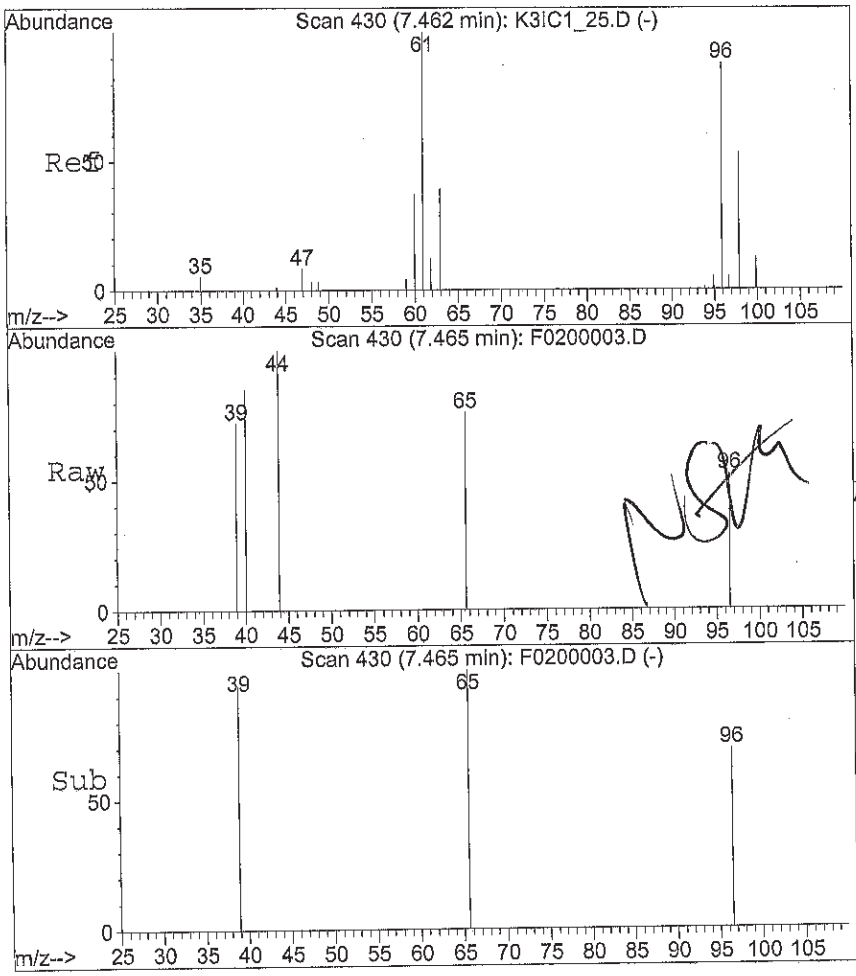
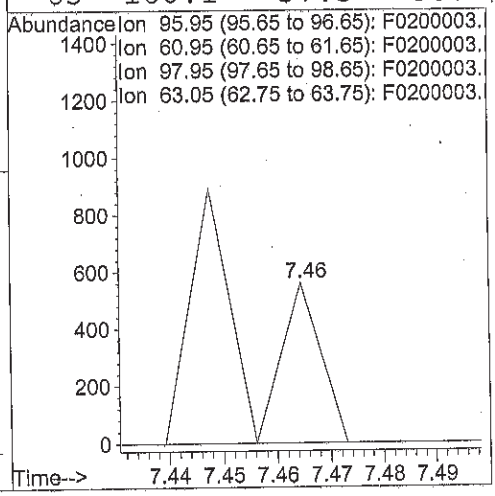
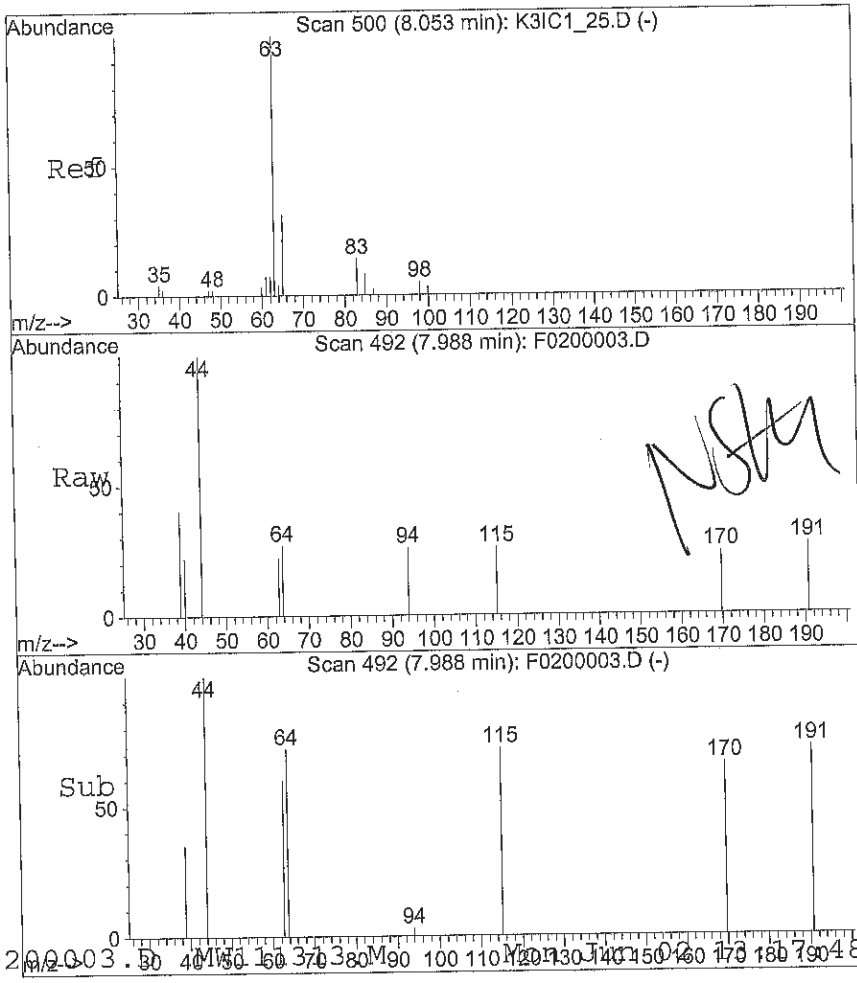


#17
trans-1,2-Dichloroethene
Concen: 0.08 ug/L
RT: 7.46 min Scan# 430
Delta R.T. 0.00 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

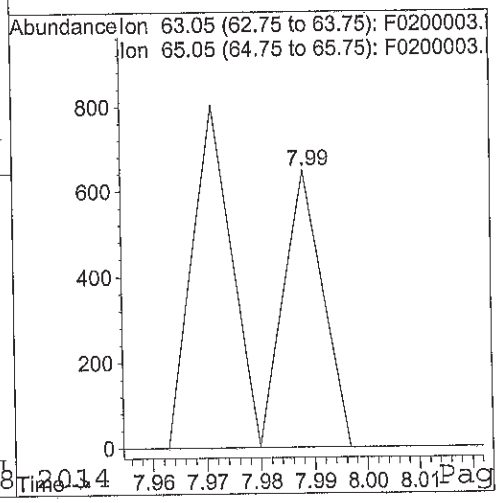


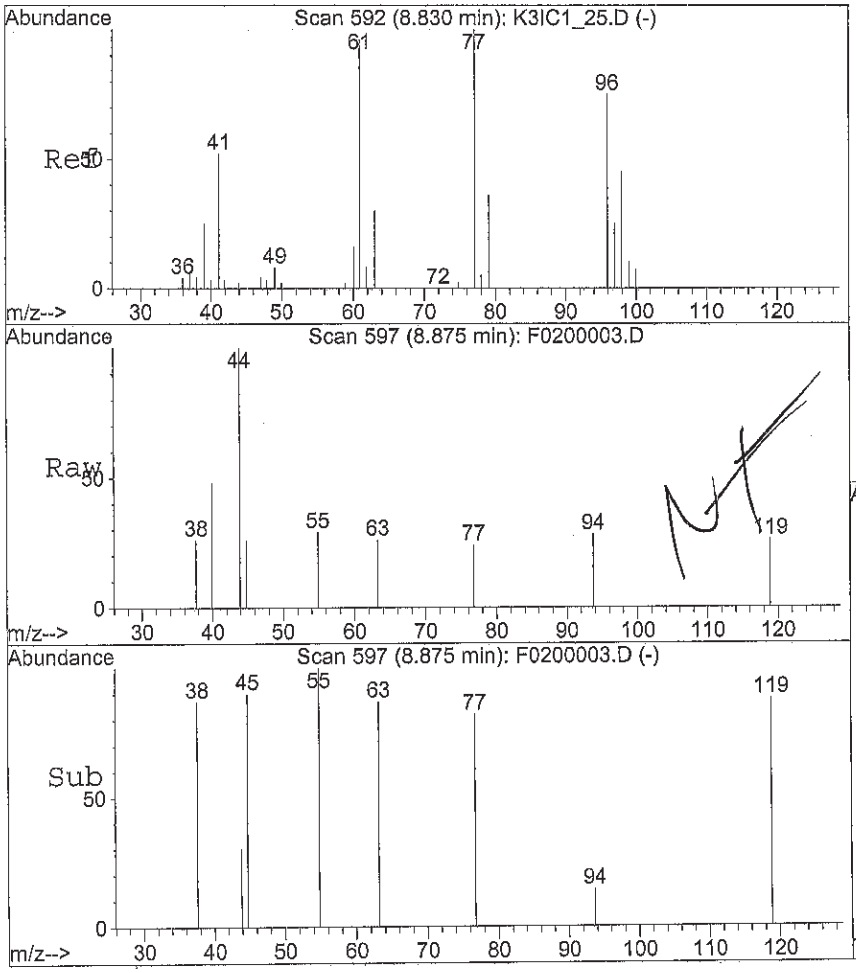


#18
1,1-Dichloroethane
Concen: 0.05 ug/L
RT: 7.99 min Scan# 492
Delta R.T. -0.06 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion: 63 Resp: 328

Ion	Ratio	Lower	Upper
63	100		
65	124.1	25.8	38.8#

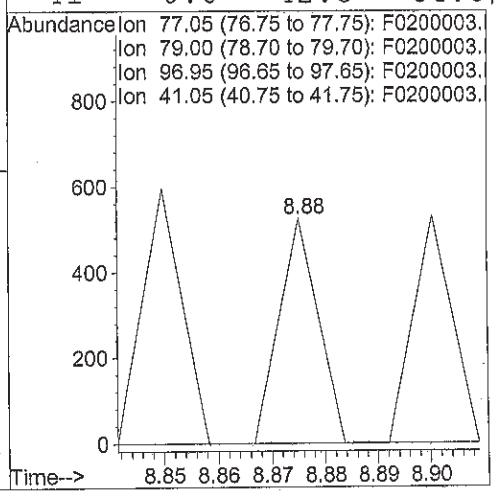


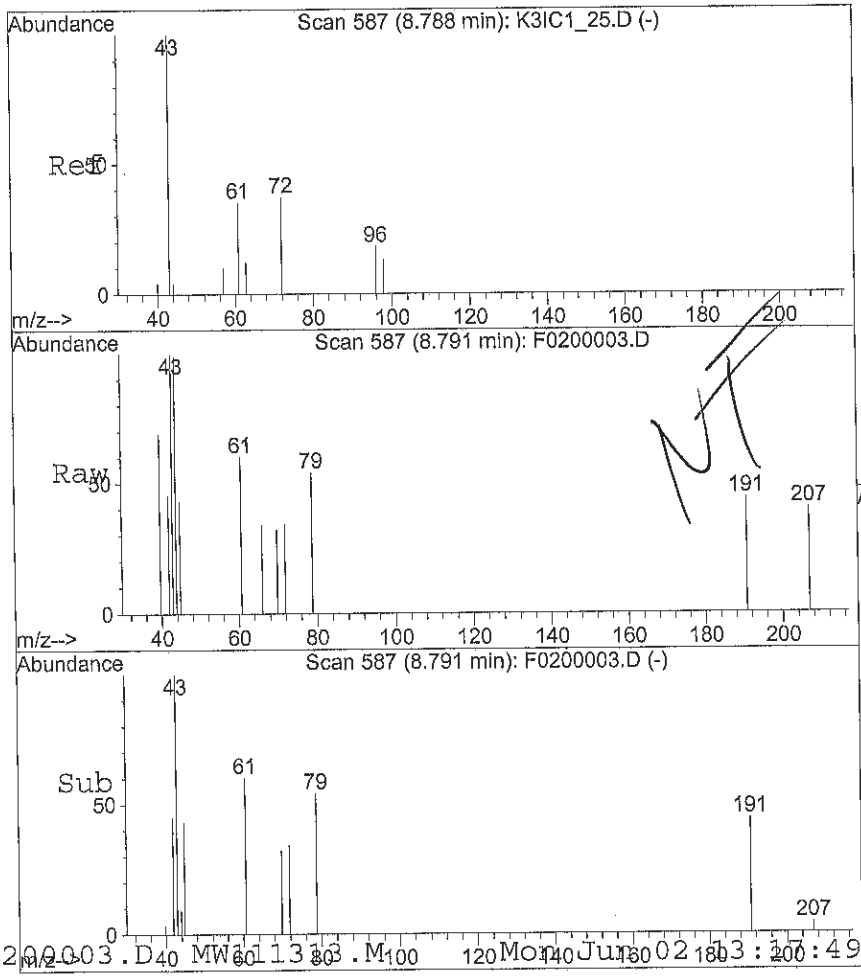


#20
2,2-Dichloropropane
Concen: 0.05 ug/L
RT: 8.88 min Scan# 597
Delta R.T. 0.05 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

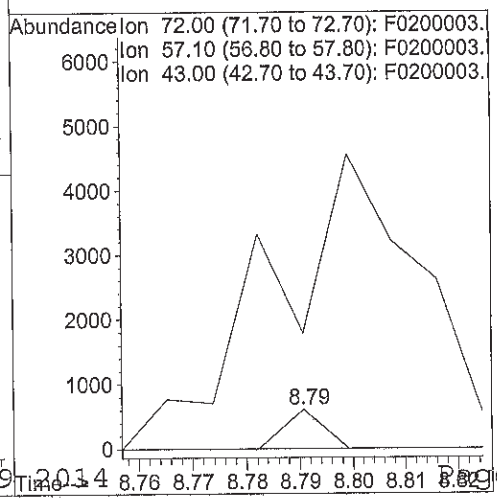


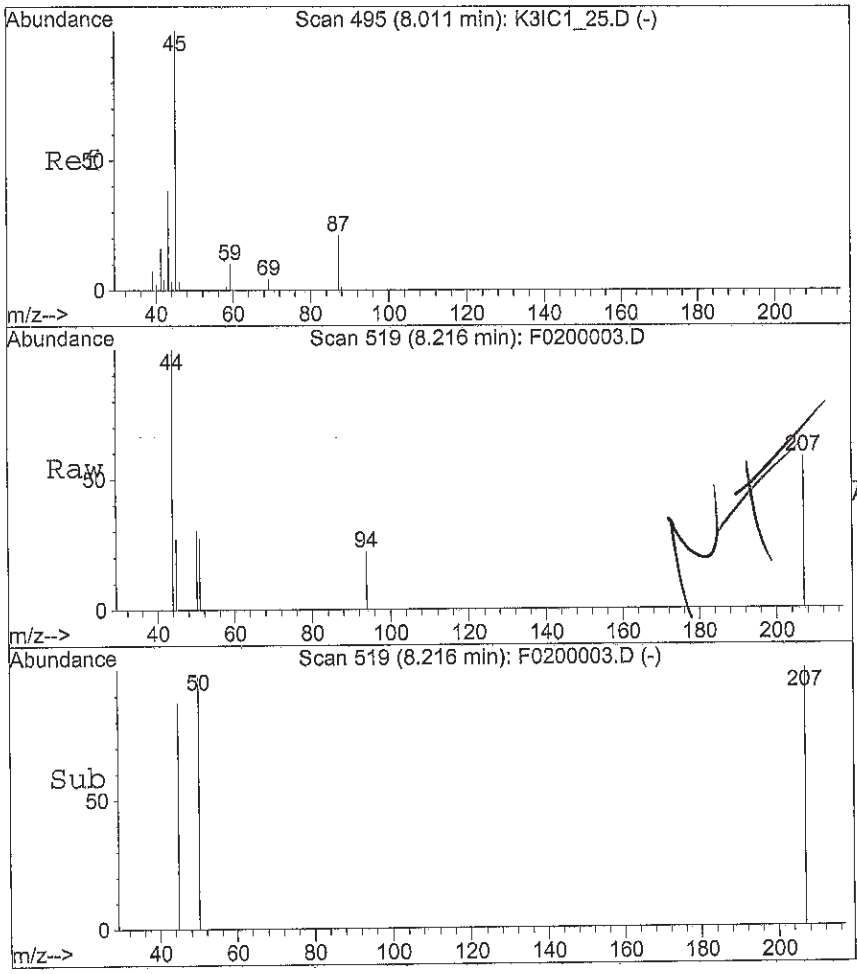


#21
(MEK) 2-Butanone
Concen: 0.79 ug/L
RT: 8.79 min Scan# 587
Delta R.T. 0.00 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

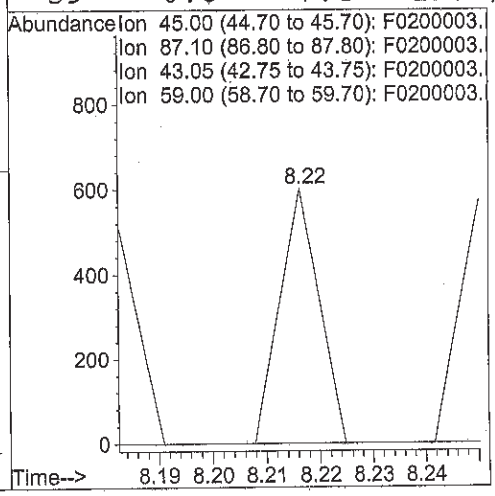


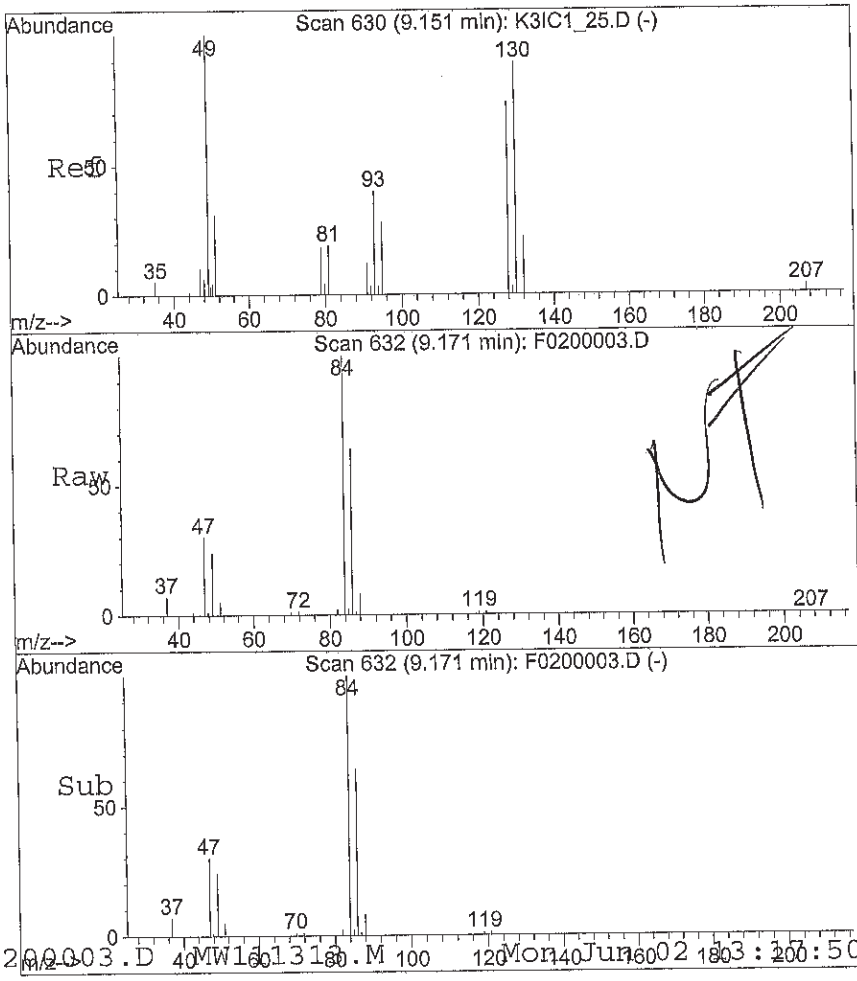


#22
(DIPE) Diisopropyl Ether
Concen: 0.03 ug/L
RT: 8.22 min Scan# 519
Delta R.T. 0.21 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

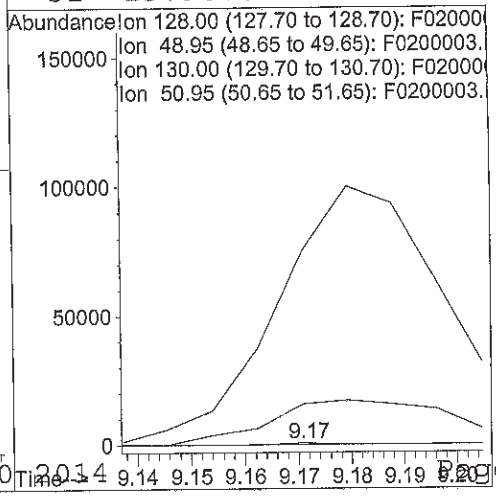


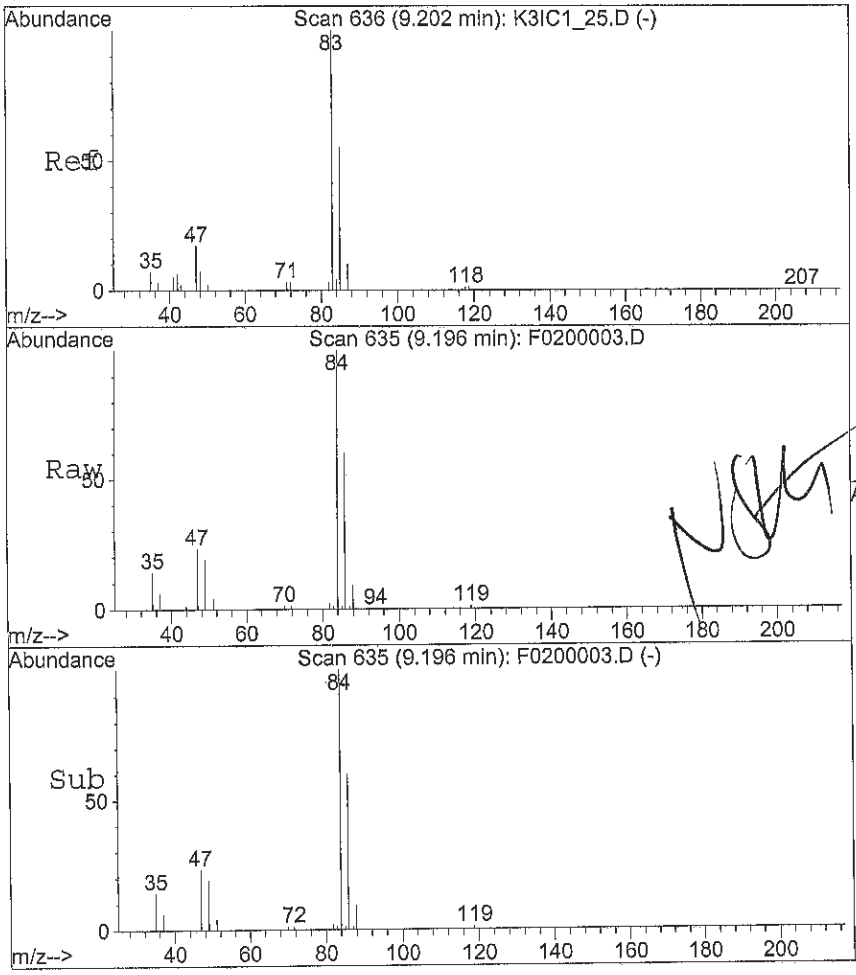


#23
Bromochloromethane
Concen: 0.17 ug/L
RT: 9.17 min Scan# 632
Delta R.T. 0.02 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

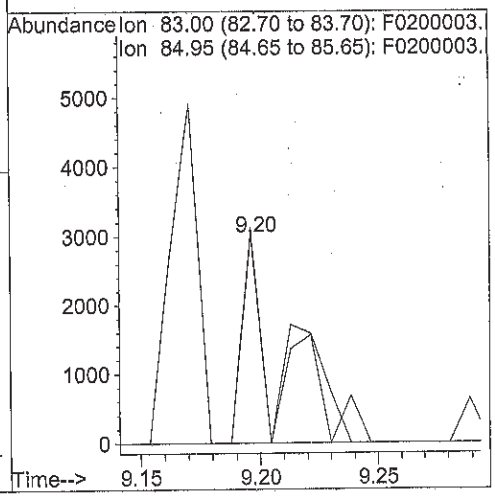


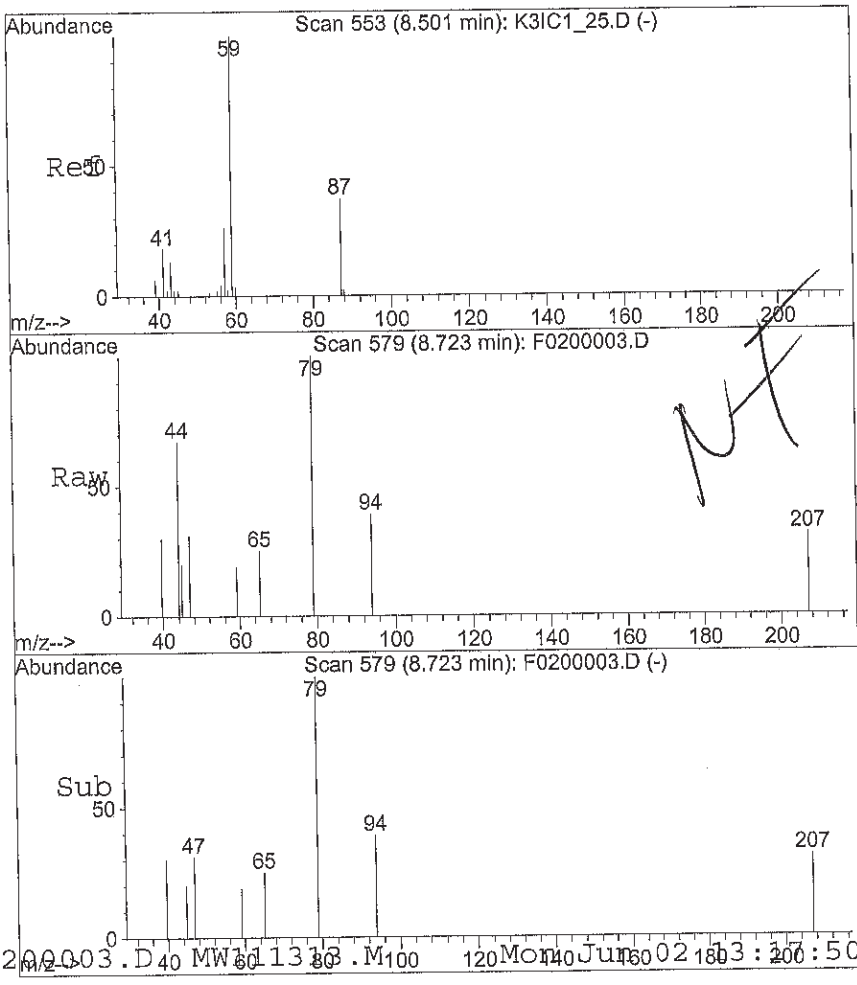


#24
Chloroform
Concen: 0.46 ug/L
RT: 9.20 min Scan# 635
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion: 83 Resp: 3340

Ion	Ratio	Lower	Upper
83	100		
85	47.3	51.8	77.6#

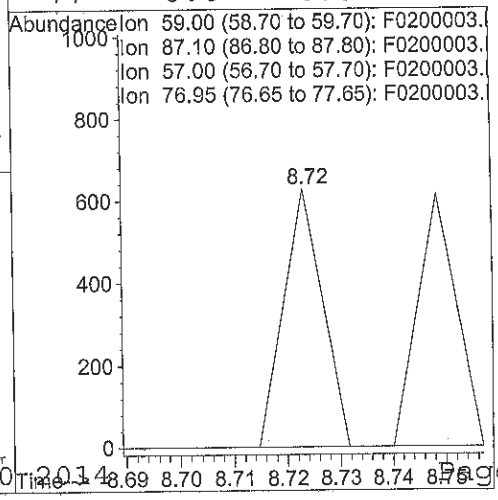


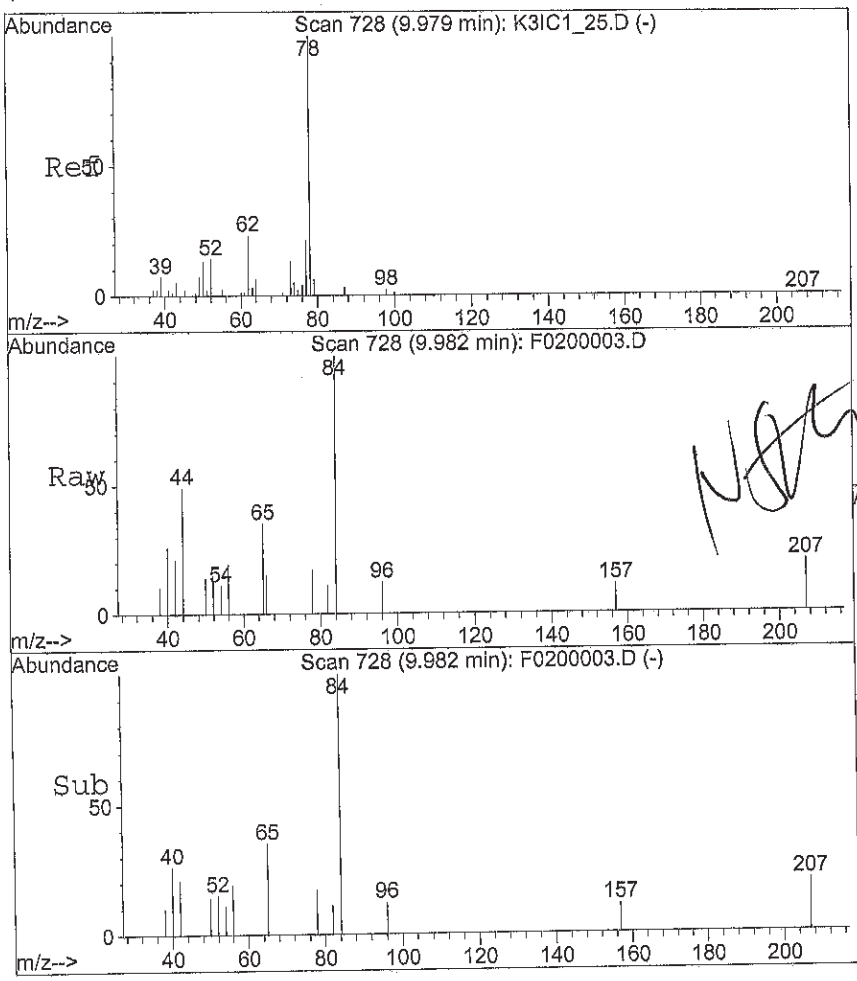


#25
(ETBE) 2-ethoxy 2-methyl propar
Concen: 0.03 ug/L
RT: 8.72 min Scan# 579
Delta R.T. 0.22 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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

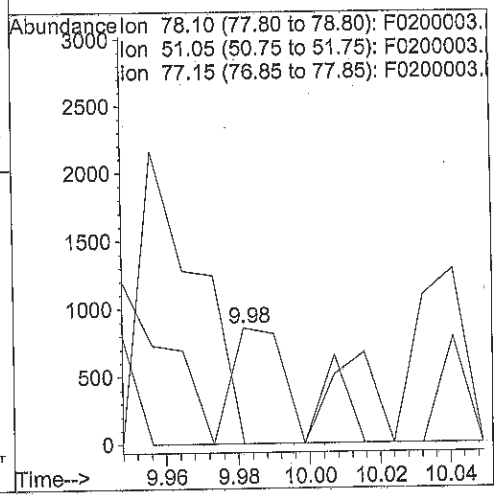


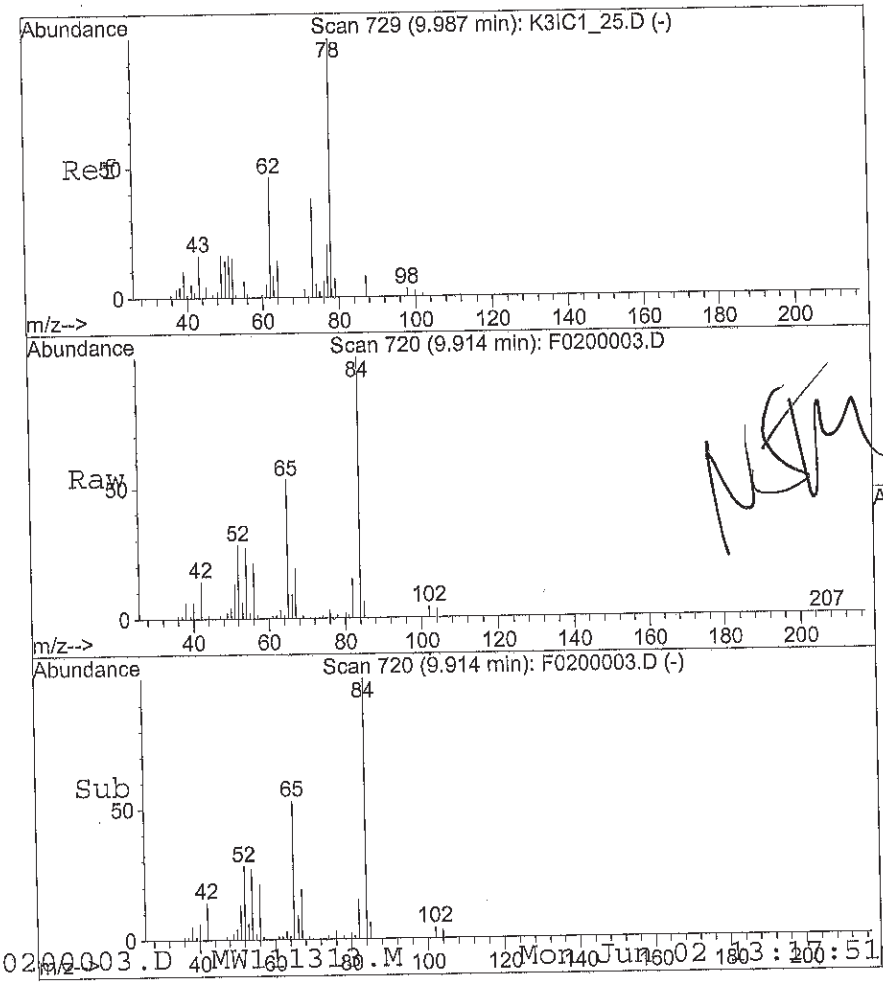


#31
Benzene
Concen: 0.09 ug/L
RT: 9.98 min Scan# 728
Delta R.T. 0.00 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

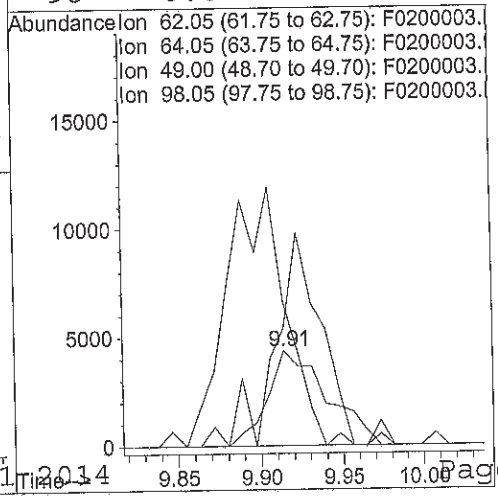


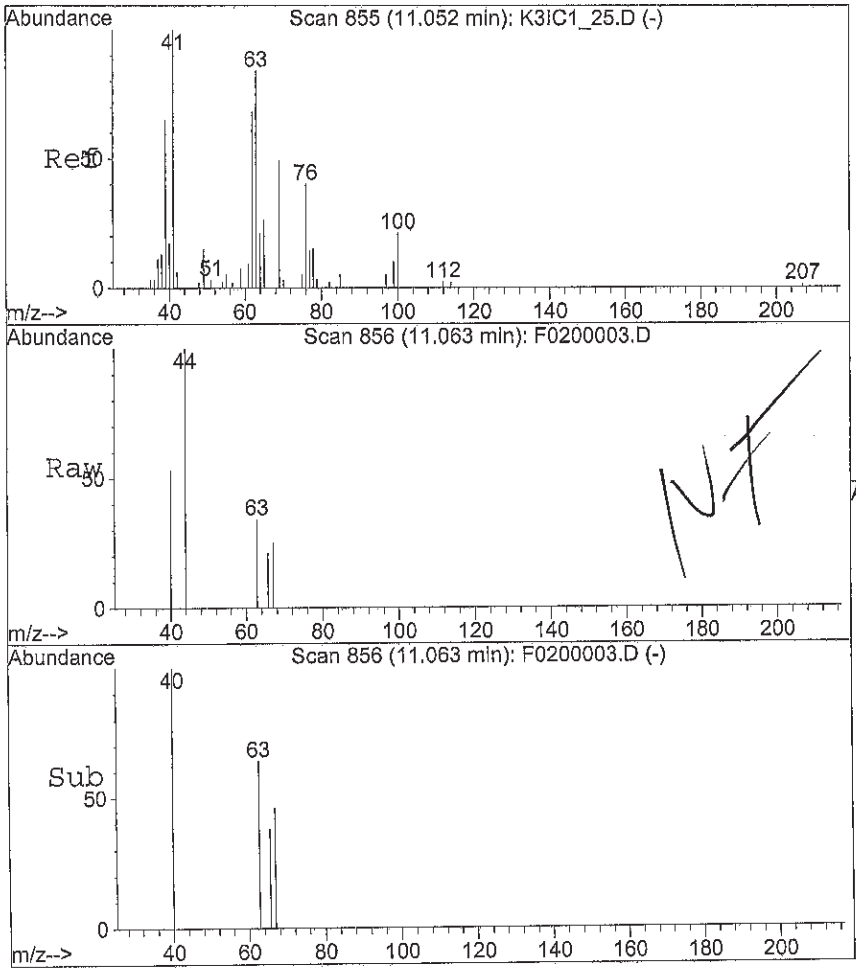


#32
1,2-Dichloroethane
Concen: 2.37 ug/L
RT: 9.91 min Scan# 720
Delta R.T. -0.07 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

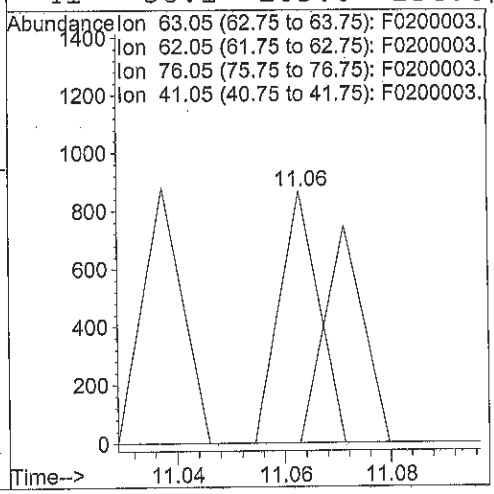


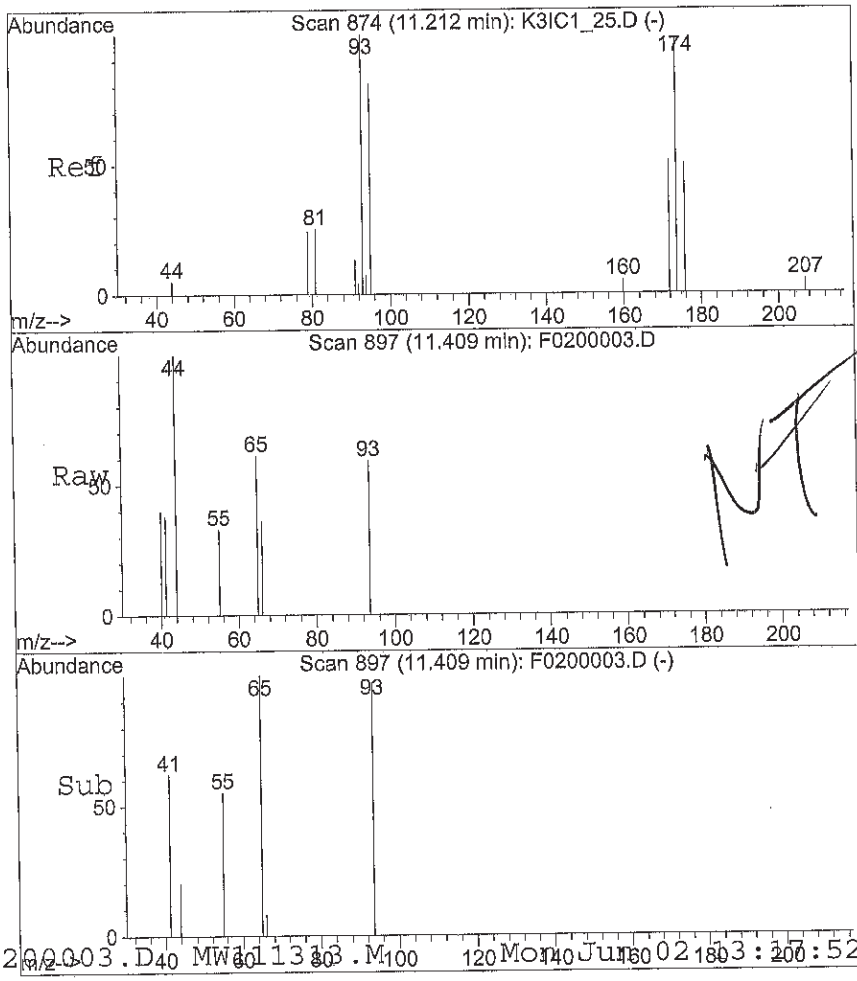


#34
1,2-Dichloropropane
Concen: 0.14 ug/L
RT: 11.06 min Scan# 856
Delta R.T. 0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

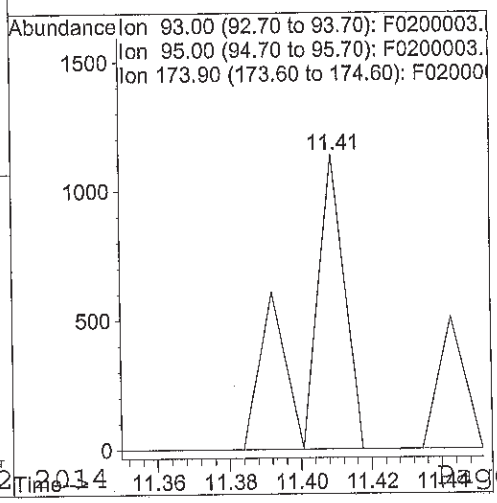


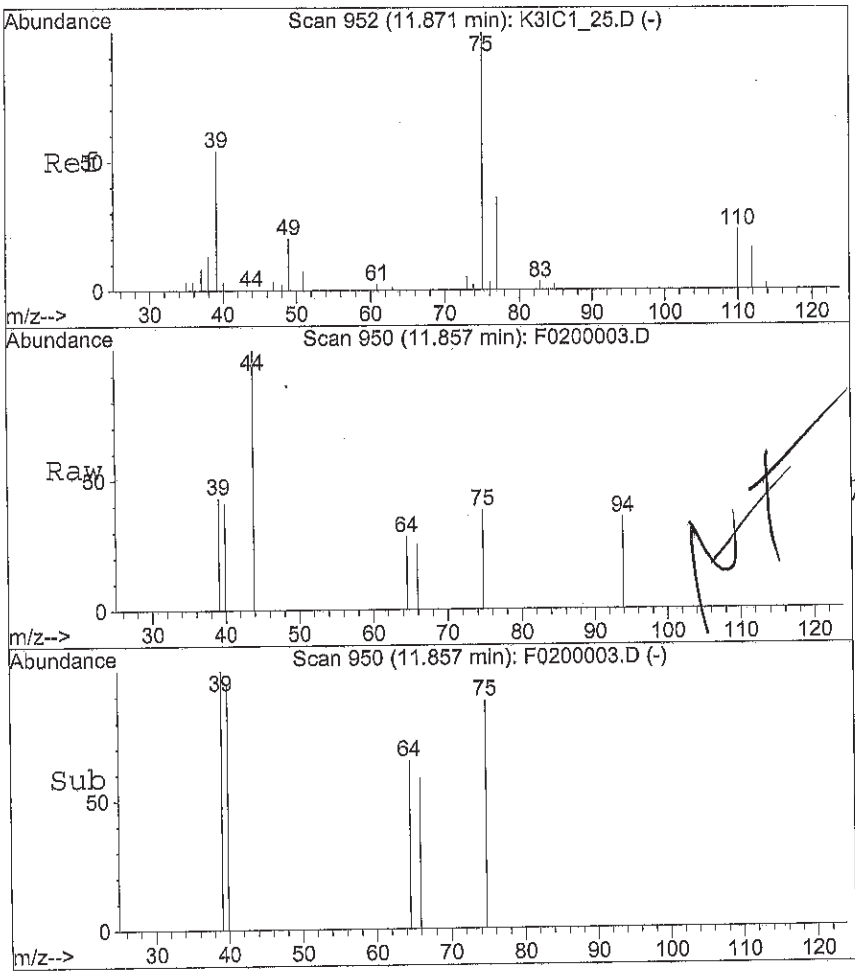


#35
Dibromomethane
Concen: 0.36 ug/L
RT: 11.41 min Scan# 897
Delta R.T. 0.20 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

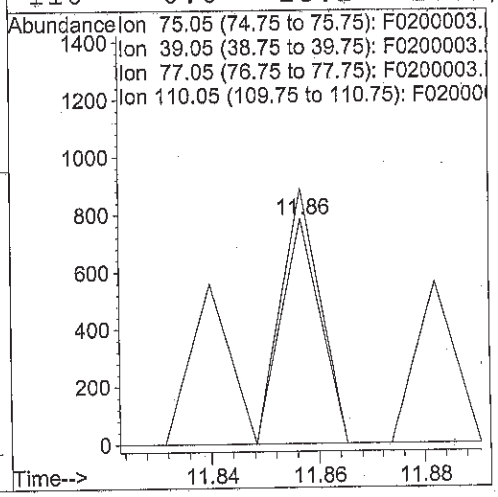


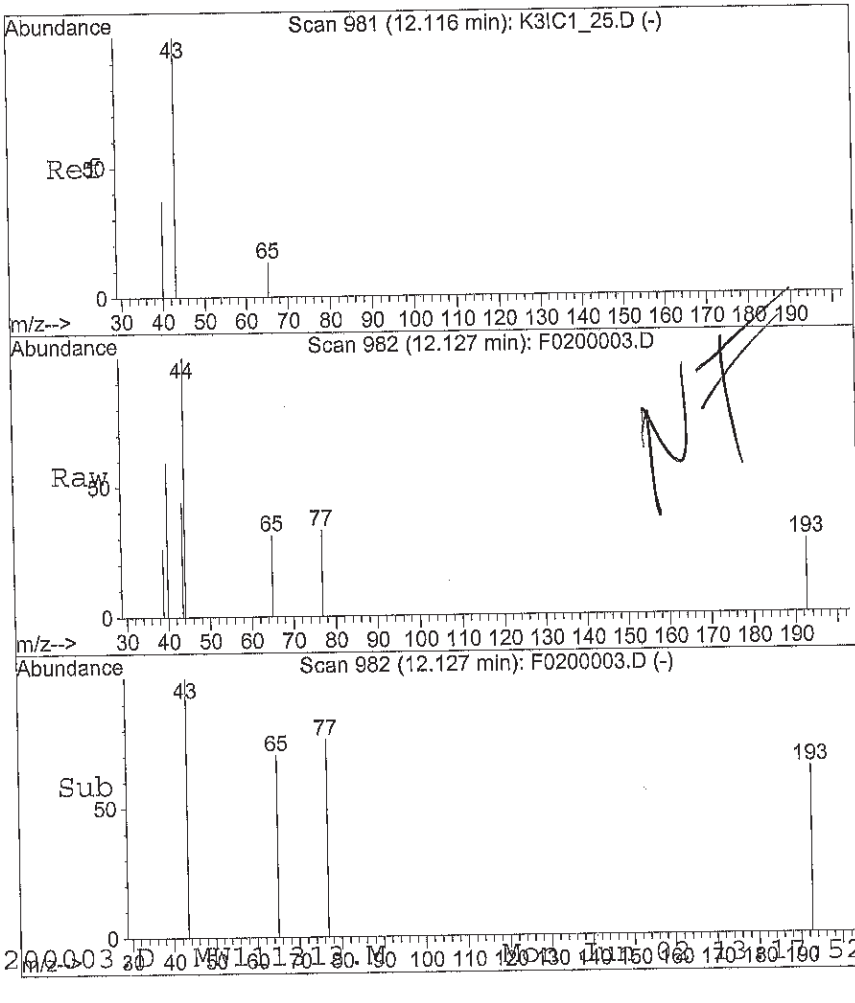


#37
cis-1,3-Dichloropropene
Concen: 0.07 ug/L
RT: 11.86 min Scan# 950
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

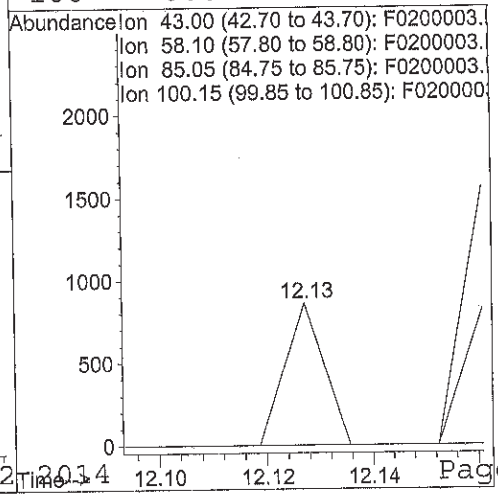


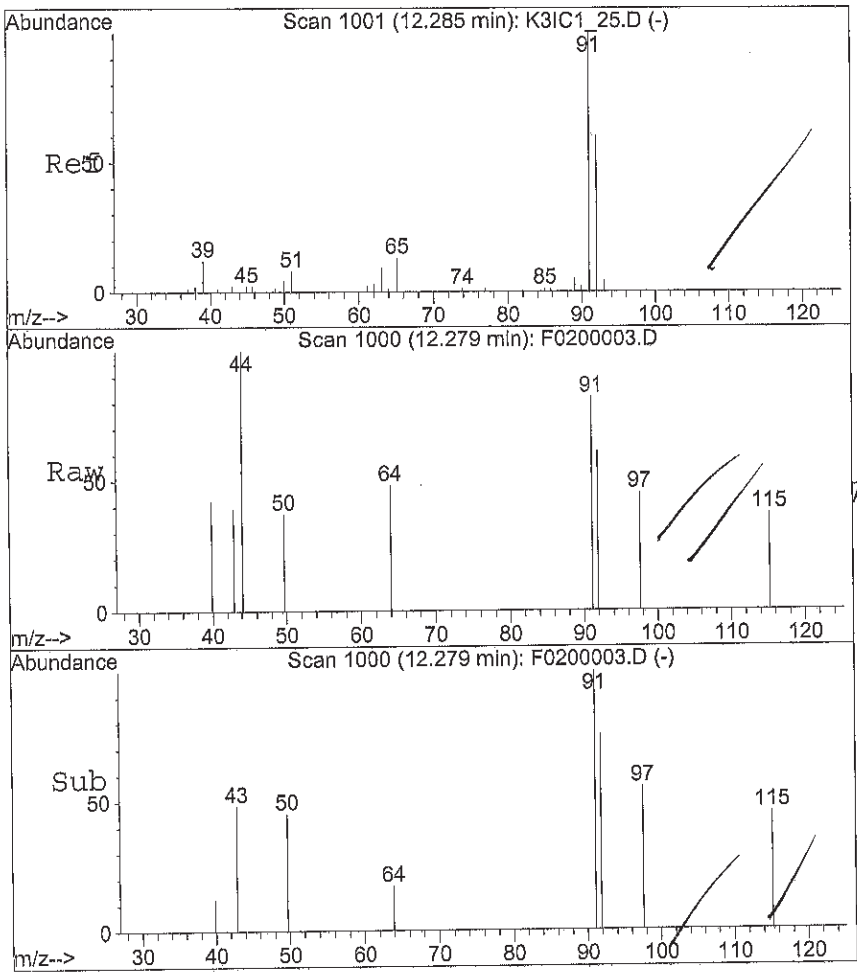


#40
(MIBK) 4-Methyl-2-Pentanone
Concen: 0.17 ug/L
RT: 12.13 min Scan# 982
Delta R.T. 0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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

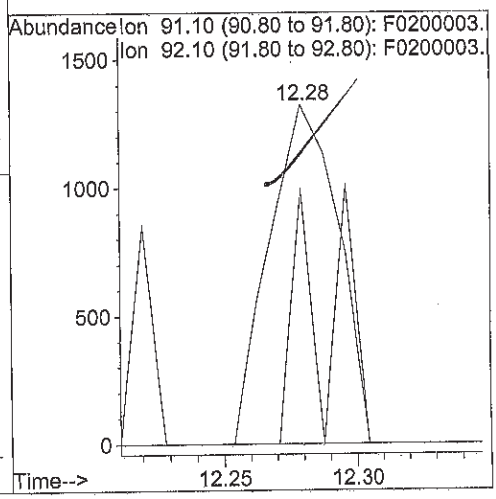


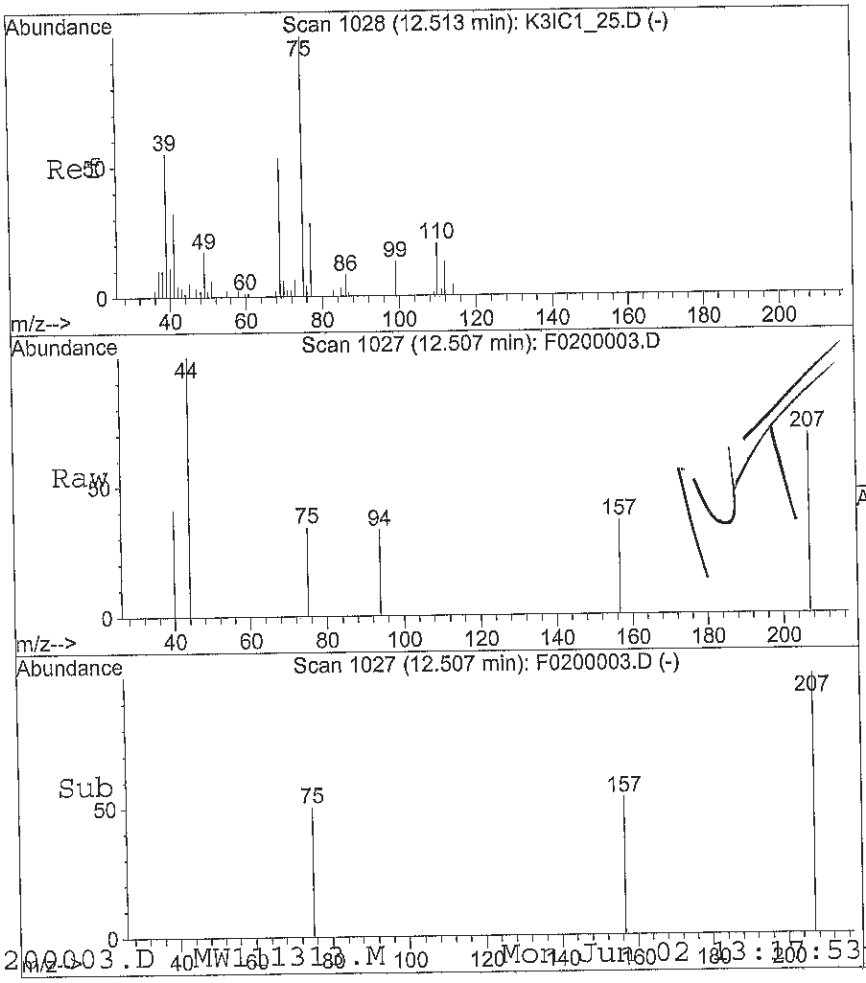


#41
Toluene
Concen: 0.14 ug/L
RT: 12.28 min Scan# 1000
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion: 91 Resp: 2379

Ion	Ratio	Lower	Upper
91	100		
92	42.8	47.4	71.0#

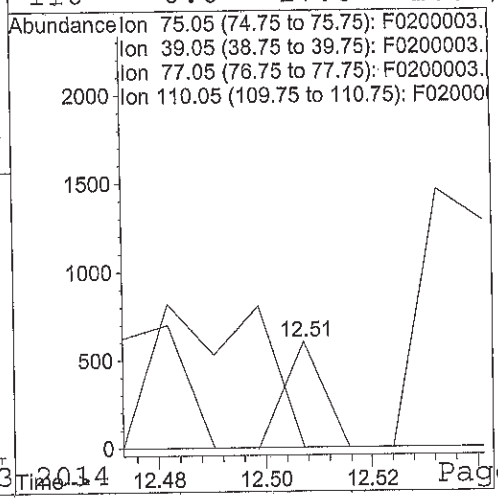


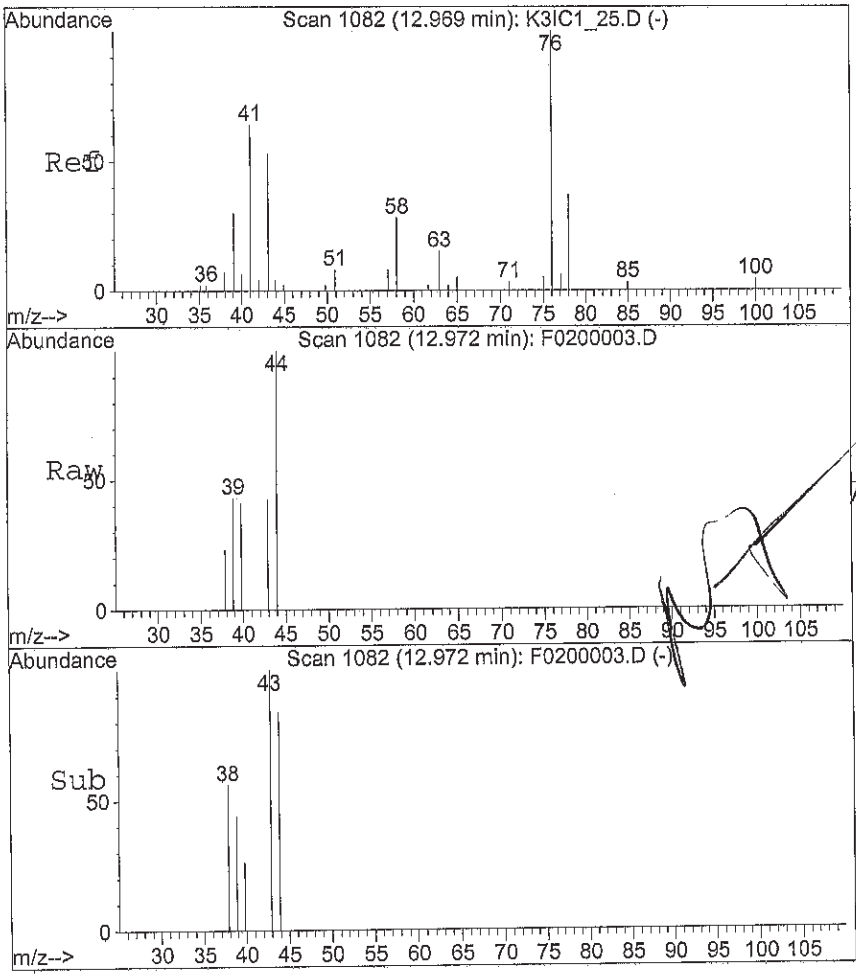


#42
trans-1,3-Dichloropropene
Concen: 0.05 ug/L
RT: 12.51 min Scan# 1027
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

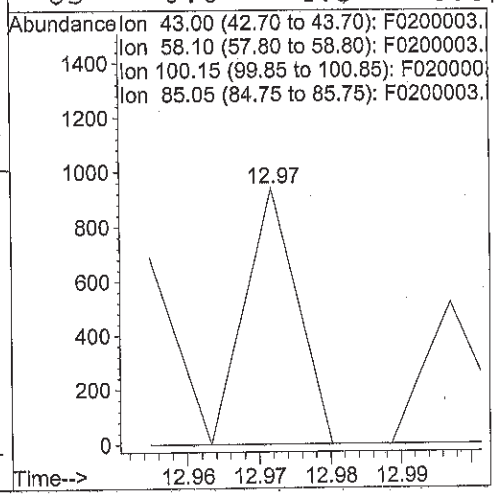


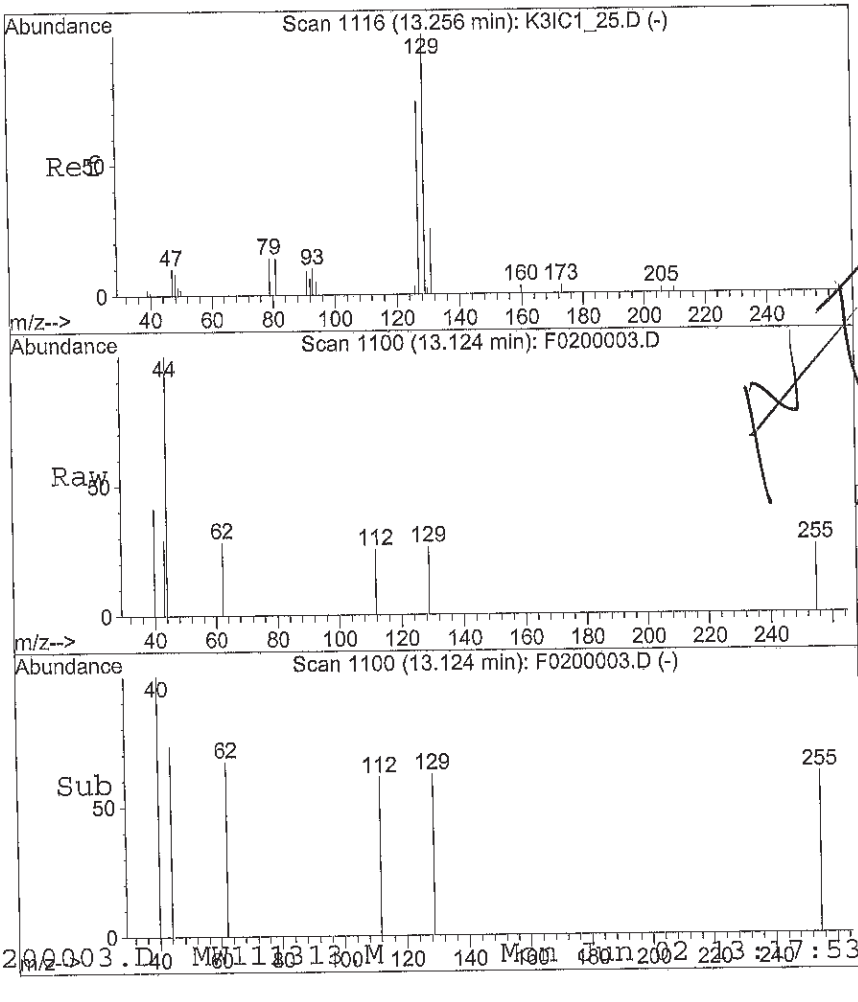


#46
2-Hexanone
Concen: 0.17 ug/L
RT: 12.97 min Scan# 1082
Delta R.T. 0.00 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

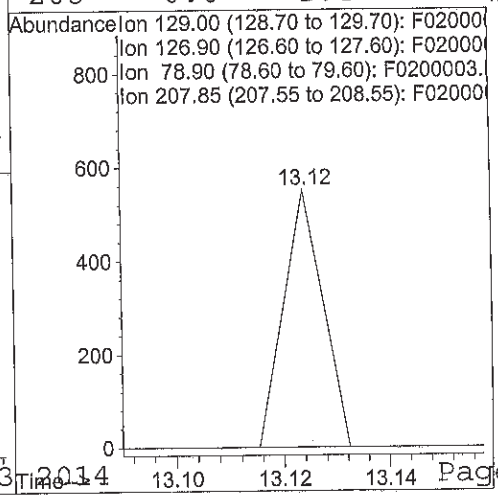


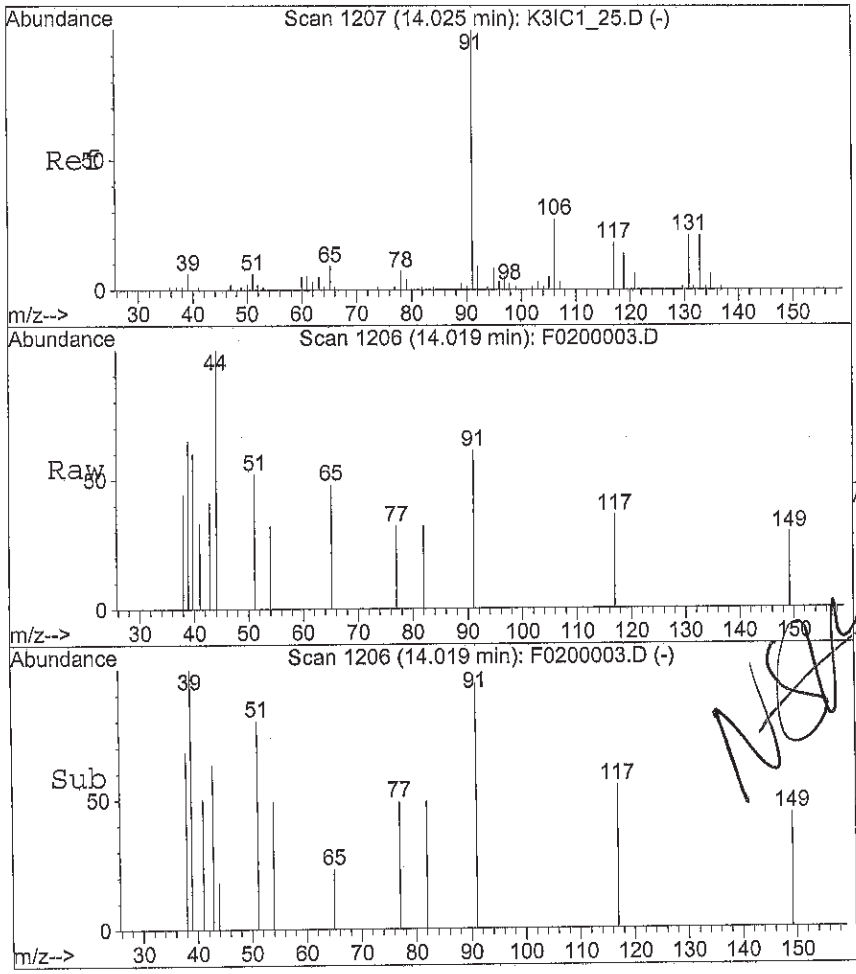


#47
Dibromochloromethane
Concen: 0.06 ug/L
RT: 13.12 min Scan# 1100
Delta R.T. -0.13 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

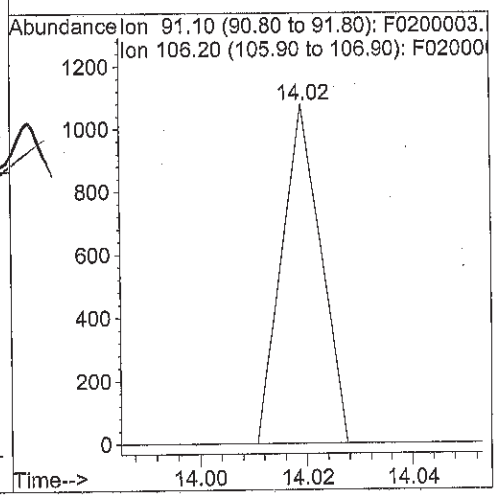


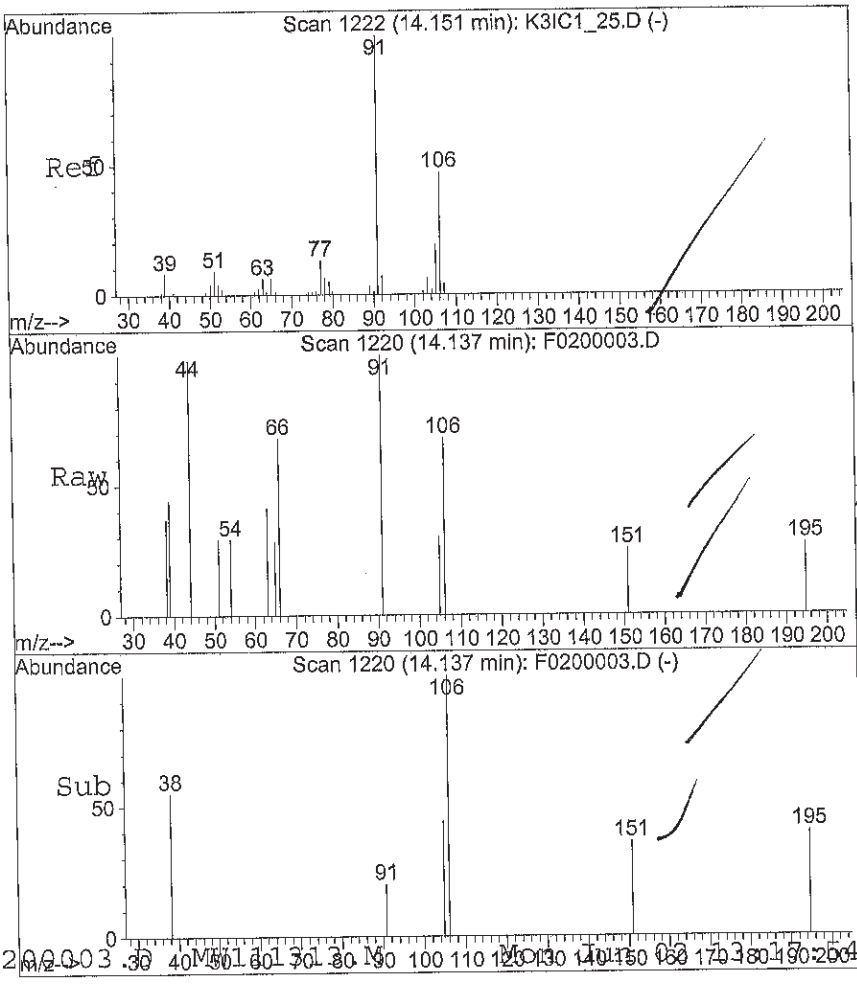


#51
Ethylbenzene
Concen: 0.03 ug/L
RT: 14.02 min Scan# 1206
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion: 91 Resp: 546

Ion	Ratio	Lower	Upper
91	100		
106	0.0	23.5	35.3#

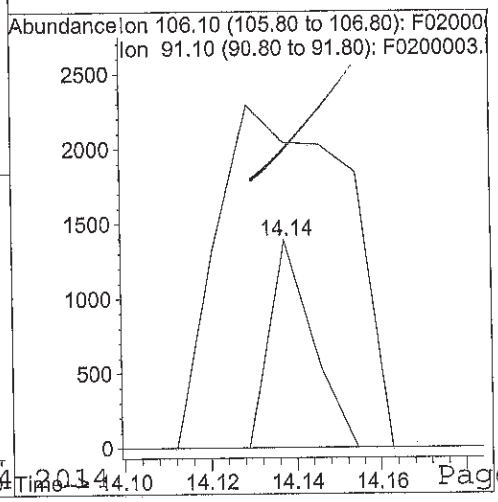


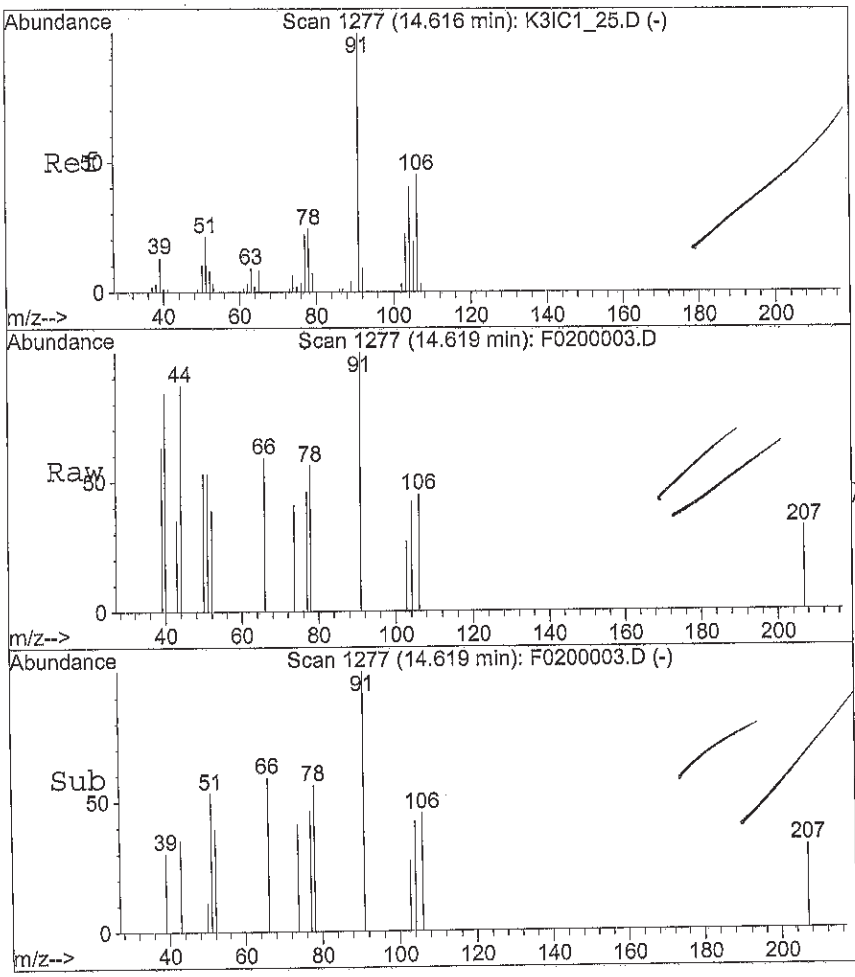


#52
m,p-Xylenes
Concen: 0.14 ug/L
RT: 14.14 min Scan# 1220
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion:106 Resp: 974

Ion	Ratio	Lower	Upper
106	100		
91	495.4	177.1	265.7#

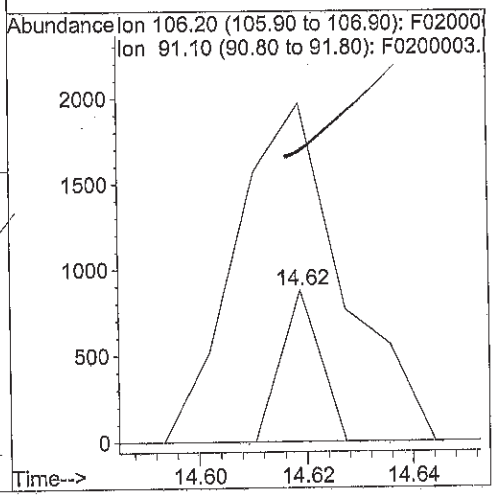


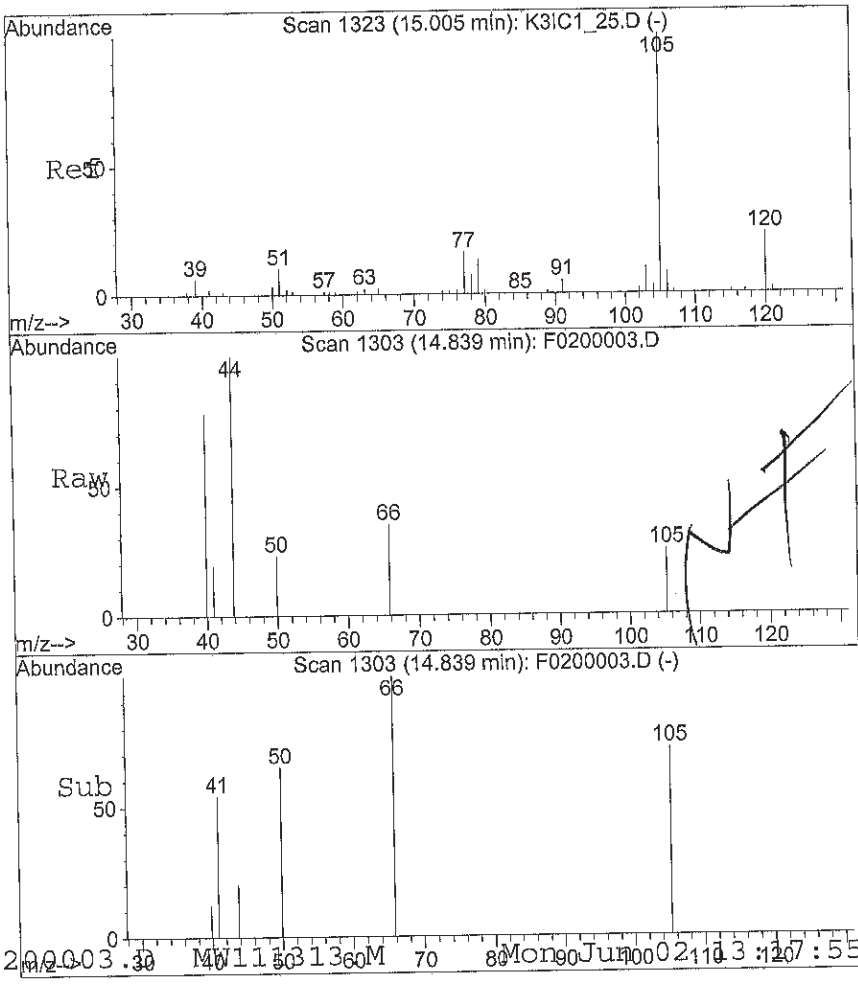


#53
o-Xylene
Concen: 0.06 ug/L
RT: 14.62 min Scan# 1277
Delta R.T. 0.00 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion:106 Resp: 444

Ion	Ratio	Lower	Upper
106	100		
91	614.0	179.0	268.6#

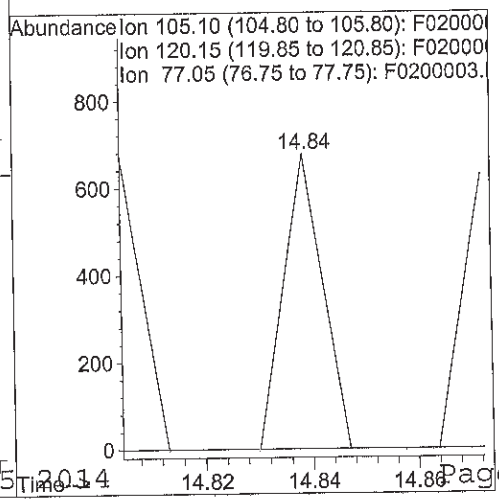


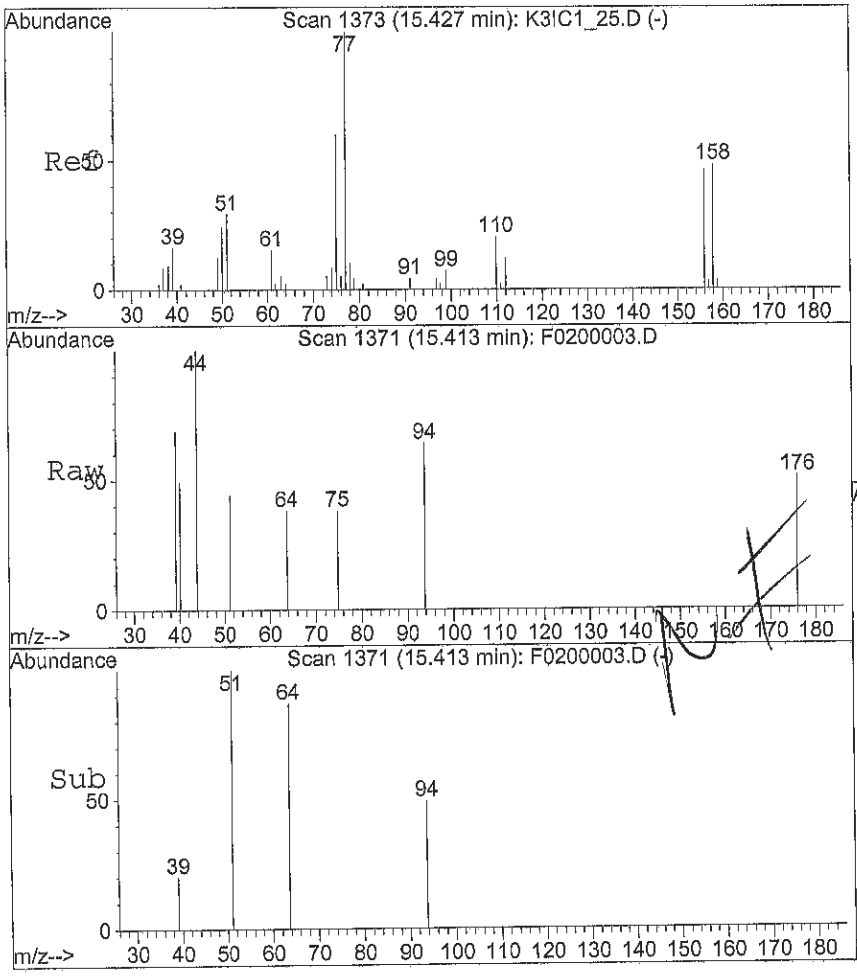


#56
Isopropylbenzene
Concen: 0.02 ug/L
RT: 14.84 min Scan# 1303
Delta R.T. -0.17 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

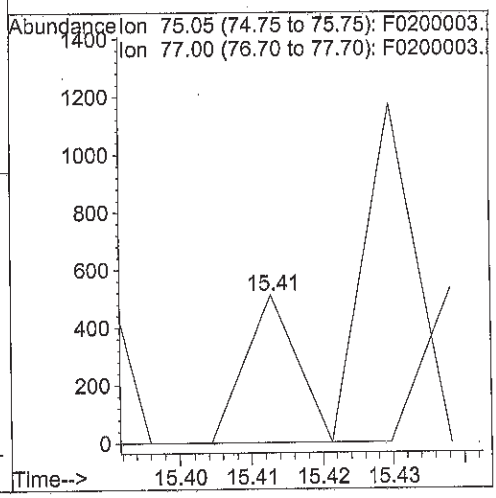


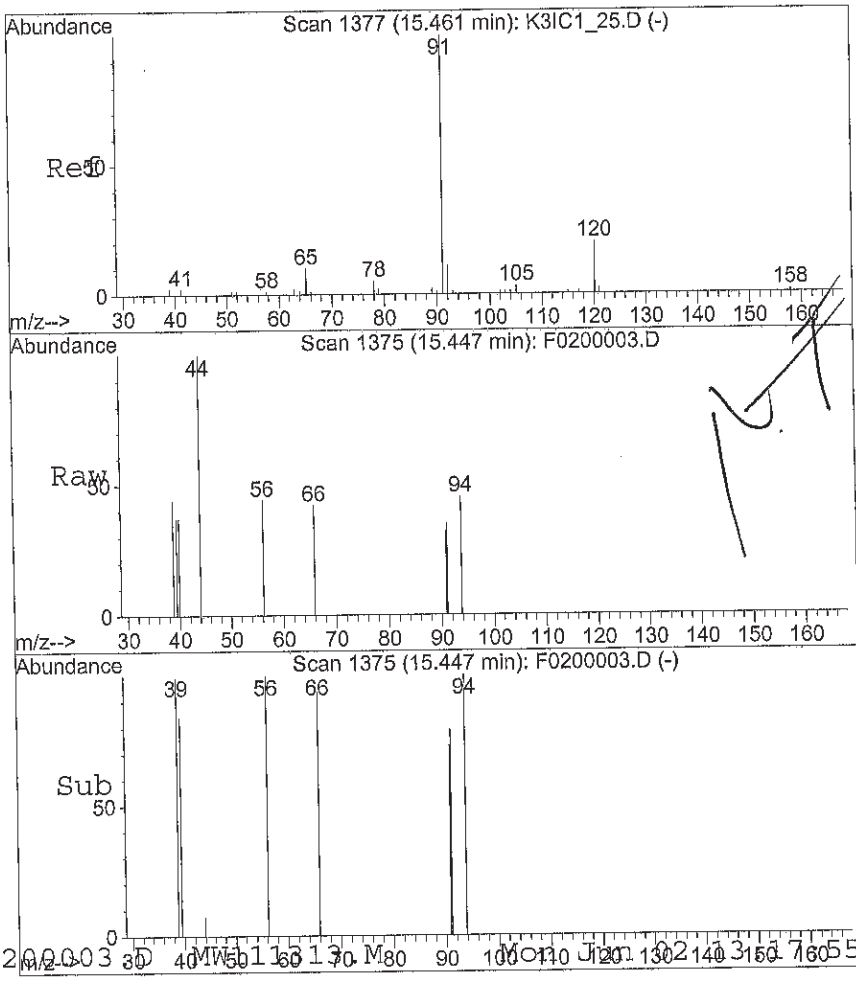


#57
1,2,3-Trichloropropane
Concen: 0.05 ug/L
RT: 15.41 min Scan# 1371
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion: 75 Resp: 259

Ion	Ratio	Lower	Upper
75	100		
77	0.0	31.2	46.8#

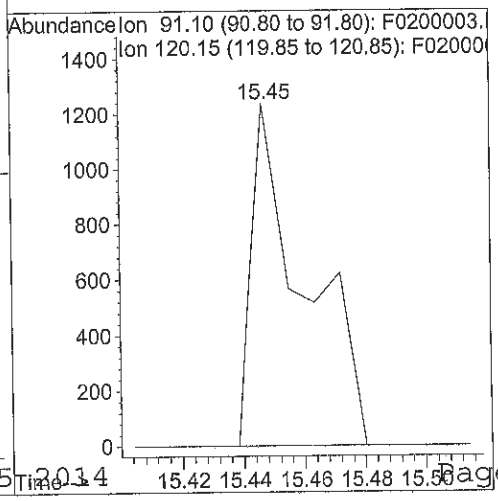


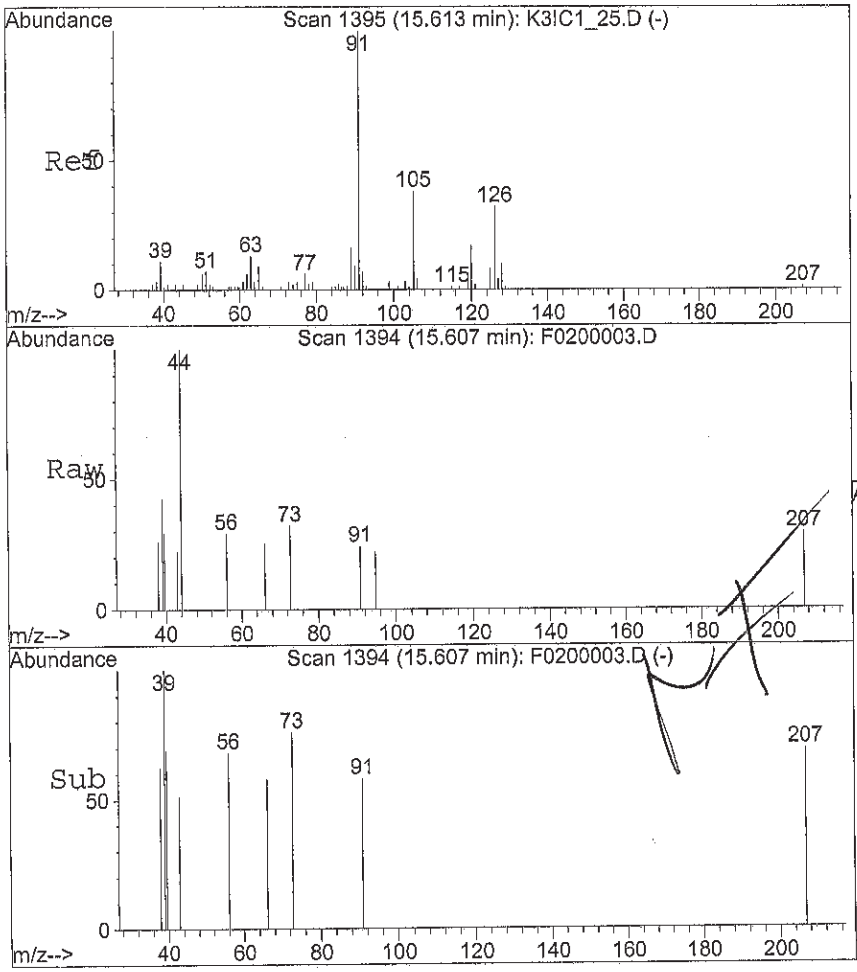


#62
n-Propylbenzene
Concen: 0.06 ug/L
RT: 15.45 min Scan# 1375
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion: 91 Resp: 1489

Ion	Ratio	Lower	Upper
91	100		
120	0.0	16.1	24.1#

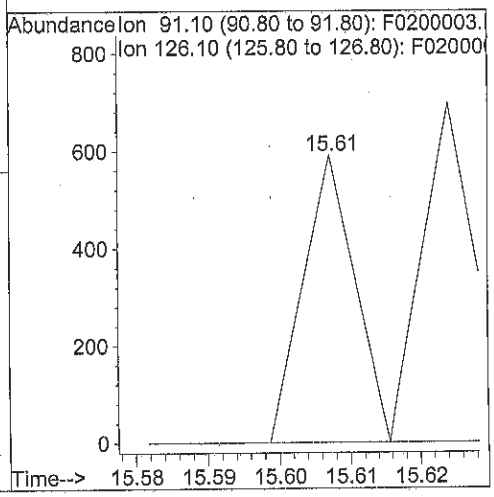


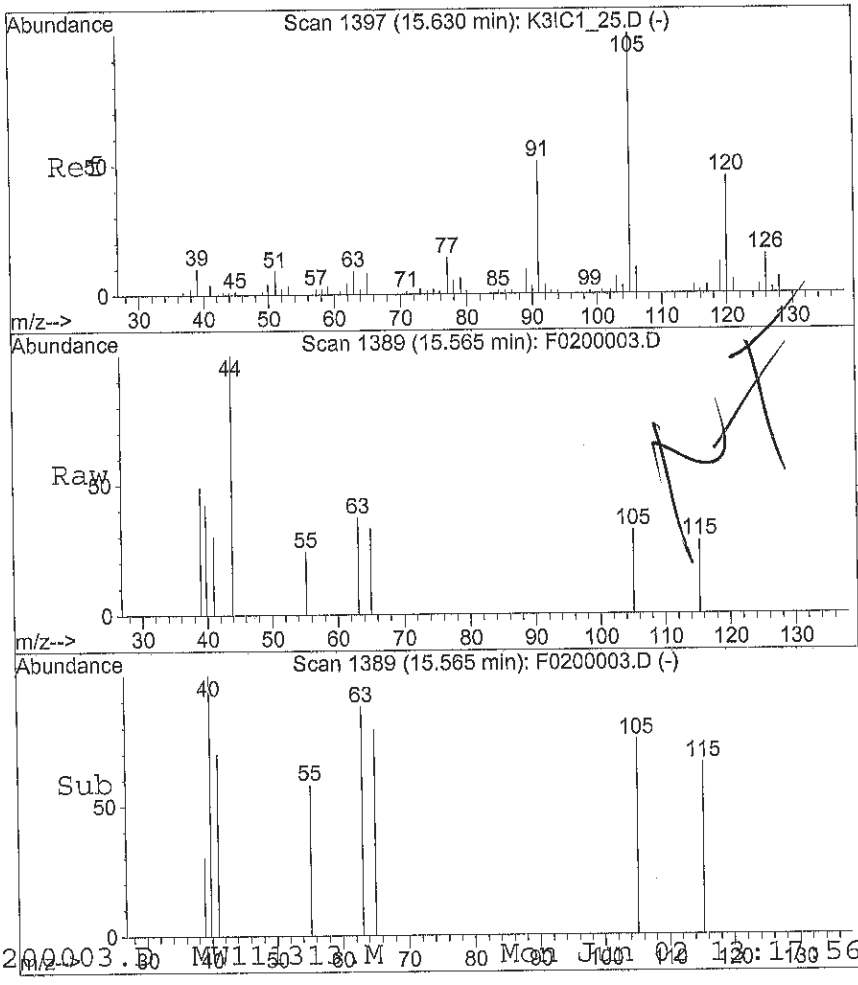


#63
2-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.61 min Scan# 1394
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion: 91 Resp: 299

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.0	36.0#

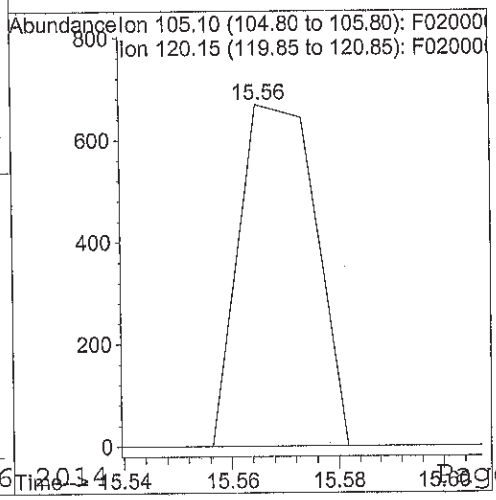


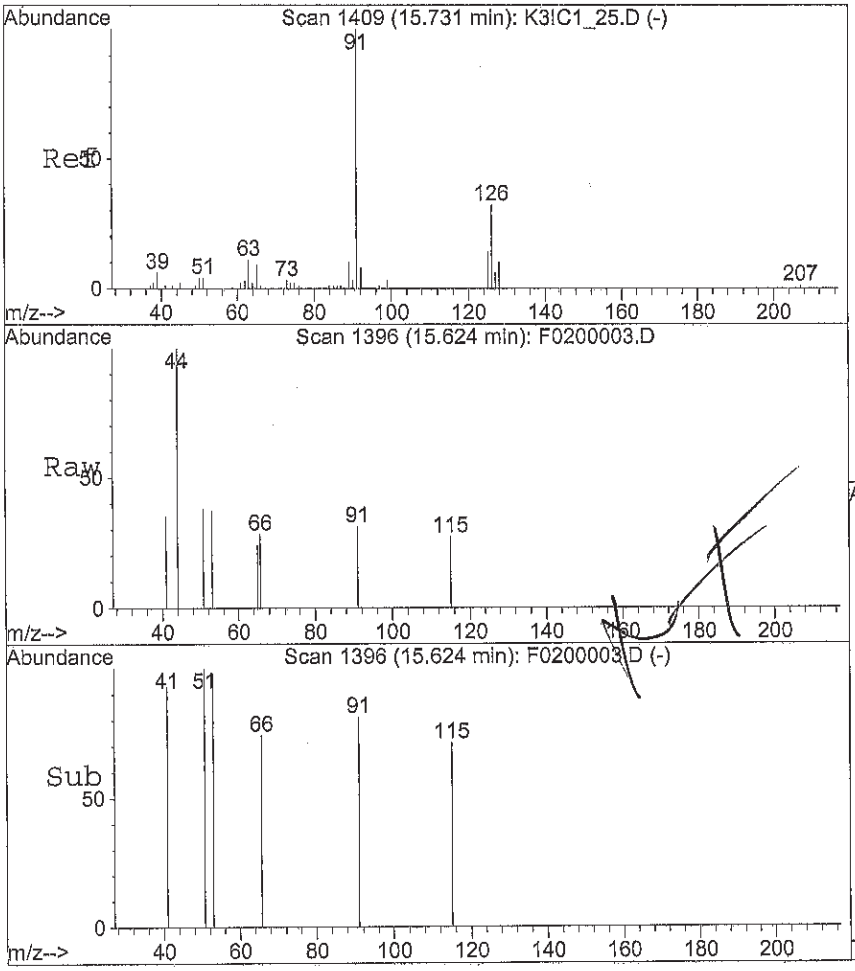


#64
1,3,5-Trimethylbenzene
Concen: 0.04 ug/L
RT: 15.56 min Scan# 1389
Delta R.T. -0.06 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion:105 Resp: 665

Ion	Ratio	Lower	Upper
105	100		
120	0.0	36.4	54.6#

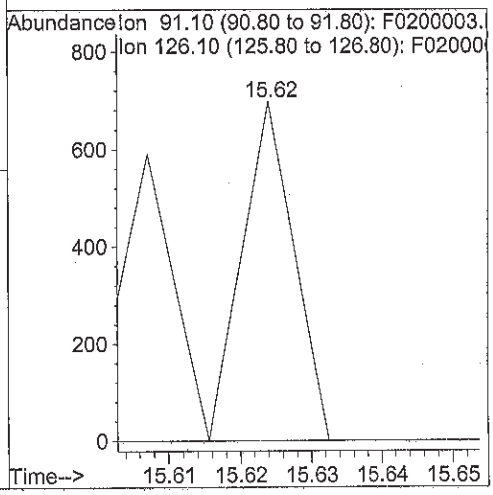


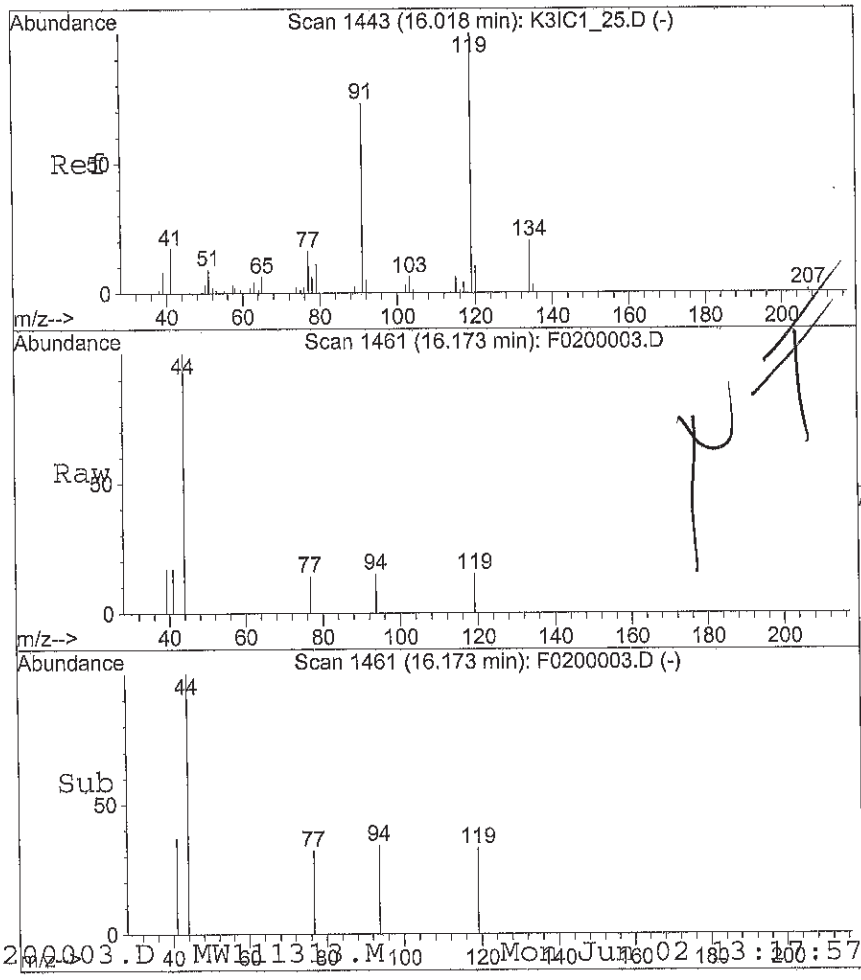


#65
4-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.62 min Scan# 1396
Delta R.T. -0.11 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion: 91 Resp: 353

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.6	36.8#

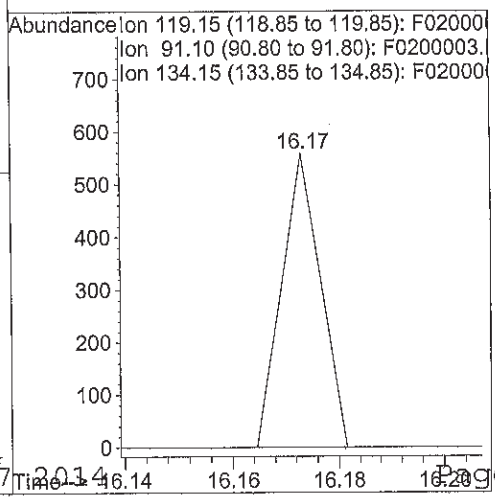


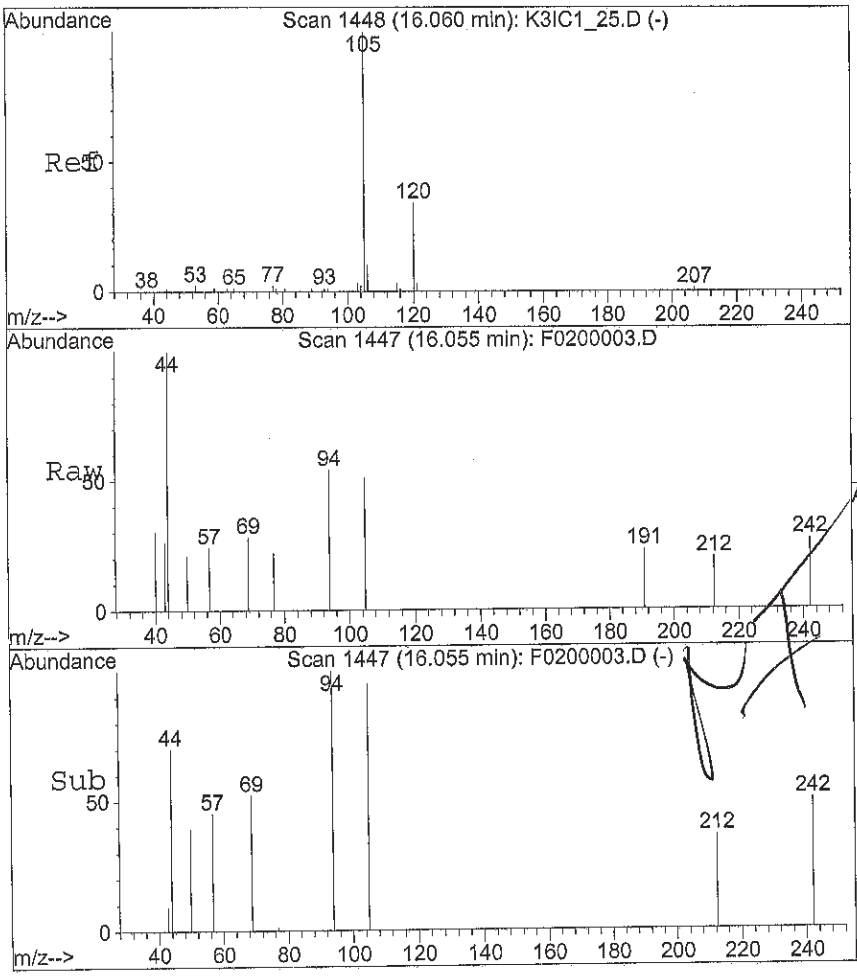


#66
tert-Butylbenzene
Concen: 0.02 ug/L
RT: 16.17 min Scan# 1461
Delta R.T. 0.15 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

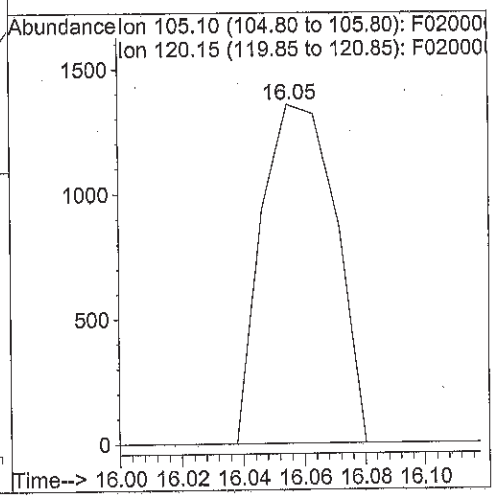


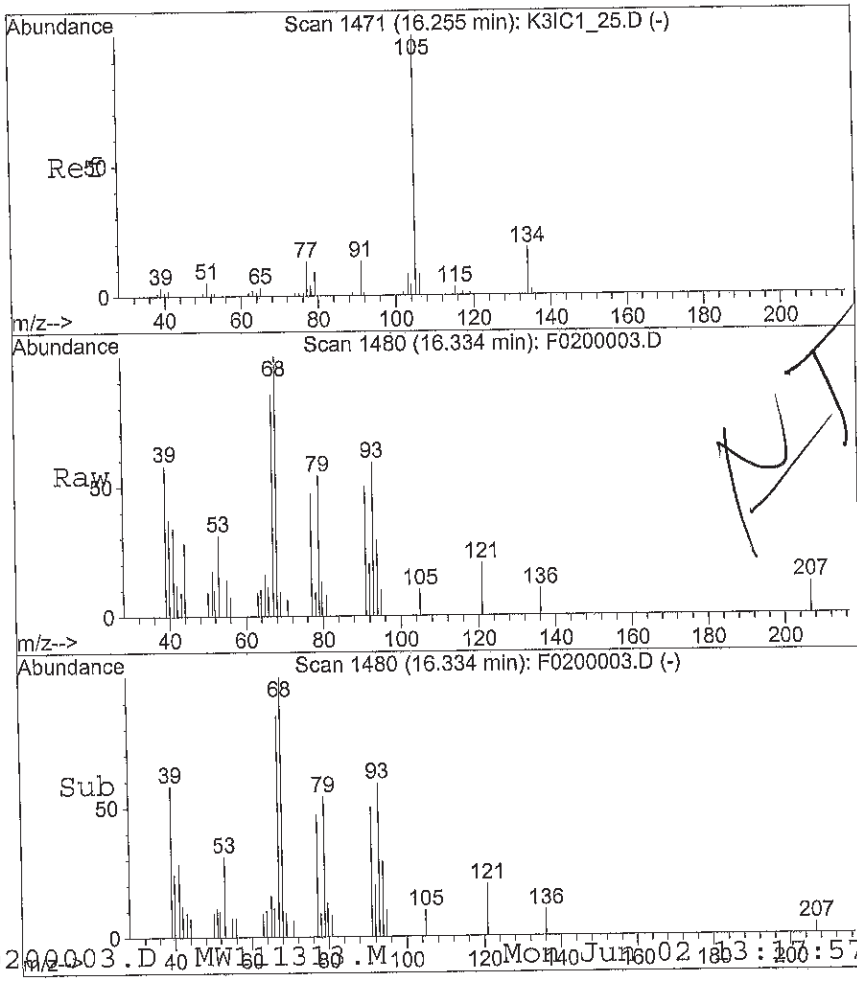


#67
1,2,4-Trimethylbenzene
Concen: 0.14 ug/L
RT: 16.05 min Scan# 1447
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion:105 Resp: 2267

Ion	Ratio	Lower	Upper
105	100		
120	0.0	33.8	50.8#

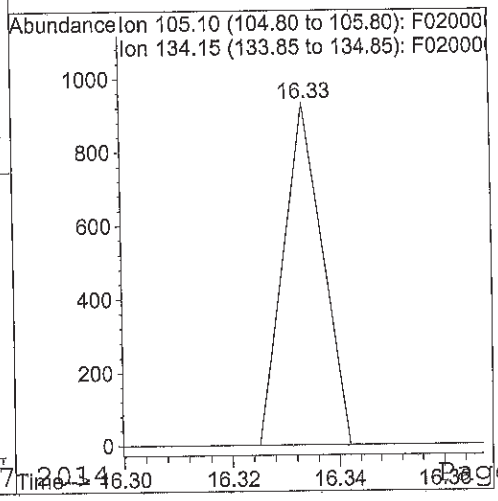


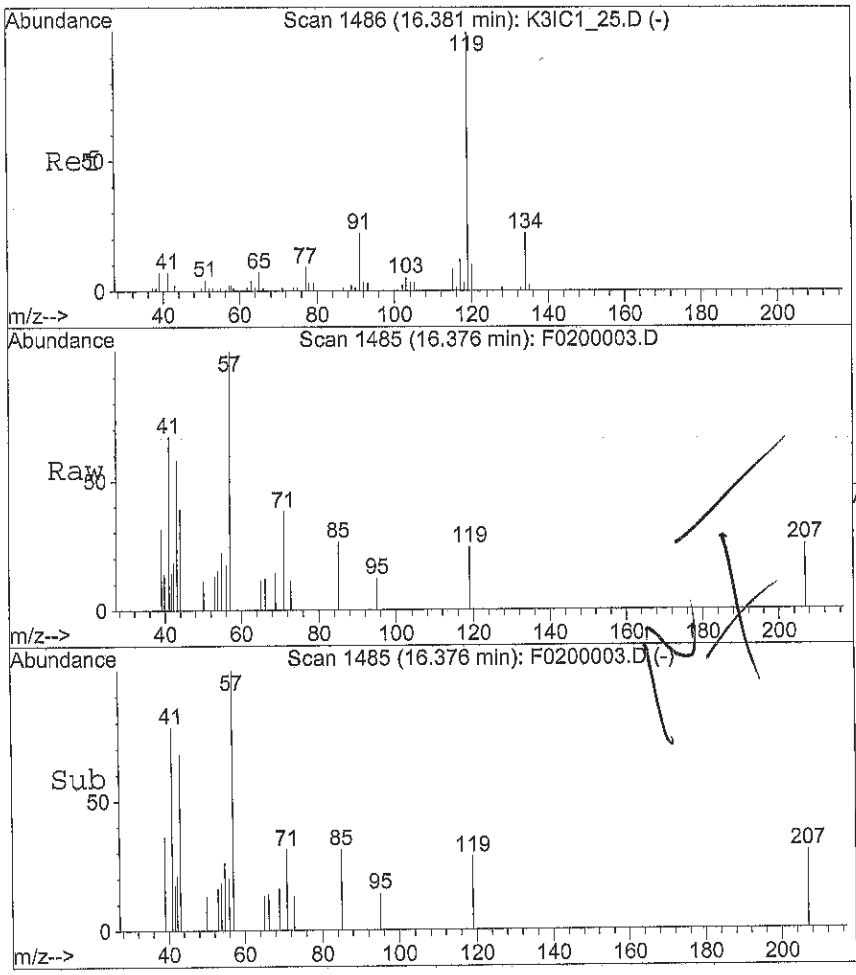


#68
sec-Butylbenzene
Concen: 0.02 ug/L
RT: 16.33 min Scan# 1480
Delta R.T. 0.08 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion:105 Resp: 472

Ion	Ratio	Lower	Upper
105	100		
134	0.0	13.0	19.6#

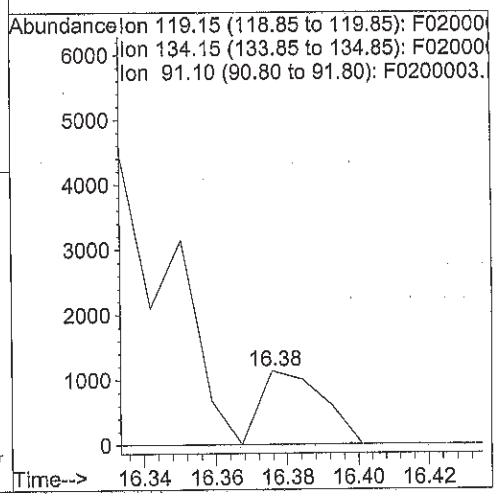


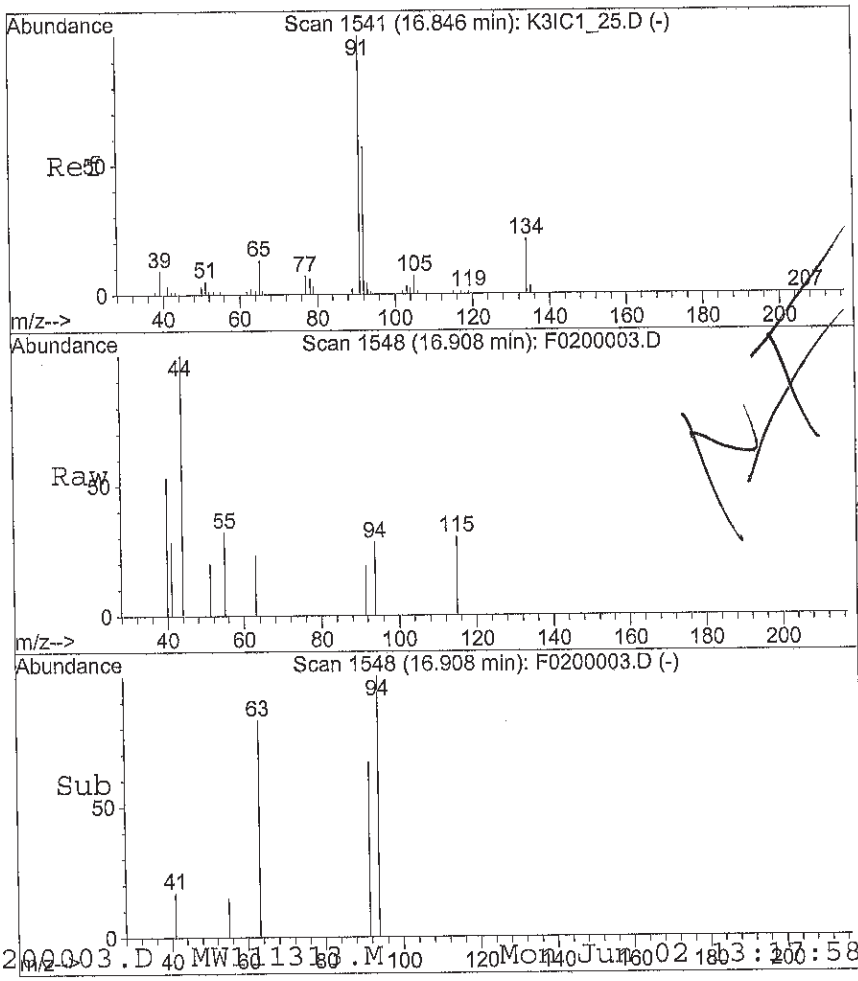


#69
p-Isopropyltoluene
Concen: 0.08 ug/L
RT: 16.38 min Scan# 1485
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

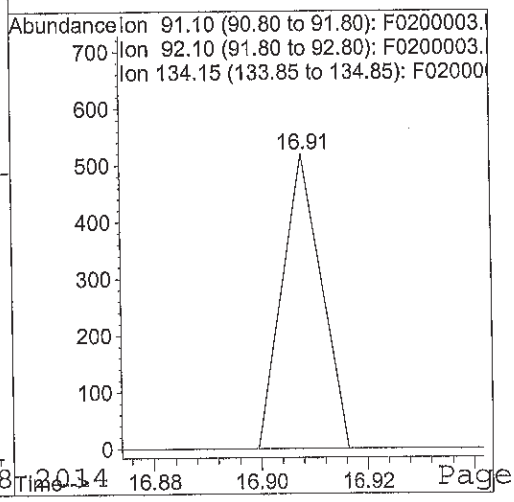


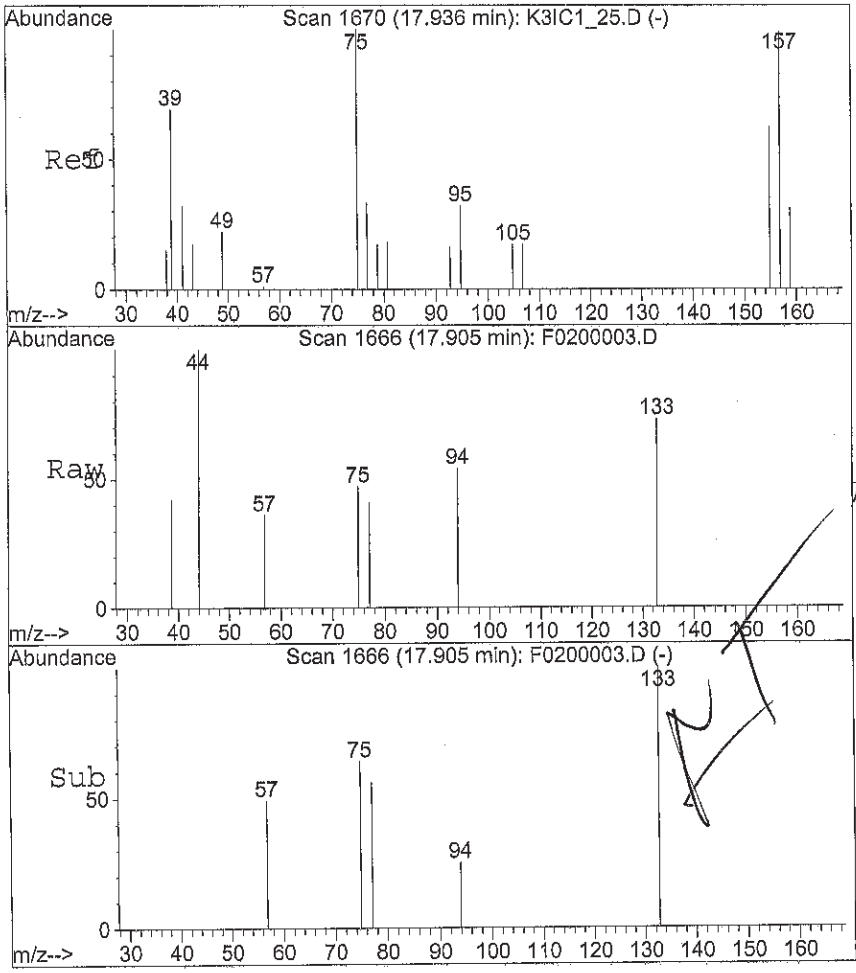


#72
n-Butylbenzene
Concen: 0.01 ug/L
RT: 16.91 min Scan# 1548
Delta R.T. 0.06 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

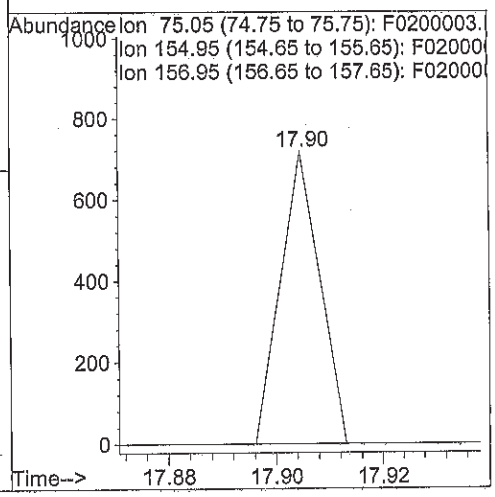


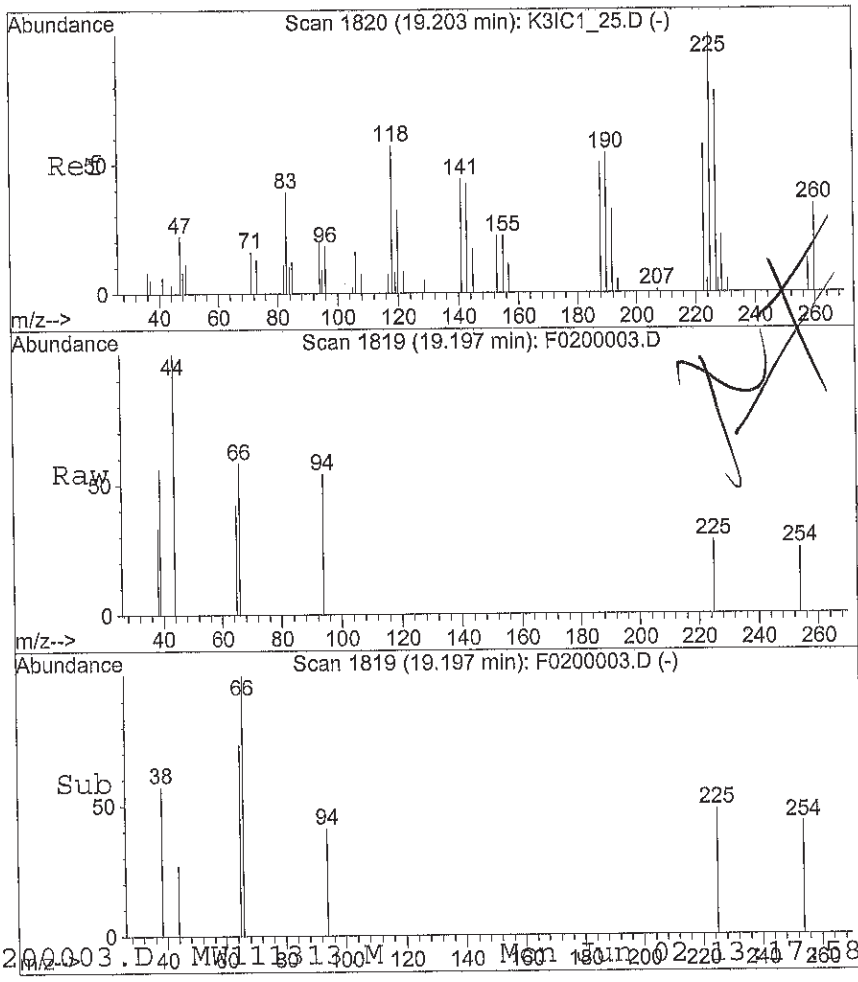


#74
1,2-Dibromo-3-chloropropane
Concen: 1.37 ug/L
RT: 17.90 min Scan# 1666
Delta R.T. -0.03 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

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#

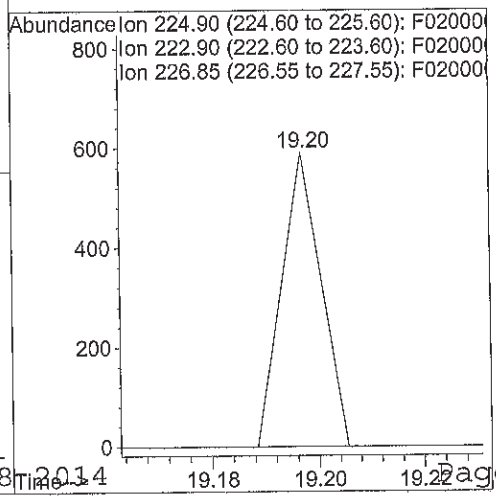


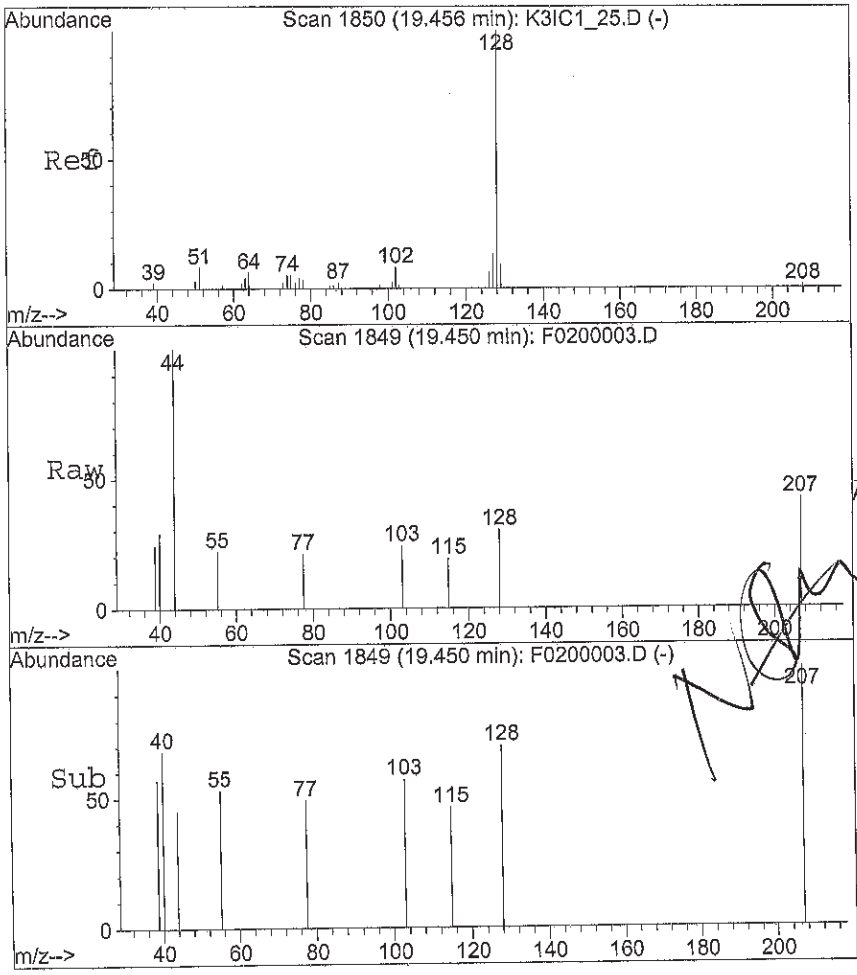


#76
Hexachlorobutadiene
Concen: 0.26 ug/L
RT: 19.20 min Scan# 1819
Delta R.T. -0.01 min
Lab File: F0200003.D
Acq: 2 Jun 2014 12:51 pm

Tgt Ion:225 Resp: 299

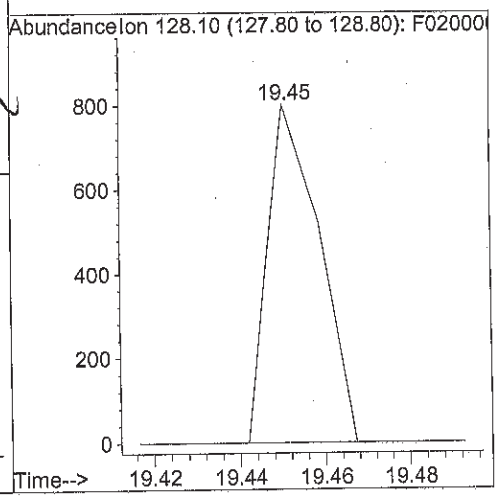
Ion	Ratio	Lower	Upper
225	100		
223	0.0	52.0	78.0#
227	0.0	50.6	75.8#





#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



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\060214L3\F0200003.D Vial: 2
Acq On : 2 Jun 2014 12:51 pm Operator: DN
Sample : 34F0201-DUP1 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 7:30 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	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

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

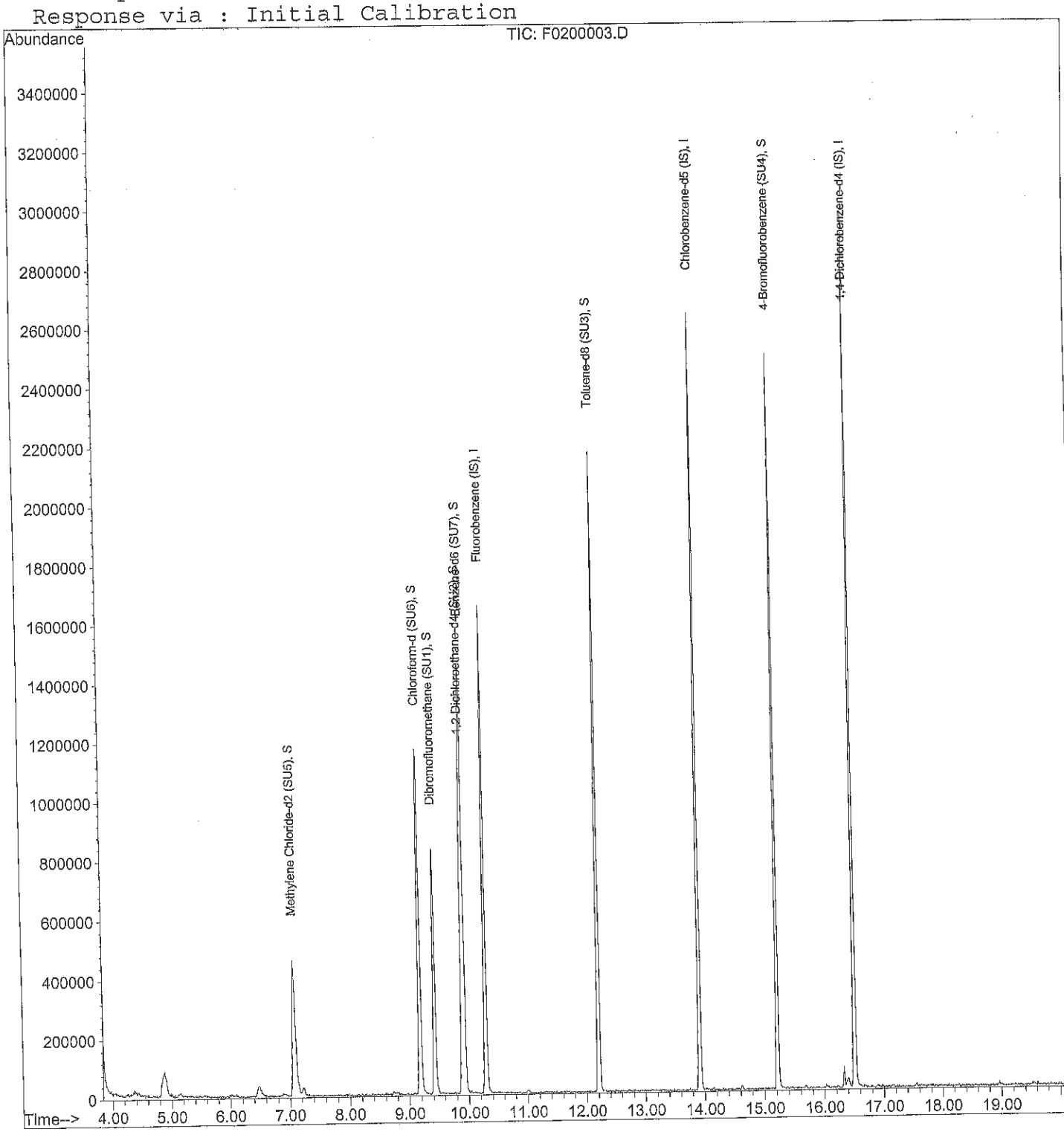
Quantitation Report

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

Quantitation Report (QT Reviewed)

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

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						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 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
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-Pentanon	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

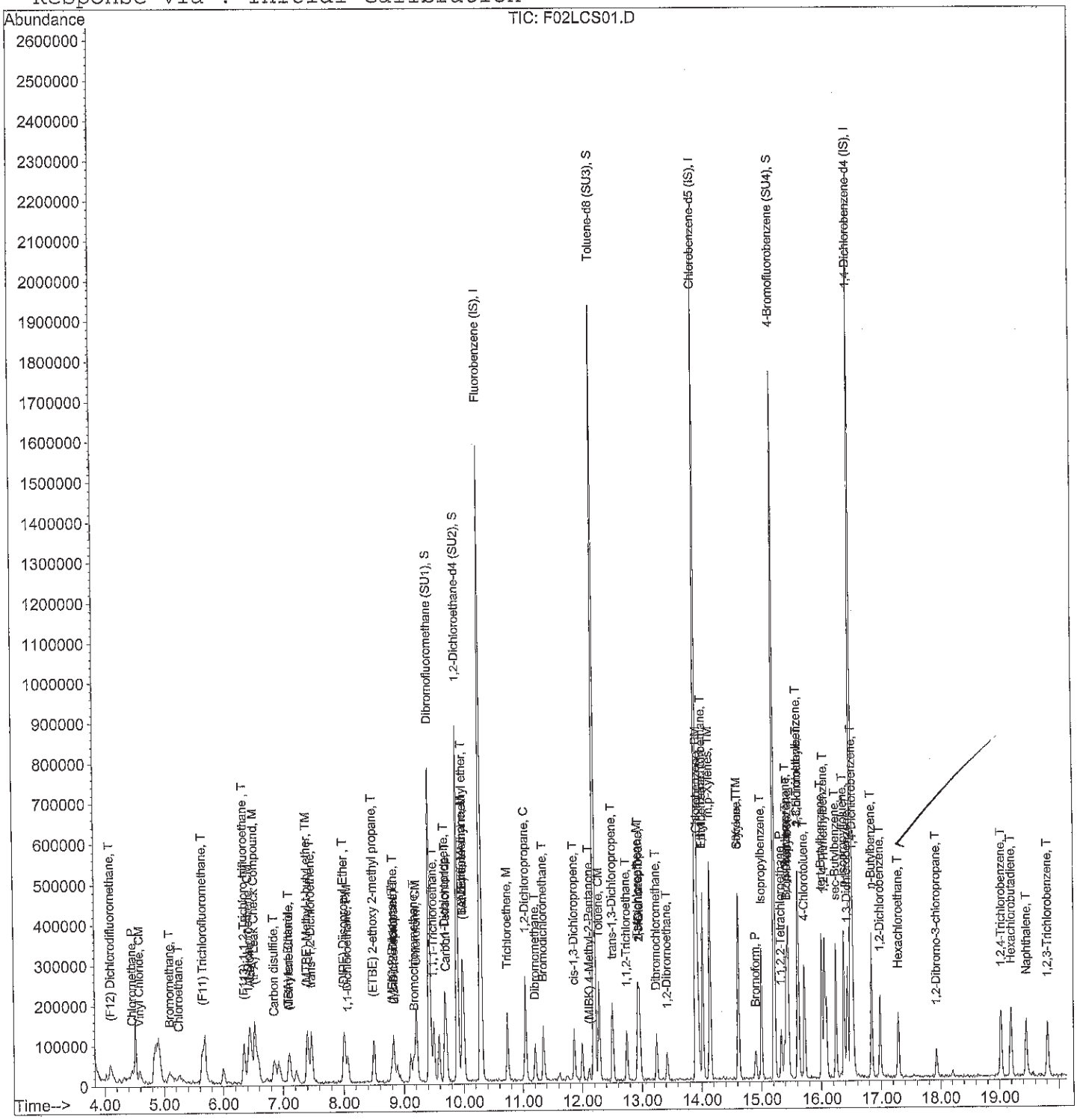
Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
Title : 8260B GC/MS #3 ICAL 11/13/13 DN
Last Update : Wed Nov 13 19:38:32 2013
Response via : Initial Calibration
DataAcq Meth : MW111313

	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

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

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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Quantitation Report (QT Reviewed)

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/H20 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

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 #	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 #	1
12) (IPA) Leak Check Compound	6.53	45	6298	32.12	ug/L #	57
13) Carbon disulfide	6.74	76	366	0.03	ug/L #	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 #	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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\060214L3\F02BLK01.D
Acq On : 2 Jun 2014 11:15 am
Sample : 34F0201-BLK1
Misc : 100cc AMBIENT AIR/H20
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

AF

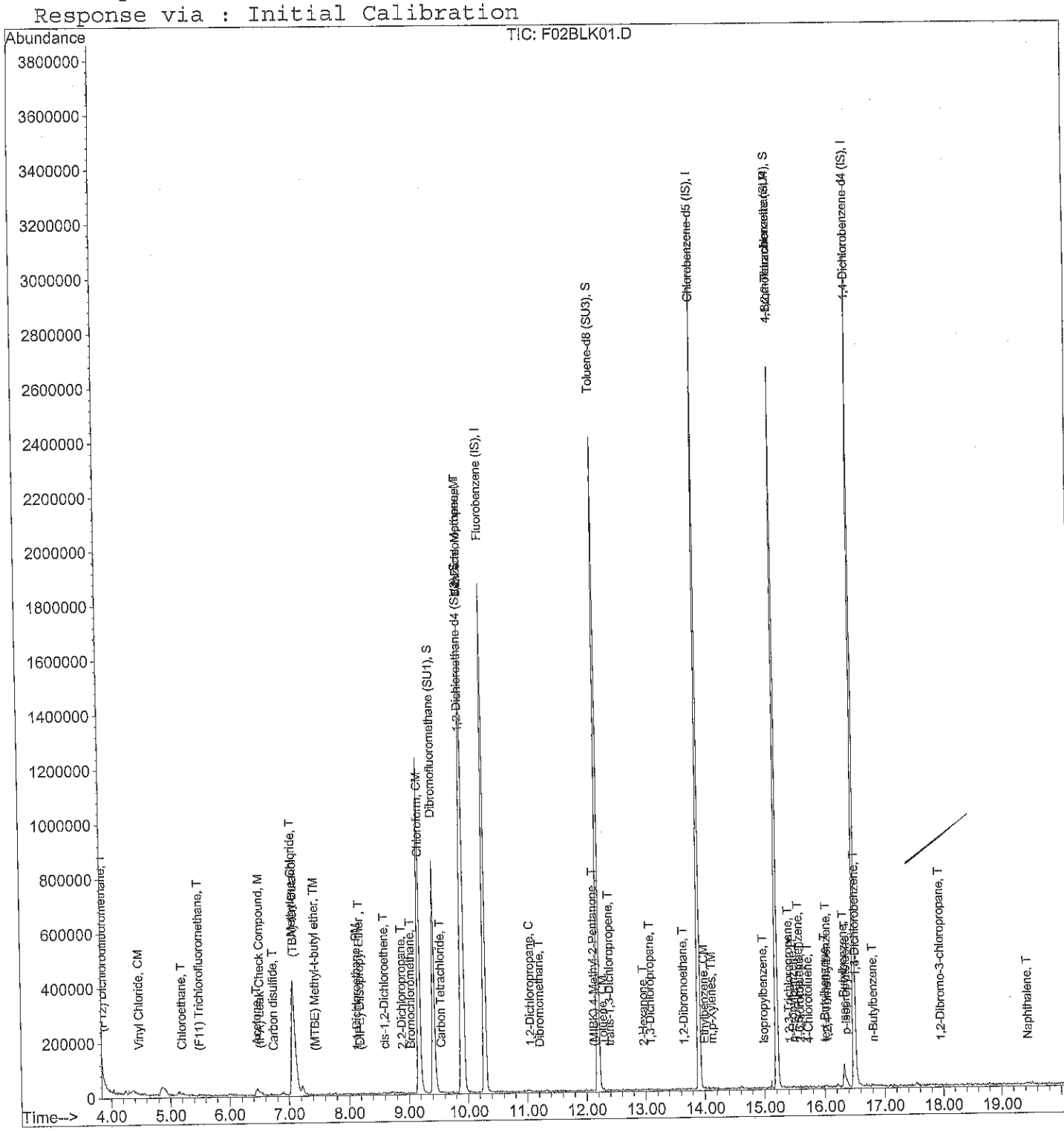
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
34) 1,2-Dichloropropane	11.05	63	610	0.17 ~~ug/L~~ #	25
35) Dibromomethane	11.21	93	297	0.10 ug/L #	19
40) (MIBK) 4-Methyl-2-Pentanon	12.14	43	568	0.19 ~~ug/L~~ #	100
41) Toluene	12.28	91	1411	0.07 ug/L # 0.0014	1
42) trans-1,3-Dichloropropene	12.41	75	270	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

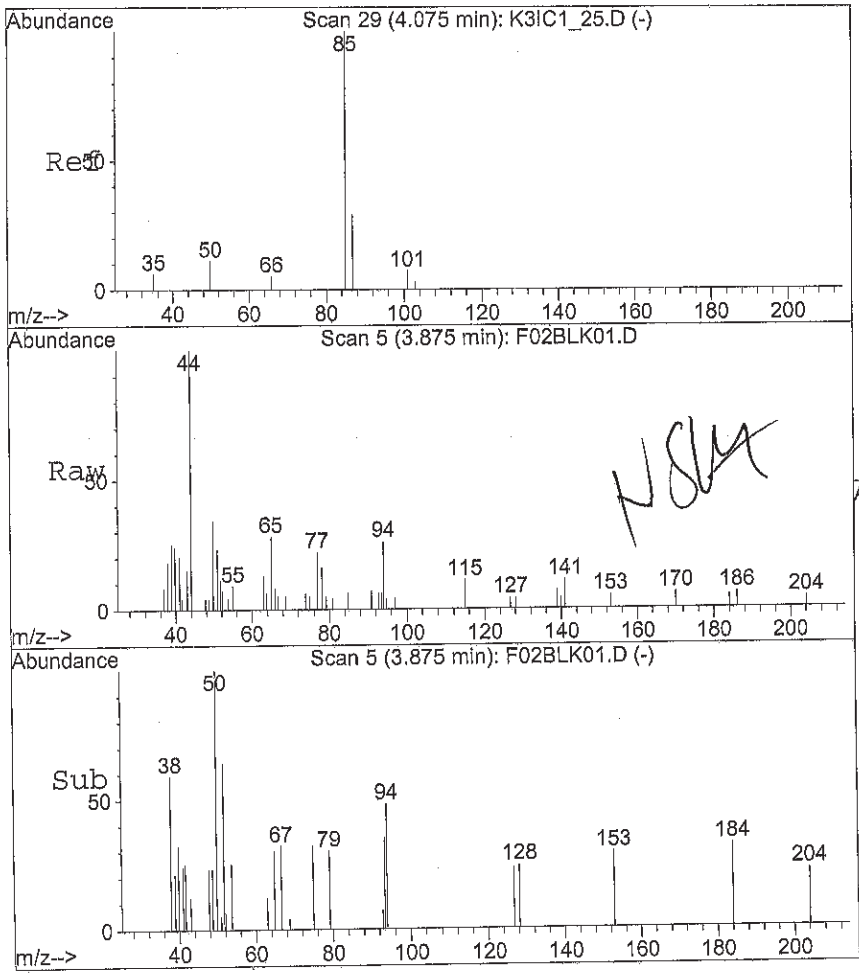
(#) = qualifier out of range (m) = manual integration

Quantitation Report

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/H20 Multiplr: 10.00
MS Integration Params: rteint.p
Quant Time: Jun 2 12:33 19114 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

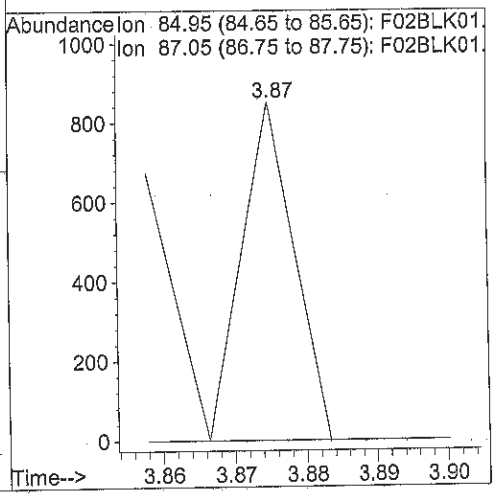


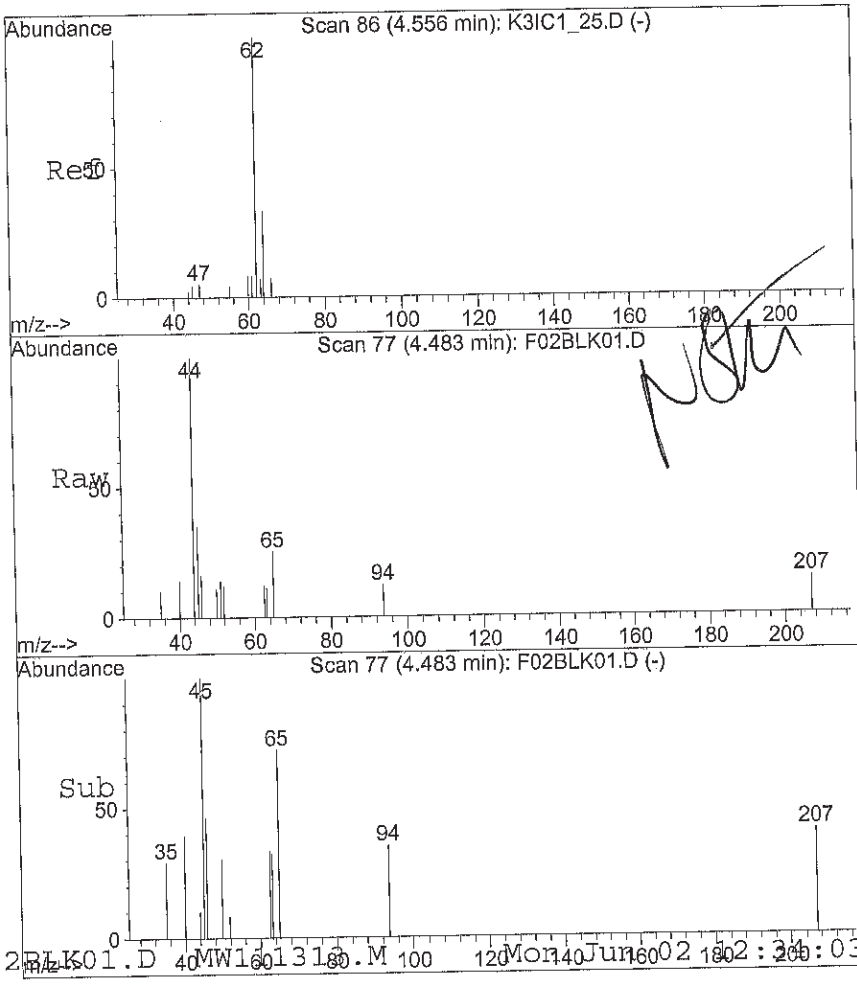


#3
(F12) Dichlorodifluoromethane
Concen: 0.11 ug/L
RT: 3.87 min Scan# 5
Delta R.T. -0.20 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 85 Resp: 431

Ion	Ratio	Lower	Upper
85	100		
87	0.0	24.6	37.0#

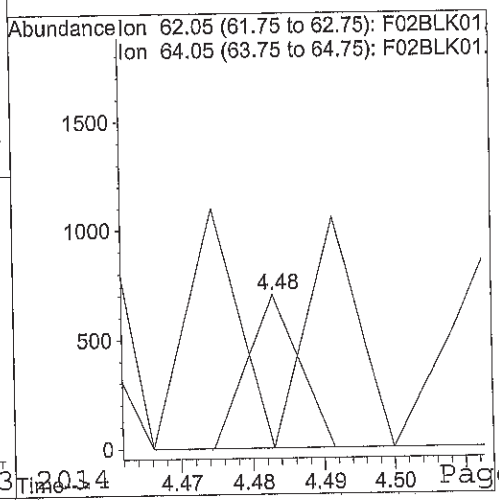


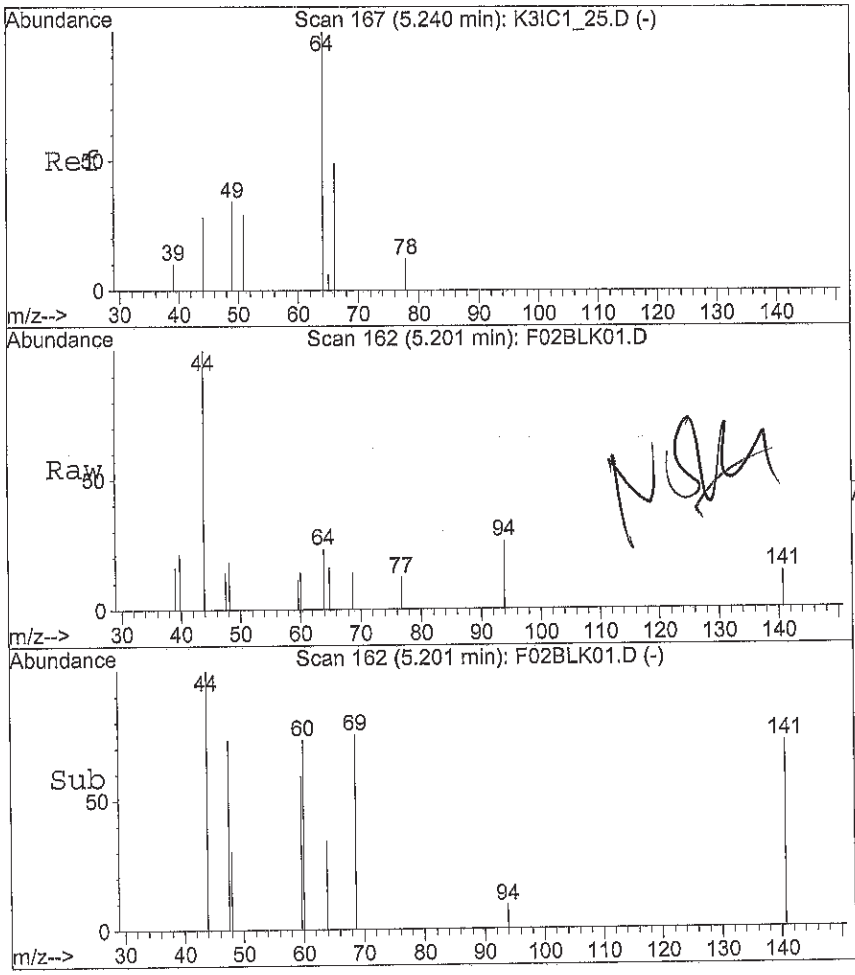


#5
Vinyl Chloride
Concen: 0.12 ug/L
RT: 4.48 min Scan# 77
Delta R.T. -0.07 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 62 Resp: 356

Ion	Ratio	Lower	Upper
62	100		
64	150.0	25.6	38.4#

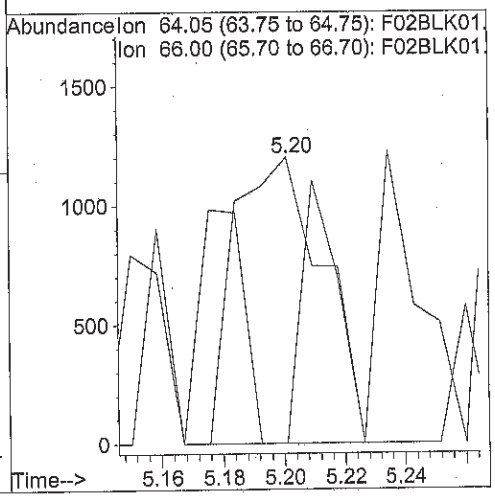


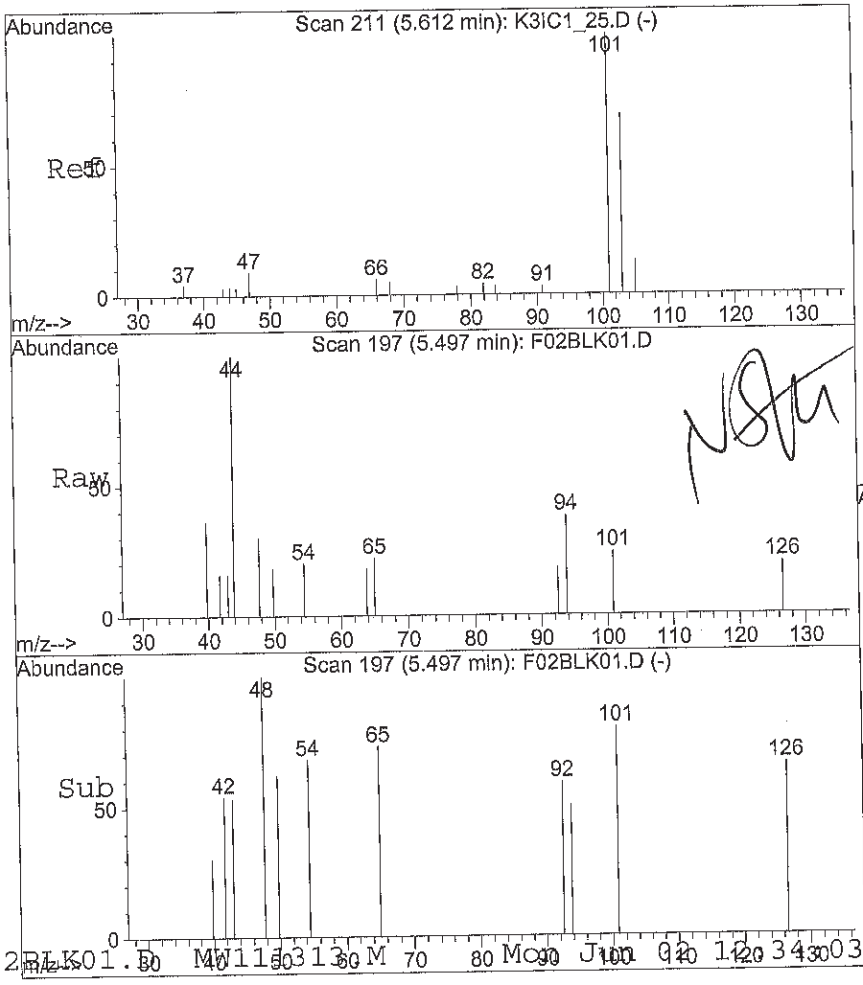


#7
Chloroethane
Concen: 2.47 ug/L
RT: 5.20 min Scan# 162
Delta R.T. -0.04 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 64 Resp: 2426

Ion	Ratio	Lower	Upper
64	100		
66	37.6	35.4	53.0

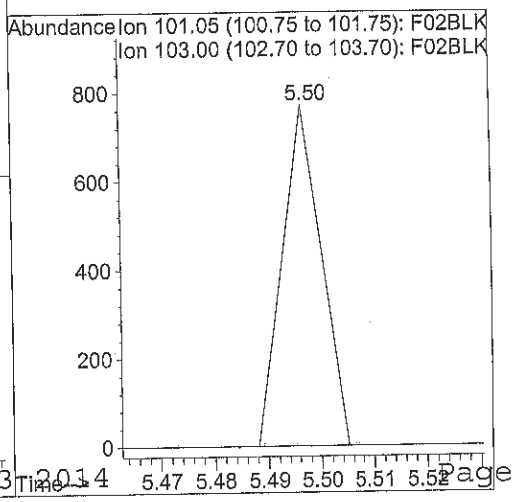


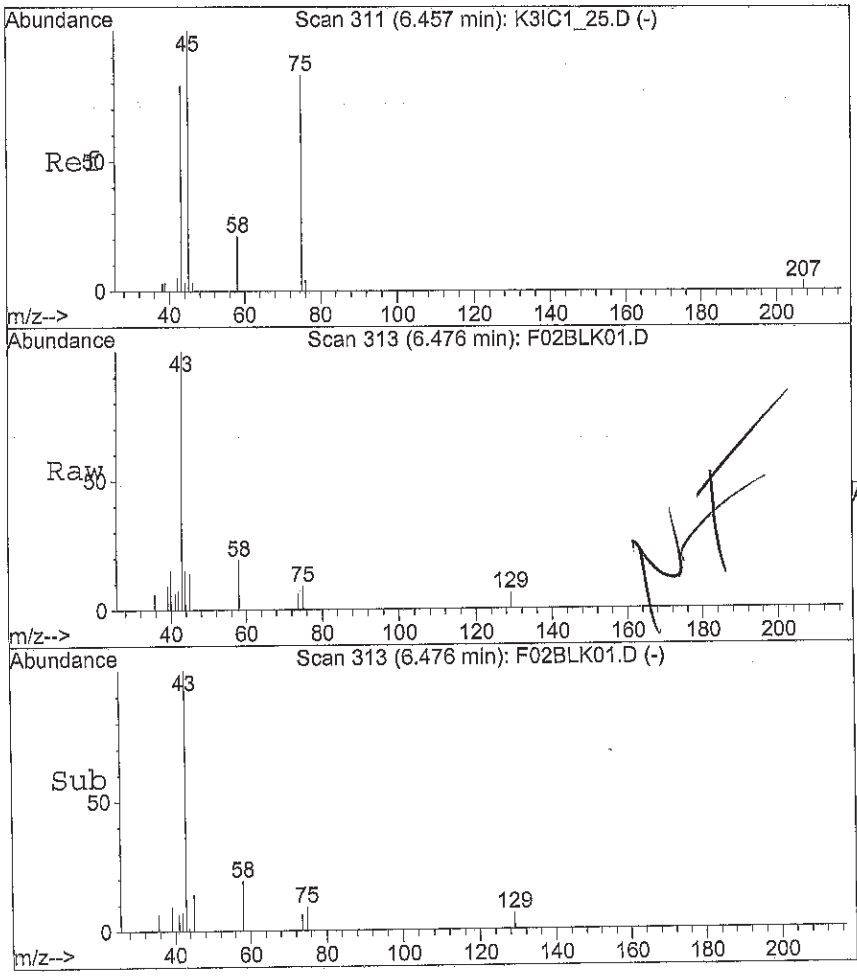


#8
(F11) Trichlorofluoromethane
Concen: 0.09 ug/L
RT: 5.50 min Scan# 197
Delta R.T. -0.12 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion:101 Resp: 391

Ion	Ratio	Lower	Upper
101	100		
103	0.0	54.5	81.7#

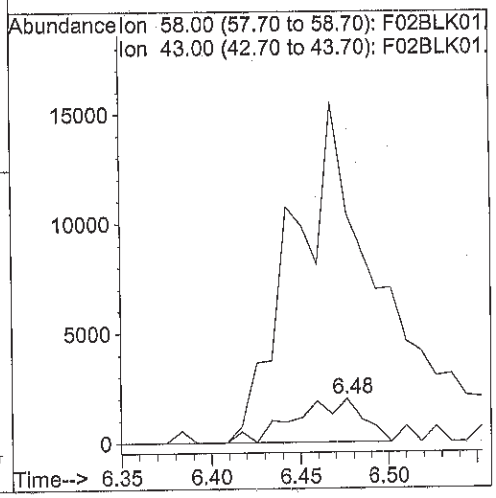


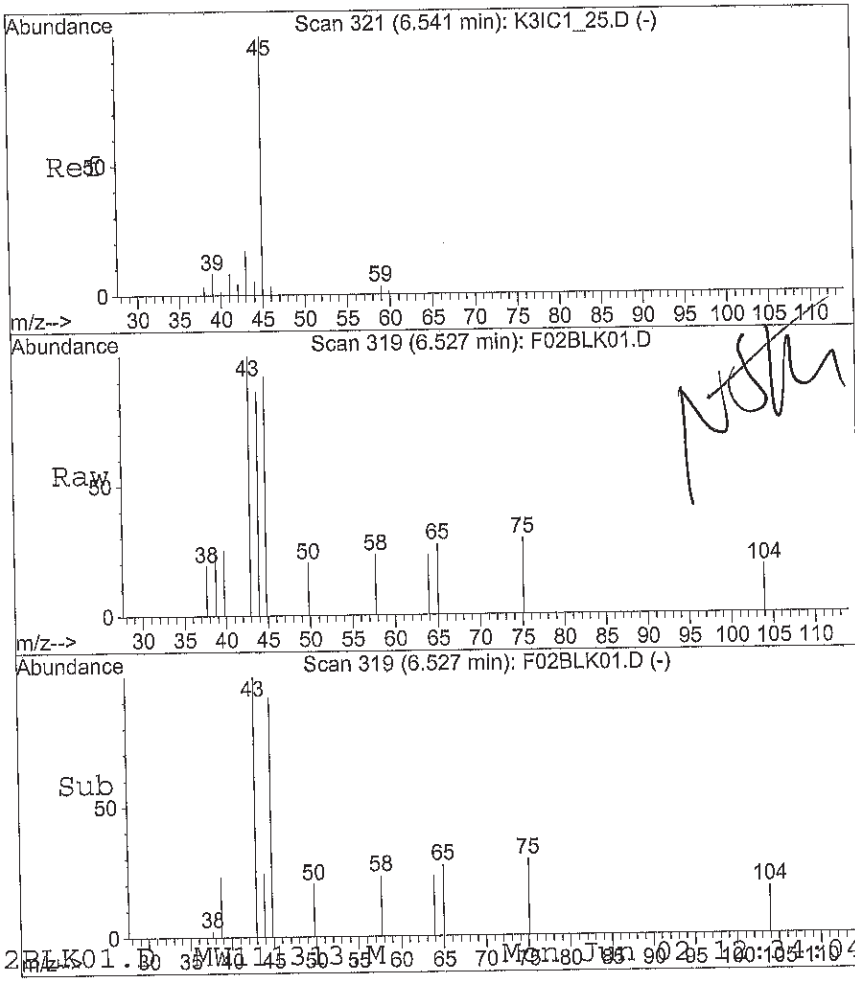


#11
Acetone
Concen: 3.30 ug/L
RT: 6.48 min Scan# 313
Delta R.T. 0.02 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 58 Resp: 5279

Ion	Ratio	Lower	Upper
58	100		
43	1012.3	360.9	541.3#

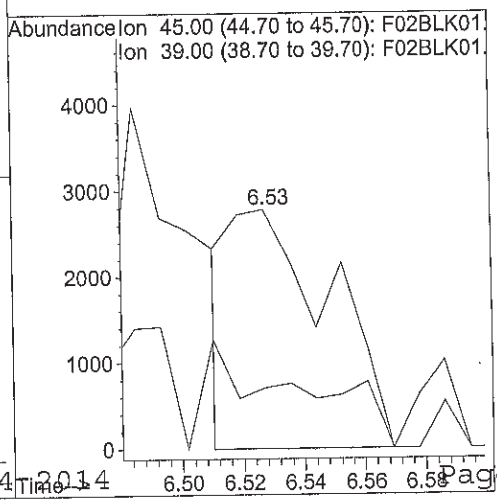


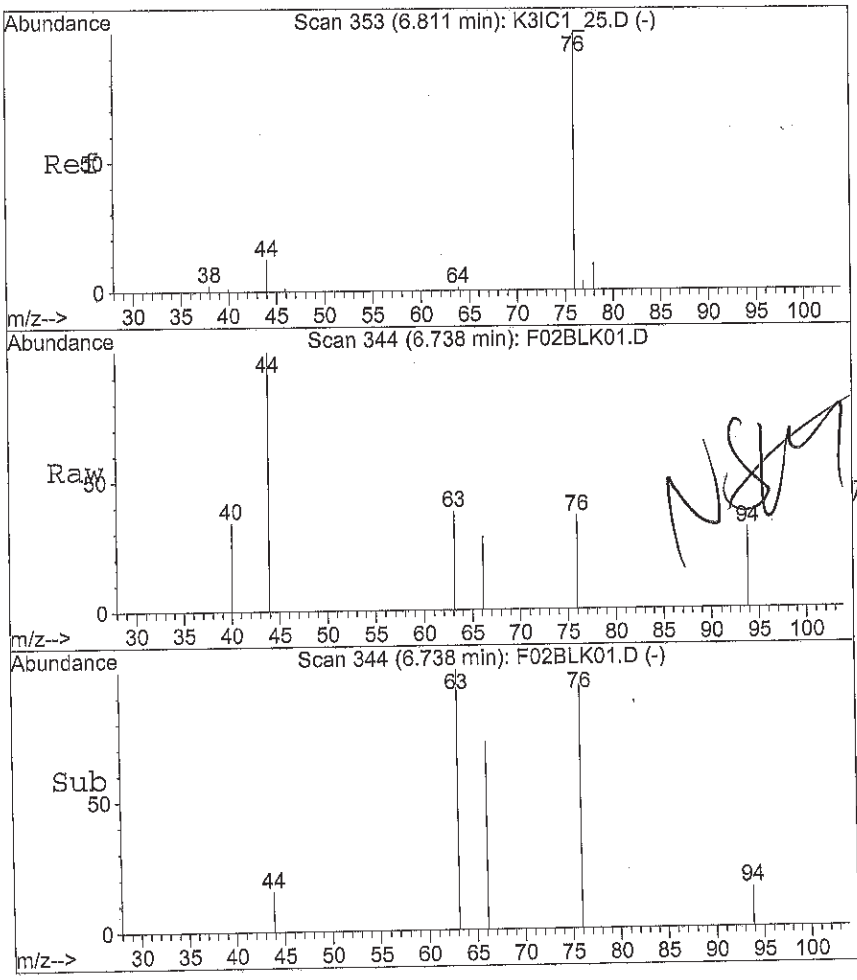


#12
(IPA) Leak Check Compound
Concen: 32.12 ug/L
RT: 6.53 min Scan# 319
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 45 Resp: 6298

Ion	Ratio	Lower	Upper
45	100		
39	20.6	4.9	7.3#

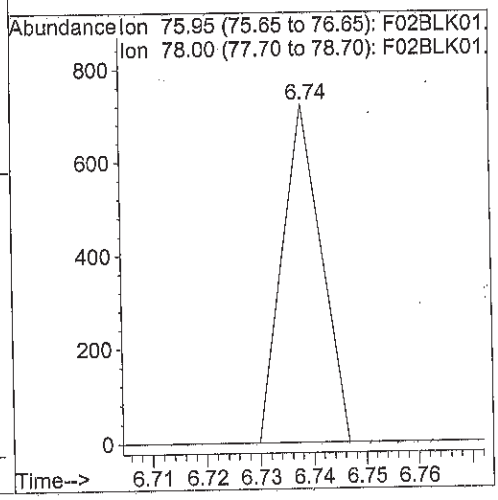


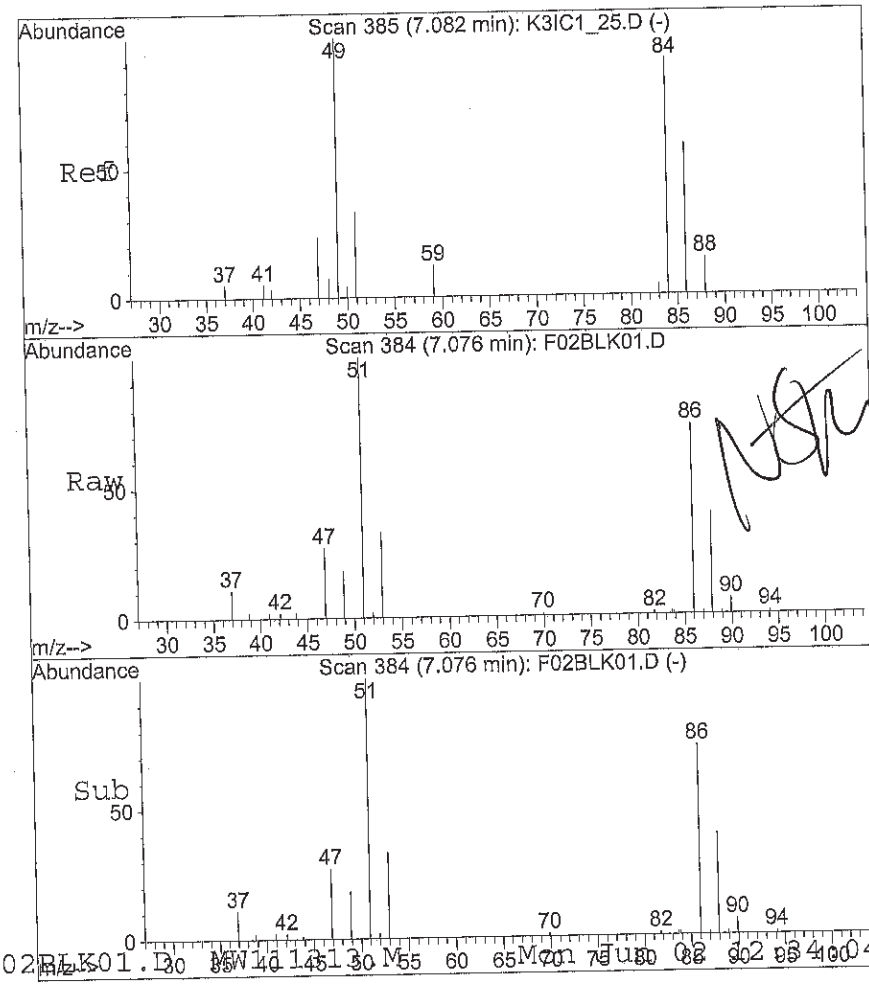


#13
Carbon disulfide
Concen: 0.03 ug/L
RT: 6.74 min Scan# 344
Delta R.T. -0.07 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 76 Resp: 366

Ion	Ratio	Lower	Upper
76	100		
78	0.0	7.0	10.4#

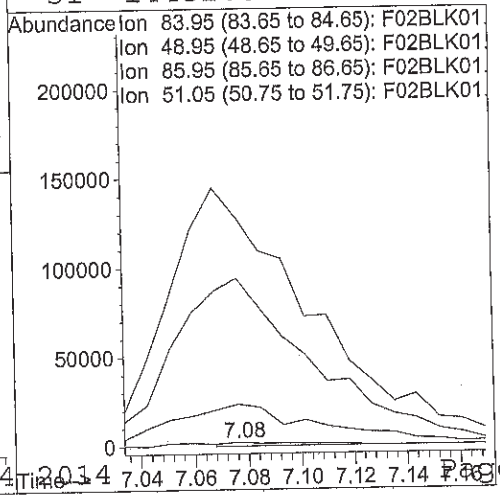


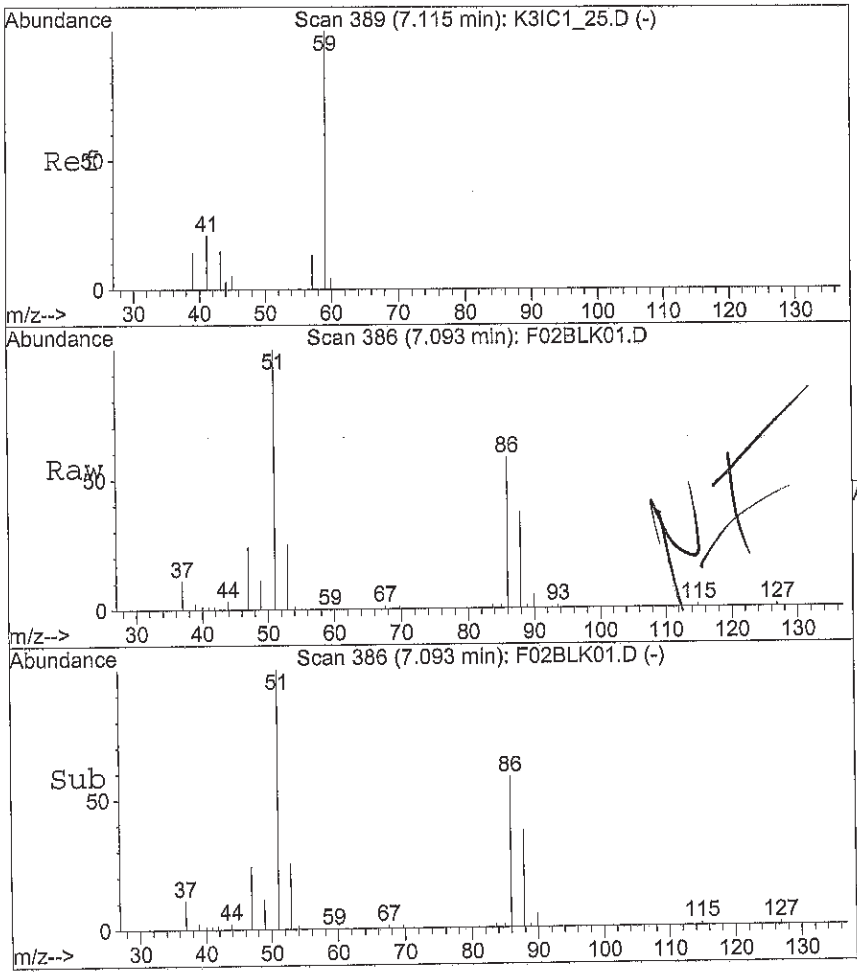


#14
Methylene Chloride
Concen: 0.87 ug/L
RT: 7.08 min Scan# 384
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

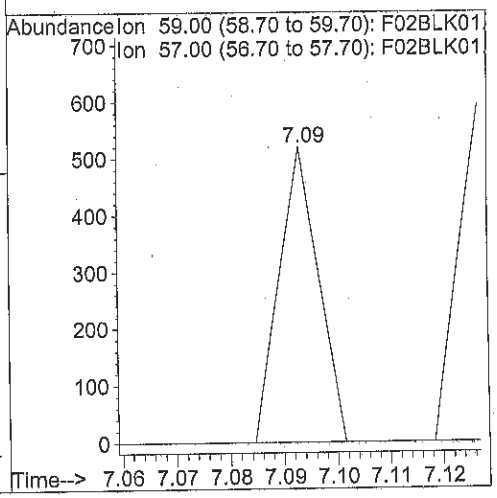


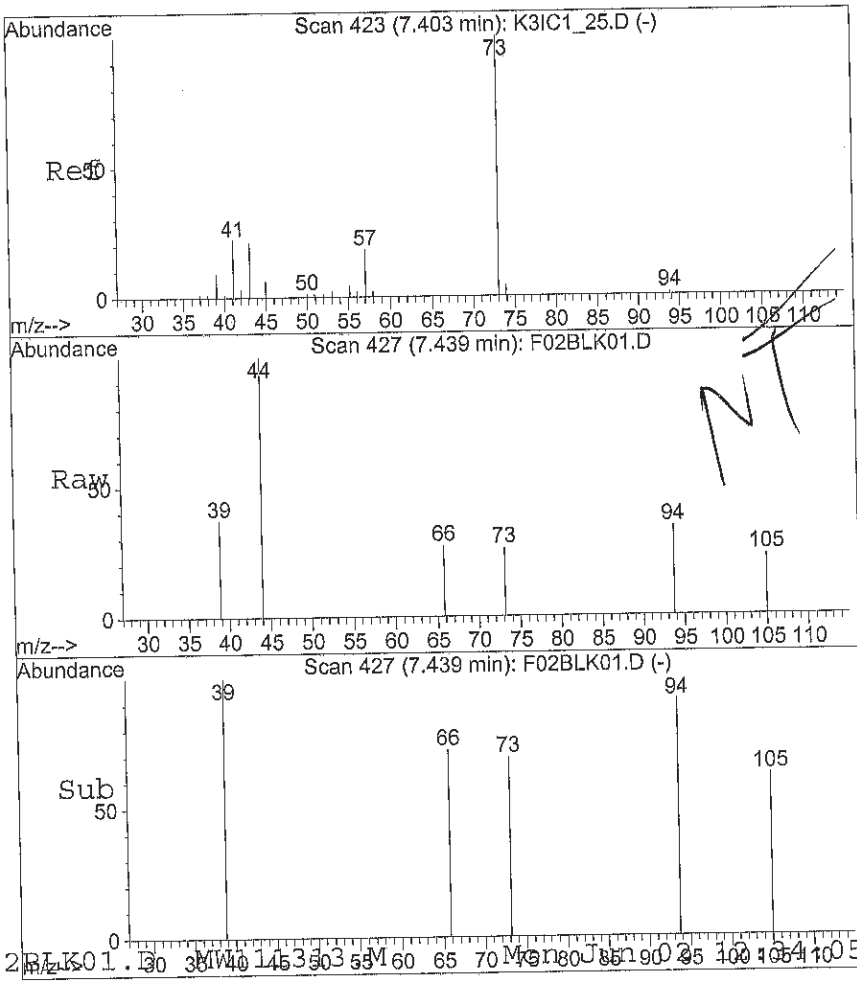


#15
(TBA) tert-Butanol
Concen: 0.94 ug/L
RT: 7.09 min Scan# 386
Delta R.T. -0.02 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 59 Resp: 263

Ion	Ratio	Lower	Upper
59	100		
57	0.0	6.4	9.6#

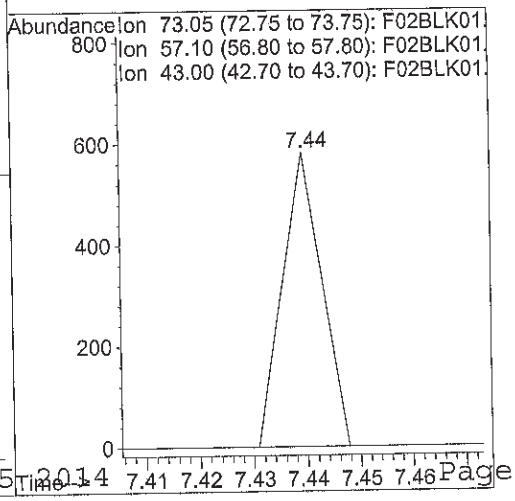


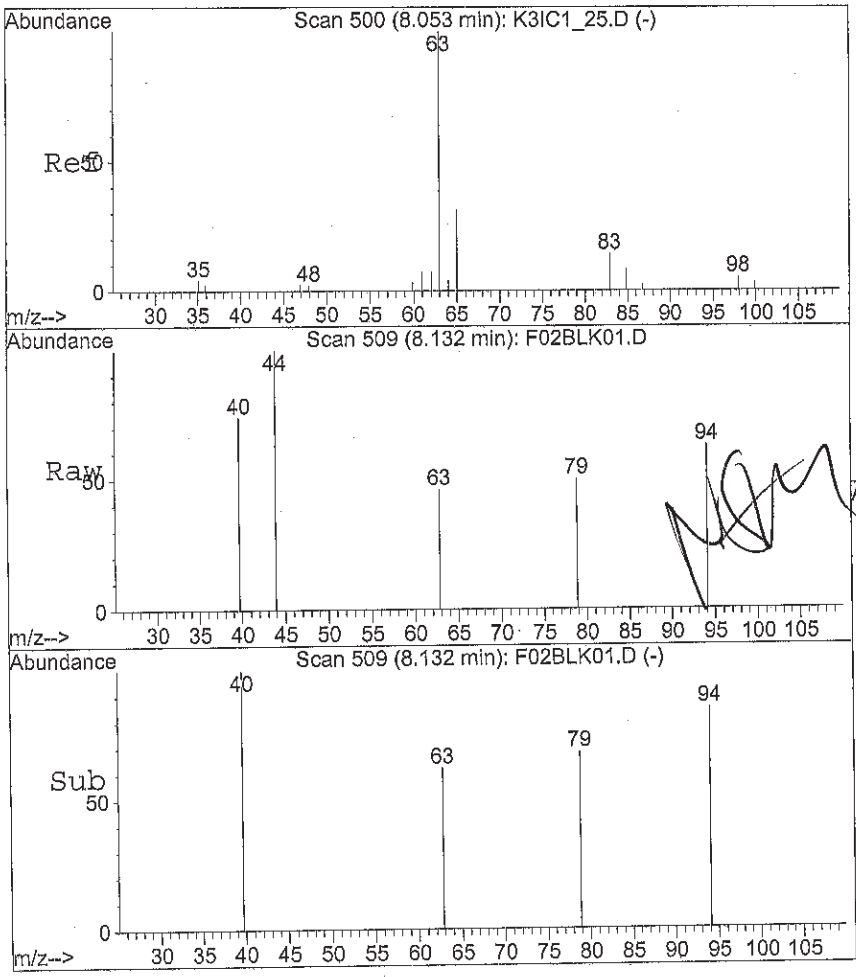


#16
(MTBE) Methyl-t-butyl ether
Concen: 0.03 ug/L
RT: 7.44 min Scan# 427
Delta R.T. 0.04 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

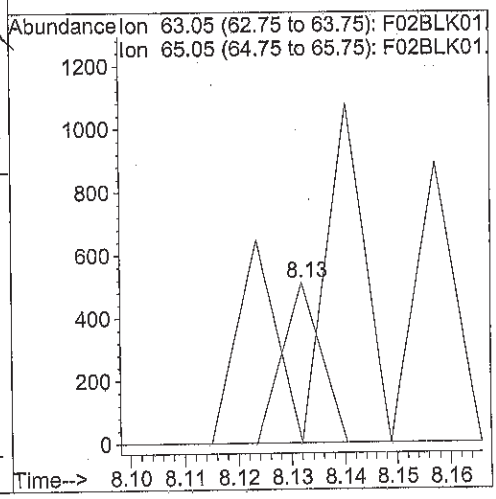


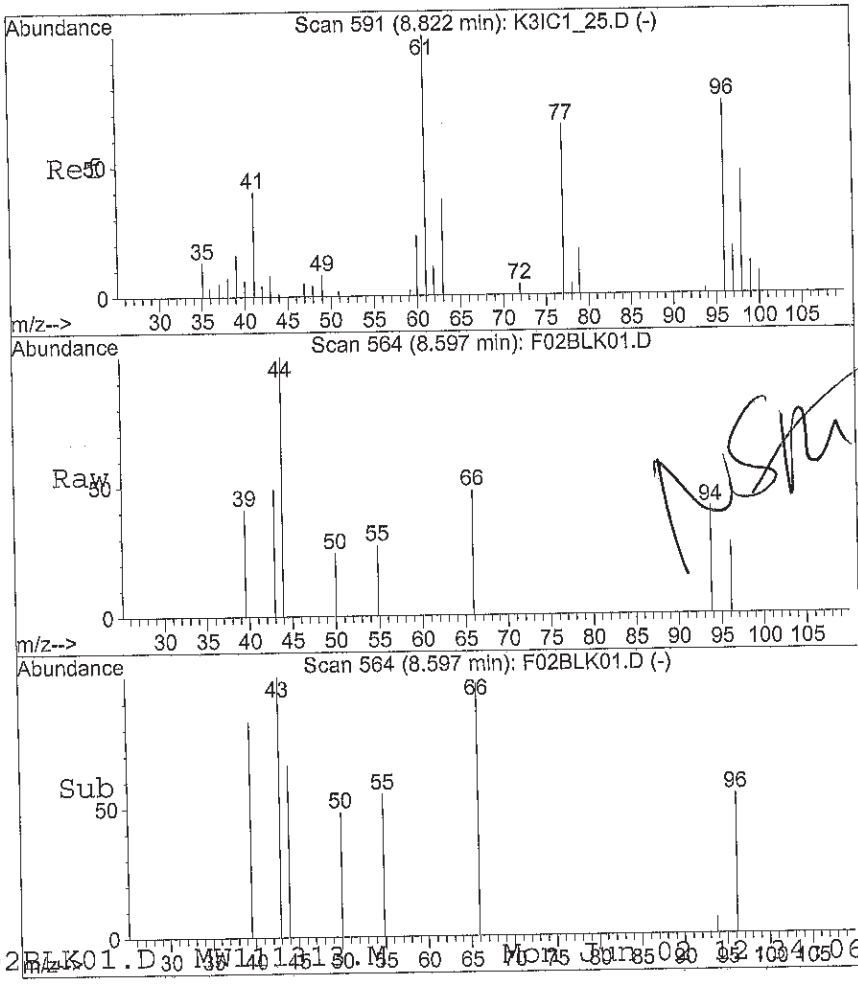


#18
1,1-Dichloroethane
Concen: 0.04 ug/L
RT: 8.13 min Scan# 509
Delta R.T. 0.08 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 63 Resp: 259

Ion	Ratio	Lower	Upper
63	100		
65	511.2	25.8	38.8#

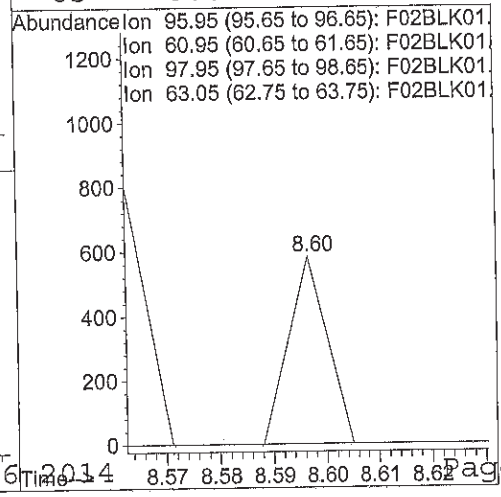


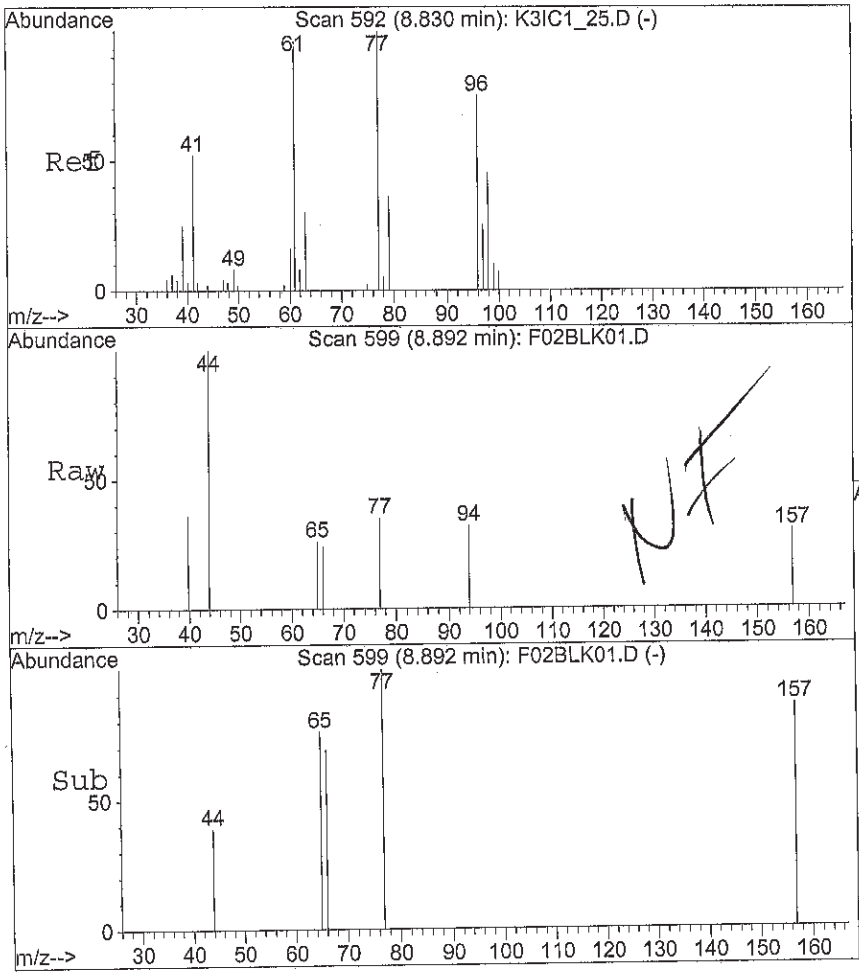


#19
cis-1,2-Dichloroethene
Concen: 0.06 ug/L
RT: 8.60 min Scan# 564
Delta R.T. -0.23 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

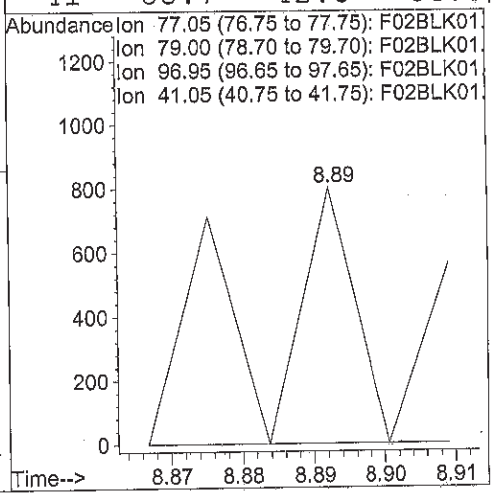


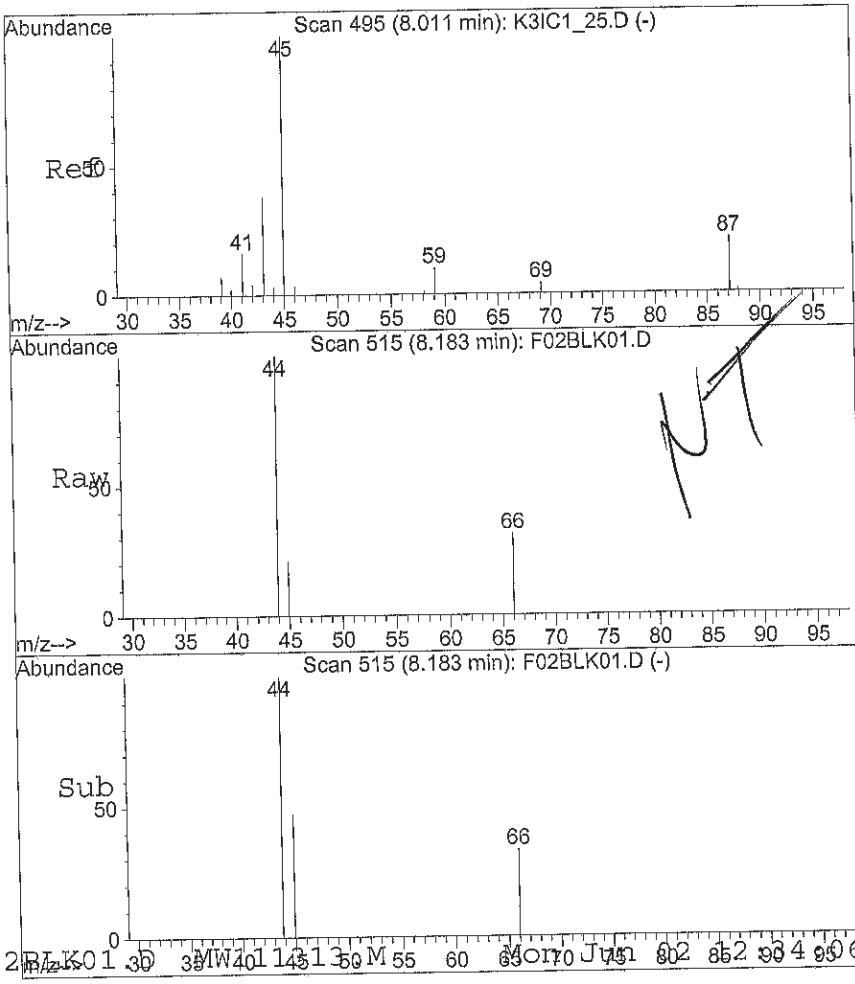


#20
2,2-Dichloropropane
Concen: 0.06 ug/L
RT: 8.89 min Scan# 599
Delta R.T. 0.06 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

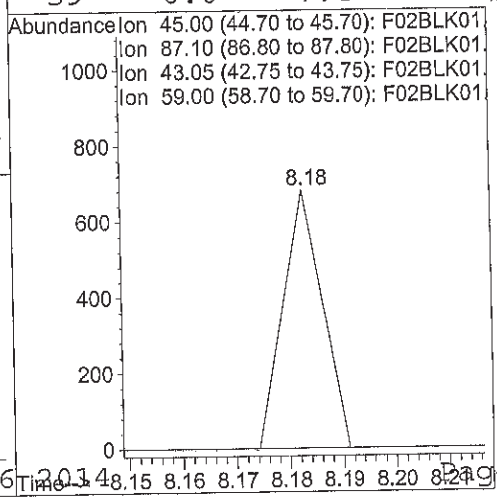


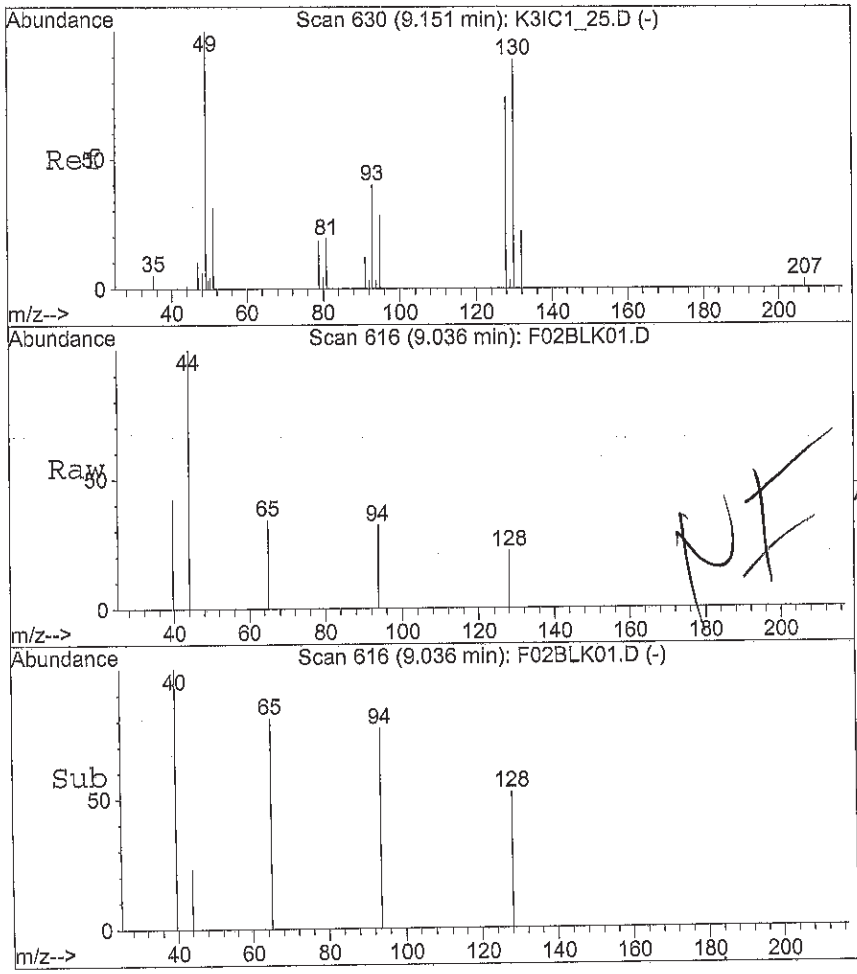


#22
(DIPE) Diisopropyl Ether
Concen: 0.03 ug/L
RT: 8.18 min Scan# 515
Delta R.T. 0.17 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

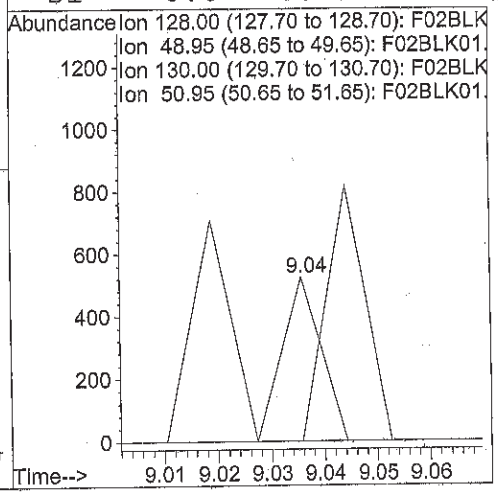


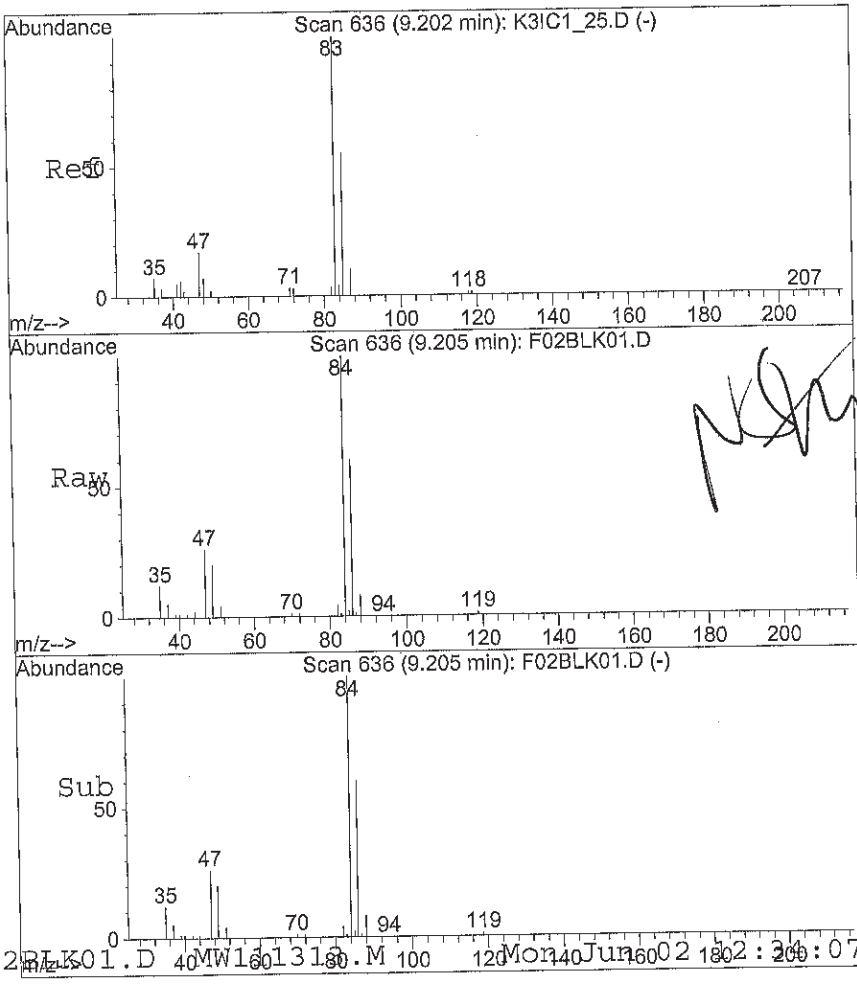


#23
Bromochloromethane
Concen: 0.12 ug/L
RT: 9.04 min Scan# 616
Delta R.T. -0.12 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

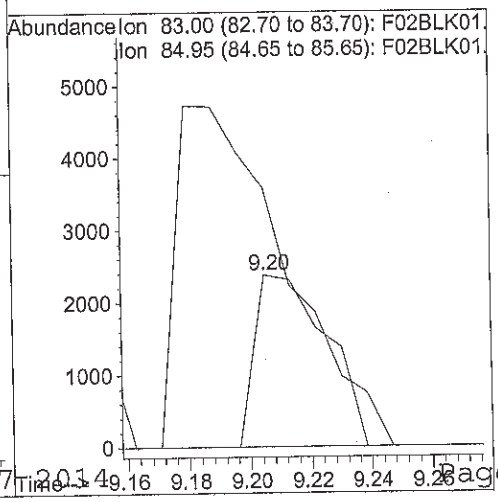


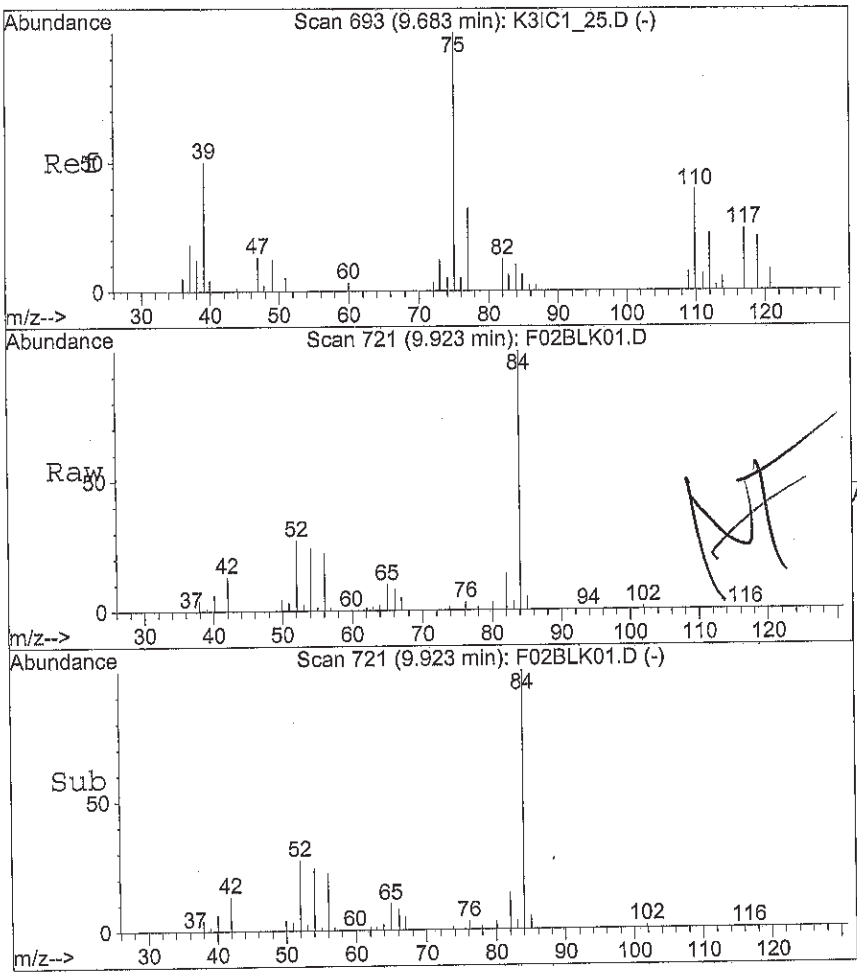


#24
Chloroform
Concen: 0.46 ug/L
RT: 9.20 min Scan# 636
Delta R.T. 0.00 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 83 Resp: 3903

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.8	77.6#

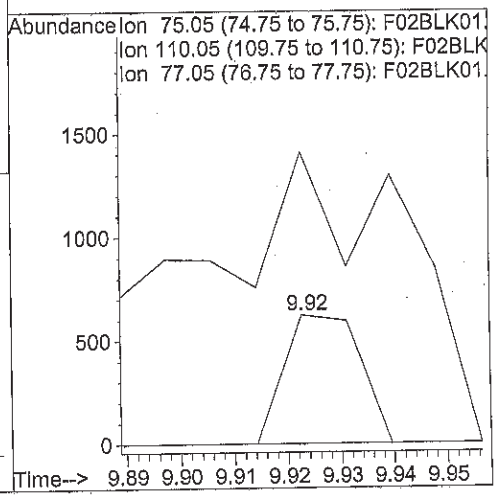




#29
1,1-Dichloropropene
Concen: 0.10 ug/L
RT: 9.92 min Scan# 721
Delta R.T. 0.24 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

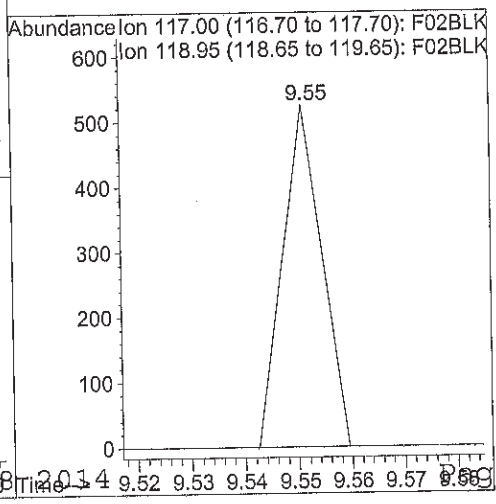


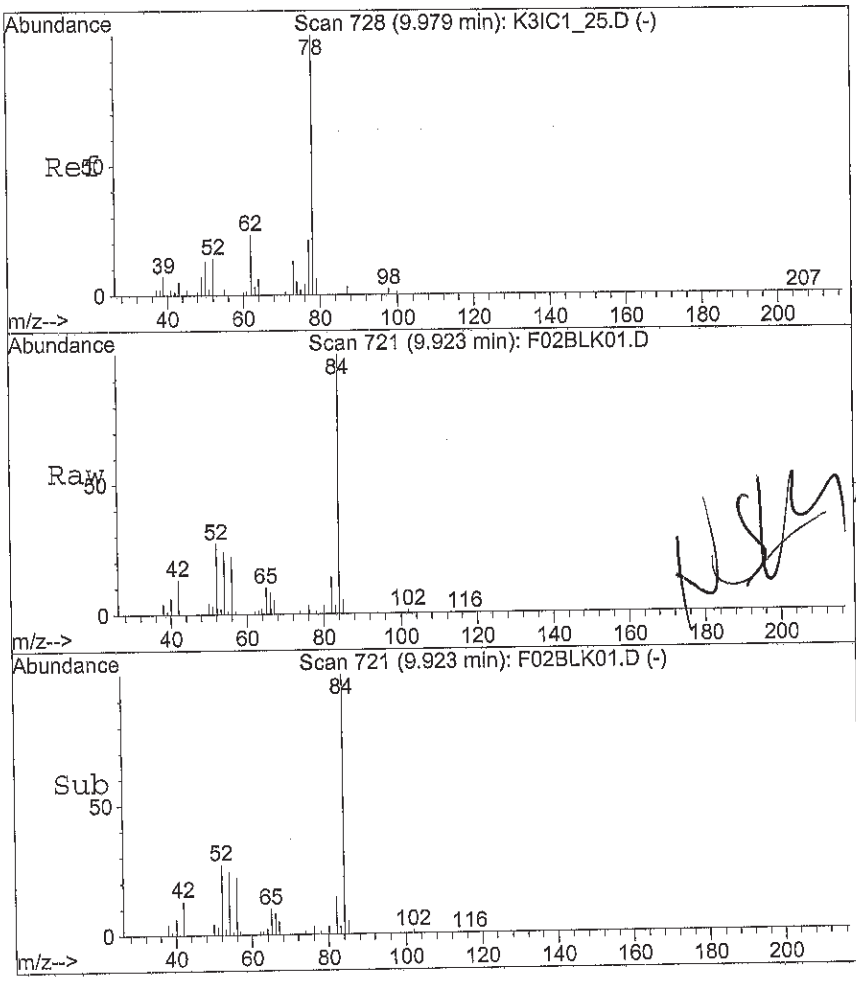


#30
Carbon Tetrachloride
Concen: 0.05 ug/L
RT: 9.55 min Scan# 677
Delta R.T. -0.16 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion:117 Resp: 266

Ion	Ratio	Lower	Upper
117	100		
119	0.0	75.8	113.8#

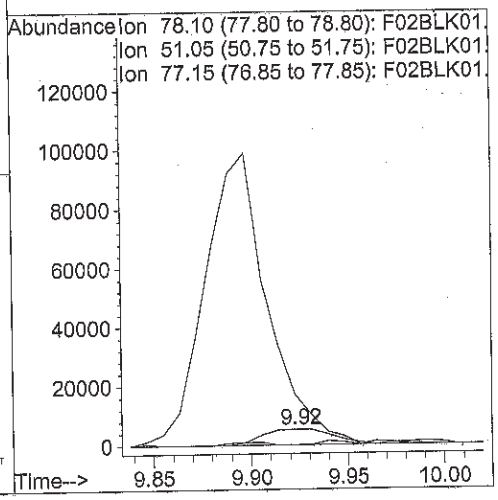


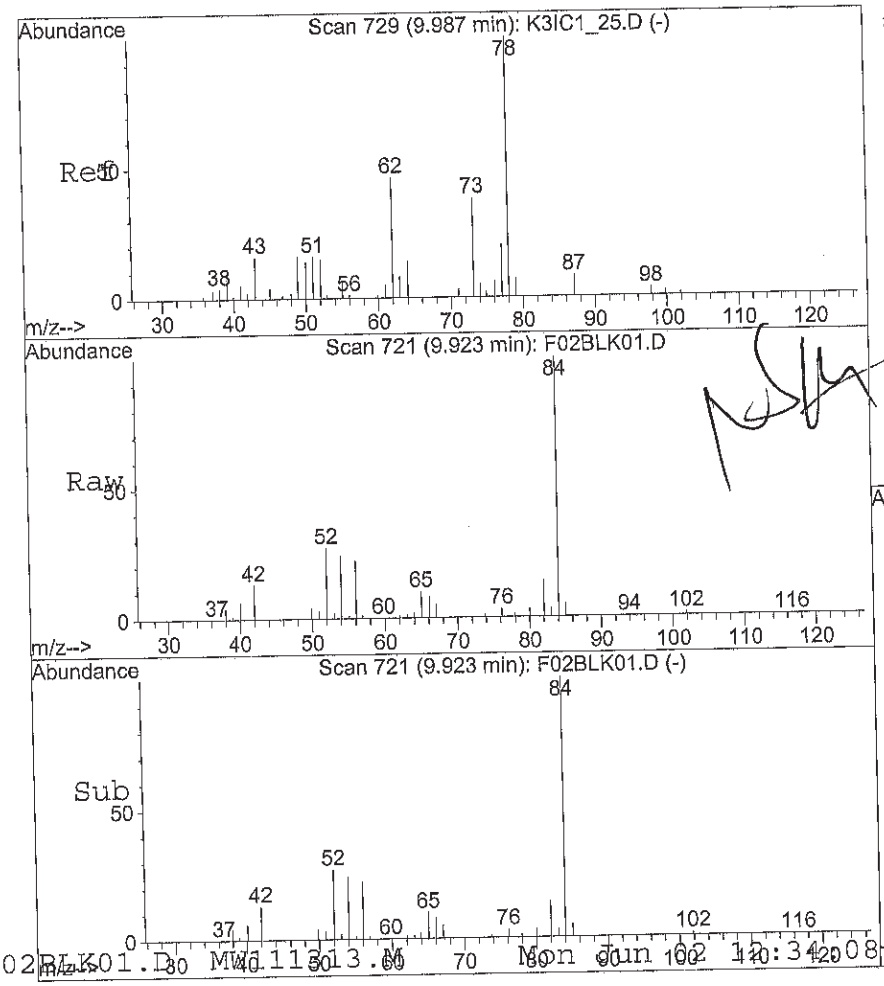


#31
Benzene
Concen: 0.85 ug/L
RT: 9.92 min Scan# 721
Delta R.T. -0.06 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

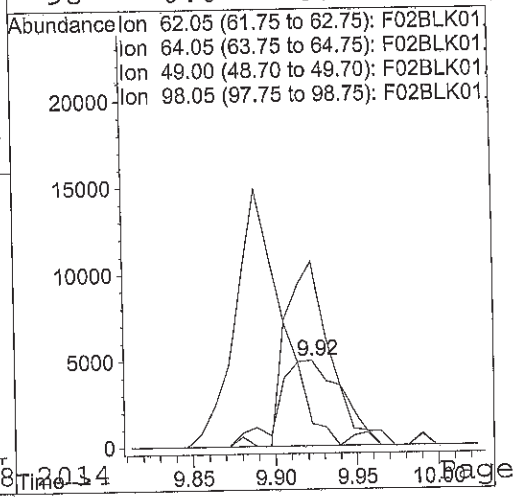


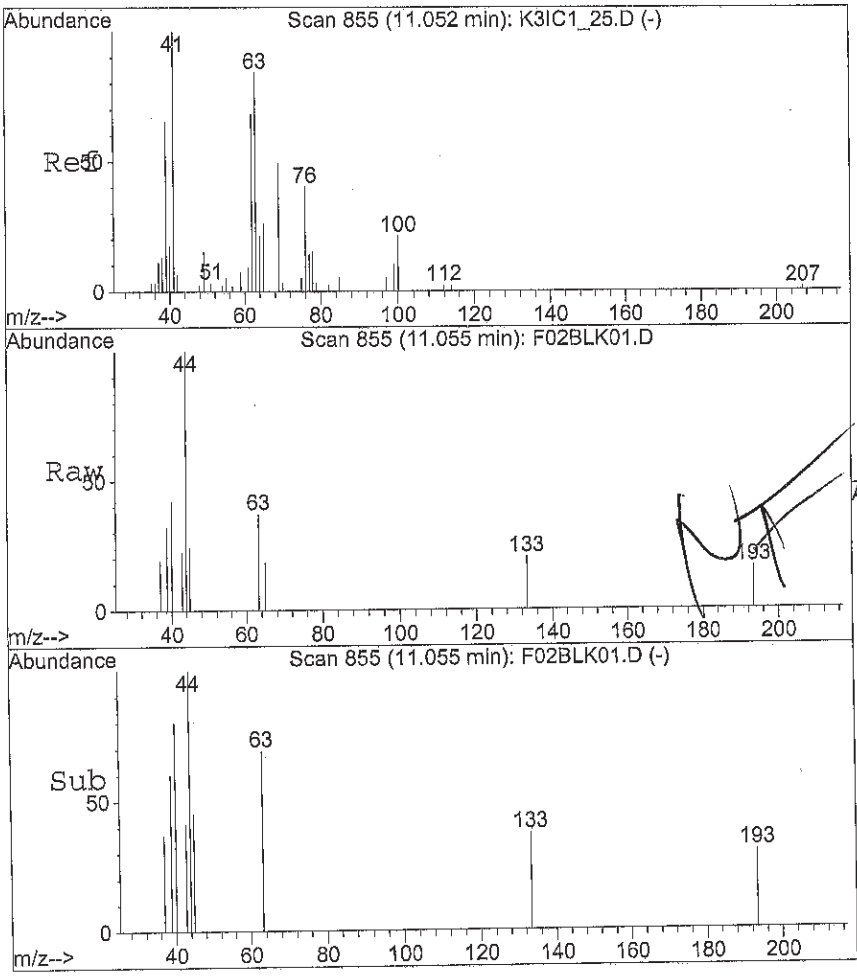


#32
1,2-Dichloroethane
Concen: 2.38 ug/L
RT: 9.92 min Scan# 721
Delta R.T. -0.06 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

