237	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0153	0.0153	0.00625	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0109	0.0109	0.00183	ug/L	U	U	
1,1-Dichloroethane	75343	0.00607	0.00607	0.00146	ug/L	U	U	
1,1-Dichloroethene	75354	0.0159	0.0159	0.00143	ug/L	U	UJ	C
1,2-Dichloroethane	107062	0.0162	0.0162	0.00178	ug/L	U	U	
Benzene	71432	0.00639	0.00639	0.00126	ug/L	U	U	
Carbon Tetrachloride	56235	0.0252	0.0252	0.00201	ug/L	U	U	
Chloroethane	75003	0.0106	0.0106	0.00406	ug/L	U	U	
Chloroform	67663	0.00732	0.00732	0.00232	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00793	0.00793	0.00176	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00989	0.00989	0.00359	ug/L	U	U	
Ethylbenzene	100414	0.00868	0.00868	0.00137	ug/L	U	U	
Methylene chloride	75092	0.00695	0.00695	0.00125	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0174	0.0174	0.00217	ug/L	U	U	
o-Xylene	95476	0.00868	0.00868	0.00117	ug/L	U	U	
Tetrachloroethene	127184	0.0136	0.0136	0.00173	ug/L	U	U	

Analysis Method *TO-15*

Toluene	108883	0.00754	0.00754	0.000961	ug/L	U	U
trans-1,2-Dichloroethene	156605	0.00793	0.00793	0.00198	ug/L	U	U
Trichloroethene	79016	0.0107	0.0107	0.00282	ug/L	U	U
Trichlorofluoromethane	75694	0.0112	0.0112	0.00551	ug/L	U	U
Vinyl chloride	75014	0.00511	0.00511	0.00153	ug/L	U	U



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 280-56908-1

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 280-56908-1
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Laboratory: TestAmerica

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
SVL-931-SA8-SV-4.5-5.5	280-56908-1	N/A	Soil Vapor	6/19/14 9:34 AM	TO-15
SVL-999-SA5B-SV-8.0-9.0	280-56908-2	N/A	Soil Vapor	6/18/14 9:18 AM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were not utilized.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 15, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: Initial calibration %RSDs were $\leq 30\%$. The %D for 1,1-dichloroethene in the initial calibration verification associated with sample SVL-999-SA5B-SV-8.0-9.0 exceeded the control limit at -30.8%; therefore, the nondetected result for this compound was qualified as estimated, "UJ," in the associated sample. The remaining initial calibration verification and continuing calibration %Ds were $\leq 30\%$.
- Blanks: There were no detects in the method blanks.
- Surrogate Recovery: Recoveries were within the laboratory-established control limits.
- Blank Spikes and Laboratory Control Samples: The recoveries were within the laboratory control limits.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy was evaluated based on LCS results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blanks FB-061814 (3F41801), and FB-061914 (3F041901) were associated with the samples in this SDG. There were no detects in these samples.
 - Field Duplicates: There were no field duplicate samples identified in this SDG.



- Internal Standards: The internal standards were acceptably recovered. The areas were within 40% of the continuing calibration and the retention times were within 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 280-56908-1

Analysis Method TO-15

Sample Name SVL-931-SA8-SV-4.5-5.5 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 280-56908-1 **Sample Date:** 6/19/2014 9:34:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0137	0.0137	0.00103	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00818	0.00818	0.00177	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0137	0.0137	0.00237	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0153	0.0153	0.00625	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0109	0.0109	0.00183	ug/L	U	U	
1,1-Dichloroethane	75343	0.00607	0.00607	0.00146	ug/L	U	U	
1,1-Dichloroethene	75354	0.0159	0.0159	0.00143	ug/L	U	U	
1,2-Dichloroethane	107062	0.0162	0.0162	0.00178	ug/L	U	U	
Benzene	71432	0.00639	0.00639	0.00126	ug/L	U	U	
Carbon Tetrachloride	56235	0.0252	0.0252	0.00201	ug/L	U	U	
Chloroethane	75003	0.0106	0.0106	0.00406	ug/L	U	U	
Chloroform	67663	0.00732	0.00732	0.00232	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00793	0.00793	0.00176	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00989	0.00989	0.00359	ug/L	U	U	
Ethylbenzene	100414	0.00868	0.00868	0.00137	ug/L	U	U	
Methylene chloride	75092	0.00695	0.00695	0.00125	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.00333	0.0174	0.00217	ug/L	J	J	
o-Xylene	95476	0.00189	0.00868	0.00117	ug/L	J	J	
Tetrachloroethene	127184	0.0136	0.0136	0.00173	ug/L	U	U	
Toluene	108883	0.00287	0.00754	0.000961	ug/L	J	J	
trans-1,2-Dichloroethene	156605	0.00793	0.00793	0.00198	ug/L	U	U	
Trichloroethene	79016	0.00476	0.0107	0.00282	ug/L	J	J	
Trichlorofluoromethane	75694	0.0112	0.0112	0.00551	ug/L	U	U	
Vinyl chloride	75014	0.00511	0.00511	0.00153	ug/L	U	U	

Sample Name SVL-999-SA5B-SV-8.0-9. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 280-56908-2 **Sample Date:** 6/18/2014 9:18:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0137	0.0137	0.00103	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.00818	0.00818	0.00177	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0137	0.0137	0.00237	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0153	0.0153	0.00625	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0109	0.0109	0.00183	ug/L	U	U	
1,1-Dichloroethane	75343	0.00607	0.00607	0.00146	ug/L	U	U	

Analysis Method *TO-15*

1,1-Dichloroethene	75354	0.0159	0.0159	0.00143	ug/L	U	UJ	C
1,2-Dichloroethane	107062	0.0162	0.0162	0.00178	ug/L	U	U	
Benzene	71432	0.00639	0.00639	0.00126	ug/L	U	U	
Carbon Tetrachloride	56235	0.0252	0.0252	0.00201	ug/L	U	U	
Chloroethane	75003	0.0106	0.0106	0.00406	ug/L	U	U	
Chloroform	67663	0.00732	0.00732	0.00232	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.00793	0.00793	0.00176	ug/L	U	U	
Dichlorodifluoromethane	75718	0.00989	0.00989	0.00359	ug/L	U	U	
Ethylbenzene	100414	0.00868	0.00868	0.00137	ug/L	U	U	
Methylene chloride	75092	0.00695	0.00695	0.00125	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0174	0.0174	0.00217	ug/L	U	U	
o-Xylene	95476	0.00868	0.00868	0.00117	ug/L	U	U	
Tetrachloroethene	127184	0.0136	0.0136	0.00173	ug/L	U	U	
Toluene	108883	0.00754	0.00754	0.000961	ug/L	U	U	
trans-1,2-Dichloroethene	156605	0.00793	0.00793	0.00198	ug/L	U	U	
Trichloroethene	79016	0.0107	0.0107	0.00282	ug/L	U	U	
Trichlorofluoromethane	75694	0.0112	0.0112	0.00551	ug/L	U	U	
Vinyl chloride	75014	0.00511	0.00511	0.00153	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 1476964

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 1476964
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 8
No. of Reanalyses/Dilutions: 0
Laboratory: Eurofins Lancaster Laboratories Env., LLC

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
FB-052114	7476663	N/A	Soil Vapor	5/21/14 4:07 PM	TO-15
SVL-503-SA5B-SV-7.0-8.0	7476664	N/A	Soil Vapor	5/21/14 3:50 PM	TO-15
SVL-512-SA5B-SV-6.75-7.75	7476665	N/A	Soil Vapor	5/21/14 11:11 AM	TO-15
SVL-516-SA5B-SV-12.5-13.5	7476666	N/A	Soil Vapor	5/21/14 12:47 PM	TO-15
SVL-516-SA5B-SV-6.0-7.0	7476667	N/A	Soil Vapor	5/21/14 12:23 PM	TO-15
SVL-526-SA5B-SV-12.5-13.5	7476668	N/A	Soil Vapor	5/21/14 9:57 AM	TO-15
SVL-526-SA5B-SV-5.0-6.0	7476669	N/A	Soil Vapor	5/21/14 9:15 AM	TO-15
SVL-530-SA5B-SV-6.75-7.75	7476670	N/A	Soil Vapor	5/21/14 2:31 PM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were intact.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 16, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: Initial calibration %RSDs were $\leq 30\%$. The continuing calibration %Ds were $\leq 30\%$.
- Blanks: There were no detects in the method blanks.
- Surrogate Recovery: Surrogates were not utilized.
- Blank Spikes and Laboratory Control Samples: The recoveries and RPDs were within the laboratory control limits. Target compound 1,1,1,2-tetrachloroethane was not spiked in the LCS/LCSD.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy and precision were evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blank FB-052114 was associated with the samples in this SDG. Dichlorodifluoromethane (0.0025 $\mu\text{g/L}$), ethylbenzene (0.00096 $\mu\text{g/L}$), m,p-xylene (0.0028 $\mu\text{g/L}$), and o-xylene (0.0018 $\mu\text{g/L}$) were detected in FB-052114. Ethylbenzene, m,p-xylene, and o-xylene in samples SVL-512-SV-6.75-7.75 and SVL-516-SA5B-SV-6.0-7.0 were qualified as nondetected, "U," at the reporting limit if detected below the reporting limit or at the level of contamination if detected above. Dichlorodifluoromethane in SVL-516-SA5B-6.0-7.0, SVL-516-SA5B-12.5-



13.5, SVL-526-SA5B-SV-5.0-6.0, SVL-526-SA5B-SV-12.5-13.5, and SVL-530-SA5B-SV-6.75-7.75 was qualified as nondetected, "U," at the reporting limit if detected below the reporting limit or at the level of contamination if detected above. Other site sample detects were too large to qualify. There were no other ambient blank detects affecting sample results.