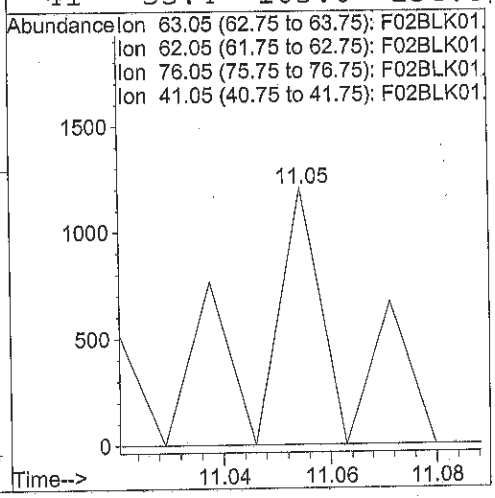


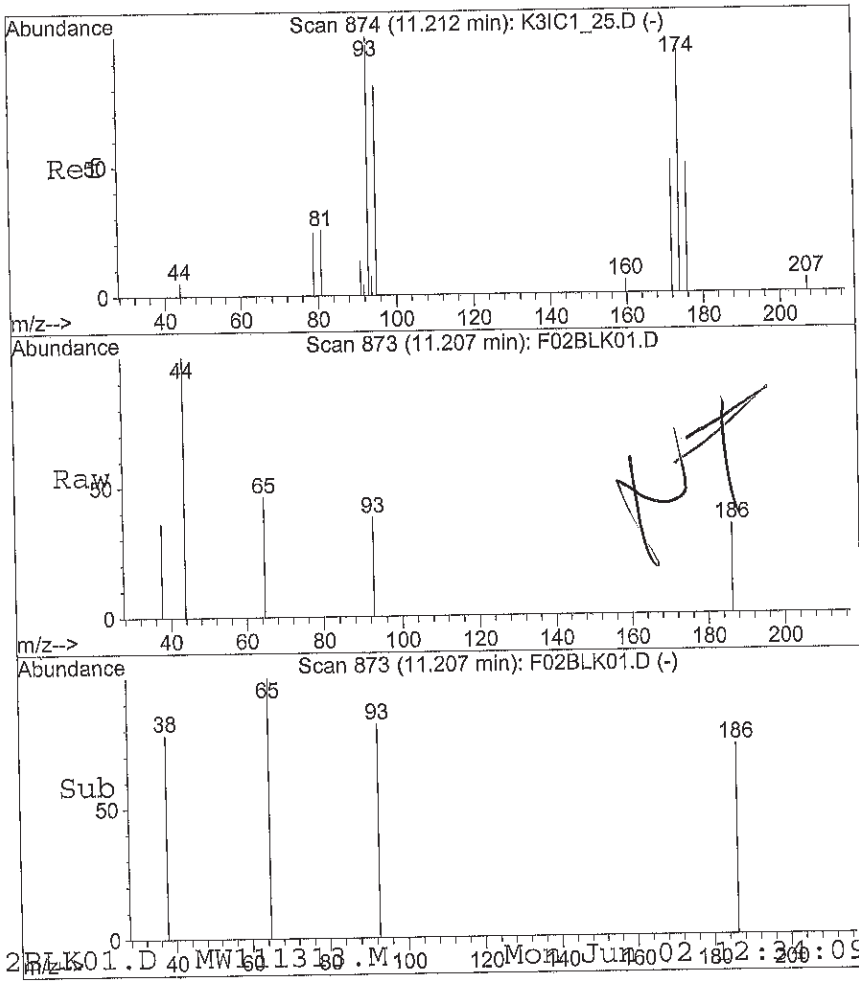


#34
1,2-Dichloropropane
Concen: 0.17 ug/L
RT: 11.05 min Scan# 855
Delta R.T. 0.00 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

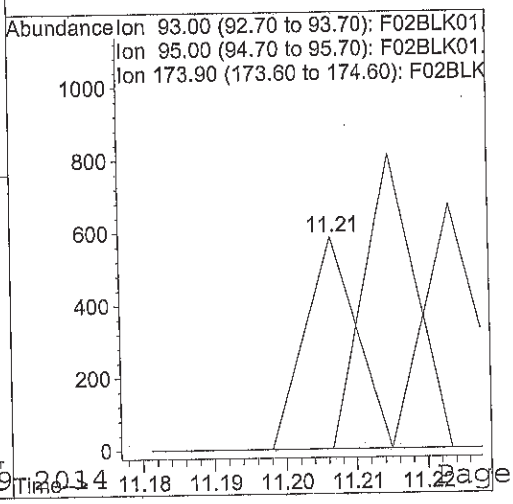


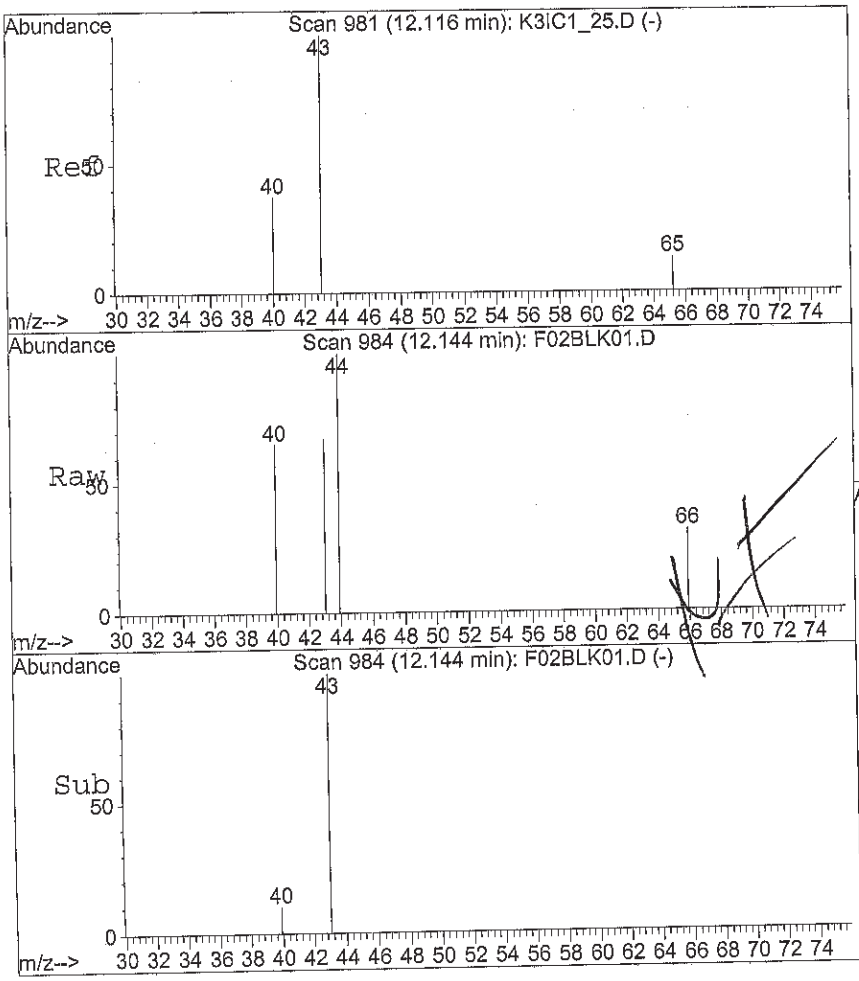


#35
Dibromomethane
Concen: 0.10 ug/L
RT: 11.21 min Scan# 873
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

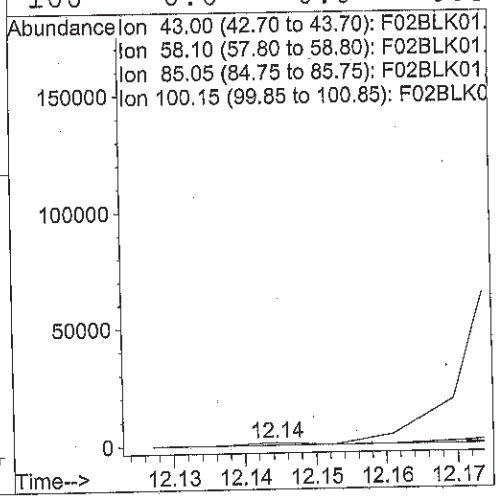


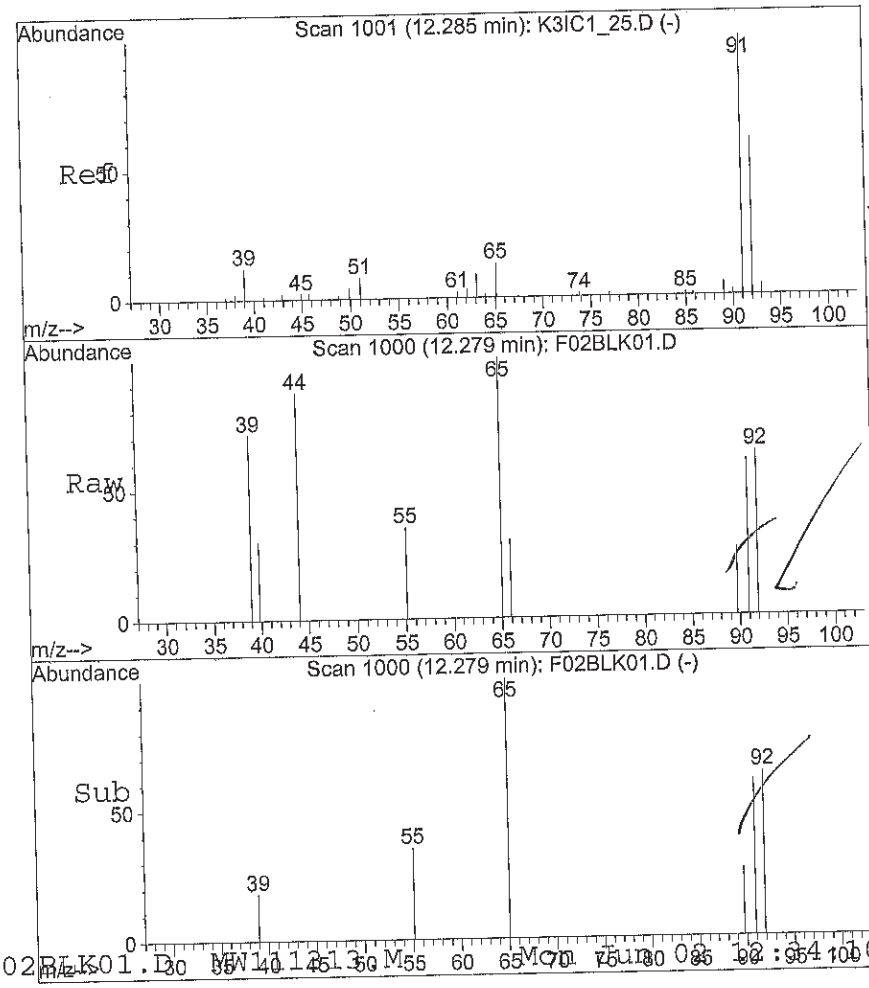


#40
(MIBK) 4-Methyl-2-Pentanone
Concen: 0.19 ug/L
RT: 12.14 min Scan# 984
Delta R.T. 0.03 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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

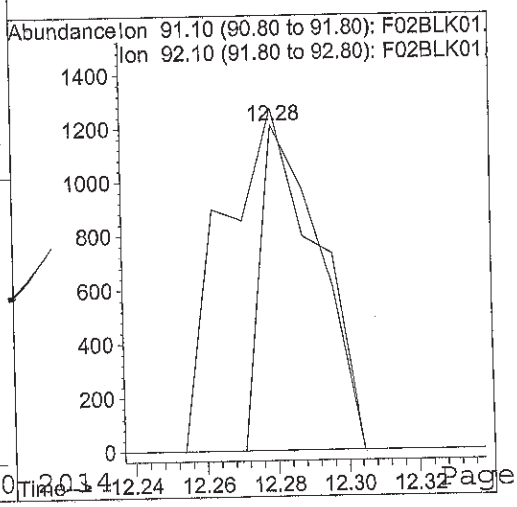


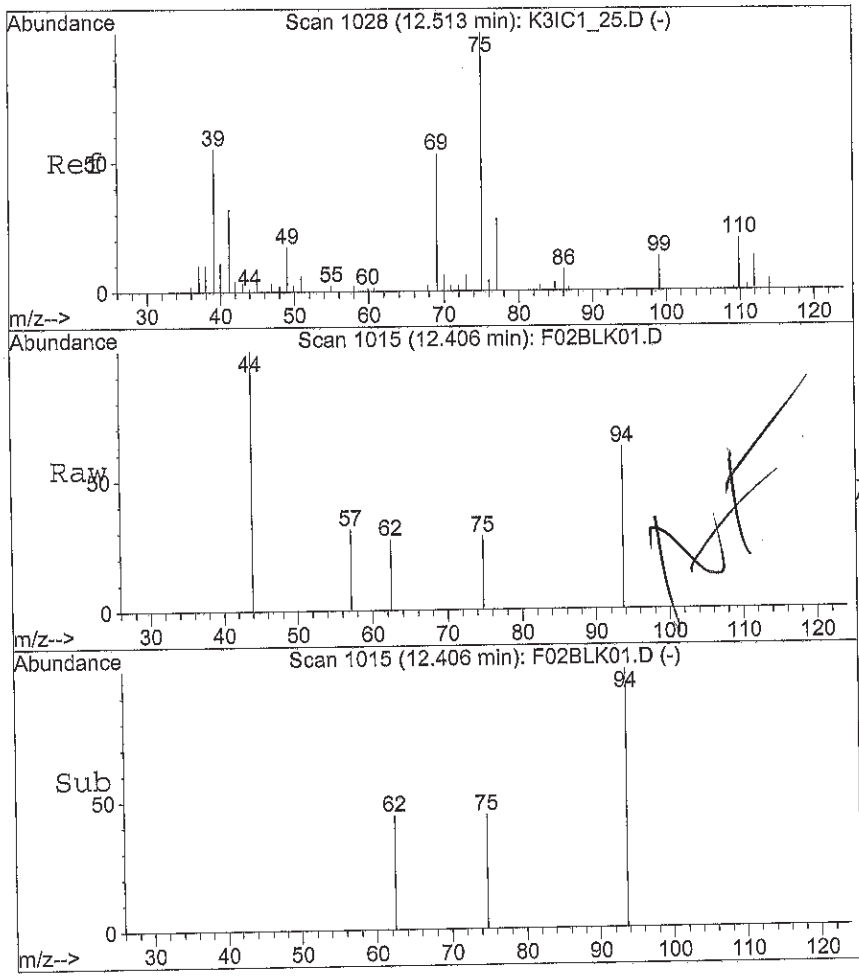


#41
Toluene
Concen: 0.07 ug/L
RT: 12.28 min Scan# 1000
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 91 Resp: 1411

Ion	Ratio	Lower	Upper
91	100		
92	163.1	47.4	71.0#

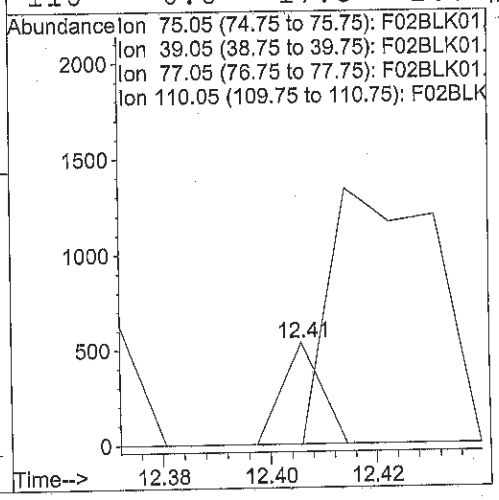


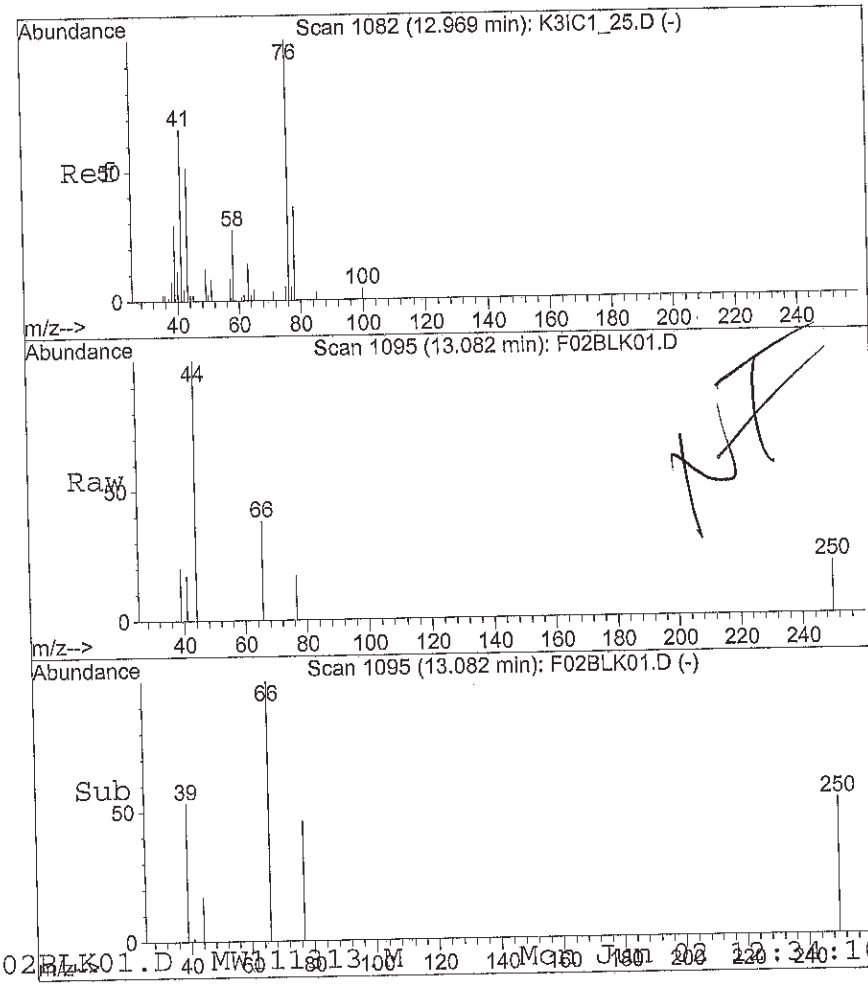


#42
trans-1,3-Dichloropropene
Concen: 0.04 ug/L
RT: 12.41 min Scan# 1015
Delta R.T. -0.11 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

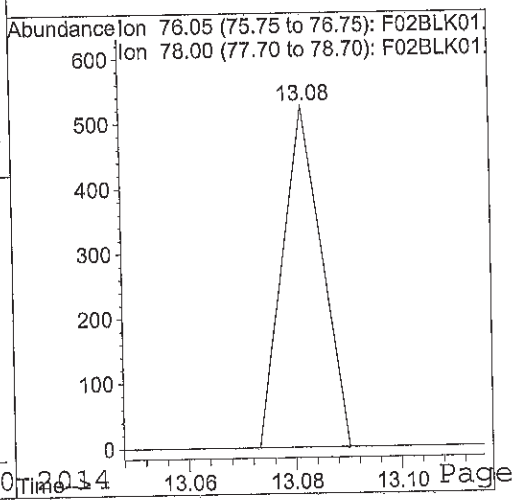


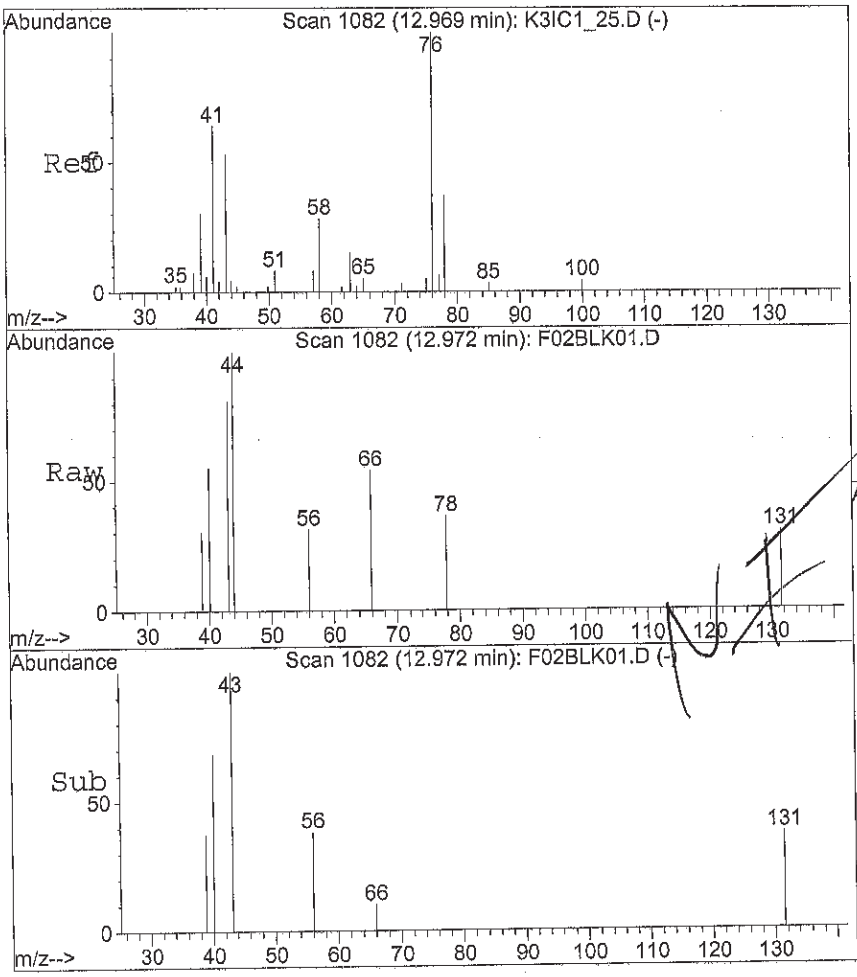


#45
1,3-Dichloropropane
Concen: 0.04 ug/L
RT: 13.08 min Scan# 1095
Delta R.T. 0.11 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 76 Resp: 267

Ion	Ratio	Lower	Upper
76	100		
78	0.0	26.9	40.3#

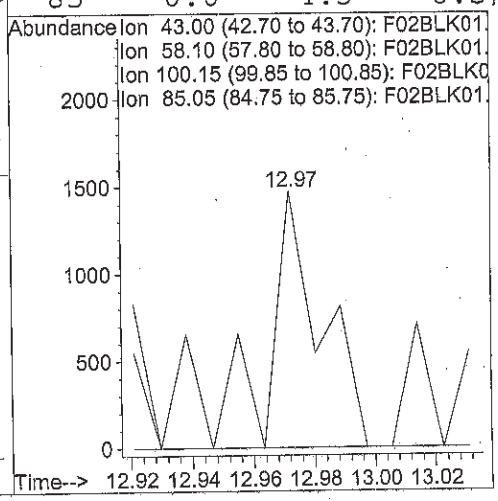


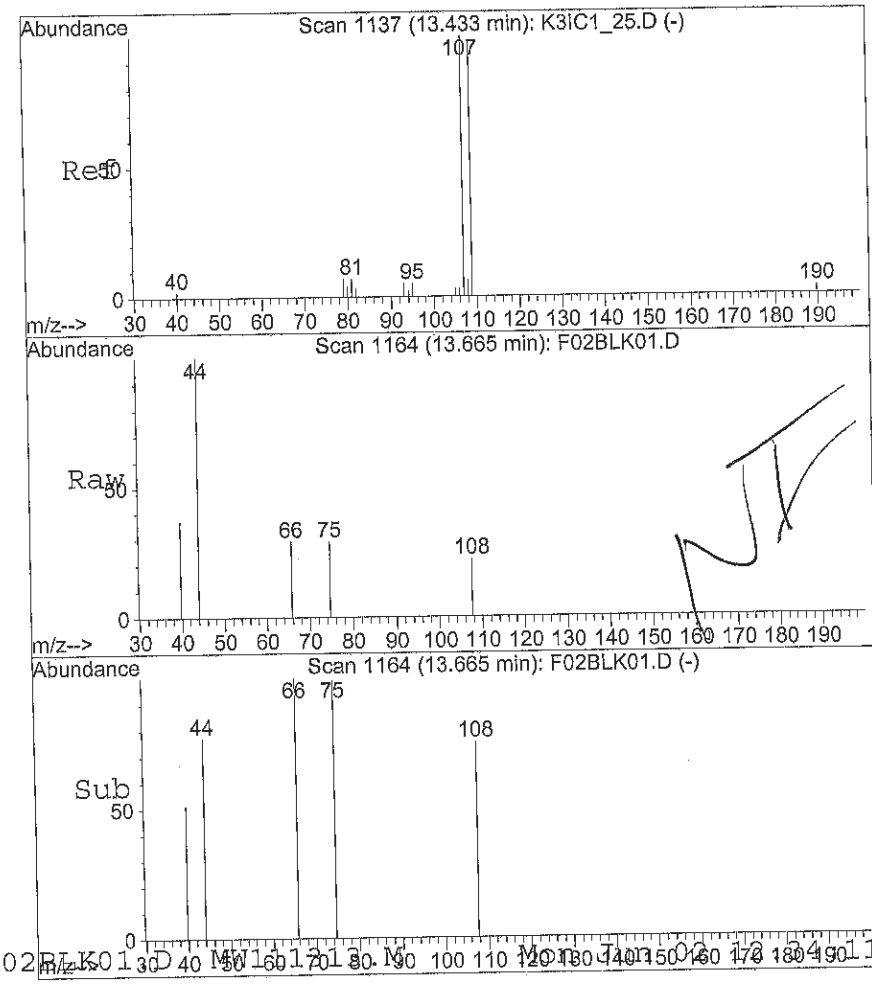


#46
2-Hexanone
Concen: 0.55 ug/L
RT: 12.97 min Scan# 1082
Delta R.T. 0.00 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

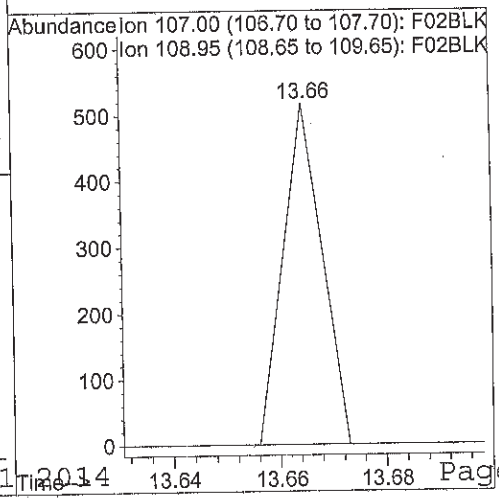


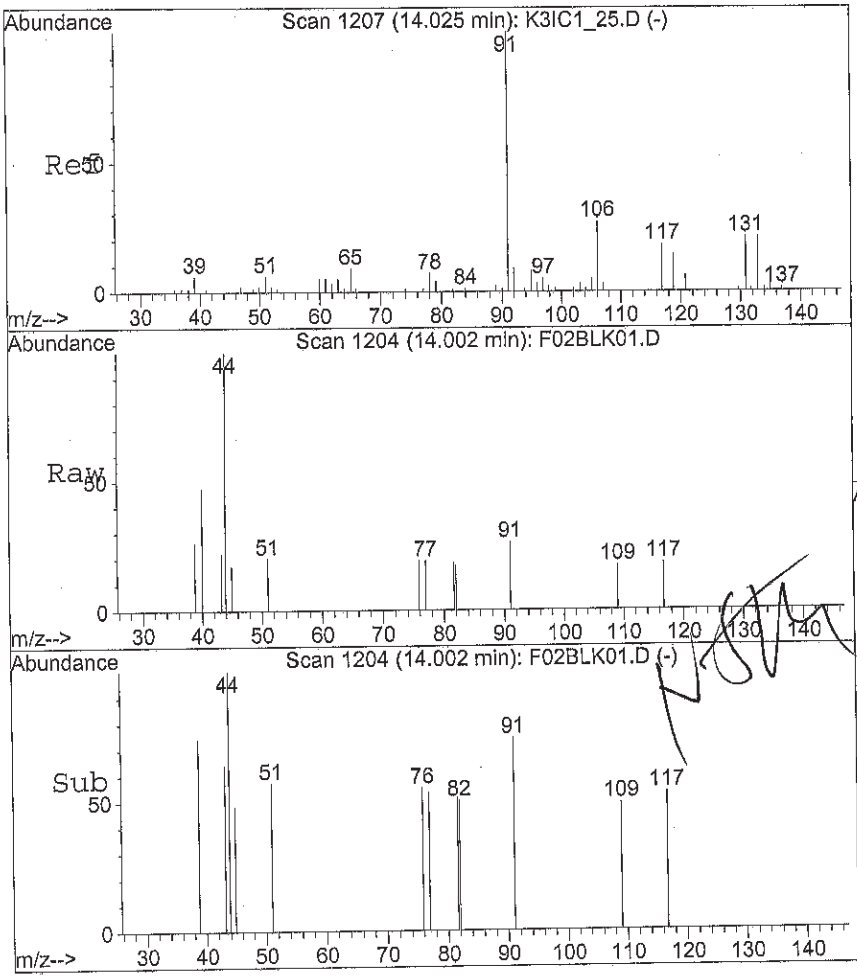


#48
1,2-Dibromoethane
Concen: 0.06 ug/L
RT: 13.66 min Scan# 1164
Delta R.T. 0.23 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion:107 Resp: 262

Ion	Ratio	Lower	Upper
107	100		
109	0.0	74.4	111.6#

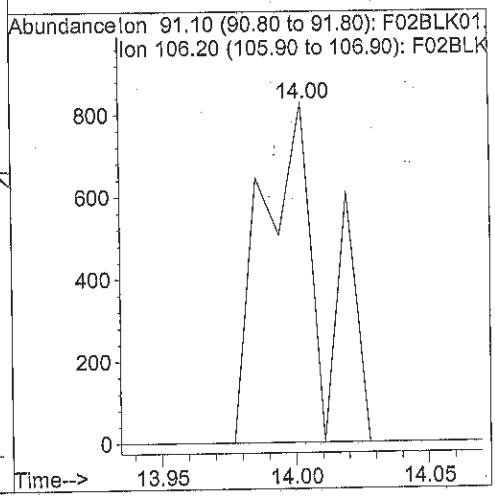


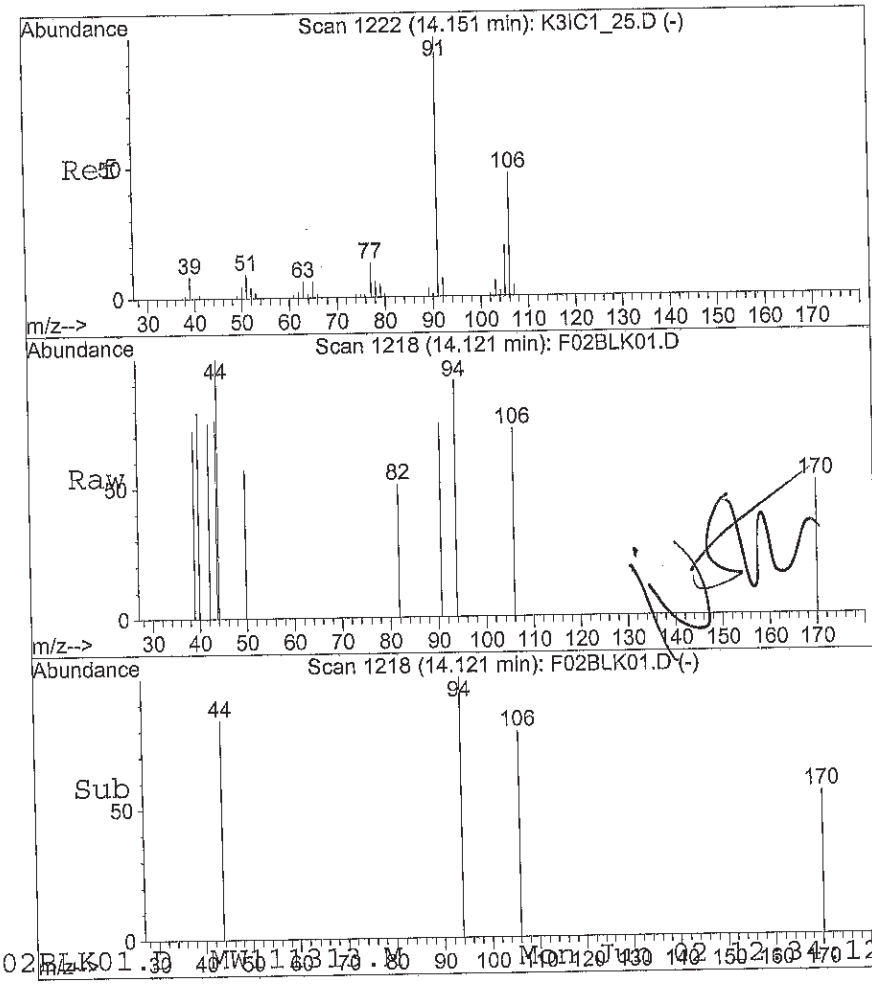


#51
Ethylbenzene
Concen: 0.06 ug/L
RT: 14.00 min Scan# 1204
Delta R.T. -0.02 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 91 Resp: 1311

Ion	Ratio	Lower	Upper
91	100		
106	0.0	23.5	35.3#

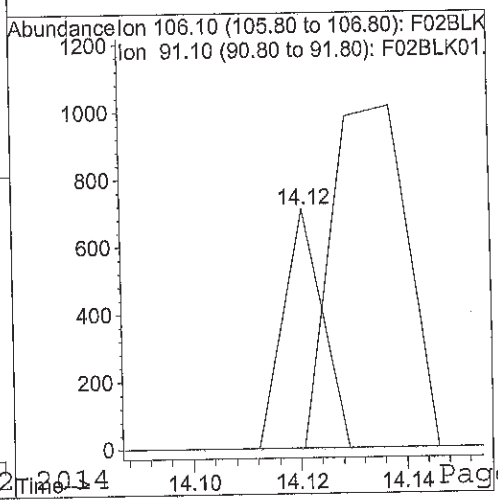


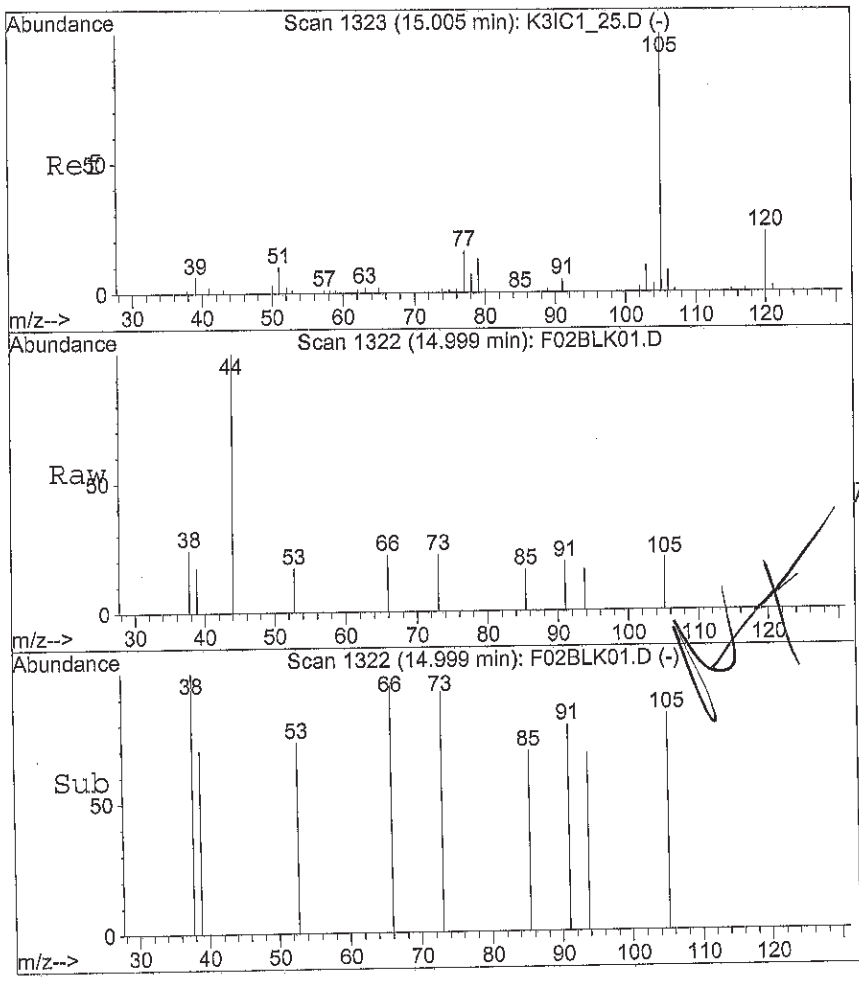


#52
m,p-Xylenes
Concen: 0.04 ug/L
RT: 14.12 min Scan# 1218
Delta R.T. -0.03 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion:106 Resp: 359

Ion	Ratio	Lower	Upper
106	100		
91	281.9	177.1	265.7#

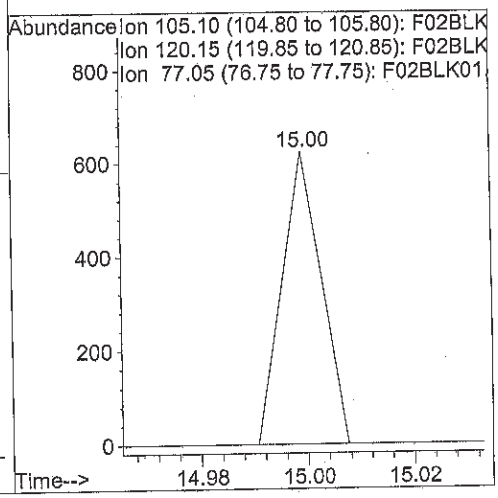


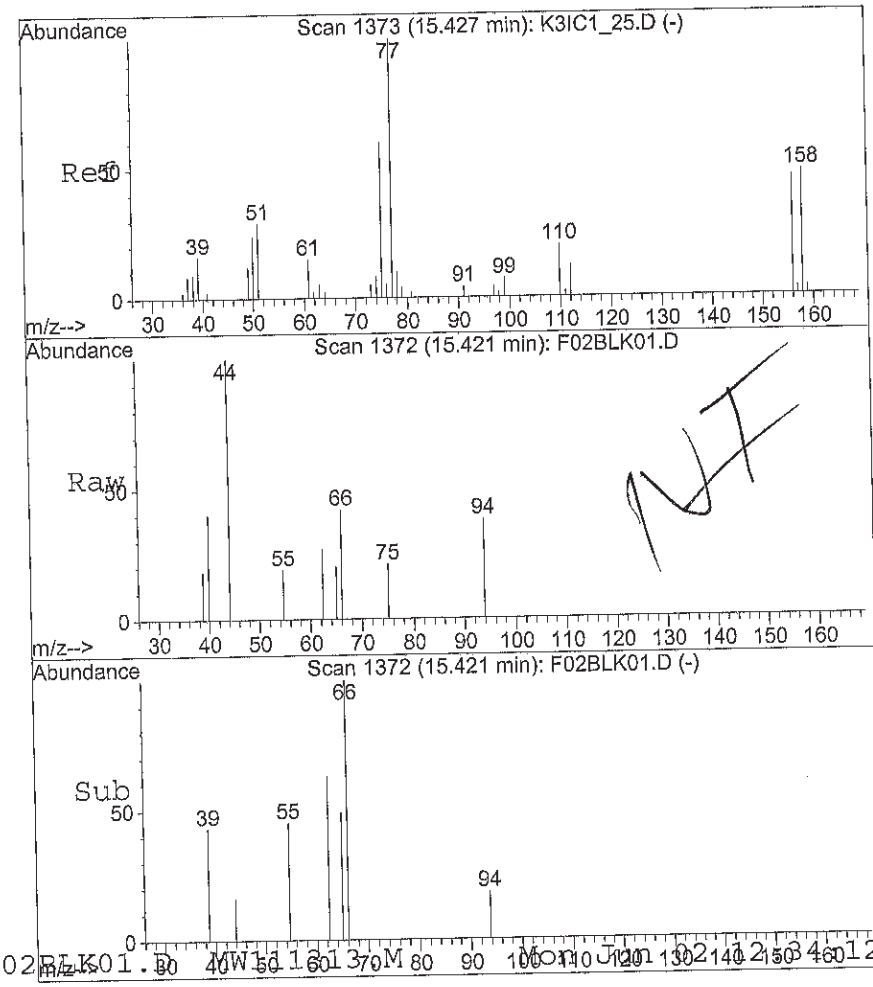


#56
Isopropylbenzene
Concen: 0.01 ug/L
RT: 15.00 min Scan# 1322
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

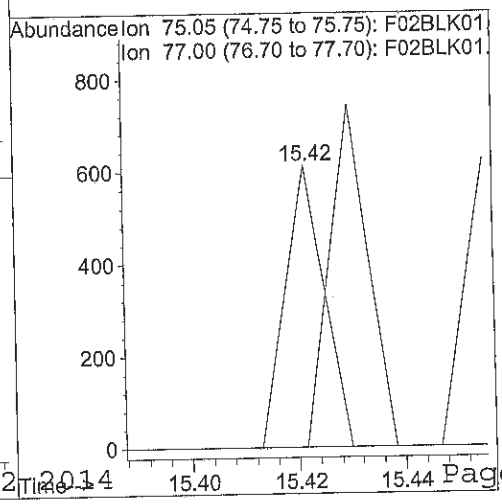


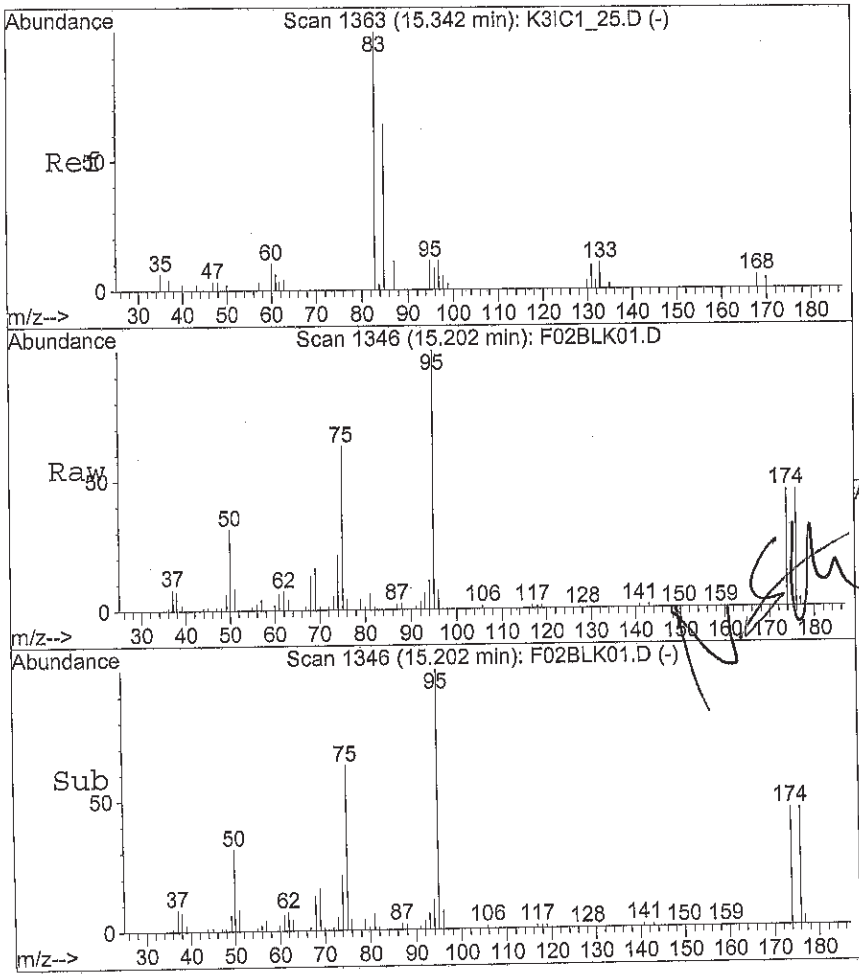


#57
1,2,3-Trichloropropane
Concen: 0.05 ug/L
RT: 15.42 min Scan# 1372
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 75 Resp: 310

Ion	Ratio	Lower	Upper
75	100		
77	121.3	31.2	46.8#

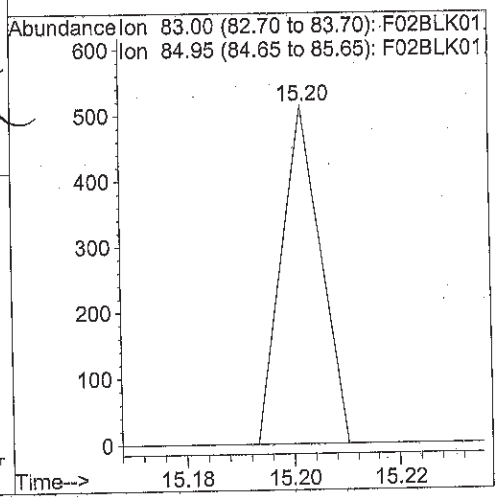


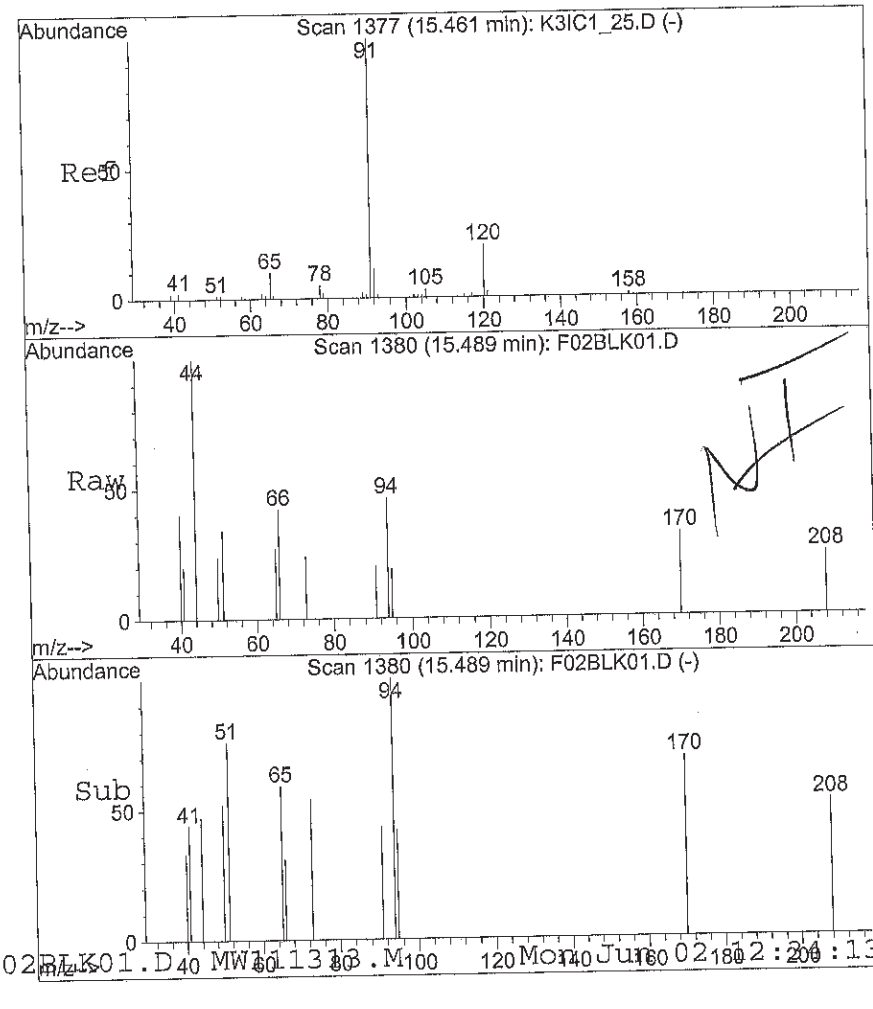


#60
1,1,2,2-Tetrachloroethane
Concen: 0.05 ug/L
RT: 15.20 min Scan# 1346
Delta R.T. -0.14 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 83 Resp: 260

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.2	76.8#

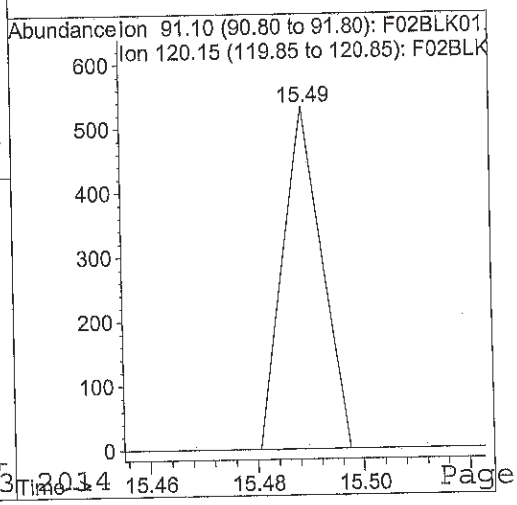


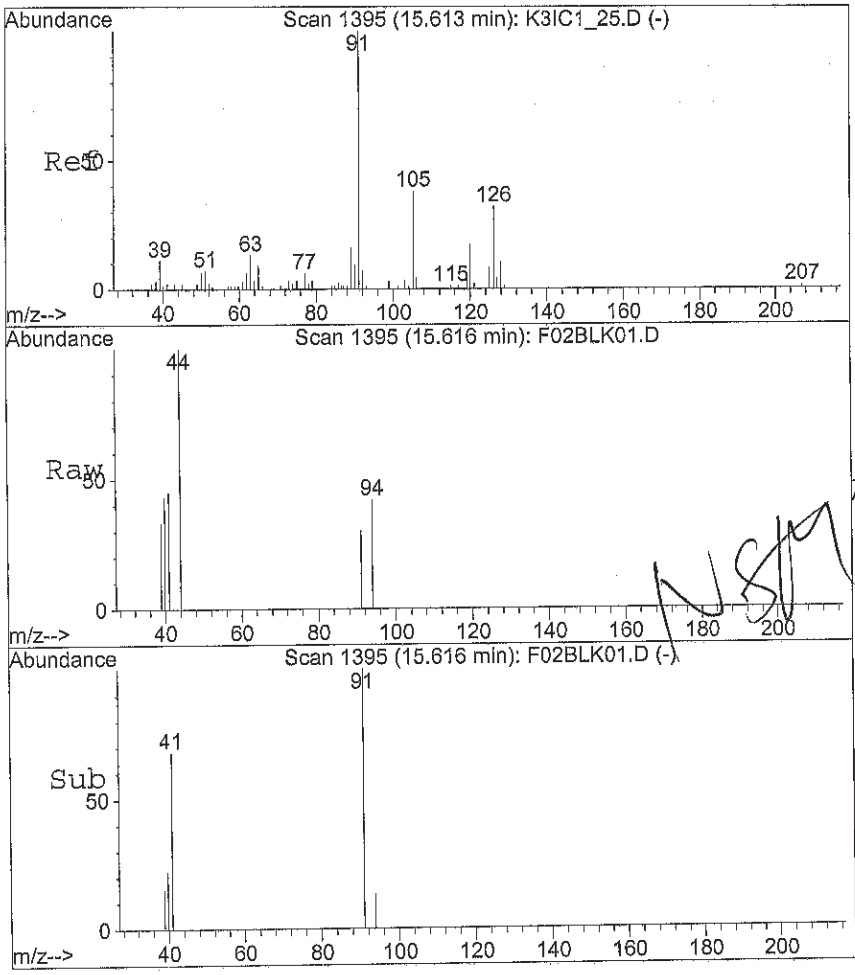


#62
n-Propylbenzene
Concen: 0.01 ug/L
RT: 15.49 min Scan# 1380
Delta R.T. 0.03 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 91 Resp: 270

Ion	Ratio	Lower	Upper
91	100		
120	0.0	16.1	24.1#

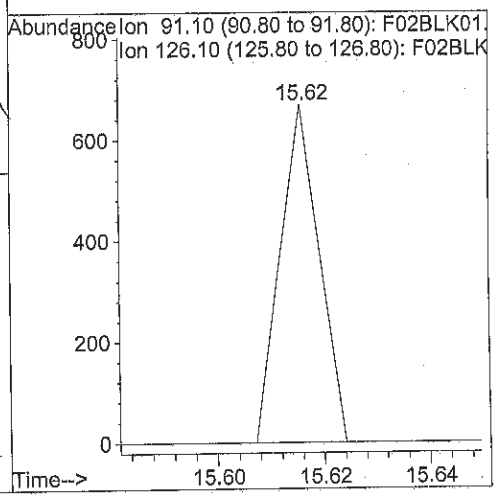


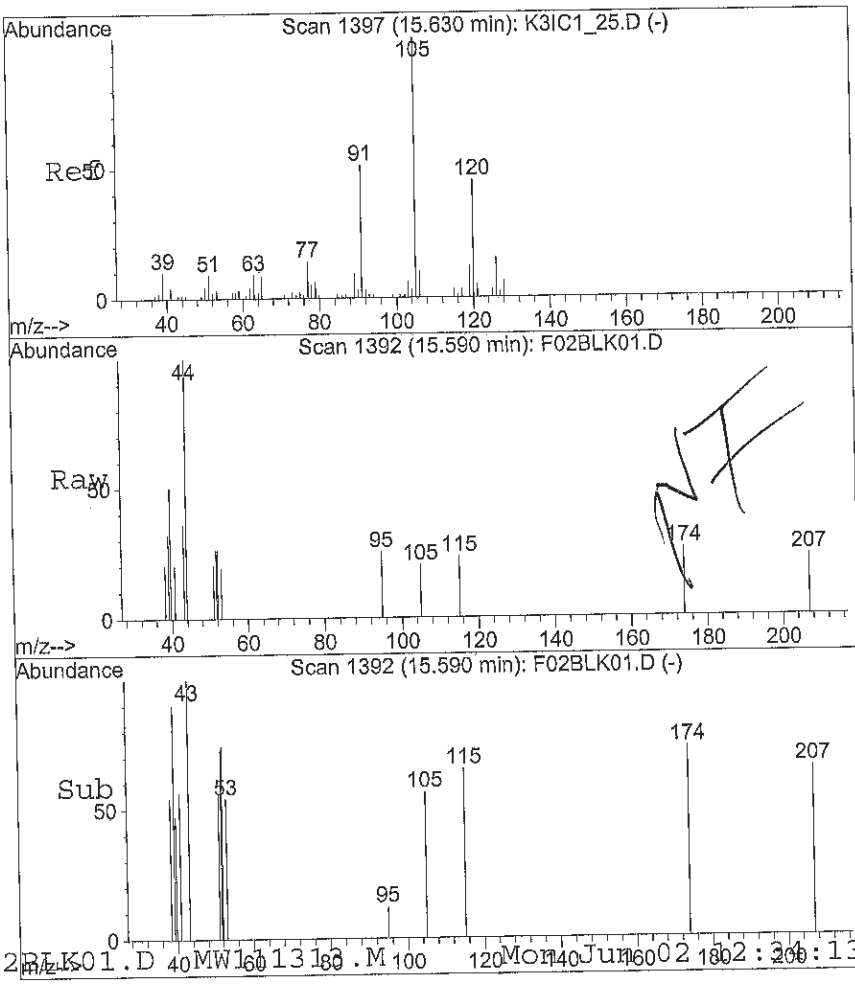


#63
2-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.62 min Scan# 1395
Delta R.T. 0.00 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 91 Resp: 339

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.0	36.0#

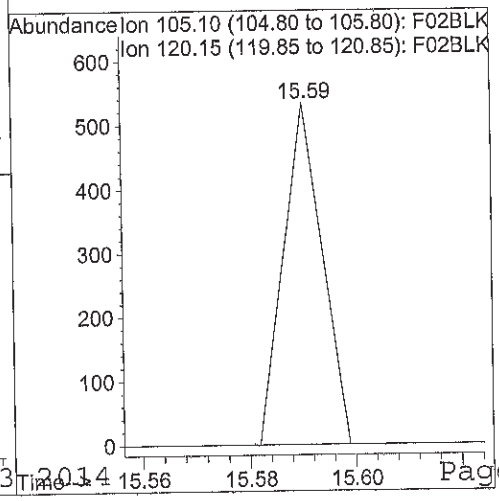


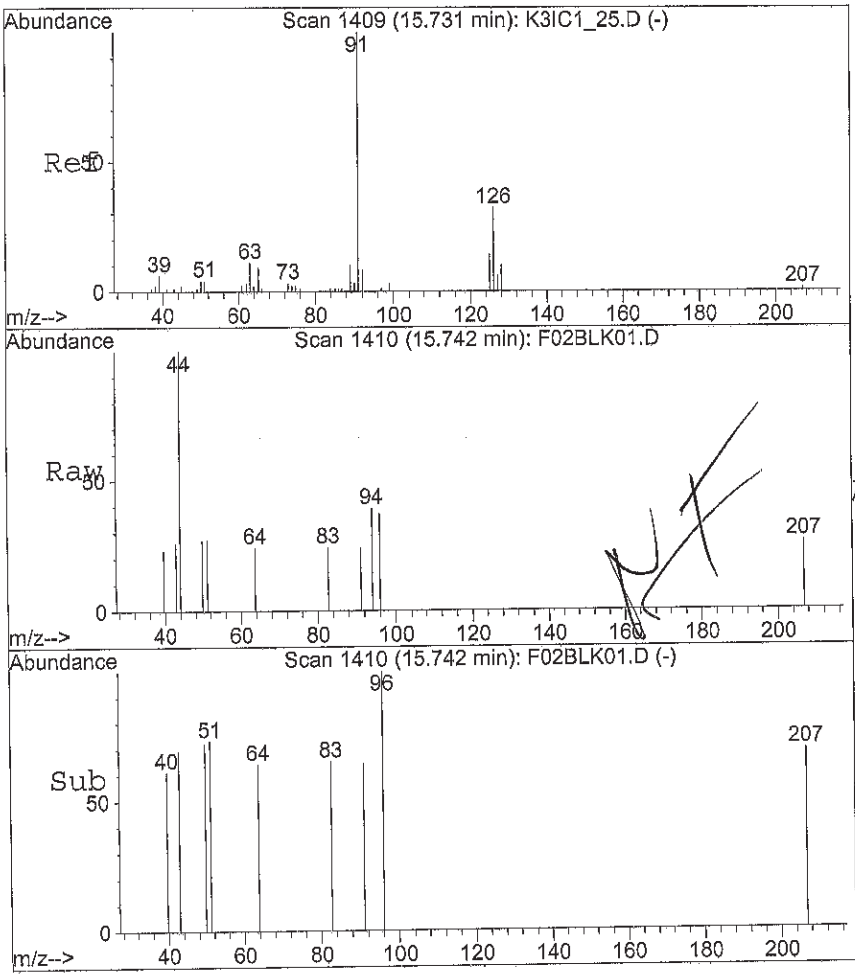


#64
1,3,5-Trimethylbenzene
Concen: 0.02 ug/L
RT: 15.59 min Scan# 1392
Delta R.T. -0.04 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion:105 Resp: 270

Ion	Ratio	Lower	Upper
105	100		
120	0.0	36.4	54.6#

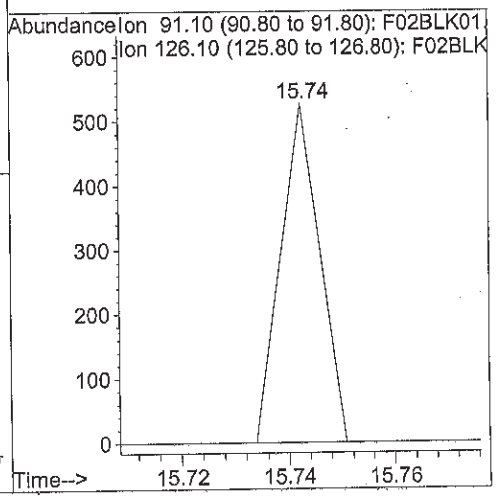


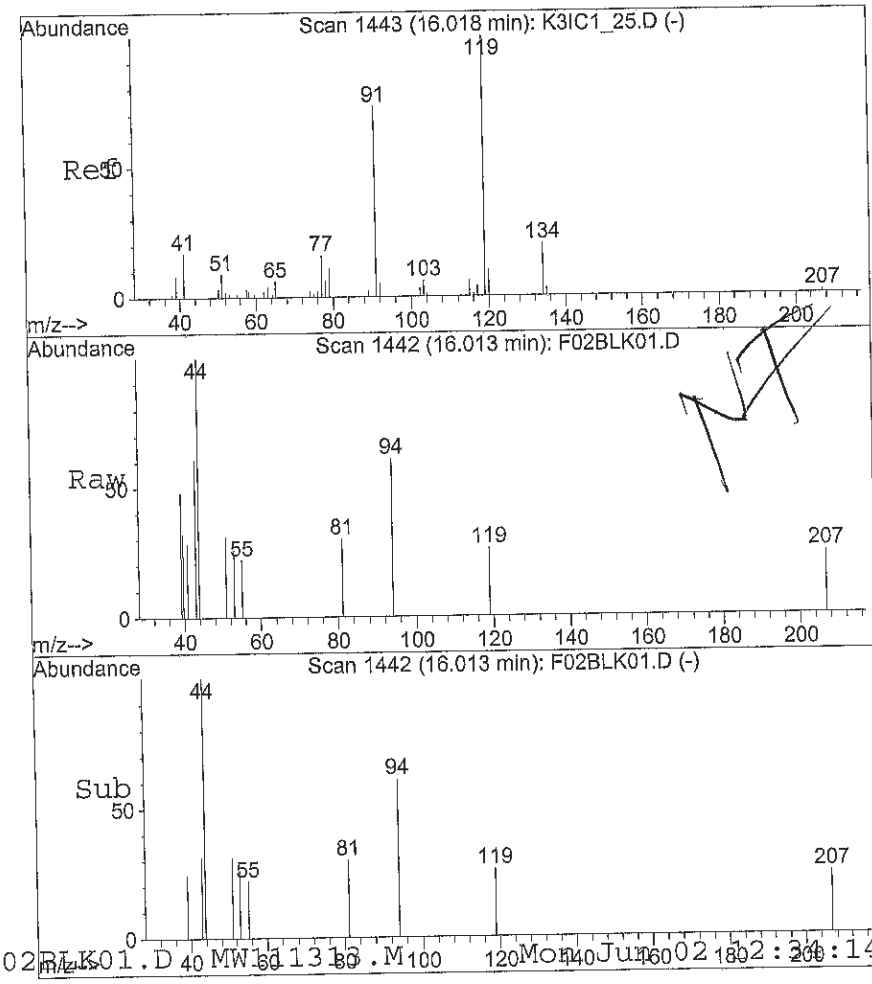


#65
4-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.74 min Scan# 1410
Delta R.T. 0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 91 Resp: 267

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.6	36.8#

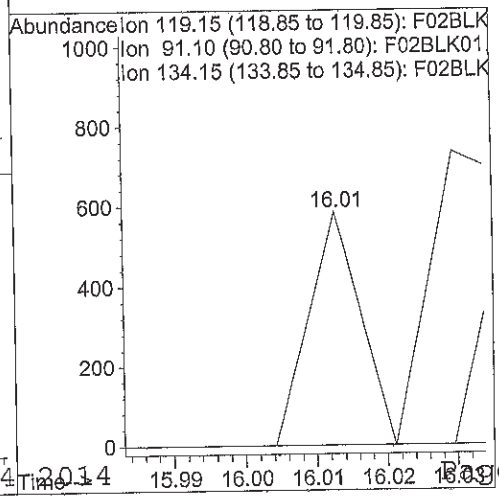


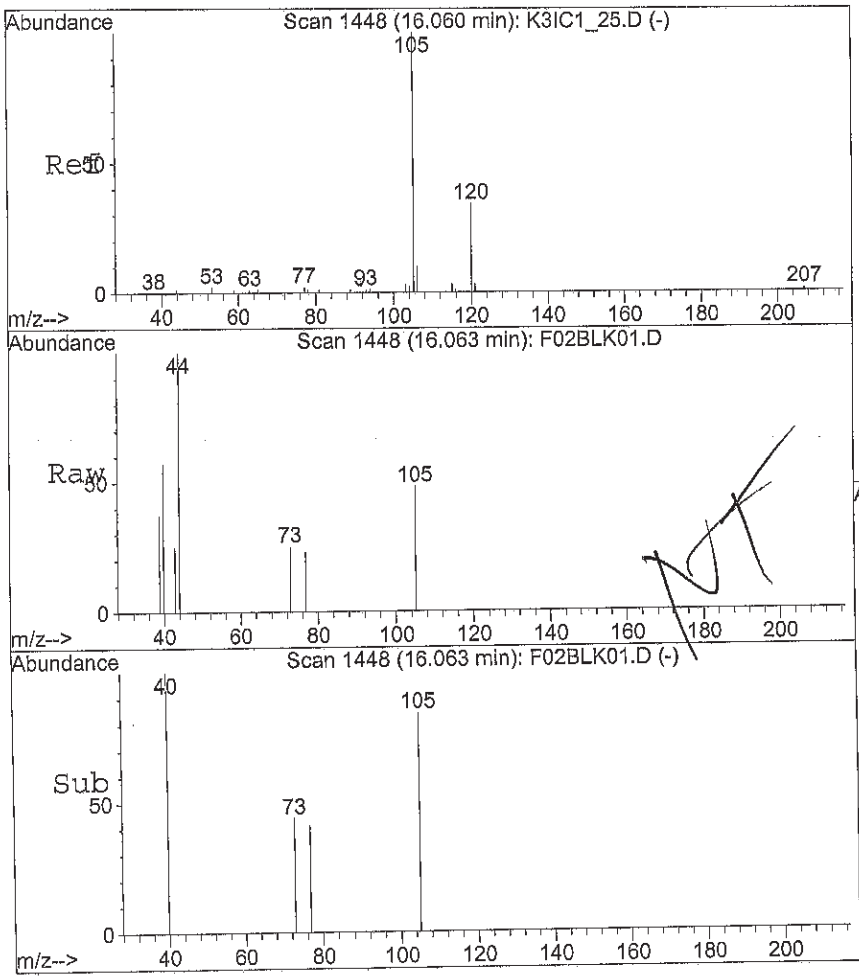


#66
tert-Butylbenzene
Concen: 0.02 ug/L
RT: 16.01 min Scan# 1442
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

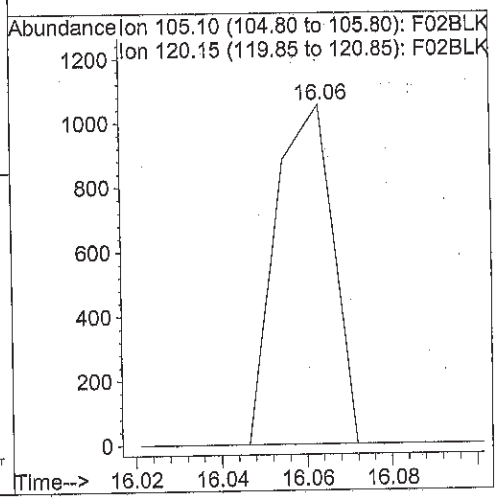


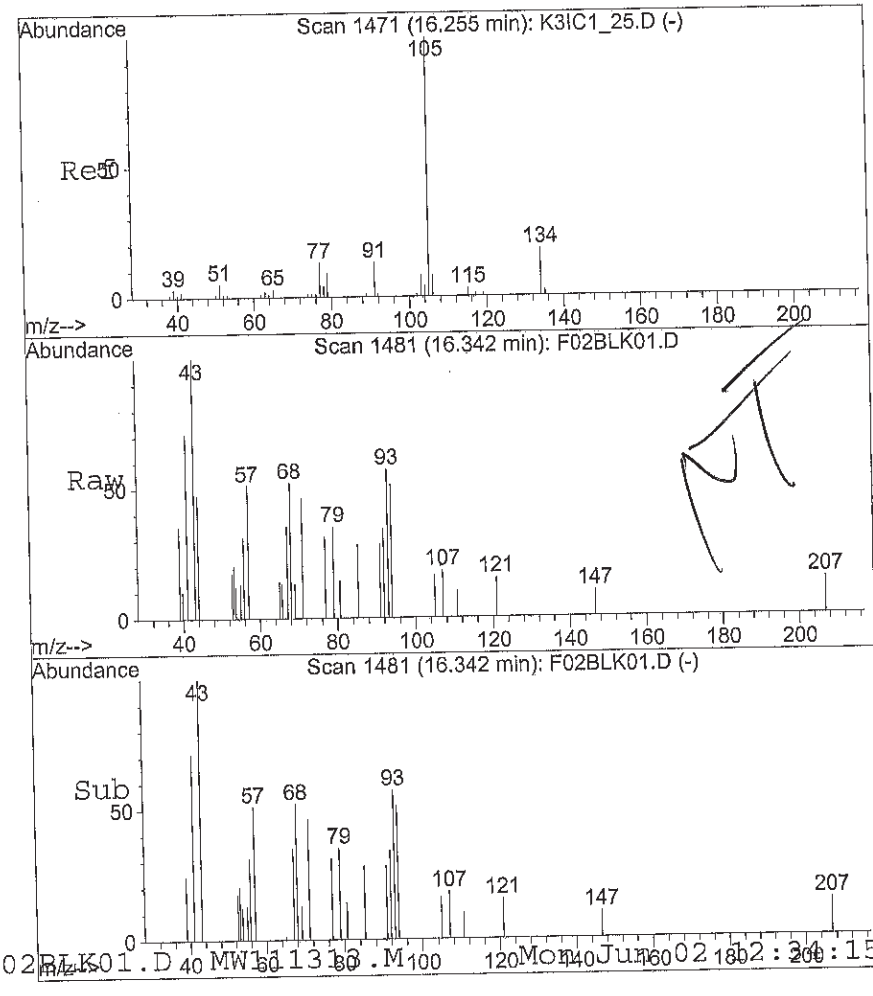


#67
1,2,4-Trimethylbenzene
Concen: 0.05 ug/L
RT: 16.06 min Scan# 1448
Delta R.T. 0.00 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion:105 Resp: 982

Ion	Ratio	Lower	Upper
105	100		
120	0.0	33.8	50.8#

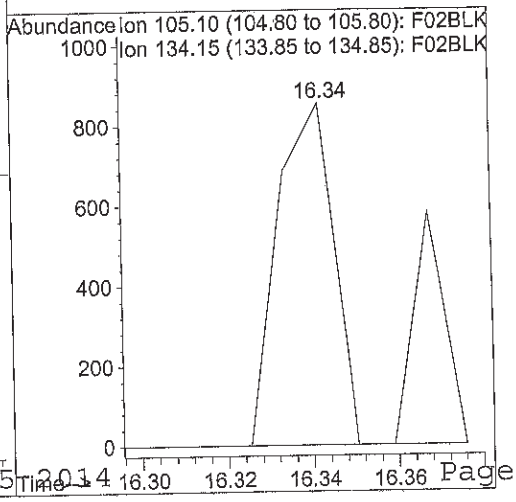


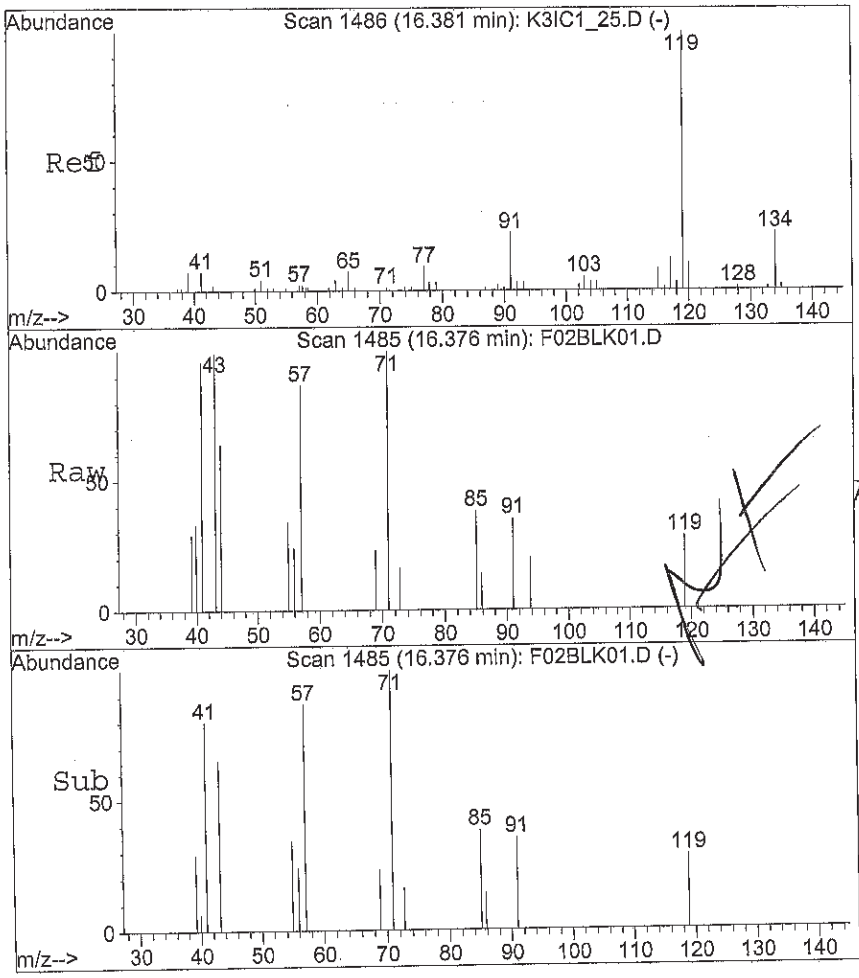


#68
sec-Butylbenzene
Concen: 0.03 ug/L
RT: 16.34 min Scan# 1481
Delta R.T. 0.09 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion:105 Resp: 780

Ion	Ratio	Lower	Upper
105	100		
134	0.0	13.0	19.6#

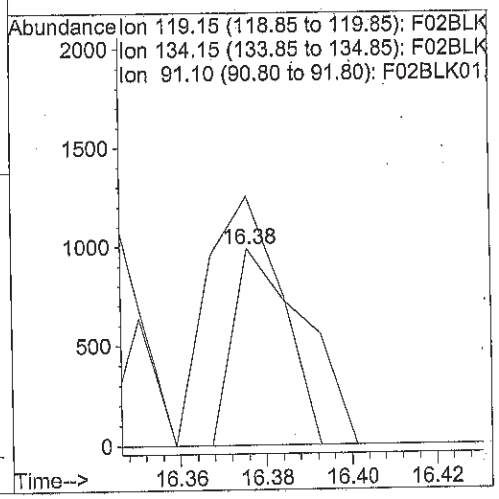


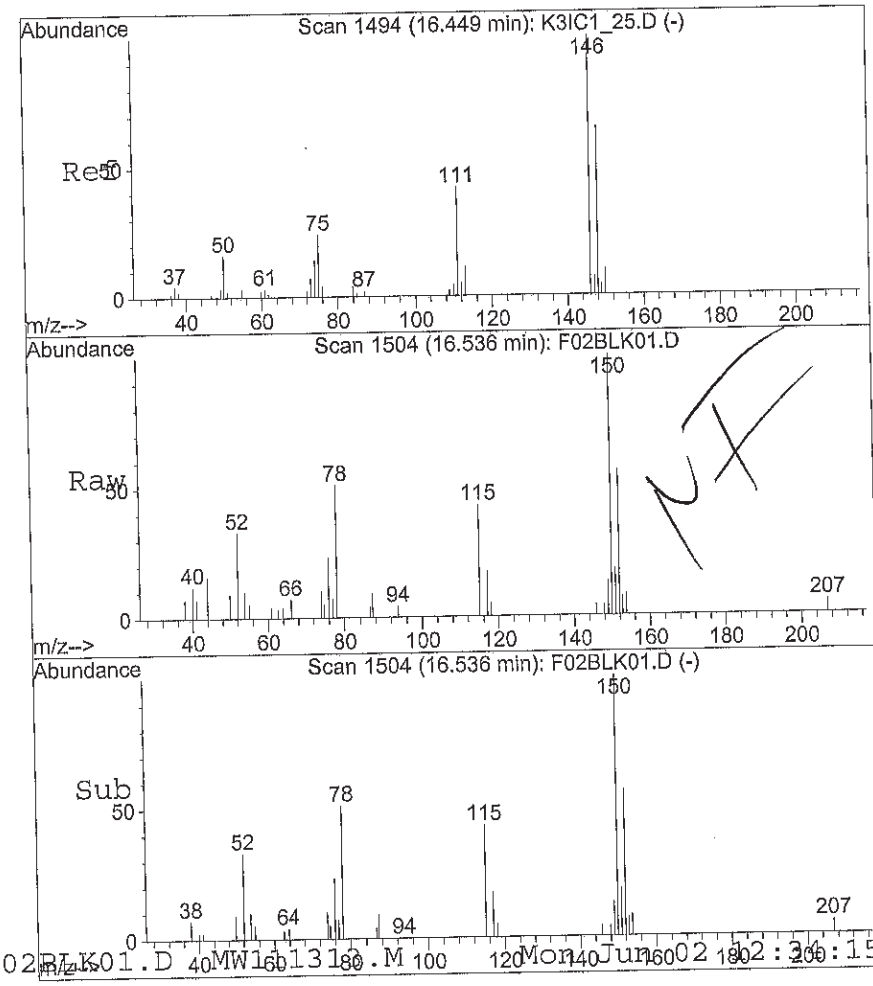


#69
p-Isopropyltoluene
Concen: 0.06 ug/L
RT: 16.38 min Scan# 1485
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

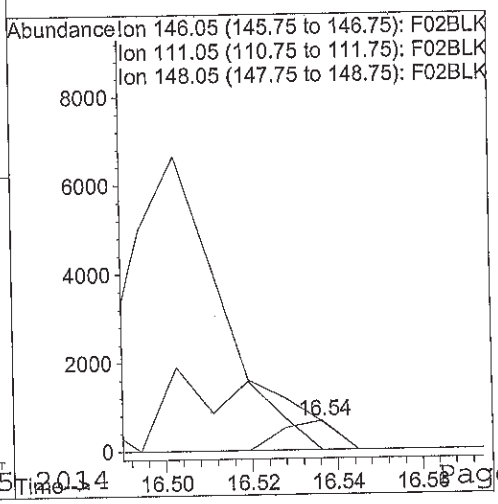


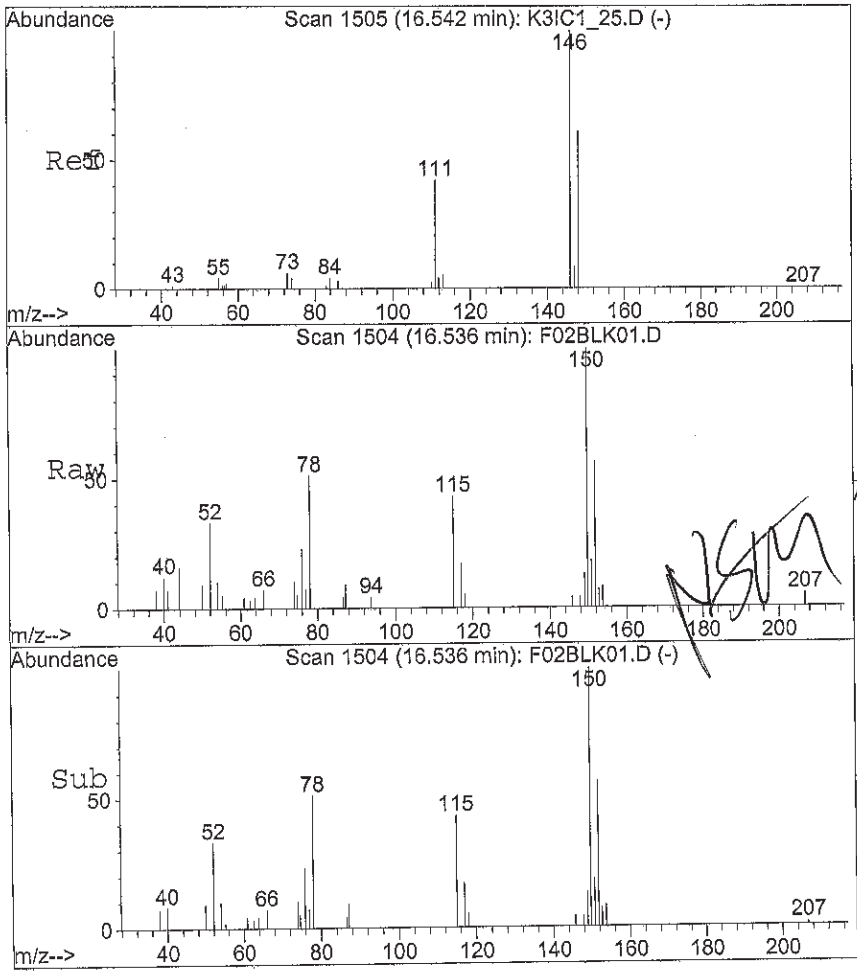


#70
1,3-Dichlorobenzene
Concen: 0.06 ug/L
RT: 16.54 min Scan# 1504
Delta R.T. 0.09 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

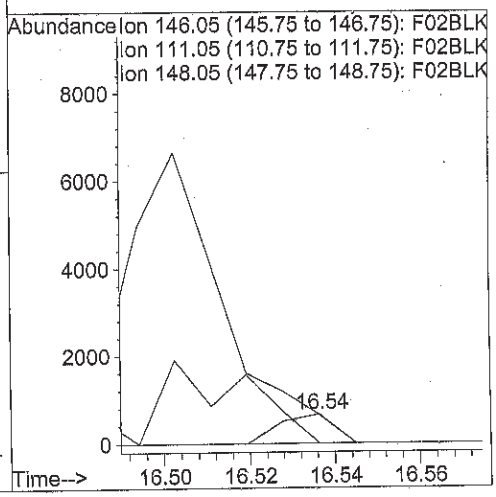


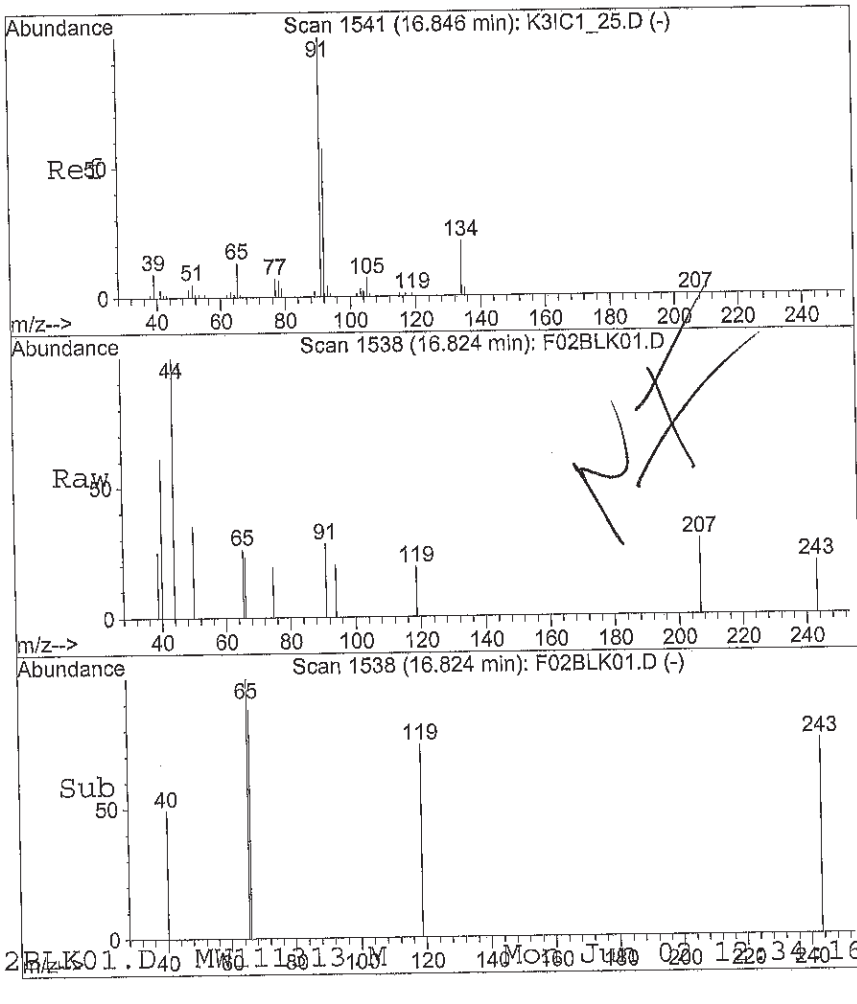


#71
1,4-Dichlorobenzene
Concen: 0.06 ug/L
RT: 16.54 min Scan# 1504
Delta R.T. -0.01 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

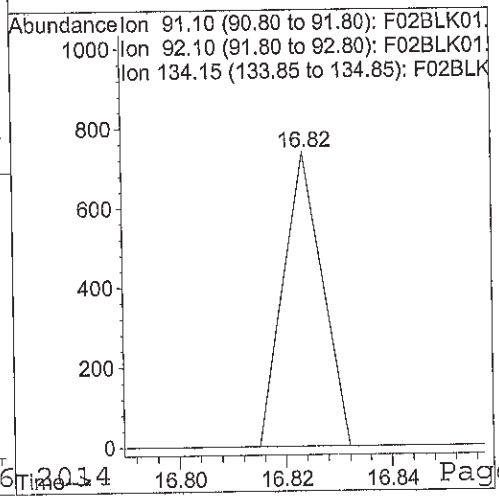


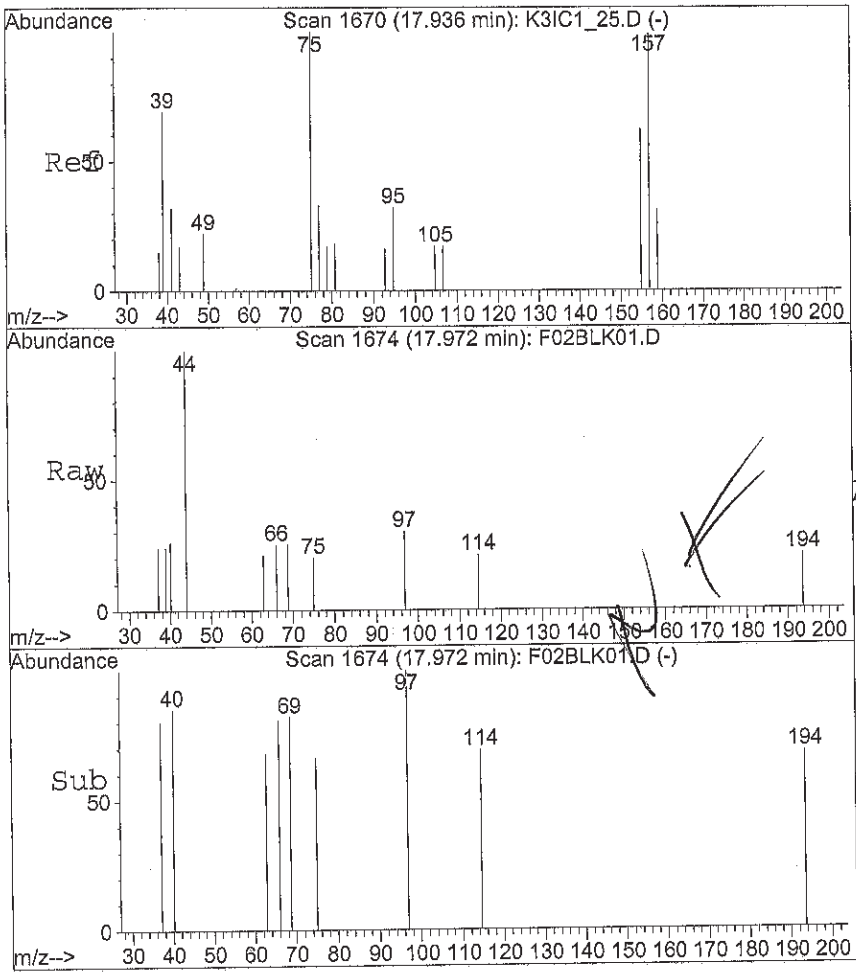


#72
n-Butylbenzene
Concen: 0.02 ug/L
RT: 16.82 min Scan# 1538
Delta R.T. -0.02 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

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#

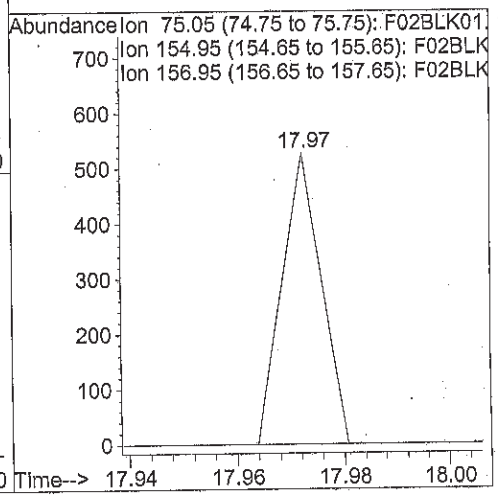


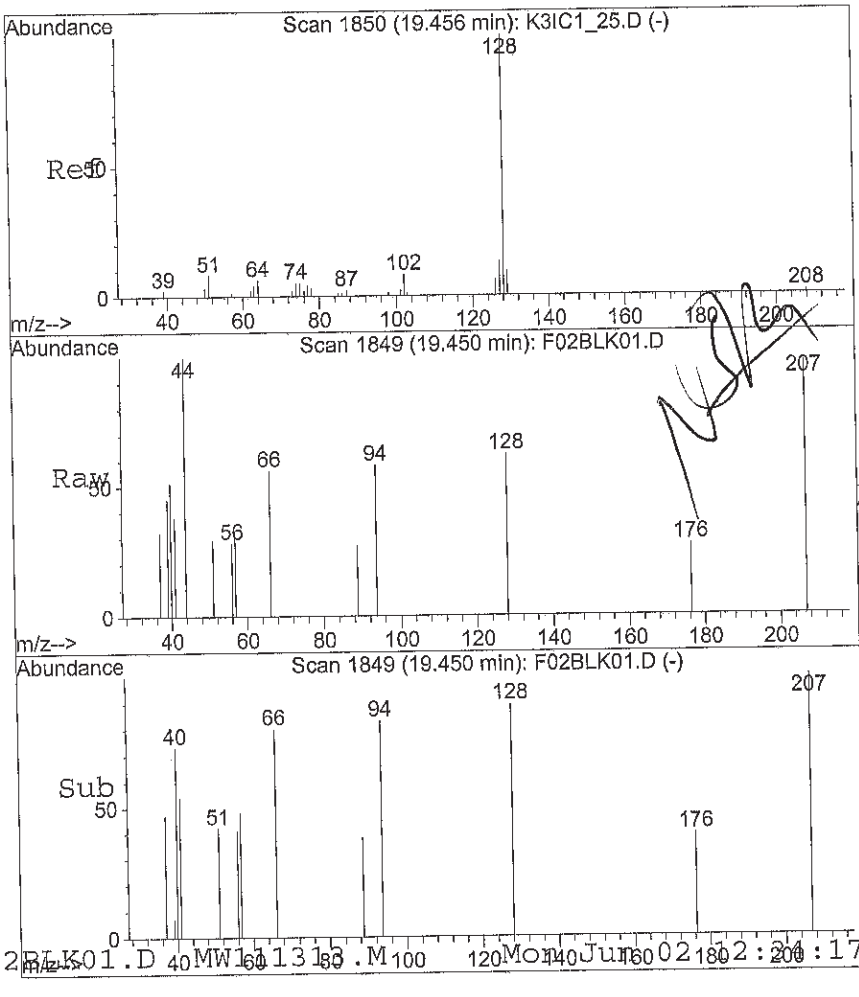


#74
1,2-Dibromo-3-chloropropane
Concen: 1.21 ug/L
RT: 17.97 min Scan# 1674
Delta R.T. 0.04 min
Lab File: F02BLK01.D
Acq: 2 Jun 2014 11:15 am

Tgt Ion: 75 Resp: 268

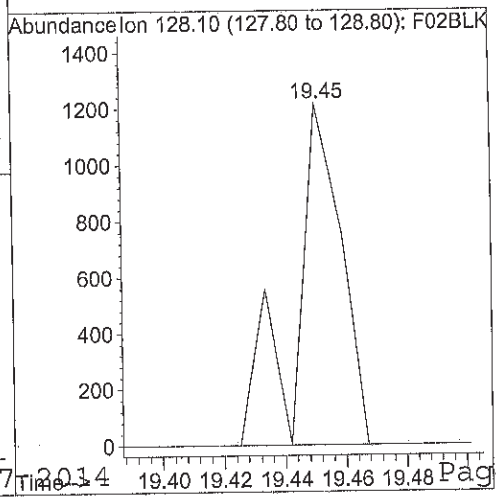
Ion	Ratio	Lower	Upper
75	100		
155	0.0	59.2	88.8#
157	0.0	77.0	115.6#





#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



Quantitation Report (QT Reviewed)

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/H20 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

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

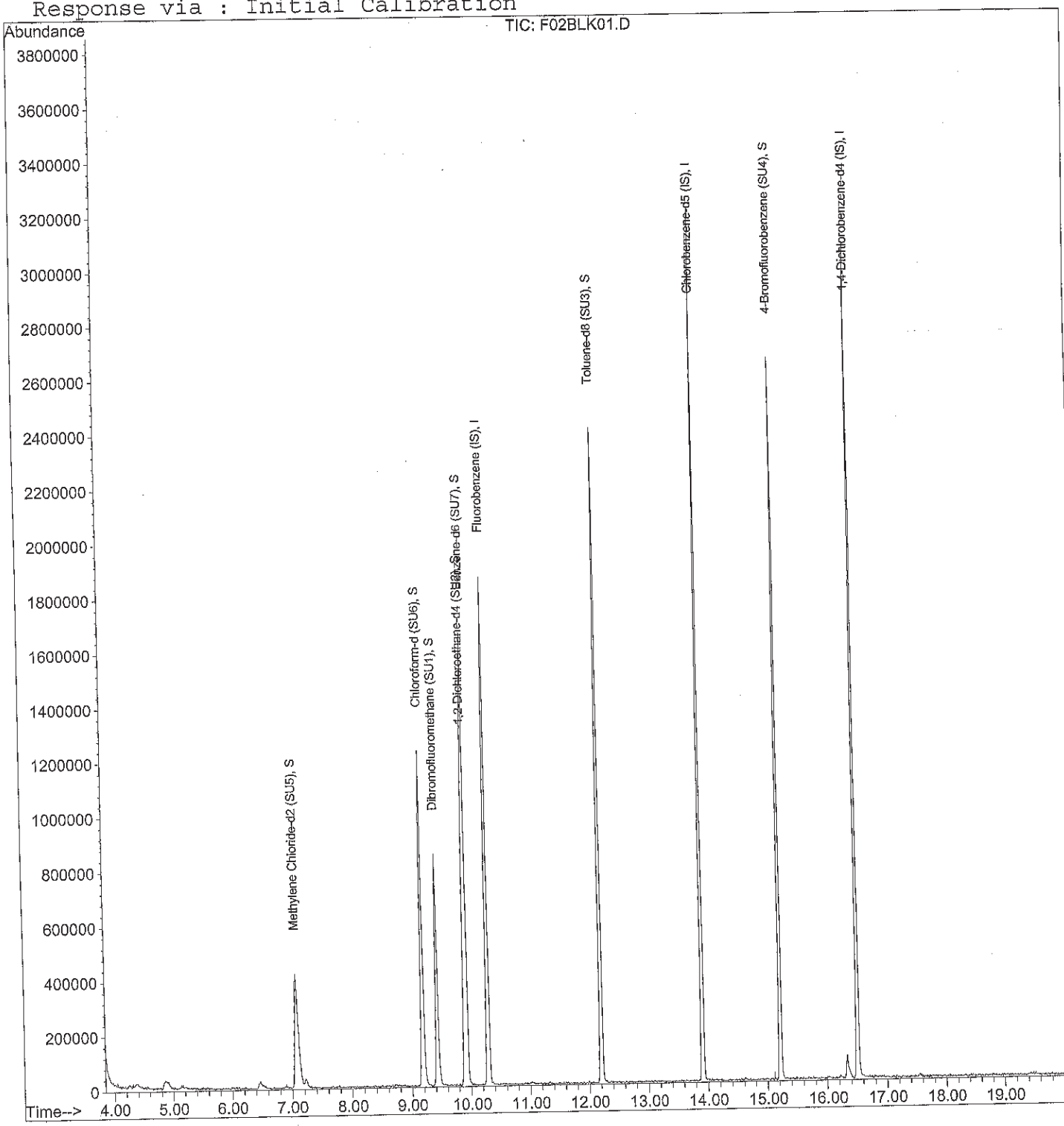
Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F02BLK01.D
Acq On : 2 Jun 2014 11:15 am
Sample : 34F0201-BLK1
Misc : 100cc AMBIENT AIR/H20
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

Quantitation Report (QT Reviewed)

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 =	97.76%		

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

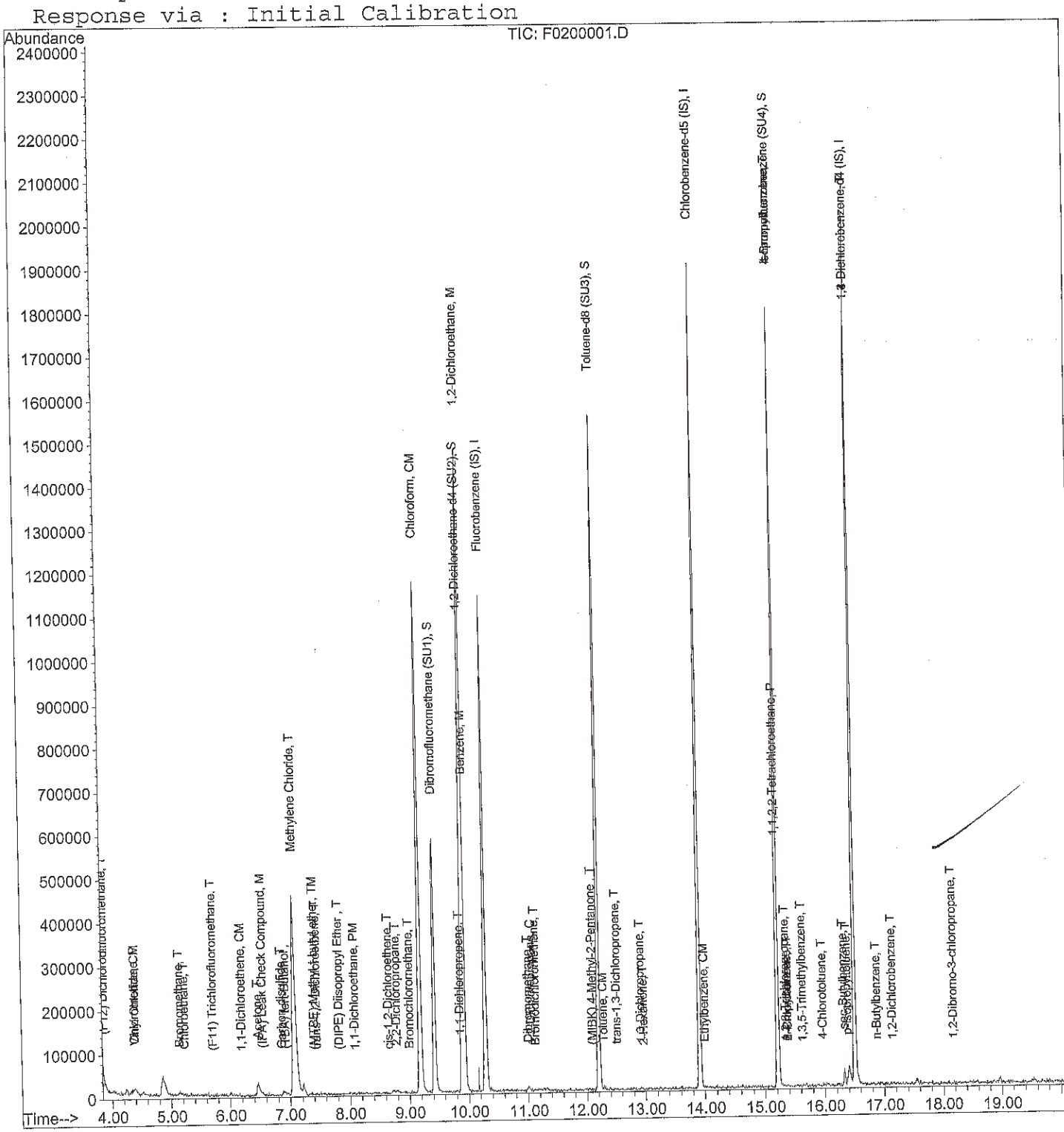
Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
Title : 8260B GC/MS #3 ICAL 11/13/13 DN
Last Update : Wed Nov 13 19:38:32 2013
Response via : Initial Calibration
DataAcq Meth : MW111313

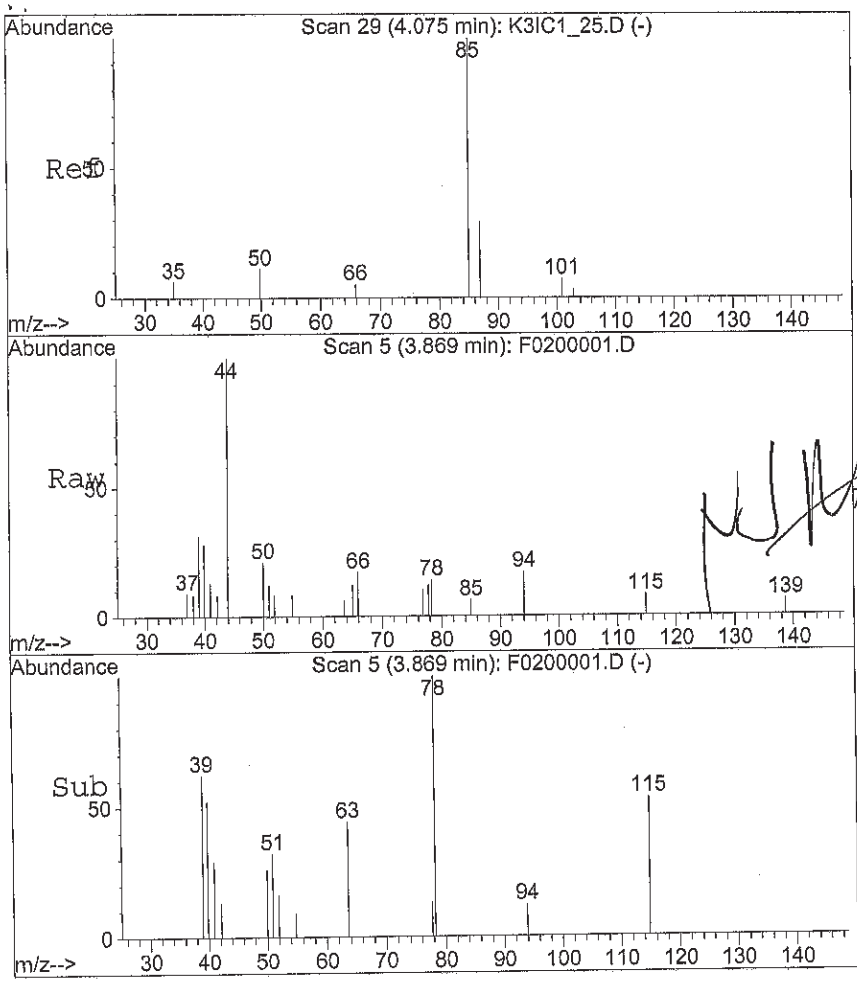
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) 1,2-Dichloroethane	9.92	62	13541	4.24 ug/L #	1
34) 1,2-Dichloropropane	11.06	63	300	0.14 ug/L #	2
35) Dibromomethane	11.01	93	272	0.16 ug/L #	5
36) Bromodichloromethane	11.13	83	263	0.08 ug/L #	21
40) (MIBK) 4-Methyl-2-Pentanon	12.10	43	288	0.16 ug/L #	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

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

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

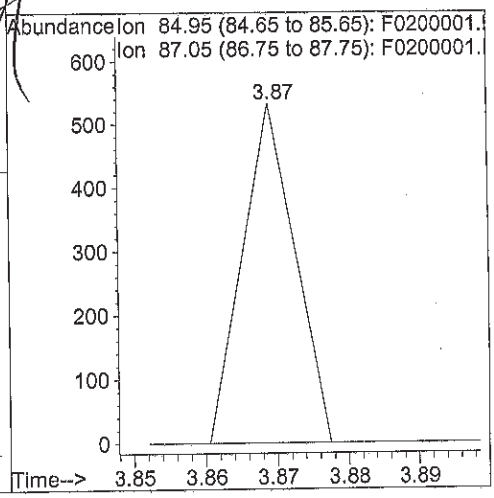


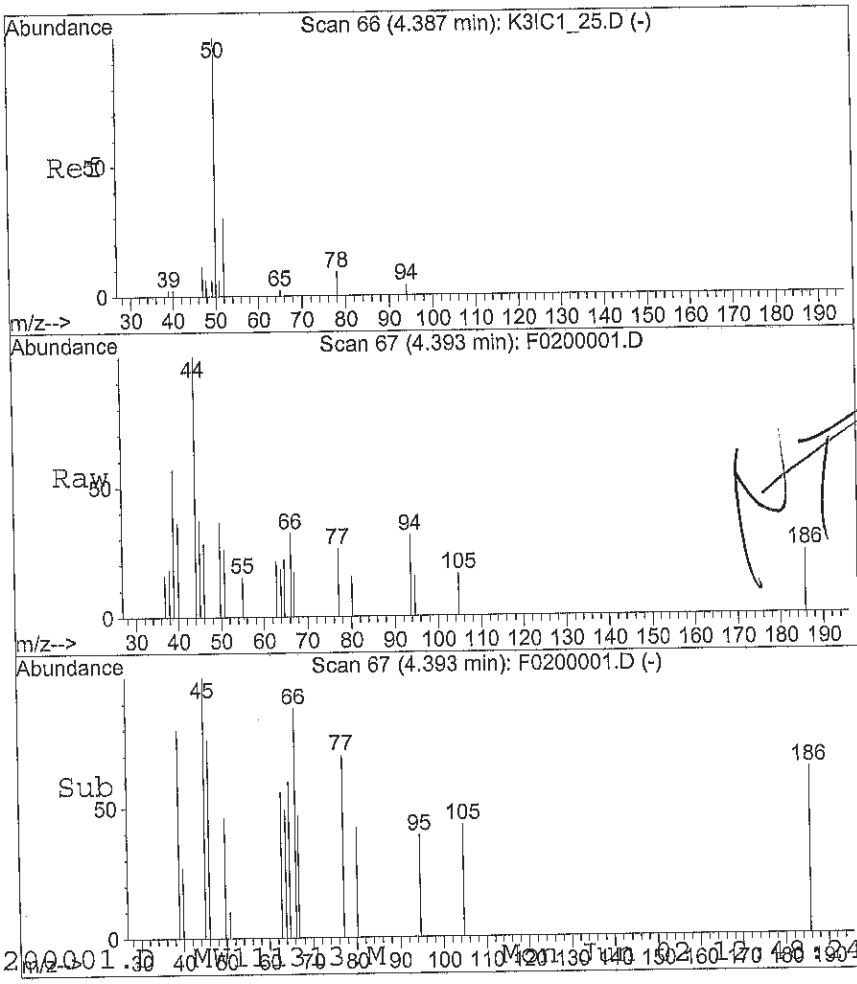


#3
(F12) Dichlorodifluoromethane
Concen: 0.11 ug/L
RT: 3.87 min Scan# 5
Delta R.T. -0.21 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 85 Resp: 270

Ion	Ratio	Lower	Upper
85	100		
87	0.0	24.6	37.0#

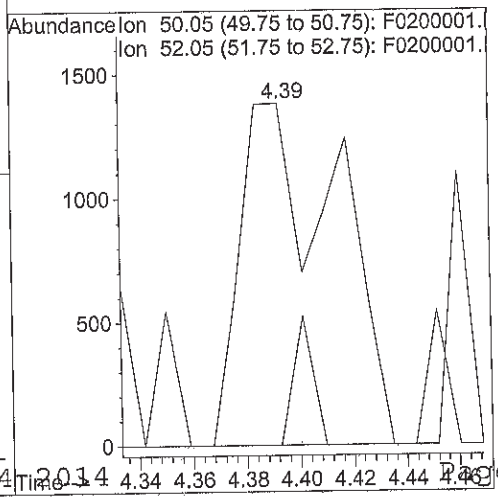


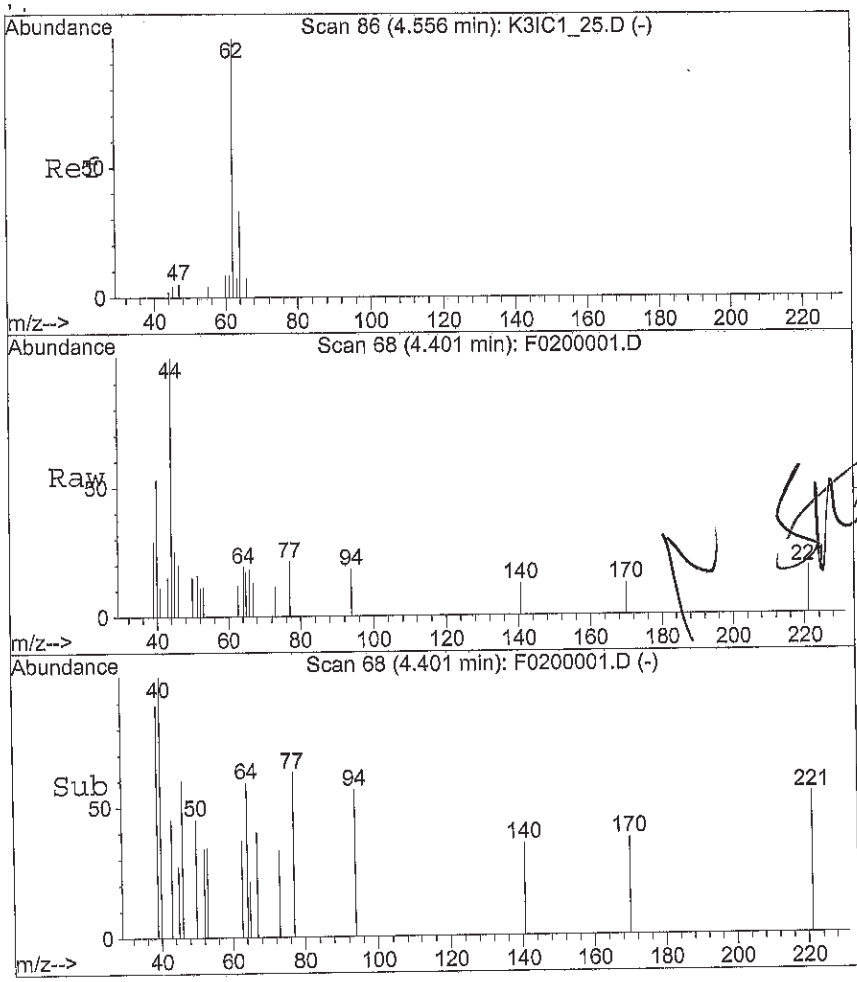


#4
Chloromethane
Concen: 0.92 ug/L
RT: 4.39 min Scan# 67
Delta R.T. 0.01 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 50 Resp: 3448

Ion	Ratio	Lower	Upper
50	100		
52	7.7	26.9	40.3#

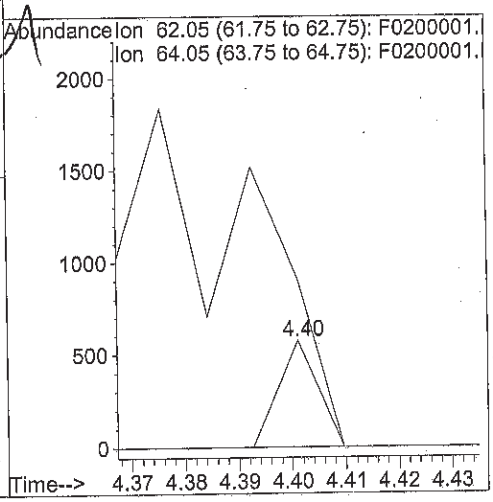


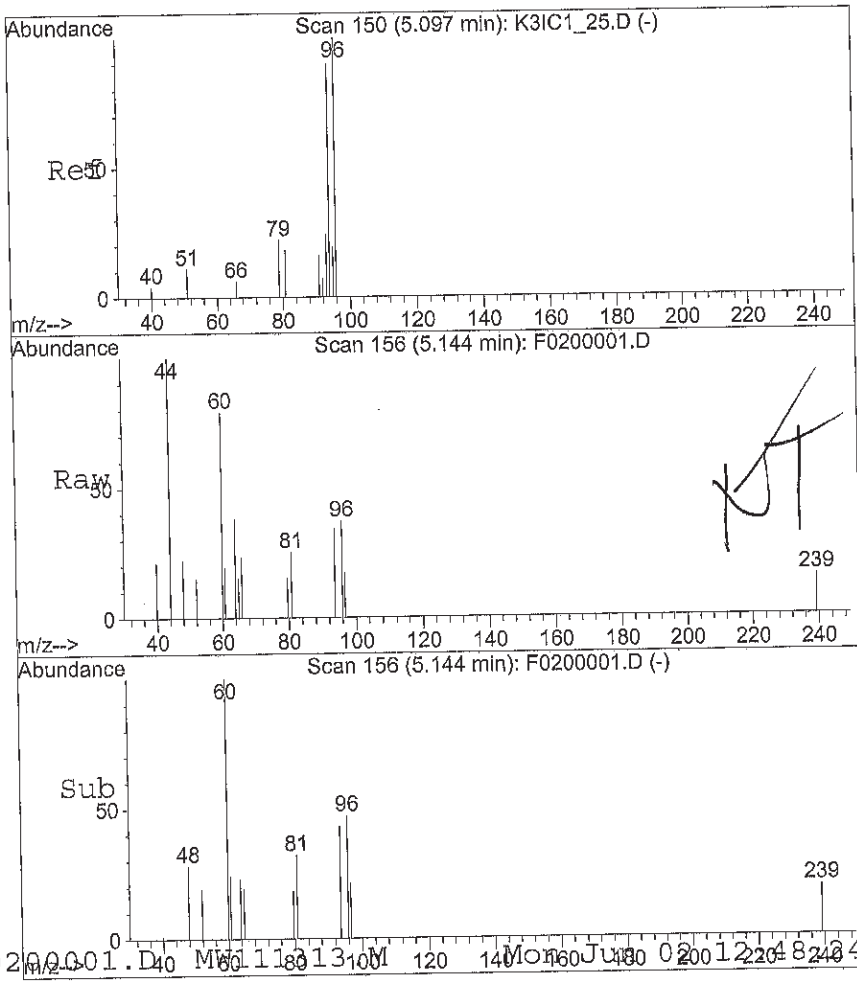


#5
Vinyl Chloride
Concen: 0.17 ug/L
RT: 4.40 min Scan# 68
Delta R.T. -0.15 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 62 Resp: 289

Ion	Ratio	Lower	Upper
62	100		
64	0.0	25.6	38.4#

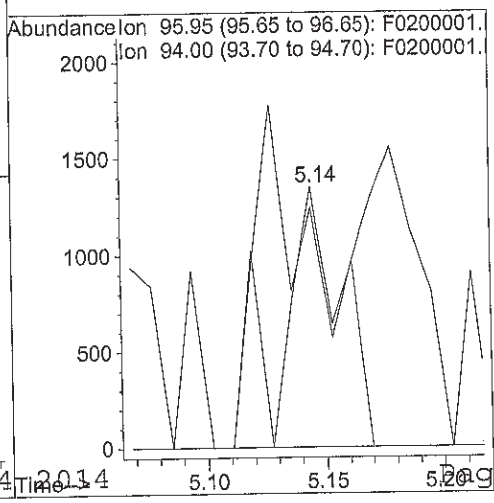


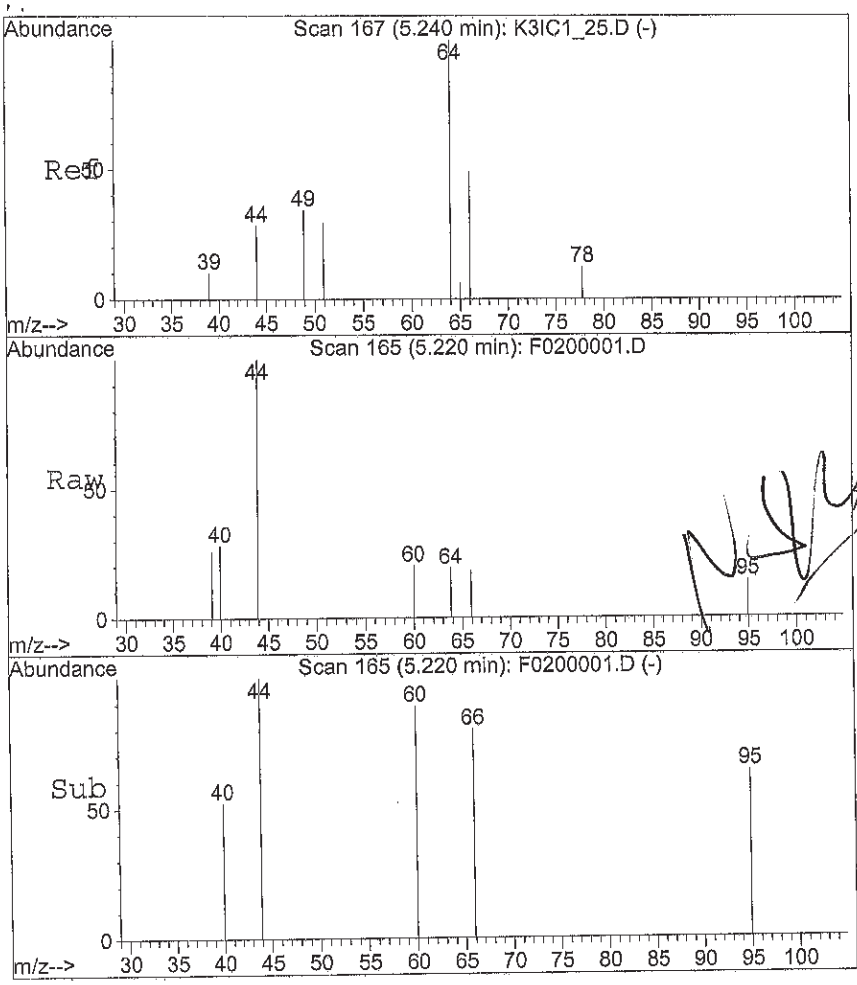


#6
Bromomethane
Concen: 0.49 ug/L
RT: 5.14 min Scan# 156
Delta R.T. 0.05 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 96 Resp: 2397

Ion	Ratio	Lower	Upper
96	100		
94	113.2	101.0	151.4

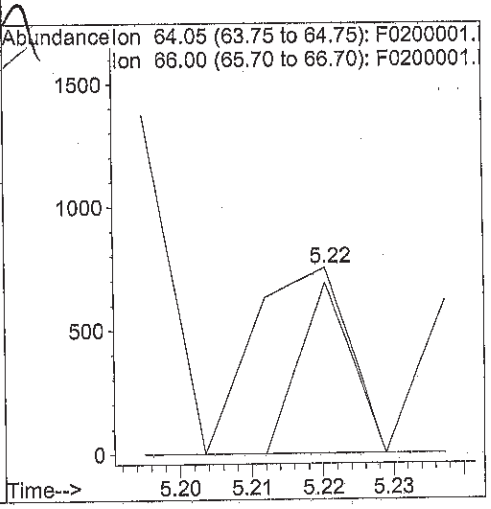


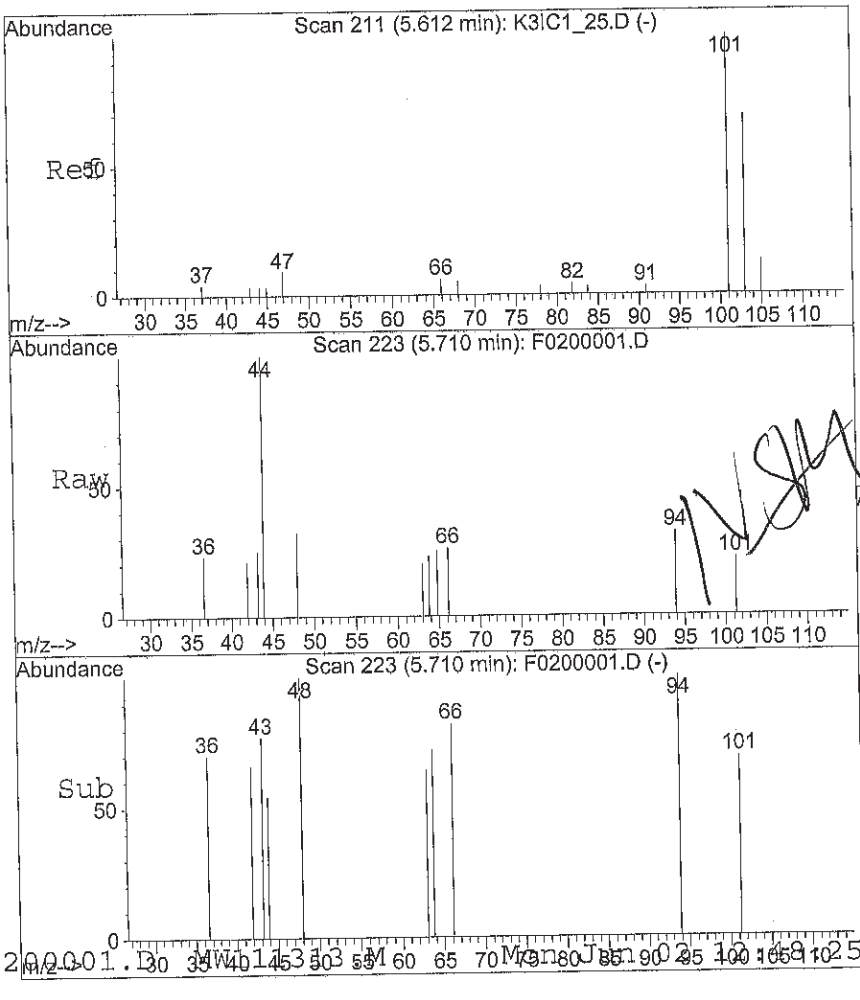


#7
Chloroethane
Concen: 1.56 ug/L
RT: 5.22 min Scan# 165
Delta R.T. -0.02 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 64 Resp: 699

Ion	Ratio	Lower	Upper
64	100		
66	49.8	35.4	53.0

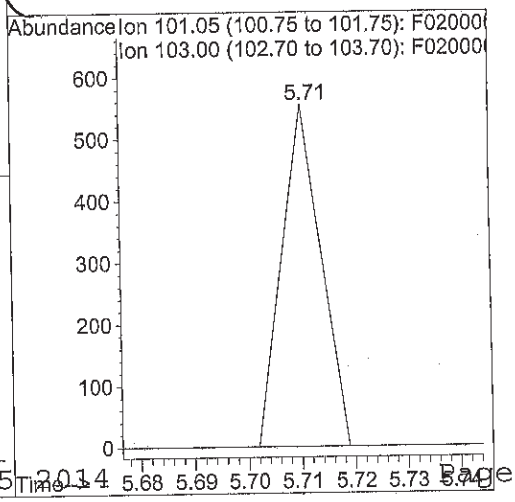


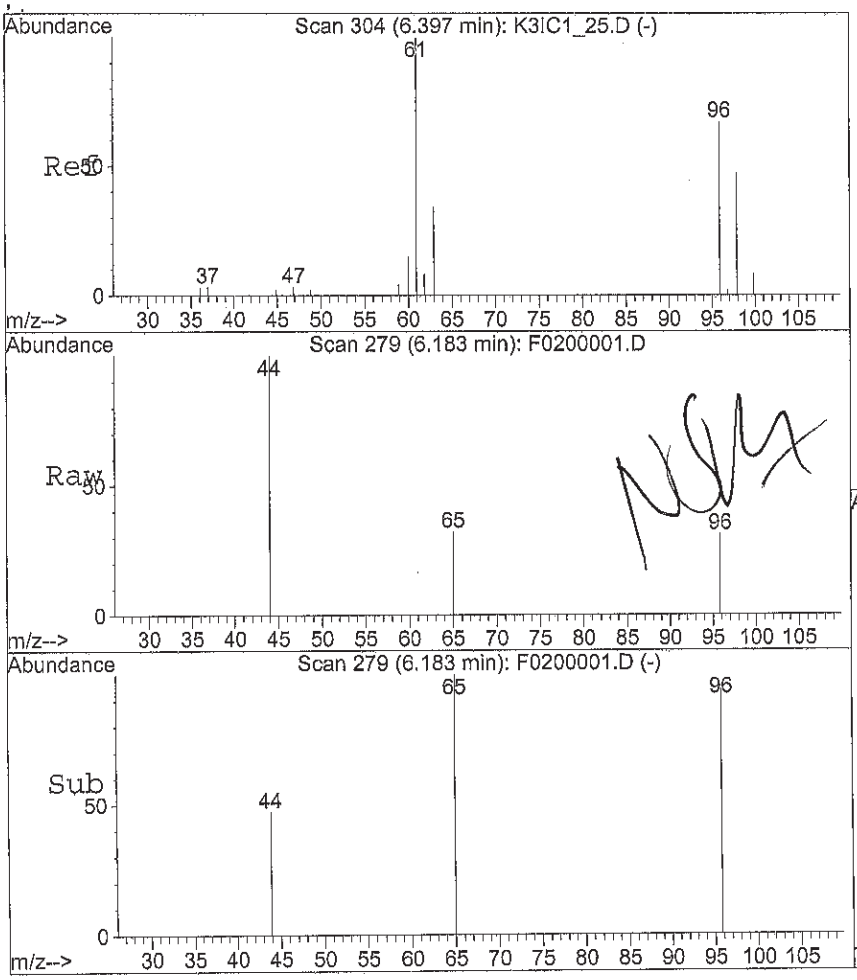


#8
(F11) Trichlorofluoromethane
Concen: 0.11 ug/L
RT: 5.71 min Scan# 223
Delta R.T. 0.10 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion:101 Resp: 281

Ion	Ratio	Lower	Upper
101	100		
103	0.0	54.5	81.7#

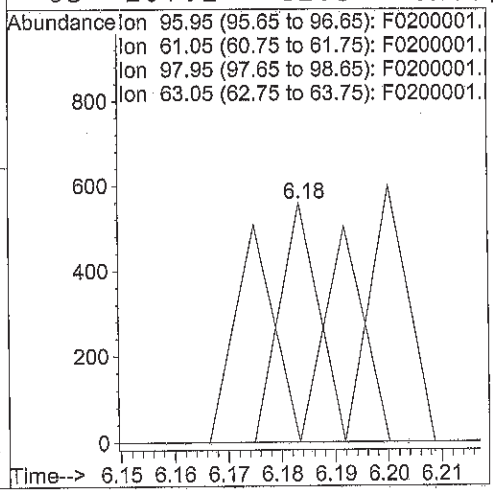


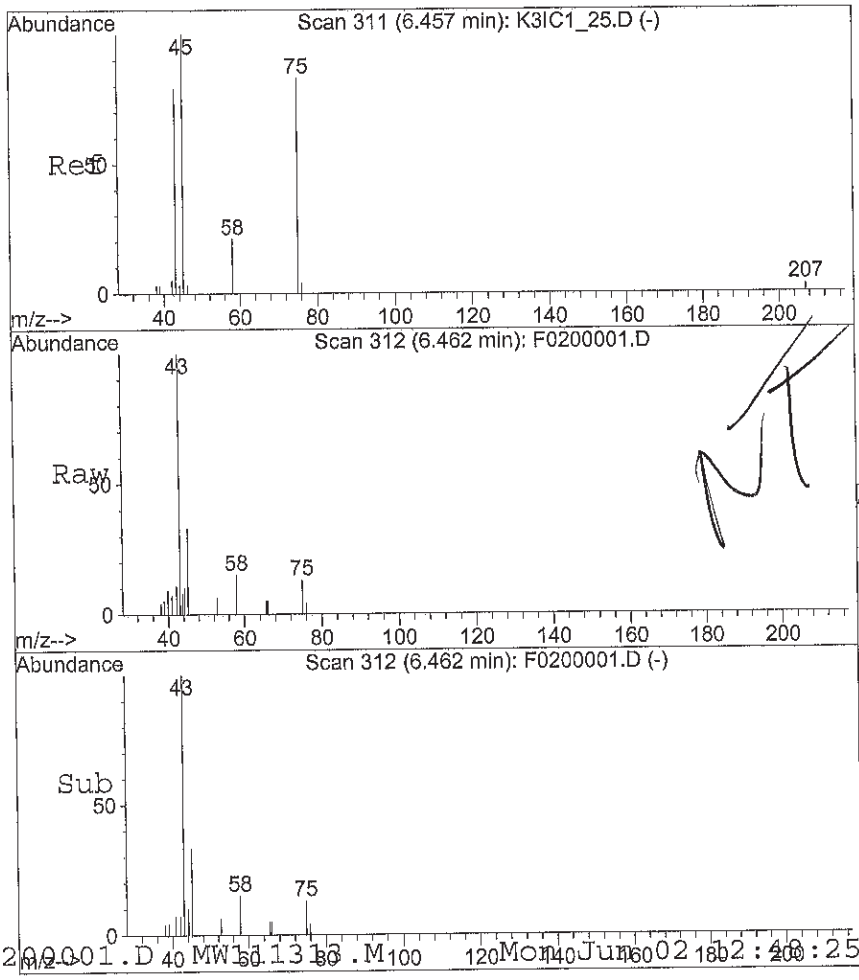


#10
1,1-Dichloroethene
Concen: 0.12 ug/L
RT: 6.18 min Scan# 279
Delta R.T. -0.21 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

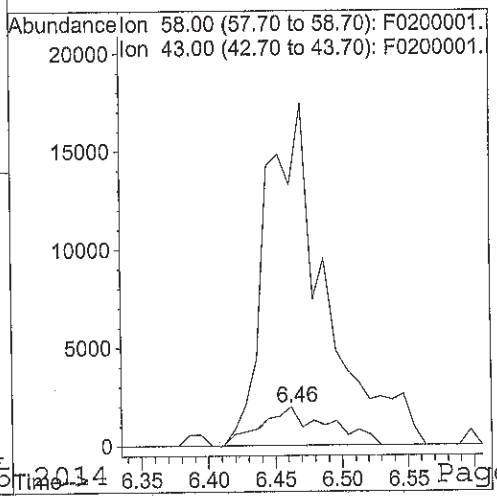


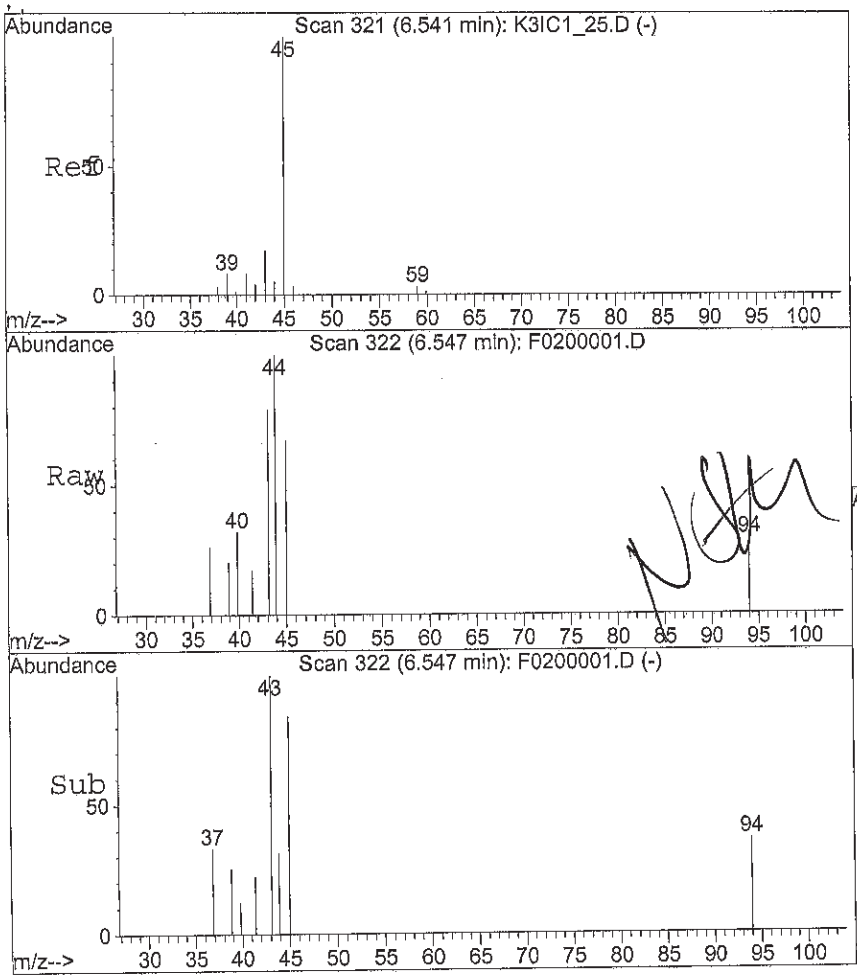


#11
Acetone
Concen: 14.29 ug/L
RT: 6.46 min Scan# 312
Delta R.T. 0.01 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 58 Resp: 6749

Ion	Ratio	Lower	Upper
58	100		
43	800.8	360.9	541.3#

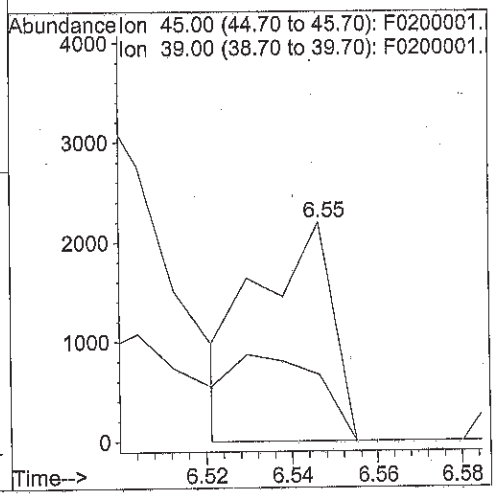


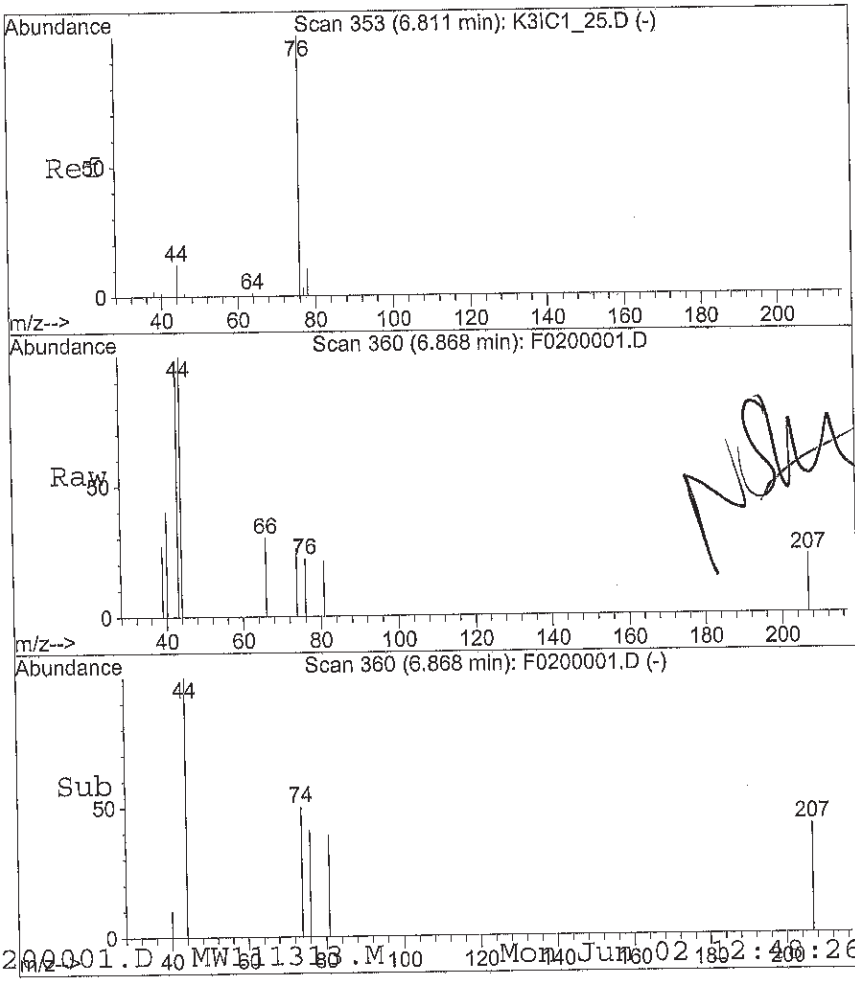


#12
(IPA) Leak Check Compound
Concen: 23.21 ug/L
RT: 6.55 min Scan# 322
Delta R.T. 0.01 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 45 Resp: 2677

Ion	Ratio	Lower	Upper
45	100		
39	43.9	4.9	7.3#

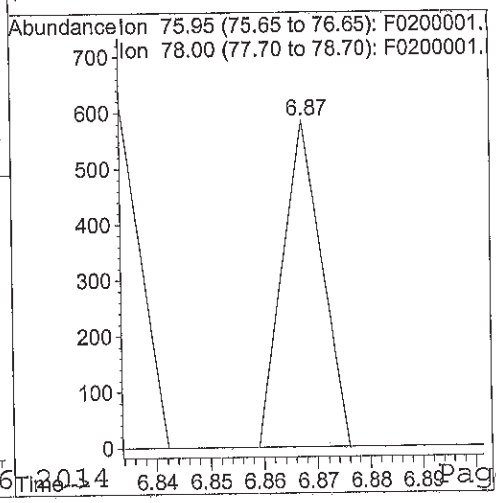


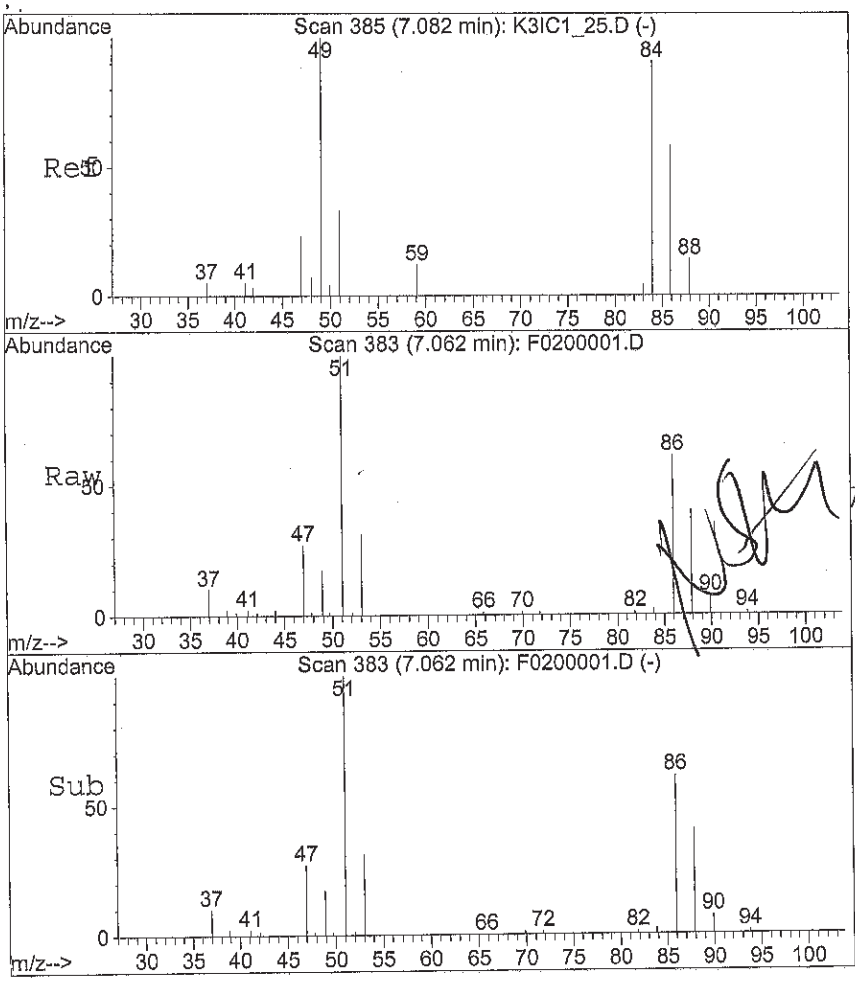


#13
Carbon disulfide
Concen: 0.04 ug/L
RT: 6.87 min Scan# 360
Delta R.T. 0.06 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 76 Resp: 297

Ion	Ratio	Lower	Upper
76	100		
78	0.0	7.0	10.4#

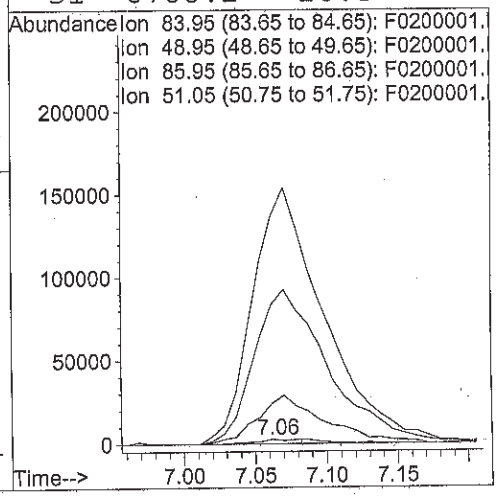


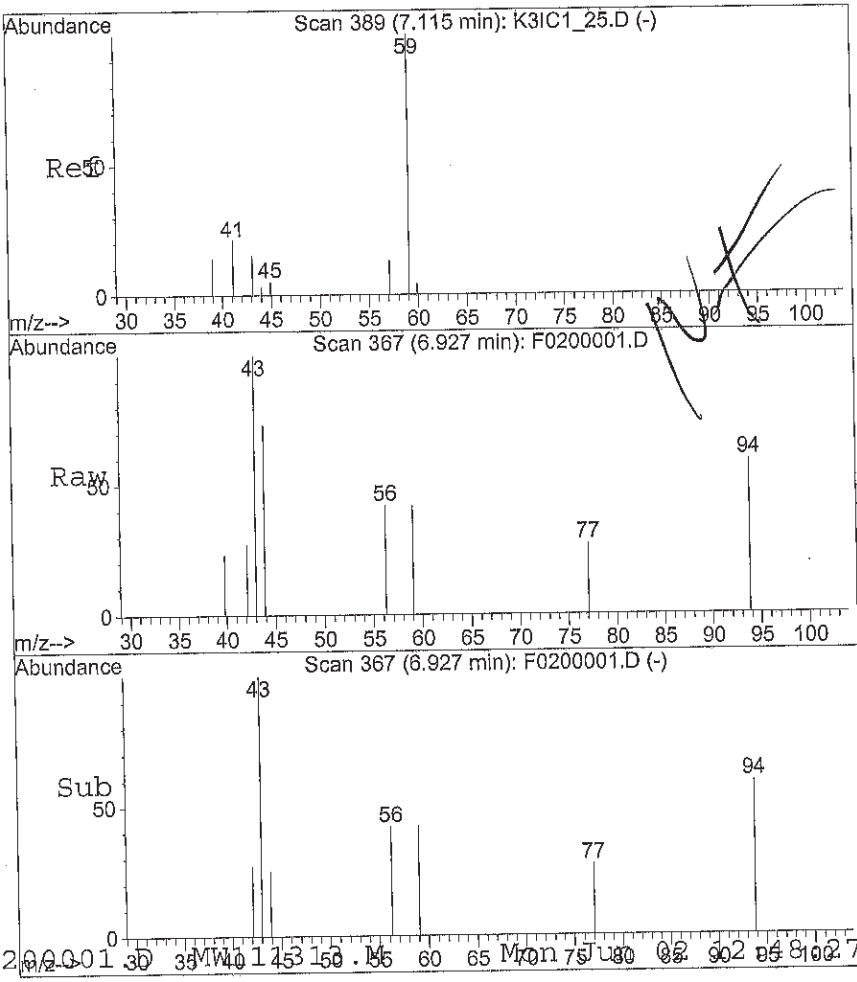


#14
Methylene Chloride
Concen: 3.00 ug/L
RT: 7.06 min Scan# 383
Delta R.T. -0.02 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

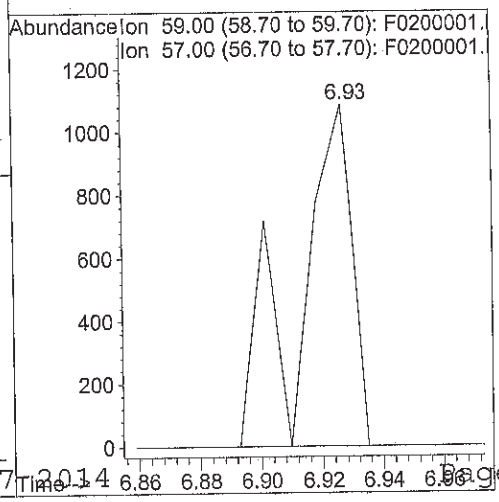


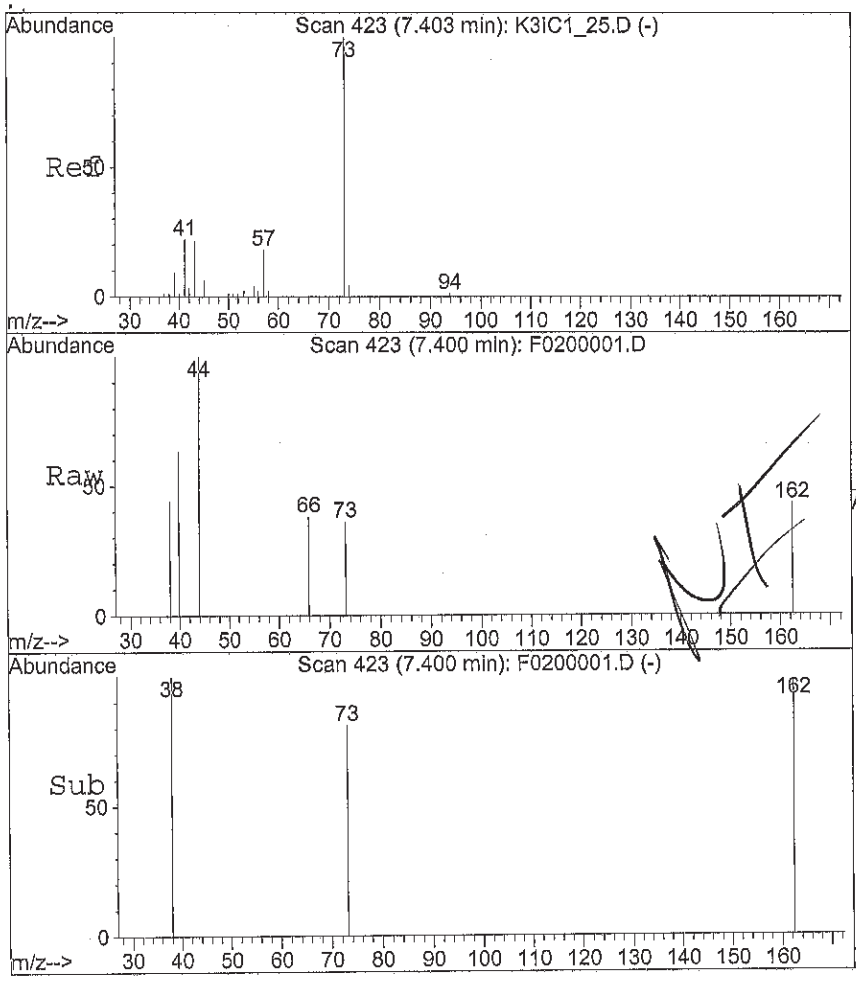


#15
(TBA) tert-Butanol
Concen: 7.98 ug/L
RT: 6.93 min Scan# 367
Delta R.T. -0.19 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 59 Resp: 1307

Ion	Ratio	Lower	Upper
59	100		
57	0.0	6.4	9.6#

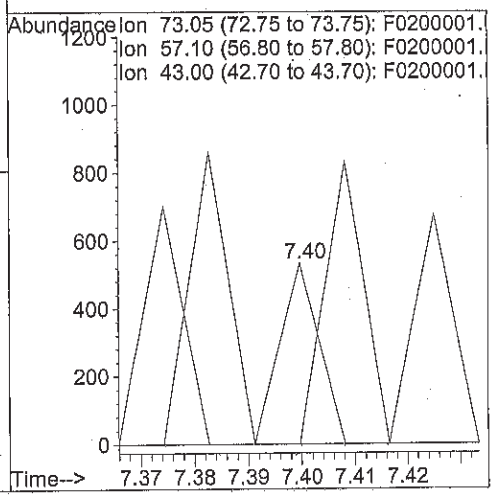


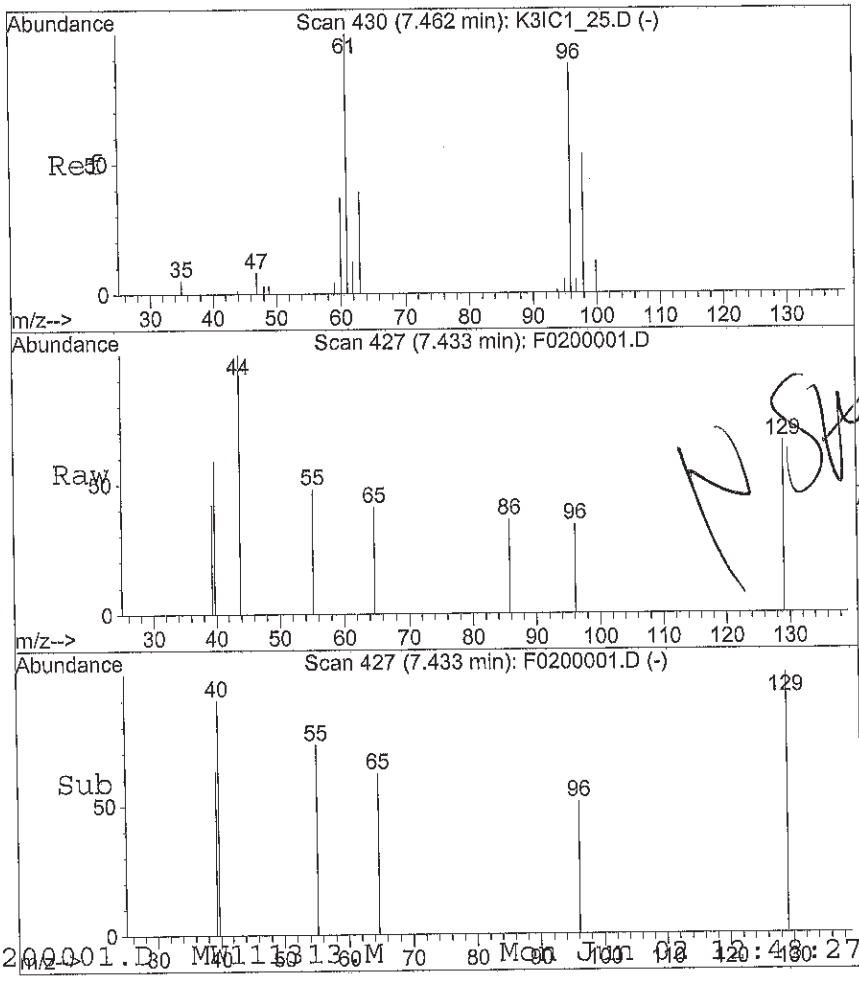


#16
(MTBE) Methyl-t-butyl ether
Concen: 0.05 ug/L
RT: 7.40 min Scan# 423
Delta R.T. -0.00 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

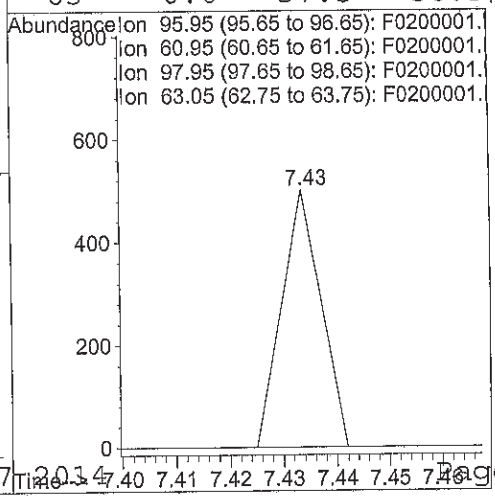


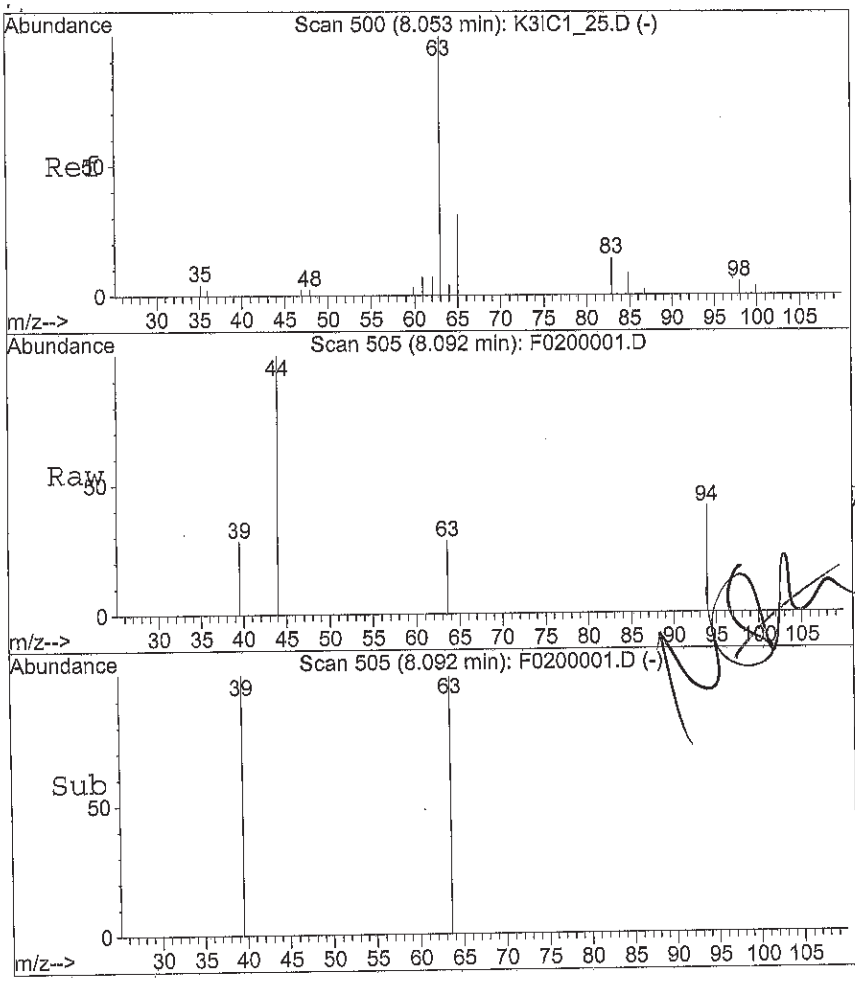


#17
trans-1,2-Dichloroethene
Concen: 0.10 ug/L
RT: 7.43 min Scan# 427
Delta R.T. -0.03 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

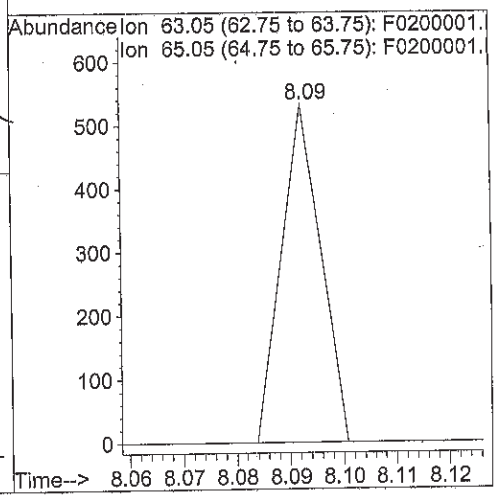


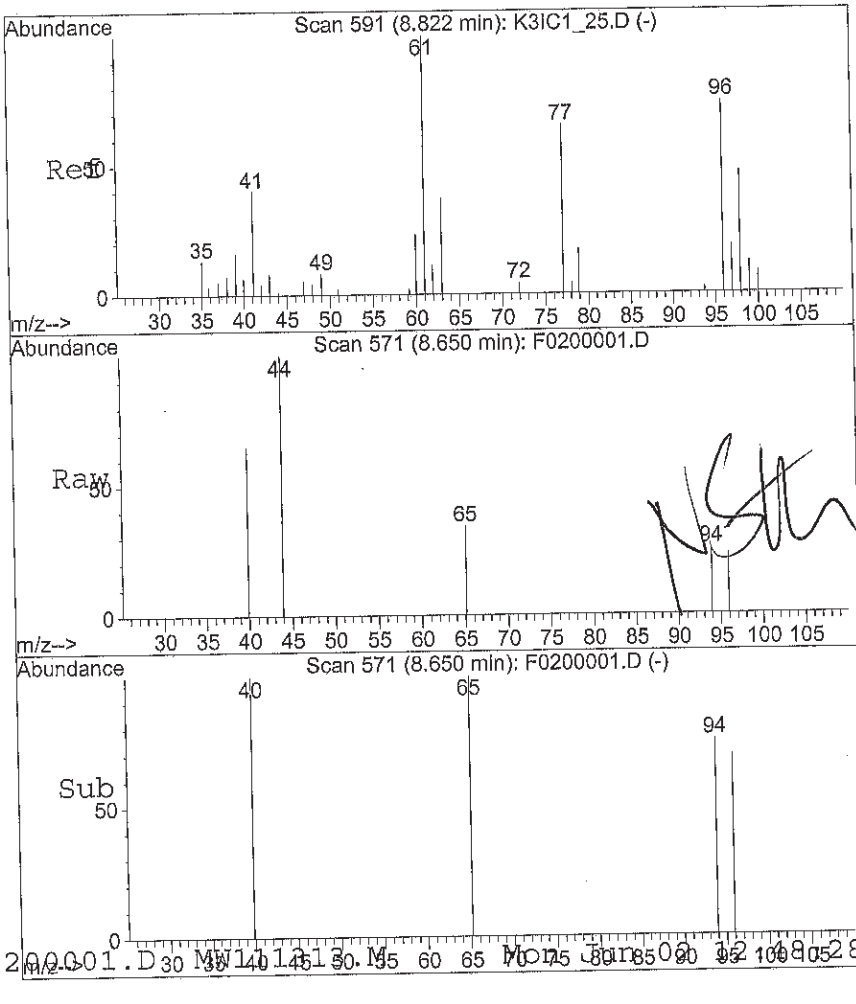


#18
1,1-Dichloroethane
Concen: 0.06 ug/L
RT: 8.09 min Scan# 505
Delta R.T. 0.04 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 63 Resp: 270

Ion	Ratio	Lower	Upper
63	100		
65	0.0	25.8	38.8#

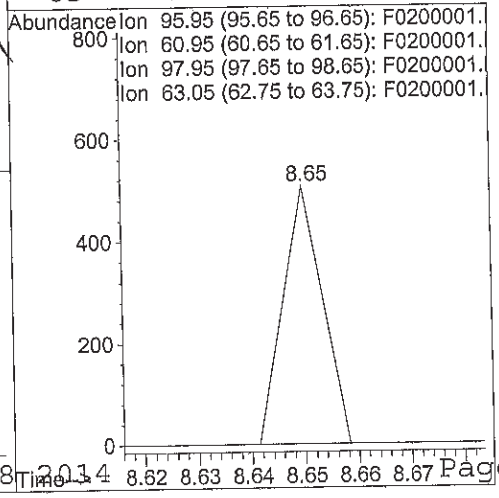


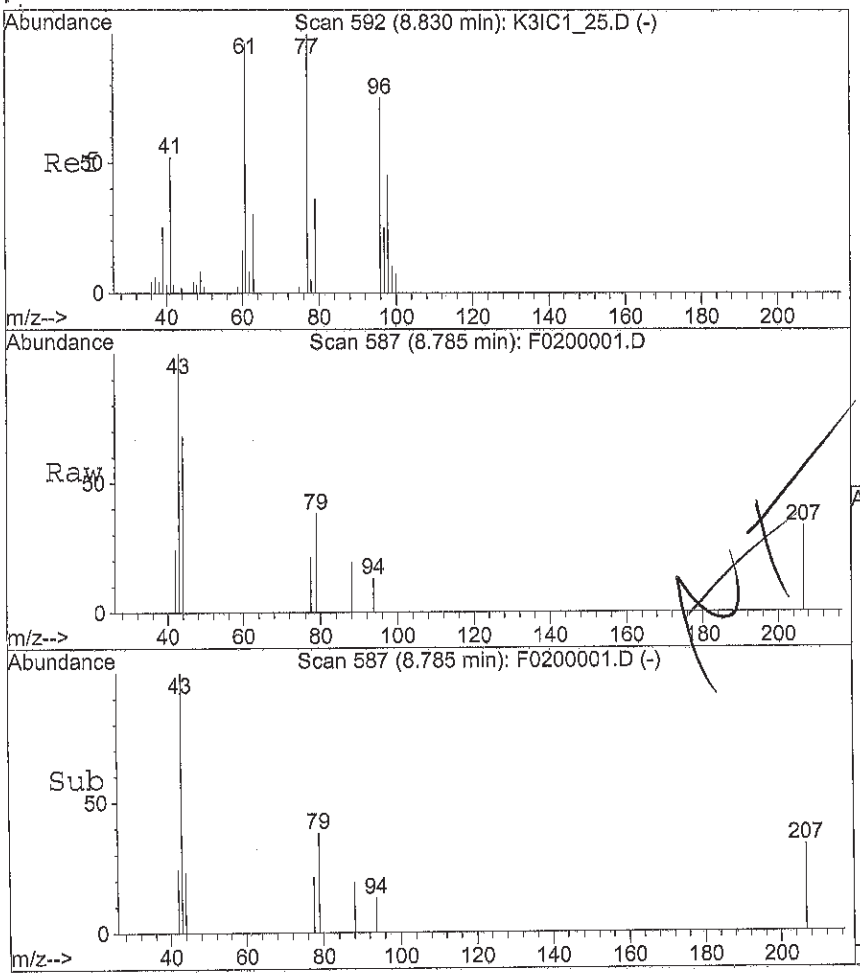


#19
cis-1,2-Dichloroethene
Concen: 0.09 ug/L
RT: 8.65 min Scan# 571
Delta R.T. -0.17 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

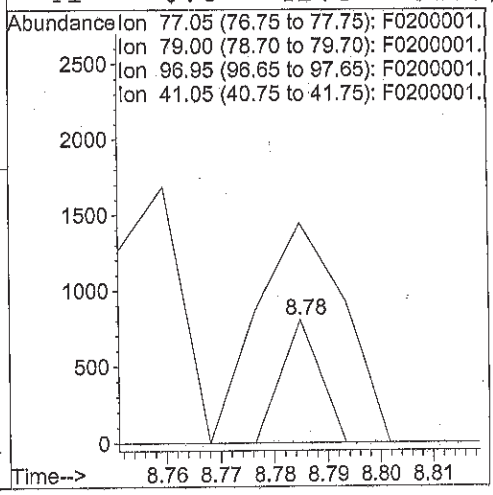


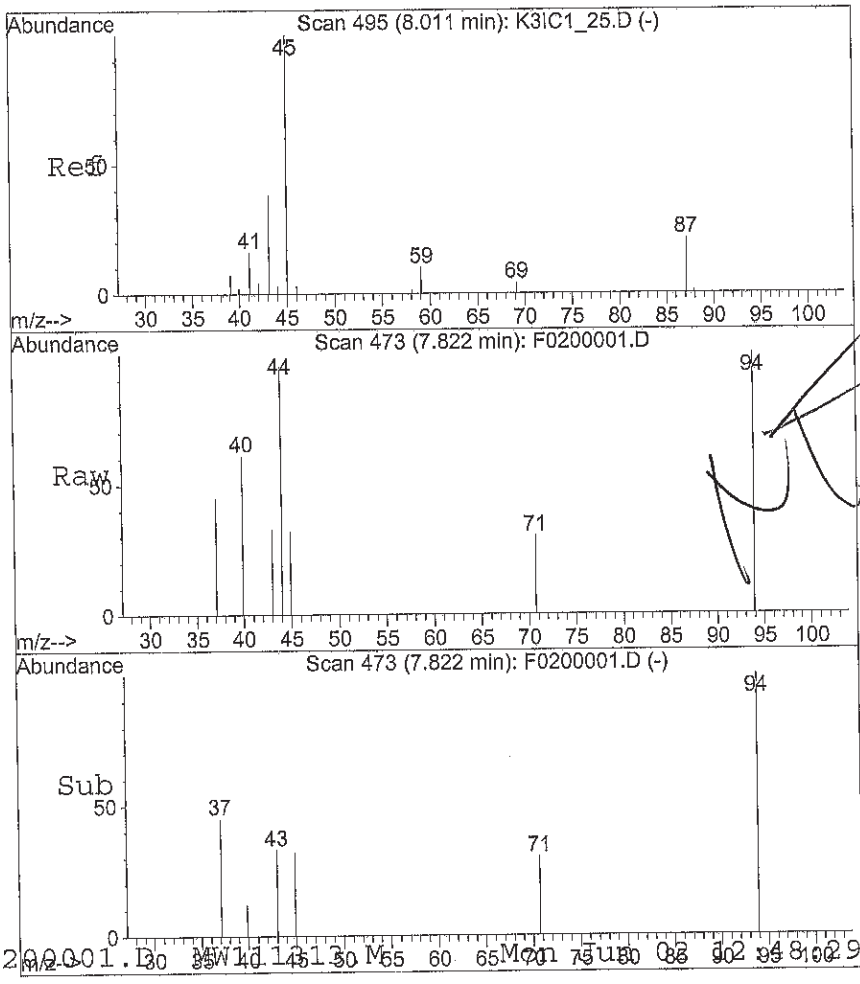


#20
2,2-Dichloropropane
Concen: 0.11 ug/L
RT: 8.78 min Scan# 587
Delta R.T. -0.05 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

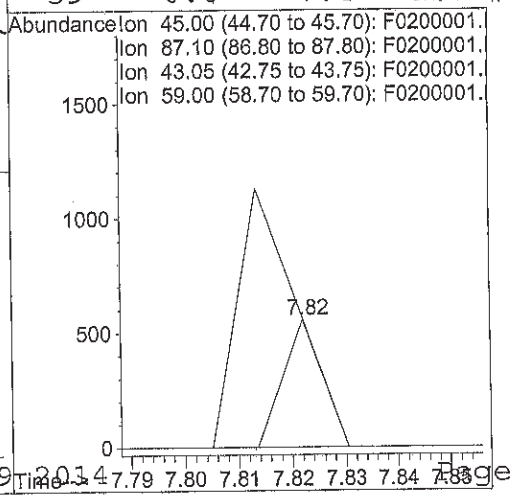


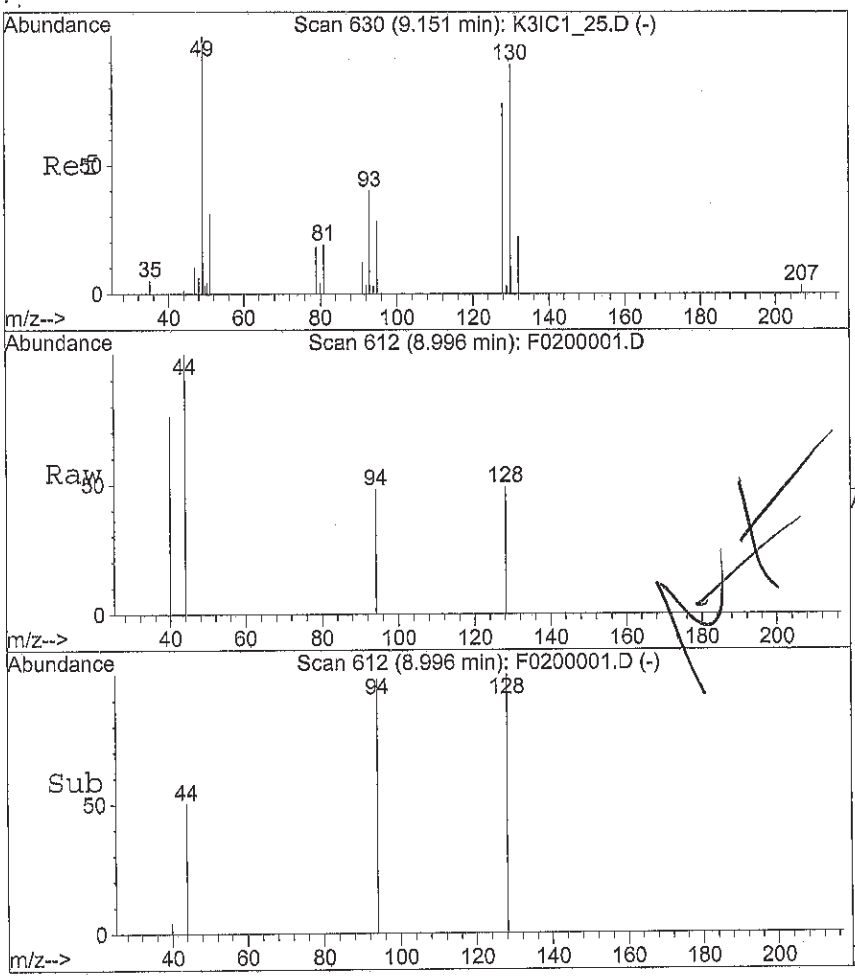


#22
(DIPE) Diisopropyl Ether
Concen: 0.04 ug/L
RT: 7.82 min Scan# 473
Delta R.T. -0.19 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

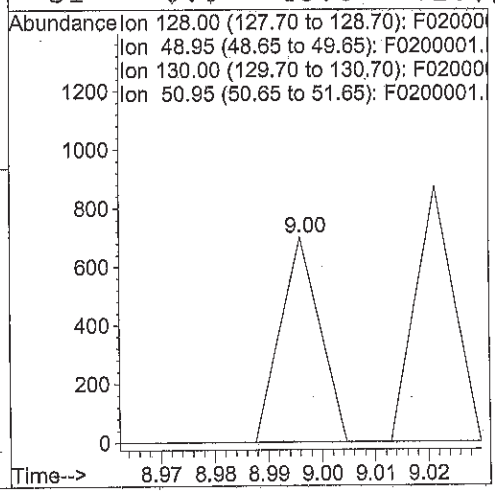


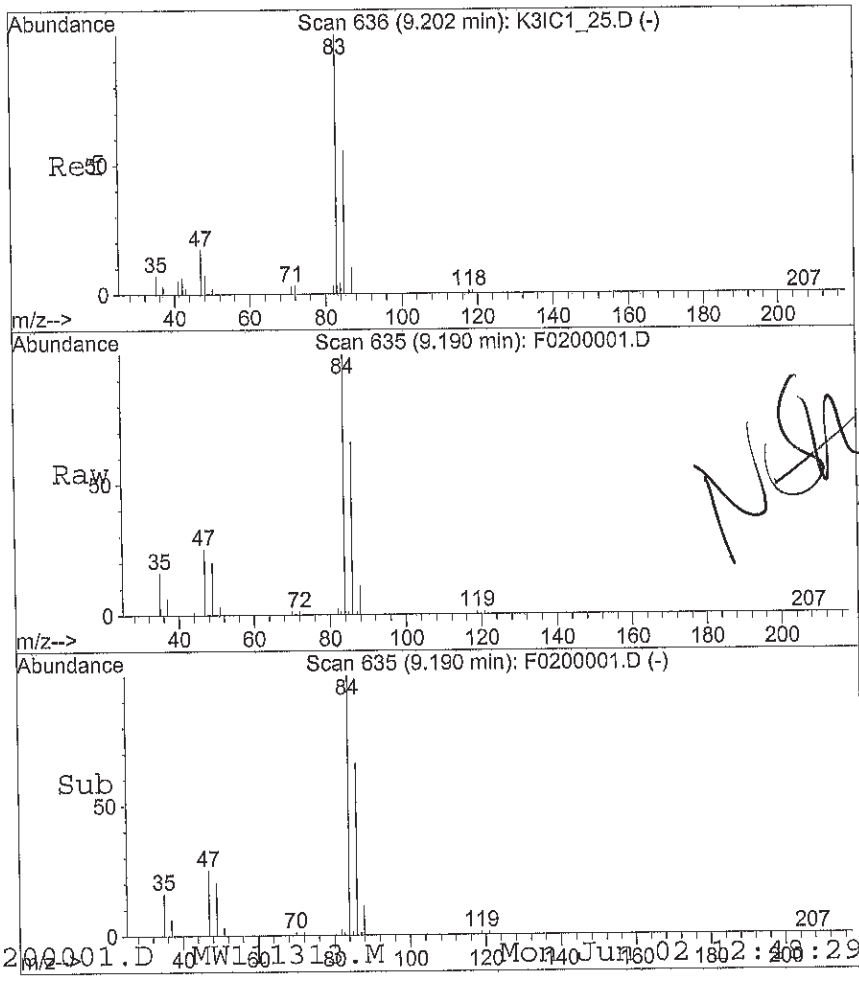


#23
Bromochloromethane
Concen: 0.28 ug/L
RT: 9.00 min Scan# 612
Delta R.T. -0.15 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

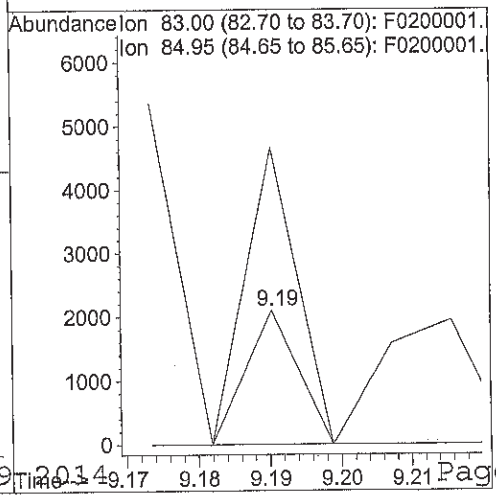


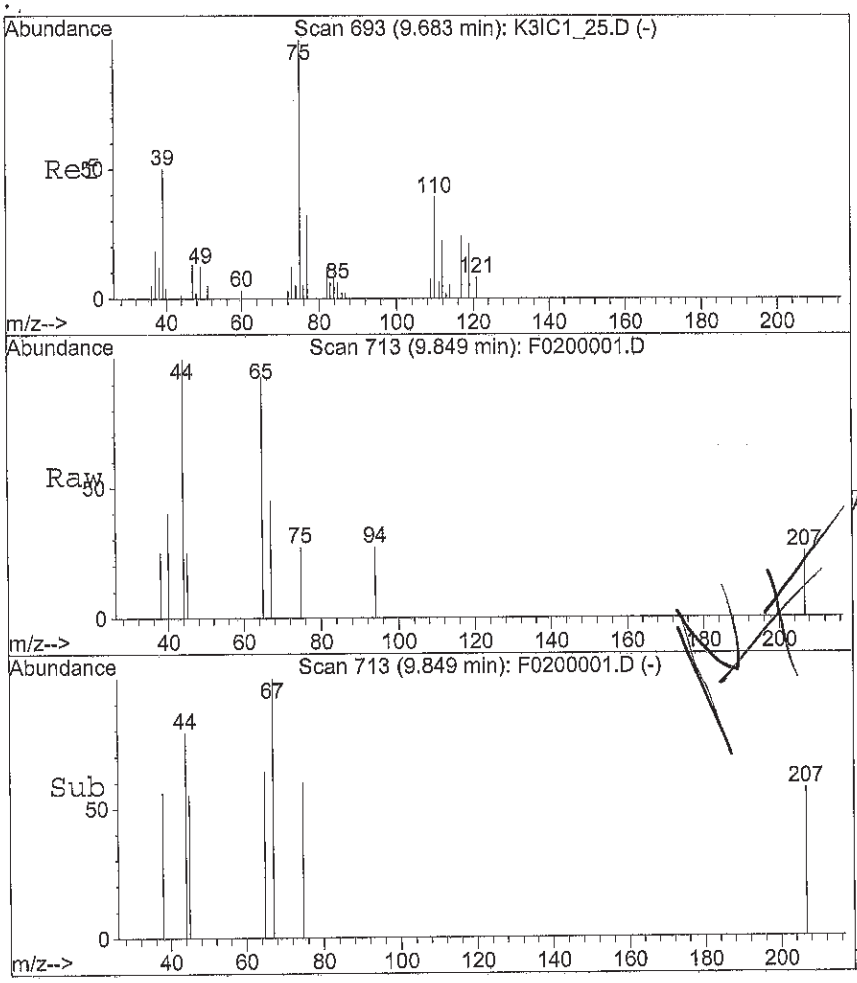


#24
Chloroform
Concen: 0.21 ug/L
RT: 9.19 min Scan# 635
Delta R.T. -0.01 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 83 Resp: 1062

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.8	77.6#

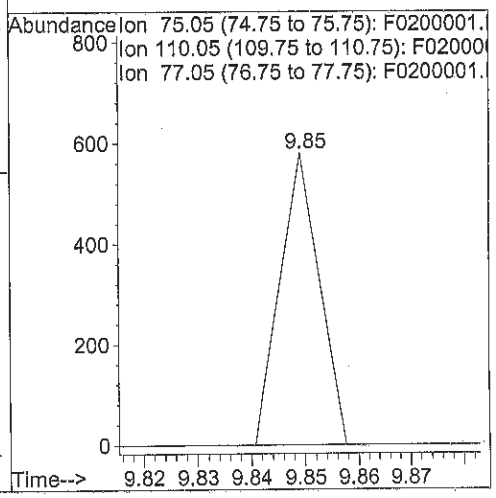


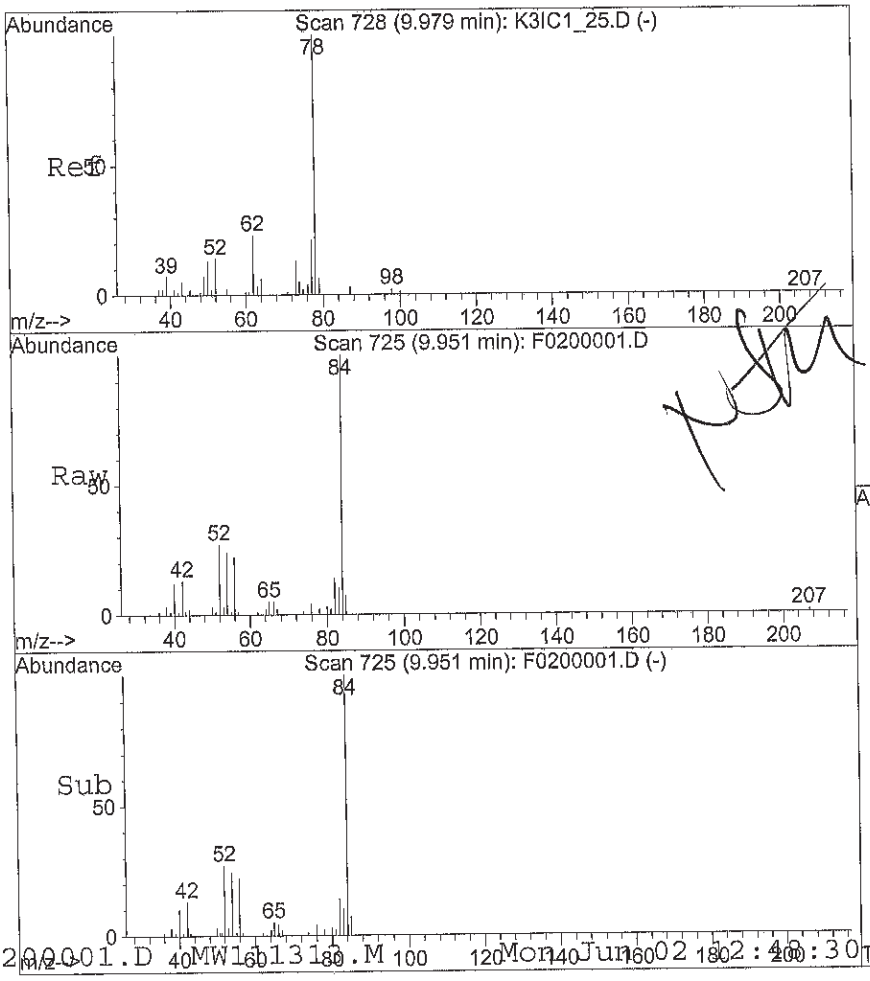


#29
1,1-Dichloropropene
Concen: 0.08 ug/L
RT: 9.85 min Scan# 713
Delta R.T. 0.17 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

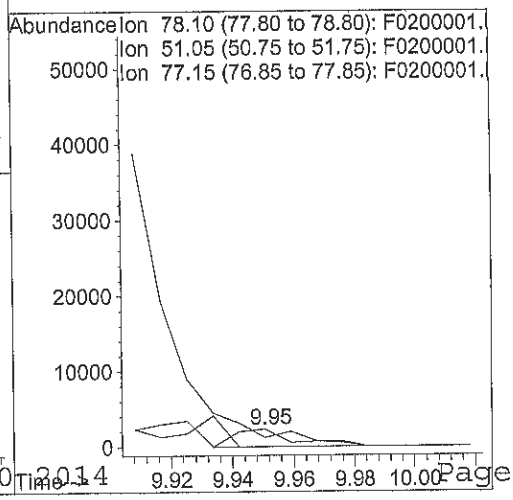


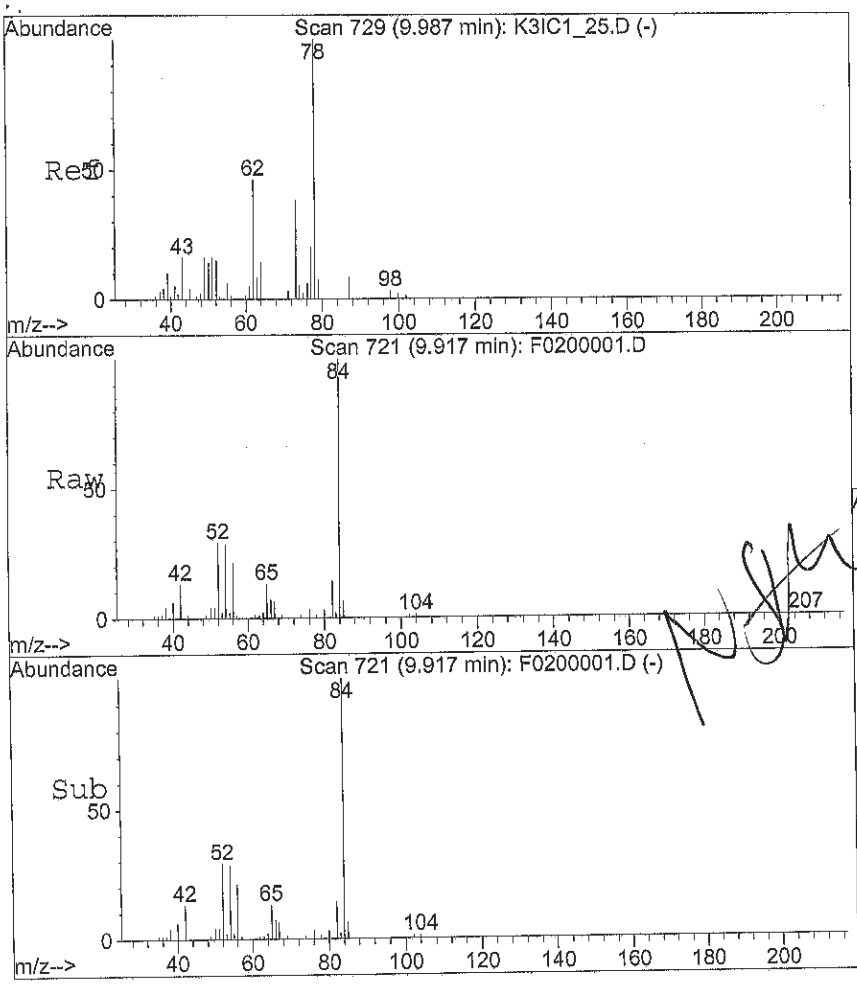


#31
Benzene
Concen: 0.34 ug/L
RT: 9.95 min Scan# 725
Delta R.T. -0.03 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

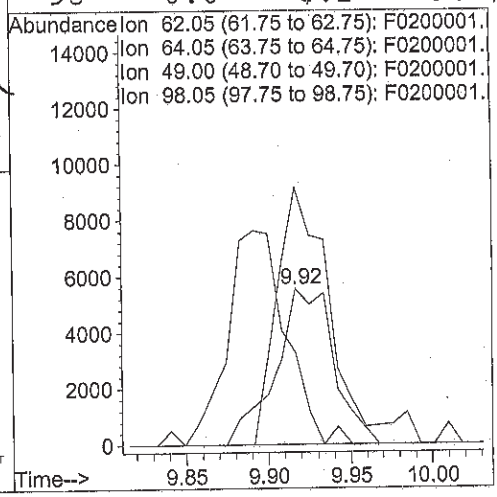


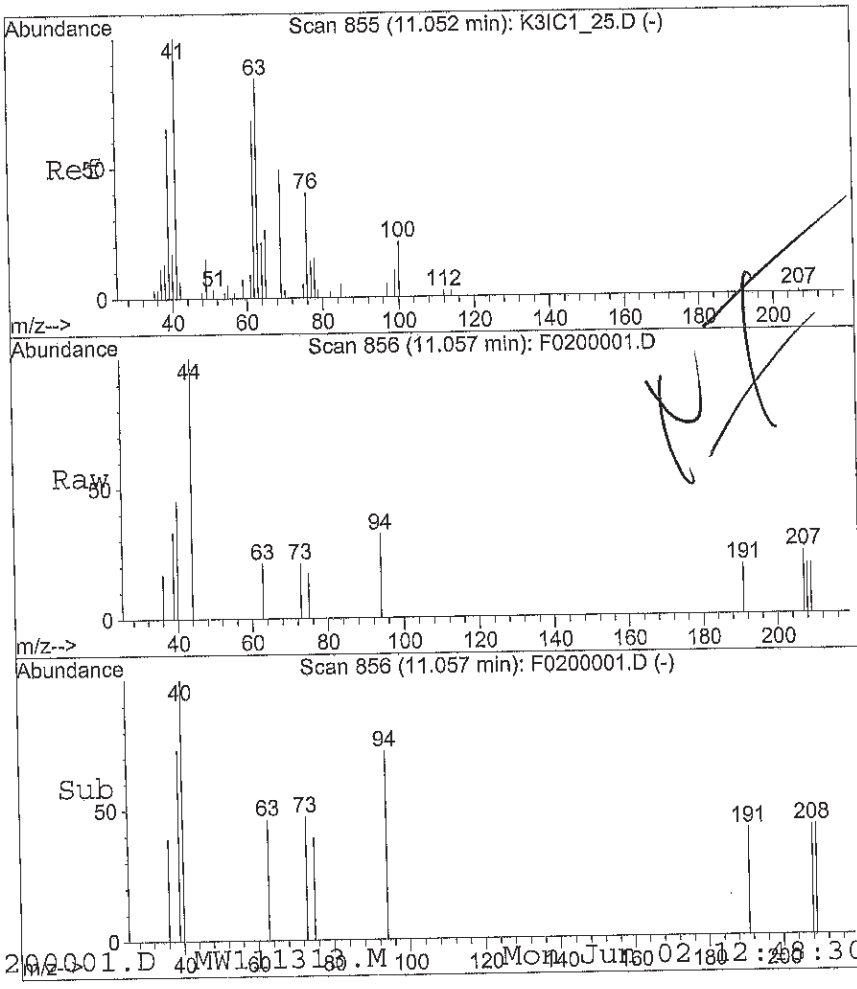


#32
1,2-Dichloroethane
Concen: 4.24 ug/L
RT: 9.92 min Scan# 721
Delta R.T. -0.07 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

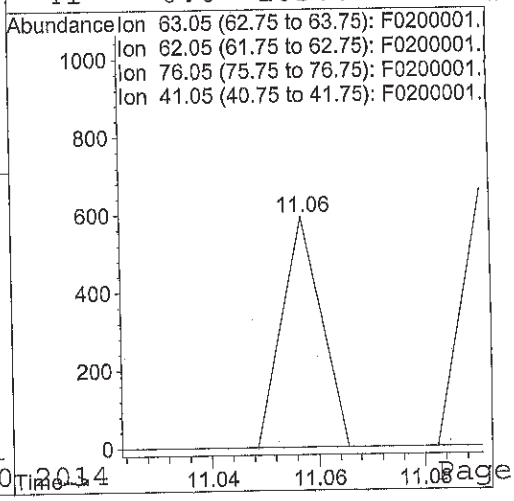


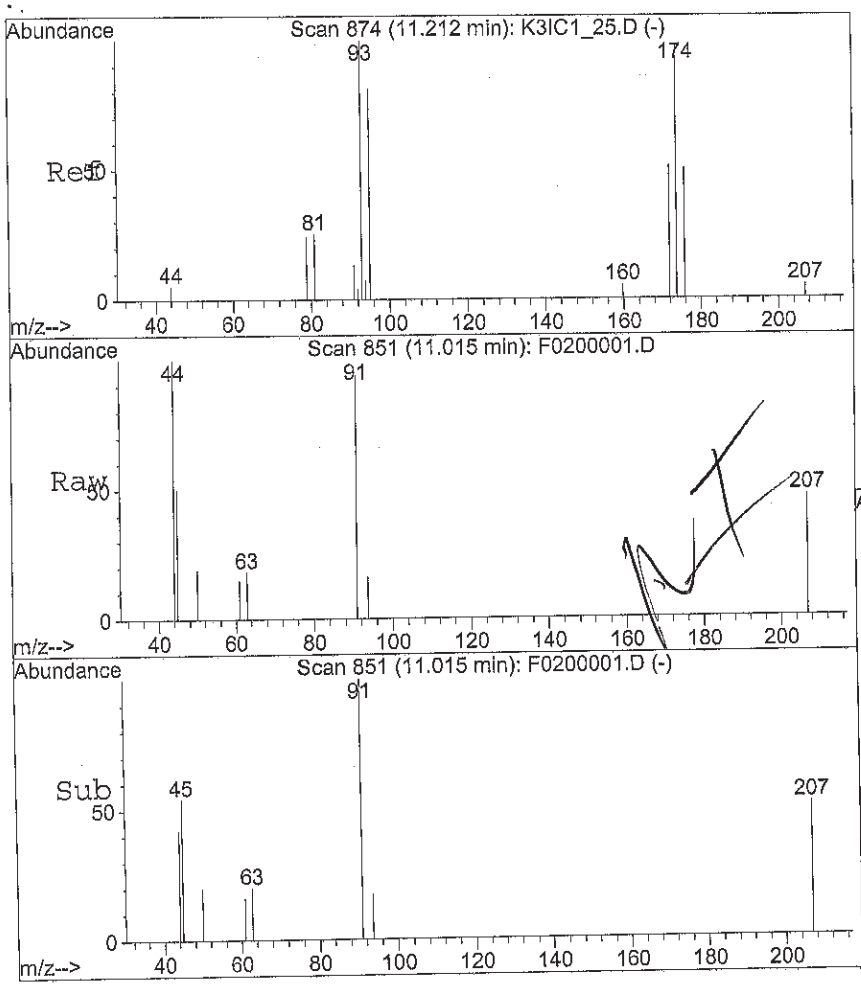


#34
1,2-Dichloropropane
Concen: 0.14 ug/L
RT: 11.06 min Scan# 856
Delta R.T. 0.01 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

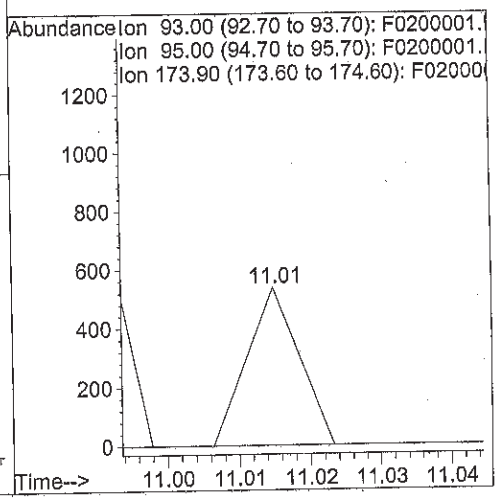


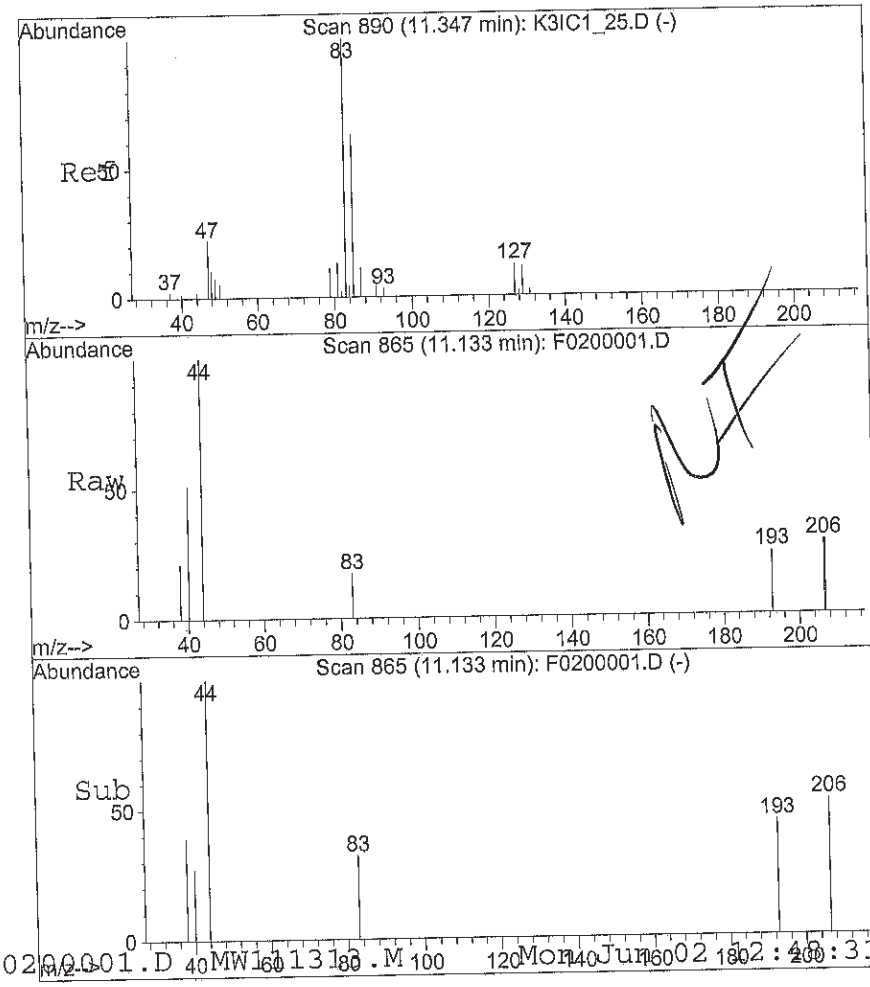


#35
Dibromomethane
Concen: 0.16 ug/L
RT: 11.01 min Scan# 851
Delta R.T. -0.20 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

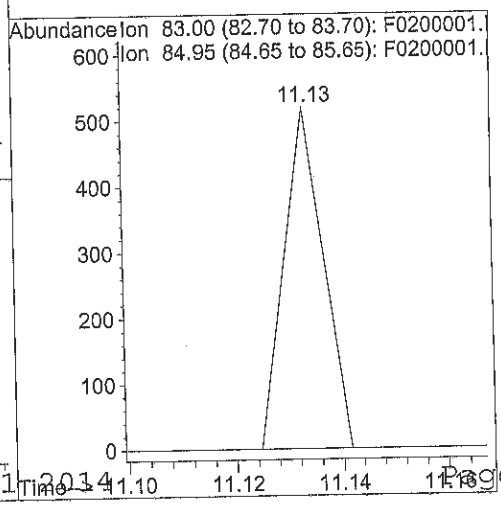


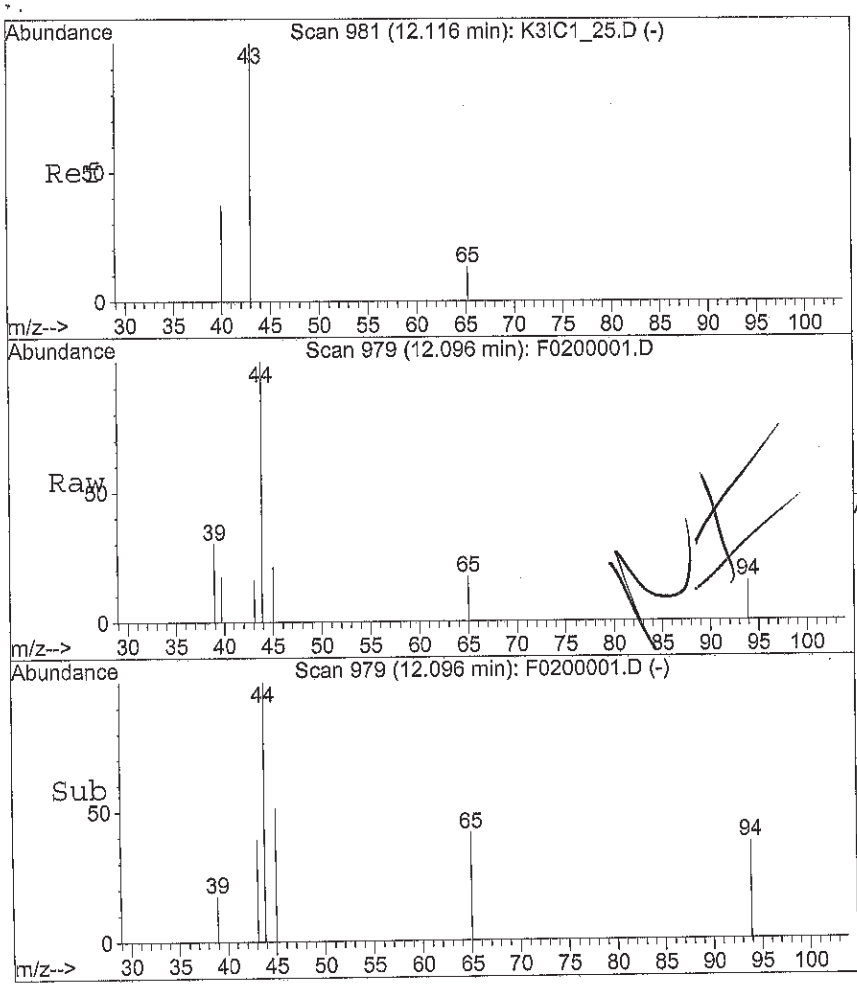


#36
Bromodichloromethane
Concen: 0.08 ug/L
RT: 11.13 min Scan# 865
Delta R.T. -0.21 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 83 Resp: 263

Ion	Ratio	Lower	Upper
83	100		
85	0.0	48.2	72.2#

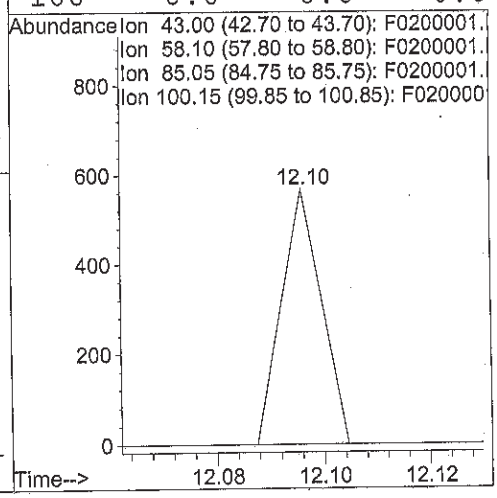


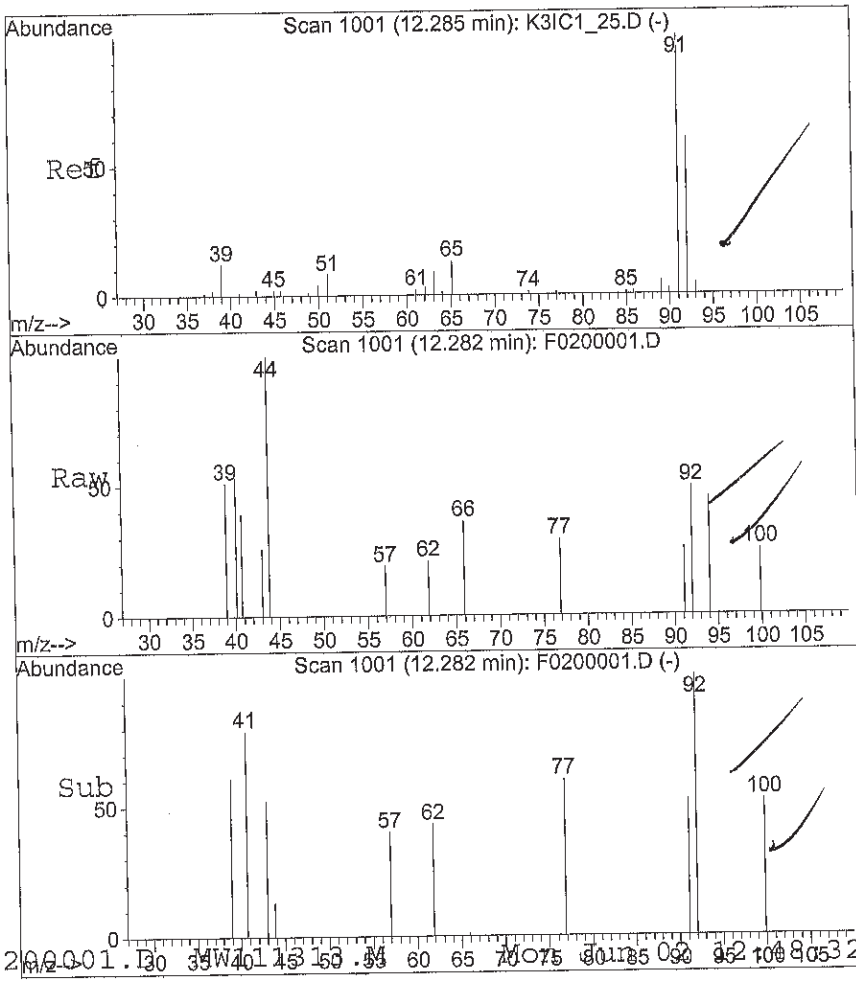


#40
(MIBK) 4-Methyl-2-Pentanone
Concen: 0.16 ug/L
RT: 12.10 min Scan# 979
Delta R.T. -0.02 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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

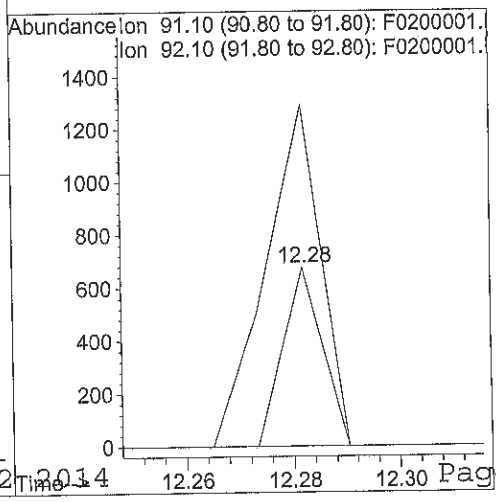


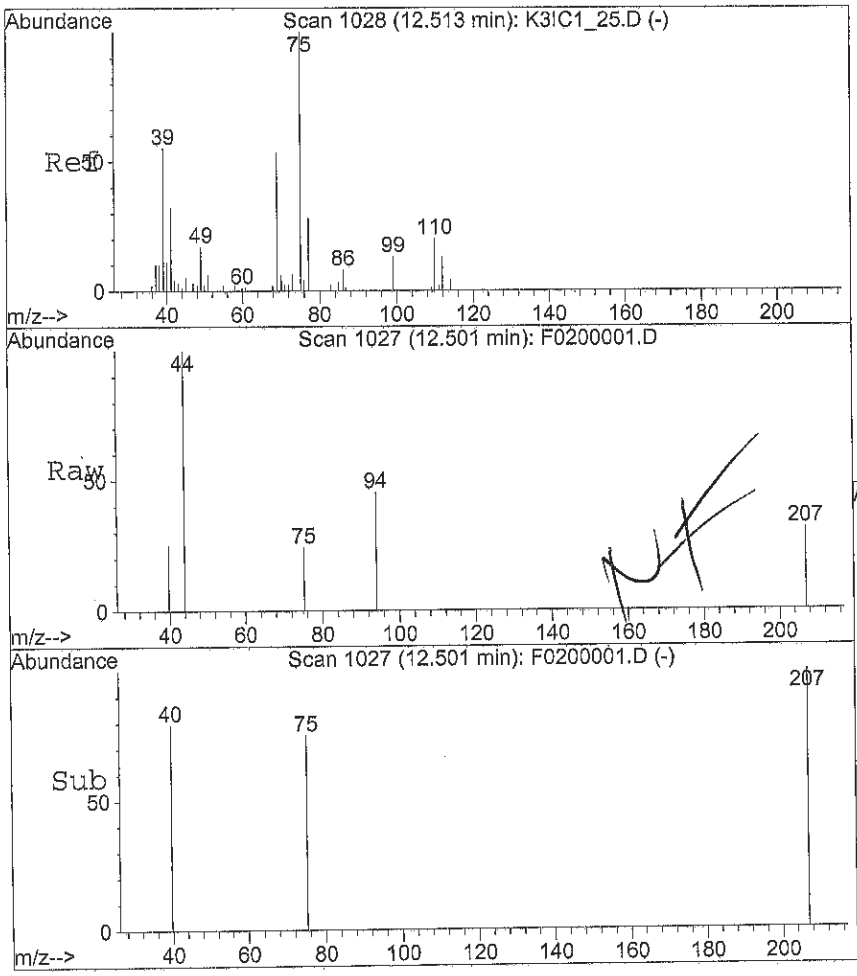


#41
Toluene
Concen: 0.03 ug/L
RT: 12.28 min Scan# 1001
Delta R.T. -0.00 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 91 Resp: 342

Ion	Ratio	Lower	Upper
91	100		
92	266.7	47.4	71.0#

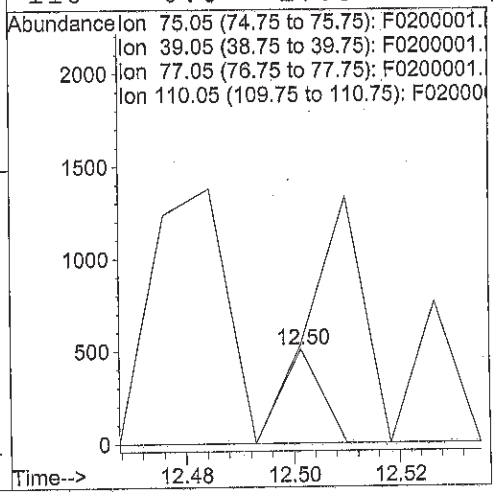


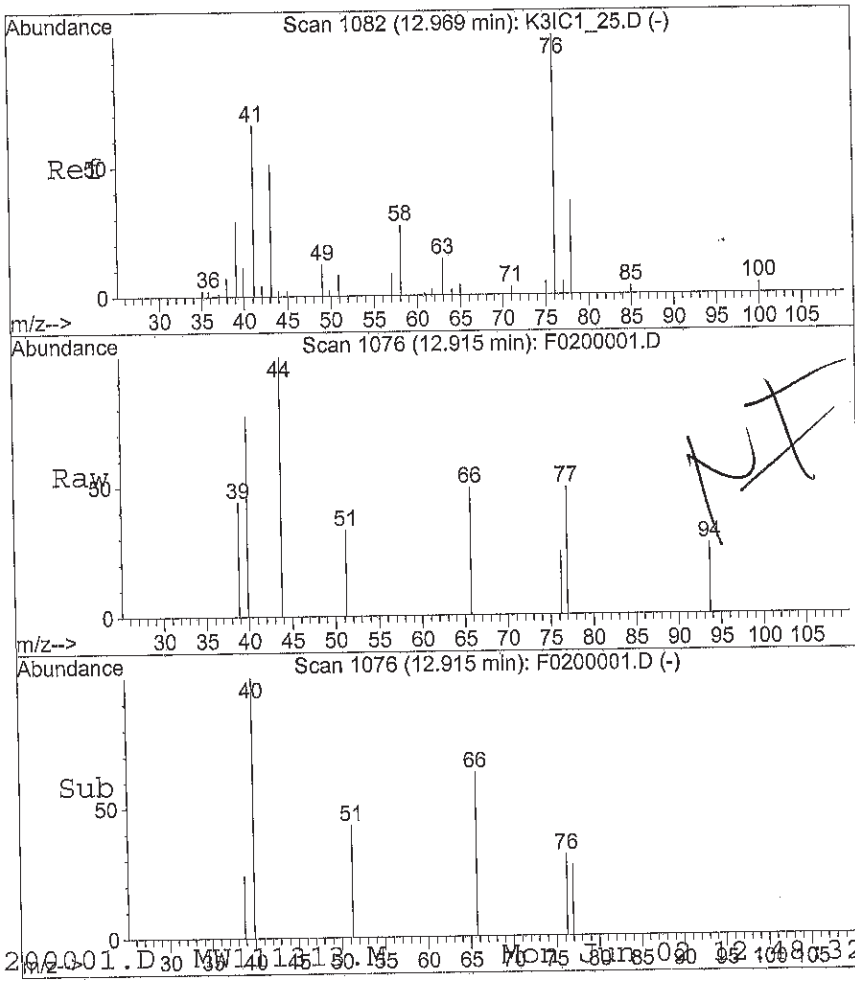


#42
trans-1,3-Dichloropropene
Concen: 0.06 ug/L
RT: 12.50 min Scan# 1027
Delta R.T. -0.01 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

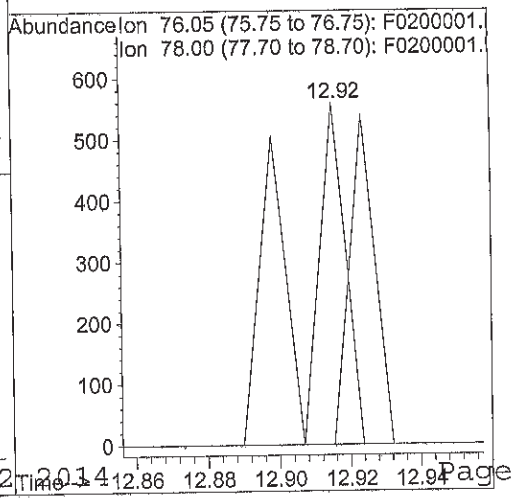


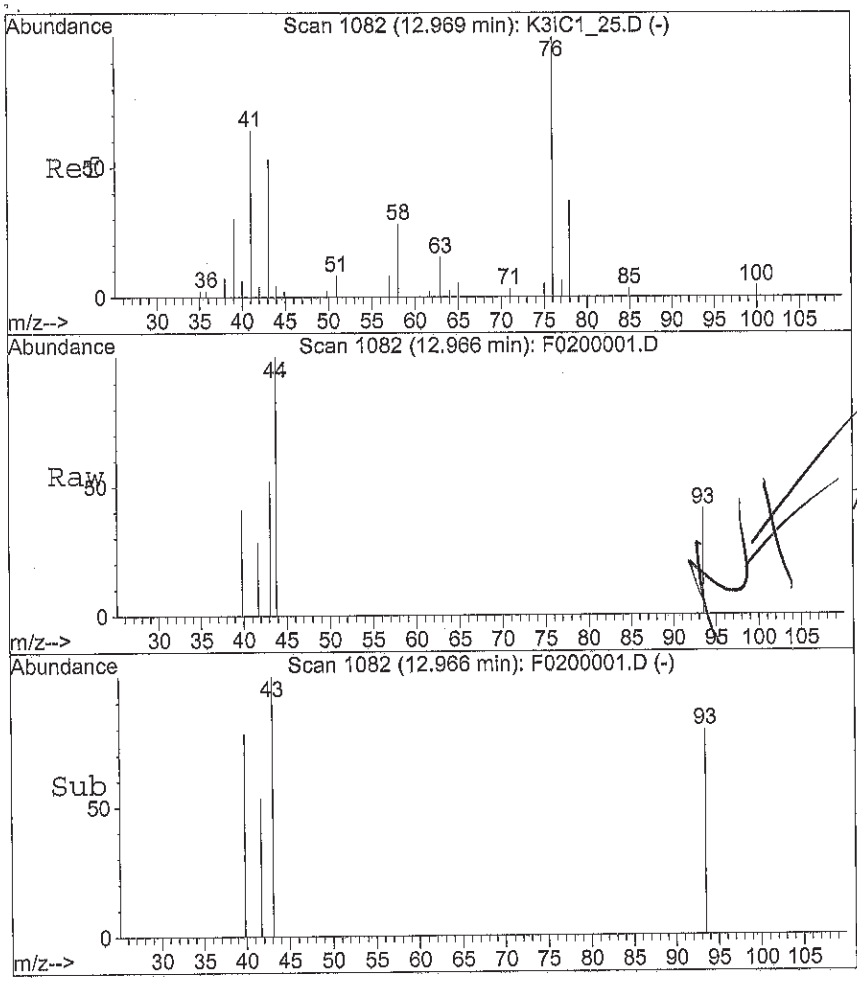


#45
1,3-Dichloropropane
Concen: 0.13 ug/L
RT: 12.92 min Scan# 1076
Delta R.T. -0.05 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 76 Resp: 539

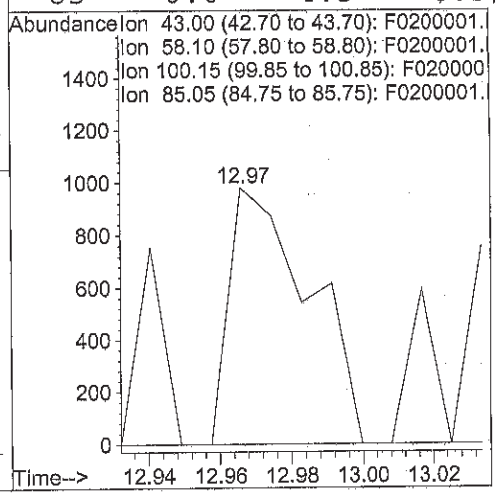
Ion	Ratio	Lower	Upper
76	100		
78	50.6	26.9	40.3#

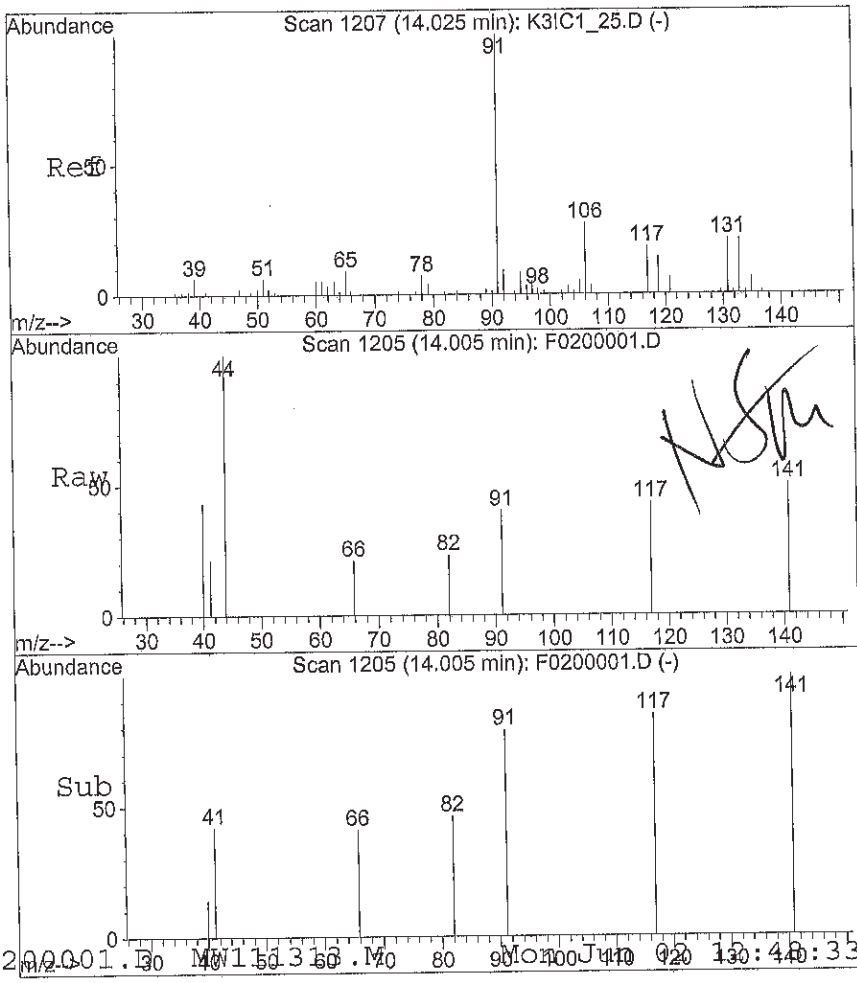




#46
2-Hexanone
Concen: 0.78 ug/L
RT: 12.97 min Scan# 1082
Delta R.T. -0.00 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

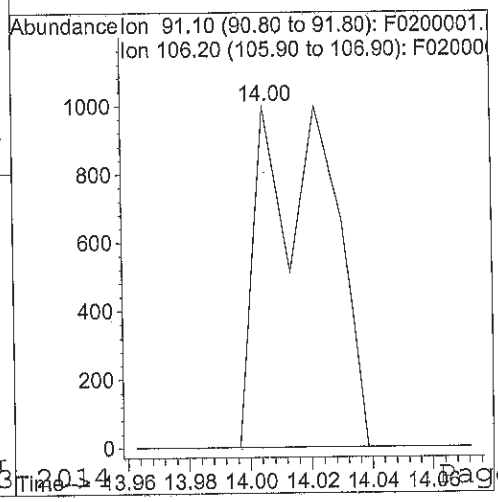
Tgt Ion: 43	Resp:	1526	
Ion	Ratio	Lower	Upper
43	100		
58	0.0	40.9	61.3#
100	0.0	5.5	8.3#
85	0.0	4.3	6.5#

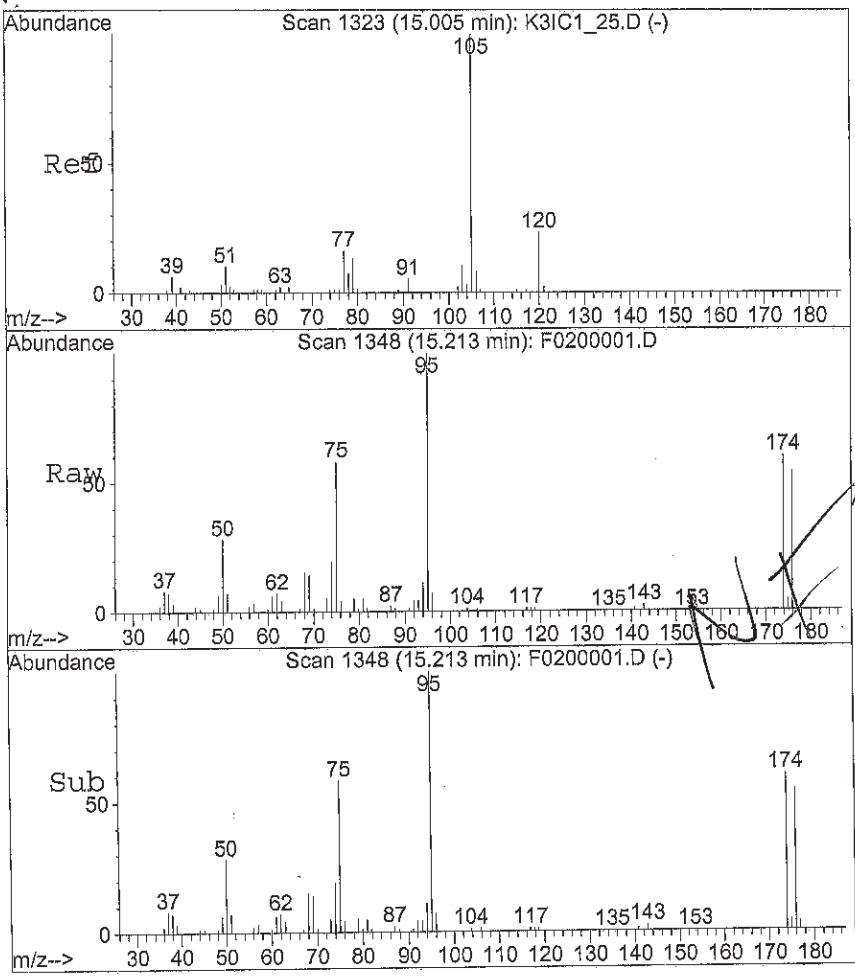




#51
Ethylbenzene
Concen: 0.12 ug/L
RT: 14.00 min Scan# 1205
Delta R.T. -0.02 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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

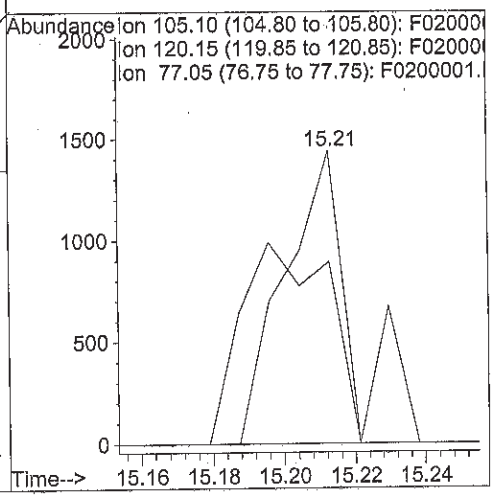


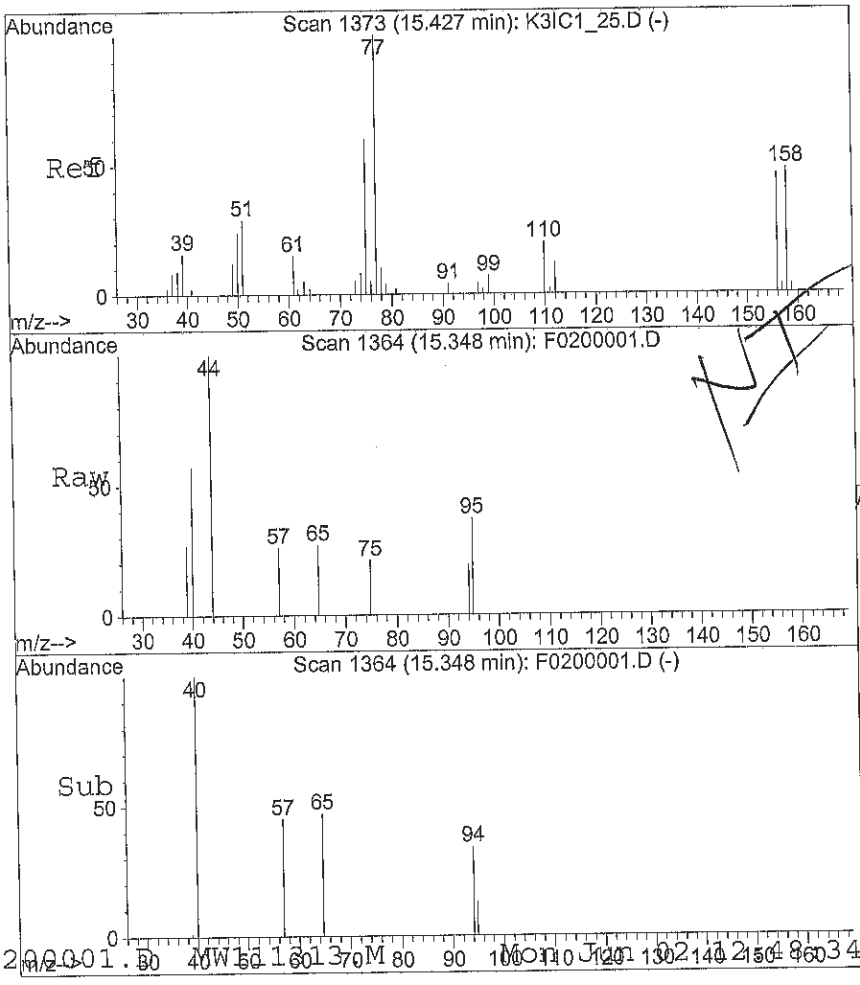


#56
Isopropylbenzene
Concen: 0.12 ug/L
RT: 15.21 min Scan# 1348
Delta R.T. 0.21 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

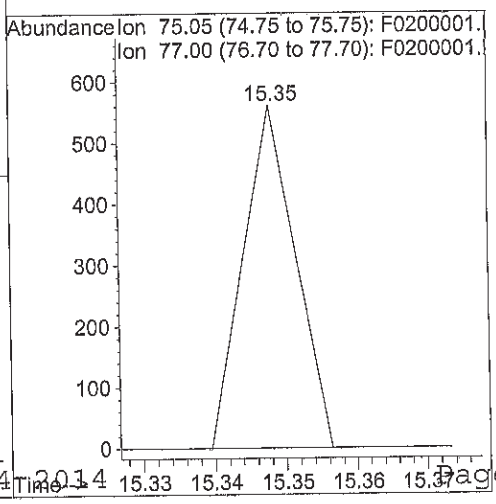


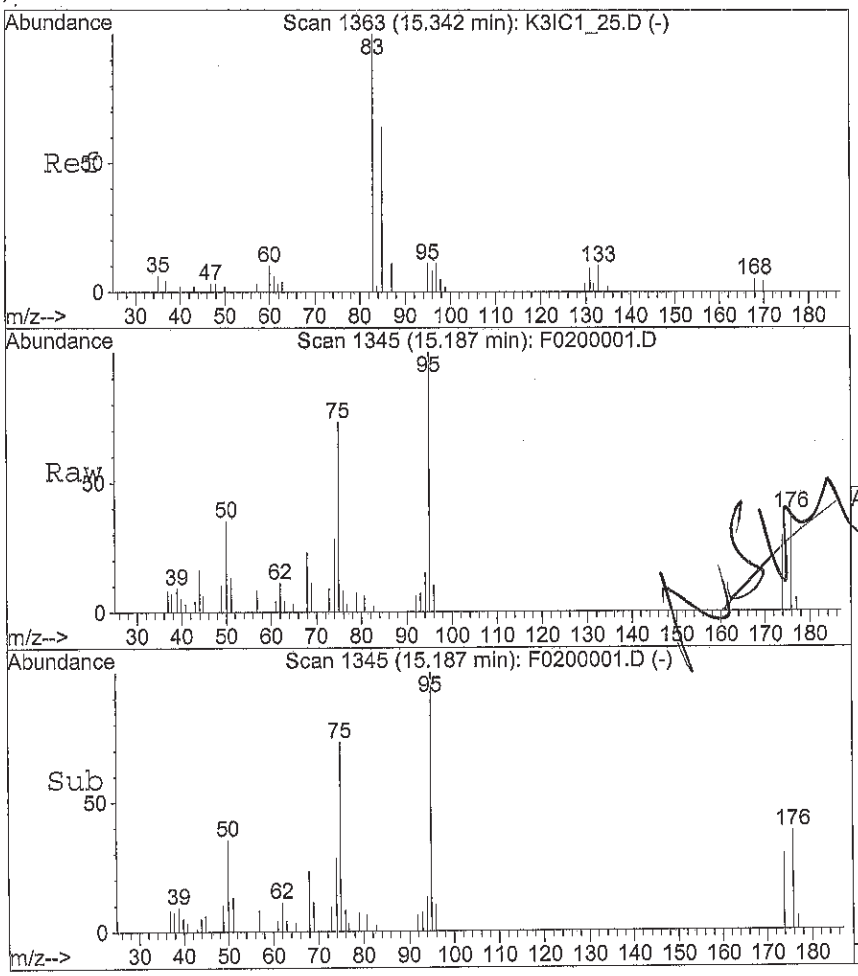


#57
1,2,3-Trichloropropane
Concen: 0.08 ug/L
RT: 15.35 min Scan# 1364
Delta R.T. -0.08 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 75 Resp: 284

Ion	Ratio	Lower	Upper
75	100		
77	0.0	31.2	46.8#

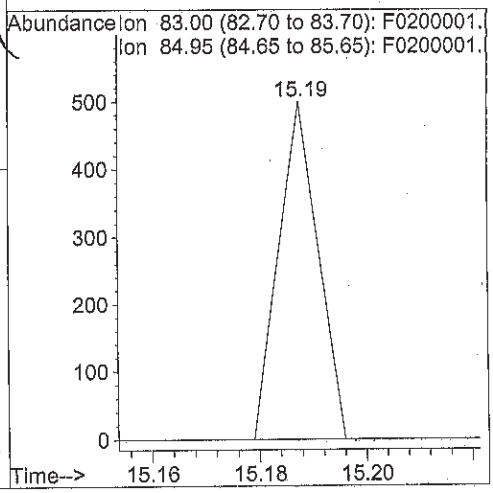


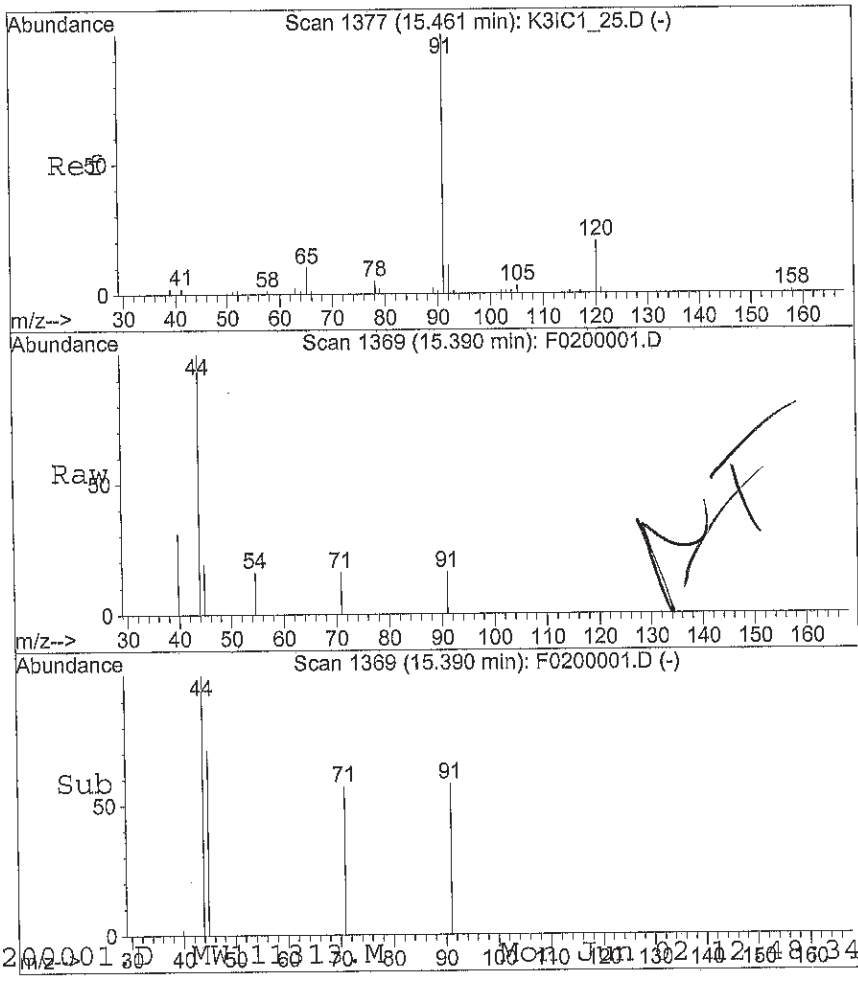


#60
1,1,2,2-Tetrachloroethane
Concen: 0.08 ug/L
RT: 15.19 min Scan# 1345
Delta R.T. -0.15 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 83 Resp: 253

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.2	76.8#

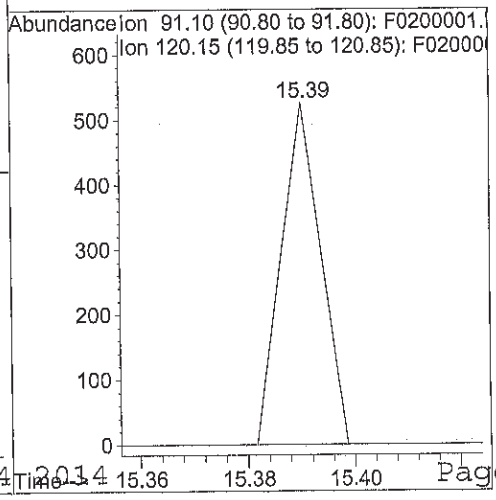


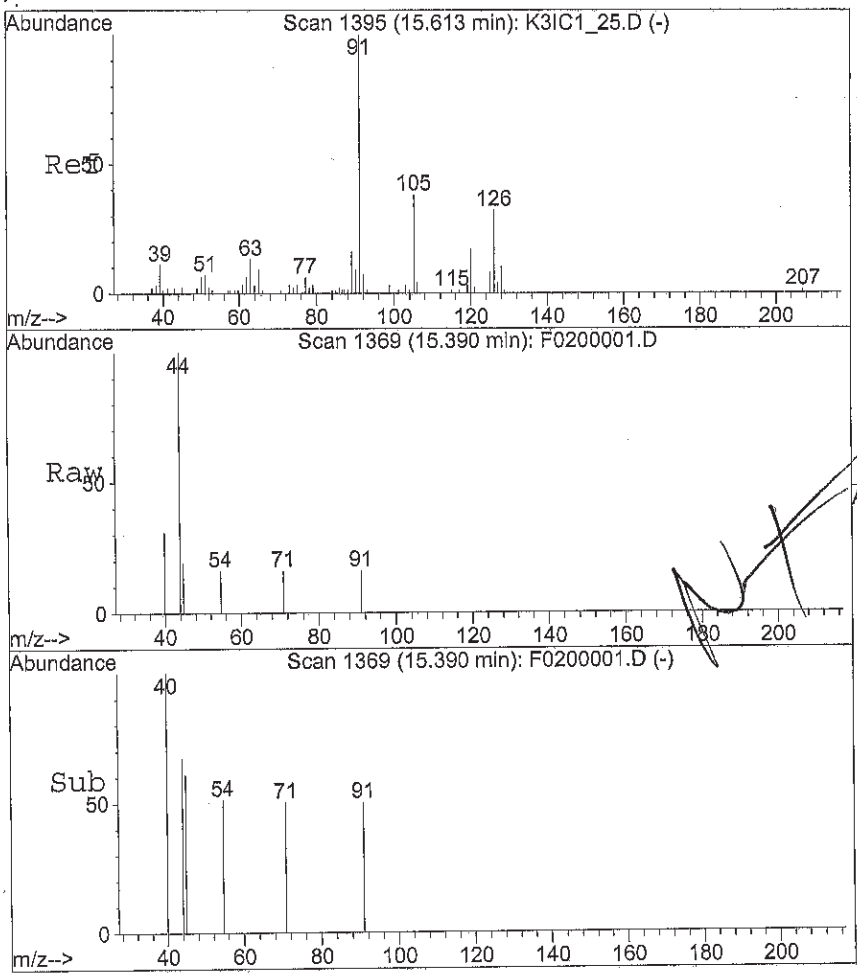


#62
n-Propylbenzene
Concen: 0.01 ug/L
RT: 15.39 min Scan# 1369
Delta R.T. -0.07 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 91 Resp: 267

Ion	Ratio	Lower	Upper
91	100		
120	0.0	16.1	24.1#

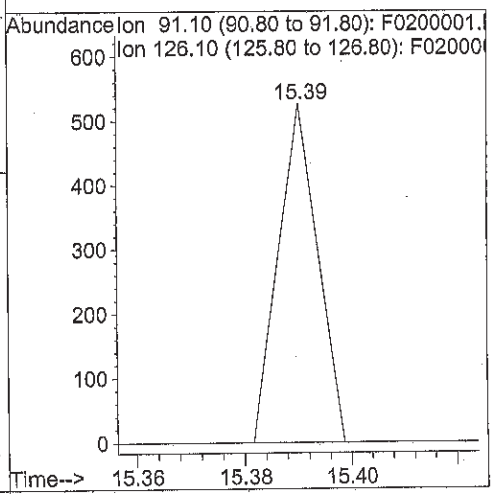


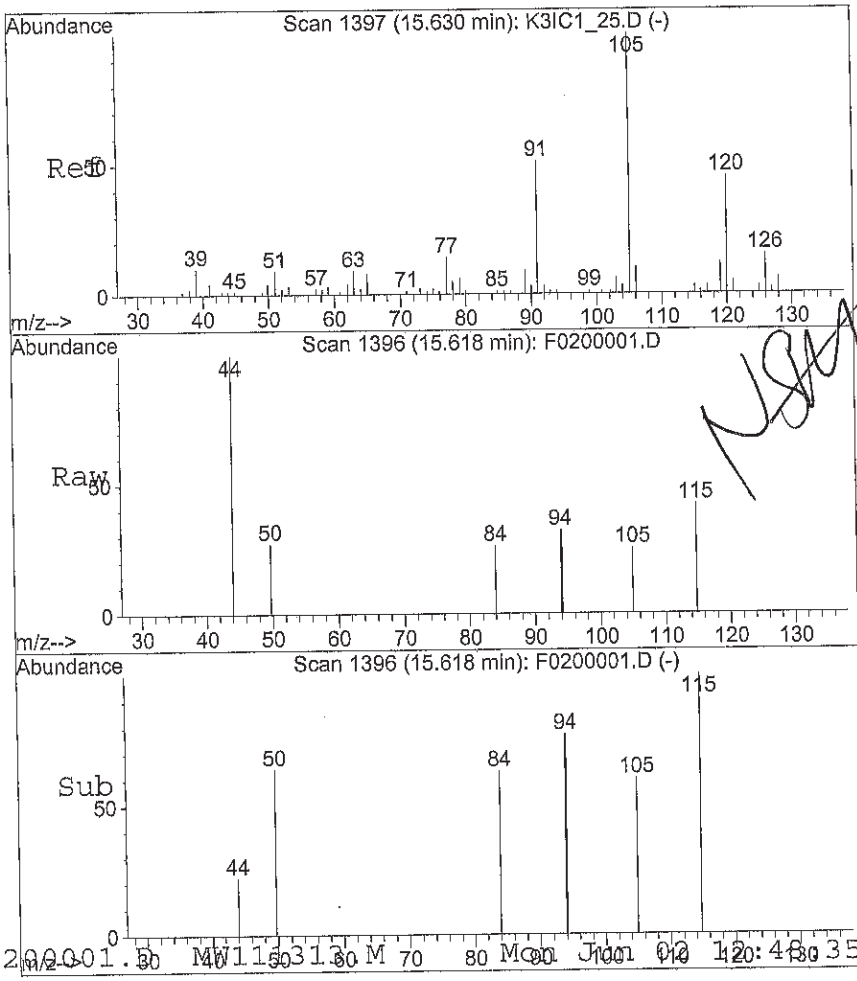


#63
2-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.39 min Scan# 1369
Delta R.T. -0.22 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 91 Resp: 267

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.0	36.0#

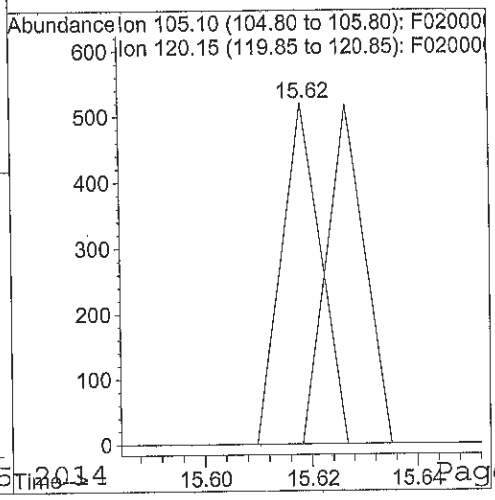


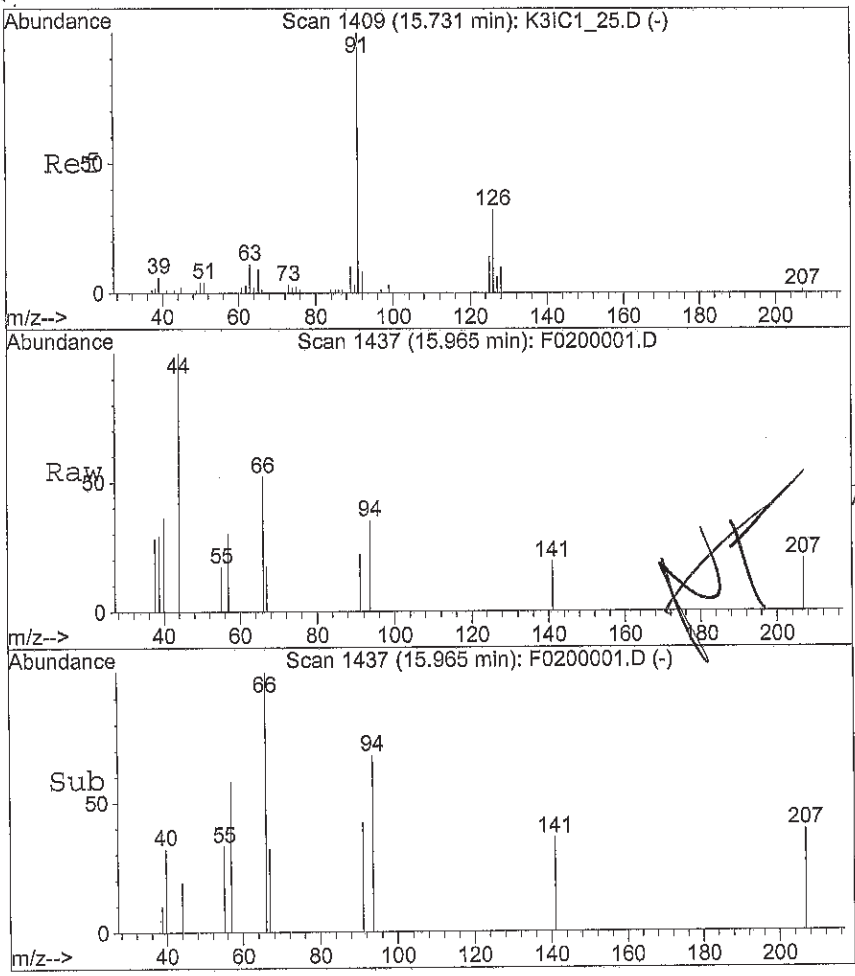


#64
1,3,5-Trimethylbenzene
Concen: 0.02 ug/L
RT: 15.62 min Scan# 1396
Delta R.T. -0.01 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion:105 Resp: 264

Ion	Ratio	Lower	Upper
105	100		
120	99.2	36.4	54.6#

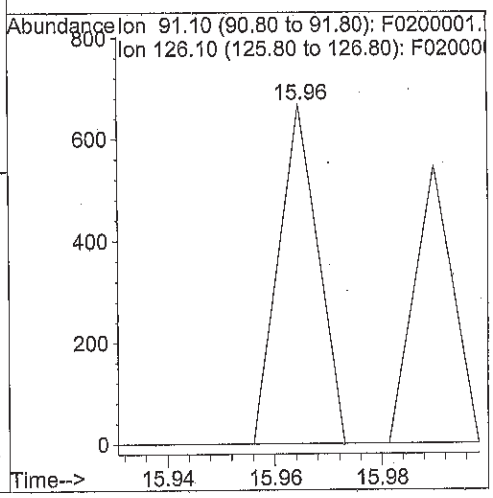


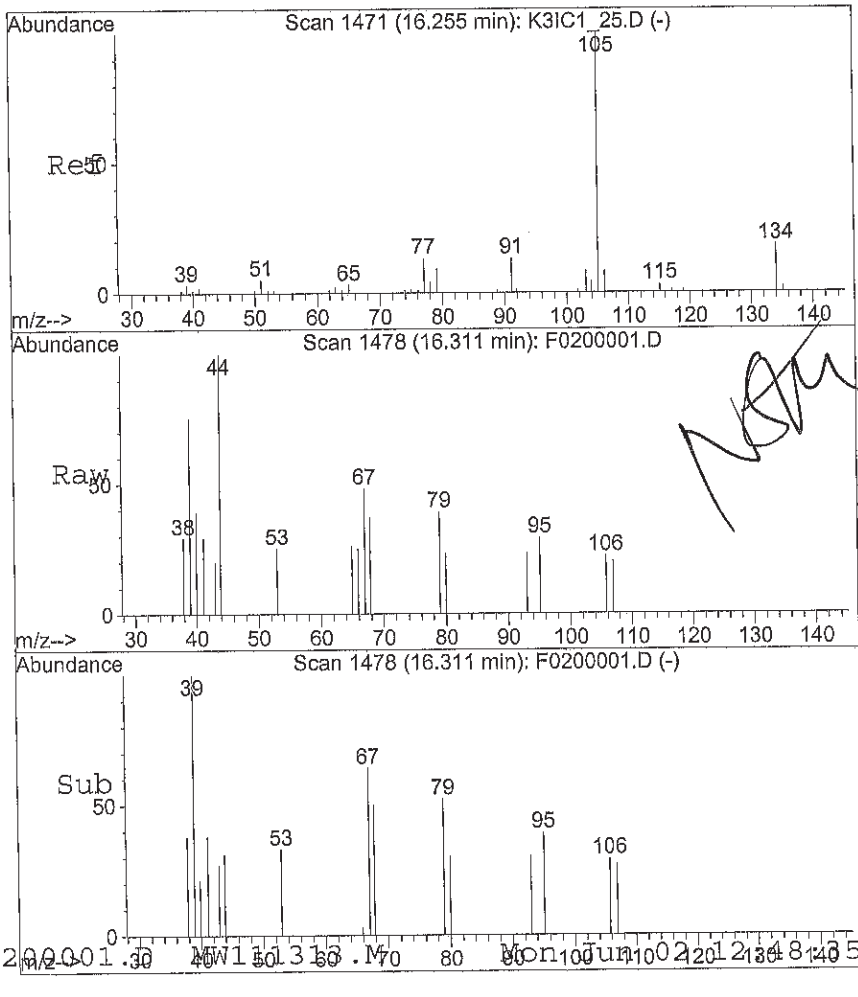


#65
4-Chlorotoluene
Concen: 0.03 ug/L
RT: 15.96 min Scan# 1437
Delta R.T. 0.23 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion: 91 Resp: 339

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.6	36.8#

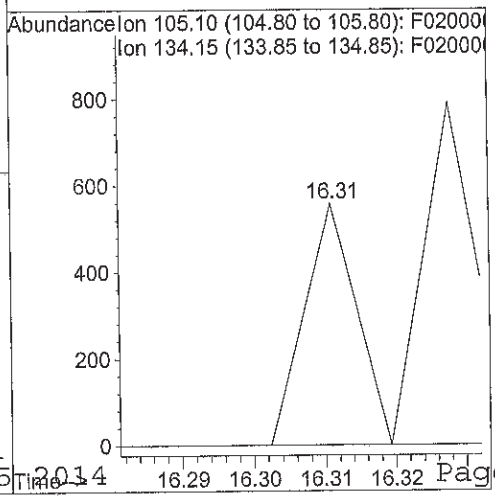


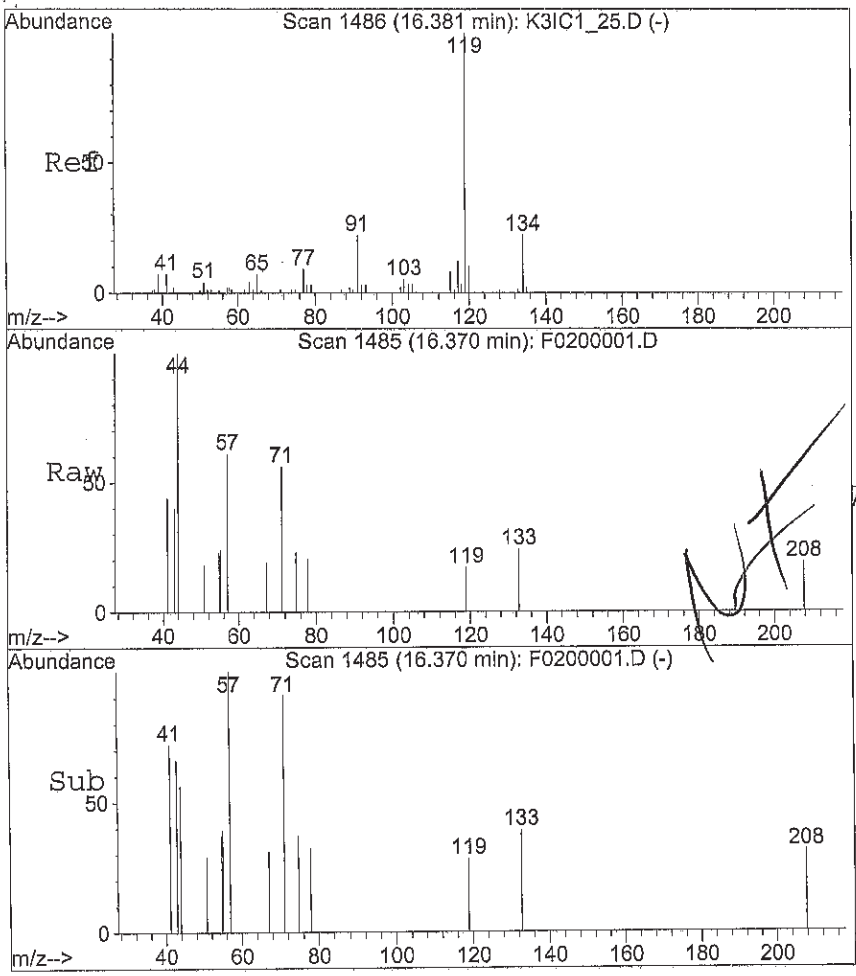


#68
sec-Butylbenzene
Concen: 0.02 ug/L
RT: 16.31 min Scan# 1478
Delta R.T. 0.06 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

Tgt Ion:105 Resp: 283

Ion	Ratio	Lower	Upper
105	100		
134	0.0	13.0	19.6#

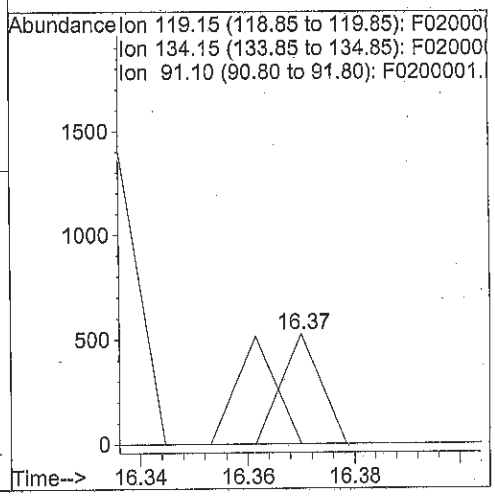


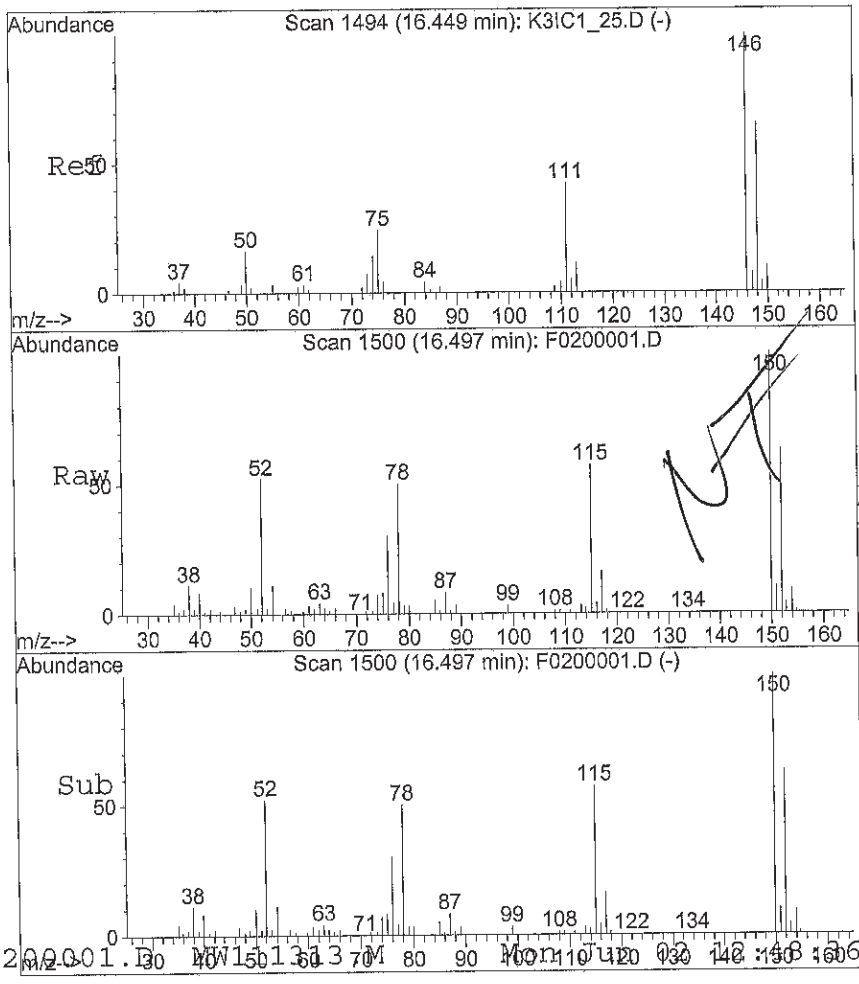


#69
p-Isopropyltoluene
Concen: 0.02 ug/L
RT: 16.37 min Scan# 1485
Delta R.T. -0.01 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

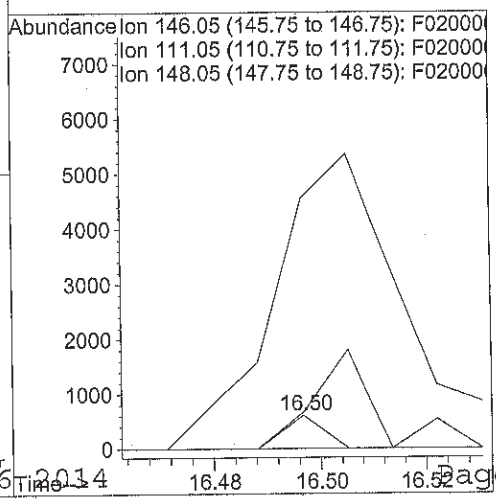


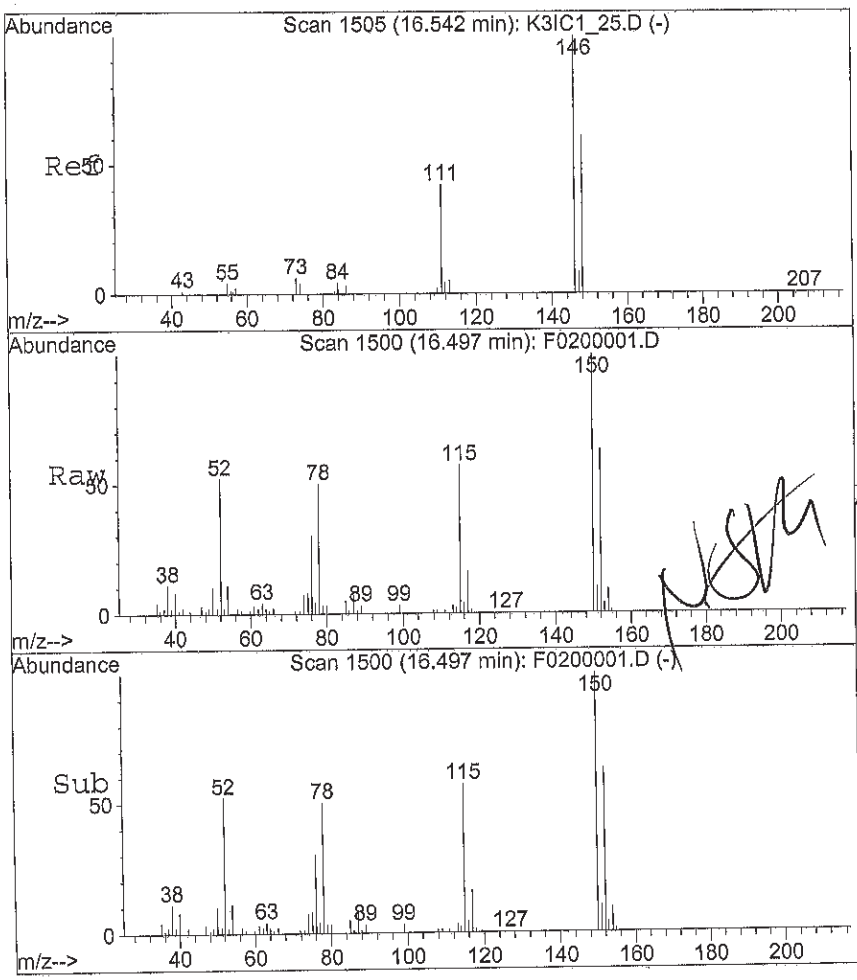


#70
1,3-Dichlorobenzene
Concen: 0.05 ug/L
RT: 16.50 min Scan# 1500
Delta R.T. 0.05 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

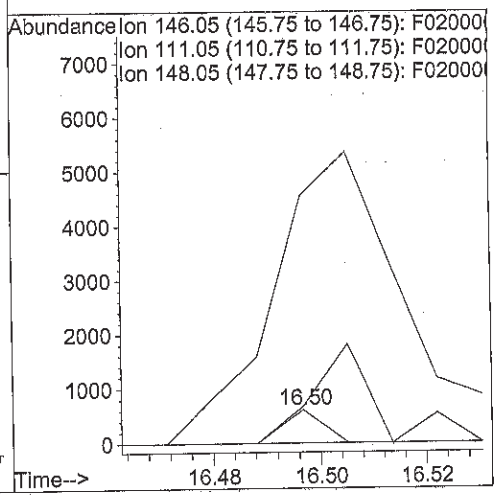


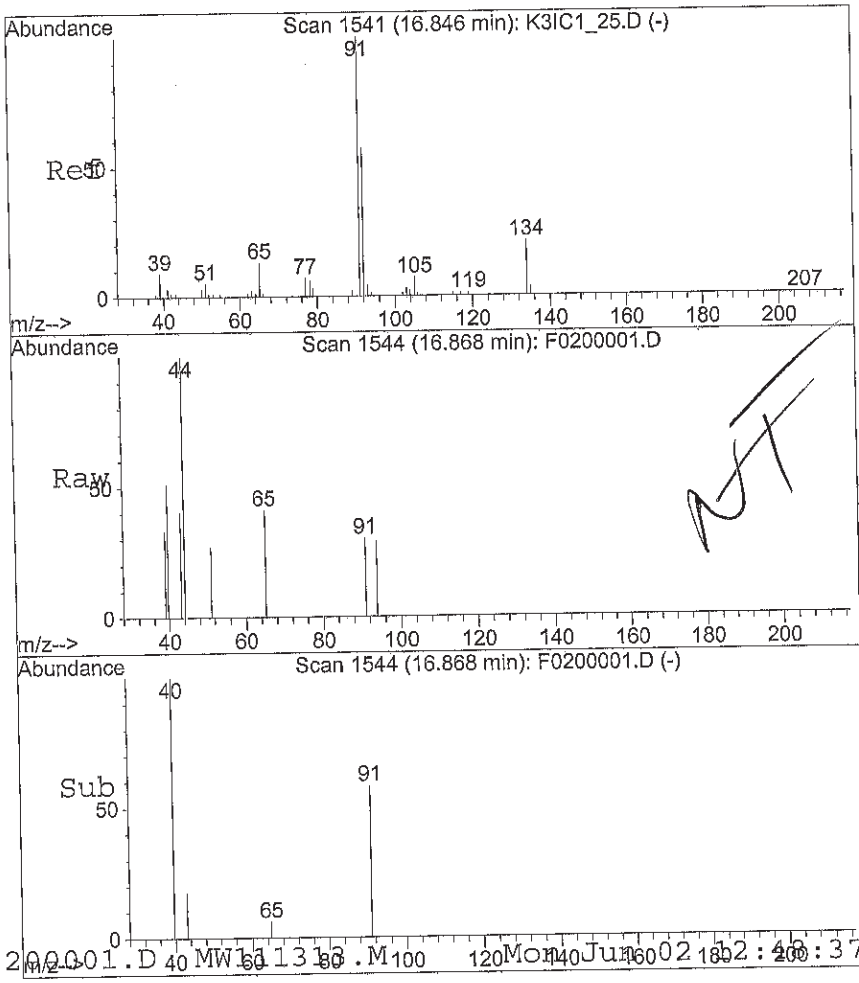


#71
1,4-Dichlorobenzene
Concen: 0.05 ug/L
RT: 16.50 min Scan# 1500
Delta R.T. -0.05 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

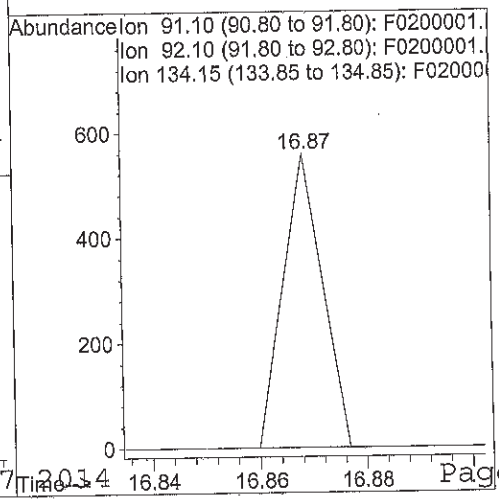


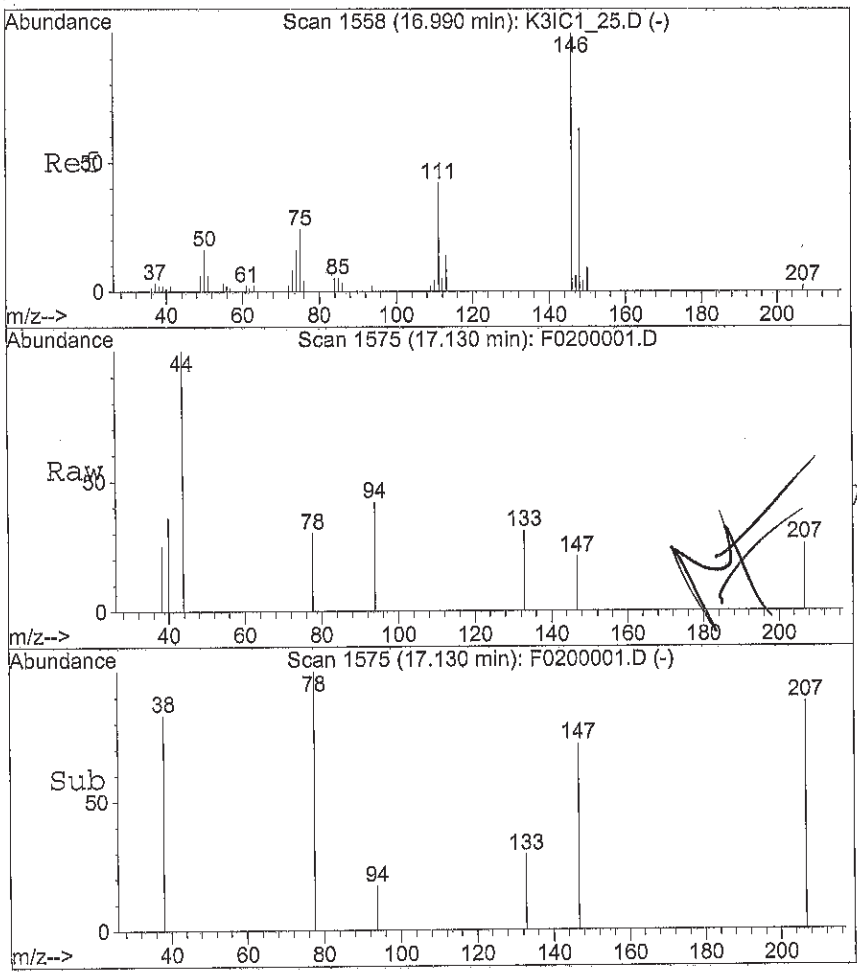


#72
n-Butylbenzene
Concen: 0.02 ug/L
RT: 16.87 min Scan# 1544
Delta R.T. 0.02 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

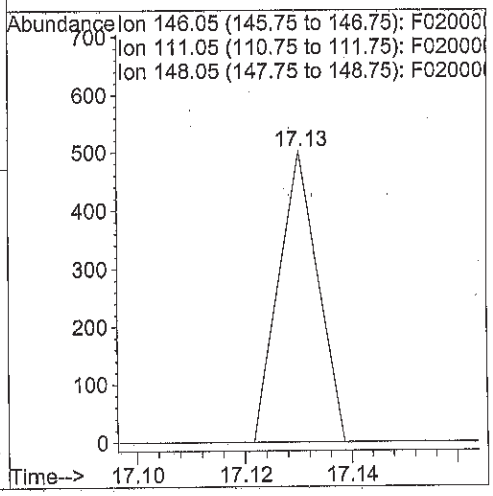


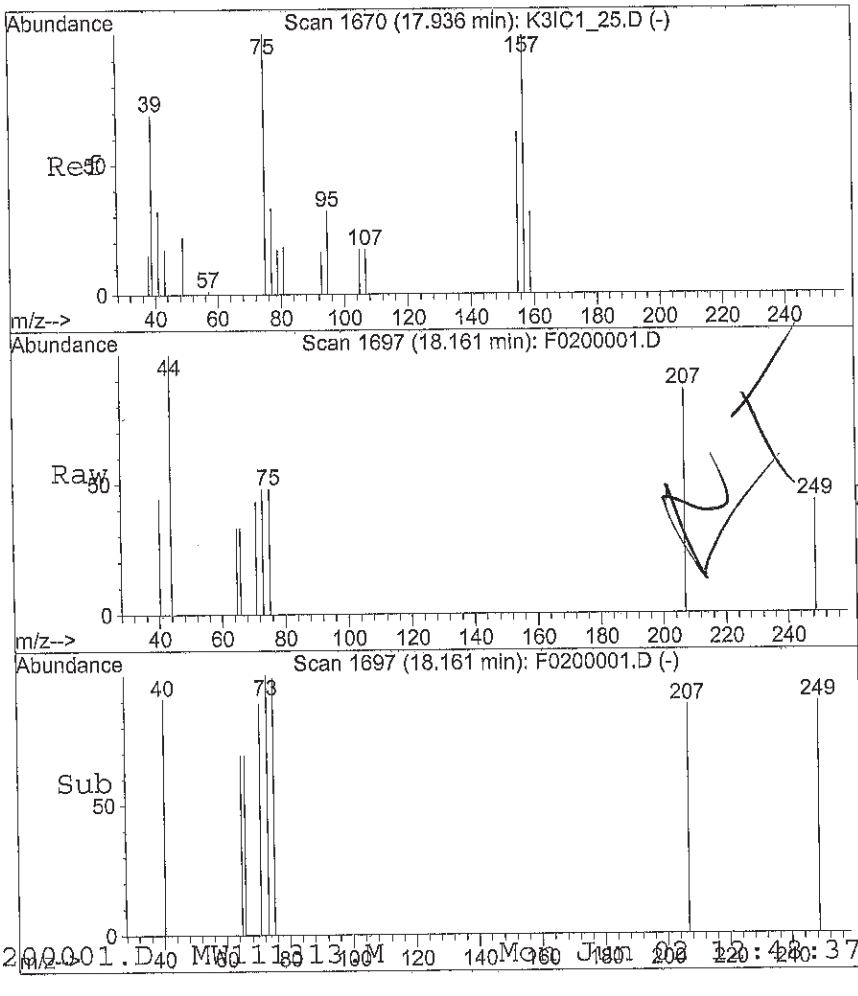


#73
1,2-Dichlorobenzene
Concen: 0.04 ug/L
RT: 17.13 min Scan# 1575
Delta R.T. 0.14 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#

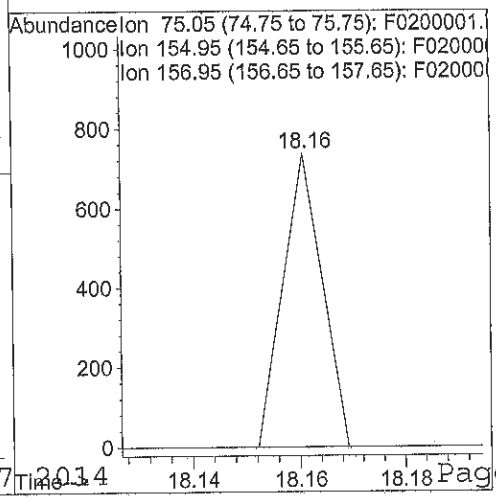




#74
1,2-Dibromo-3-chloropropane
Concen: 1.59 ug/L
RT: 18.16 min Scan# 1697
Delta R.T. 0.23 min
Lab File: F0200001.D
Acq: 2 Jun 2014 11:46 am

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#



Quantitation Report (QT Reviewed)

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 3 7:23 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	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

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

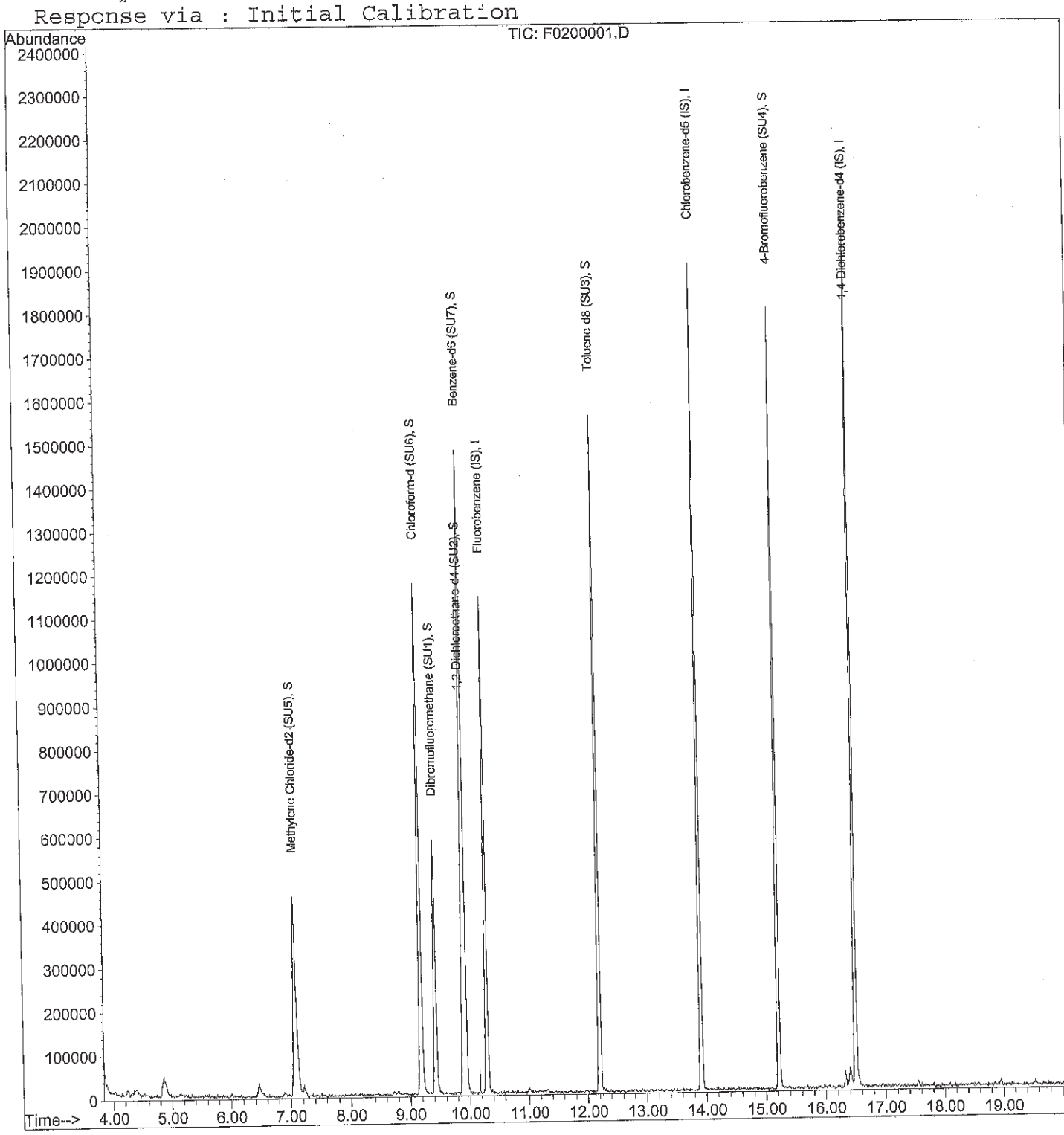
Quantitation Report

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 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



Quantitation Report (QT Reviewed)

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 #	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 #	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 #	77
16) (MTBE) Methyl-t-butyl ethe	7.41	73	275	0.04	ug/L #	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	99
31) Benzene	9.93	78	13109	1.02	ug/L #	70

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

Quantitation Report (QT Reviewed)

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

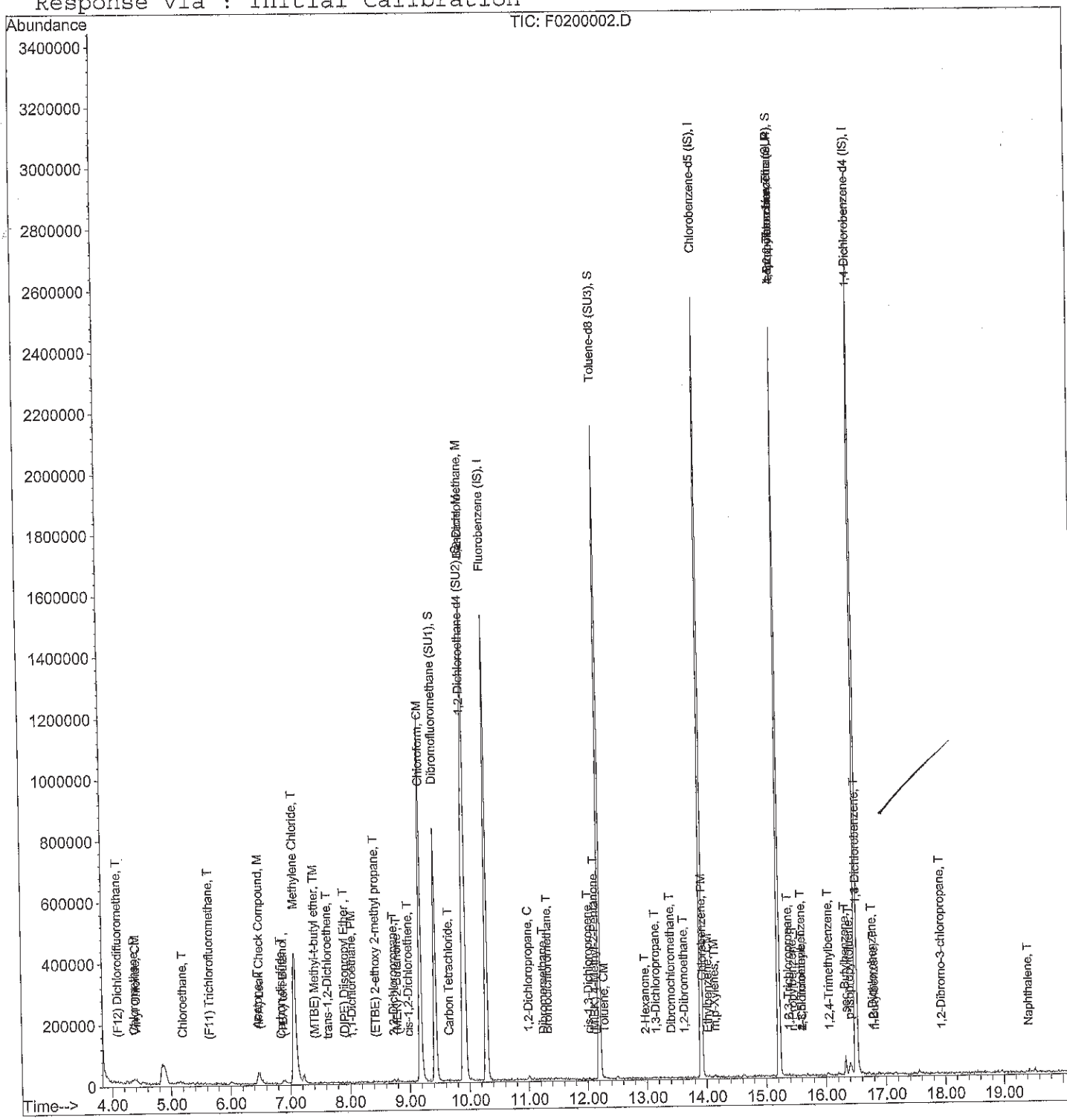
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) 1,2-Dichloroethane	9.92	62	11263	2.48 ug/L #	1
34) 1,2-Dichloropropane	11.01	63	316	0.10 ug/L #	2
35) Dibromomethane	11.26	93	349	0.15 ug/L #	5
36) Bromodichloromethane	11.32	83	558	0.12 ug/L #	21
37) cis-1,3-Dichloropropene	12.02	75	309	0.06 ug/L #	36
40) (MIBK) 4-Methyl-2-Pentanon	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

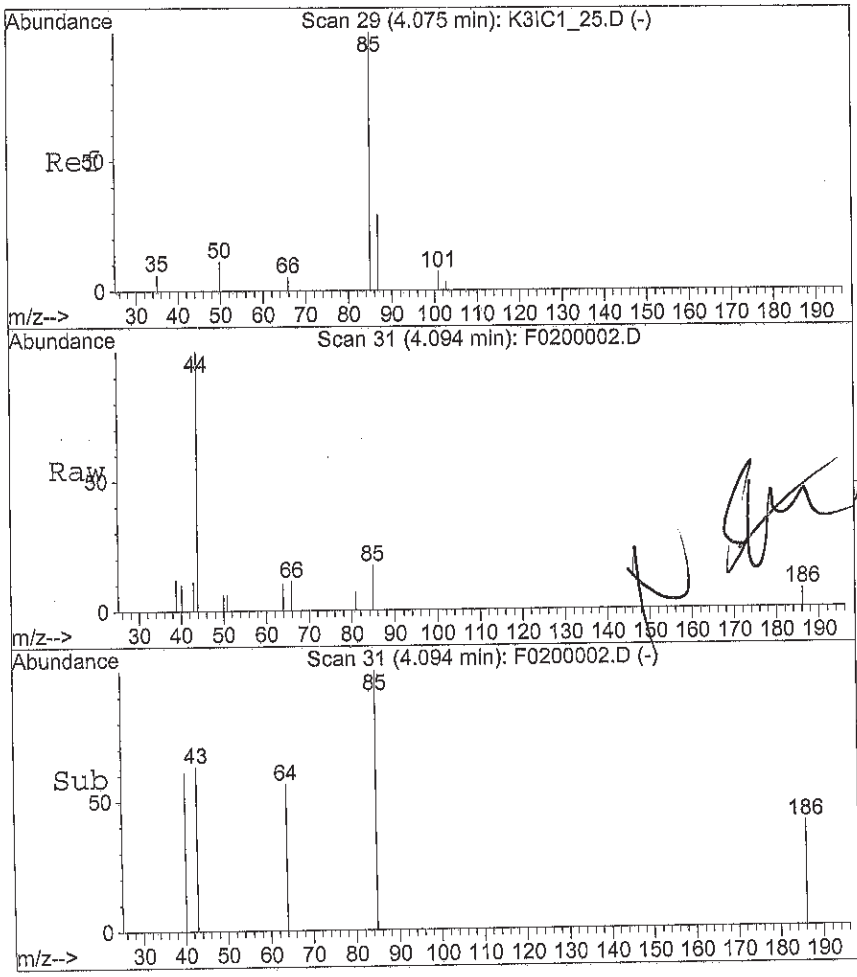
(#) = qualifier out of range (m) = manual integration

Quantitation Report

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

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

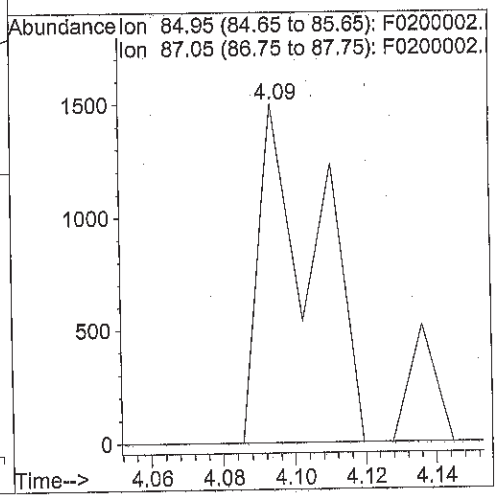


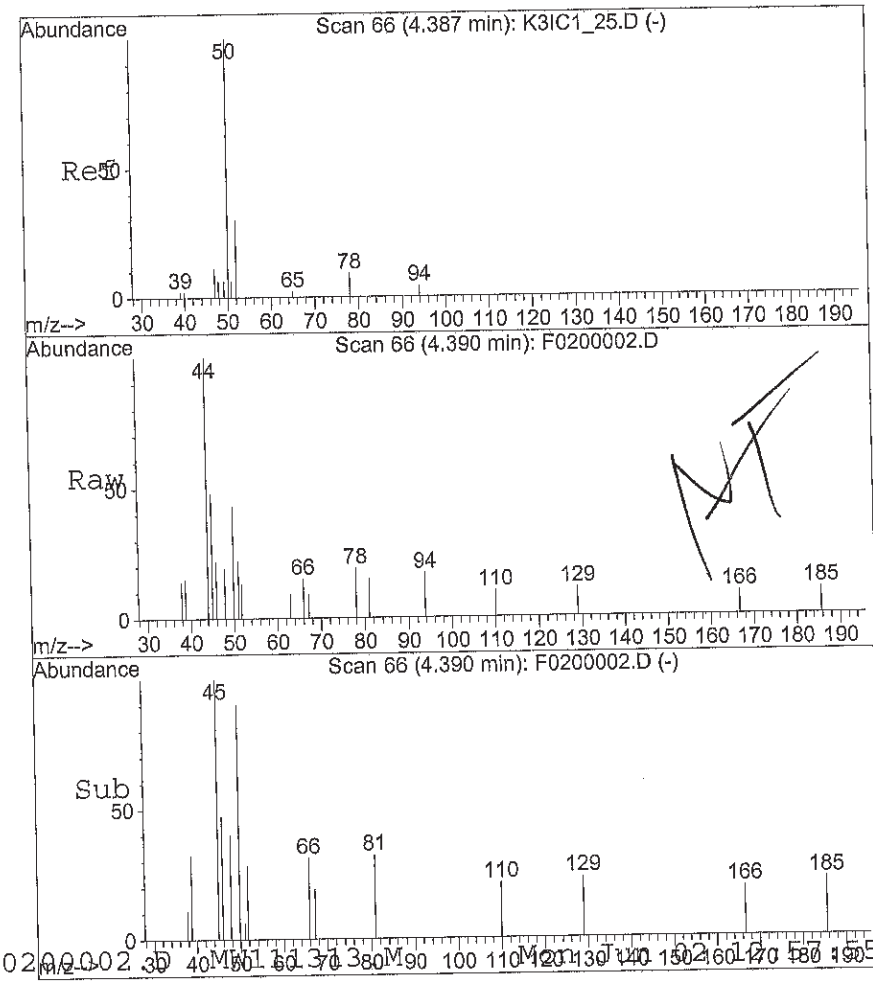


#3
(F12) Dichlorodifluoromethane
Concen: 0.50 ug/L
RT: 4.09 min Scan# 31
Delta R.T. 0.02 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 85 Resp: 1657

Ion	Ratio	Lower	Upper
85	100		
87	0.0	24.6	37.0#

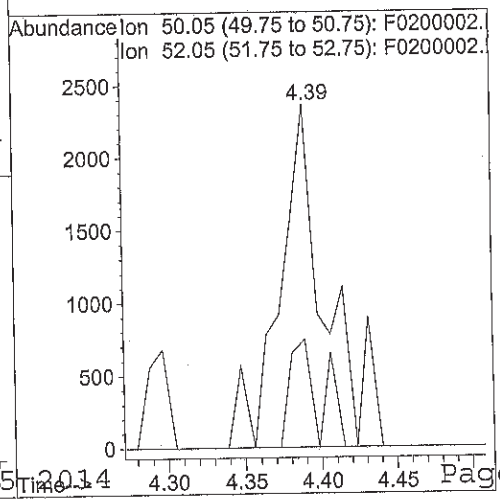


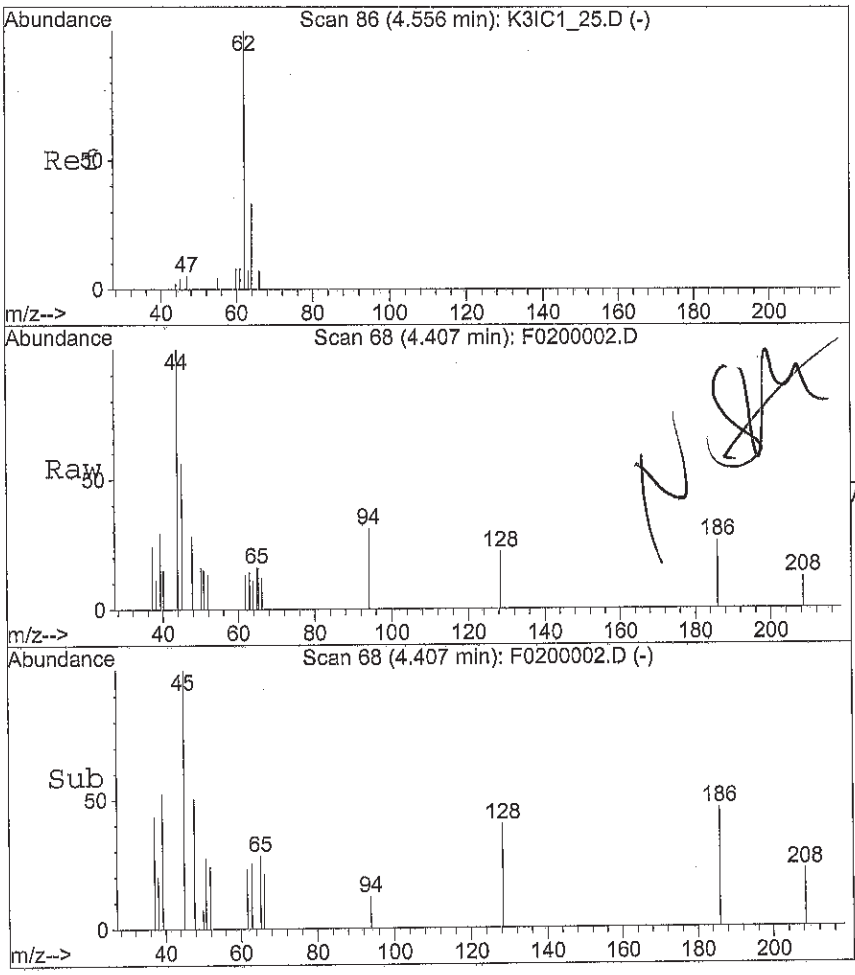


#4
Chloromethane
Concen: 0.97 ug/L
RT: 4.39 min Scan# 66
Delta R.T. 0.00 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 50 Resp: 5008

Ion	Ratio	Lower	Upper
50	100		
52	20.6	26.9	40.3#

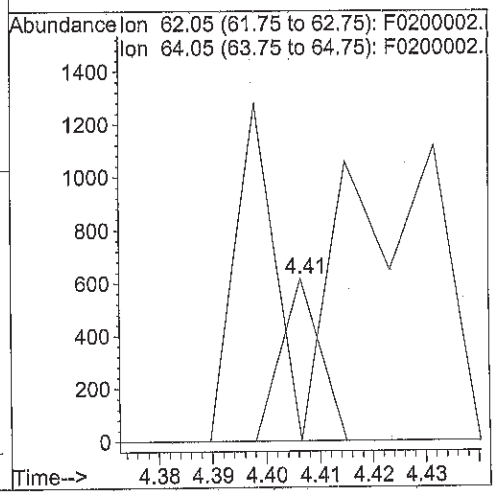


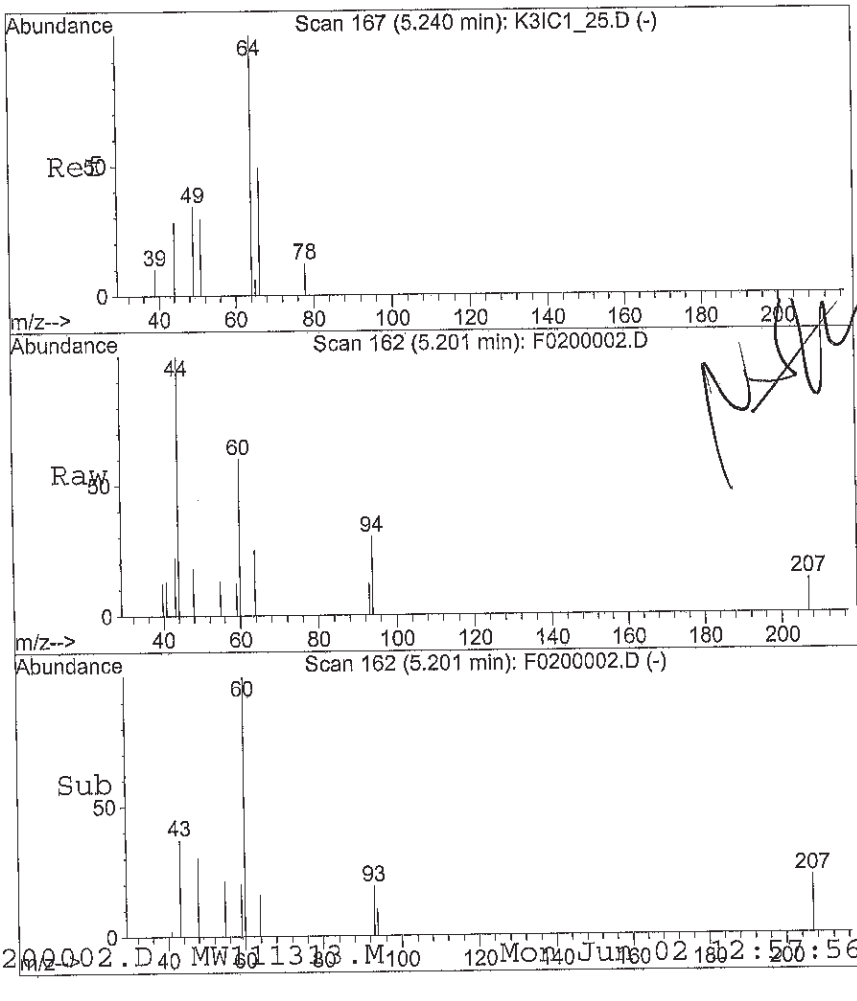


#5
Vinyl Chloride
Concen: 0.13 ug/L
RT: 4.41 min Scan# 68
Delta R.T. -0.15 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 62 Resp: 313

Ion	Ratio	Lower	Upper
62	100		
64	207.0	25.6	38.4#

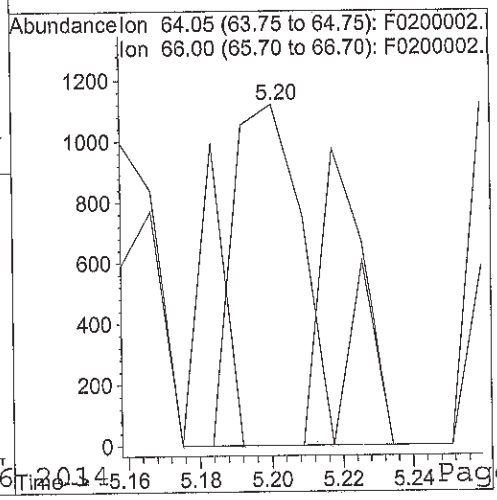


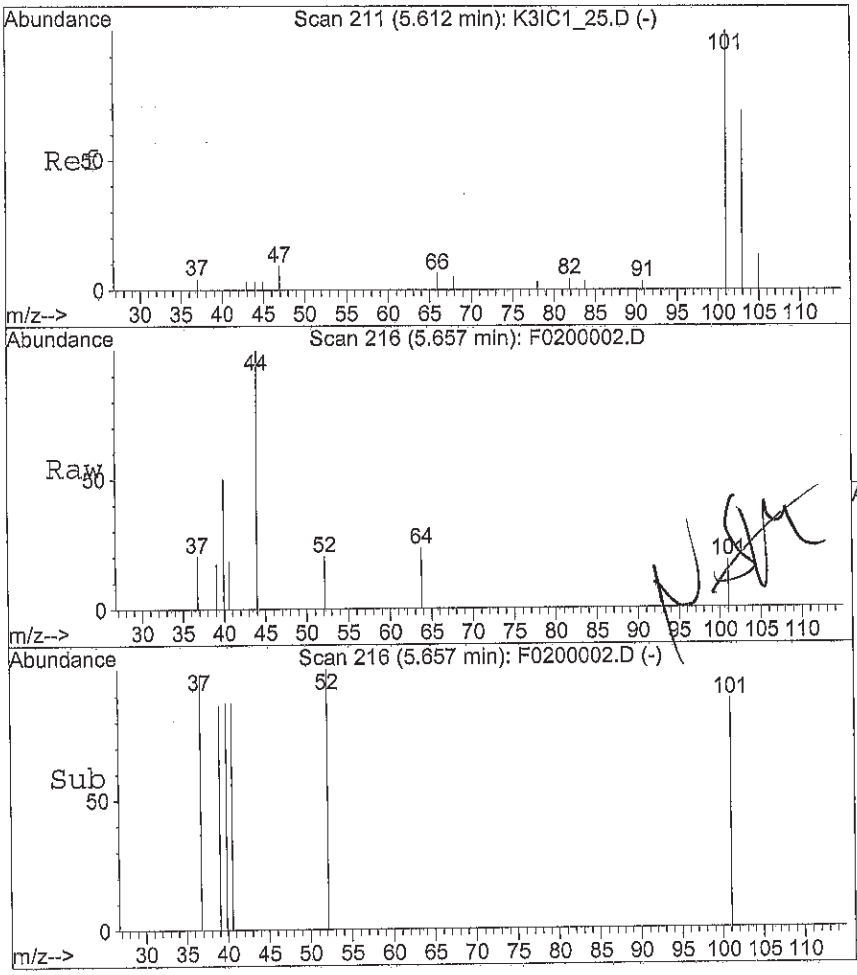


#7
Chloroethane
Concen: 2.27 ug/L
RT: 5.20 min Scan# 162
Delta R.T. -0.04 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 64 Resp: 1791

Ion	Ratio	Lower	Upper
64	100		
66	46.3	35.4	53.0

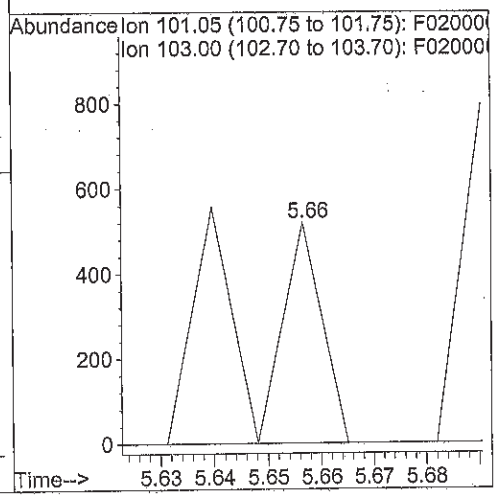


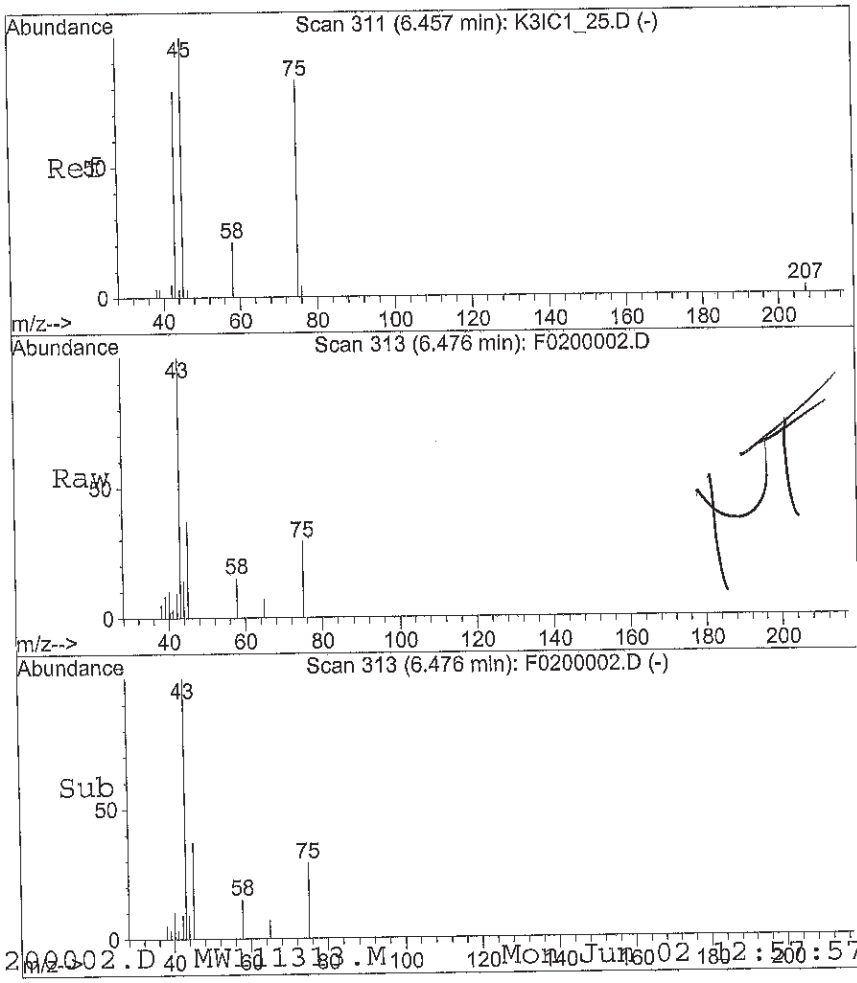


#8
(F11) Trichlorofluoromethane
Concen: 0.07 ug/L
RT: 5.66 min Scan# 216
Delta R.T. 0.04 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion:101 Resp: 263

Ion	Ratio	Lower	Upper
101	100		
103	107.2	54.5	81.7#

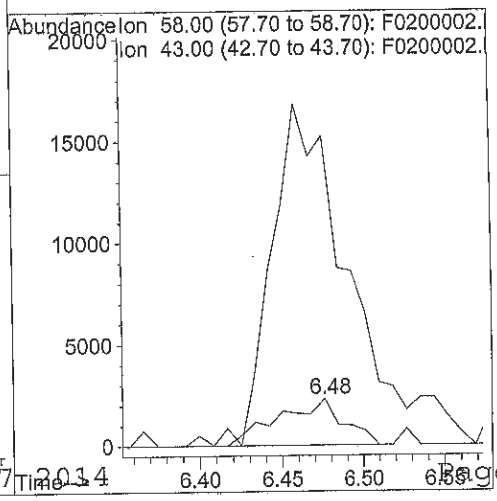


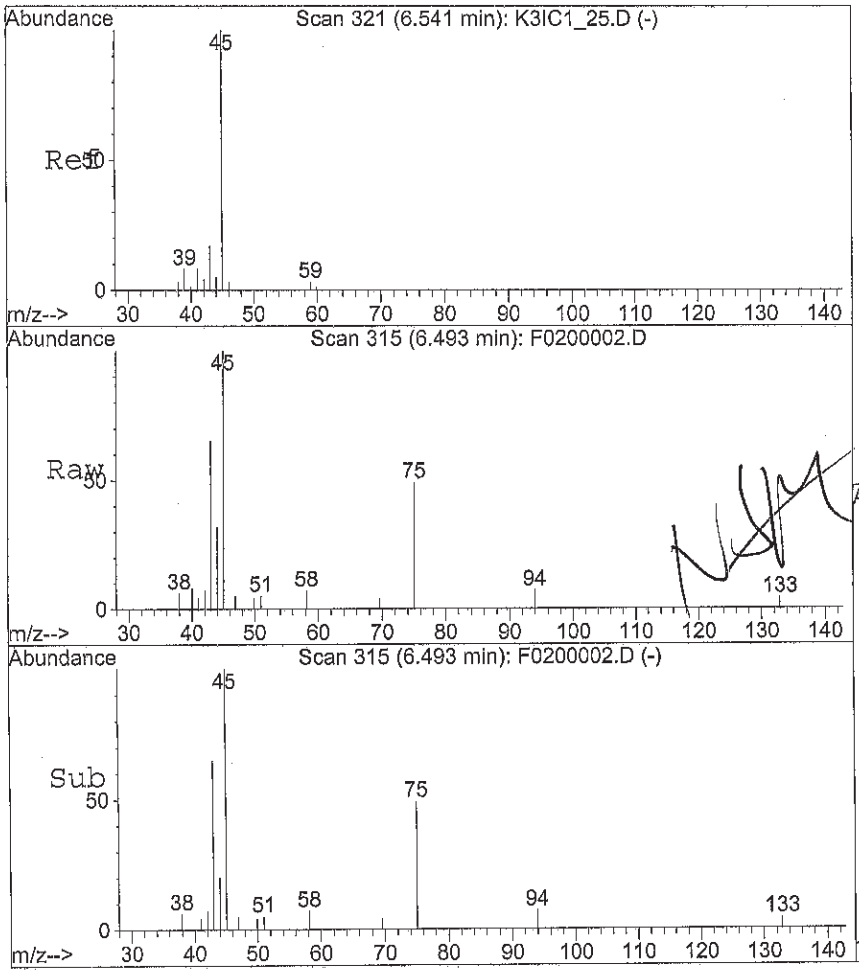


#11
Acetone
Concen: 7.27 ug/L
RT: 6.48 min Scan# 313
Delta R.T. 0.02 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 58 Resp: 6358

Ion	Ratio	Lower	Upper
58	100		
43	881.8	360.9	541.3#

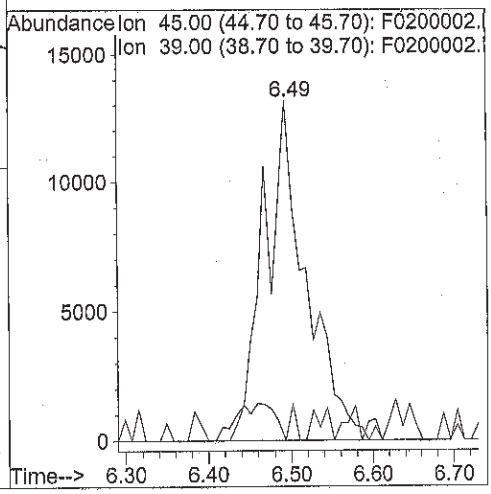


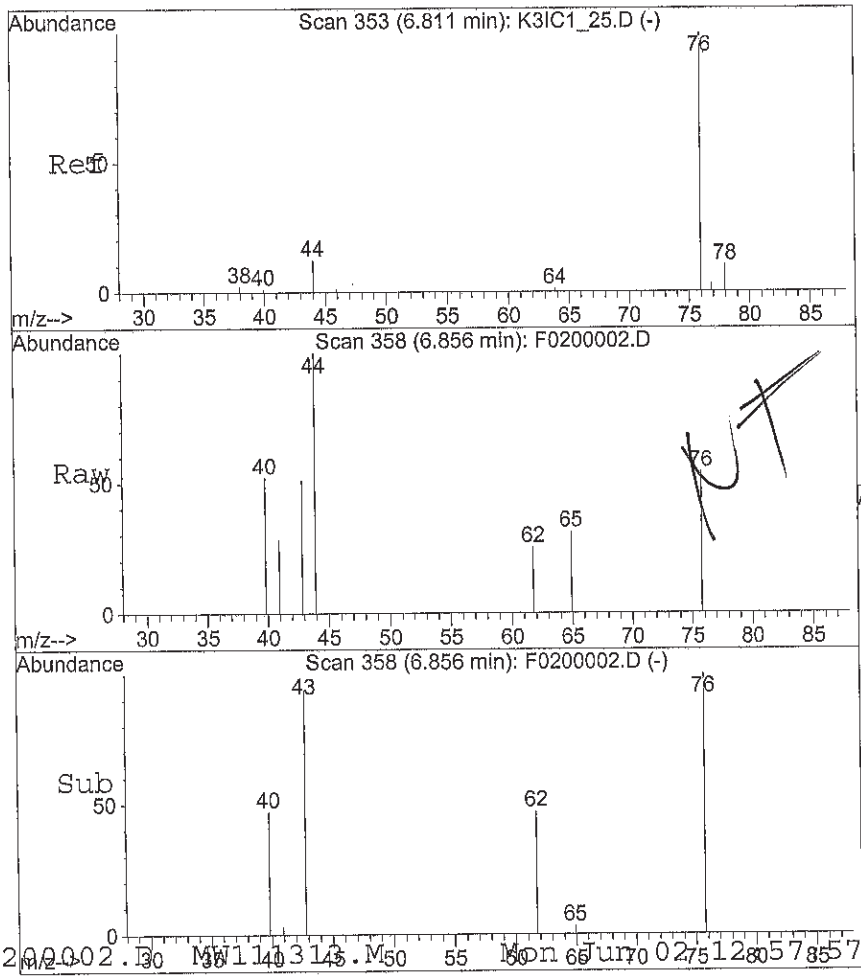


#12
(IPA) Leak Check Compound
Concen: 286.00 ug/L
RT: 6.49 min Scan# 315
Delta R.T. -0.05 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 45 Resp: 46799

Ion	Ratio	Lower	Upper
45	100		
39	1.5	4.9	7.3#

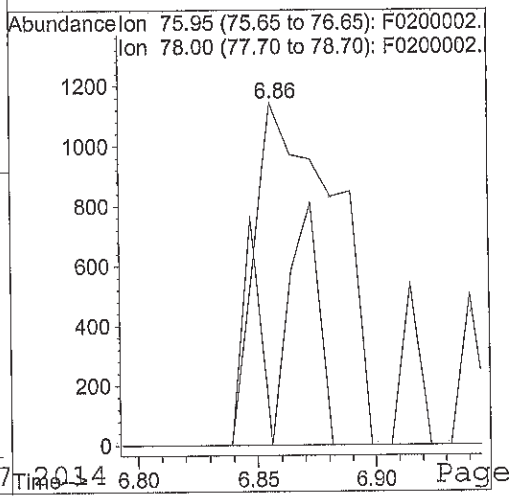


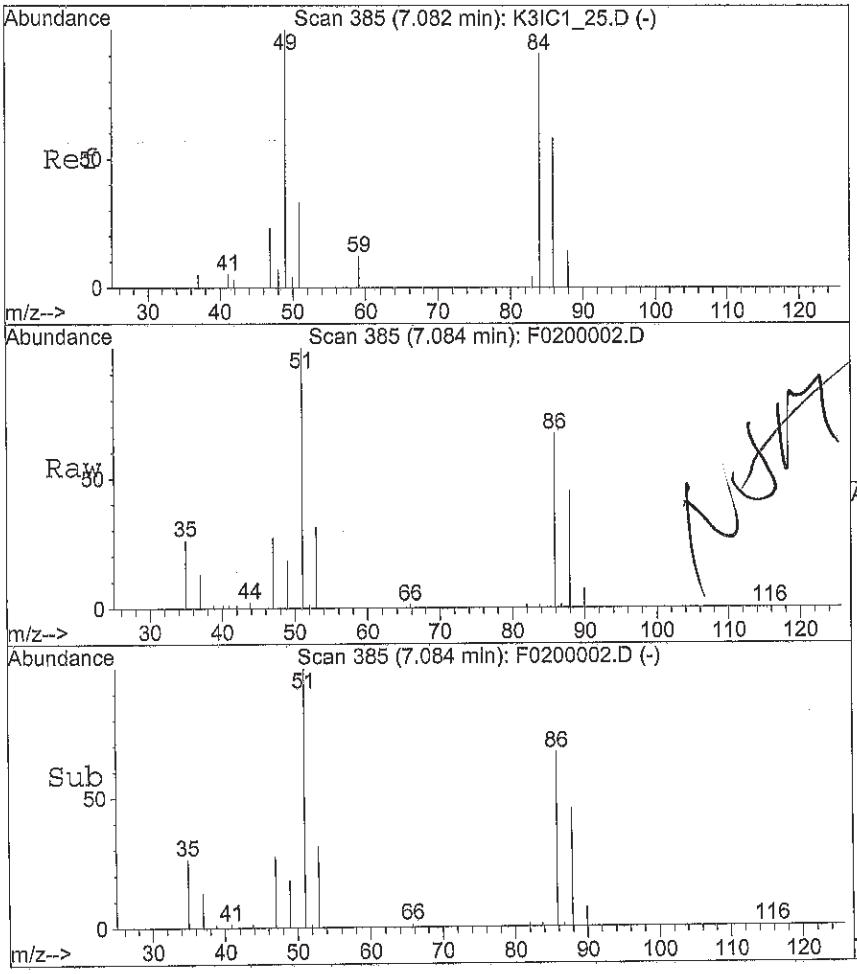


#13
Carbon disulfide
Concen: 0.24 ug/L
RT: 6.86 min Scan# 358
Delta R.T. 0.04 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 76 Resp: 2687

Ion	Ratio	Lower	Upper
76	100		
78	14.4	7.0	10.4#

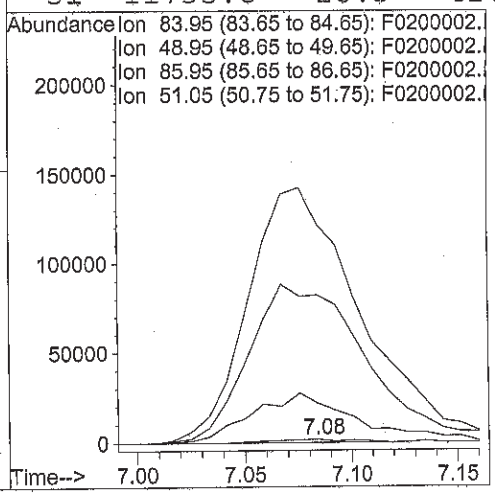


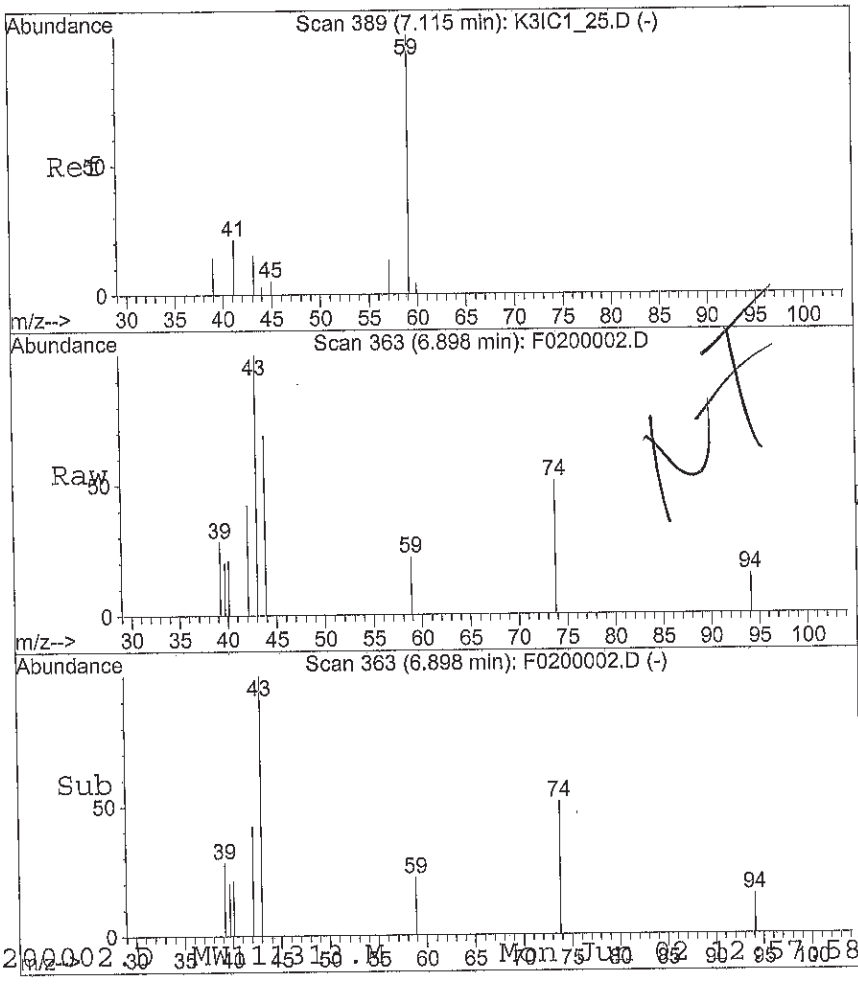


#14
Methylene Chloride
Concen: 1.20 ug/L
RT: 7.08 min Scan# 385
Delta R.T. 0.00 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

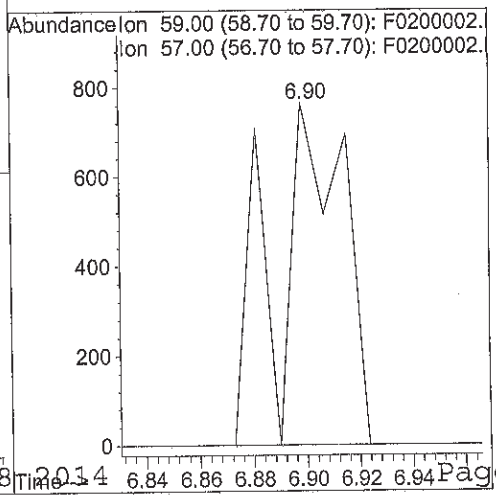


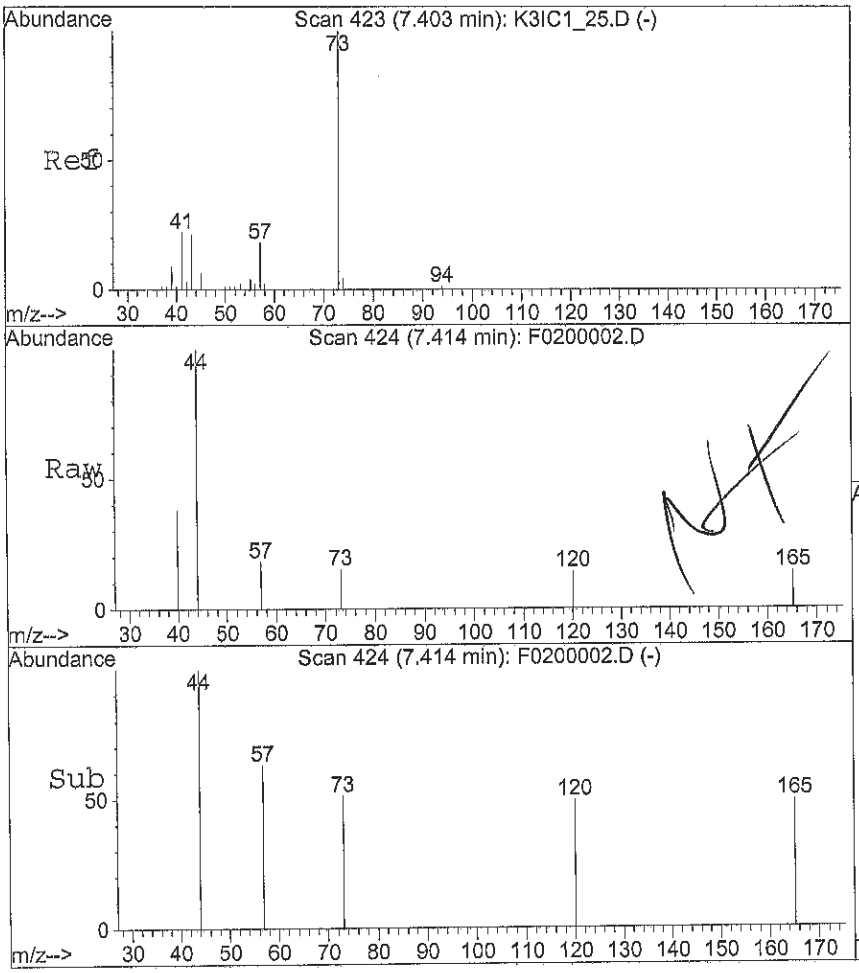


#15
(TBA) tert-Butanol
Concen: 5.85 ug/L
RT: 6.90 min Scan# 363
Delta R.T. -0.22 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 59 Resp: 1358

Ion	Ratio	Lower	Upper
59	100		
57	0.0	6.4	9.6#

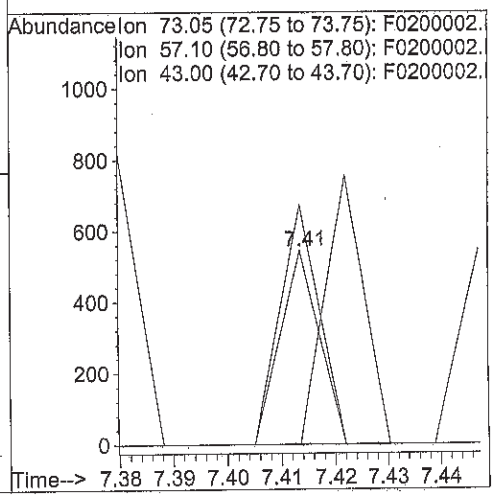


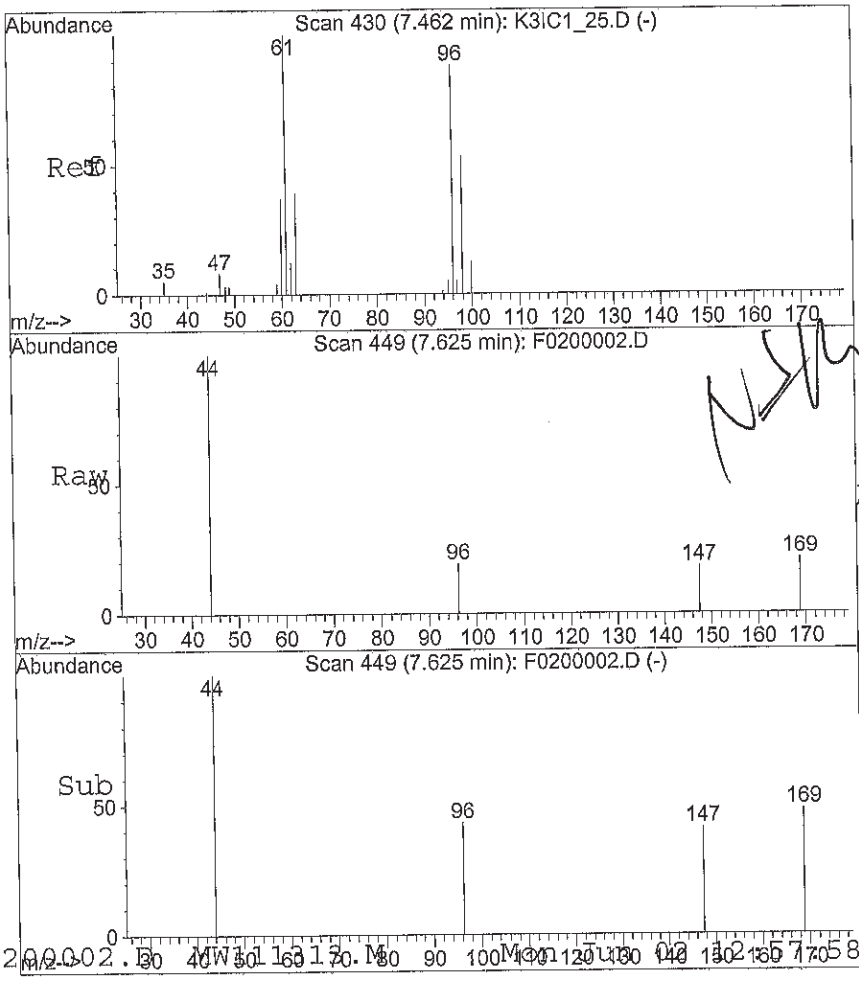


#16
(MTBE) Methyl-t-butyl ether
Concen: 0.04 ug/L
RT: 7.41 min Scan# 424
Delta R.T. 0.01 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

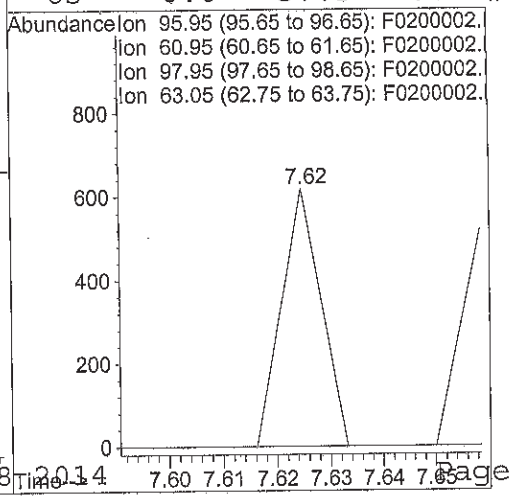


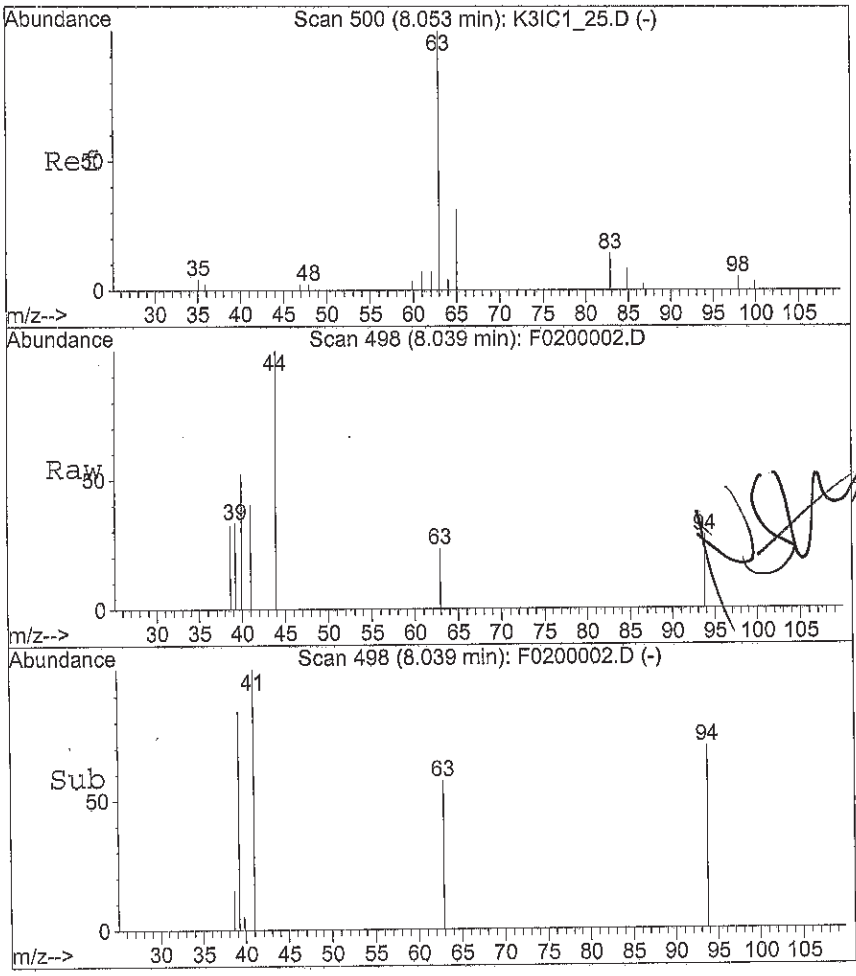


#17
trans-1,2-Dichloroethene
Concen: 0.09 ug/L
RT: 7.62 min Scan# 449
Delta R.T. 0.16 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

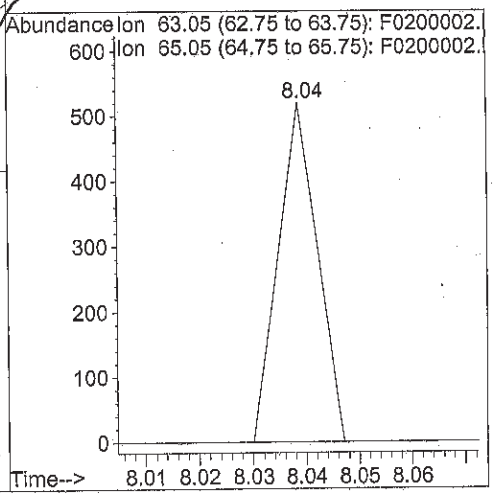


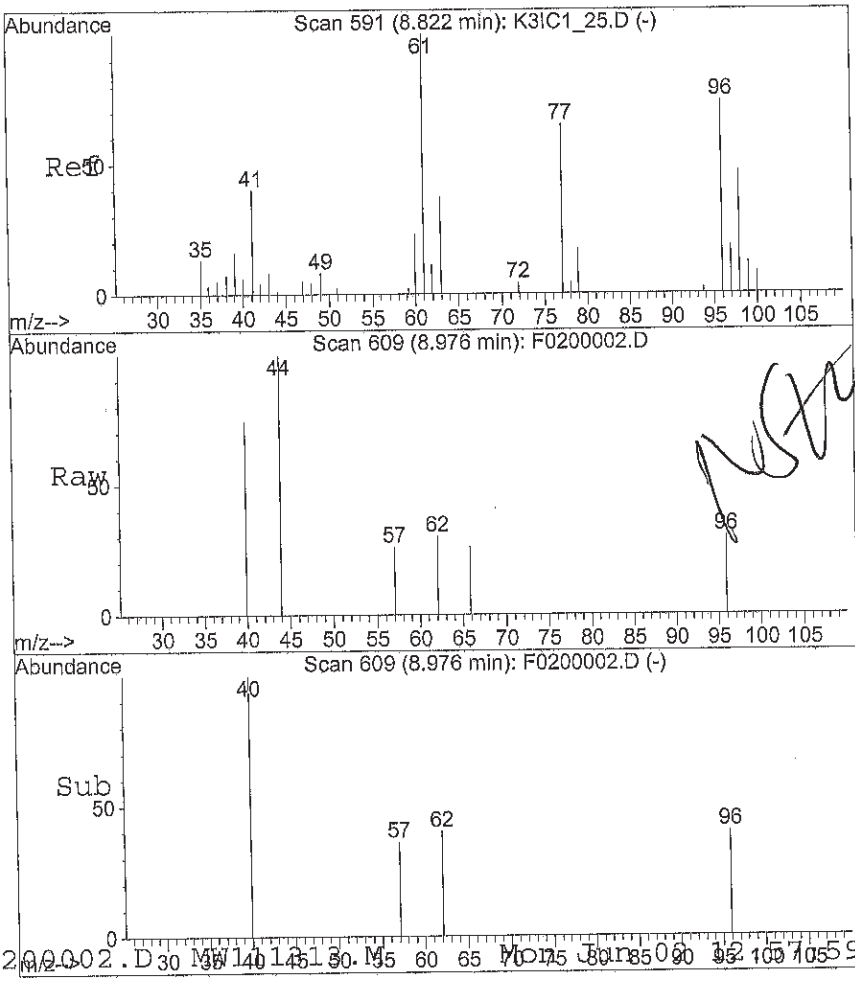


#18
1,1-Dichloroethane
Concen: 0.04 ug/L
RT: 8.04 min Scan# 498
Delta R.T. -0.01 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 63 Resp: 264

Ion	Ratio	Lower	Upper
63	100		
65	0.0	25.8	38.8#

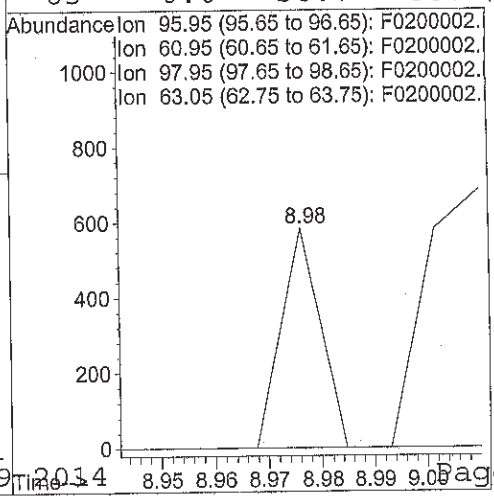


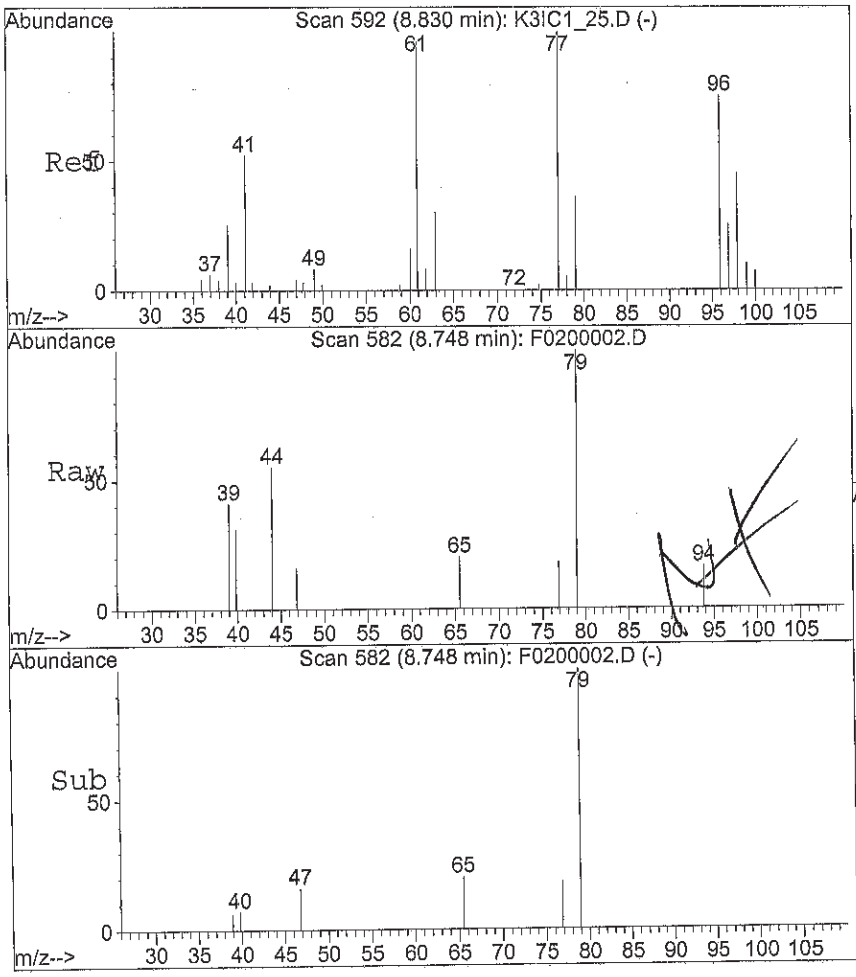


#19
cis-1,2-Dichloroethene
Concen: 0.07 ug/L
RT: 8.98 min Scan# 609
Delta R.T. 0.15 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

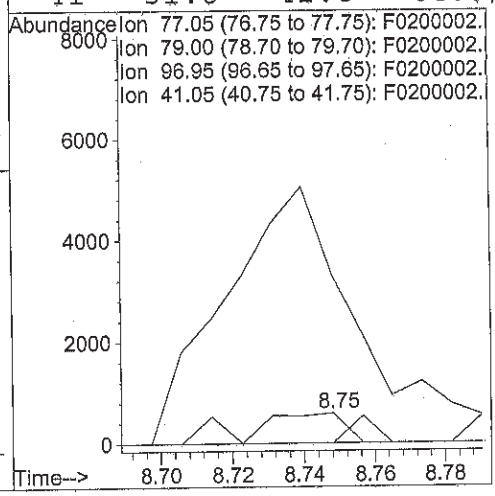


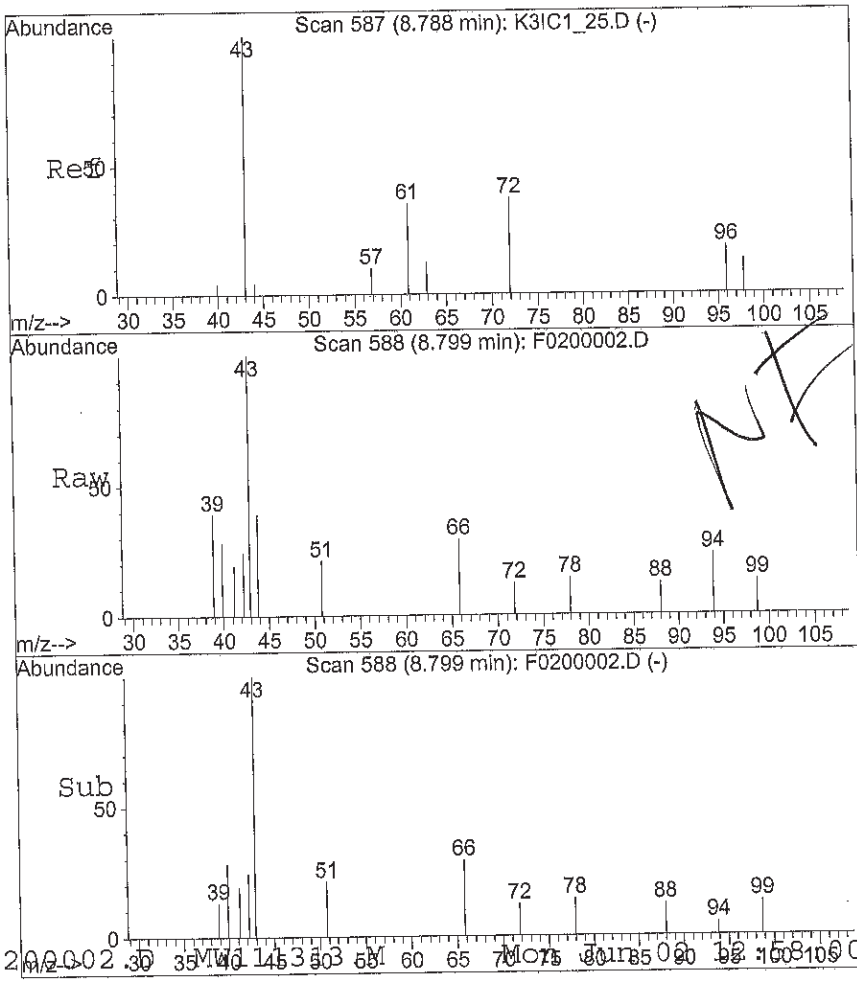


#20
2,2-Dichloropropane
Concen: 0.16 ug/L
RT: 8.75 min Scan# 582
Delta R.T. -0.08 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

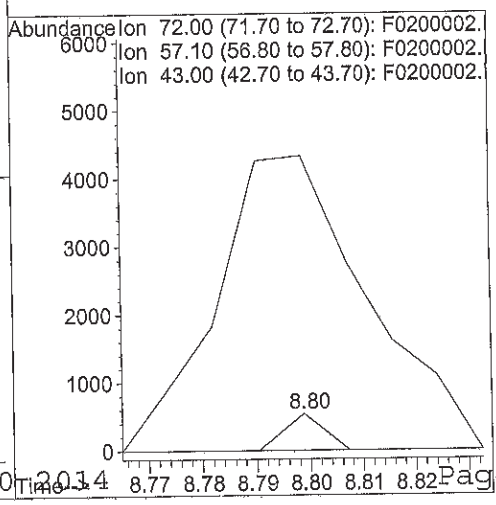


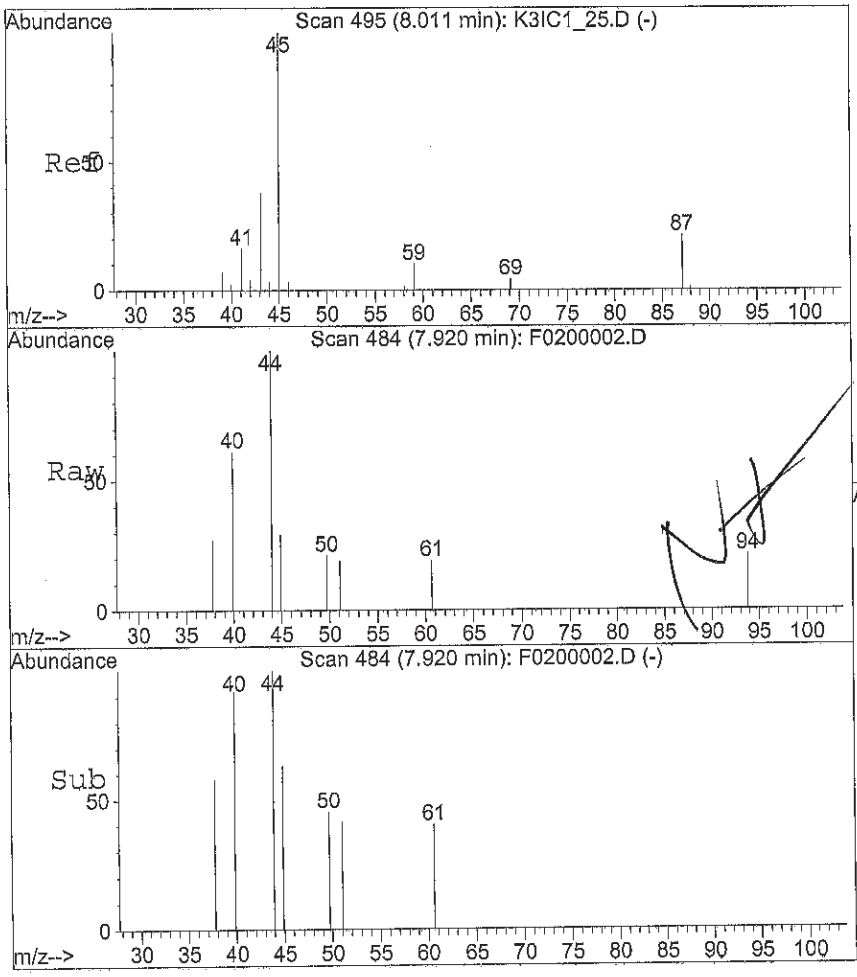


#21
(MEK) 2-Butanone
Concen: 0.71 ug/L
RT: 8.80 min Scan# 588
Delta R.T. 0.01 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

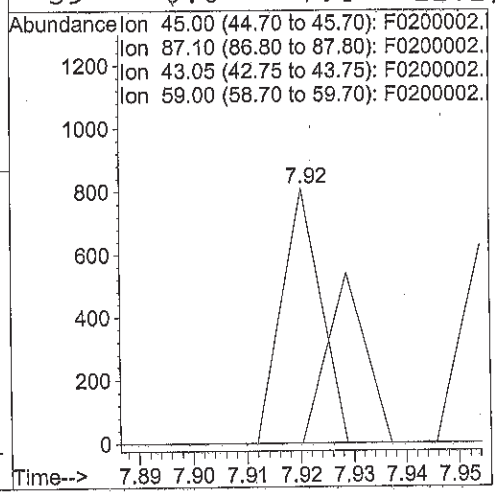


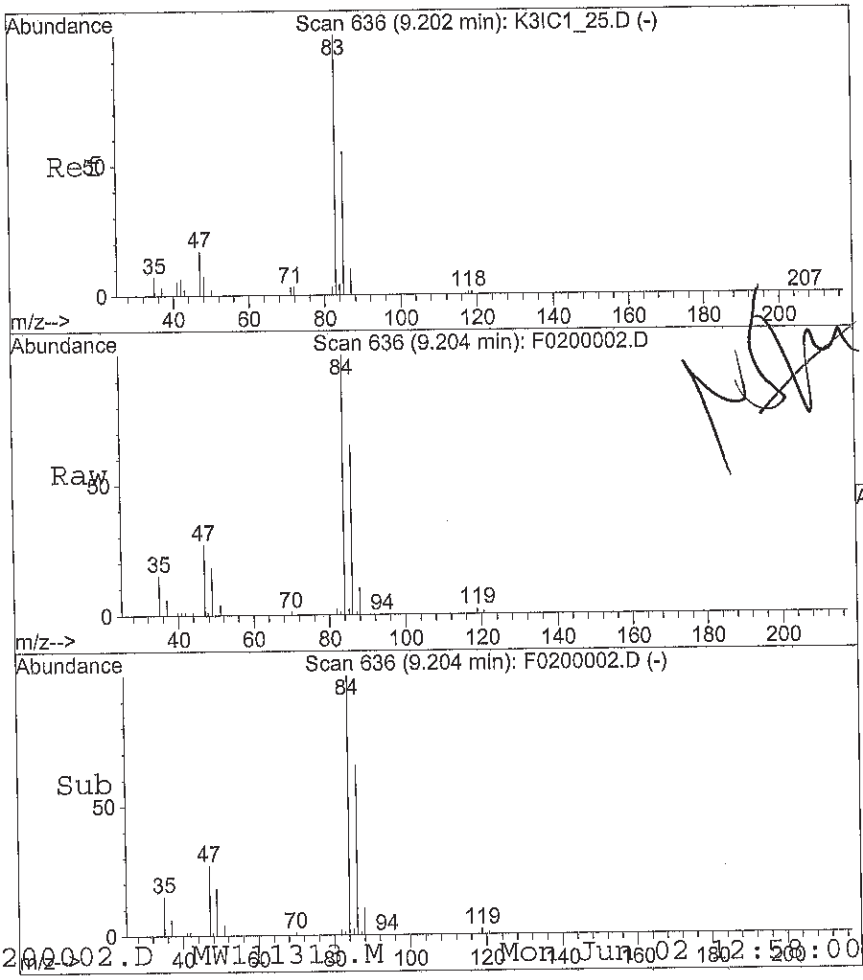


#22
(DIPE) Diisopropyl Ether
Concen: 0.04 ug/L
RT: 7.92 min Scan# 484
Delta R.T. -0.09 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

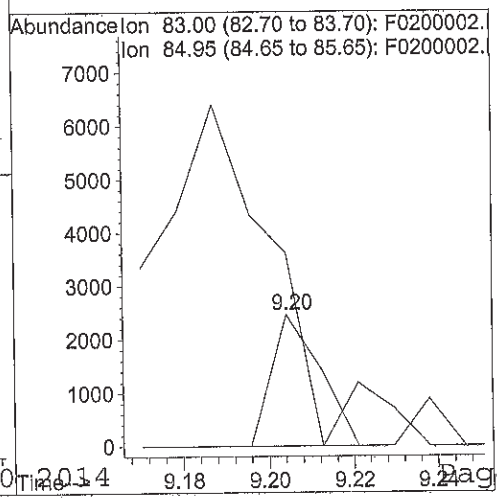


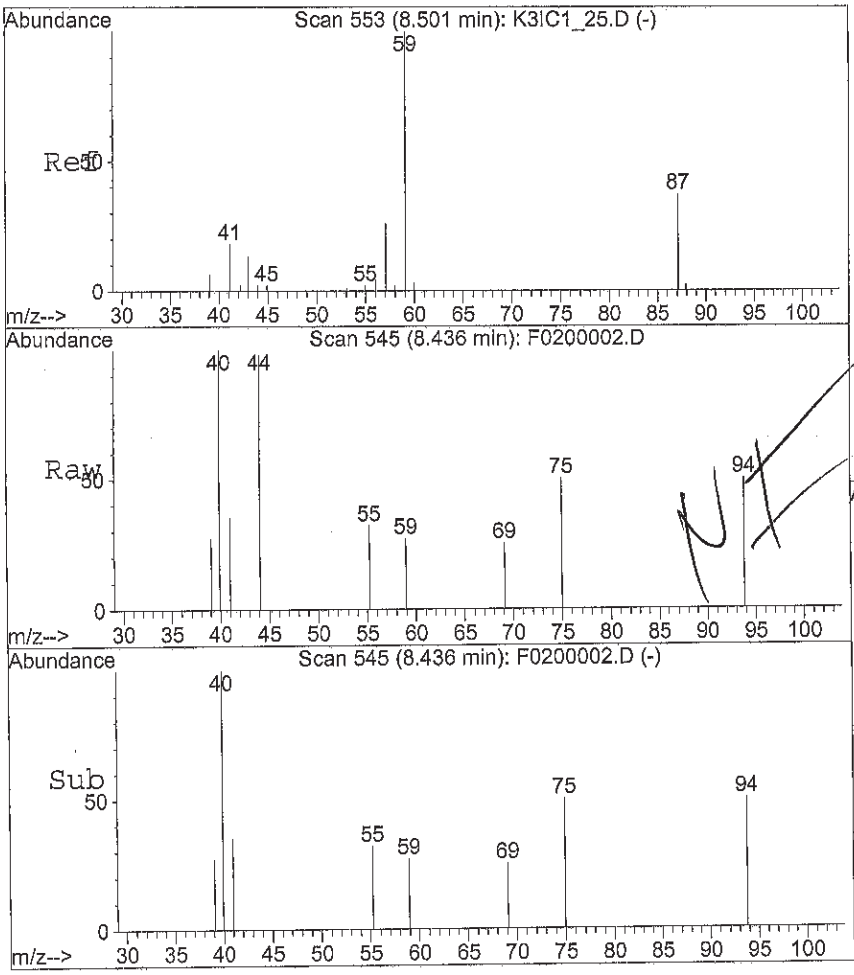


#24
Chloroform
Concen: 0.27 ug/L
RT: 9.20 min Scan# 636
Delta R.T. 0.00 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 83 Resp: 1955

Ion	Ratio	Lower	Upper
83	100		
85	621.9	51.8	77.6#

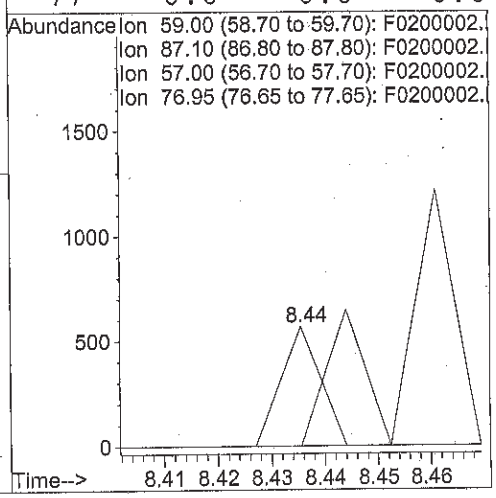


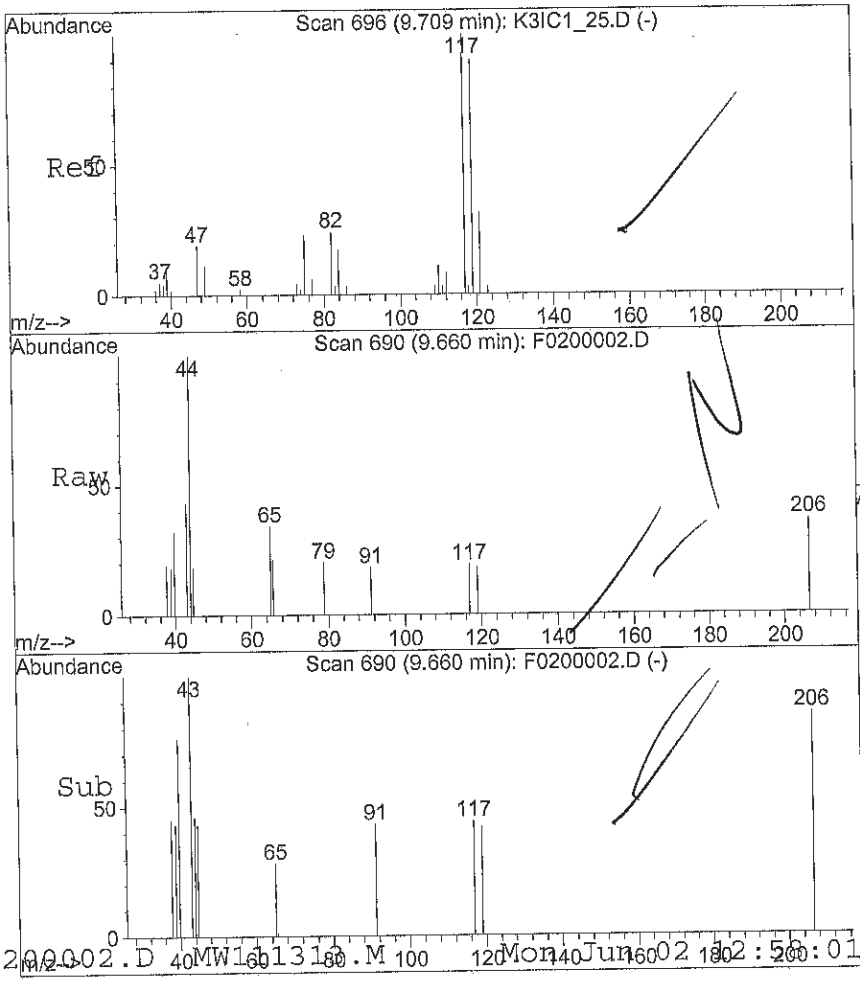


#25
(ETBE) 2-ethoxy 2-methyl propar
Concen: 0.03 ug/L
RT: 8.44 min Scan# 545
Delta R.T. -0.07 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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

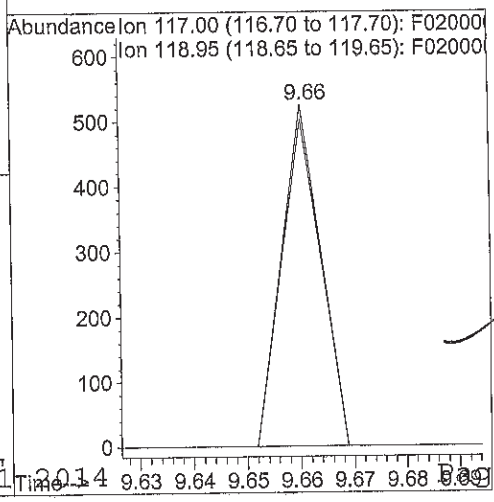


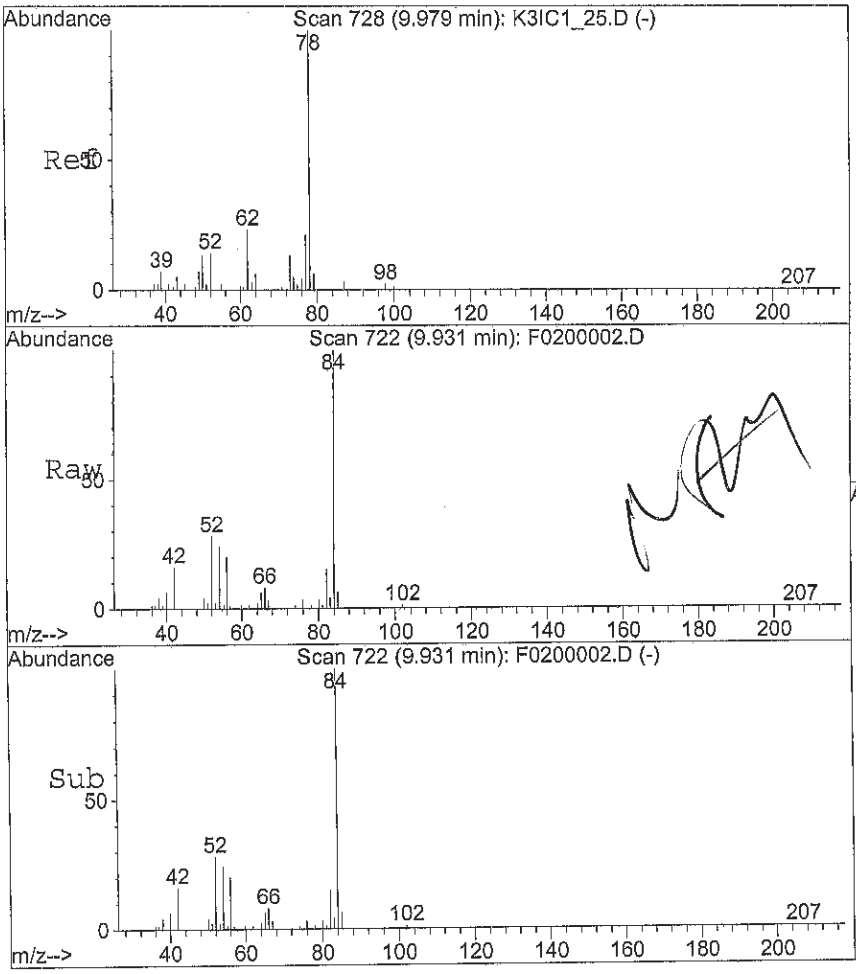


#30
Carbon Tetrachloride
Concen: 0.06 ug/L
RT: 9.66 min Scan# 690
Delta R.T. -0.05 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion:117 Resp: 266

Ion	Ratio	Lower	Upper
117	100		
119	95.9	75.8	113.8

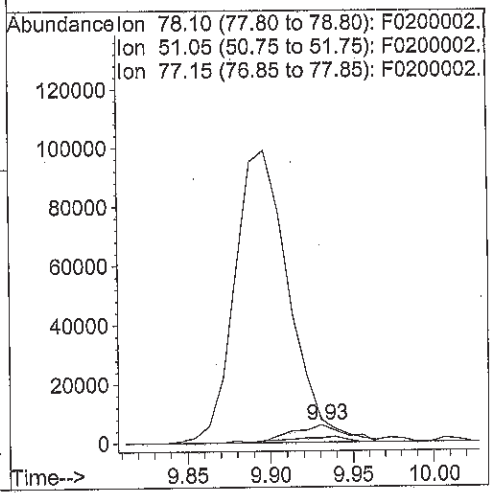


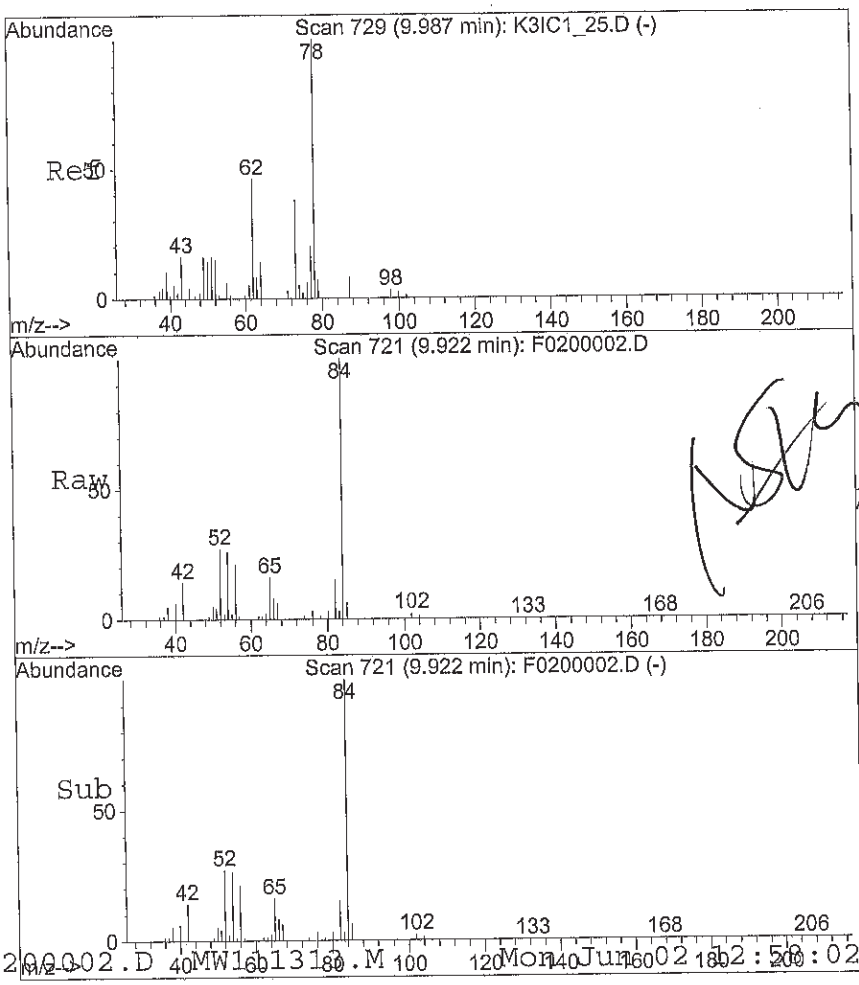


#31
Benzene
Concen: 1.02 ug/L
RT: 9.93 min Scan# 722
Delta R.T. -0.05 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

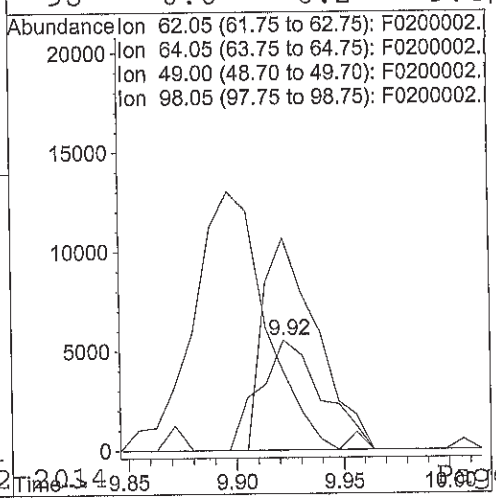


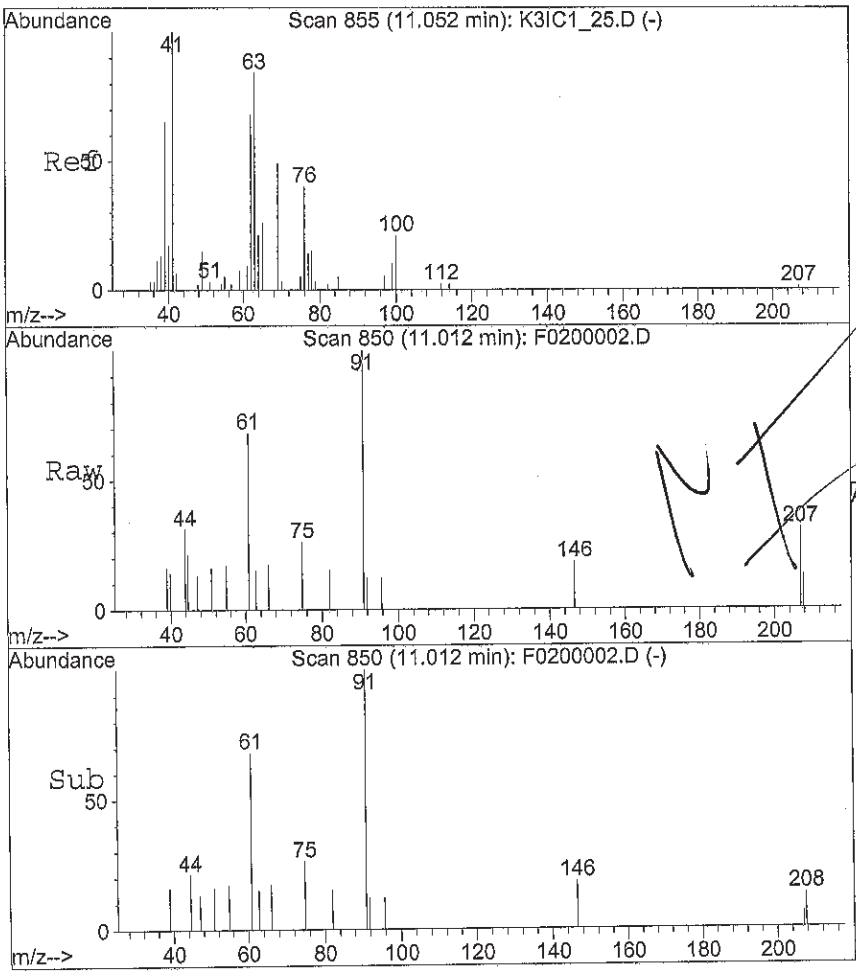


#32
1,2-Dichloroethane
Concen: 2.48 ug/L
RT: 9.92 min Scan# 721
Delta R.T. -0.07 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 62 Resp: 11263

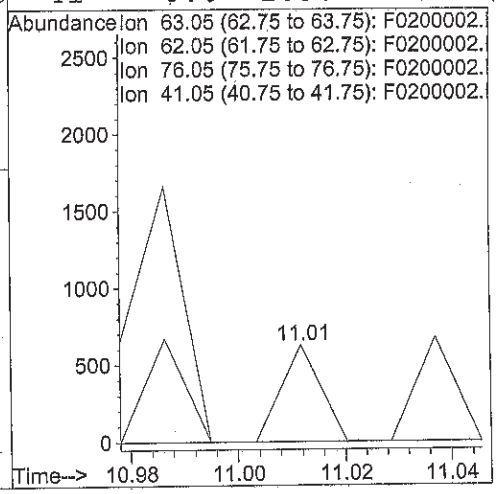
Ion	Ratio	Lower	Upper
62	100		
64	166.7	28.0	42.0#
49	0.0	28.5	42.7#
98	0.0	6.2	9.4#

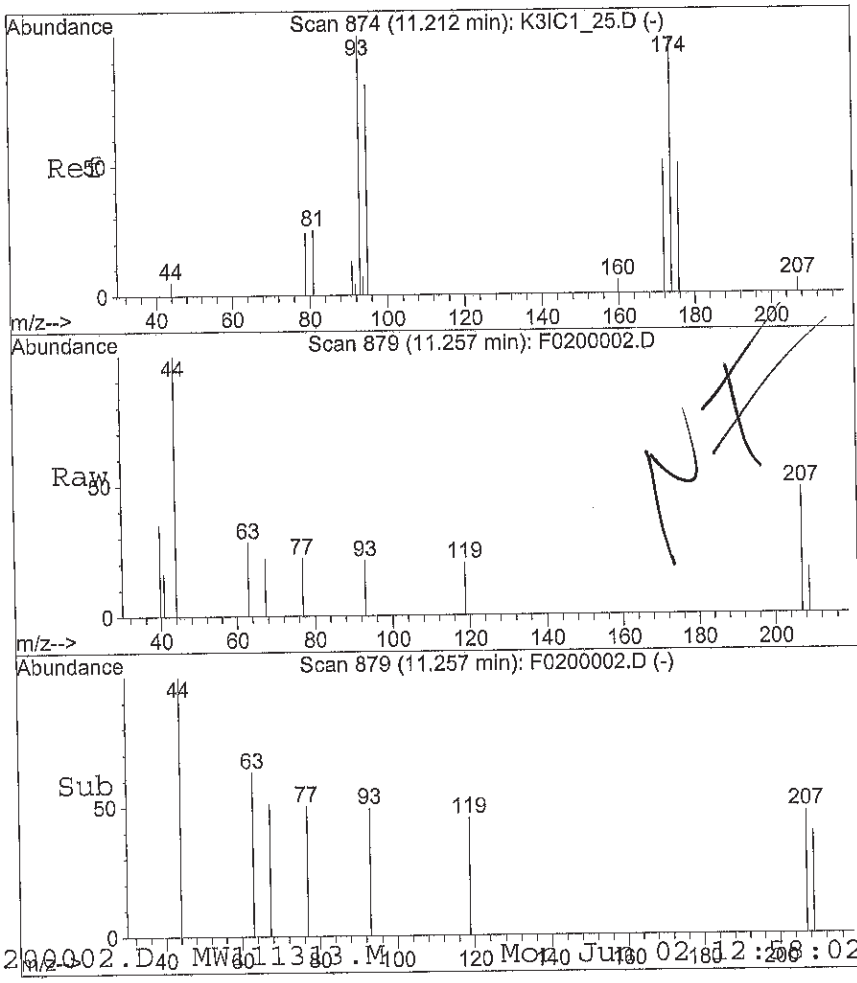




#34
1,2-Dichloropropane
Concen: 0.10 ug/L
RT: 11.01 min Scan# 850
Delta R.T. -0.04 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

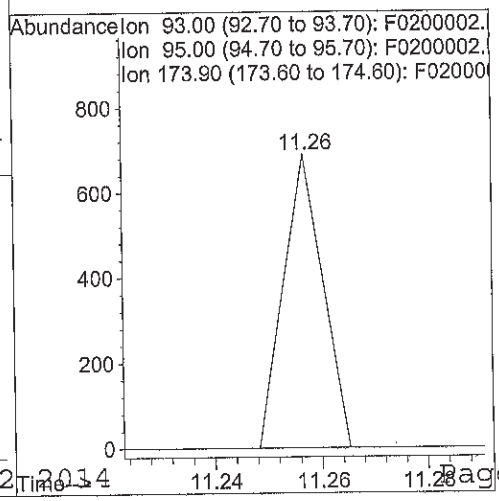
Tgt Ion: 63	Resp:	316	
Ion	Ratio	Lower	Upper
63	100		
62	0.0	67.4	101.2#
76	0.0	40.3	60.5#
41	0.0	103.0	154.6#

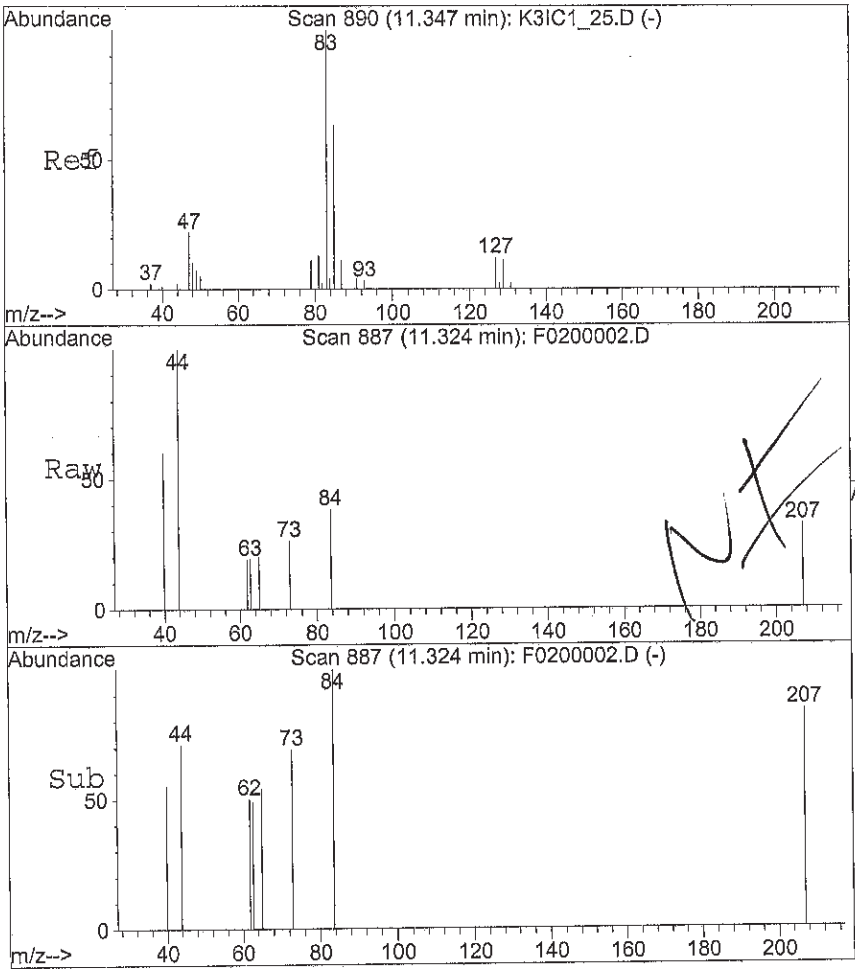




#35
Dibromomethane
Concen: 0.15 ug/L
RT: 11.26 min Scan# 879
Delta R.T. 0.04 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

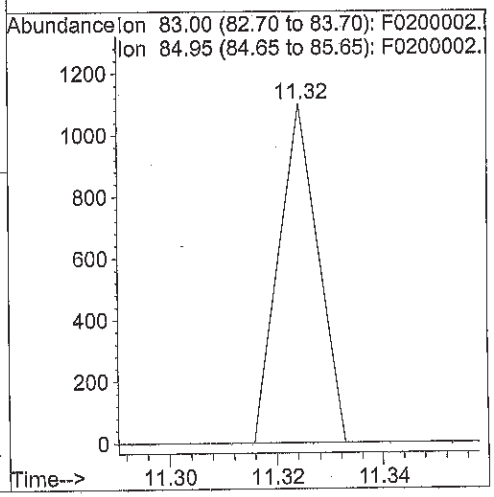


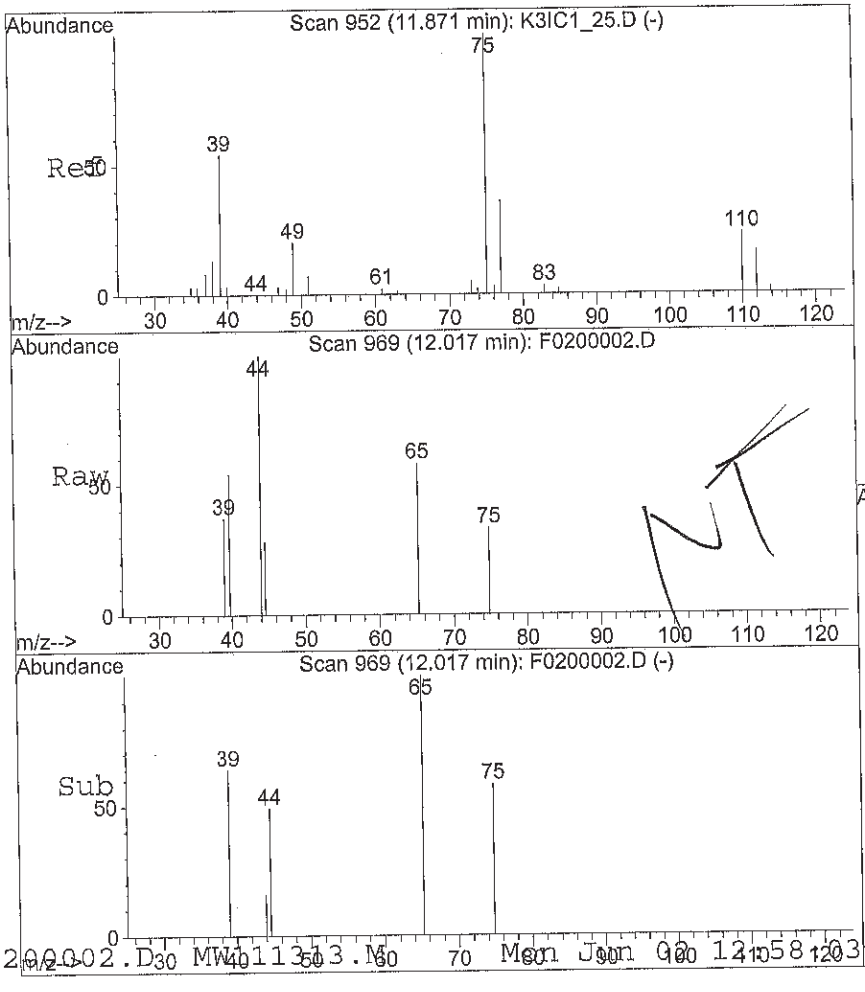


#36
Bromodichloromethane
Concen: 0.12 ug/L
RT: 11.32 min Scan# 887
Delta R.T. -0.02 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 83 Resp: 558

Ion	Ratio	Lower	Upper
83	100		
85	0.0	48.2	72.2#

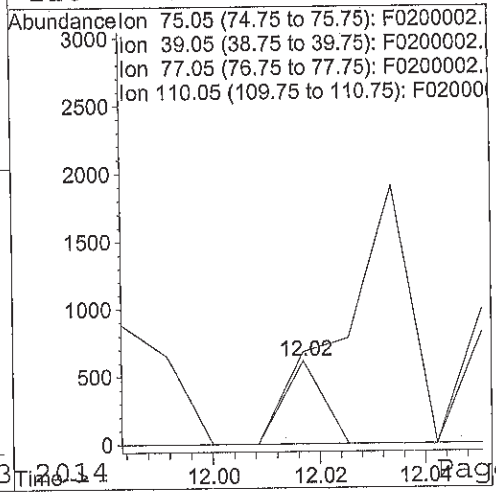


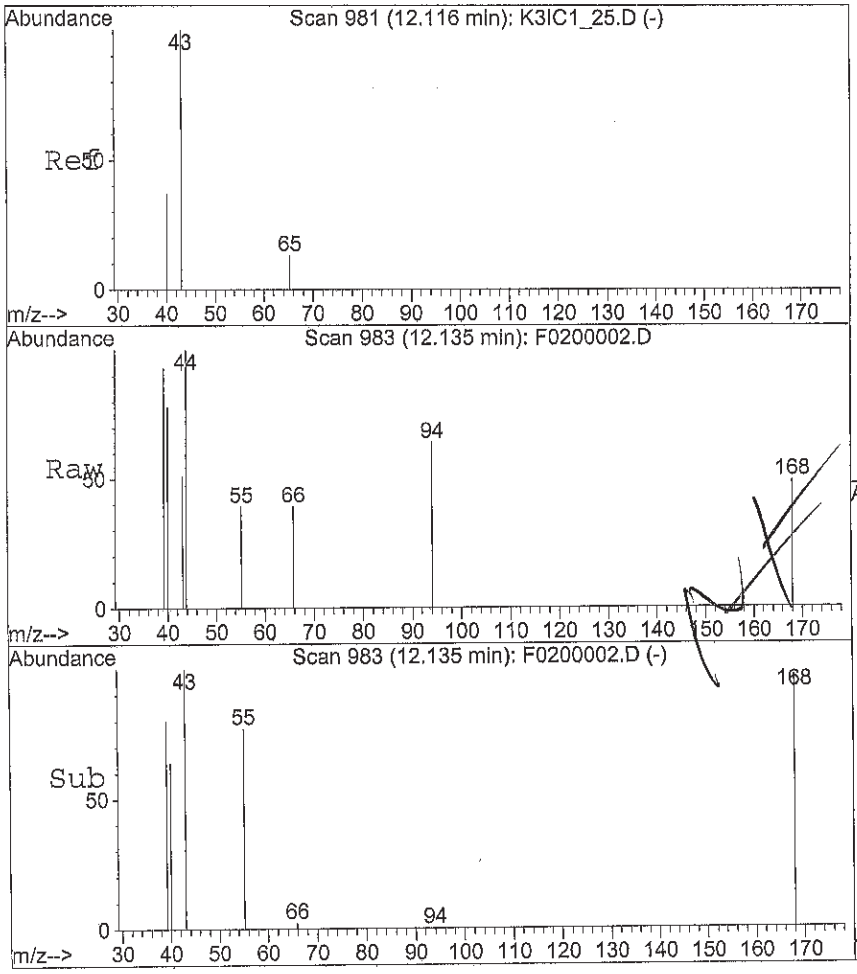


#37
cis-1,3-Dichloropropene
Concen: 0.06 ug/L
RT: 12.02 min Scan# 969
Delta R.T. 0.15 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

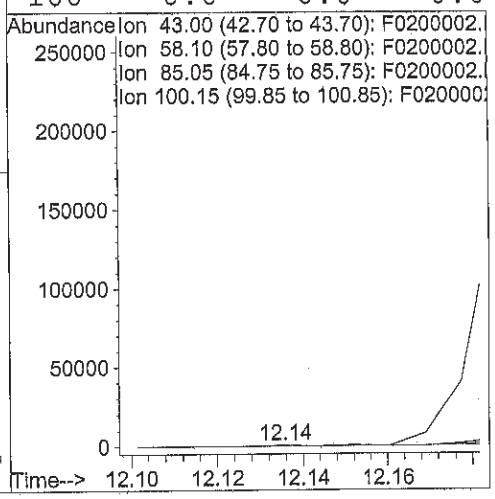


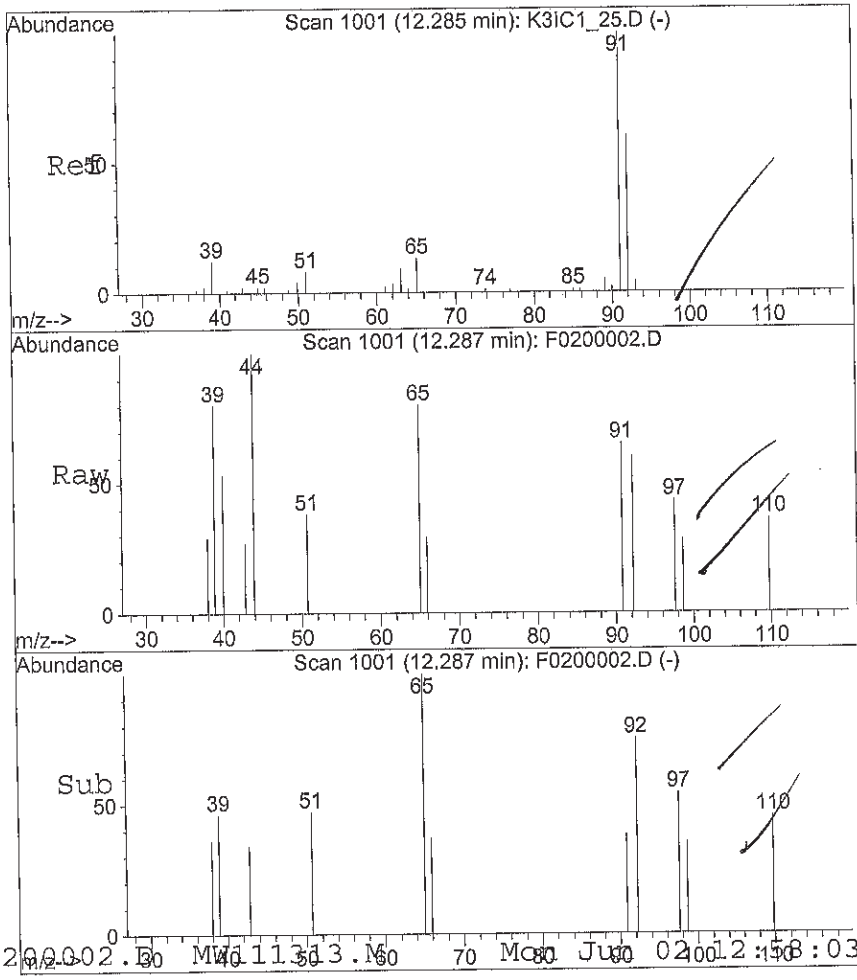


#40
(MIBK) 4-Methyl-2-Pentanone
Concen: 0.24 ug/L
RT: 12.14 min Scan# 983
Delta R.T. 0.02 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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

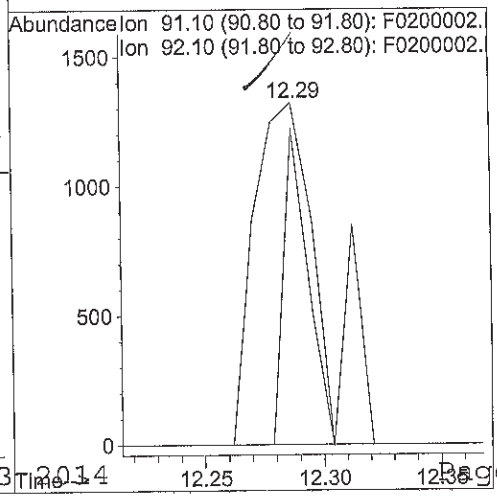


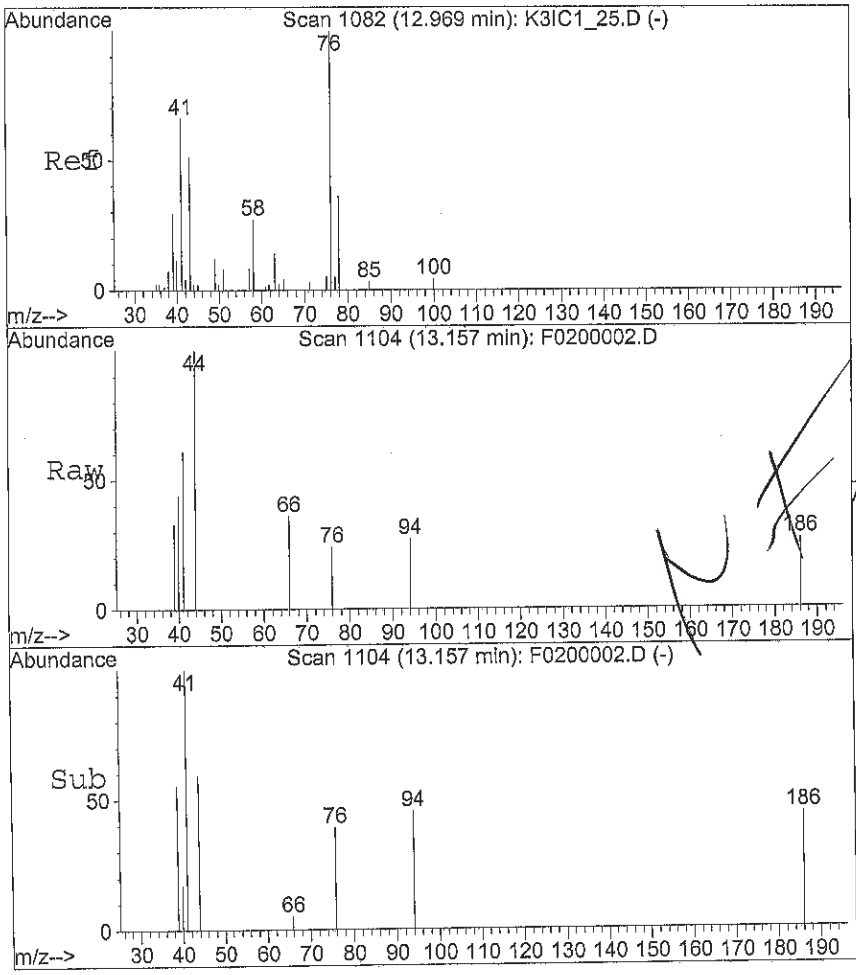


#41
Toluene
Concen: 0.15 ug/L
RT: 12.29 min Scan# 1001
Delta R.T. 0.00 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 91 Resp: 2610

Ion	Ratio	Lower	Upper
91	100		
92	33.5	47.4	71.0#

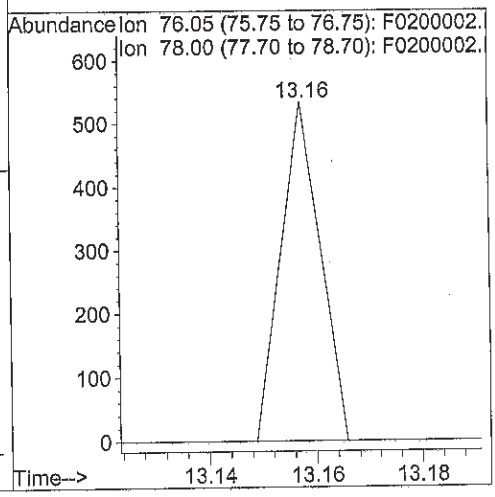


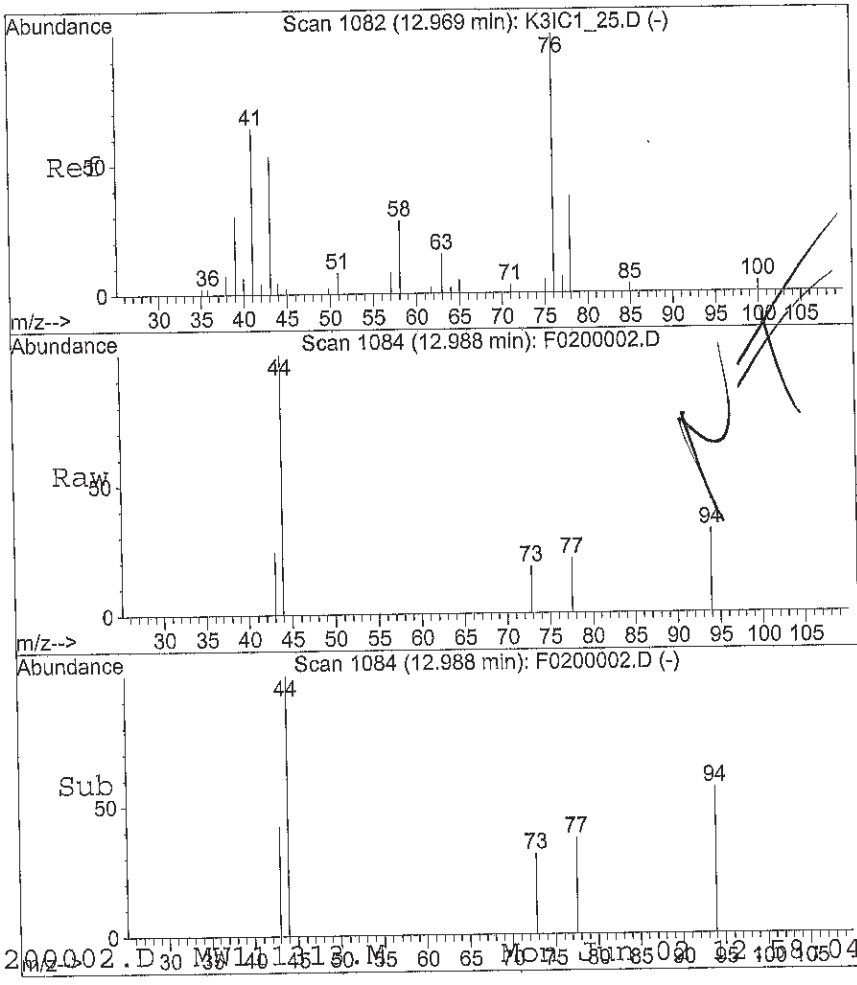


#45
1,3-Dichloropropane
Concen: 0.05 ug/L
RT: 13.16 min Scan# 1104
Delta R.T. 0.19 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 76 Resp: 270

Ion	Ratio	Lower	Upper
76	100		
78	0.0	26.9	40.3#

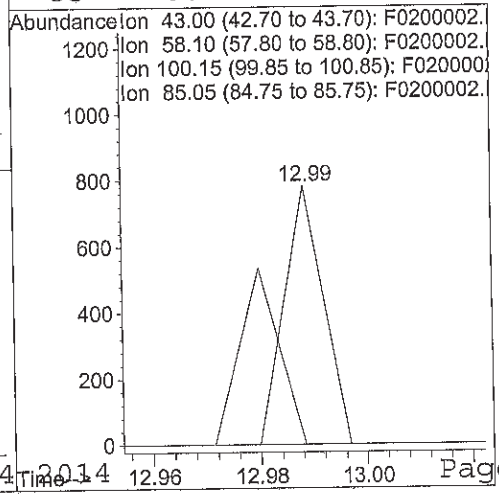


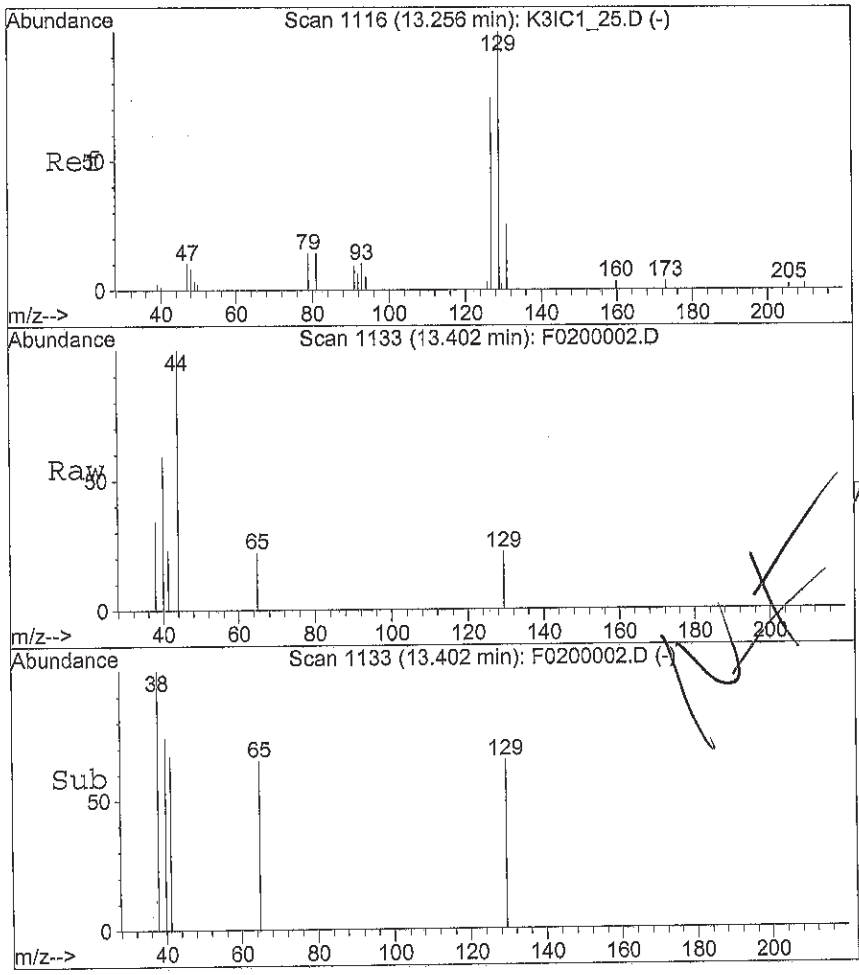


#46
2-Hexanone
Concen: 0.14 ug/L
RT: 12.99 min Scan# 1084
Delta R.T. 0.02 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

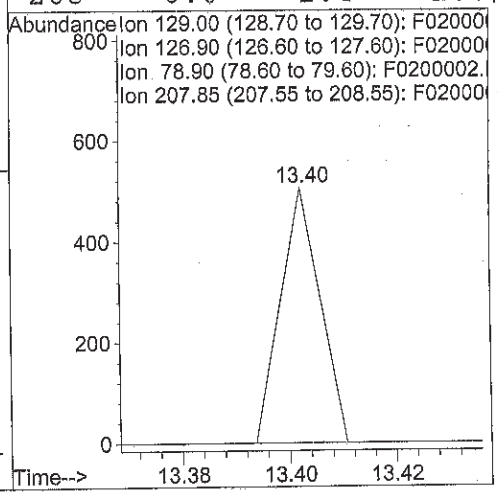


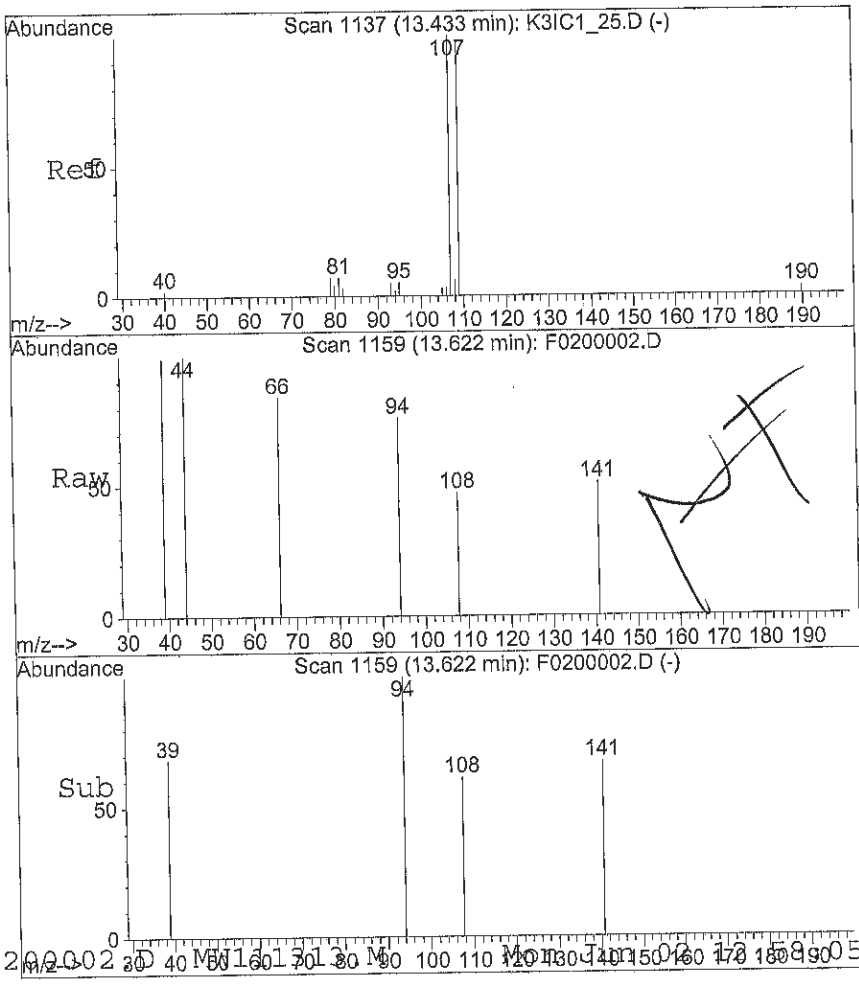


#47
Dibromochloromethane
Concen: 0.06 ug/L
RT: 13.40 min Scan# 1133
Delta R.T. 0.15 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

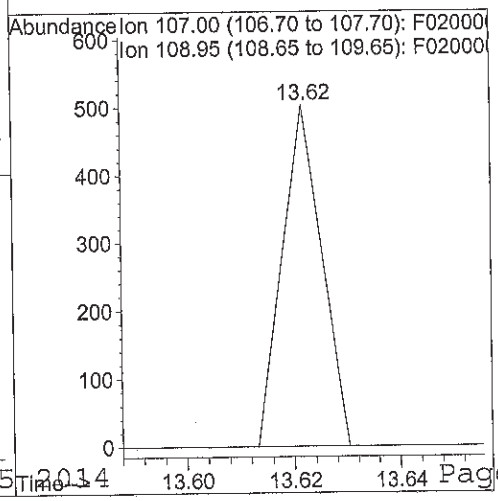


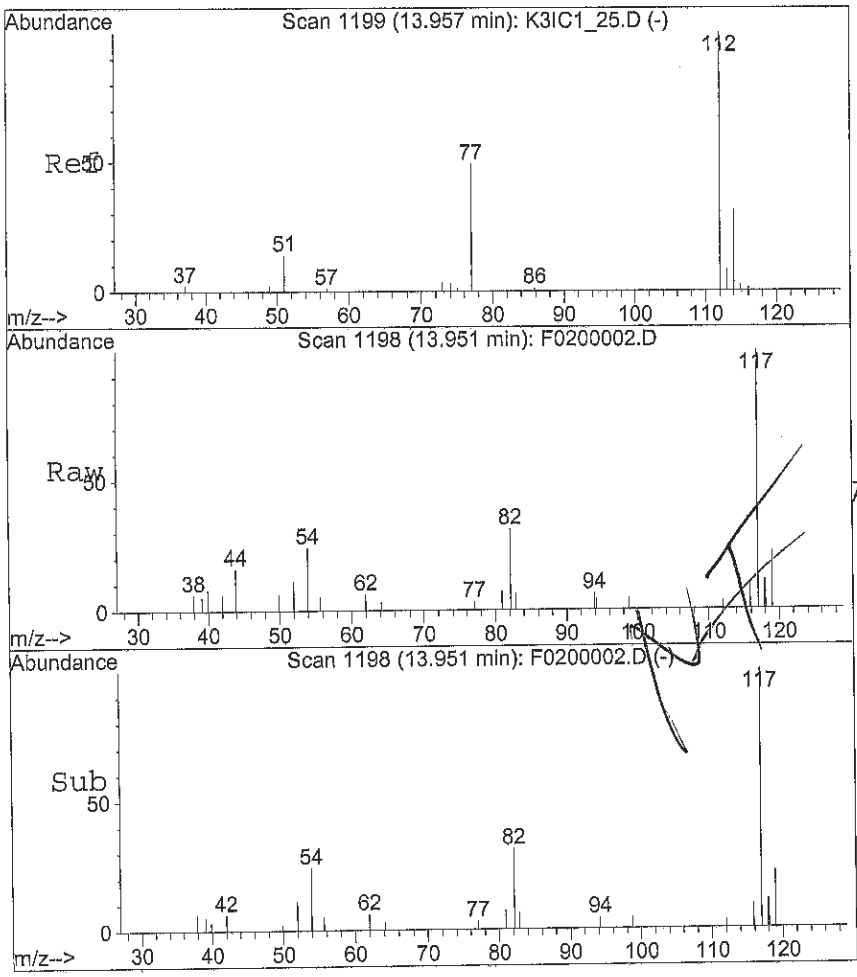


#48
1,2-Dibromoethane
Concen: 0.06 ug/L
RT: 13.62 min Scan# 1159
Delta R.T. 0.19 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion:107 Resp: 255

Ion	Ratio	Lower	Upper
107	100		
109	0.0	74.4	111.6#

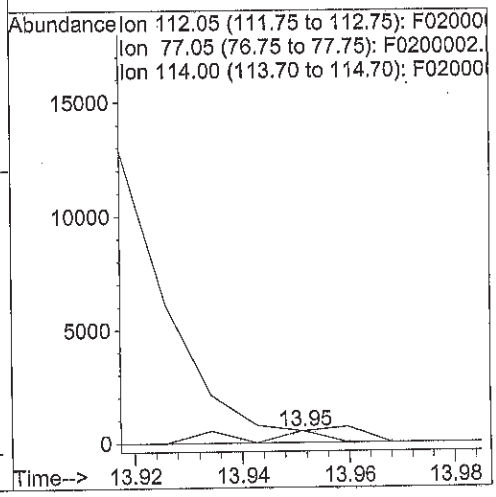


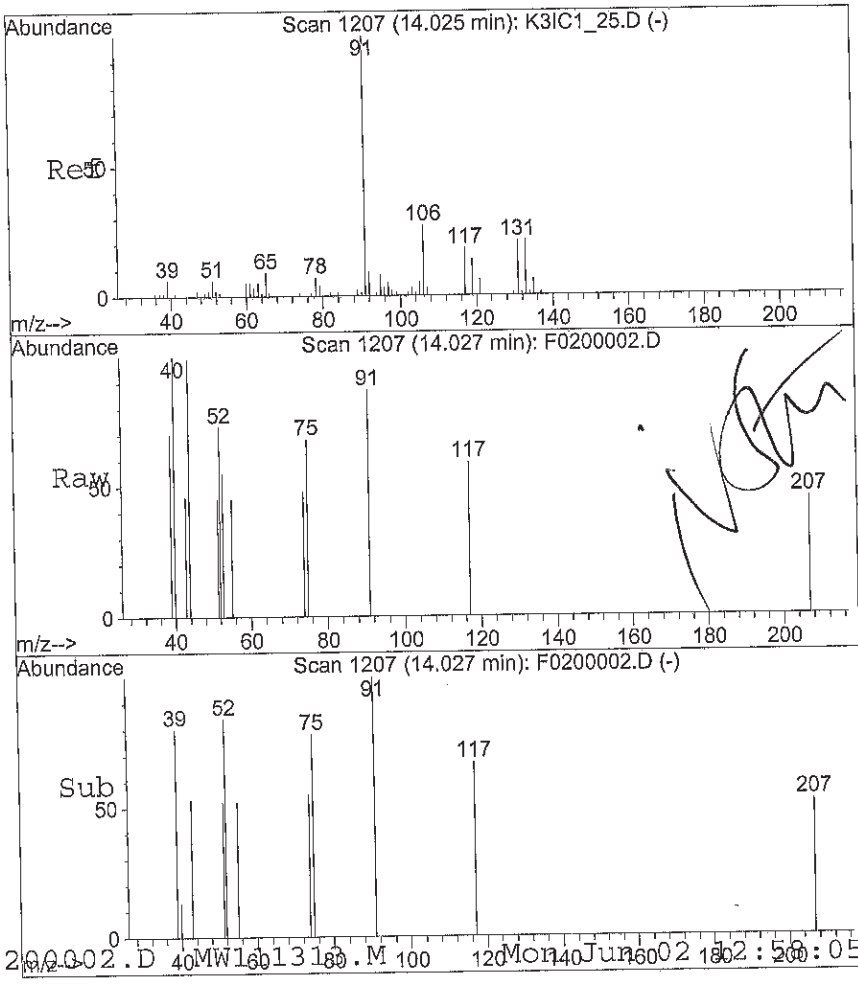


#49
Chlorobenzene
Concen: 0.02 ug/L
RT: 13.95 min Scan# 1198
Delta R.T. -0.01 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion:112 Resp: 257

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

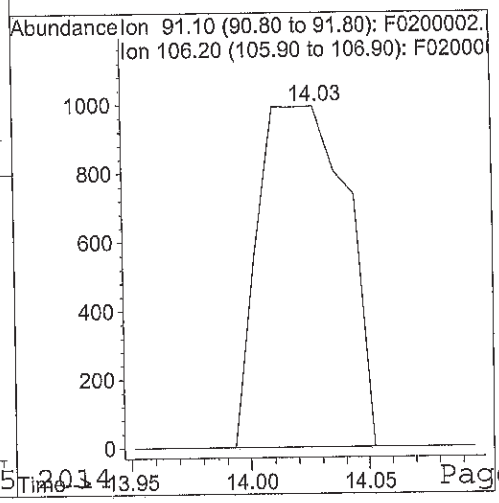


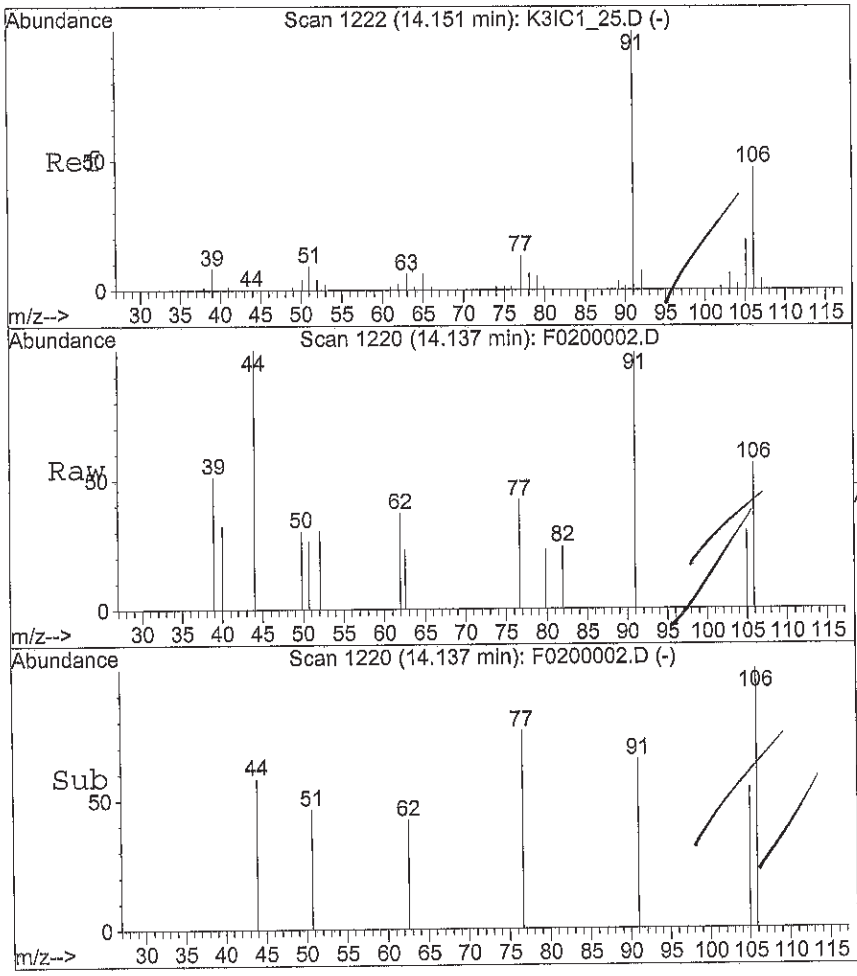


#51
Ethylbenzene
Concen: 0.13 ug/L
RT: 14.03 min Scan# 1207
Delta R.T. 0.00 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 91 Resp: 2572

Ion	Ratio	Lower	Upper
91	100		
106	0.0	23.5	35.3#

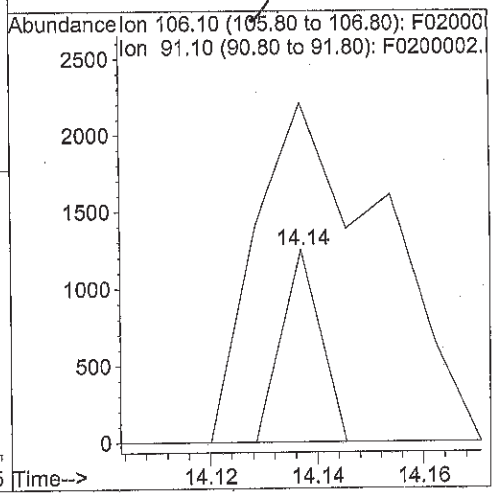


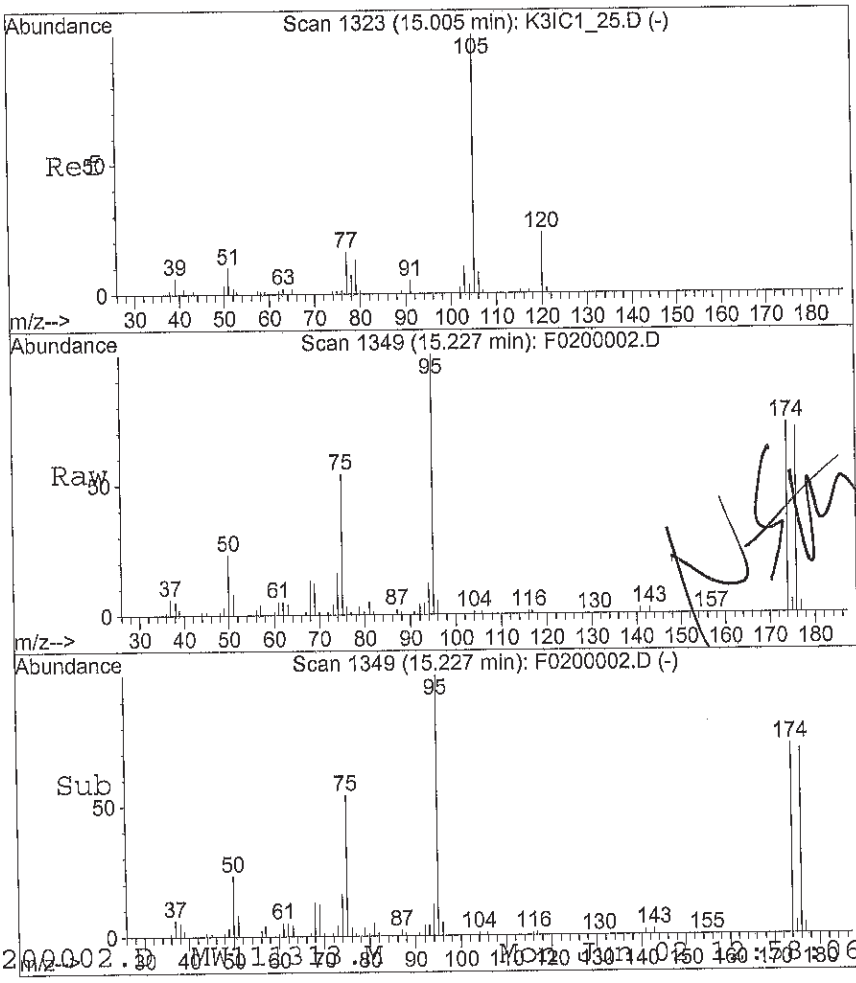


#52
m,p-Xylenes
Concen: 0.09 ug/L
RT: 14.14 min Scan# 1220
Delta R.T. -0.01 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion:106 Resp: 632

Ion	Ratio	Lower	Upper
106	100		
91	581.3	177.1	265.7#

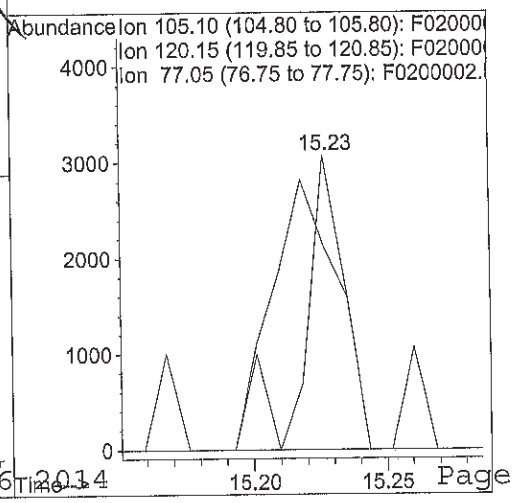


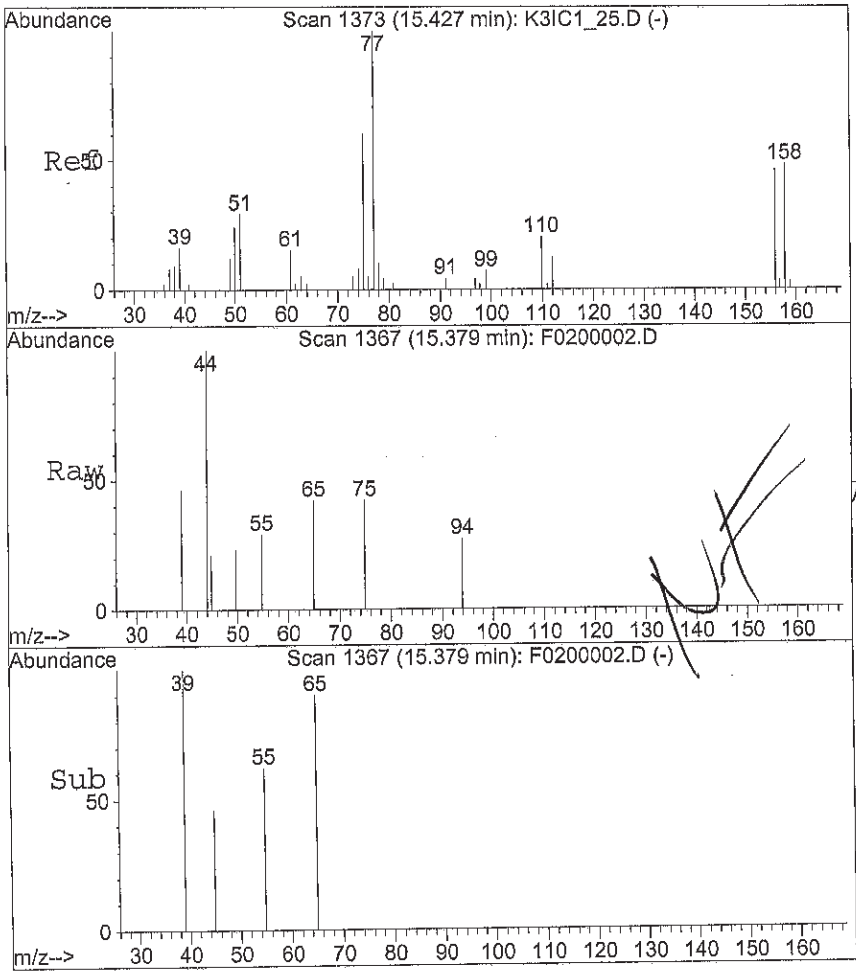


#56
Isopropylbenzene
Concen: 0.17 ug/L
RT: 15.23 min Scan# 1349
Delta R.T. 0.22 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

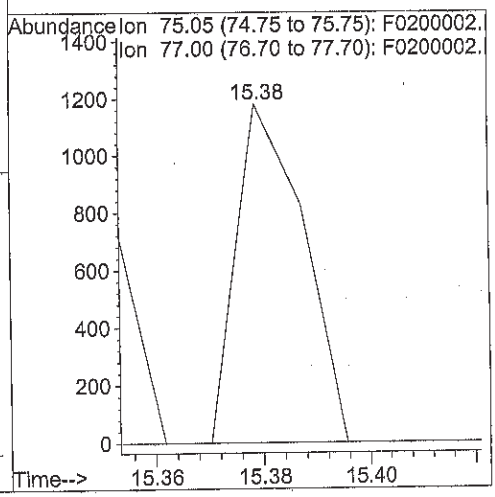


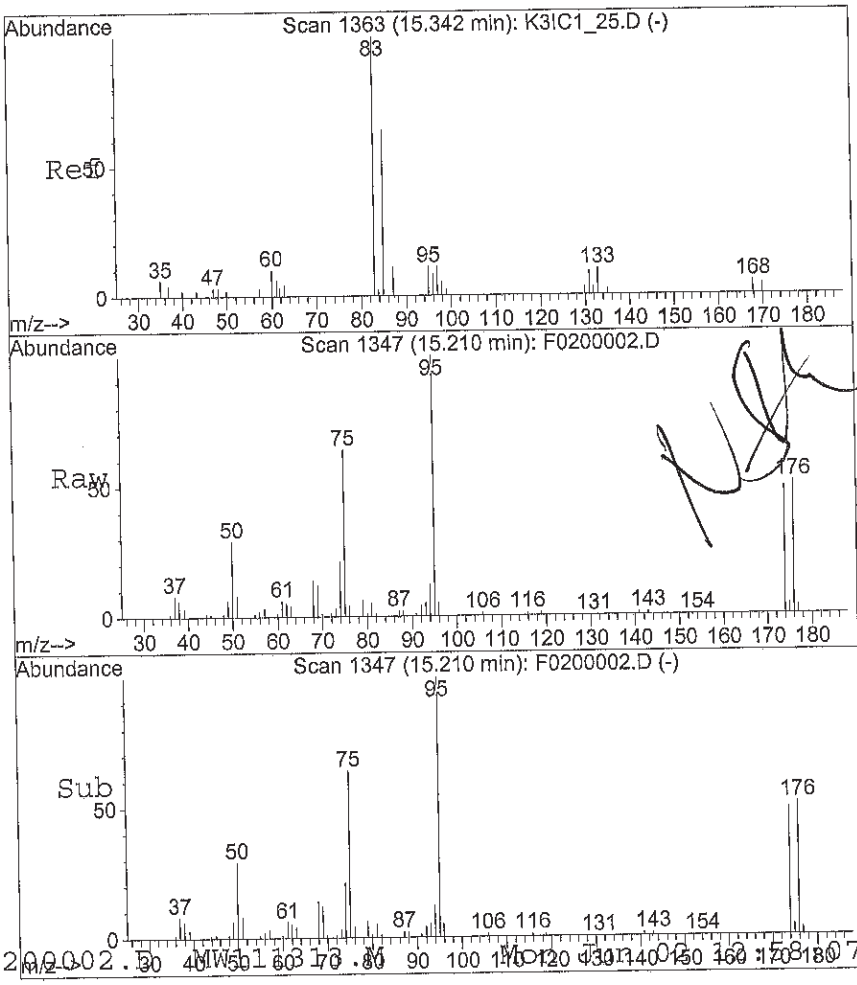


#57
1,2,3-Trichloropropane
Concen: 0.20 ug/L
RT: 15.38 min Scan# 1367
Delta R.T. -0.05 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 75 Resp: 1018

Ion	Ratio	Lower	Upper
75	100		
77	0.0	31.2	46.8#

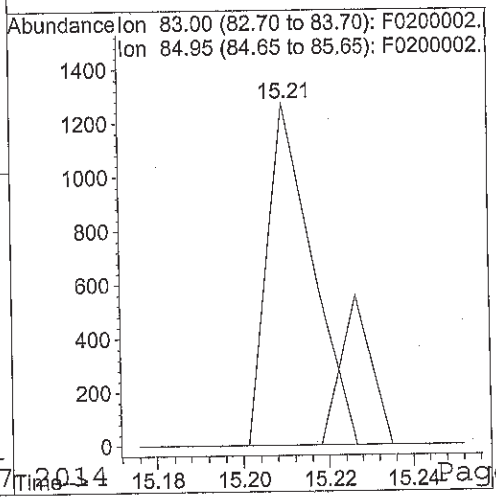


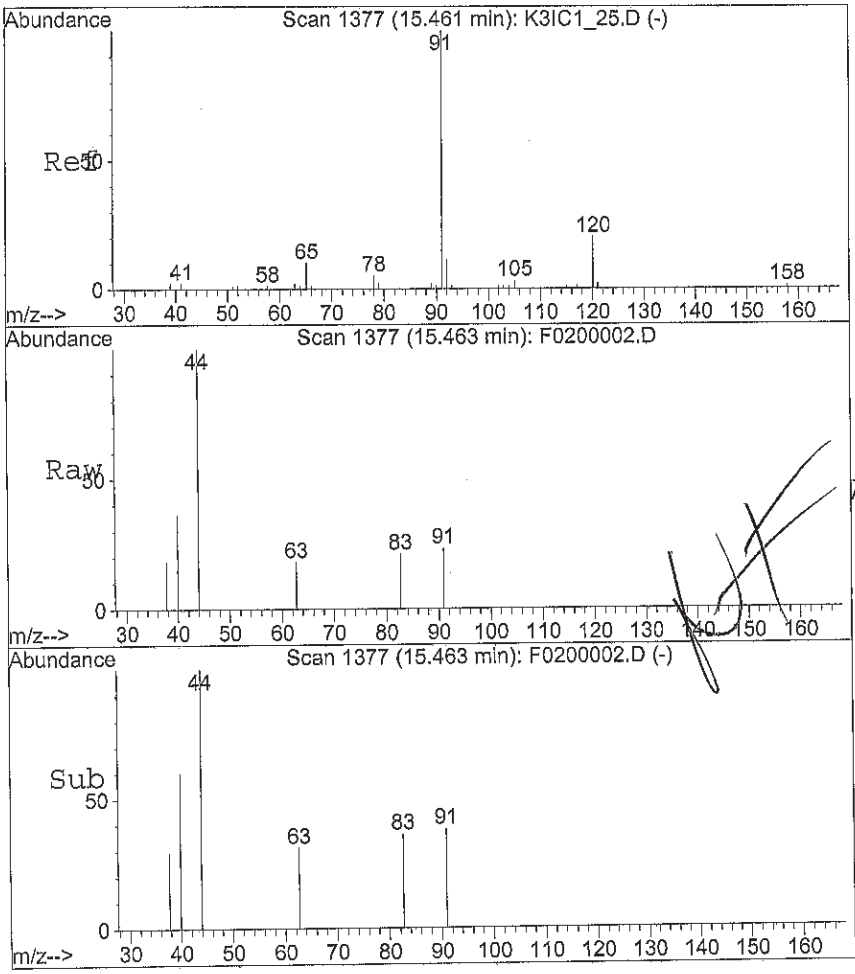


#60
1,1,2,2-Tetrachloroethane
Concen: 0.21 ug/L
RT: 15.21 min Scan# 1347
Delta R.T. -0.13 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 83 Resp: 929

Ion	Ratio	Lower	Upper
83	100		
85	30.4	51.2	76.8#

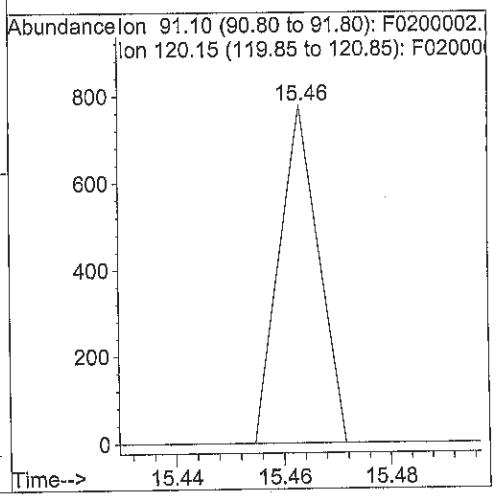


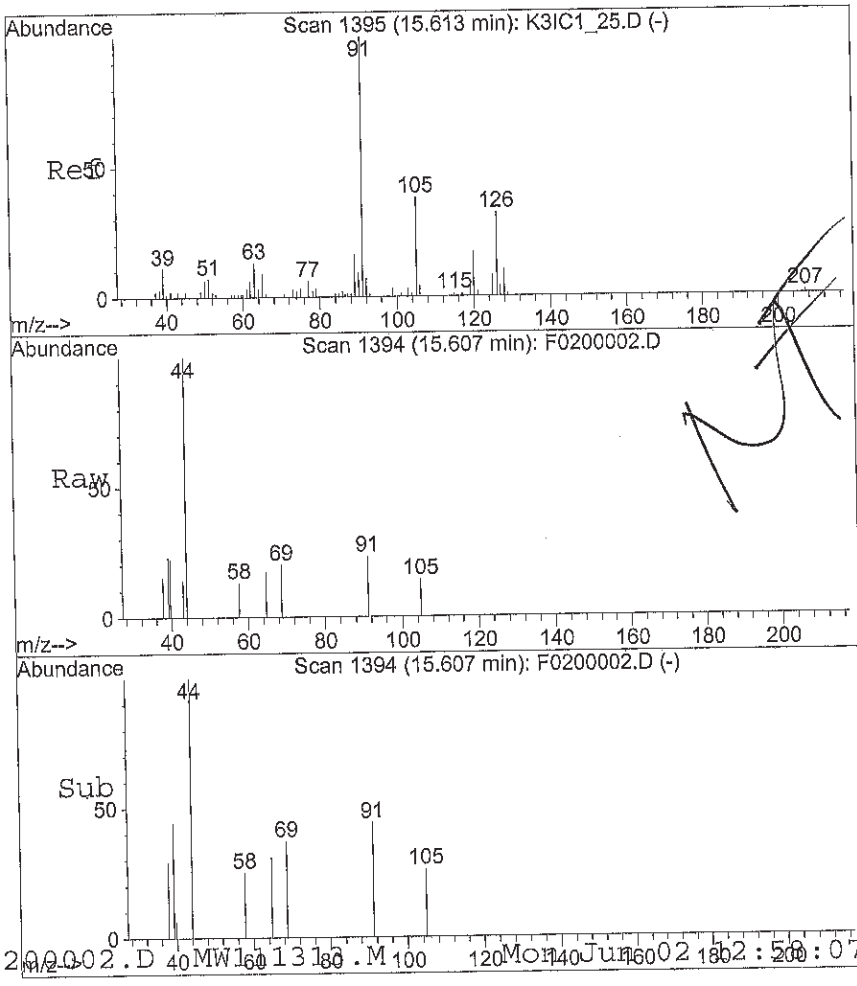


#62
n-Propylbenzene
Concen: 0.02 ug/L
RT: 15.46 min Scan# 1377
Delta R.T. 0.00 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 91 Resp: 394

Ion	Ratio	Lower	Upper
91	100		
120	0.0	16.1	24.1#

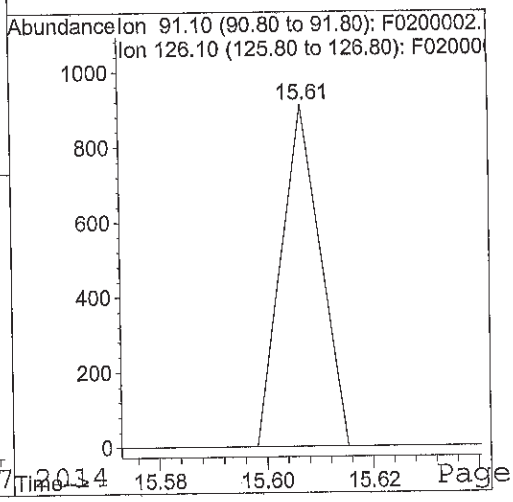


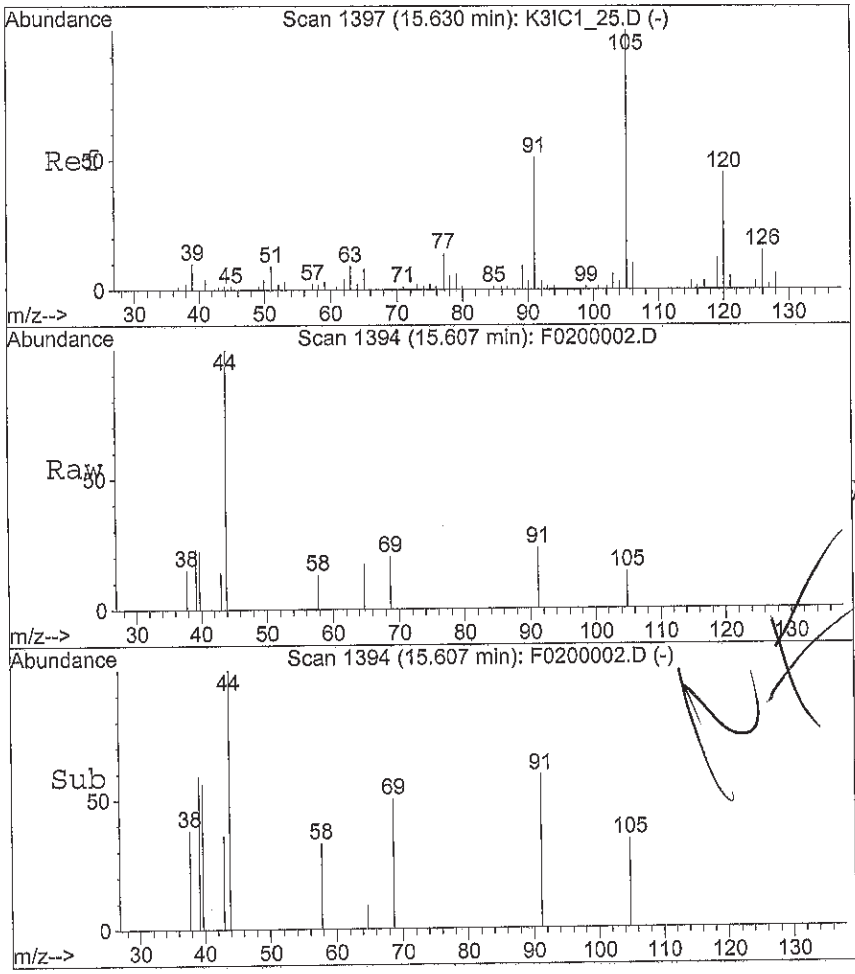


#63
2-Chlorotoluene
Concen: 0.03 ug/L
RT: 15.61 min Scan# 1394
Delta R.T. -0.01 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 91 Resp: 462