- Field Duplicates: There were no field duplicate samples identified in this SDG.
- Internal Standards: The internal standards were acceptably recovered. The areas were within 40% of the continuing calibration and the retention times were within 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

In order to report the analytes within the linear range of the calibration, the following dilutions were performed.

Sample	Analyte	Dilution
SVL-526-SA5B-SV-12.5-13.5	Toluene	10x
	Trichlorofluoromethane	25x
	m,p-Xylene	10x
SVL-526-SA5B-5.0-6.0	Toluene	10x
	Trichlorofluoromethane	200x
	m,p-Xylene	10x
SVL-530-SA5B-SV-6.75-7.75	Trichlorofluoromethane	200x

Due to limited sample volume, sample SVL-503-SA5B-SV-7.0-8.0 could not be analyzed at a dilution, and toluene was reported above the linear range of the calibration. This result was qualified as estimated, "J."

Validated Sample Result Forms: 1476964

Analysis Method TO-15

Sample Name FB-052114 **Matrix Type:** Soil Vapor **Result Type:** Primary Result
Lab Sample Name: 7476663 **Sample Date:** 5/21/2014 4:07:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0025	0.0049	0.00099	ug/L	J	J	
Ethylbenzene	100414	0.00096	0.0043	0.00087	ug/L	J	J	
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0028	0.0043	0.00087	ug/L	J	J	
o-Xylene	95476	0.0018	0.0043	0.00087	ug/L	J	J	
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0038	0.0038	0.00075	ug/L	U	U	
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	U	U	
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-503-SA5B-SV-7.0-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result
Lab Sample Name: 7476664 **Sample Date:** 5/21/2014 3:50:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	

Analysis Method TO-15

1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U
Benzene	71432	0.055	0.0032	0.00064	ug/L		
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	U	U
Ethylbenzene	100414	0.05	0.0043	0.00087	ug/L		
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.17	0.0043	0.00087	ug/L		
o-Xylene	95476	0.058	0.0043	0.00087	ug/L		
Tetrachloroethene	127184	0.0027	0.0068	0.0014	ug/L	J	J
Toluene	108883	0.28	0.0038	0.00075	ug/L	E	J *III
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	U	U
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U

Sample Name SVL-512-SA5B-SV-6.75- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476665 **Sample Date:** 5/21/2014 11:11:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.002	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.024	0.0049	0.00099	ug/L			
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0041
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.012	0.012	0.00087	ug/L		U	F, RL changed from 0.0043
o-Xylene	95476	0.008	0.008	0.00087	ug/L		U	F, RL changed from 0.0043
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0025	0.0038	0.00075	ug/L	J	J	

Analysis Method TO-15

trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U
Trichlorofluoromethane	75694	0.01	0.0056	0.0011	ug/L		
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U

Sample Name SVL-516-SA5B-SV-12.5- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476666 **Sample Date:** 5/21/2014 12:47:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.00073	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0021
Ethylbenzene	100414	0.0056	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.00082	0.0035	0.00069	ug/L	J	J	
m-Xylene & p-Xylene	179601231	0.026	0.0043	0.00087	ug/L			
o-Xylene	95476	0.012	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.026	0.0068	0.0014	ug/L			
Toluene	108883	0.0078	0.0038	0.00075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0016	0.0056	0.0011	ug/L	J	J	
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-516-SA5B-SV-6.0-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476667 **Sample Date:** 5/21/2014 12:23:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	

Analysis Method TO-15

1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U
Benzene	71432	0.00089	0.0032	0.00064	ug/L	J	J
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U F, result changed from 0.0019
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	J	U F, result changed from 0.00089
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.0067	0.0067	0.00087	ug/L		U F, RL changed from 0.0043
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	J	U F, result changed from 0.004
Tetrachloroethene	127184	0.014	0.0068	0.0014	ug/L		
Toluene	108883	0.0026	0.0038	0.00075	ug/L	J	J
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U
Trichlorofluoromethane	75694	0.0016	0.0056	0.0011	ug/L	J	J
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U

Sample Name SVL-526-SA5B-SV-12.5- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476668 **Sample Date:** 5/21/2014 9:57:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.041	0.0055	0.0011	ug/L			
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.018	0.015	0.0038	ug/L			
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.0048	0.004	0.00081	ug/L			
1,1-Dichloroethene	75354	0.0018	0.004	0.00079	ug/L	J	J	
1,2-Dichloroethane	107062	0.0011	0.004	0.00081	ug/L	J	J	
Benzene	71432	0.053	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.012	0.012	0.00099	ug/L		U	F, RL changed from 0.0049
Ethylbenzene	100414	0.1	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.00087	0.0035	0.00069	ug/L	J	J	
m-Xylene & p-Xylene	179601231	0.22	0.043	0.0087	ug/L			
o-Xylene	95476	0.14	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0096	0.0068	0.0014	ug/L			

Analysis Method TO-15

Toluene	108883	0.32	0.038	0.0075	ug/L		
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U
Trichloroethene	79016	0.0021	0.0054	0.0011	ug/L	J	J
Trichlorofluoromethane	75694	3.5	0.14	0.028	ug/L		
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U

Sample Name SVL-526-SA5B-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476669 **Sample Date:** 5/21/2014 9:15:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.036	0.0055	0.0011	ug/L			
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0066	0.015	0.0038	ug/L	J	J	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.0012	0.004	0.00081	ug/L	J	J	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.022	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0011	0.0049	0.00098	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0035
Ethylbenzene	100414	0.087	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.23	0.043	0.0087	ug/L			
o-Xylene	95476	0.12	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0054	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.24	0.038	0.0075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.96	1.1	0.22	ug/L	J	J	
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-530-SA5B-SV-6.75- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476670 **Sample Date:** 5/21/2014 2:31:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0035	0.0055	0.0011	ug/L	J	J	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.11	0.015	0.0038	ug/L			

Analysis Method TO-15

1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.0022	0.004	0.00081	ug/L	J	J	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.005	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0012	0.0049	0.00098	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0025
Ethylbenzene	100414	0.068	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.23	0.0043	0.00087	ug/L			
o-Xylene	95476	0.081	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0028	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.18	0.0038	0.00075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.002	0.0054	0.0011	ug/L	J	J	
Trichlorofluoromethane	75694	1.9	1.1	0.22	ug/L			
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 1476965

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 1476965
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Laboratory: Eurofins Lancaster Laboratories Env., LLC

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
FB-052214	7476671	N/A	Soil Vapor	5/22/14 3:07 PM	TO-15
SVL-506-SA8-SV-7.0-8.0	7476672	N/A	Soil Vapor	5/22/14 10:05 AM	TO-15
SVL-515-SA8-SV-6.0-7.0	7476673	N/A	Soil Vapor	5/22/14 10:50 AM	TO-15
SVL-519-SA8-SV-7.0-8.0	7476674	N/A	Soil Vapor	5/22/14 8:49 AM	TO-15
SVL-560-SA5B-SV-7.0-8.0	7476675	N/A	Soil Vapor	5/22/14 2:30 PM	TO-15
SVL-562-SA5B-SV-5.0-6.0	7476676	N/A	Soil Vapor	5/22/14 12:09 PM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were intact.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 16, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: Initial calibration %RSDs were $\leq 30\%$. The continuing calibration %Ds were $\leq 30\%$.
- Blanks: There were no detects in the method blanks.
- Surrogate Recovery: Surrogates were not utilized.
- Blank Spikes and Laboratory Control Samples: The recoveries and RPDs were within the laboratory control limits. Target compound 1,1,1,2-tetrachloroethane was not spiked in the LCS/LCSD.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy and precision were evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blank FB-052214 was associated with the samples in this SDG. Results listed in the table below were qualified as nondetected, "U," at the reporting limit if detected below the reporting limit or at the level of contamination if detected above. Other site sample detects were too large to qualify. There were no other ambient blank detects affecting sample results.