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.0	36.0#

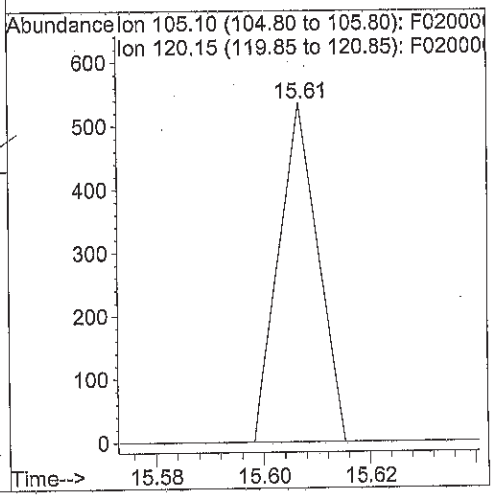


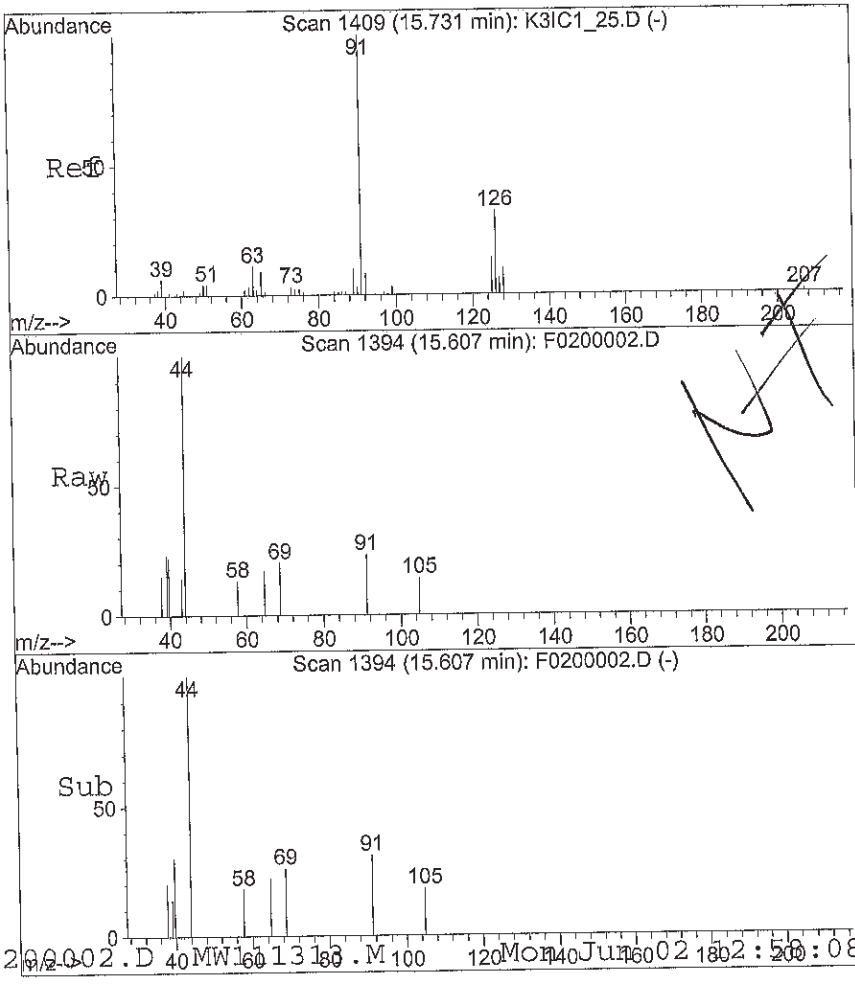


#64
1,3,5-Trimethylbenzene
Concen: 0.02 ug/L
RT: 15.61 min Scan# 1394
Delta R.T. -0.02 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion:105 Resp: 271

Ion	Ratio	Lower	Upper
105	100		
120	0.0	36.4	54.6#

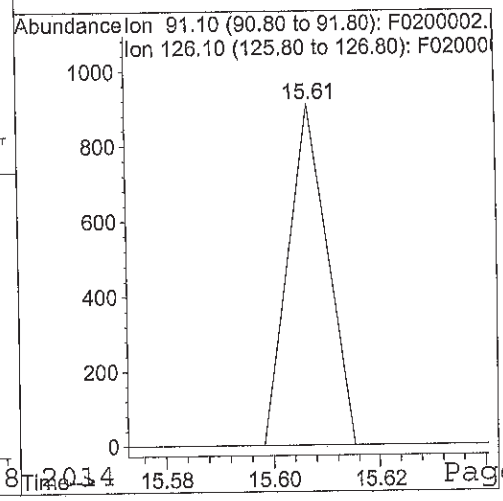


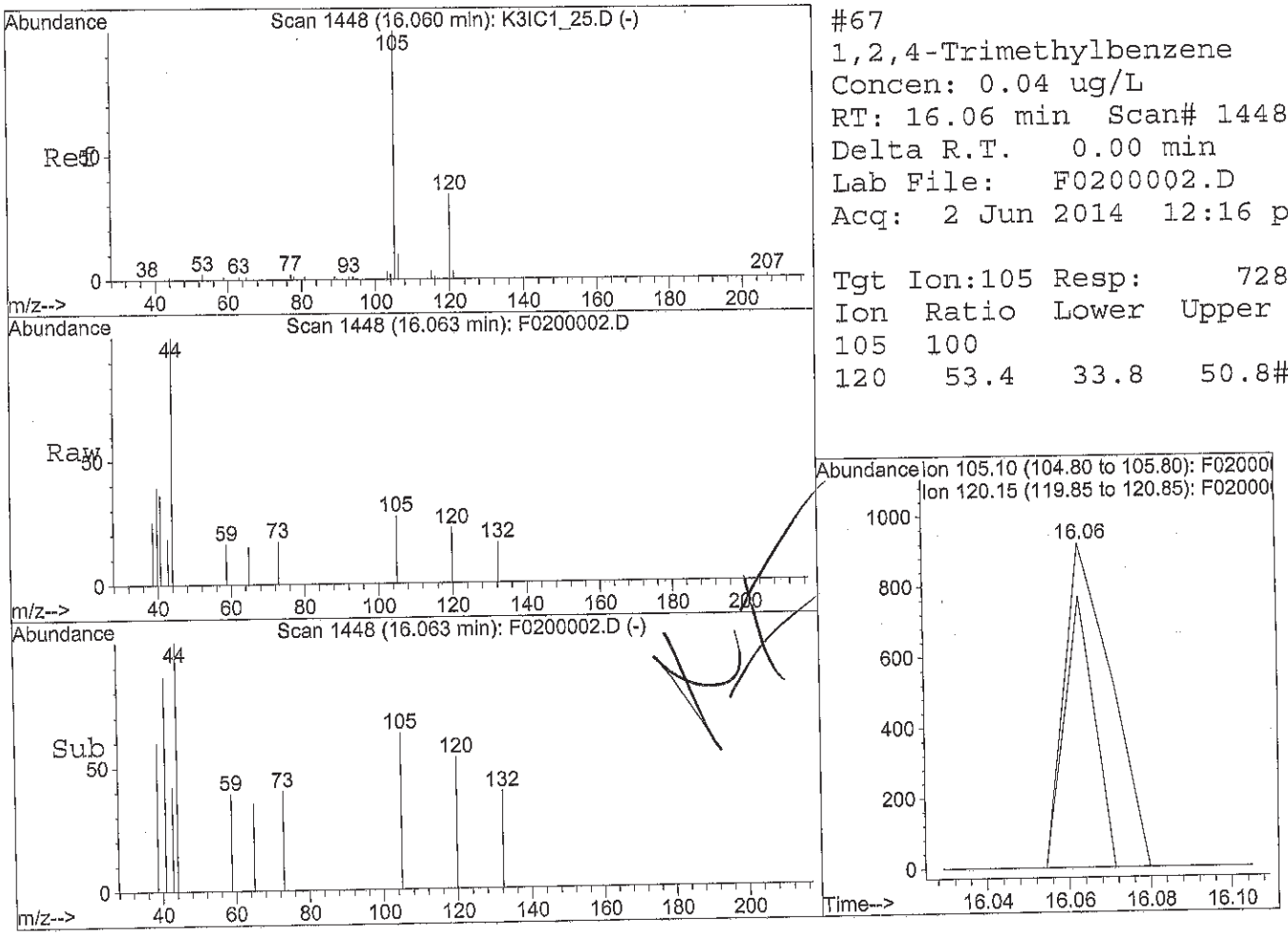


#65
4-Chlorotoluene
Concen: 0.03 ug/L
RT: 15.61 min Scan# 1394
Delta R.T. -0.12 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 91 Resp: 462

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.6	36.8#

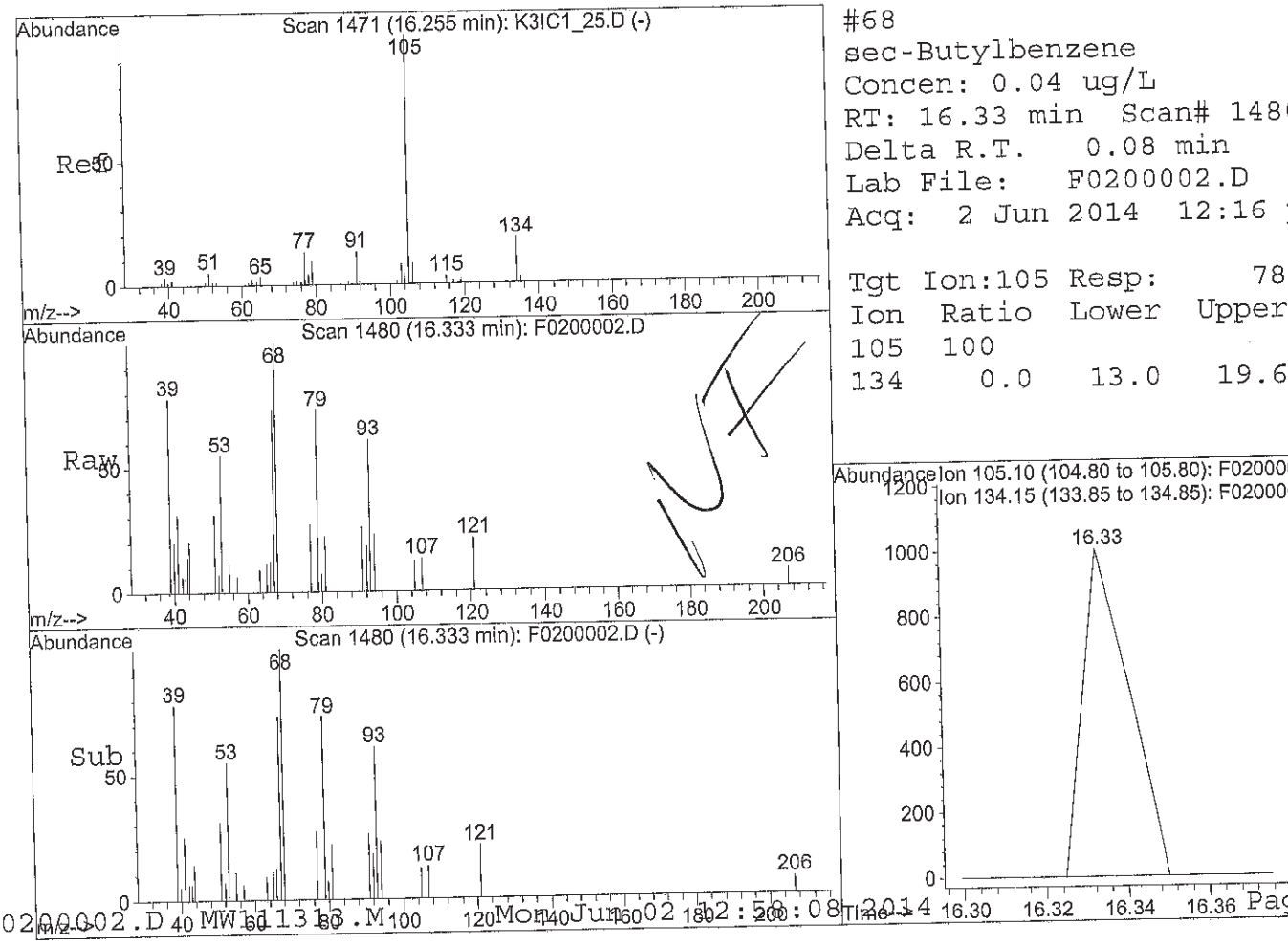




#67
1,2,4-Trimethylbenzene
Concen: 0.04 ug/L
RT: 16.06 min Scan# 1448
Delta R.T. 0.00 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion:105 Resp: 728

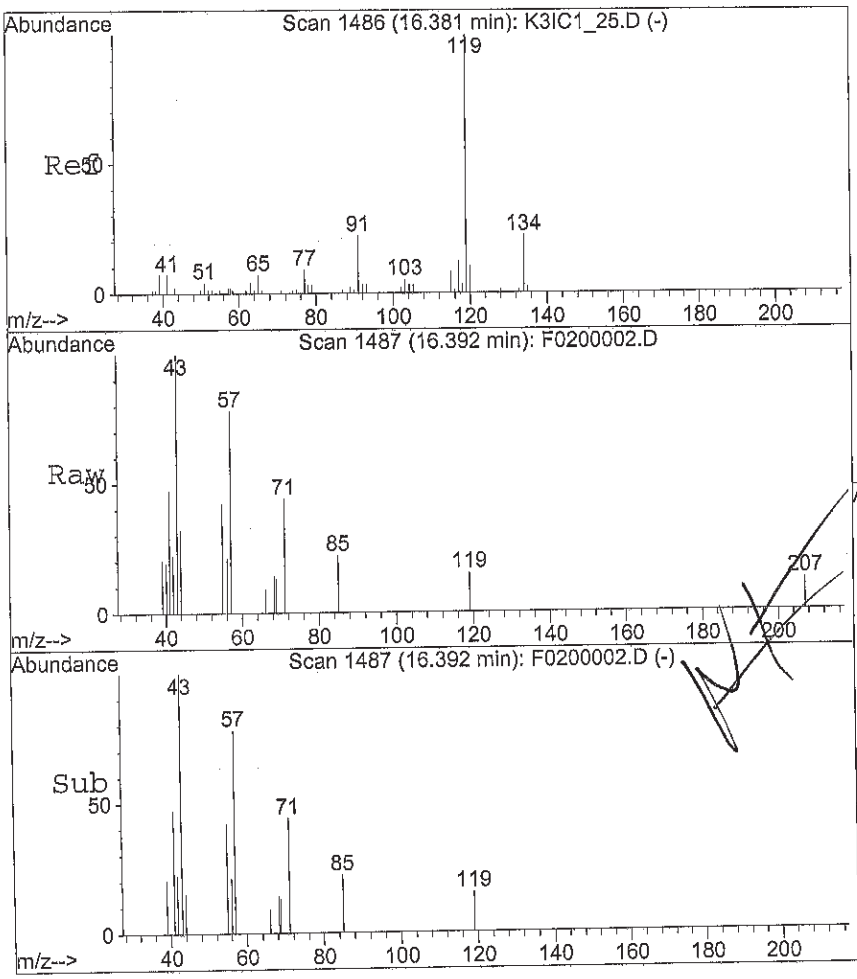
Ion	Ratio	Lower	Upper
105	100		
120	53.4	33.8	50.8#



#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

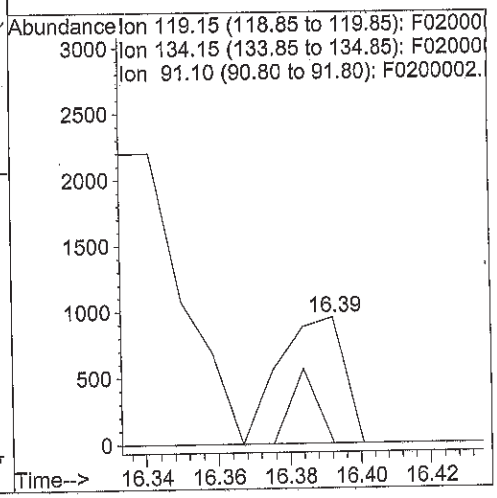
Ion	Ratio	Lower	Upper
105	100		
134	0.0	13.0	19.6#

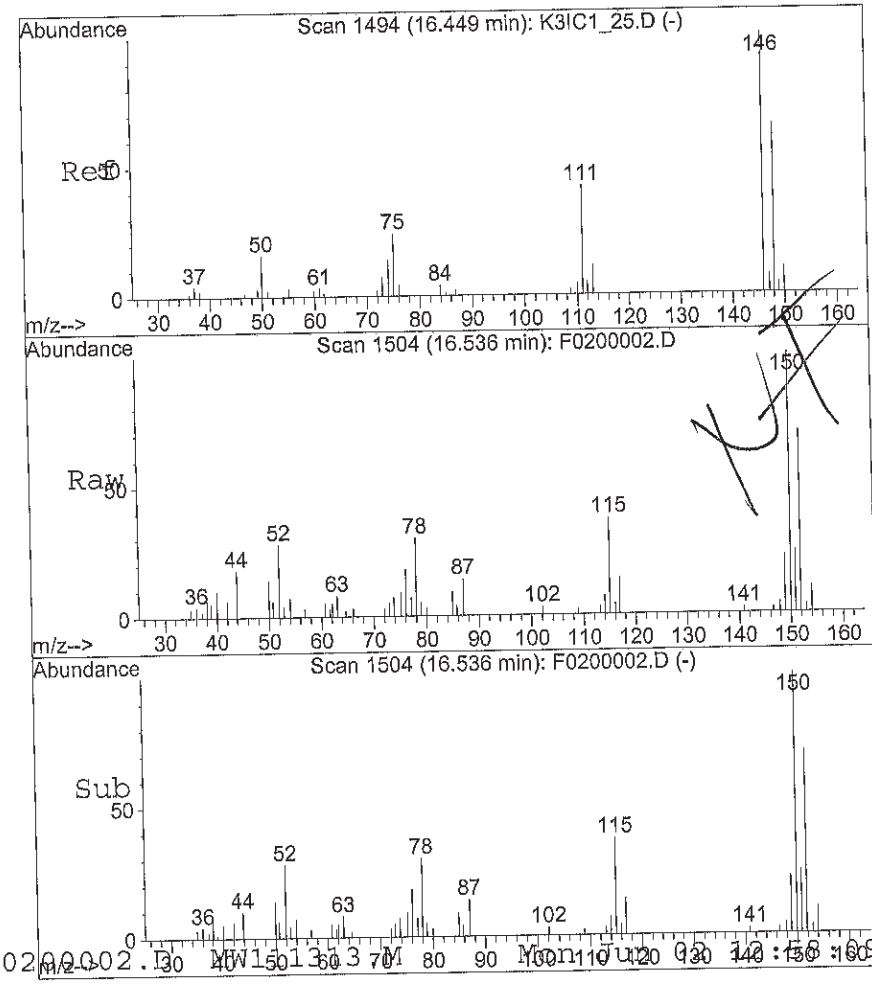


#69
p-Isopropyltoluene
Concen: 0.07 ug/L
RT: 16.39 min Scan# 1487
Delta R.T. 0.01 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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

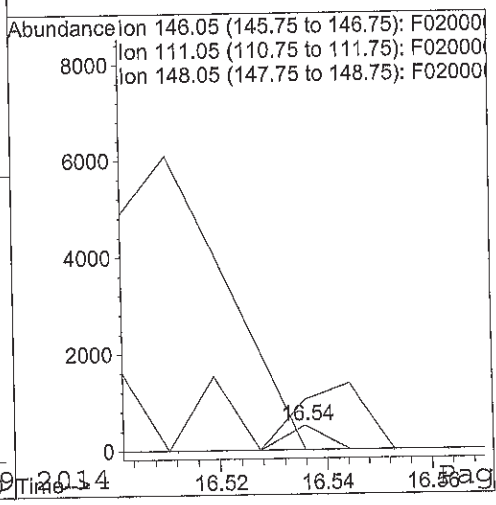


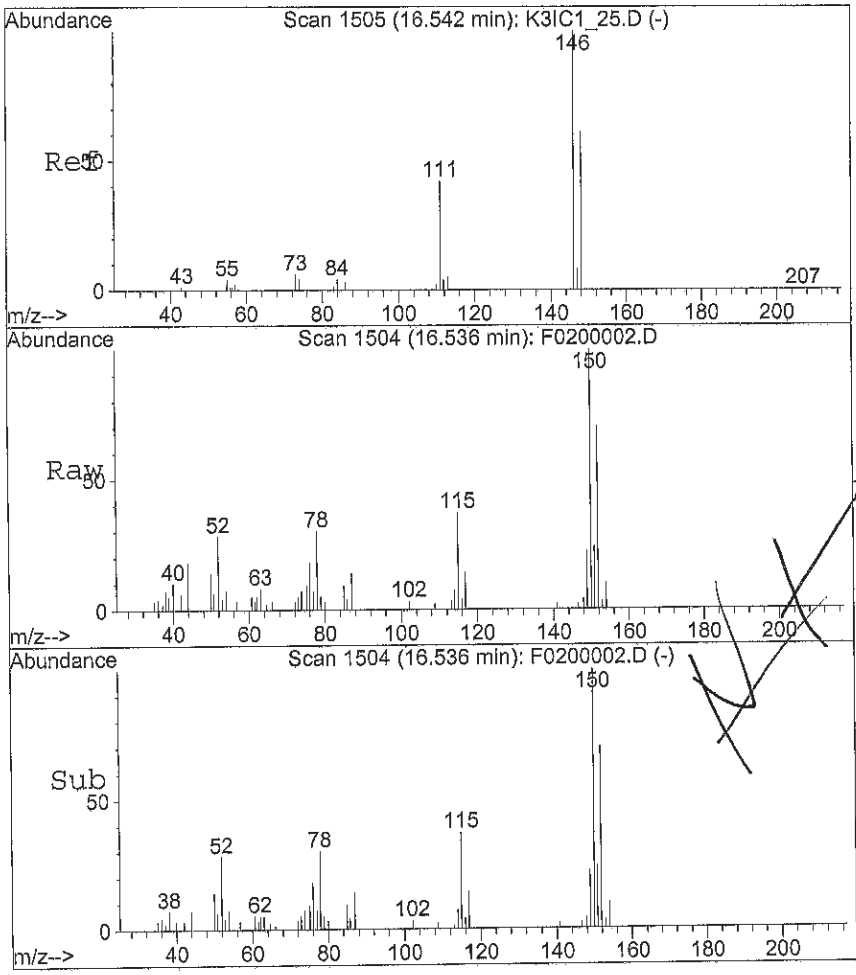


#70
1,3-Dichlorobenzene
Concen: 0.03 ug/L
RT: 16.54 min Scan# 1504
Delta R.T. 0.09 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

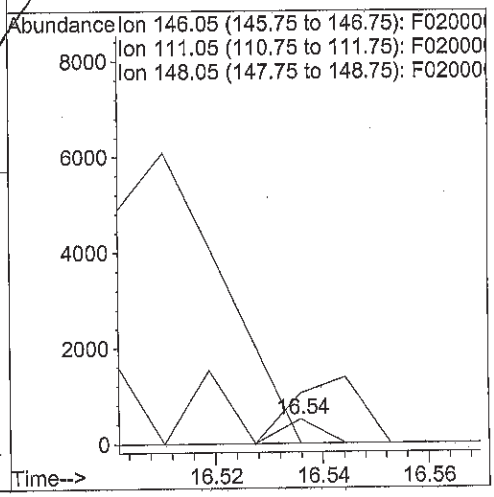


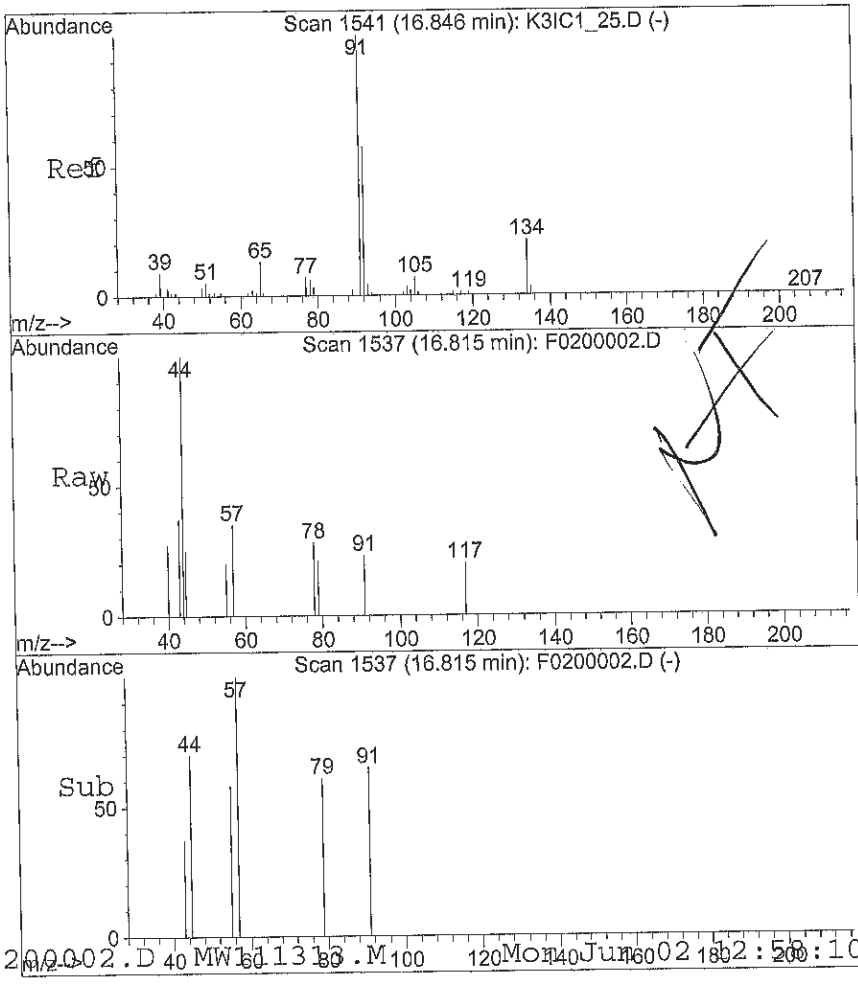


#71
1,4-Dichlorobenzene
Concen: 0.03 ug/L
RT: 16.54 min Scan# 1504
Delta R.T. -0.01 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

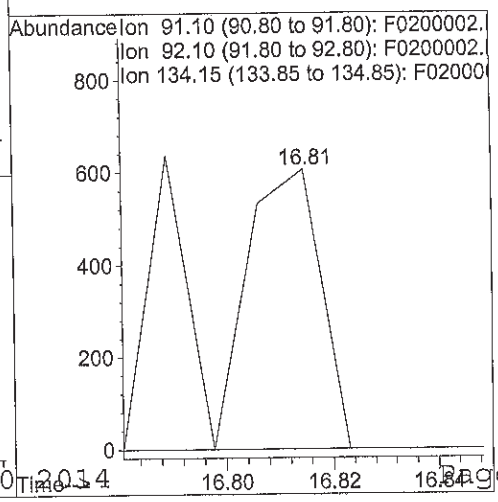


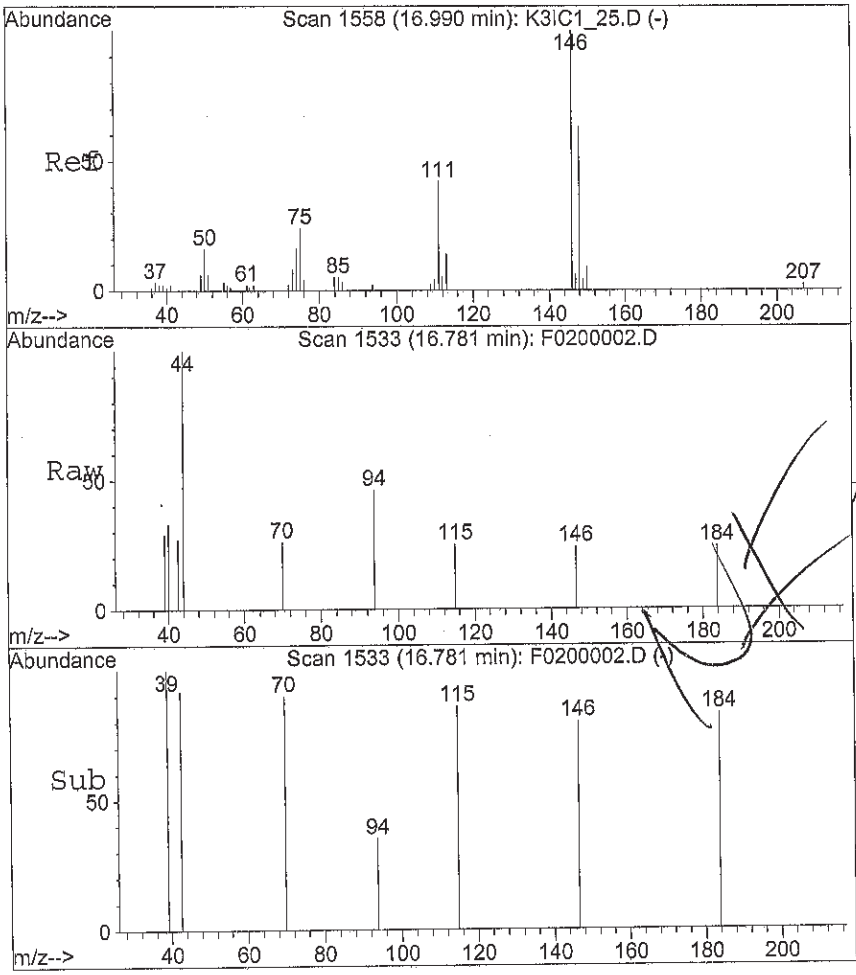


#72
n-Butylbenzene
Concen: 0.03 ug/L
RT: 16.81 min Scan# 1537
Delta R.T. -0.03 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

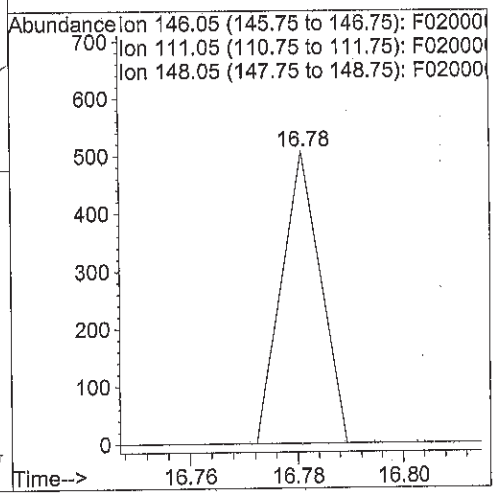


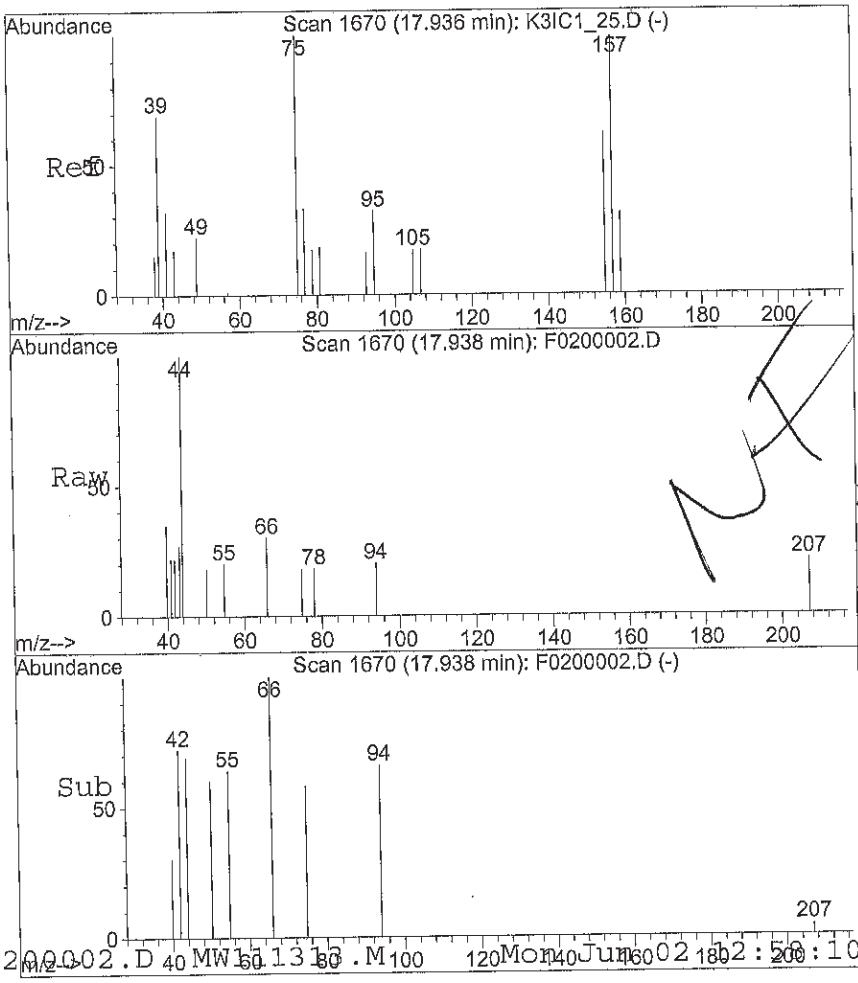


#73
1,2-Dichlorobenzene
Concen: 0.03 ug/L
RT: 16.78 min Scan# 1533
Delta R.T. -0.21 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

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#

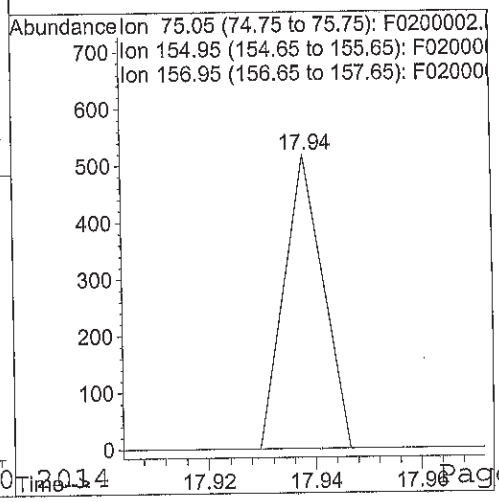


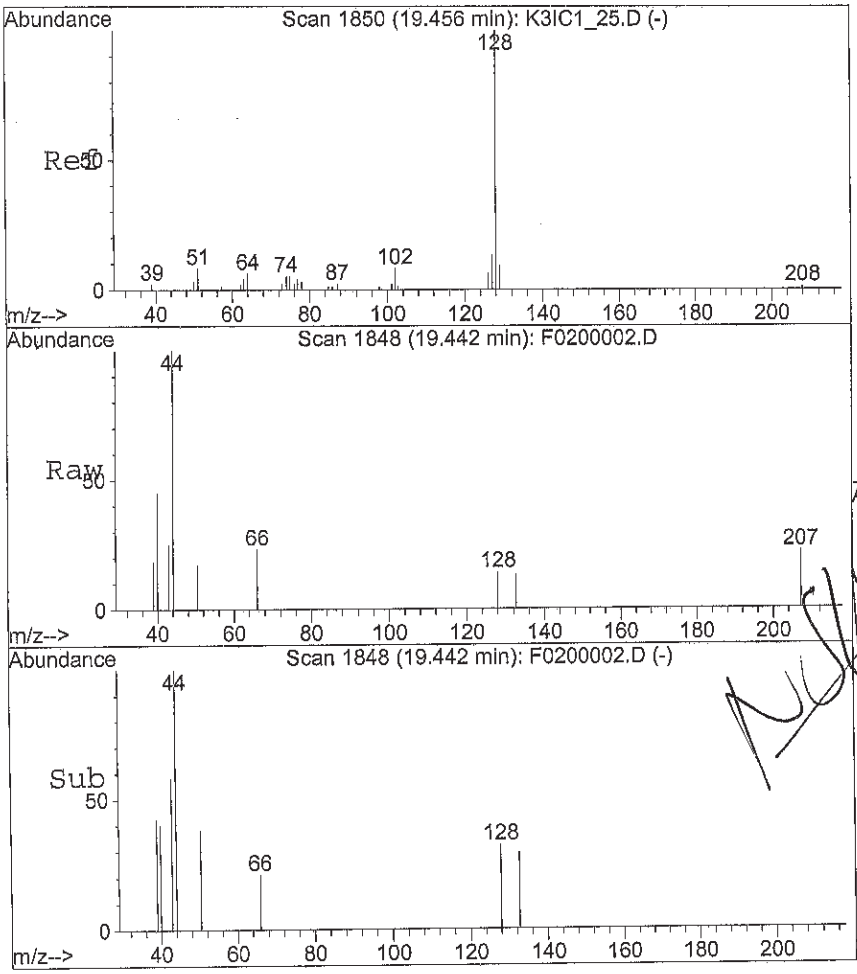


#74
1,2-Dibromo-3-chloropropane
Concen: 1.25 ug/L
RT: 17.94 min Scan# 1670
Delta R.T. 0.00 min
Lab File: F0200002.D
Acq: 2 Jun 2014 12:16 pm

Tgt Ion: 75 Resp: 262

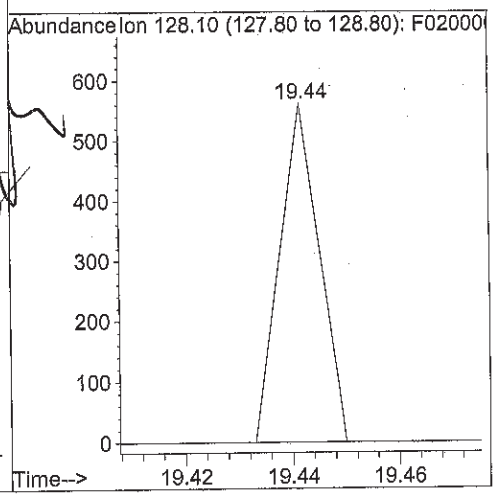
Ion	Ratio	Lower	Upper
75	100		
155	0.0	59.2	88.8#
157	0.0	77.0	115.6#





#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



Quantitation Report (QT Reviewed)

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

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

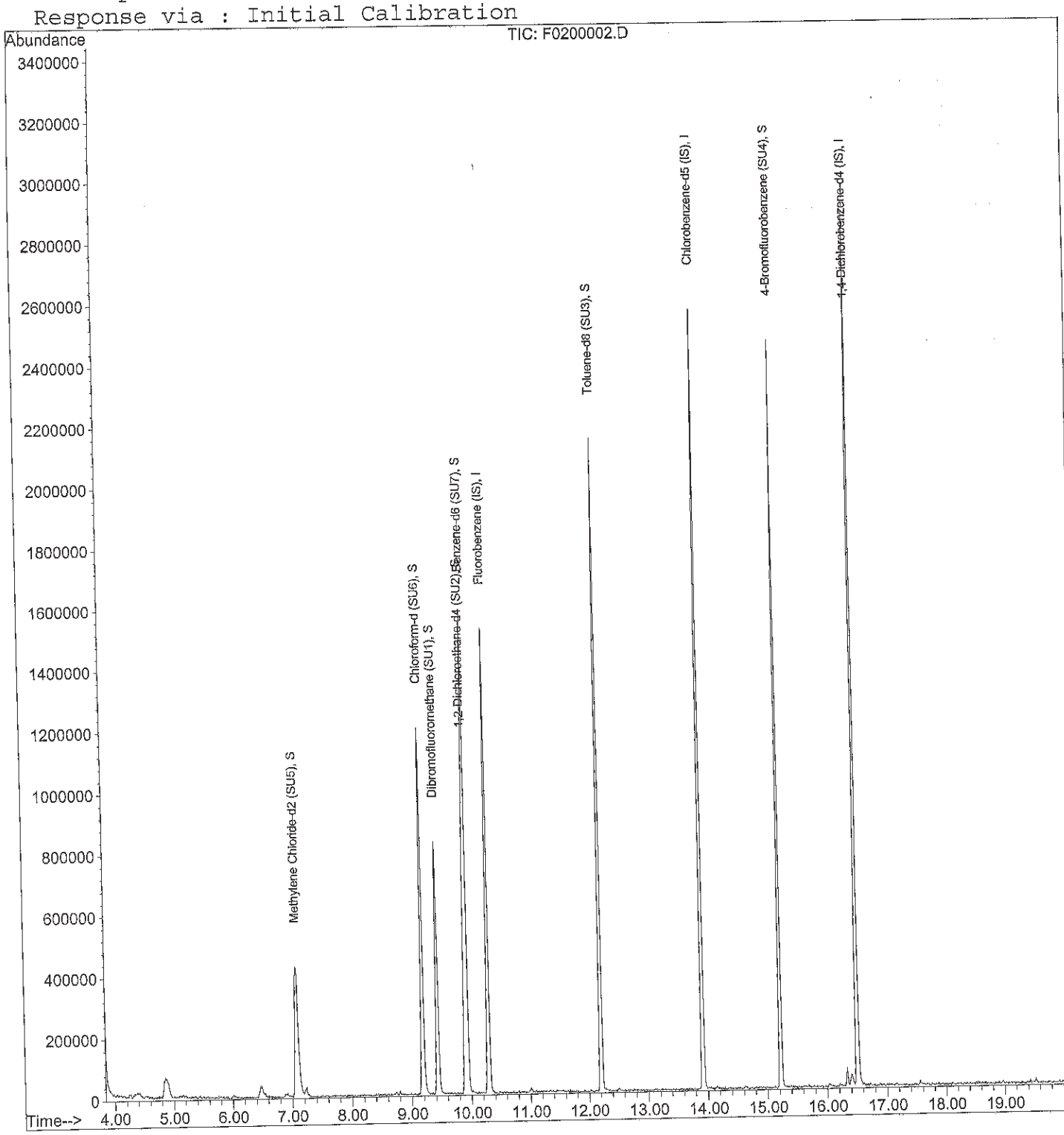
Quantitation Report

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



Quantitation Report (QT Reviewed)

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

Quantitation Report (QT Reviewed)

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

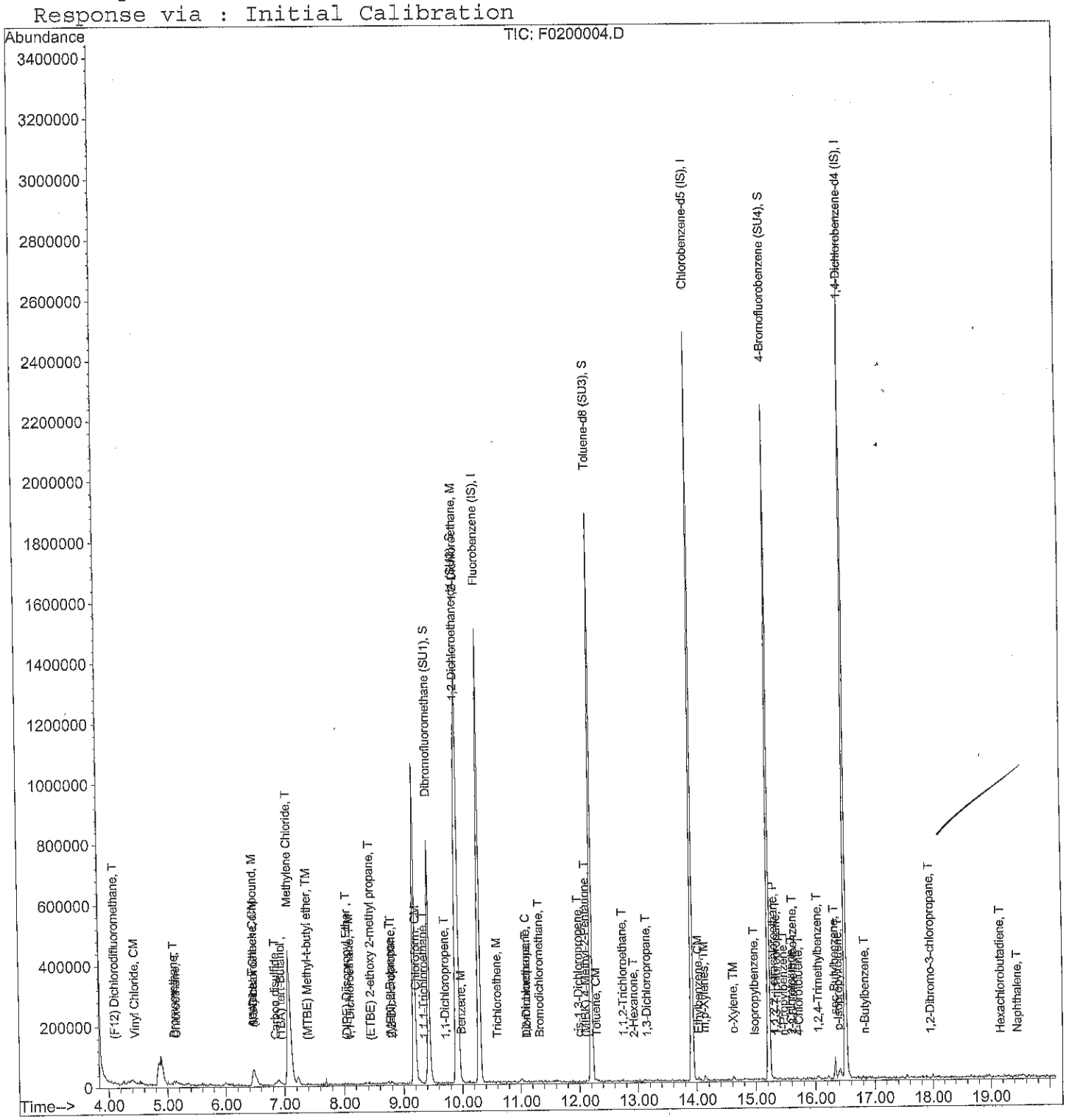
Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
33) Trichloroethene	10.59	130	259	0.07	~~ug/L~~	#	4
34) 1,2-Dichloropropane	11.09	63	398	0.14	~~ug/L~~	#	52
35) Dibromomethane	11.09	93	358	0.16	~~ug/L~~	#	5
36) Bromodichloromethane	11.34	83	254	0.06	~~ug/L~~	#	21
37) cis-1,3-Dichloropropene	12.00	75	264	0.05	~~ug/L~~	#	1
40) (MIBK) 4-Methyl-2-Pentanon	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	0.0148	79
53) o-Xylene	14.63	106	259	0.04	ug/L	# 0.0008	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

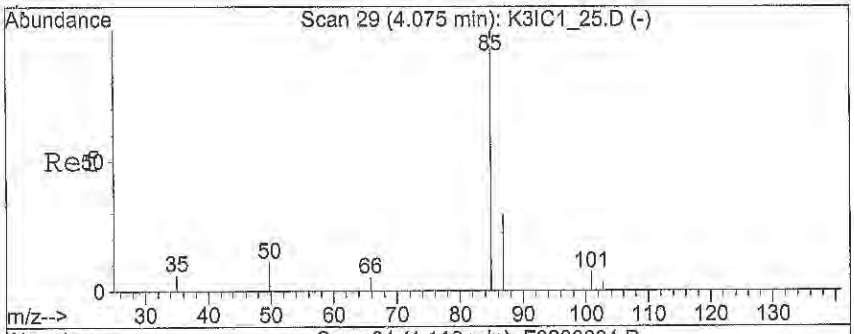
(#) = qualifier out of range (m) = manual integration

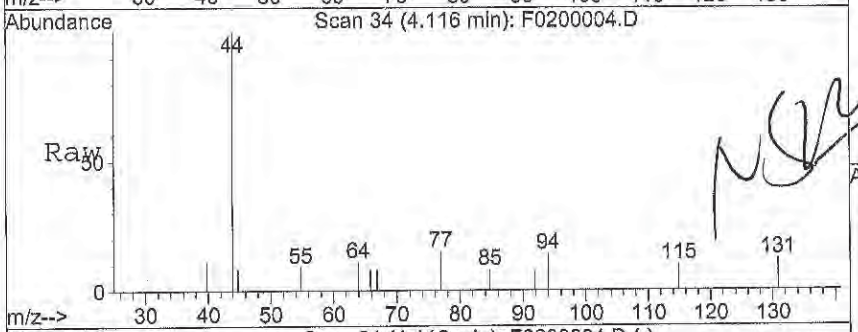
Quantitation Report

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

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



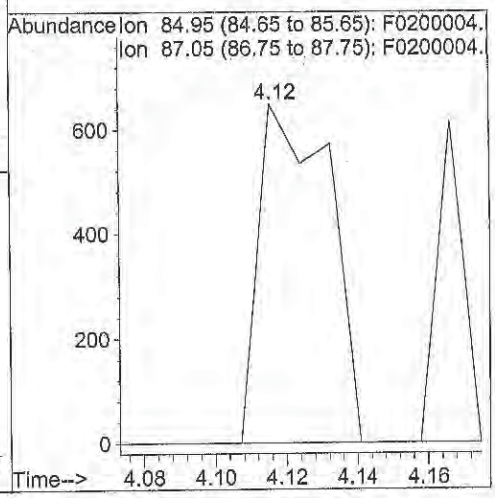


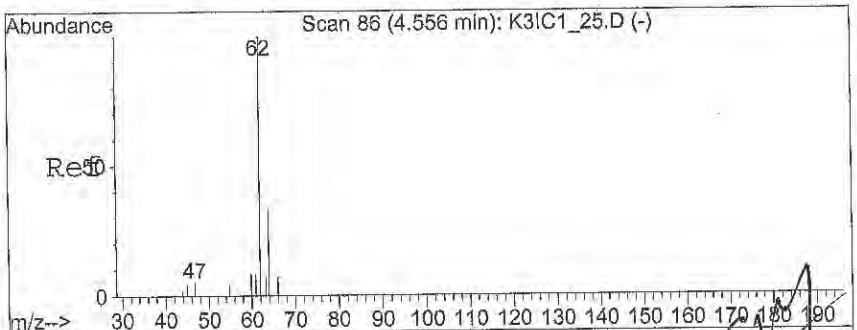


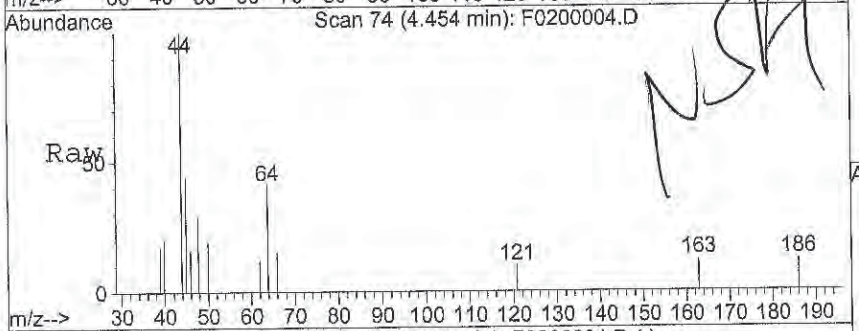
#3
(F12) Dichlorodifluoromethane
Concen: 0.28 ug/L
RT: 4.12 min Scan# 34
Delta R.T. 0.04 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

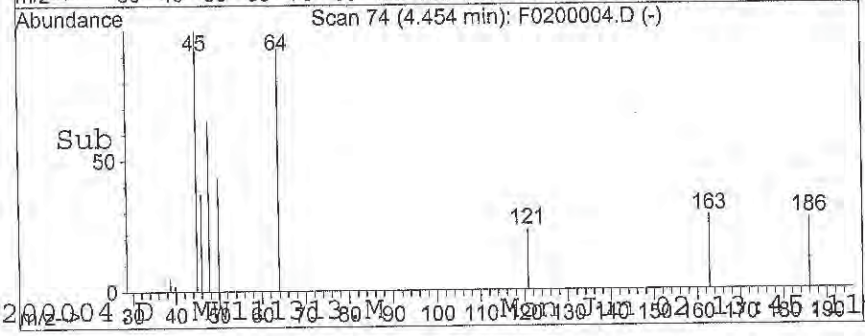
Tgt Ion: 85 Resp: 890

Ion	Ratio	Lower	Upper
85	100		
87	0.0	24.6	37.0#





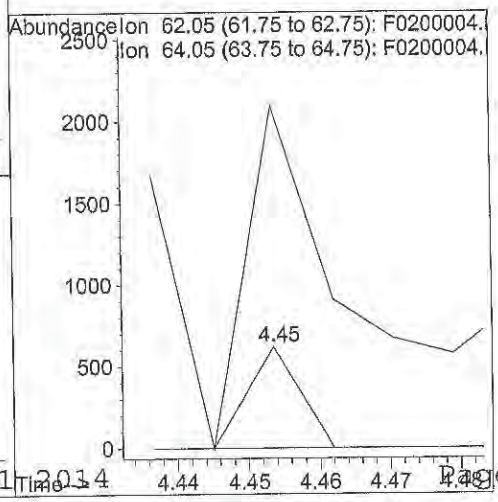


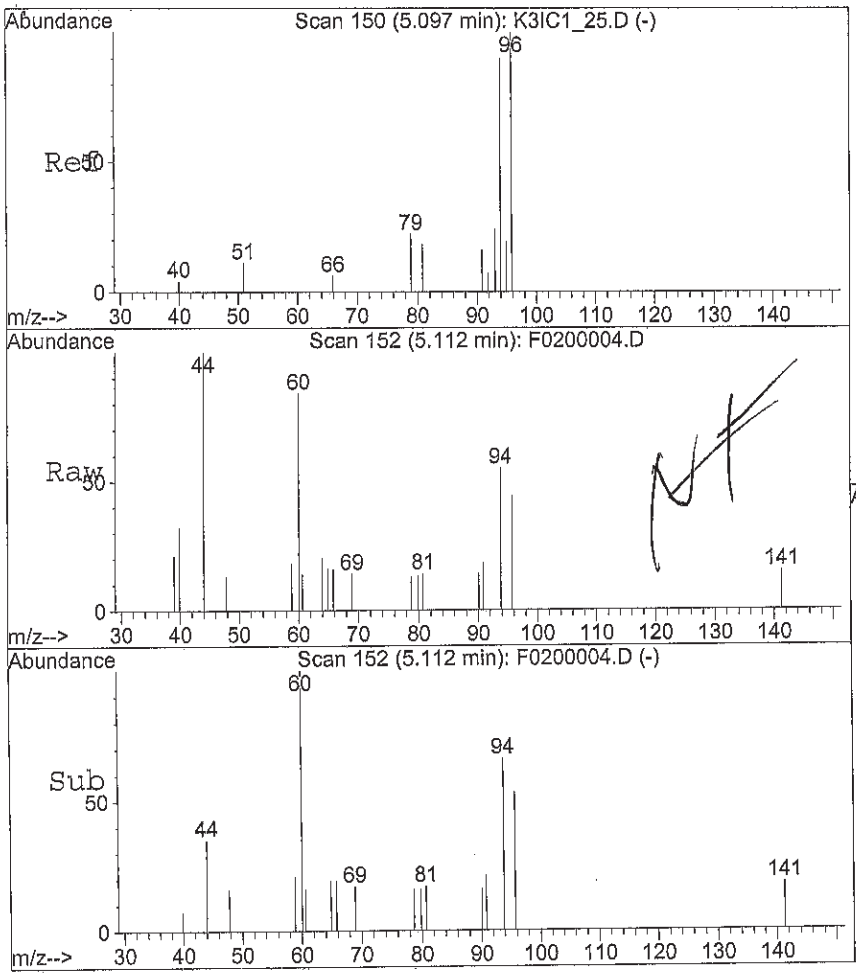


#5
Vinyl Chloride
Concen: 0.14 ug/L
RT: 4.45 min Scan# 74
Delta R.T. -0.10 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 62 Resp: 314

Ion	Ratio	Lower	Upper
62	100		
64	1093.3	25.6	38.4#

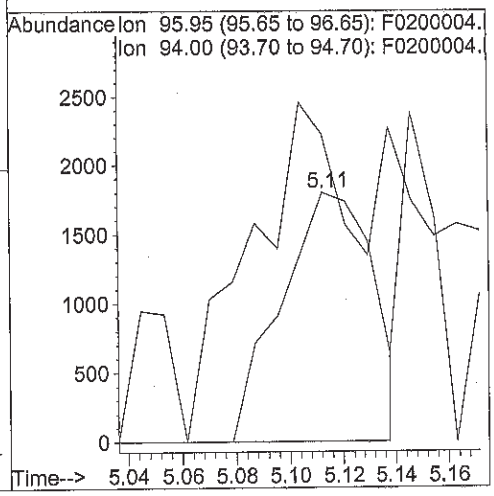


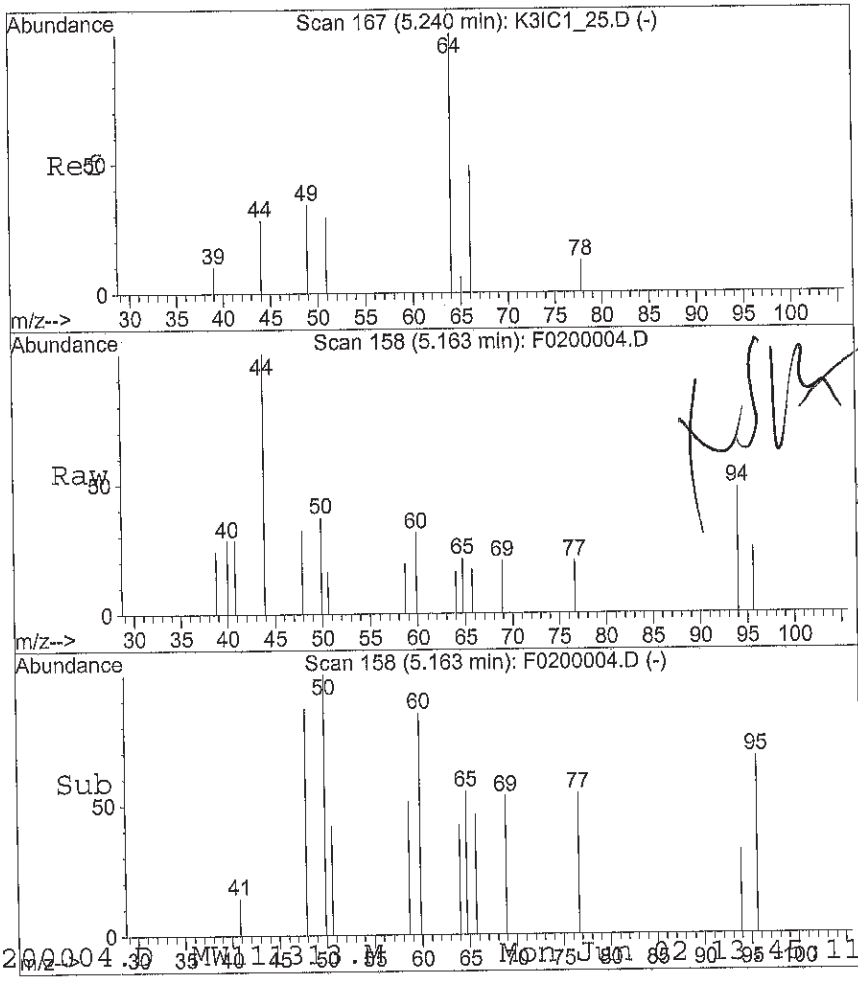


#6
Bromomethane
Concen: 1.33 ug/L
RT: 5.11 min Scan# 152
Delta R.T. 0.02 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 96 Resp: 4359

Ion	Ratio	Lower	Upper
96	100		
94	148.2	101.0	151.4

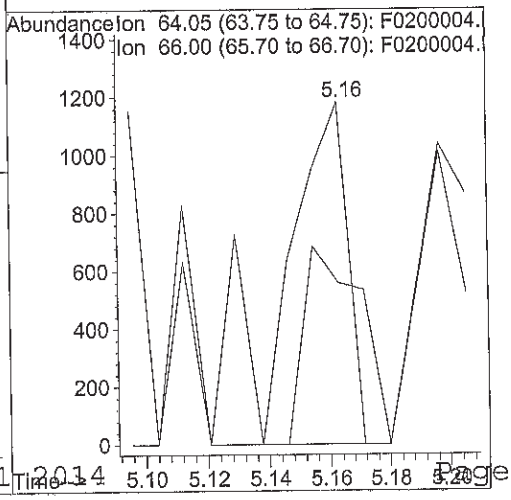


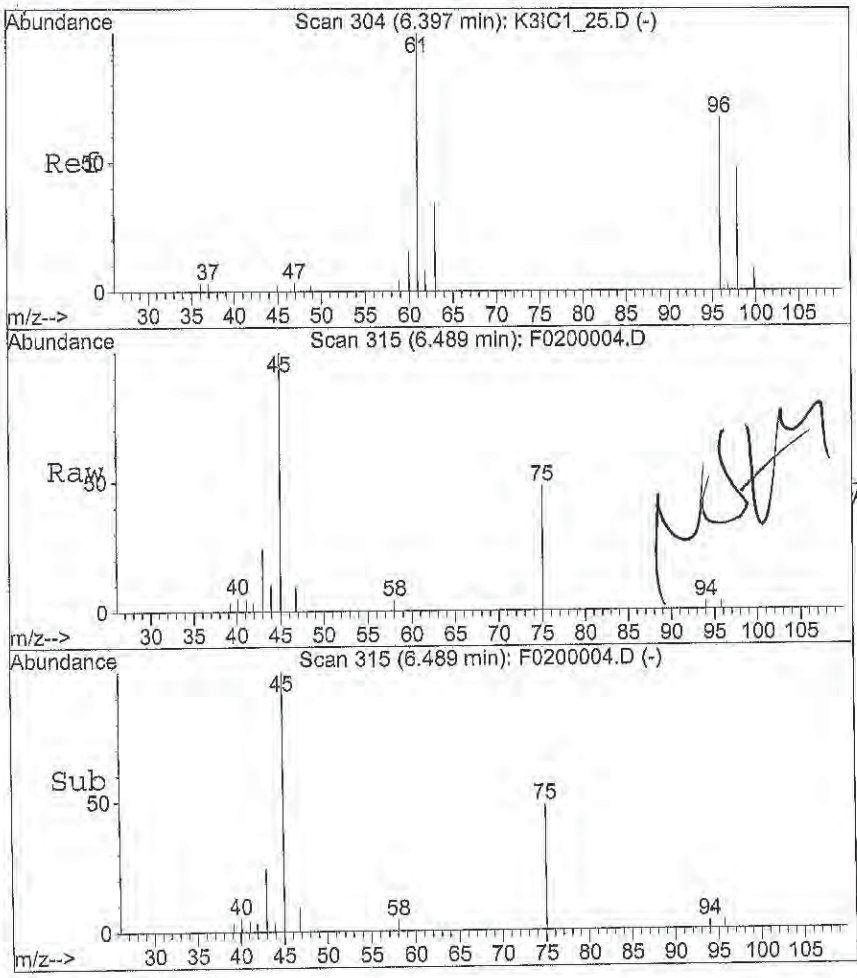


#7
Chloroethane
Concen: 2.35 ug/L
RT: 5.16 min Scan# 158
Delta R.T. -0.08 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 64 Resp: 1770

Ion	Ratio	Lower	Upper
64	100		
66	50.8	35.4	53.0

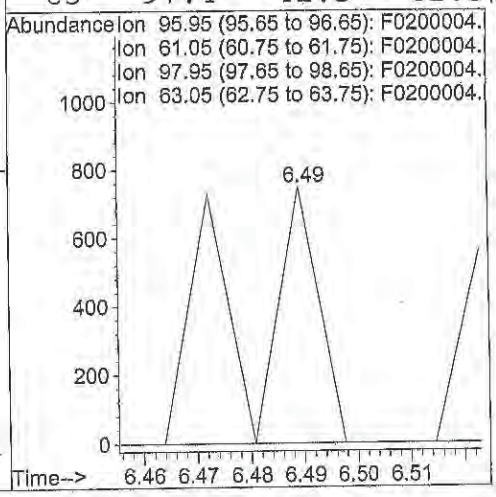


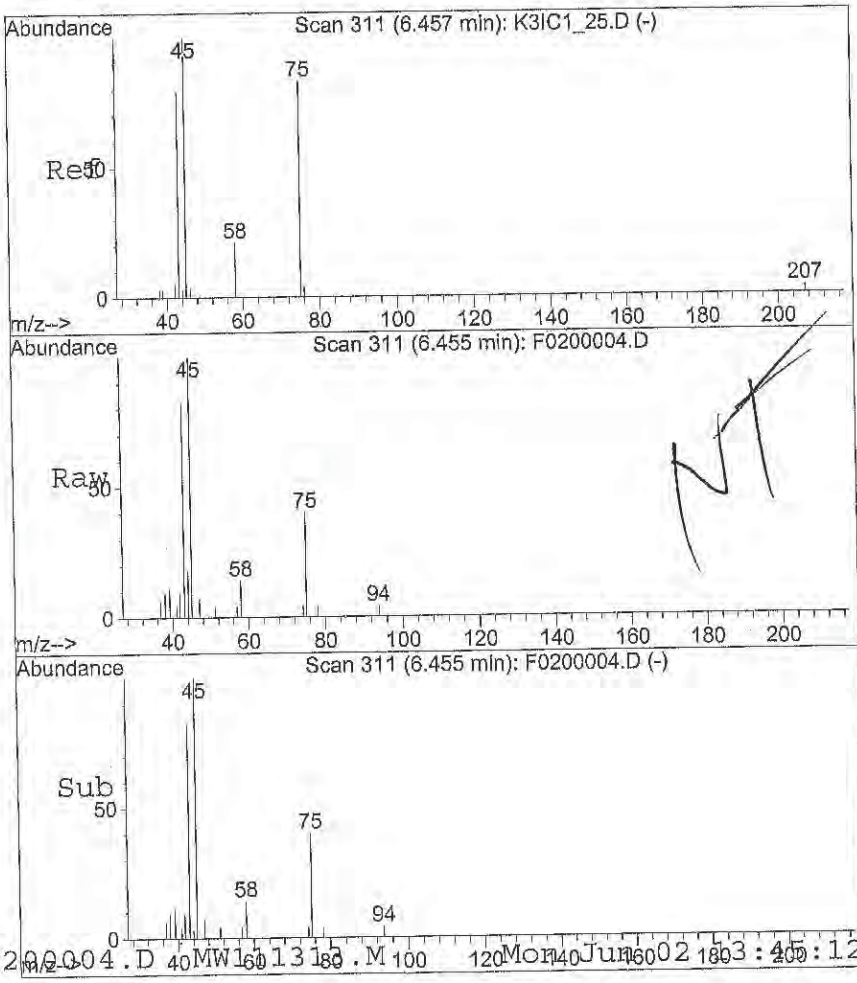


#10
1,1-Dichloroethene
Concen: 0.13 ug/L
RT: 6.49 min Scan# 315
Delta R.T. 0.09 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

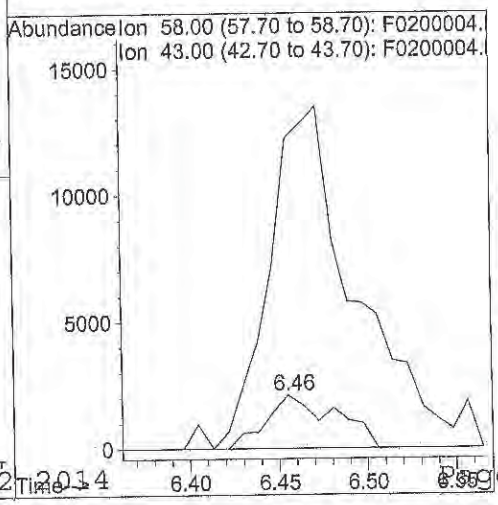


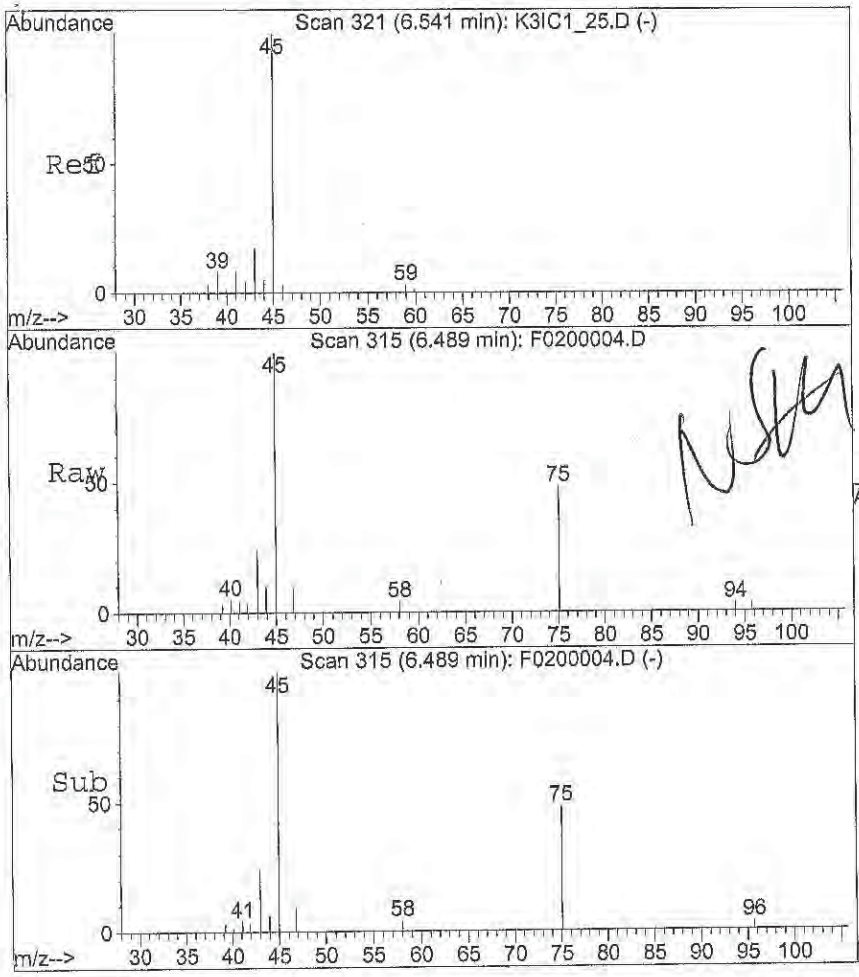


#11
Acetone
Concen: 6.76 ug/L
RT: 6.46 min Scan# 311
Delta R.T. -0.00 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 58 Resp: 5730

Ion	Ratio	Lower	Upper
58	100		
43	815.3	360.9	541.3#

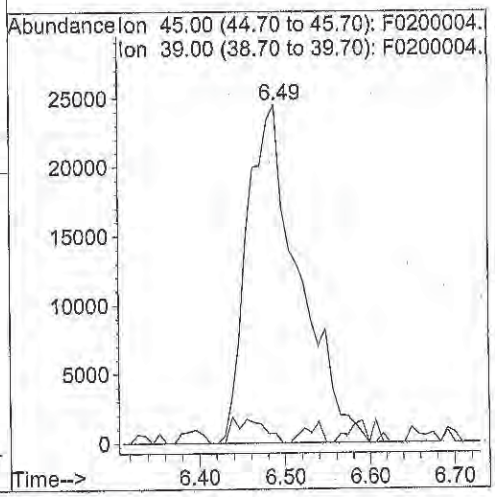


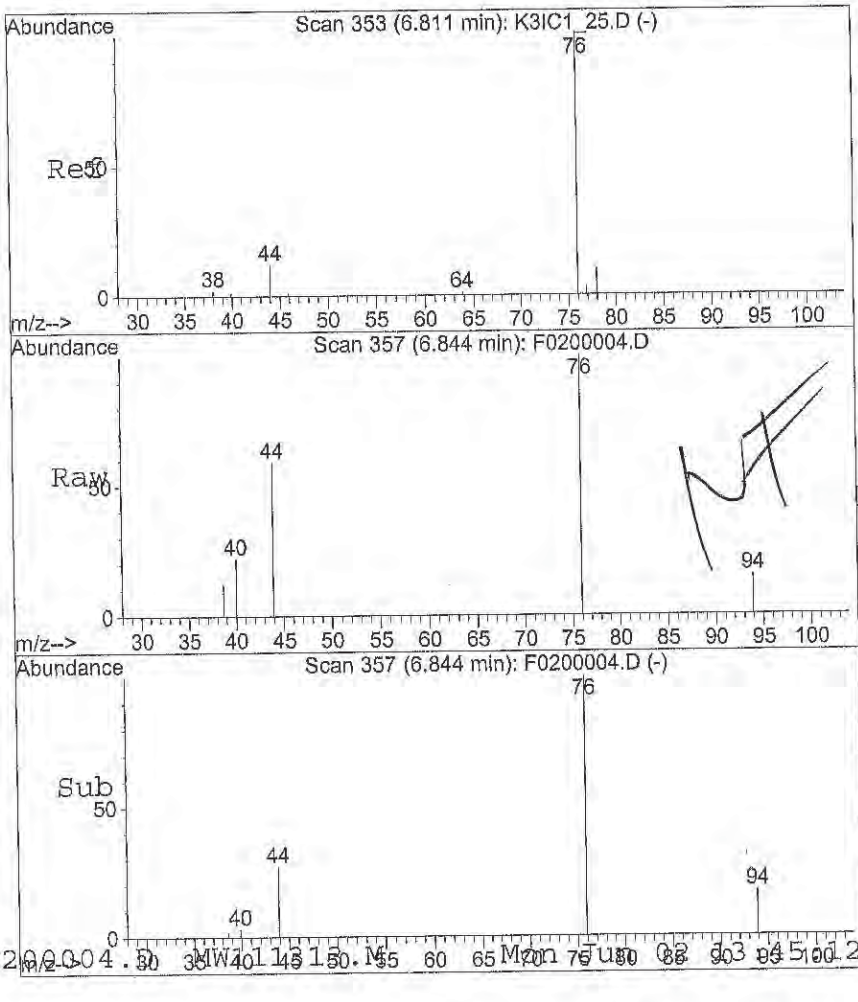


#12
(IPA) Leak Check Compound
Concen: 679.69 ug/L
RT: 6.49 min Scan# 315
Delta R.T. -0.05 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 45 Resp: 104307

Ion	Ratio	Lower	Upper
45	100		
39	0.0	4.9	7.3#

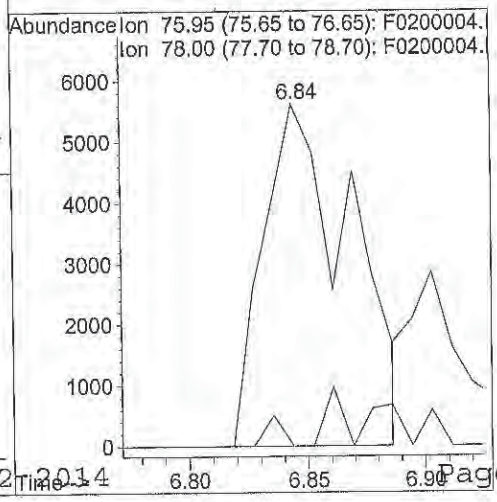


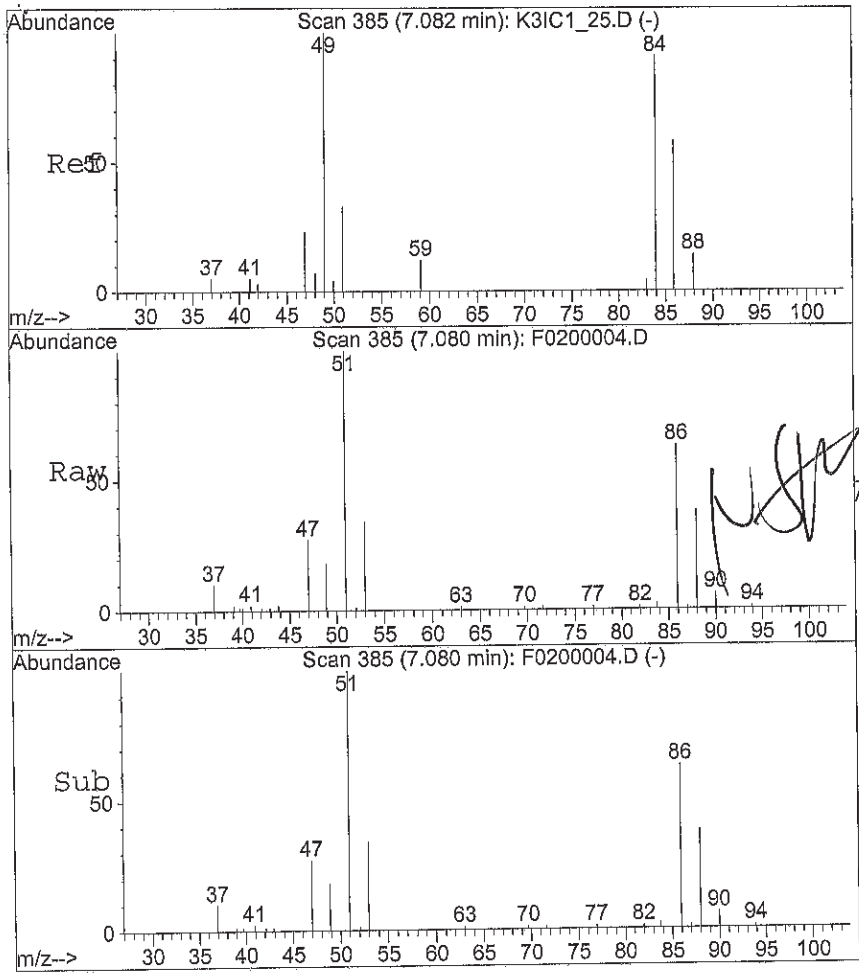


#13
Carbon disulfide
Concen: 1.37 ug/L
RT: 6.84 min Scan# 357
Delta R.T. 0.03 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 76 Resp: 14548

Ion	Ratio	Lower	Upper
76	100		
78	1.8	7.0	10.4#

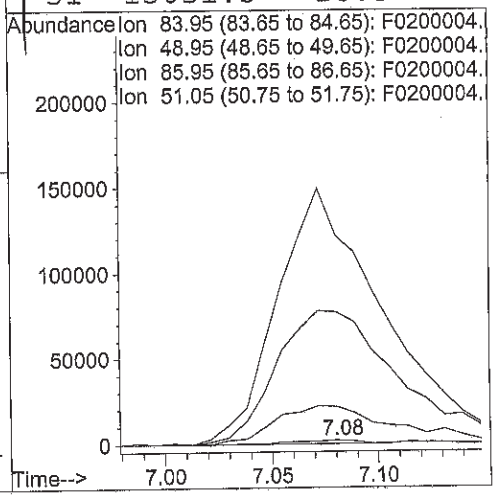


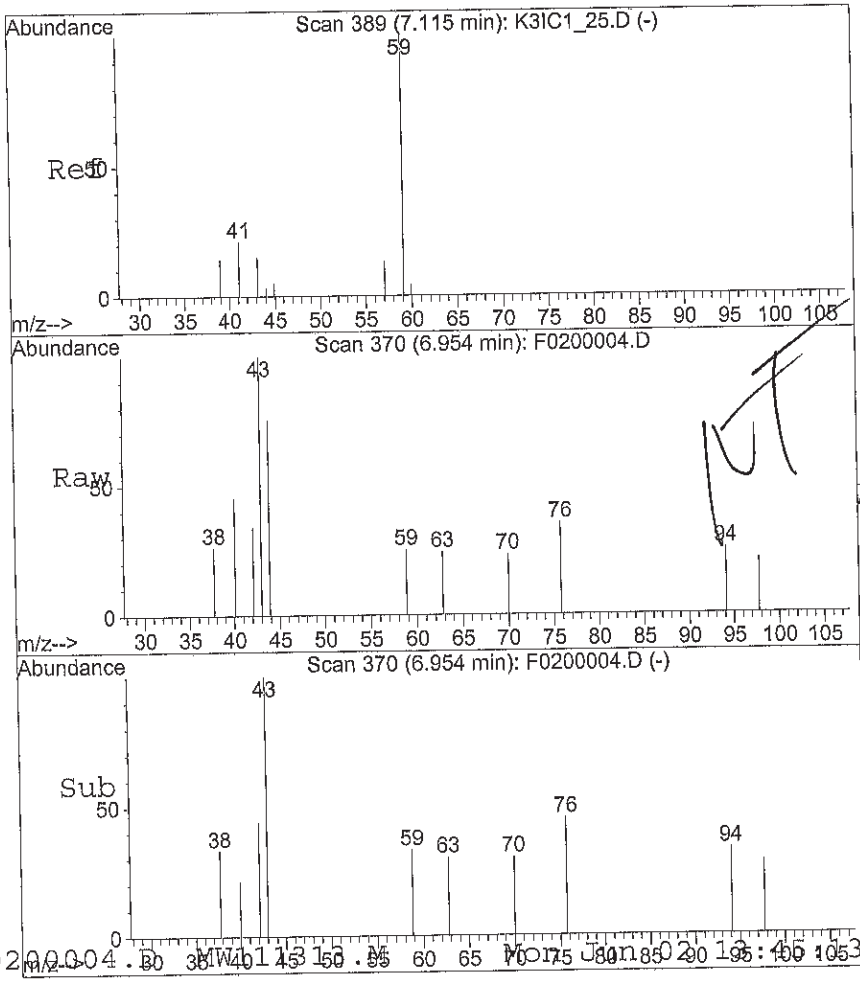


#14
Methylene Chloride
Concen: 1.16 ug/L
RT: 7.08 min Scan# 385
Delta R.T. -0.00 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

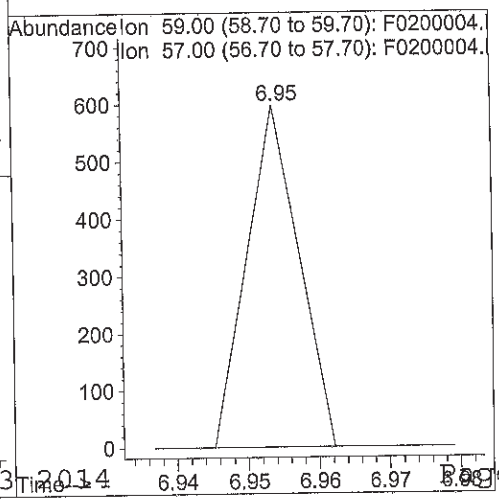


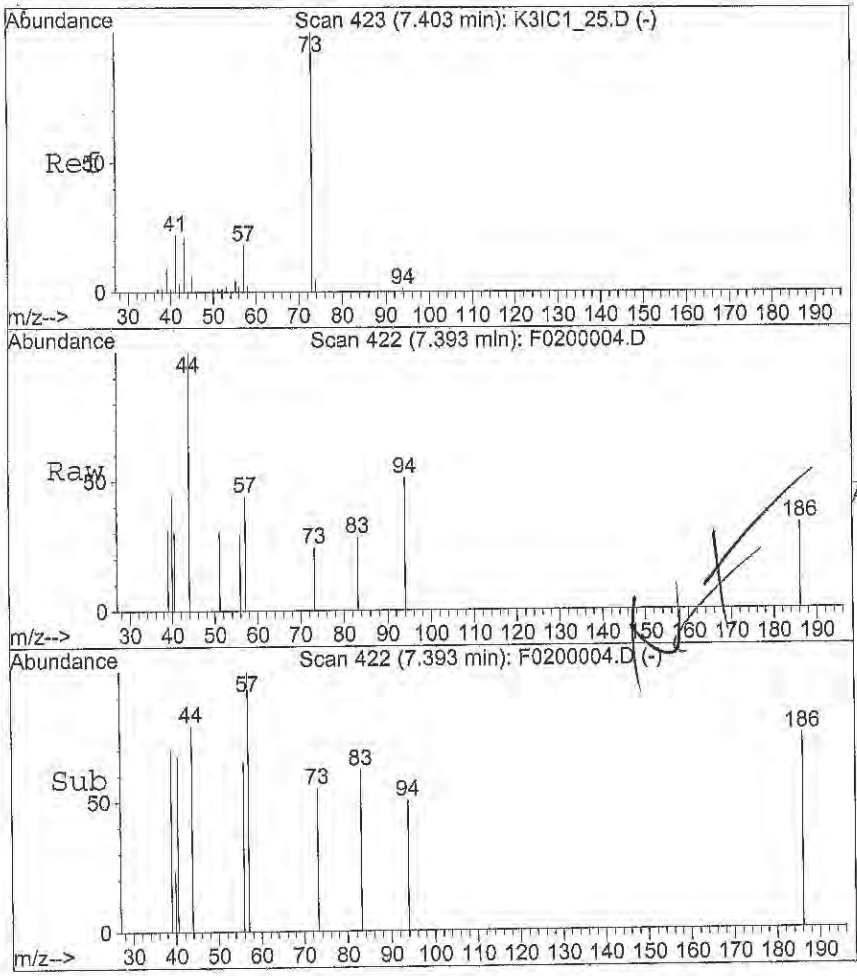


#15
(TBA) tert-Butanol
Concen: 1.39 ug/L
RT: 6.95 min Scan# 370
Delta R.T. -0.16 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 59 Resp: 302

Ion	Ratio	Lower	Upper
59	100		
57	0.0	6.4	9.6#

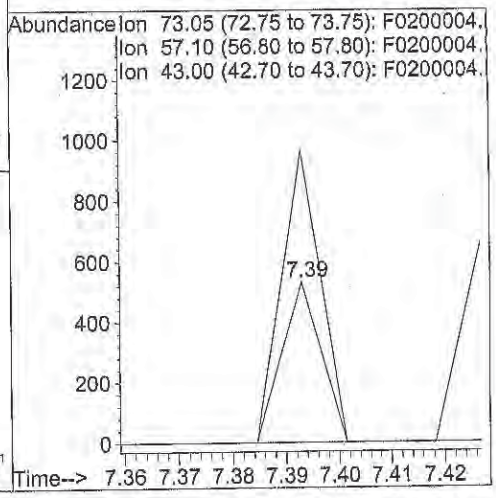


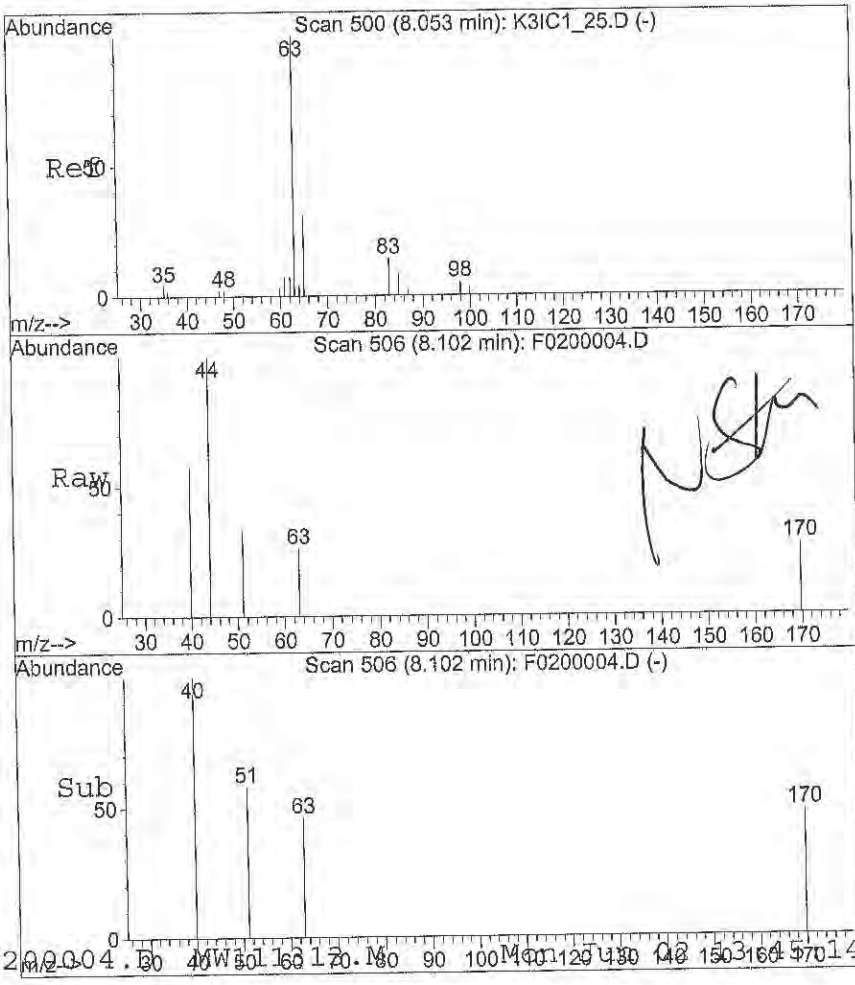


#16
(MTBE) Methyl-t-butyl ether
Concen: 0.04 ug/L
RT: 7.39 min Scan# 422
Delta R.T. -0.01 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

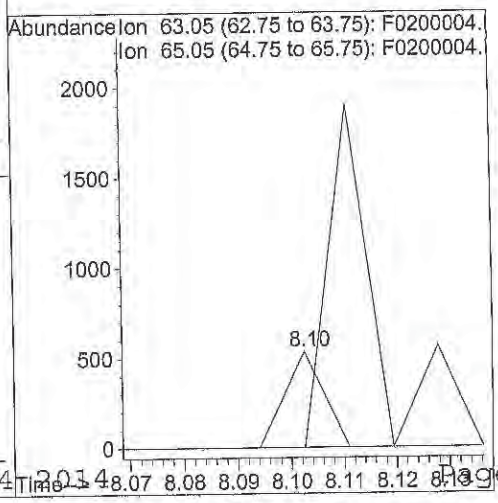


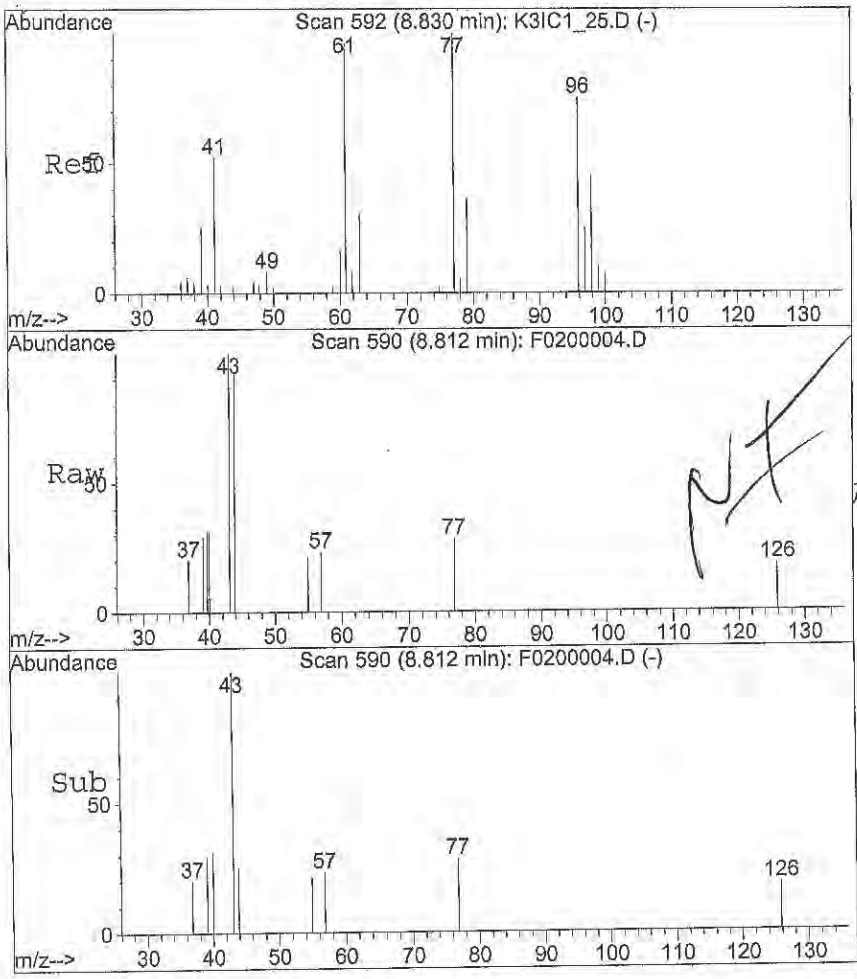


#18
1,1-Dichloroethane
Concen: 0.05 ug/L
RT: 8.10 min Scan# 506
Delta R.T. 0.05 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 63 Resp: 271

Ion	Ratio	Lower	Upper
63	100		
65	460.5	25.8	38.8#

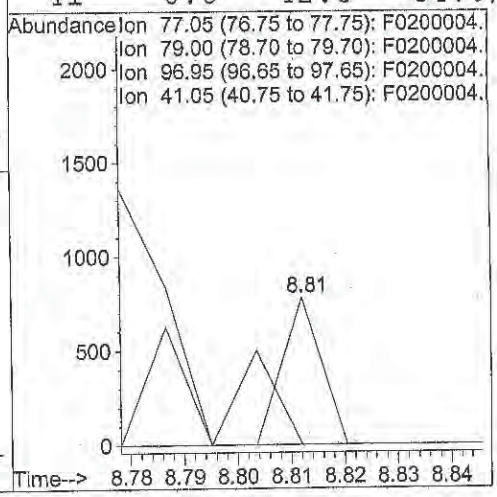


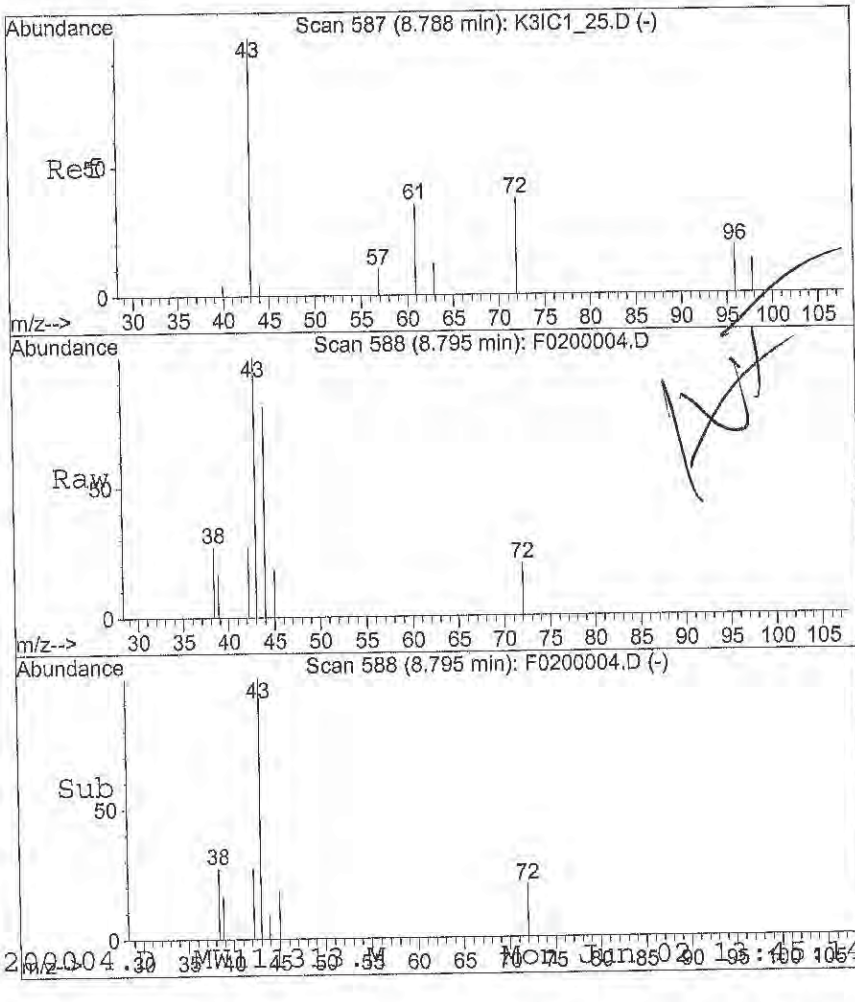


#20
2,2-Dichloropropane
Concen: 0.08 ug/L
RT: 8.81 min Scan# 590
Delta R.T. -0.02 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

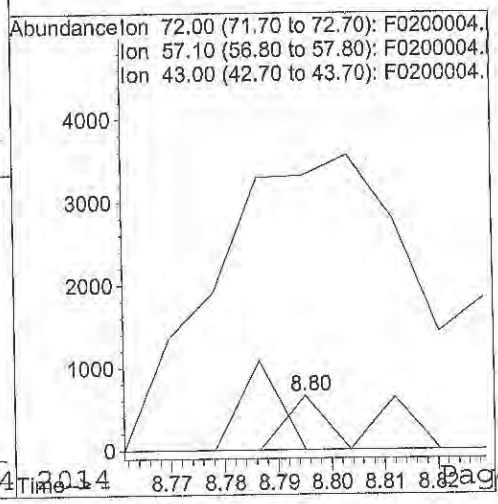


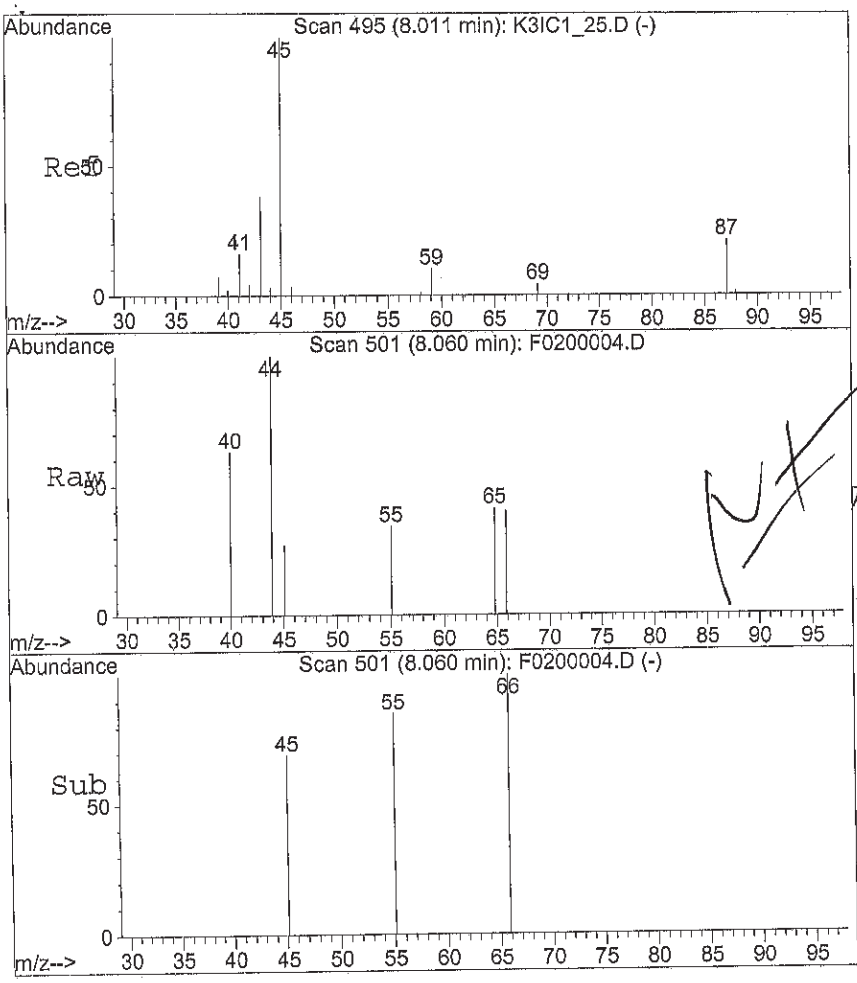


#21
(MEK) 2-Butanone
Concen: 0.92 ug/L
RT: 8.80 min Scan# 588
Delta R.T. 0.01 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

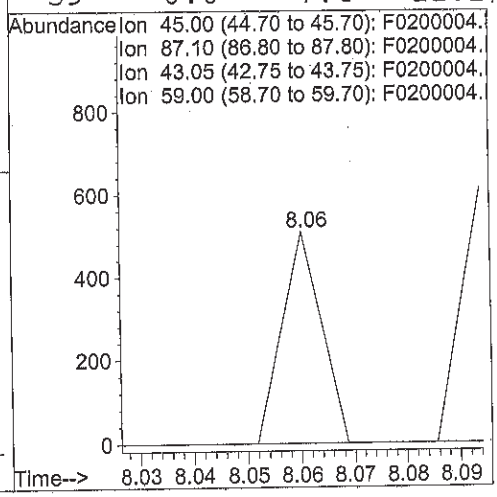


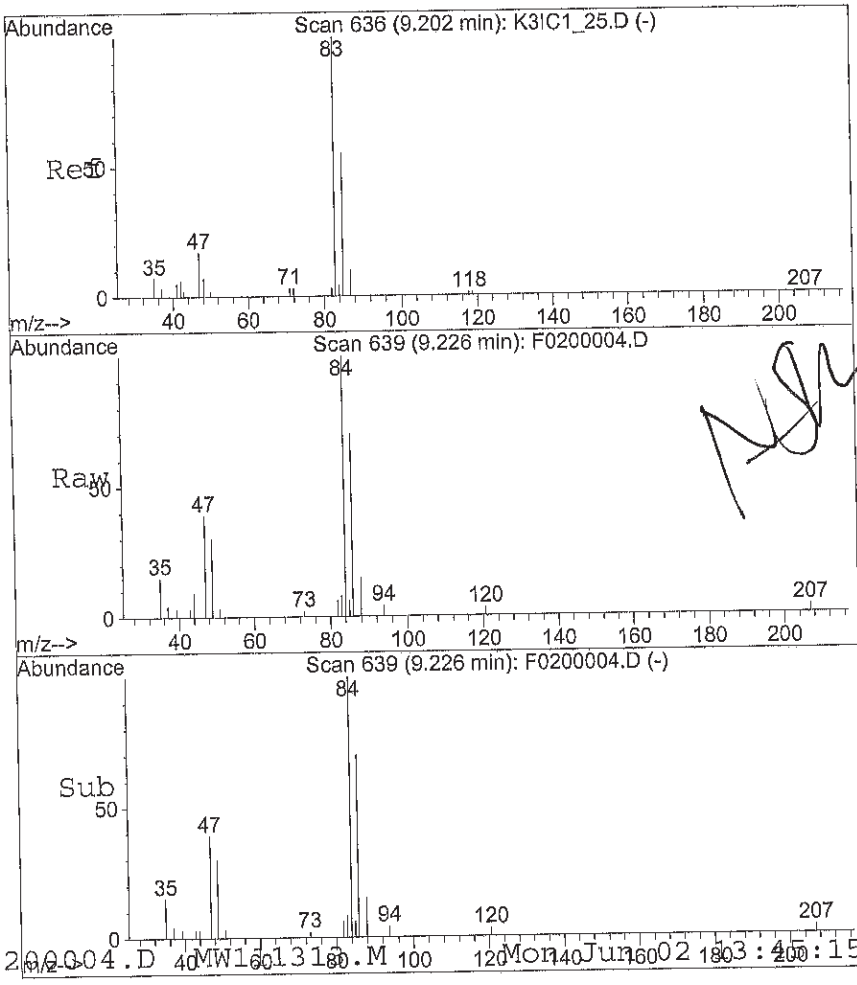


#22
(DIPE) Diisopropyl Ether
Concen: 0.03 ug/L
RT: 8.06 min Scan# 501
Delta R.T. 0.05 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

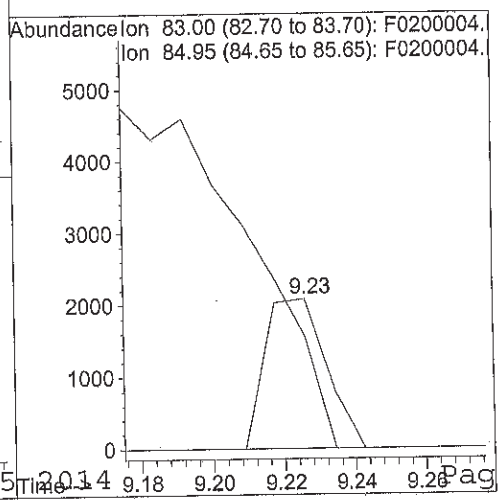


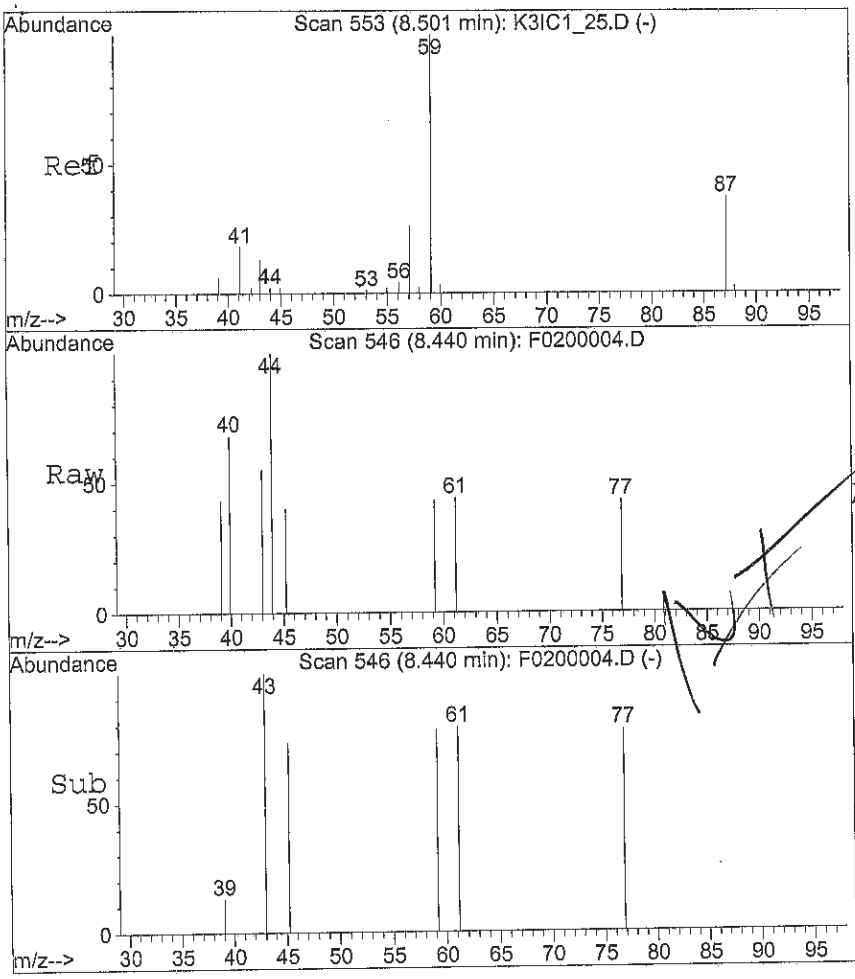


#24
Chloroform
Concen: 0.37 ug/L
RT: 9.23 min Scan# 639
Delta R.T. 0.02 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 83 Resp: 2471

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.8	77.6#

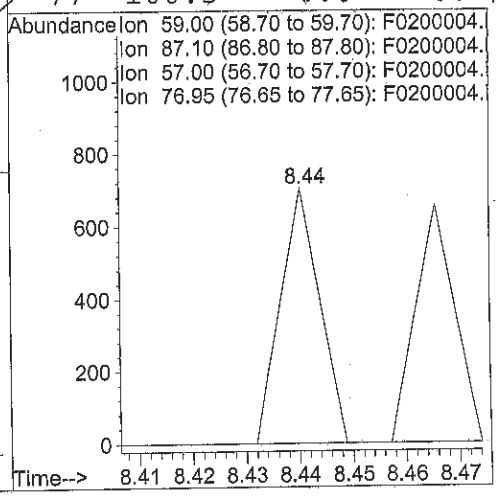


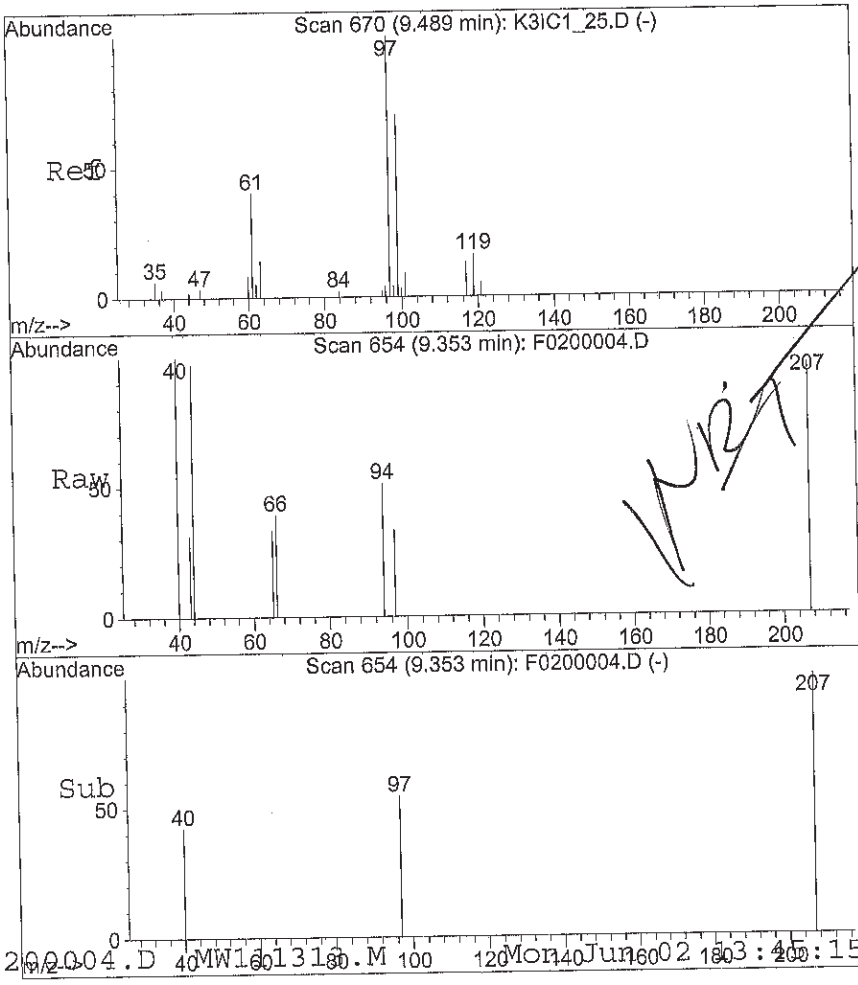


#25
(ETBE) 2-ethoxy 2-methyl propar
Concen: 0.04 ug/L
RT: 8.44 min Scan# 546
Delta R.T. -0.06 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

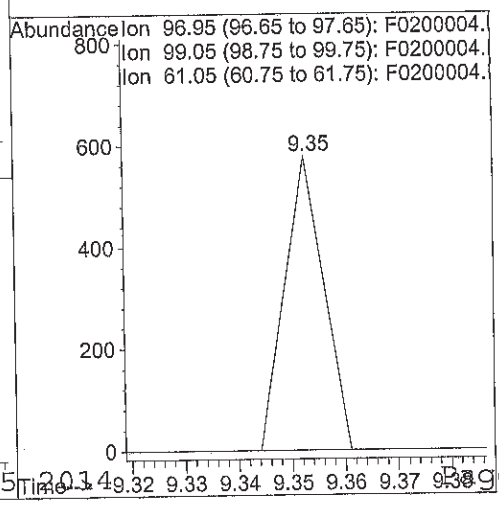


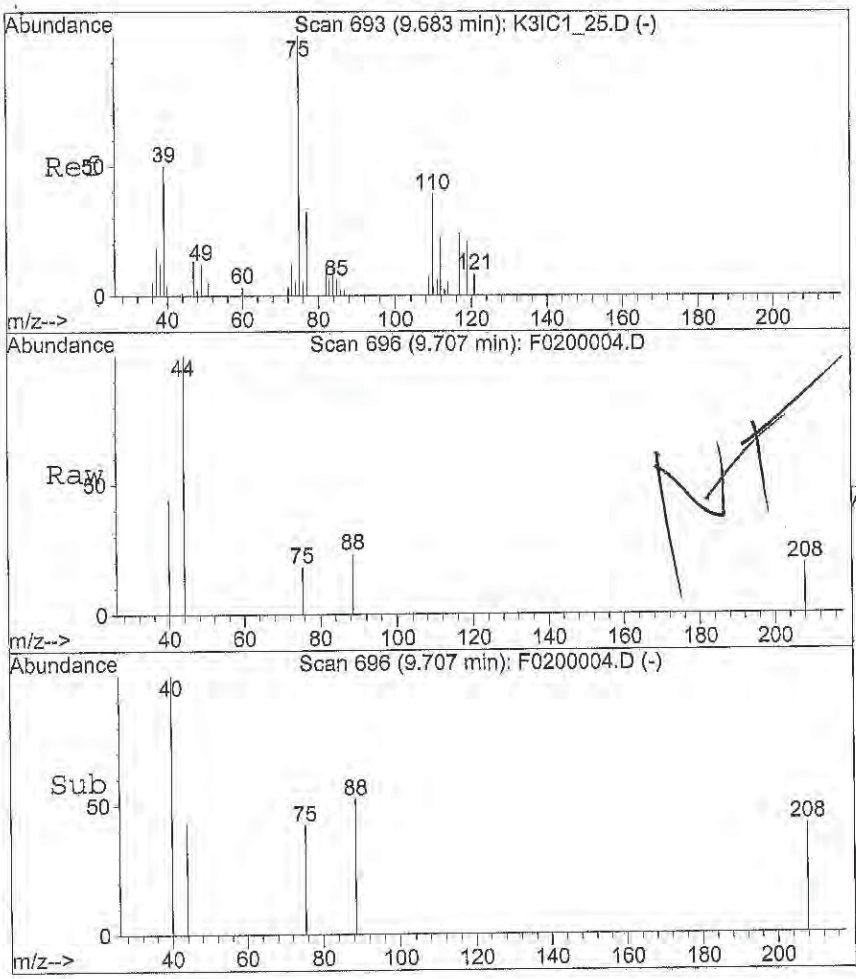


#26
1,1,1-Trichloroethane
Concen: 0.06 ug/L
RT: 9.35 min Scan# 654
Delta R.T. -0.14 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

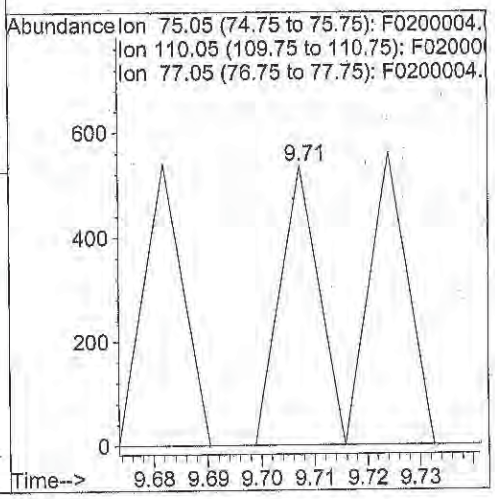


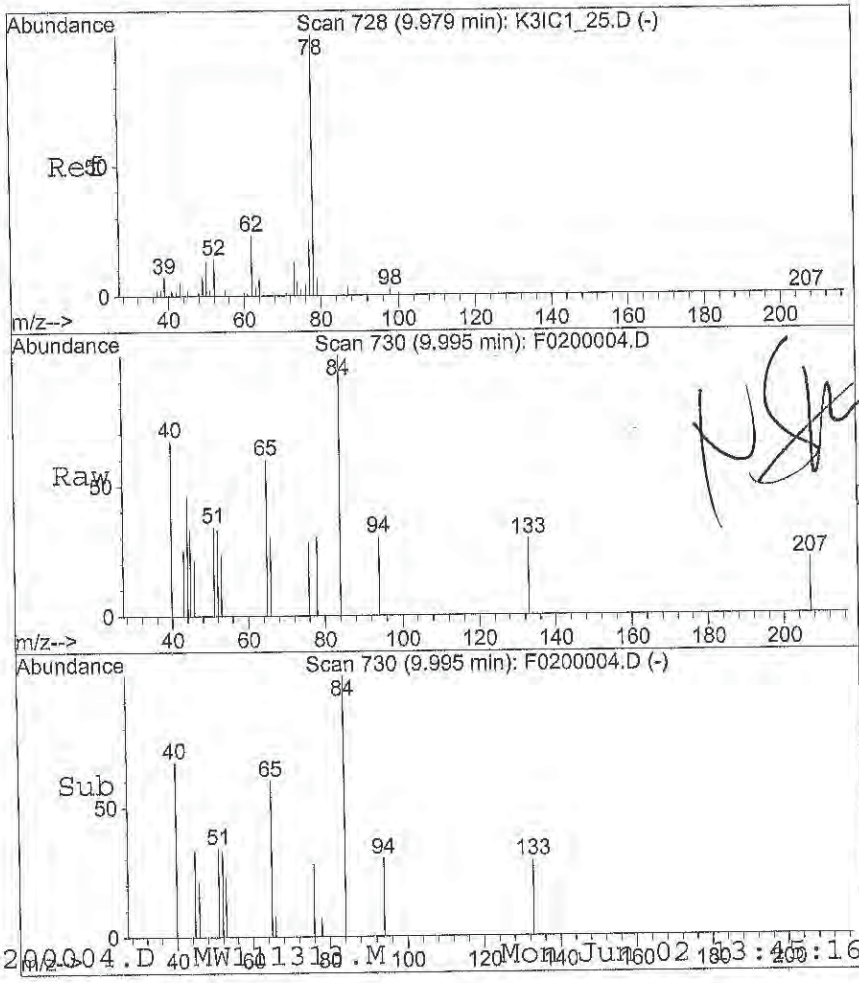


#29
1,1-Dichloropropene
Concen: 0.06 ug/L
RT: 9.71 min Scan# 696
Delta R.T. 0.02 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

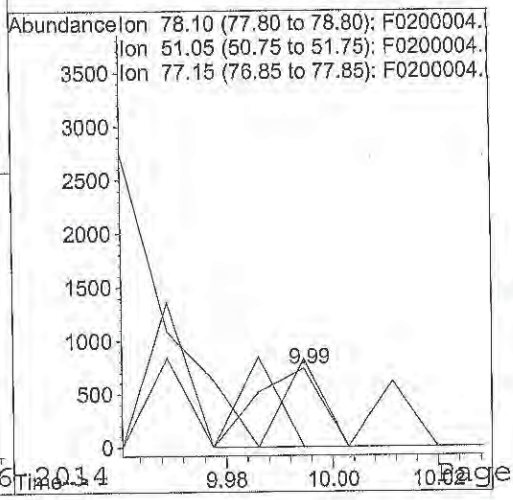


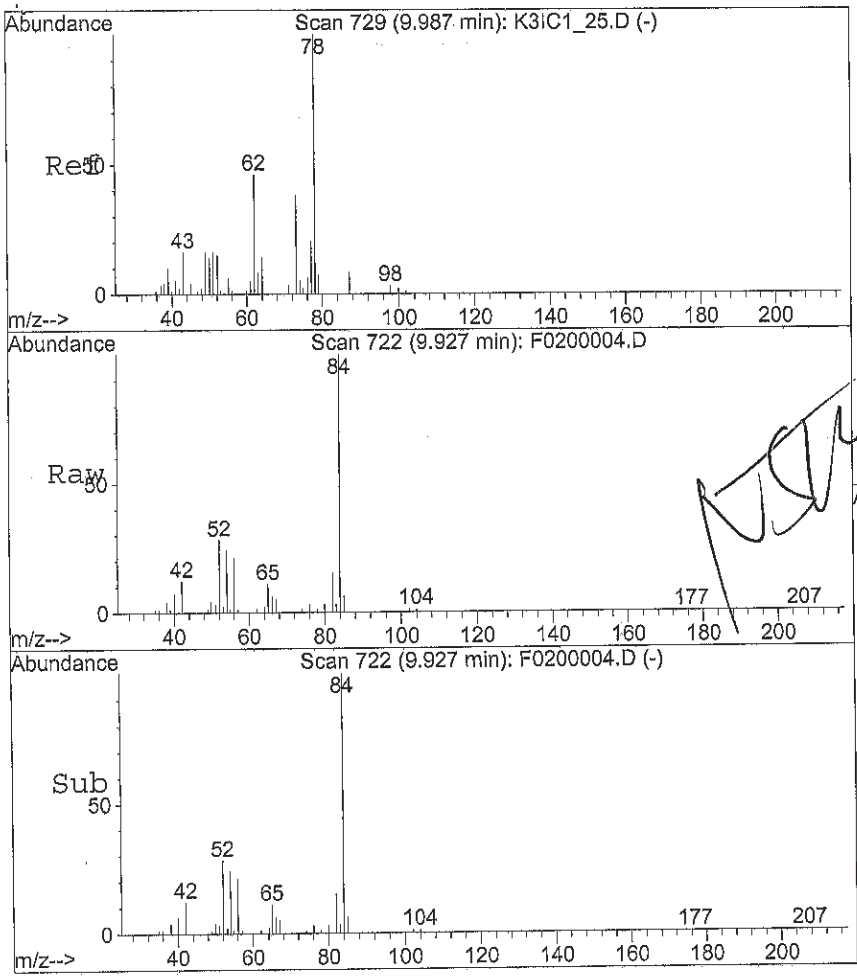


#31
Benzene
Concen: 0.05 ug/L
RT: 9.99 min Scan# 730
Delta R.T. 0.02 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

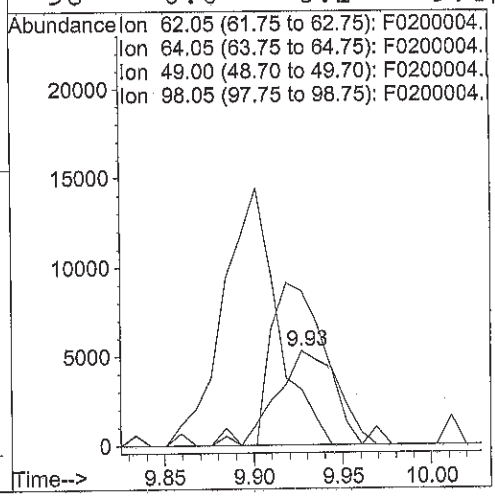


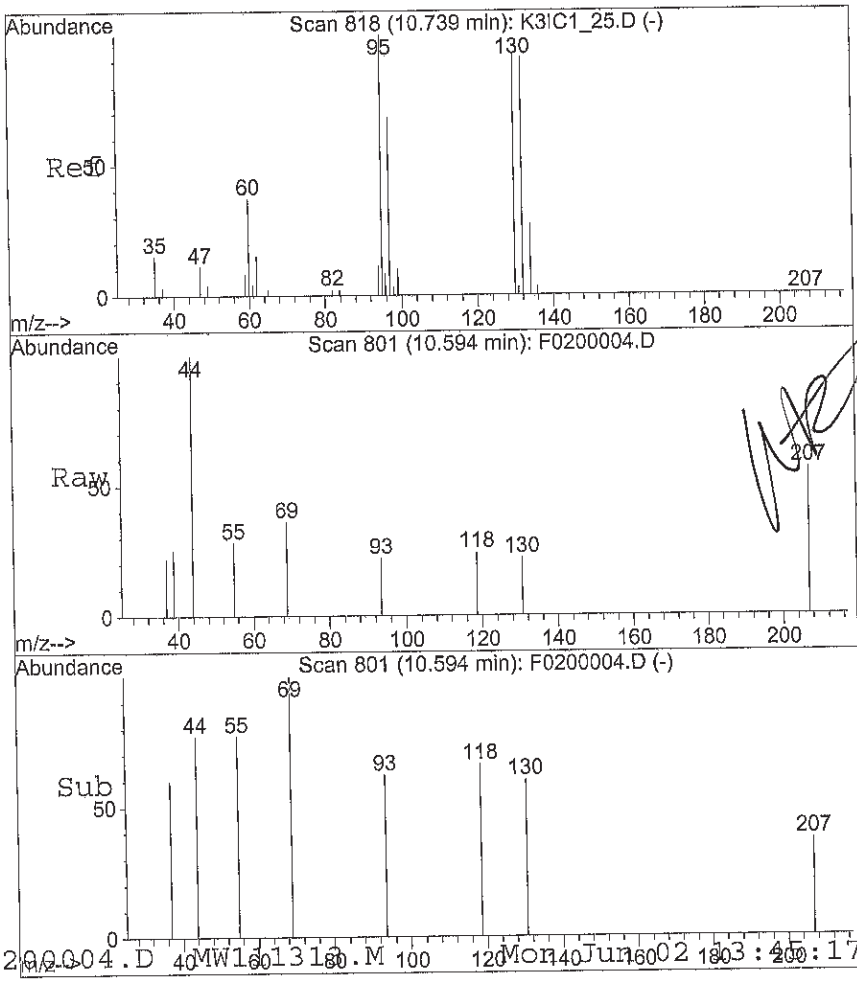


#32
1,2-Dichloroethane
Concen: 2.96 ug/L
RT: 9.93 min Scan# 722
Delta R.T. -0.06 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

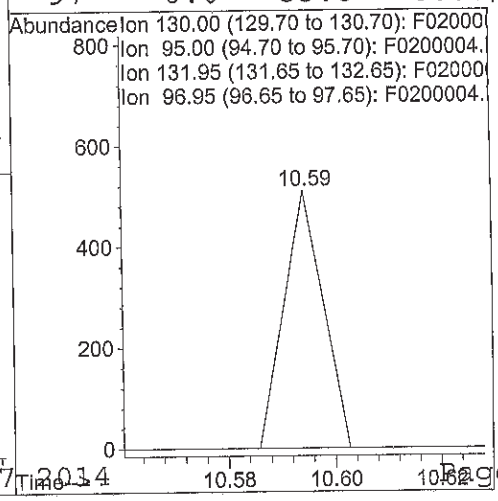


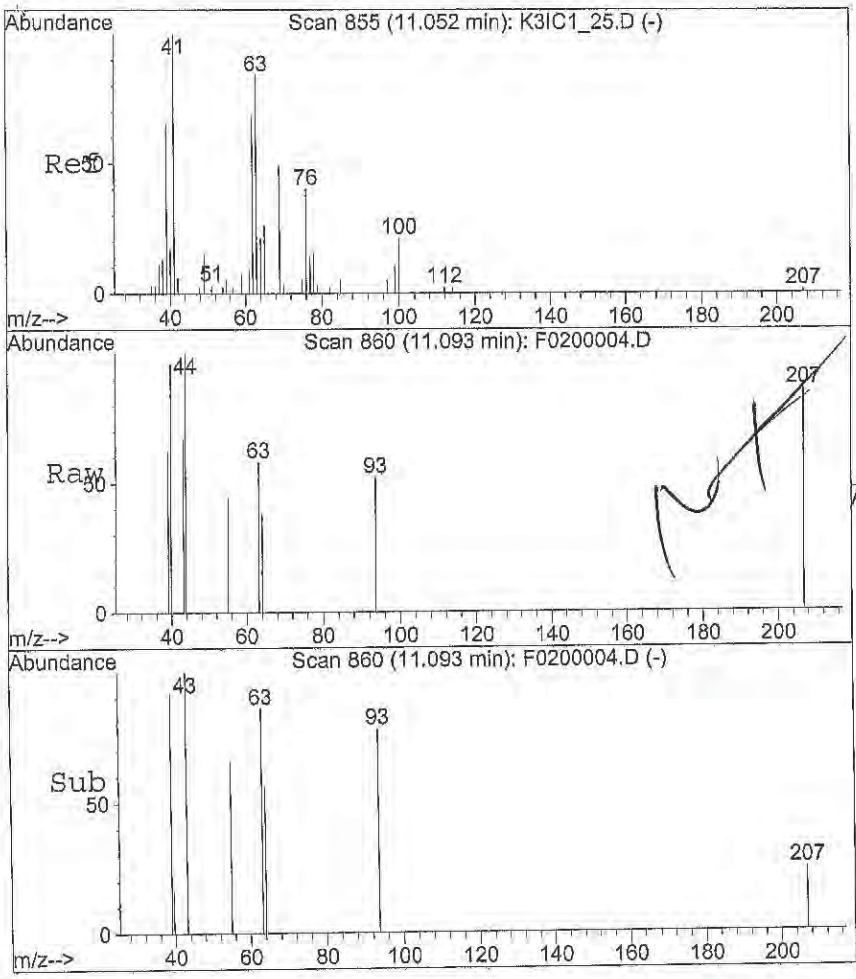


#33
Trichloroethene
Concen: 0.07 ug/L
RT: 10.59 min Scan# 801
Delta R.T. -0.14 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

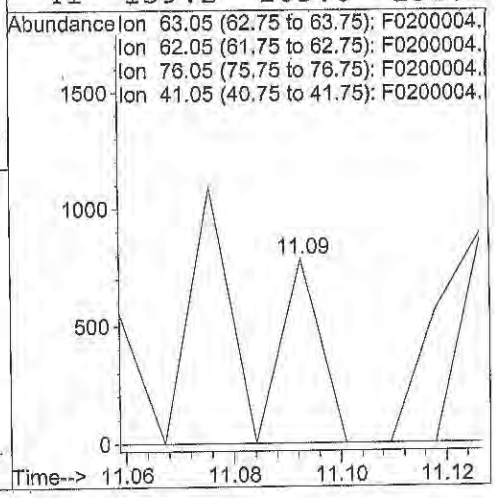


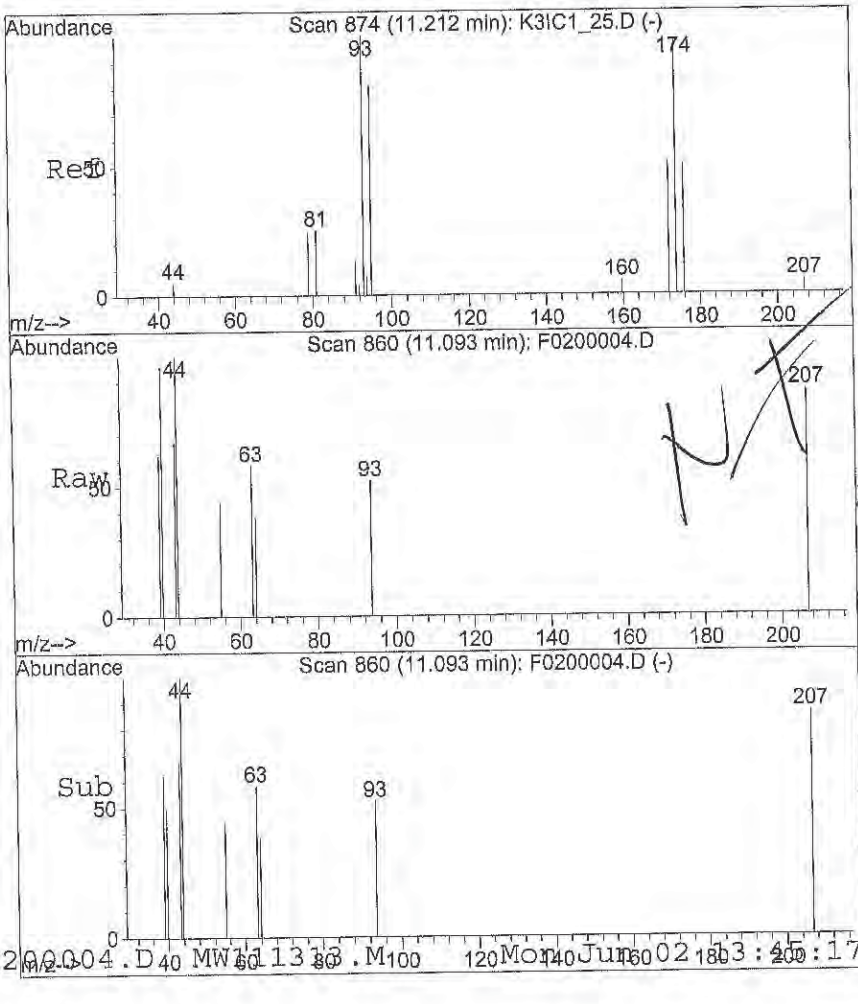


#34
1,2-Dichloropropane
Concen: 0.14 ug/L
RT: 11.09 min Scan# 860
Delta R.T. 0.04 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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

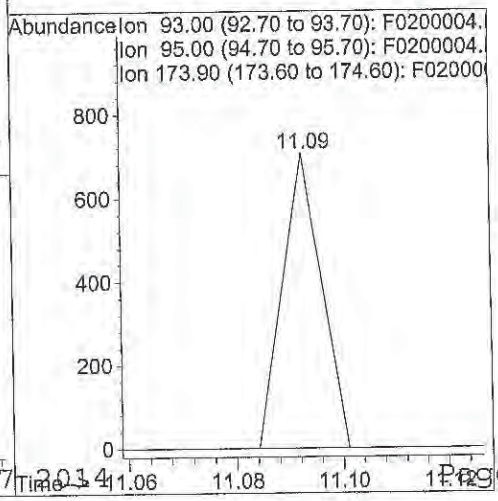


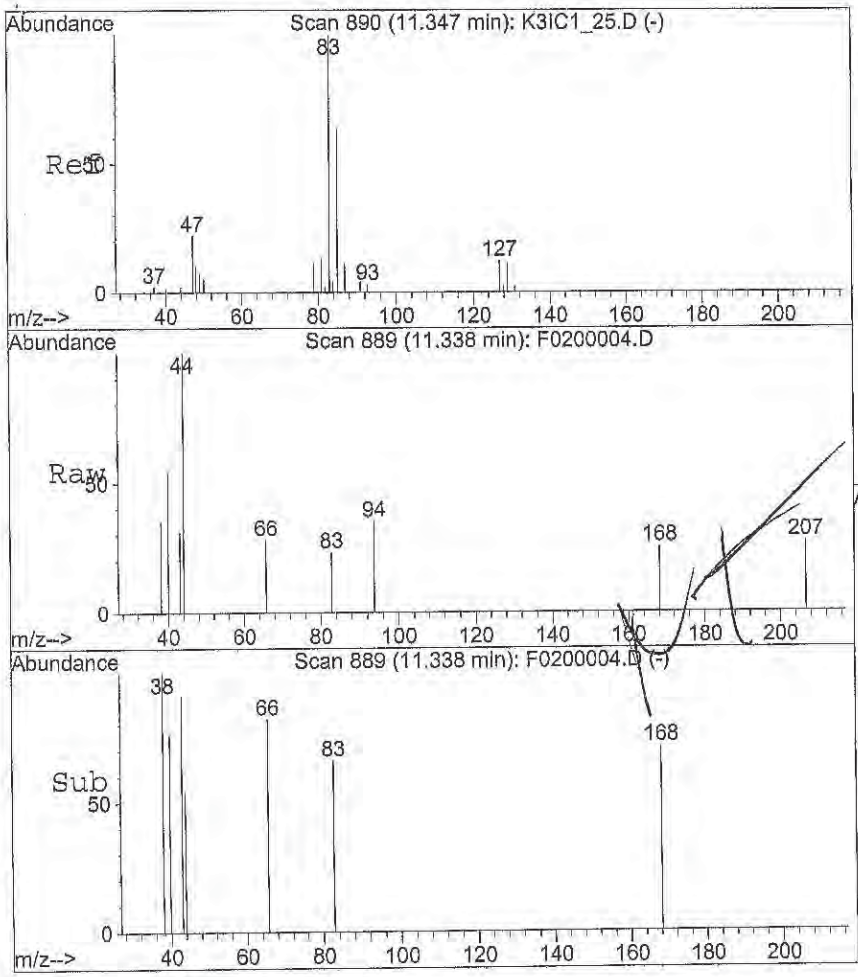


#35
Dibromomethane
Concen: 0.16 ug/L
RT: 11.09 min Scan# 860
Delta R.T. -0.12 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

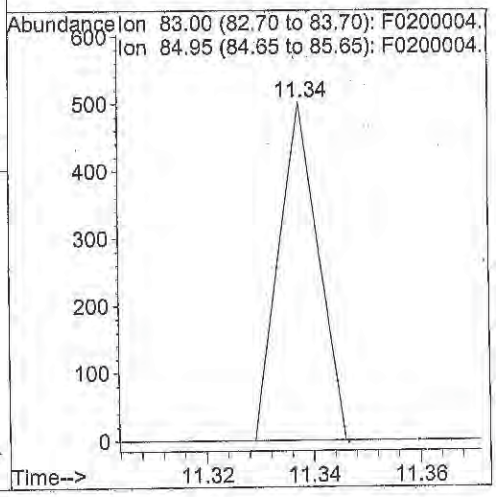


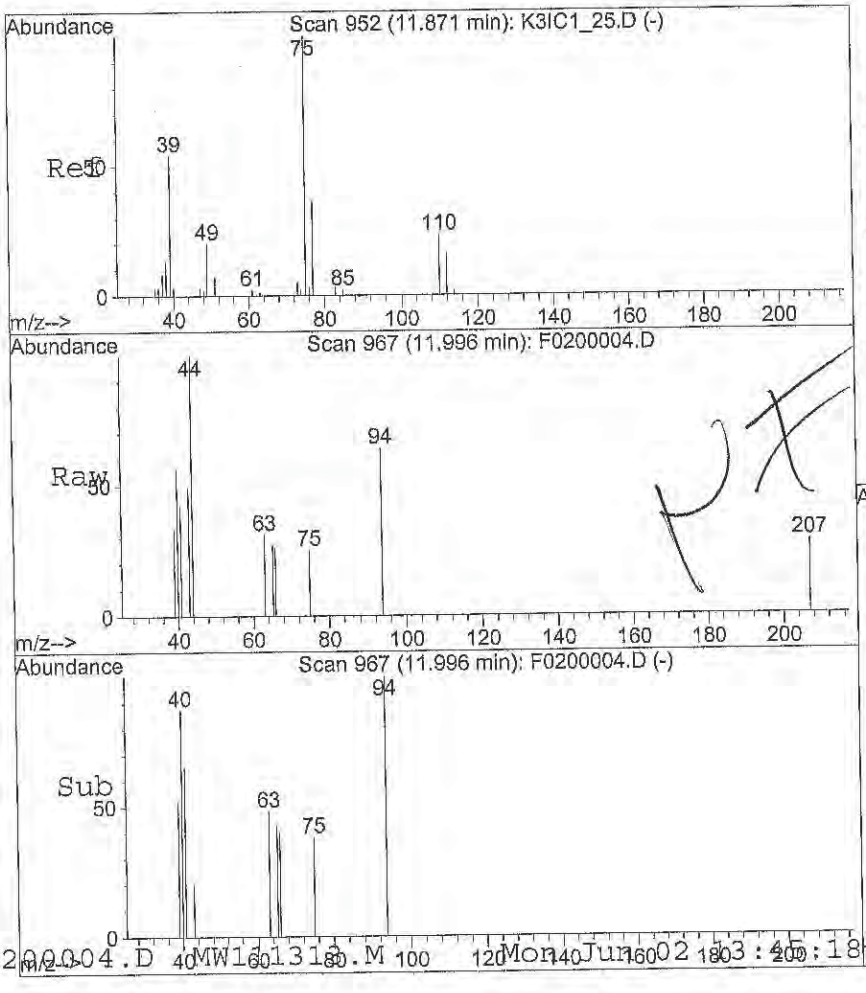


#36
Bromodichloromethane
Concen: 0.06 ug/L
RT: 11.34 min Scan# 889
Delta R.T. -0.01 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 83 Resp: 254

Ion	Ratio	Lower	Upper
83	100		
85	0.0	48.2	72.2#

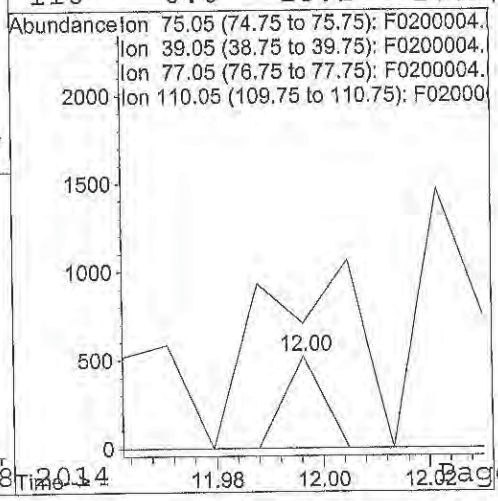


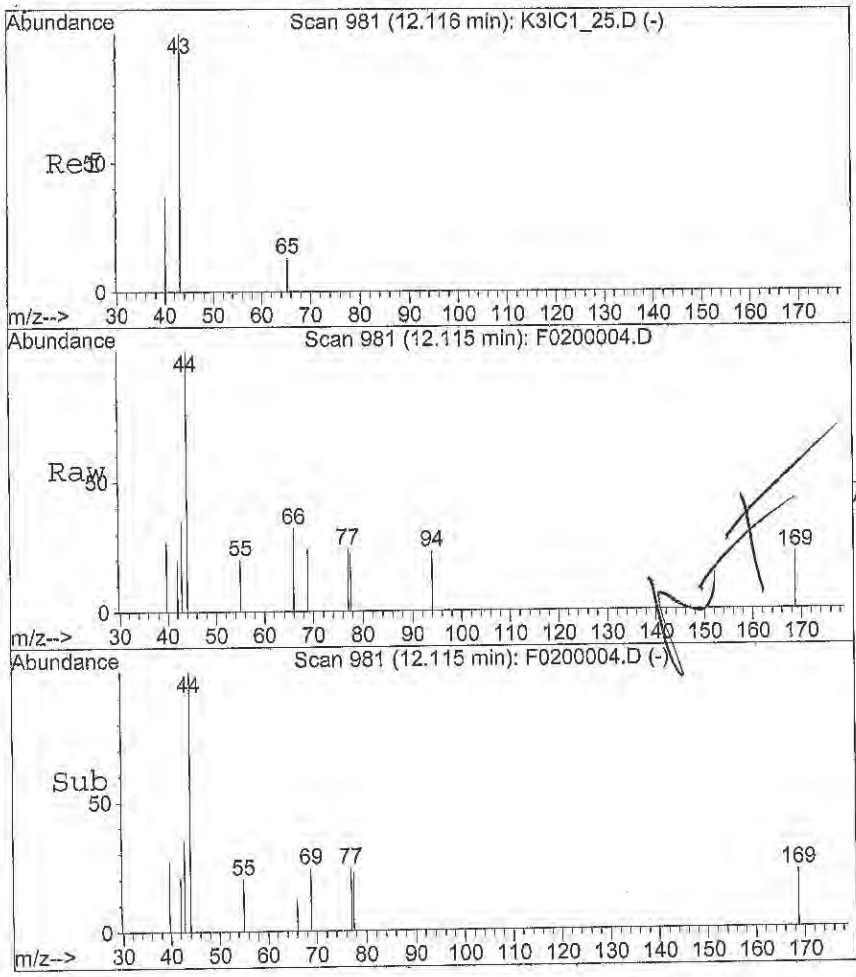


#37
cis-1,3-Dichloropropene
Concen: 0.05 ug/L
RT: 12.00 min Scan# 967
Delta R.T. 0.13 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

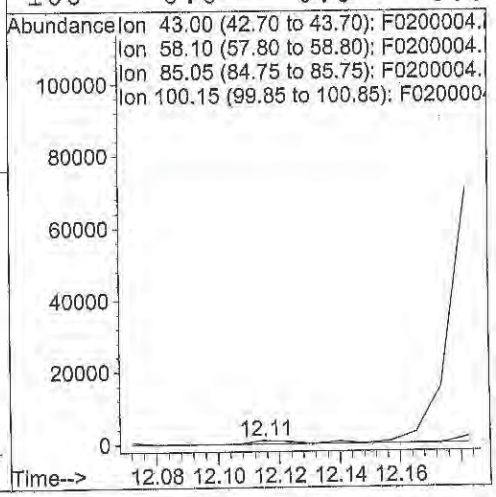


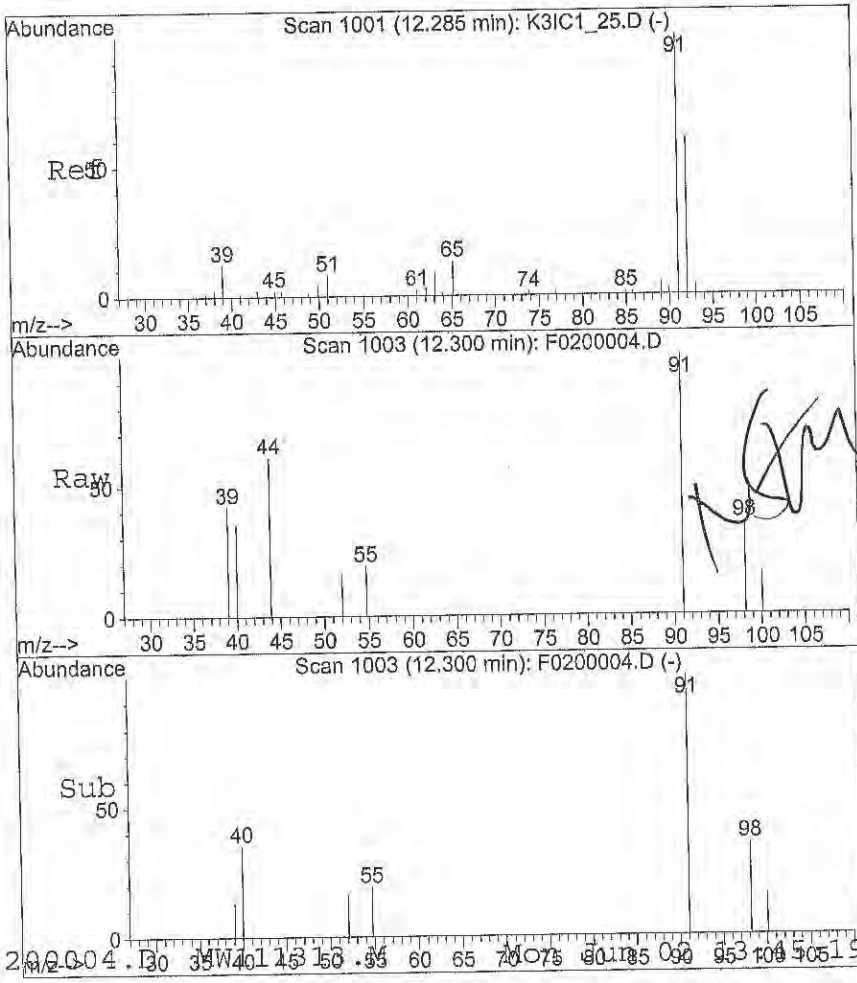


#40
(MIBK) 4-Methyl-2-Pentanone
Concen: 0.45 ug/L
RT: 12.11 min Scan# 981
Delta R.T. -0.00 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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

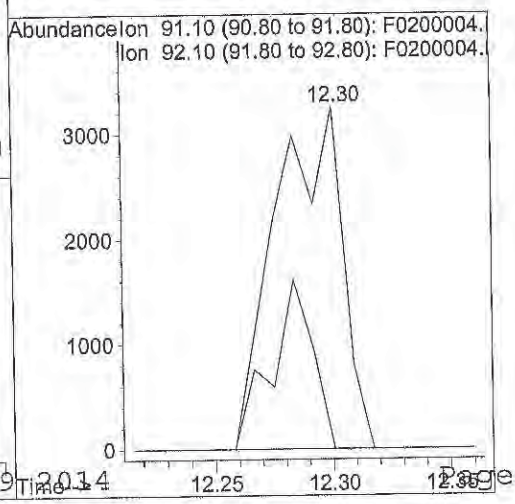


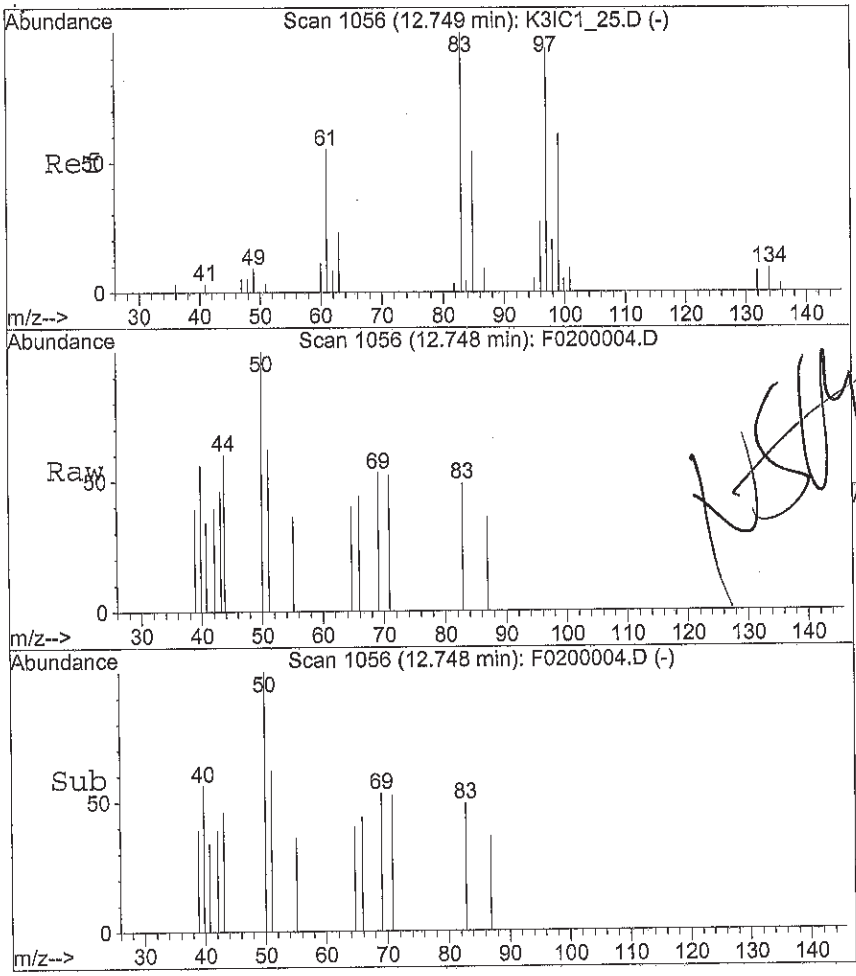


#41
Toluene
Concen: 0.39 ug/L
RT: 12.30 min Scan# 1003
Delta R.T. 0.02 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 91 Resp: 6415

Ion	Ratio	Lower	Upper
91	100		
92	30.7	47.4	71.0#

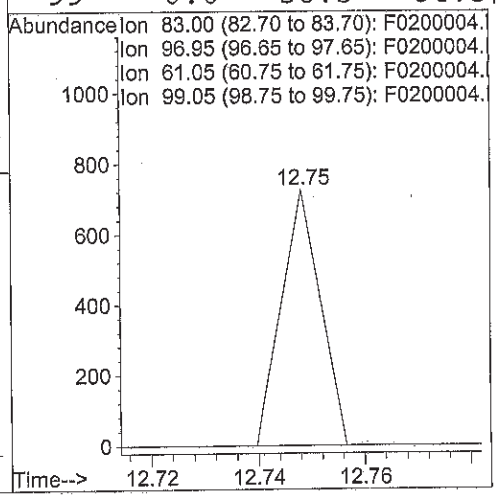


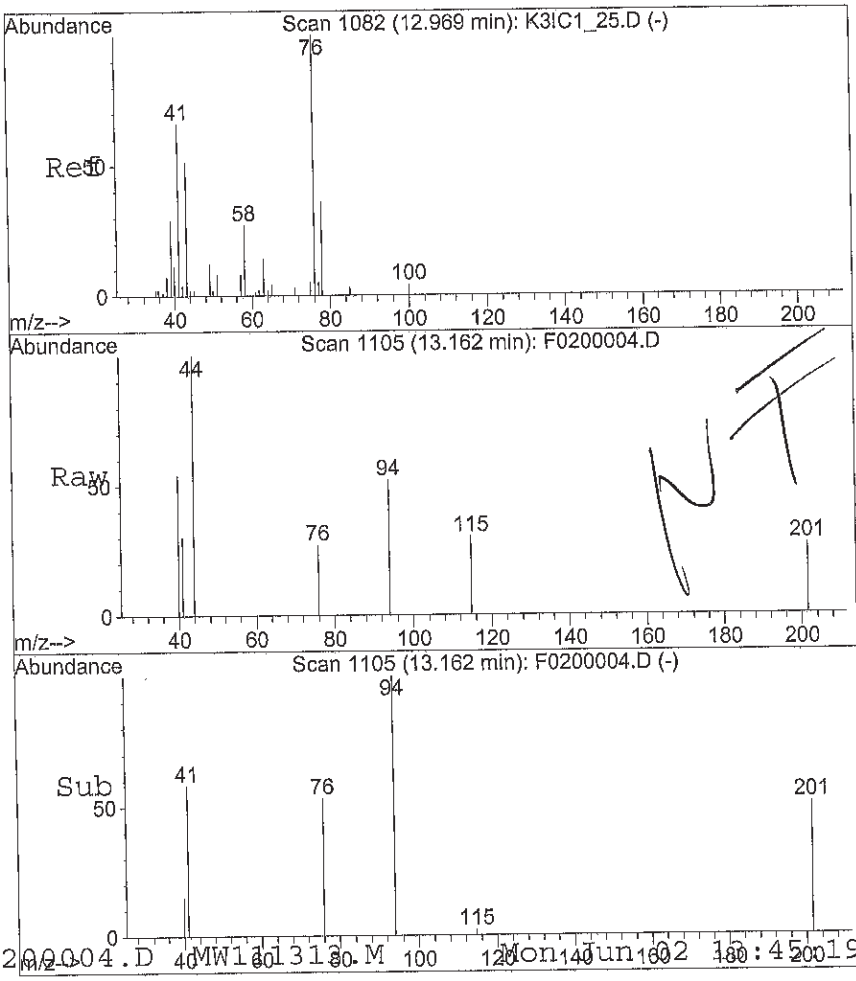


#43
1,1,2-Trichloroethane
Concen: 0.12 ug/L
RT: 12.75 min Scan# 1056
Delta R.T. -0.00 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

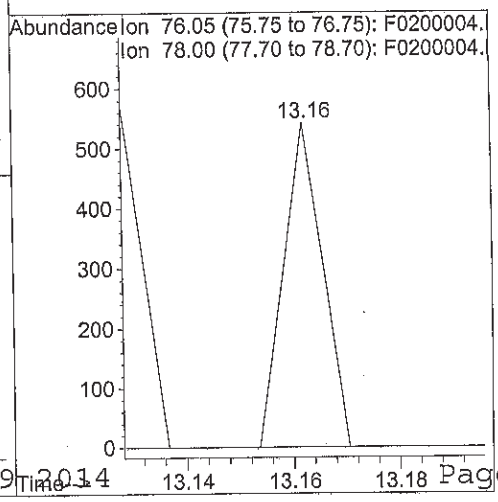


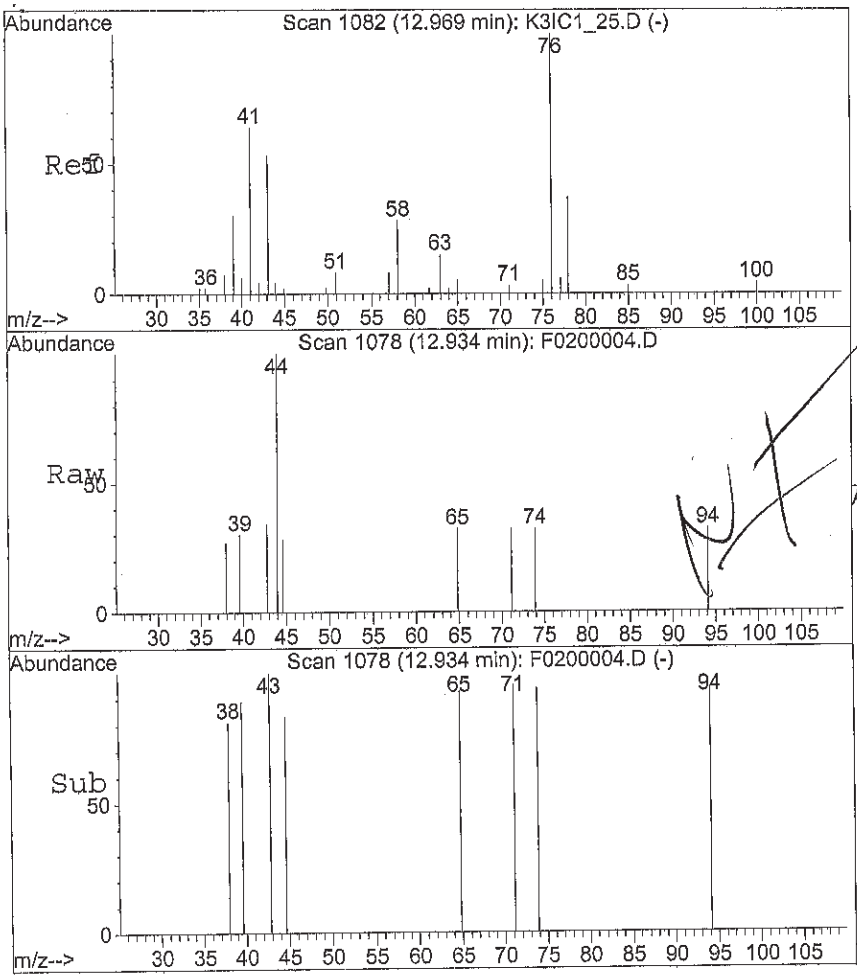


#45
1,3-Dichloropropane
Concen: 0.05 ug/L
RT: 13.16 min Scan# 1105
Delta R.T. 0.19 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 76 Resp: 275

Ion	Ratio	Lower	Upper
76	100		
78	0.0	26.9	40.3#

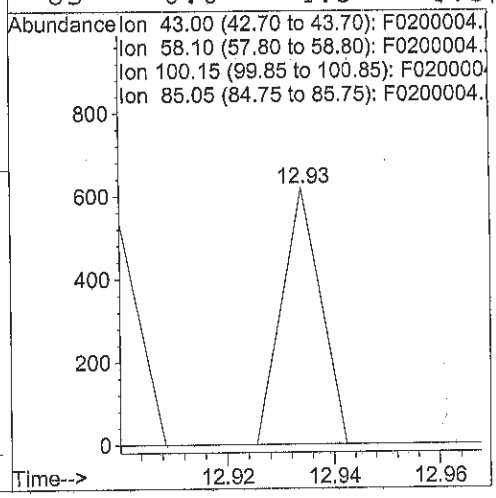


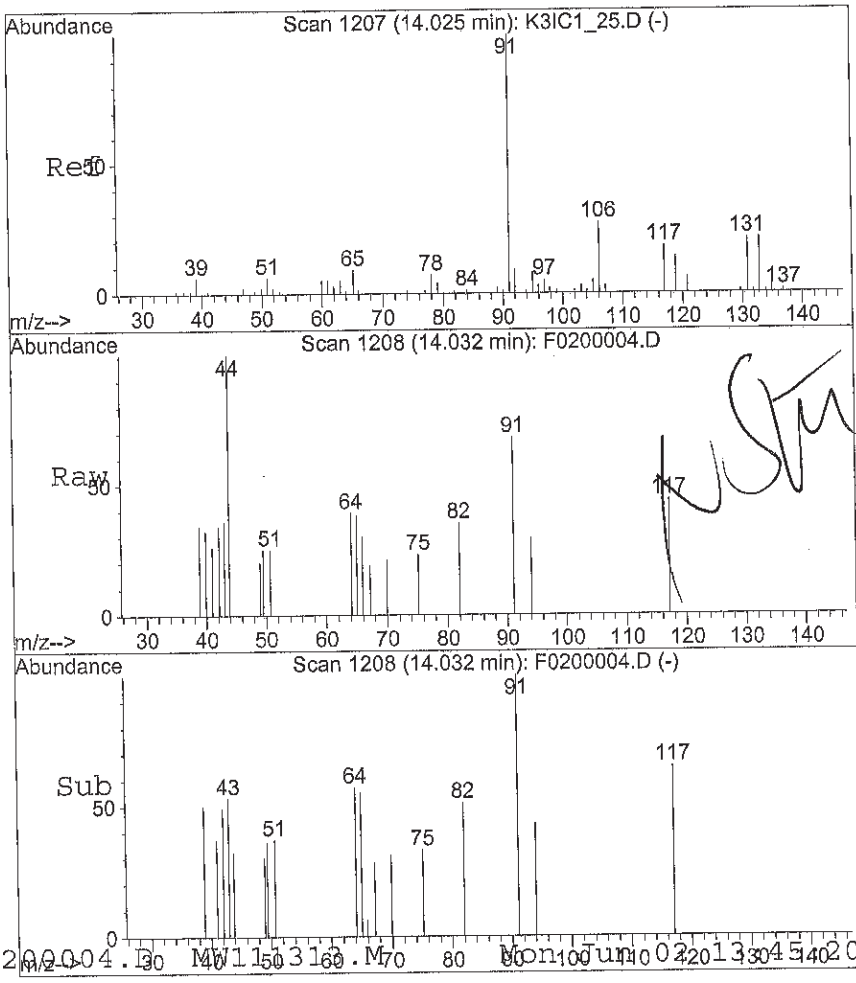


#46
2-Hexanone
Concen: 0.12 ug/L
RT: 12.93 min Scan# 1078
Delta R.T. -0.03 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

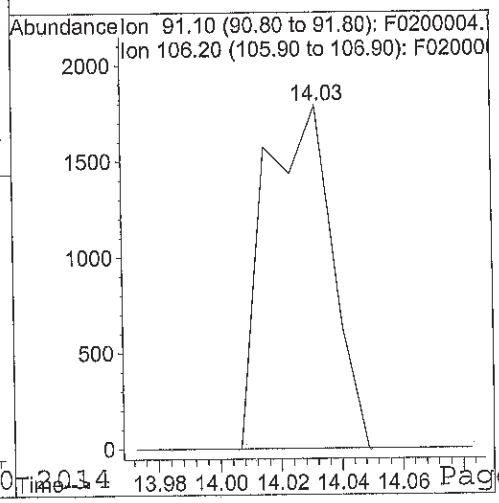


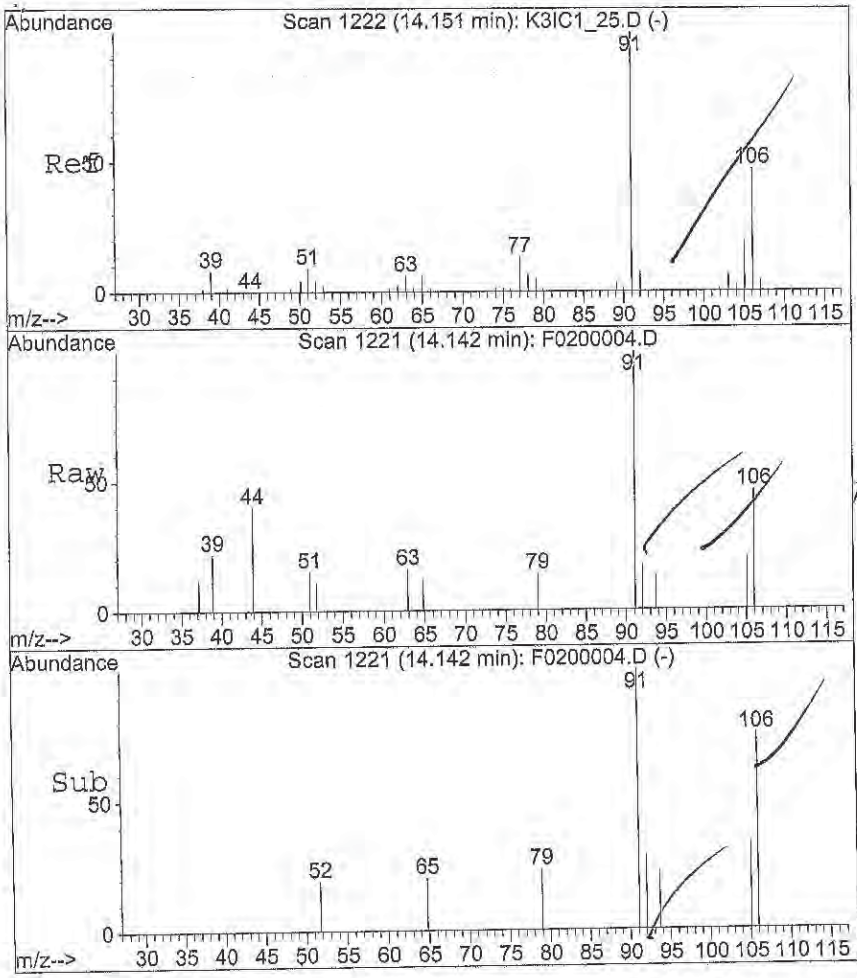


#51
Ethylbenzene
Concen: 0.15 ug/L
RT: 14.03 min Scan# 1208
Delta R.T. 0.01 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 91 Resp: 2741

Ion	Ratio	Lower	Upper
91	100		
106	0.0	23.5	35.3#

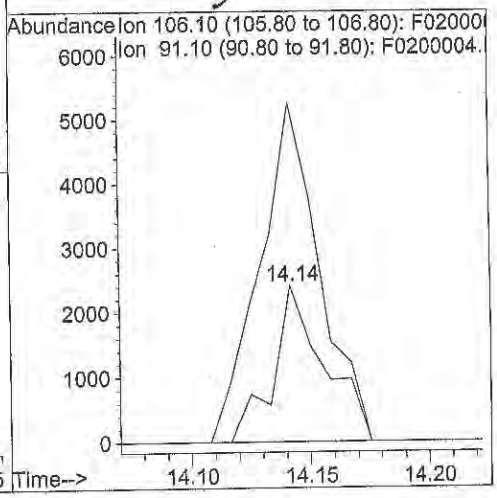


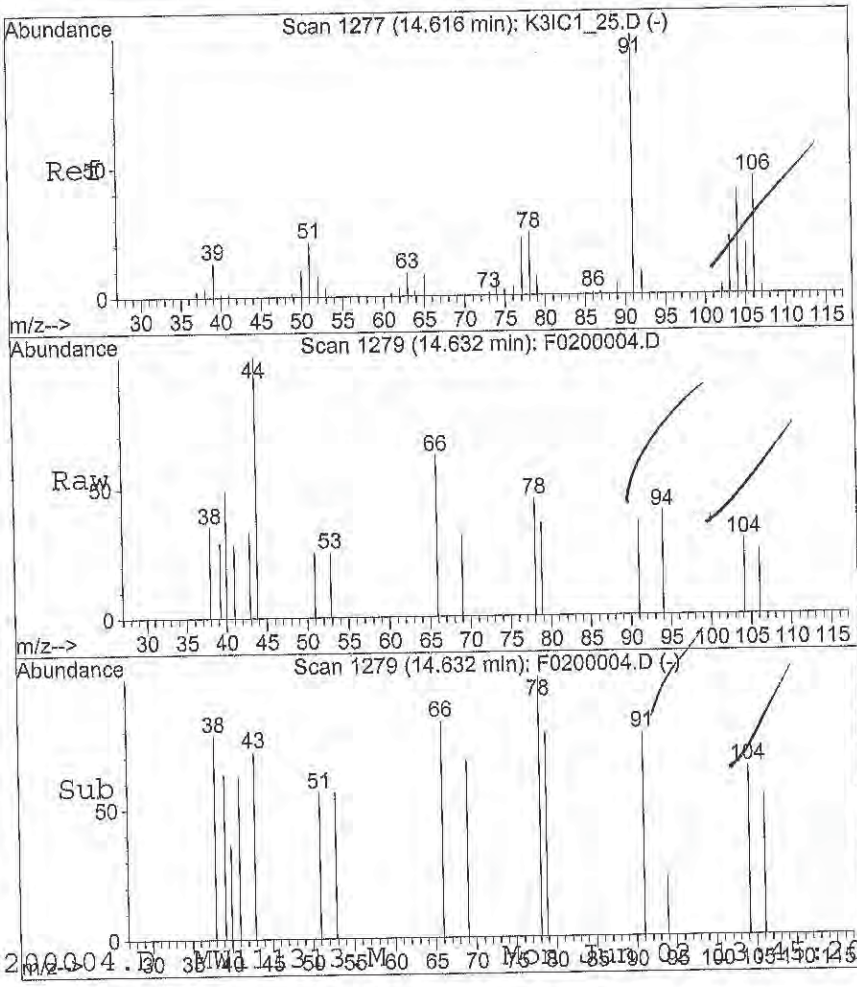


#52
m,p-Xylenes
Concen: 0.54 ug/L
RT: 14.14 min Scan# 1221
Delta R.T. -0.01 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion:106 Resp: 3584

Ion	Ratio	Lower	Upper
106	100		
91	254.9	177.1	265.7

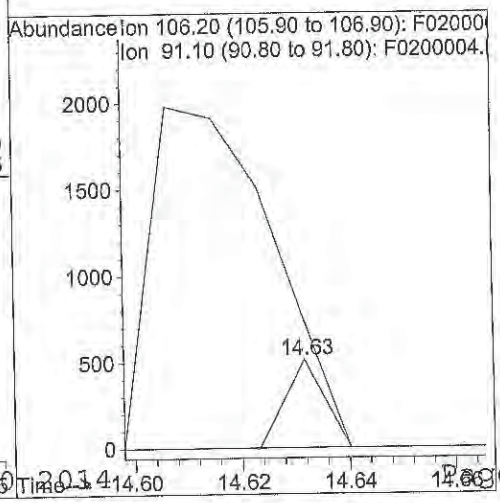


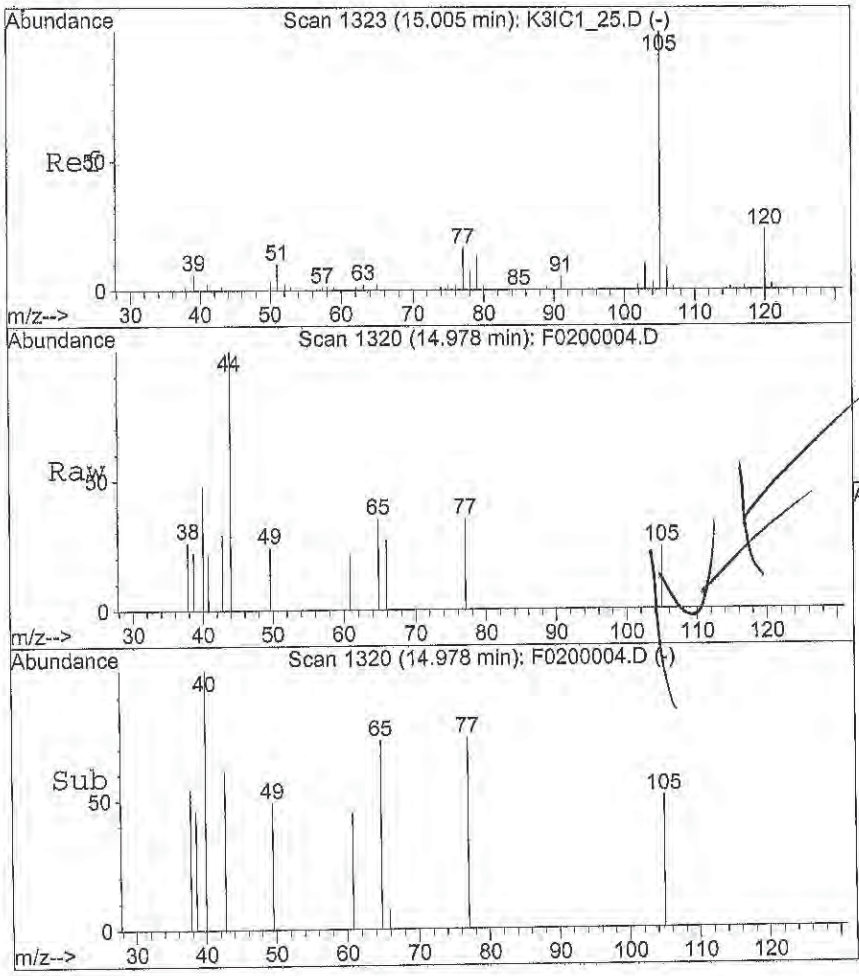


#53
o-Xylene
Concen: 0.04 ug/L
RT: 14.63 min Scan# 1279
Delta R.T. 0.02 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion:106 Resp: 259

Ion	Ratio	Lower	Upper
106	100		
91	0.0	179.0	268.6#

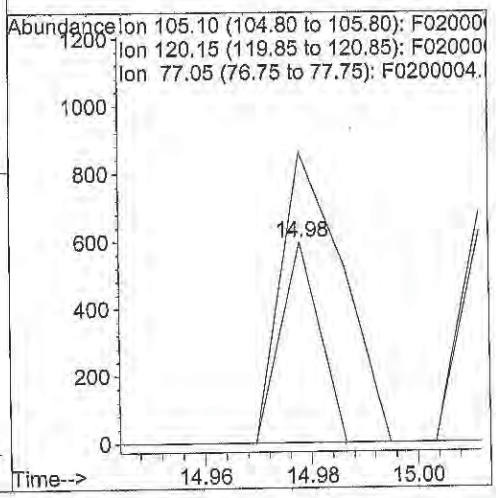


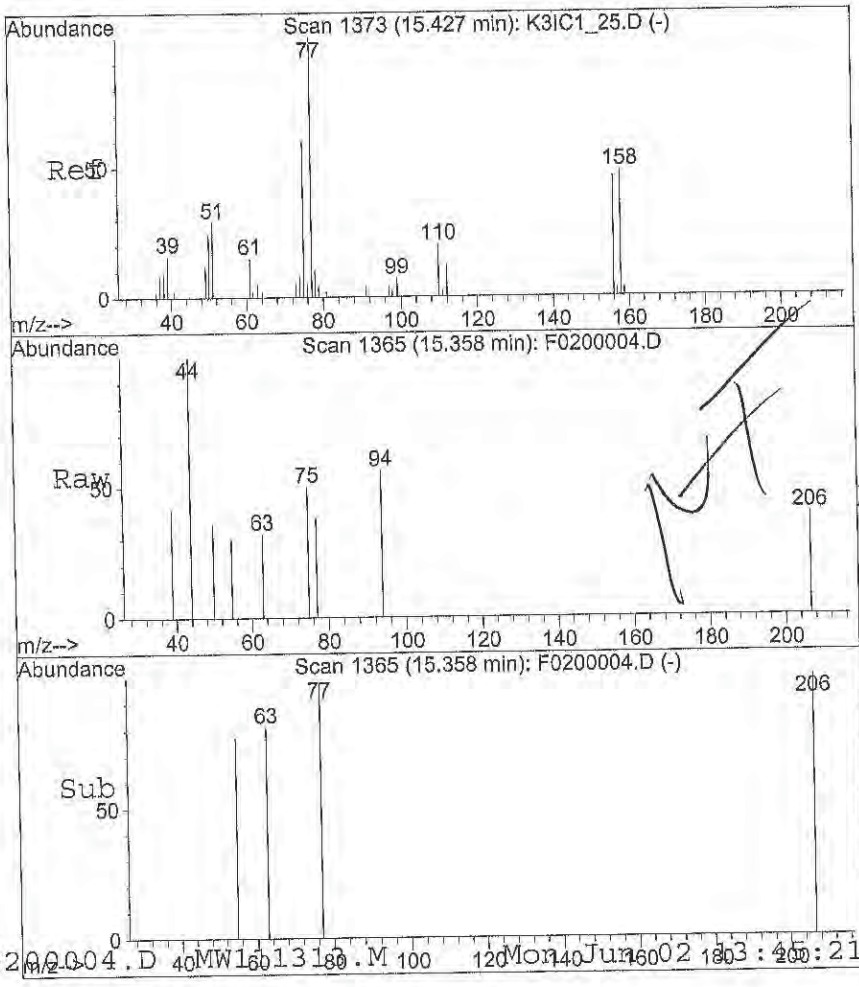


#56
Isopropylbenzene
Concen: 0.02 ug/L
RT: 14.98 min Scan# 1320
Delta R.T. -0.03 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

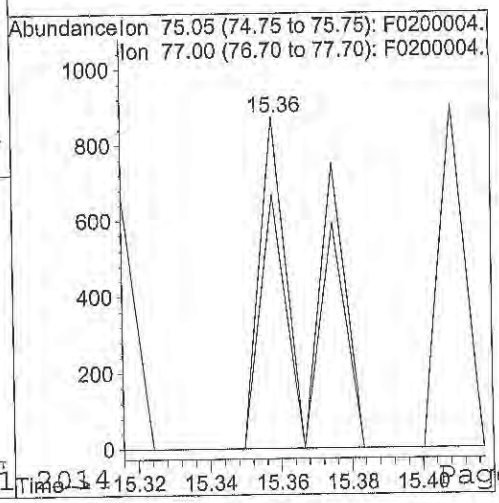


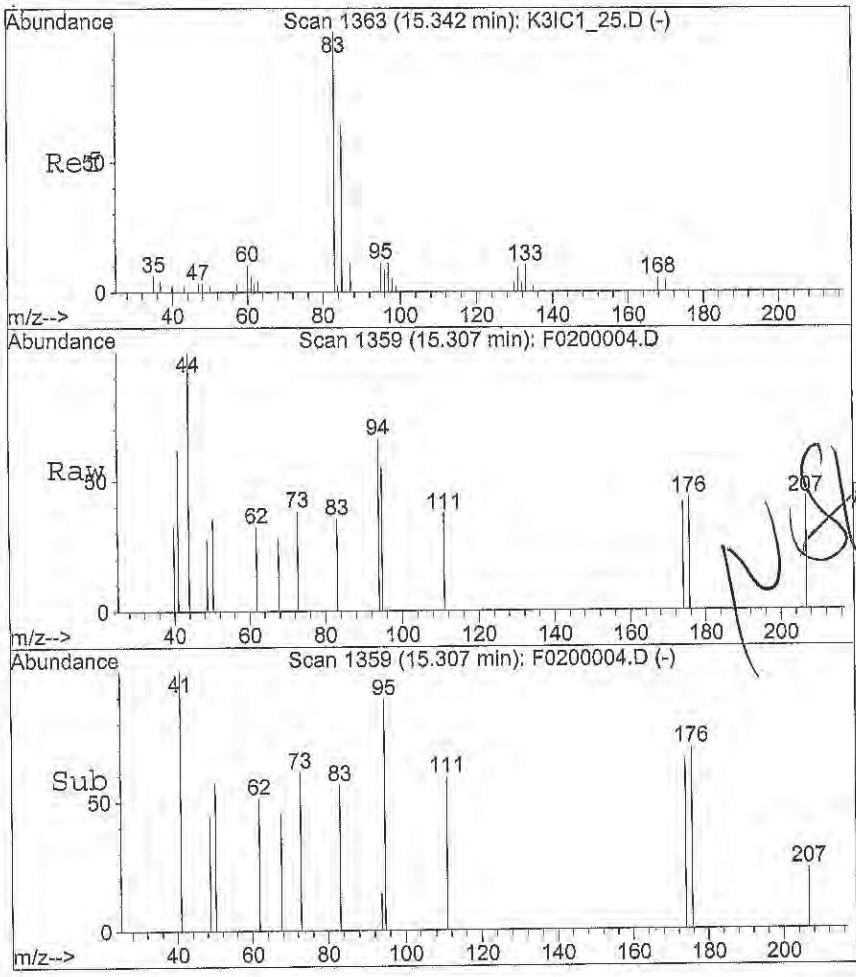


#57
1,2,3-Trichloropropane
Concen: 0.17 ug/L
RT: 15.36 min Scan# 1365
Delta R.T. -0.07 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 75 Resp: 821

Ion	Ratio	Lower	Upper
75	100		
77	77.5	31.2	46.8#

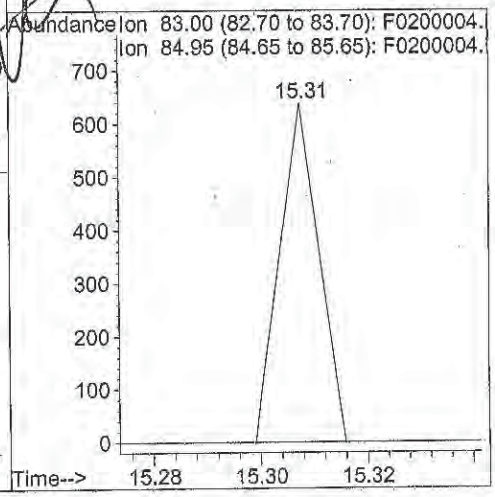


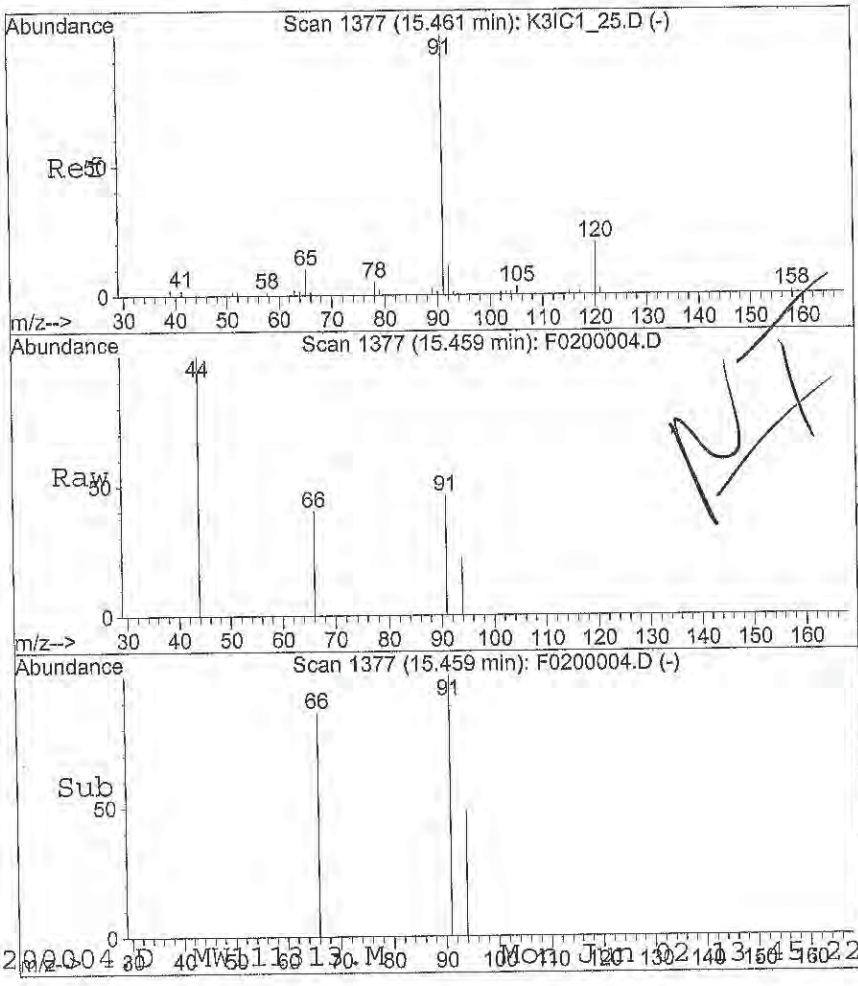


#60
1,1,2,2-Tetrachloroethane
Concen: 0.07 ug/L
RT: 15.31 min Scan# 1359
Delta R.T. -0.03 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 83 Resp: 323

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.2	76.8#

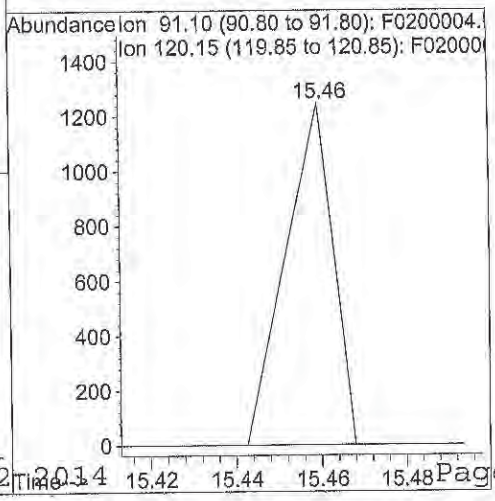


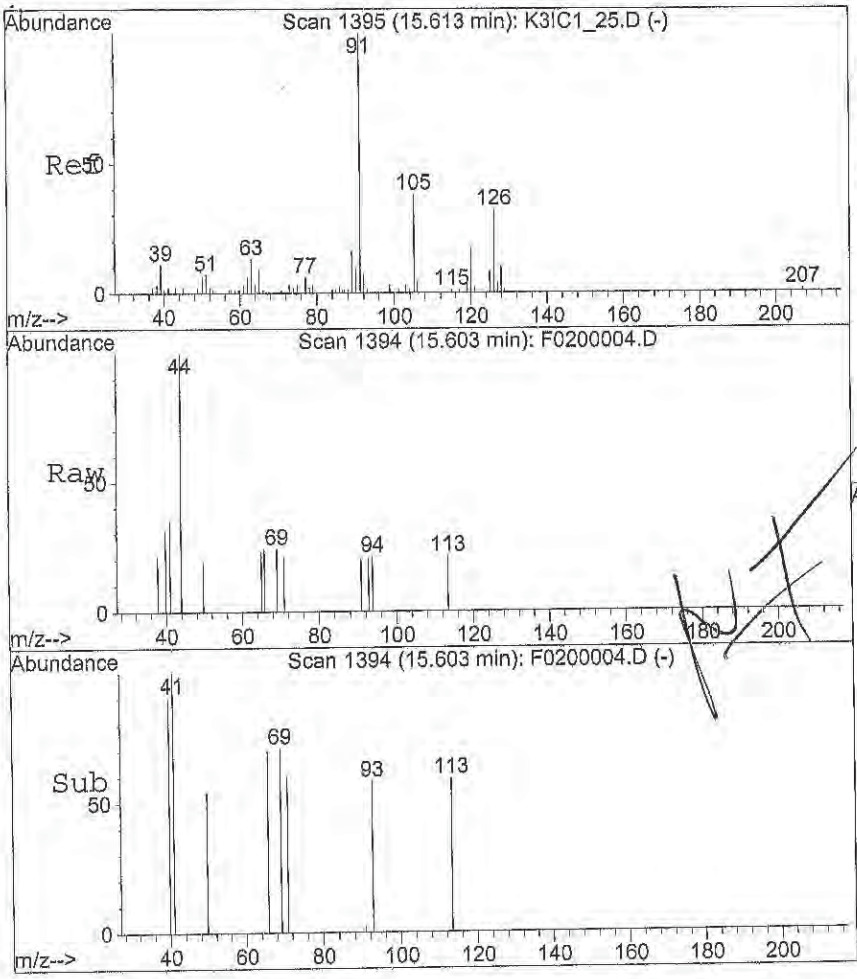


#62
n-Propylbenzene
Concen: 0.04 ug/L
RT: 15.46 min Scan# 1377
Delta R.T. -0.00 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 91 Resp: 958

Ion	Ratio	Lower	Upper
91	100		
120	0.0	16.1	24.1#

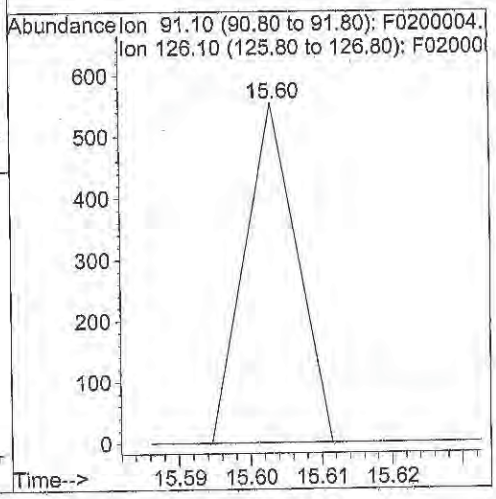


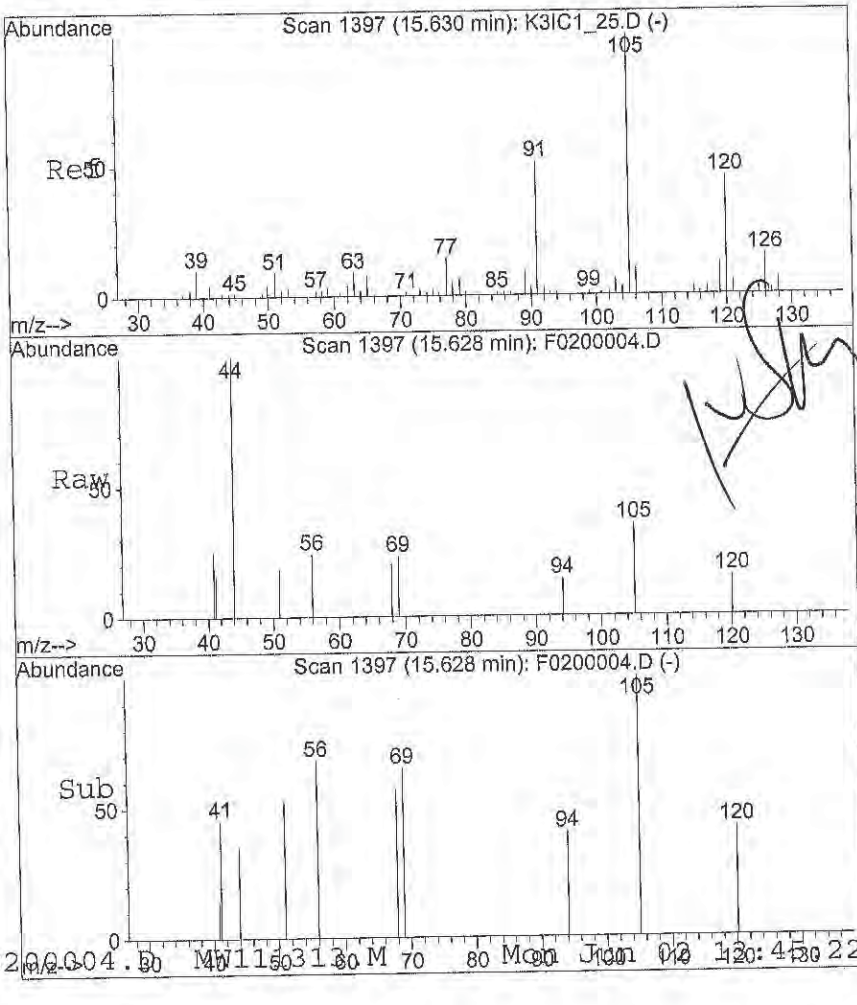


#63
2-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.60 min Scan# 1394
Delta R.T. -0.01 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 91 Resp: 281

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.0	36.0#

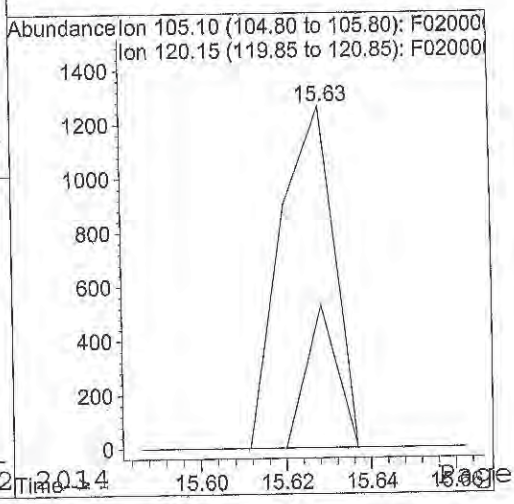


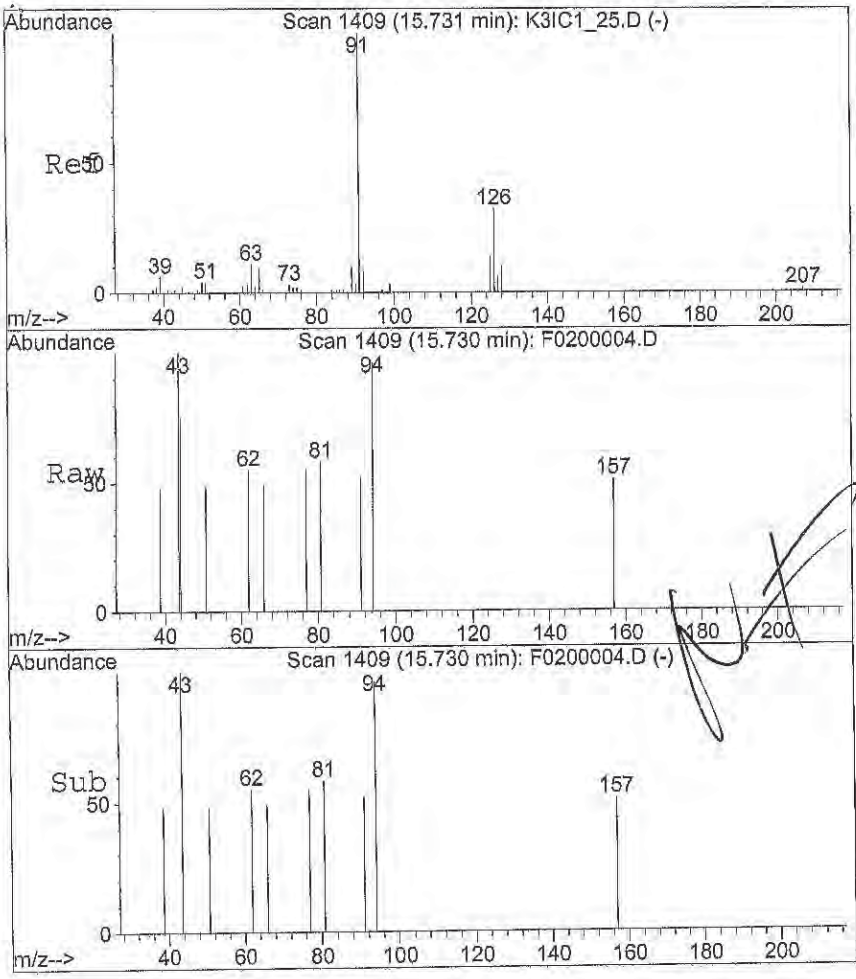


#64
1,3,5-Trimethylbenzene
Concen: 0.07 ug/L
RT: 15.63 min Scan# 1397
Delta R.T. -0.00 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion:105 Resp: 1099

Ion	Ratio	Lower	Upper
105	100		
120	24.3	36.4	54.6#

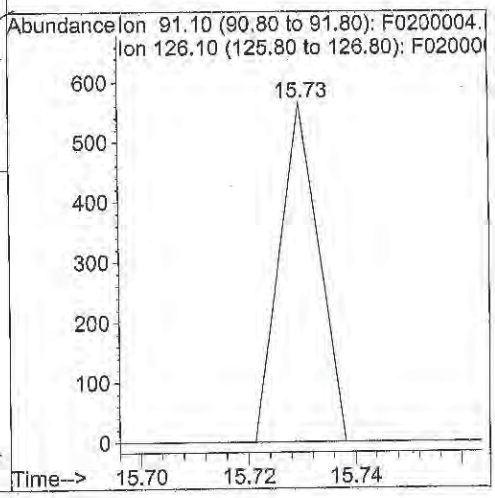


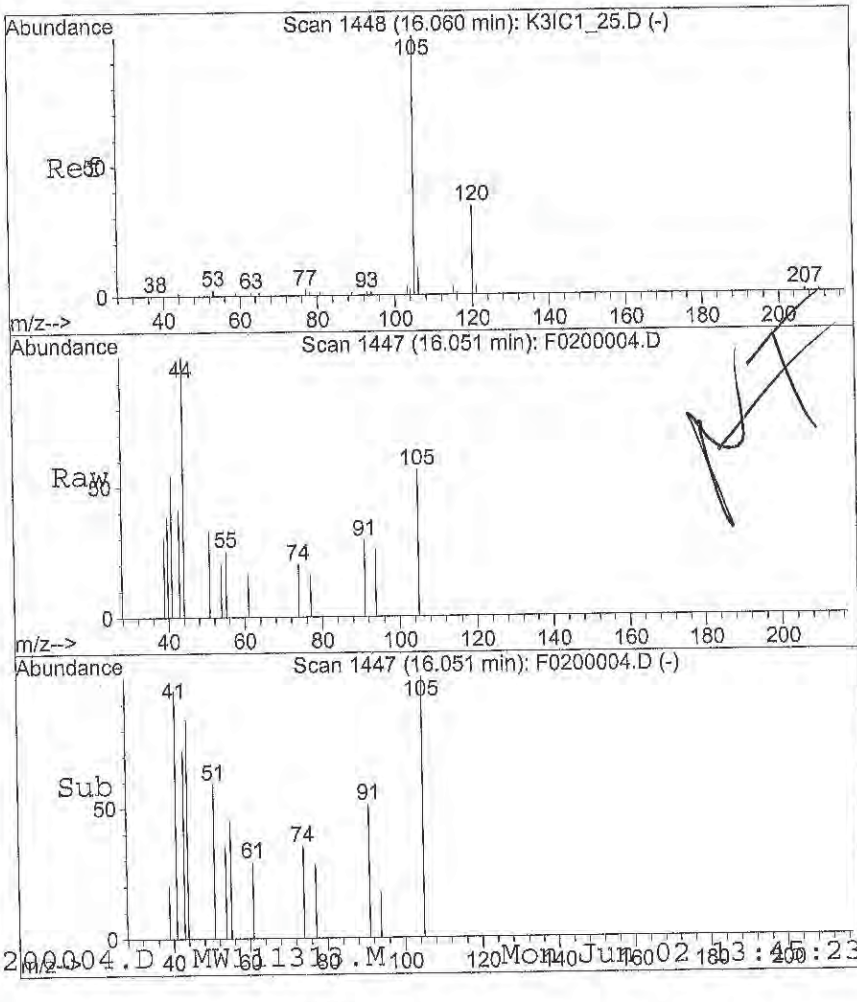


#65
4-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.73 min Scan# 1409
Delta R.T. -0.00 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion: 91 Resp: 287

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.6	36.8#

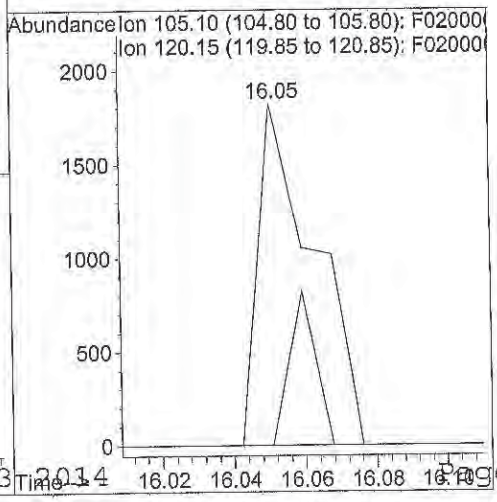


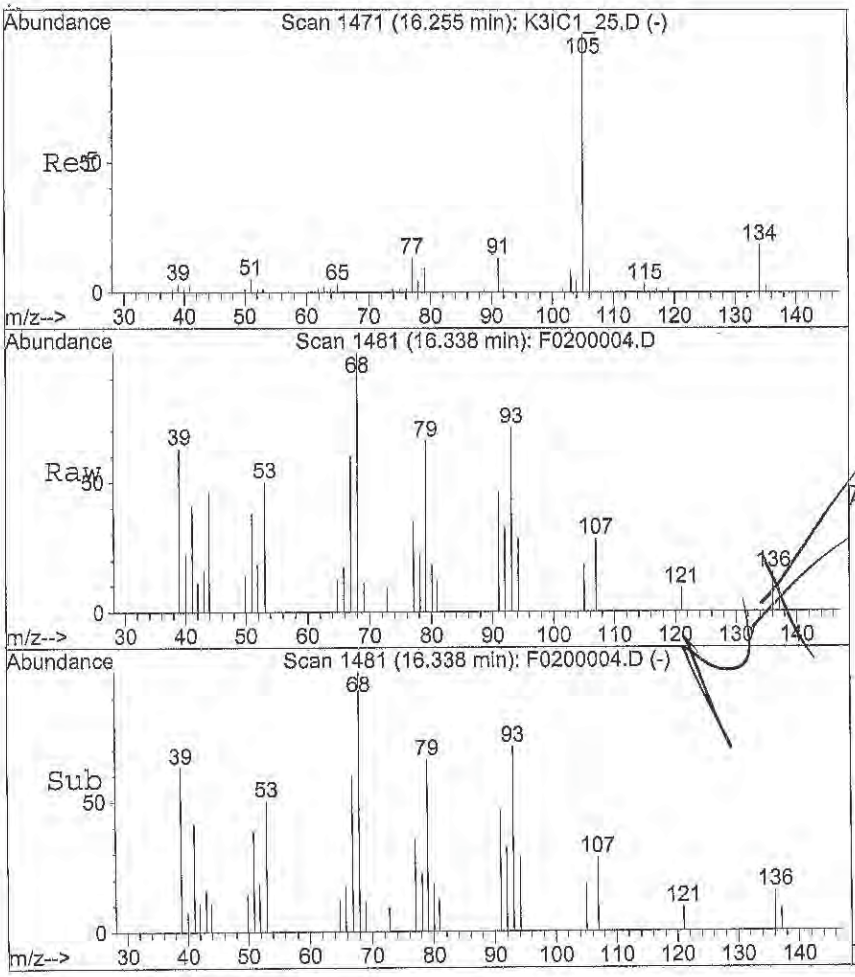


#67
1,2,4-Trimethylbenzene
Concen: 0.12 ug/L
RT: 16.05 min Scan# 1447
Delta R.T. -0.01 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion:105 Resp: 1977

Ion	Ratio	Lower	Upper
105	100		
120	21.1	33.8	50.8#

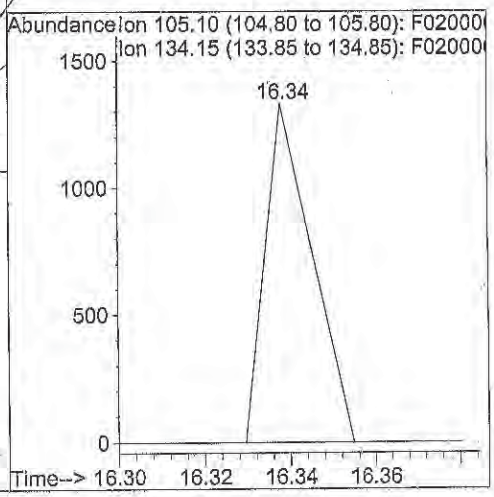


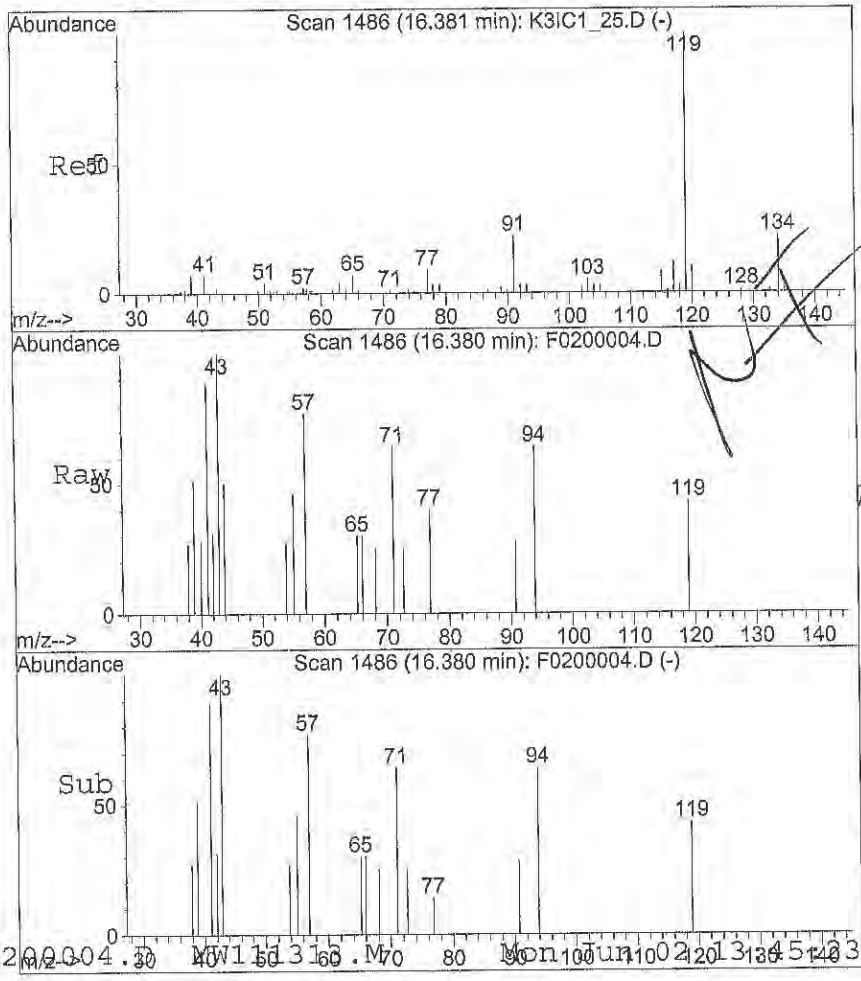


#68
sec-Butylbenzene
Concen: 0.05 ug/L
RT: 16.34 min Scan# 1481
Delta R.T. 0.08 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion:105 Resp: 1008

Ion	Ratio	Lower	Upper
105	100		
134	0.0	13.0	19.6#

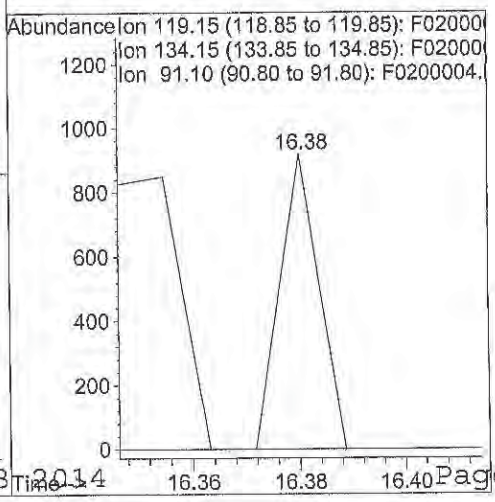


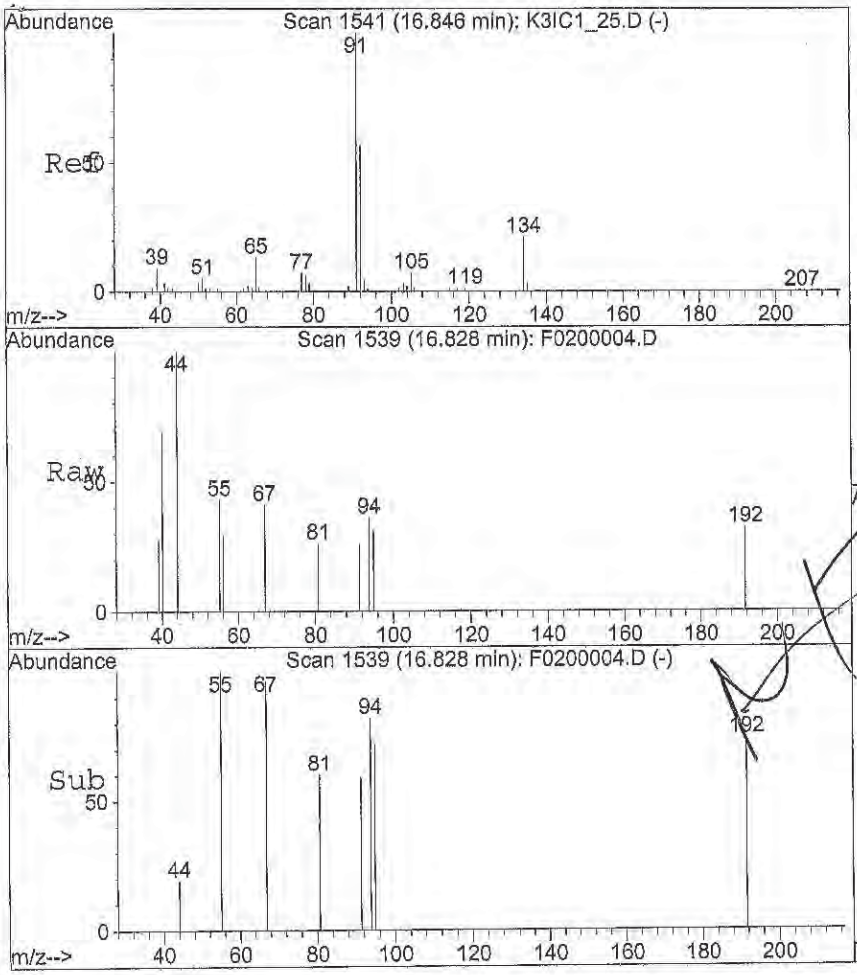


#69
p-Isopropyltoluene
Concen: 0.03 ug/L
RT: 16.38 min Scan# 1486
Delta R.T. -0.00 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

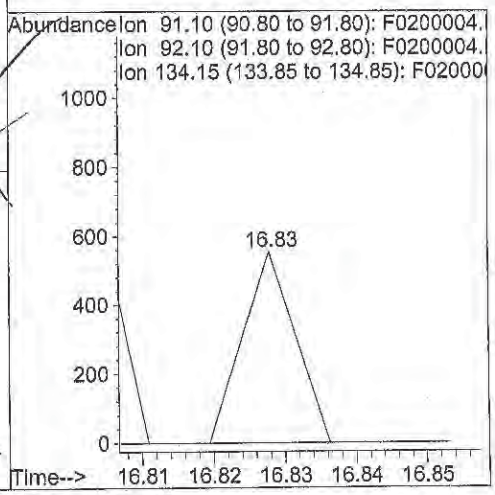


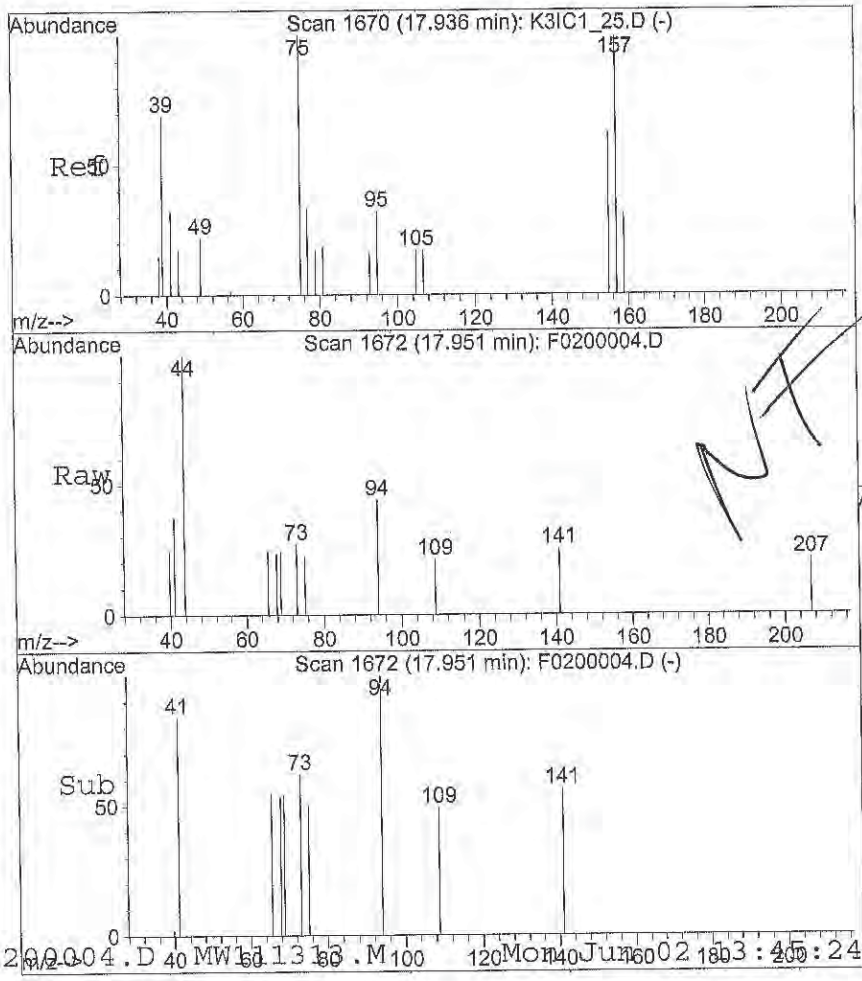


#72
n-Butylbenzene
Concen: 0.02 ug/L
RT: 16.83 min Scan# 1539
Delta R.T. -0.02 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

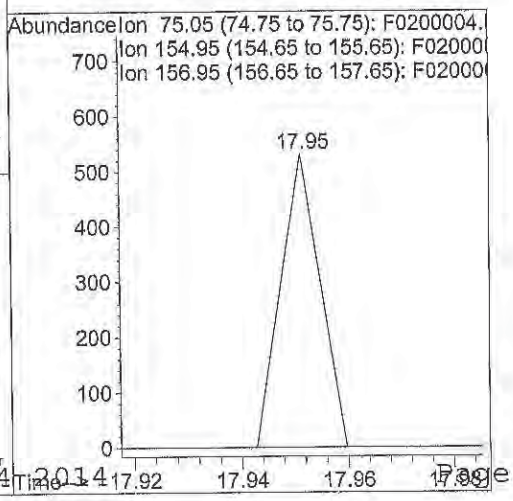


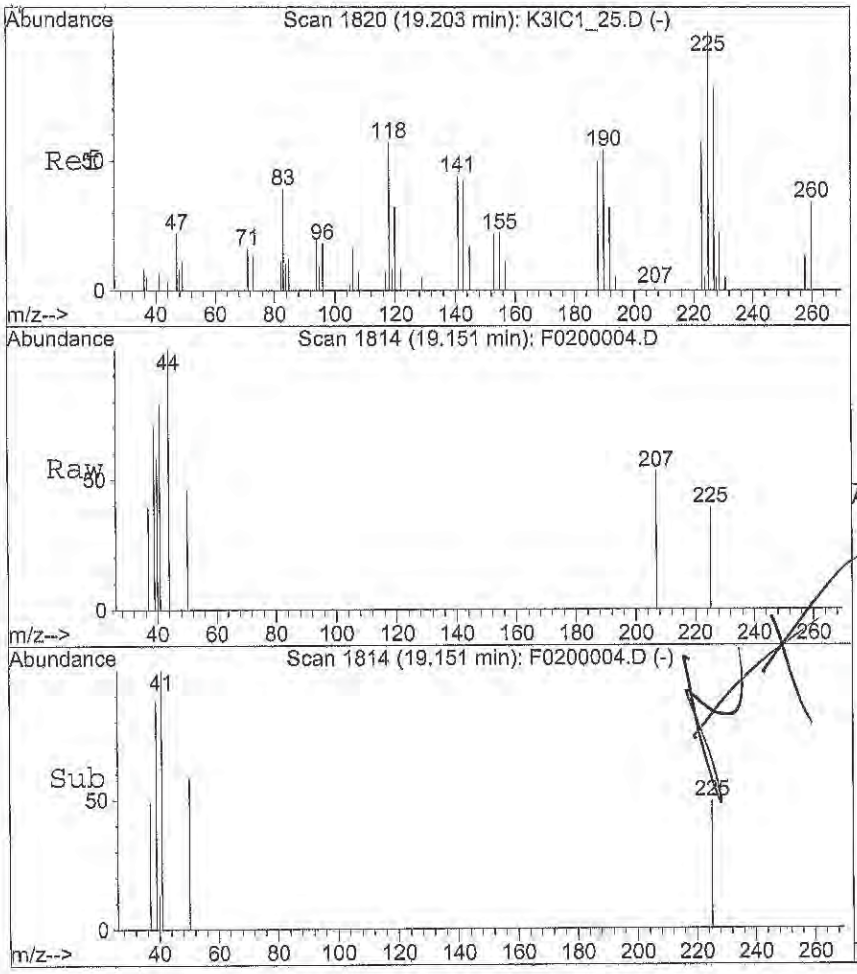


#74
1,2-Dibromo-3-chloropropane
Concen: 1.26 ug/L
RT: 17.95 min Scan# 1672
Delta R.T. 0.02 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

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#

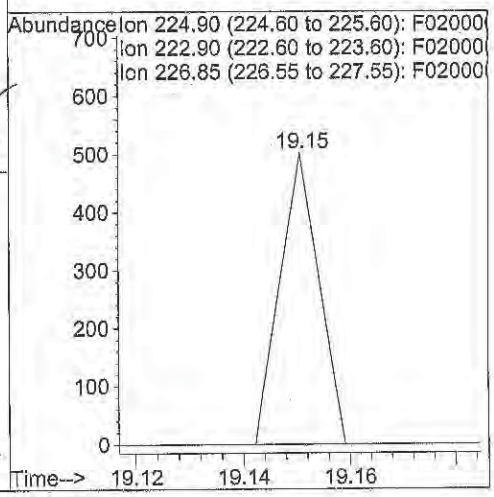


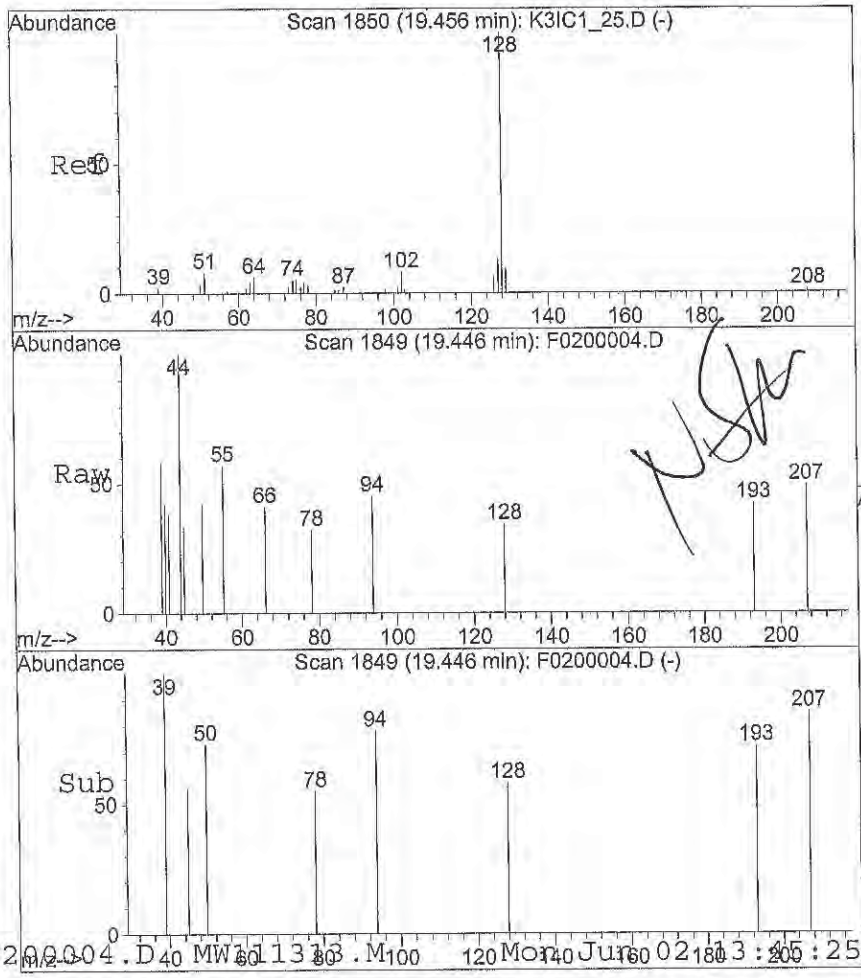


#76
Hexachlorobutadiene
Concen: 0.24 ug/L
RT: 19.15 min Scan# 1814
Delta R.T. -0.05 min
Lab File: F0200004.D
Acq: 2 Jun 2014 1:21 pm

Tgt Ion:225 Resp: 254

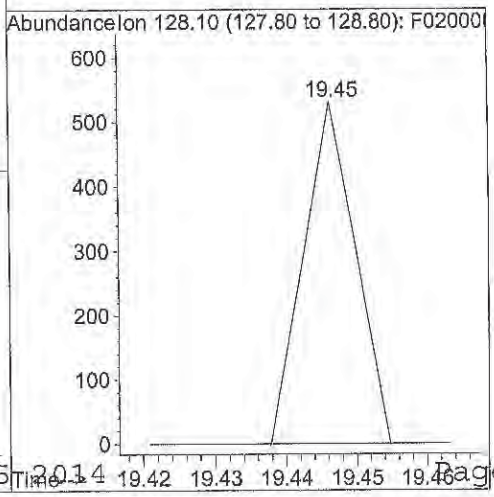
Ion	Ratio	Lower	Upper
225	100		
223	0.0	52.0	78.0#
227	0.0	50.6	75.8#





#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



Quantitation Report (QT Reviewed)

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%			

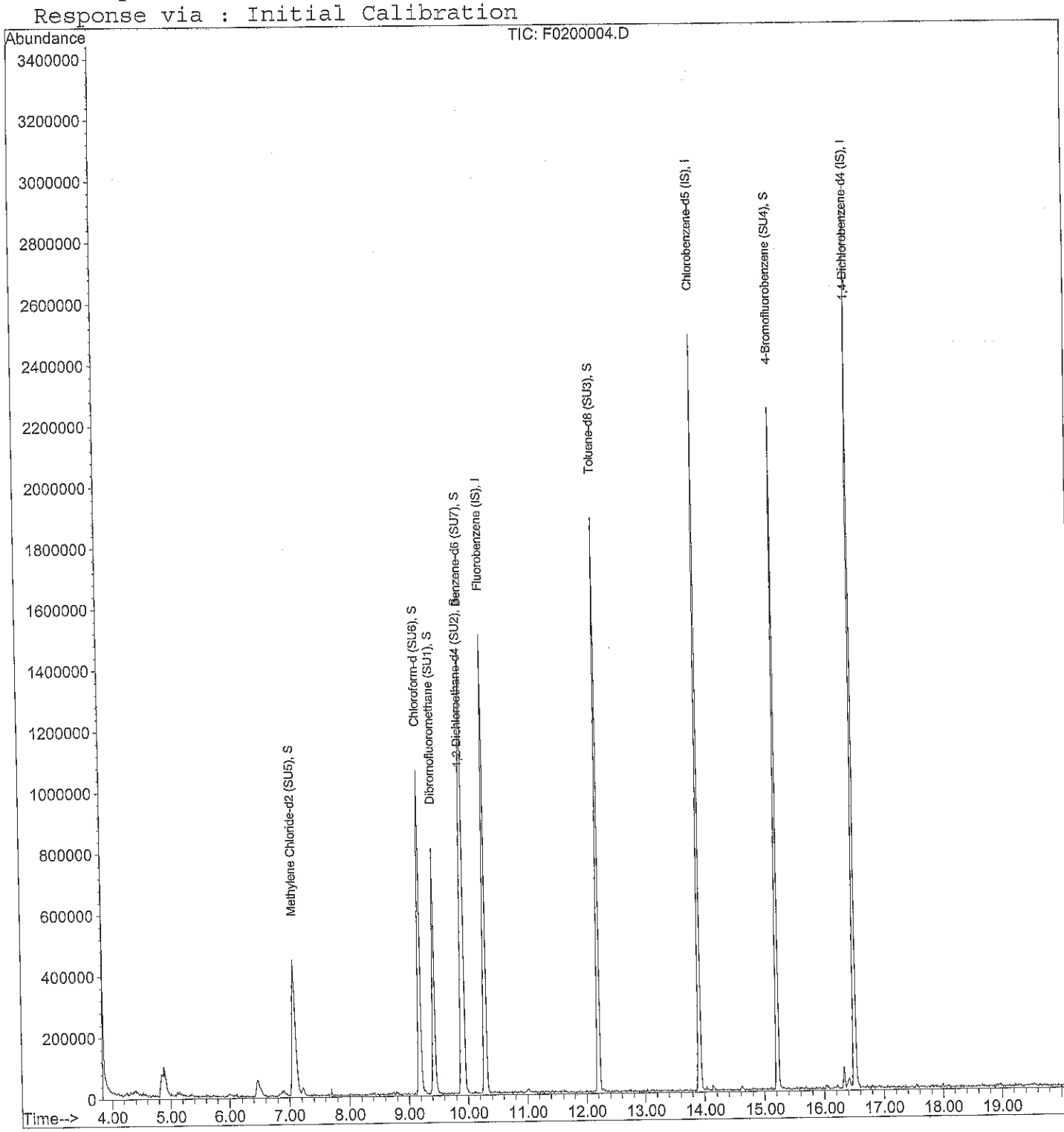
Target Compounds Qvalue

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

Quantitation Report

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

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



Quantitation Report (QT Reviewed)

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

Quantitation Report (QT Reviewed)

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

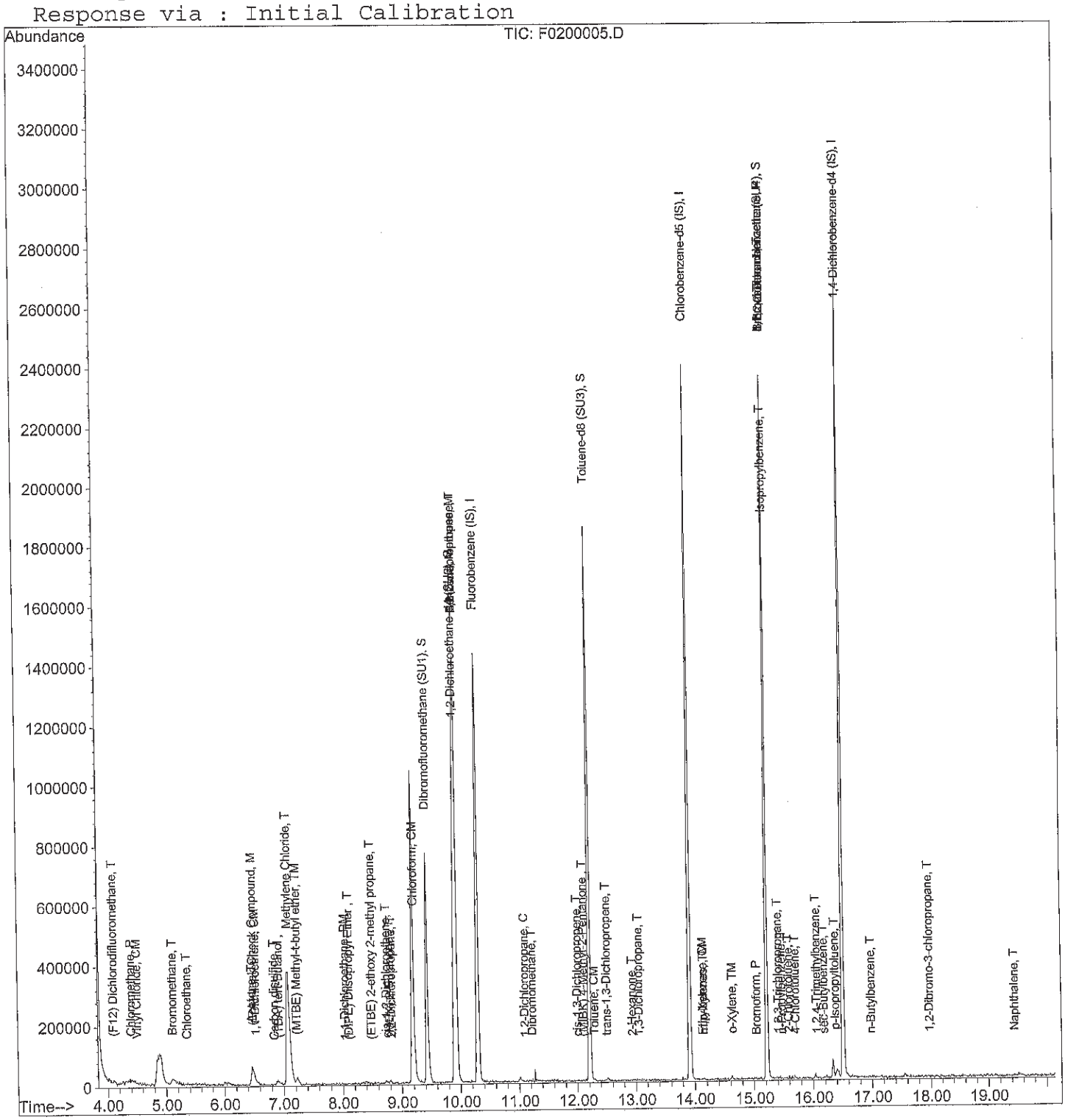
Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
Title : 8260B GC/MS #3 ICAL 11/13/13 DN
Last Update : Wed Nov 13 19:38:32 2013
Response via : Initial Calibration
DataAcq Meth : MW111313

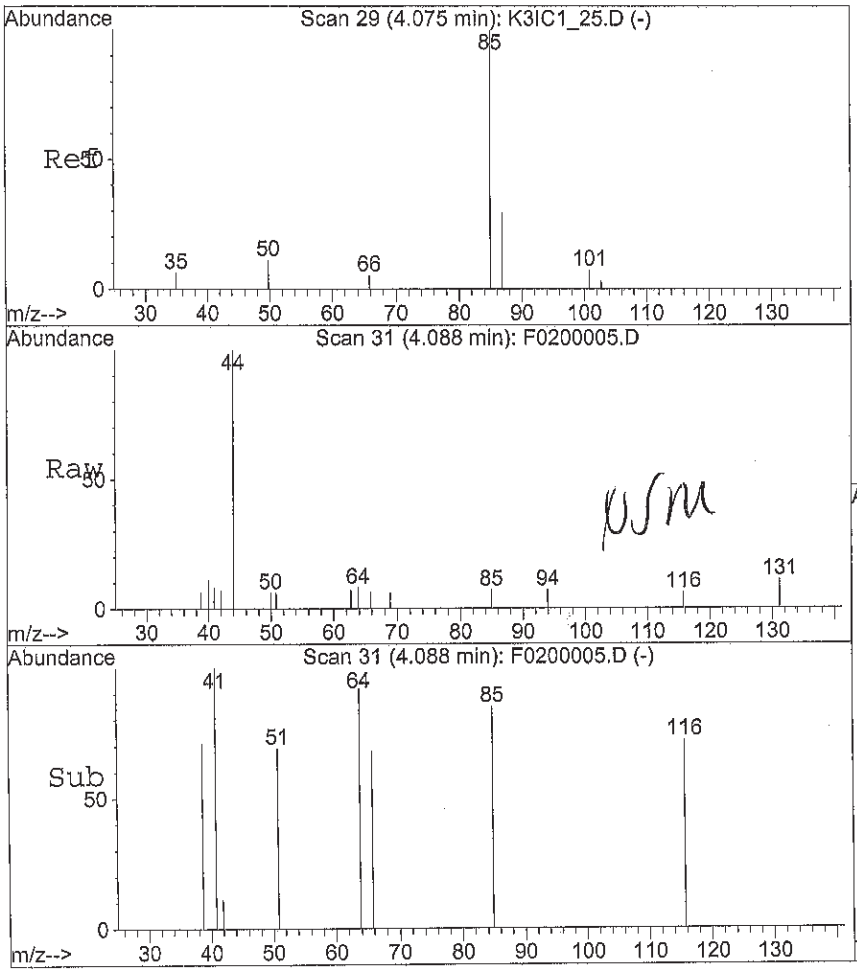
Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
34) 1,2-Dichloropropane	11.09	63	299	0.11	ug/L	#	39
35) Dibromomethane	11.22	93	268	0.12	ug/L	#	5
37) cis-1,3-Dichloropropene	12.00	75	273	0.06	ug/L	#	1
40) (MIBK) 4-Methyl-2-Pentanon	12.10	43	504	0.22	ug/L	#	100
41) Toluene	12.29	91	1541	0.10	ug/L	#	74
42) 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		65
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

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

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

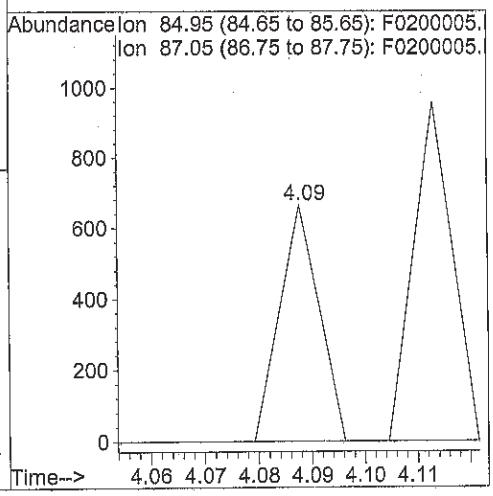


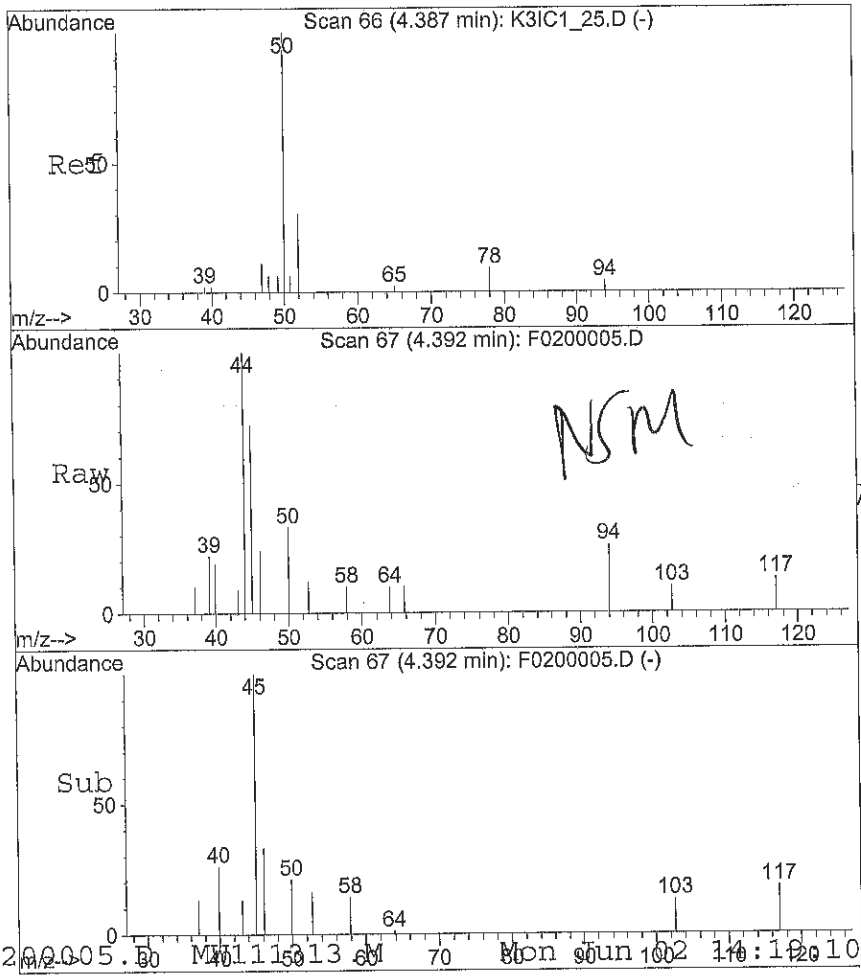


#3
(F12) Dichlorodifluoromethane
Concen: 0.11 ug/L
RT: 4.09 min Scan# 31
Delta R.T. 0.01 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 85 Resp: 337

Ion	Ratio	Lower	Upper
85	100		
87	0.0	24.6	37.0#

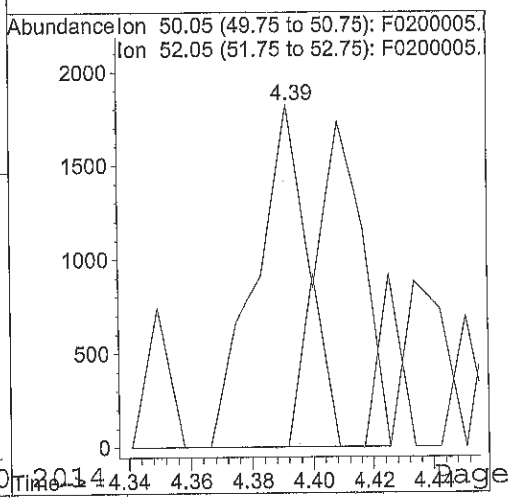


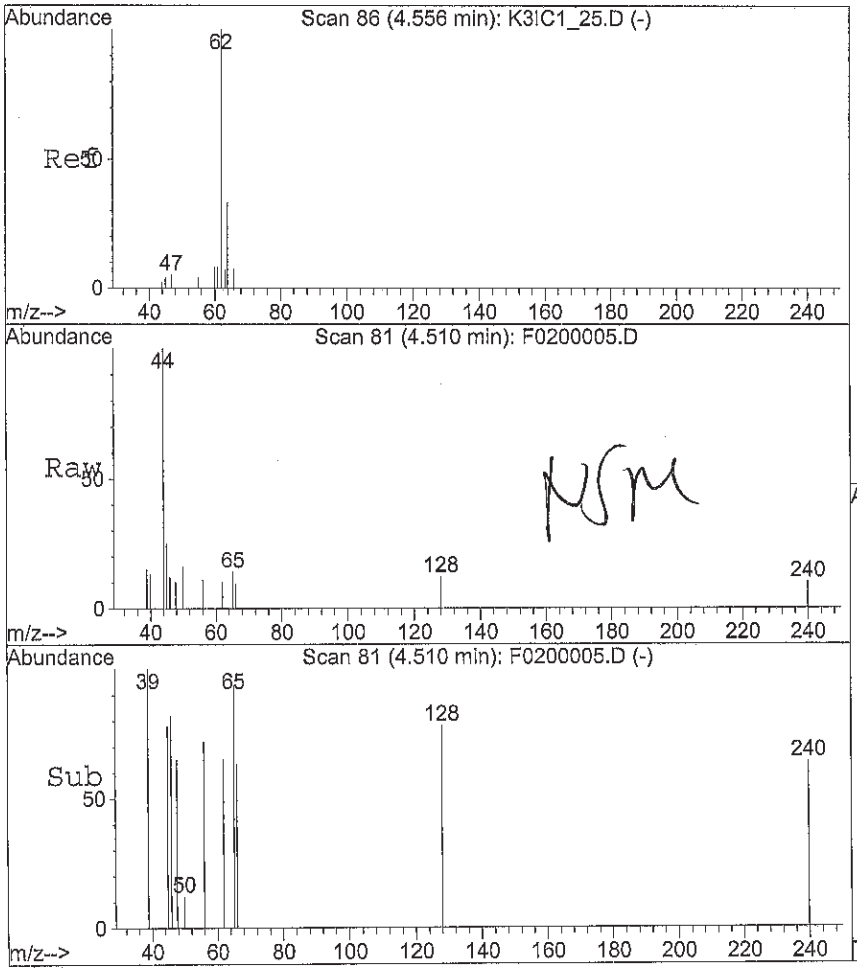


#4
Chloromethane
Concen: 0.50 ug/L
RT: 4.39 min Scan# 67
Delta R.T. 0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 50 Resp: 3615

Ion	Ratio	Lower	Upper
50	100		
52	12.9	26.9	40.3#

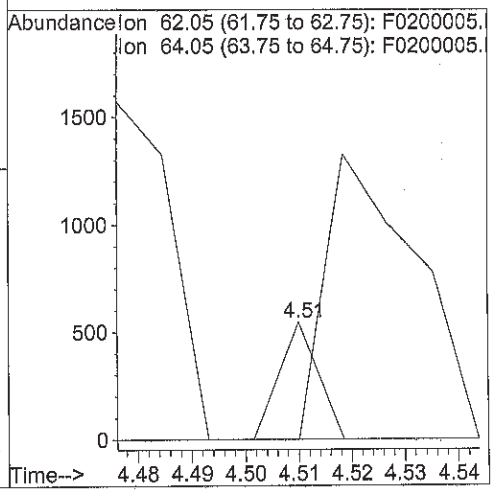


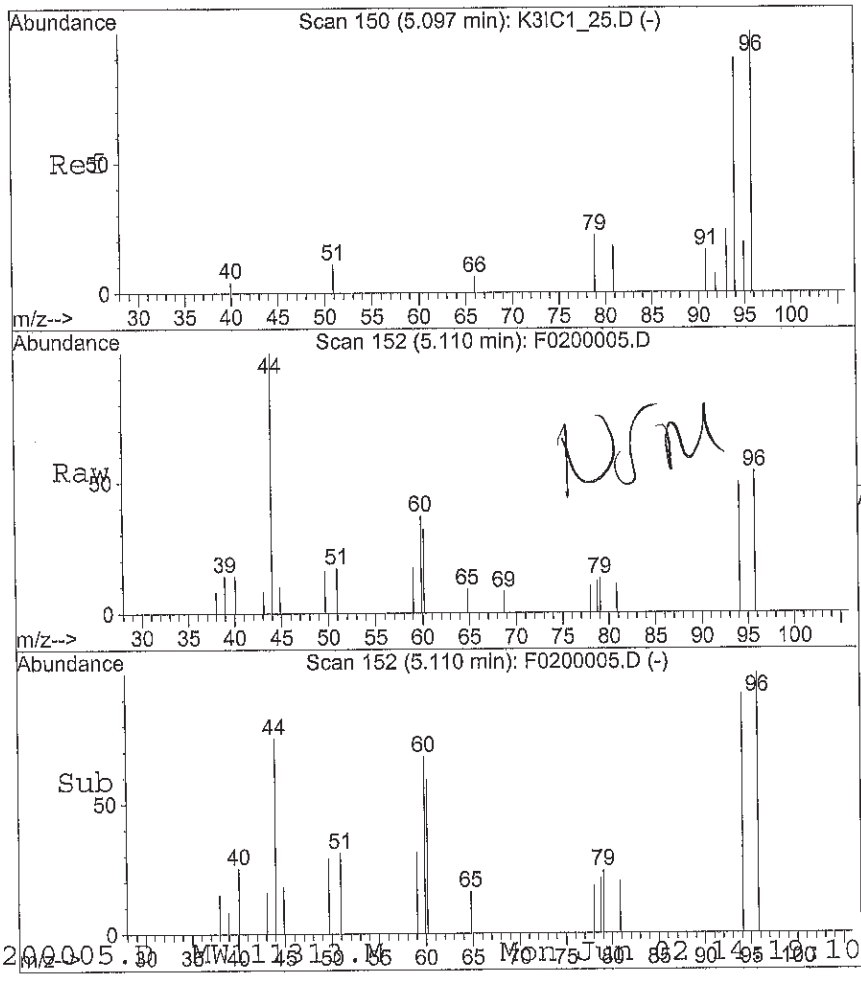


#5
Vinyl Chloride
Concen: 0.13 ug/L
RT: 4.51 min Scan# 81
Delta R.T. -0.05 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 62 Resp: 276

Ion	Ratio	Lower	Upper
62	100		
64	570.7	25.6	38.4#

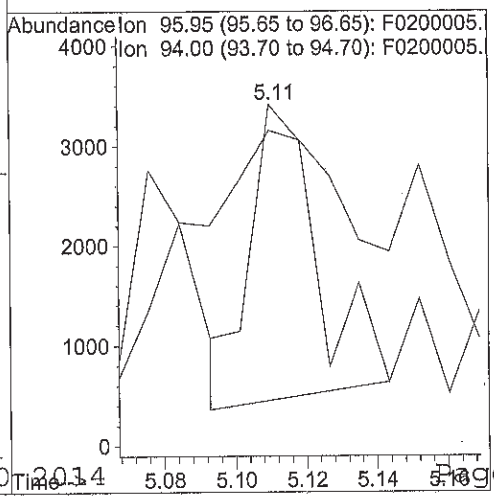


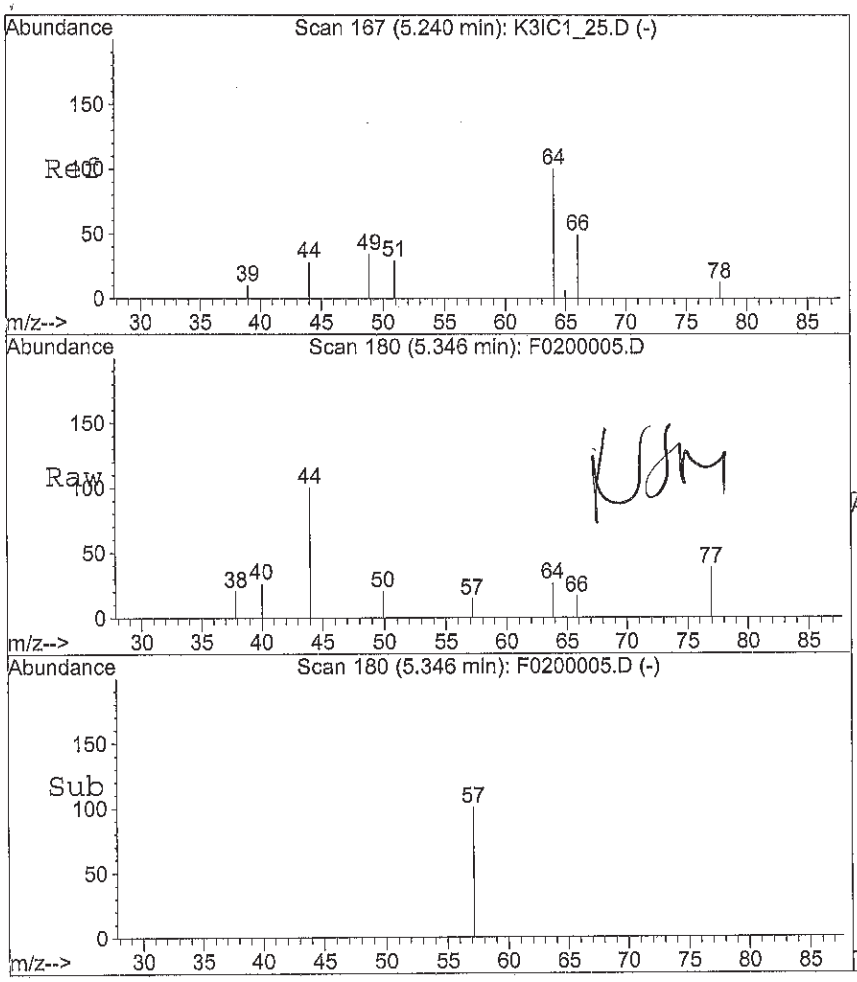


#6
Bromomethane
Concen: 1.05 ug/L
RT: 5.11 min Scan# 152
Delta R.T. 0.01 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 96 Resp: 3887

Ion	Ratio	Lower	Upper
96	100		
94	335.3	101.0	151.4#

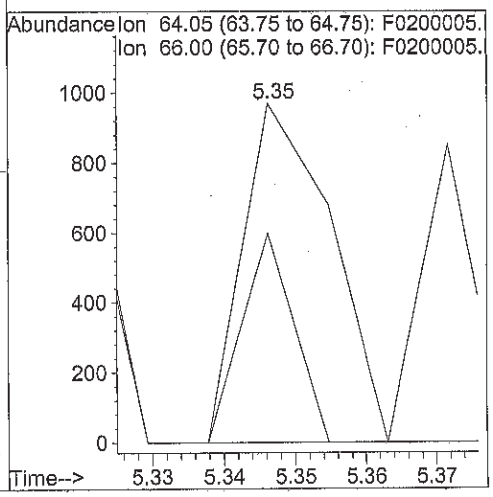


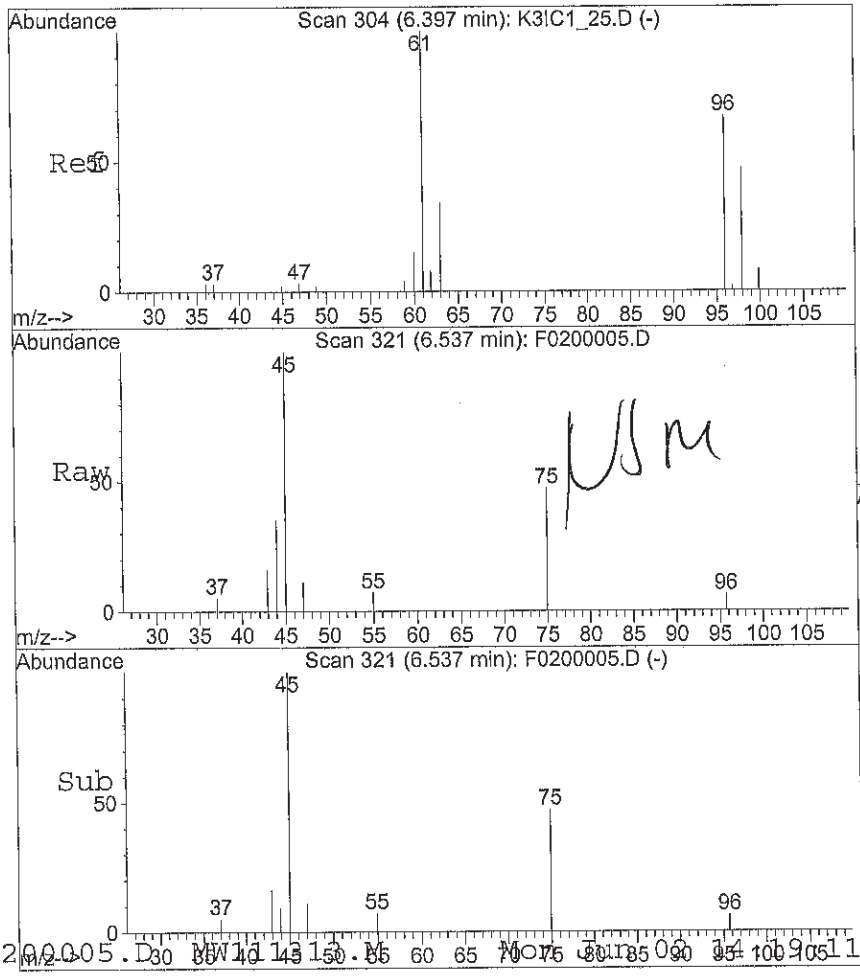


#7
Chloroethane
Concen: 1.49 ug/L
RT: 5.35 min Scan# 180
Delta R.T. 0.11 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 64 Resp: 836

Ion	Ratio	Lower	Upper
64	100		
66	36.2	35.4	53.0

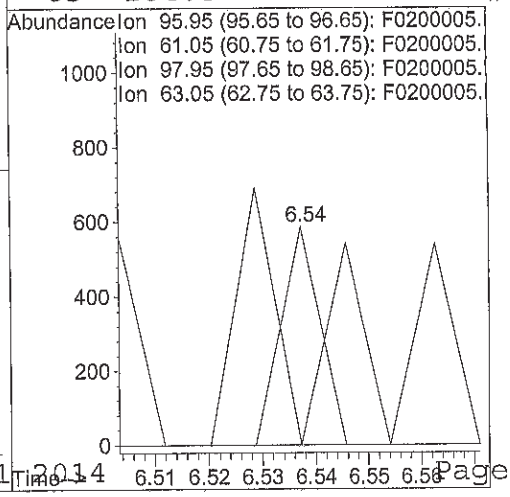


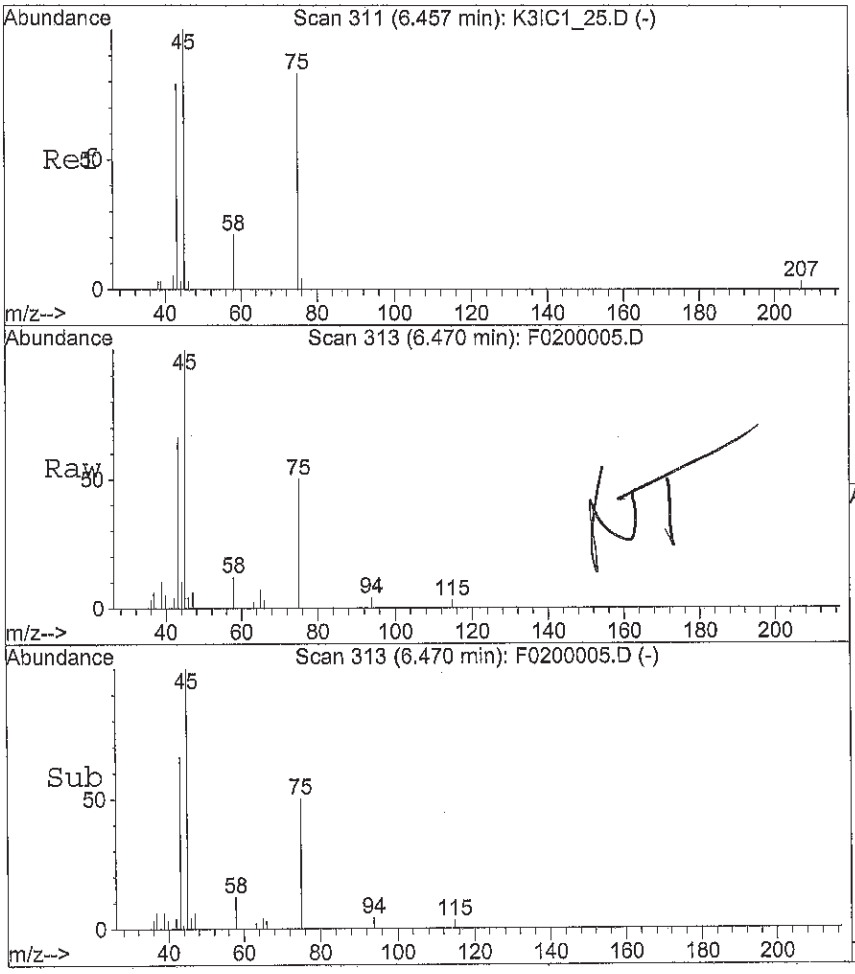


#10
1,1-Dichloroethene
Concen: 0.10 ug/L
RT: 6.54 min Scan# 321
Delta R.T. 0.14 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

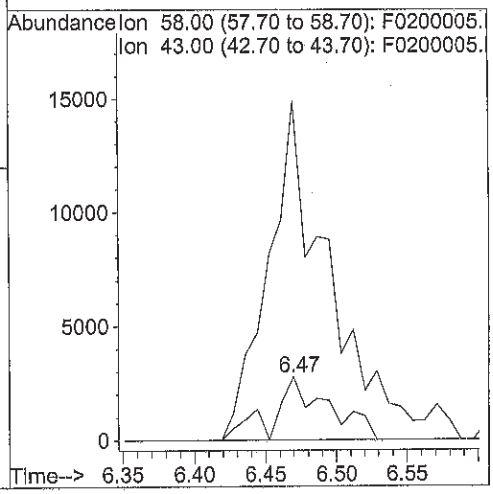


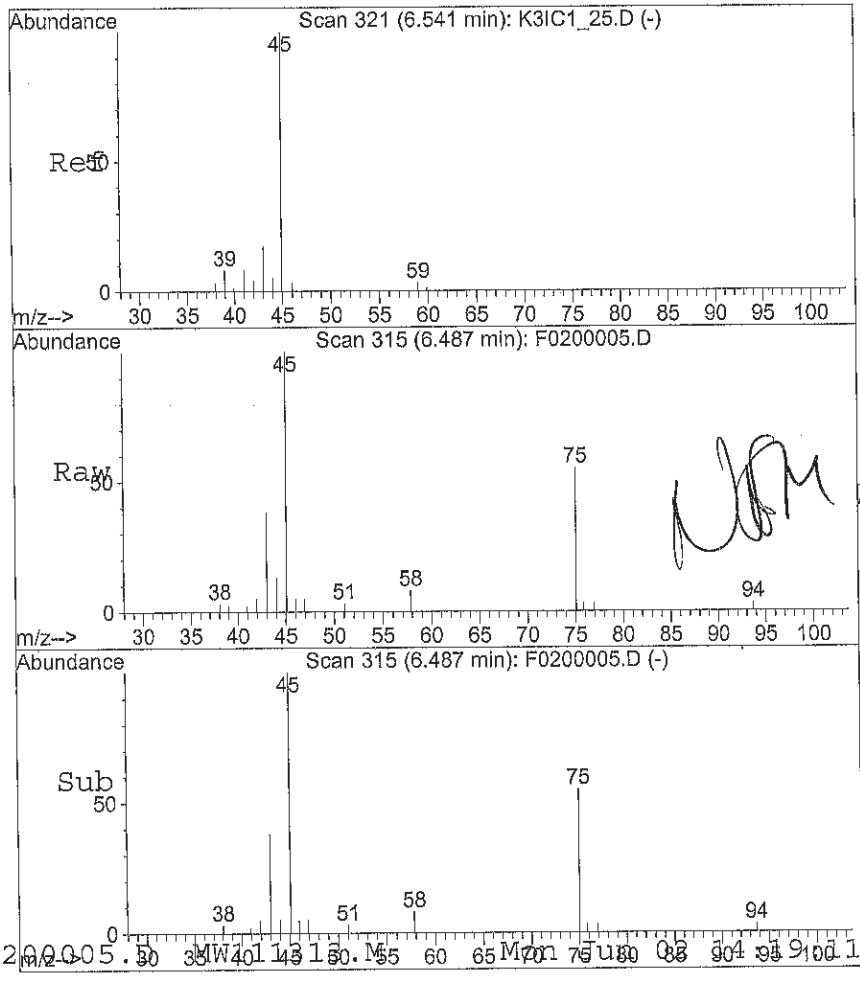


#11
Acetone
Concen: 11.35 ug/L
RT: 6.47 min Scan# 313
Delta R.T. 0.01 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 58 Resp: 7582

Ion	Ratio	Lower	Upper
58	100		
43	572.8	360.9	541.3#

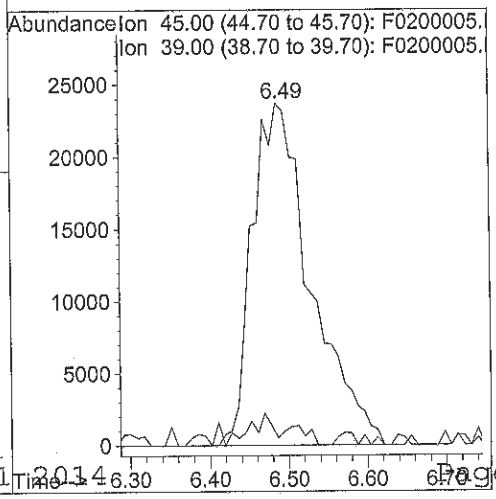


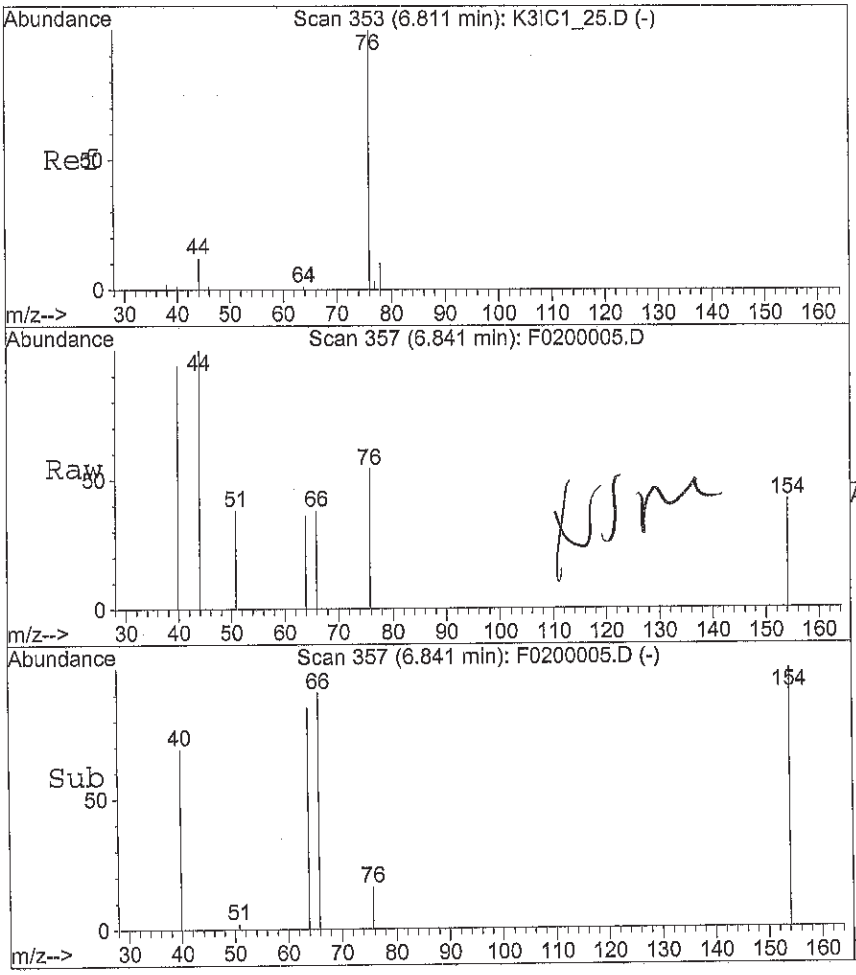


#12
(IPA) Leak Check Compound
Concen: 814.29 ug/L
RT: 6.49 min Scan# 315
Delta R.T. -0.05 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 45 Resp: 122248

Ion	Ratio	Lower	Upper
45	100		
39	3.7	4.9	7.3#

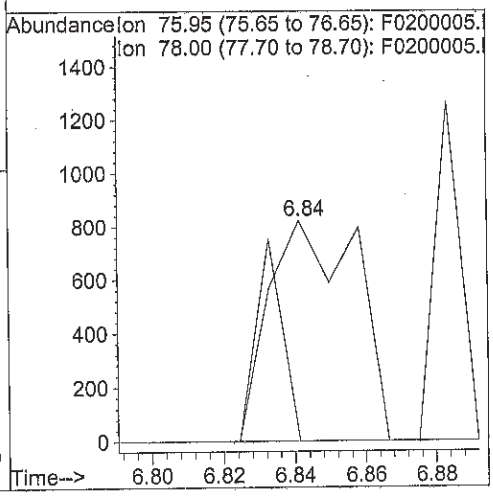


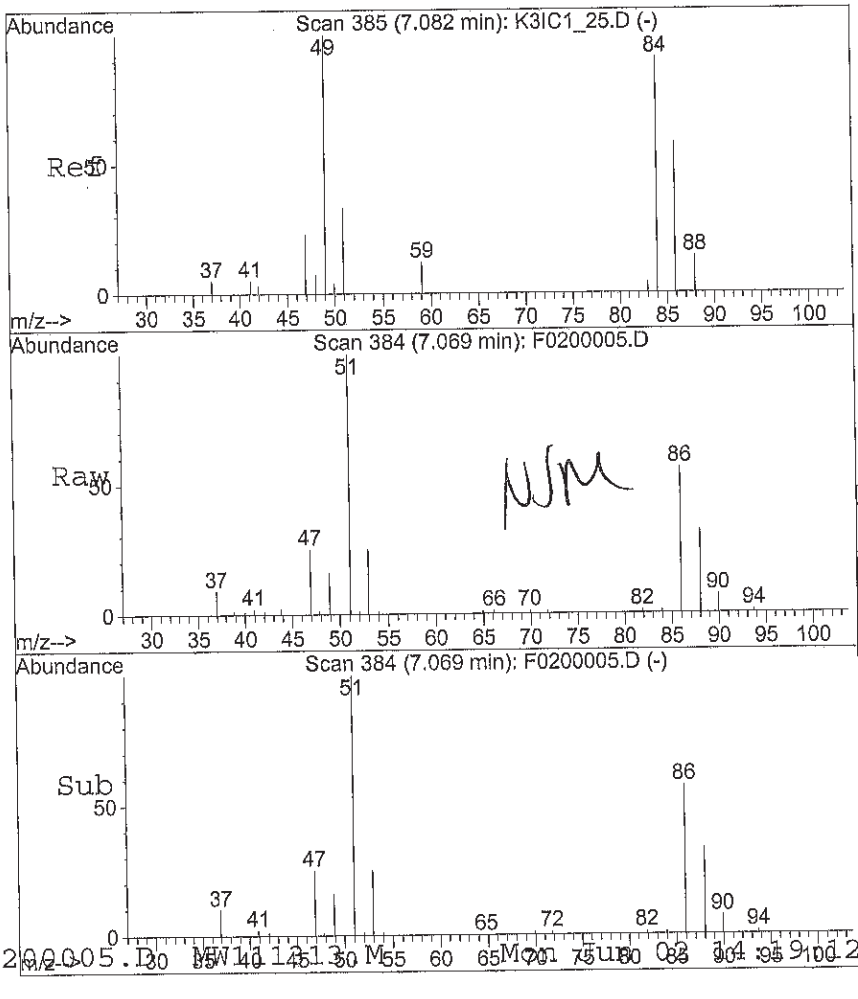


#13
Carbon disulfide
Concen: 0.14 ug/L
RT: 6.84 min Scan# 357
Delta R.T. 0.03 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 76 Resp: 1405

Ion	Ratio	Lower	Upper
76	100		
78	27.1	7.0	10.4#

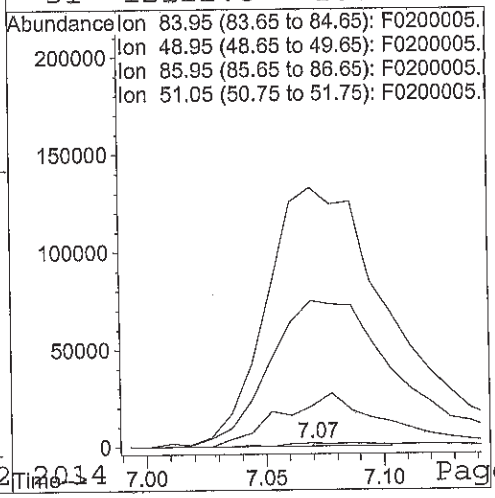


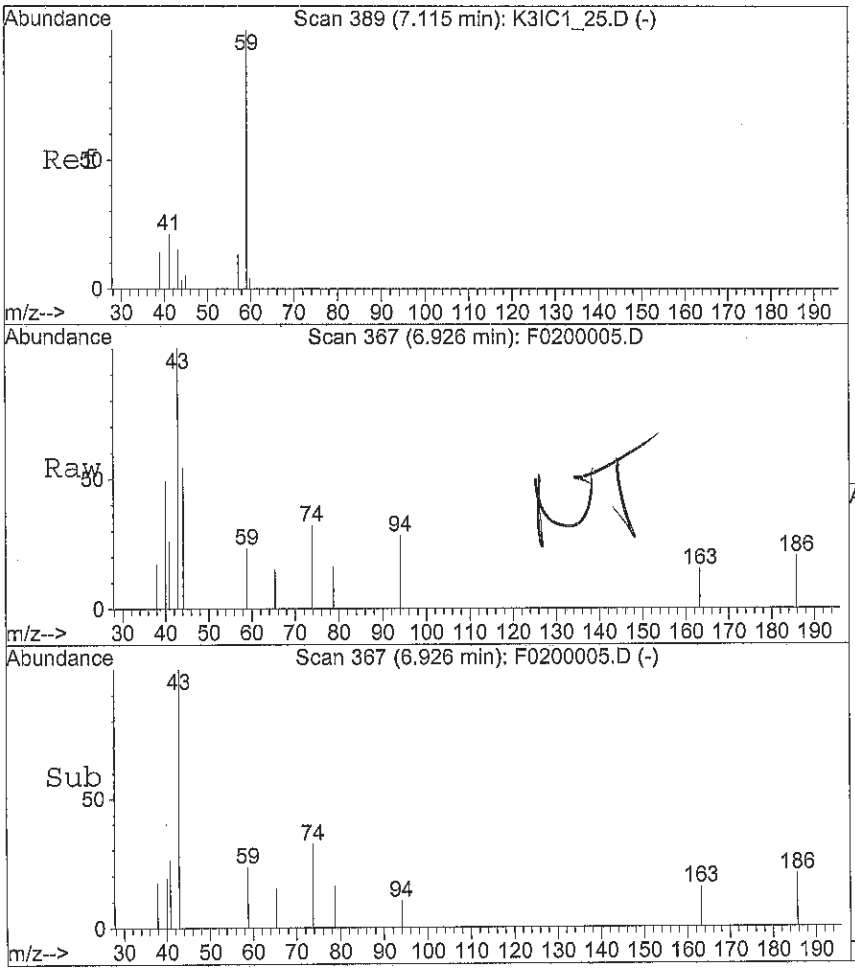


#14
Methylene Chloride
Concen: 1.22 ug/L
RT: 7.07 min Scan# 384
Delta R.T. -0.01 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

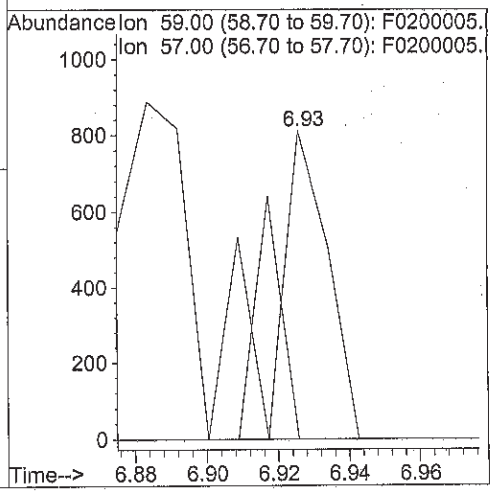


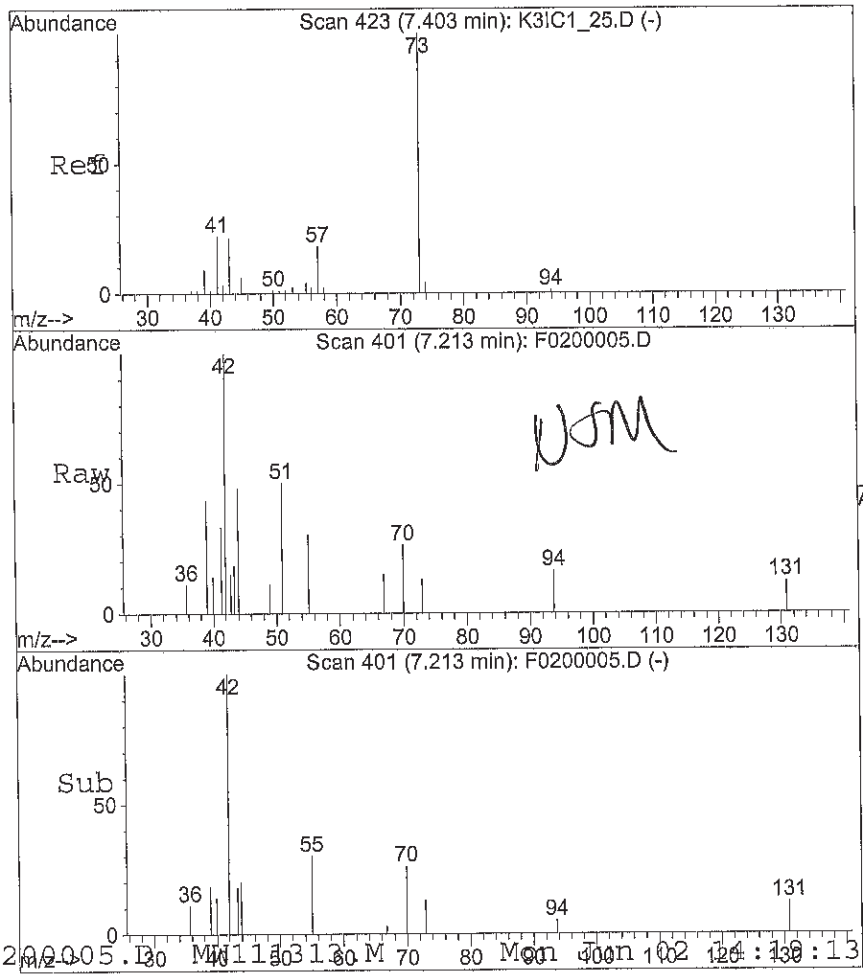


#15
(TBA) tert-Butanol
Concen: 4.40 ug/L
RT: 6.93 min Scan# 367
Delta R.T. -0.19 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 59 Resp: 938

Ion	Ratio	Lower	Upper
59	100		
57	34.5	6.4	9.6#

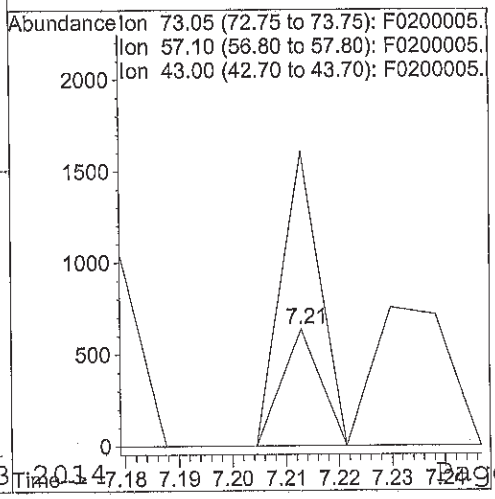


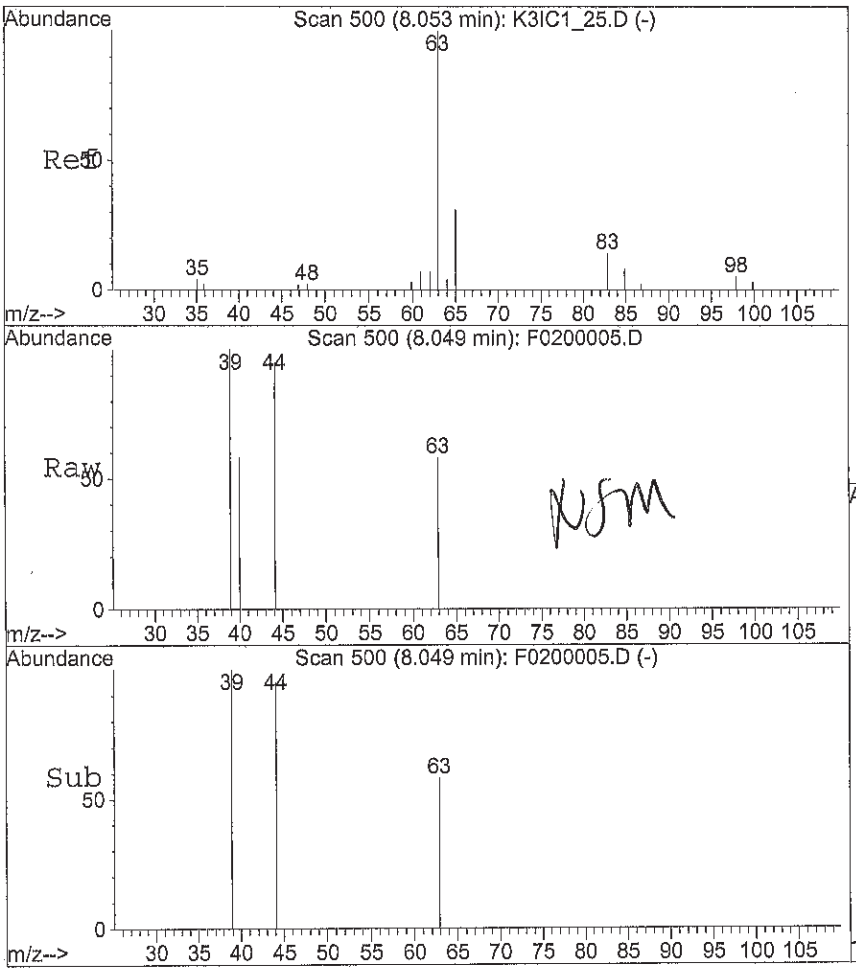


#16
(MTBE) Methyl-t-butyl ether
Concen: 0.05 ug/L
RT: 7.21 min Scan# 401
Delta R.T. -0.19 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

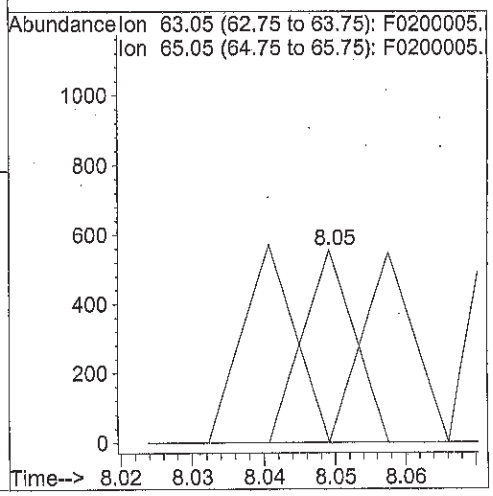


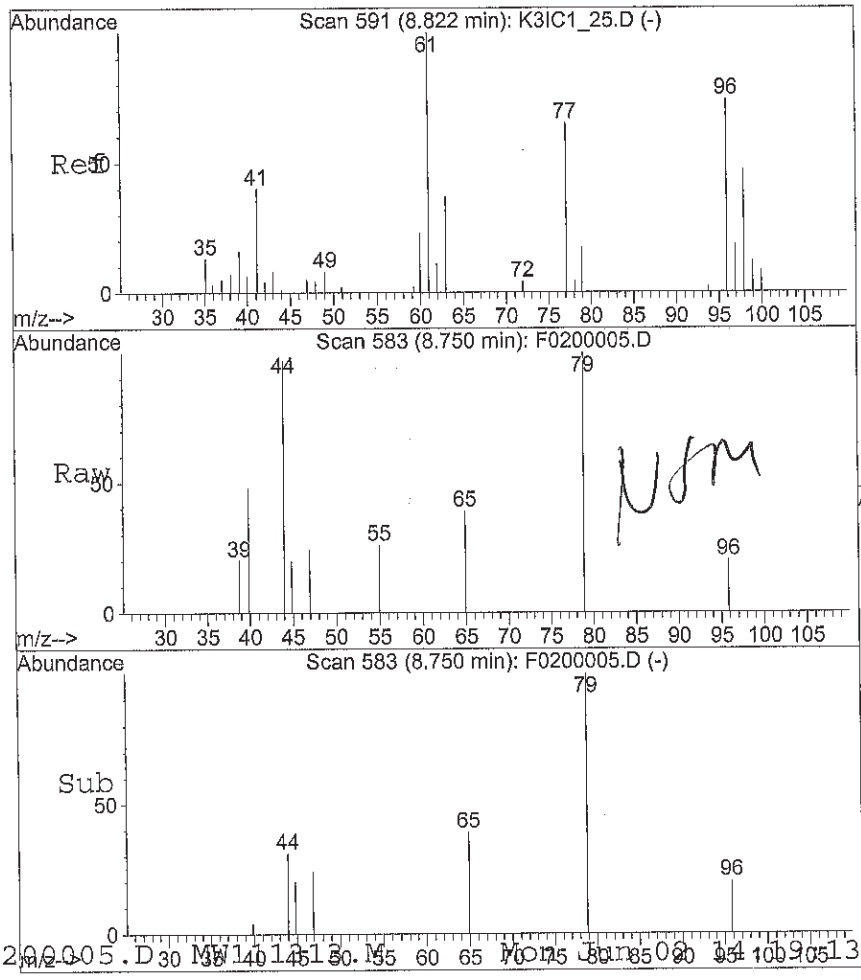


#18
1,1-Dichloroethane
Concen: 0.05 ug/L
RT: 8.05 min Scan# 500
Delta R.T. -0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 63 Resp: 282

Ion	Ratio	Lower	Upper
63	100		
65	201.1	25.8	38.8#

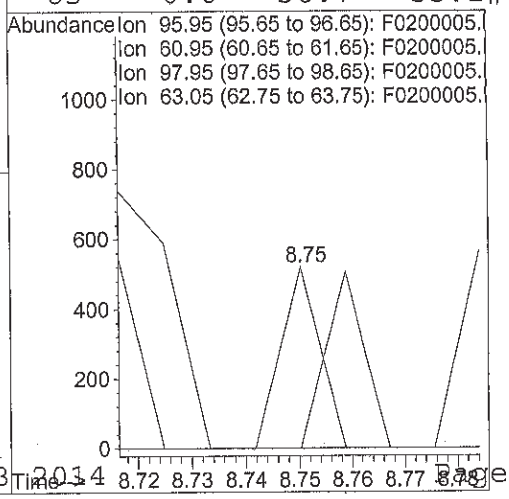


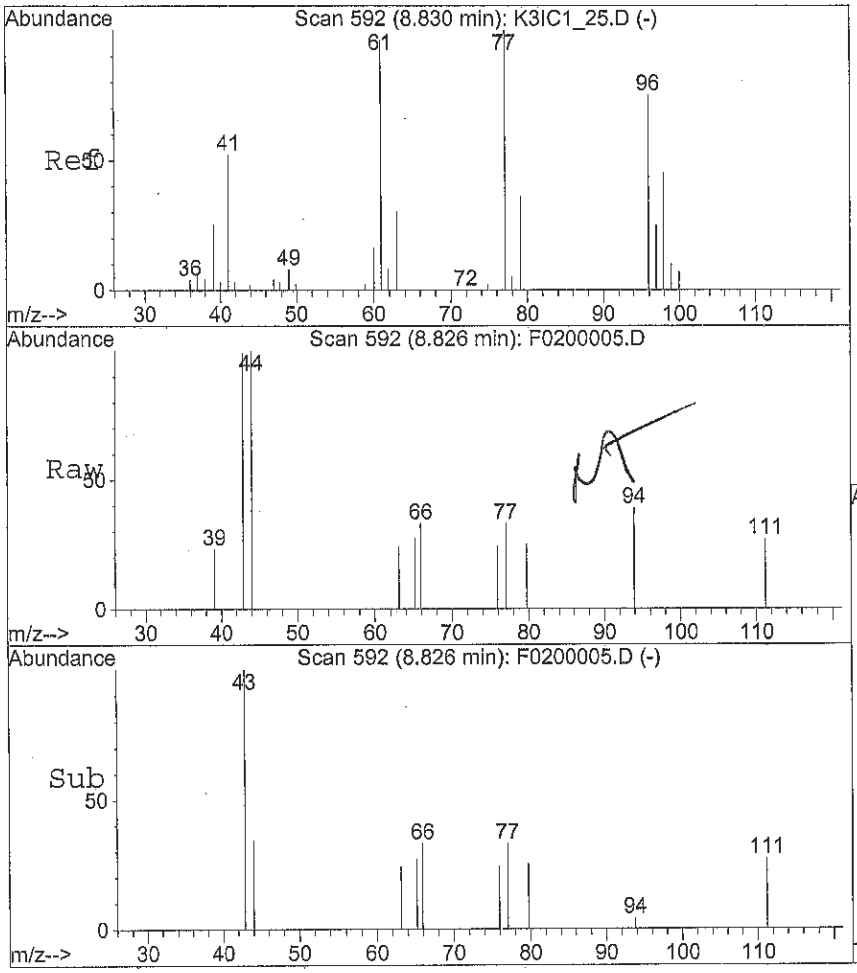


#19
cis-1,2-Dichloroethene
Concen: 0.07 ug/L
RT: 8.75 min Scan# 583
Delta R.T. -0.07 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

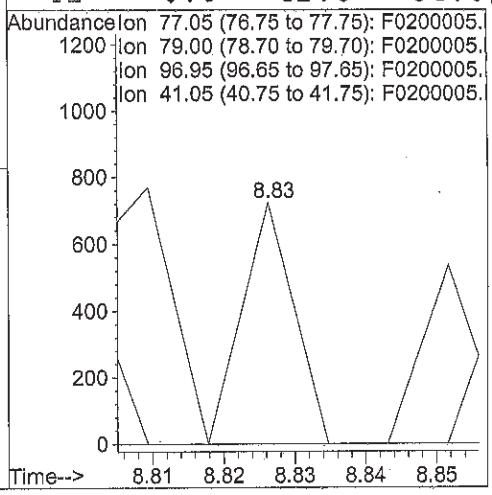


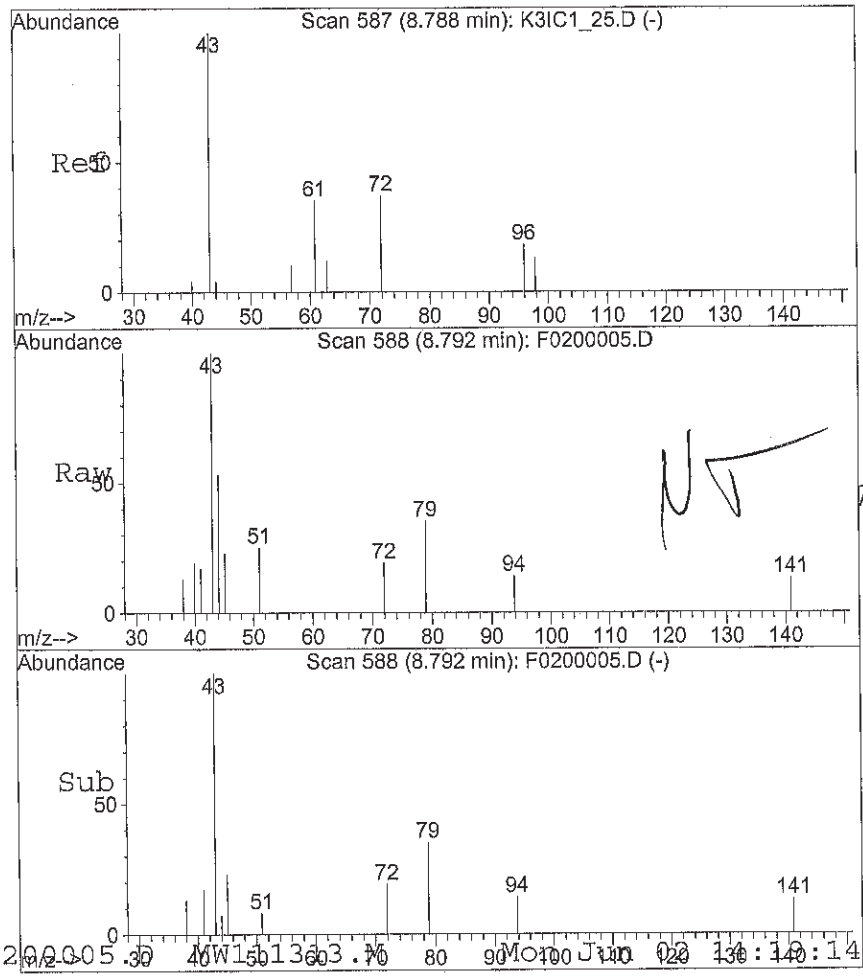


#20
2,2-Dichloropropane
Concen: 0.07 ug/L
RT: 8.83 min Scan# 592
Delta R.T. -0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

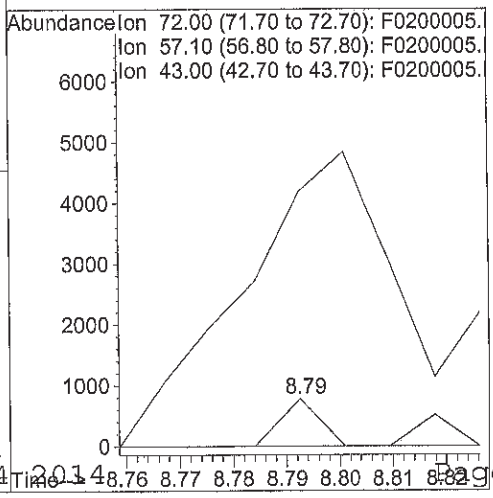


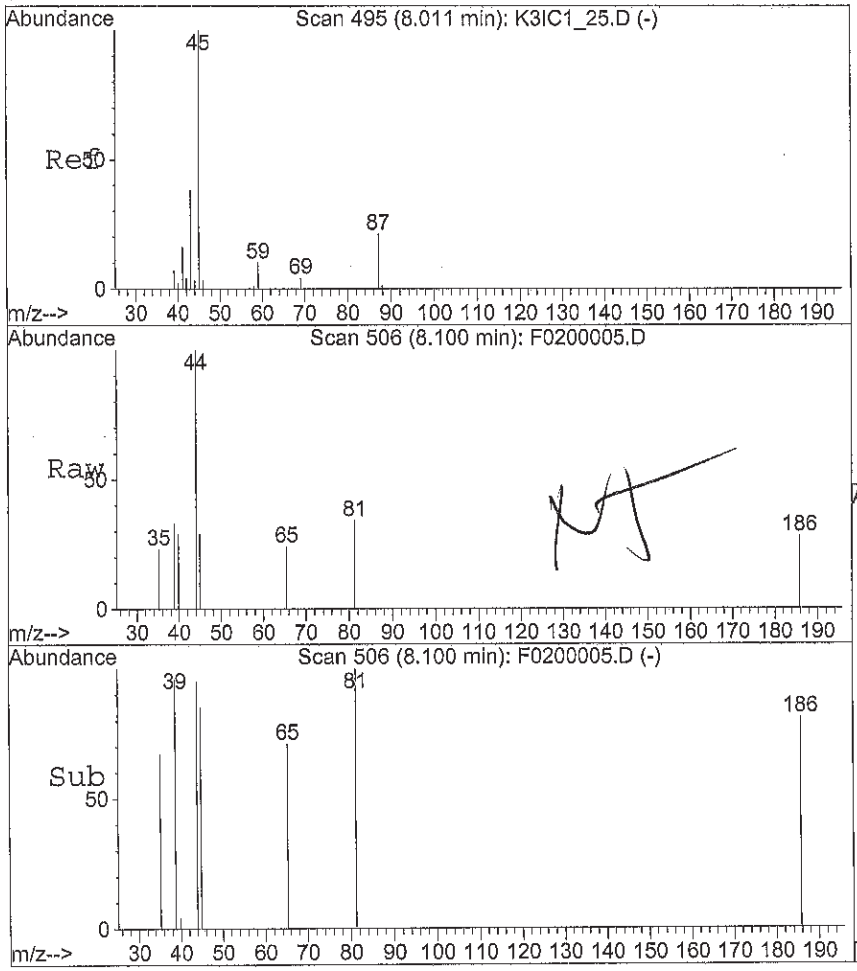


#21
(MEK) 2-Butanone
Concen: 1.13 ug/L
RT: 8.79 min Scan# 588
Delta R.T. 0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

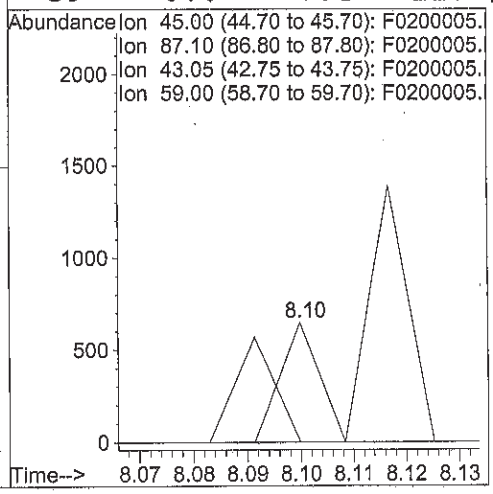


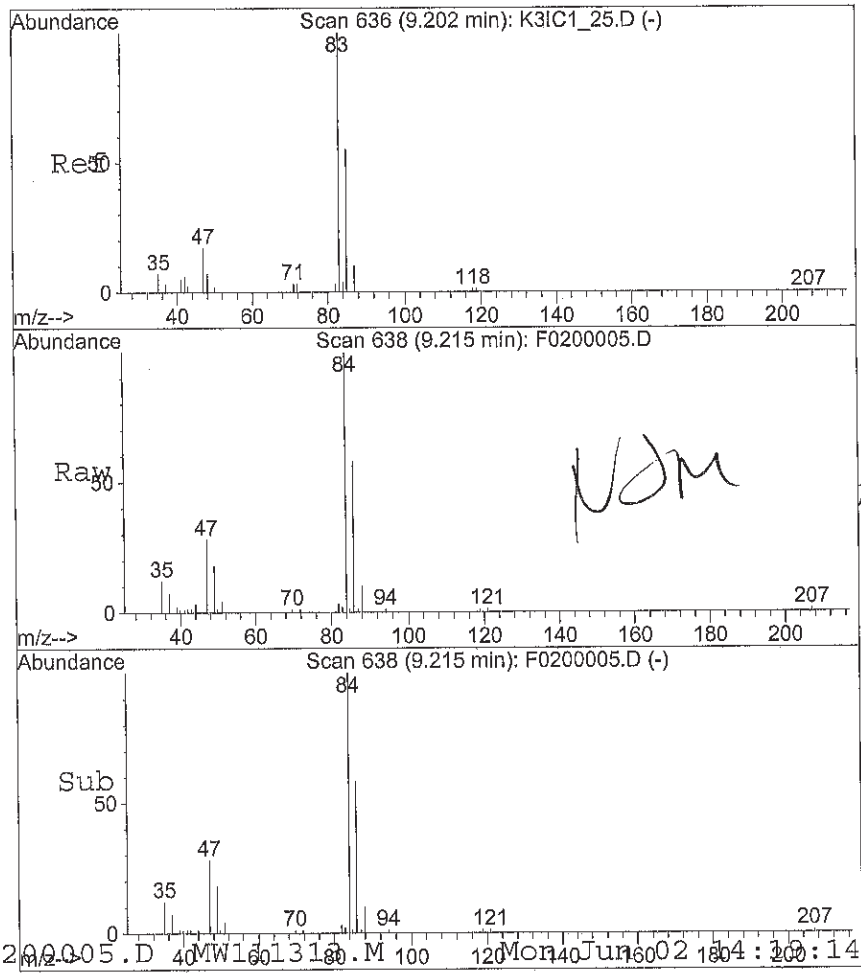


#22
(DIPE) Diisopropyl Ether
Concen: 0.03 ug/L
RT: 8.10 min Scan# 506
Delta R.T. 0.09 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

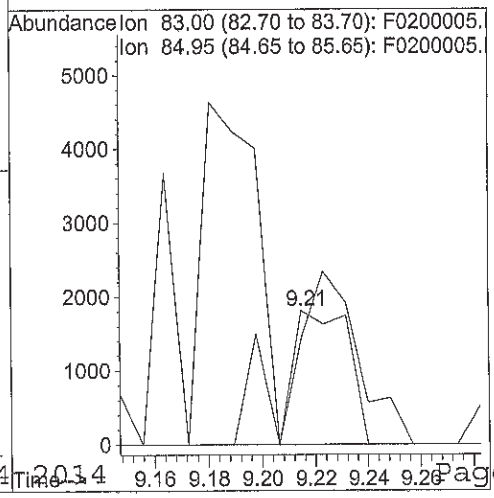


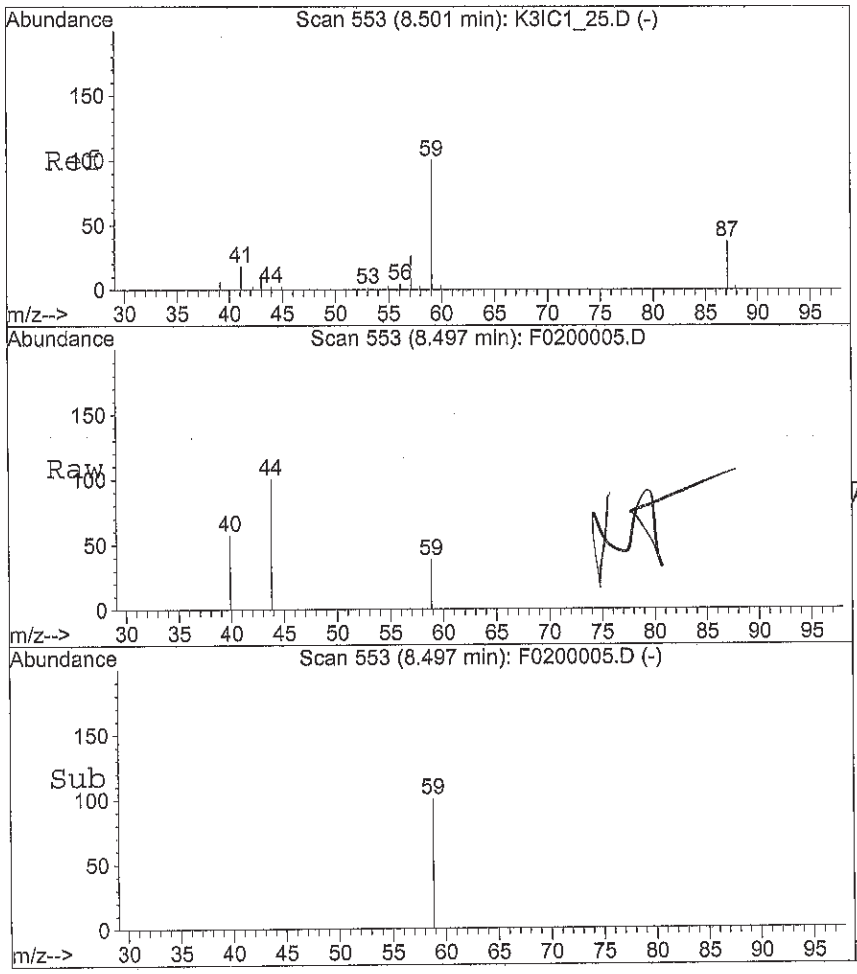


#24
Chloroform
Concen: 0.52 ug/L
RT: 9.21 min Scan# 638
Delta R.T. 0.01 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 83 Resp: 3380

Ion	Ratio	Lower	Upper
83	100		
85	103.4	51.8	77.6#

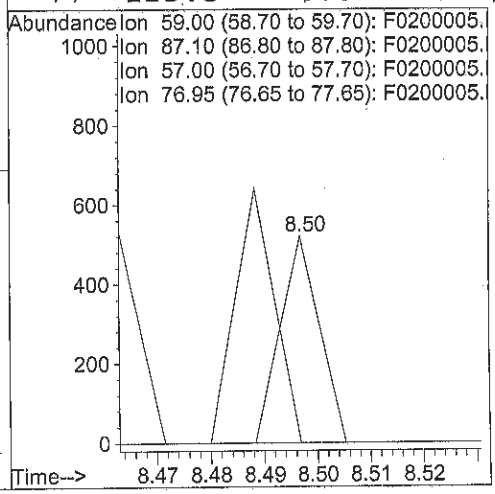


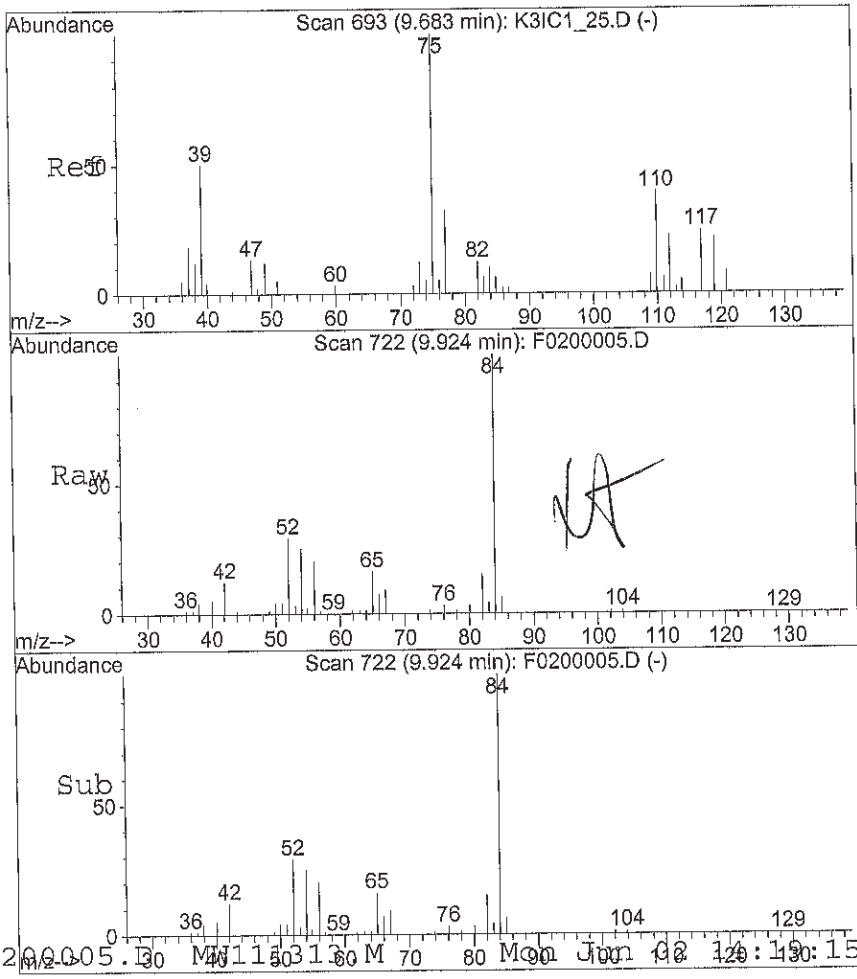


#25
(ETBE) 2-ethoxy 2-methyl propar
Concen: 0.03 ug/L
RT: 8.50 min Scan# 553
Delta R.T. -0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

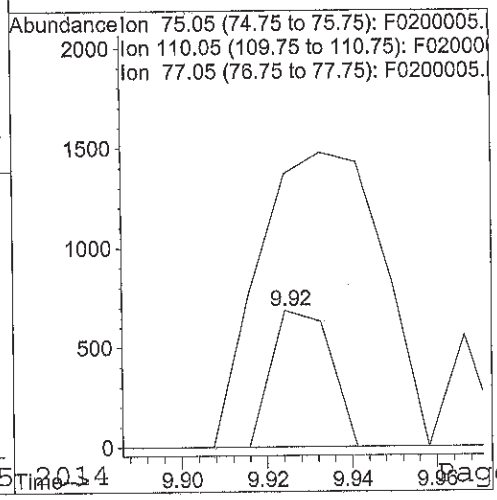


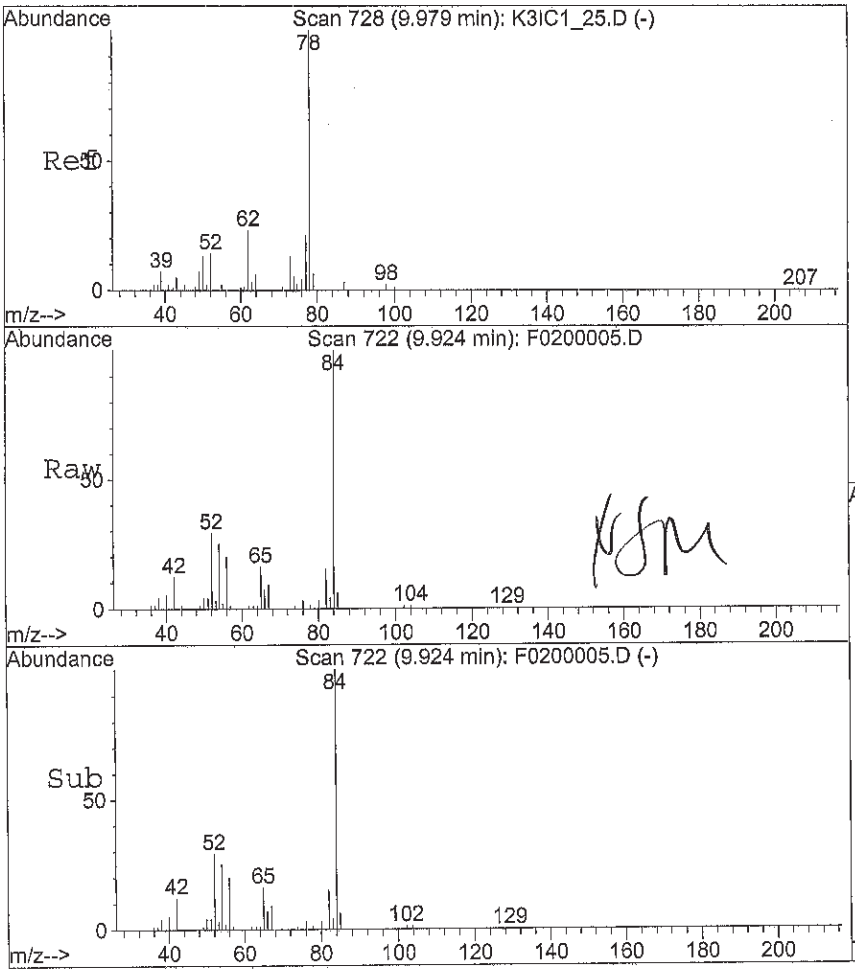


#29
1,1-Dichloropropene
Concen: 0.14 ug/L
RT: 9.92 min Scan# 722
Delta R.T. 0.24 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

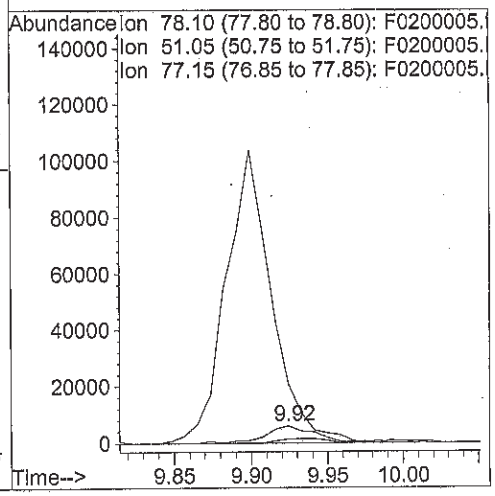


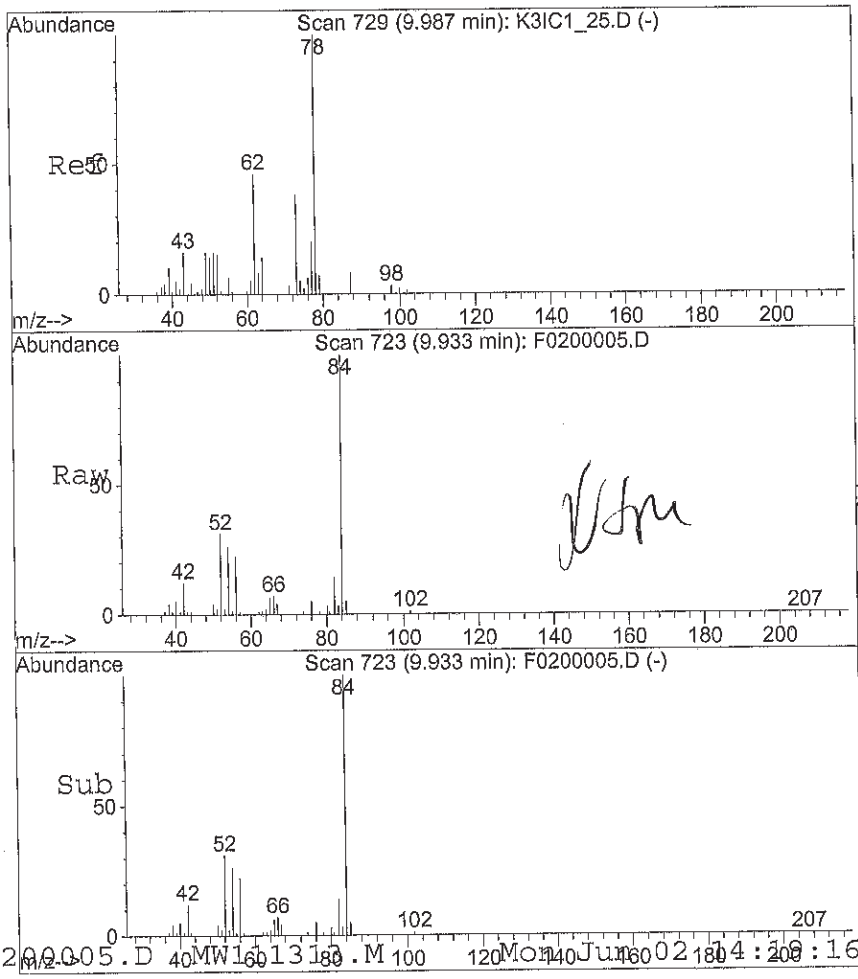


#31
Benzene
Concen: 1.09 ug/L
RT: 9.92 min Scan# 722
Delta R.T. -0.05 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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

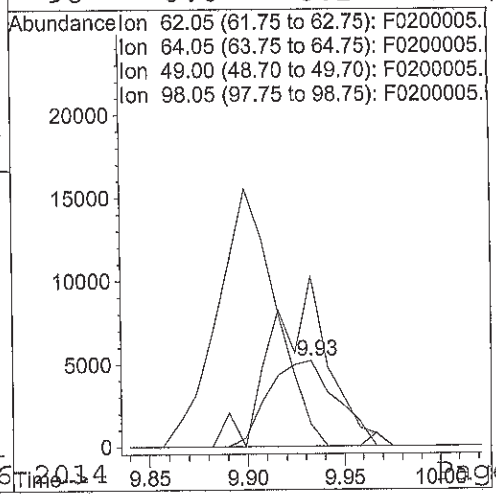


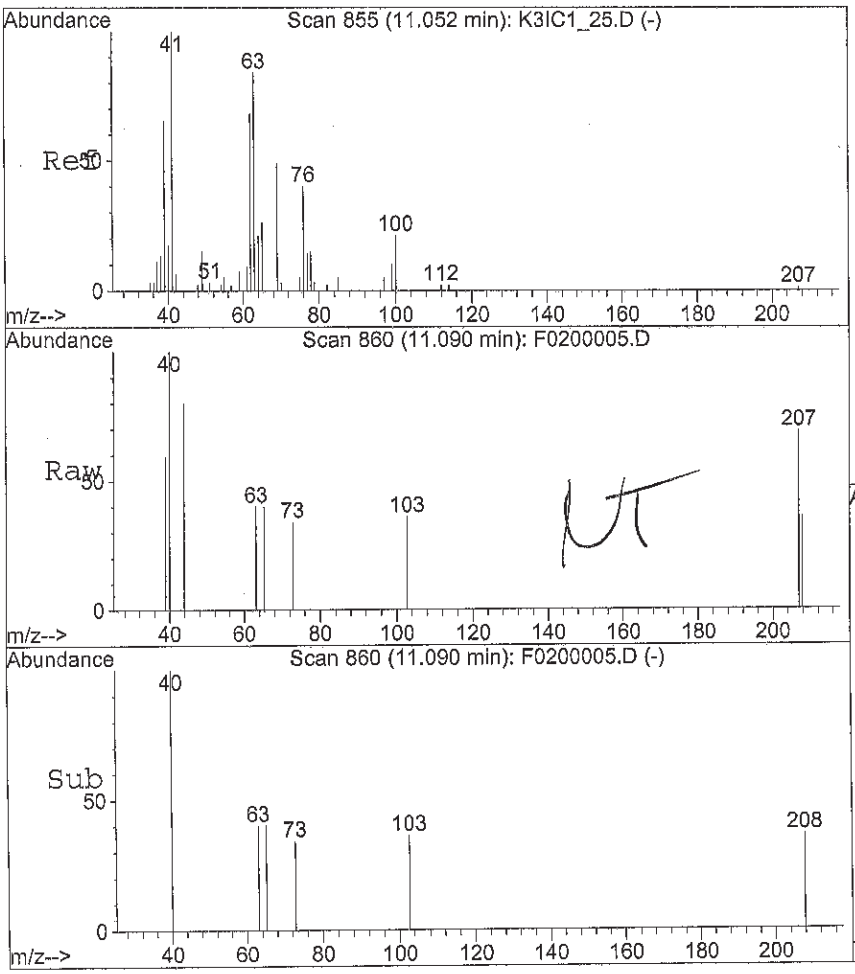


#32
1,2-Dichloroethane
Concen: 3.04 ug/L
RT: 9.93 min Scan# 723
Delta R.T. -0.05 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

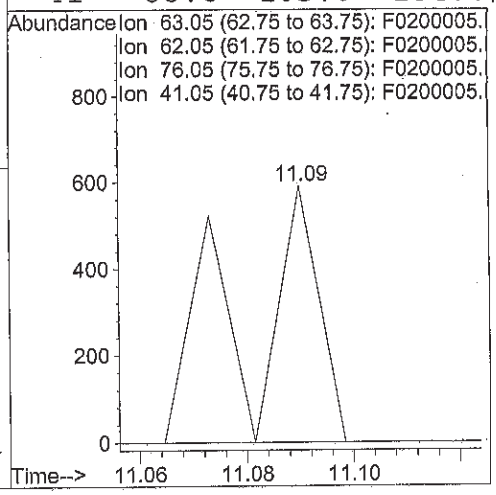


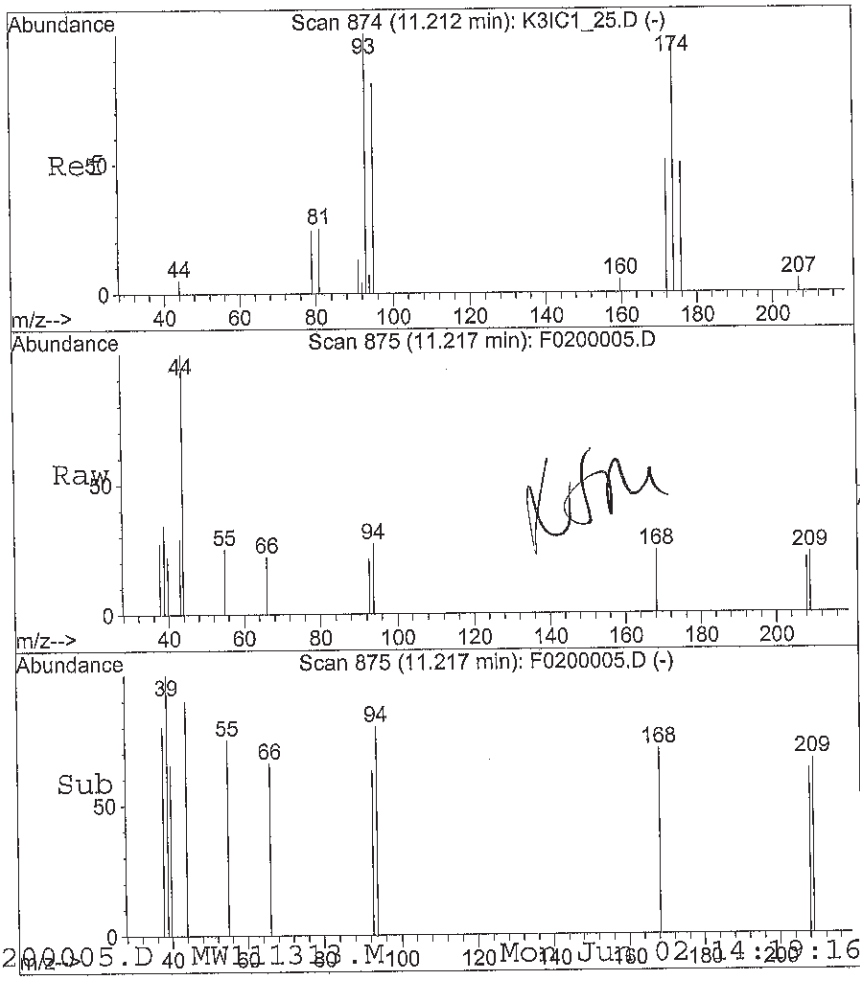


#34
1,2-Dichloropropane
Concen: 0.11 ug/L
RT: 11.09 min Scan# 860
Delta R.T. 0.04 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

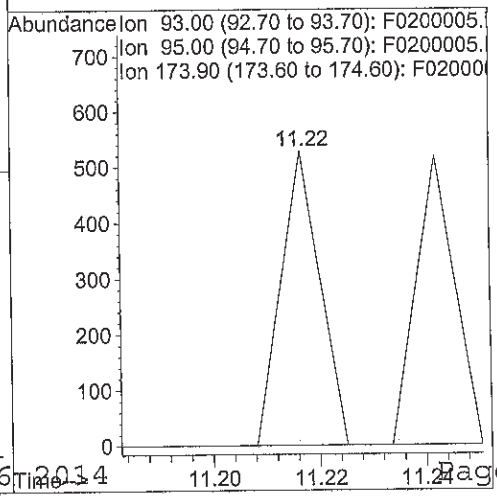


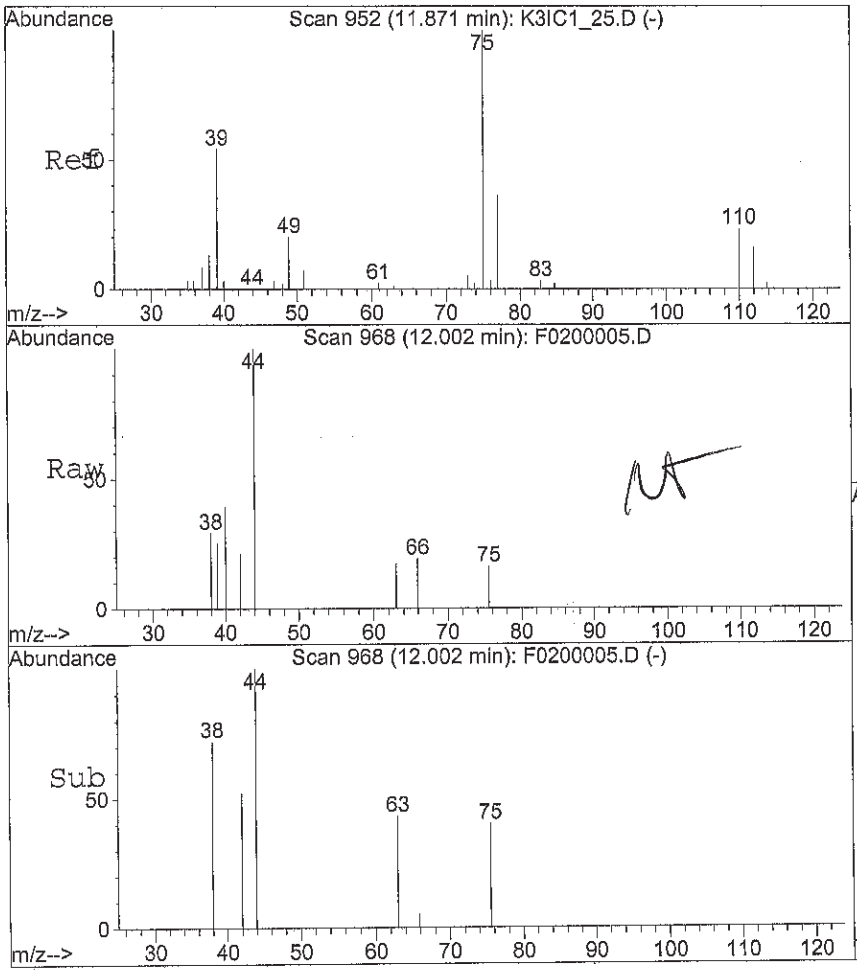


#35
Dibromomethane
Concen: 0.12 ug/L
RT: 11.22 min Scan# 875
Delta R.T. 0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

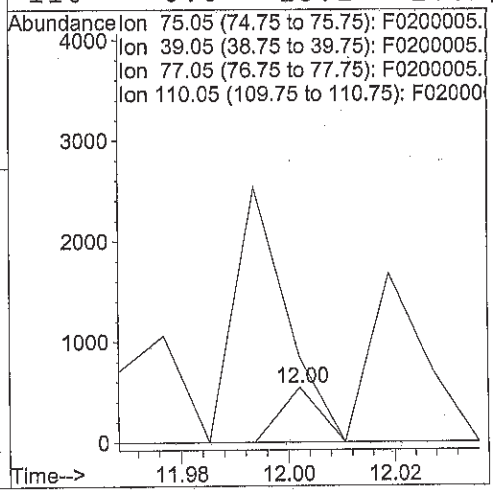


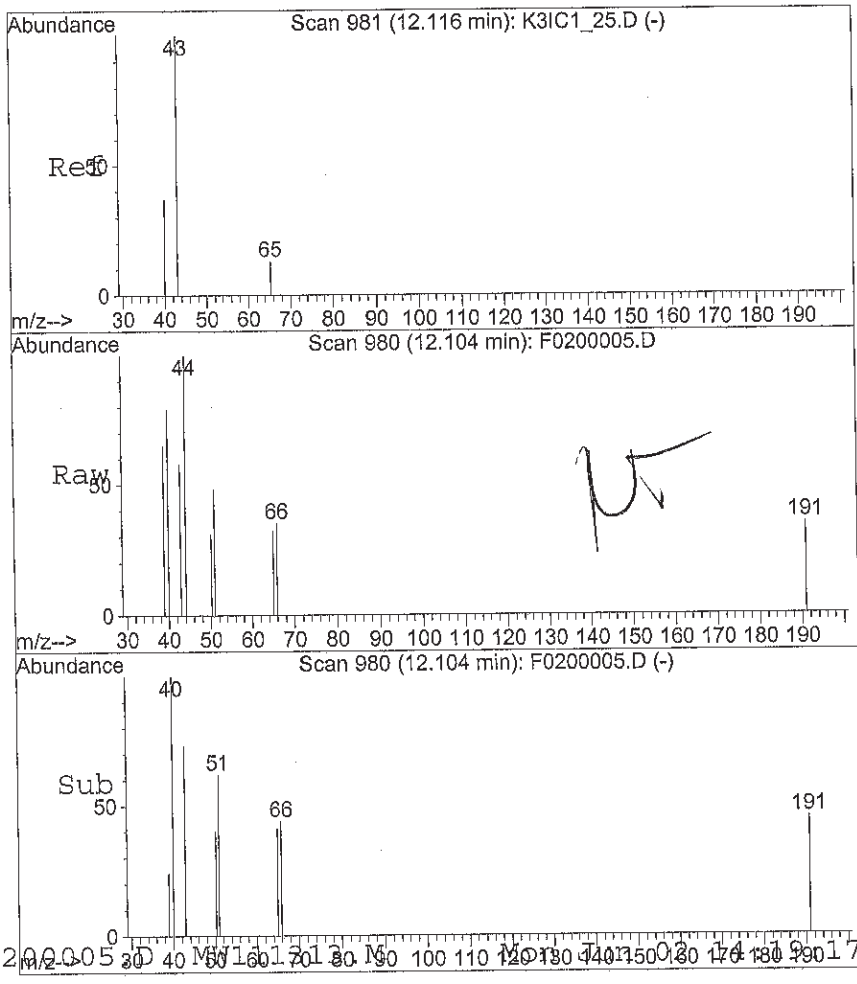


#37
cis-1,3-Dichloropropene
Concen: 0.06 ug/L
RT: 12.00 min Scan# 968
Delta R.T. 0.13 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

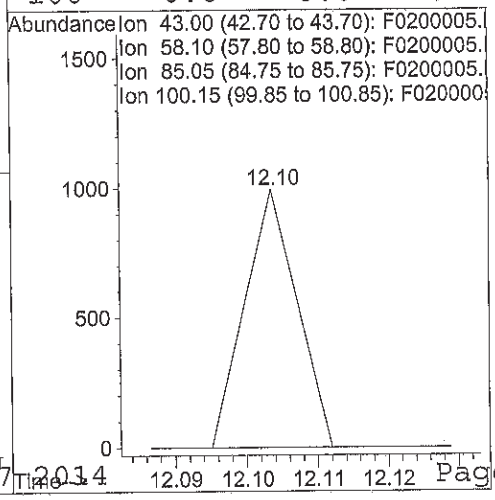


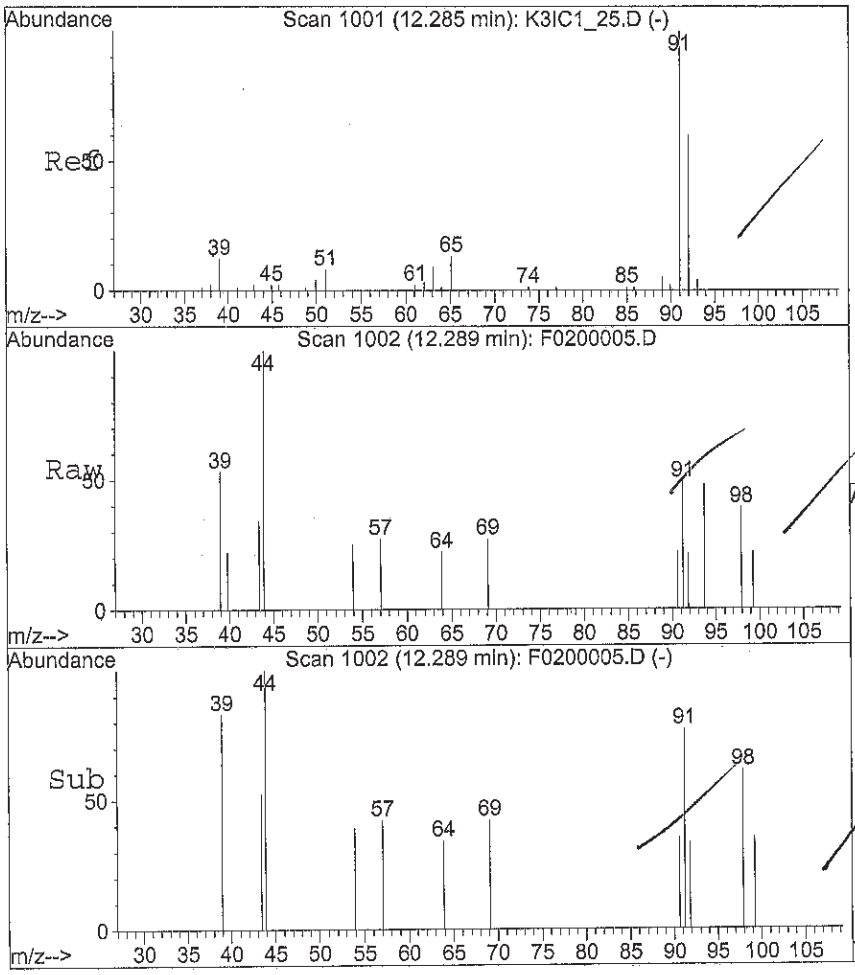


#40
(MIBK) 4-Methyl-2-Pentanone
Concen: 0.22 ug/L
RT: 12.10 min Scan# 980
Delta R.T. -0.01 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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

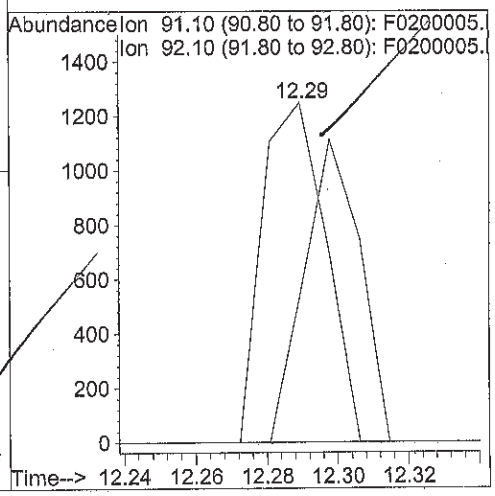


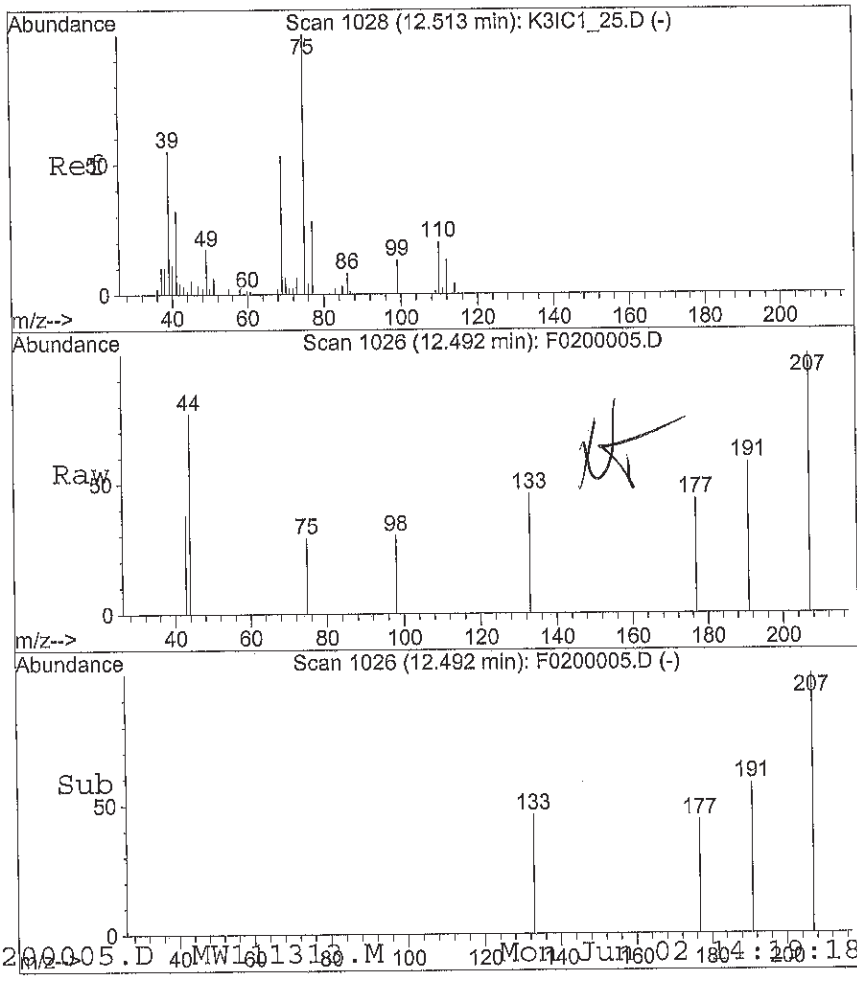


#41
Toluene
Concen: 0.10 ug/L
RT: 12.29 min Scan# 1002
Delta R.T. 0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 91 Resp: 1541

Ion	Ratio	Lower	Upper
91	100		
92	78.7	47.4	71.0#

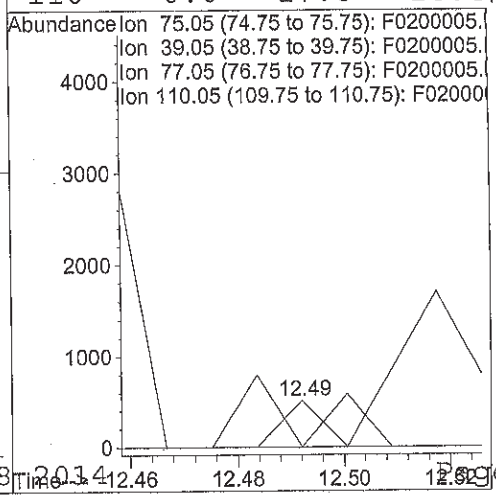


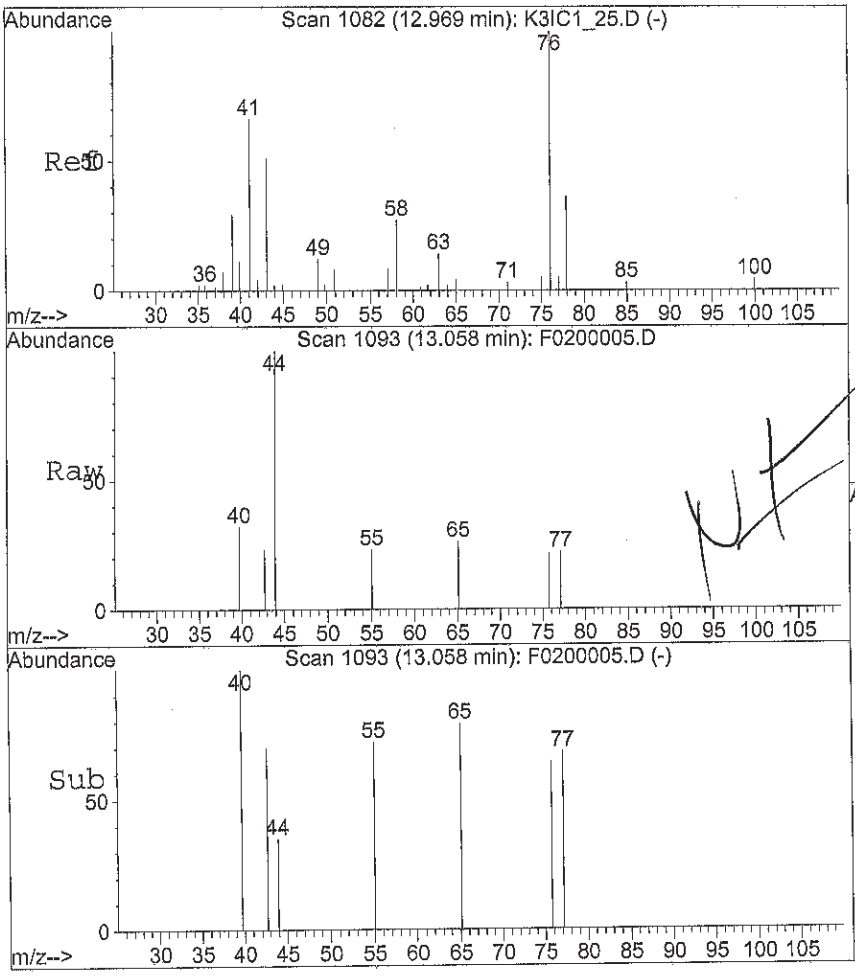


#42
trans-1,3-Dichloropropene
Concen: 0.05 ug/L
RT: 12.49 min Scan# 1026
Delta R.T. -0.02 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

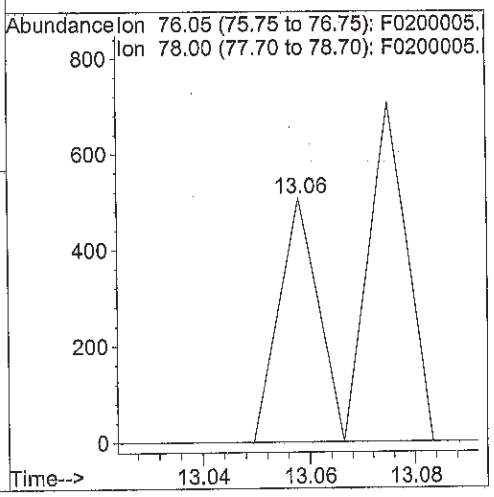


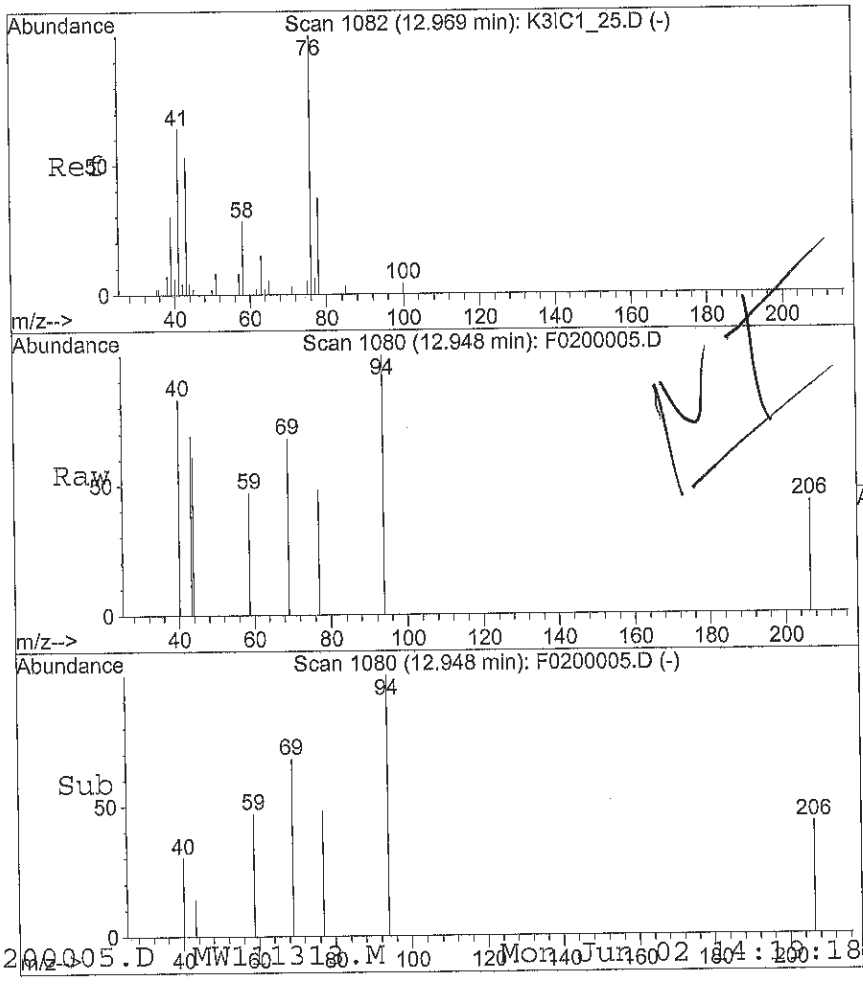


#45
1,3-Dichloropropane
Concen: 0.05 ug/L
RT: 13.06 min Scan# 1093
Delta R.T. 0.09 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 76 Resp: 257

Ion	Ratio	Lower	Upper
76	100		
78	139.3	26.9	40.3#

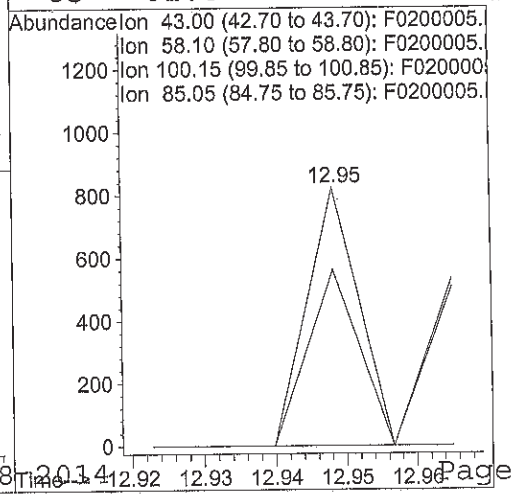


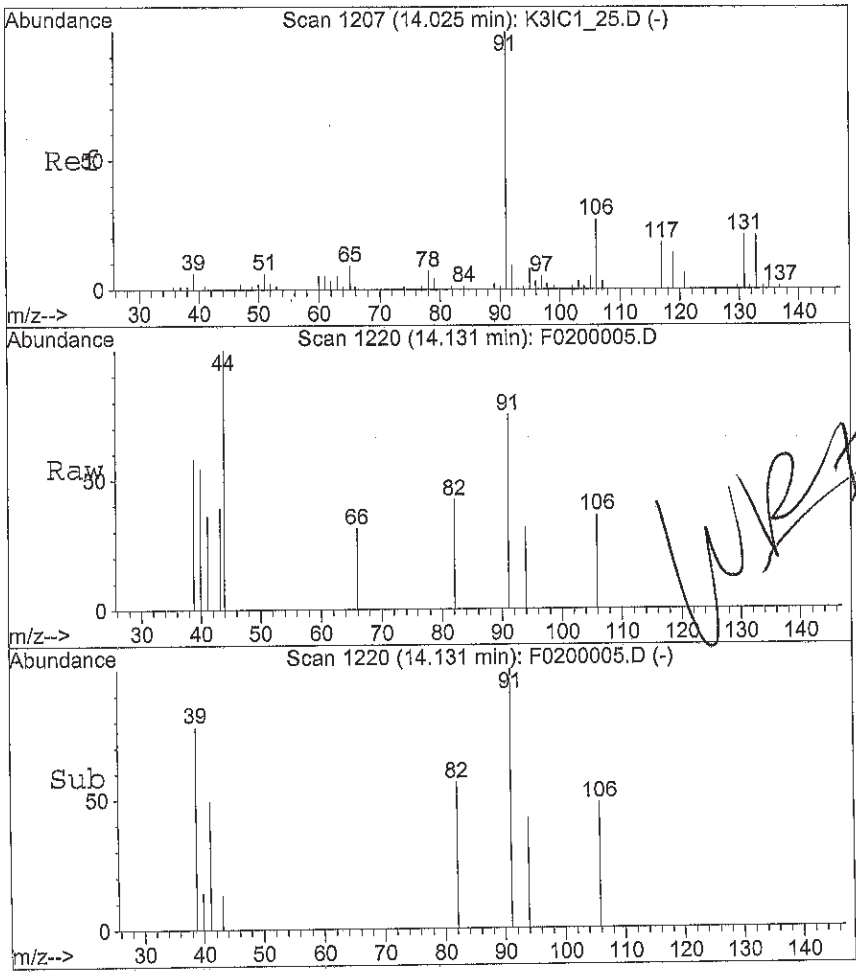


#46
2-Hexanone
Concen: 0.16 ug/L
RT: 12.95 min Scan# 1080
Delta R.T. -0.02 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

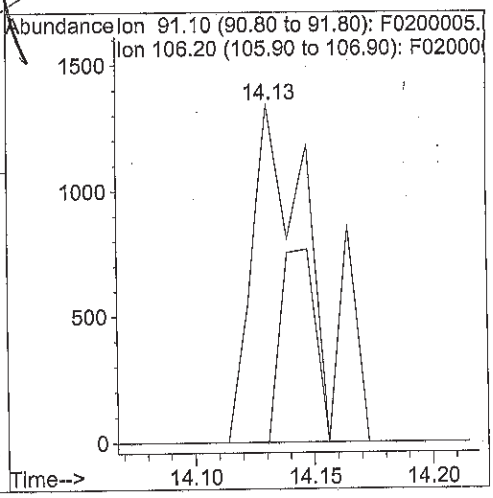


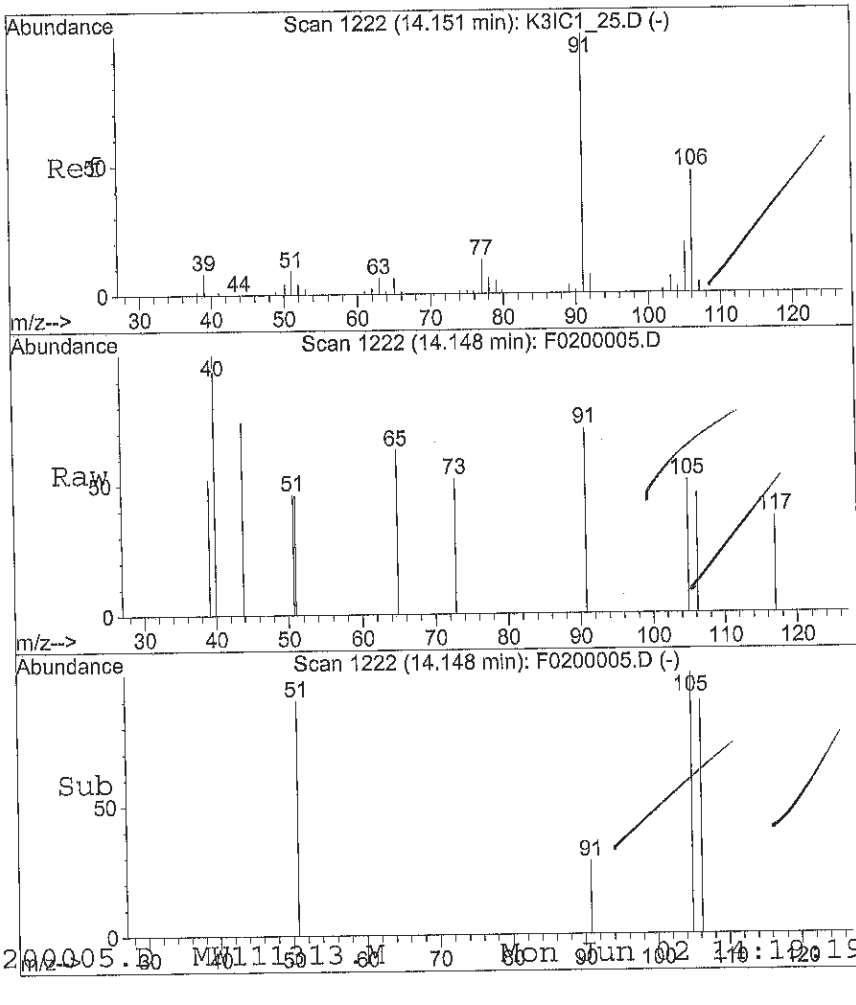


#51
Ethylbenzene
Concen: 0.13 ug/L
RT: 14.13 min Scan# 1220
Delta R.T. 0.11 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 91 Resp: 2396

Ion	Ratio	Lower	Upper
91	100		
106	32.1	23.5	35.3

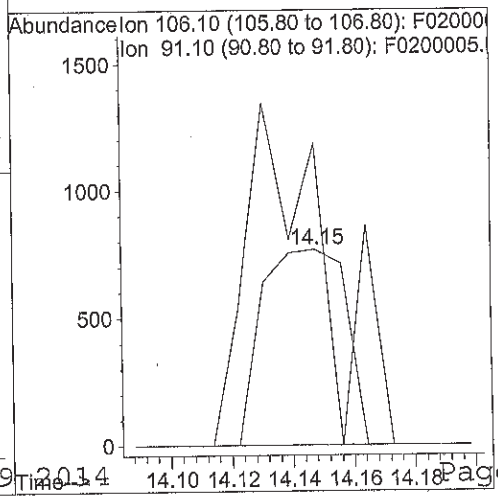


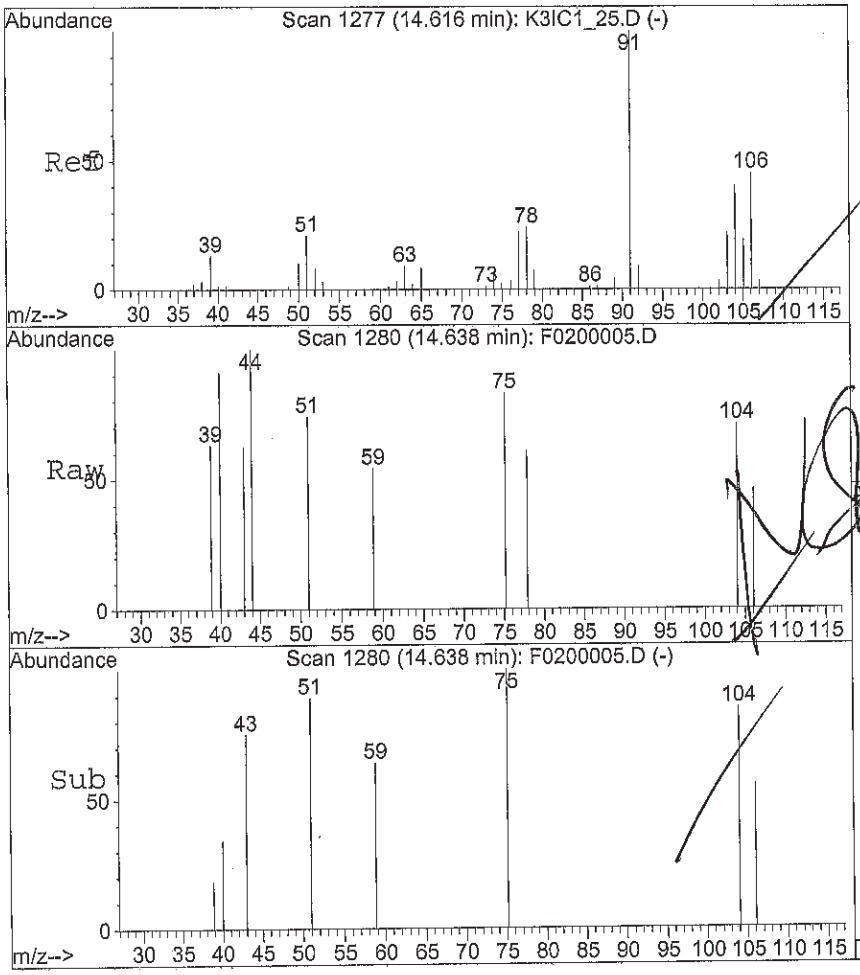


#52
m,p-Xylenes
Concen: 0.23 ug/L
RT: 14.15 min Scan# 1222
Delta R.T. -0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion:106 Resp: 1456

Ion	Ratio	Lower	Upper
106	100		
91	164.6	177.1	265.7#

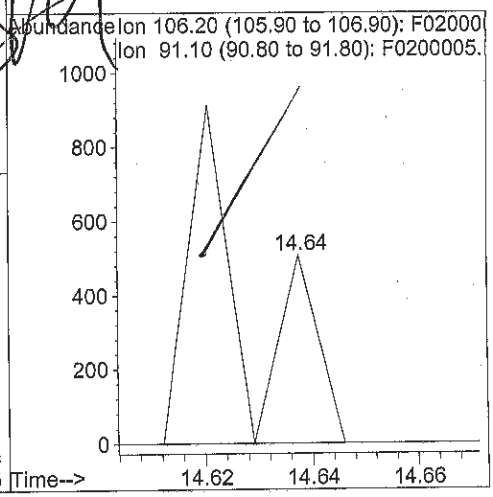


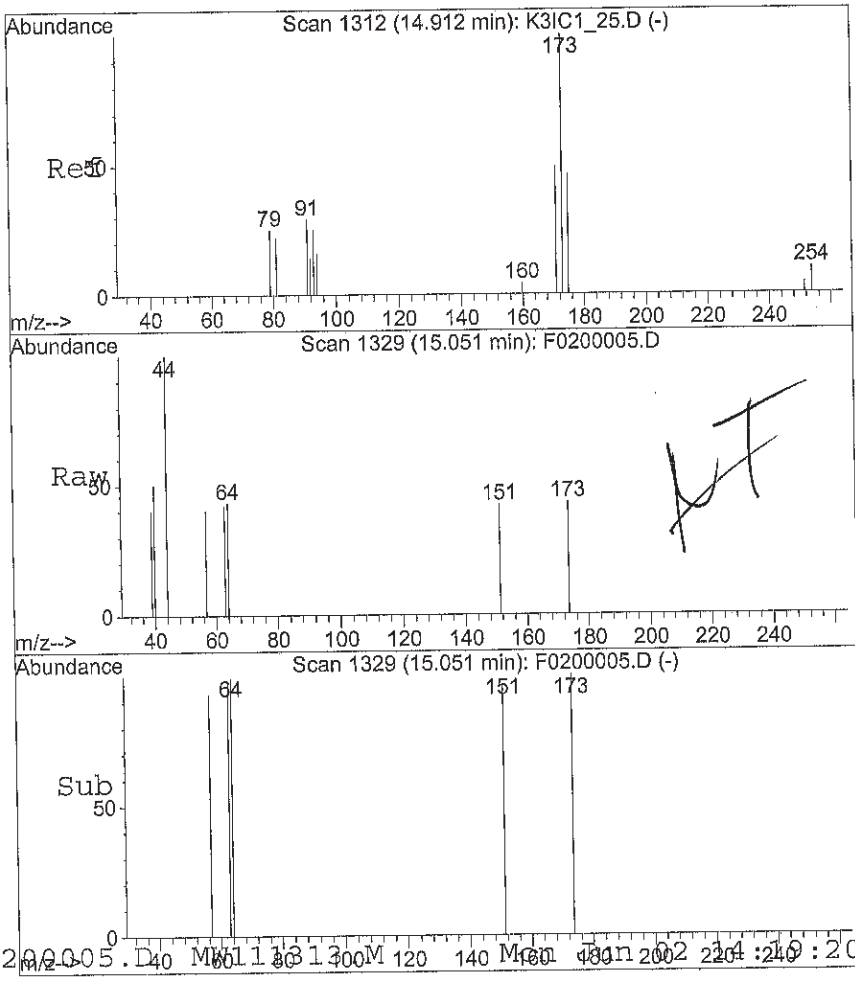


#53
o-Xylene
Concen: 0.04 ug/L
RT: 14.64 min Scan# 1280
Delta R.T. 0.02 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion:106 Resp: 258

Ion	Ratio	Lower	Upper
106	100		
91	179.1	179.0	268.6

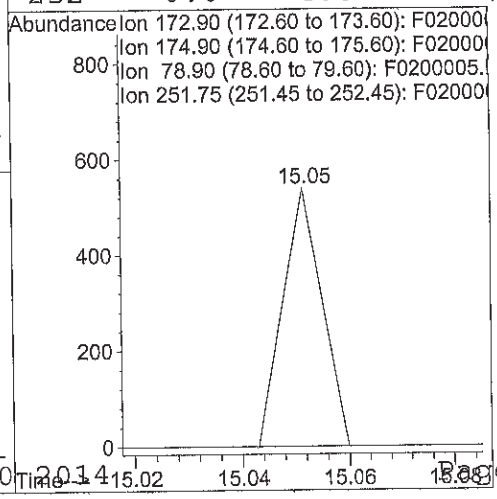


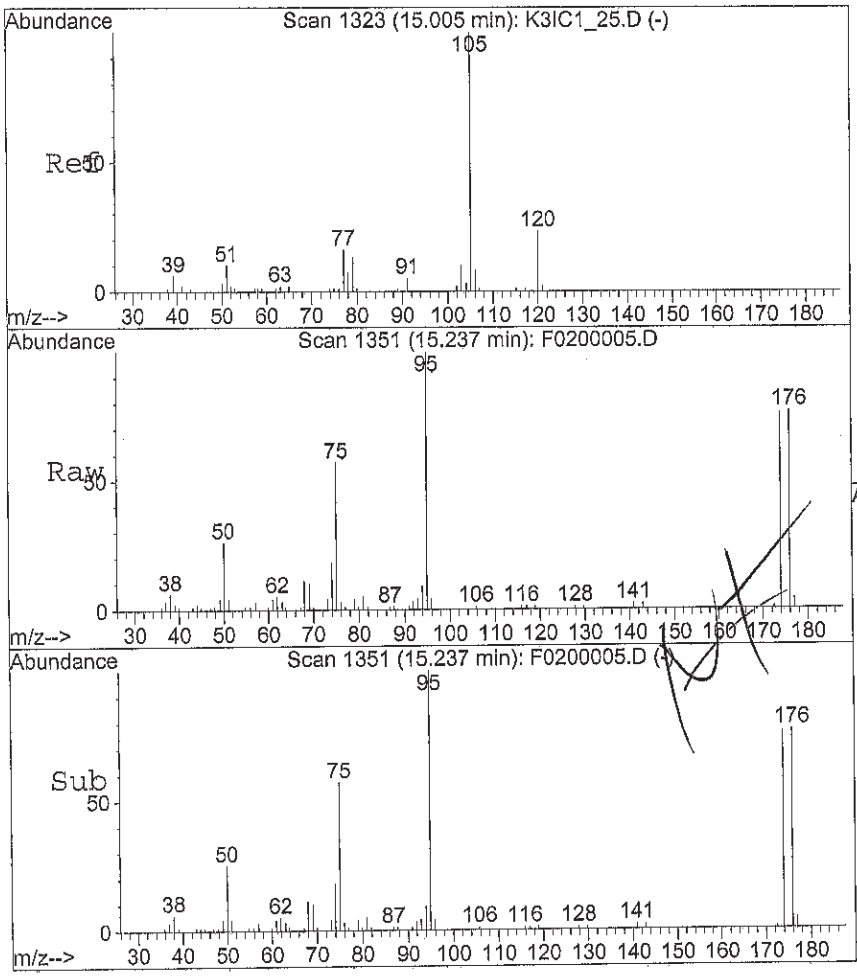


#55
Bromoform
Concen: 0.12 ug/L
RT: 15.05 min Scan# 1329
Delta R.T. 0.14 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion:173 Resp: 273

Ion	Ratio	Lower	Upper
173	100		
175	0.0	35.8	53.6#
79	0.0	18.9	28.3#
252	0.0	4.6	6.8#

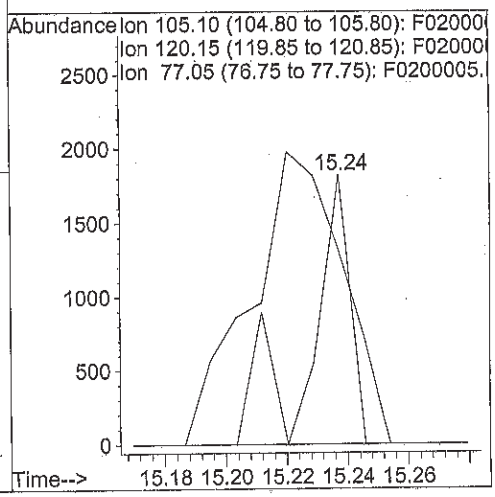


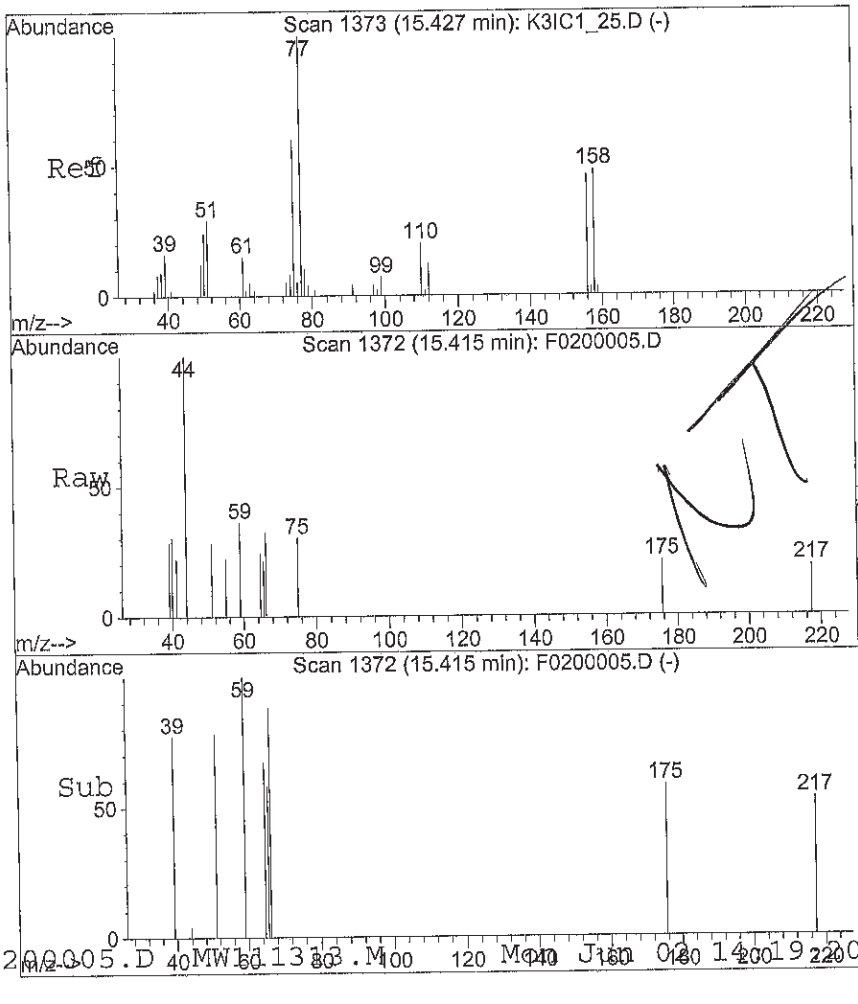


#56
Isopropylbenzene
Concen: 0.10 ug/L
RT: 15.24 min Scan# 1351
Delta R.T. 0.23 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

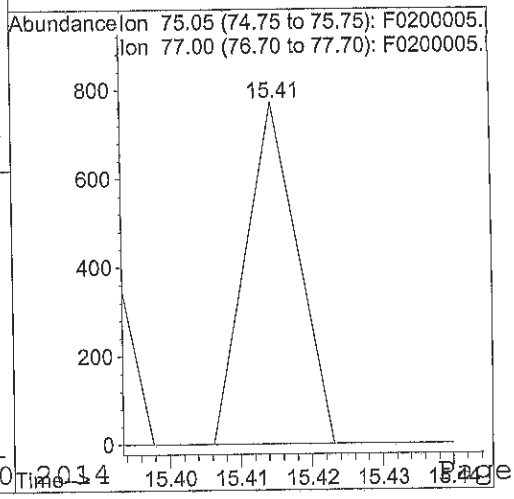


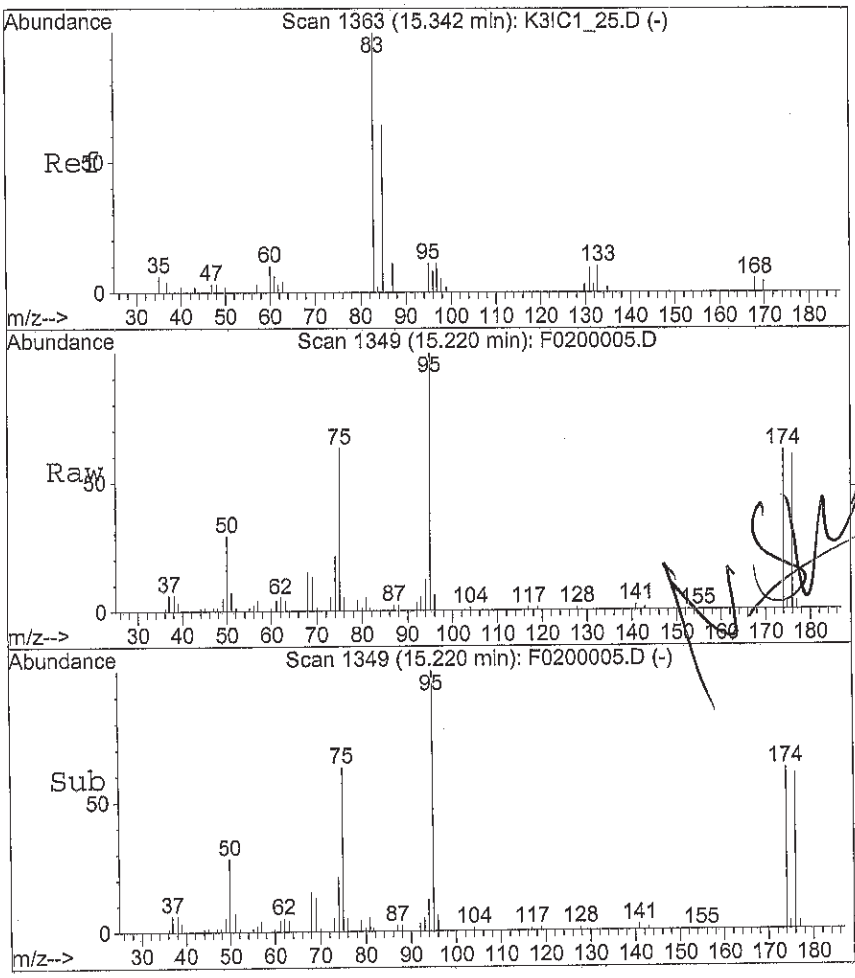


#57
1,2,3-Trichloropropane
Concen: 0.08 ug/L
RT: 15.41 min Scan# 1372
Delta R.T. -0.01 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 75 Resp: 391

Ion	Ratio	Lower	Upper
75	100		
77	0.0	31.2	46.8#

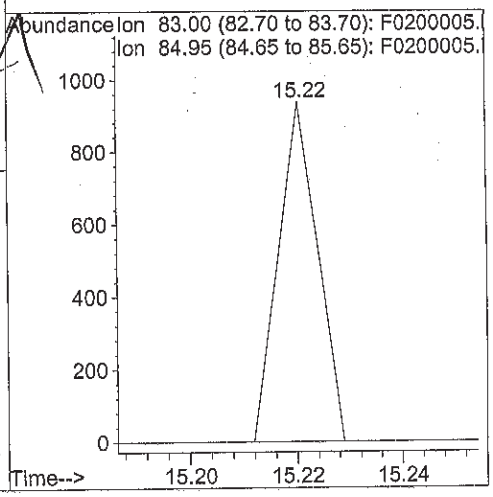


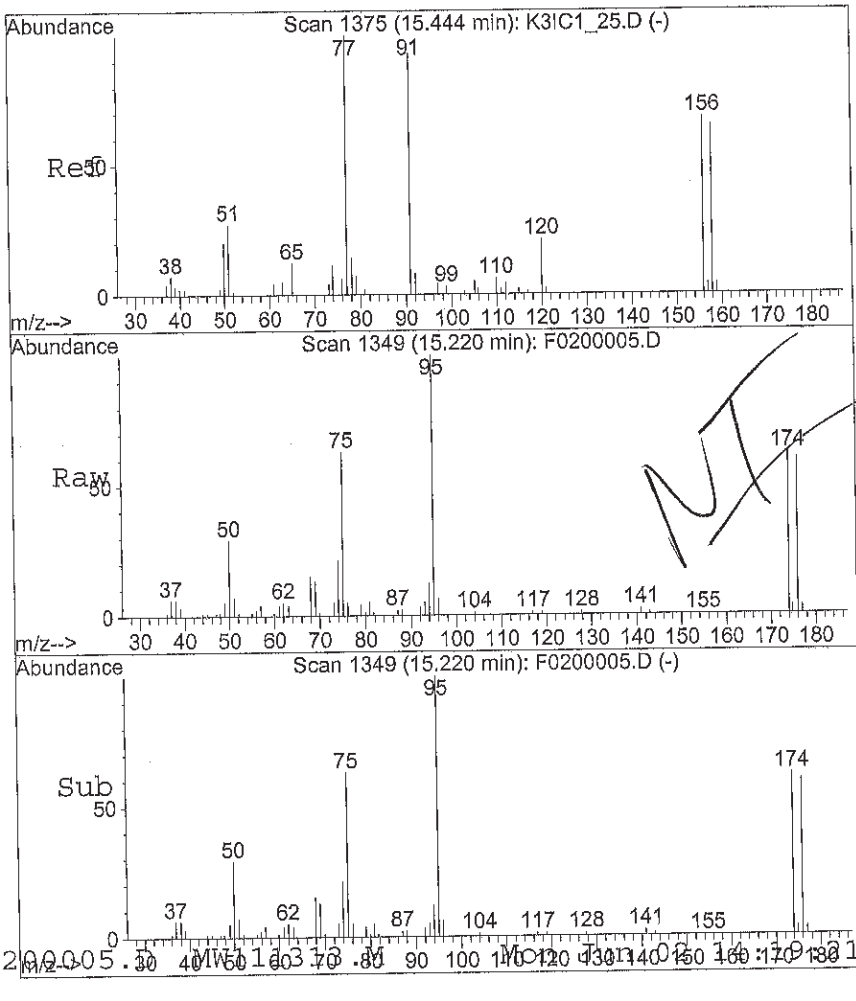


#60
1,1,2,2-Tetrachloroethane
Concen: 0.11 ug/L
RT: 15.22 min Scan# 1349
Delta R.T. -0.12 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 83 Resp: 475

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.2	76.8#

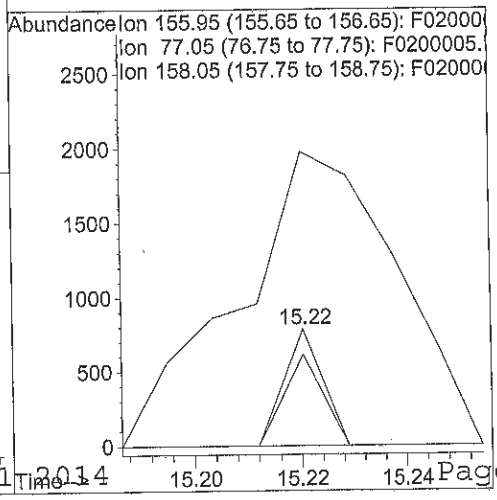


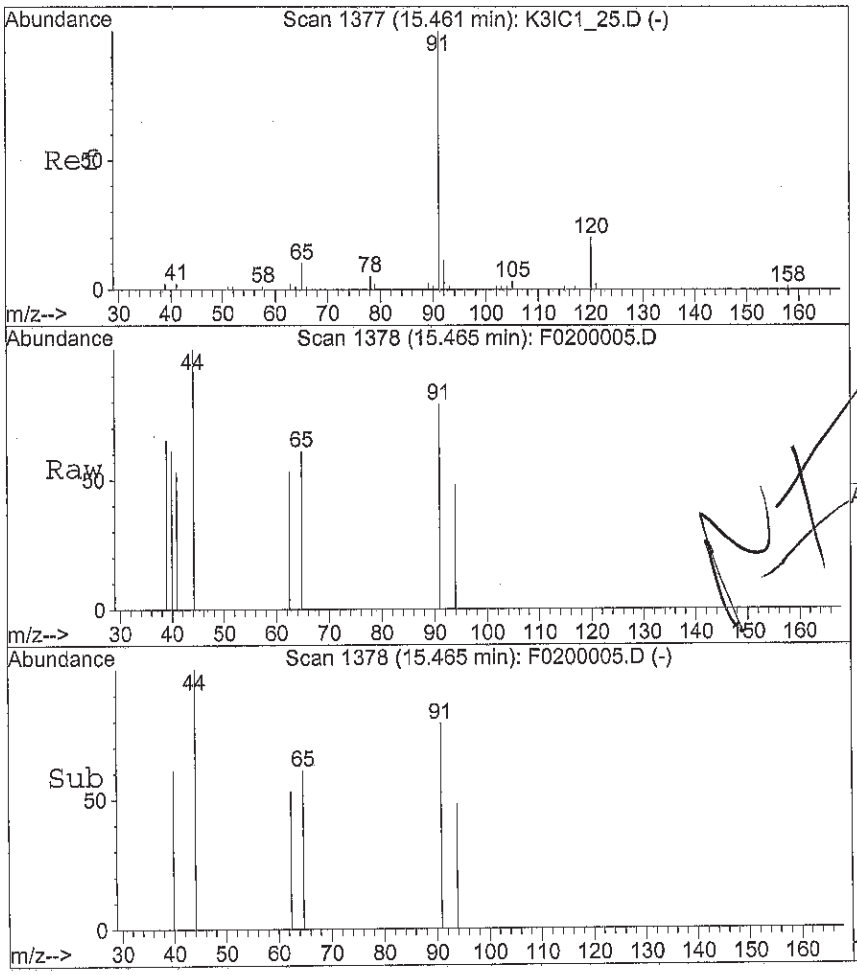


#61
Bromobenzene
Concen: 0.08 ug/L
RT: 15.22 min Scan# 1349
Delta R.T. -0.22 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

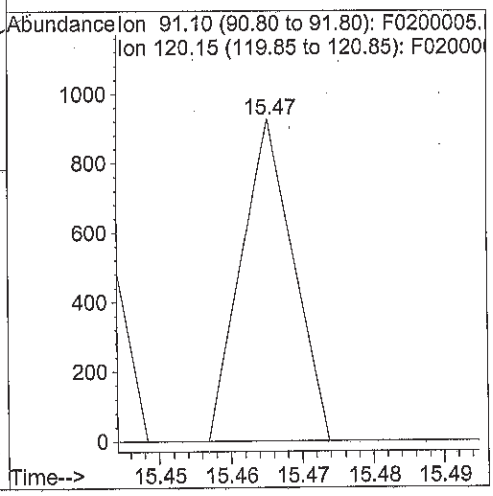


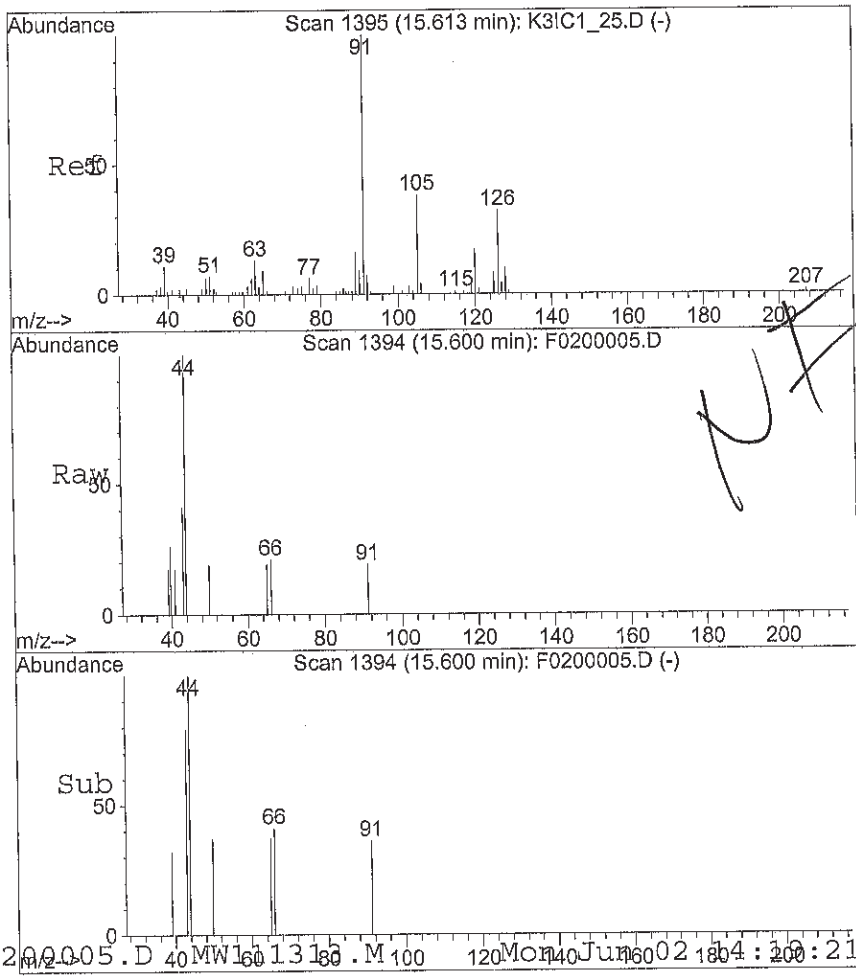


#62
n-Propylbenzene
Concen: 0.02 ug/L
RT: 15.47 min Scan# 1378
Delta R.T. 0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 91 Resp: 470

Ion	Ratio	Lower	Upper
91	100		
120	0.0	16.1	24.1#

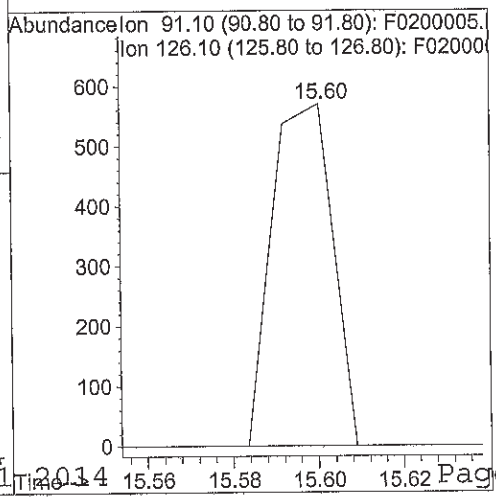


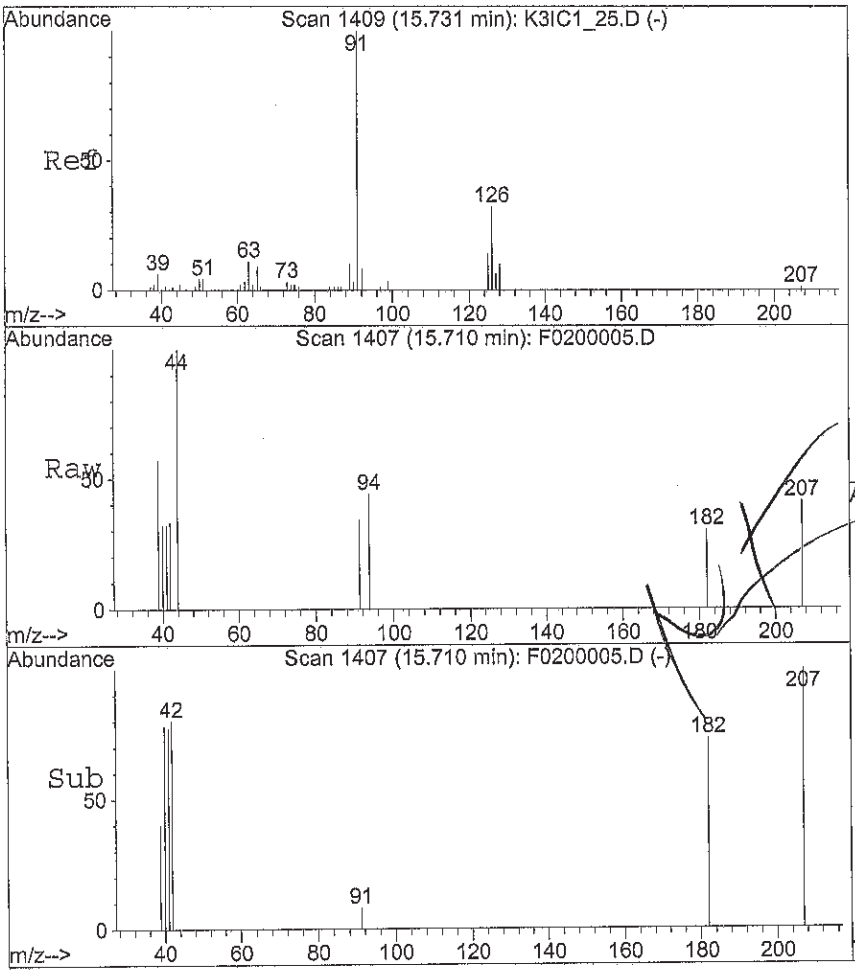


#63
2-Chlorotoluene
Concen: 0.04 ug/L
RT: 15.60 min Scan# 1394
Delta R.T. -0.01 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 91 Resp: 561

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.0	36.0#

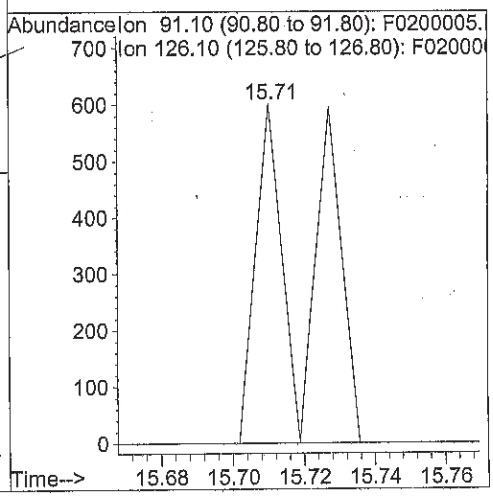


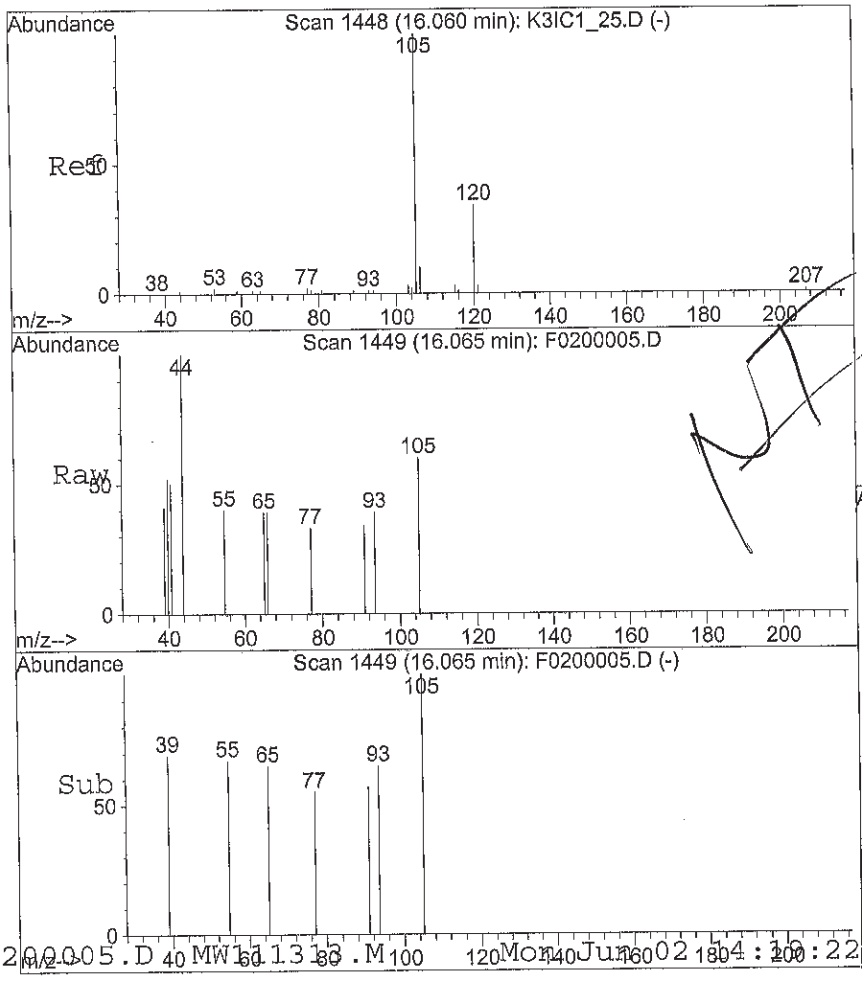


#65
4-Chlorotoluene
Concen: 0.04 ug/L
RT: 15.71 min Scan# 1407
Delta R.T. -0.02 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 91 Resp: 606

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.6	36.8#

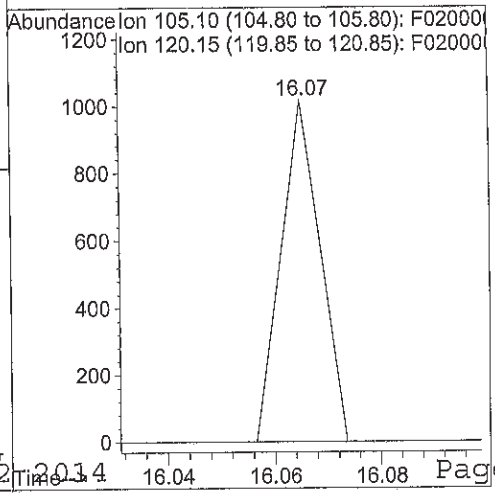


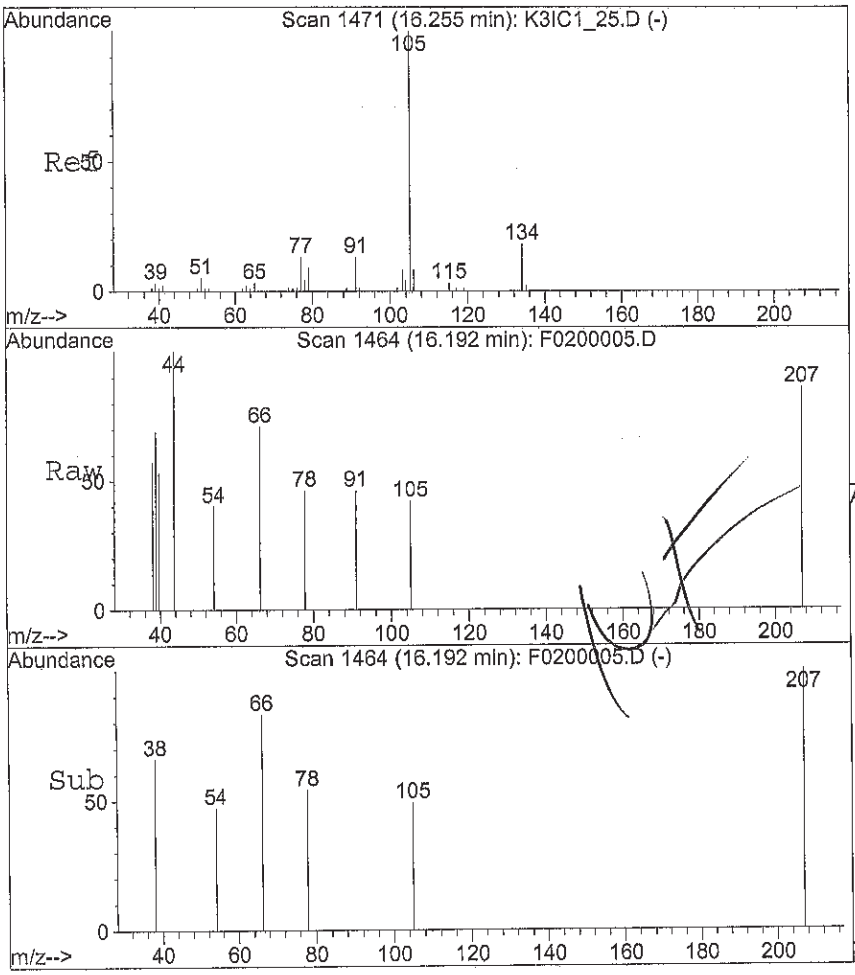


#67
1,2,4-Trimethylbenzene
Concen: 0.03 ug/L
RT: 16.07 min Scan# 1449
Delta R.T. 0.00 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion:105 Resp: 516

Ion	Ratio	Lower	Upper
105	100		
120	0.0	33.8	50.8#

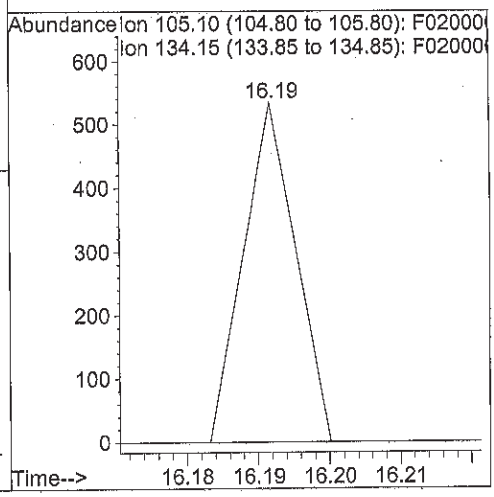


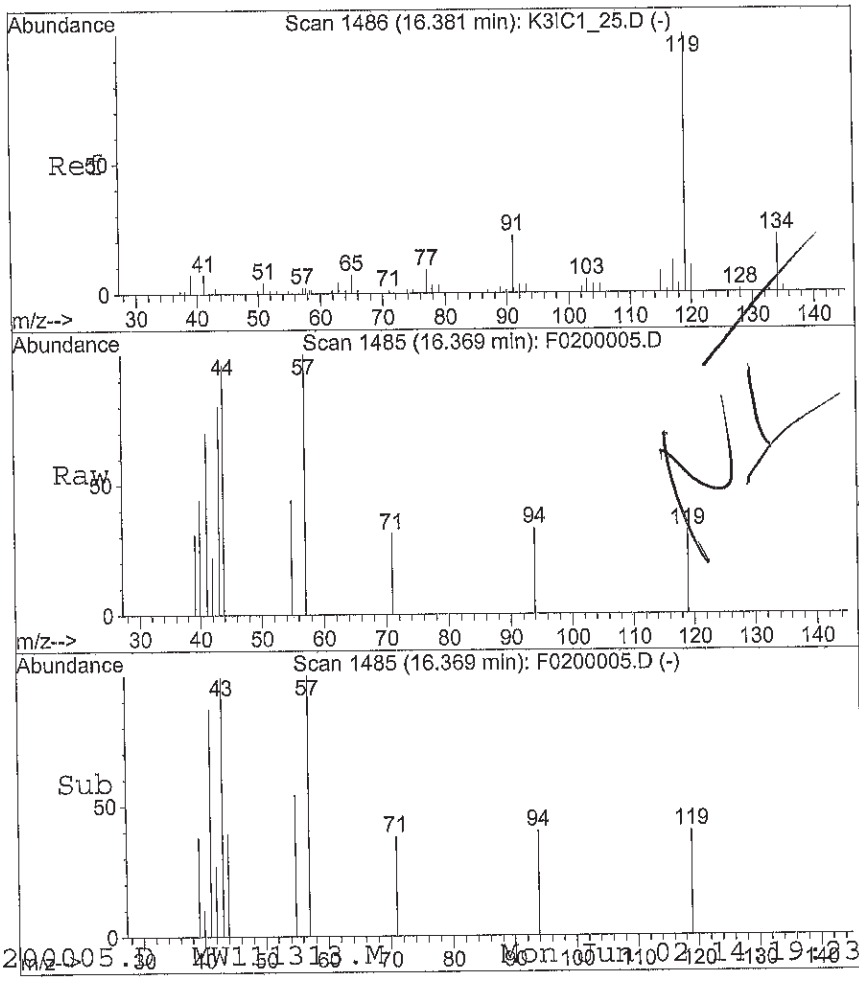


#68
sec-Butylbenzene
Concen: 0.01 ug/L
RT: 16.19 min Scan# 1464
Delta R.T. -0.06 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion:105 Resp: 271

Ion	Ratio	Lower	Upper
105	100		
134	0.0	13.0	19.6#

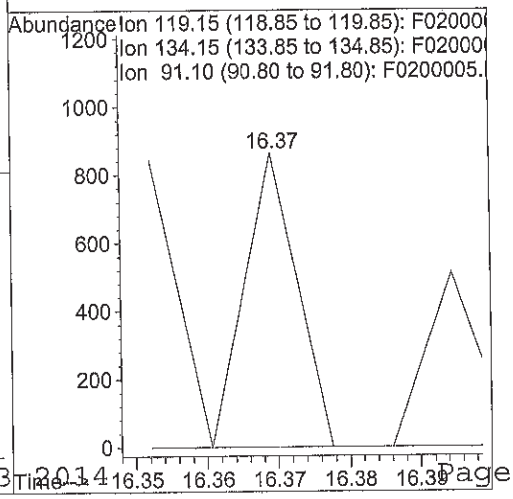


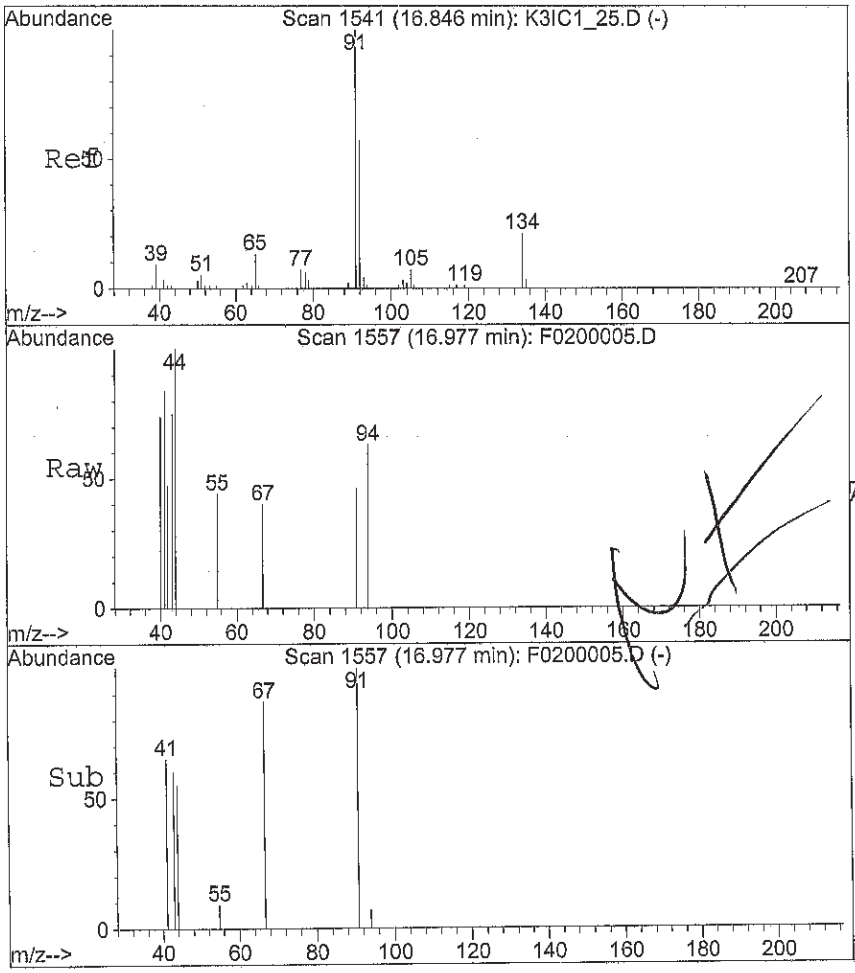


#69
p-Isopropyltoluene
Concen: 0.03 ug/L
RT: 16.37 min Scan# 1485
Delta R.T. -0.01 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion:119 Resp: 438

Ion	Ratio	Lower	Upper
119	100		
134	0.0	17.4	26.2#
91	0.0	19.6	29.4#

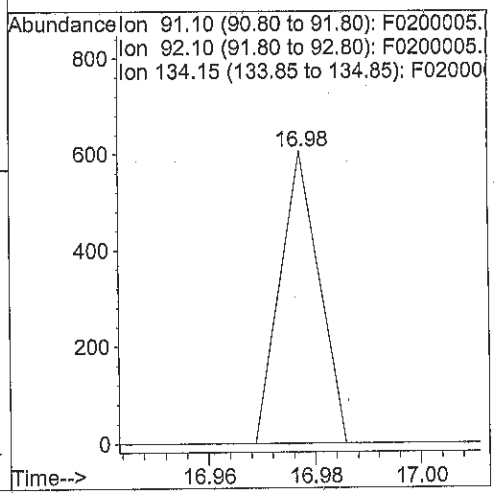


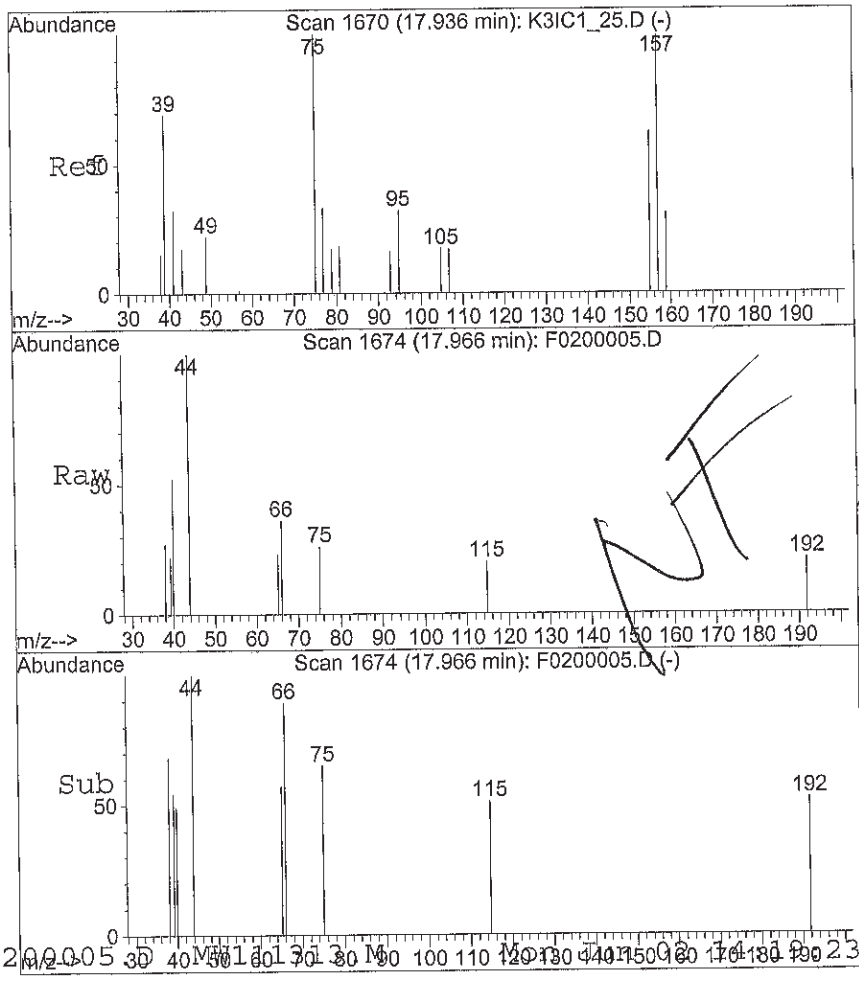


#72
n-Butylbenzene
Concen: 0.02 ug/L
RT: 16.98 min Scan# 1557
Delta R.T. 0.13 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

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#

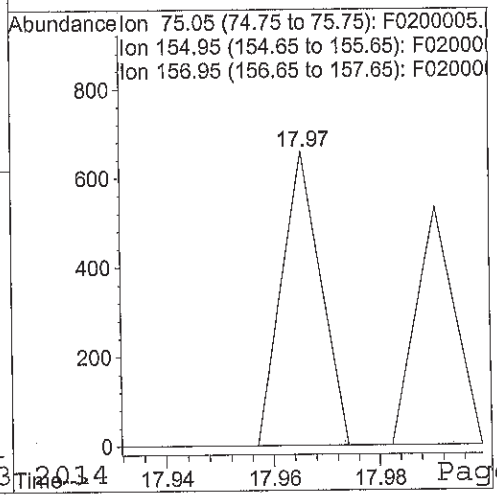


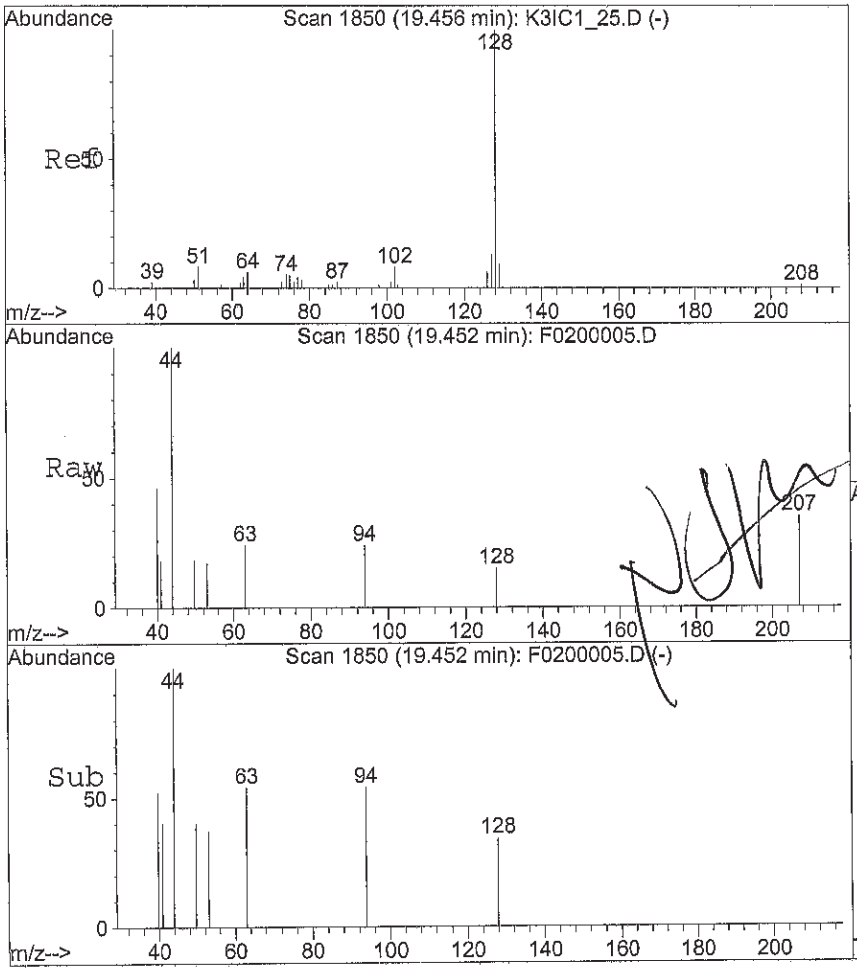


#74
1,2-Dibromo-3-chloropropane
Concen: 1.34 ug/L
RT: 17.97 min Scan# 1674
Delta R.T. 0.03 min
Lab File: F0200005.D
Acq: 2 Jun 2014 1:50 pm

Tgt Ion: 75 Resp: 334

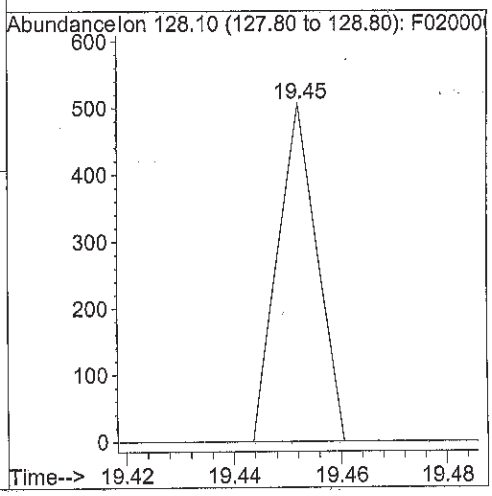
Ion	Ratio	Lower	Upper
75	100		
155	0.0	59.2	88.8#
157	0.0	77.0	115.6#





#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



Quantitation Report (QT Reviewed)

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 = 114.32%			
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

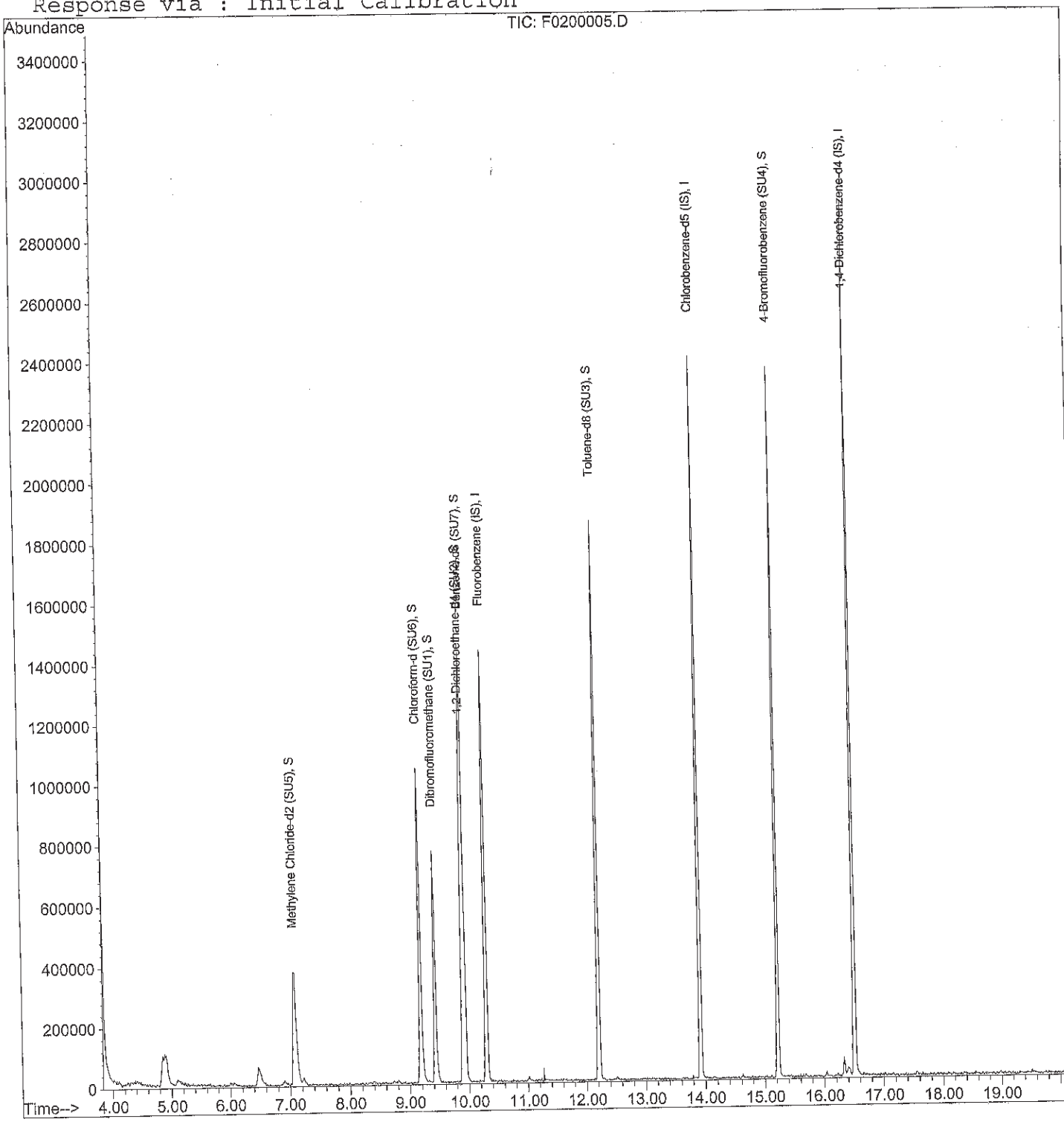
Quantitation Report

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



Quantitation Report (QT Reviewed)

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

Quantitation Report (QT Reviewed)

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

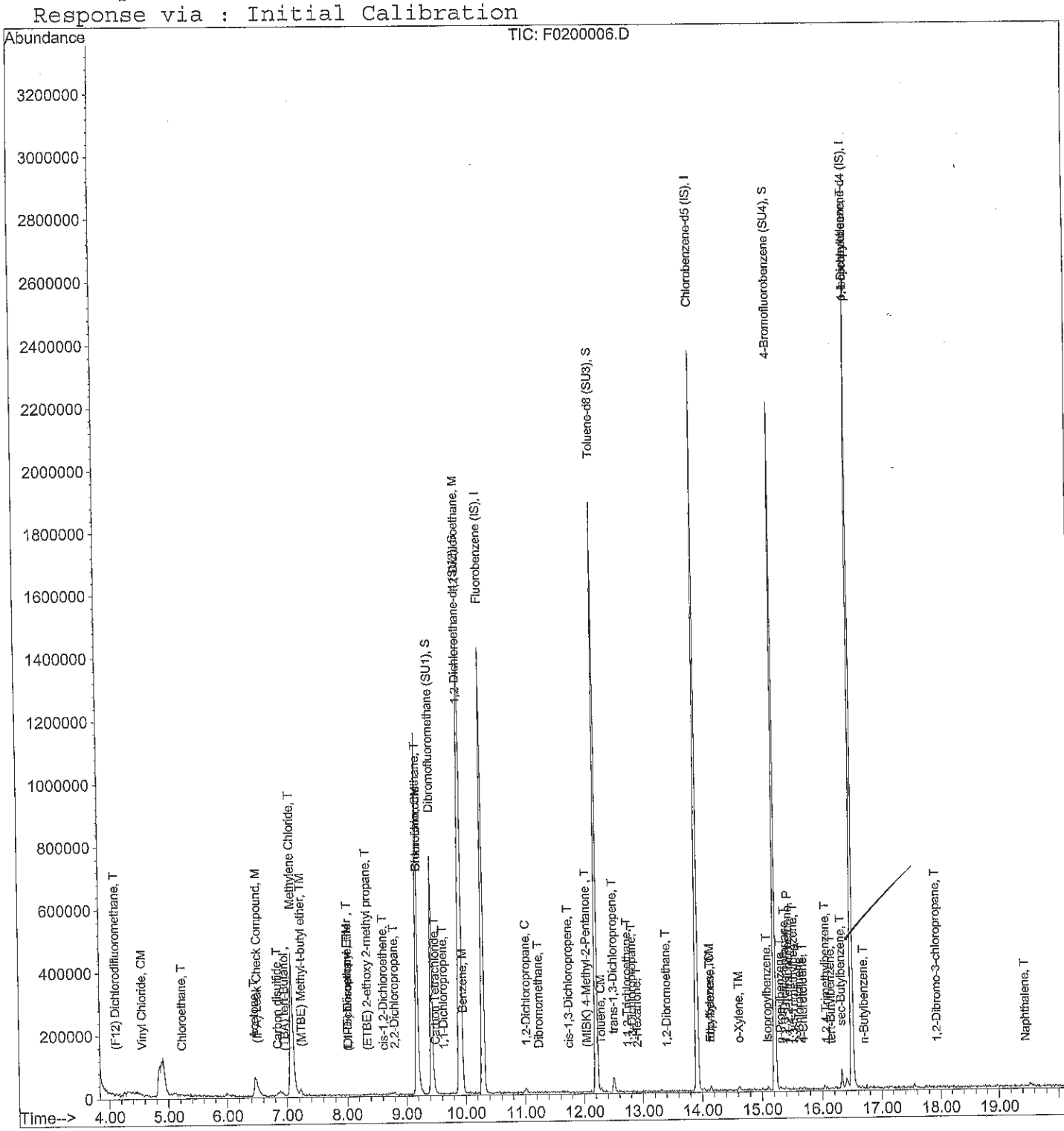
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
34) 1,2-Dichloropropane	11.03	63	590	0.22 ~~ug/L~~ #	46
35) Dibromomethane	11.25	93	295	0.14 ~~ug/L~~ #	5
37) cis-1,3-Dichloropropene	11.75	75	281	0.06 ~~ug/L~~ #	1
40) (MIBK) 4-Methyl-2-Pentanon	12.05	43	560	0.25 ~~ug/L~~ #	100
41) Toluene	12.28	91	6909	0.45 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

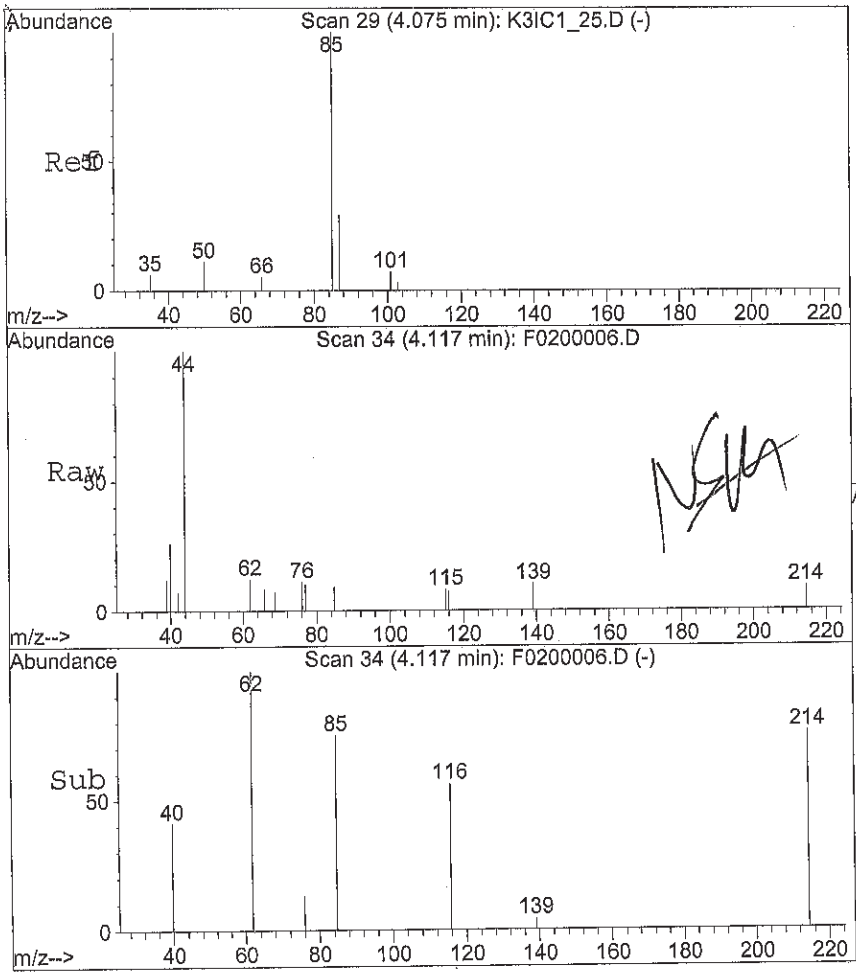
(#) = qualifier out of range (m) = manual integration

Quantitation Report

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

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

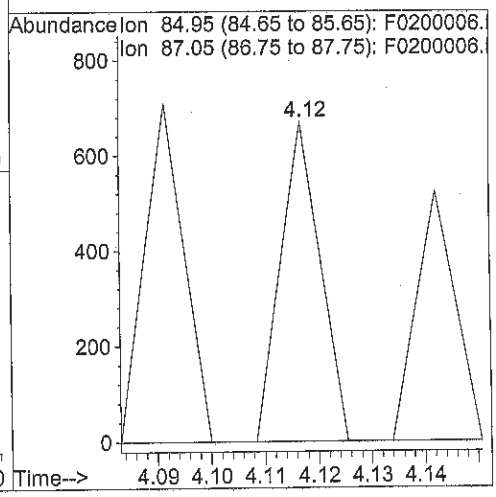


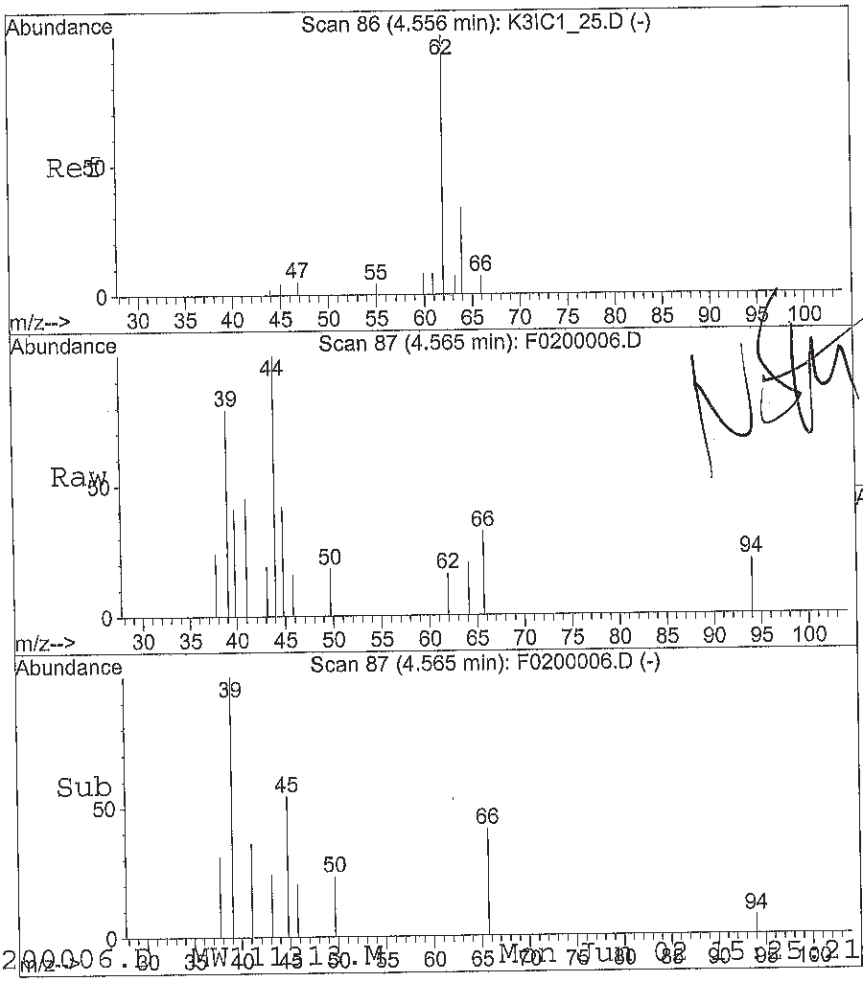


#3
(F12) Dichlorodifluoromethane
Concen: 0.12 ug/L
RT: 4.12 min Scan# 34
Delta R.T. 0.04 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 85 Resp: 340

Ion	Ratio	Lower	Upper
85	100		
87	0.0	24.6	37.0#

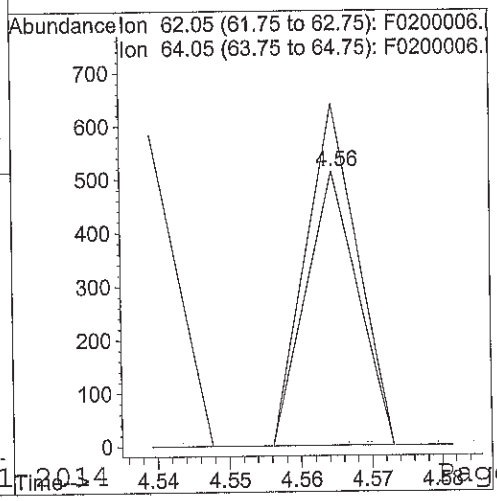


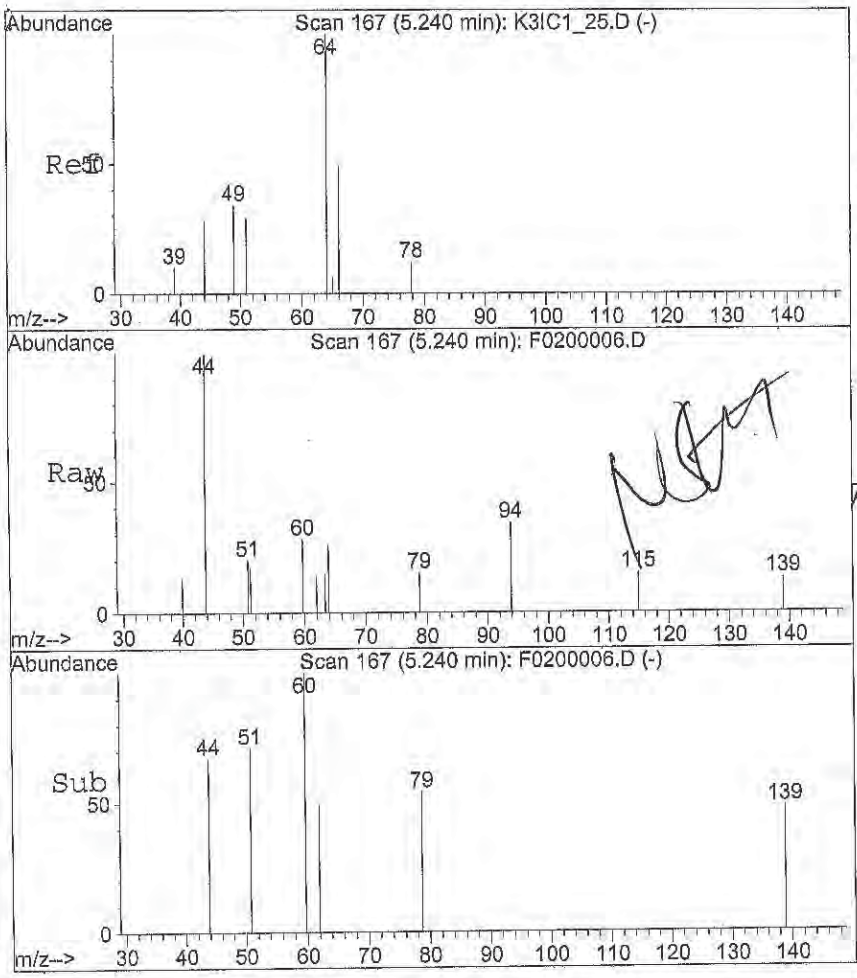


#5
Vinyl Chloride
Concen: 0.12 ug/L
RT: 4.56 min Scan# 87
Delta R.T. 0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 62 Resp: 260

Ion	Ratio	Lower	Upper
62	100		
64	124.6	25.6	38.4#

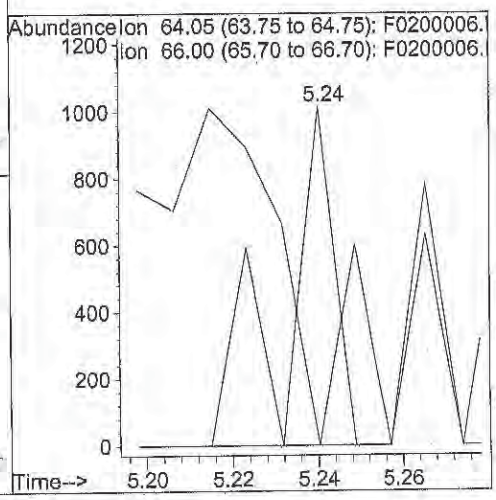


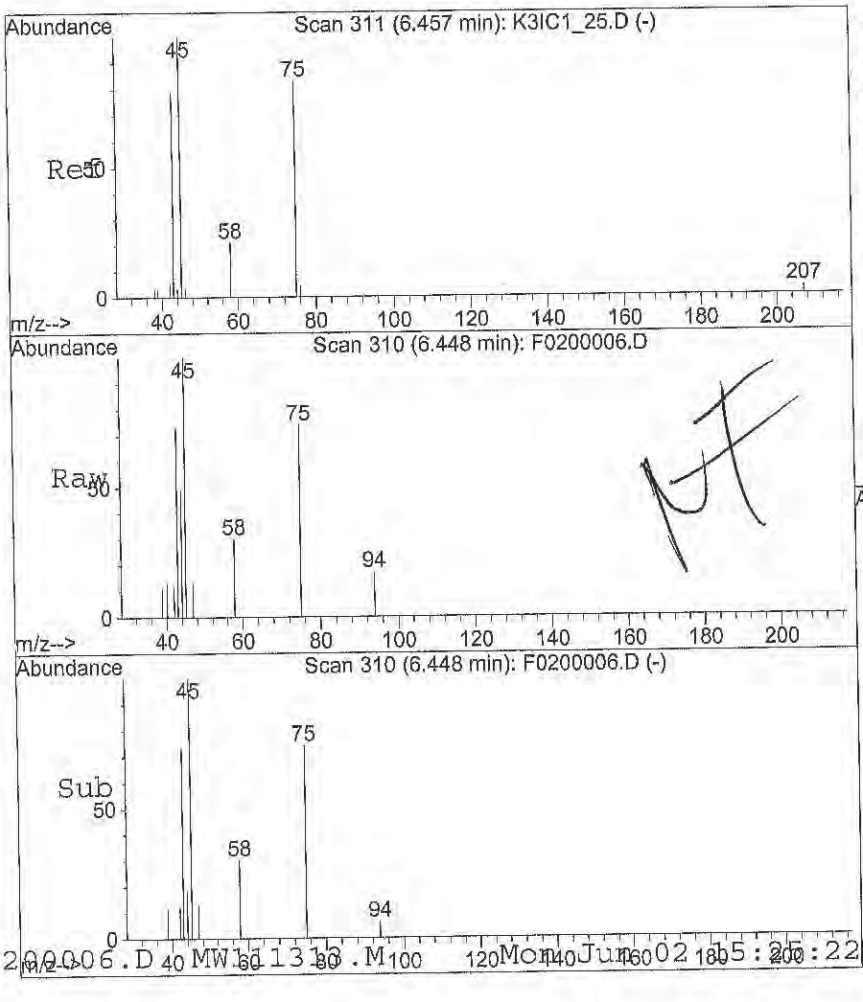


#7
Chloroethane
Concen: 1.51 ug/L
RT: 5.24 min Scan# 167
Delta R.T. 0.00 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 64 Resp: 814

Ion	Ratio	Lower	Upper
64	100		
66	37.5	35.4	53.0

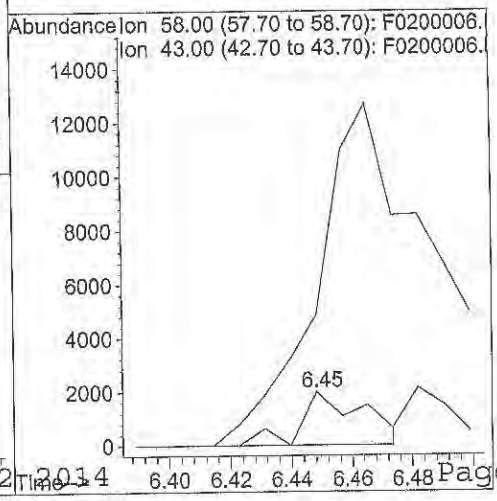


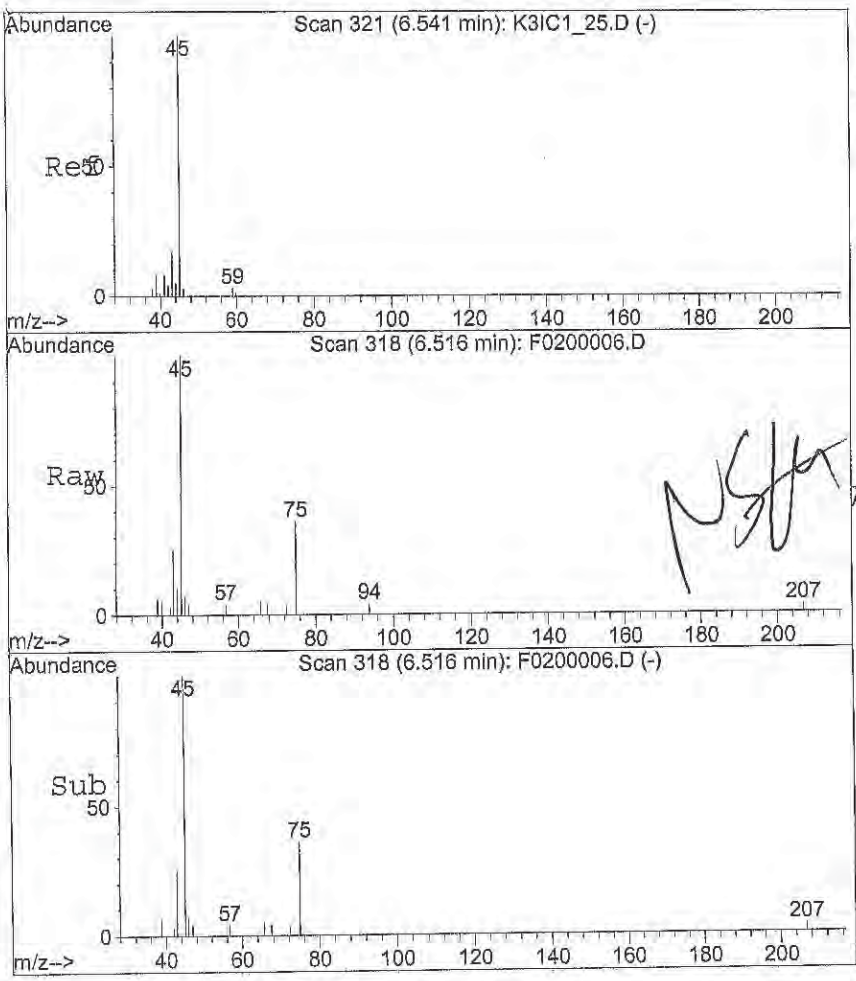


#11
Acetone
Concen: 1.24 ug/L
RT: 6.45 min Scan# 310
Delta R.T. -0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 58 Resp: 2931

Ion	Ratio	Lower	Upper
58	100		
43	0.0	360.9	541.3#

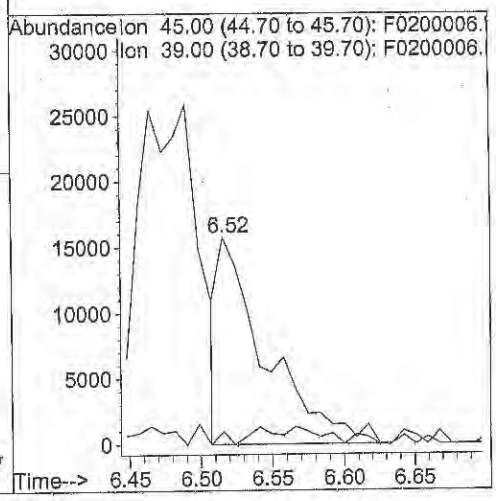


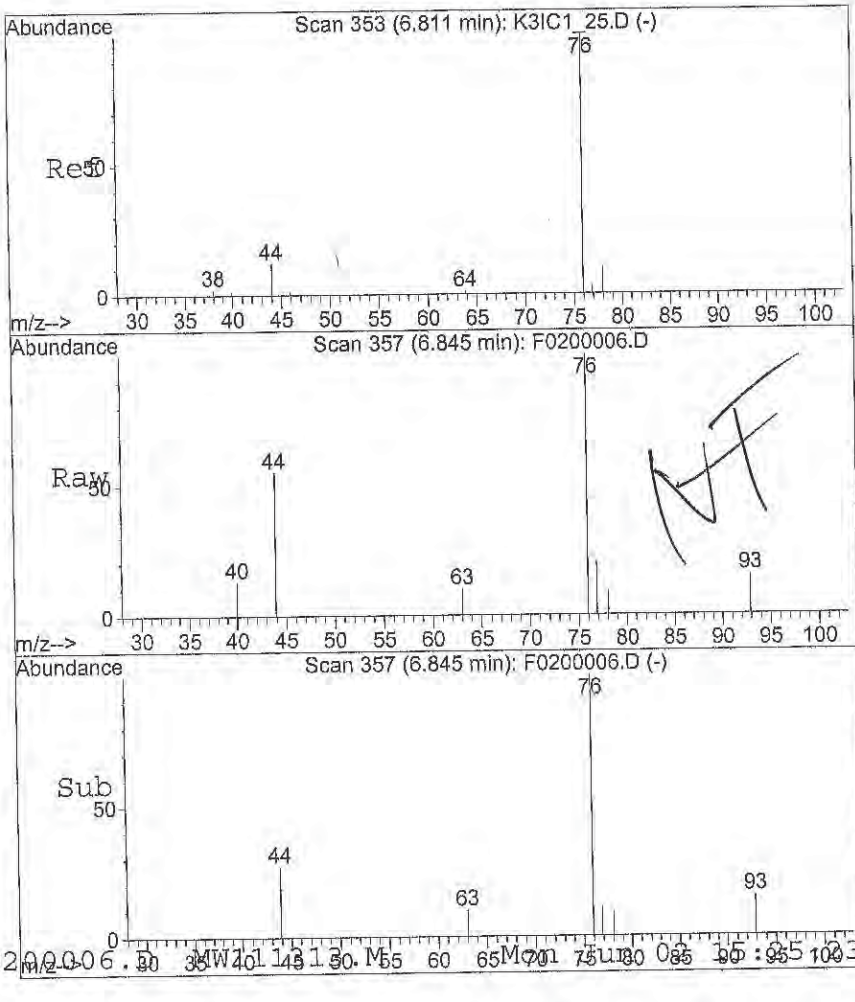


#12
(IPA) Leak Check Compound
Concen: 253.95 ug/L
RT: 6.52 min Scan# 318
Delta R.T. -0.03 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 45 Resp: 36243