Analyte	Ambient Blank (µg/L)	Qualified Samples
Dichlorodifluoromethane	0.0023	All samples
Ethylbenzene	0.0021	SVL-519-SA8-SV-7.0-8.0
Toluene	0.0056	All except SVL-515-SA8-SV-6.0-7.0
Trichlorofluoromethane	0.0012	SVL-560-SA5B-SV-7.0-8.0, SVL-562-SA5B-SV-5.0-6.0, SVL-506-SA8-SV-7.0-8.0
m,p-Xylene	0.0060	SVL-519-SA8-SV-7.0-8.0
o-Xylene	0.0038	SVL-560-SA5B-SV-7.0-8.0, SVL-519-SA8-SV-7.0-8.0

- Field Duplicates: There were no field duplicate samples identified in this SDG.
- Internal Standards: The internal standards were acceptably recovered. The areas were within 40% of the continuing calibration and the retention times were within 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 1476965

Analysis Method TO-15

Sample Name FB-052214 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476671 **Sample Date:** 5/22/2014 3:07:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0023	0.0049	0.00099	ug/L	J	J	
Ethylbenzene	100414	0.0021	0.0043	0.00087	ug/L	J	J	
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.006	0.0043	0.00087	ug/L			
o-Xylene	95476	0.0038	0.0043	0.00087	ug/L	J	J	
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0056	0.0038	0.00075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0012	0.0056	0.0011	ug/L	J	J	
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-506-SA8-SV-7.0-8.0 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476672 **Sample Date:** 5/22/2014 10:05:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.002	0.0055	0.0011	ug/L	J	J	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0052	0.015	0.0038	ug/L	J	J	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	

Analysis Method TO-15

1,1-Dichloroethene	75354	0.014	0.004	0.00079	ug/L		
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U
Benzene	71432	0.0017	0.0032	0.00064	ug/L	J	J
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U
Chloroform	67663	0.009	0.0049	0.00098	ug/L		
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U F, result changed from 0.0019
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	U	U
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.0043	0.0043	0.00087	ug/L	U	U
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	U	U
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U
Toluene	108883	0.0045	0.0045	0.00075	ug/L		U F, RL changed from 0.0038
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U
Trichloroethene	79016	0.3	0.0054	0.0011	ug/L		
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U F, result changed from 0.0015
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U

Sample Name SVL-515-SA8-SV-6.0-7.0 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476673 **Sample Date:** 5/22/2014 10:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0014	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0021
Ethylbenzene	100414	0.014	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.062	0.0043	0.00087	ug/L			
o-Xylene	95476	0.024	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.033	0.0038	0.00075	ug/L			

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trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	U	U
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U

Sample Name SVL-519-SA8-SV-7.0-8.0 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476674 **Sample Date:** 5/22/2014 8:49:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.0014	0.004	0.00079	ug/L	J	J	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0017	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0012	0.0049	0.00098	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.002
Ethylbenzene	100414	0.0059	0.0059	0.00087	ug/L		U	F, RL changed from 0.0043
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.025	0.025	0.00087	ug/L		U	F, RL changed from 0.0043
o-Xylene	95476	0.013	0.013	0.00087	ug/L		U	F, RL changed from 0.0043
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.015	0.015	0.00075	ug/L		U	F, RL changed from 0.0038
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	U	U	
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-560-SA5B-SV-7.0-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476675 **Sample Date:** 5/22/2014 2:30:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	

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1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.00096	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.00098	0.0049	0.00098	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.002
Ethylbenzene	100414	0.0093	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.032	0.0043	0.00087	ug/L			
o-Xylene	95476	0.019	0.019	0.00087	ug/L		U	F, RL changed from 0.0043
Tetrachloroethene	127184	0.0064	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.0047	0.0047	0.00075	ug/L		U	F, RL changed from 0.0038
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0023	0.0054	0.0011	ug/L	J	J	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0023
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-562-SA5B-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476676 **Sample Date:** 5/22/2014 12:09:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0014	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0021
Ethylbenzene	100414	0.024	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.077	0.0043	0.00087	ug/L			
o-Xylene	95476	0.036	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0038	0.0068	0.0014	ug/L	J	J	

Analysis Method *TO-15*

Toluene	108883	0.022	0.022	0.00075	ug/L		U	F, RL changed from 0.0038
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0015
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 1476966

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 1476966
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 8
No. of Reanalyses/Dilutions: 0
Laboratory: Eurofins Lancaster Laboratories Env., LLC

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
FB-052314	7476677	N/A	Soil Vapor	5/23/14 11:17 AM	TO-15
SVL-512-SA8-SV-8.0-9.0	7476678	N/A	Soil Vapor	5/23/14 9:34 AM	TO-15
SVL-517-SA8-SV-10.0-11.0	7476679	N/A	Soil Vapor	5/23/14 8:44 AM	TO-15
SVL-517-SA8-SV-15.5-16.5	7476680	N/A	Soil Vapor	5/23/14 9:02 AM	TO-15
SVL-517-SA8-SV-5.0-6.0	7476681	N/A	Soil Vapor	5/23/14 8:23 AM	TO-15
SVL-524-SA8-SV-10.5-11.5	7476682	N/A	Soil Vapor	5/23/14 10:59 AM	TO-15
SVL-524-SA8-SV-4.5-5.5	7476683	N/A	Soil Vapor	5/23/14 10:36 AM	TO-15
SVL-812-SA8-SV-8.0-9.0	7476684	N/A	Soil Vapor	5/23/14 8:44 AM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. The COCs were appropriately signed and dated by field and laboratory personnel. Custody seals were intact.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 16, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: Initial calibration %RSDs were $\leq 30\%$. The continuing calibration %Ds were $\leq 30\%$.
- Blanks: There were no detects in the method blanks.
- Surrogate Recovery: Surrogates were not utilized.
- Blank Spikes and Laboratory Control Samples: The recoveries and RPDs were within the laboratory control limits. Target compound 1,1,1,2-tetrachloroethane was not spiked in the LCS/LCSD.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy and precision were evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blank FB-052214 was associated with the samples in this SDG. Results listed in the table below were qualified as nondetected, "U," at the reporting limit if detected below the reporting limit or at the level of contamination if detected above. Other site sample detects were too large to qualify. There were no other ambient blank detects affecting sample results.



Analyte	Ambient Blank (µg/L)	Qualified Samples
Dichlorodifluoromethane	0.0023	All samples
Methylene chloride	0.0016	All detects
Toluene	0.0057	SVL-517-SA8-SV-15.5-16.5, SVL-524-SA8-SV-10.5-11.5
Trichlorofluoromethane	0.0012	All samples
m,p-Xylene	0.0017	SVL-524-SA8-SV-10.5-11.5

- Field Duplicates: Samples SVL-512-SA8-SV-8.0-9.0 and SVL-812-SA8-SV-8.0-9.0 were identified as field duplicate samples. There were ten common detects above the reporting limit and one common detect below. All RPDs were ≤50%.
- Internal Standards: The internal standards were acceptably recovered. The areas were within 40% of the continuing calibration and the retention times were within 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

In order to report the analytes within the linear range of the calibration, the following dilutions were performed.

Sample	Analyte	Dilution
SVL-512-SA8-SV-8.0-9.8	Chloroform	10x
	Trichloroethene	10x
SVL-524-SA8-SV-4.5-5.5	Toluene	10x
	m,p-Xylene	10x
SVL-812-SA8-SV-8.0-9.0	Chloroform	10x
	Trichloroethene	10x

Validated Sample Result Forms: 1476966

Analysis Method TO-15

Sample Name FB-052314 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476677 **Sample Date:** 5/23/2014 11:17:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0023	0.0049	0.00099	ug/L	J	J	
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	U	U	
Methylene chloride	75092	0.0016	0.0035	0.00069	ug/L	J	J	
m-Xylene & p-Xylene	179601231	0.0017	0.0043	0.00087	ug/L	J	J	
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	U	U	
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0057	0.0038	0.00075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0012	0.0056	0.0011	ug/L	J	J	
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-512-SA8-SV-8.0-9.0 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476678 **Sample Date:** 5/23/2014 9:34:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.0096	0.004	0.00081	ug/L			

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1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0056	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.072	0.0063	0.0013	ug/L			
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.28	0.049	0.0098	ug/L			
cis-1,2-Dichloroethene	156592	0.0033	0.004	0.00079	ug/L	J	J	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0022
Ethylbenzene	100414	0.016	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	J	U	F, result changed from 0.00085
m-Xylene & p-Xylene	179601231	0.063	0.0043	0.00087	ug/L			
o-Xylene	95476	0.023	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.057	0.0068	0.0014	ug/L			
Toluene	108883	0.043	0.0038	0.00075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	1.6	0.054	0.011	ug/L			
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0016
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-517-SA8-SV-10.0-11 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476679 **Sample Date:** 5/23/2014 8:44:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.05	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0031	0.0049	0.00098	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0021
Ethylbenzene	100414	0.045	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.16	0.0043	0.00087	ug/L			
o-Xylene	95476	0.065	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0029	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.2	0.0038	0.00075	ug/L			

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trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0013
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-517-SA8-SV-15.5-16 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476680 **Sample Date:** 5/23/2014 9:02:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0036	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0021
Ethylbenzene	100414	0.0052	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.019	0.0043	0.00087	ug/L			
o-Xylene	95476	0.01	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0068	0.0068	0.00075	ug/L		U	F, RL changed from 0.0038
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0012
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-517-SA8-SV-5.0-6.0 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476681 **Sample Date:** 5/23/2014 8:23:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	

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1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0056	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0022
Ethylbenzene	100414	0.018	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	J	U	F, result changed from 0.0014
m-Xylene & p-Xylene	179601231	0.076	0.0043	0.00087	ug/L			
o-Xylene	95476	0.031	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.056	0.0038	0.00075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0013
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-524-SA8-SV-10.5-11 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476682 **Sample Date:** 5/23/2014 10:59:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0052	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.002
Ethylbenzene	100414	0.001	0.0043	0.00087	ug/L	J	J	
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.001
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	U	U	
Tetrachloroethene	127184	0.0035	0.0068	0.0014	ug/L	J	J	