Ion	Ratio	Lower	Upper
45	100		
39	0.0	4.9	7.3#

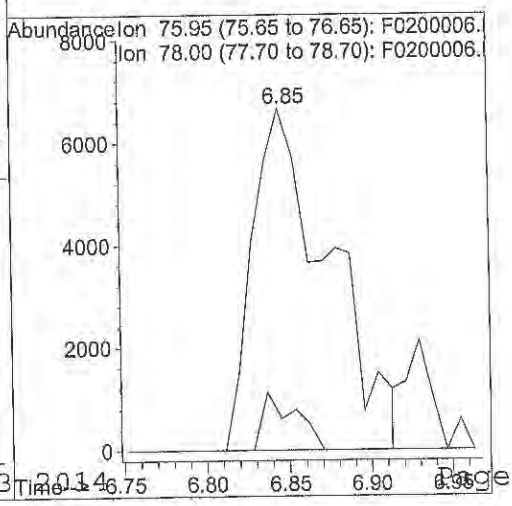


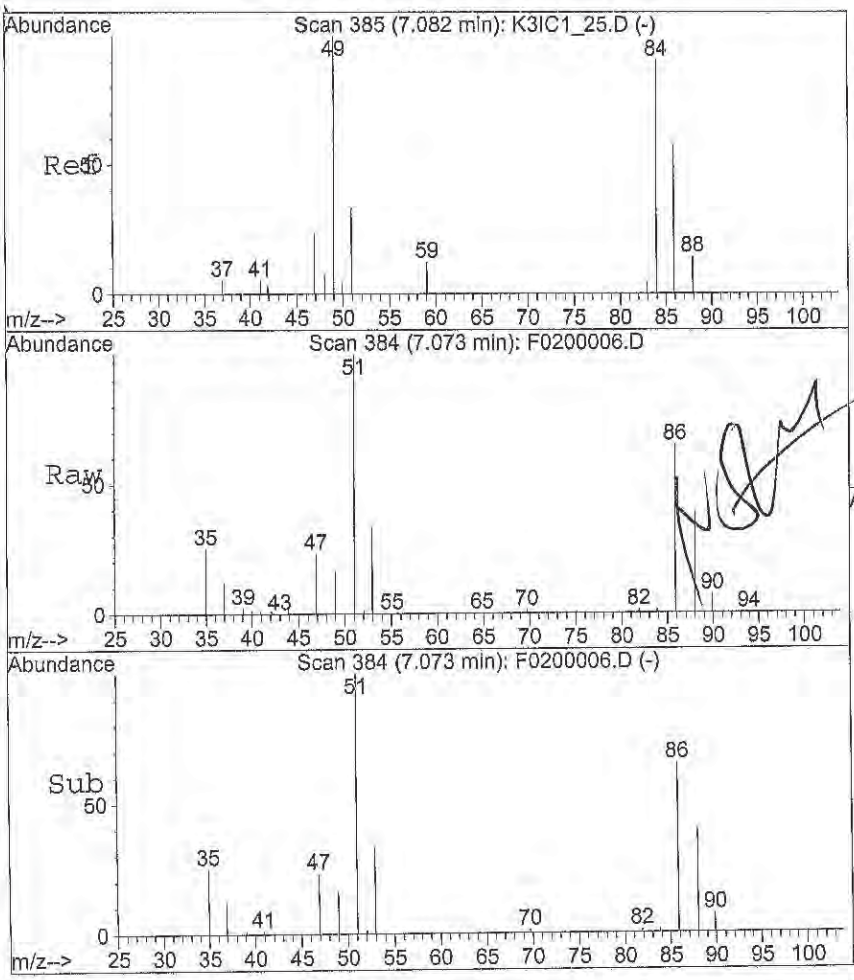


#13
Carbon disulfide
Concen: 2.17 ug/L
RT: 6.85 min Scan# 357
Delta R.T. 0.03 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 76 Resp: 21407

Ion	Ratio	Lower	Upper
76	100		
78	7.2	7.0	10.4

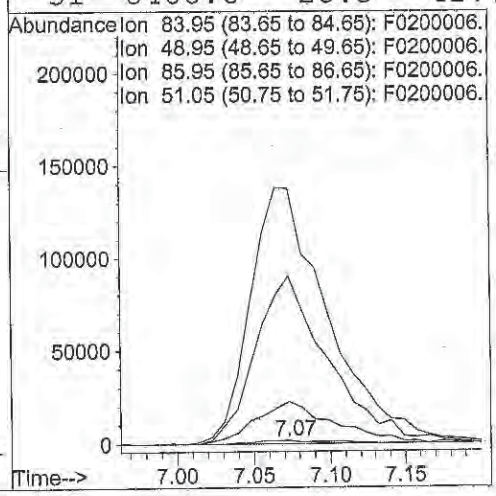


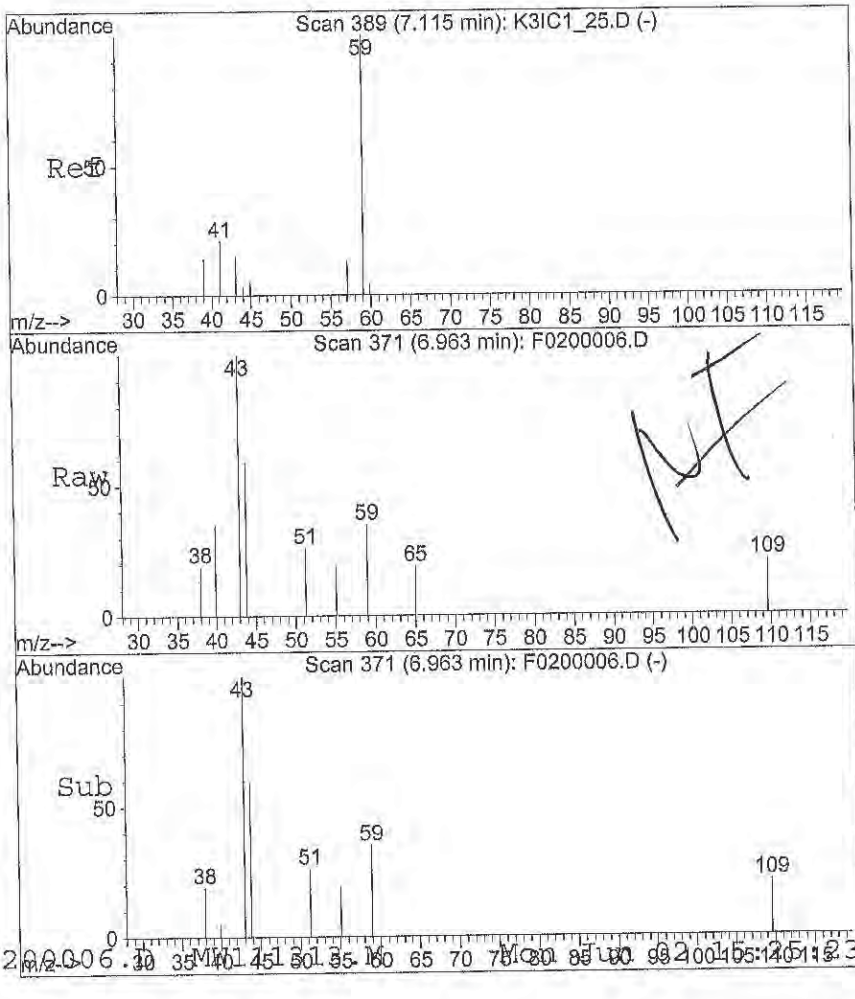


#14
Methylene Chloride
Concen: 1.77 ug/L
RT: 7.07 min Scan# 384
Delta R.T. -0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

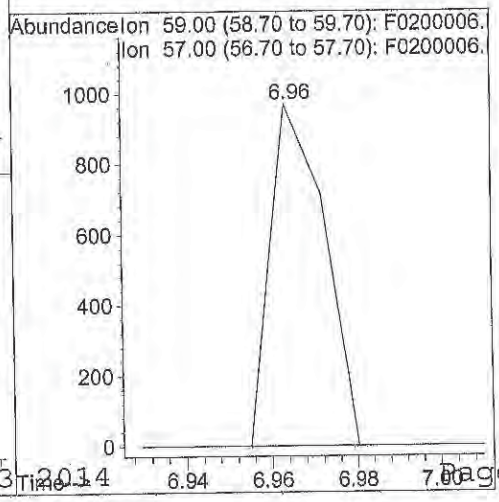


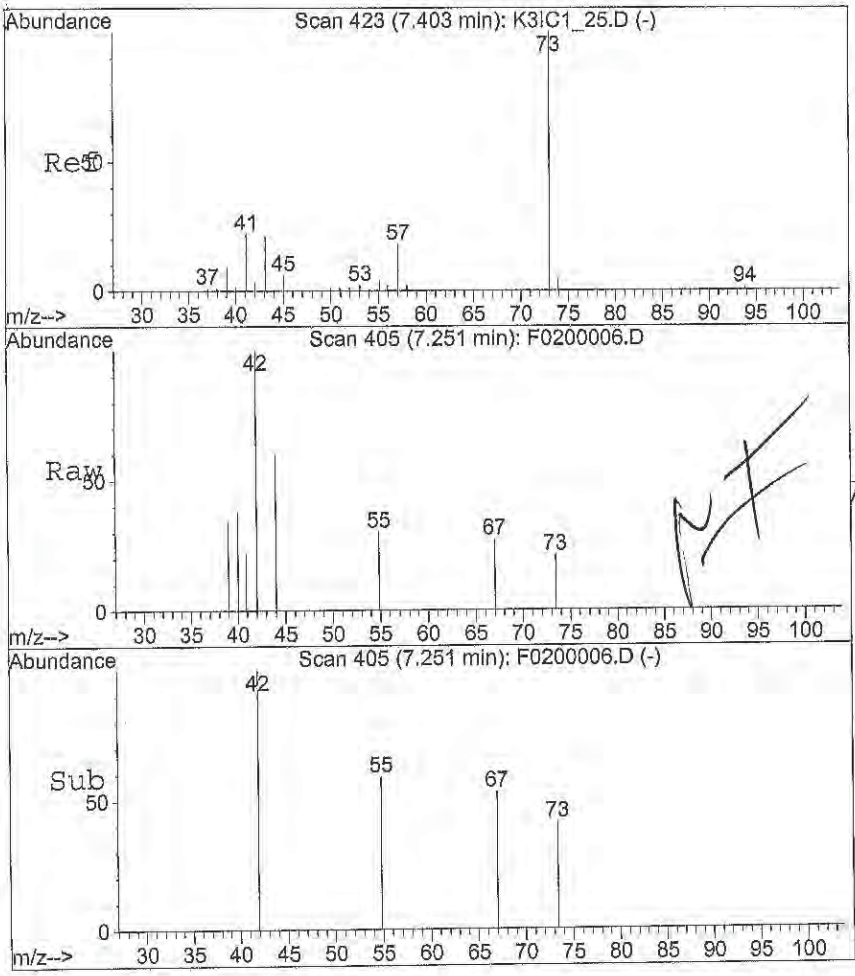


#15
(TBA) tert-Butanol
Concen: 4.21 ug/L
RT: 6.96 min Scan# 371
Delta R.T. -0.15 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 59 Resp: 853

Ion	Ratio	Lower	Upper
59	100		
57	0.0	6.4	9.6#

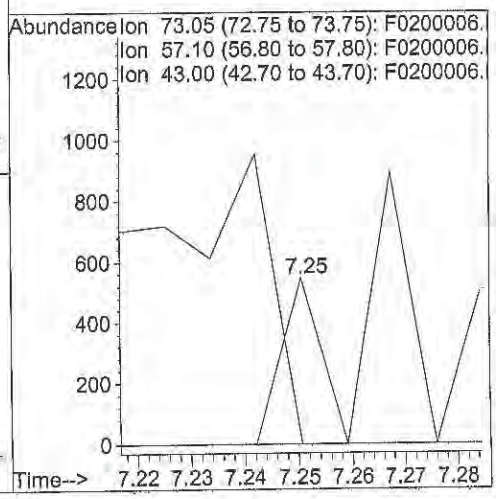


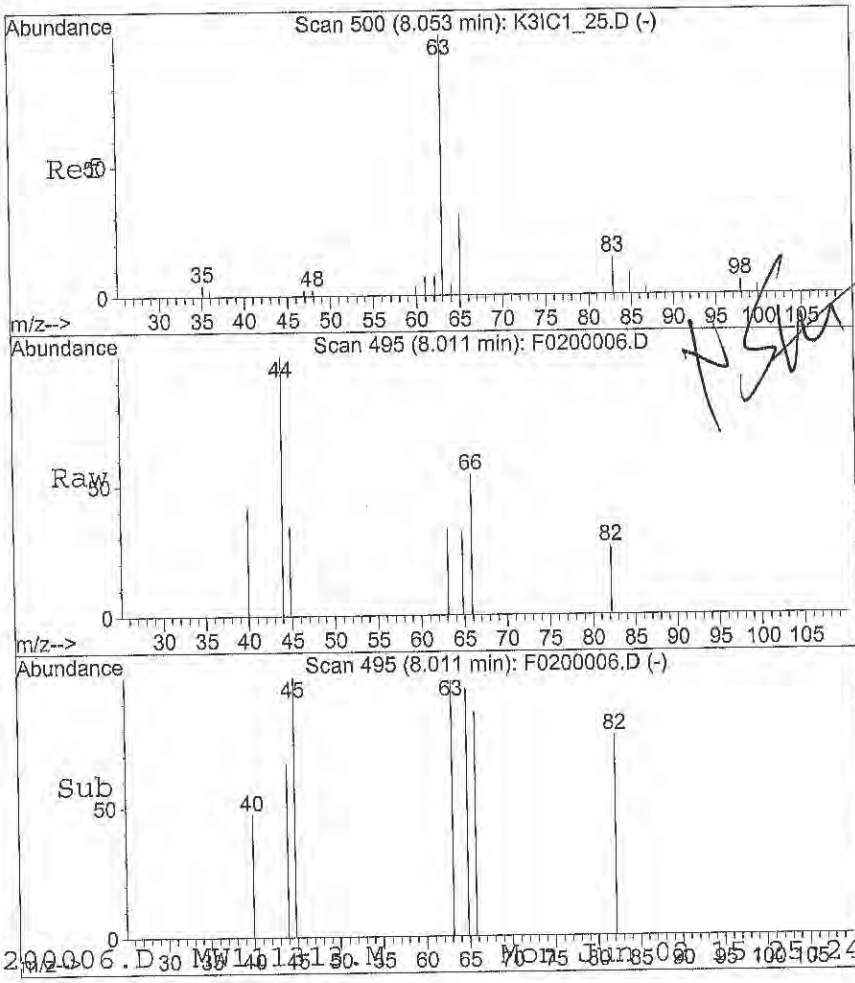


#16
(MTBE) Methyl-t-butyl ether
Concen: 0.04 ug/L
RT: 7.25 min Scan# 405
Delta R.T. -0.15 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

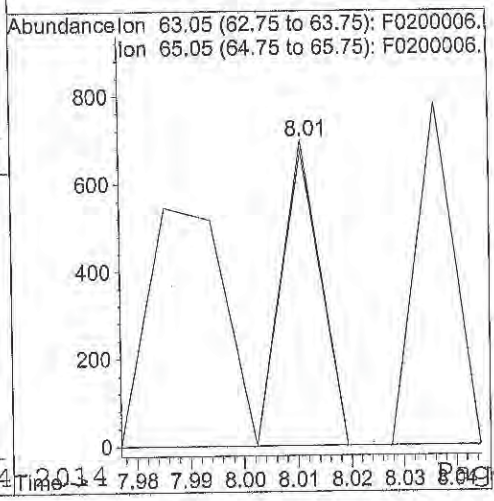


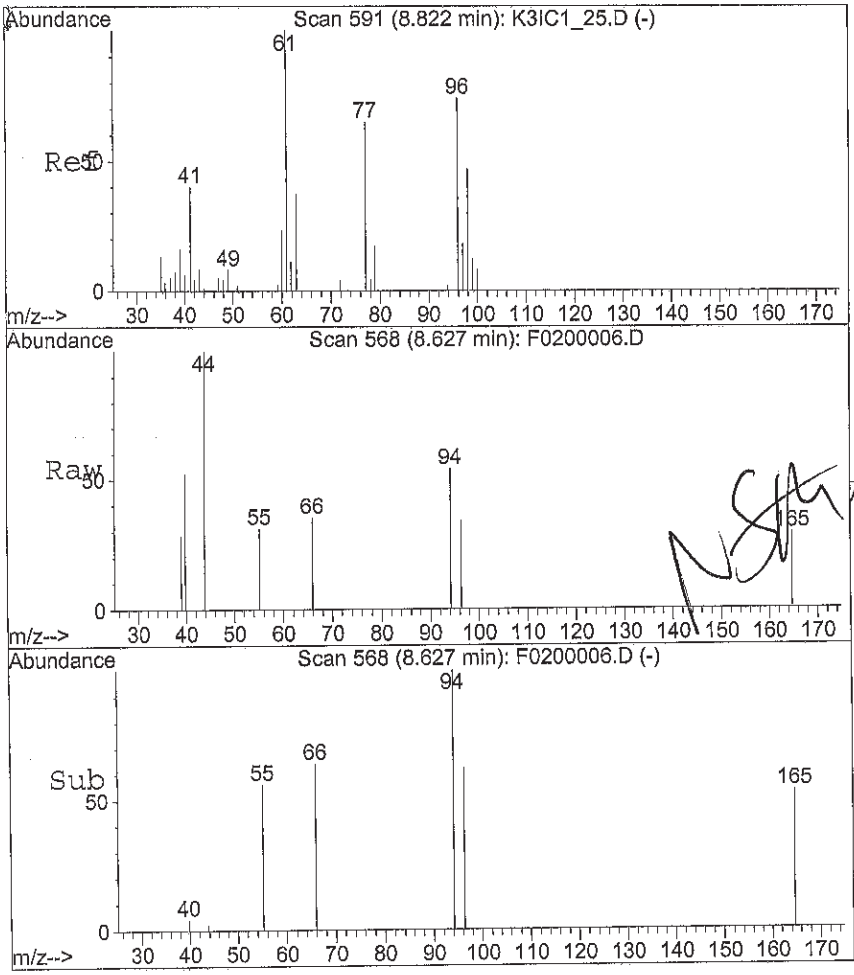


#18
1,1-Dichloroethane
Concen: 0.07 ug/L
RT: 8.01 min Scan# 495
Delta R.T. -0.04 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 63 Resp: 353

Ion	Ratio	Lower	Upper
63	100		
65	96.6	25.8	38.8#

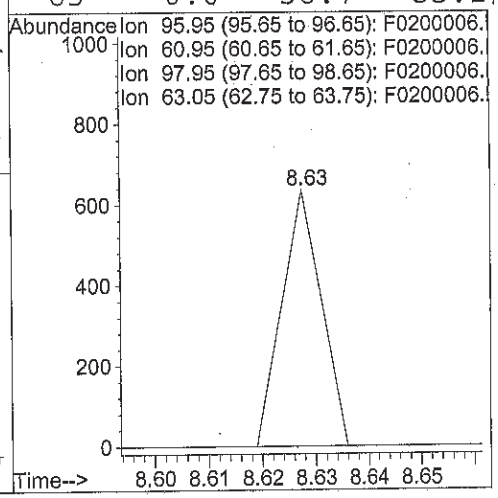


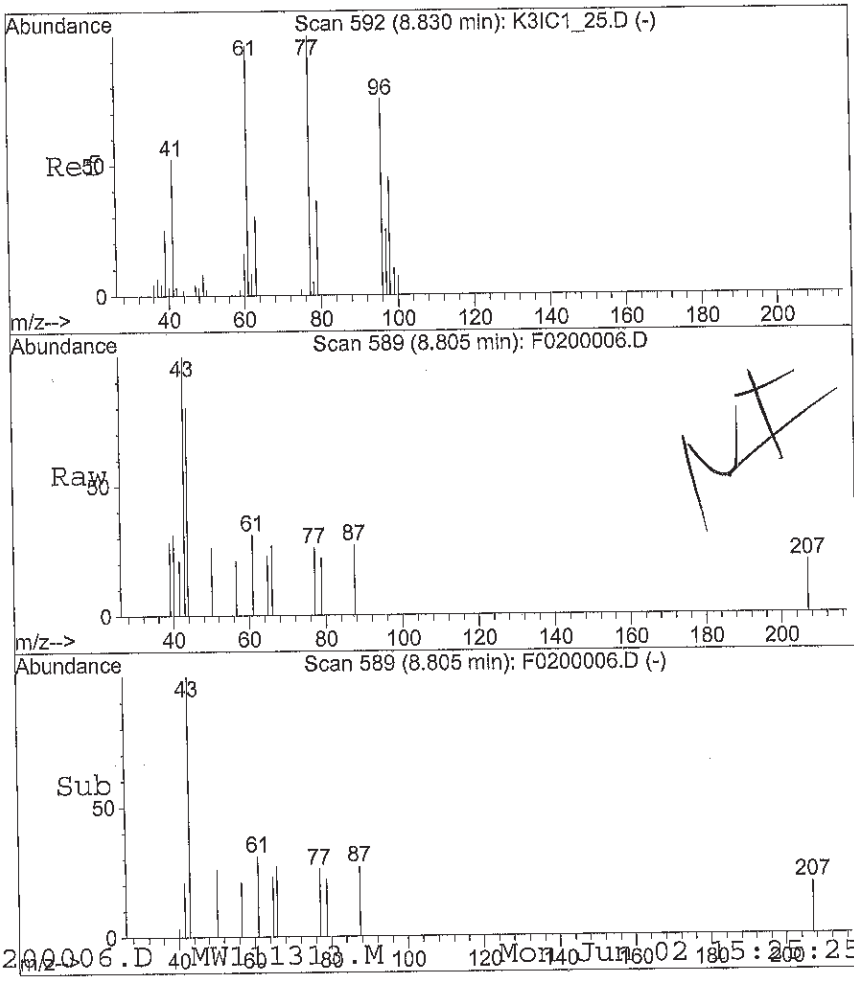


#19
cis-1,2-Dichloroethene
Concen: 0.09 ug/L
RT: 8.63 min Scan# 568
Delta R.T. -0.19 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

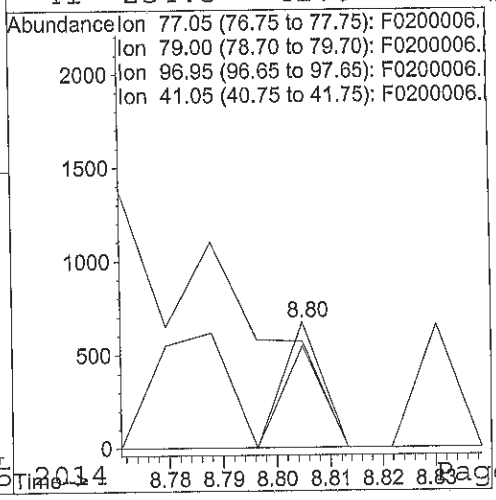


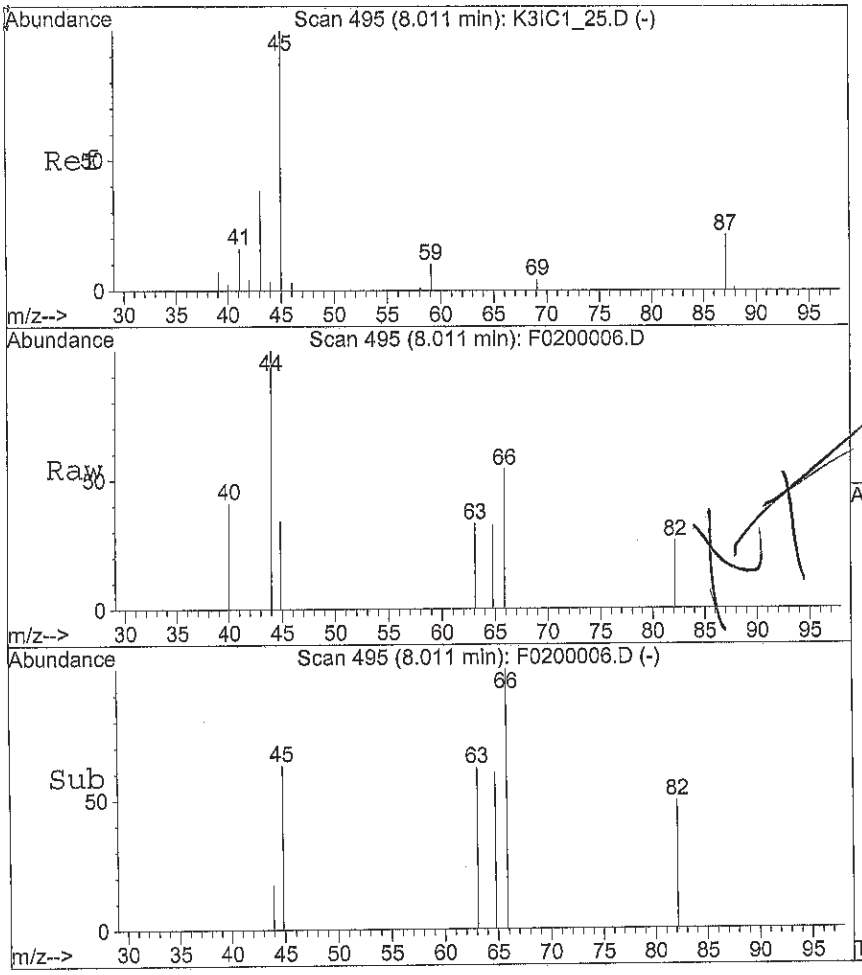


#20
2,2-Dichloropropane
Concen: 0.07 ug/L
RT: 8.80 min Scan# 589
Delta R.T. -0.03 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

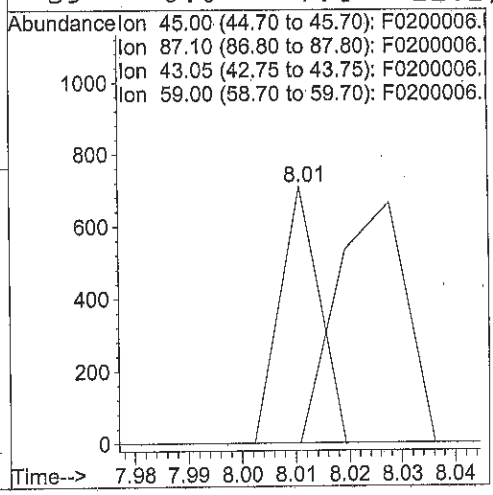


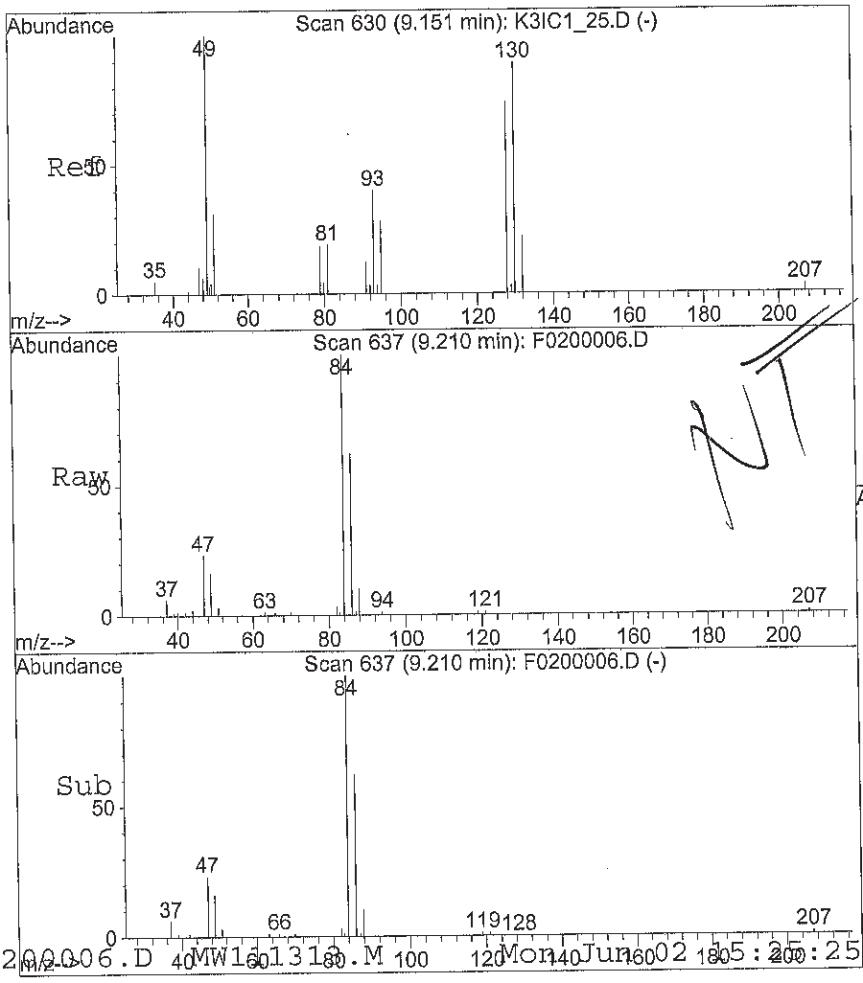


#22
(DIPE) Diisopropyl Ether
Concen: 0.04 ug/L
RT: 8.01 min Scan# 495
Delta R.T. 0.00 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

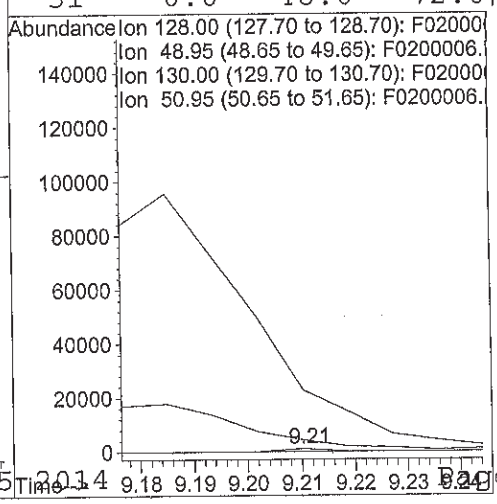


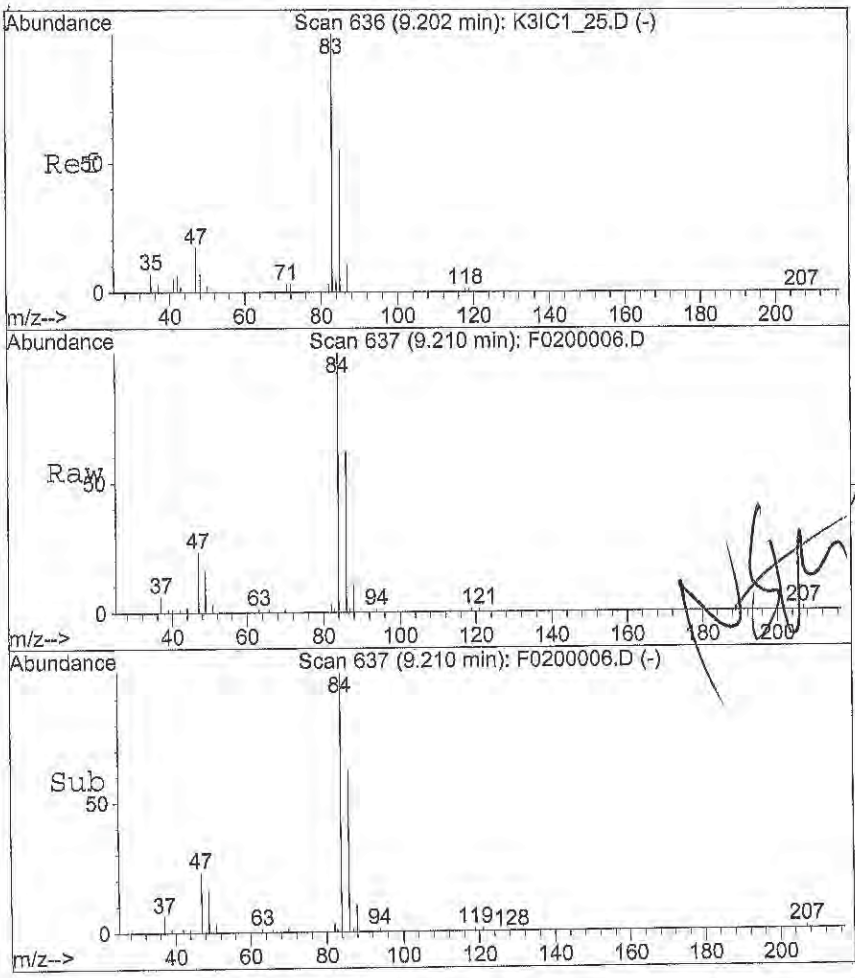


#23
Bromochloromethane
Concen: 0.34 ug/L
RT: 9.21 min Scan# 637
Delta R.T. 0.06 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

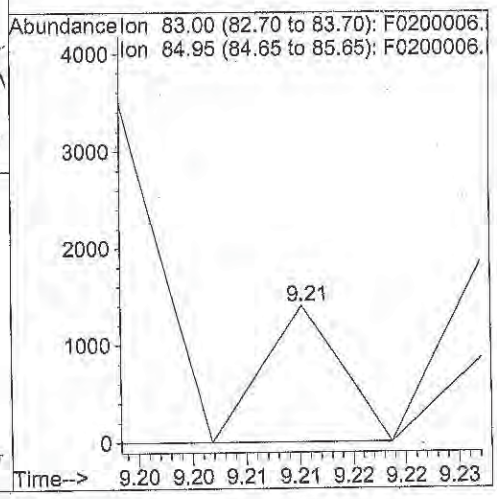


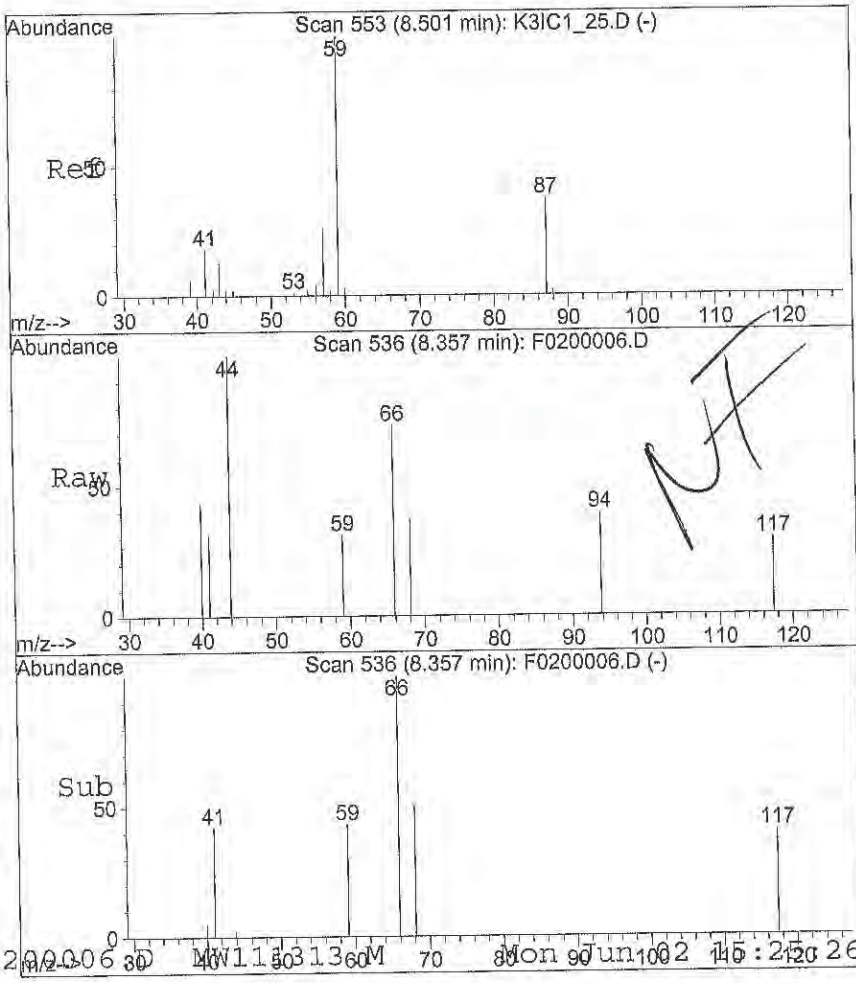


#24
Chloroform
Concen: 0.11 ug/L
RT: 9.21 min Scan# 637
Delta R.T. 0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 83 Resp: 708

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.8	77.6#

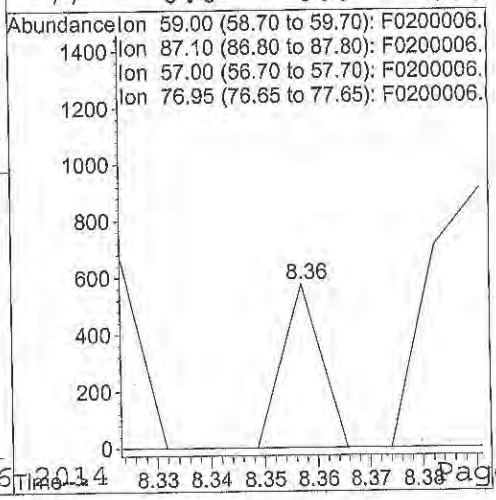


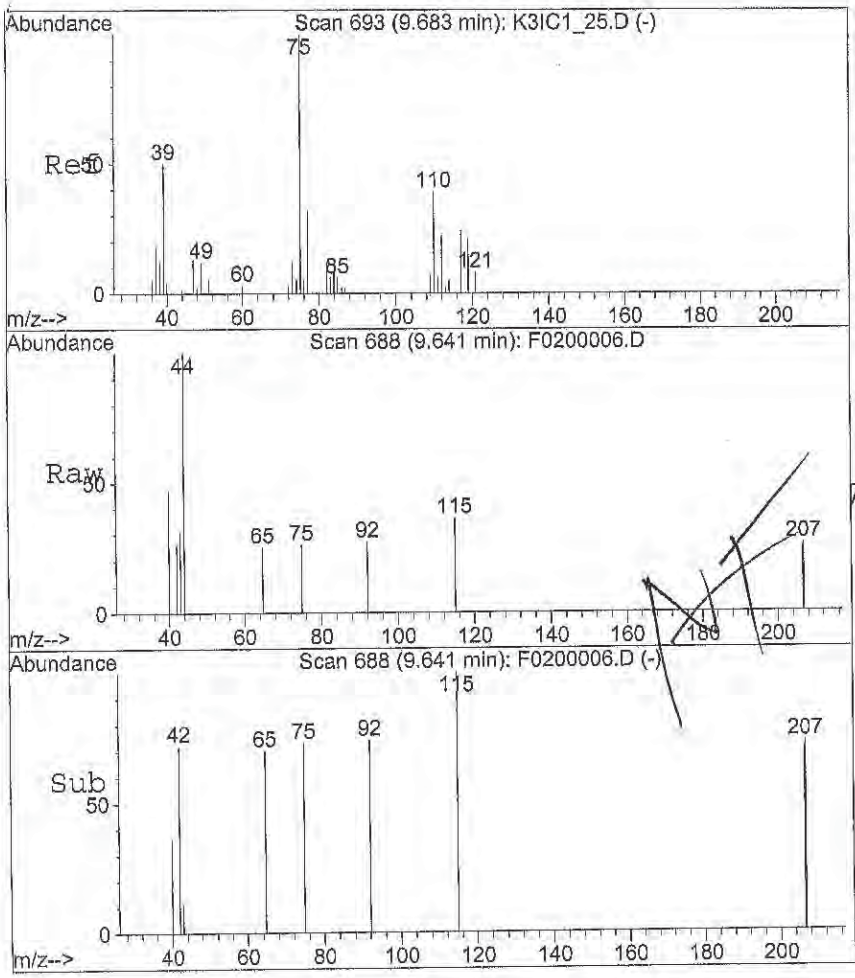


#25
(ETBE) 2-ethoxy 2-methyl propar
Concen: 0.03 ug/L
RT: 8.36 min Scan# 536
Delta R.T. -0.14 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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

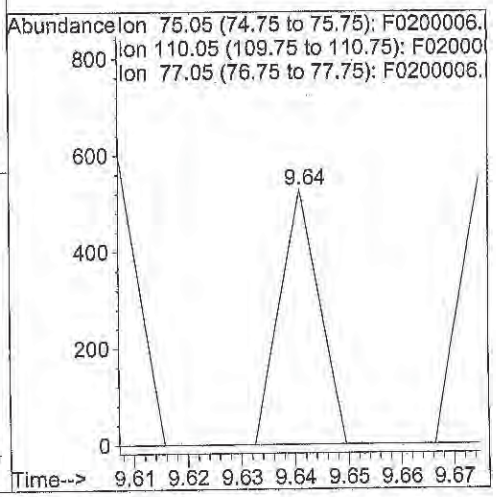


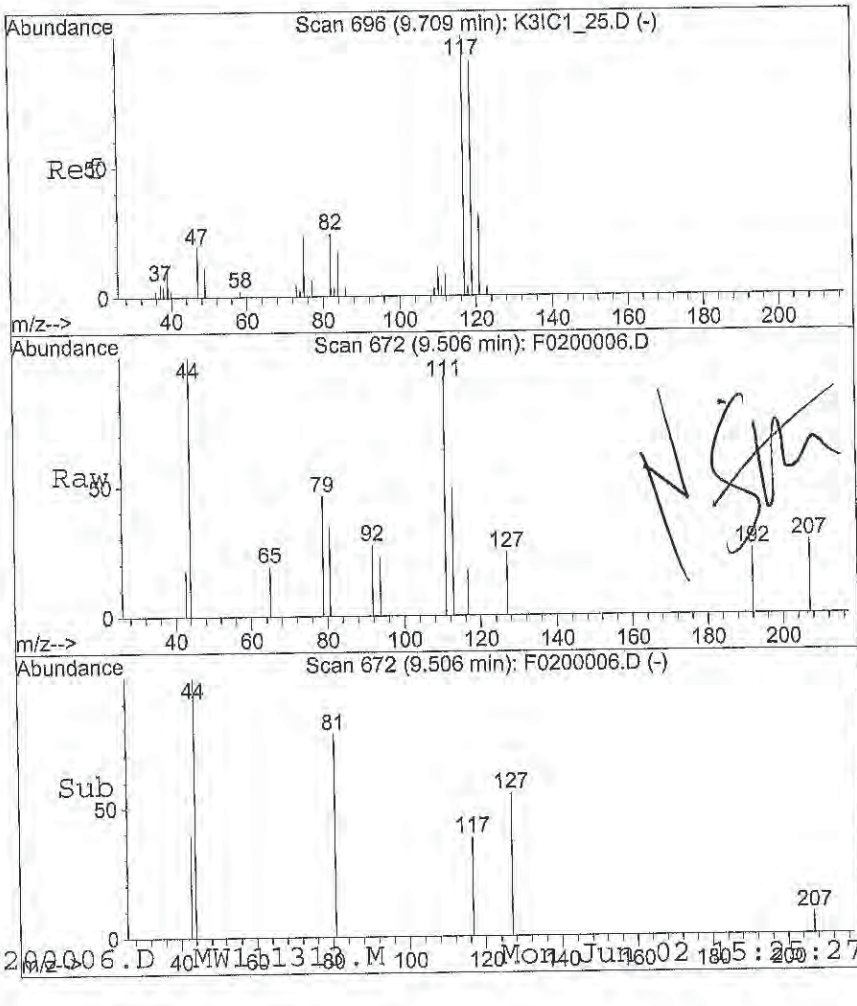


#29
1,1-Dichloropropene
Concen: 0.06 ug/L
RT: 9.64 min Scan# 688
Delta R.T. -0.04 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

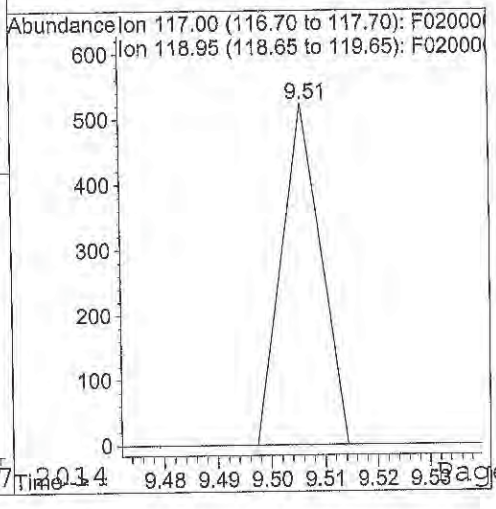


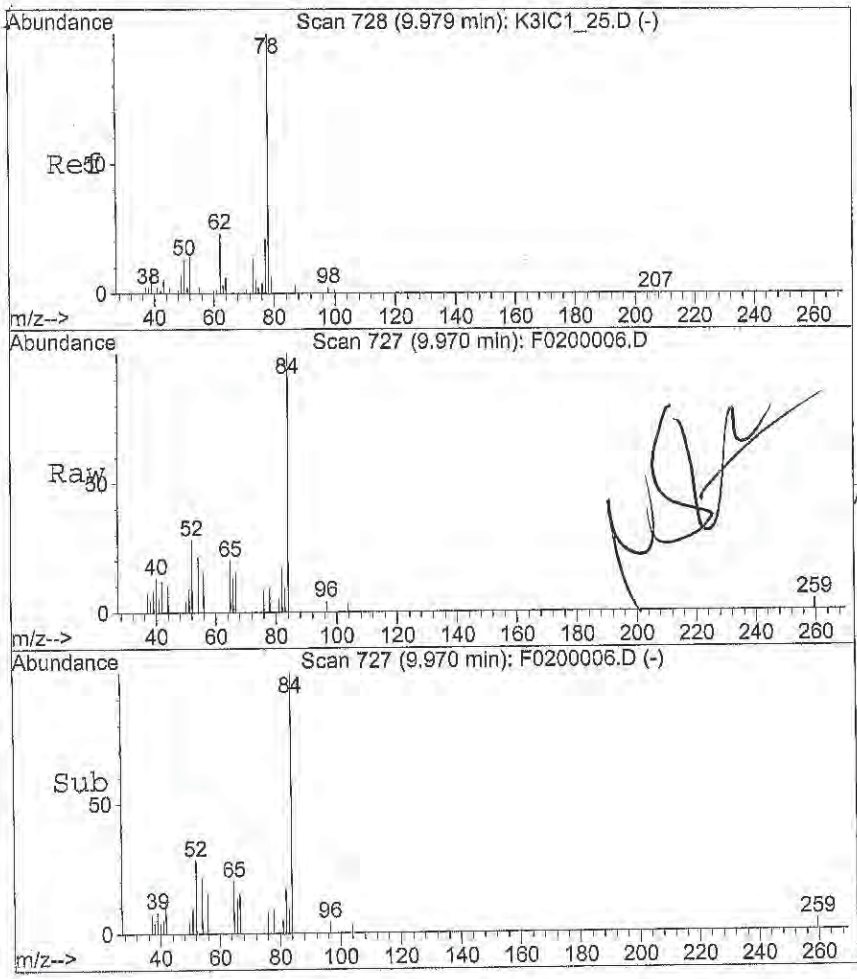


#30
Carbon Tetrachloride
Concen: 0.07 ug/L
RT: 9.51 min Scan# 672
Delta R.T. -0.20 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion:117 Resp: 265

Ion	Ratio	Lower	Upper
117	100		
119	0.0	75.8	113.8#

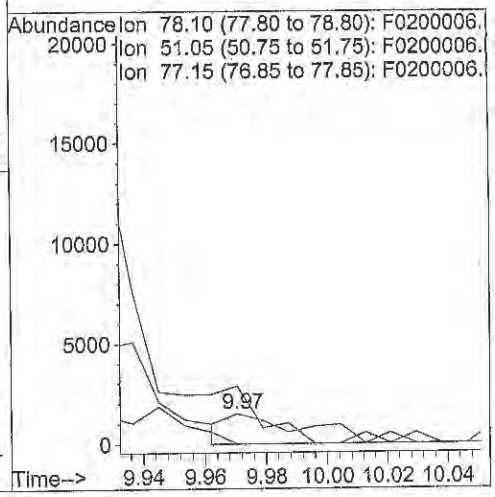


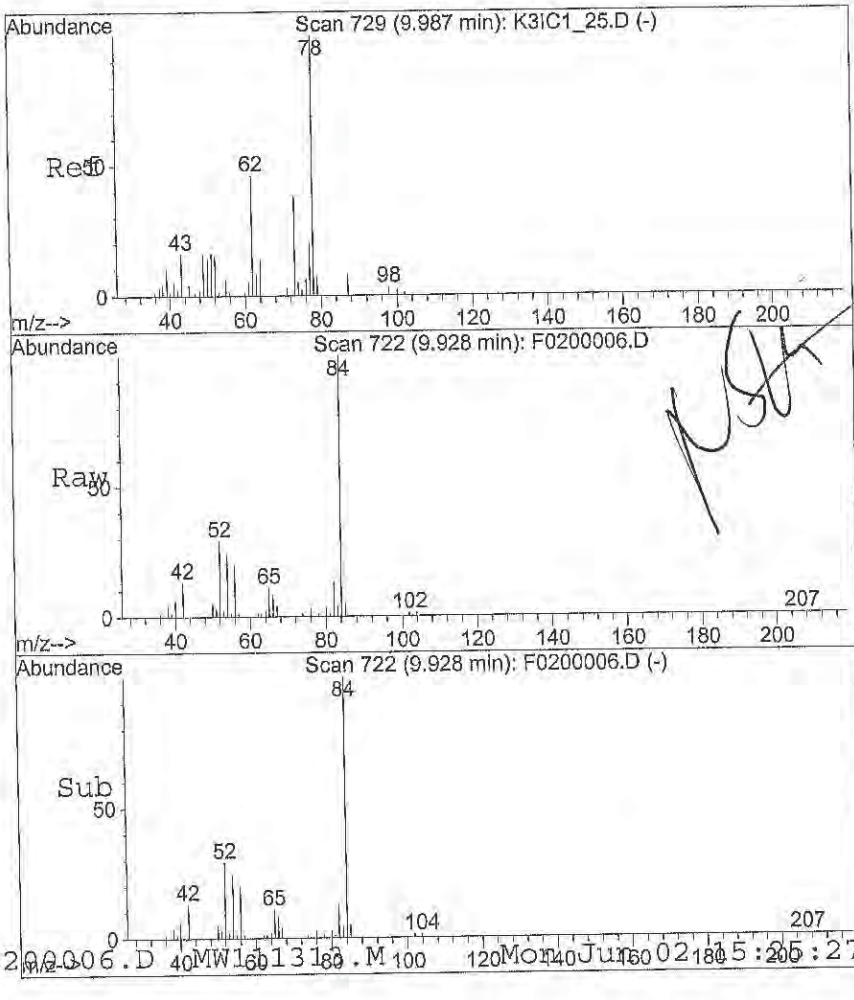


#31
Benzene
Concen: 0.23 ug/L
RT: 9.97 min Scan# 727
Delta R.T. -0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

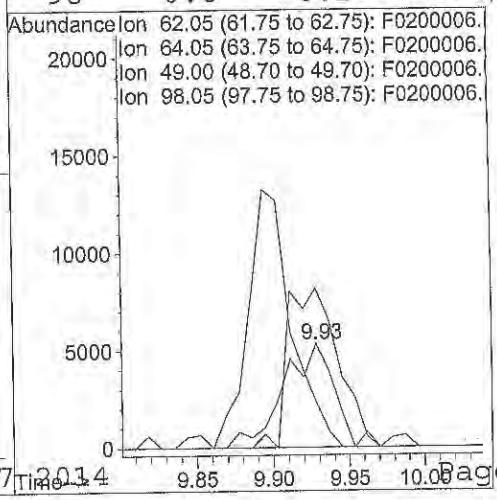


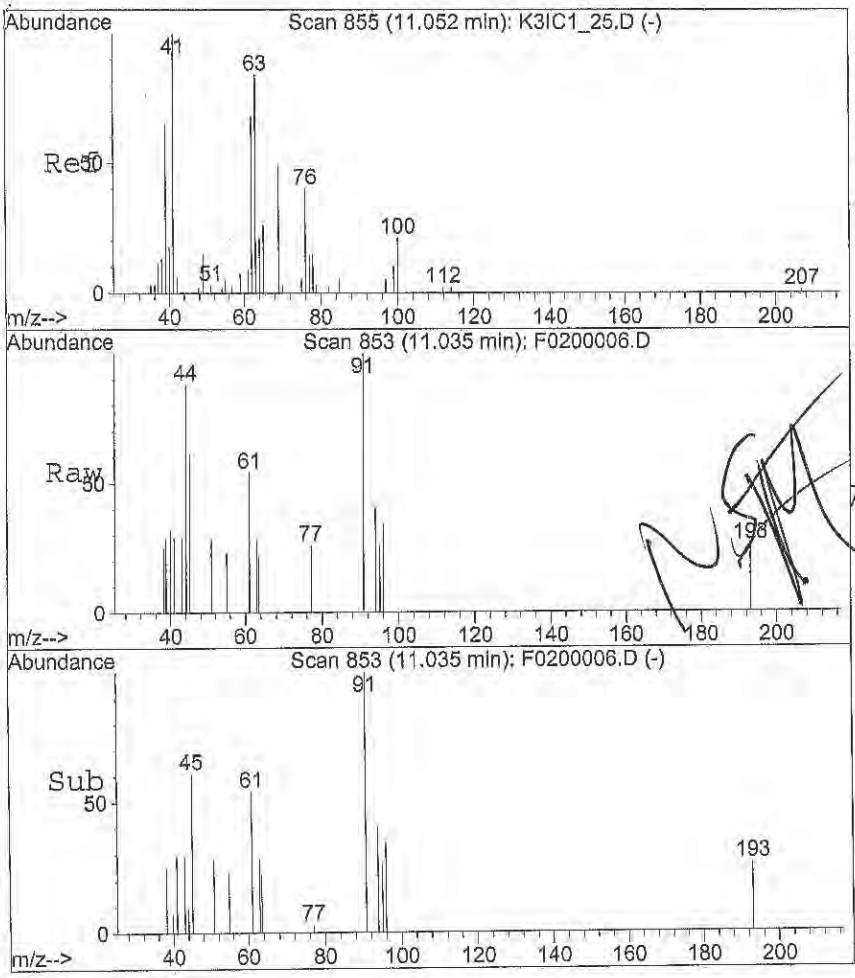


#32
1,2-Dichloroethane
Concen: 3.16 ug/L
RT: 9.93 min Scan# 722
Delta R.T. -0.06 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

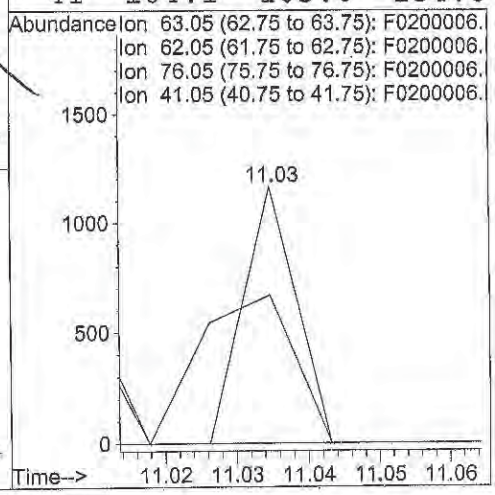


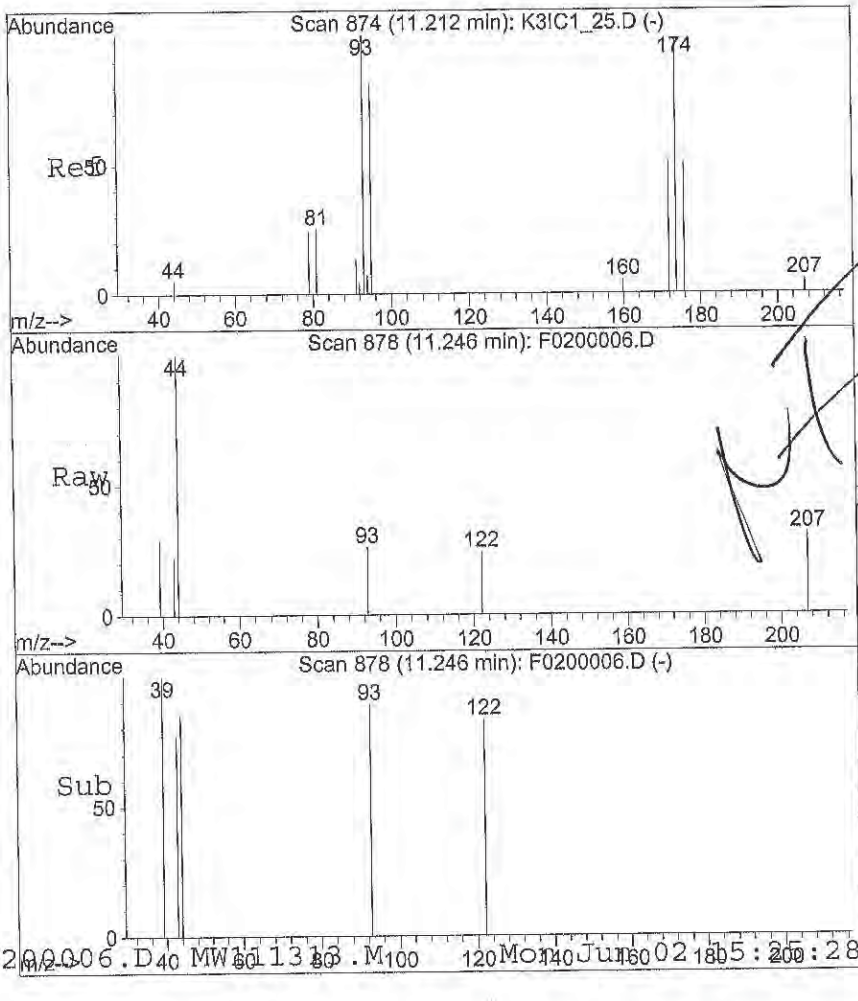


#34
1,2-Dichloropropane
Concen: 0.22 ug/L
RT: 11.03 min Scan# 853
Delta R.T. -0.02 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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

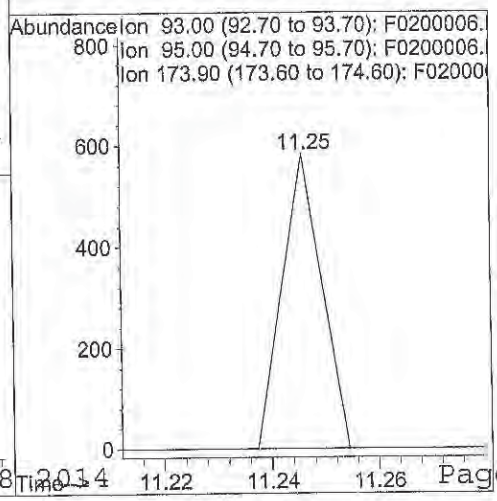


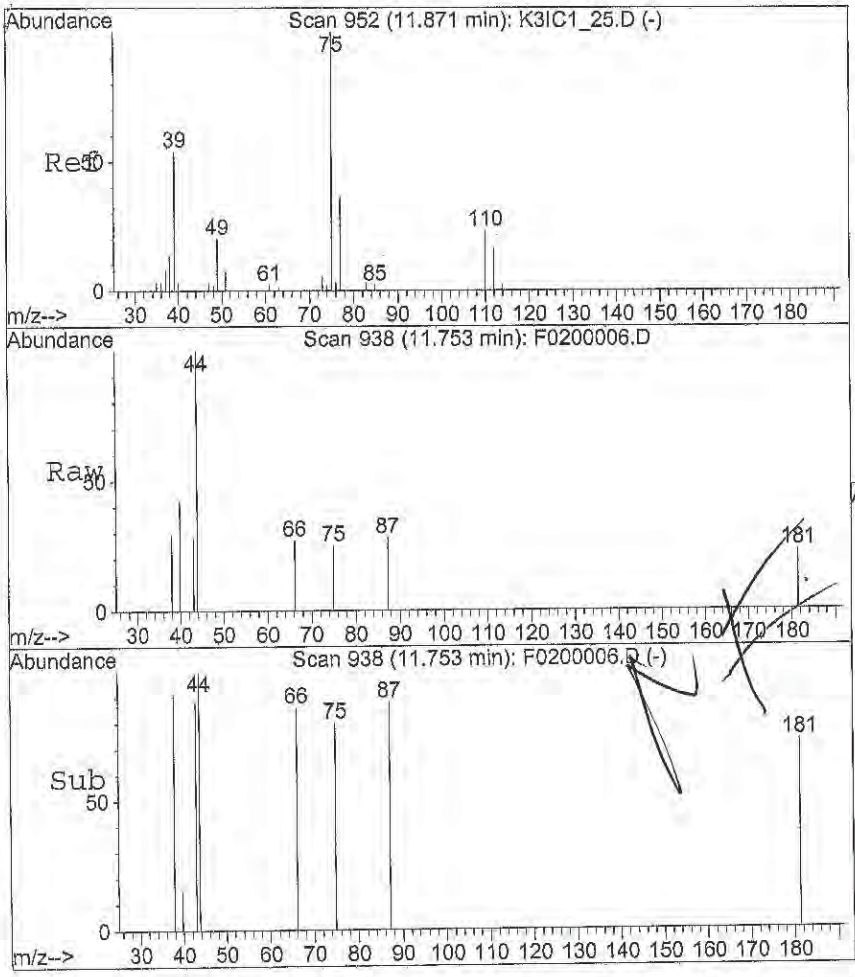


#35
Dibromomethane
Concen: 0.14 ug/L
RT: 11.25 min Scan# 878
Delta R.T. 0.03 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

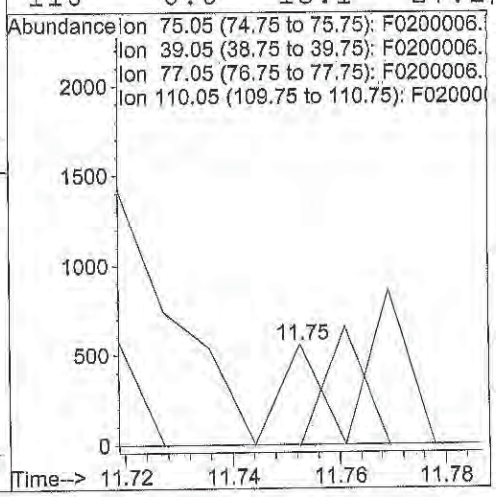


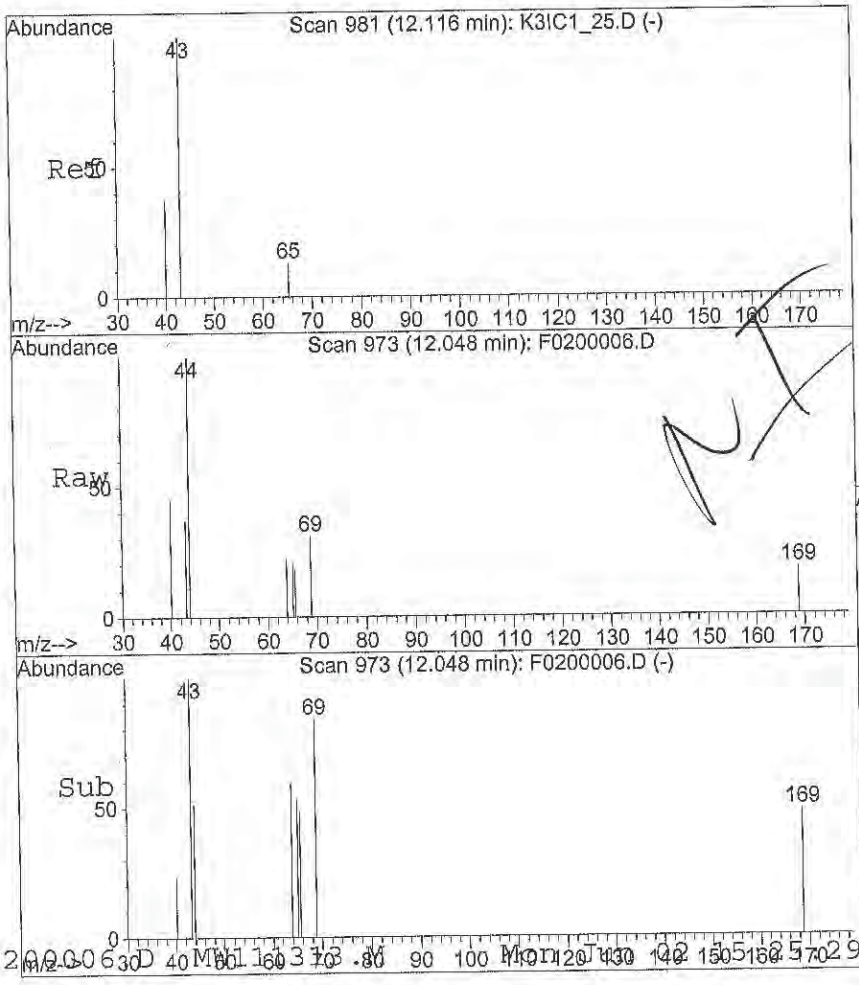


#37
cis-1,3-Dichloropropene
Concen: 0.06 ug/L
RT: 11.75 min Scan# 938
Delta R.T. -0.12 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

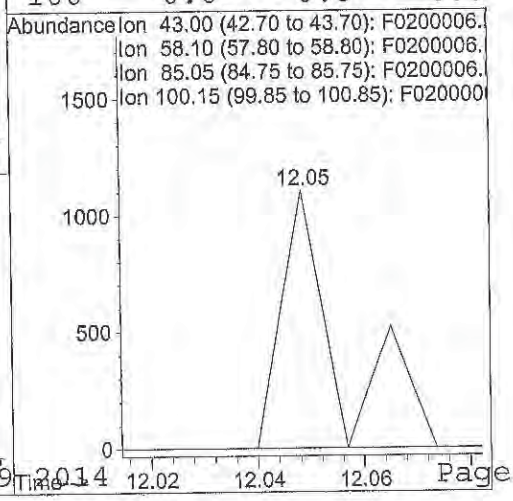


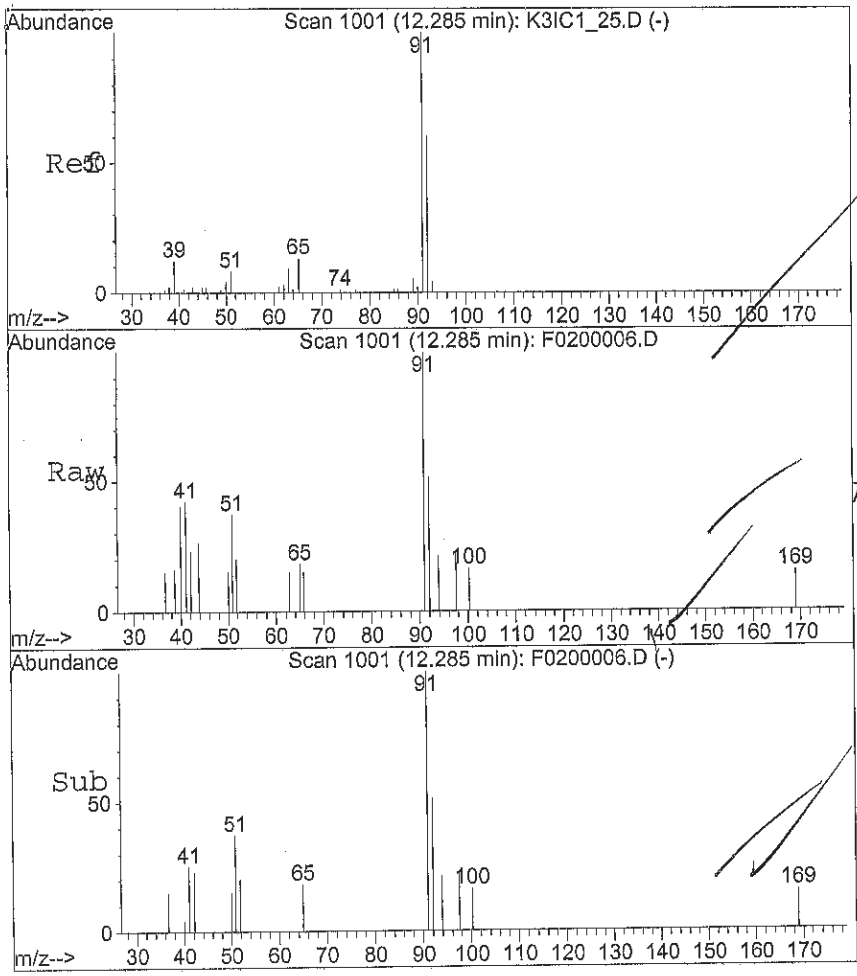


#40
(MIBK) 4-Methyl-2-Pentanone
Concen: 0.25 ug/L
RT: 12.05 min Scan# 973
Delta R.T. -0.07 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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

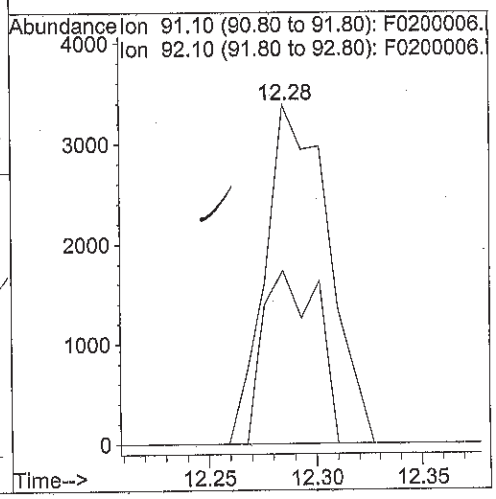


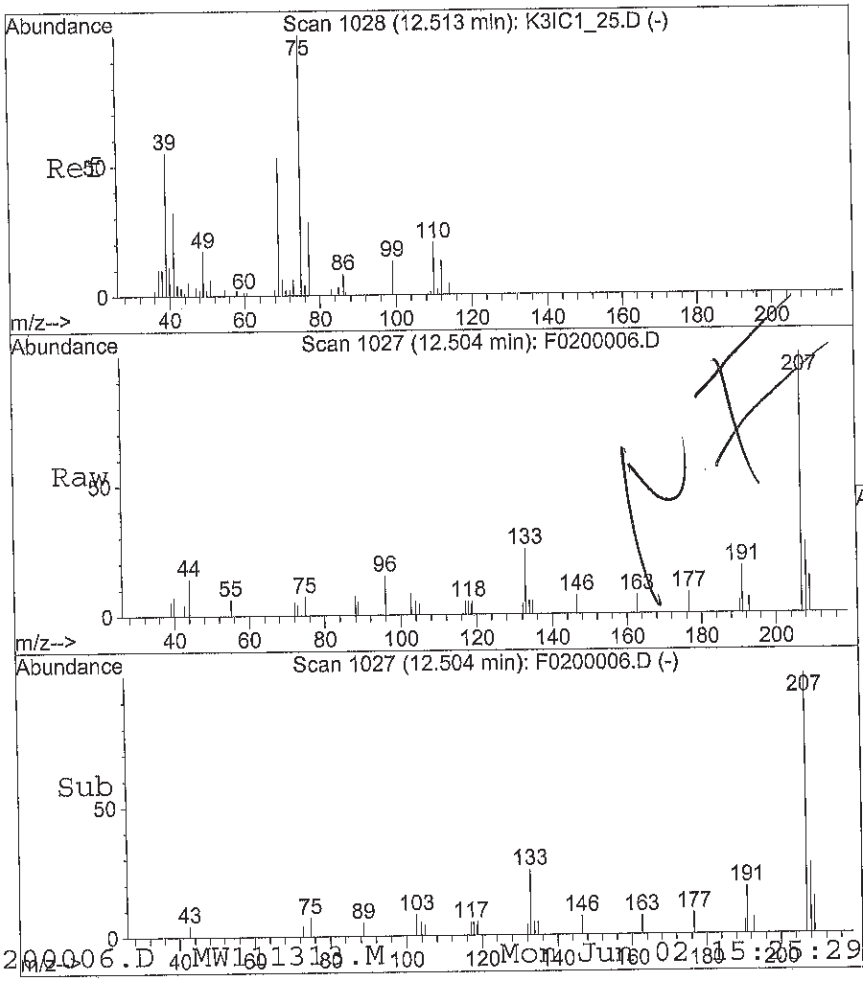


#41
Toluene
Concen: 0.45 ug/L
RT: 12.28 min Scan# 1001
Delta R.T. 0.00 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 91 Resp: 6909

Ion	Ratio	Lower	Upper
91	100		
92	44.1	47.4	71.0#

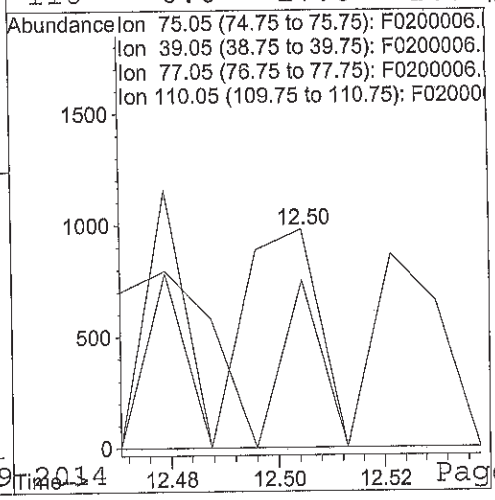


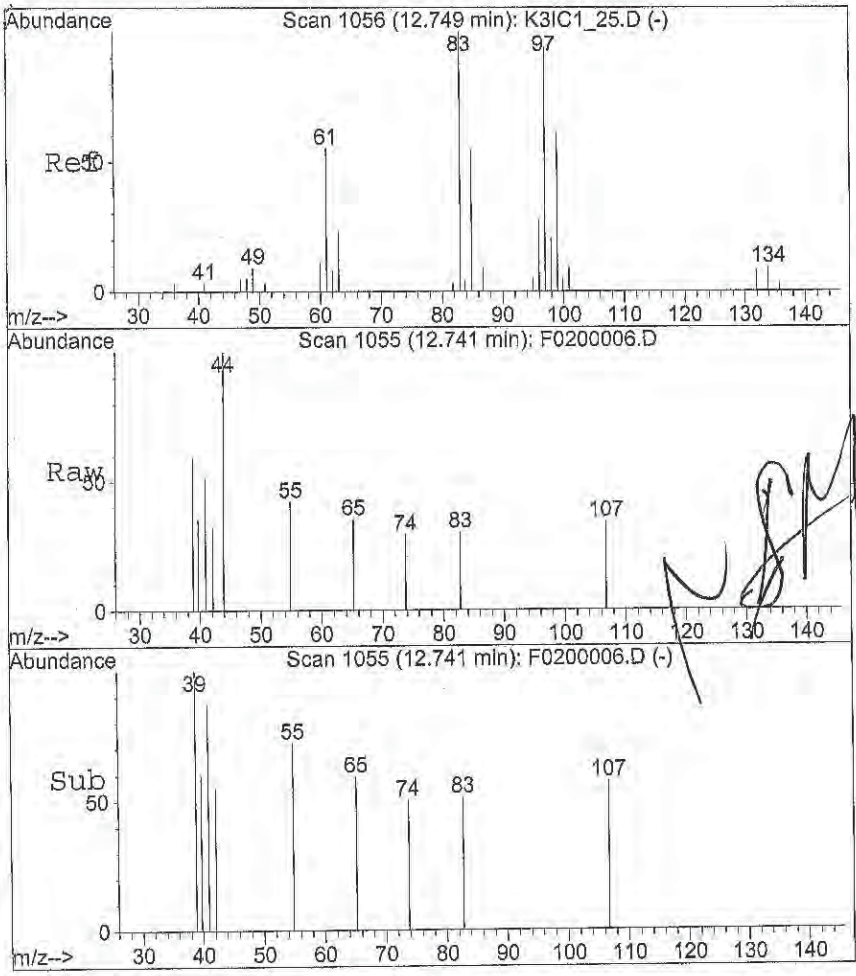


#42
trans-1,3-Dichloropropene
Concen: 0.19 ug/L
RT: 12.50 min Scan# 1027
Delta R.T. -0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

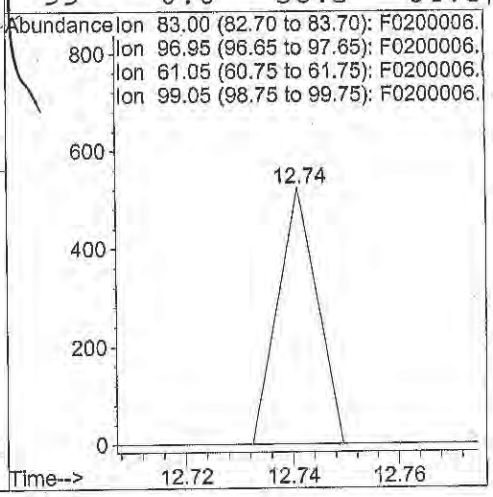


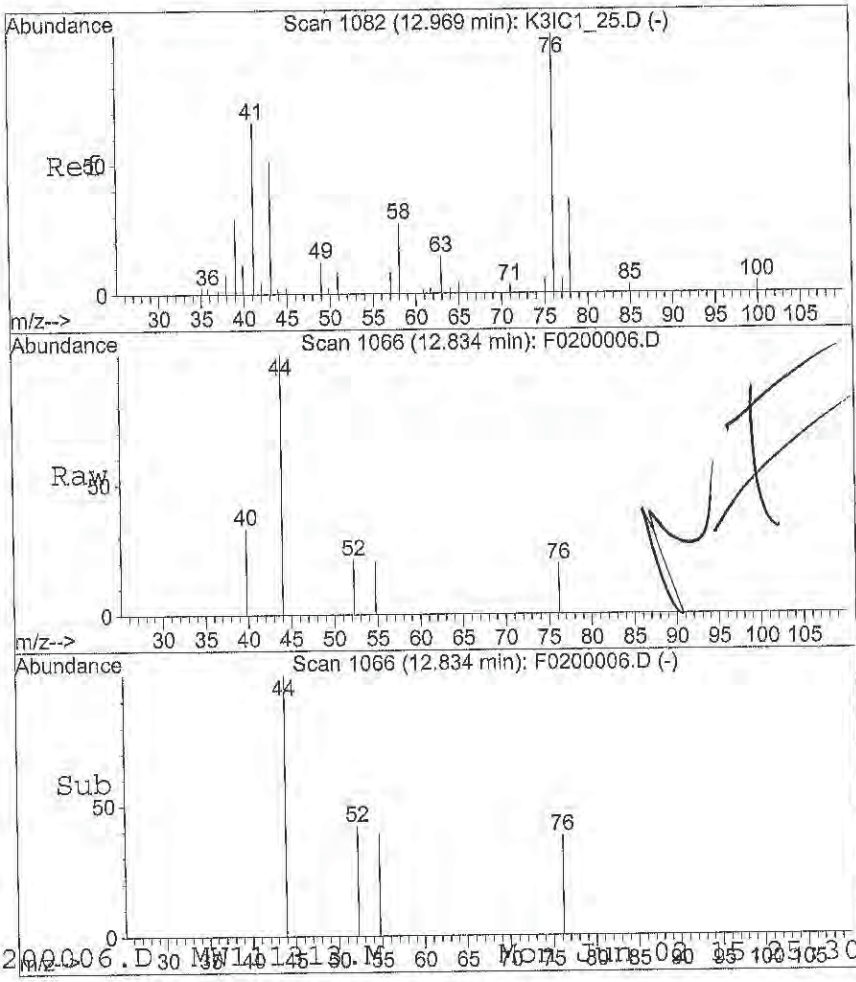


#43
1,1,2-Trichloroethane
Concen: 0.10 ug/L
RT: 12.74 min Scan# 1055
Delta R.T. -0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

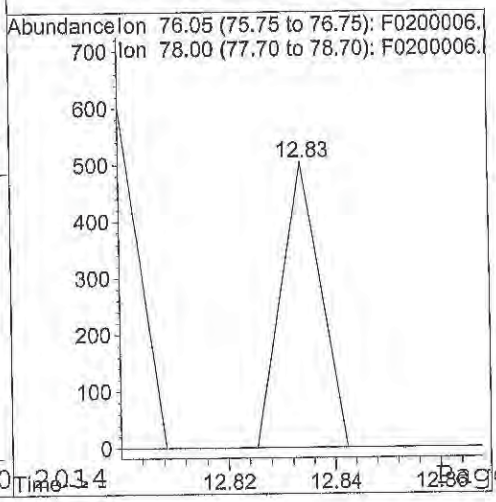


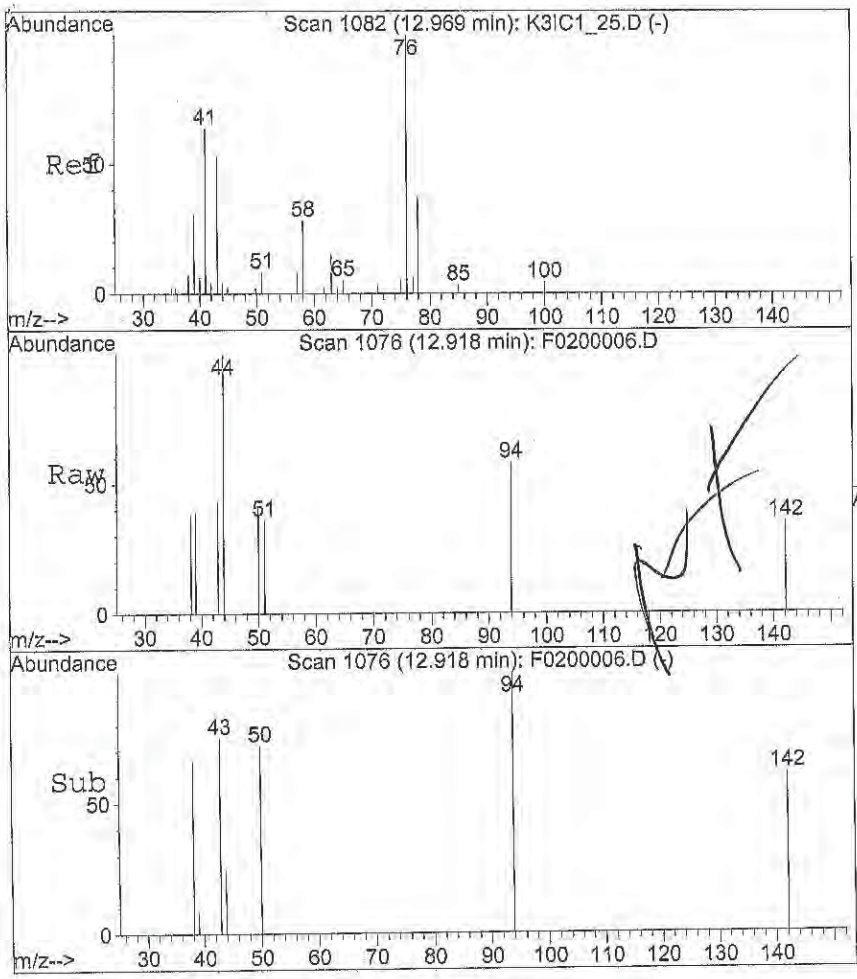


#45
1,3-Dichloropropane
Concen: 0.05 ug/L
RT: 12.83 min Scan# 1066
Delta R.T. -0.14 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 76 Resp: 255

Ion	Ratio	Lower	Upper
76	100		
78	0.0	26.9	40.3#

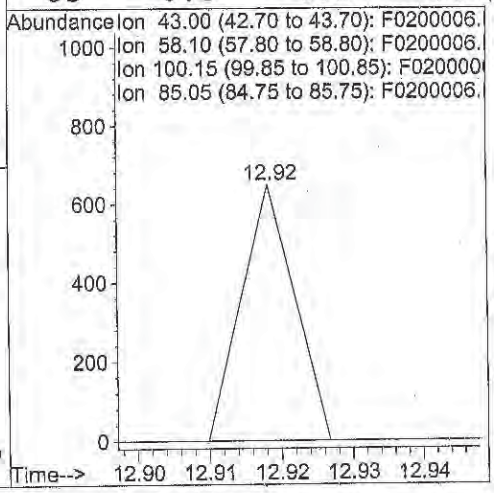


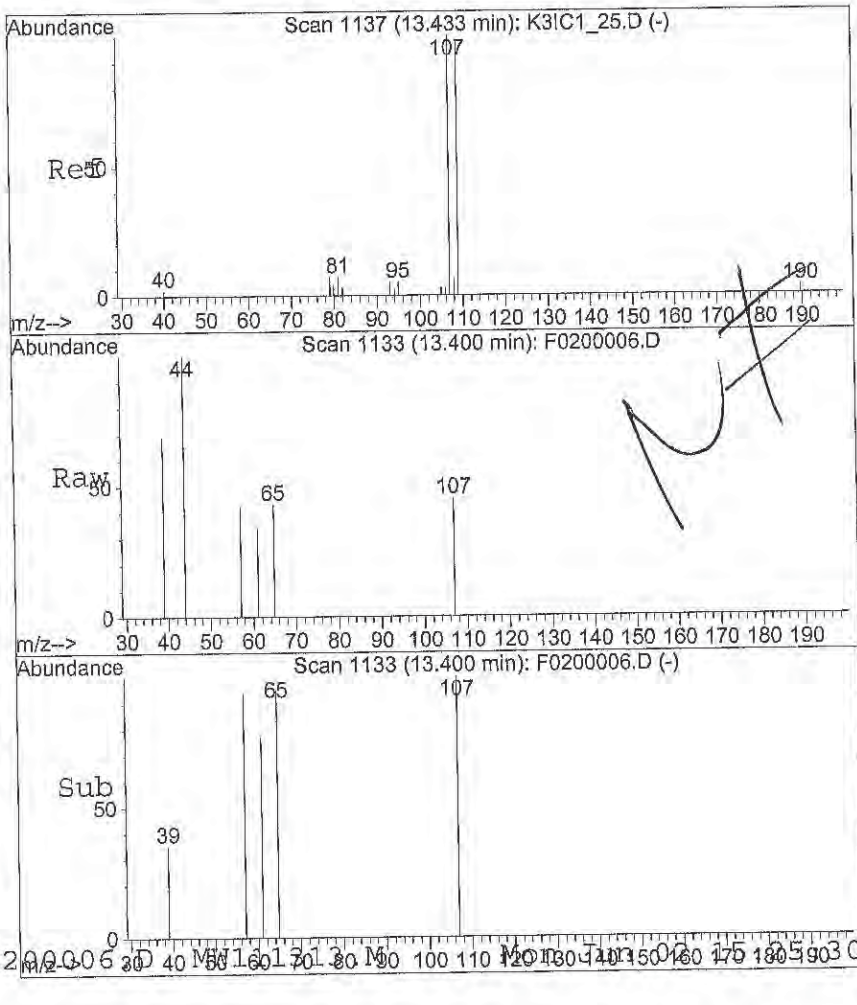


#46
2-Hexanone
Concen: 0.13 ug/L
RT: 12.92 min Scan# 1076
Delta R.T. -0.05 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

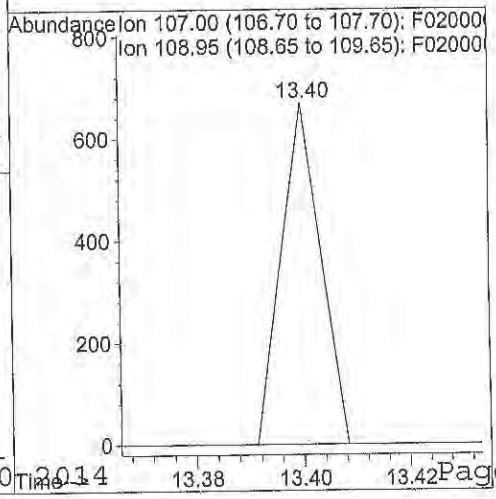


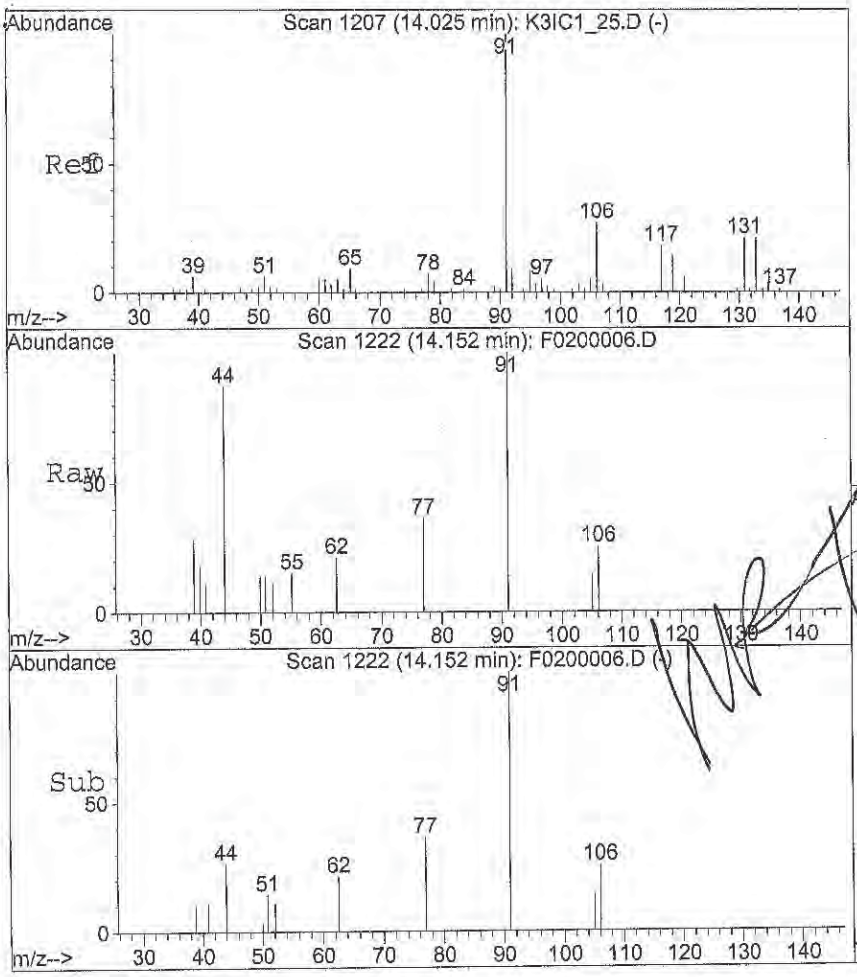


#48
1,2-Dibromoethane
Concen: 0.10 ug/L
RT: 13.40 min Scan# 1133
Delta R.T. -0.03 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion:107 Resp: 340

Ion	Ratio	Lower	Upper
107	100		
109	0.0	74.4	111.6#

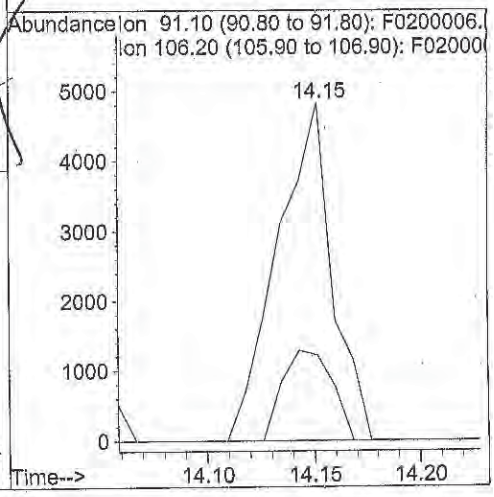


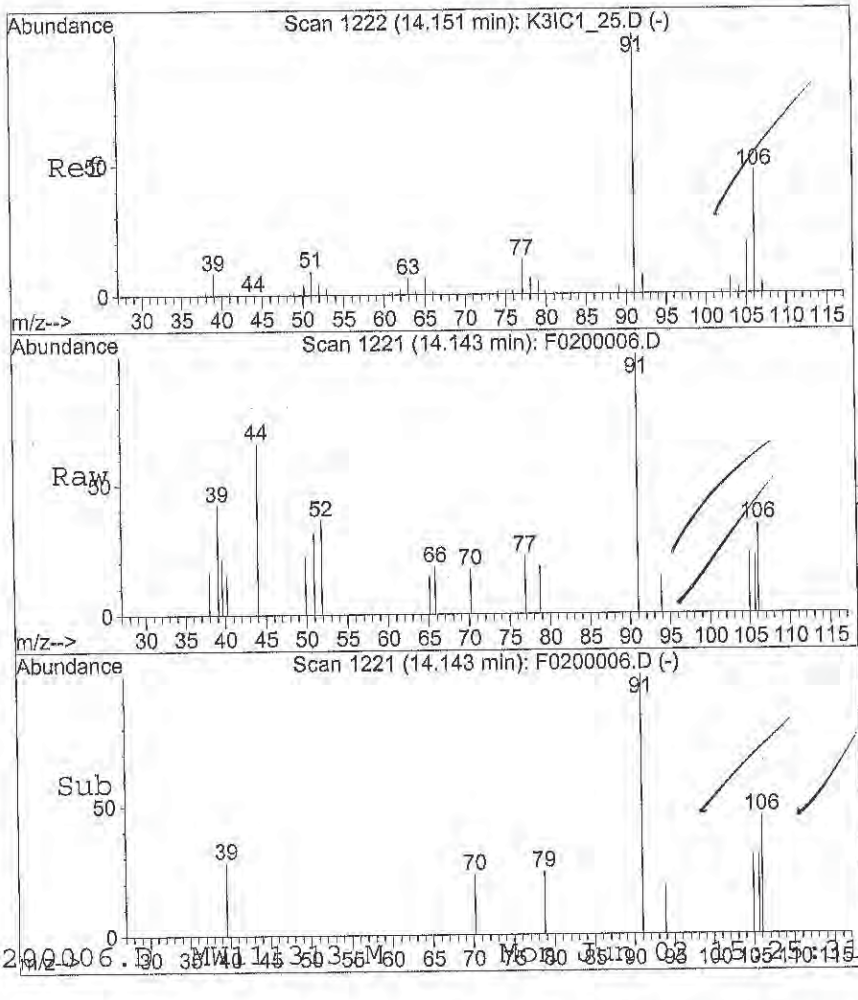


#51
Ethylbenzene
Concen: 0.50 ug/L
RT: 14.15 min Scan# 1222
Delta R.T. 0.13 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 91 Resp: 8571

Ion	Ratio	Lower	Upper
91	100		
106	24.1	23.5	35.3

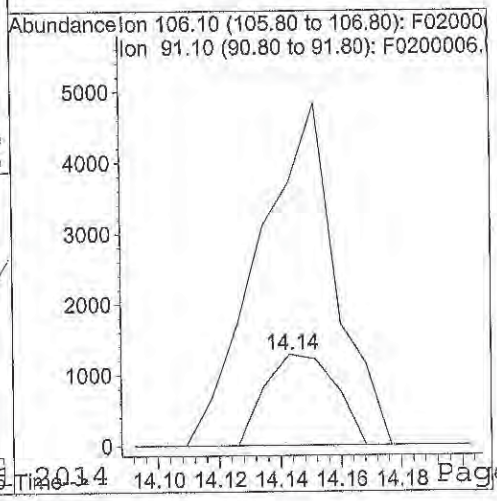


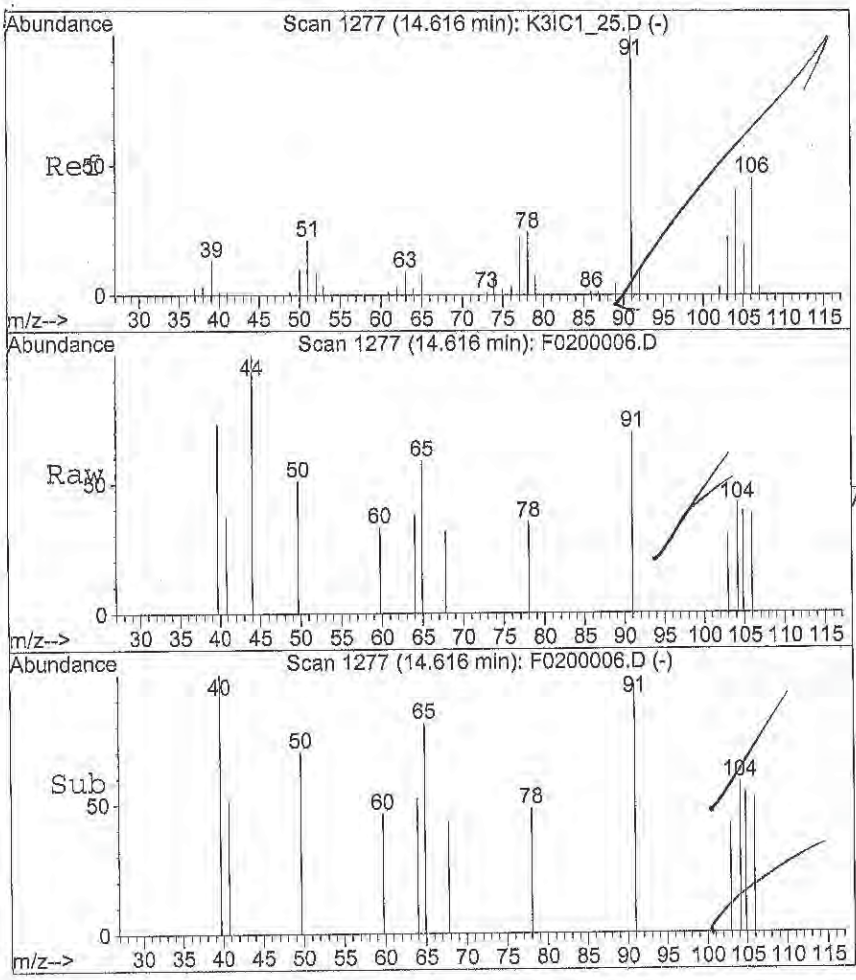


#52
m,p-Xylenes
Concen: 0.34 ug/L
RT: 14.14 min Scan# 1221
Delta R.T. -0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion:106 Resp: 2067

Ion	Ratio	Lower	Upper
106	100		
91	414.7	177.1	265.7#

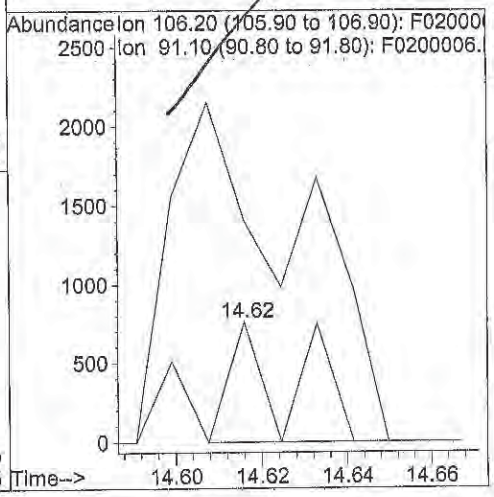


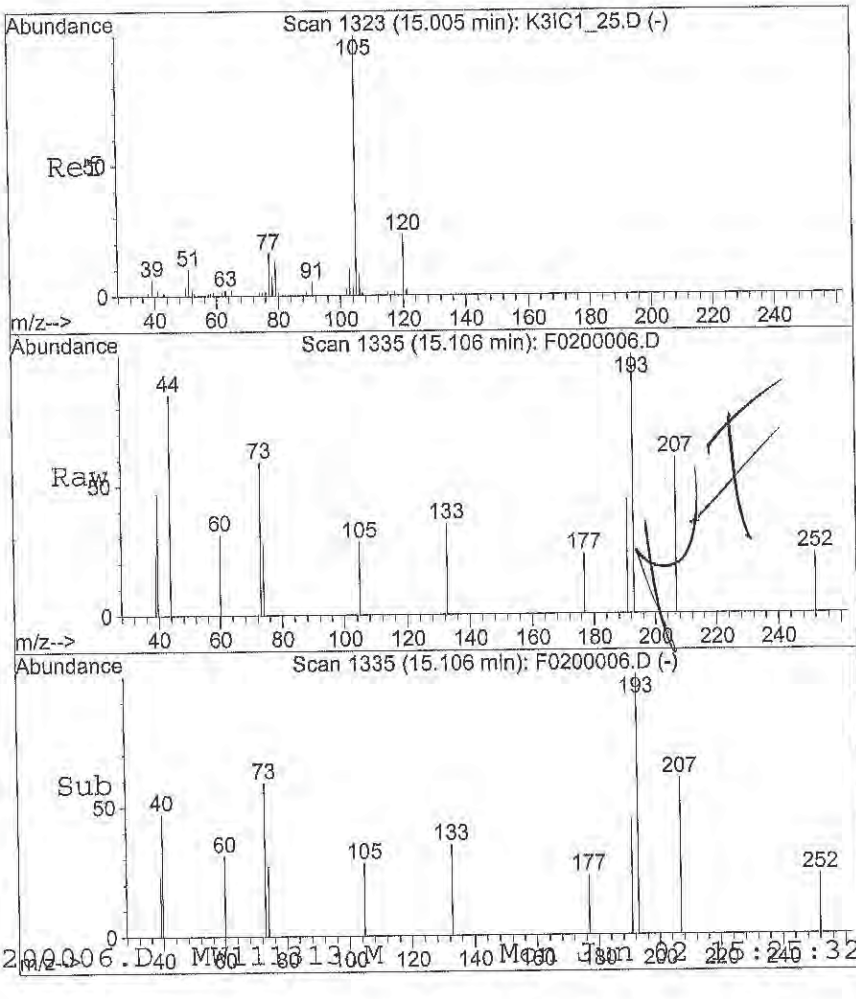


#53
o-Xylene
Concen: 0.13 ug/L
RT: 14.62 min Scan# 1277
Delta R.T. 0.00 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion:106 Resp: 763

Ion	Ratio	Lower	Upper
106	100		
91	580.9	179.0	268.6#

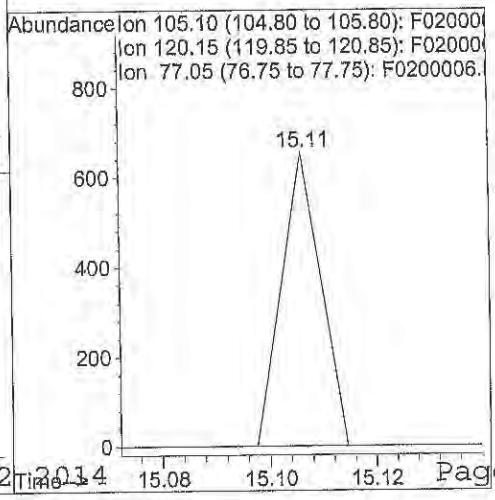


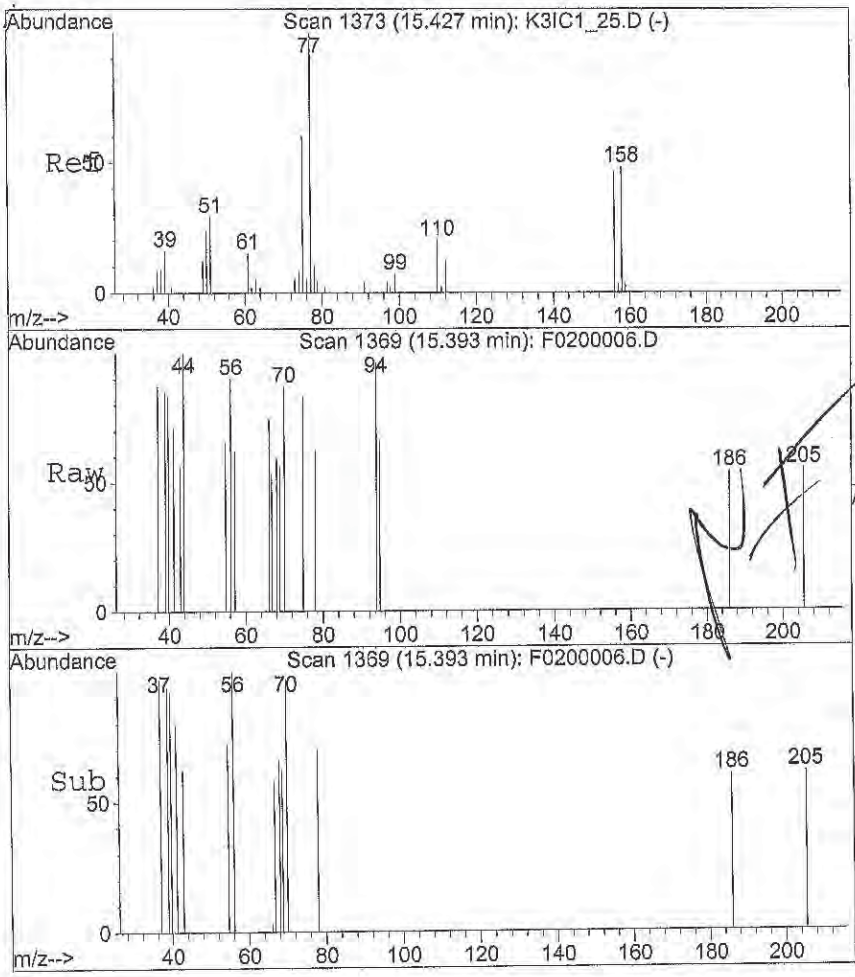


#56
Isopropylbenzene
Concen: 0.02 ug/L
RT: 15.11 min Scan# 1335
Delta R.T. 0.10 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

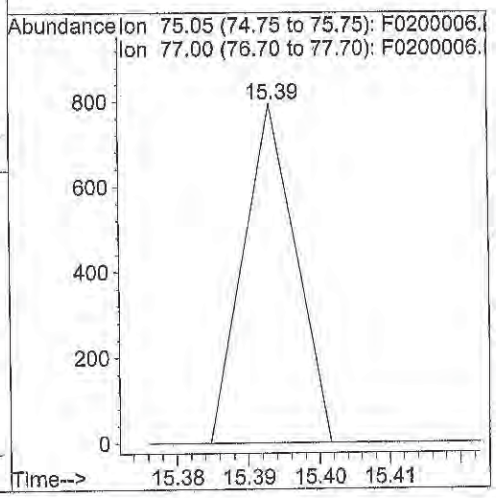


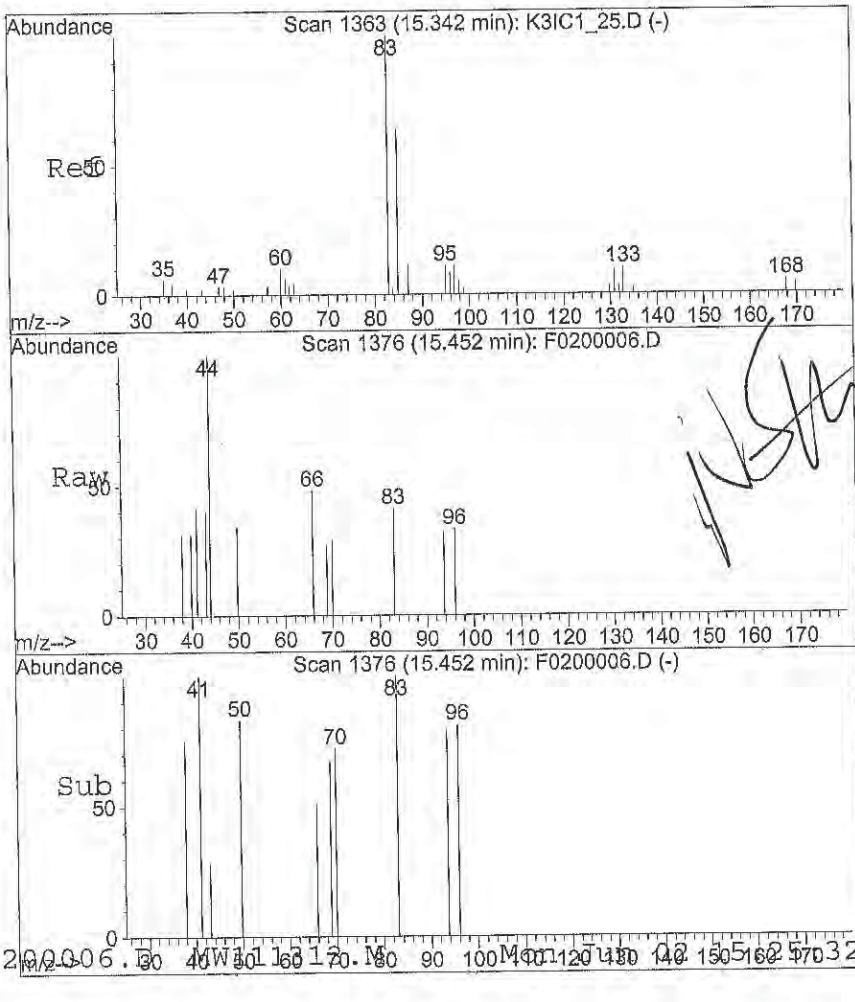


#57
1,2,3-Trichloropropane
Concen: 0.09 ug/L
RT: 15.39 min Scan# 1369
Delta R.T. -0.03 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 75 Resp: 402

Ion	Ratio	Lower	Upper
75	100		
77	0.0	31.2	46.8#

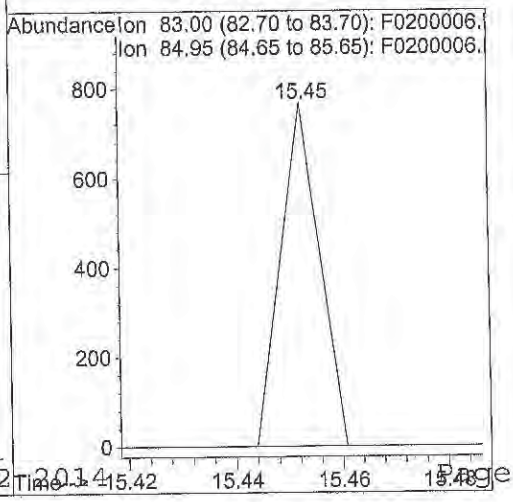


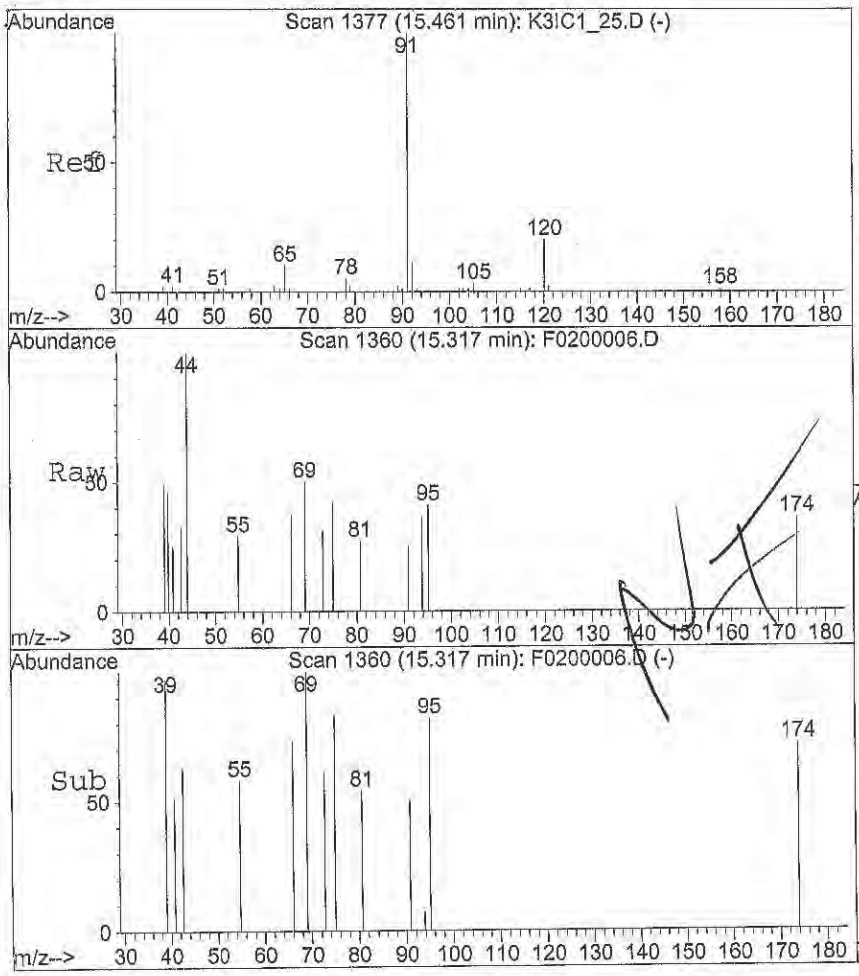


#60
1,1,2,2-Tetrachloroethane
Concen: 0.09 ug/L
RT: 15.45 min Scan# 1376
Delta R.T. 0.11 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 83 Resp: 388

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.2	76.8#

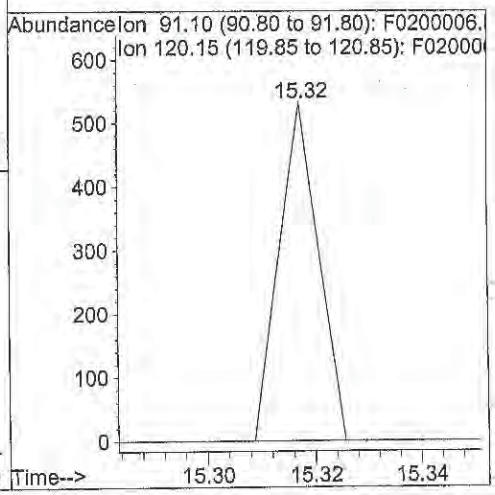


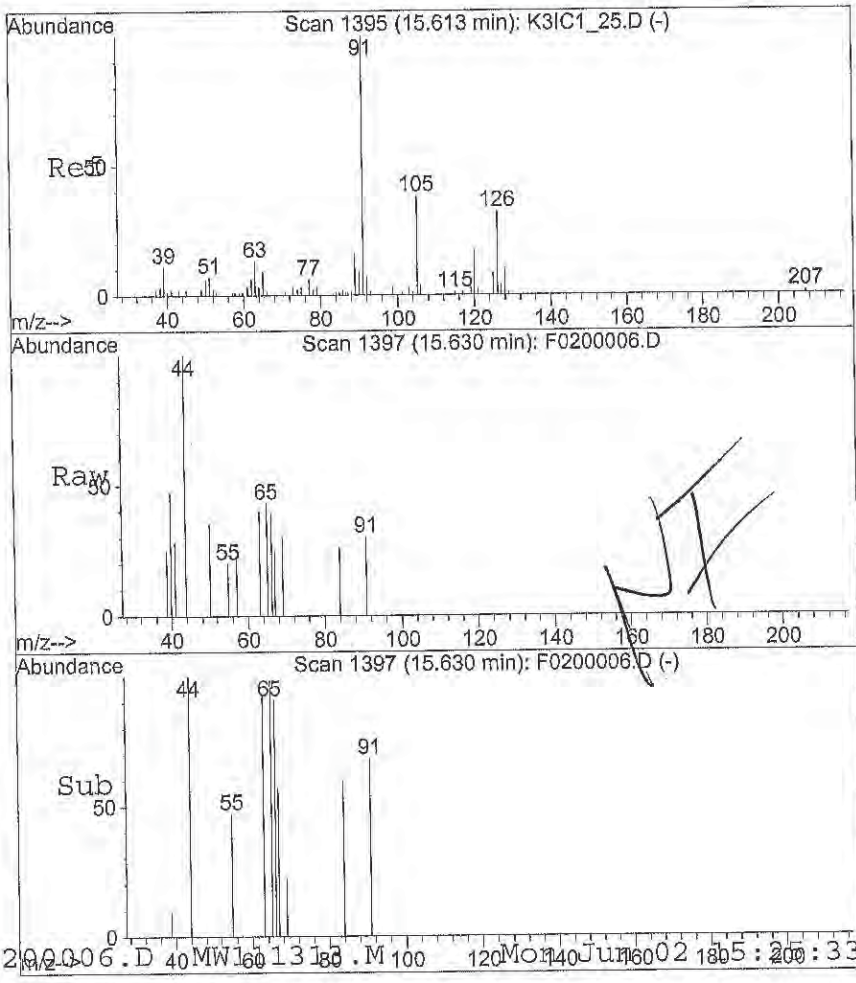


#62
n-Propylbenzene
Concen: 0.01 ug/L
RT: 15.32 min Scan# 1360
Delta R.T. -0.14 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 91 Resp: 270

Ion	Ratio	Lower	Upper
91	100		
120	0.0	16.1	24.1#

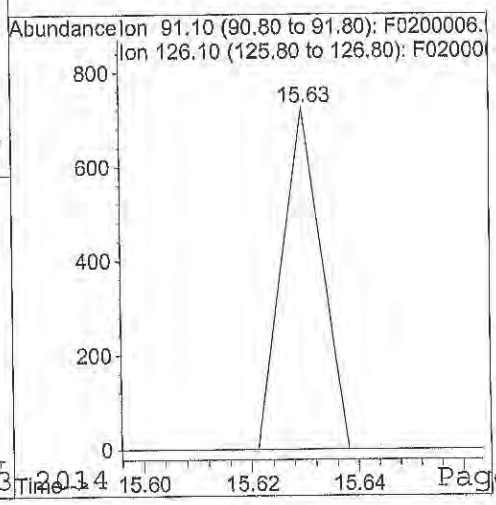


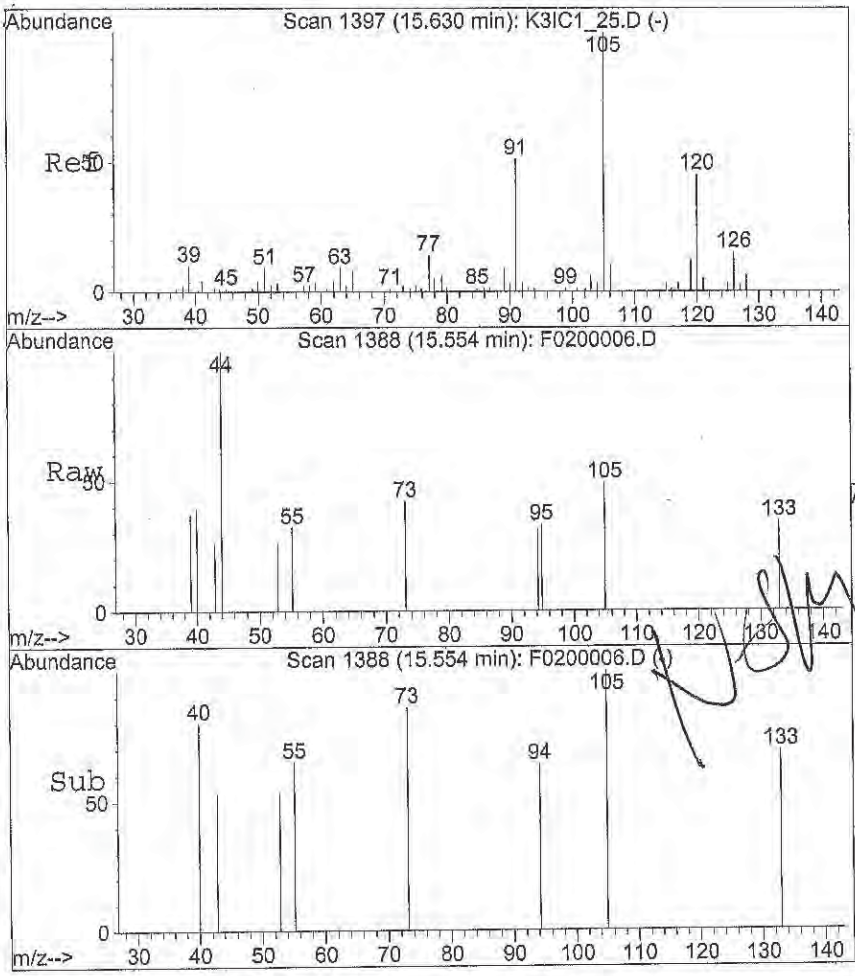


#63
2-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.63 min Scan# 1397
Delta R.T. 0.02 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 91 Resp: 368

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.0	36.0#

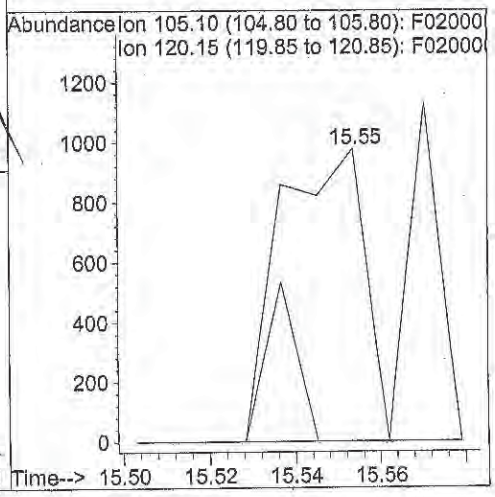


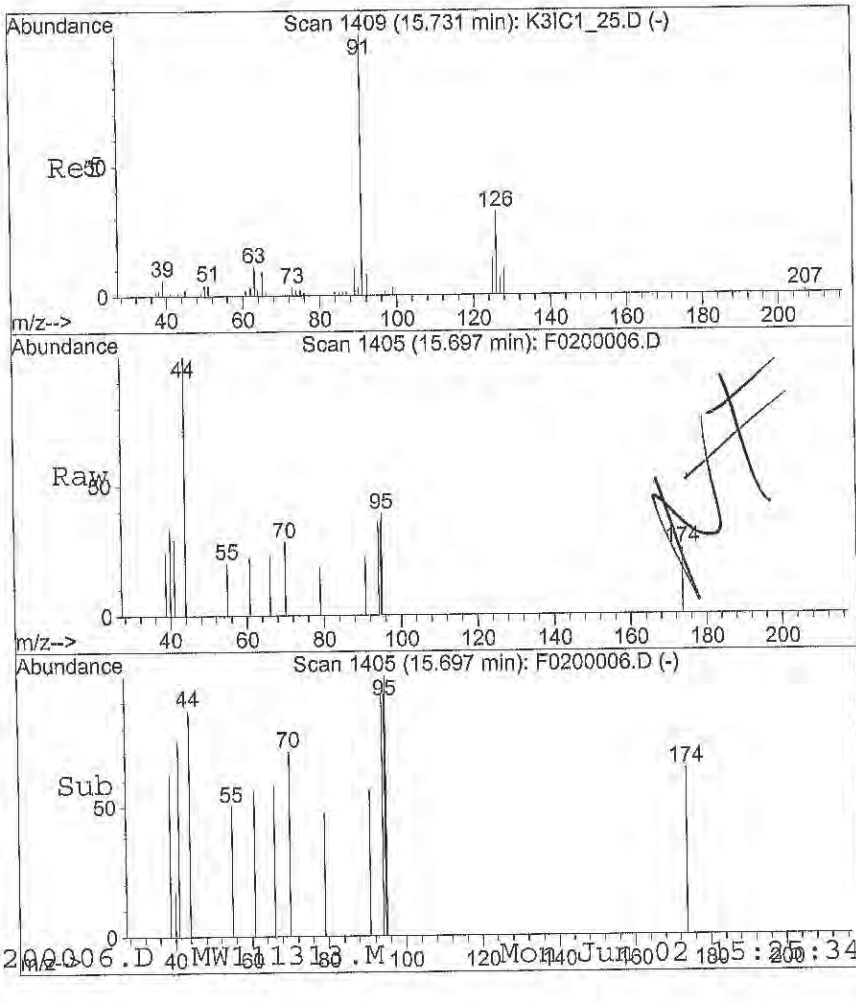


#64
1,3,5-Trimethylbenzene
Concen: 0.09 ug/L
RT: 15.55 min Scan# 1388
Delta R.T. -0.08 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion:105 Resp: 1346

Ion	Ratio	Lower	Upper
105	100		
120	20.1	36.4	54.6#

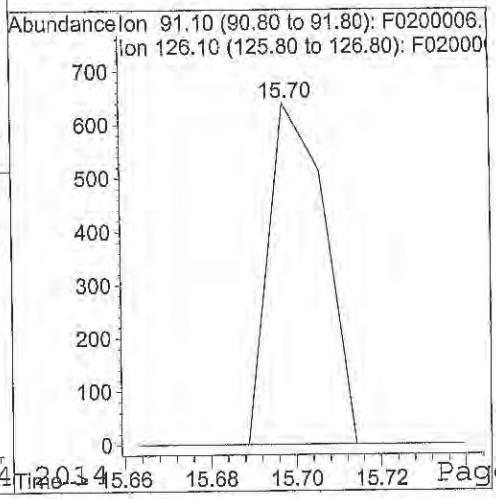


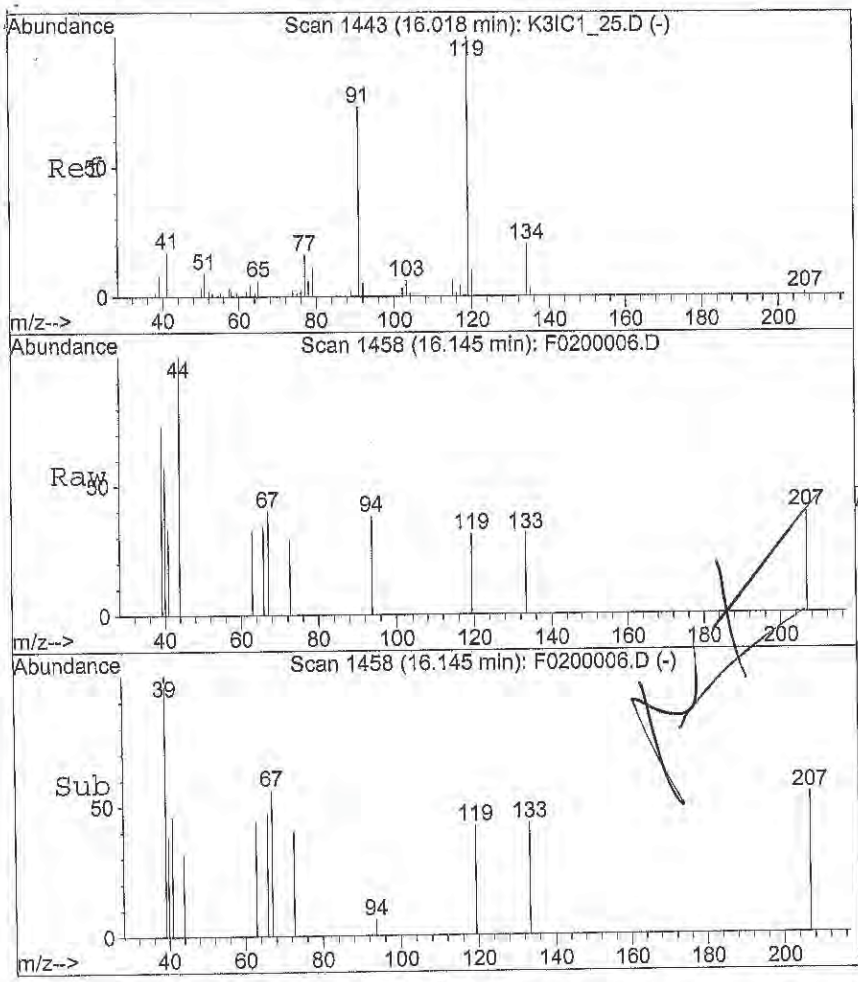


#65
4-Chlorotoluene
Concen: 0.04 ug/L
RT: 15.70 min Scan# 1405
Delta R.T. -0.03 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 91 Resp: 585

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.6	36.8#

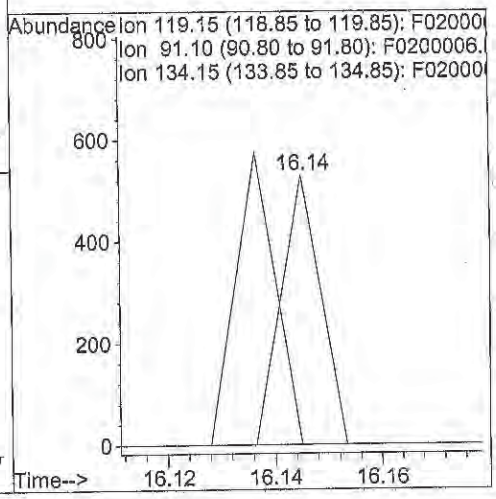


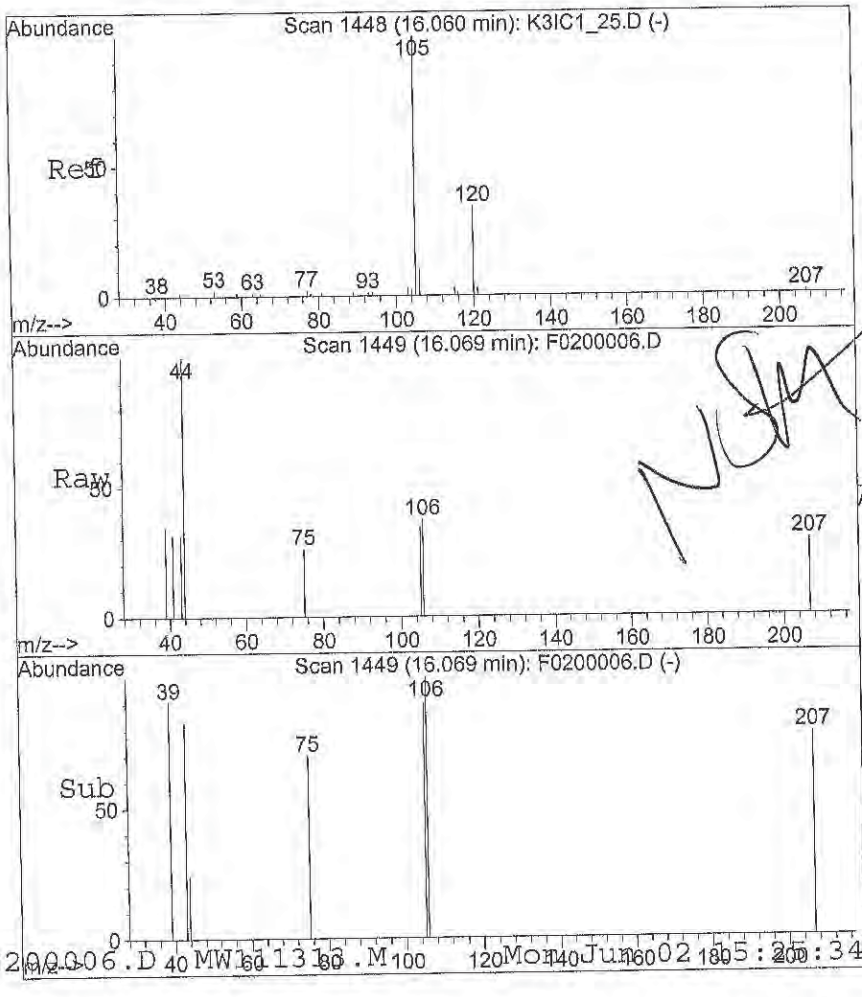


#66
tert-Butylbenzene
Concen: 0.02 ug/L
RT: 16.14 min Scan# 1458
Delta R.T. 0.13 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

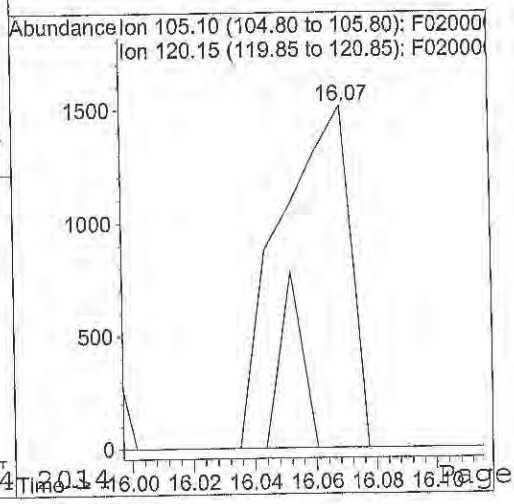


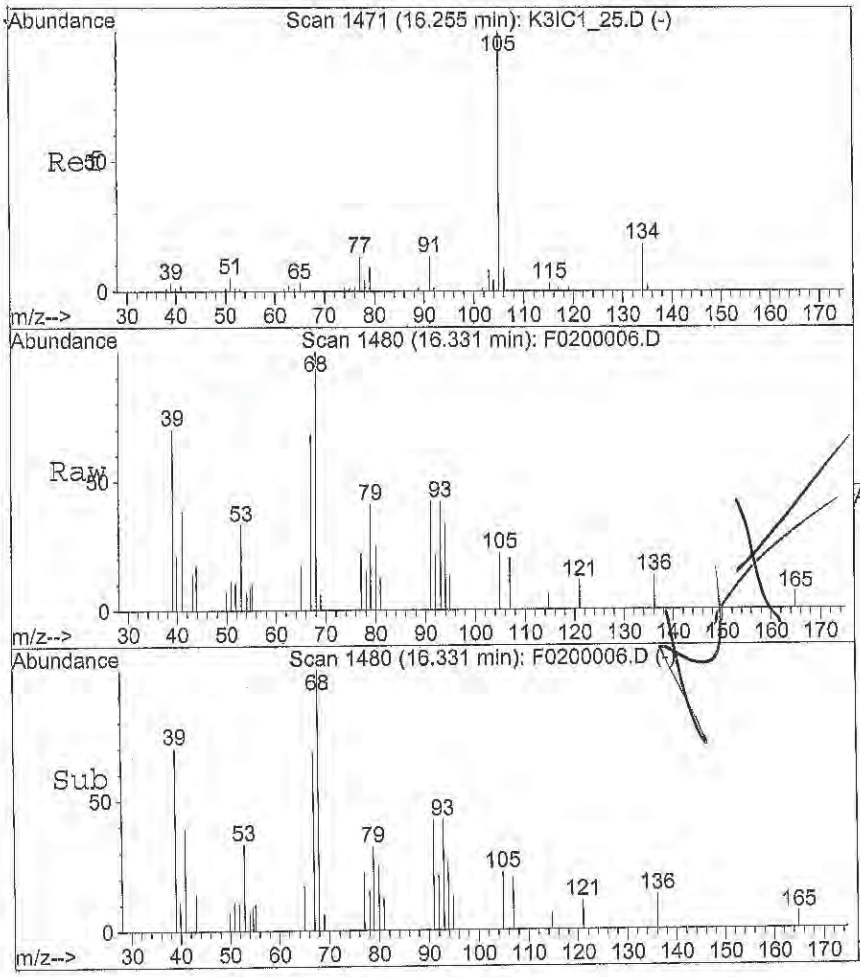


#67
1,2,4-Trimethylbenzene
Concen: 0.16 ug/L
RT: 16.07 min Scan# 1449
Delta R.T. 0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion:105 Resp: 2425

Ion	Ratio	Lower	Upper
105	100		
120	16.3	33.8	50.8#

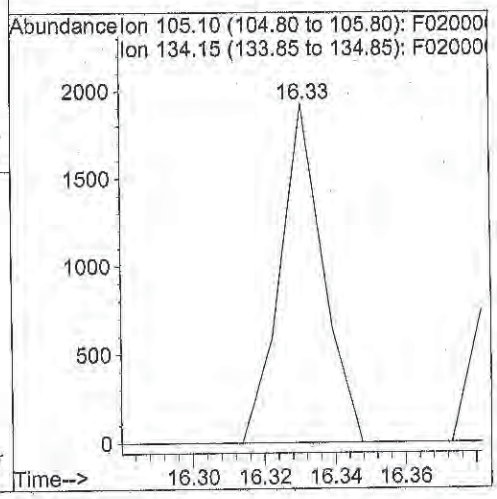


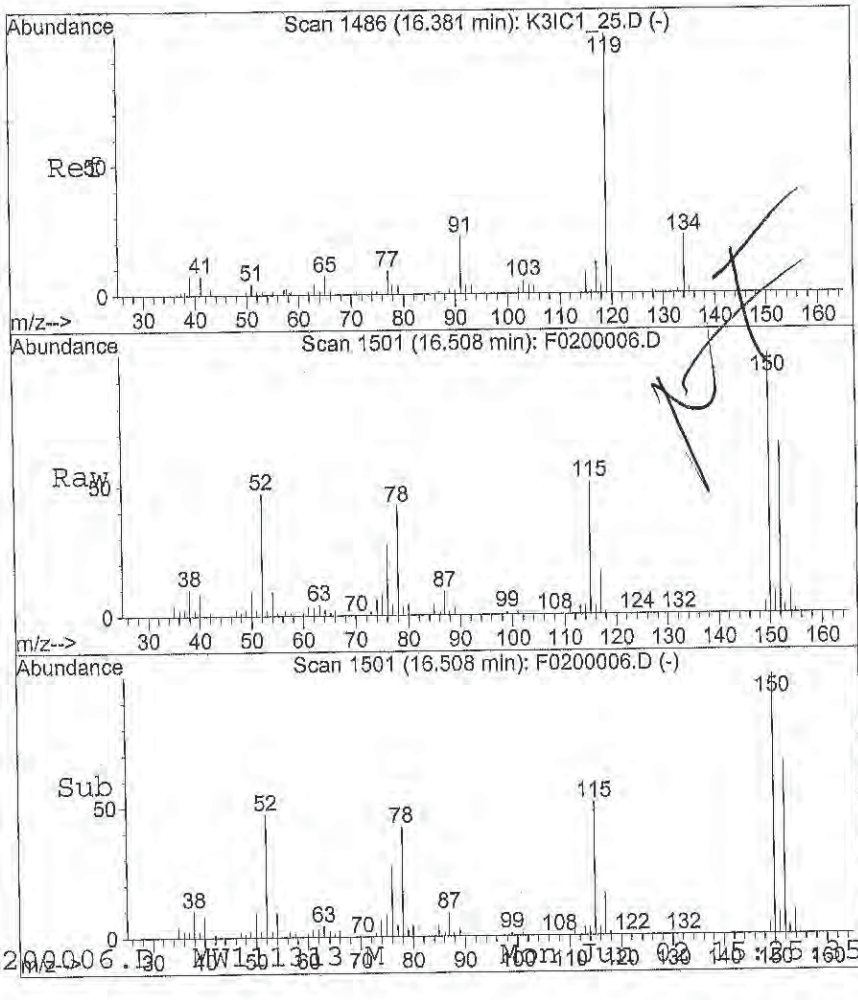


#68
sec-Butylbenzene
Concen: 0.08 ug/L
RT: 16.33 min Scan# 1480
Delta R.T. 0.08 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion:105 Resp: 1598

Ion	Ratio	Lower	Upper
105	100		
134	0.0	13.0	19.6#

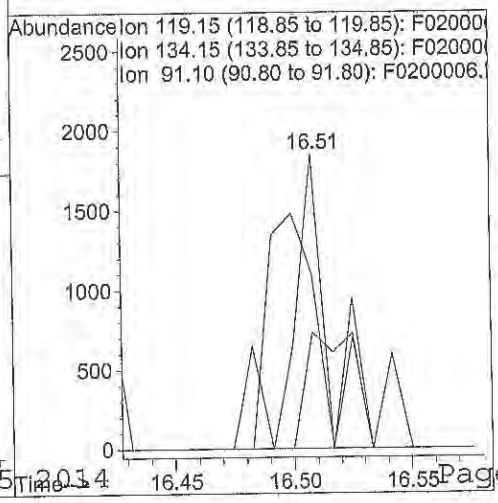


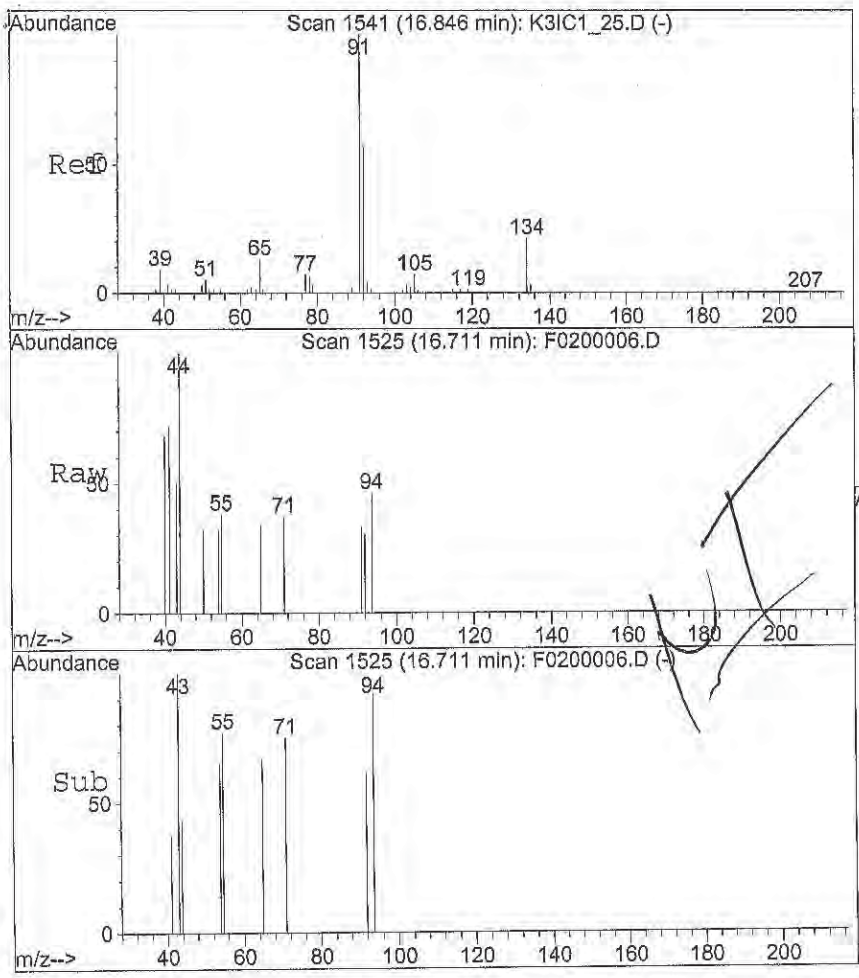


#69
p-Isopropyltoluene
Concen: 0.12 ug/L
RT: 16.51 min Scan# 1501
Delta R.T. 0.13 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion:119 Resp: 1944

Ion	Ratio	Lower	Upper
119	100		
134	53.9	17.4	26.2#
91	102.3	19.6	29.4#

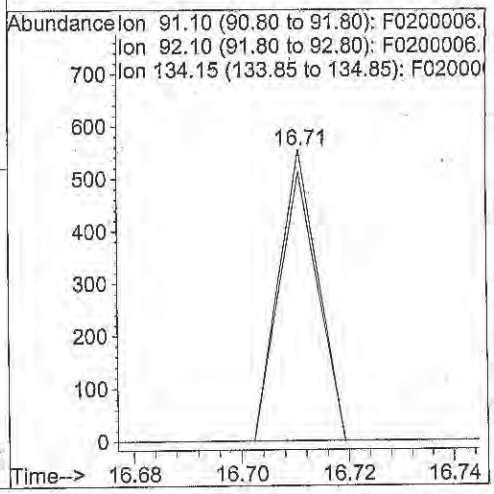


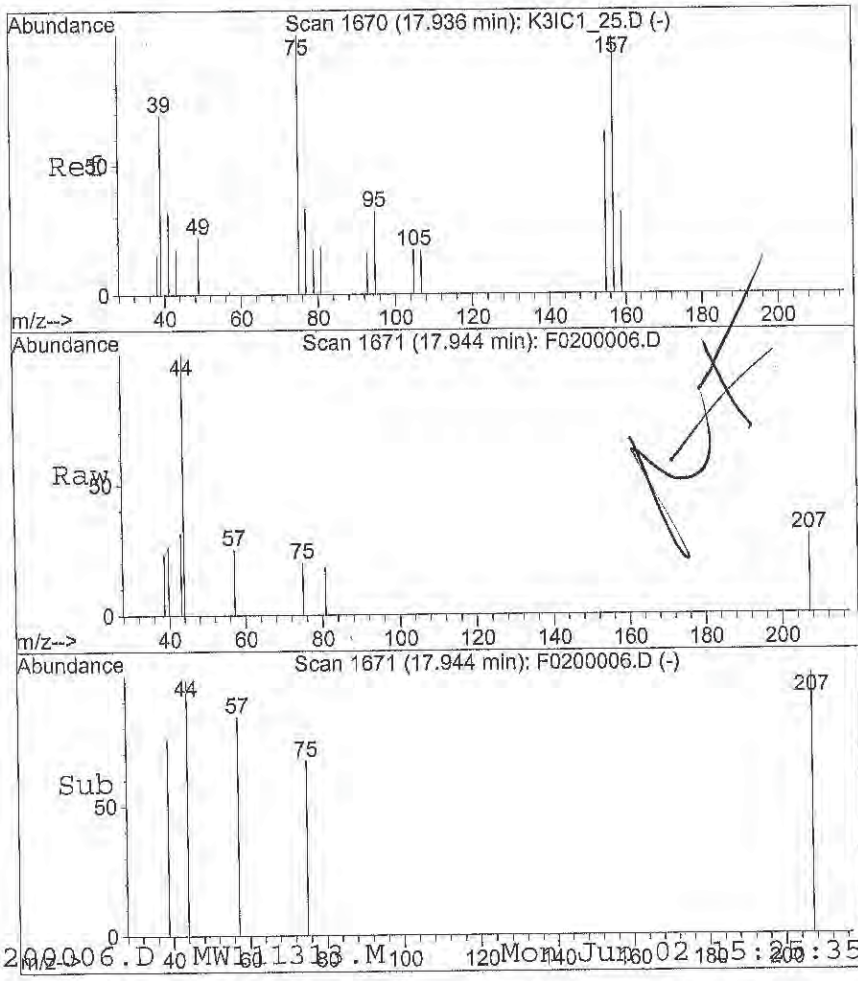


#72
n-Butylbenzene
Concen: 0.02 ug/L
RT: 16.71 min Scan# 1525
Delta R.T. -0.14 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

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#

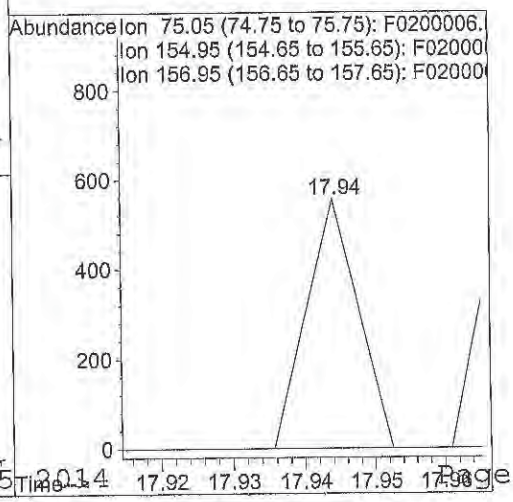


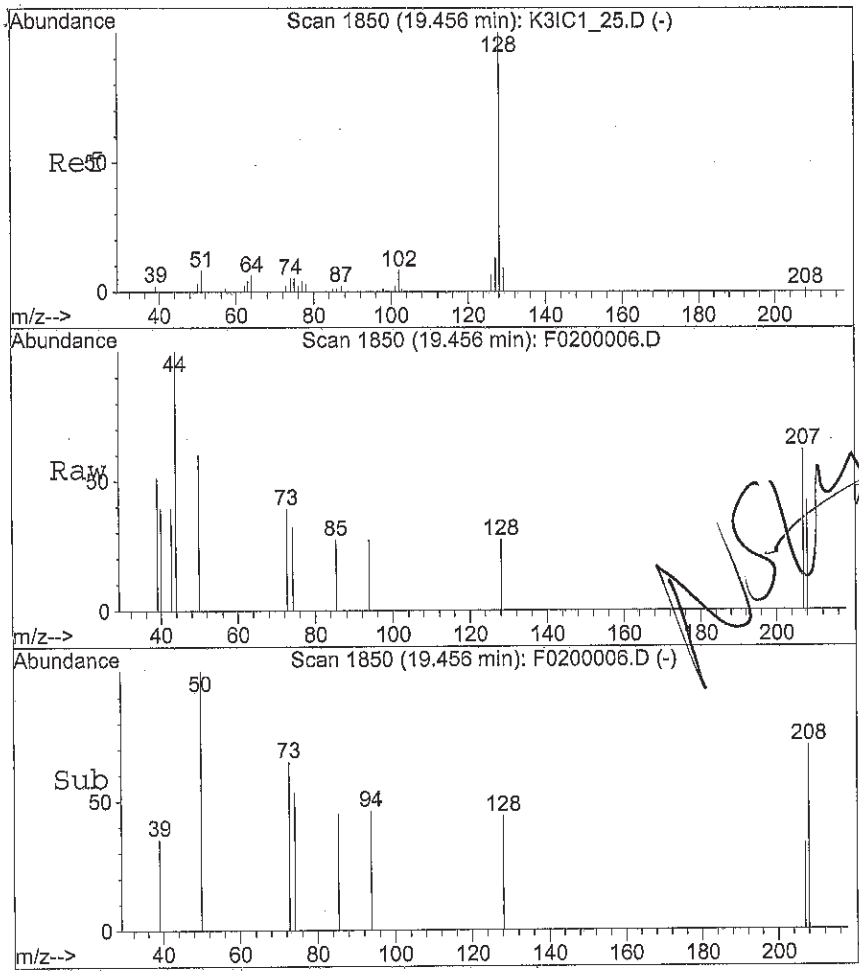


#74
1,2-Dibromo-3-chloropropane
Concen: 1.30 ug/L
RT: 17.94 min Scan# 1671
Delta R.T. 0.01 min
Lab File: F0200006.D
Acq: 2 Jun 2014 2:21 pm

Tgt Ion: 75 Resp: 281

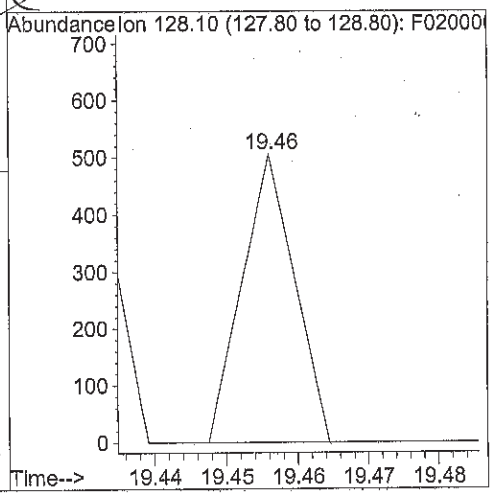
Ion	Ratio	Lower	Upper
75	100		
155	0.0	59.2	88.8#
157	0.0	77.0	115.6#





#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



Quantitation Report (QT Reviewed)

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

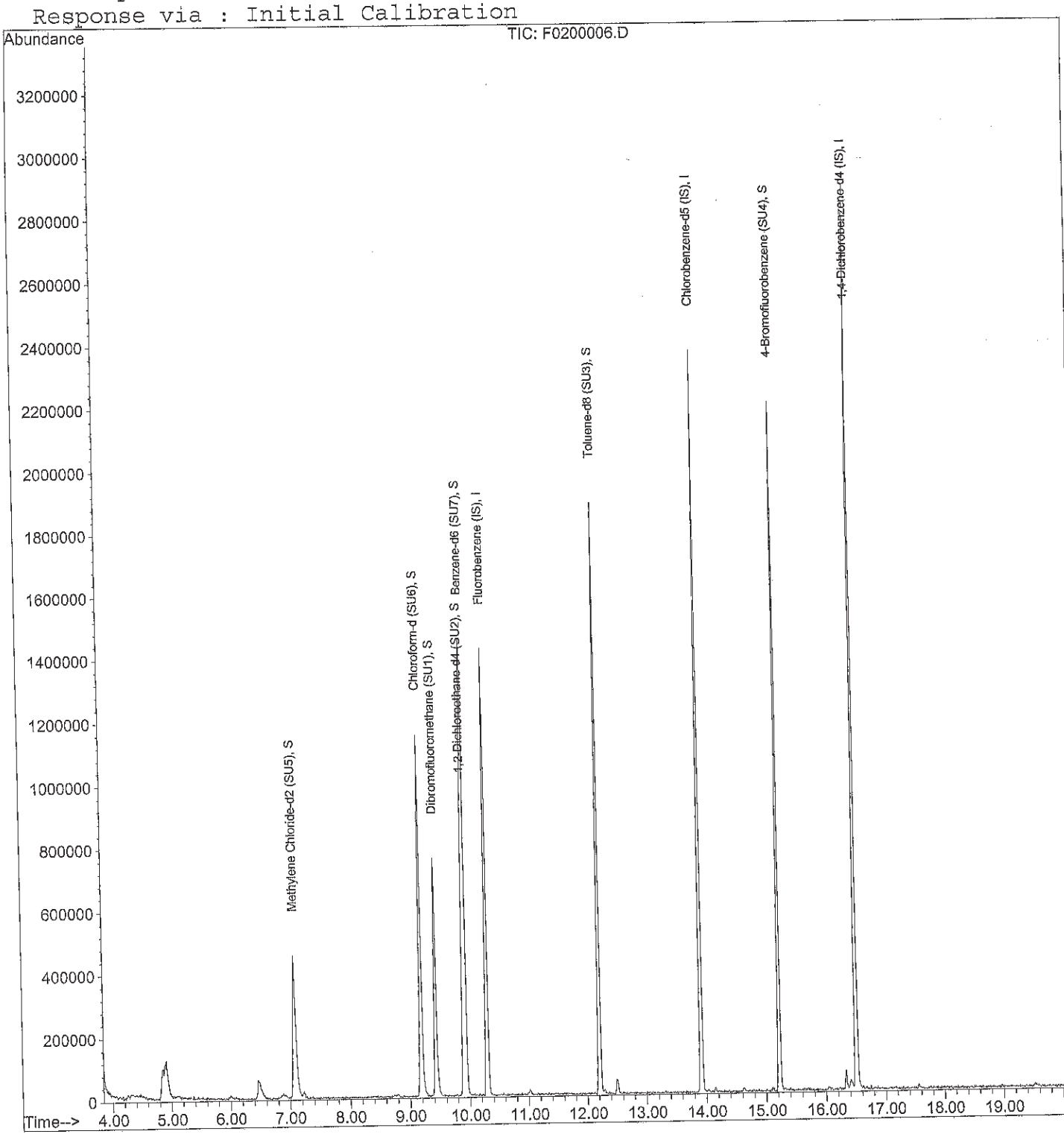
Quantitation Report

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



Quantitation Report (QT Reviewed)

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

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	#0.017 76
4) Chloromethane	4.38	50	1497	-0.46	ug/L	NSM 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	# NSM 87
13) Carbon disulfide	6.83	76	5853	0.60	ug/L	# 91
14) Methylene Chloride	7.08	84	6500	2.01	ug/L	# NSM 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	# NSM 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	# NSM 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

Quantitation Report (QT Reviewed)

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

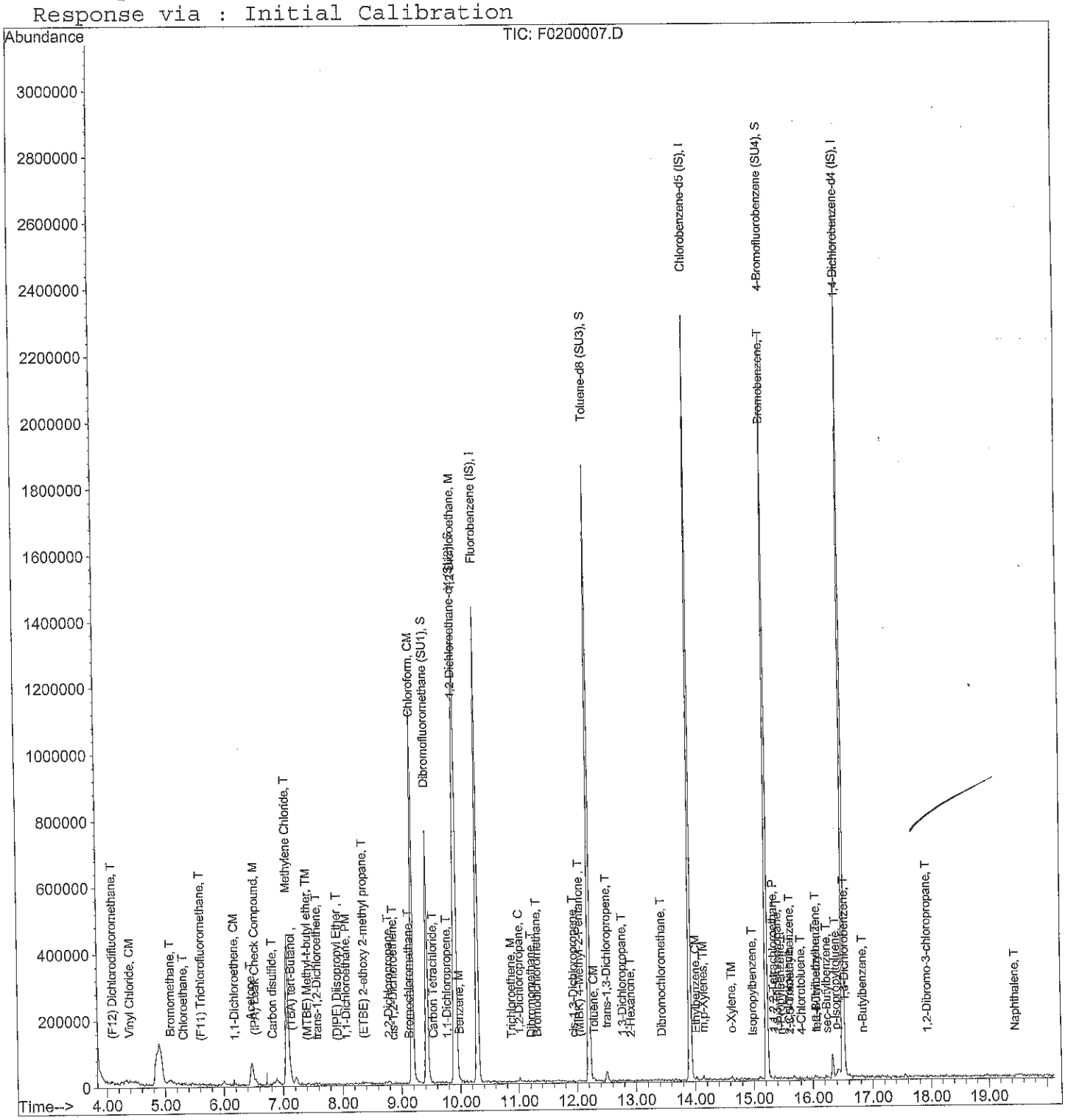
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30) Carbon Tetrachloride	9.54	117	439	0.11 ug/L #	2
31) Benzene	9.99	78	862	0.08 ug/L #	57
32) 1,2-Dichloroethane	9.93	62	12462	3.18 ug/L #	1
33) Trichloroethene	10.88	130	305	0.09 ug/L #	4
34) 1,2-Dichloropropane	11.02	63	659	0.25 ug/L #	2
35) Dibromomethane	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-Pentanon	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

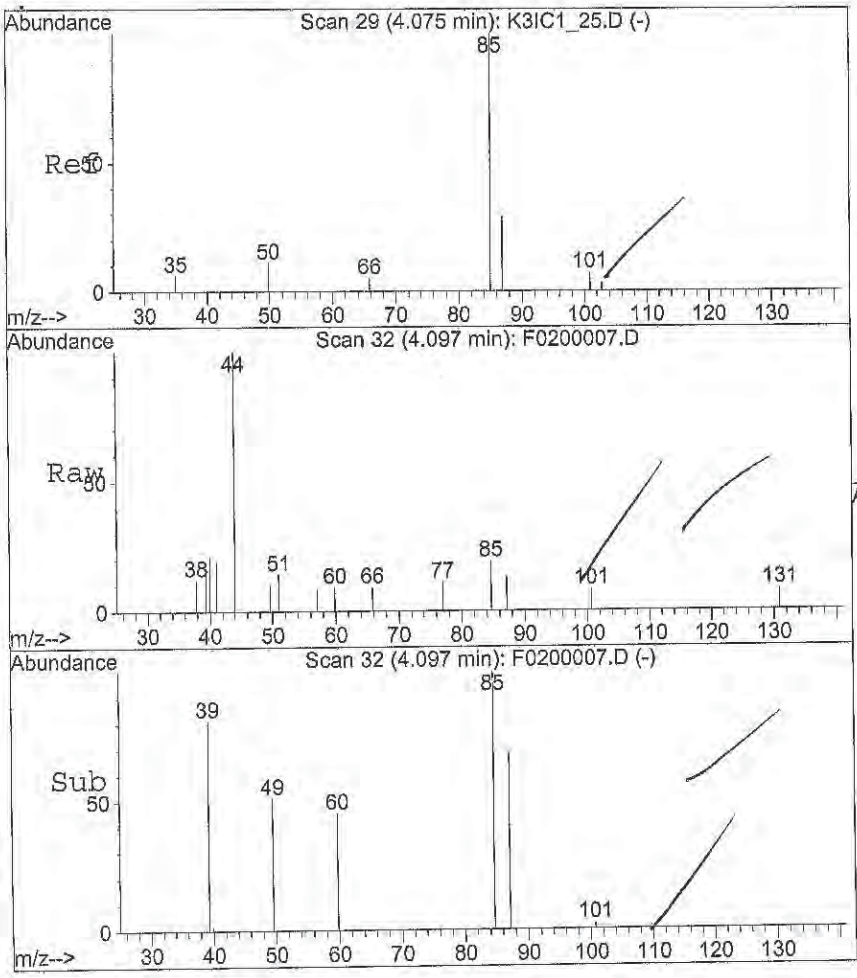
(#) = qualifier out of range (m) = manual integration

Quantitation Report

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

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

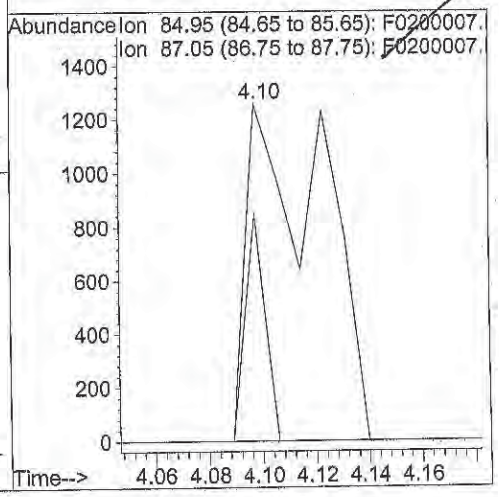


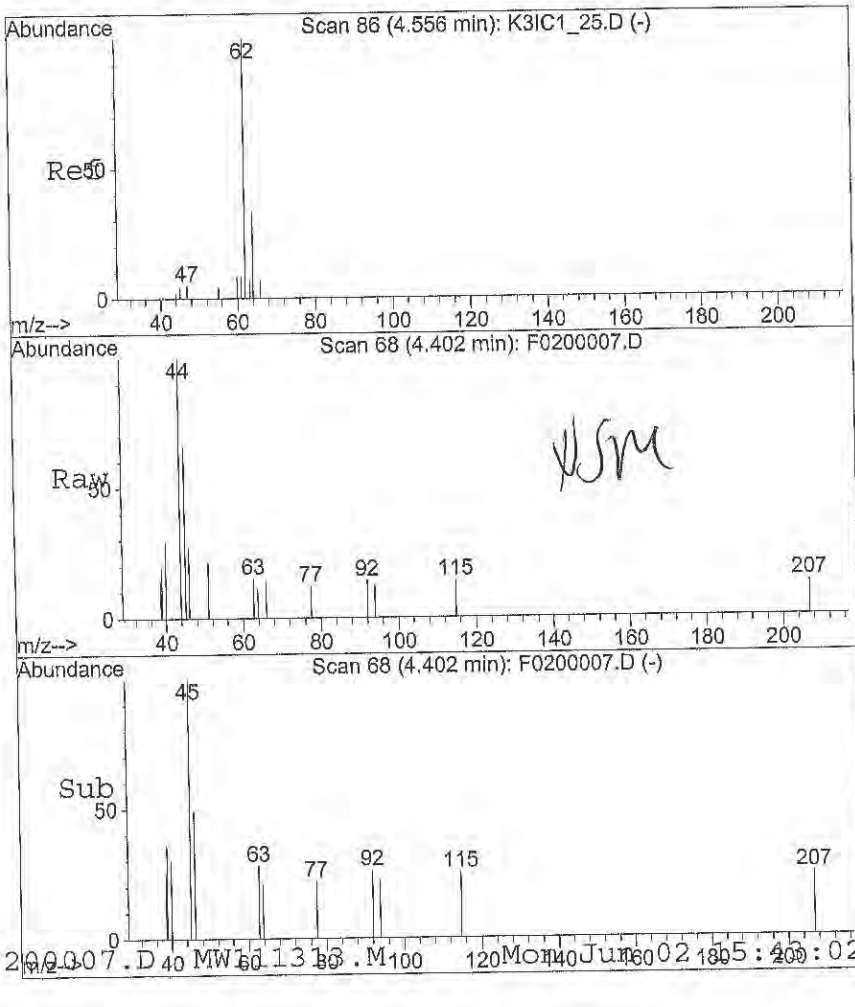


#3
(F12) Dichlorodifluoromethane
Concen: 0.85 ug/L
RT: 4.10 min Scan# 32
Delta R.T. 0.02 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 85 Resp: 2461

Ion	Ratio	Lower	Upper
85	100		
87	17.5	24.6	37.0#

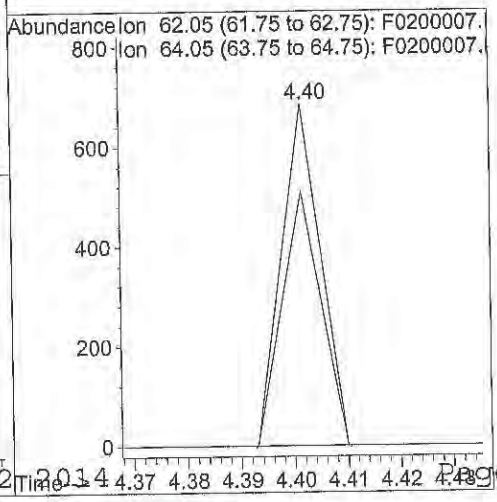


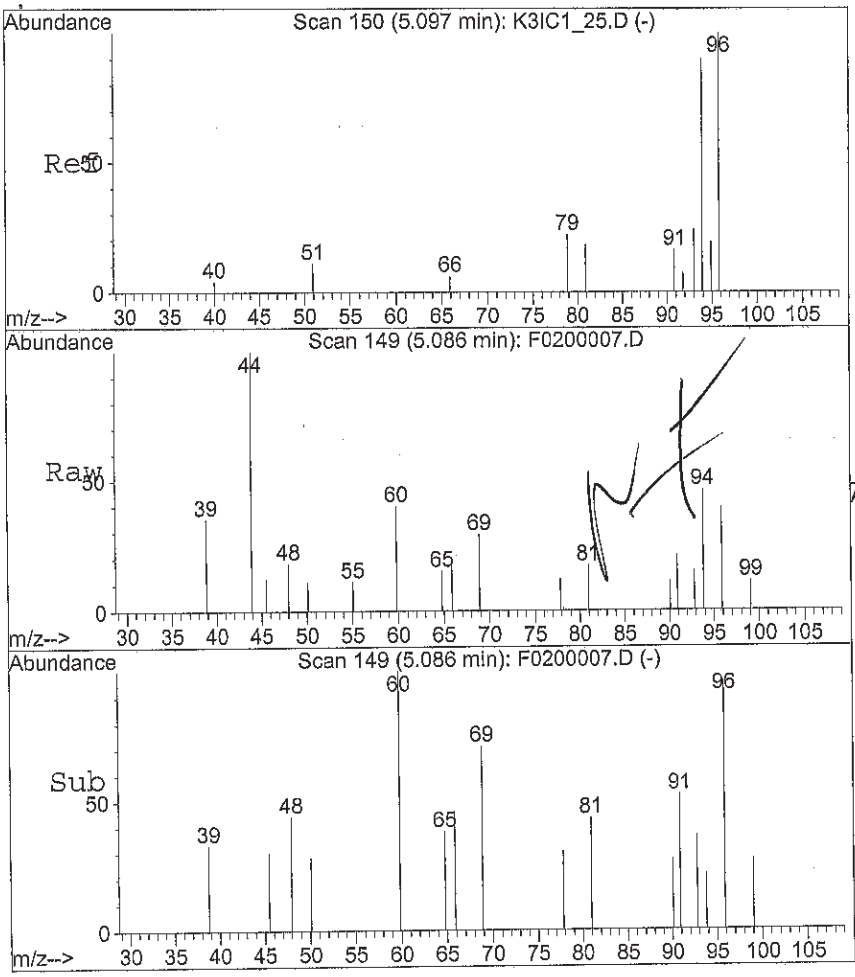


#5
Vinyl Chloride
Concen: 0.17 ug/L
RT: 4.40 min Scan# 68
Delta R.T. -0.15 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 62 Resp: 347

Ion	Ratio	Lower	Upper
62	100		
64	74.4	25.6	38.4#

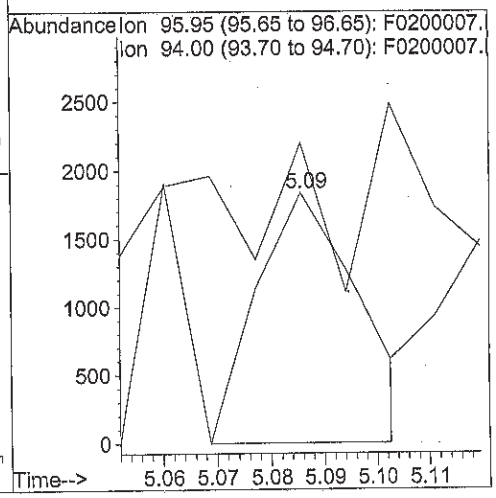


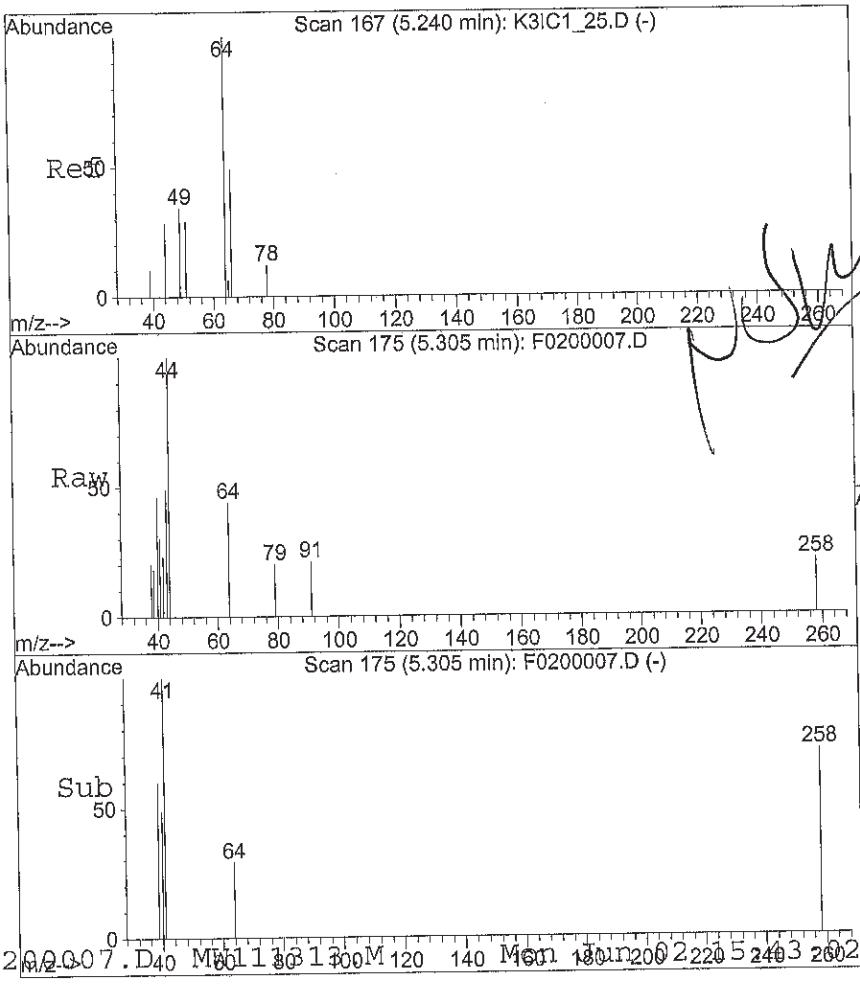


#6
Bromomethane
Concen: 0.12 ug/L
RT: 5.09 min Scan# 149
Delta R.T. -0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 96 Resp: 2458

Ion	Ratio	Lower	Upper
96	100		
94	33.6	101.0	151.4#

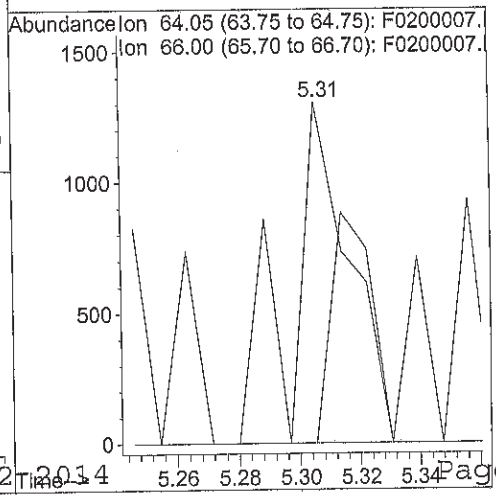


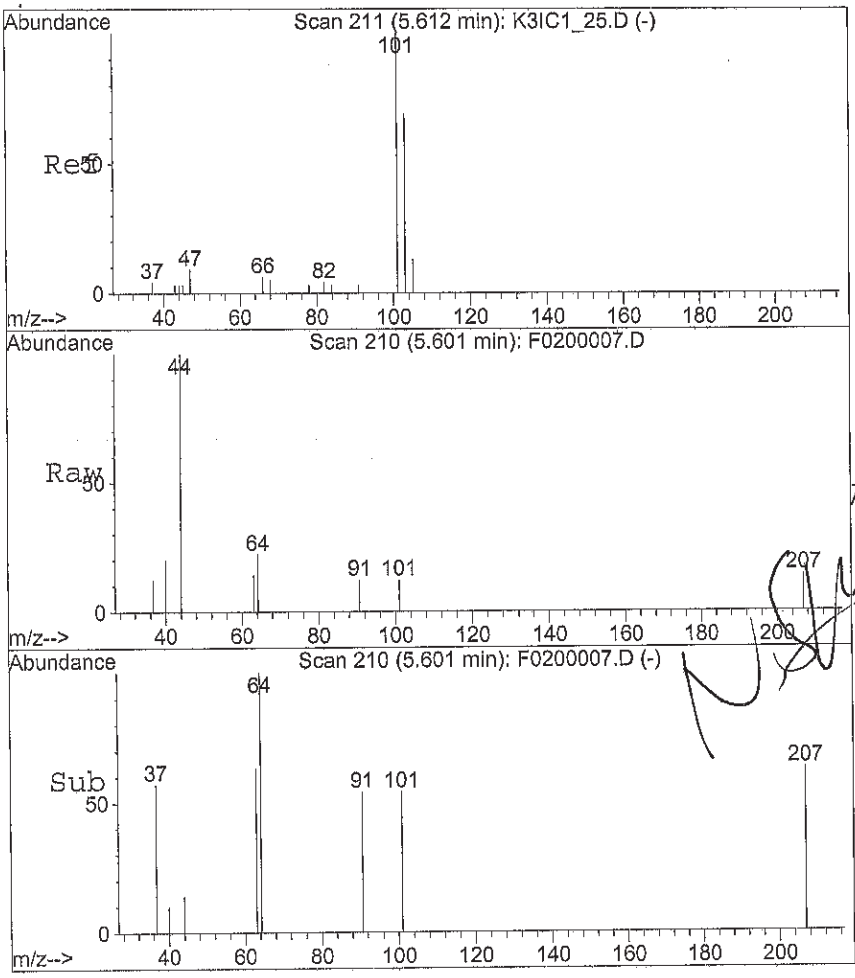


#7
Chloroethane
Concen: 2.50 ug/L
RT: 5.31 min Scan# 175
Delta R.T. 0.07 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 64 Resp: 1780

Ion	Ratio	Lower	Upper
64	100		
66	46.2	35.4	53.0

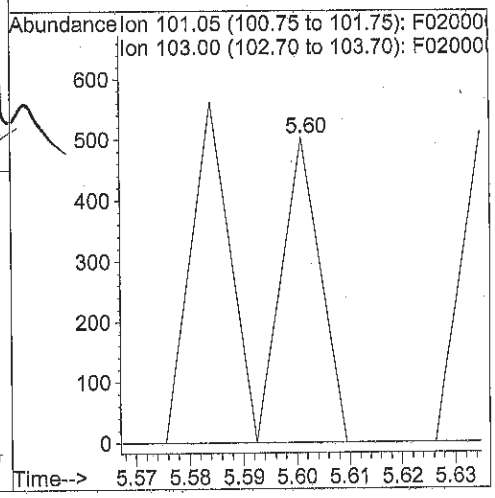


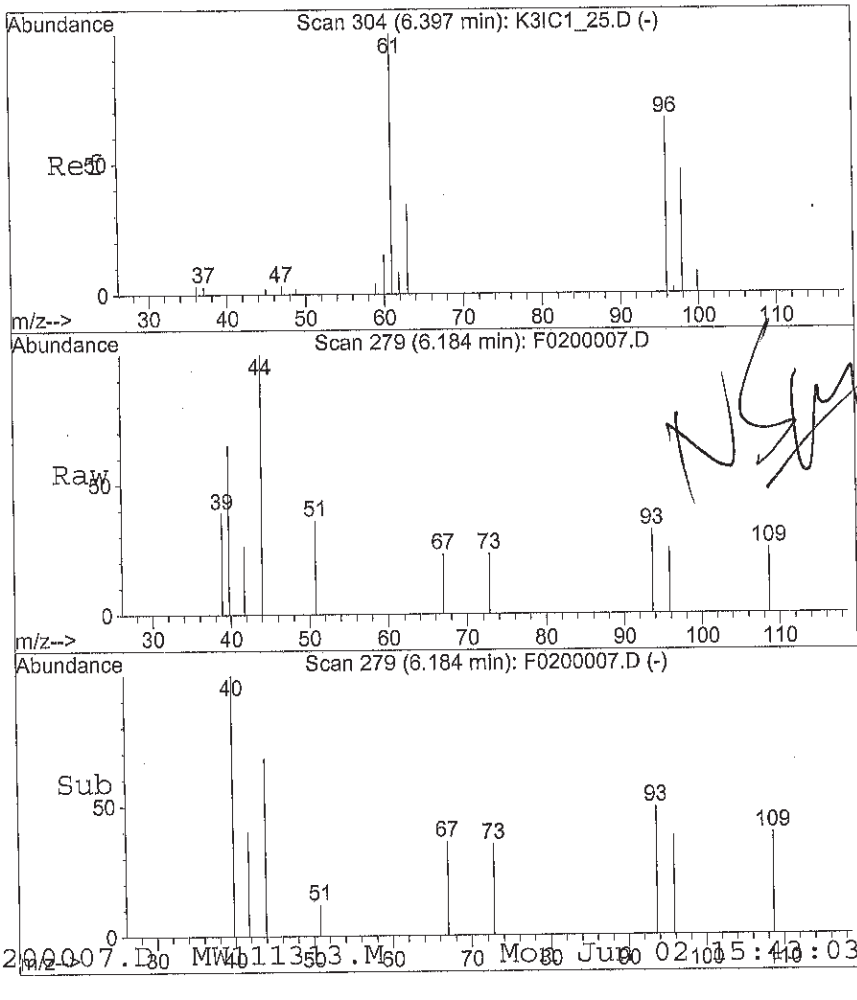


#8
(F11) Trichlorofluoromethane
Concen: 0.08 ug/L
RT: 5.60 min Scan# 210
Delta R.T. -0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion:101 Resp: 254

Ion	Ratio	Lower	Upper
101	100		
103	111.8	54.5	81.7#

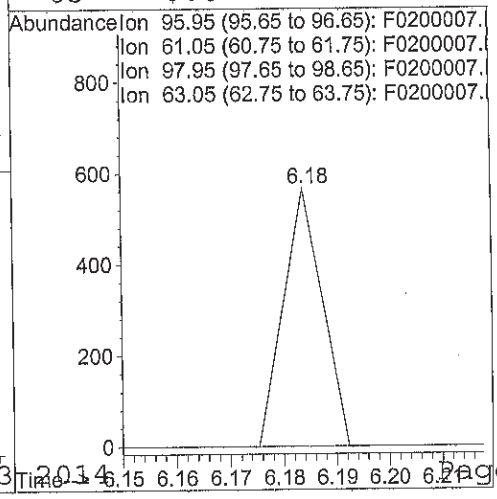


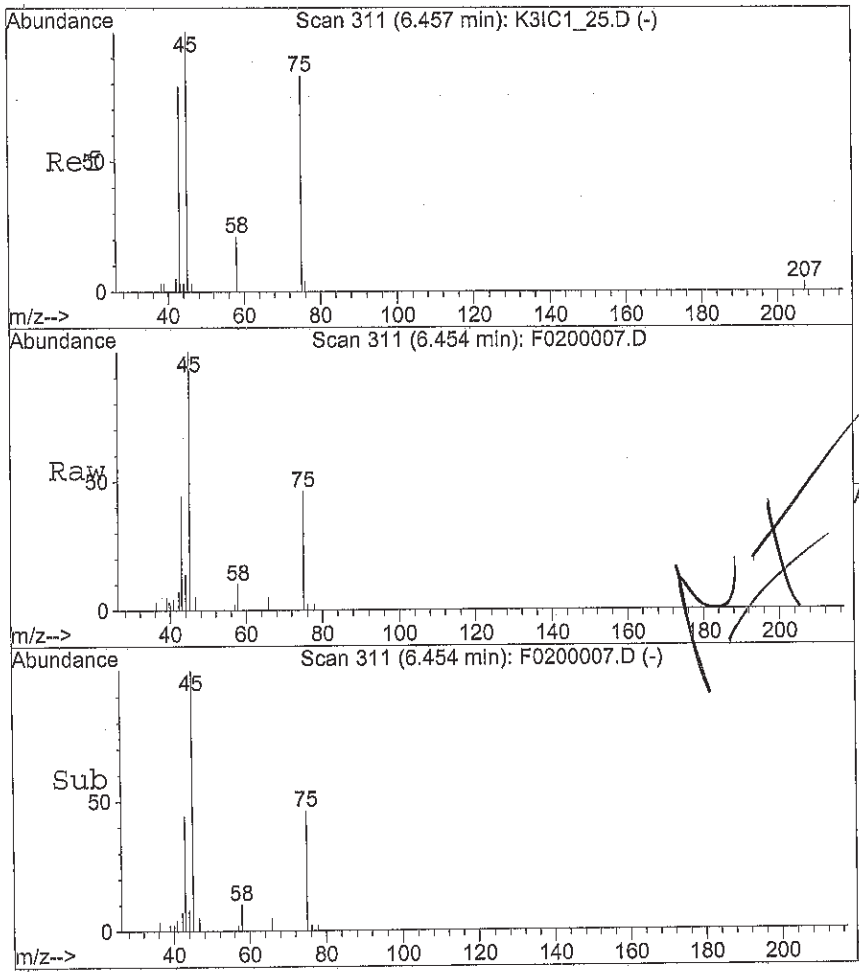


#10
1,1-Dichloroethene
Concen: 0.10 ug/L
RT: 6.18 min Scan# 279
Delta R.T. -0.21 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

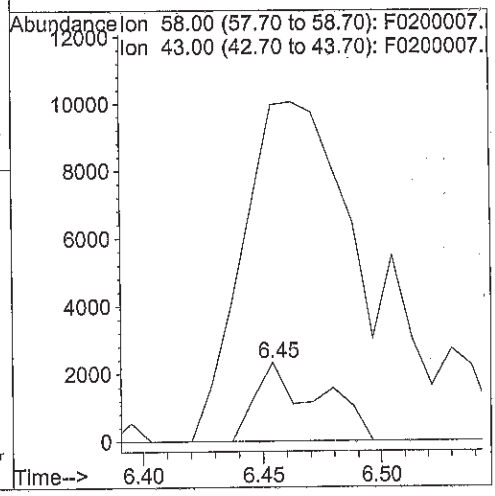


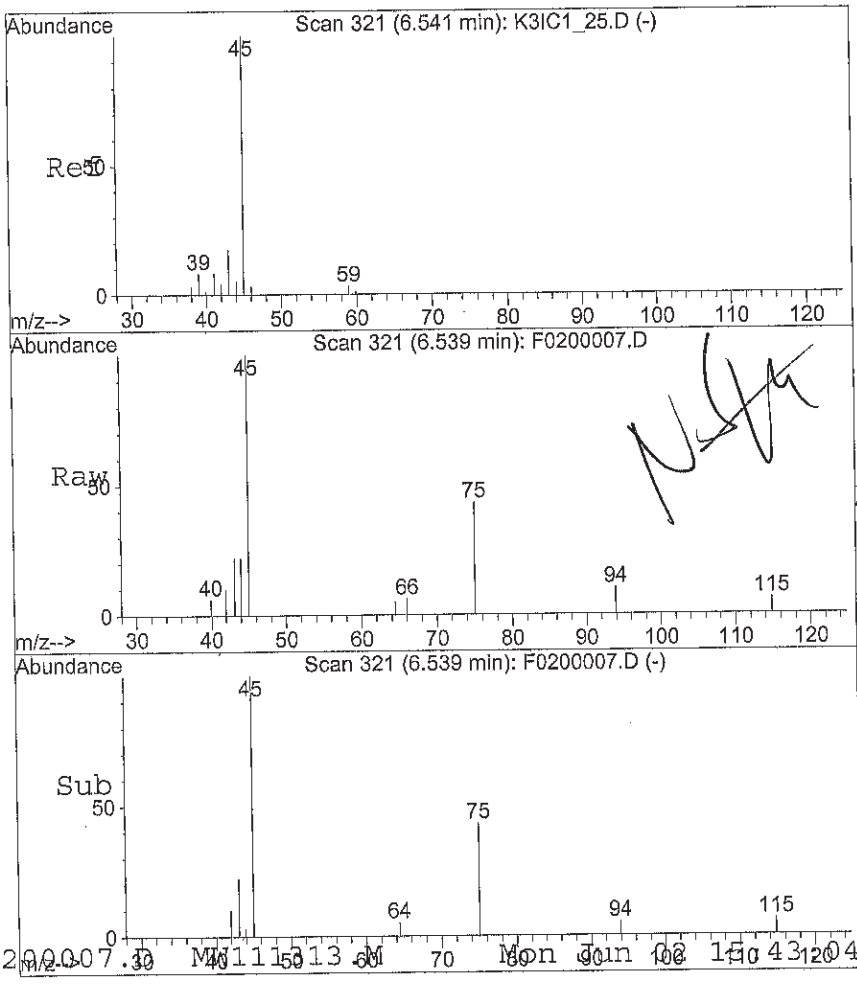


#11
Acetone
Concen: 4.34 ug/L
RT: 6.45 min Scan# 311
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 58 Resp: 4266

Ion	Ratio	Lower	Upper
58	100		
43	937.8	360.9	541.3#

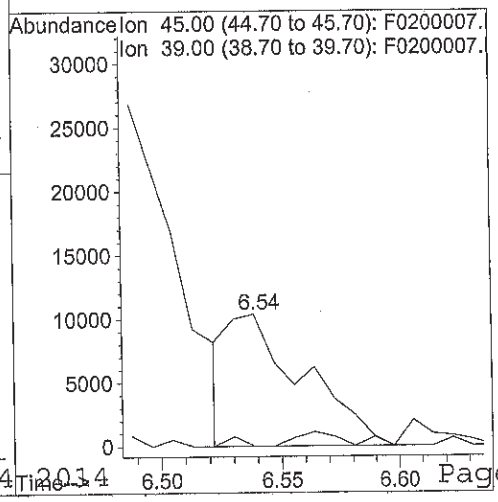


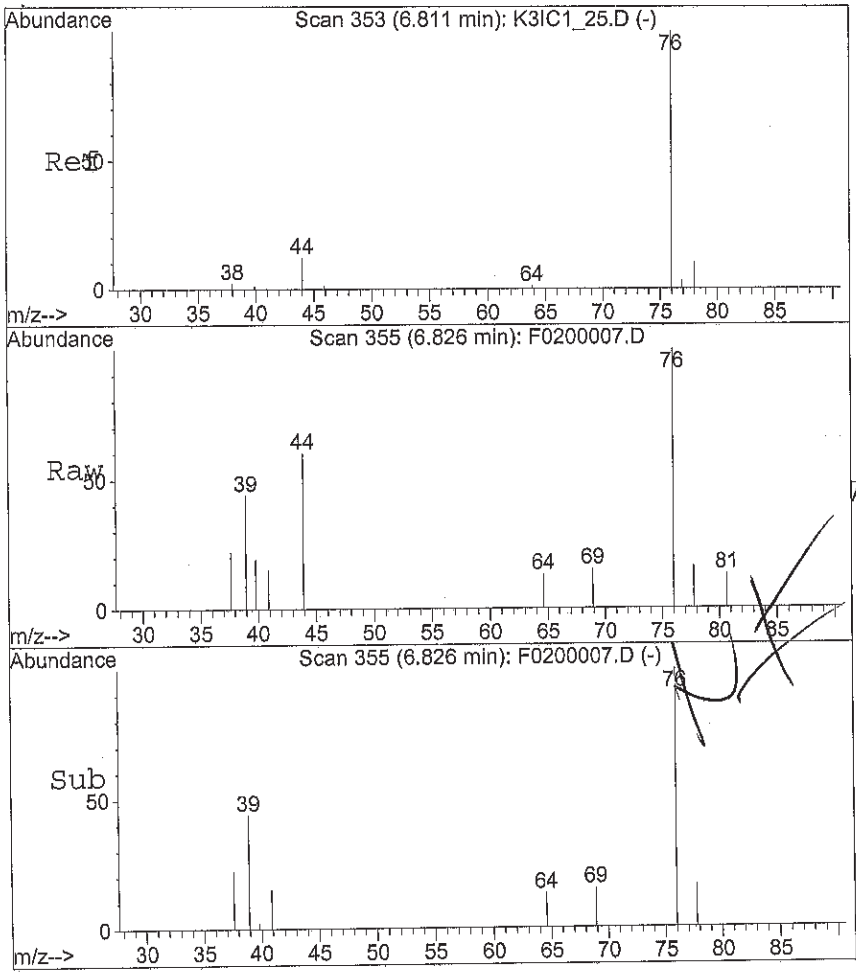


#12
(IPA) Leak Check Compound
Concen: 160.79 ug/L
RT: 6.54 min Scan# 321
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 45 Resp: 22773

Ion	Ratio	Lower	Upper
45	100		
39	1.7	4.9	7.3#

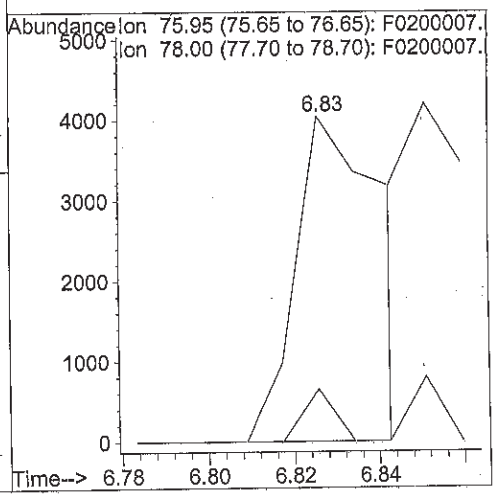


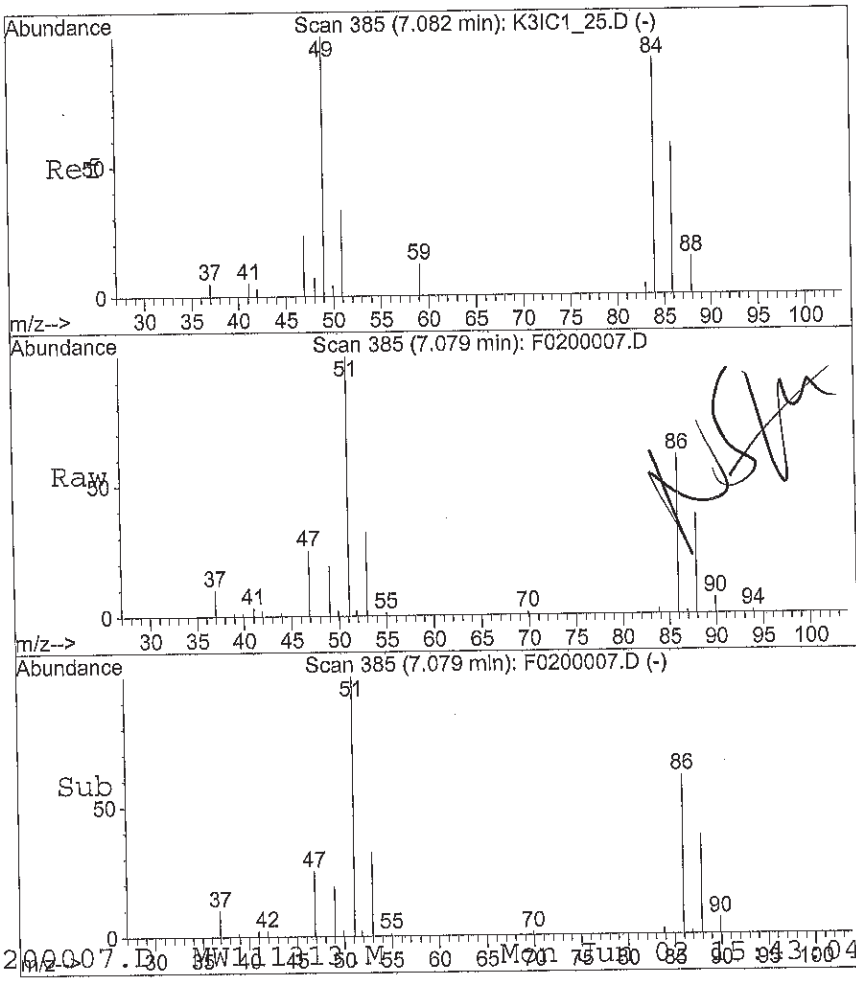


#13
Carbon disulfide
Concen: 0.60 ug/L
RT: 6.83 min Scan# 355
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 76 Resp: 5853

Ion	Ratio	Lower	Upper
76	100		
78	5.6	7.0	10.4#

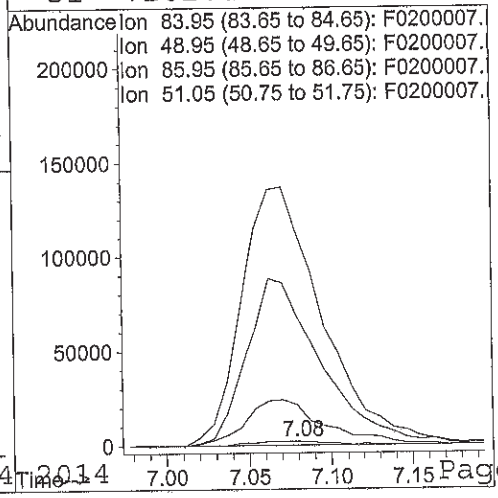


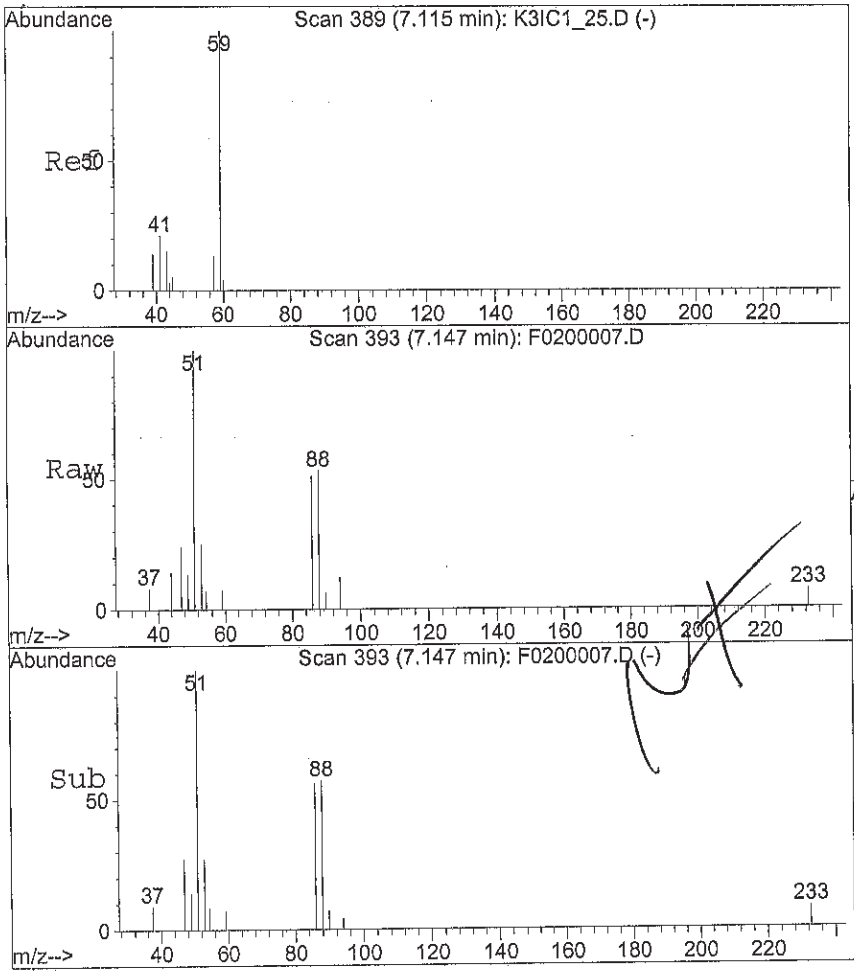


#14
Methylene Chloride
Concen: 2.01 ug/L
RT: 7.08 min Scan# 385
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

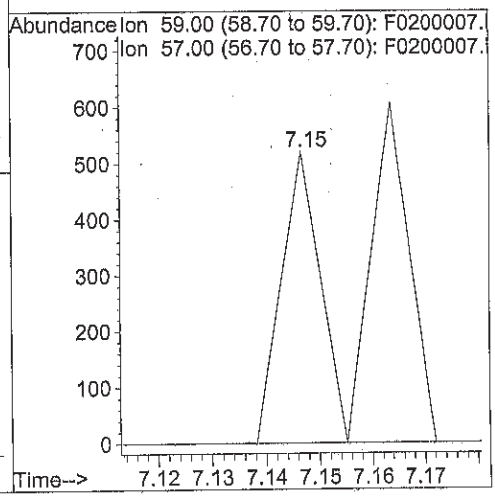


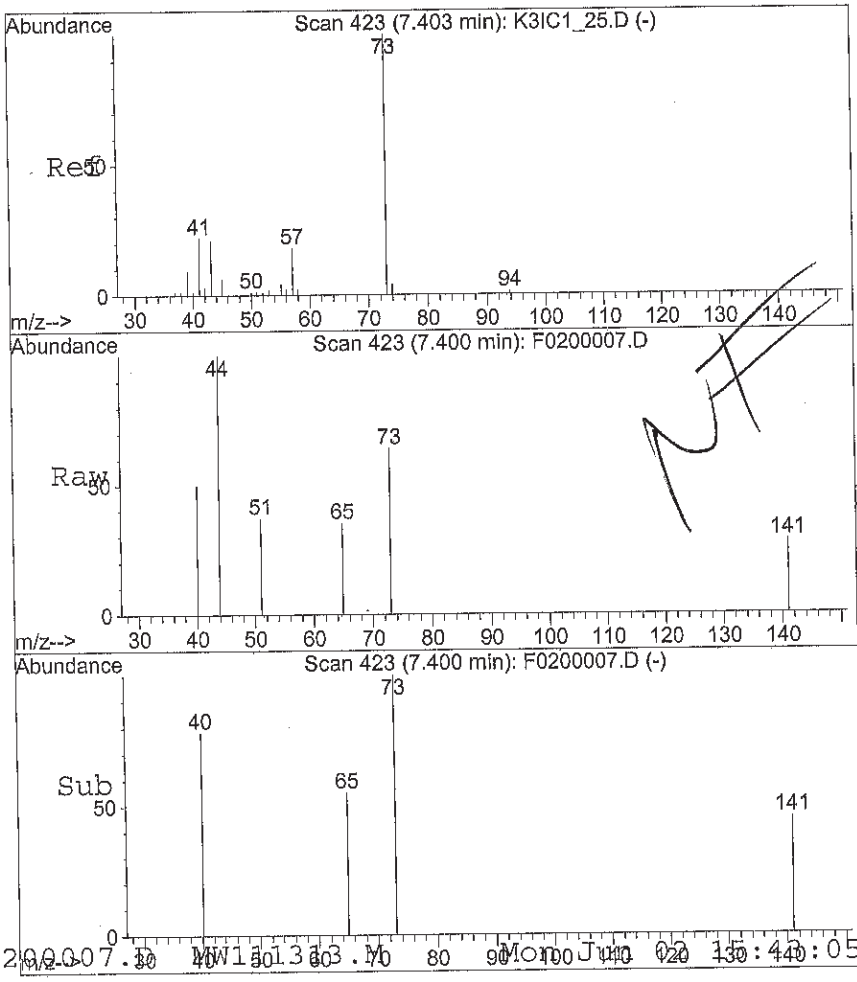


#15
(TBA) tert-Butanol
Concen: 1.31 ug/L
RT: 7.15 min Scan# 393
Delta R.T. 0.03 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 59 Resp: 264

Ion	Ratio	Lower	Upper
59	100		
57	116.3	6.4	9.6#

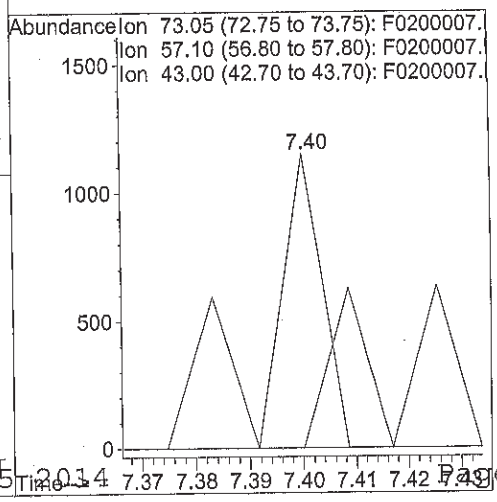


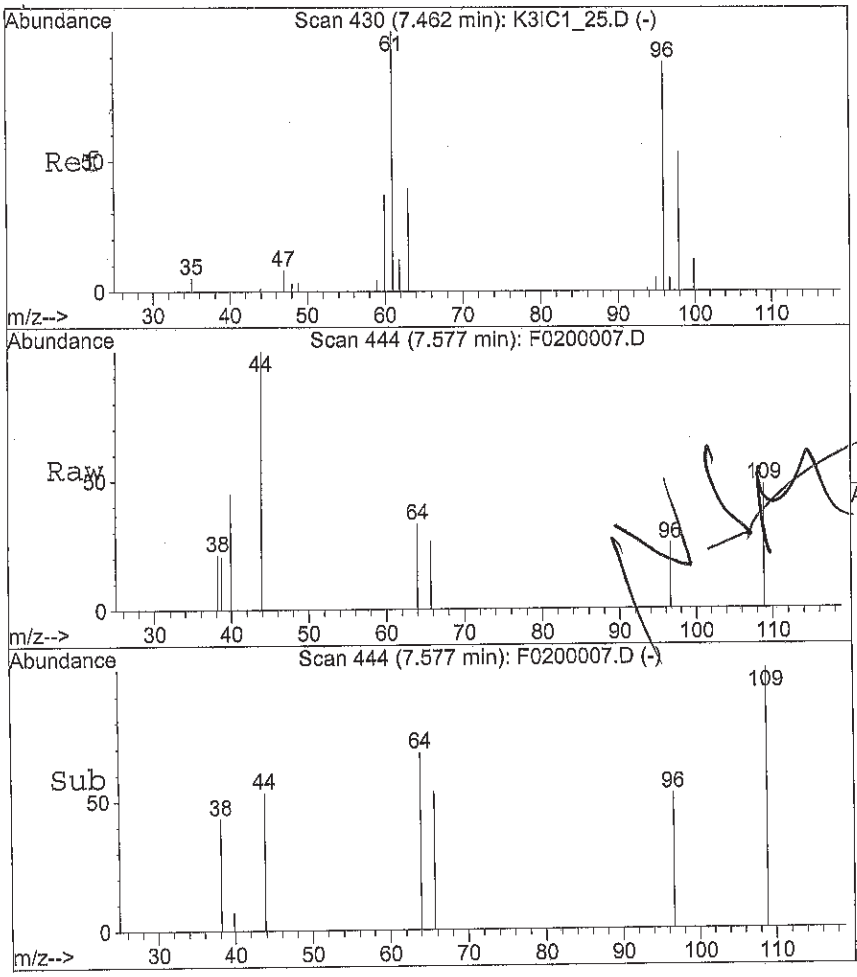


#16
(MTBE) Methyl-t-butyl ether
Concen: 0.09 ug/L
RT: 7.40 min Scan# 423
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

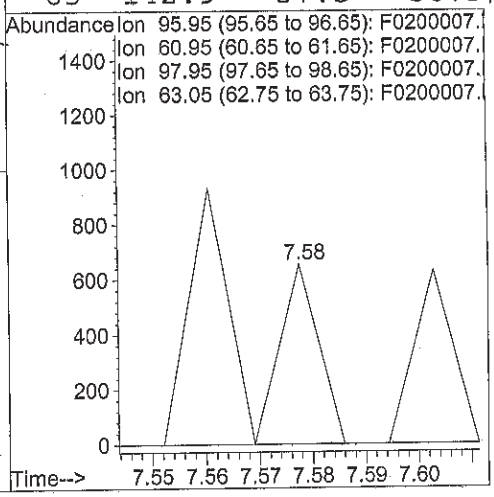


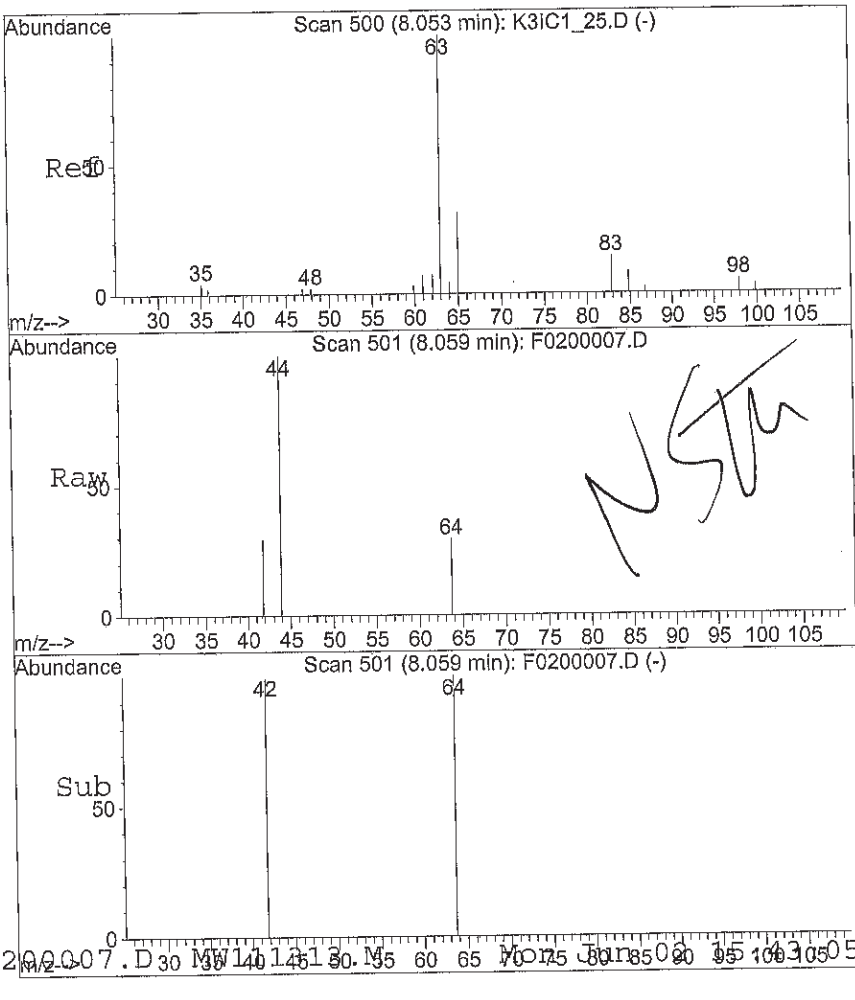


#17
trans-1,2-Dichloroethene
Concen: 0.10 ug/L
RT: 7.58 min Scan# 444
Delta R.T. 0.12 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

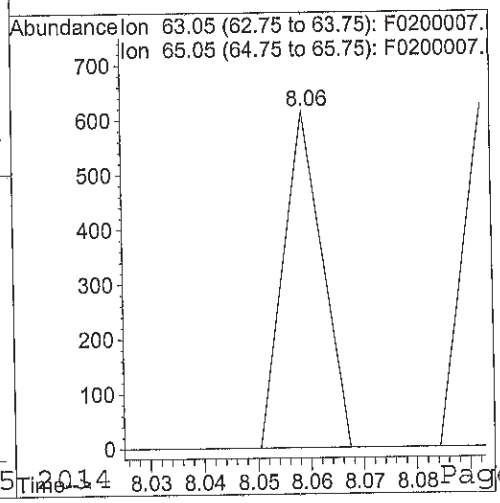


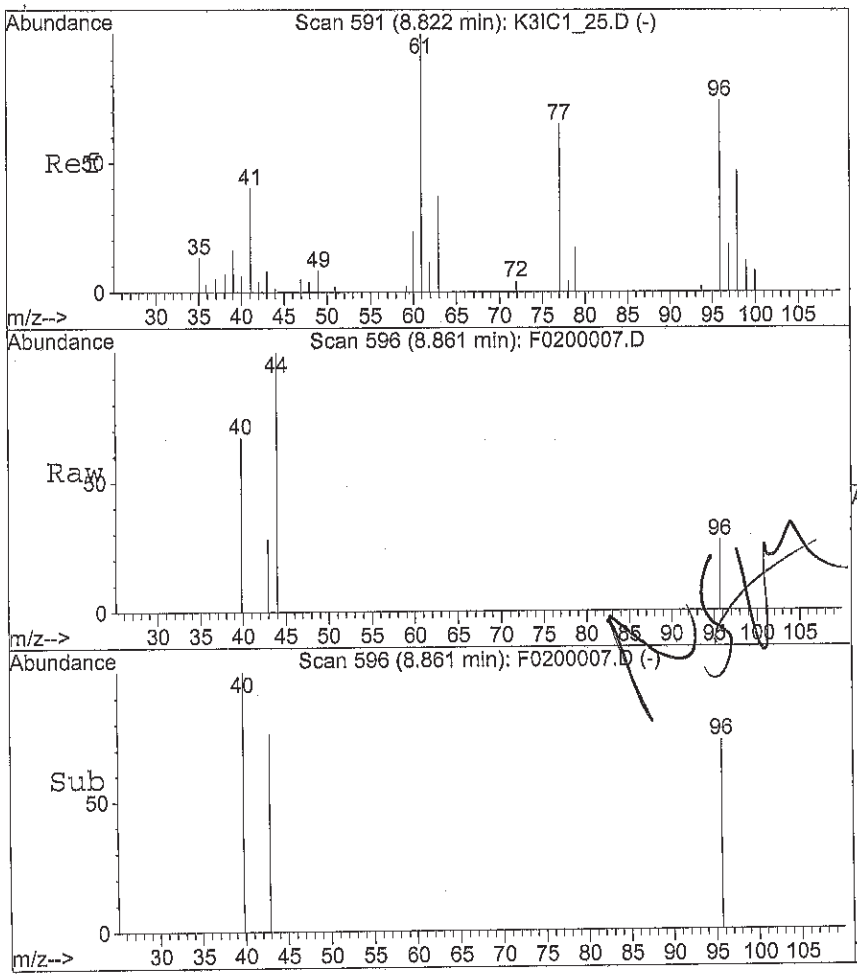


#18
1,1-Dichloroethane
Concen: 0.06 ug/L
RT: 8.06 min Scan# 501
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 63 Resp: 312