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Toluene	108883	0.005	0.005	0.00075	ug/L		U	F, RL changed from 0.0038
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0027	0.0054	0.0011	ug/L	J	J	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0012
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-524-SA8-SV-4.5-5.5 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476683 **Sample Date:** 5/23/2014 10:36:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.061	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0016	0.0049	0.00098	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0025
Ethylbenzene	100414	0.048	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	J	U	F, result changed from 0.0013
m-Xylene & p-Xylene	179601231	0.1	0.043	0.0087	ug/L			
o-Xylene	95476	0.076	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0043	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.14	0.038	0.0075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0015
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-812-SA8-SV-8.0-9.0 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7476684 **Sample Date:** 5/23/2014 8:44:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	

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1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.0088	0.004	0.00081	ug/L			
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0063	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.06	0.0063	0.0013	ug/L			
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.19	0.049	0.0098	ug/L			
cis-1,2-Dichloroethene	156592	0.003	0.004	0.00079	ug/L	J	J	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0022
Ethylbenzene	100414	0.011	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	J	U	F, result changed from 0.0012
m-Xylene & p-Xylene	179601231	0.047	0.0043	0.00087	ug/L			
o-Xylene	95476	0.017	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.053	0.0068	0.0014	ug/L			
Toluene	108883	0.035	0.0038	0.00075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	1.3	0.054	0.011	ug/L			
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0013
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 1481734

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 1481734
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 11
No. of Reanalyses/Dilutions: 0
Laboratory: Eurofins Lancaster Laboratories Env., LLC

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
FB1-061014	7498161	N/A	Soil Vapor	6/10/14 2:59 PM	TO-15
SVL-504-SA5A-SV-10.0-11.0	7498162	N/A	Soil Vapor	6/10/14 8:51 AM	TO-15
SVL-504-SA5A-SV-15.0-16.0	7498163	N/A	Soil Vapor	6/10/14 9:12 AM	TO-15
SVL-504-SA5A-SV-20.0-21.0	7498164	N/A	Soil Vapor	6/10/14 9:54 AM	TO-15
SVL-504-SA5A-SV-25.0-26.0	7498165	N/A	Soil Vapor	6/10/14 10:56 AM	TO-15
SVL-504-SA5A-SV-5.0-6.0	7498166	N/A	Soil Vapor	6/10/14 8:24 AM	TO-15
SVL-509-SA5A-SV-10.0-11.0	7498167	N/A	Soil Vapor	6/10/14 12:04 PM	TO-15
SVL-509-SA5A-SV-15.0-16.0	7498168	N/A	Soil Vapor	6/10/14 12:39 PM	TO-15
SVL-509-SA5A-SV-20.0-21.0	7498169	N/A	Soil Vapor	6/10/14 1:03 PM	TO-15
SVL-509-SA5A-SV-25.0-26.0	7498170	N/A	Soil Vapor	6/10/14 2:19 PM	TO-15
SVL-509-SA5A-SV-5.0-6.0	7498171	N/A	Soil Vapor	6/10/14 11:30 AM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. The COCs were appropriately signed and dated by field and laboratory personnel. Custody seals were intact.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 16, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: The carbon tetrachloride %RSD was 34% on instrument 09464; therefore, the carbon tetrachloride results for samples SVL-504-SA5A-SV-5.0-6.0, SVL-504-SA5A-SV-10.0-11.0, SVL-504-SA5A-SV-15.0-16.0, SVL-504-SA5A-SV-20.0-21.0, and SVL-504-SA5A-SV-25.0-26.0, all nondetects, were qualified as estimated, "UJ." The remaining initial calibration %RSDs were $\leq 30\%$. The continuing calibration %Ds were $\leq 30\%$.
- Blanks: There were no detects in the method blanks.
- Surrogate Recovery: Surrogates were not utilized.
- Blank Spikes and Laboratory Control Samples: The recoveries and RPDs were within the laboratory control limits. Target compound 1,1,1,2-tetrachloroethane was not spiked in the LCS/LCSD.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy and precision were evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blank FB-061014 was associated with the samples in this SDG. Results listed in the table below were qualified as nondetected, "U," at the reporting limit if detected below the reporting limit or at the level of contamination if



detected above. Other site sample detects were too large to qualify. There were no other ambient blank detects affecting sample results.

Analyte	Ambient Blank (µg/L)	Qualified Samples
Dichlorodifluoromethane	0.0026	SVL-504-SA5A-SV-5.0-6.0, SVL-504-SA5A-SV-10.0-11.0, SVL-504-SA5A-SV-15.0-16.0, SVL-509-SA5A-SV-5.0-6.0
Ethylbenzene	0.0022	SVL-504-SA5A-SV-5.0-6.0, SVL-504-SA5A-SV-10.0-11.0, SVL-504-SA5A-SV-15.0-16.0, SVL-504-SA5A-SV-20.0-21.0, SVL-509-SA5A-SV-25.0-26.0
Methylene chloride	0.00095	SVL-509-SA5A-SV-15.0-16.0
Toluene	0.0015	SVL-504-SA5A-SV-10.0-11.0, SVL-509-SA5A-SV-5.0-6.0, SVL-509-SA5A-SV-25.0-26.0
Trichlorofluoromethane	0.0013	SVL-504-SA5A-SV-5.0-6.0, SVL-504-SA5A-SV-15.0-16.0, SVL-509-SA5A-SV-5.0-6.0, SVL-509-SA5A-SV-15.0-16.0, SVL-509-SA5A-SV-20.0-21.0, SVL-509-SA5A-SV-25.0-26.0
m,p-Xylene	0.0057	SVL-504-SA5A-SV-10.0-11.0, SVL-504-SA5A-SV-15.0-16.0, SVL-504-SA5A-SV-20.0-21.0, SVL-504-SA5A-SV-25.0-26.0, SVL-509-SA5A-SV-5.0-6.0, SVL-509-SA5A-SV-25.0-26.0
o-Xylene	0.0033	SVL-504-SA5A-SV-5.0-6.0, SVL-504-SA5A-SV-10.0-11.0, SVL-504-SA5A-SV-15.0-16.0, SVL-504-SA5A-SV-20.0-21.0, SVL-509-SA5A-SV-25.0-26.0

- Field Duplicates: There were no field duplicate samples identified in this SDG.
- Internal Standards: The internal standards were acceptably recovered. The areas were within 40% of the continuing calibration and the retention times were within 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.



Due to matrix interference or in order to report the analyte within the linear range of the calibration, the following dilutions were performed.

Sample	Analyte	Dilution	Reason
SVL-504-SA5A-SV-10.0-11.0	All analytes	2x	Matrix interference
SVL-504-SA5A-SV-15.0-16.0	All analytes	2x	Matrix interference
SVL-504-SA5A-SV-20.0-21.0	All analytes	2x	Matrix interference
SVL-504-SA5A-SV-25.0-26.0	All analytes	10x	Matrix interference
SVL-504-SA5A-SV-5.0-6.0	All Analytes	2x	Matrix interference
SVL-509-SA5A-SV-20.0-21.0	m,p-Xylene	10x	Linear range

Validated Sample Result Forms: 1481734

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Sample Name FB1-061014 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498161 **Sample Date:** 6/10/2014 2:59:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0026	0.0049	0.00099	ug/L	J	J	
Ethylbenzene	100414	0.0022	0.0043	0.00087	ug/L	J	J	
Methylene chloride	75092	0.00095	0.0035	0.00069	ug/L	J	J	
m-Xylene & p-Xylene	179601231	0.0057	0.0043	0.00087	ug/L			
o-Xylene	95476	0.0033	0.0043	0.00087	ug/L	J	J	
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0015	0.0038	0.00075	ug/L	J	J	
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0013	0.0056	0.0011	ug/L	J	J	
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-504-SA5A-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498162 **Sample Date:** 6/10/2014 8:51:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.014	0.014	0.0027	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.011	0.011	0.0022	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.014	0.014	0.0027	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.031	0.031	0.0077	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.011	0.011	0.0022	ug/L	U	U	
1,1-Dichloroethane	75343	0.0081	0.0081	0.0016	ug/L	U	U	

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1,1-Dichloroethene	75354	0.0079	0.0079	0.0016	ug/L	U	U	
1,2-Dichloroethane	107062	0.0081	0.0081	0.0016	ug/L	U	U	
Benzene	71432	0.0018	0.0064	0.0013	ug/L	J	J	
Carbon Tetrachloride	56235	0.013	0.013	0.0025	ug/L	U	UJ	C
Chloroethane	75003	0.0053	0.0053	0.0011	ug/L	U	U	
Chloroform	67663	0.016	0.0098	0.002	ug/L			
cis-1,2-Dichloroethene	156592	0.0079	0.0079	0.0016	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0099	0.0099	0.002	ug/L	J	U	F, result changed from 0.0072
Ethylbenzene	100414	0.0087	0.0087	0.0017	ug/L	J	U	F, result changed from 0.0062
Methylene chloride	75092	0.0069	0.0069	0.0014	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.019	0.019	0.0017	ug/L		U	F, RL changed from 0.0087
o-Xylene	95476	0.011	0.011	0.0017	ug/L		U	F, RL changed from 0.0087
Tetrachloroethene	127184	0.031	0.014	0.0027	ug/L			
Toluene	108883	0.0075	0.0075	0.0015	ug/L	J	U	F, result changed from 0.0073
trans-1,2-Dichloroethene	156605	0.0079	0.0079	0.0016	ug/L	U	U	
Trichloroethene	79016	0.011	0.011	0.0021	ug/L	U	U	
Trichlorofluoromethane	75694	0.011	0.011	0.0022	ug/L	U	U	
Vinyl chloride	75014	0.0051	0.0051	0.001	ug/L	U	U	

Sample Name SVL-504-SA5A-SV-15.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498163 **Sample Date:** 6/10/2014 9:12:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.014	0.014	0.0027	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.011	0.011	0.0022	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.014	0.014	0.0027	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.031	0.031	0.0077	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.011	0.011	0.0022	ug/L	U	U	
1,1-Dichloroethane	75343	0.0081	0.0081	0.0016	ug/L	U	U	
1,1-Dichloroethene	75354	0.0079	0.0079	0.0016	ug/L	U	U	
1,2-Dichloroethane	107062	0.0081	0.0081	0.0016	ug/L	U	U	
Benzene	71432	0.0056	0.0064	0.0013	ug/L	J	J	
Carbon Tetrachloride	56235	0.013	0.013	0.0025	ug/L	U	UJ	C
Chloroethane	75003	0.0053	0.0053	0.0011	ug/L	U	U	
Chloroform	67663	0.058	0.0098	0.002	ug/L			
cis-1,2-Dichloroethene	156592	0.0079	0.0079	0.0016	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0099	0.0099	0.002	ug/L	J	U	F, result changed from 0.0077
Ethylbenzene	100414	0.0087	0.0087	0.0017	ug/L	J	U	F, result changed from 0.0069
Methylene chloride	75092	0.0069	0.0069	0.0014	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.023	0.023	0.0017	ug/L		U	F, RL changed from 0.0087
o-Xylene	95476	0.011	0.011	0.0017	ug/L		U	F, RL changed from 0.0087
Tetrachloroethene	127184	0.027	0.014	0.0027	ug/L			
Toluene	108883	0.015	0.0075	0.0015	ug/L			

Analysis Method TO-15

trans-1,2-Dichloroethene	156605	0.0079	0.0079	0.0016	ug/L	U	U	
Trichloroethene	79016	0.011	0.011	0.0021	ug/L	U	U	
Trichlorofluoromethane	75694	0.011	0.011	0.0022	ug/L	J	U	F, result changed from 0.0025
Vinyl chloride	75014	0.0051	0.0051	0.001	ug/L	U	U	

Sample Name SVL-504-SA5A-SV-20.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498164 **Sample Date:** 6/10/2014 9:54:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.014	0.014	0.0027	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.011	0.011	0.0022	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.014	0.014	0.0027	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.031	0.031	0.0077	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.011	0.011	0.0022	ug/L	U	U	
1,1-Dichloroethane	75343	0.0081	0.0081	0.0016	ug/L	U	U	
1,1-Dichloroethene	75354	0.0079	0.0079	0.0016	ug/L	U	U	
1,2-Dichloroethane	107062	0.0081	0.0081	0.0016	ug/L	U	U	
Benzene	71432	0.0044	0.0064	0.0013	ug/L	J	J	
Carbon Tetrachloride	56235	0.013	0.013	0.0025	ug/L	U	UJ	C
Chloroethane	75003	0.0053	0.0053	0.0011	ug/L	U	U	
Chloroform	67663	0.016	0.0098	0.002	ug/L			
cis-1,2-Dichloroethene	156592	0.0079	0.0079	0.0016	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0099	0.0099	0.002	ug/L	U	U	
Ethylbenzene	100414	0.0087	0.0087	0.0017	ug/L	J	U	F, result changed from 0.0056
Methylene chloride	75092	0.0069	0.0069	0.0014	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.015	0.015	0.0017	ug/L		U	F, RL changed from 0.0087
o-Xylene	95476	0.0087	0.0087	0.0017	ug/L	J	U	F, result changed from 0.0082
Tetrachloroethene	127184	0.024	0.014	0.0027	ug/L			
Toluene	108883	0.008	0.0075	0.0015	ug/L			
trans-1,2-Dichloroethene	156605	0.0079	0.0079	0.0016	ug/L	U	U	
Trichloroethene	79016	0.011	0.011	0.0021	ug/L	U	U	
Trichlorofluoromethane	75694	0.011	0.011	0.0022	ug/L	U	U	
Vinyl chloride	75014	0.0051	0.0051	0.001	ug/L	U	U	

Sample Name SVL-504-SA5A-SV-25.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498165 **Sample Date:** 6/10/2014 10:56:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.069	0.069	0.014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.055	0.055	0.011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.069	0.069	0.014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.15	0.15	0.038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.055	0.055	0.011	ug/L	U	U	

Analysis Method TO-15

1,1-Dichloroethane	75343	0.04	0.04	0.0081	ug/L	U	U	
1,1-Dichloroethene	75354	0.04	0.04	0.0079	ug/L	U	U	
1,2-Dichloroethane	107062	0.04	0.04	0.0081	ug/L	U	U	
Benzene	71432	0.014	0.032	0.0064	ug/L	J	J	
Carbon Tetrachloride	56235	0.063	0.063	0.013	ug/L	U	UJ	C
Chloroethane	75003	0.026	0.026	0.0053	ug/L	U	U	
Chloroform	67663	0.049	0.049	0.0098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.04	0.04	0.0079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.049	0.049	0.0099	ug/L	U	U	
Ethylbenzene	100414	0.043	0.043	0.0087	ug/L	U	U	
Methylene chloride	75092	0.035	0.035	0.0069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.043	0.043	0.0087	ug/L	J	U	F, result changed from 0.018
o-Xylene	95476	0.043	0.043	0.0087	ug/L	U	U	
Tetrachloroethene	127184	0.068	0.068	0.014	ug/L	U	U	
Toluene	108883	0.019	0.038	0.0075	ug/L	J	J	
trans-1,2-Dichloroethene	156605	0.04	0.04	0.0079	ug/L	U	U	
Trichloroethene	79016	0.054	0.054	0.011	ug/L	U	U	
Trichlorofluoromethane	75694	0.056	0.056	0.011	ug/L	U	U	
Vinyl chloride	75014	0.026	0.026	0.0051	ug/L	U	U	

Sample Name SVL-504-SA5A-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498166 **Sample Date:** 6/10/2014 8:24:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.014	0.014	0.0027	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.011	0.011	0.0022	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.014	0.014	0.0027	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.031	0.031	0.0077	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.011	0.011	0.0022	ug/L	U	U	
1,1-Dichloroethane	75343	0.0081	0.0081	0.0016	ug/L	U	U	
1,1-Dichloroethene	75354	0.0079	0.0079	0.0016	ug/L	U	U	
1,2-Dichloroethane	107062	0.0081	0.0081	0.0016	ug/L	U	U	
Benzene	71432	0.0068	0.0064	0.0013	ug/L			
Carbon Tetrachloride	56235	0.013	0.013	0.0025	ug/L	U	UJ	C
Chloroethane	75003	0.0053	0.0053	0.0011	ug/L	U	U	
Chloroform	67663	0.006	0.0098	0.002	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.0079	0.0079	0.0016	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0099	0.0099	0.002	ug/L	J	U	F, result changed from 0.0077
Ethylbenzene	100414	0.011	0.011	0.0017	ug/L		U	F, RL changed from 0.0087
Methylene chloride	75092	0.0069	0.0069	0.0014	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.034	0.0087	0.0017	ug/L			
o-Xylene	95476	0.016	0.016	0.0017	ug/L		U	F, RL changed from 0.0087
Tetrachloroethene	127184	0.032	0.014	0.0027	ug/L			

Analysis Method TO-15

Toluene	108883	0.019	0.0075	0.0015	ug/L		
trans-1,2-Dichloroethene	156605	0.0079	0.0079	0.0016	ug/L	U	U
Trichloroethene	79016	0.011	0.011	0.0021	ug/L	U	U
Trichlorofluoromethane	75694	0.011	0.011	0.0022	ug/L	J	U F, result changed from 0.0054
Vinyl chloride	75014	0.0051	0.0051	0.001	ug/L	U	U

Sample Name SVL-509-SA5A-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498167 **Sample Date:** 6/10/2014 12:04:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.019	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.11	0.0049	0.00099	ug/L			
Ethylbenzene	100414	0.02	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.062	0.0043	0.00087	ug/L			
o-Xylene	95476	0.028	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0037	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.022	0.0038	0.00075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.036	0.0054	0.0011	ug/L			
Trichlorofluoromethane	75694	0.027	0.0056	0.0011	ug/L			
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-509-SA5A-SV-15.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498168 **Sample Date:** 6/10/2014 12:39:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	