Ion	Ratio	Lower	Upper
63	100		
65	0.0	25.8	38.8#

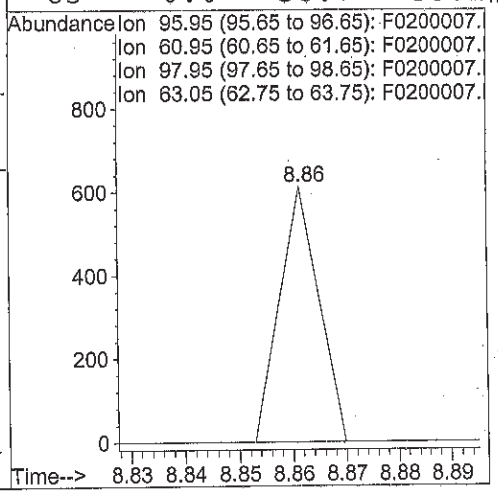


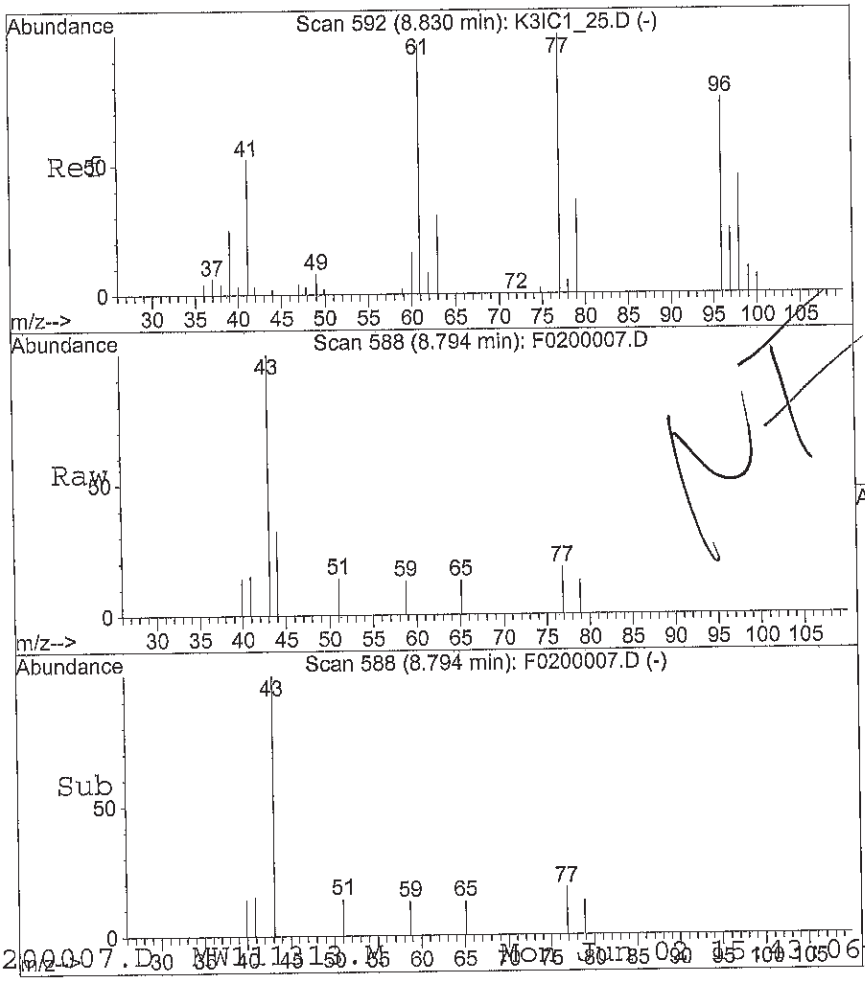


#19
cis-1,2-Dichloroethene
Concen: 0.08 ug/L
RT: 8.86 min Scan# 596
Delta R.T. 0.04 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 96 Resp: 310

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#

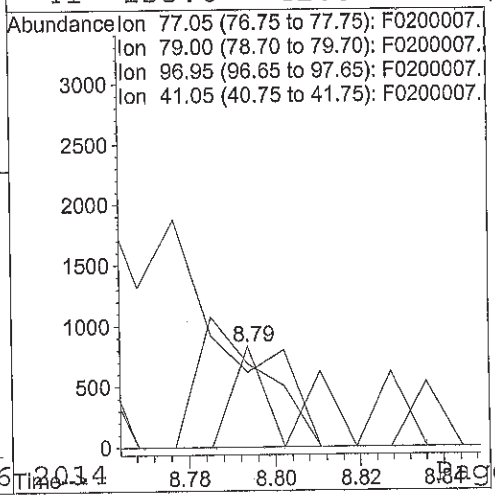


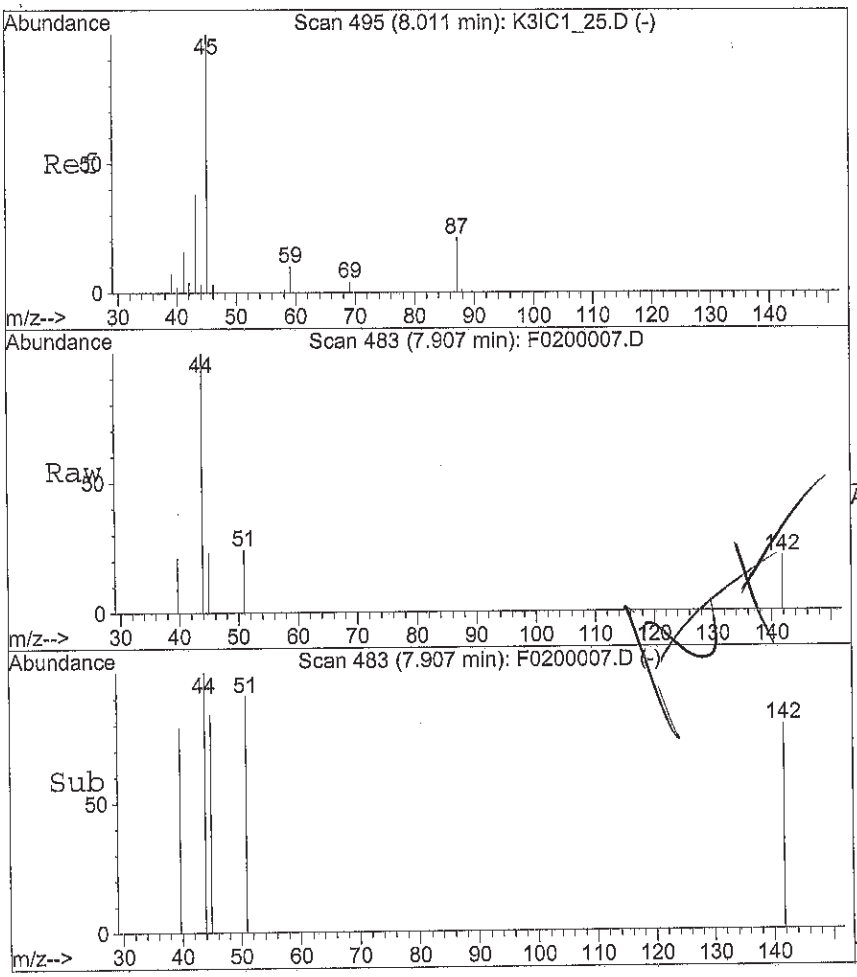


#20
2,2-Dichloropropane
Concen: 0.16 ug/L
RT: 8.79 min Scan# 588
Delta R.T. -0.04 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 77 Resp: 736

Ion	Ratio	Lower	Upper
77	100		
79	0.0	26.6	40.0#
97	0.0	18.9	28.3#
41	155.6	42.6	64.0#

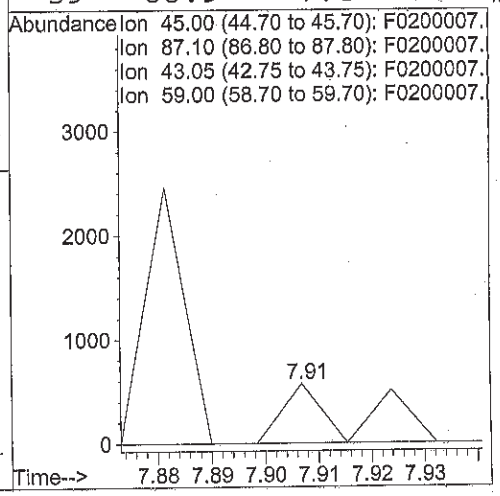


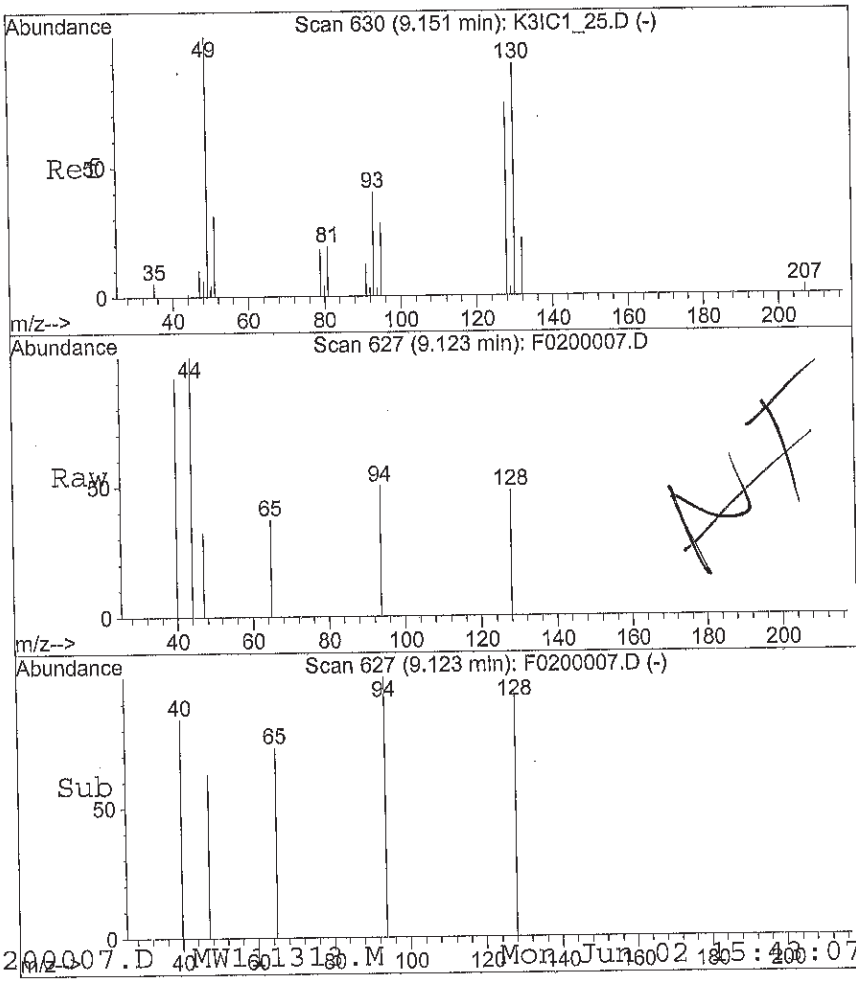


#22
(DIPE) Diisopropyl Ether
Concen: 0.03 ug/L
RT: 7.91 min Scan# 483
Delta R.T. -0.10 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

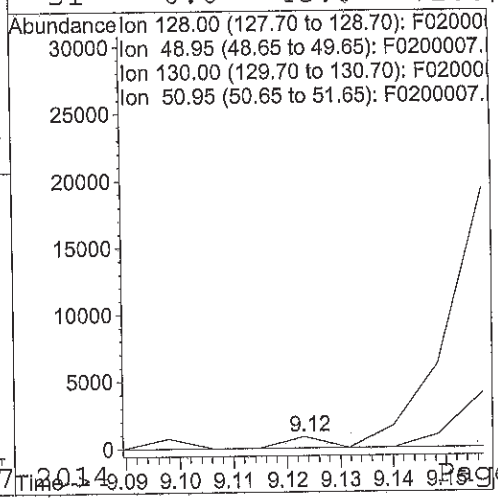


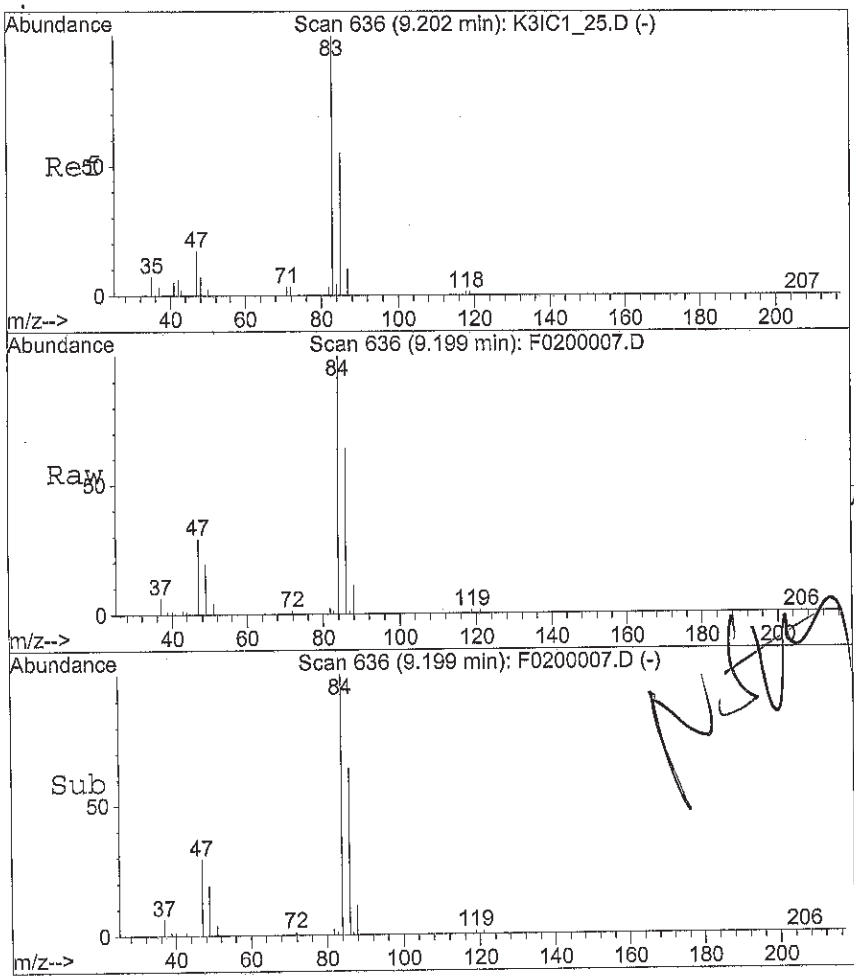


#23
Bromochloromethane
Concen: 0.27 ug/L
RT: 9.12 min Scan# 627
Delta R.T. -0.03 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

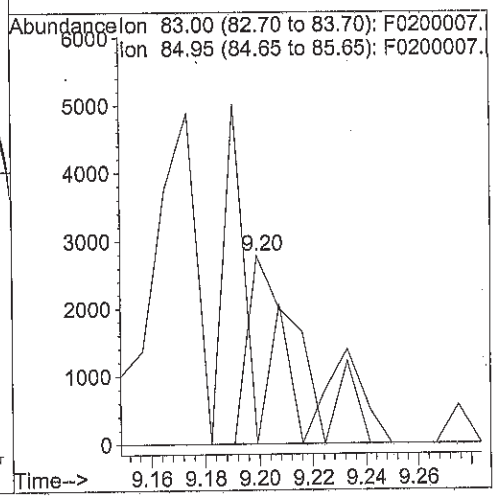


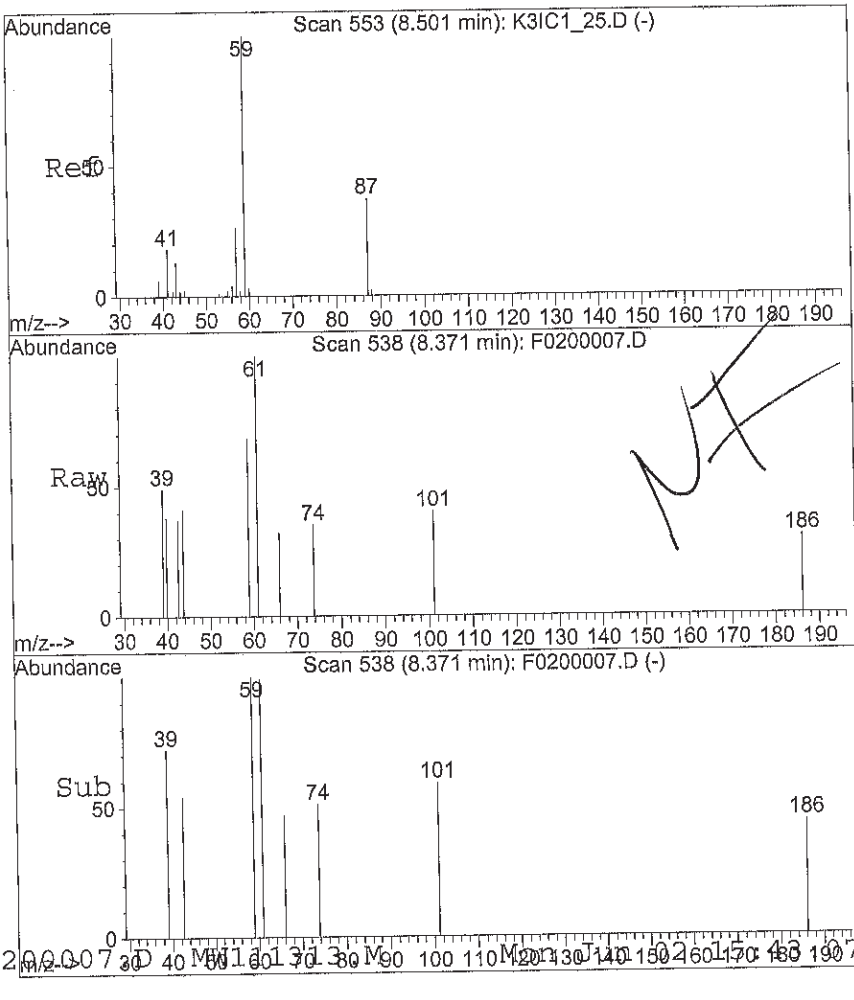


#24
Chloroform
Concen: 0.63 ug/L
RT: 9.20 min Scan# 636
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 83 Resp: 3862

Ion	Ratio	Lower	Upper
83	100		
85	92.7	51.8	77.6#

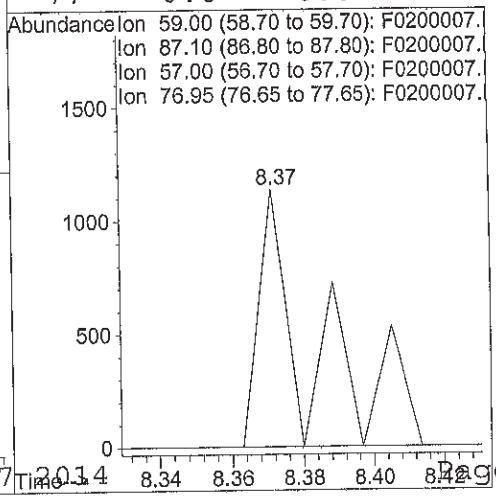


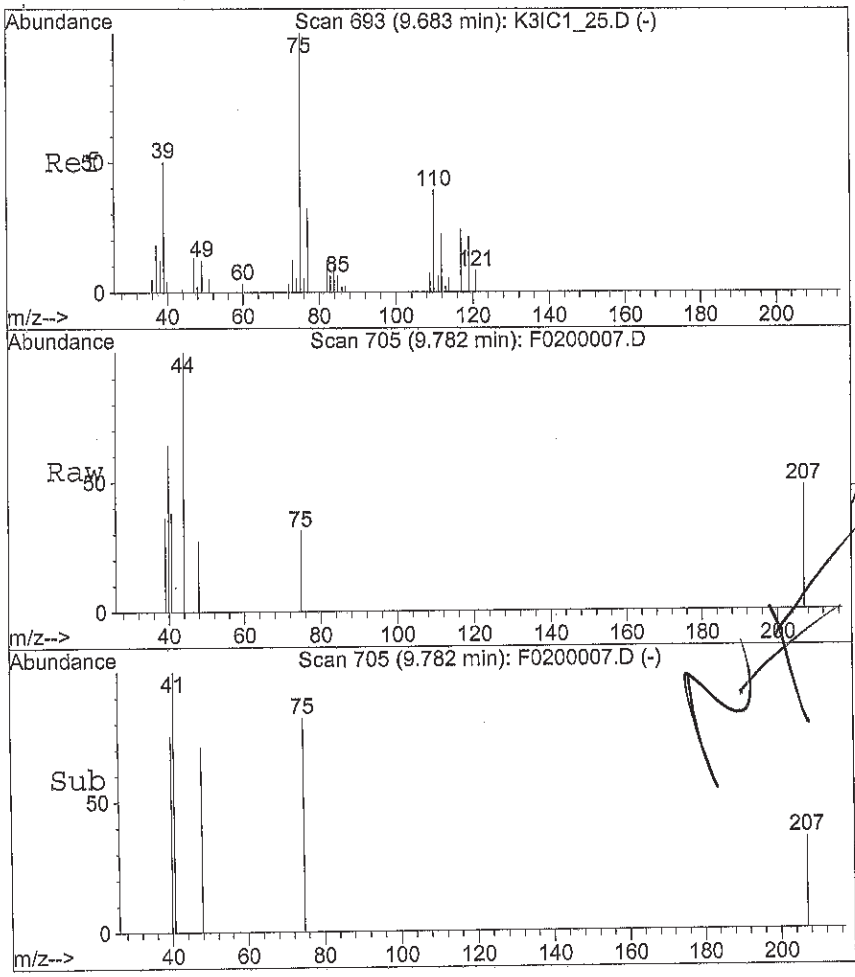


#25
(ETBE) 2-ethoxy 2-methyl propar
Concen: 0.11 ug/L
RT: 8.37 min Scan# 538
Delta R.T. -0.13 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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

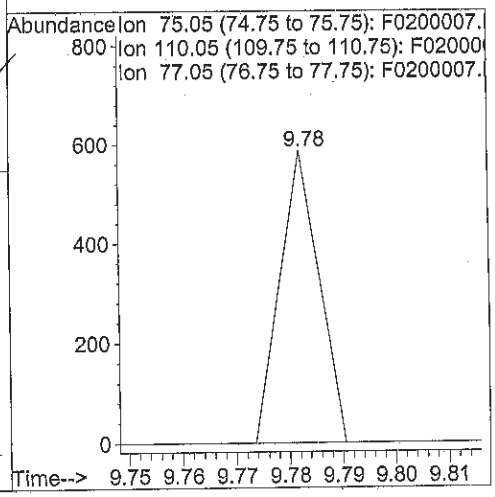


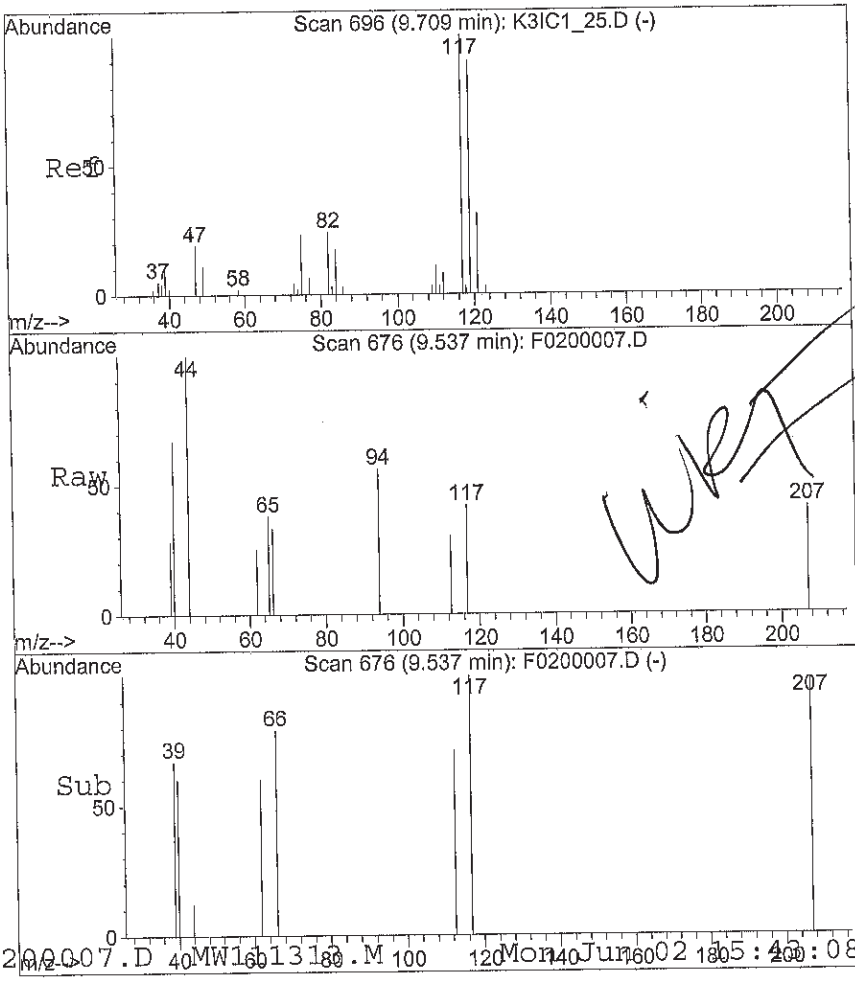


#29
1,1-Dichloropropene
Concen: 0.07 ug/L
RT: 9.78 min Scan# 705
Delta R.T. 0.10 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

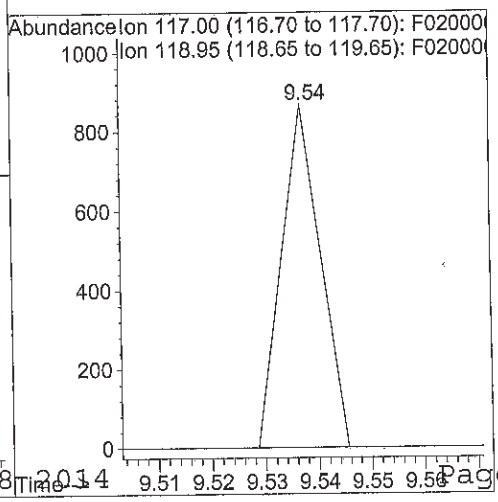


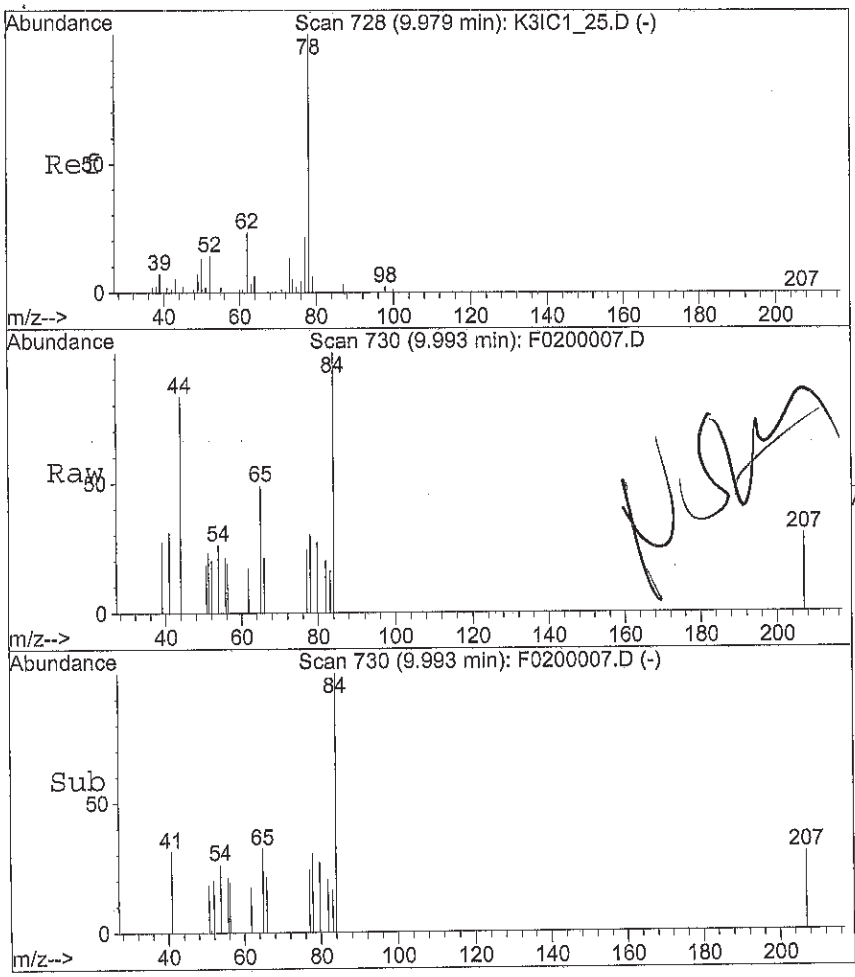


#30
Carbon Tetrachloride
Concen: 0.11 ug/L
RT: 9.54 min Scan# 676
Delta R.T. -0.17 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion:117 Resp: 439

Ion	Ratio	Lower	Upper
117	100		
119	0.0	75.8	113.8#

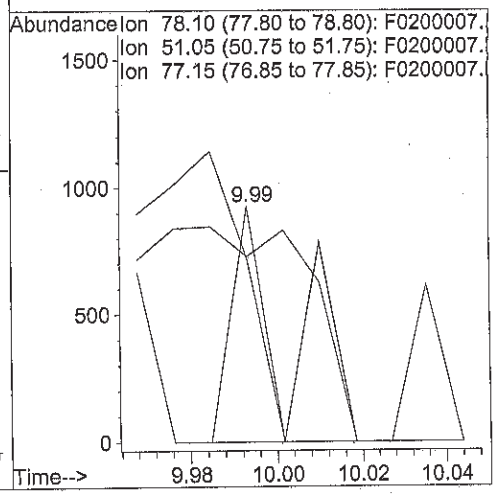


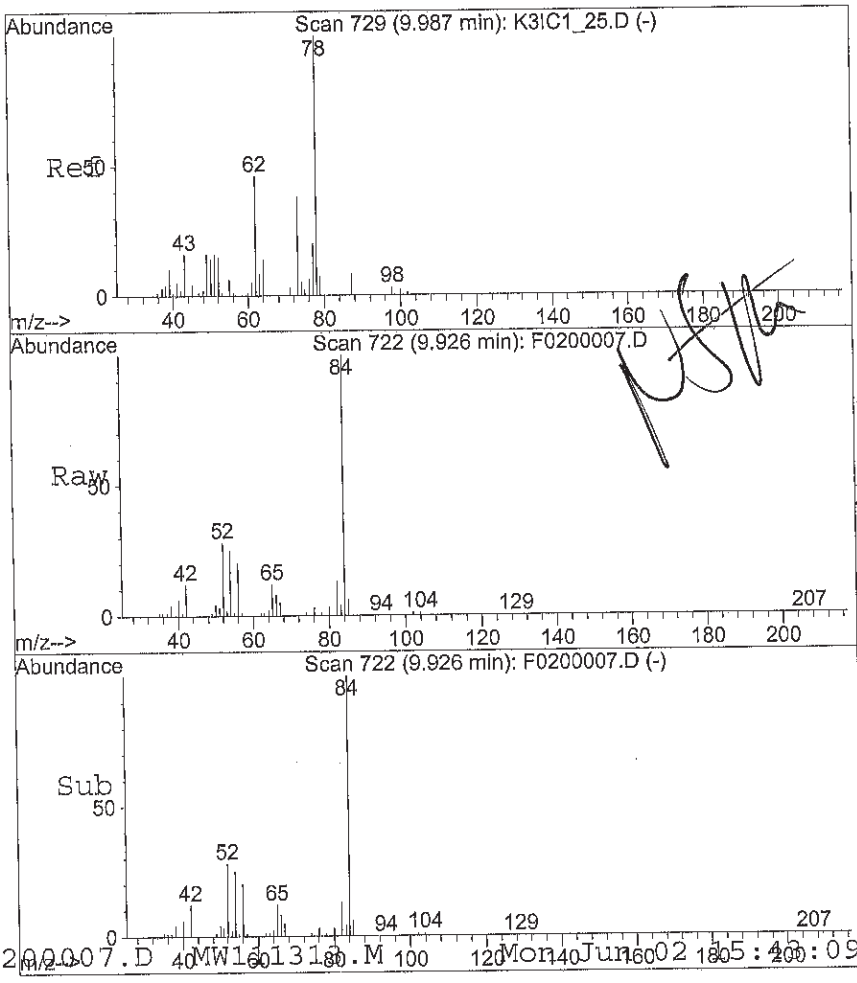


#31
Benzene
Concen: 0.08 ug/L
RT: 9.99 min Scan# 730
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

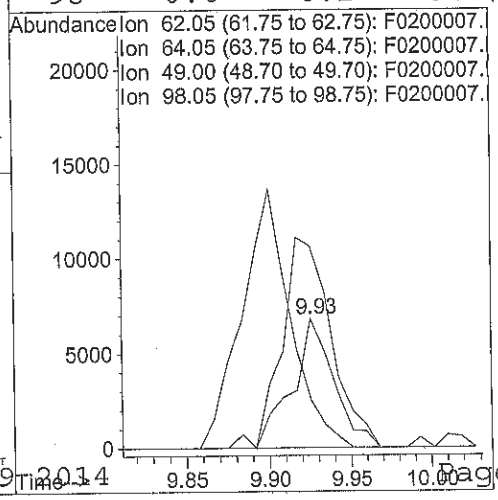


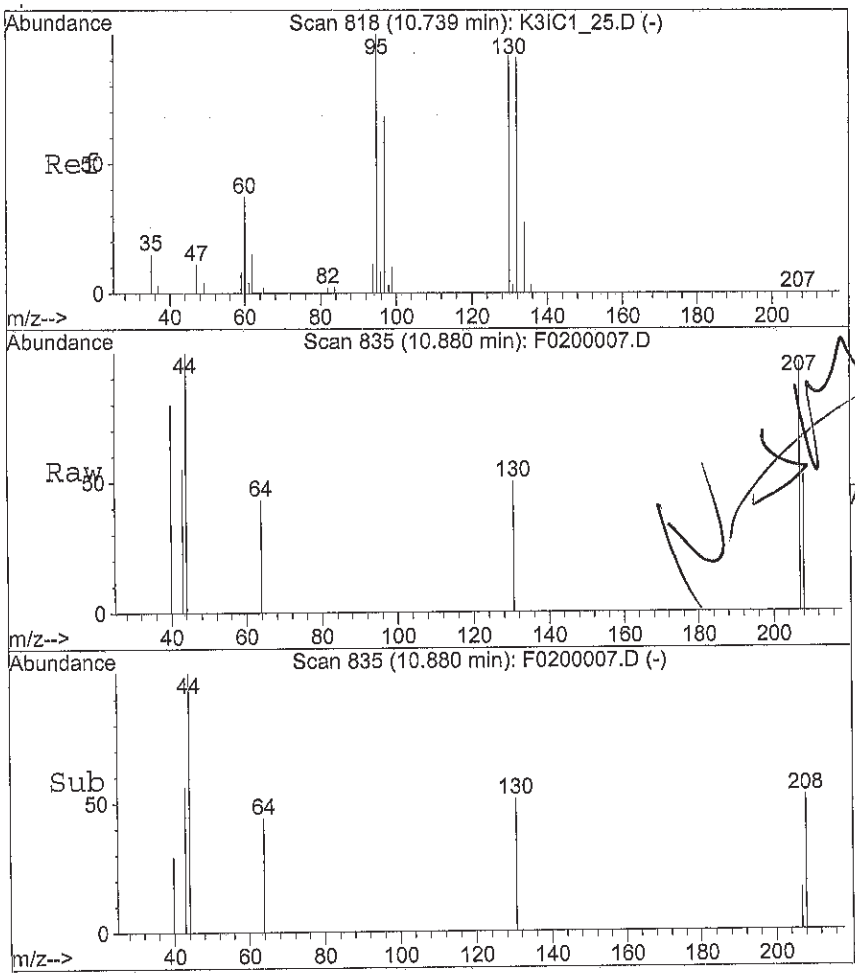


#32
1,2-Dichloroethane
Concen: 3.18 ug/L
RT: 9.93 min Scan# 722
Delta R.T. -0.06 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

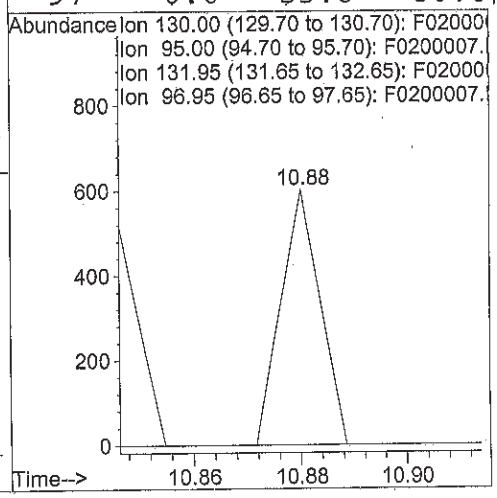


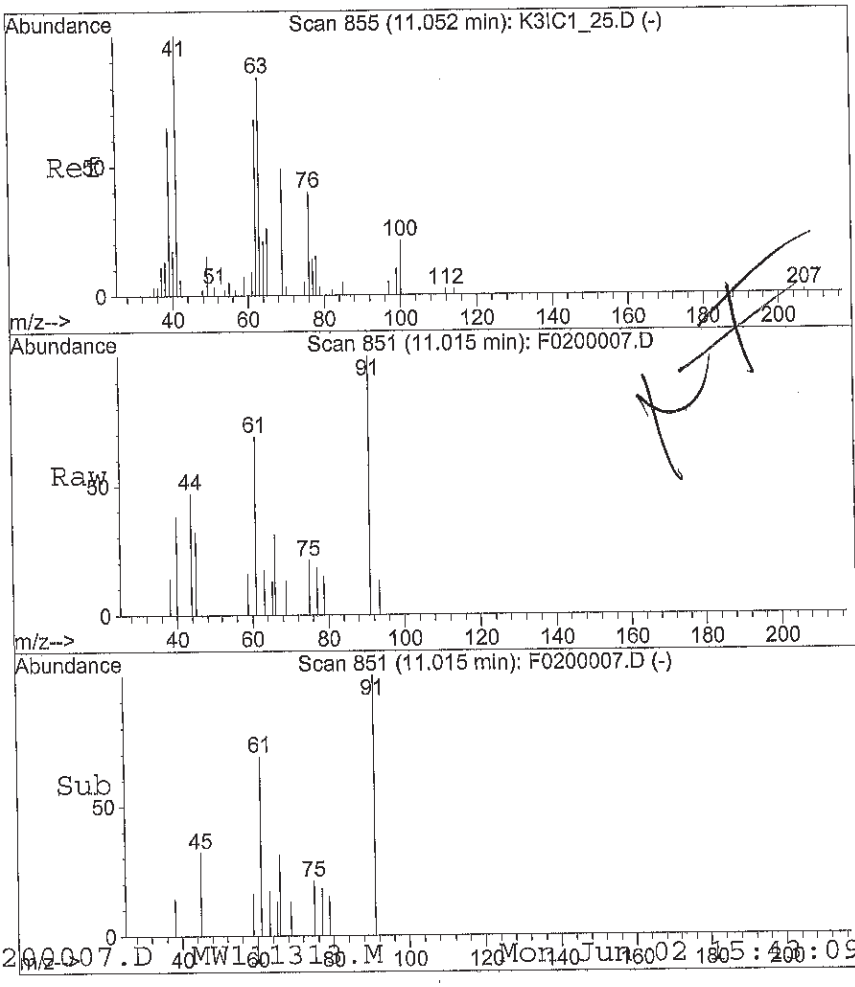


#33
Trichloroethene
Concen: 0.09 ug/L
RT: 10.88 min Scan# 835
Delta R.T. 0.14 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

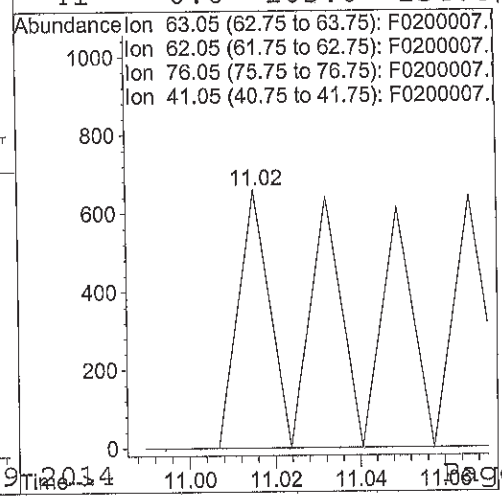


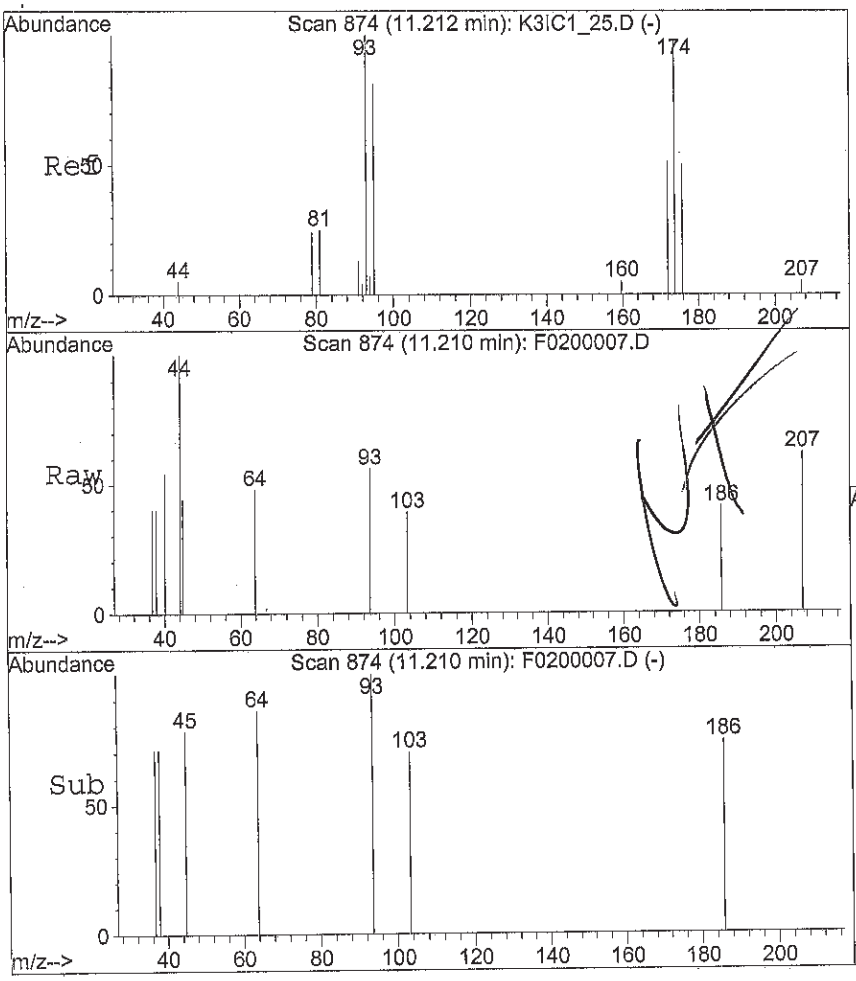


#34
1,2-Dichloropropane
Concen: 0.25 ug/L
RT: 11.02 min Scan# 851
Delta R.T. -0.04 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

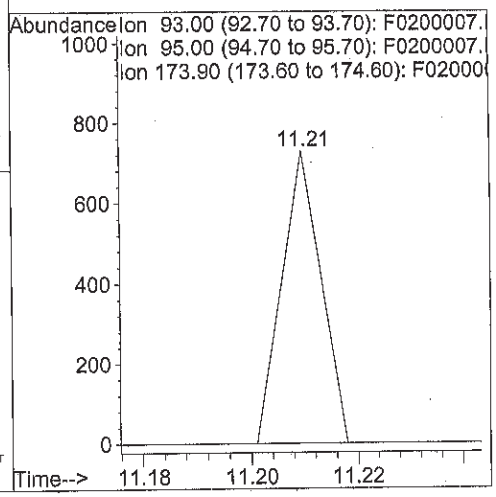


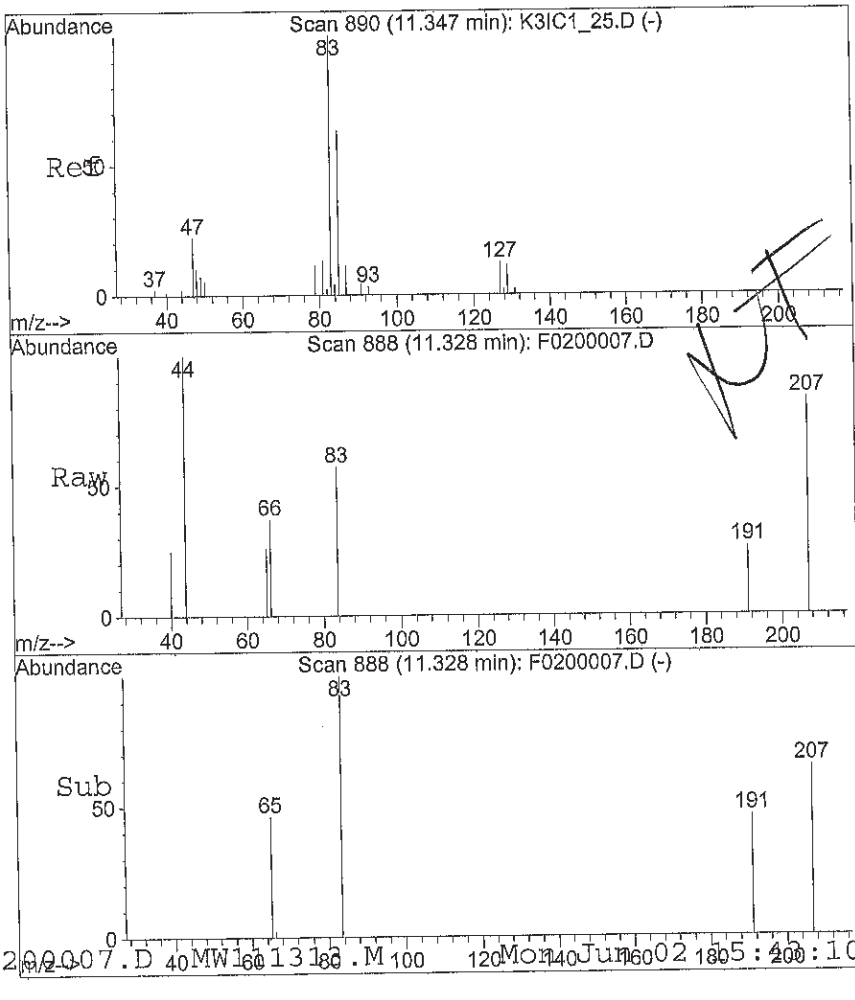


#35
Dibromomethane
Concen: 0.18 ug/L
RT: 11.21 min Scan# 874
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

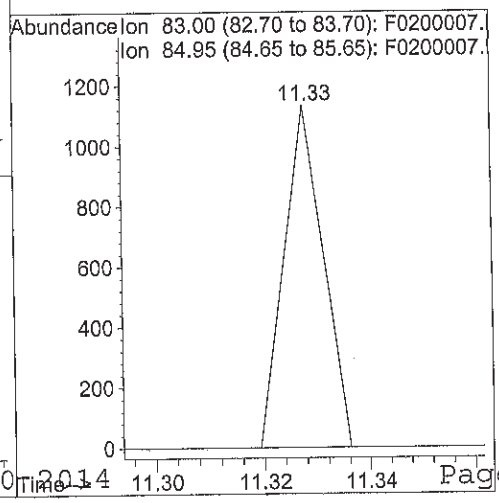


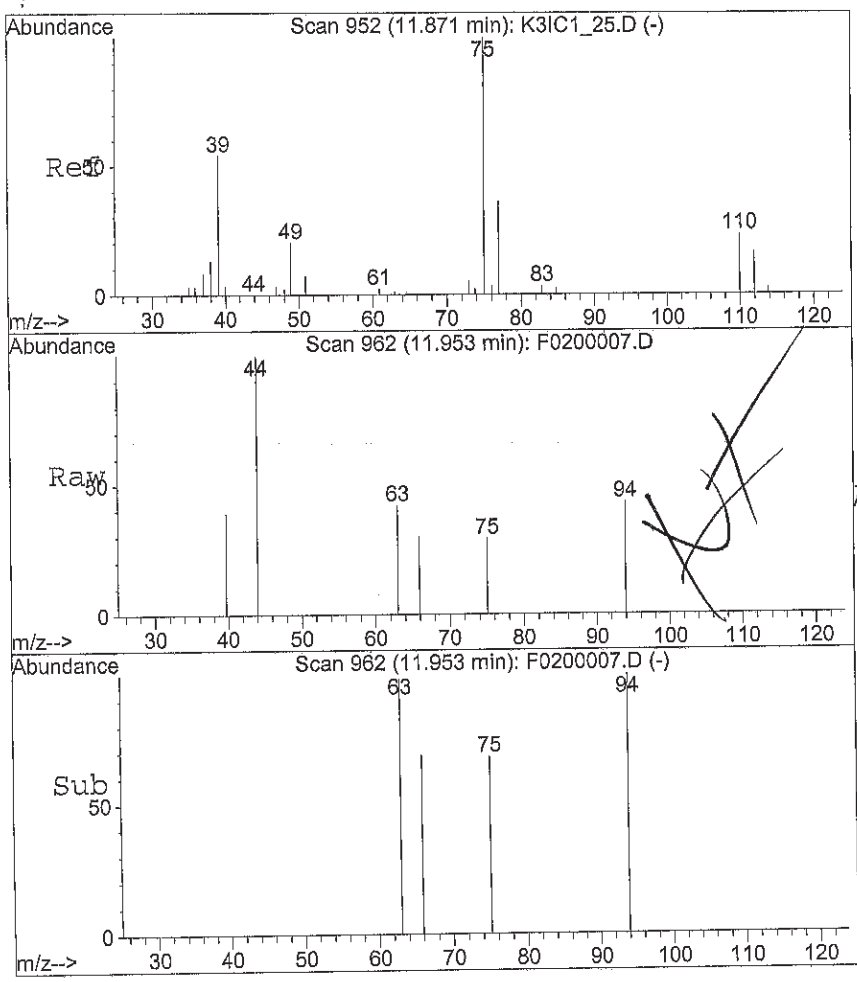


#36
Bromodichloromethane
Concen: 0.14 ug/L
RT: 11.33 min Scan# 888
Delta R.T. -0.02 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 83 Resp: 574

Ion	Ratio	Lower	Upper
83	100		
85	0.0	48.2	72.2#

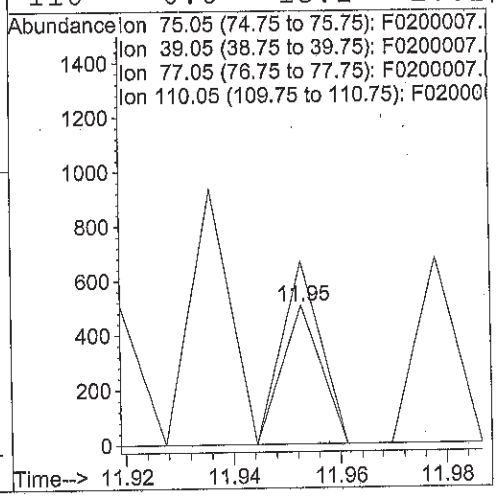


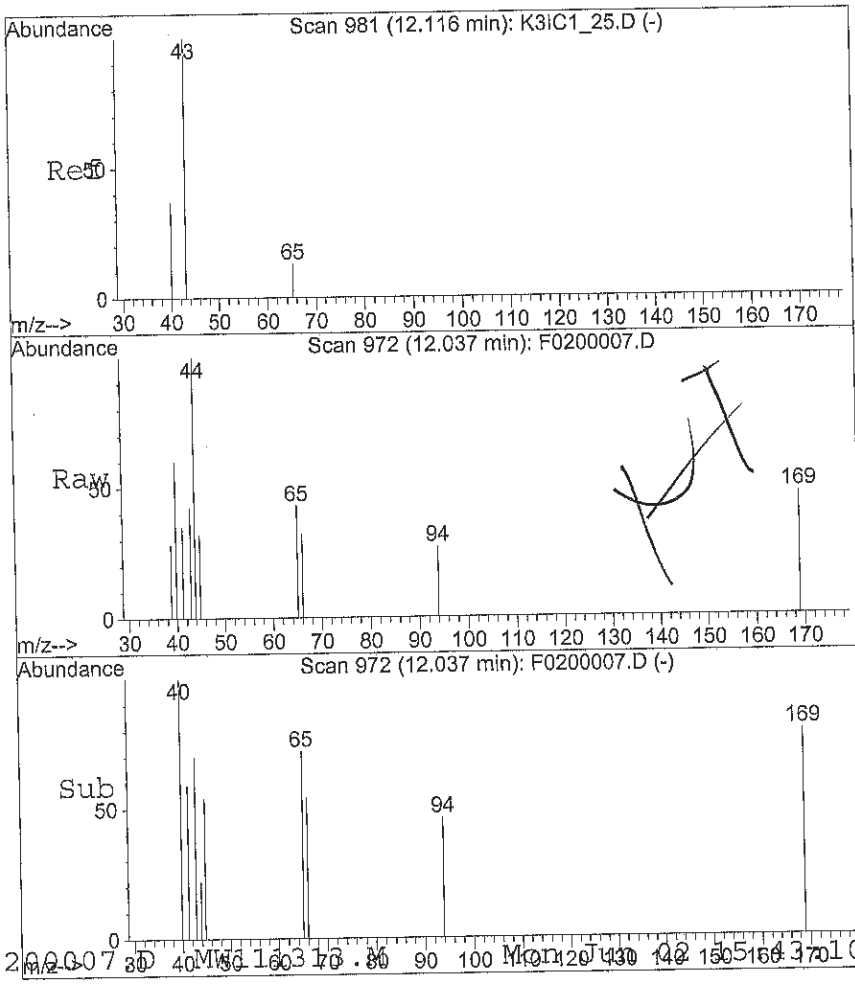


#37
cis-1,3-Dichloropropene
Concen: 0.06 ug/L
RT: 11.95 min Scan# 962
Delta R.T. 0.08 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

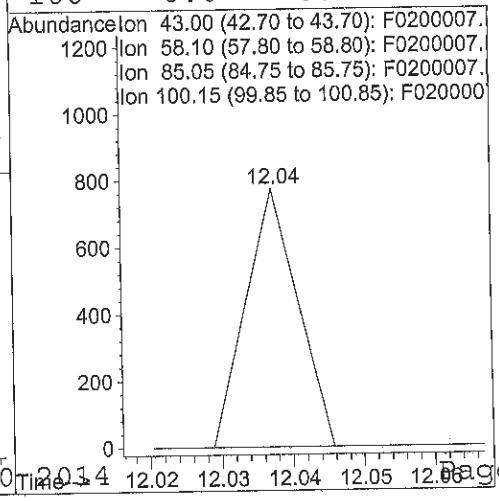


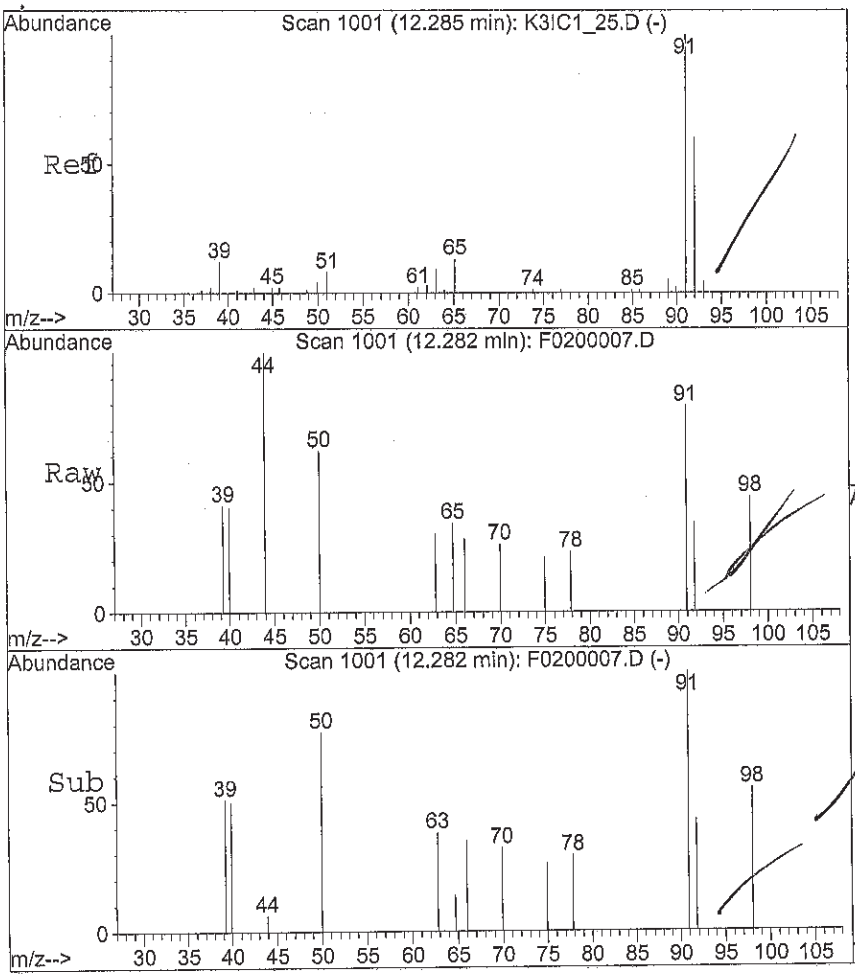


#40
(MIBK) 4-Methyl-2-Pentanone
Concen: 0.18 ug/L
RT: 12.04 min Scan# 972
Delta R.T. -0.08 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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

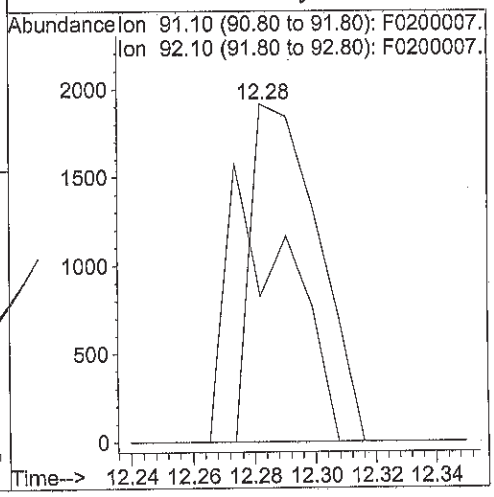


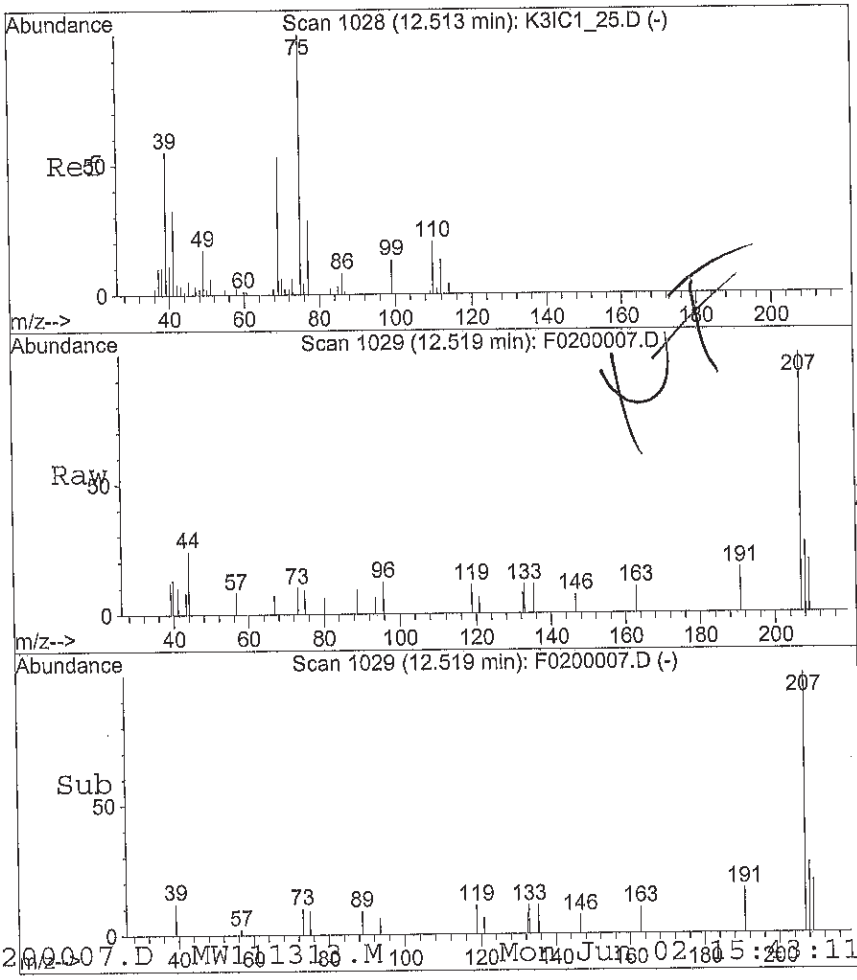


#41
Toluene
Concen: 0.19 ug/L
RT: 12.28 min Scan# 1001
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 91 Resp: 2946

Ion	Ratio	Lower	Upper
91	100		
92	74.4	47.4	71.0#

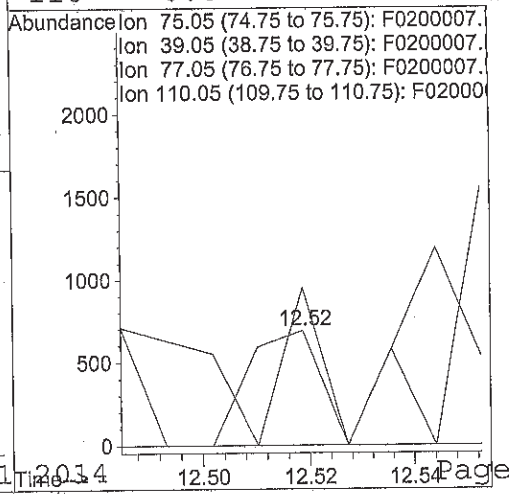


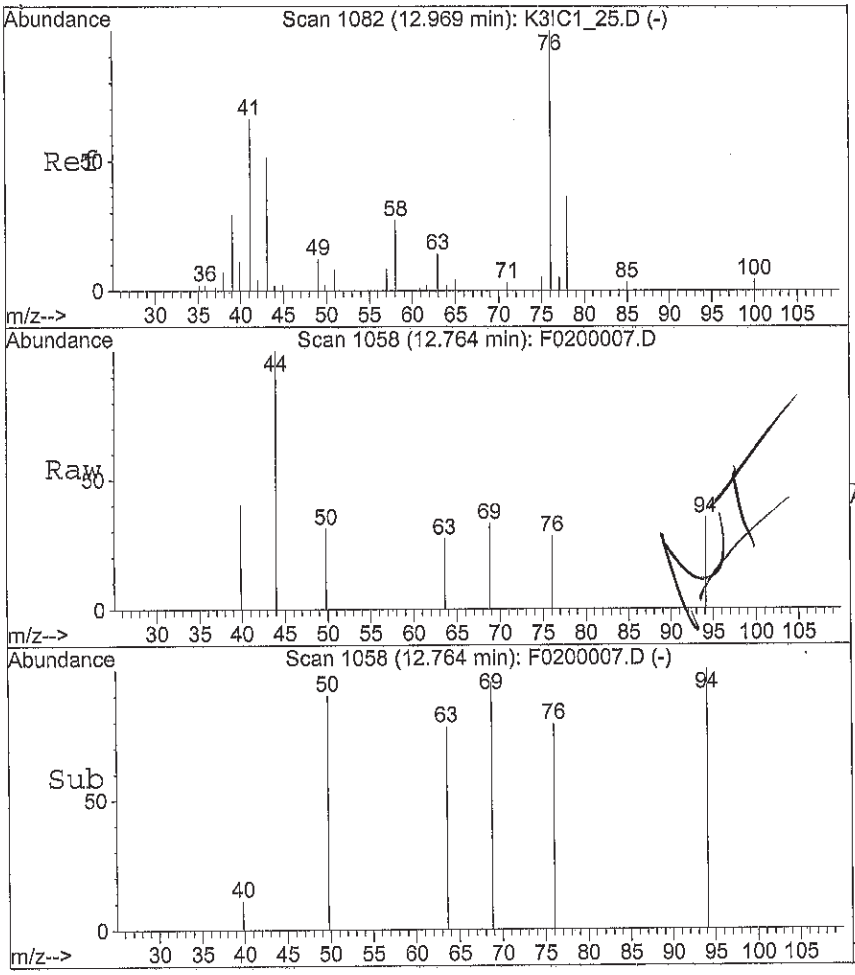


#42
trans-1,3-Dichloropropene
Concen: 0.13 ug/L
RT: 12.52 min Scan# 1029
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

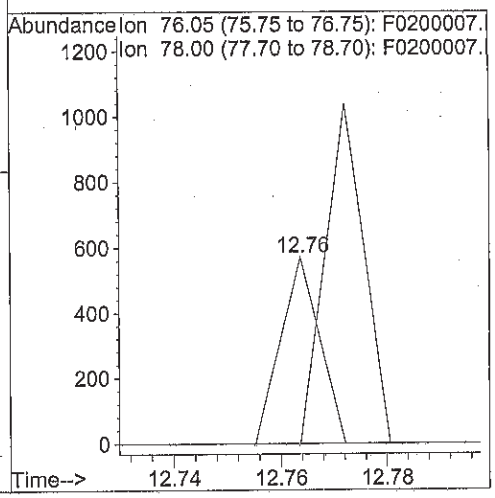


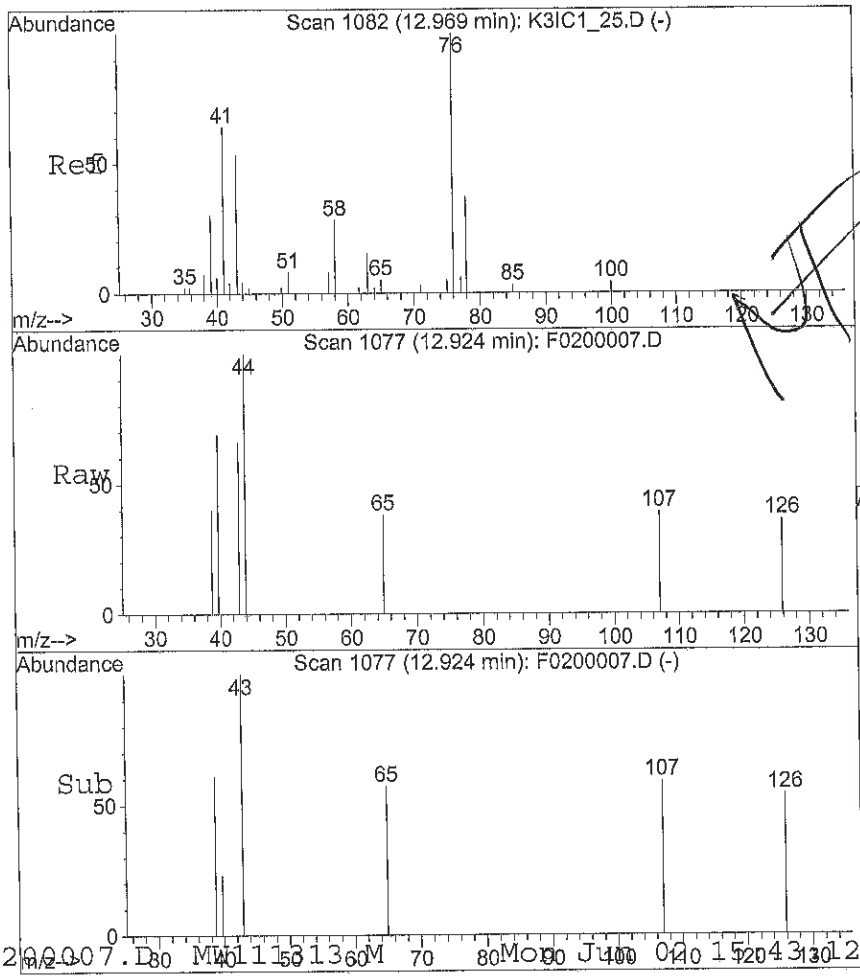


#45
1,3-Dichloropropane
Concen: 0.06 ug/L
RT: 12.76 min Scan# 1058
Delta R.T. -0.21 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 76 Resp: 289

Ion	Ratio	Lower	Upper
76	100		
78	182.0	26.9	40.3#

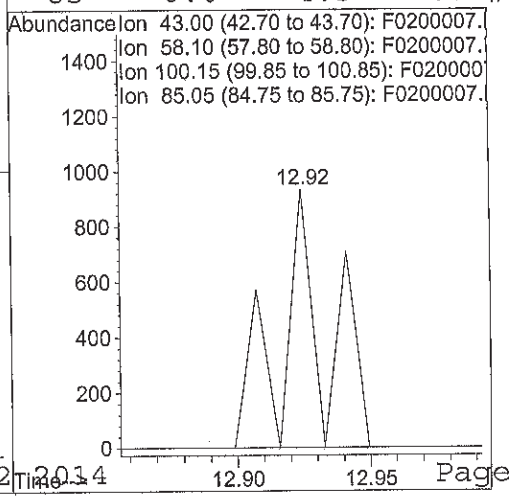


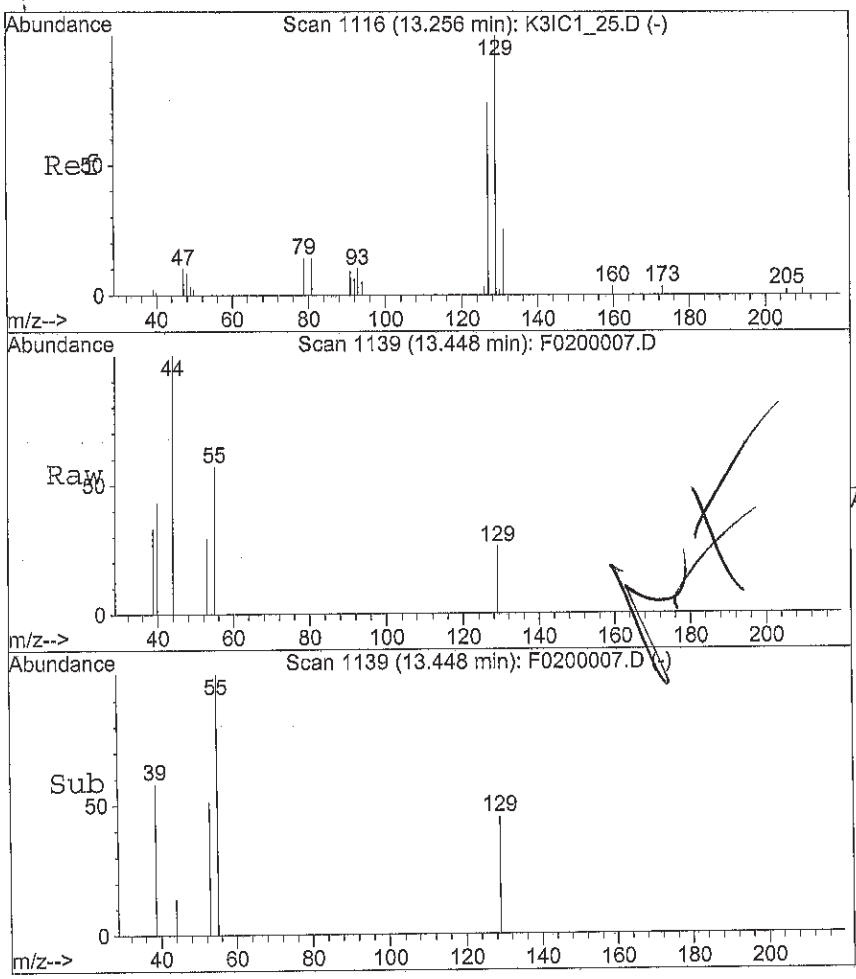


#46
2-Hexanone
Concen: 0.46 ug/L
RT: 12.92 min Scan# 1077
Delta R.T. -0.04 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

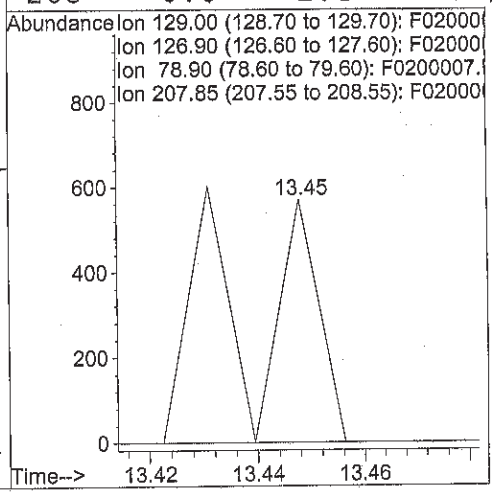


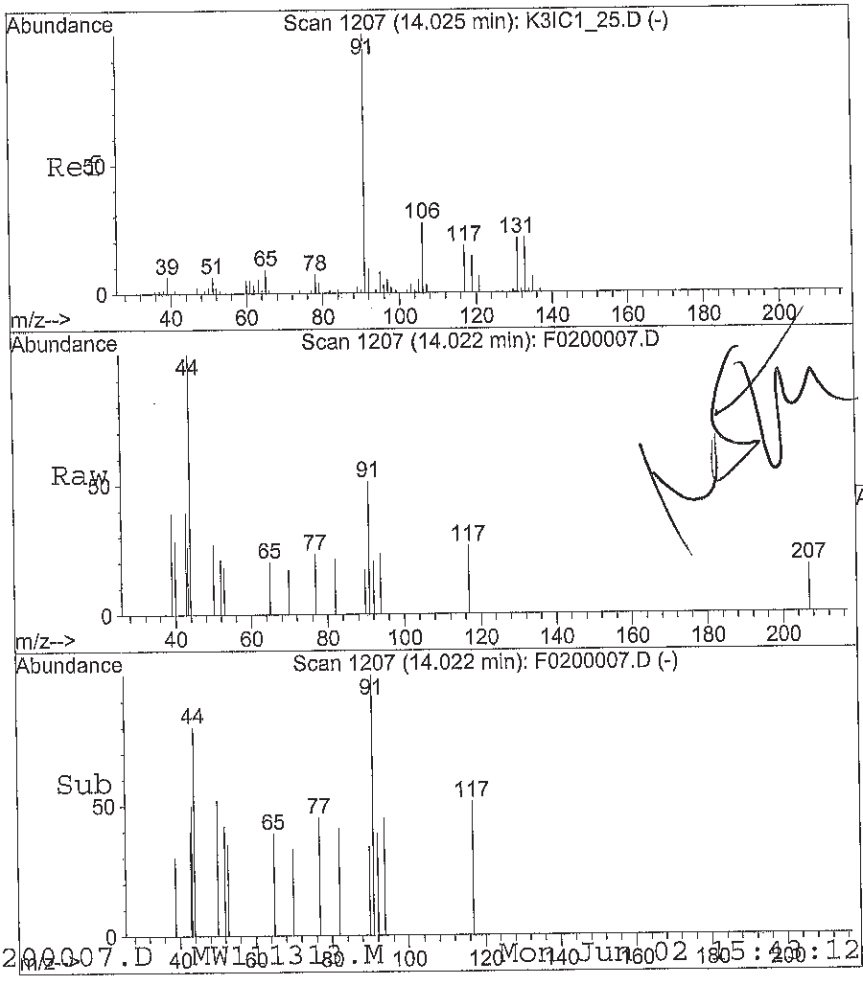


#47
Dibromochloromethane
Concen: 0.07 ug/L
RT: 13.45 min Scan# 1139
Delta R.T. 0.19 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

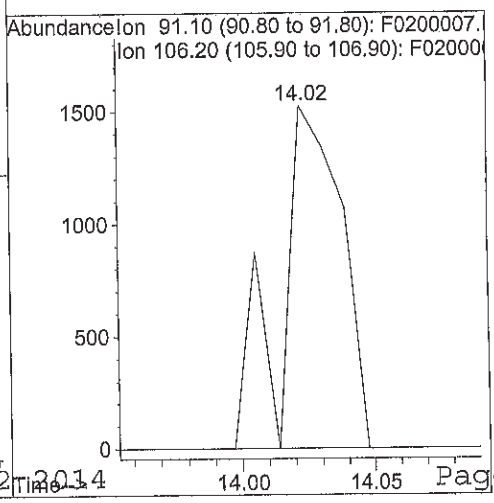


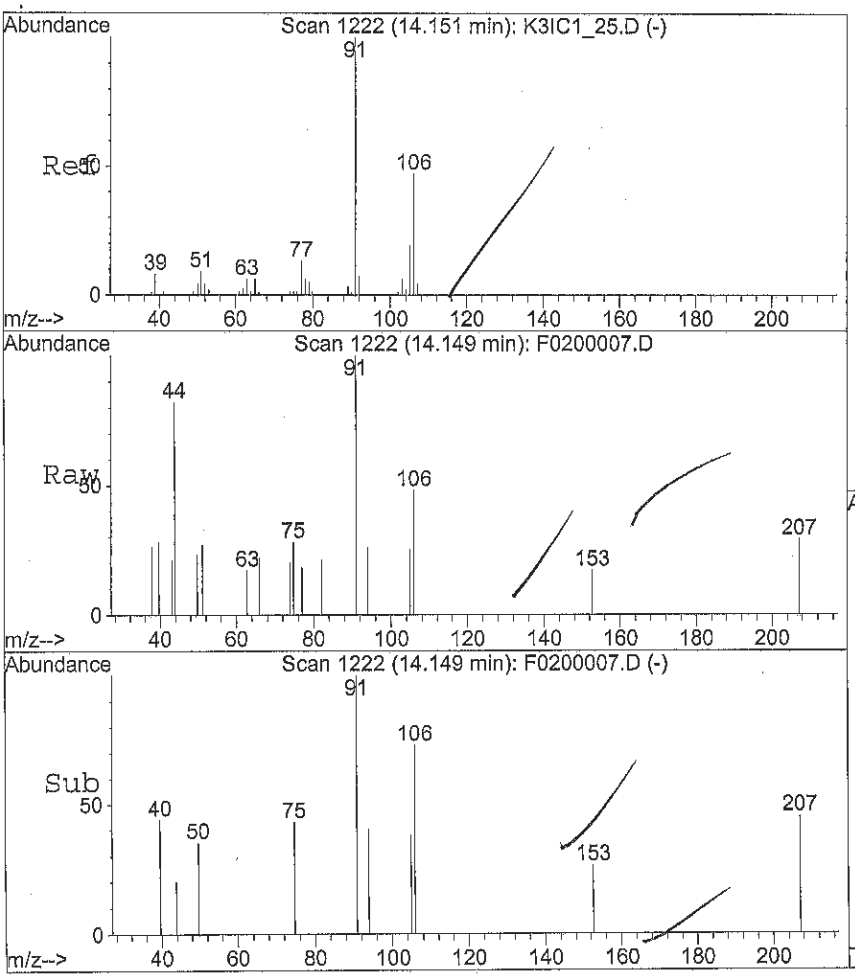


#51
Ethylbenzene
Concen: 0.14 ug/L
RT: 14.02 min Scan# 1207
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 91 Resp: 2441

Ion	Ratio	Lower	Upper
91	100		
106	0.0	23.5	35.3#

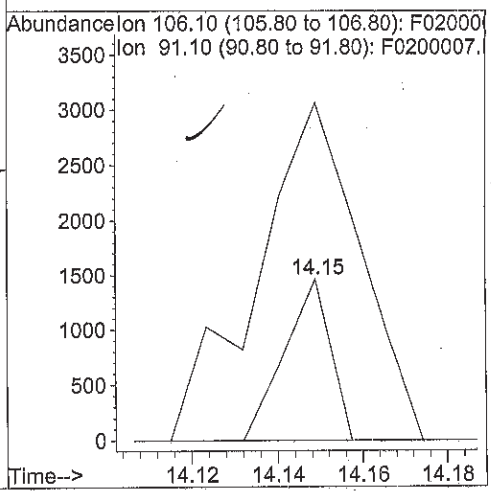


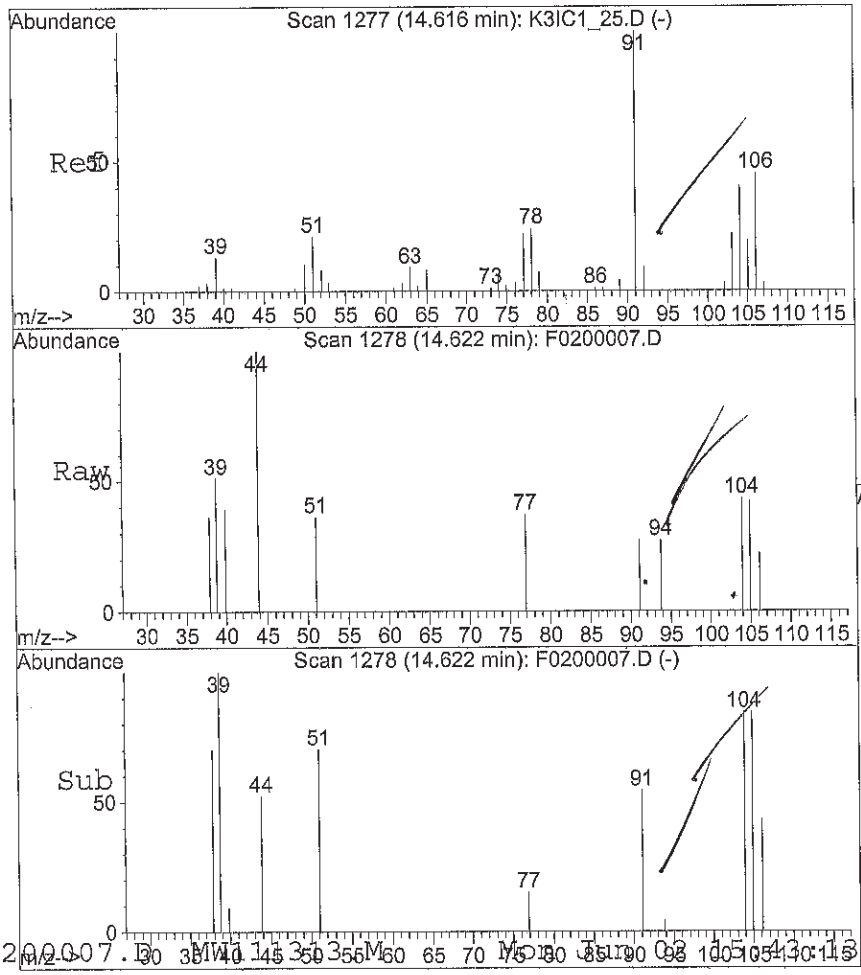


#52
m,p-Xylenes
Concen: 0.18 ug/L
RT: 14.15 min Scan# 1222
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion:106 Resp: 1090

Ion	Ratio	Lower	Upper
106	100		
91	473.0	177.1	265.7#

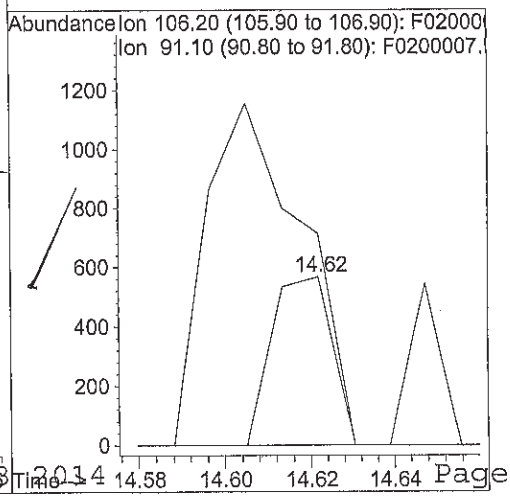


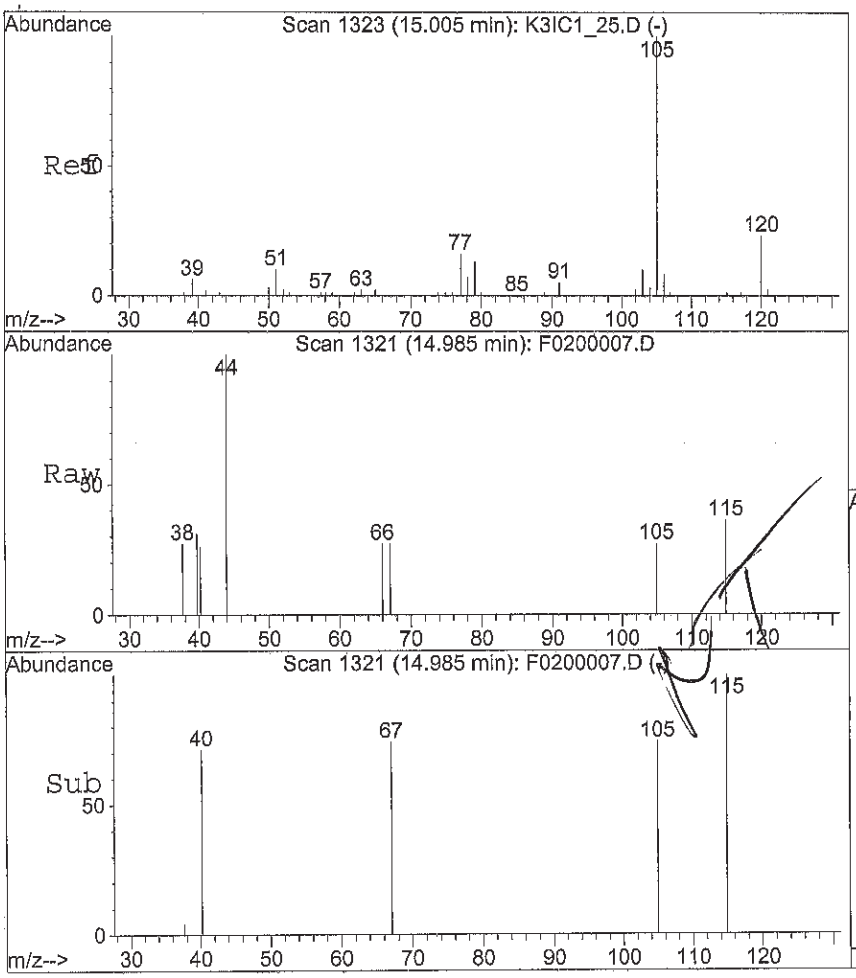


#53
o-Xylene
Concen: 0.09 ug/L
RT: 14.62 min Scan# 1278
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion:106 Resp: 557

Ion	Ratio	Lower	Upper
106	100		
91	321.4	179.0	268.6#

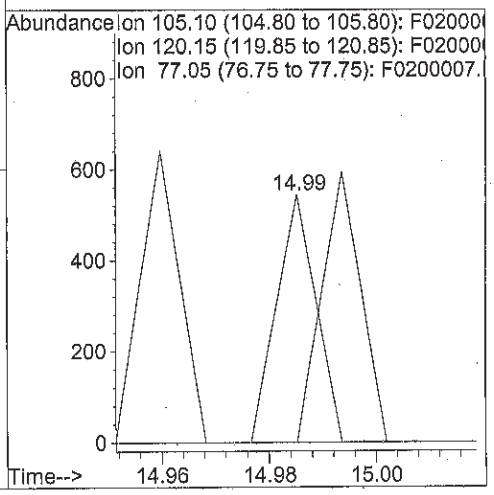


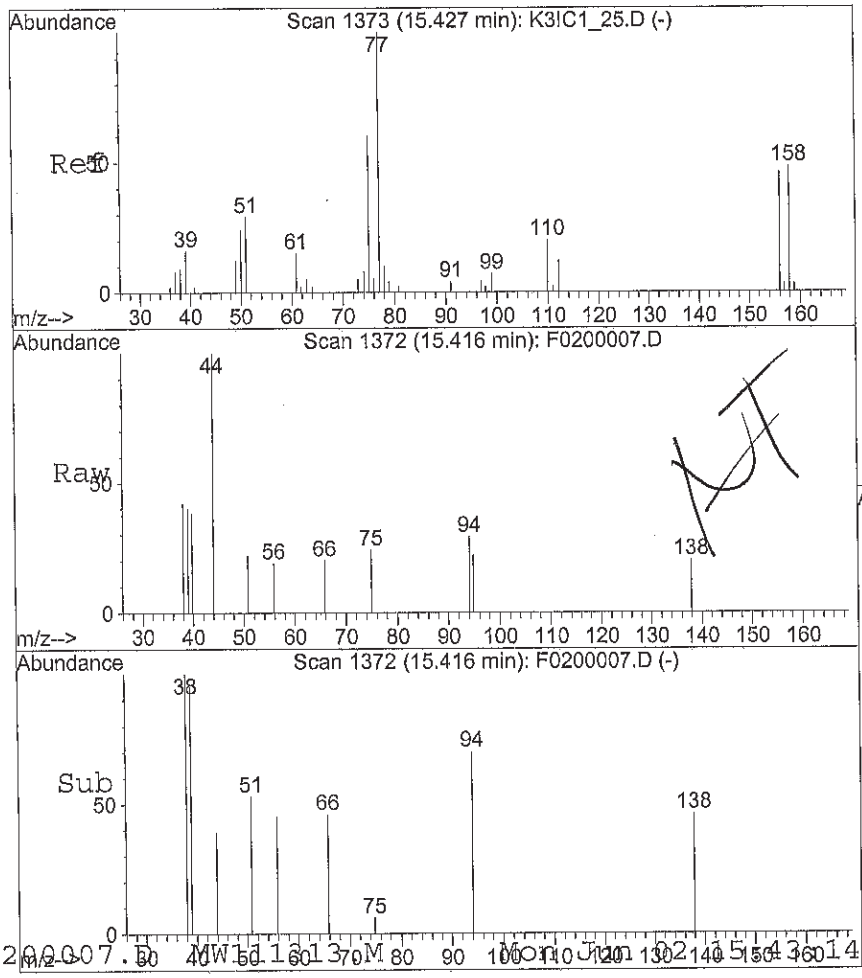


#56
Isopropylbenzene
Concen: 0.02 ug/L
RT: 14.99 min Scan# 1321
Delta R.T. -0.02 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

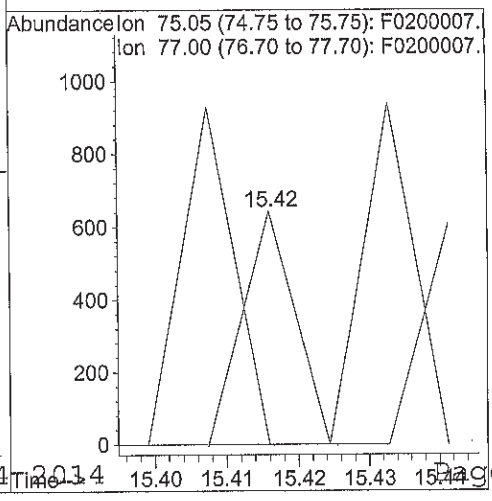


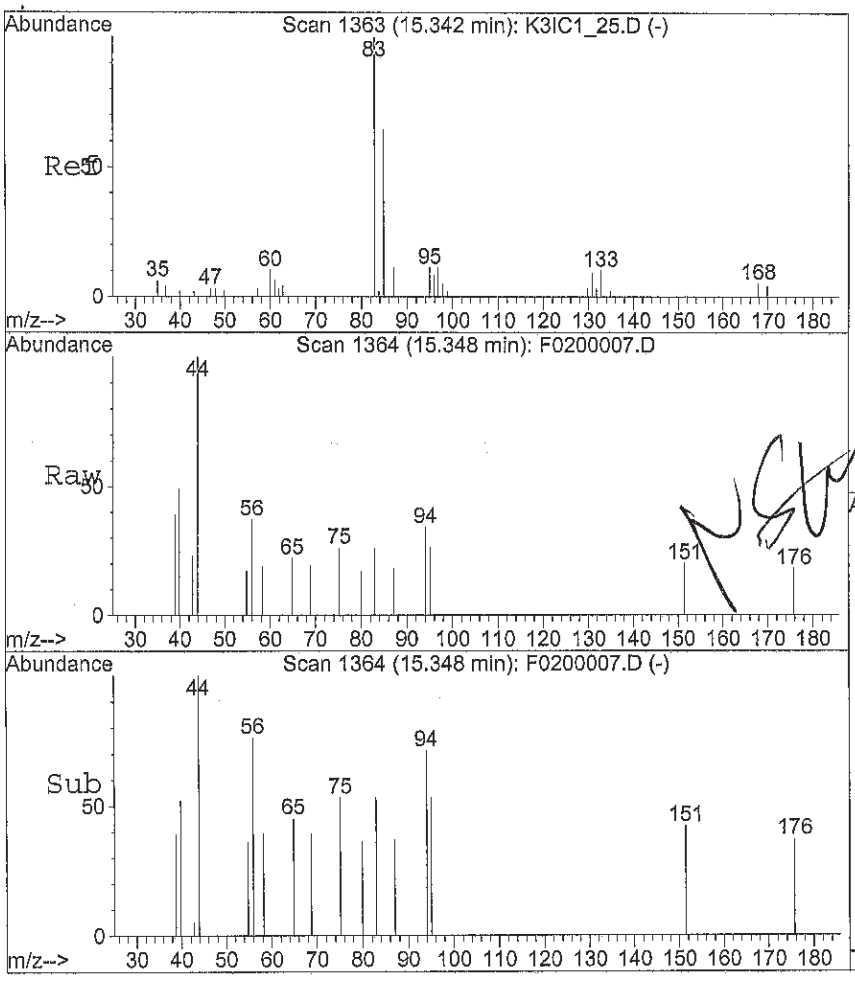


#57
1,2,3-Trichloropropane
Concen: 0.07 ug/L
RT: 15.42 min Scan# 1372
Delta R.T. -0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 75 Resp: 325

Ion	Ratio	Lower	Upper
75	100		
77	144.6	31.2	46.8#

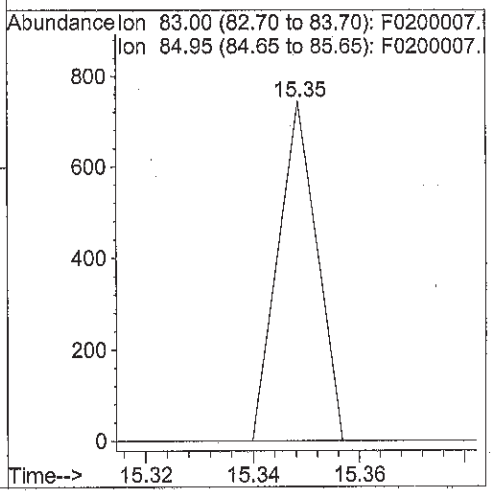


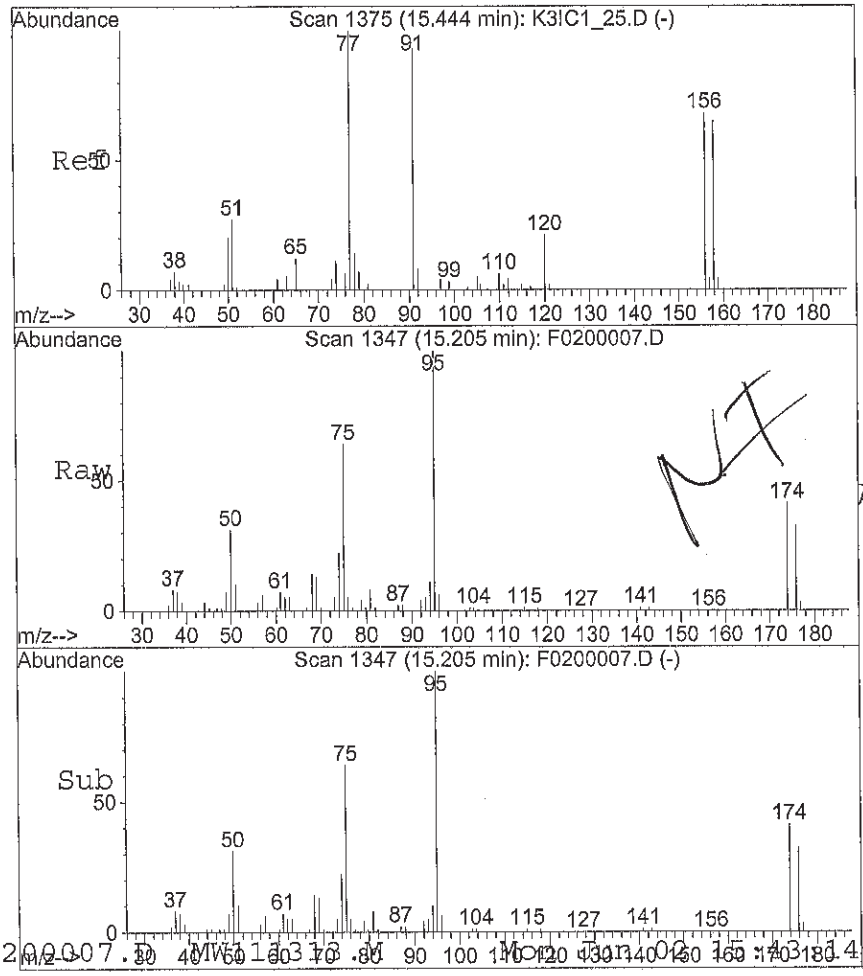


#60
1,1,2,2-Tetrachloroethane
Concen: 0.09 ug/L
RT: 15.35 min Scan# 1364
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 83 Resp: 377

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.2	76.8#

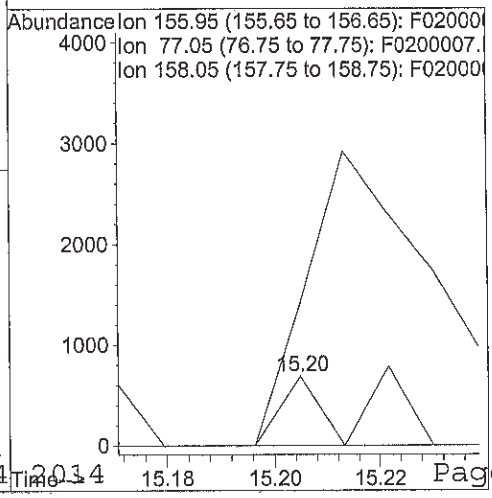


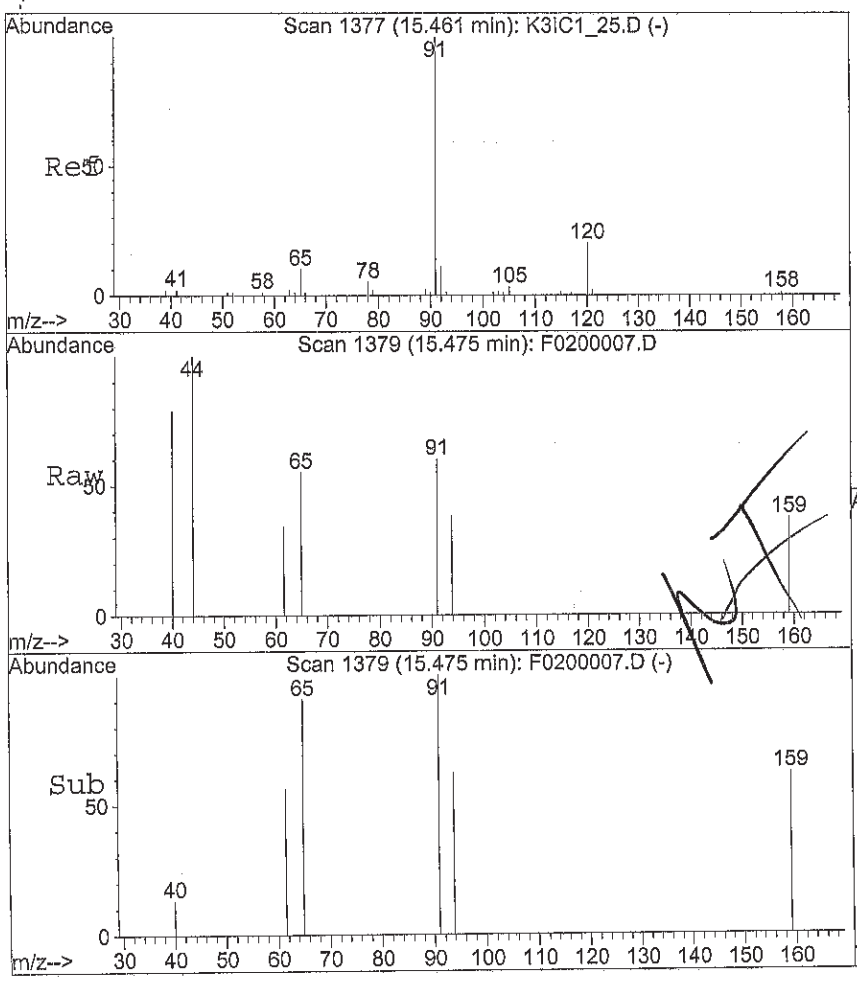


#61
Bromobenzene
Concen: 0.08 ug/L
RT: 15.20 min Scan# 1347
Delta R.T. -0.24 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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

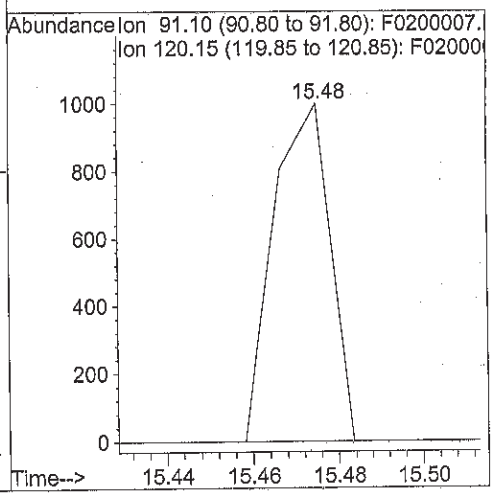


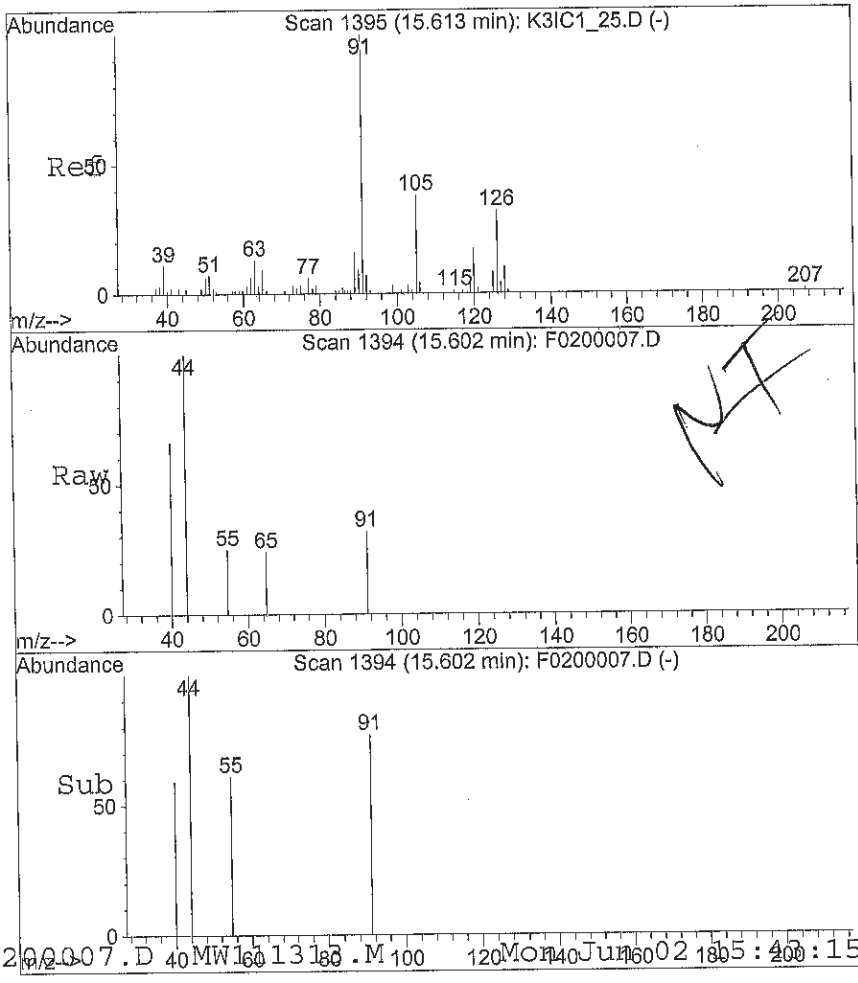


#62
n-Propylbenzene
Concen: 0.04 ug/L
RT: 15.48 min Scan# 1379
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 91 Resp: 915

Ion	Ratio	Lower	Upper
91	100		
120	0.0	16.1	24.1#

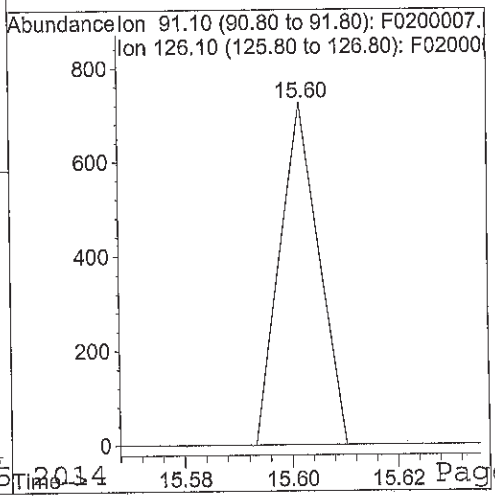


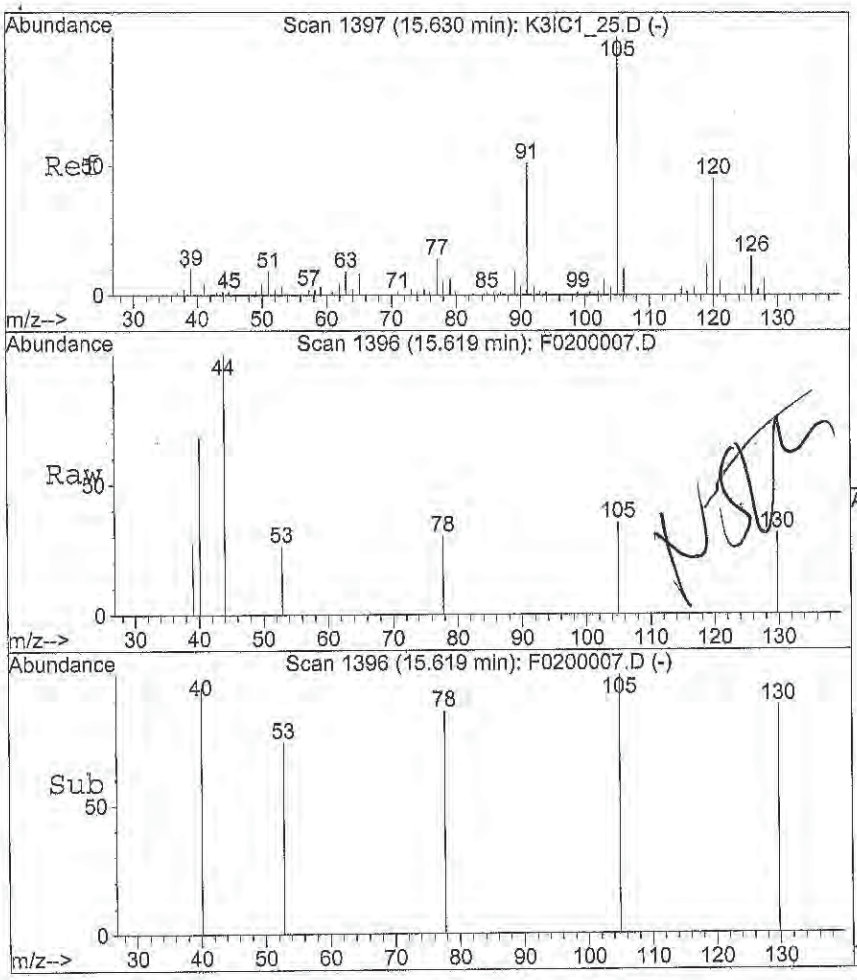


#63
2-Chlorotoluene
Concen: 0.03 ug/L
RT: 15.60 min Scan# 1394
Delta R.T. -0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 91 Resp: 368

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.0	36.0#

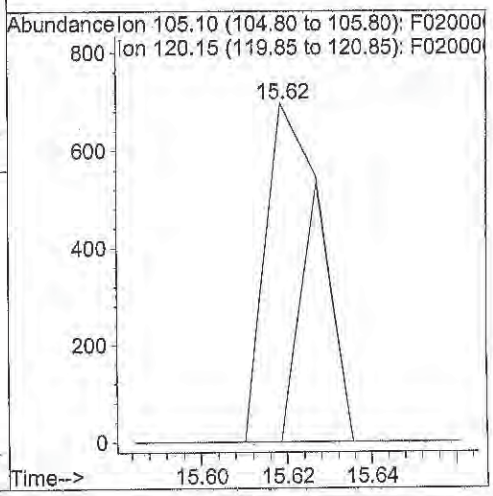


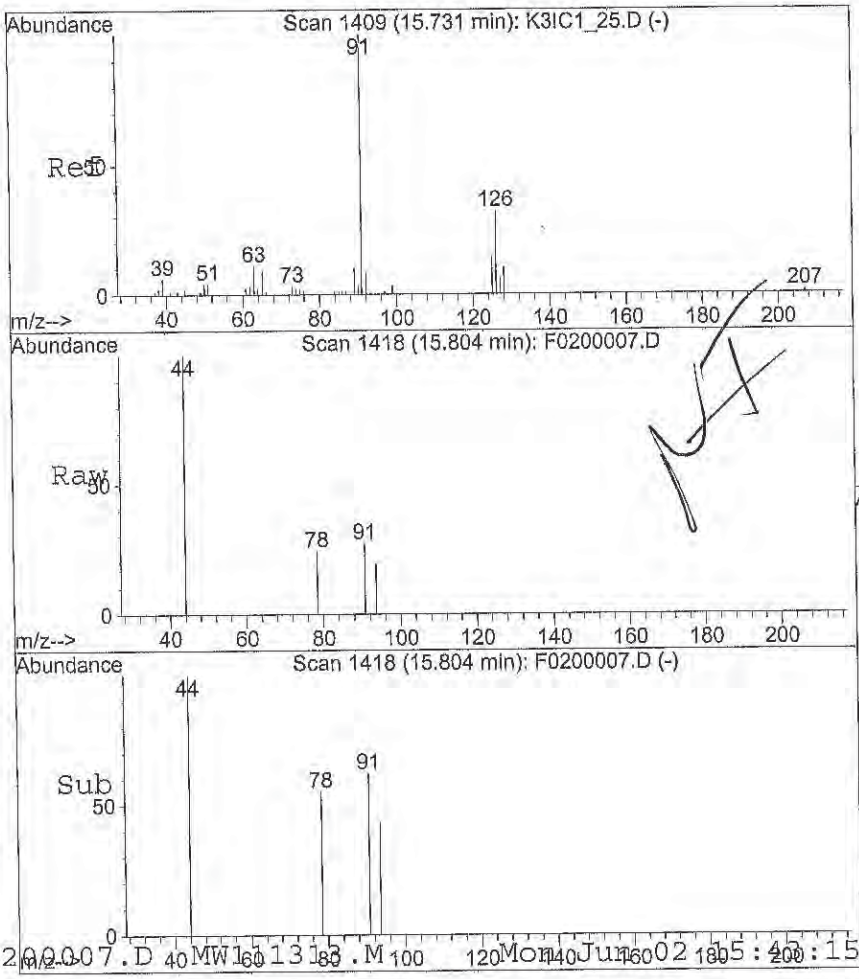


#64
1,3,5-Trimethylbenzene
Concen: 0.04 ug/L
RT: 15.62 min Scan# 1396
Delta R.T. -0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion:105 Resp: 629

Ion	Ratio	Lower	Upper
105	100		
120	42.8	36.4	54.6

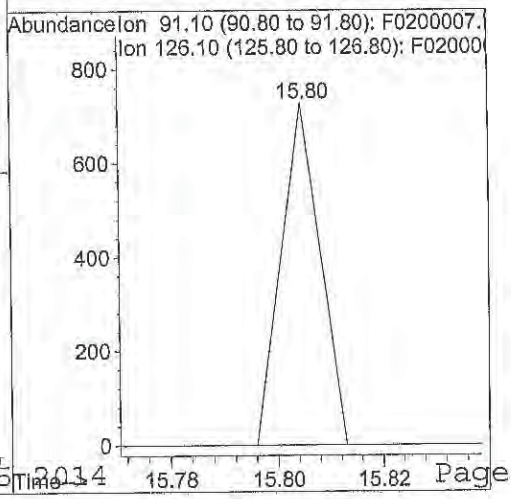


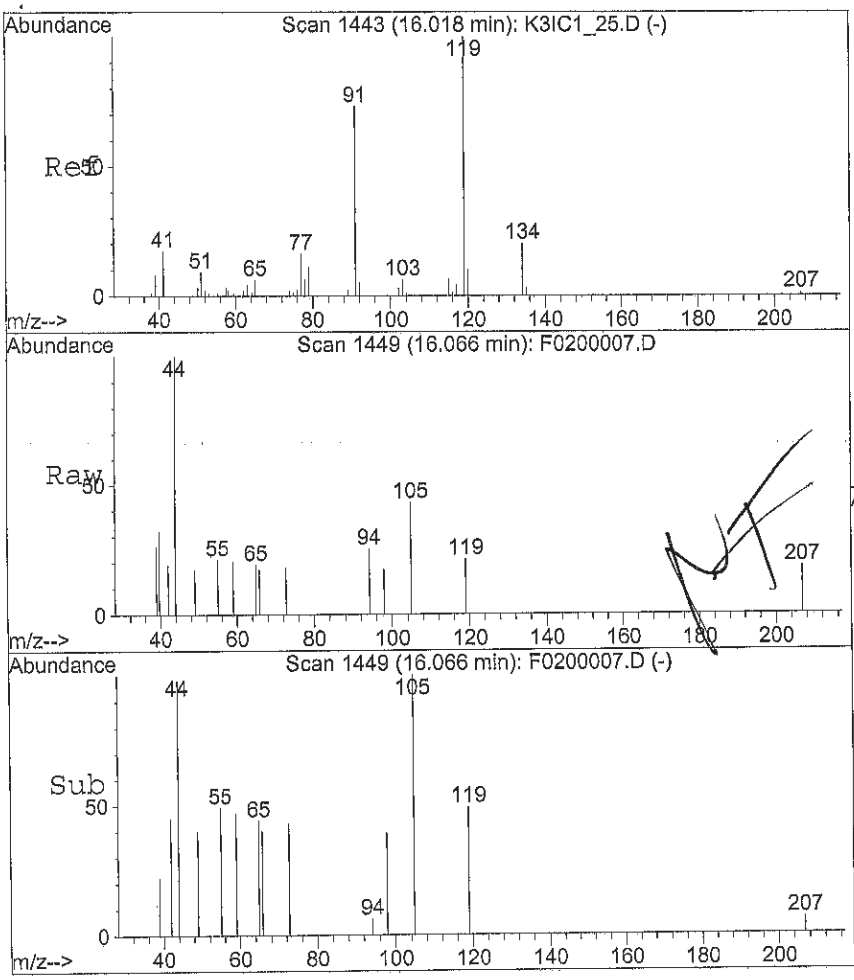


#65
4-Chlorotoluene
Concen: 0.03 ug/L
RT: 15.80 min Scan# 1418
Delta R.T. 0.07 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion: 91 Resp: 368

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.6	36.8#

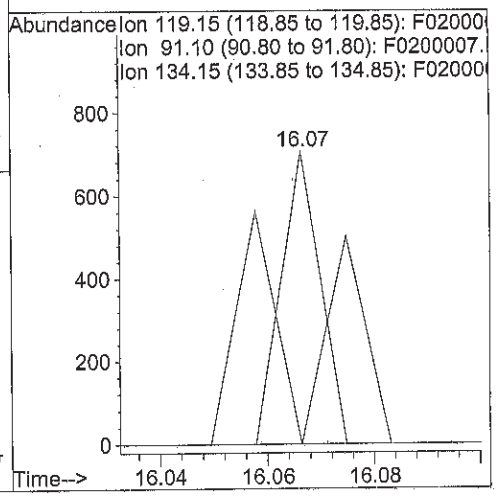


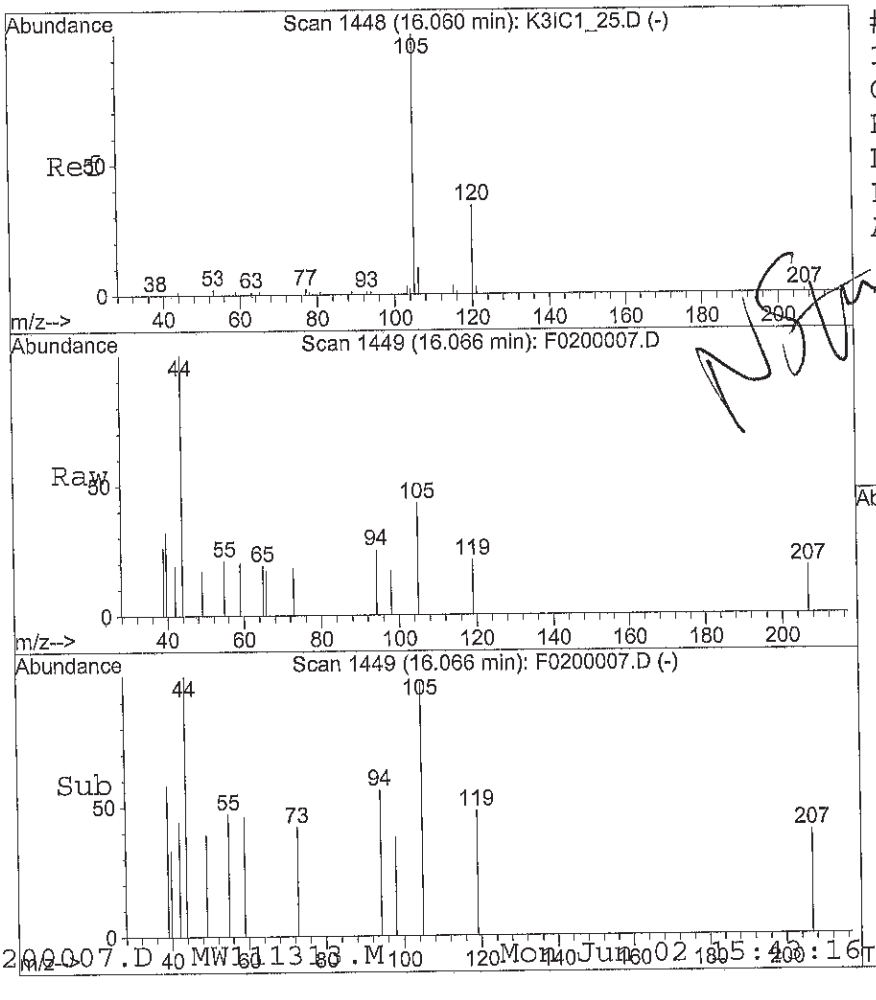


#66
tert-Butylbenzene
Concen: 0.03 ug/L
RT: 16.07 min Scan# 1449
Delta R.T. 0.05 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

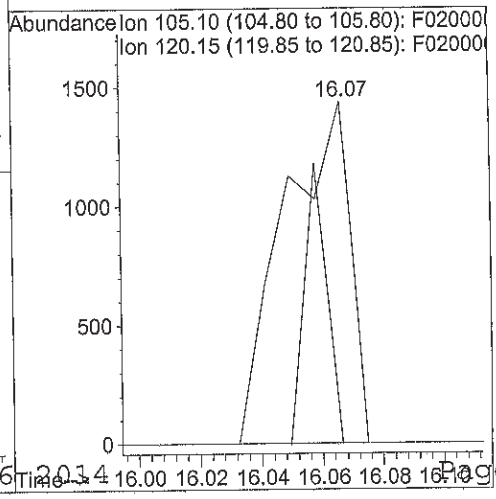


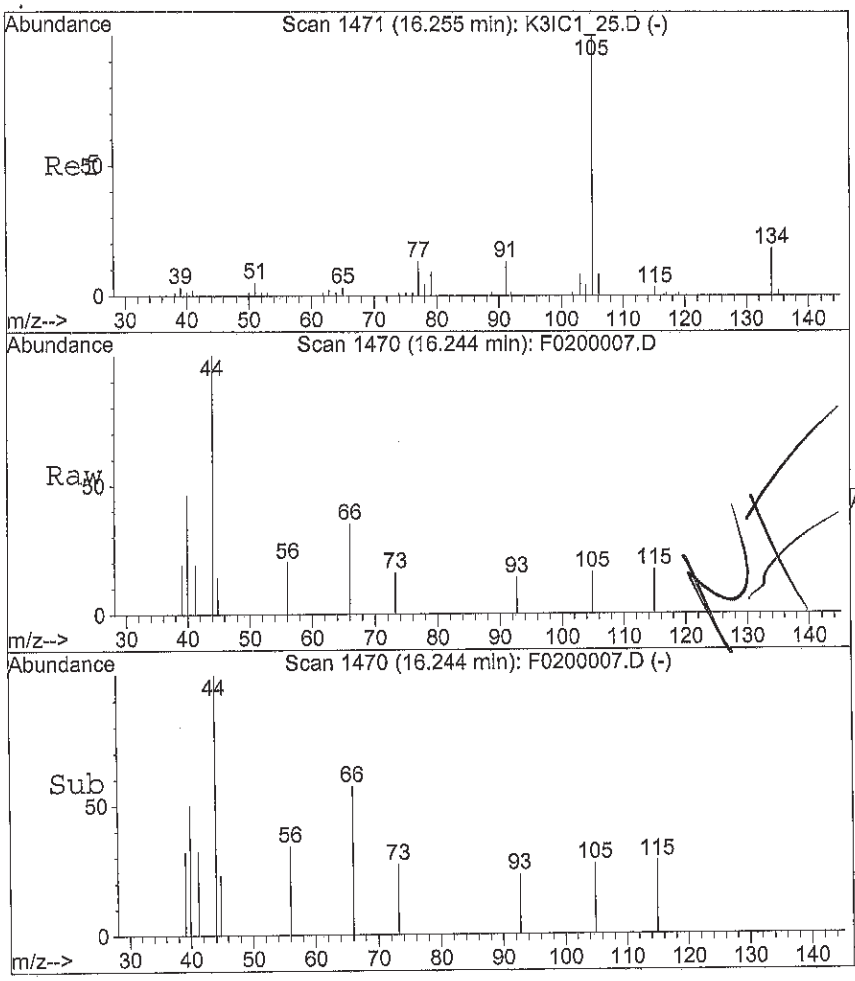


#67
1,2,4-Trimethylbenzene
Concen: 0.15 ug/L
RT: 16.07 min Scan# 1449
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion:105 Resp: 2155

Ion	Ratio	Lower	Upper
105	100		
120	27.7	33.8	50.8#

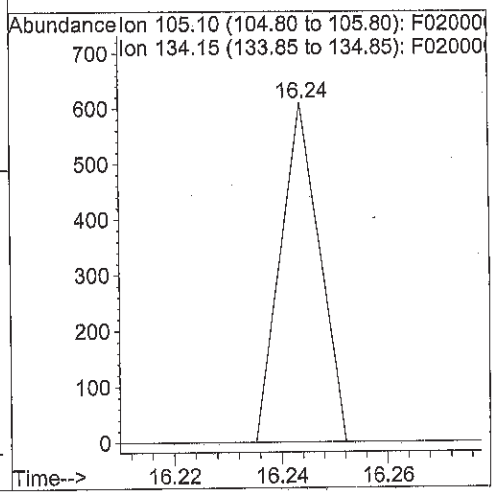


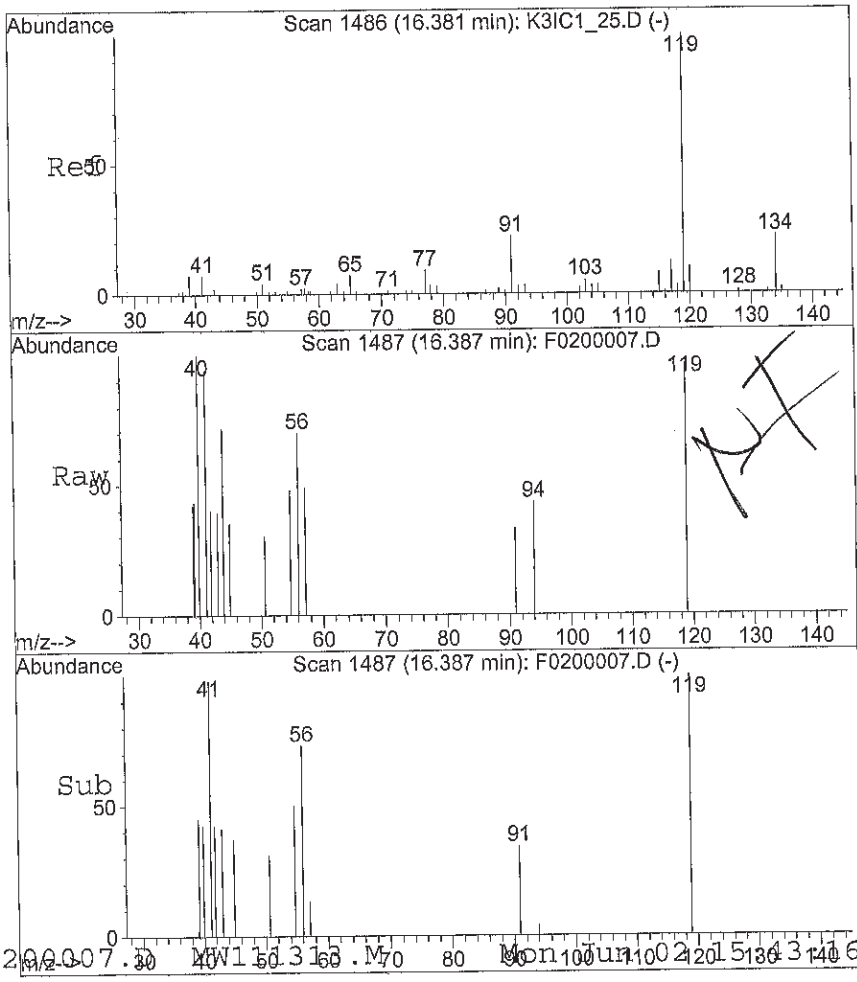


#68
sec-Butylbenzene
Concen: 0.02 ug/L
RT: 16.24 min Scan# 1470
Delta R.T. -0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

Tgt Ion:105 Resp: 309

Ion	Ratio	Lower	Upper
105	100		
134	0.0	13.0	19.6#

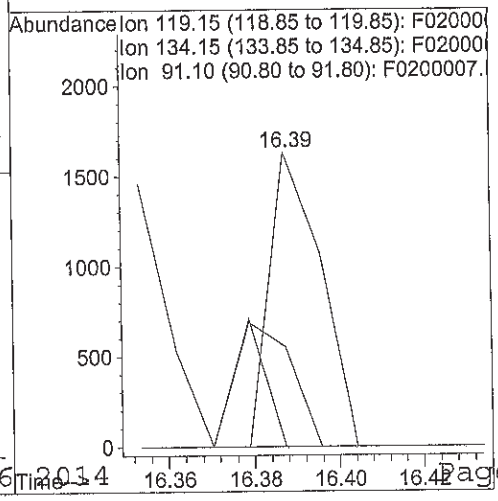


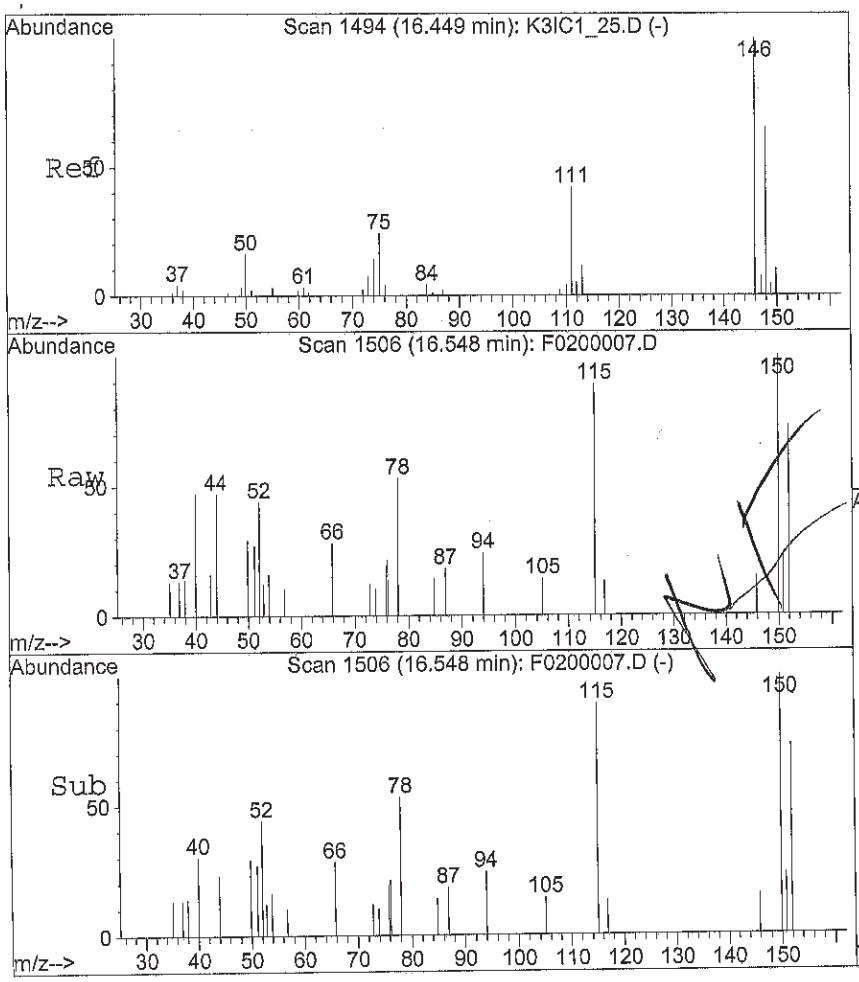


#69
p-Isopropyltoluene
Concen: 0.09 ug/L
RT: 16.39 min Scan# 1487
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

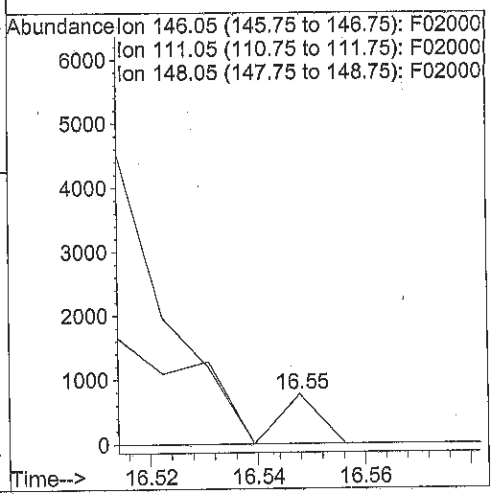


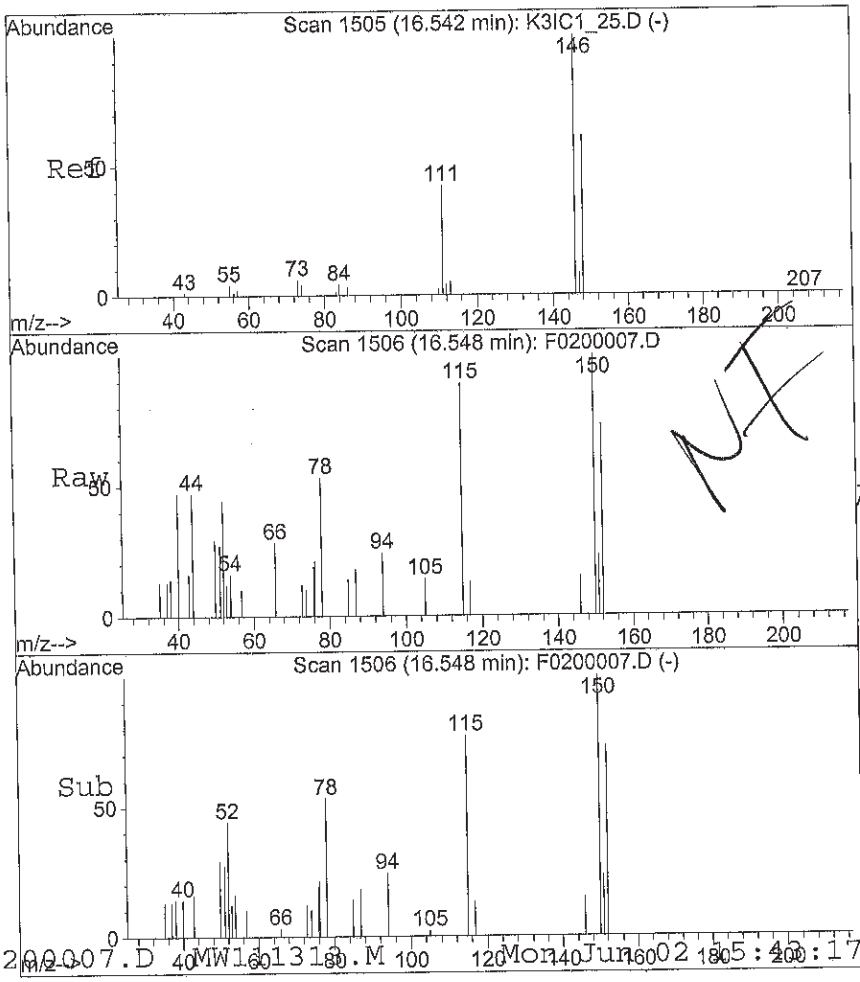


#70
1,3-Dichlorobenzene
Concen: 0.05 ug/L
RT: 16.55 min Scan# 1506
Delta R.T. 0.10 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

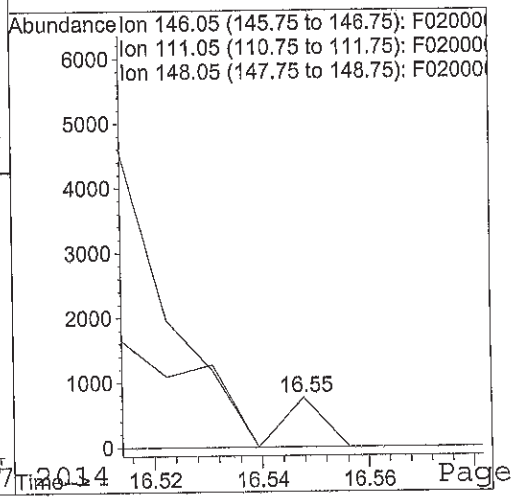


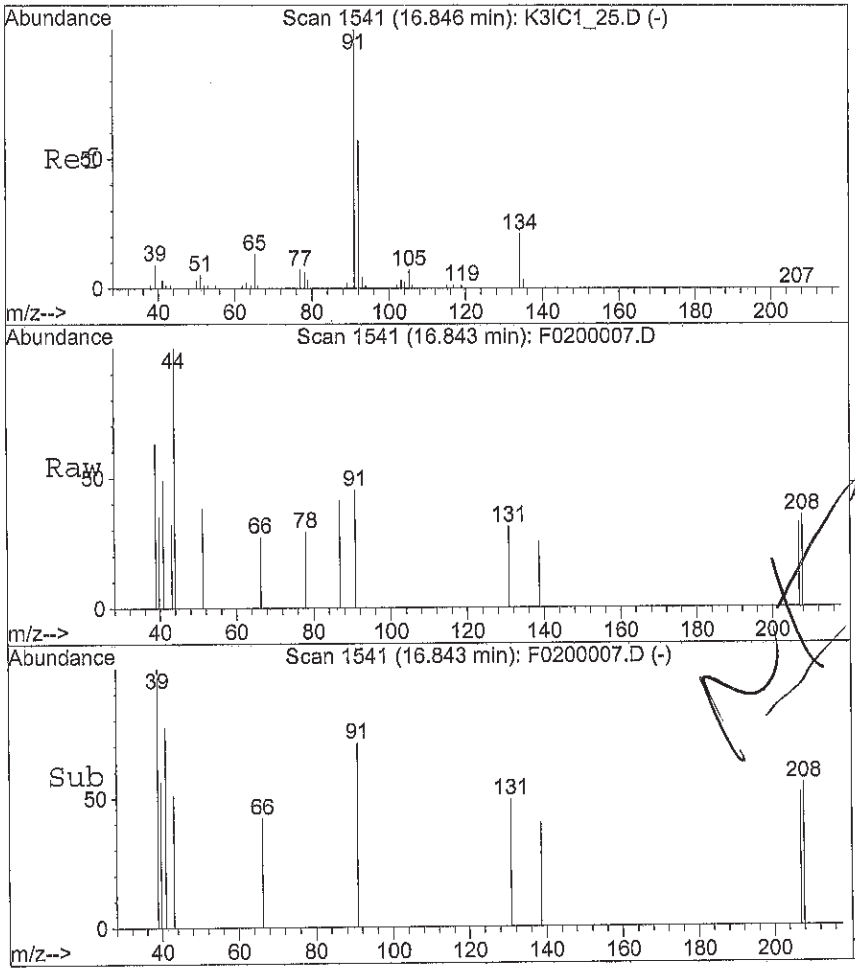


#71
1,4-Dichlorobenzene
Concen: 0.05 ug/L
RT: 16.55 min Scan# 1506
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

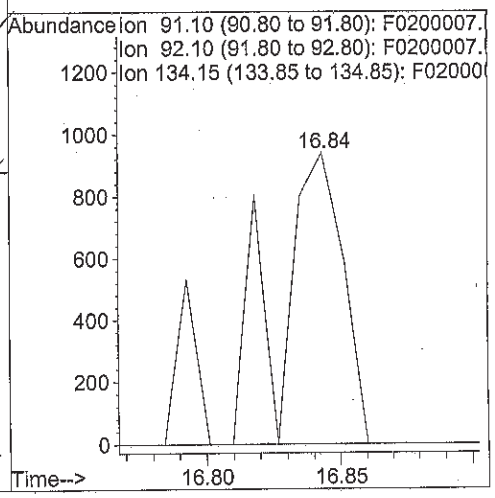


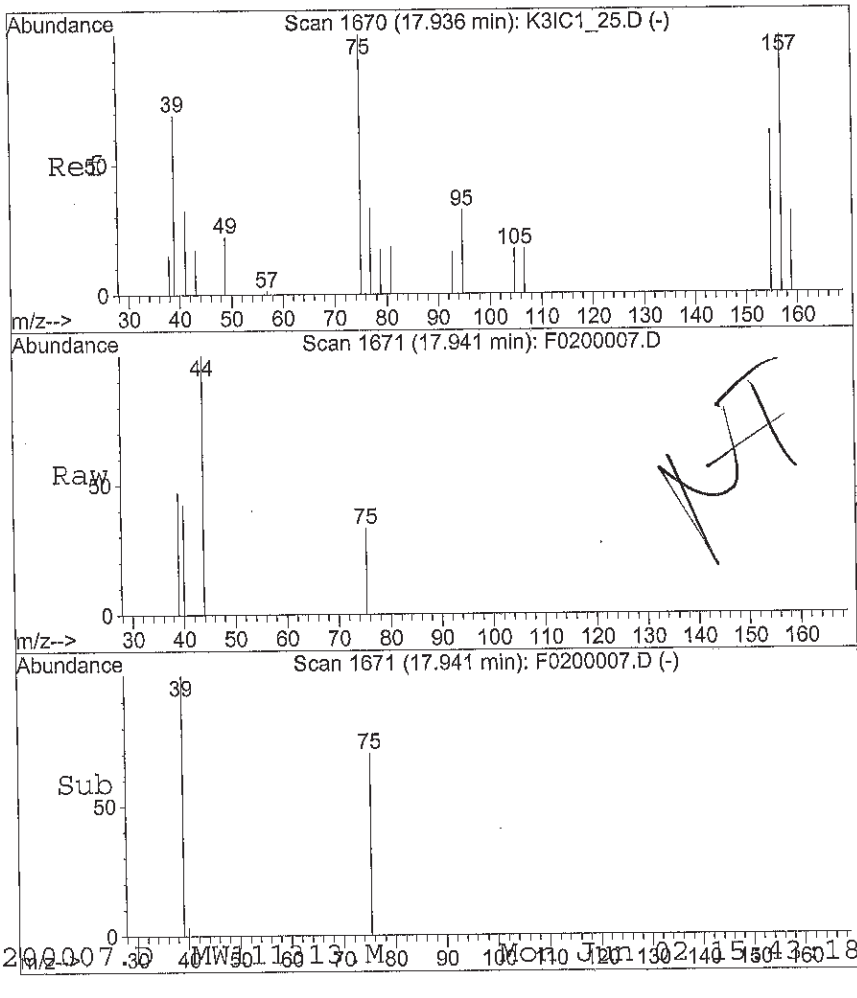


#72
n-Butylbenzene
Concen: 0.10 ug/L
RT: 16.84 min Scan# 1541
Delta R.T. -0.00 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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#

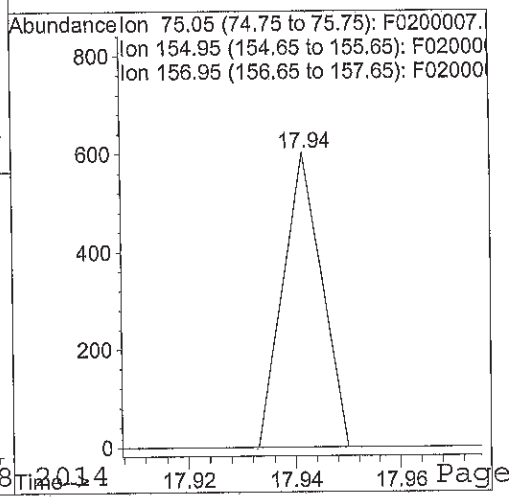


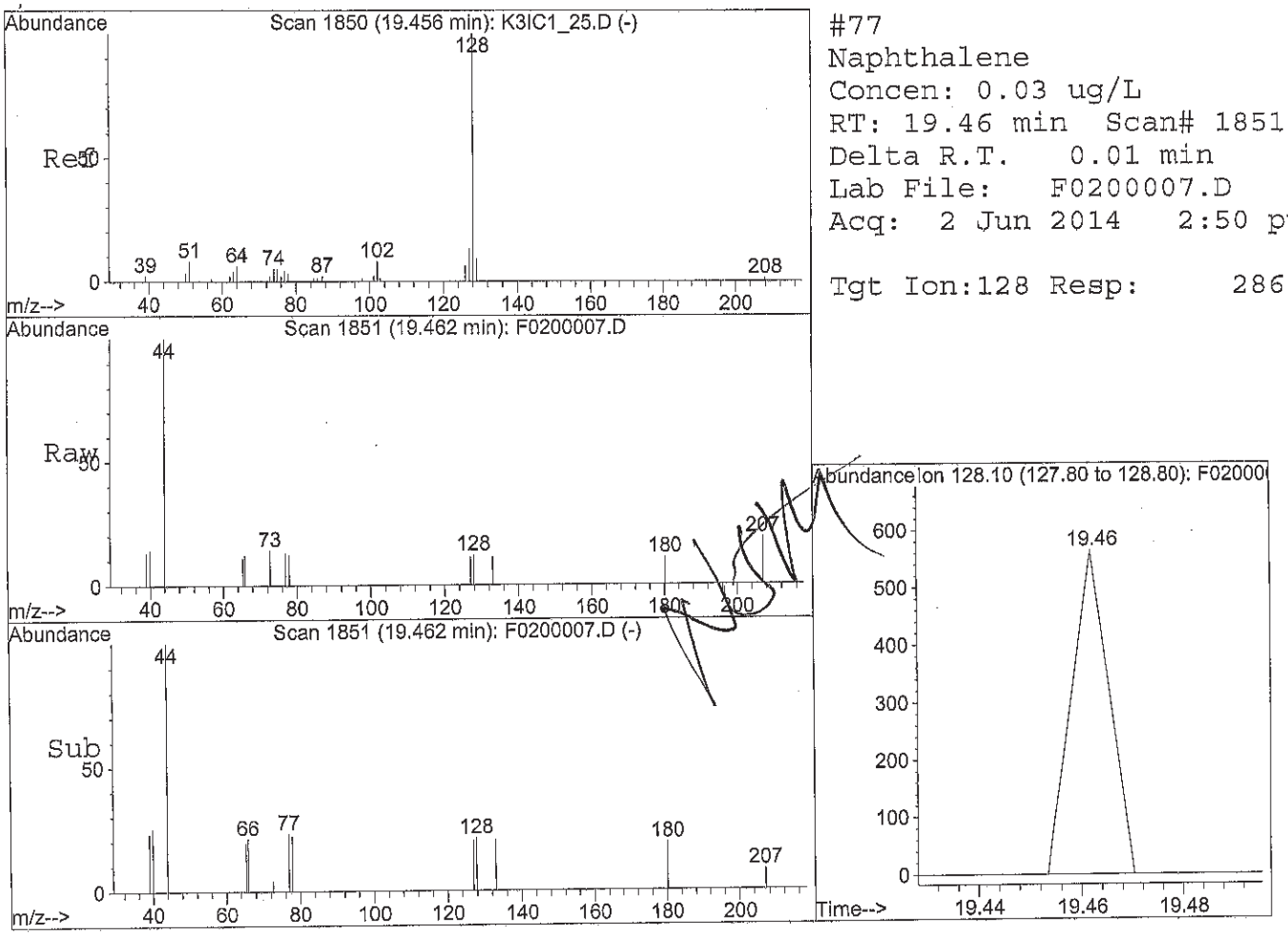


#74
1,2-Dibromo-3-chloropropane
Concen: 1.35 ug/L
RT: 17.94 min Scan# 1671
Delta R.T. 0.01 min
Lab File: F0200007.D
Acq: 2 Jun 2014 2:50 pm

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

Quantitation Report (QT Reviewed)

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

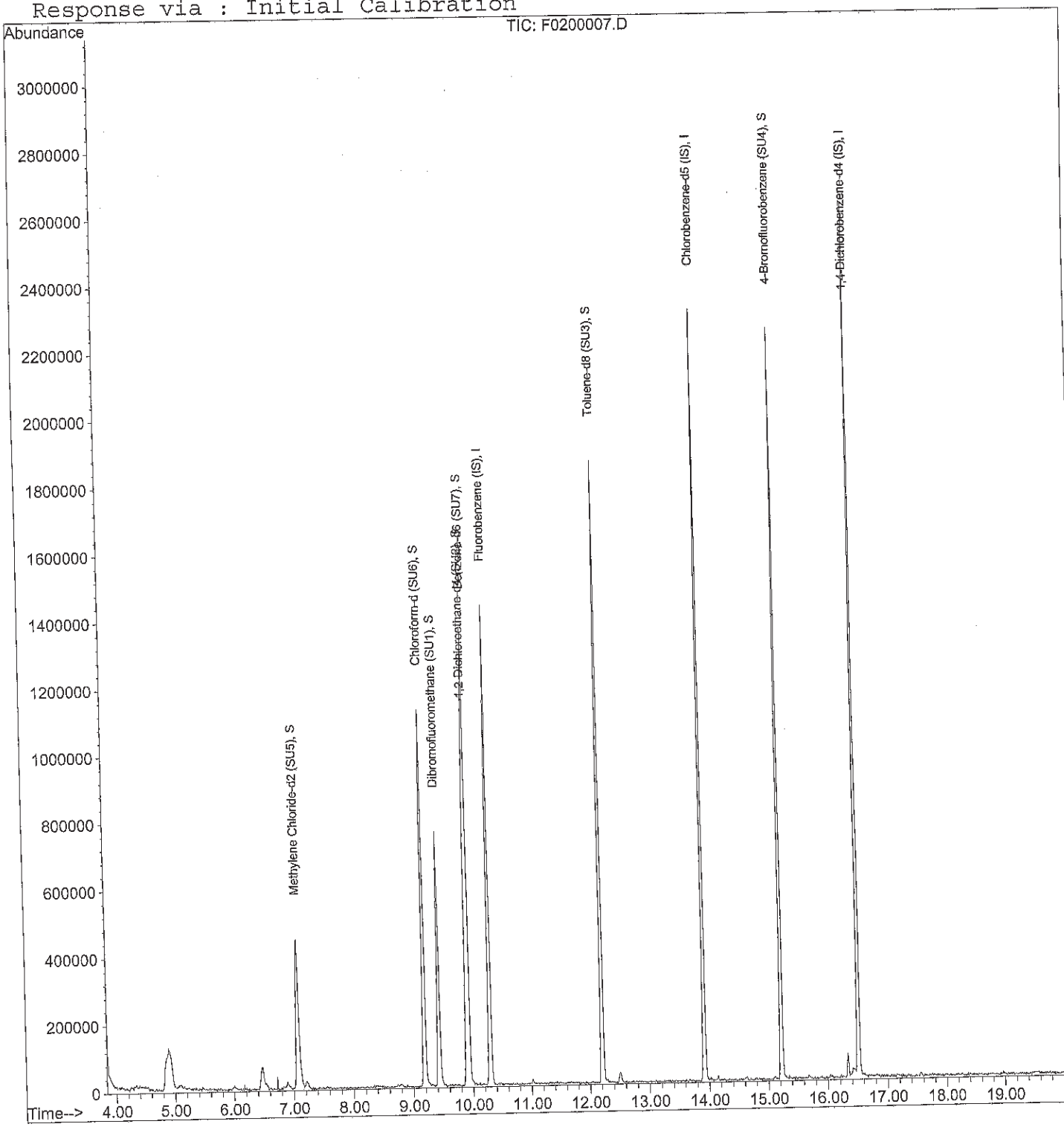
Quantitation Report

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



Quantitation Report (QT Reviewed)

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

Quantitation Report (QT Reviewed)

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

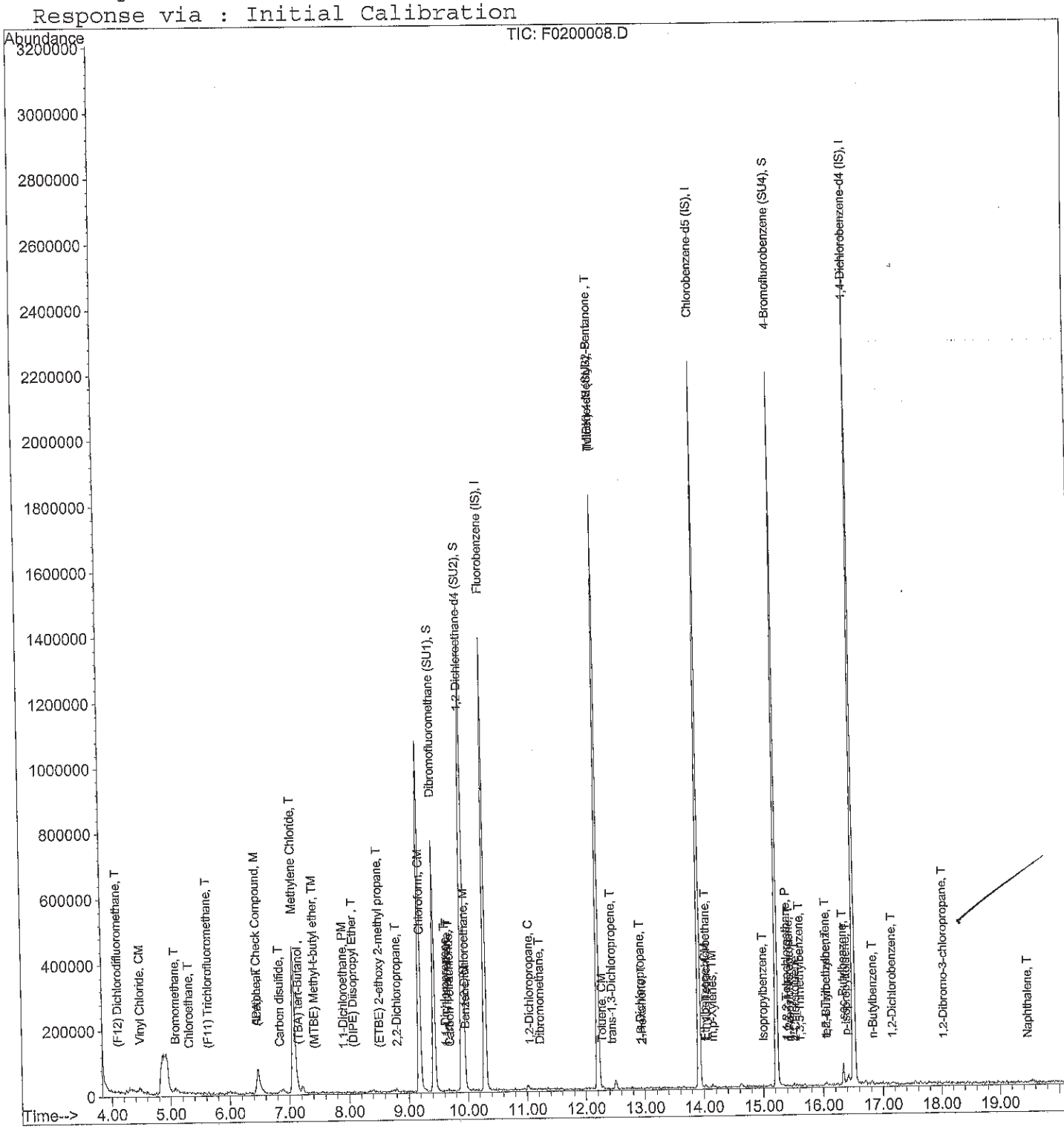
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
34) 1,2-Dichloropropane	11.06	63	302	0.11 ug/L #	2
35) Dibromomethane	11.22	93	371	0.18 ug/L #	5
40) (MIBK) 4-Methyl-2-Pentanon	12.20	43	11349	5.27 ug/L #	100
41) Toluene	12.29	91	5602	0.38 ug/L #	82
42) trans-1,3-Dichloropropene	12.45	75	254	0.05 ug/L #	4
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 #	74
52) m,p-Xylenes	14.16	106	1332	0.22 ug/L #	28
54) Styrene	14.62	104	1712	-0.67 ug/L #	50
56) Isopropylbenzene	15.01	105	479	0.03 ug/L #	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 #	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

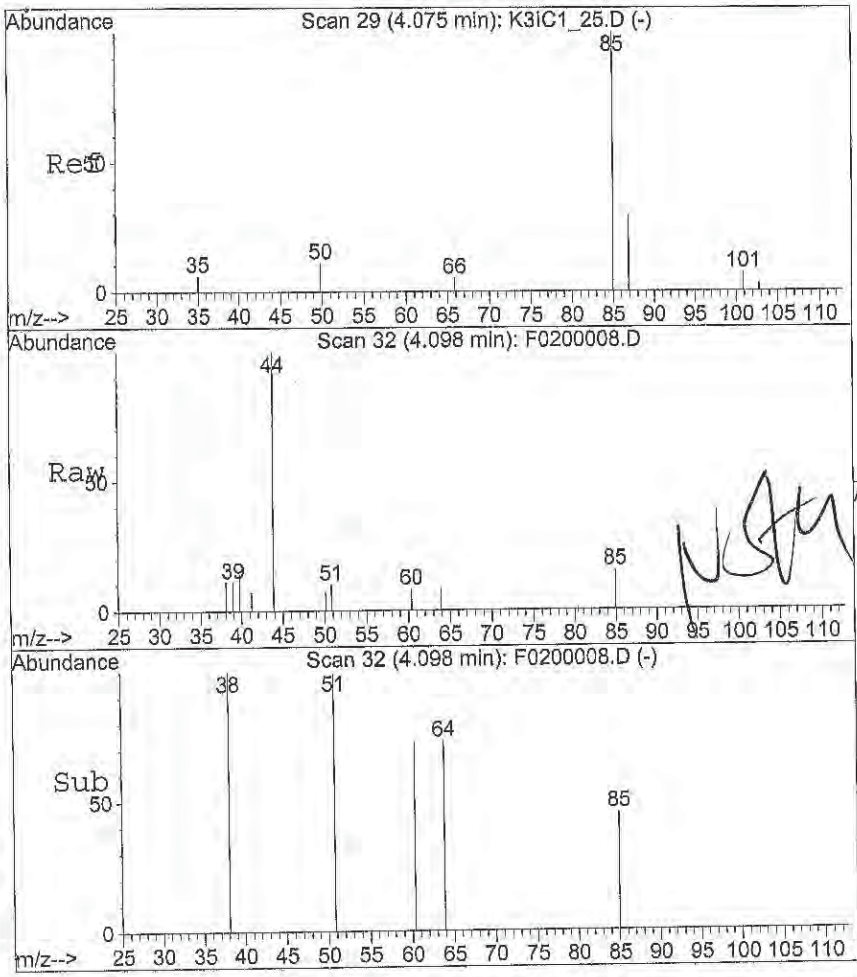
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200008.D 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

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

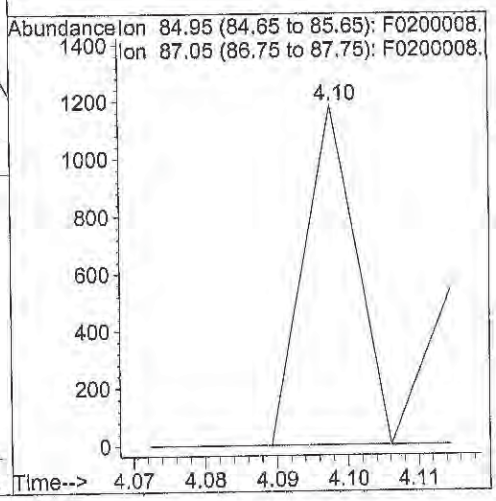


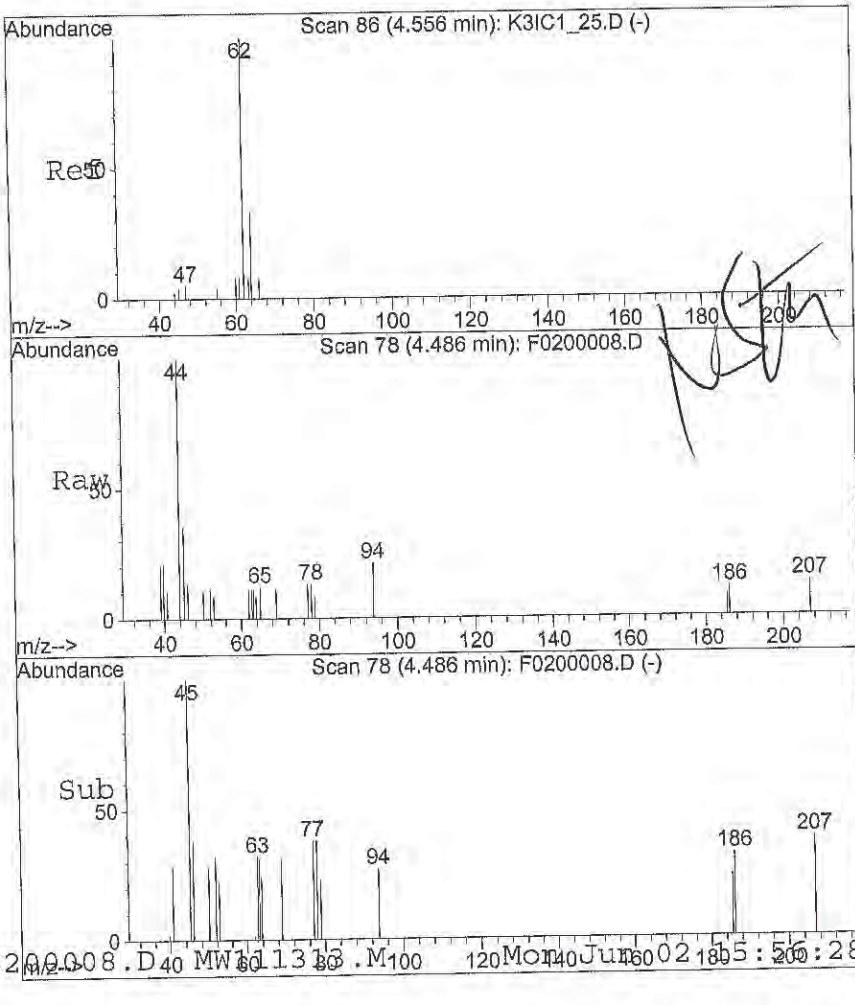


#3
(F12) Dichlorodifluoromethane
Concen: 0.20 ug/L
RT: 4.10 min Scan# 32
Delta R.T. 0.02 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 85 Resp: 600

Ion	Ratio	Lower	Upper
85	100		
87	0.0	24.6	37.0#

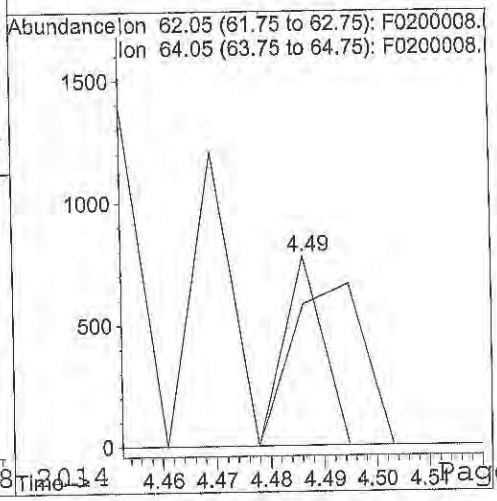


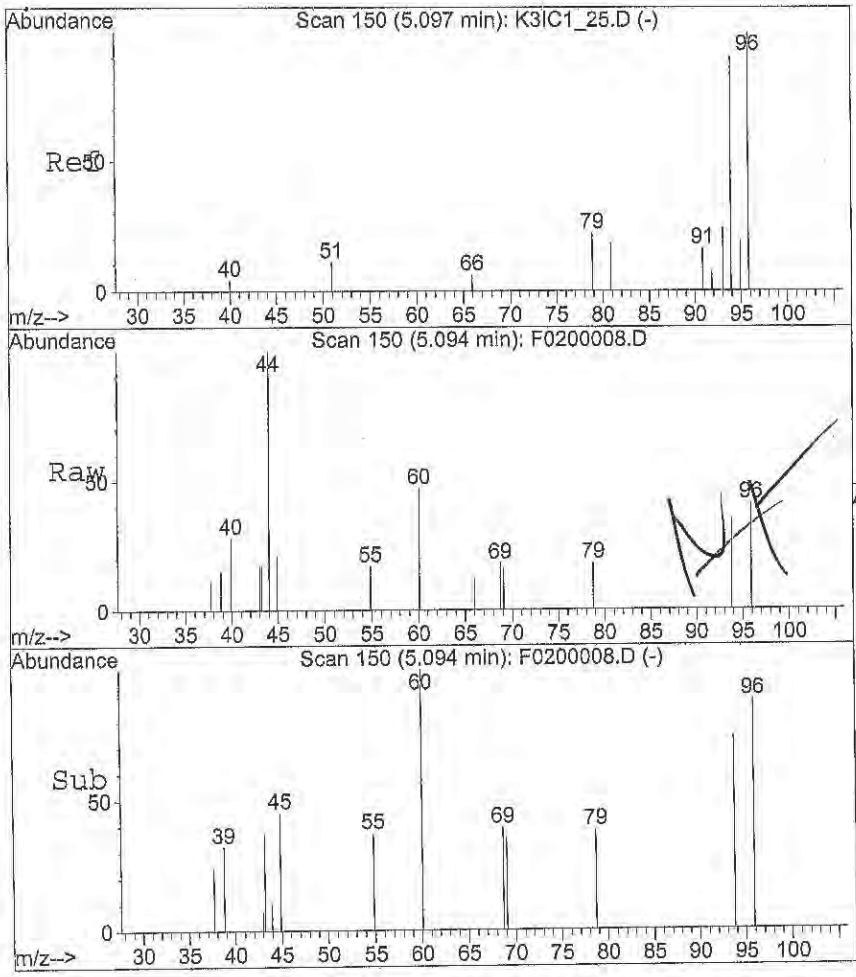


#5
Vinyl Chloride
Concen: 0.19 ug/L
RT: 4.49 min Scan# 78
Delta R.T. -0.07 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 62 Resp: 394

Ion	Ratio	Lower	Upper
62	100		
64	0.0	25.6	38.4#

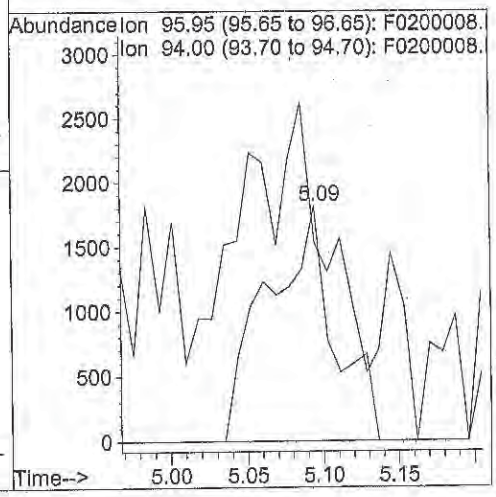


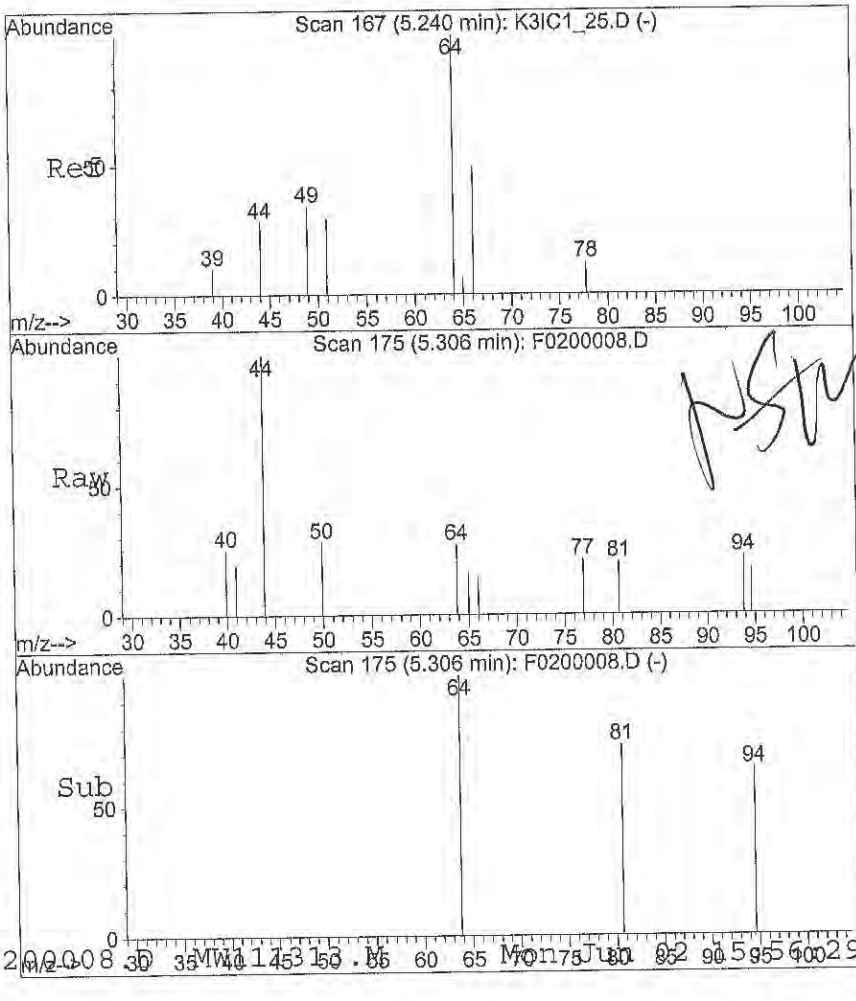


#6
Bromomethane
Concen: 2.44 ug/L
RT: 5.09 min Scan# 150
Delta R.T. -0.00 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 96 Resp: 5536

Ion	Ratio	Lower	Upper
96	100		
94	65.6	101.0	151.4#

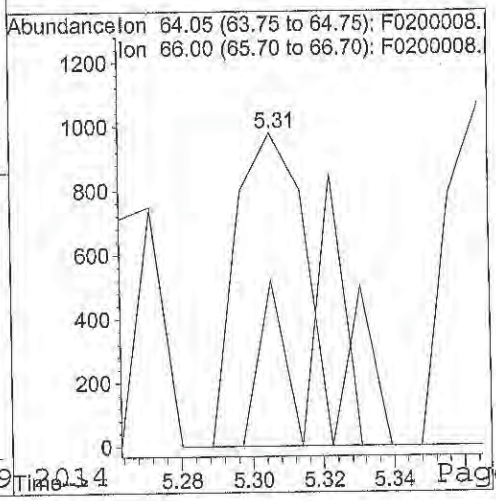


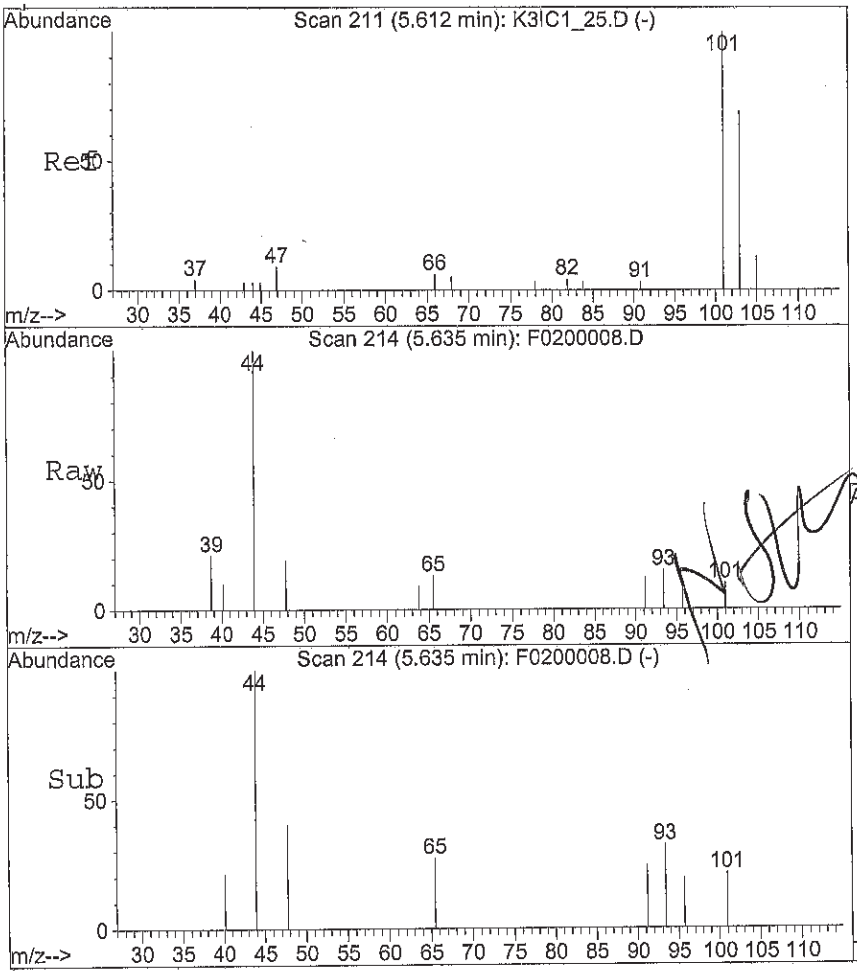


#7
Chloroethane
Concen: 2.26 ug/L
RT: 5.31 min Scan# 175
Delta R.T. 0.07 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 64 Resp: 1559

Ion	Ratio	Lower	Upper
64	100		
66	44.5	35.4	53.0

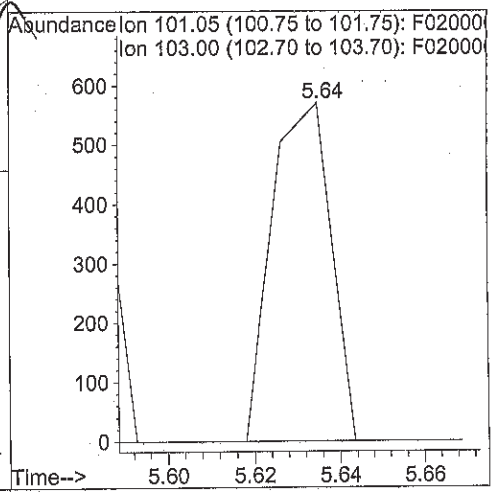


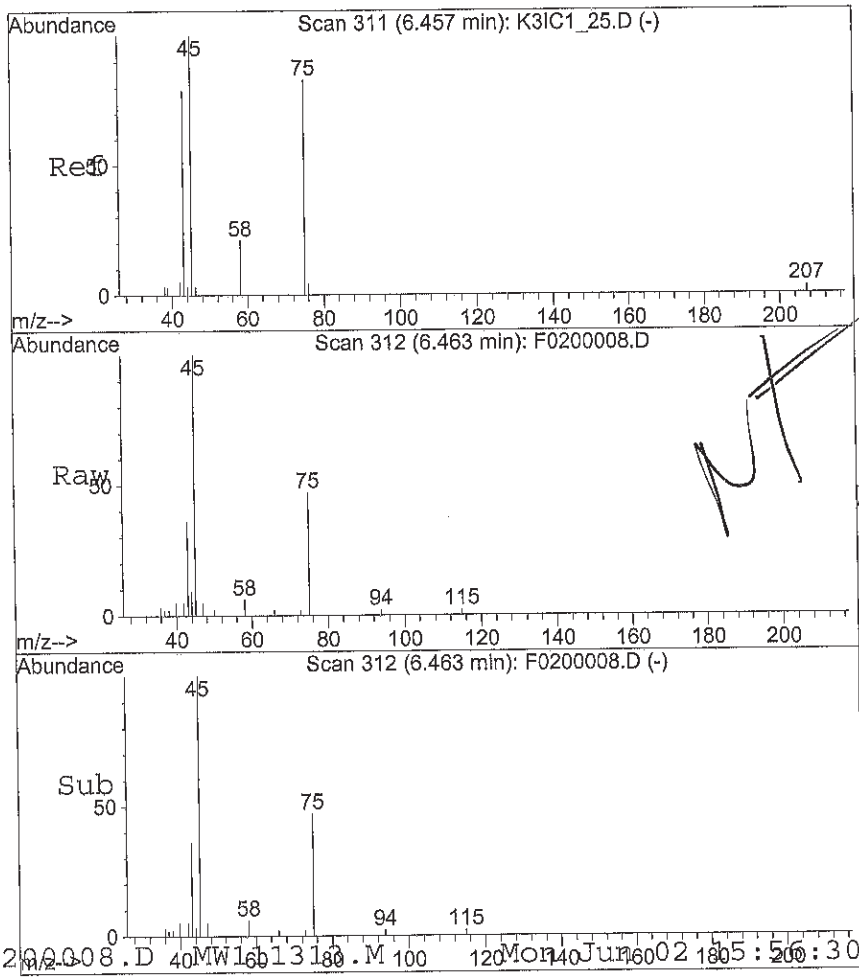


#8
(F11) Trichlorofluoromethane
Concen: 0.17 ug/L
RT: 5.64 min Scan# 214
Delta R.T. 0.02 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion:101 Resp: 544

Ion	Ratio	Lower	Upper
101	100		
103	0.0	54.5	81.7#

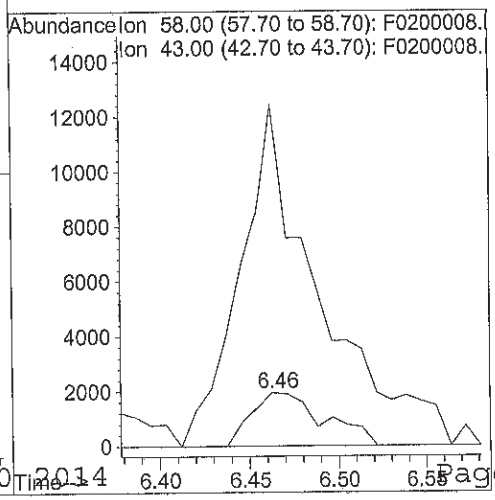


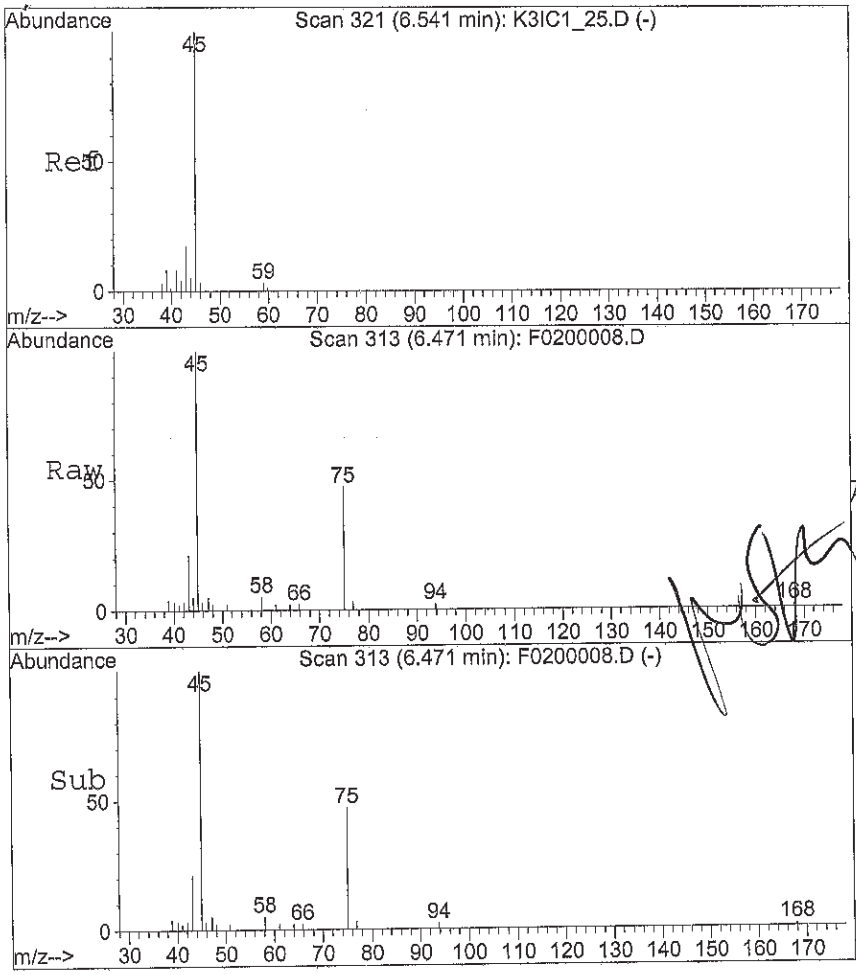


#11
Acetone
Concen: 7.13 ug/L
RT: 6.46 min Scan# 312
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 58 Resp: 5514

Ion	Ratio	Lower	Upper
58	100		
43	706.3	360.9	541.3#

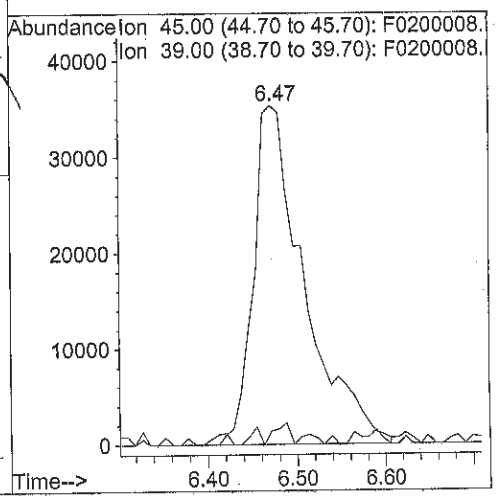


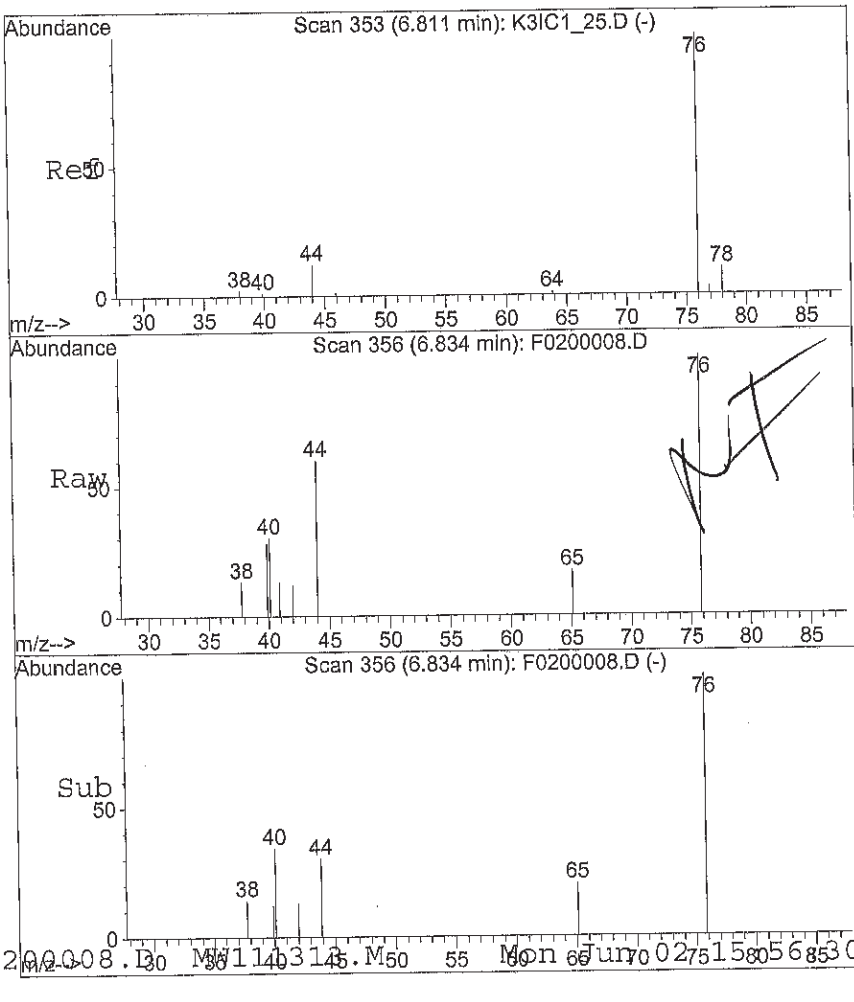


#12
(IPA) Leak Check Compound
Concen: 975.05 ug/L
RT: 6.47 min Scan# 313
Delta R.T. -0.07 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 45 Resp: 139869

Ion	Ratio	Lower	Upper
45	100		
39	2.2	4.9	7.3#

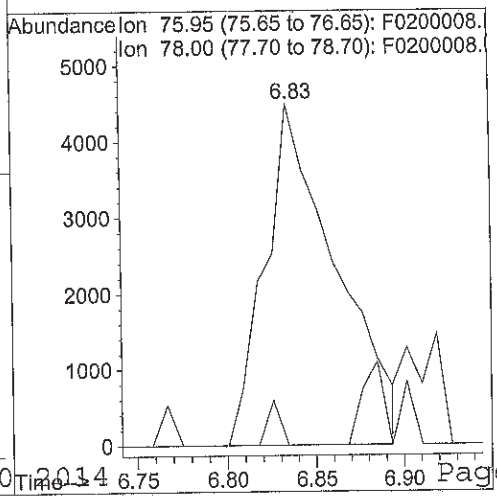


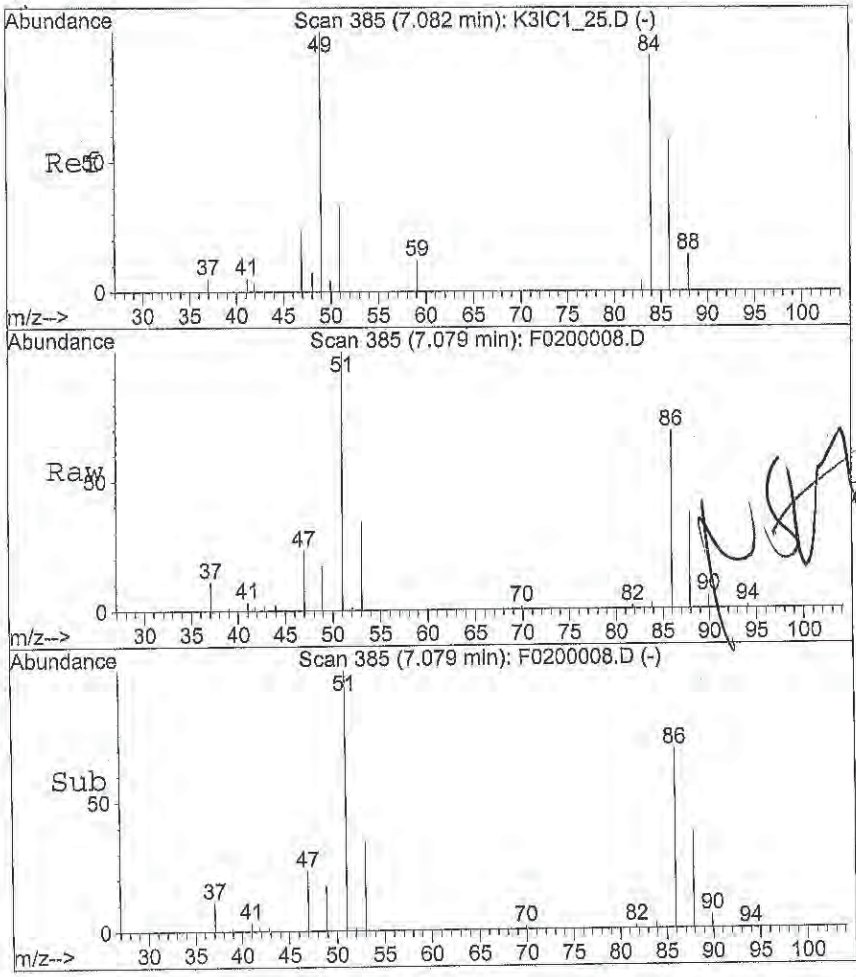


#13
Carbon disulfide
Concen: 1.26 ug/L
RT: 6.83 min Scan# 356
Delta R.T. 0.02 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 76 Resp: 12553

Ion	Ratio	Lower	Upper
76	100		
78	2.4	7.0	10.4#

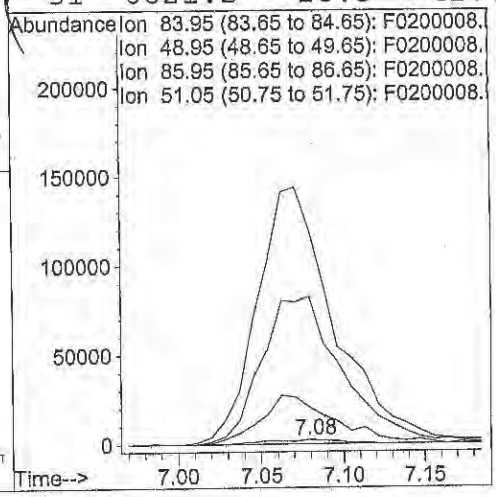


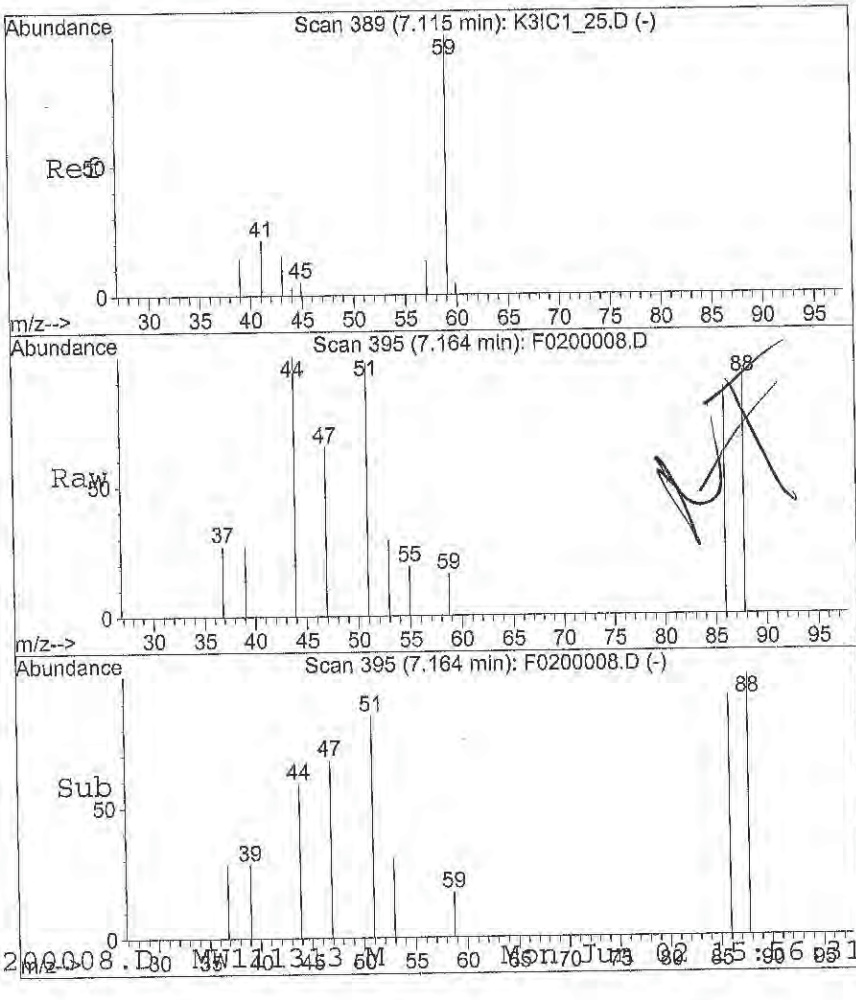


#14
Methylene Chloride
Concen: 2.18 ug/L
RT: 7.08 min Scan# 385
Delta R.T. -0.00 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

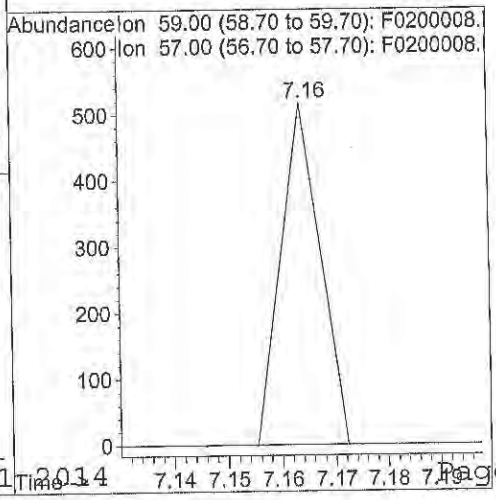


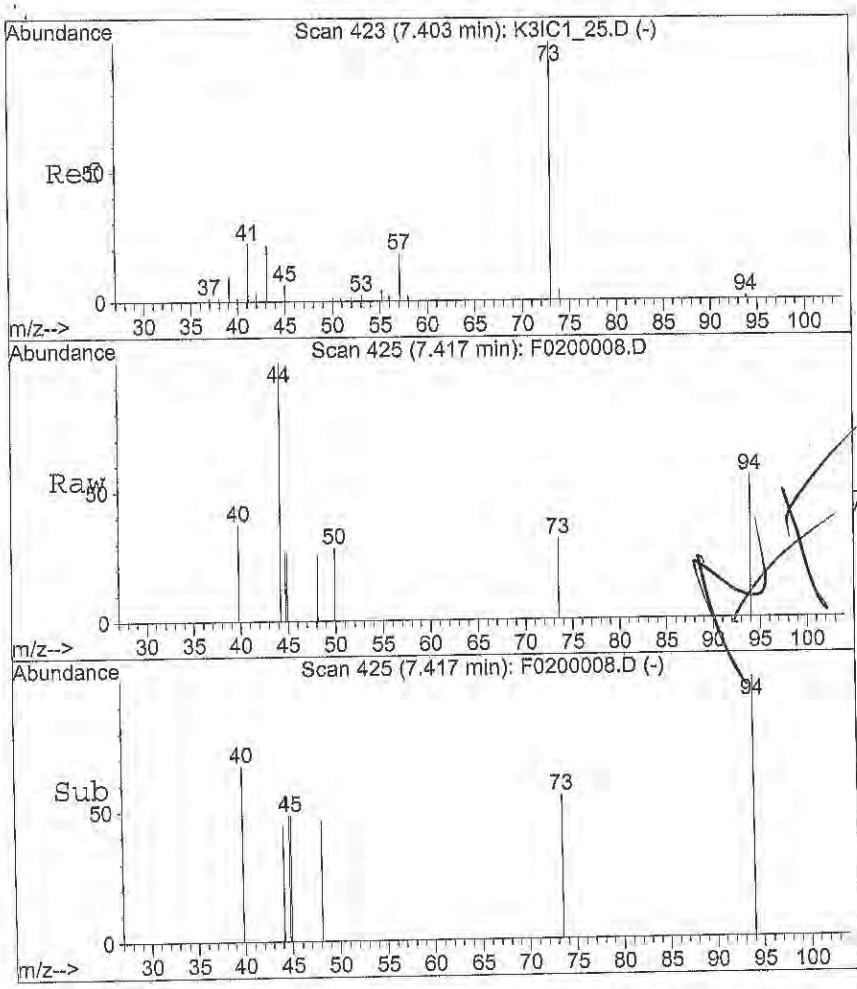


#15
(TBA) tert-Butanol
Concen: 1.29 ug/L
RT: 7.16 min Scan# 395
Delta R.T. 0.05 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 59 Resp: 262

Ion	Ratio	Lower	Upper
59	100		
57	0.0	6.4	9.6#

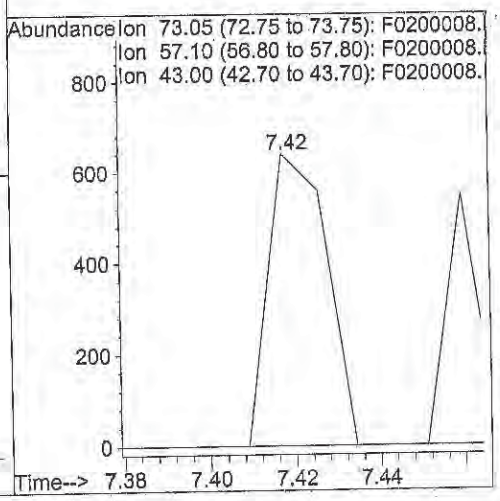


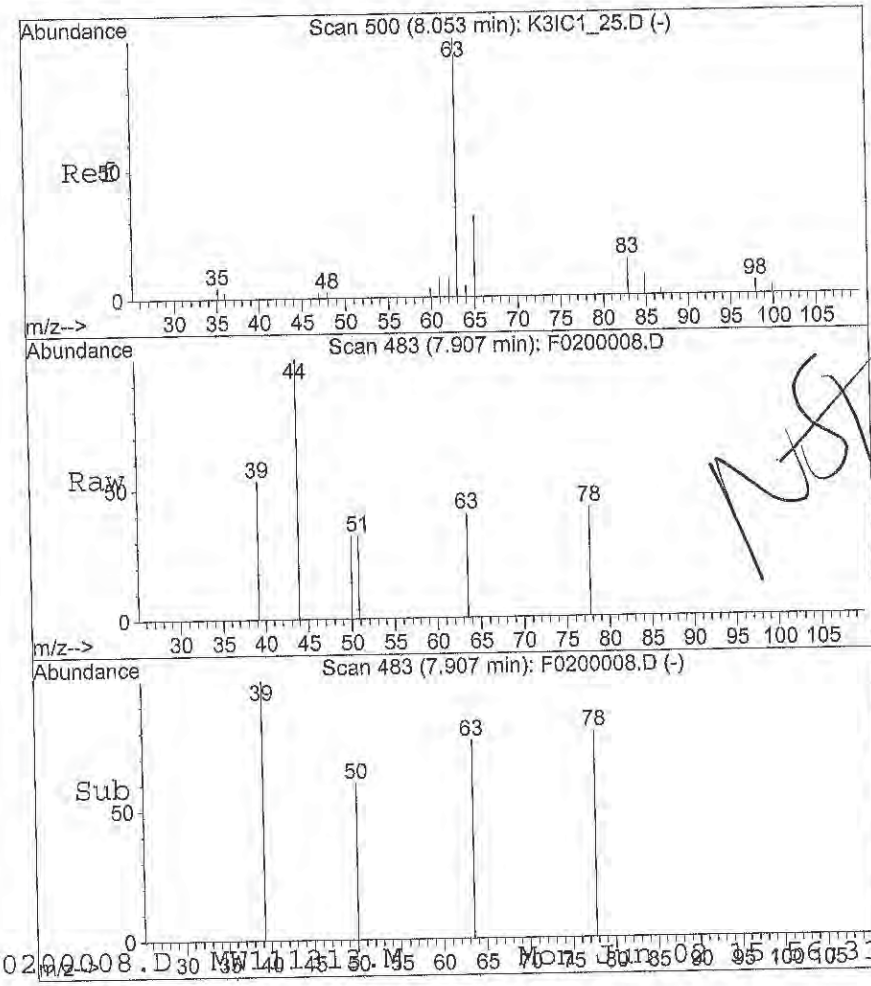


#16
(MTBE) Methyl-t-butyl ether
Concen: 0.09 ug/L
RT: 7.42 min Scan# 425
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

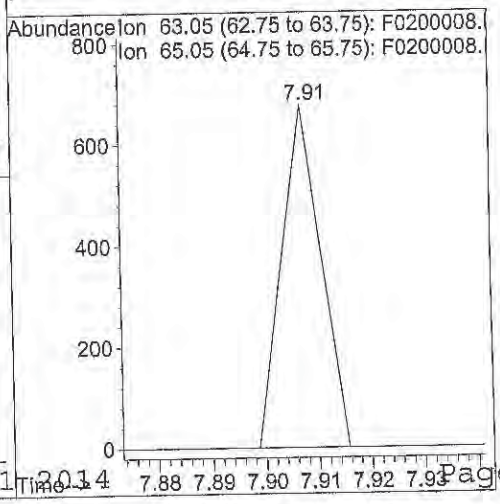


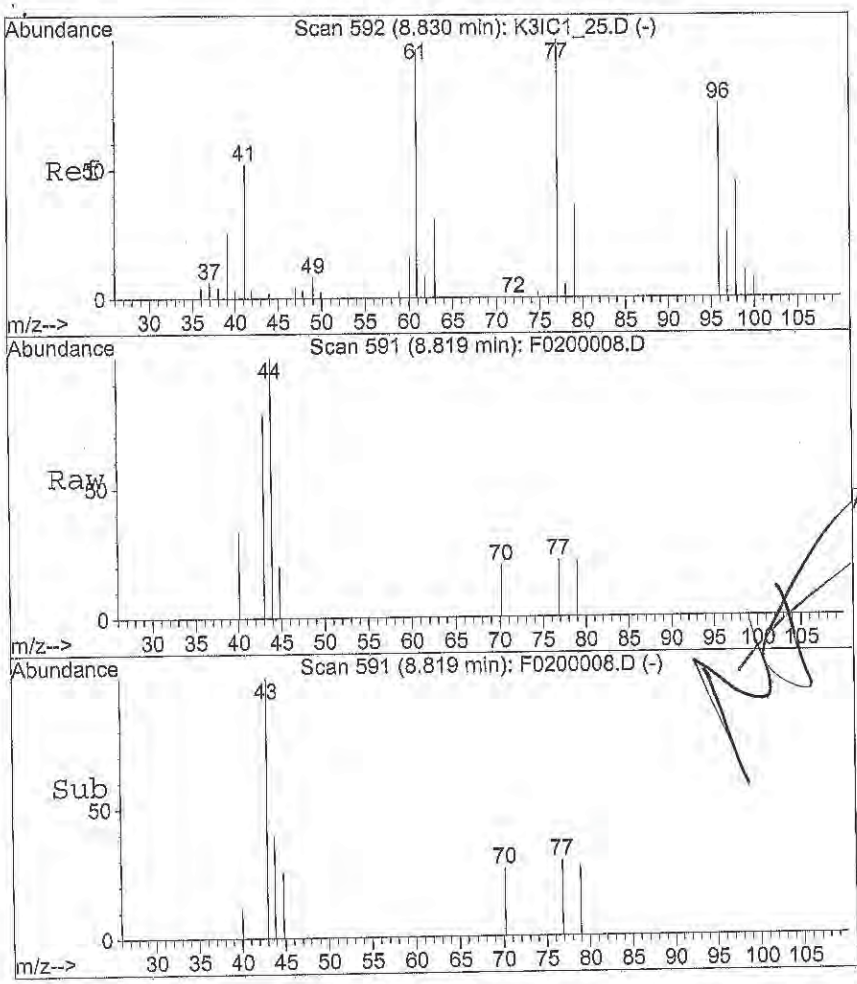


#18
1,1-Dichloroethane
Concen: 0.06 ug/L
RT: 7.91 min Scan# 483
Delta R.T. -0.15 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 63 Resp: 343

Ion	Ratio	Lower	Upper
63	100		
65	0.0	25.8	38.8#

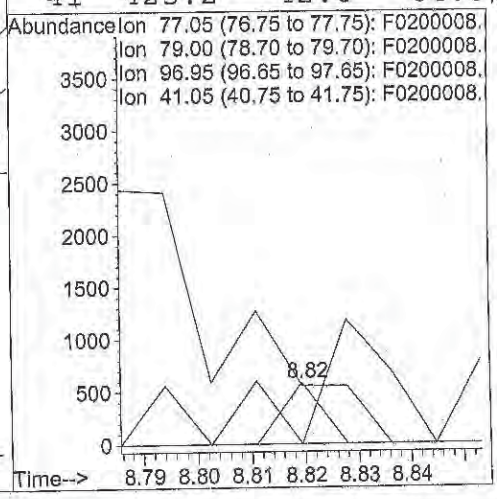


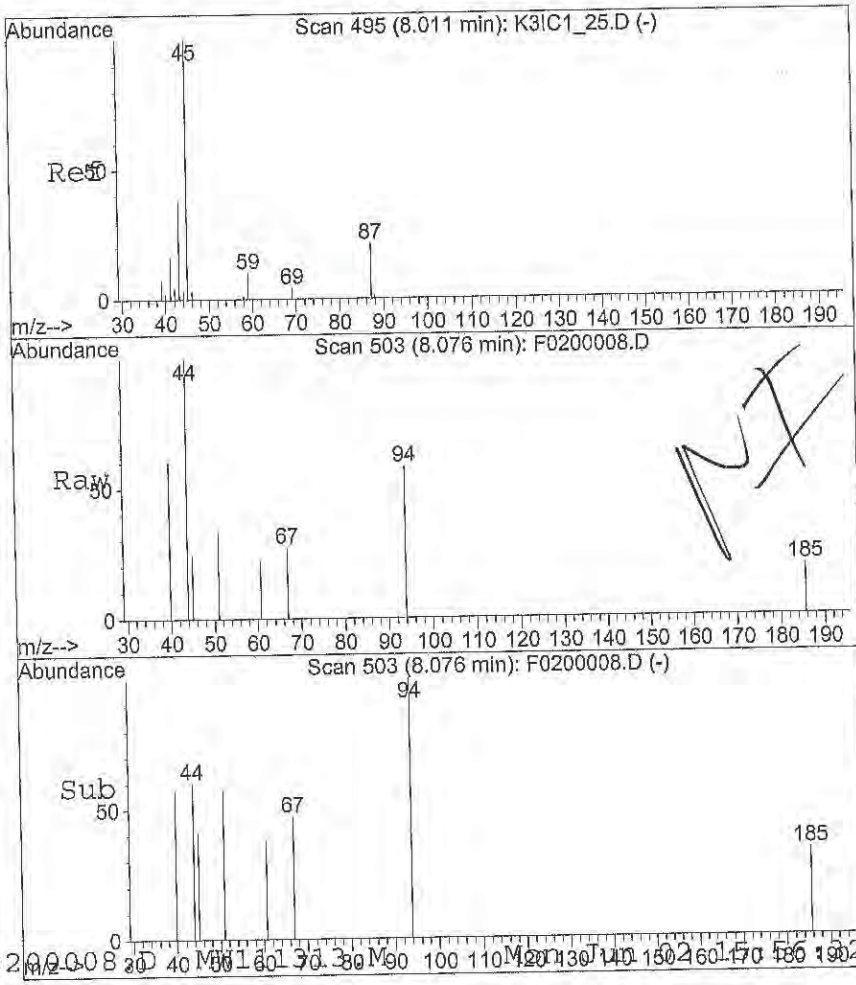


#20
2,2-Dichloropropane
Concen: 0.06 ug/L
RT: 8.82 min Scan# 591
Delta R.T. -0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

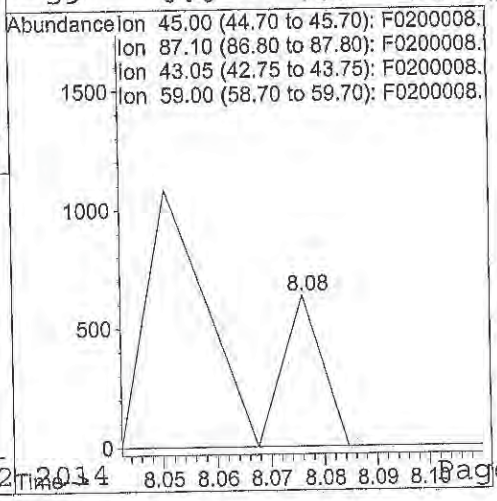


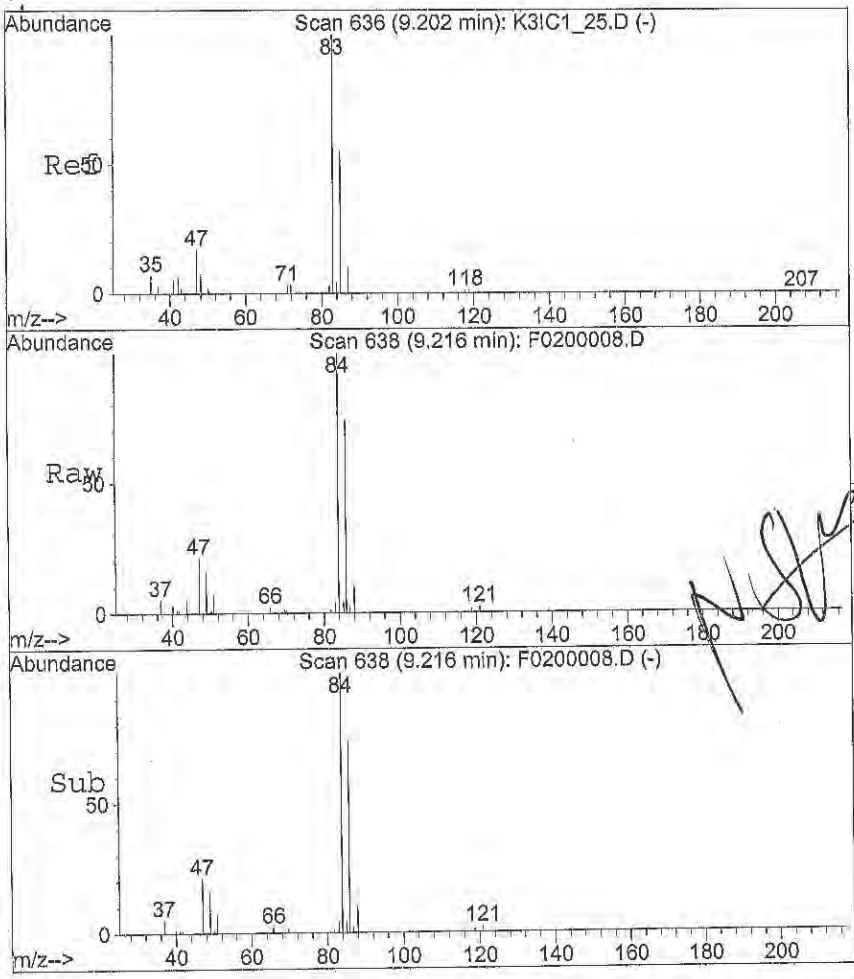


#22
(DIPE) Diisopropyl Ether
Concen: 0.03 ug/L
RT: 8.08 min Scan# 503
Delta R.T. 0.07 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

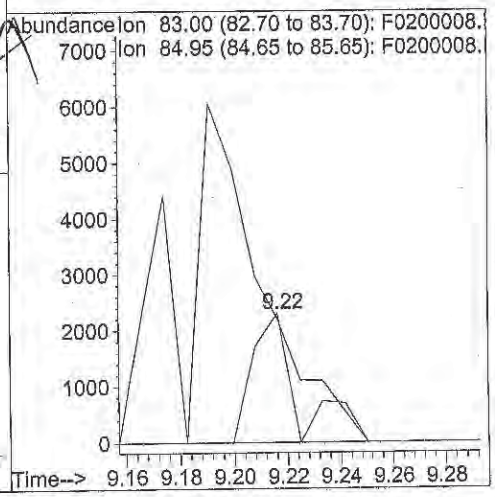


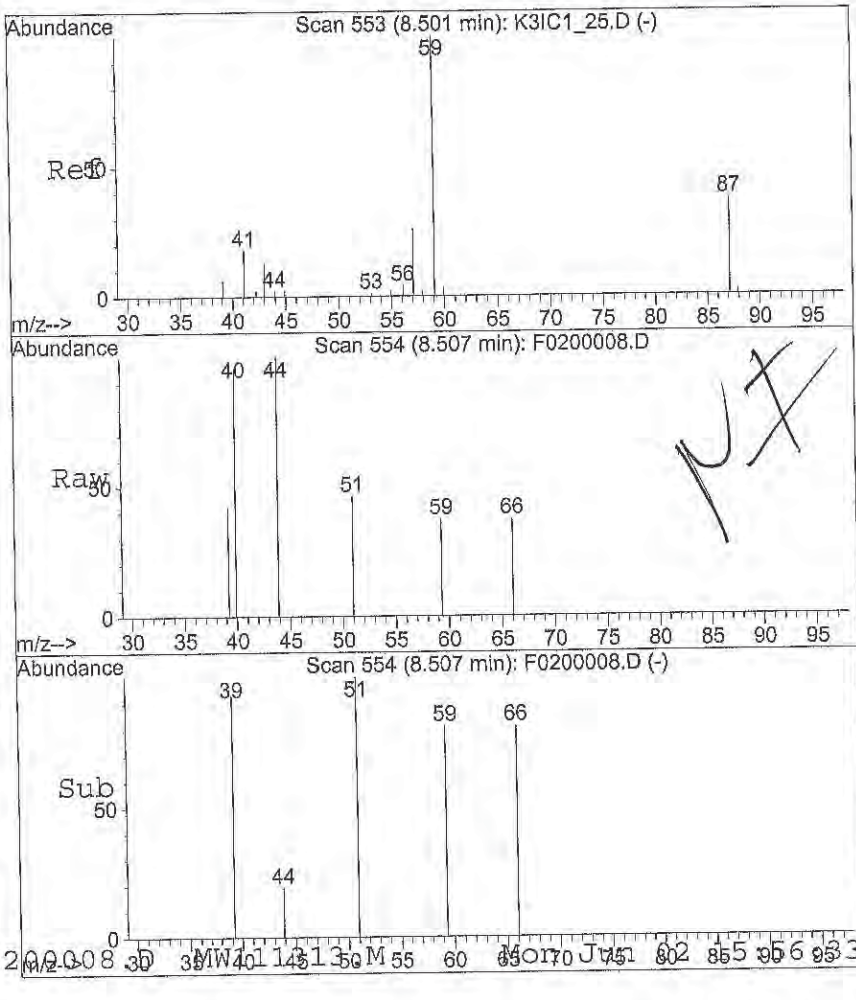


#24
Chloroform
Concen: 0.44 ug/L
RT: 9.22 min Scan# 638
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 83 Resp: 2741