Analysis Method TO-15

1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.018	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.073	0.0049	0.00099	ug/L			
Ethylbenzene	100414	0.019	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	J	U	F, result changed from 0.00088
m-Xylene & p-Xylene	179601231	0.058	0.0043	0.00087	ug/L			
o-Xylene	95476	0.027	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0029	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.022	0.0038	0.00075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0011	0.0054	0.0011	ug/L	J	J	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0055
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-509-SA5A-SV-20.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498169 **Sample Date:** 6/10/2014 1:03:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0031	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.054	0.0049	0.00099	ug/L			
Ethylbenzene	100414	0.034	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.081	0.043	0.0087	ug/L			
o-Xylene	95476	0.07	0.0043	0.00087	ug/L			

Analysis Method TO-15

Tetrachloroethene	127184	0.0043	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.0076	0.0038	0.00075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.002
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-509-SA5A-SV-25.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498170 **Sample Date:** 6/10/2014 2:19:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.00068	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.054	0.0049	0.00099	ug/L			
Ethylbenzene	100414	0.0044	0.0044	0.00087	ug/L		U	F, RL changed from 0.0043
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.012	0.012	0.00087	ug/L		U	F, RL changed from 0.0043
o-Xylene	95476	0.0073	0.0073	0.00087	ug/L		U	F, RL changed from 0.0043
Tetrachloroethene	127184	0.0041	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.0038	0.0038	0.00075	ug/L	J	U	F, result changed from 0.0022
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0015
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-509-SA5A-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498171 **Sample Date:** 6/10/2014 11:30:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	

Analysis Method TO-15

1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.0037	0.004	0.00081	ug/L	J	J	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0014	0.0049	0.00098	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0085	0.0085	0.00099	ug/L		U	F, RL changed from 0.0049
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	U	U	
Methylene chloride	75092	0.012	0.0035	0.00069	ug/L			
m-Xylene & p-Xylene	179601231	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0011
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	U	U	
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0055	0.0055	0.00075	ug/L		U	F, RL changed from 0.0038
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0035
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 1481735

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 1481735
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 12
No. of Reanalyses/Dilutions: 0
Laboratory: Eurofins Lancaster Laboratories Env., LLC

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
FB1-061114	7498172	N/A	Soil Vapor	6/11/14 2:25 PM	TO-15
SVL-512-SA5A-SV-5.5-6.5	7498173	N/A	Soil Vapor	6/11/14 7:54 AM	TO-15
SVL-521-SA5A-SV-10.0-11.0	7498174	N/A	Soil Vapor	6/11/14 8:50 AM	TO-15
SVL-521-SA5A-SV-5.0-6.0	7498175	N/A	Soil Vapor	6/11/14 8:24 AM	TO-15
SVL-522-SA5A-SV-7.5-8.5	7498176	N/A	Soil Vapor	6/11/14 10:50 AM	TO-15
SVL-528-SA5A-SV-5.0-6.0	7498177	N/A	Soil Vapor	6/11/14 9:31 AM	TO-15
SVL-528-SA5A-SV-9.0-10.0	7498178	N/A	Soil Vapor	6/11/14 10:02 AM	TO-15
SVL-560-SA5A-SV-10.5-11.5	7498179	N/A	Soil Vapor	6/11/14 11:54 AM	TO-15
SVL-560-SA5A-SV-5.0-6.0	7498180	N/A	Soil Vapor	6/11/14 11:26 AM	TO-15
SVL-565-SA5A-SV-12.0-13.0	7498181	N/A	Soil Vapor	6/11/14 2:10 PM	TO-15
SVL-565-SA5A-SV-5.0-6.0	7498182	N/A	Soil Vapor	6/11/14 1:35 PM	TO-15
SVL-865-SA5A-SV-5.0-6.0	7498183	N/A	Soil Vapor	6/11/14 1:43 PM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. The COCs were appropriately signed and dated by field and laboratory personnel. Custody seals were intact.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 16, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: Initial calibration %RSDs were $\leq 30\%$. The continuing calibration %Ds were $\leq 30\%$.
- Blanks: There were no detects in the method blanks.
- Surrogate Recovery: Surrogates were not utilized.
- Blank Spikes and Laboratory Control Samples: The recoveries and RPDs were within the laboratory control limits. Target compound 1,1,1,2-tetrachloroethane was not spiked in the LCS/LCSD.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy and precision were evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blank FB-061114 was associated with the samples in this SDG. Results listed in the table below were qualified as nondetected, "U," at the reporting limit if detected below the reporting limit or at the level of contamination if detected above. Other site sample detects were too large to qualify. There were no other ambient blank detects affecting sample results.



Analyte	Ambient Blank (µg/L)	Qualified Samples
Dichlorodifluoromethane	0.0027	All detects
Methylene chloride	0.00077	All detects
Trichlorofluoromethane	0.0014	All detects
m,p-Xylene	0.00089	SVL-521-SA5A-10.0-11.0, SVL-560-SA5A-SV-5.0-6.0, SVL-560-SA5A-SV-10.5-11.5, SVL-565-SA5A-SV-12.0-13.0

- Field Duplicates: Samples SVL-565-SA5A-SV-5.0-6.0 and SVL-865-SA5A-SV-5.0-6.0 were identified as field duplicate samples. There was a common detect above the reporting limit for m,p-xylene with and RPD of 167%. 1,1-Dichloroethene, tetrachloroethene, and trichloroethene were detected well above the reporting limits in the parent sample only. Ethylbenzene and toluene were detected well above the reporting limit in the parent sample and were detected below the reporting limit in the duplicate sample, with RPDs of 188% and 101%. The parent and duplicate results for the aforementioned compounds were qualified as estimated, "UJ," for nondetects and, "J," for detects. There were three compounds detected below the reporting limit in the parent sample only. No qualifications were applied to these three compounds.
- Internal Standards: The internal standards were acceptably recovered. The areas were within 40% of the continuing calibration and the retention times were within 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Due to matrix interference or in order to report the analyte within the linear range of the calibration, the following dilutions were performed.

Sample	Analyte	Dilution	Reason
SVL-528-SA5A-SV-5.0-6.0	All analytes	5x	Matrix interference
SVL-565-SA5A-SV-5.0-6.0	m,p-Xylene	10x	Linear range

Validated Sample Result Forms: 1481735

Analysis Method TO-15

Sample Name FB1-061114 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498172 **Sample Date:** 6/11/2014 2:25:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0027	0.0049	0.00099	ug/L	J	J	
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	U	U	
Methylene chloride	75092	0.00077	0.0035	0.00069	ug/L	J	J	
m-Xylene & p-Xylene	179601231	0.00089	0.0043	0.00087	ug/L	J	J	
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	U	U	
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0038	0.0038	0.00075	ug/L	U	U	
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0014	0.0056	0.0011	ug/L	J	J	
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-512-SA5A-SV-5.5-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498173 **Sample Date:** 6/11/2014 7:54:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	

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1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U
Benzene	71432	0.0013	0.0032	0.00064	ug/L	J	J
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	U	U
Ethylbenzene	100414	0.0027	0.0043	0.00087	ug/L	J	J
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.0086	0.0043	0.00087	ug/L		
o-Xylene	95476	0.0052	0.0043	0.00087	ug/L		
Tetrachloroethene	127184	0.005	0.0068	0.0014	ug/L	J	J
Toluene	108883	0.0031	0.0038	0.00075	ug/L	J	J
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U F, result changed from 0.0019
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U

Sample Name SVL-521-SA5A-SV-10.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498174 **Sample Date:** 6/11/2014 8:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.00066	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	U	U	
Ethylbenzene	100414	0.00097	0.0043	0.00087	ug/L	J	J	
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	J	U	F, result changed from 0.0017
m-Xylene & p-Xylene	179601231	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0033
o-Xylene	95476	0.0016	0.0043	0.00087	ug/L	J	J	
Tetrachloroethene	127184	0.0014	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.005	0.0038	0.00075	ug/L			

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trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0016
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-521-SA5A-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498175 **Sample Date:** 6/11/2014 8:24:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.001	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0032
Ethylbenzene	100414	0.0024	0.0043	0.00087	ug/L	J	J	
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0061	0.0043	0.00087	ug/L			
o-Xylene	95476	0.0037	0.0043	0.00087	ug/L	J	J	
Tetrachloroethene	127184	0.002	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.0015	0.0038	0.00075	ug/L	J	J	
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0017
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-522-SA5A-SV-7.5-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498176 **Sample Date:** 6/11/2014 10:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.0067	0.015	0.0038	ug/L	J	J	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	

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1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	U	U
Ethylbenzene	100414	0.0021	0.0043	0.00087	ug/L	J	J
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.0079	0.0043	0.00087	ug/L		
o-Xylene	95476	0.0047	0.0043	0.00087	ug/L		
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U
Toluene	108883	0.0043	0.0038	0.00075	ug/L		
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U F, result changed from 0.0018
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U

Sample Name SVL-528-SA5A-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498177 **Sample Date:** 6/11/2014 9:31:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.034	0.034	0.0069	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.027	0.027	0.0055	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.034	0.034	0.0069	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.077	0.077	0.019	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.027	0.027	0.0055	ug/L	U	U	
1,1-Dichloroethane	75343	0.02	0.02	0.004	ug/L	U	U	
1,1-Dichloroethene	75354	0.02	0.02	0.004	ug/L	U	U	
1,2-Dichloroethane	107062	0.02	0.02	0.004	ug/L	U	U	
Benzene	71432	0.019	0.016	0.0032	ug/L			
Carbon Tetrachloride	56235	0.031	0.031	0.0063	ug/L	U	U	
Chloroethane	75003	0.013	0.013	0.0026	ug/L	U	U	
Chloroform	67663	0.024	0.024	0.0049	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.02	0.02	0.004	ug/L	U	U	
Dichlorodifluoromethane	75718	0.025	0.025	0.0049	ug/L	U	U	
Ethylbenzene	100414	0.0061	0.022	0.0043	ug/L	J	J	
Methylene chloride	75092	0.017	0.017	0.0035	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.016	0.022	0.0043	ug/L	J	J	
o-Xylene	95476	0.0075	0.022	0.0043	ug/L	J	J	
Tetrachloroethene	127184	0.034	0.034	0.0068	ug/L	U	U	

Analysis Method TO-15

Toluene	108883	0.03	0.019	0.0038	ug/L		
trans-1,2-Dichloroethene	156605	0.02	0.02	0.004	ug/L	U	U
Trichloroethene	79016	0.027	0.027	0.0054	ug/L	U	U
Trichlorofluoromethane	75694	0.028	0.028	0.0056	ug/L	U	U
Vinyl chloride	75014	0.013	0.013	0.0026	ug/L	U	U

Sample Name SVL-528-SA5A-SV-9.0-1 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498178 **Sample Date:** 6/11/2014 10:02:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.049	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	U	U	
Ethylbenzene	100414	0.0088	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	J	U	F, result changed from 0.0011
m-Xylene & p-Xylene	179601231	0.02	0.0043	0.00087	ug/L			
o-Xylene	95476	0.01	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0044	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.053	0.0038	0.00075	ug/L			
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0021
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-560-SA5A-SV-10.5- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498179 **Sample Date:** 6/11/2014 11:54:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	

Analysis Method TO-15

1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U
Benzene	71432	0.0012	0.0032	0.00064	ug/L	J	J
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	U	U
Ethylbenzene	100414	0.0011	0.0043	0.00087	ug/L	J	J
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U
m-Xylene & p-Xylene	179601231	0.0043	0.0043	0.00087	ug/L	J	U F, result changed from 0.0029
o-Xylene	95476	0.002	0.0043	0.00087	ug/L	J	J
Tetrachloroethene	127184	0.0014	0.0068	0.0014	ug/L	J	J
Toluene	108883	0.0013	0.0038	0.00075	ug/L	J	J
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U F, result changed from 0.0014
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U

Sample Name SVL-560-SA5A-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498180 **Sample Date:** 6/11/2014 11:26:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.00082	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0025
Ethylbenzene	100414	0.0014	0.0043	0.00087	ug/L	J	J	
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0044	0.0044	0.00087	ug/L		U	F, RL changed from 0.0043
o-Xylene	95476	0.0029	0.0043	0.00087	ug/L	J	J	

Analysis Method TO-15

Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U
Toluene	108883	0.001	0.0038	0.00075	ug/L	J	J
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U F, result changed from 0.0013
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U

Sample Name SVL-565-SA5A-SV-12.0- **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498181 **Sample Date:** 6/11/2014 2:10:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.003
Ethylbenzene	100414	0.0012	0.0043	0.00087	ug/L	J	J	
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0035
o-Xylene	95476	0.0022	0.0043	0.00087	ug/L	J	J	
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.00093	0.0038	0.00075	ug/L	J	J	
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0015
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-565-SA5A-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498182 **Sample Date:** 6/11/2014 1:35:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	

Analysis Method TO-15

1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.0018	0.004	0.00081	ug/L	J	J	
1,1-Dichloroethene	75354	0.011	0.004	0.00079	ug/L		J	*III
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.00076	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.0034	0.004	0.00079	ug/L	J	J	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	U	U	
Ethylbenzene	100414	0.041	0.0043	0.00087	ug/L		J	*III
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.064	0.043	0.0087	ug/L			
o-Xylene	95476	0.11	0.0043	0.00087	ug/L		J	*III
Tetrachloroethene	127184	0.16	0.0068	0.0014	ug/L		J	*III
Toluene	108883	0.0052	0.0038	0.00075	ug/L		J	*III
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.018	0.0054	0.0011	ug/L		J	*III
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0016
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-865-SA5A-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7498183 **Sample Date:** 6/11/2014 1:43:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	UJ	*III
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0029
Ethylbenzene	100414	0.0015	0.0043	0.00087	ug/L	J	J	*III
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	

Analysis Method TO-15

m-Xylene & p-Xylene	179601231	0.0057	0.0043	0.00087	ug/L			
o-Xylene	95476	0.0033	0.0043	0.00087	ug/L	J	J	*III
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	UJ	*III
Toluene	108883	0.0017	0.0038	0.00075	ug/L	J	J	*III
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	UJ	*III
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0015
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 1482105

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 1482105
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Laboratory: Eurofins Lancaster Laboratories Env., LLC

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
FB1-061314	7500233	N/A	Soil Vapor	6/13/14 10:28 AM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the sample was received intact. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were intact.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 16, 2014

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^x Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The sample was analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. The sample was analyzed within 24 hours of the BFB injection time.
- Calibration: The carbon tetrachloride %RSD was 34% on instrument 09464; therefore, the nondetected carbon tetrachloride result for the sample was qualified as estimated, "UJ." The remaining initial calibration %RSDs were $\leq 30\%$. The continuing calibration %Ds were $\leq 30\%$.
- Blanks: There were no detects in the method blank.
- Surrogate Recovery: Surrogates were not utilized.
- Blank Spikes and Laboratory Control Samples: The recoveries and RPDs were within the laboratory control limits. Target compound 1,1,1,2-tetrachloroethane was not spiked in the LCS/LCSD.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy and precision were evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: The sample in this SDG was identified as an ambient blank FB-061314. The following analytes were detected in this sample.



Analyte	FB-061314
Dichlorodifluoromethane	0.0025
Methylene chloride	0.0010
Toluene	0.00077
Trichlorofluoromethane	0.0013
m,p-Xylene	0.0013

- Field Duplicates: There were no field duplicate samples identified in this SDG.
- Internal Standards: The internal standards were acceptably recovered. The areas were within 40% of the continuing calibration and the retention times were within 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatogram and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 1482105

Analysis Method *TO-15*

Sample Name FB1-061314 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7500233 **Sample Date:** 6/13/2014 10:28:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	UJ	C
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0025	0.0049	0.00099	ug/L	J	J	
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	U	U	
Methylene chloride	75092	0.001	0.0035	0.00069	ug/L	J	J	
m-Xylene & p-Xylene	179601231	0.0013	0.0043	0.00087	ug/L	J	J	
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	U	U	
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.00077	0.0038	0.00075	ug/L	J	J	
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0013	0.0056	0.0011	ug/L	J	J	
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	



DATA VALIDATION REPORT

Boeing SSFL RFI DOE Phase 3

SAMPLE DELIVERY GROUP: 1482106

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014



I. INTRODUCTION

Task Order Title: Boeing SSFL RFI DOE Phase 3
Contract Task Order: 1261.500D.01.001
Sample Delivery Group: 1482106
Project Manager: Dixie Hambrick
Matrix: Soil Vapor
QC Level: V
No. of Samples: 8
No. of Reanalyses/Dilutions: 0
Laboratory: Eurofins Lancaster Laboratories Env., LLC

Table 1. Sample Identification

<i>Sample Name</i>	<i>Lab Sample Name</i>	<i>Sub-Lab Sample Name</i>	<i>Matrix Type</i>	<i>Collection Date</i>	<i>Method</i>
FB1-061214	7500234	N/A	Soil Vapor	6/12/14 2:10 PM	TO-15
SVL-595-SA5A-SV-5.0-6.0	7500235	N/A	Soil Vapor	6/12/14 9:16 AM	TO-15
SVL-609-SA5A-SV-7.0-8.0	7500236	N/A	Soil Vapor	6/12/14 1:20 PM	TO-15
SVL-616-SA5A-SV-6.5-7.5	7500237	N/A	Soil Vapor	6/12/14 10:03 AM	TO-15
SVL-618-SA5A-SV-5.0-6.0	7500238	N/A	Soil Vapor	6/12/14 11:01 AM	TO-15
SVL-619-SA5A-SV-4.5-5.5	7500239	N/A	Soil Vapor	6/12/14 10:33 AM	TO-15
SVL-622-SA5A-SV-6.0-7.0	7500240	N/A	Soil Vapor	6/12/14 11:25 AM	TO-15
SVL-629-SA5A-SV-7.0-8.0	7500241	N/A	Soil Vapor	6/12/14 12:01 PM	TO-15

II. Sample Management

No anomalies were observed regarding sample management. According to the case narrative for this SDG, the samples were received intact. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were intact.



Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.



T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable
T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Qualification Code Reference Table**

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

**Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.



III. Method Analyses

A. EPA METHOD TO-15—Volatile Organic Compounds (VOCs)

Reviewed By: P. Meeks

Date Reviewed: July 16, 2014

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation, Surficial Media Operable Unit Quality Assurance Project Plan, Revision 5 (3/13)*, *MEC^X Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method TO-15*, and the *National Functional Guidelines for Superfund Organic Methods Data Review (6/08)*.

- Holding Times: Analytical holding times were met. The samples were analyzed within 30 days of collection.
- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 24 hours of the BFB injection time.
- Calibration: The carbon tetrachloride %RSD was 34% on instrument 09464; therefore, the carbon tetrachloride results for samples FB1-061214, SVL-55-SA5A-SV-5.0-6.0, SVL-609-SA5A-SV-7.0-8.0, SVL-616-SA5A-SV-6.5-7.5, SVL-618-SA5A-SV-5.0-6.0, and SVL-619-SA5A-SV-4.5-5.5, all nondetects, were qualified as estimated, "UJ." The remaining initial calibration %RSDs were $\leq 30\%$. The continuing calibration %Ds were $\leq 30\%$.
- Blanks: There were no detects in the method blanks.
- Surrogate Recovery: Surrogates were not utilized.
- Blank Spikes and Laboratory Control Samples: The recoveries and RPDs were within the laboratory control limits. Target compound 1,1,1,2-tetrachloroethane was not spiked in the LCS/LCSD.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy and precision were evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks: Ambient blank FB1-061214 was associated with the samples in this SDG. Results listed in the table below were qualified as nondetected, "U," at the reporting limit if detected below the reporting limit or at the level of contamination if



detected above. Other site sample detects were too large to qualify. There were no other ambient blank detects affecting sample results.

Analyte	Ambient Blank (µg/L)	Qualified Samples
Dichlorodifluoromethane	0.0024	All detects
Ethylbenzene	0.0011	All detects except SVL-622-SA5A-SV-6.0-7.0
Methylene chloride	0.0032	All detects except SVL-622-SA5A-SV-6.0-7.0
Toluene	0.0026	All detects except SVL-622-SA5A-SV-6.0-7.0
Trichlorofluoromethane	0.0012	All detects
m,p-Xylene	0.0041	All detects except SVL-622-SA5A-SV-6.0-7.0
o-Xylene	0.0021	All detects except SVL-622-SA5A-SV-6.0-7.0

- Field Duplicates: There were no field duplicate samples identified in this SDG.
- Internal Standards: The internal standards were acceptably recovered. The areas were within 40% of the continuing calibration and the retention times were within 20 seconds of the continuing calibration.
- Compound Identification: Review of the sample chromatograms and spectra indicated no problems with compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

In order to report the analyte within the linear range of the calibration, toluene in SVL-622-SA5A-SV-6.0-7.0 was reported from a 10x dilution.

Validated Sample Result Forms: 1482106

Analysis Method TO-15

Sample Name FB1-061214 **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7500234 **Sample Date:** 6/12/2014 2:10:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0056	0.0055	0.0011	ug/L			
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	UJ	C
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0024	0.0049	0.00099	ug/L	J	J	
Ethylbenzene	100414	0.0011	0.0043	0.00087	ug/L	J	J	
Methylene chloride	75092	0.0032	0.0035	0.00069	ug/L	J	J	
m-Xylene & p-Xylene	179601231	0.0041	0.0043	0.00087	ug/L	J	J	
o-Xylene	95476	0.0021	0.0043	0.00087	ug/L	J	J	
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0026	0.0038	0.00075	ug/L	J	J	
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0012	0.0056	0.0011	ug/L	J	J	
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-595-SA5A-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7500235 **Sample Date:** 6/12/2014 9:16:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	

Analysis Method TO-15

1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	UJ	C
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0025
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0012
Methylene chloride	75092	0.0049	0.0049	0.00069	ug/L		U	F, RL changed from 0.0035
m-Xylene & p-Xylene	179601231	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0029
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0015
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0038	0.0038	0.00075	ug/L	J	U	F, result changed from 0.0035
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0013
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-609-SA5A-SV-7.0-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7500236 **Sample Date:** 6/12/2014 1:20:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.019	0.015	0.0038	ug/L			
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	UJ	C
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	U	U	
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0012
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	J	U	F, result changed from 0.0008
m-Xylene & p-Xylene	179601231	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0032
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0016
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0038	0.0038	0.00075	ug/L	J	U	F, result changed from 0.001

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trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0013
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-616-SA5A-SV-6.5-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7500237 **Sample Date:** 6/12/2014 10:03:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0019	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	UJ	C
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0023
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0016
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.004
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0023
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0038	0.0038	0.00075	ug/L	J	U	F, result changed from 0.0013
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0011
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-618-SA5A-SV-5.0-6. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7500238 **Sample Date:** 6/12/2014 11:01:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	

Analysis Method TO-15

1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.0032	0.0032	0.00064	ug/L	U	U	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	UJ	C
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0012	0.0049	0.00098	ug/L	J	J	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	U	U	
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.00097
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	J	U	F, result changed from 0.00074
m-Xylene & p-Xylene	179601231	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0022
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0012
Tetrachloroethene	127184	0.0027	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.0038	0.0038	0.00075	ug/L	J	U	F, result changed from 0.0015
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0014
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-619-SA5A-SV-4.5-5. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7500239 **Sample Date:** 6/12/2014 10:33:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.00085	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	UJ	C
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0022
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.002
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	U	U	
m-Xylene & p-Xylene	179601231	0.0047	0.0047	0.00087	ug/L		U	F, RL changed from 0.0043
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0028
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	

Analysis Method TO-15

Toluene	108883	0.0038	0.0038	0.00075	ug/L	J	U	F, result changed from 0.0021
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0012
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-622-SA5A-SV-6.0-7. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7500240 **Sample Date:** 6/12/2014 11:25:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	
1,1,2-Trichloroethane	79005	0.0015	0.0055	0.0011	ug/L	J	J	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.0029	0.004	0.00081	ug/L	J	J	
Benzene	71432	0.005	0.0032	0.00064	ug/L			
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0029
Ethylbenzene	100414	0.015	0.0043	0.00087	ug/L			
Methylene chloride	75092	0.081	0.0035	0.00069	ug/L			
m-Xylene & p-Xylene	179601231	0.024	0.0043	0.00087	ug/L			
o-Xylene	95476	0.012	0.0043	0.00087	ug/L			
Tetrachloroethene	127184	0.0031	0.0068	0.0014	ug/L	J	J	
Toluene	108883	0.17	0.038	0.0075	ug/L			
trans-1,2-Dichloroethene	156605	0.088	0.004	0.00079	ug/L			
Trichloroethene	79016	0.024	0.0054	0.0011	ug/L			
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0017
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	

Sample Name SVL-629-SA5A-SV-7.0-8. **Matrix Type:** Soil Vapor **Result Type:** Primary Result

Lab Sample Name: 7500241 **Sample Date:** 6/12/2014 12:01:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1,2-Tetrachloroethane	630206	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,1-Trichloroethane	71556	0.0055	0.0055	0.0011	ug/L	U	U	
1,1,2,2-Tetrachloroethane	79345	0.0069	0.0069	0.0014	ug/L	U	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0.015	0.015	0.0038	ug/L	U	U	

Analysis Method TO-15

1,1,2-Trichloroethane	79005	0.0055	0.0055	0.0011	ug/L	U	U	
1,1-Dichloroethane	75343	0.004	0.004	0.00081	ug/L	U	U	
1,1-Dichloroethene	75354	0.004	0.004	0.00079	ug/L	U	U	
1,2-Dichloroethane	107062	0.004	0.004	0.00081	ug/L	U	U	
Benzene	71432	0.00067	0.0032	0.00064	ug/L	J	J	
Carbon Tetrachloride	56235	0.0063	0.0063	0.0013	ug/L	U	U	
Chloroethane	75003	0.0026	0.0026	0.00053	ug/L	U	U	
Chloroform	67663	0.0049	0.0049	0.00098	ug/L	U	U	
cis-1,2-Dichloroethene	156592	0.004	0.004	0.00079	ug/L	U	U	
Dichlorodifluoromethane	75718	0.0049	0.0049	0.00099	ug/L	J	U	F, result changed from 0.0029
Ethylbenzene	100414	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0021
Methylene chloride	75092	0.0035	0.0035	0.00069	ug/L	J	U	F, result changed from 0.00076
m-Xylene & p-Xylene	179601231	0.0059	0.0059	0.00087	ug/L		U	F, RL changed from 0.0043
o-Xylene	95476	0.0043	0.0043	0.00087	ug/L	J	U	F, result changed from 0.0034
Tetrachloroethene	127184	0.0068	0.0068	0.0014	ug/L	U	U	
Toluene	108883	0.0038	0.0038	0.00075	ug/L	J	U	F, result changed from 0.0029
trans-1,2-Dichloroethene	156605	0.004	0.004	0.00079	ug/L	U	U	
Trichloroethene	79016	0.0054	0.0054	0.0011	ug/L	U	U	
Trichlorofluoromethane	75694	0.0056	0.0056	0.0011	ug/L	J	U	F, result changed from 0.0015
Vinyl chloride	75014	0.0026	0.0026	0.00051	ug/L	U	U	