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.8	77.6#

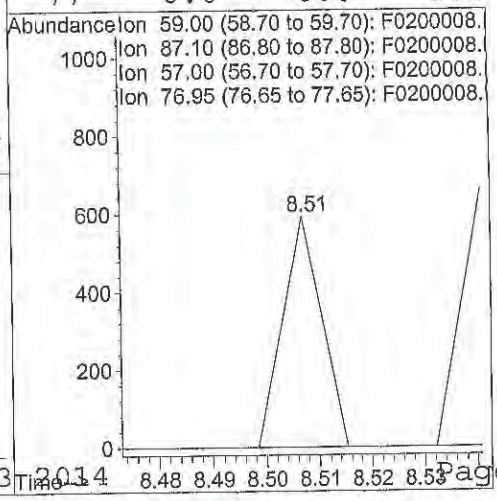


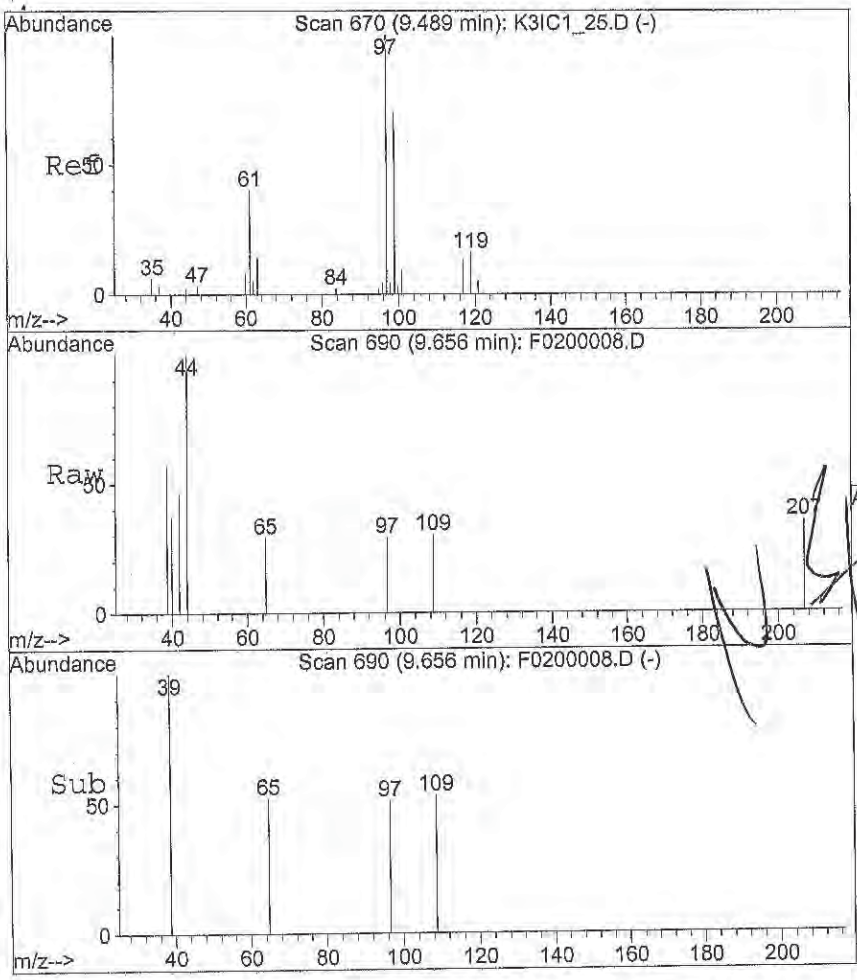


#25
(ETBE) 2-ethoxy 2-methyl propar
Concen: 0.03 ug/L
RT: 8.51 min Scan# 554
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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

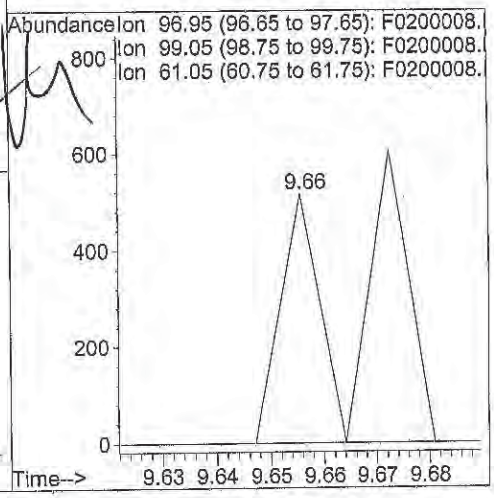


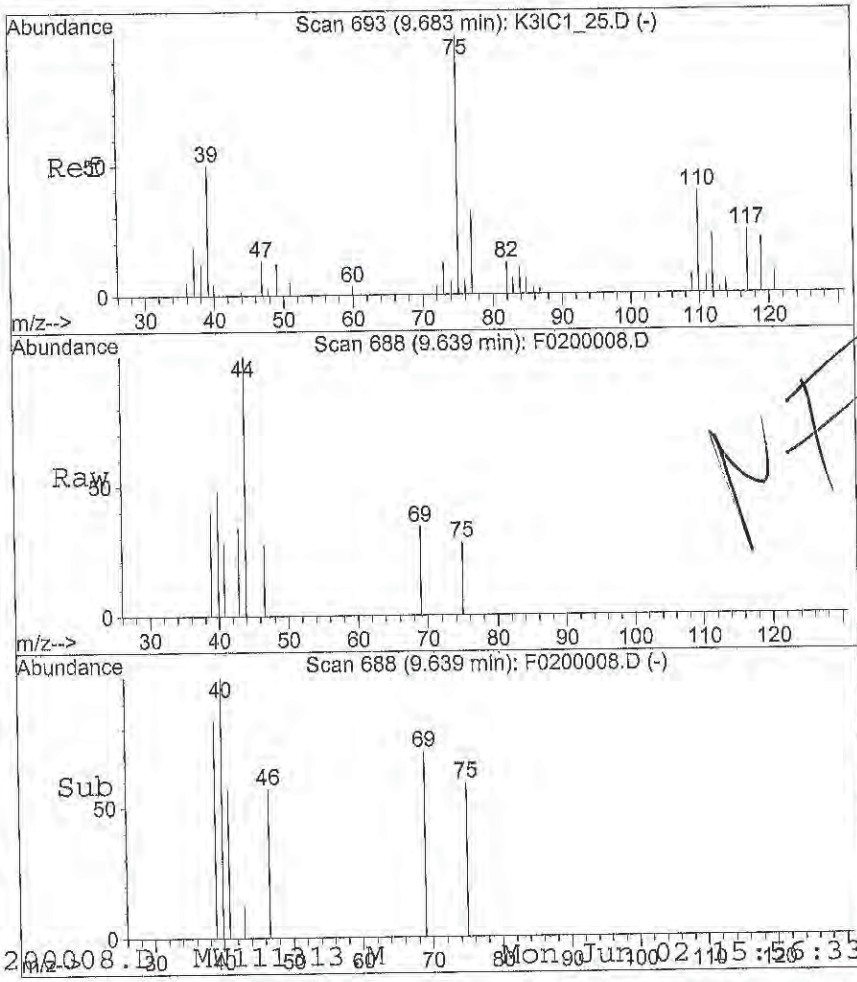


#26
1,1,1-Trichloroethane
Concen: 0.05 ug/L
RT: 9.66 min Scan# 690
Delta R.T. 0.17 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

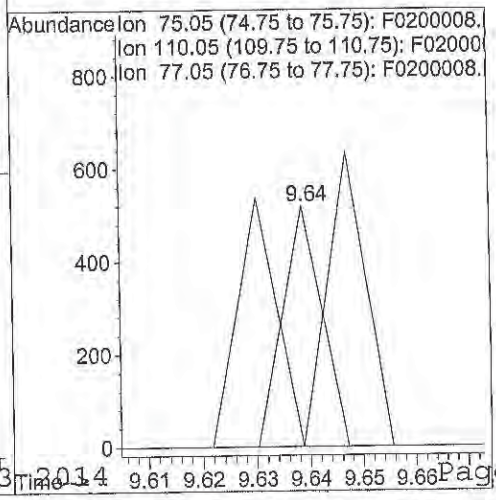


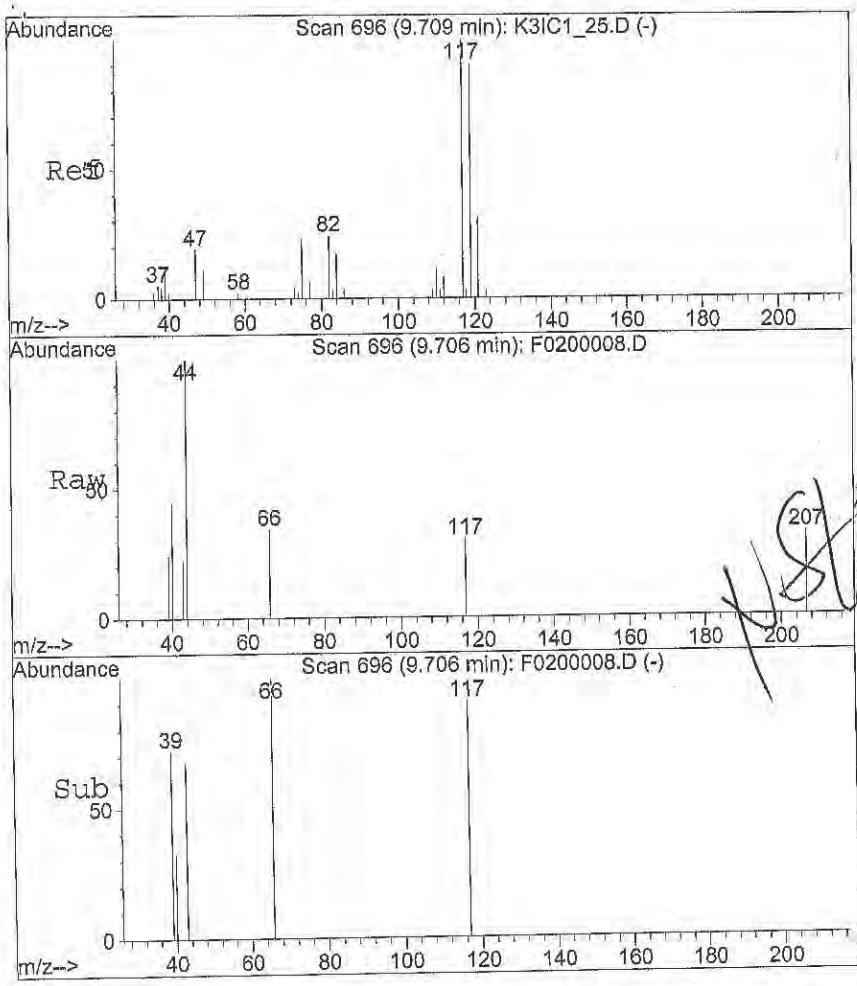


#29
1,1-Dichloropropene
Concen: 0.06 ug/L
RT: 9.64 min Scan# 688
Delta R.T. -0.04 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

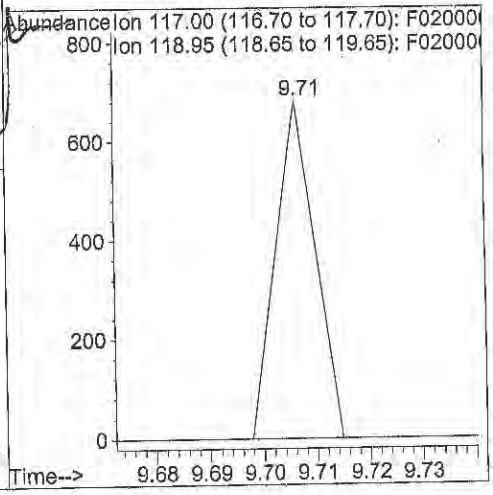


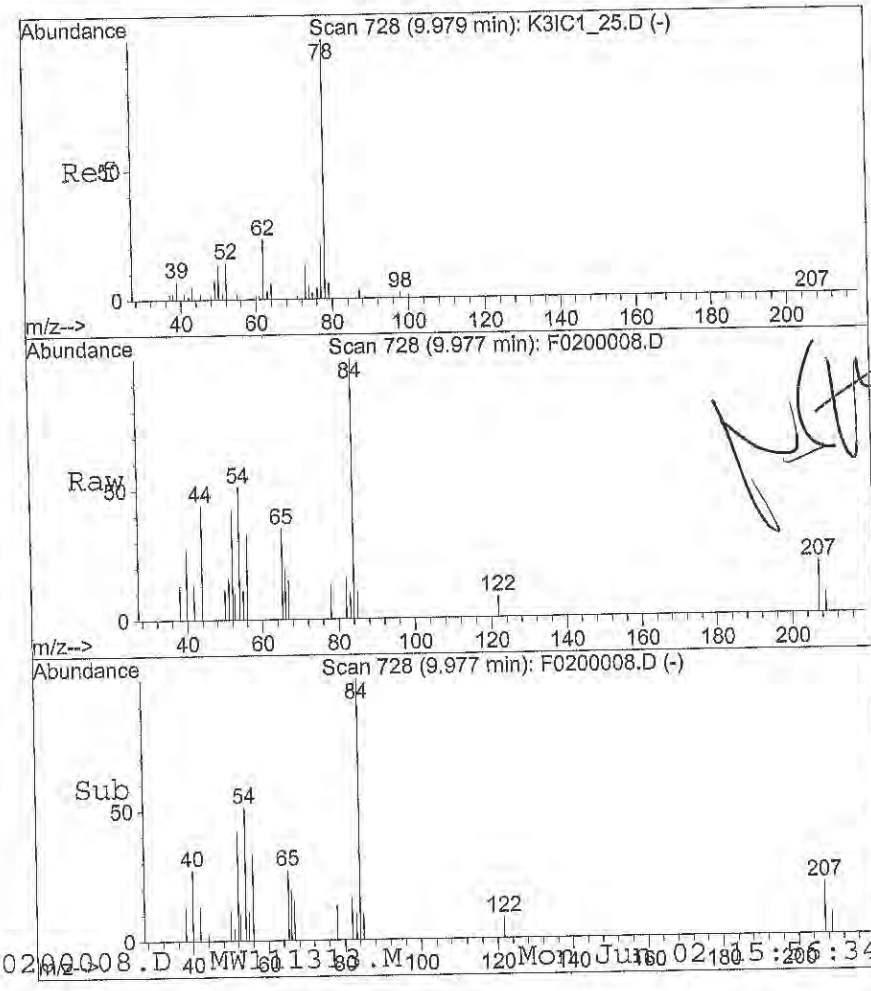


#30
Carbon Tetrachloride
Concen: 0.09 ug/L
RT: 9.71 min Scan# 696
Delta R.T. -0.00 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion:117 Resp: 346

Ion	Ratio	Lower	Upper
117	100		
119	0.0	75.8	113.8#

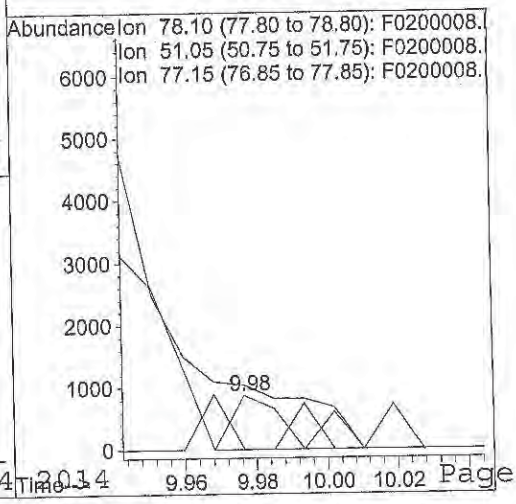


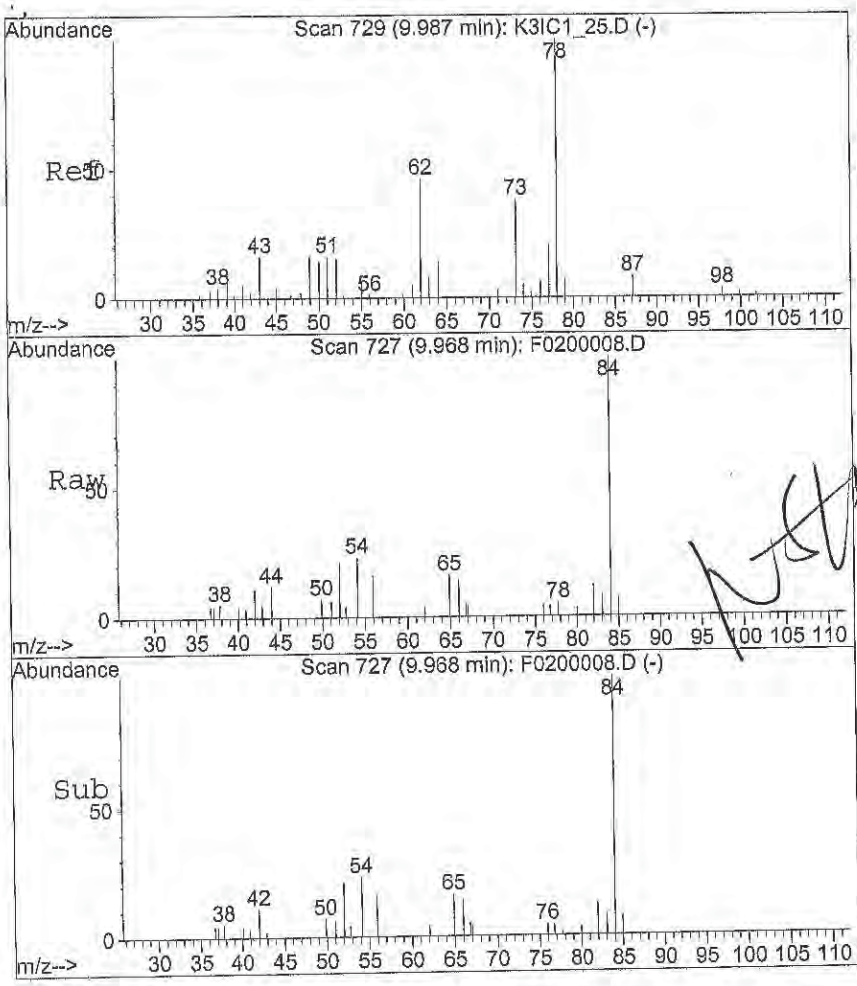


#31
Benzene
Concen: 0.10 ug/L
RT: 9.98 min Scan# 728
Delta R.T. -0.00 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

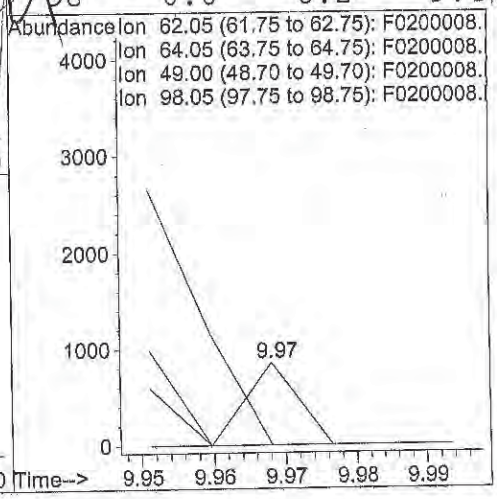


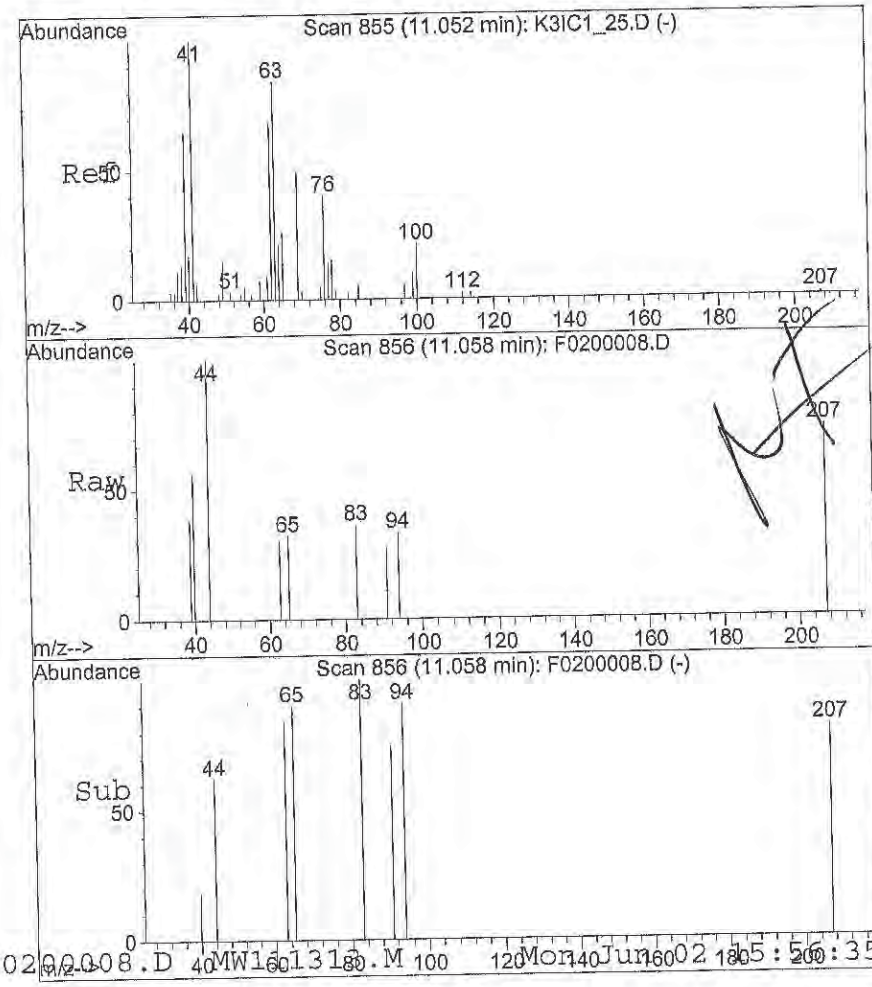


#32
1,2-Dichloroethane
Concen: 0.11 ug/L
RT: 9.97 min Scan# 727
Delta R.T. -0.02 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

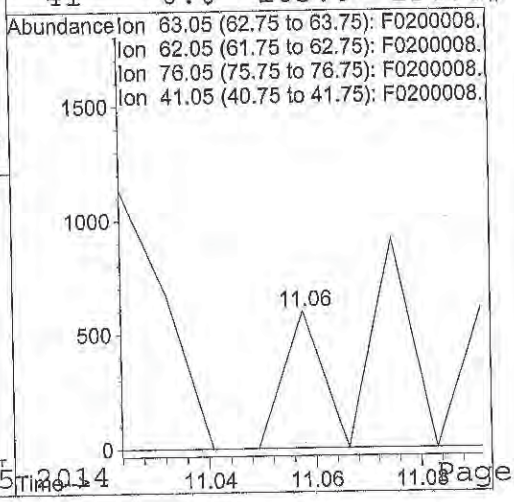


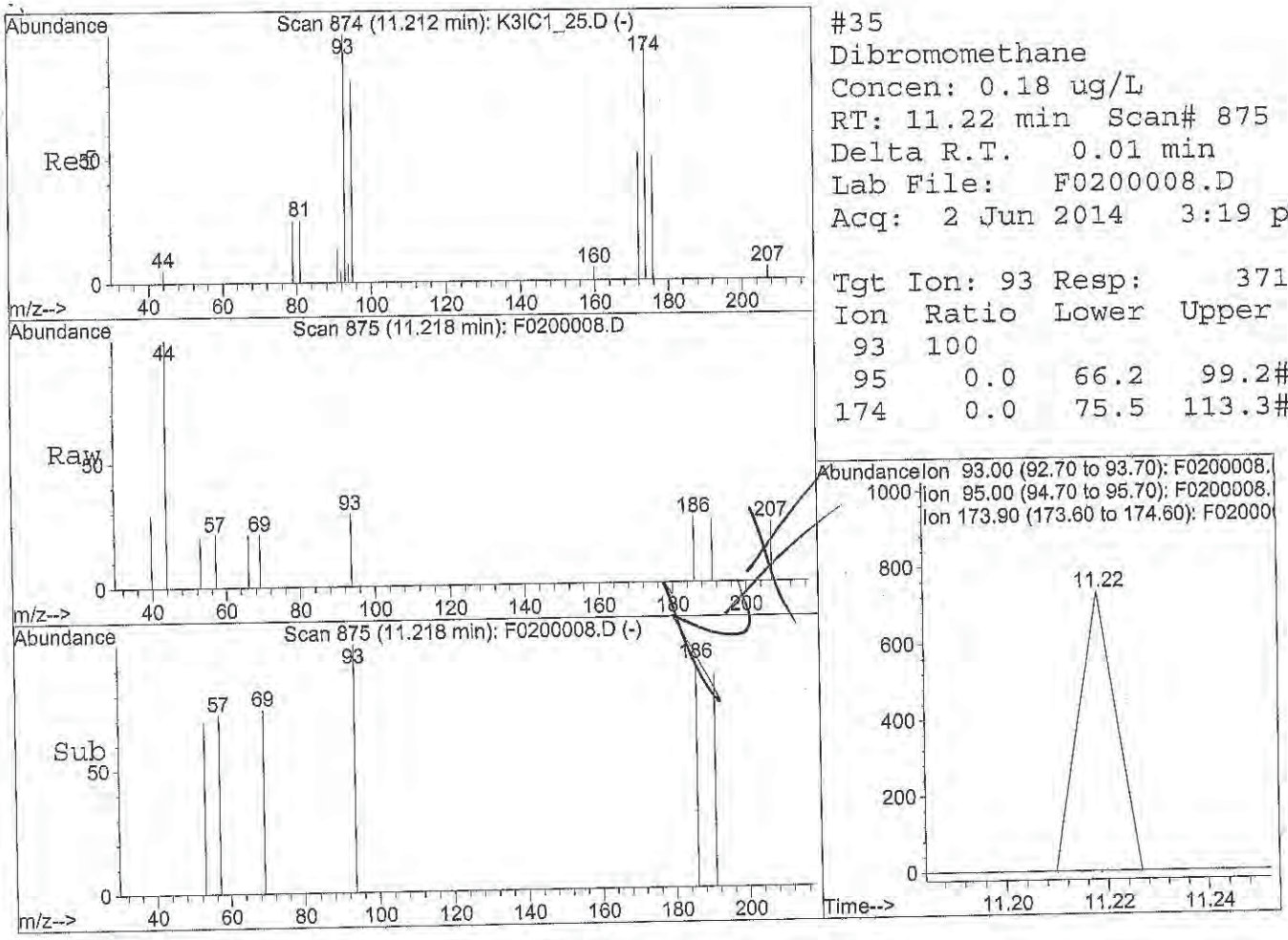


#34
1,2-Dichloropropane
Concen: 0.11 ug/L
RT: 11.06 min Scan# 856
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

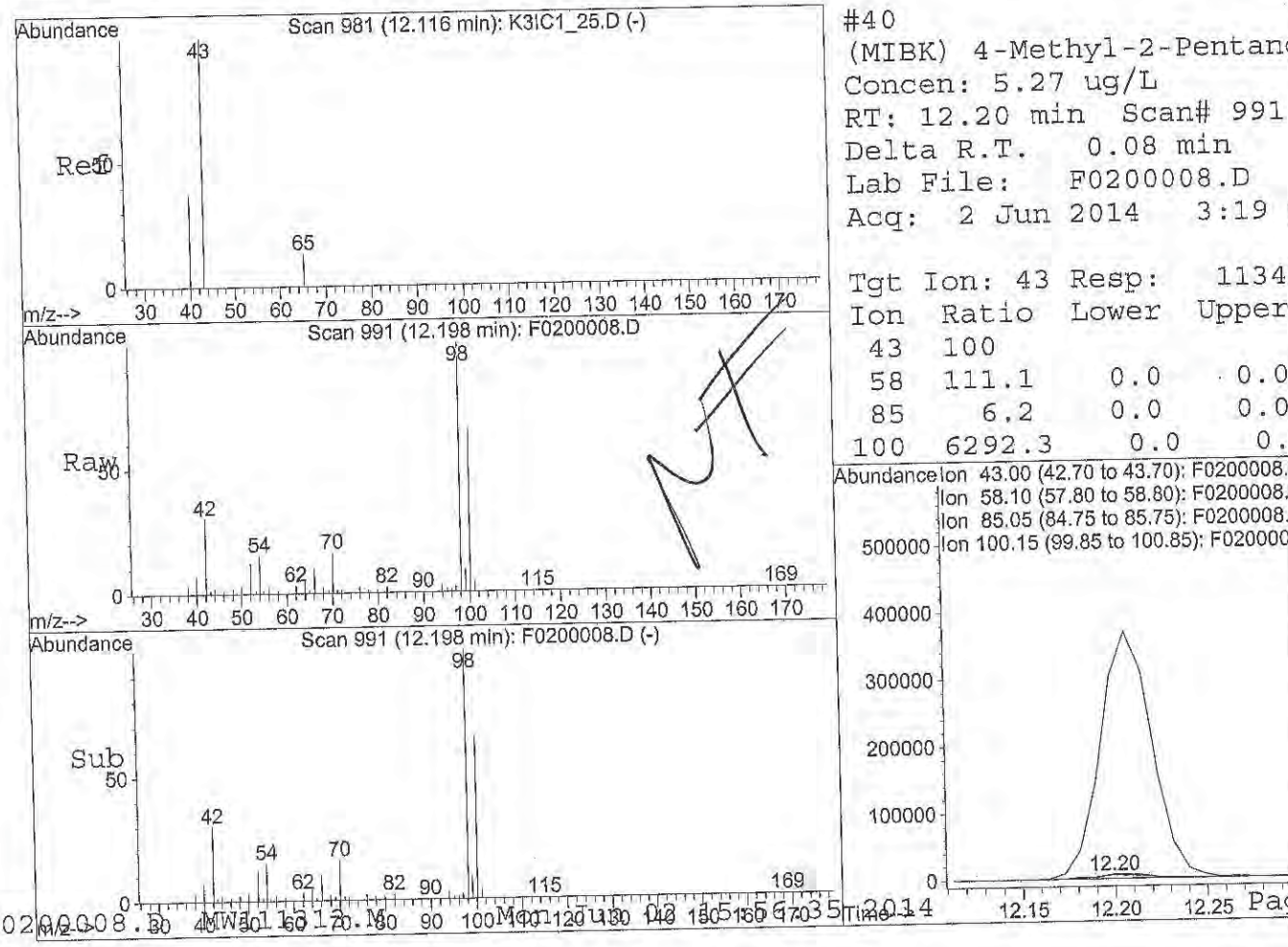




#35
Dibromomethane
Concen: 0.18 ug/L
RT: 11.22 min Scan# 875
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 93 Resp: 371

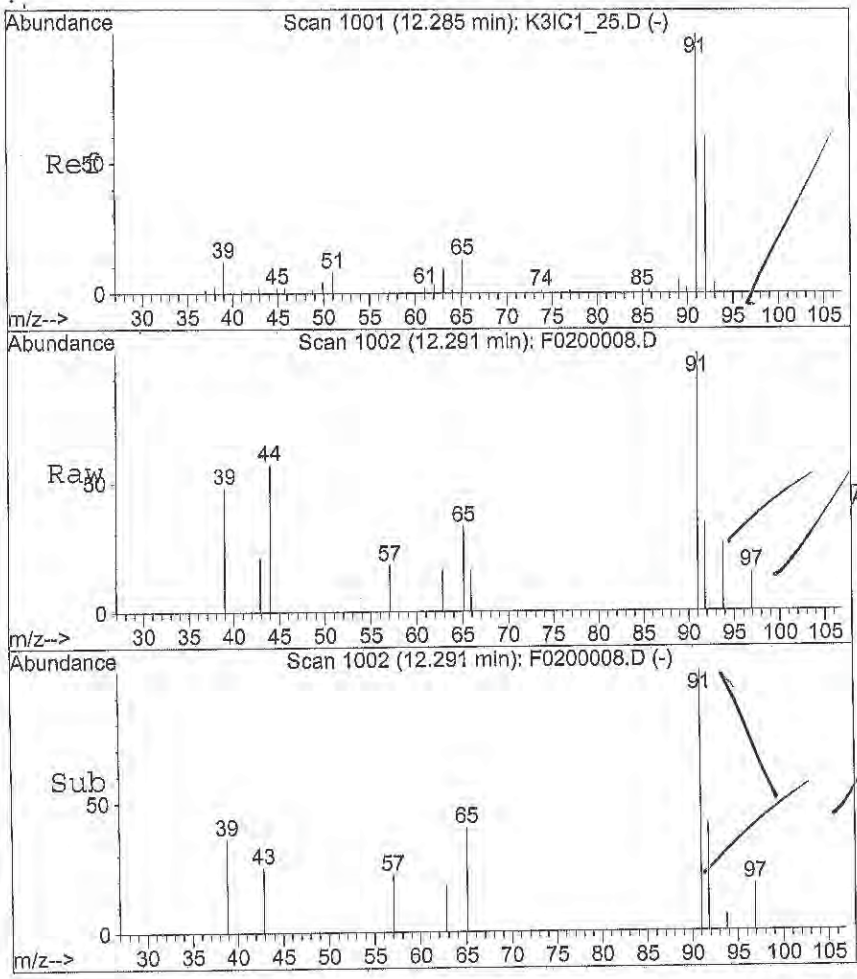
Ion	Ratio	Lower	Upper
93	100		
95	0.0	66.2	99.2#
174	0.0	75.5	113.3#



#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

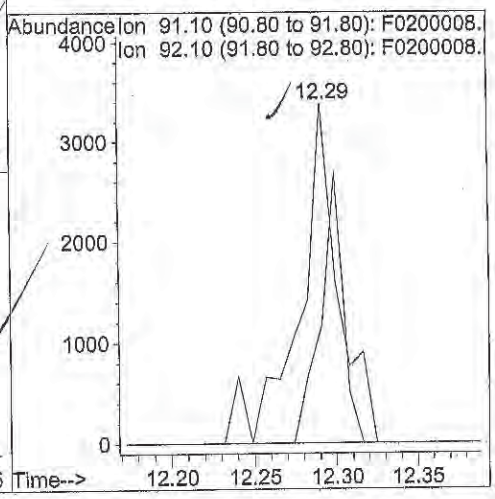
Ion	Ratio	Lower	Upper
43	100		
58	111.1	0.0	0.0#
85	6.2	0.0	0.0#
100	6292.3	0.0	0.0#

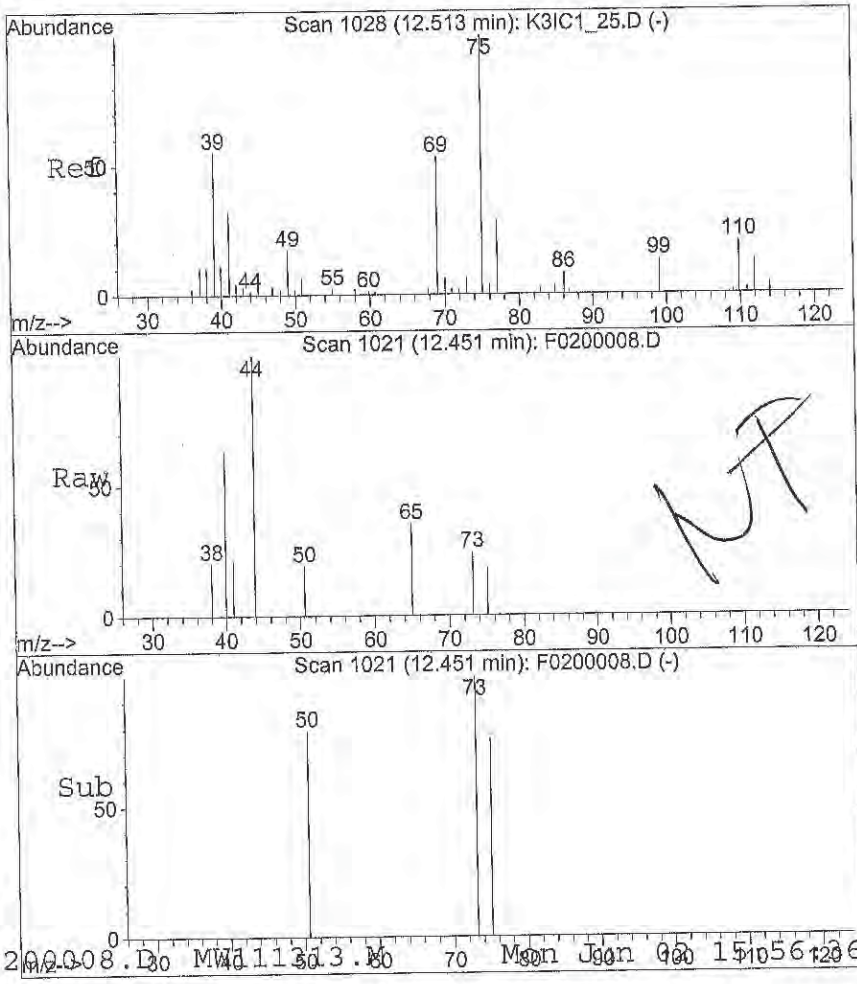


#41
Toluene
Concen: 0.38 ug/L
RT: 12.29 min Scan# 1002
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 91 Resp: 5602

Ion	Ratio	Lower	Upper
91	100		
92	45.4	47.4	71.0#

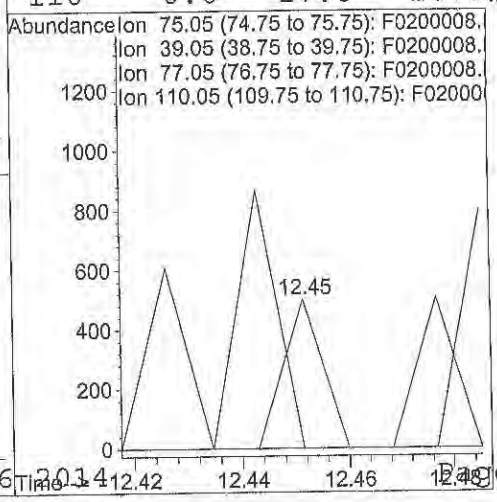


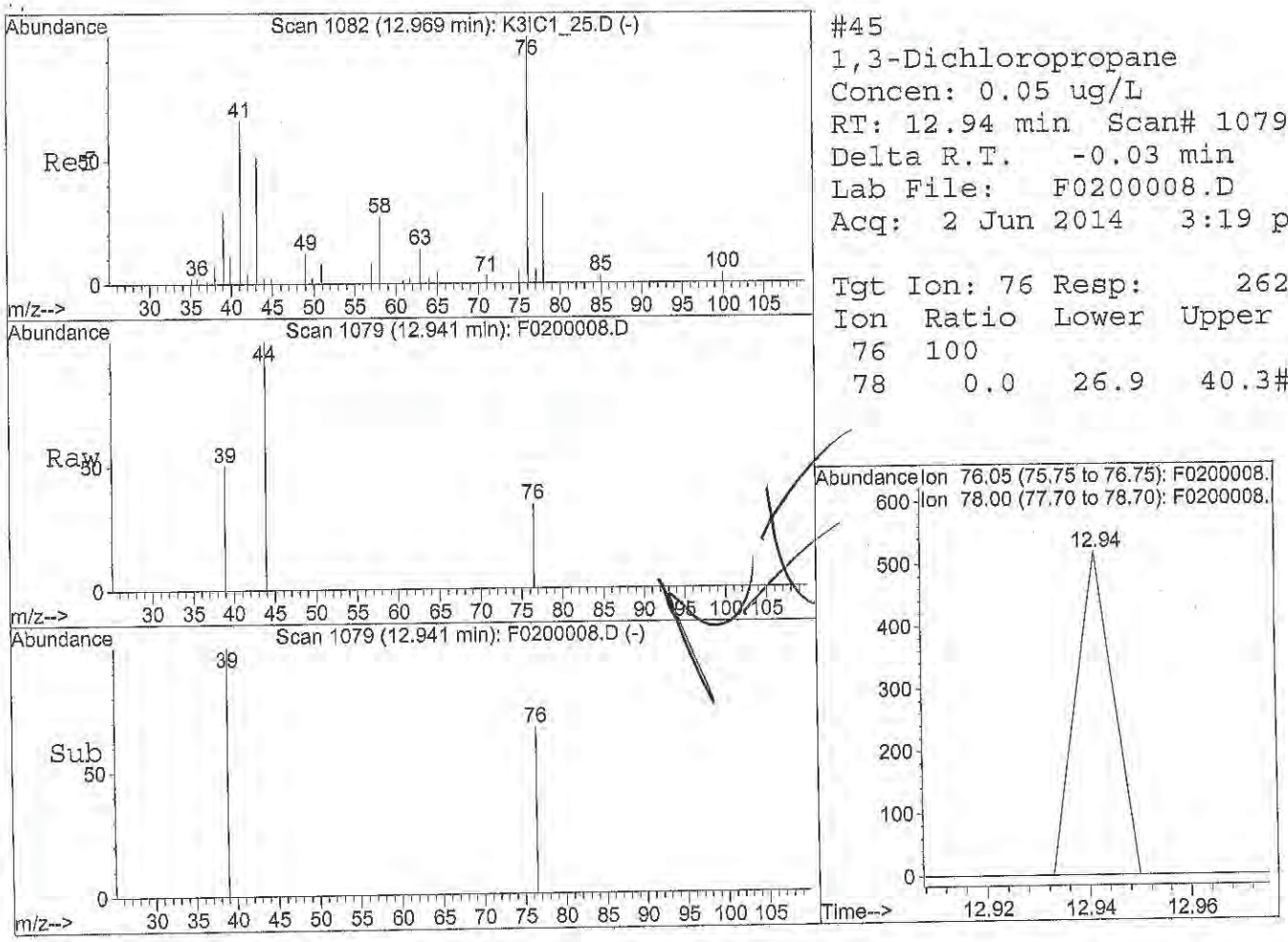


#42
trans-1,3-Dichloropropene
Concen: 0.05 ug/L
RT: 12.45 min Scan# 1021
Delta R.T. -0.06 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

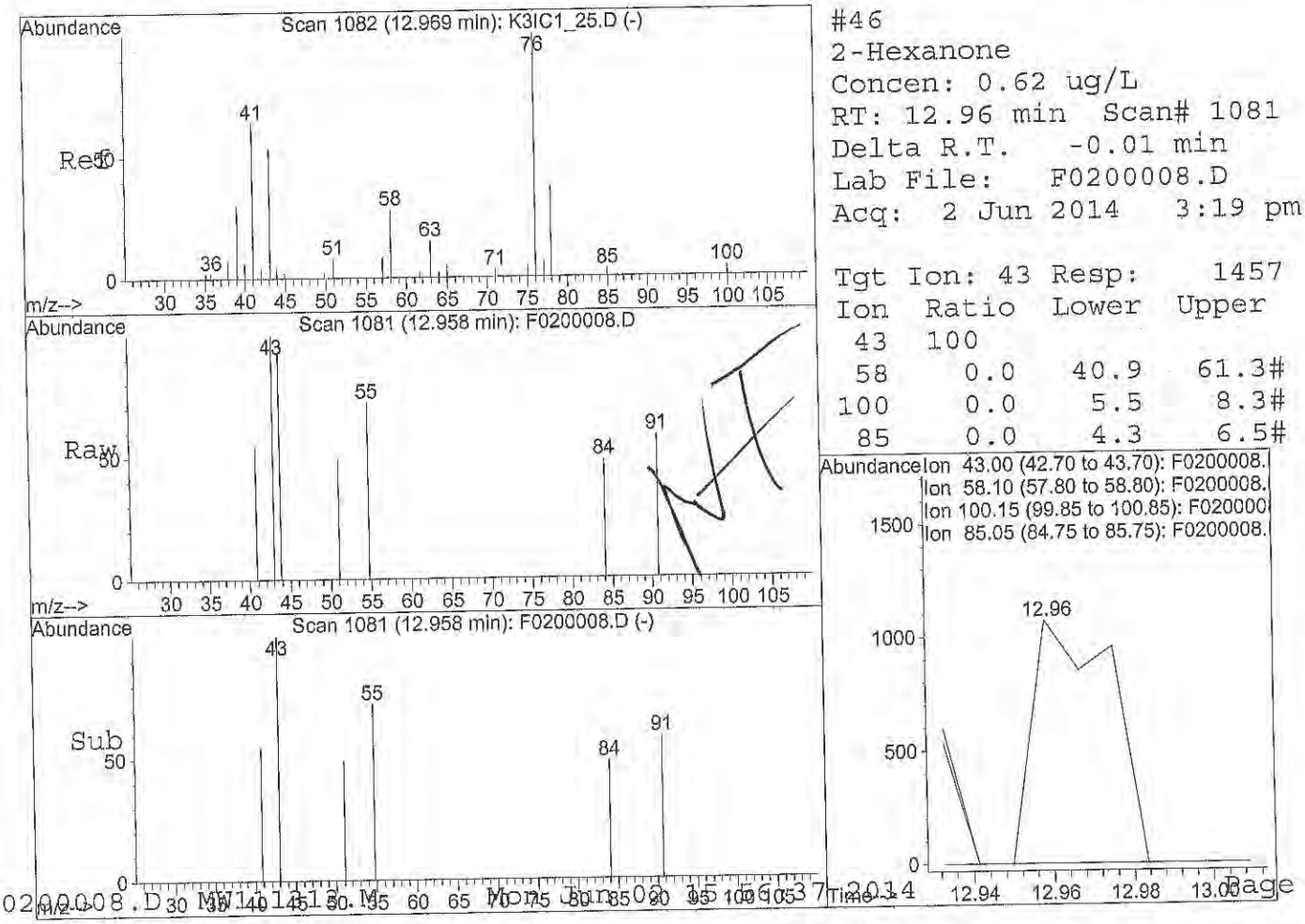




#45
1,3-Dichloropropane
Concen: 0.05 ug/L
RT: 12.94 min Scan# 1079
Delta R.T. -0.03 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 76 Resp: 262

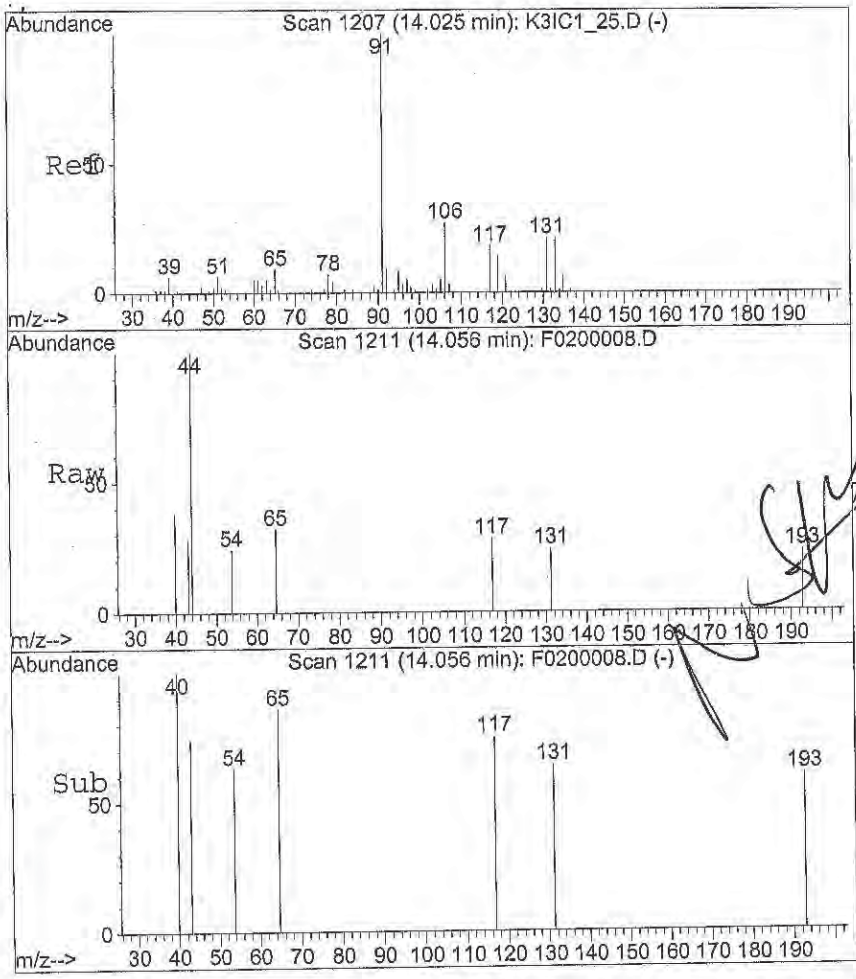
Ion	Ratio	Lower	Upper
76	100		
78	0.0	26.9	40.3#



#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

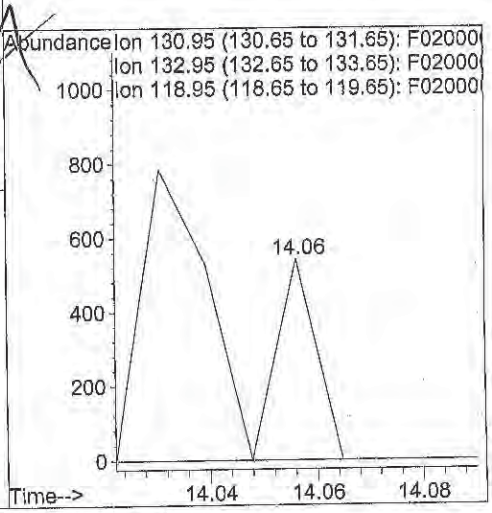
Ion	Ratio	Lower	Upper
43	100		
58	0.0	40.9	61.3#
100	0.0	5.5	8.3#
85	0.0	4.3	6.5#

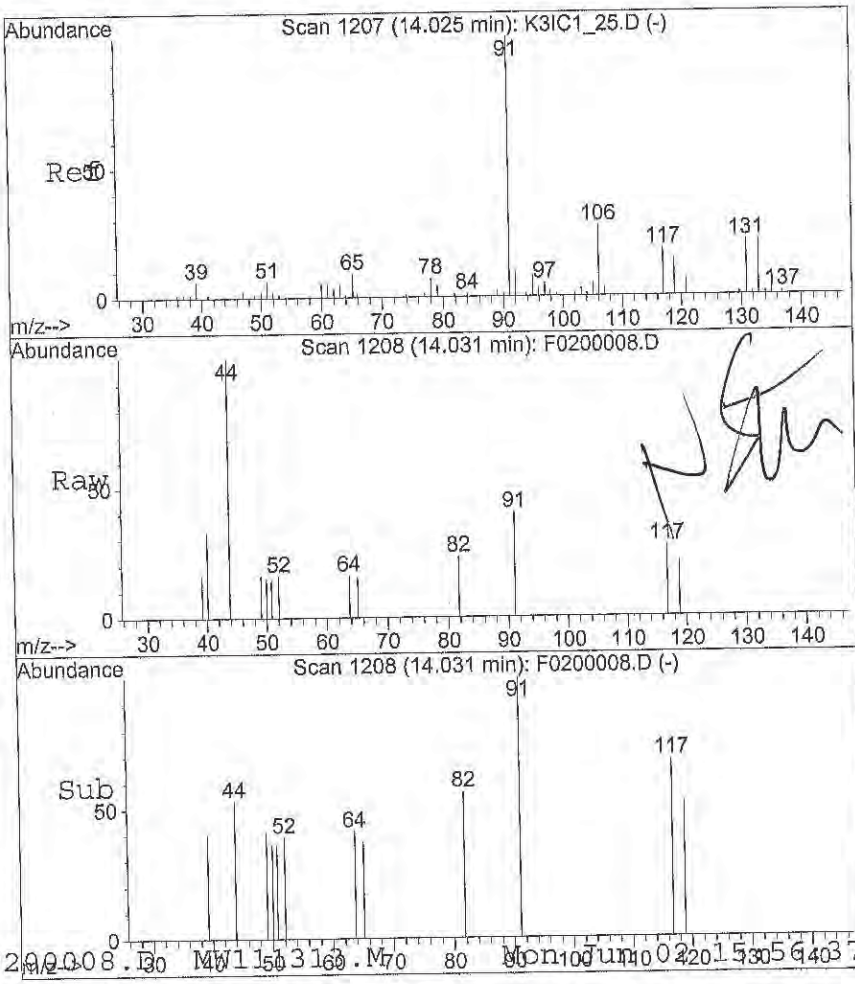


#50
1,1,1,2-Tetrachloroethane
Concen: 0.08 ug/L
RT: 14.06 min Scan# 1211
Delta R.T. 0.03 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion:131 Resp: 274

Ion	Ratio	Lower	Upper
131	100		
133	0.0	80.6	120.8#
119	0.0	56.1	84.1#

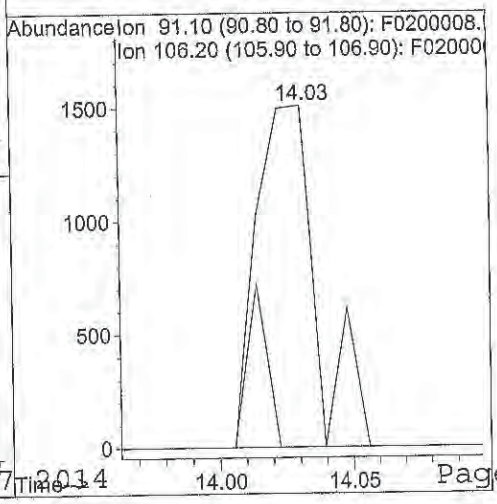


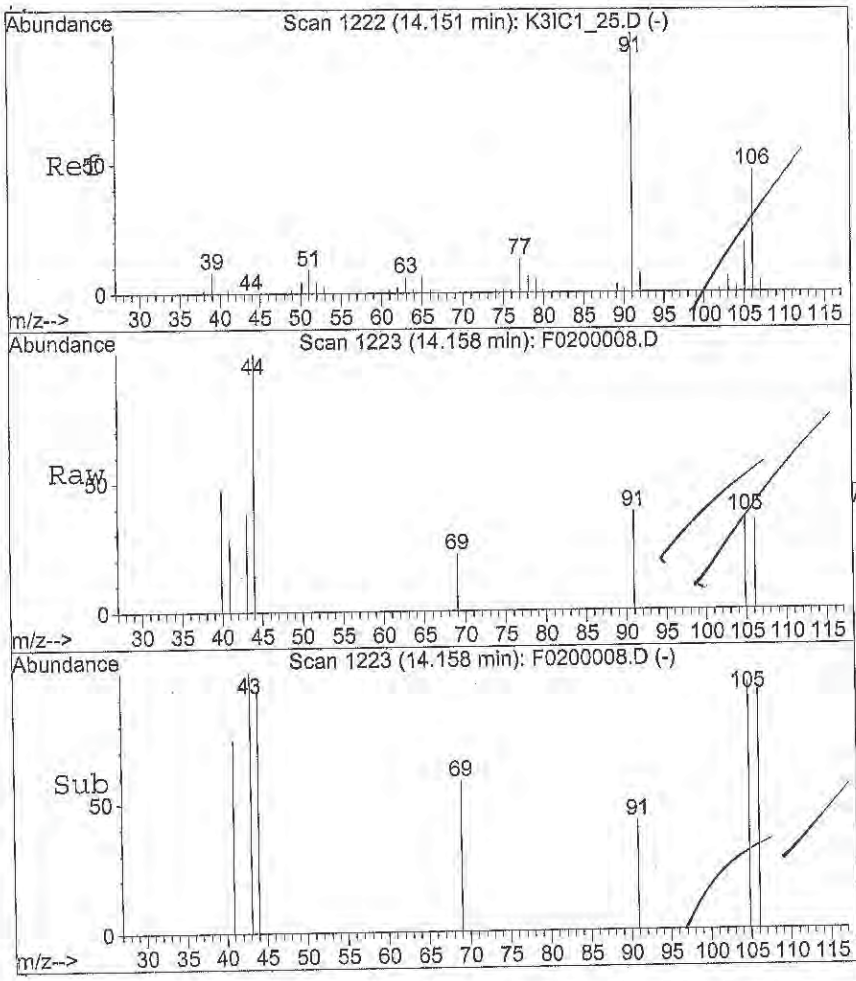


#51
Ethylbenzene
Concen: 0.14 ug/L
RT: 14.03 min Scan# 1208
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 91 Resp: 2351

Ion	Ratio	Lower	Upper
91	100		
106	15.6	23.5	35.3#

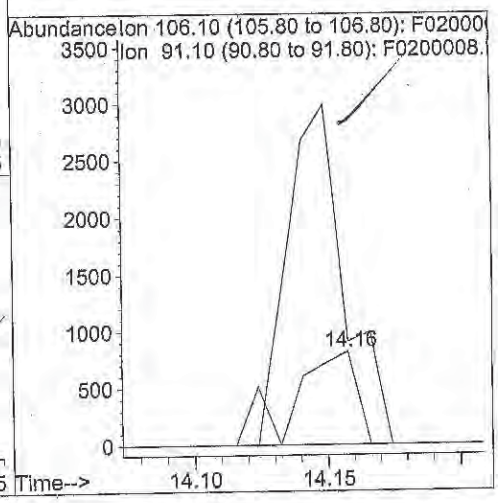


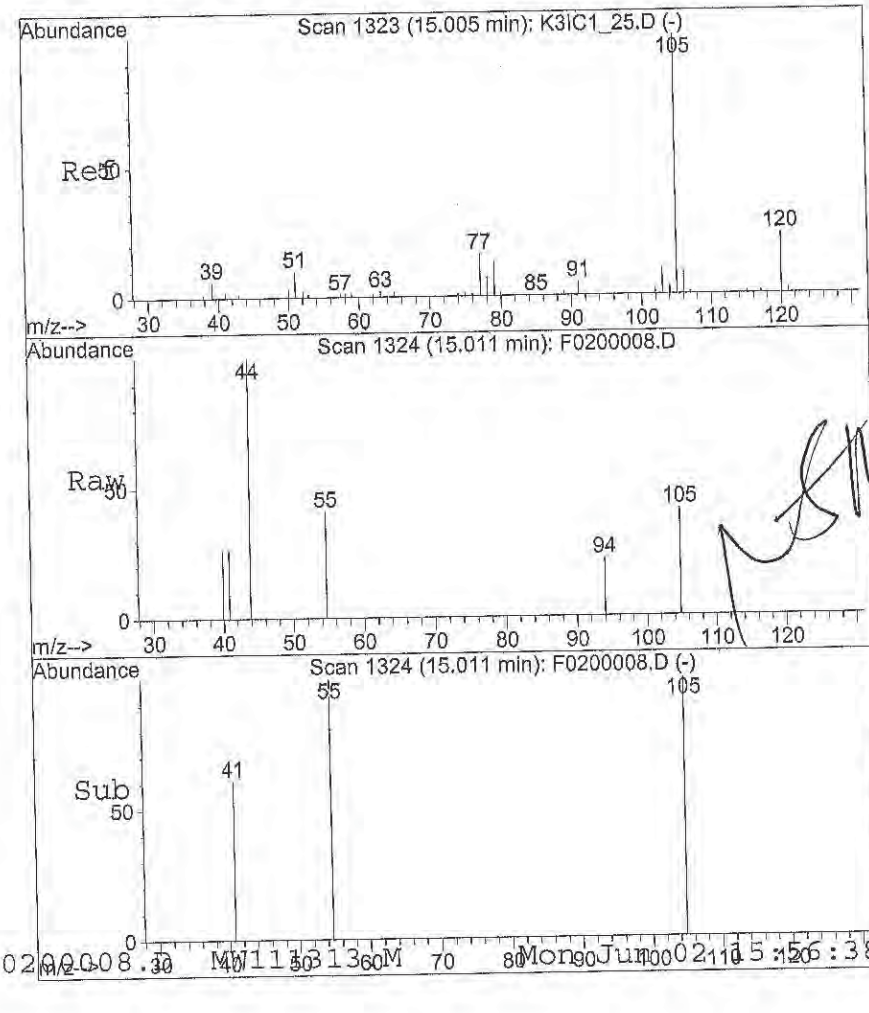


#52
m,p-Xylenes
Concen: 0.22 ug/L
RT: 14.16 min Scan# 1223
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion:106 Resp: 1332

Ion	Ratio	Lower	Upper
106	100		
91	337.2	177.1	265.7#

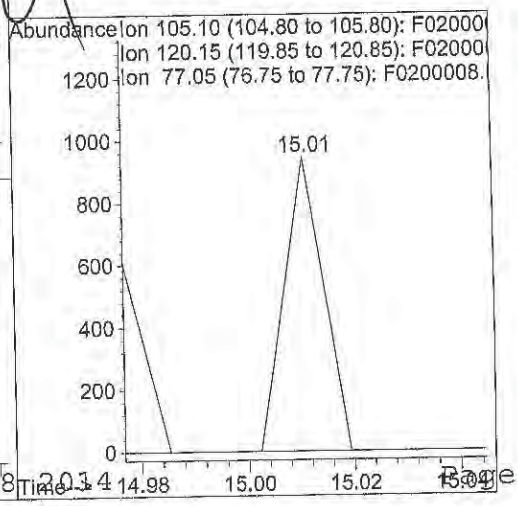


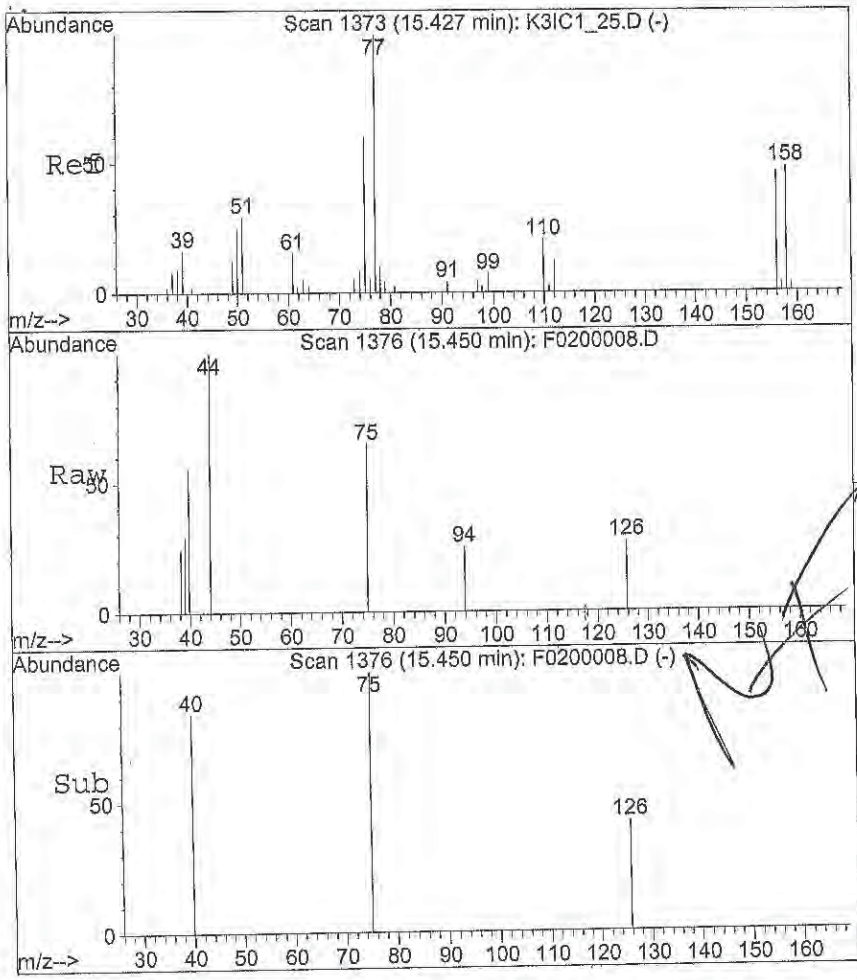


#56
Isopropylbenzene
Concen: 0.03 ug/L
RT: 15.01 min Scan# 1324
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

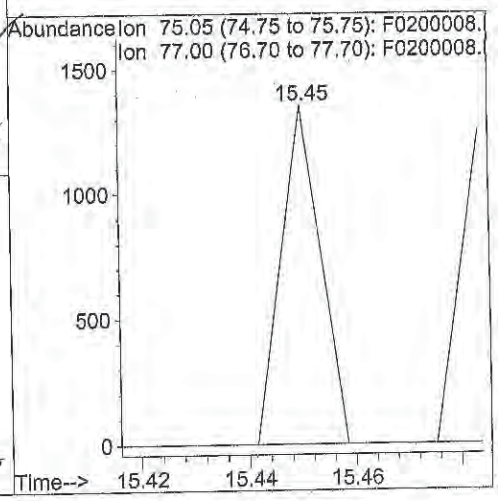


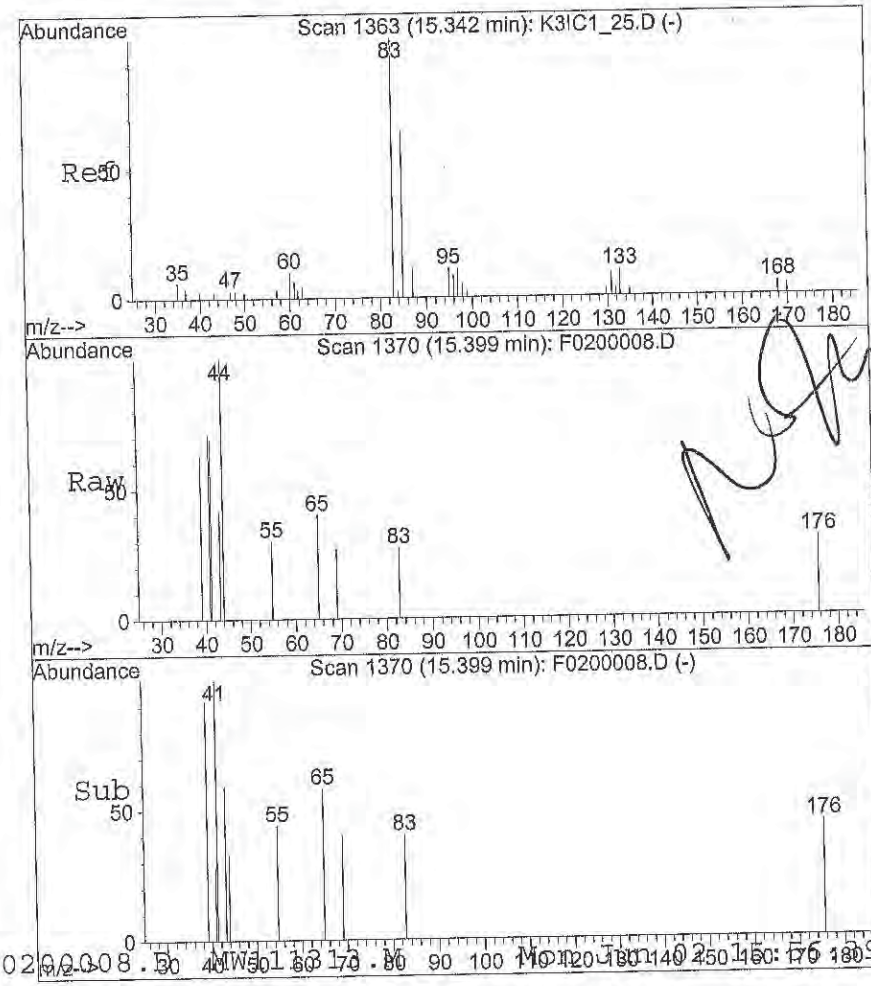


#57
1,2,3-Trichloropropane
Concen: 0.16 ug/L
RT: 15.45 min Scan# 1376
Delta R.T. 0.02 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 75 Resp: 686

Ion	Ratio	Lower	Upper
75	100		
77	0.0	31.2	46.8#

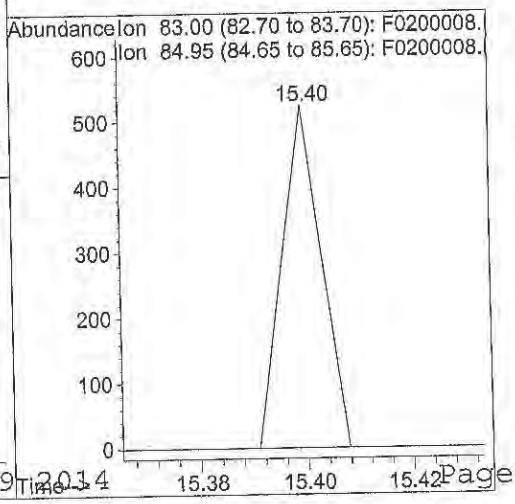


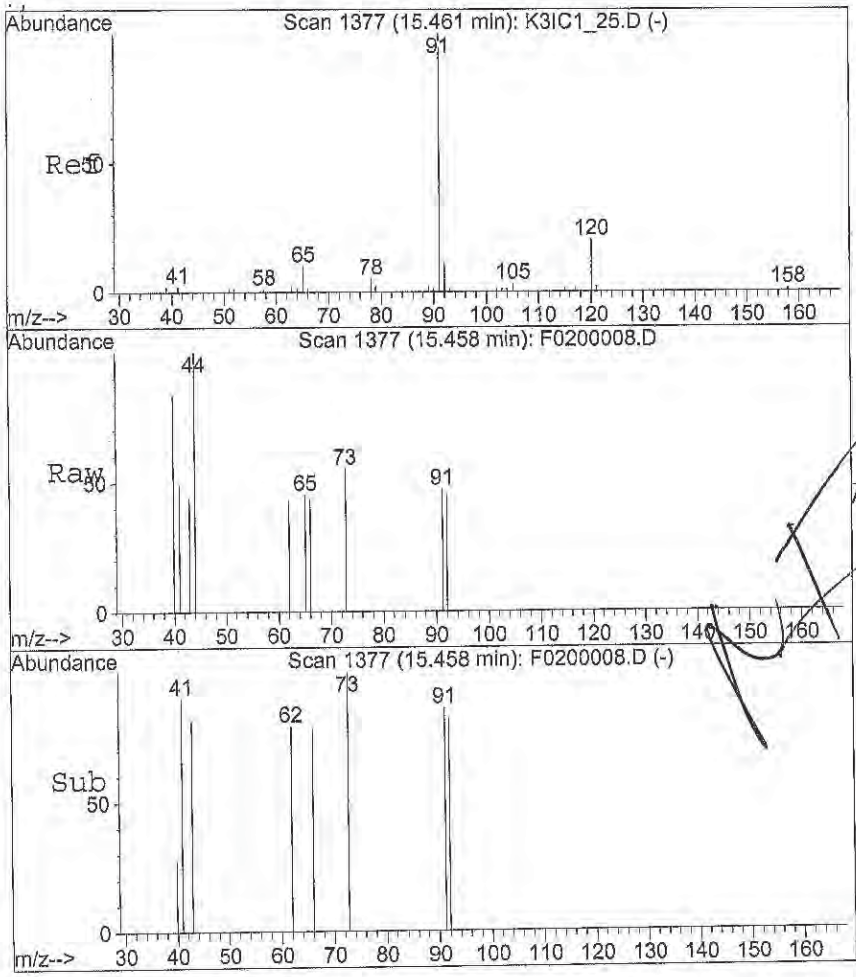


#60
1,1,2,2-Tetrachloroethane
Concen: 0.06 ug/L
RT: 15.40 min Scan# 1370
Delta R.T. 0.06 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 83 Resp: 265

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.2	76.8#

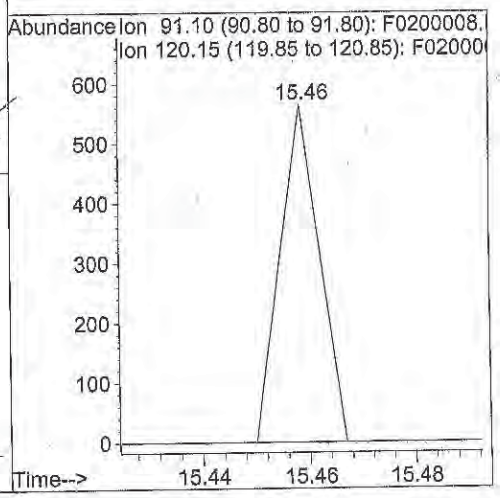


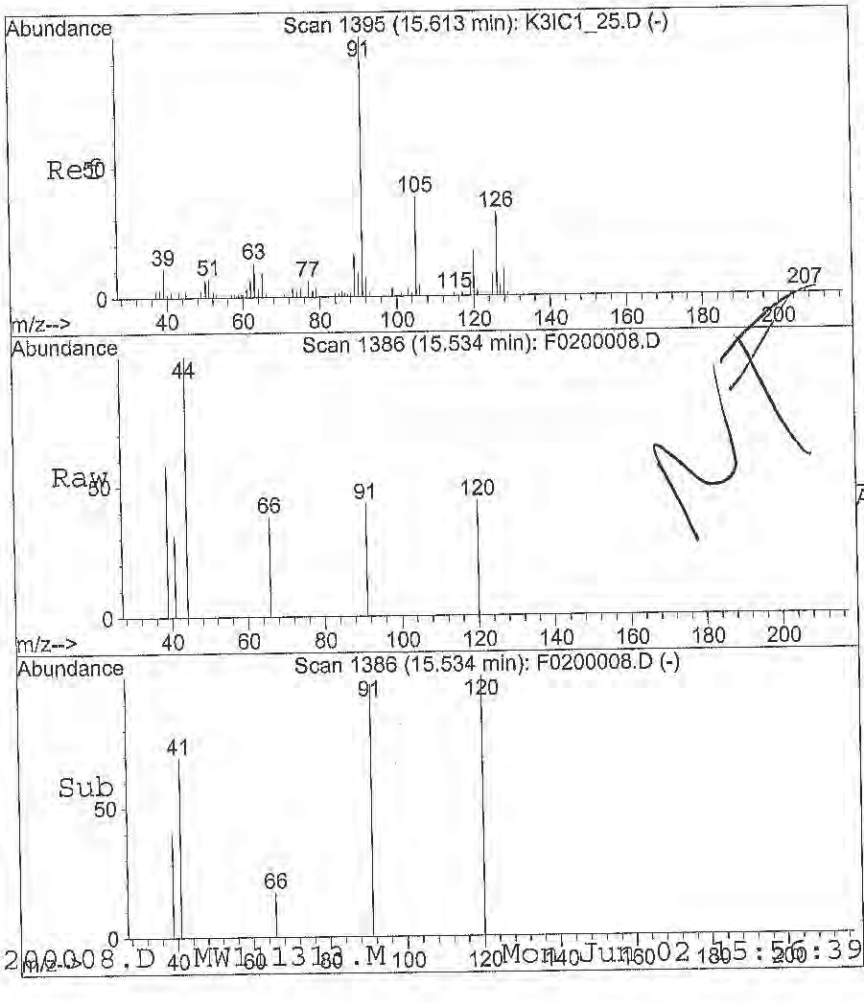


#62
n-Propylbenzene
Concen: 0.01 ug/L
RT: 15.46 min Scan# 1377
Delta R.T. -0.00 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 91 Resp: 286

Ion	Ratio	Lower	Upper
91	100		
120	0.0	16.1	24.1#

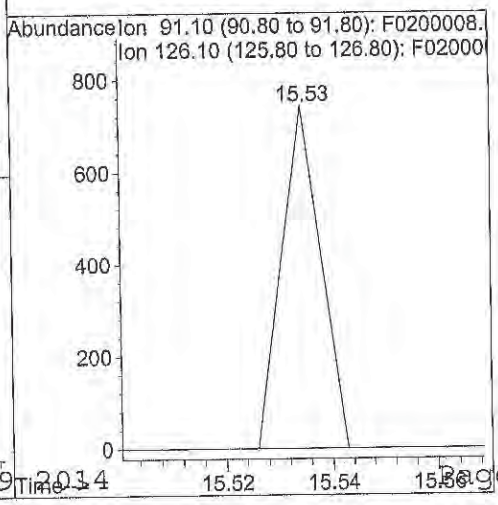


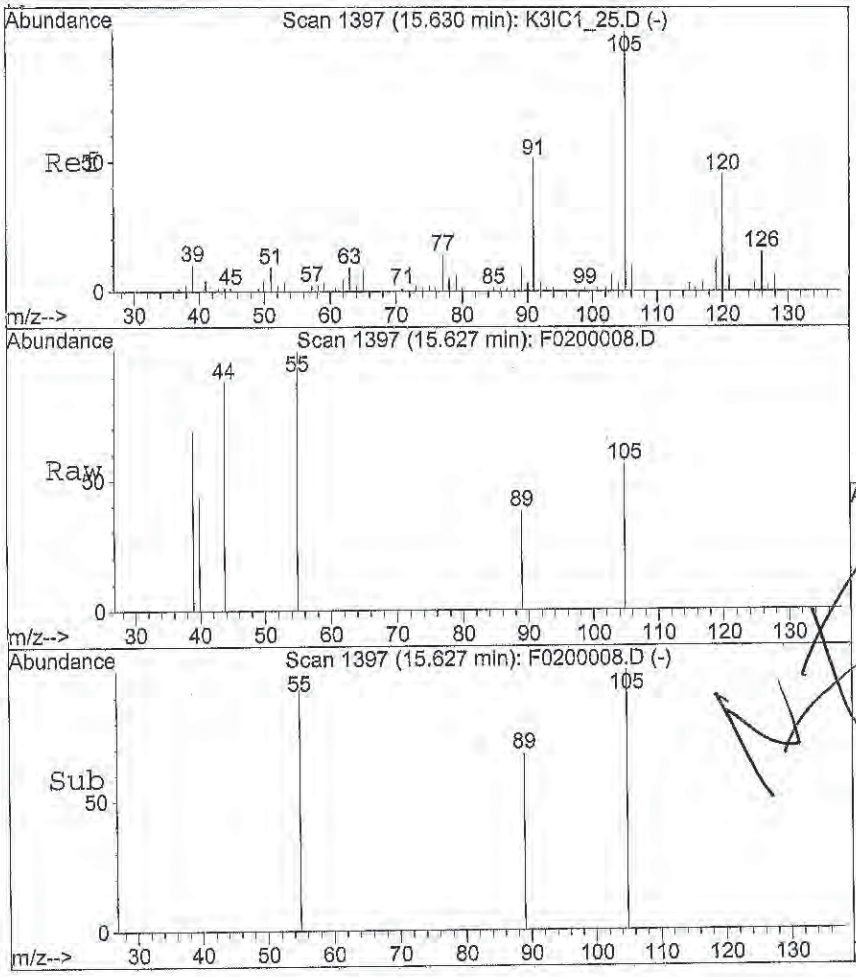


#63
2-Chlorotoluene
Concen: 0.03 ug/L
RT: 15.53 min Scan# 1386
Delta R.T. -0.08 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 91 Resp: 376

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.0	36.0#

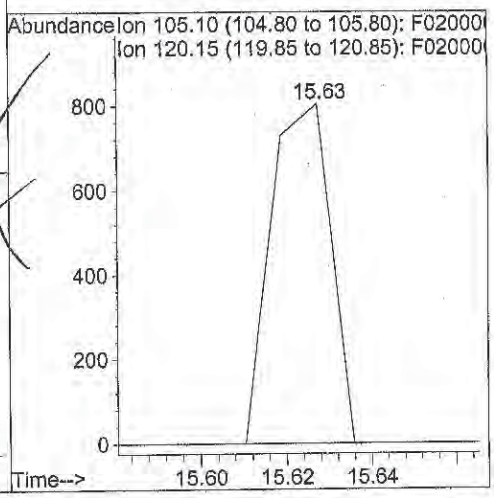


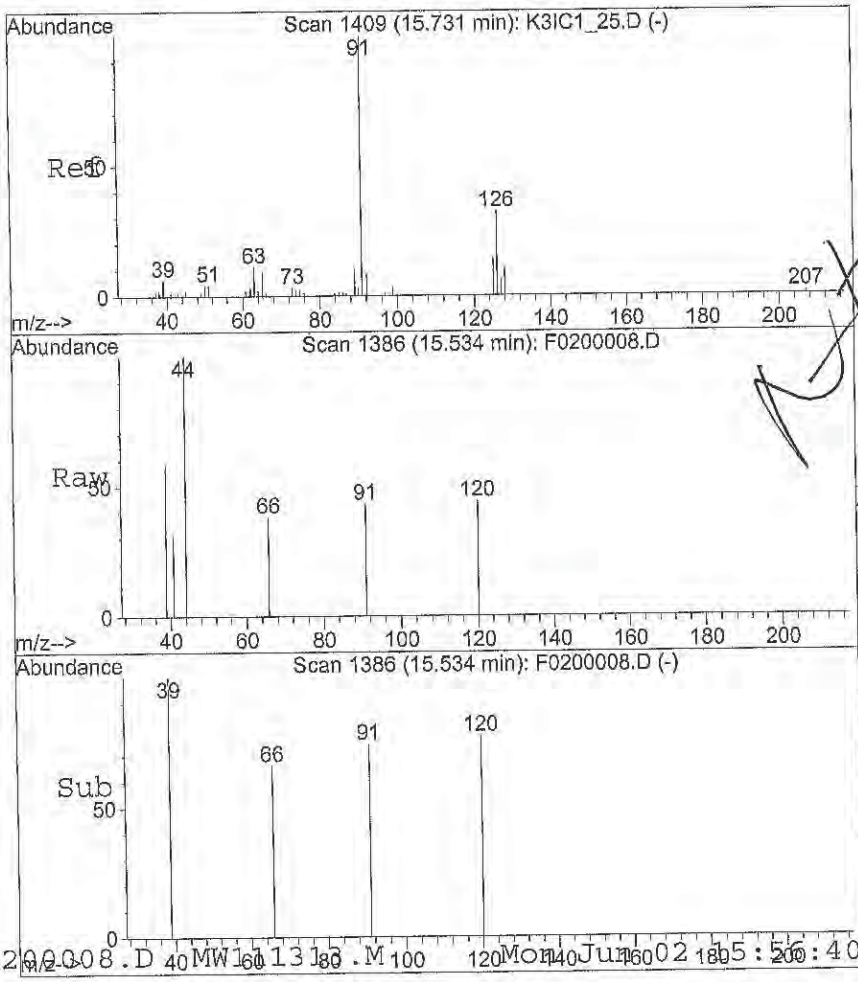


#64
1,3,5-Trimethylbenzene
Concen: 0.05 ug/L
RT: 15.63 min Scan# 1397
Delta R.T. -0.00 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion:105 Resp: 777

Ion	Ratio	Lower	Upper
105	100		
120	0.0	36.4	54.6#

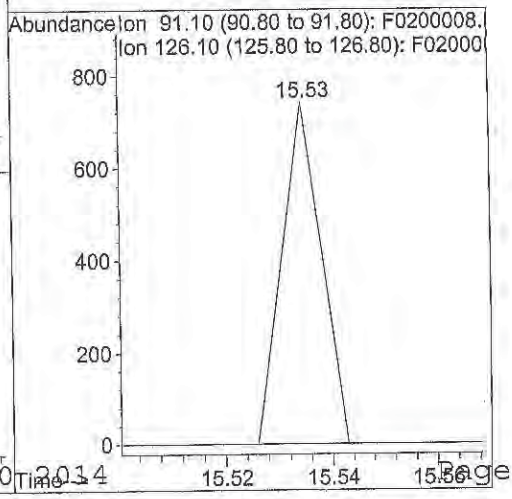


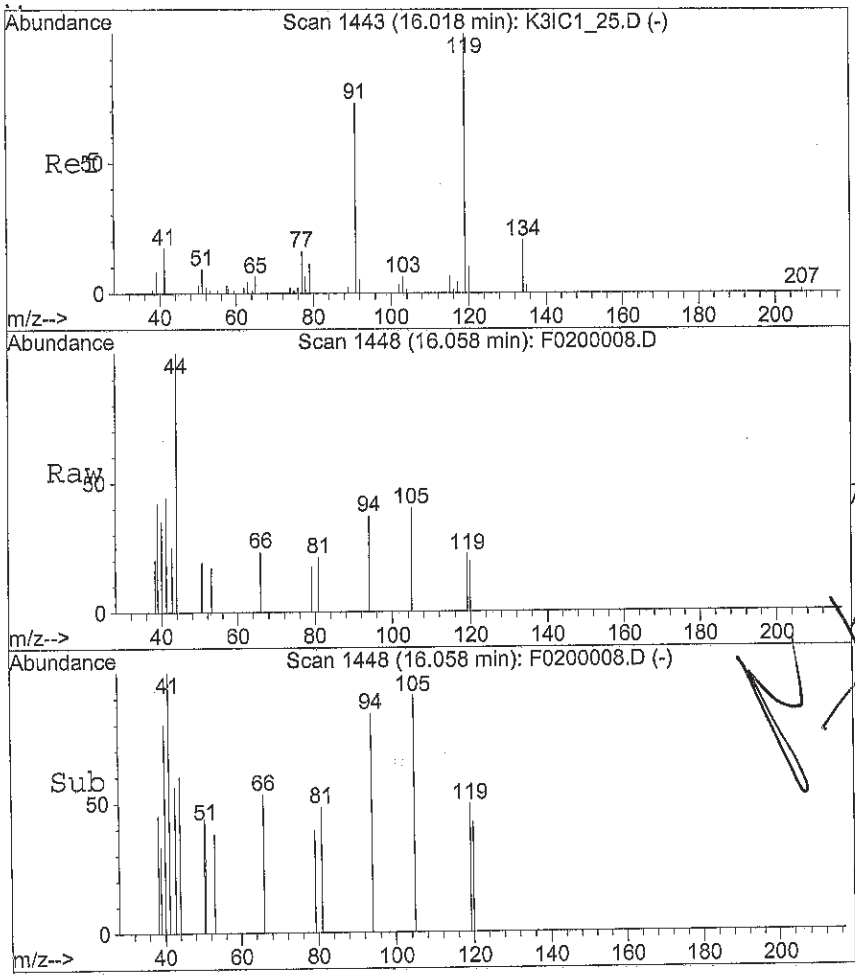


#65
4-Chlorotoluene
Concen: 0.03 ug/L
RT: 15.53 min Scan# 1386
Delta R.T. -0.20 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion: 91 Resp: 376

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.6	36.8#

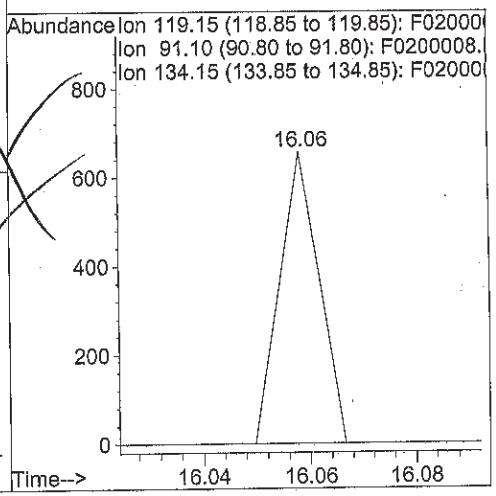


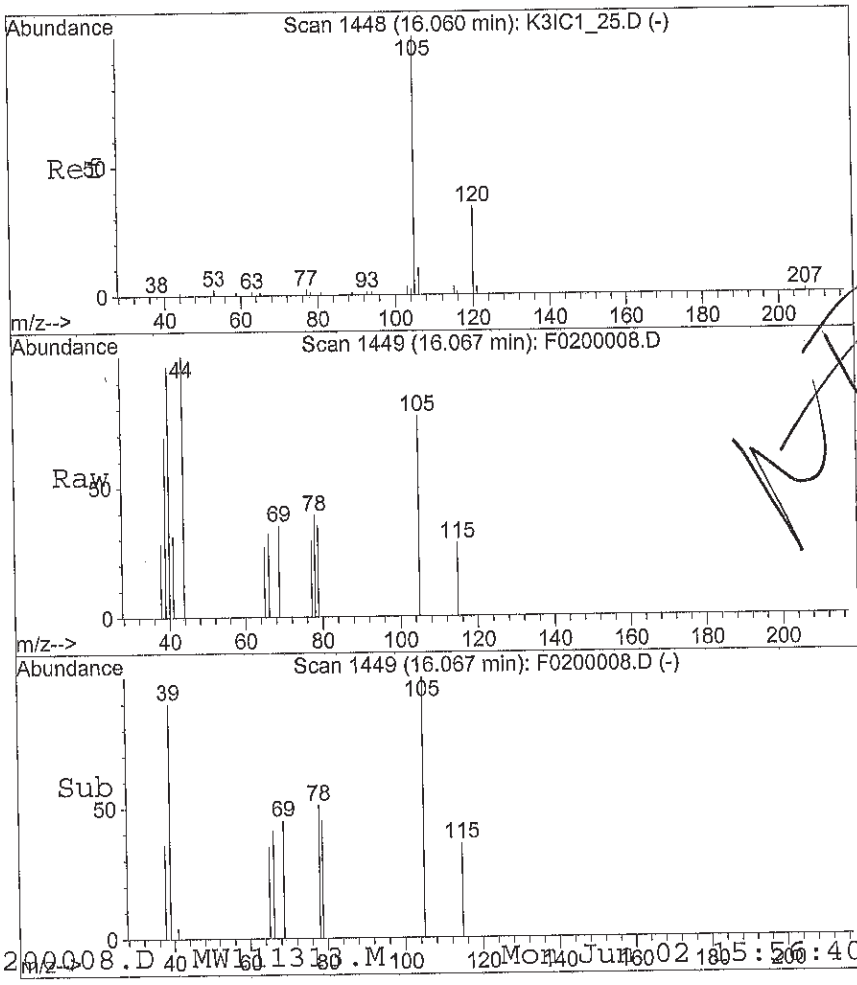


#66
tert-Butylbenzene
Concen: 0.03 ug/L
RT: 16.06 min Scan# 1448
Delta R.T. 0.04 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion:119 Resp: 333

Ion	Ratio	Lower	Upper
119	100		
91	0.0	56.3	84.5#
134	0.0	16.1	24.1#

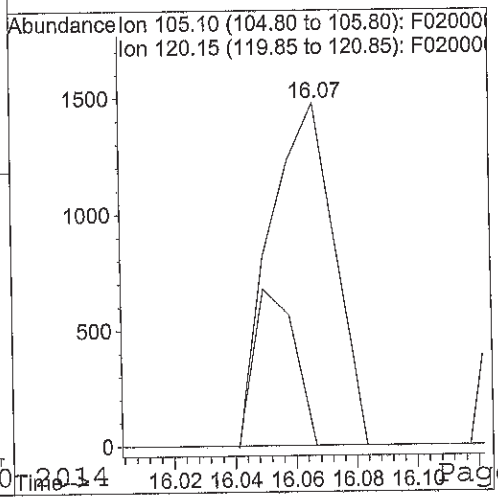


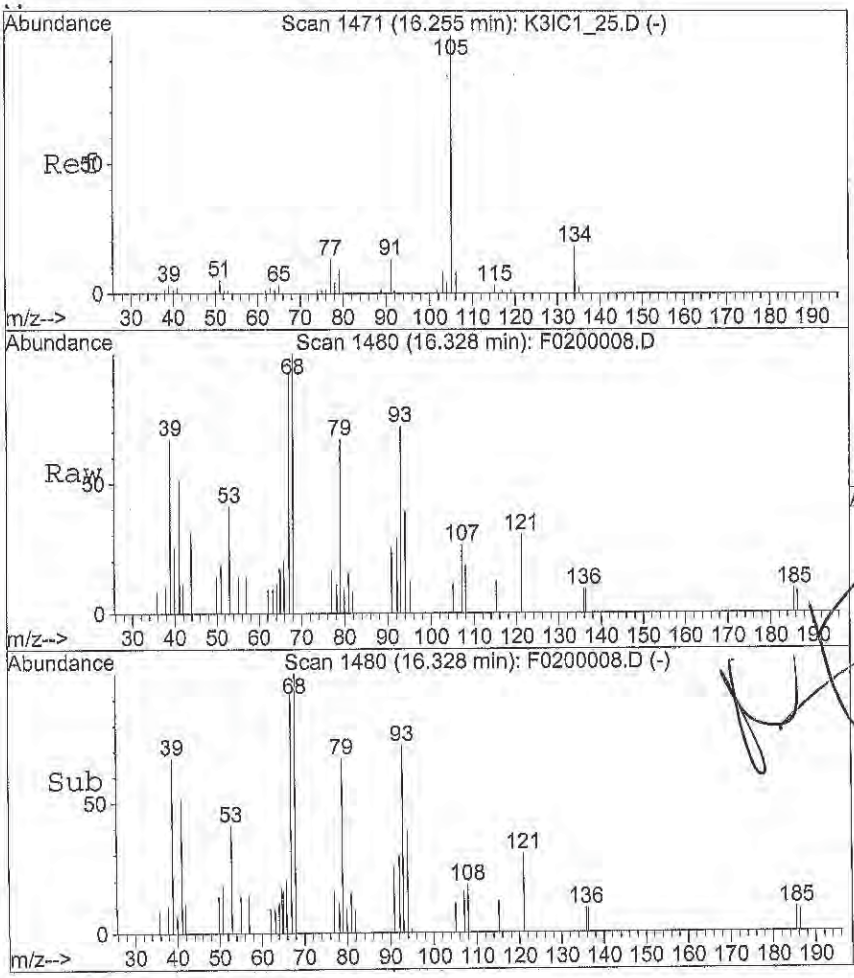


#67
1,2,4-Trimethylbenzene
Concen: 0.14 ug/L
RT: 16.07 min Scan# 1449
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion:105 Resp: 2154

Ion	Ratio	Lower	Upper
105	100		
120	29.2	33.8	50.8#

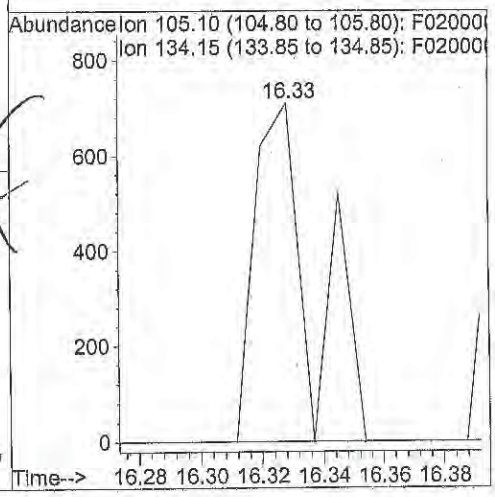


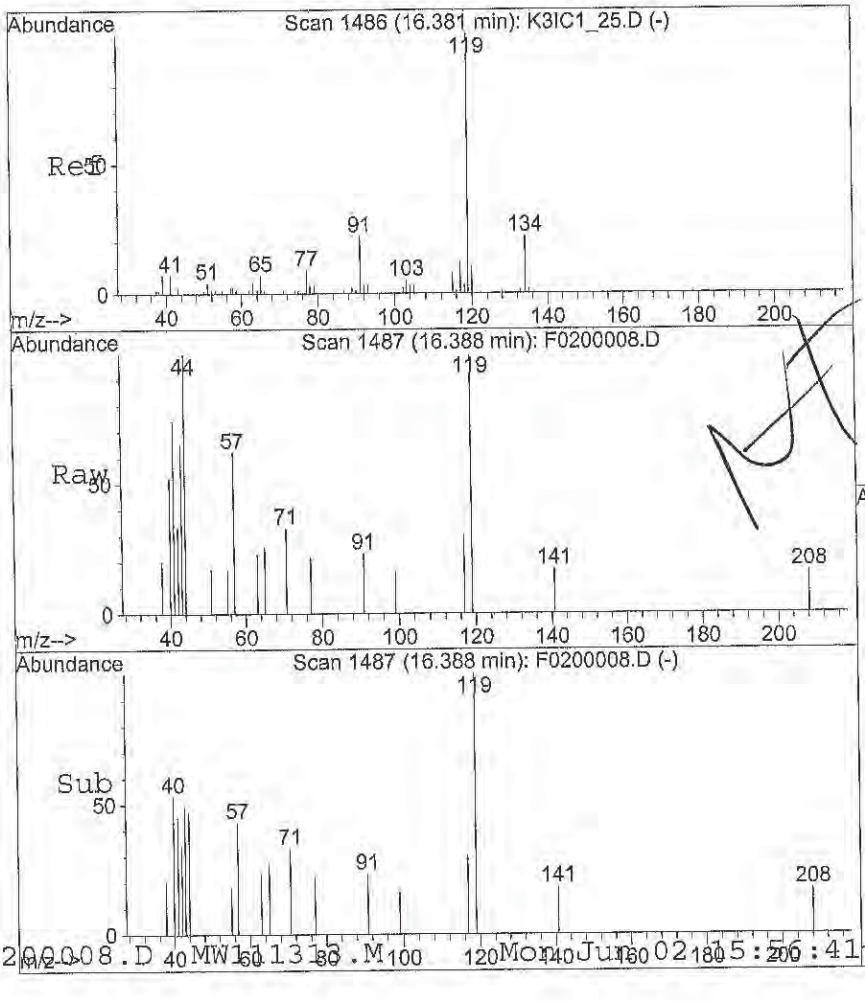


#68
sec-Butylbenzene
Concen: 0.05 ug/L
RT: 16.33 min Scan# 1480
Delta R.T. 0.07 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

Tgt Ion:105 Resp: 938

Ion	Ratio	Lower	Upper
105	100		
134	0.0	13.0	19.6#

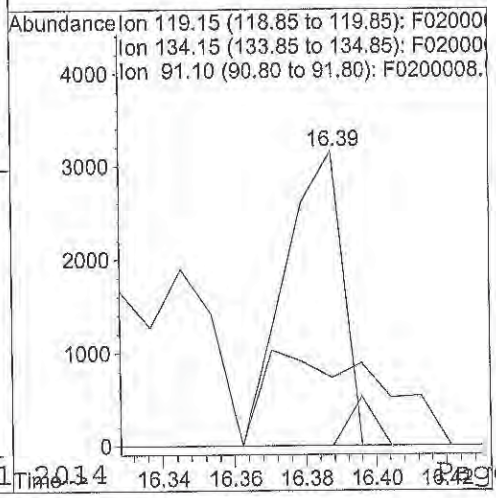


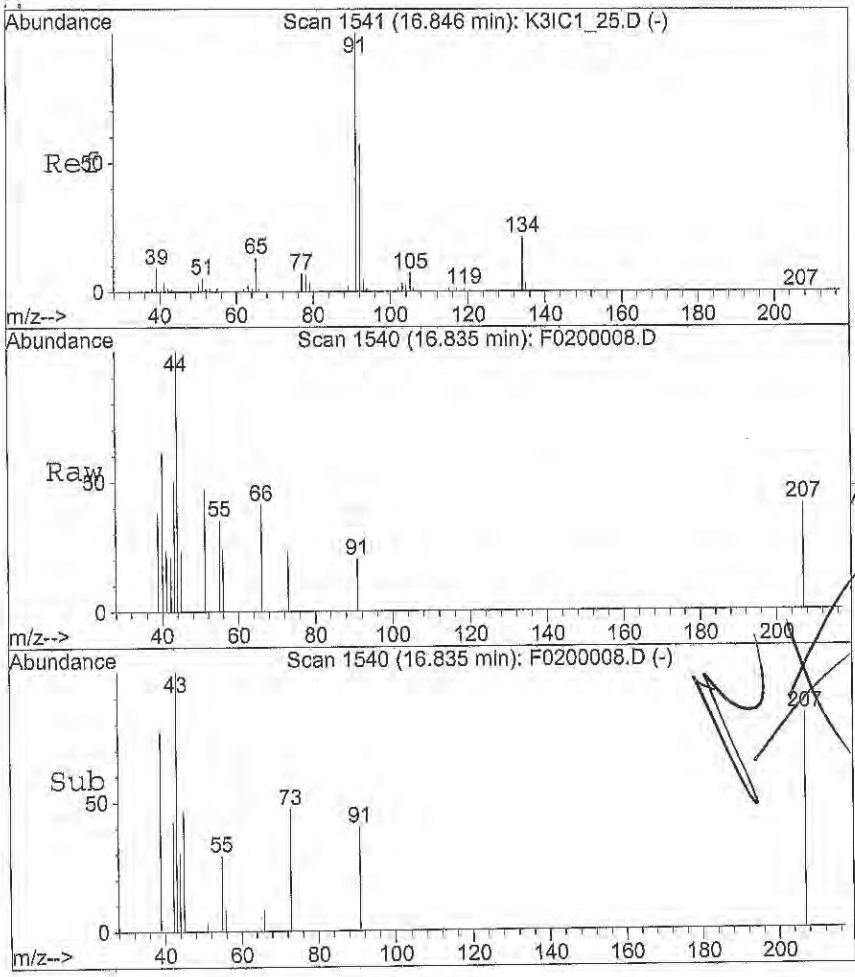


#69
p-Isopropyltoluene
Concen: 0.23 ug/L
RT: 16.39 min Scan# 1487
Delta R.T. 0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

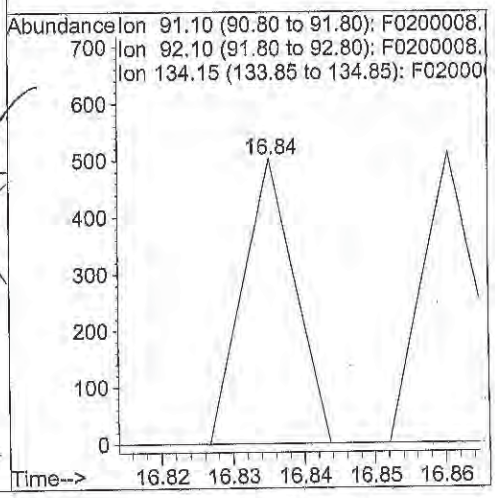


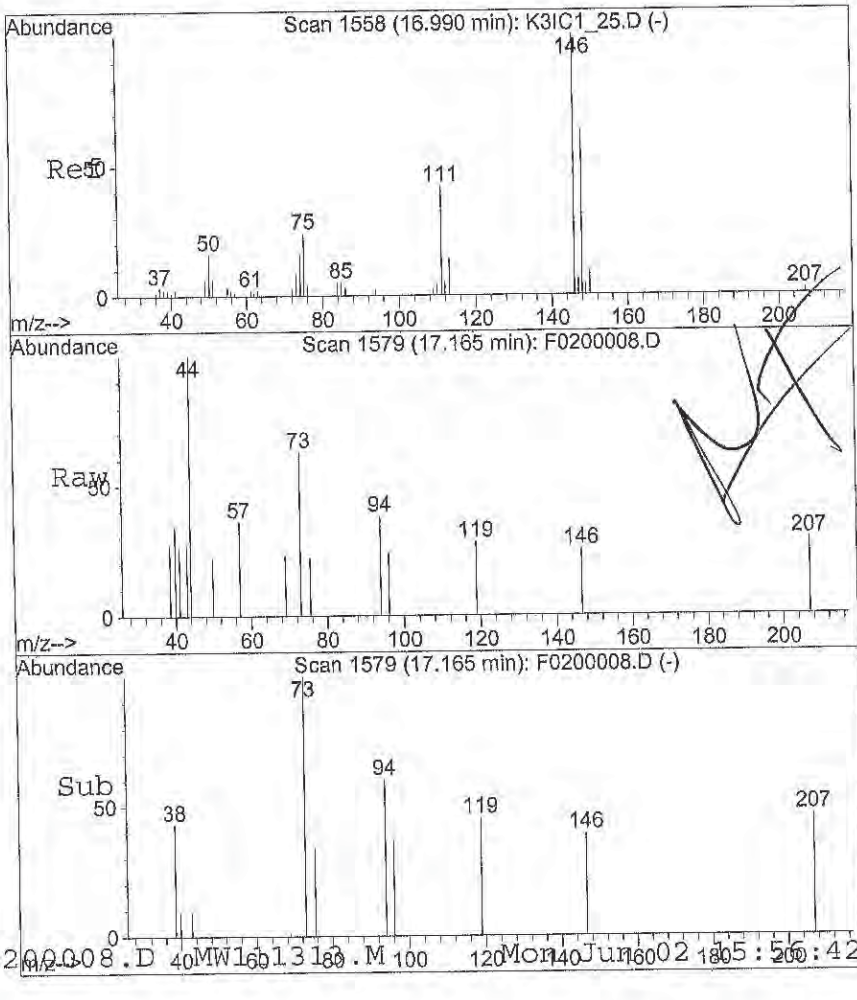


#72
n-Butylbenzene
Concen: 0.02 ug/L
RT: 16.84 min Scan# 1540
Delta R.T. -0.01 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

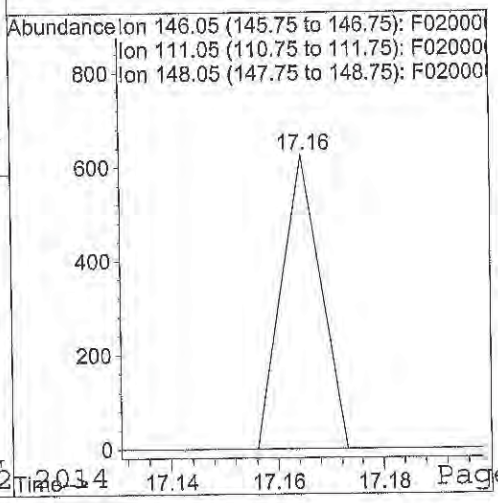


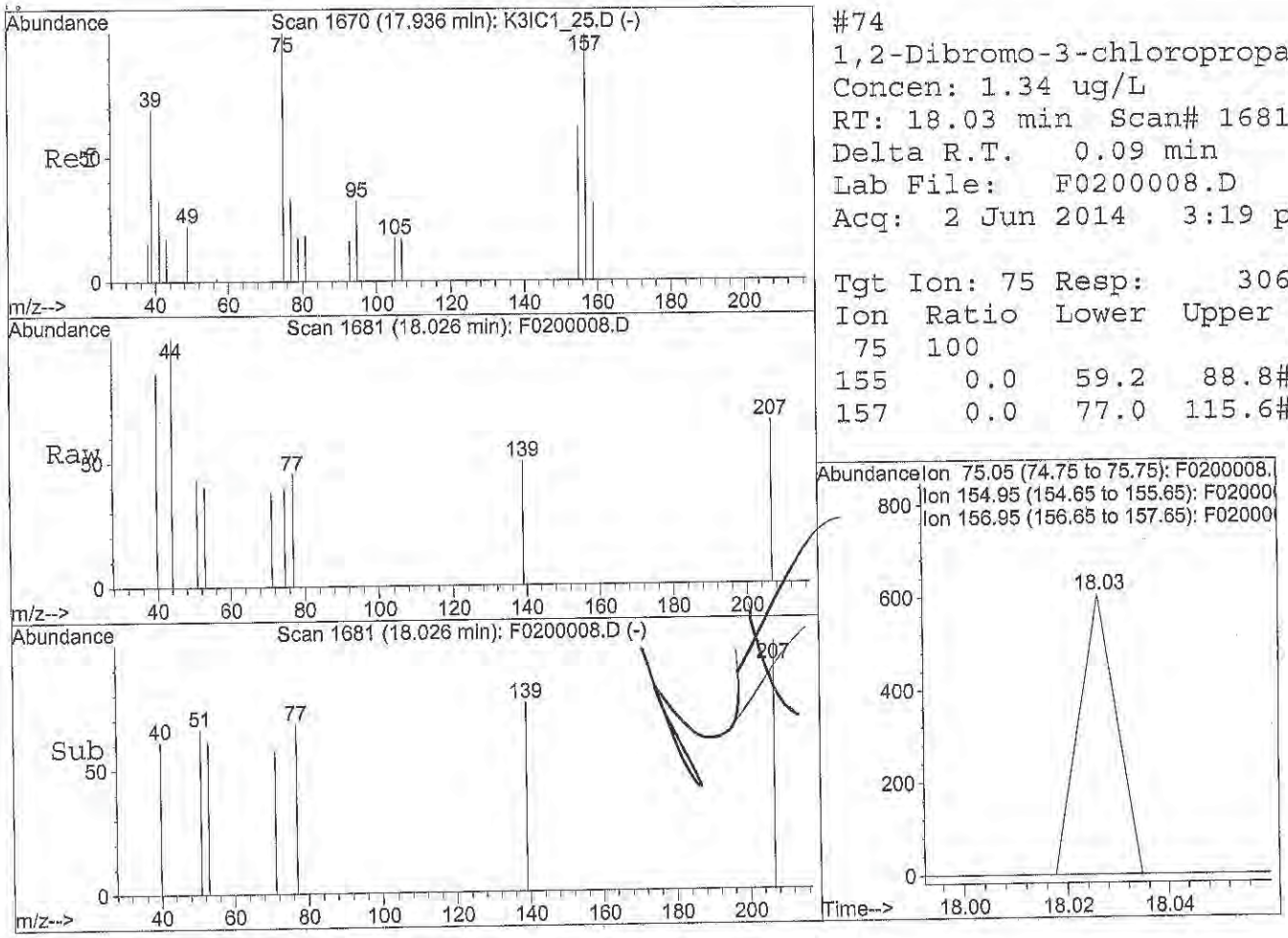


#73
1,2-Dichlorobenzene
Concen: 0.04 ug/L
RT: 17.16 min Scan# 1579
Delta R.T. 0.18 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#

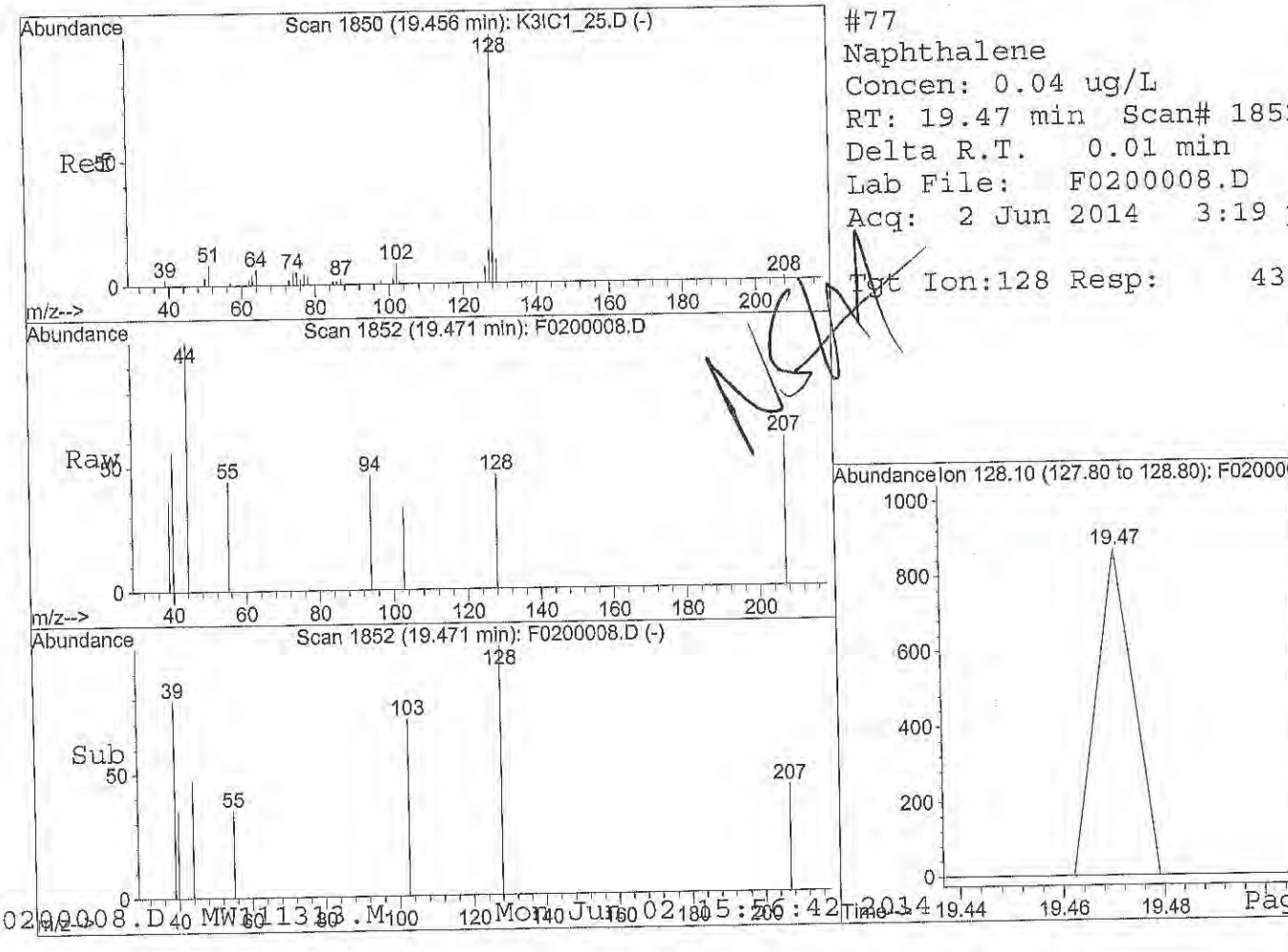




#74
1,2-Dibromo-3-chloropropane
Concen: 1.34 ug/L
RT: 18.03 min Scan# 1681
Delta R.T. 0.09 min
Lab File: F0200008.D
Acq: 2 Jun 2014 3:19 pm

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#



#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

Quantitation Report (QT Reviewed)

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%			

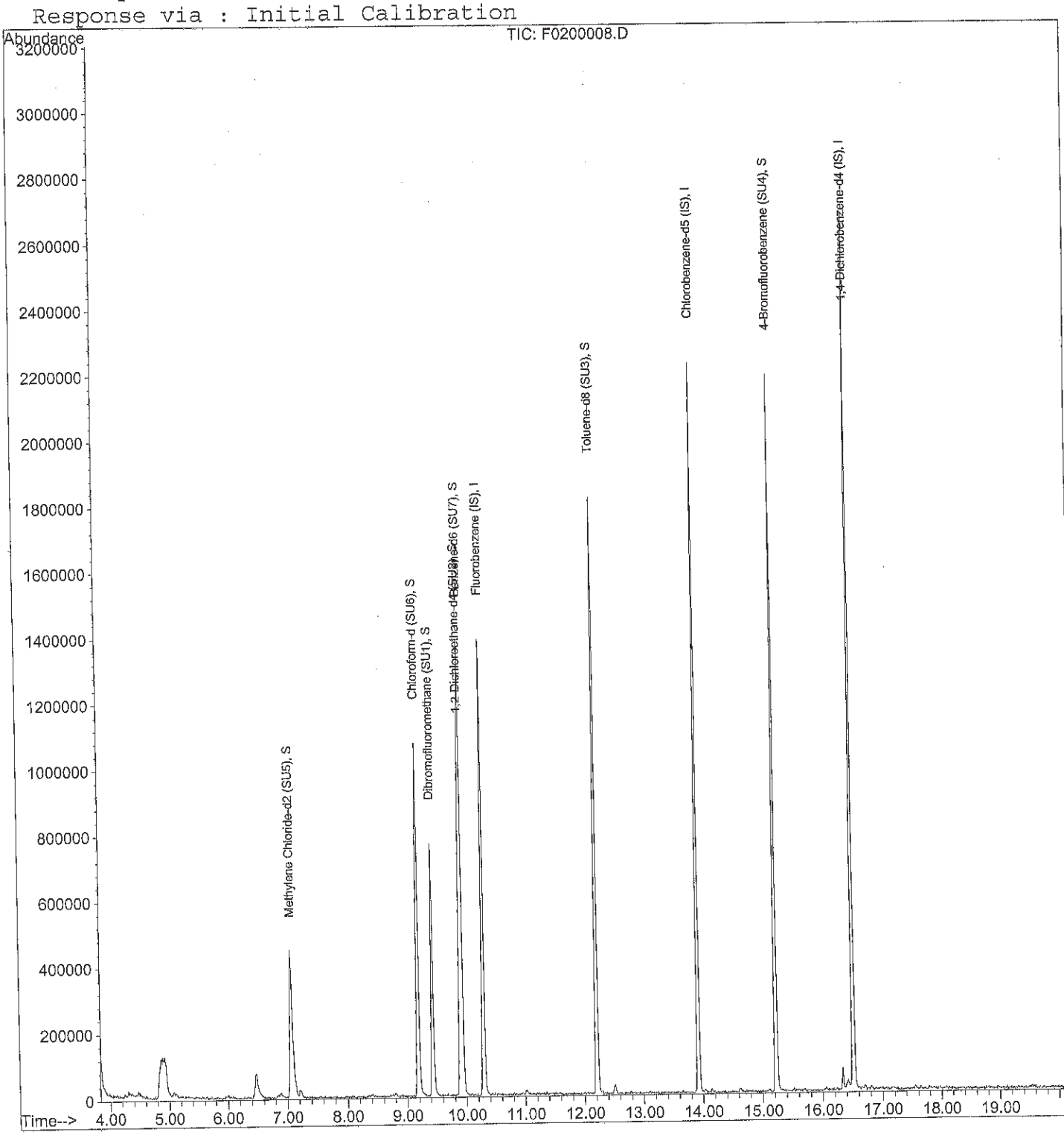
Target Compounds Qvalue

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

Quantitation Report

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

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



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\060214L3\F0200009.D Vial: 8
Acq On : 2 Jun 2014 3:49 pm Operator: DN
Sample : 3F40201-08 Inst : GC/MS Ins
Misc : 100cc SVL-505-SA5C-SV-15.0-16.0 Multiplr: 10.00
MS Integration Params: rteint.p
Quant Time: Jun 2 16:17 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	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 #	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 #	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 #	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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\060214L3\F0200009.D Vial: 8
Acq On : 2 Jun 2014 3:49 pm Operator: DN
Sample : 3F40201-08 Inst : GC/MS Ins
Misc : 100cc SVL-505-SA5C-SV-15.0-16.0 Multiplr: 10.00
MS Integration Params: rteint.p
Quant Time: Jun 2 16:17 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

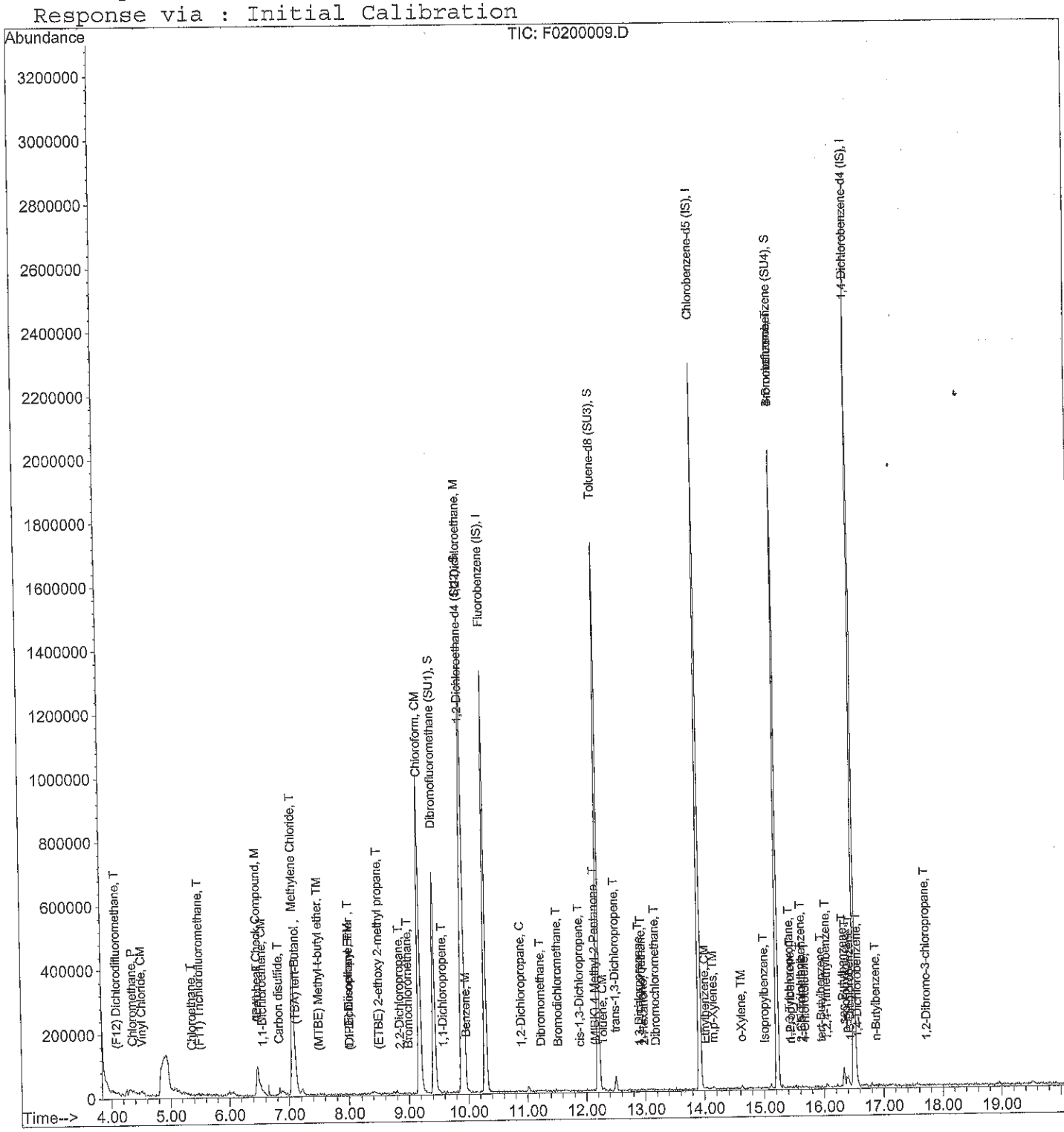
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
34) 1,2-Dichloropropane	10.91	63	362	0.14 ~~ug/L~~ #	2
35) Dibromomethane	11.24	93	395	0.20 ~~ug/L~~ #	5
36) Bromodichloromethane	11.53	83	264	0.07 ~~ug/L~~ #	21
37) cis-1,3-Dichloropropene	11.91	75	300	0.07 ~~ug/L~~ #	1
40) (MIBK) 4-Methyl-2-Pentanon	12.15	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-chloropropan	17.73	75	387	1.45 ~~ug/L~~ #	6

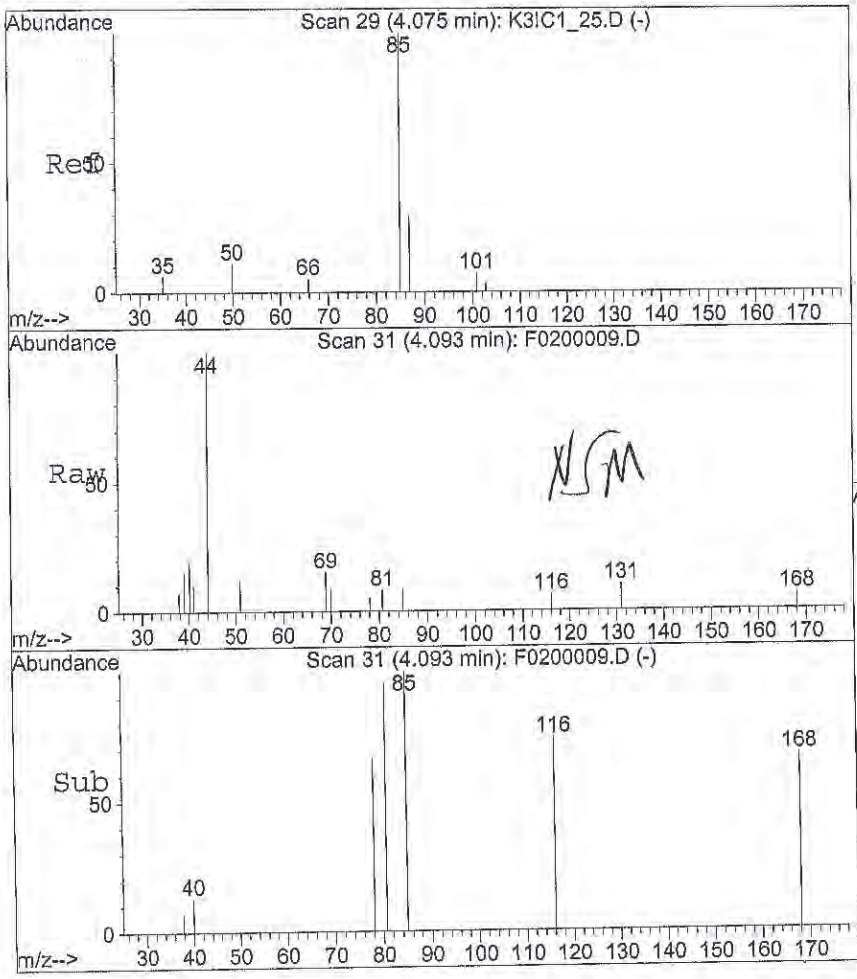
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060214L3\F0200009.D Vial: 8
Acq On : 2 Jun 2014 3:49 pm Operator: DN
Sample : 3F40201-08 Inst : GC/MS Ins
Misc : 100cc SVL-505-SA5C-SV-15.0-16.0 Multiplr: 10.00
MS Integration Params: rteint.p
Quant Time: Jun 2 16:17 19114 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

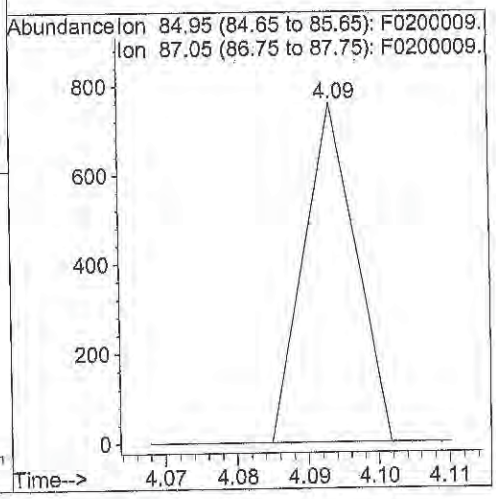


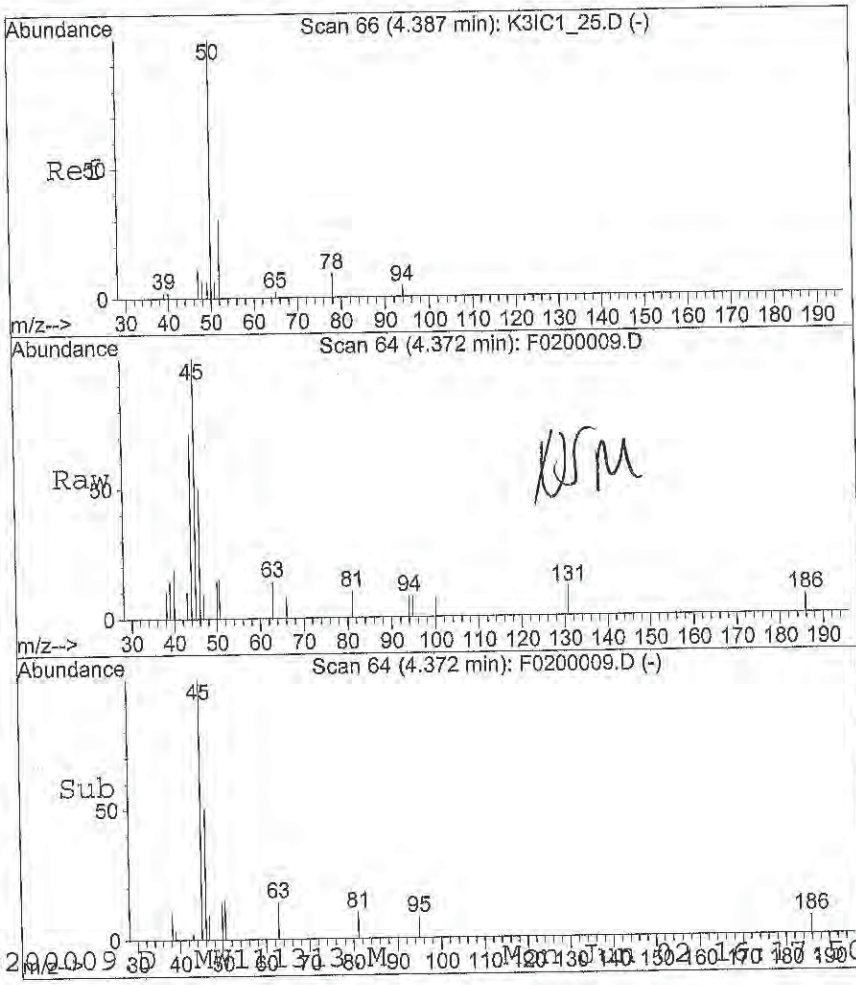


#3
(F12) Dichlorodifluoromethane
Concen: 0.14 ug/L
RT: 4.09 min Scan# 31
Delta R.T. 0.02 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 85 Resp: 385

Ion	Ratio	Lower	Upper
85	100		
87	0.0	24.6	37.0#

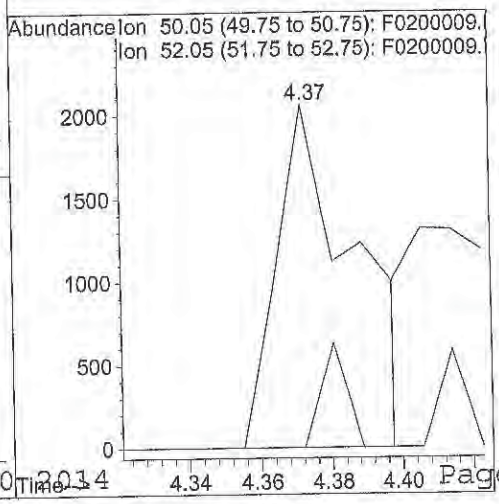


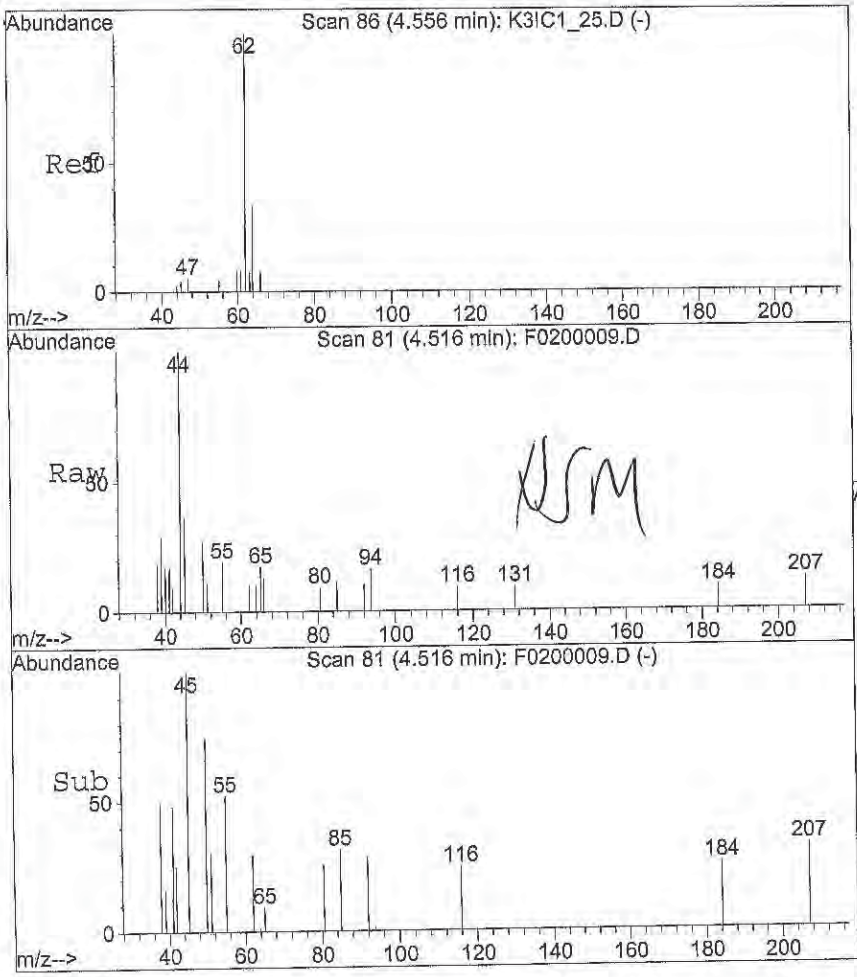


#4
Chloromethane
Concen: 0.49 ug/L
RT: 4.37 min Scan# 64
Delta R.T. -0.02 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 50 Resp: 3224

Ion	Ratio	Lower	Upper
50	100		
52	9.9	26.9	40.3#

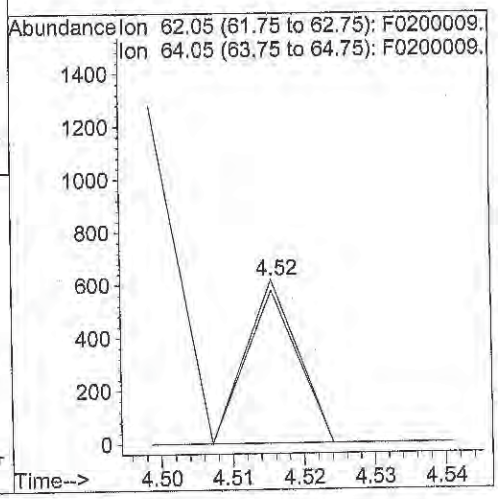


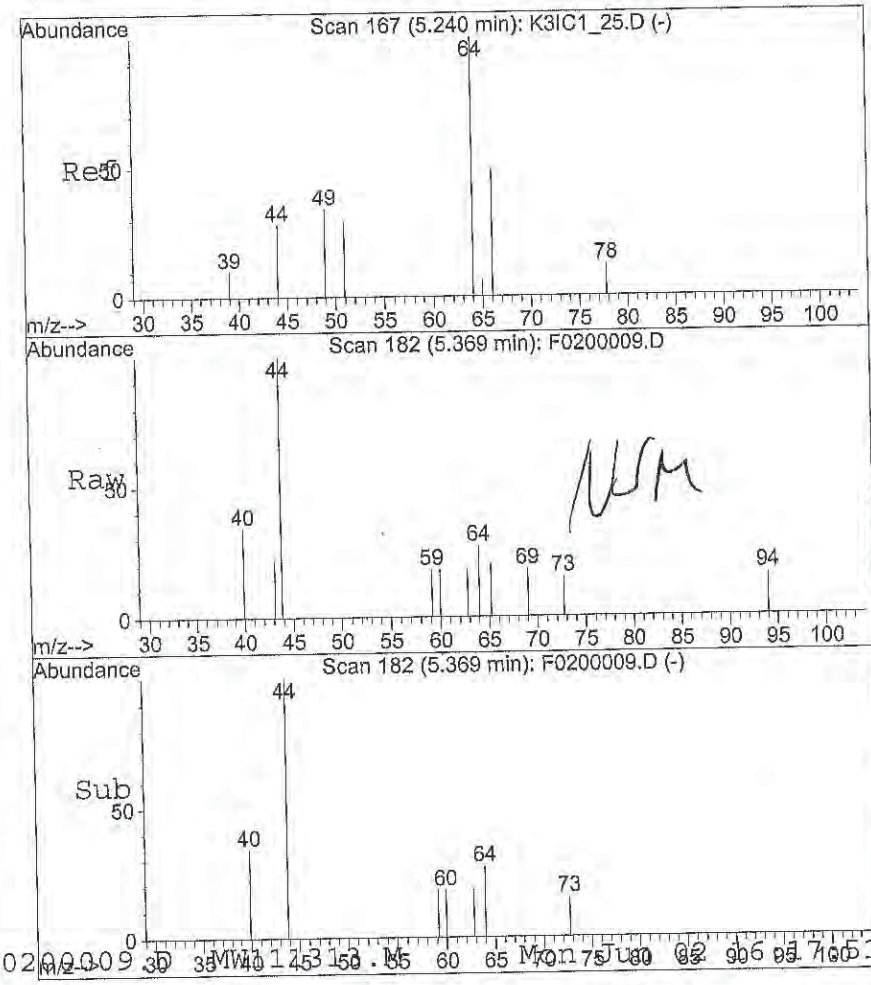


#5
Vinyl Chloride
Concen: 0.16 ug/L
RT: 4.52 min Scan# 81
Delta R.T. -0.04 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 62 Resp: 312

Ion	Ratio	Lower	Upper
62	100		
64	0.0	25.6	38.4#

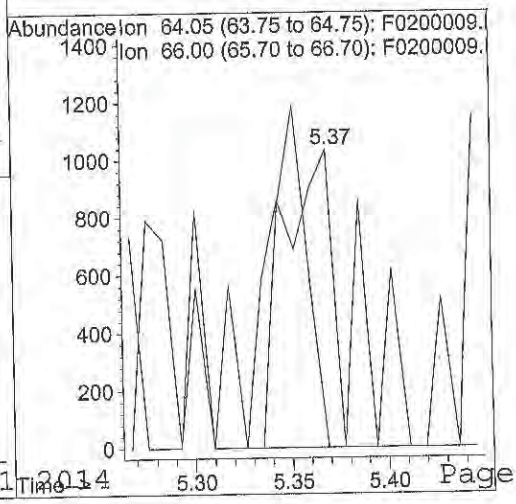


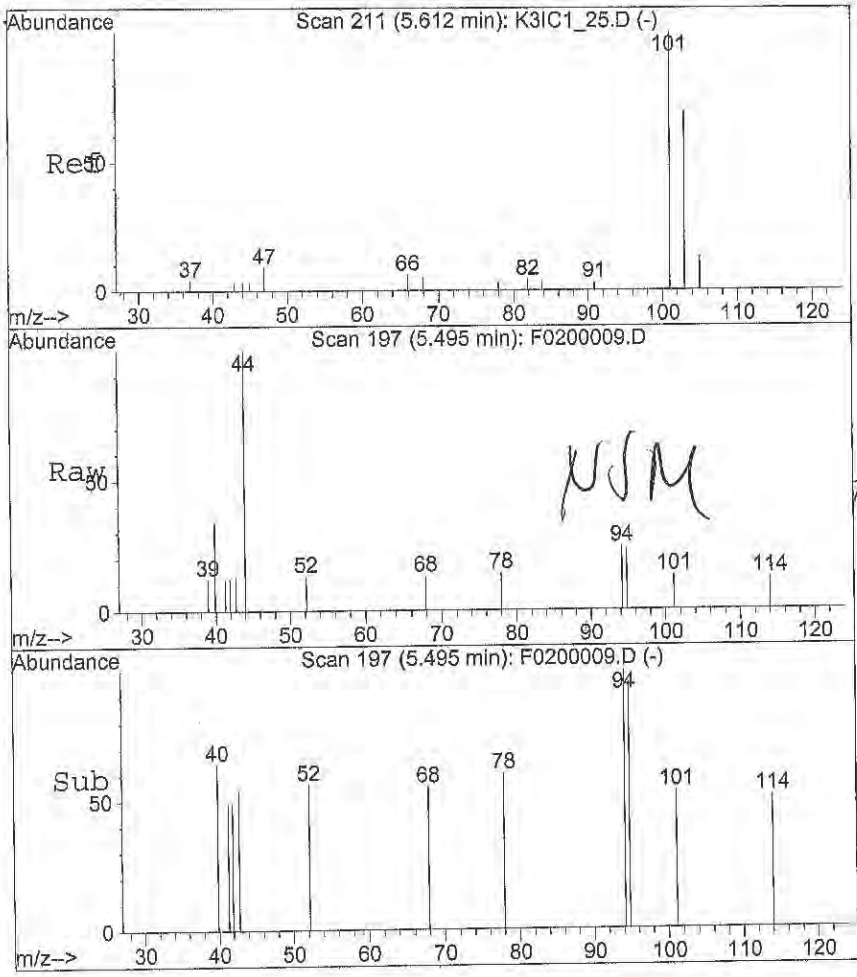


#7
Chloroethane
Concen: 3.66 ug/L
RT: 5.37 min Scan# 182
Delta R.T. 0.13 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 64 Resp: 2778

Ion	Ratio	Lower	Upper
64	100		
66	47.3	35.4	53.0

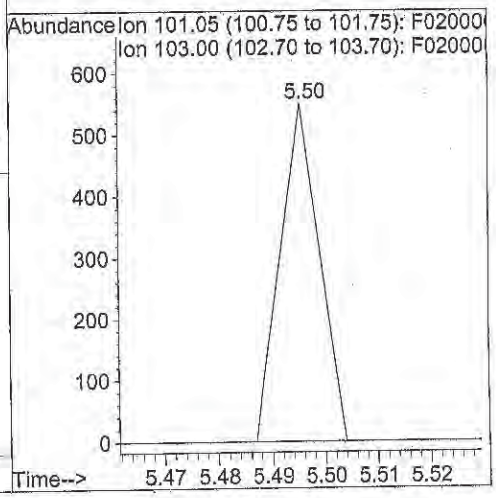


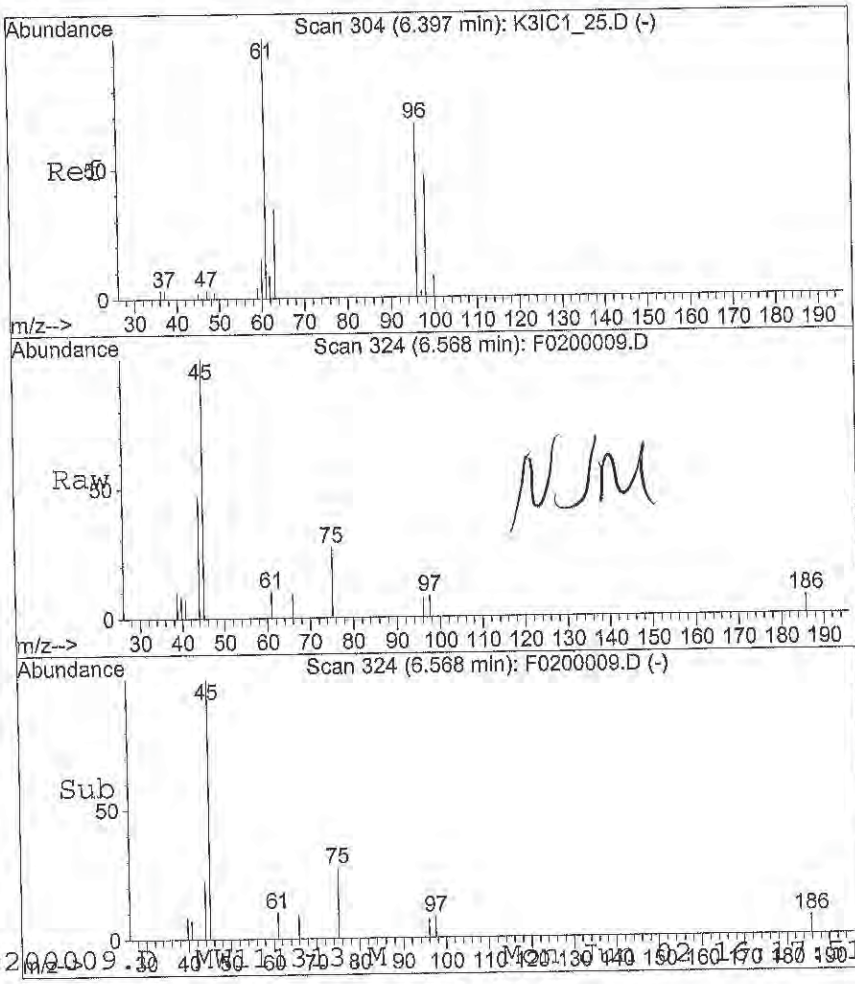


#8
(F11) Trichlorofluoromethane
Concen: 0.09 ug/L
RT: 5.50 min Scan# 197
Delta R.T. -0.12 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion:101 Resp: 279

Ion	Ratio	Lower	Upper
101	100		
103	0.0	54.5	81.7#

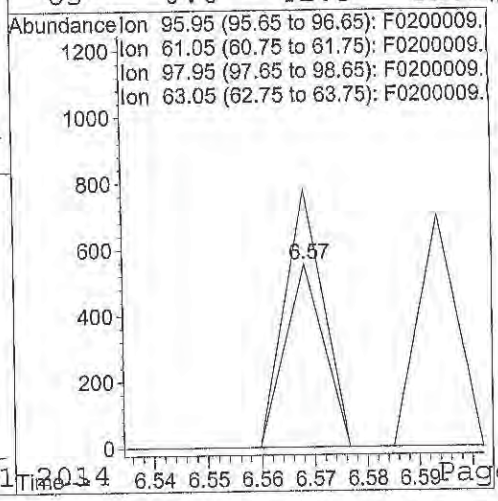


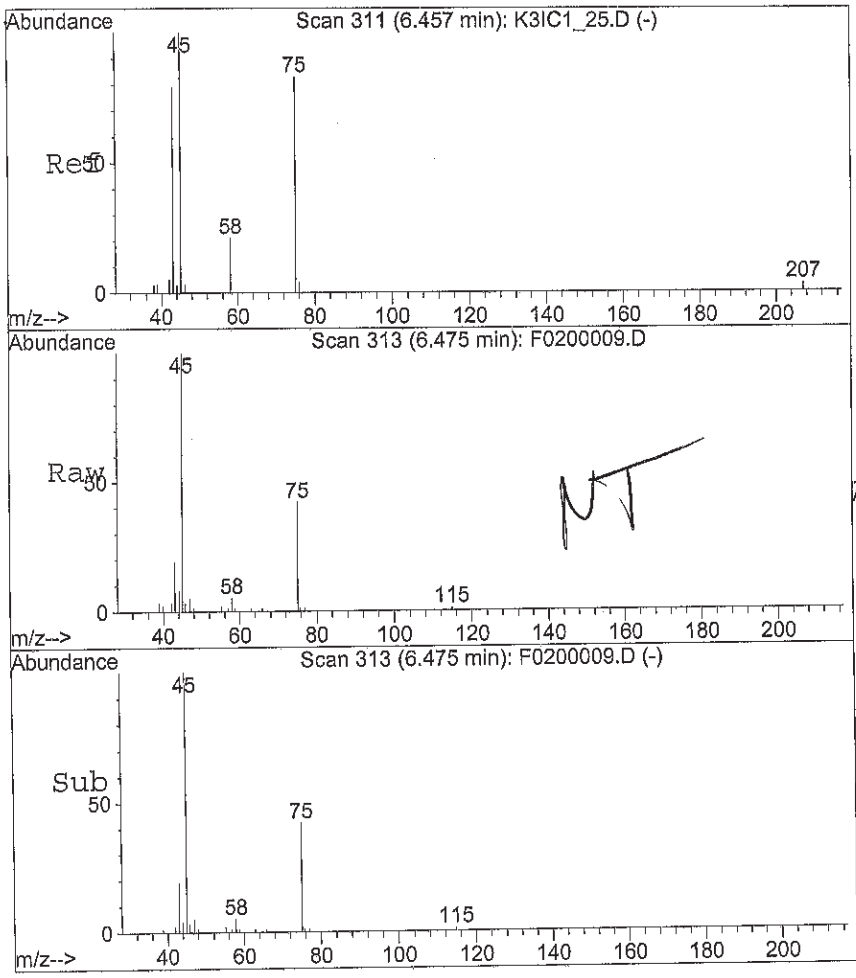


#10
1,1-Dichloroethene
Concen: 0.11 ug/L
RT: 6.57 min Scan# 324
Delta R.T. 0.17 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

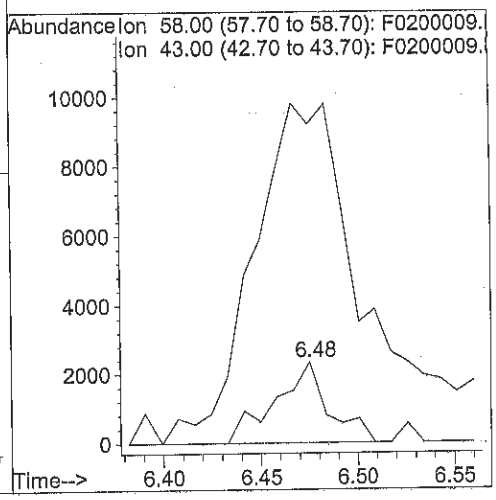


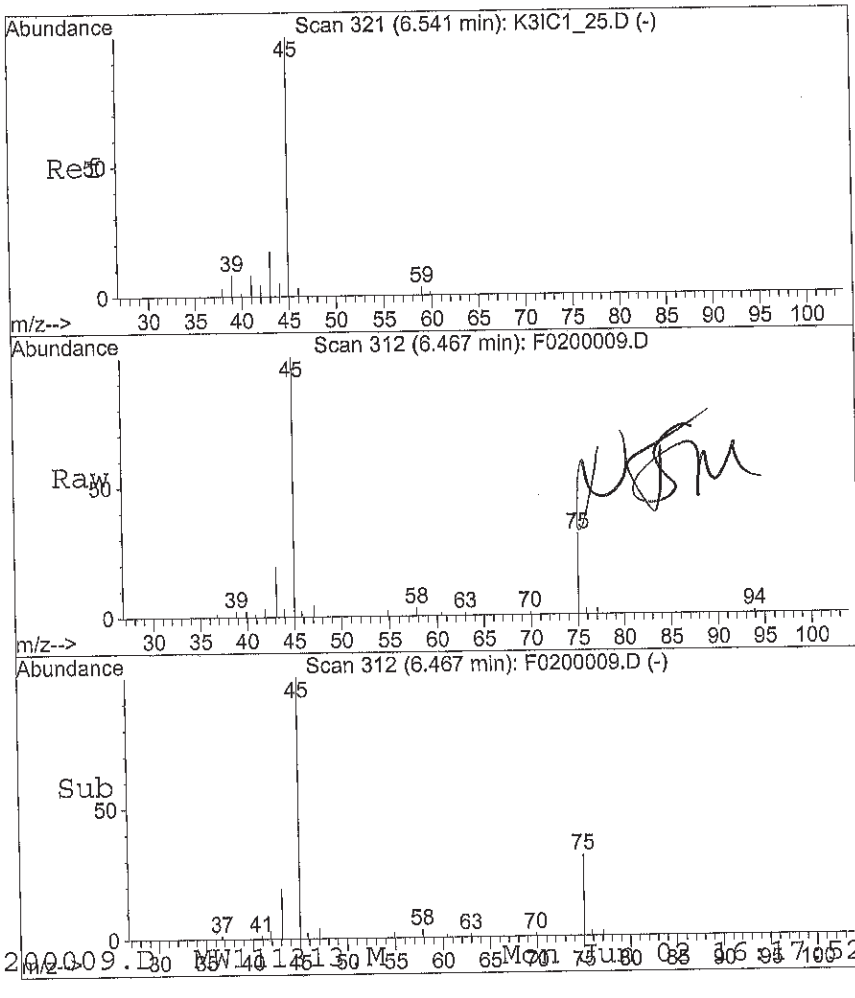


#11
Acetone
Concen: 5.24 ug/L
RT: 6.48 min Scan# 313
Delta R.T. 0.02 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 58 Resp: 4442

Ion	Ratio	Lower	Upper
58	100		
43	894.4	360.9	541.3#

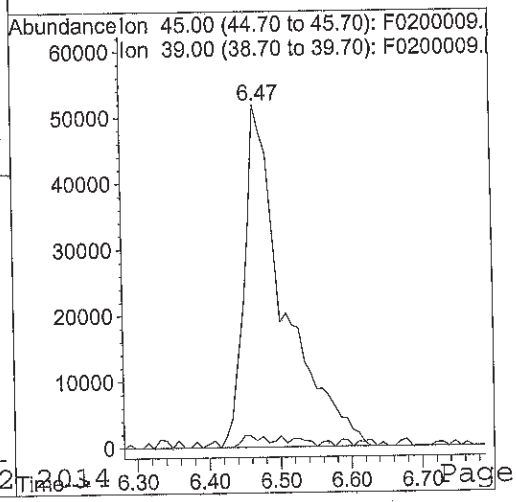


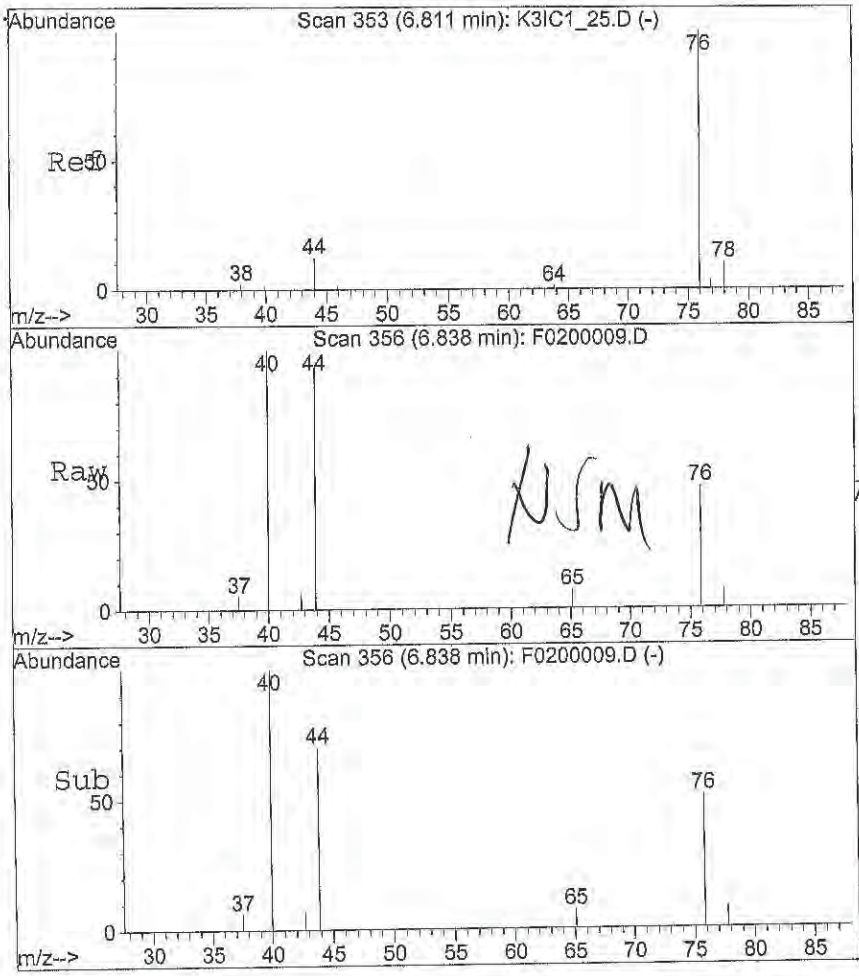


#12
(IPA) Leak Check Compound
Concen: 1488.01 ug/L
RT: 6.47 min Scan# 312
Delta R.T. -0.07 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 45 Resp: 201316

Ion	Ratio	Lower	Upper
45	100		
39	2.1	4.9	7.3#

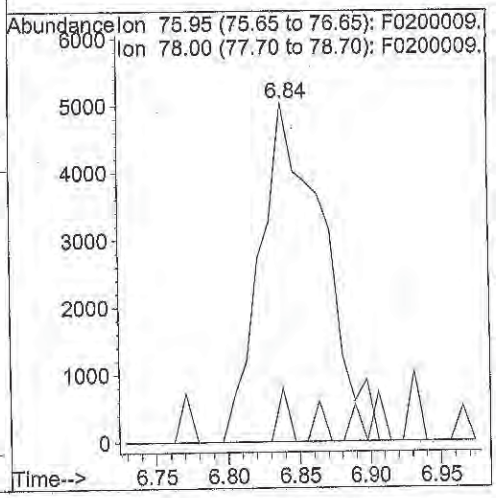


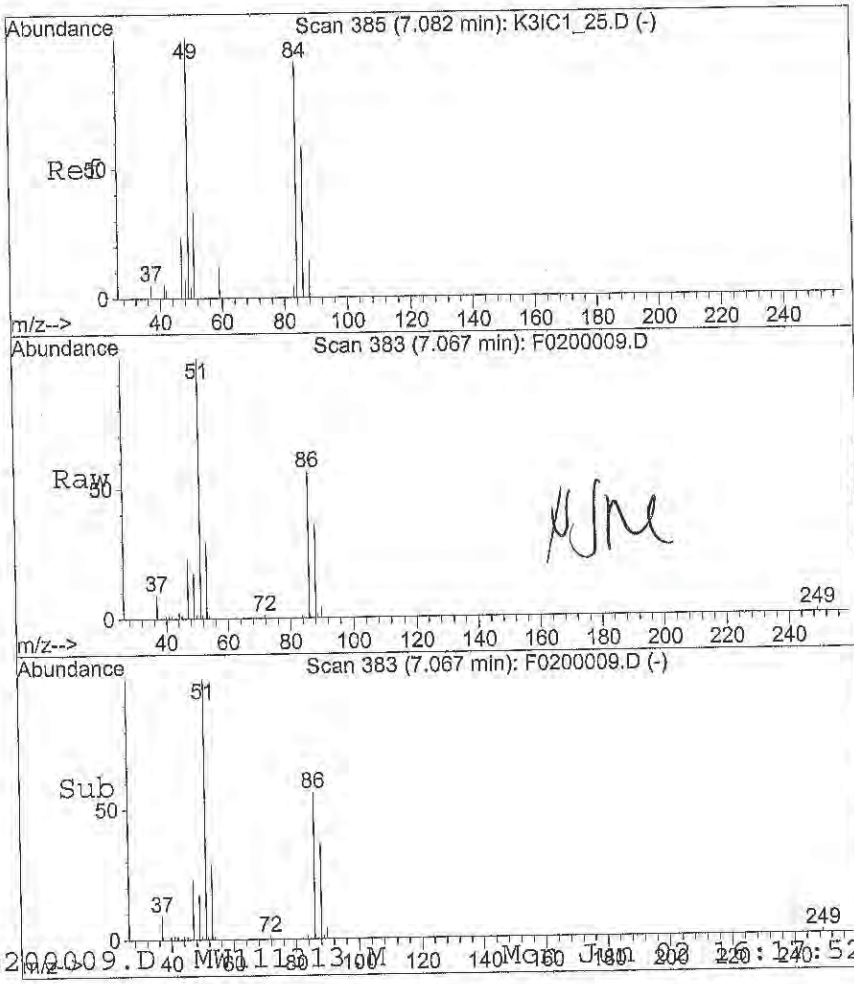


#13
Carbon disulfide
Concen: 1.64 ug/L
RT: 6.84 min Scan# 356
Delta R.T. 0.03 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 76 Resp: 15374

Ion	Ratio	Lower	Upper
76	100		
78	2.6	7.0	10.4#

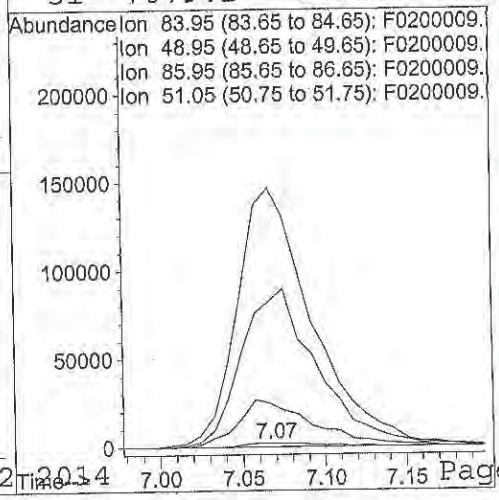


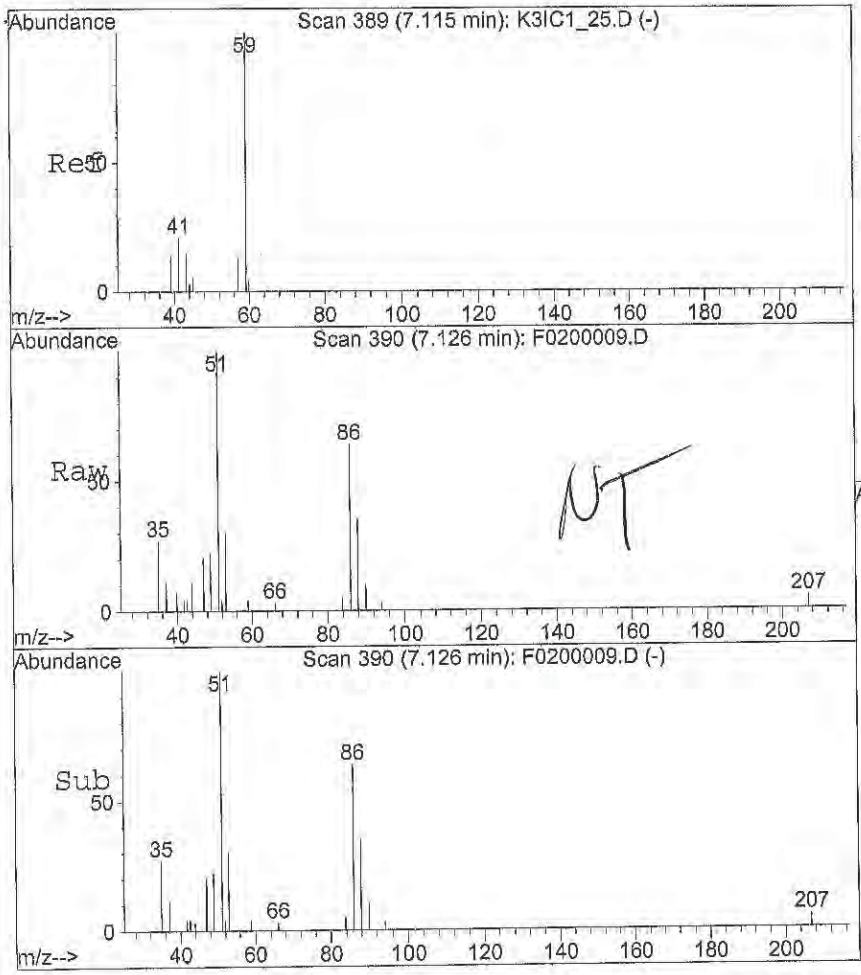


#14
Methylene Chloride
Concen: 2.14 ug/L
RT: 7.07 min Scan# 383
Delta R.T. -0.02 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

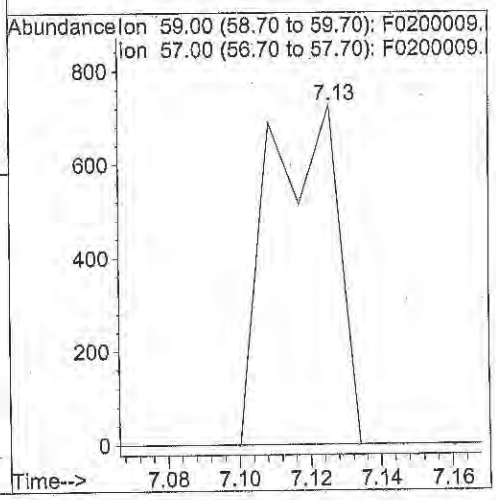


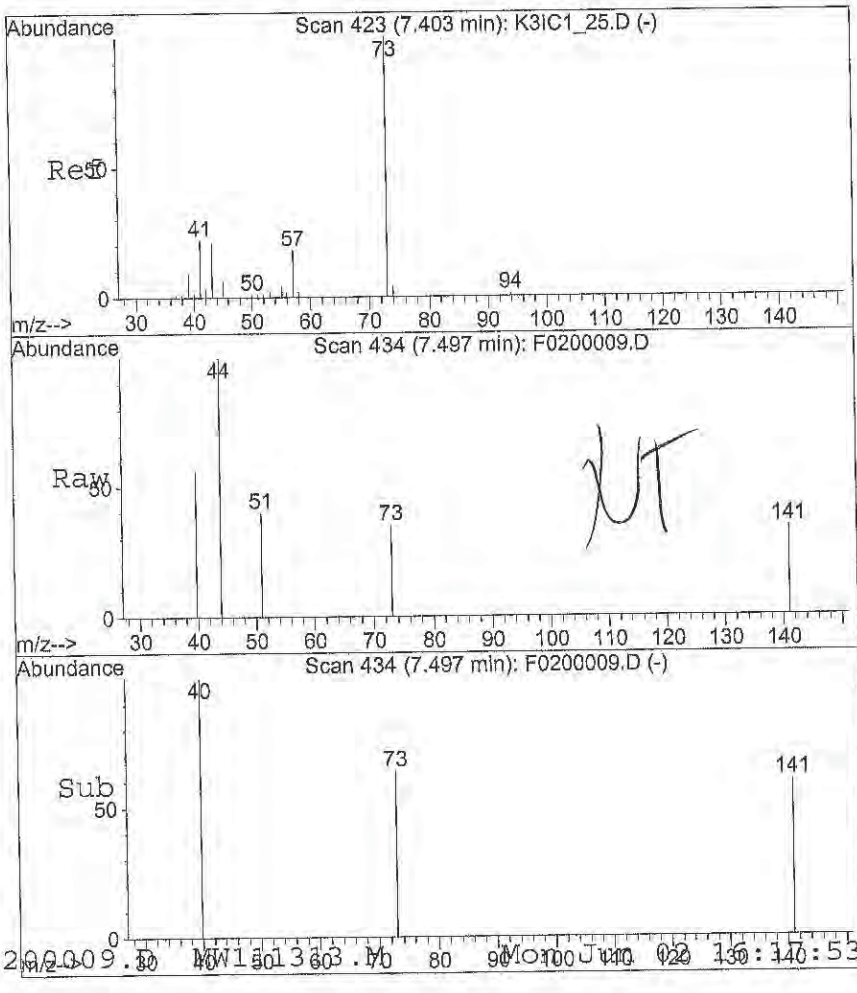


#15
(TBA) tert-Butanol
Concen: 5.09 ug/L
RT: 7.13 min Scan# 390
Delta R.T. 0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 59 Resp: 977

Ion	Ratio	Lower	Upper
59	100		
57	0.0	6.4	9.6#

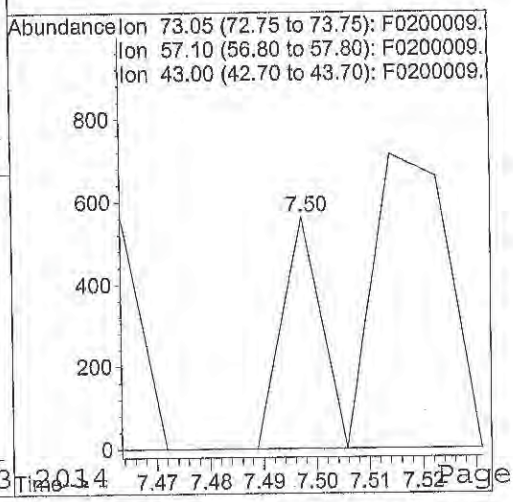


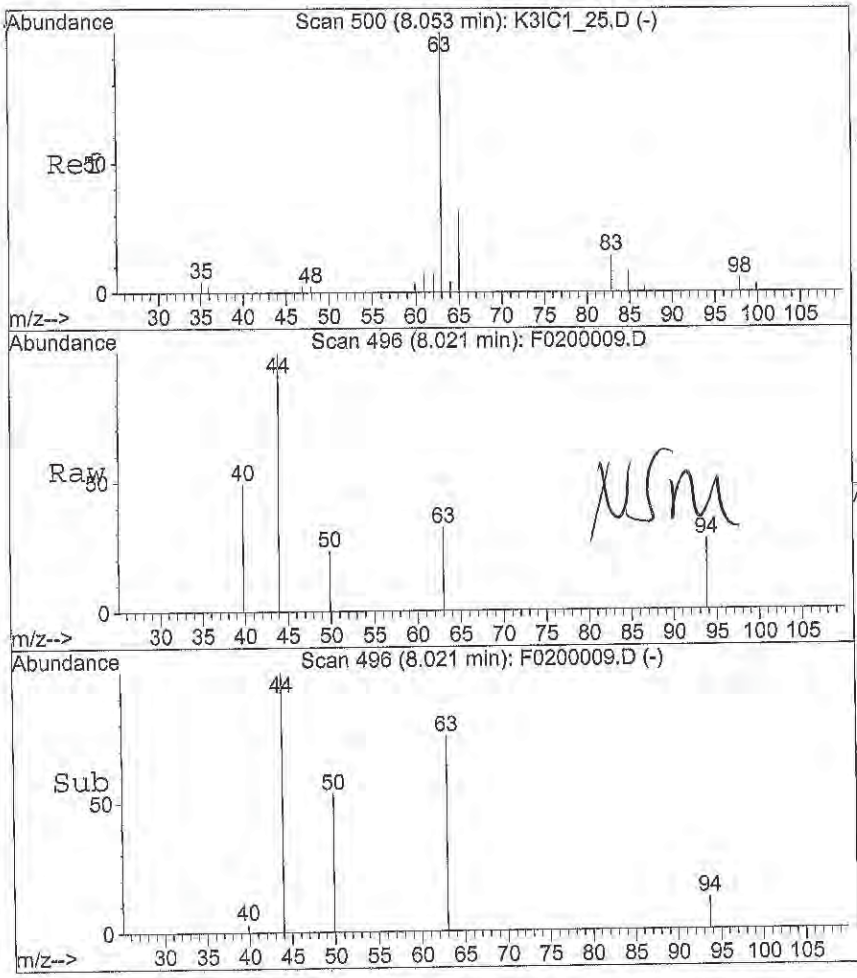


#16
(MTBE) Methyl-t-butyl ether
Concen: 0.04 ug/L
RT: 7.50 min Scan# 434
Delta R.T. 0.09 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

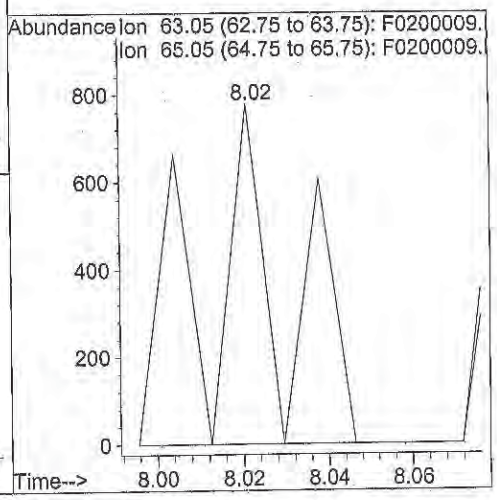


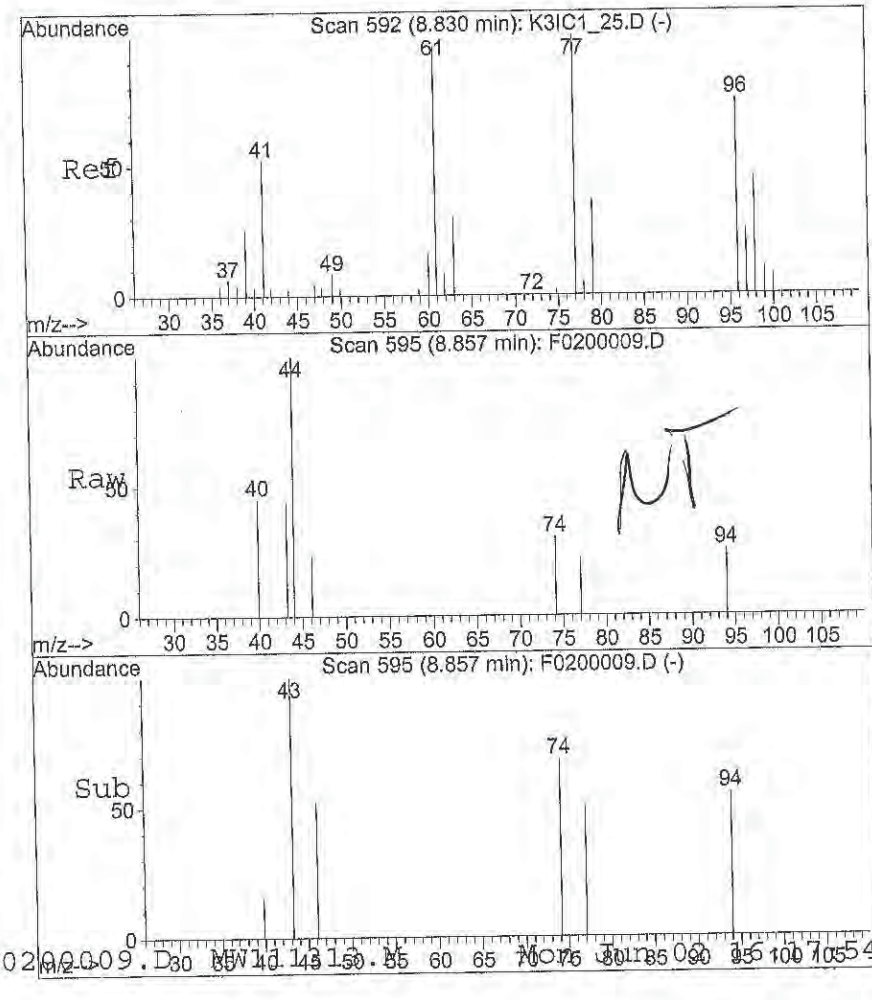


#18
1,1-Dichloroethane
Concen: 0.14 ug/L
RT: 8.02 min Scan# 496
Delta R.T. -0.03 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 63 Resp: 700

Ion	Ratio	Lower	Upper
63	100		
65	43.9	25.8	38.8#

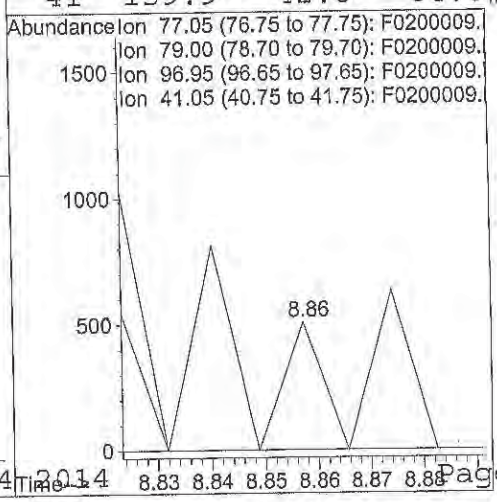


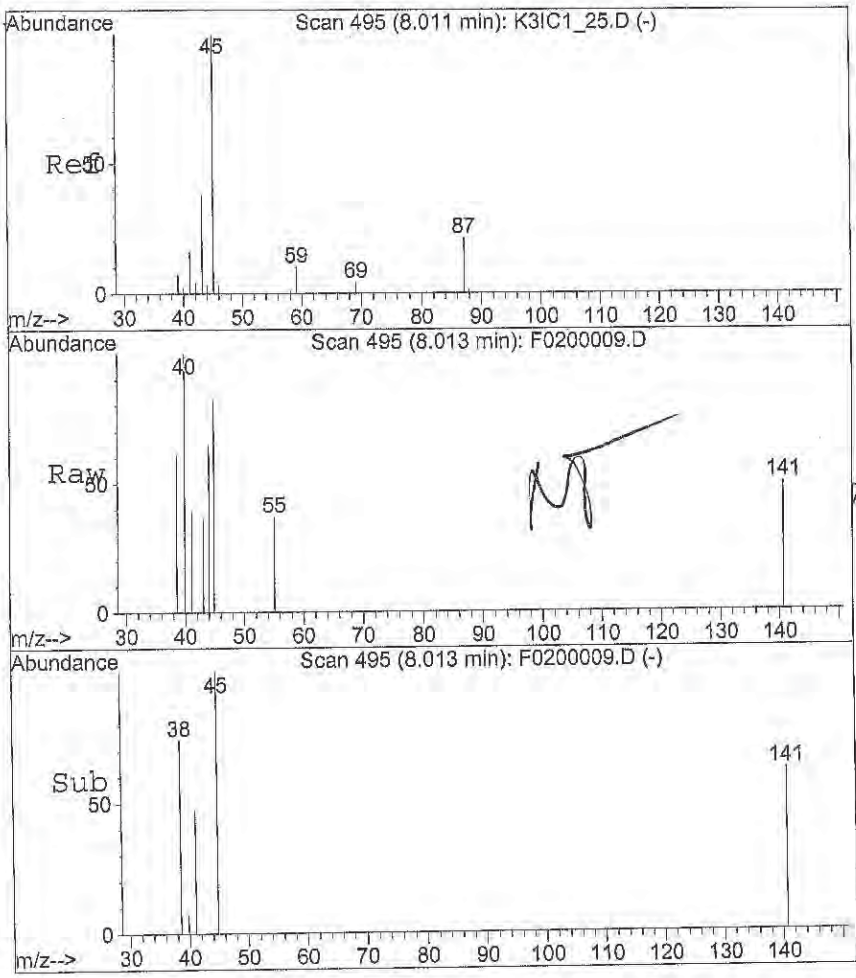


#20
2,2-Dichloropropane
Concen: 0.06 ug/L
RT: 8.86 min Scan# 595
Delta R.T. 0.03 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

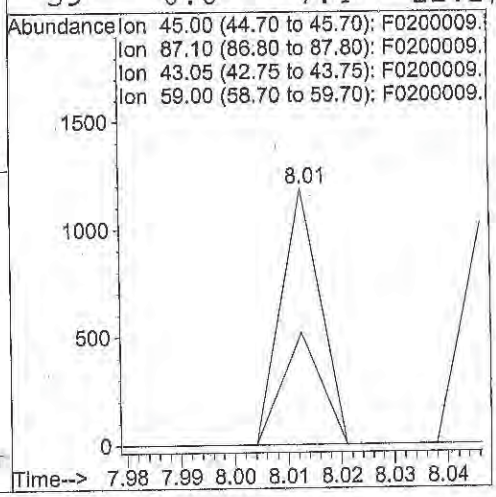


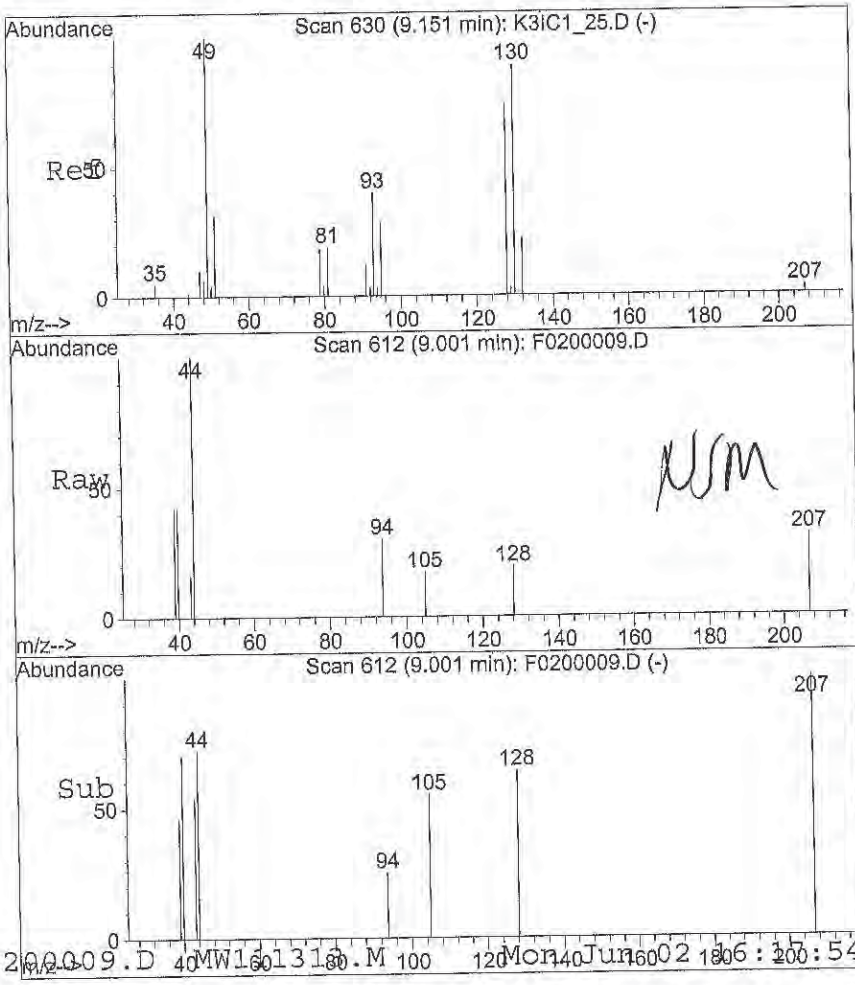


#22
(DIPE) Diisopropyl Ether
Concen: 0.07 ug/L
RT: 8.01 min Scan# 495
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

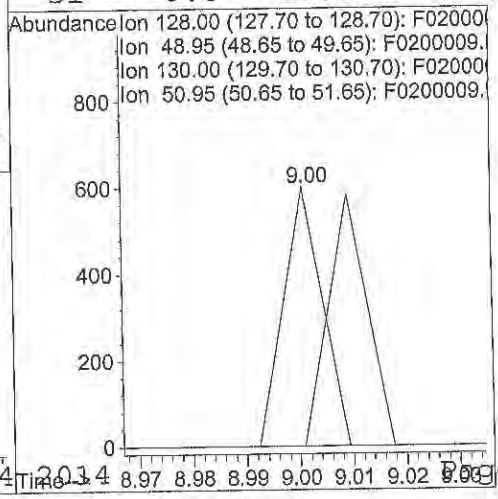


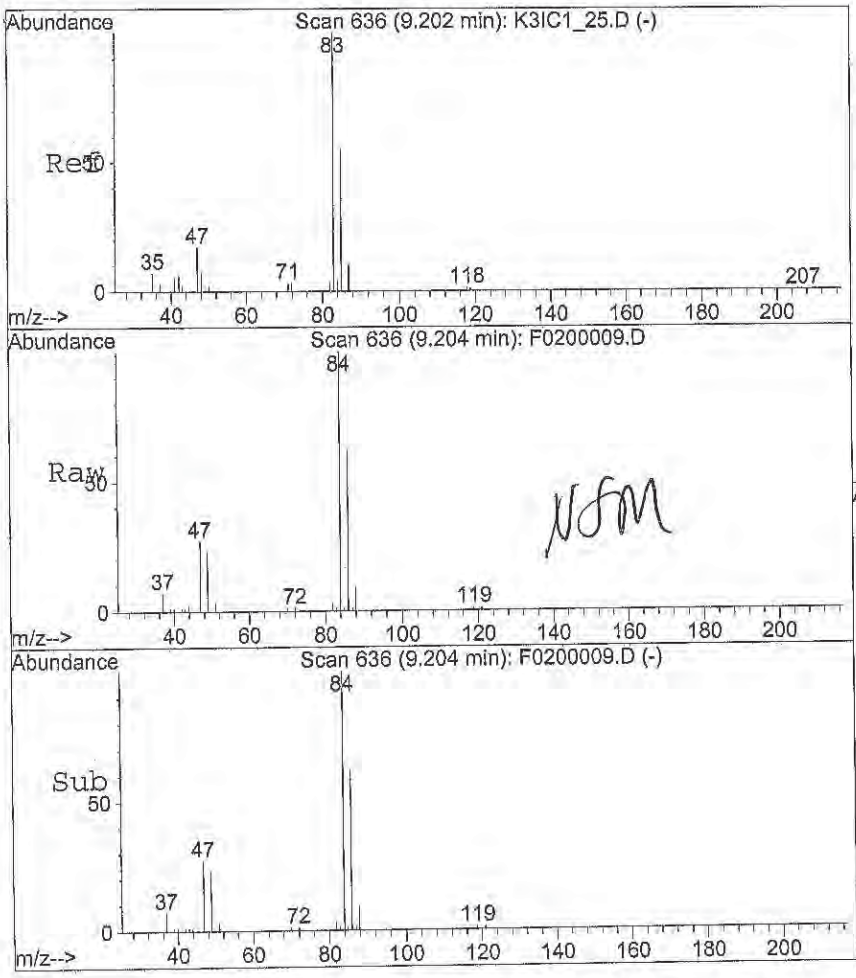


#23
Bromochloromethane
Concen: 0.20 ug/L
RT: 9.00 min Scan# 612
Delta R.T. -0.15 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

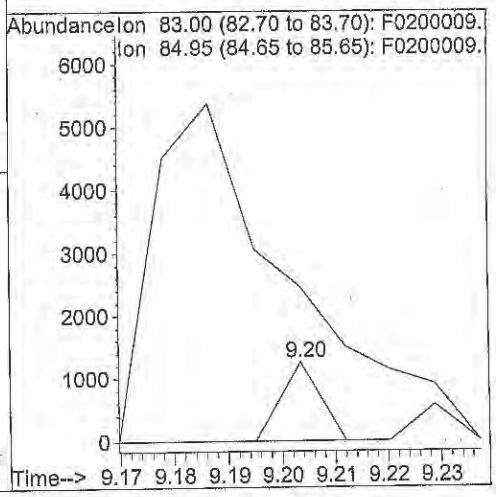


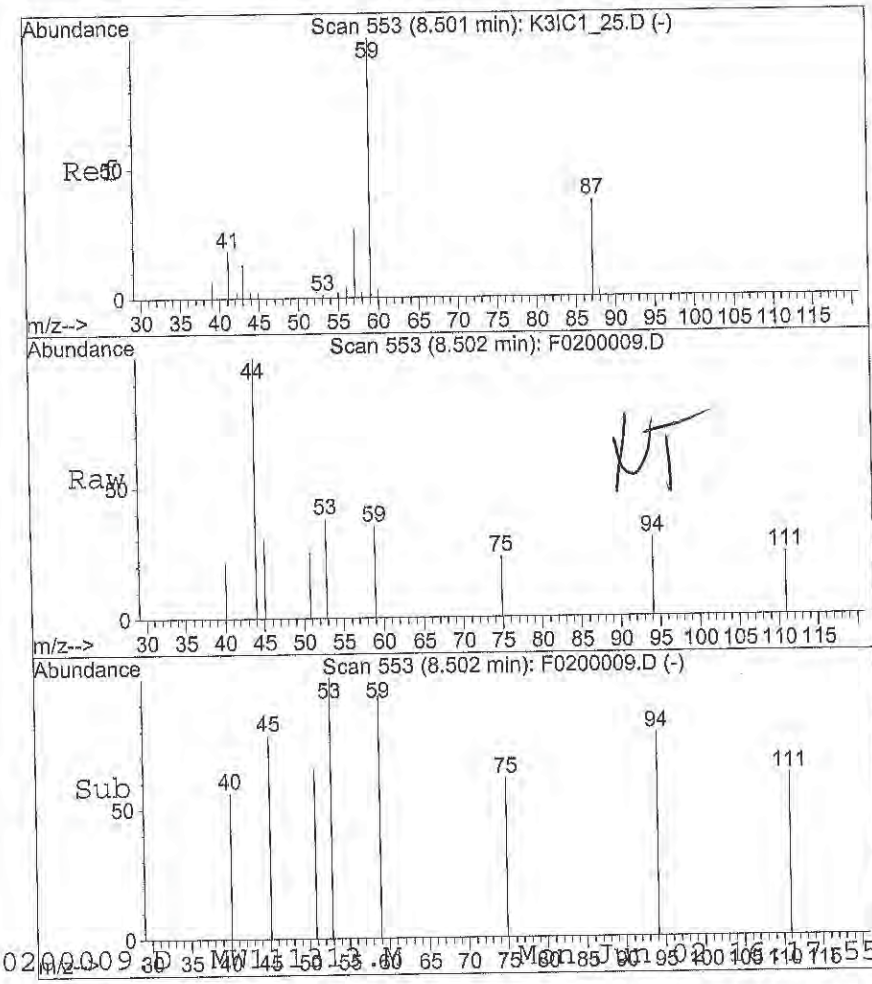


#24
Chloroform
Concen: 0.11 ug/L
RT: 9.20 min Scan# 636
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 83 Resp: 633

Ion	Ratio	Lower	Upper
83	100		
85	1808.7	51.8	77.6#

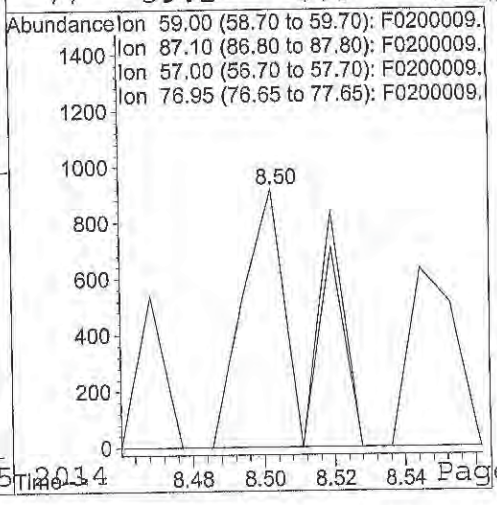


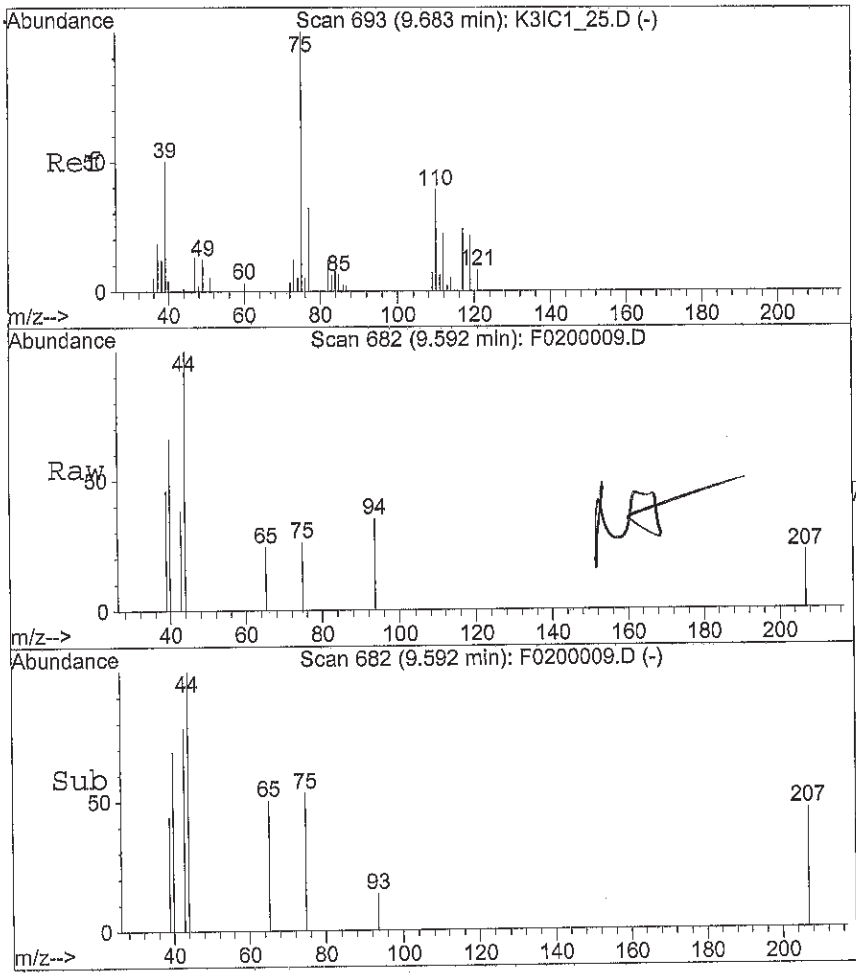


#25
(ETBE) 2-ethoxy 2-methyl propar
Concen: 0.13 ug/L
RT: 8.50 min Scan# 553
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

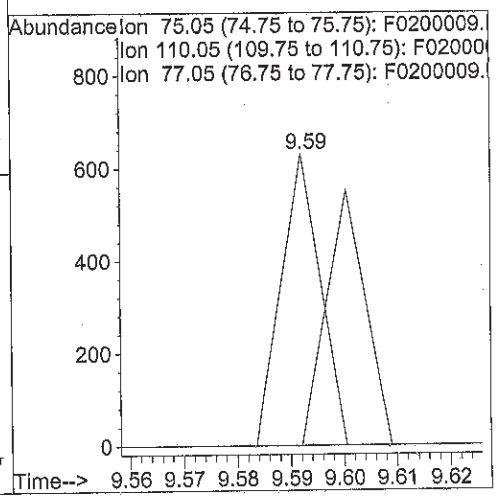


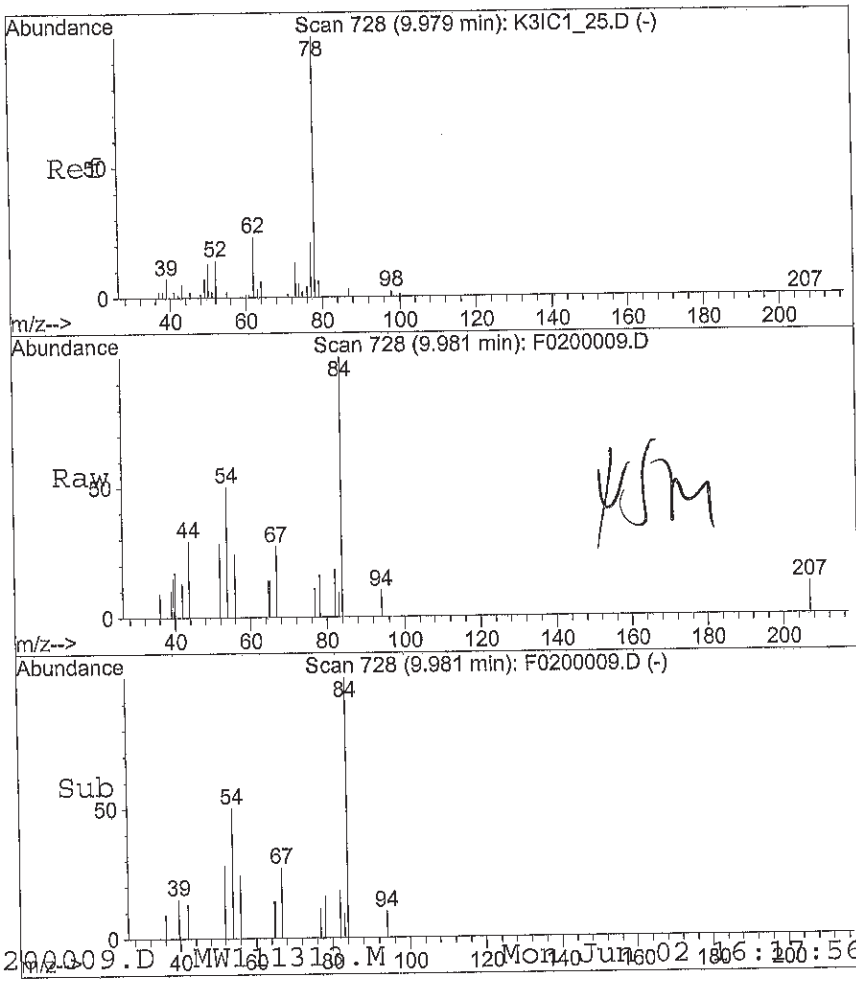


#29
1,1-Dichloropropene
Concen: 0.07 ug/L
RT: 9.59 min Scan# 682
Delta R.T. -0.09 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

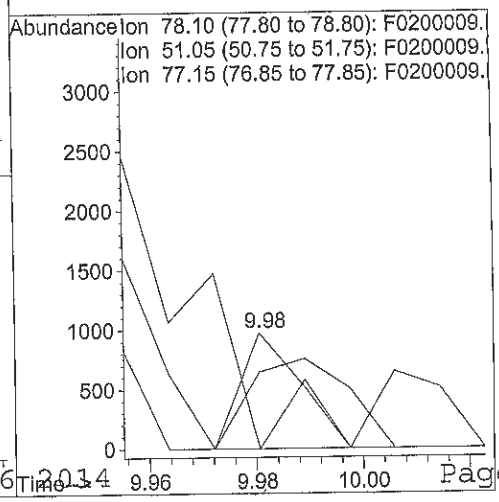


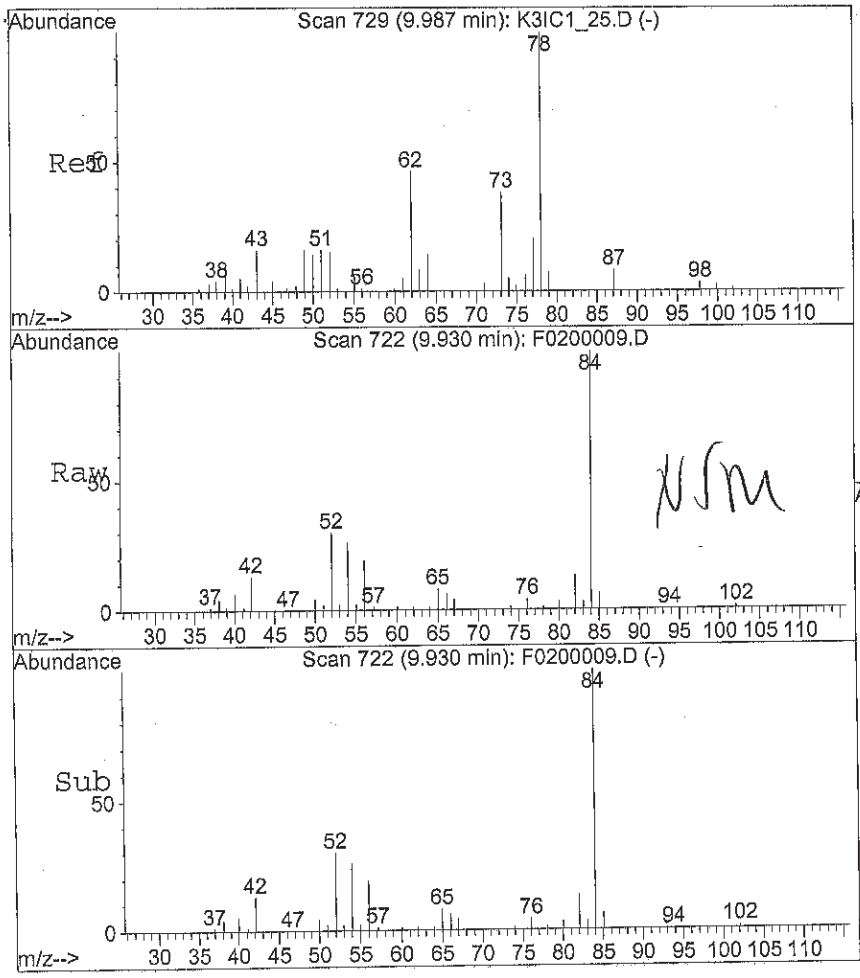


#31
Benzene
Concen: 0.07 ug/L
RT: 9.98 min Scan# 728
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

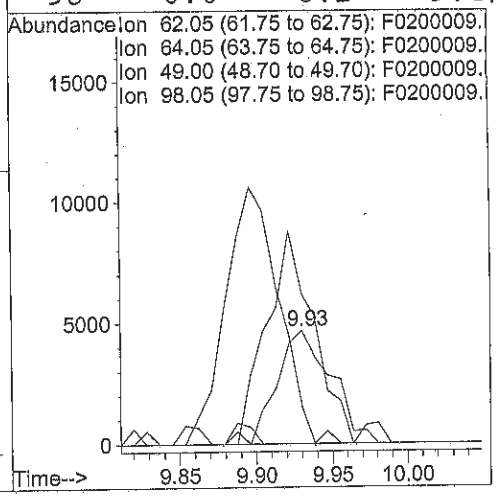


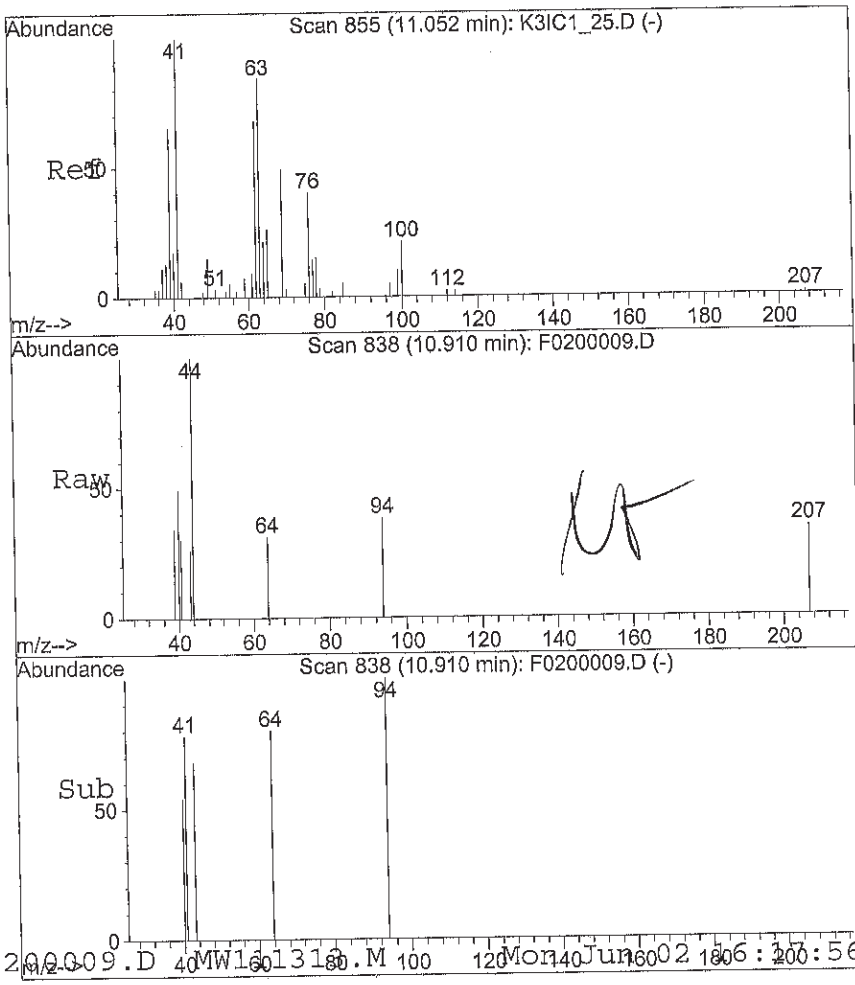


#32
1,2-Dichloroethane
Concen: 3.14 ug/L
RT: 9.93 min Scan# 722
Delta R.T. -0.06 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

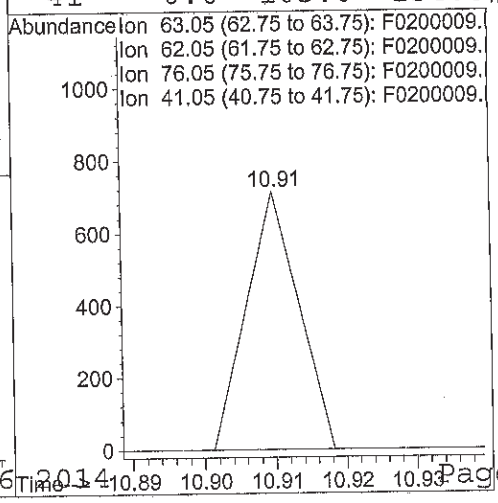


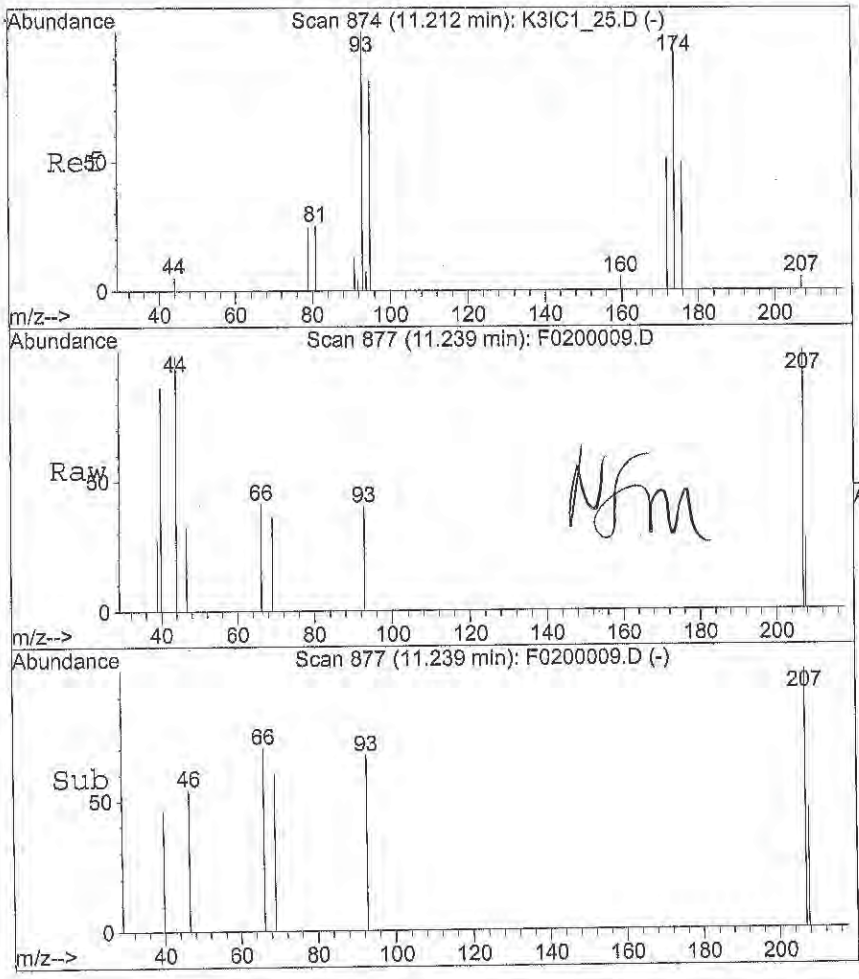


#34
1,2-Dichloropropane
Concen: 0.14 ug/L
RT: 10.91 min Scan# 838
Delta R.T. -0.14 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

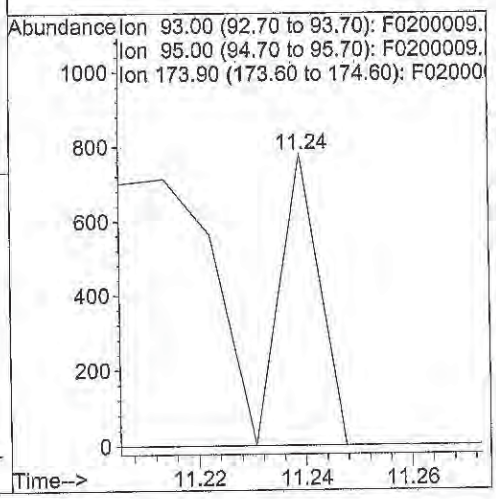


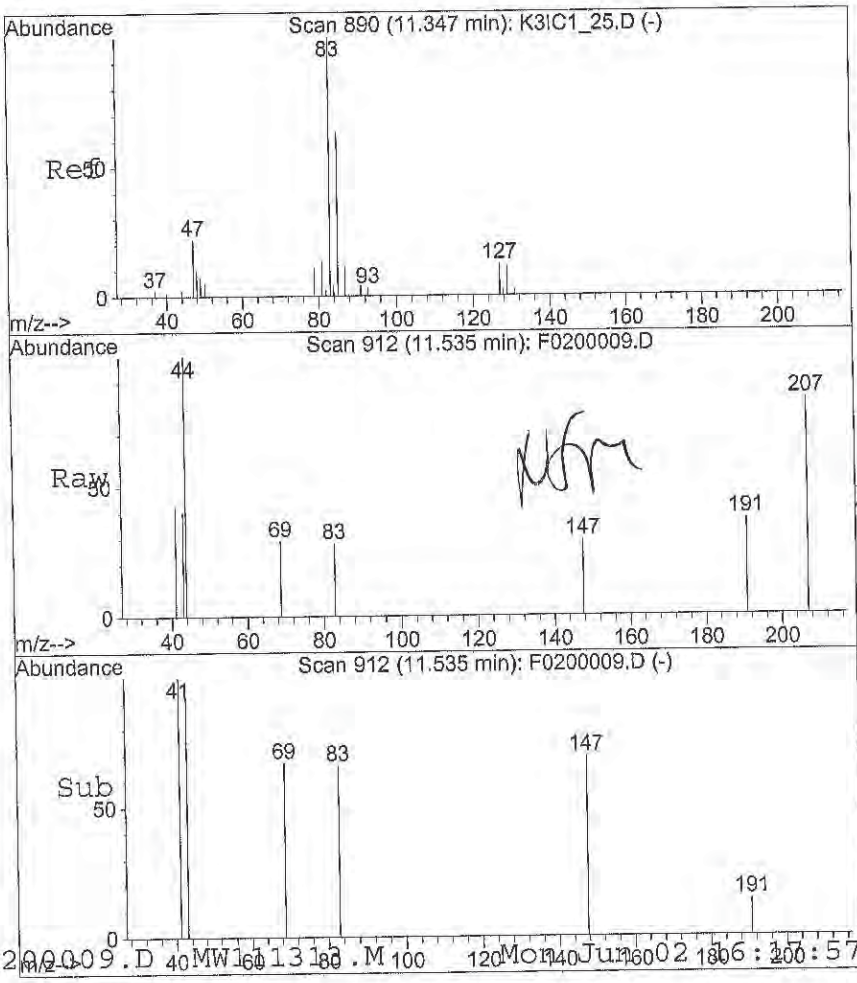


#35
Dibromomethane
Concen: 0.20 ug/L
RT: 11.24 min Scan# 877
Delta R.T. 0.03 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

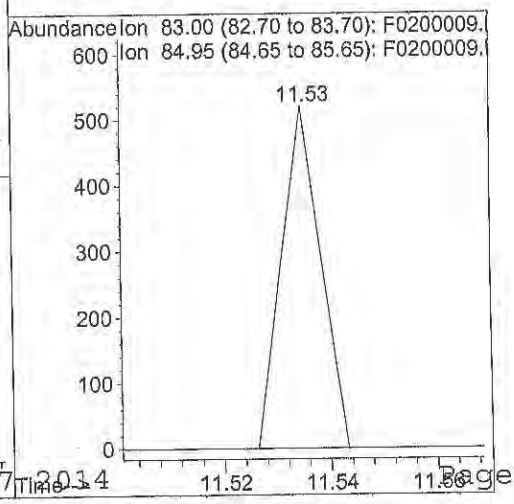


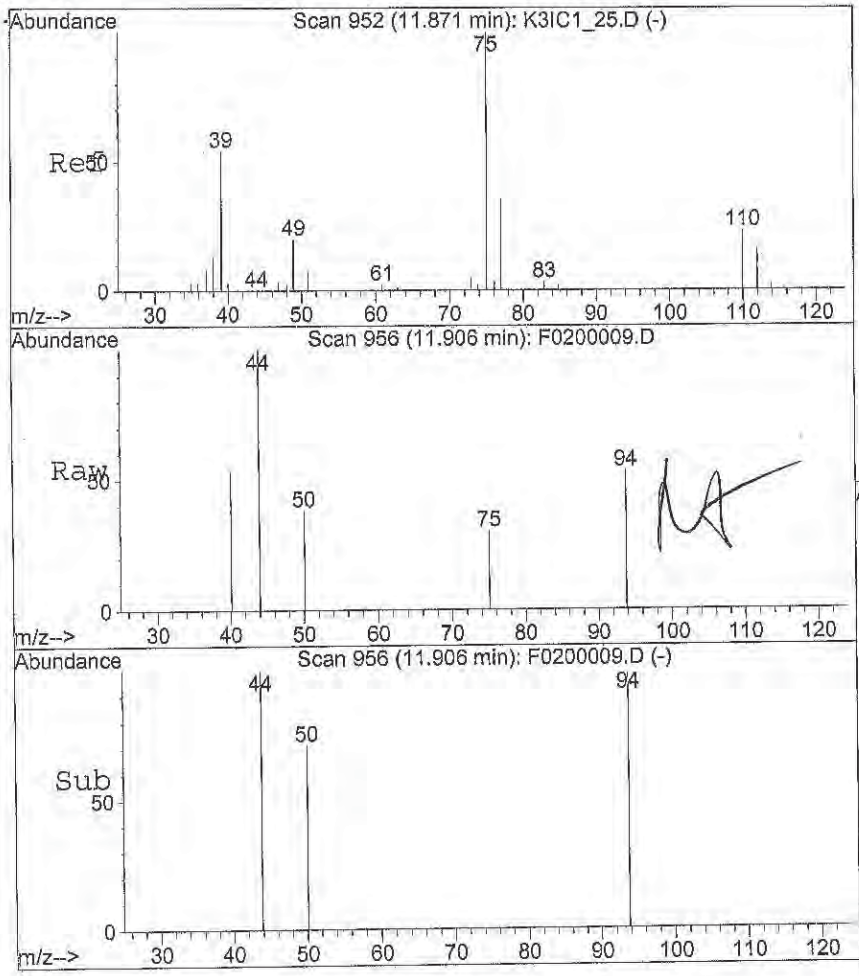


#36
Bromodichloromethane
Concen: 0.07 ug/L
RT: 11.53 min Scan# 912
Delta R.T. 0.19 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 83 Resp: 264

Ion	Ratio	Lower	Upper
83	100		
85	0.0	48.2	72.2#

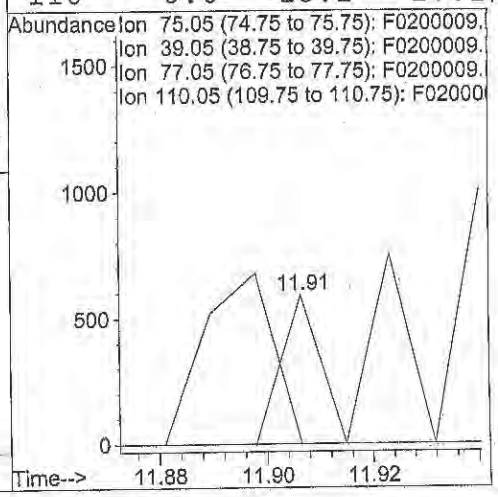


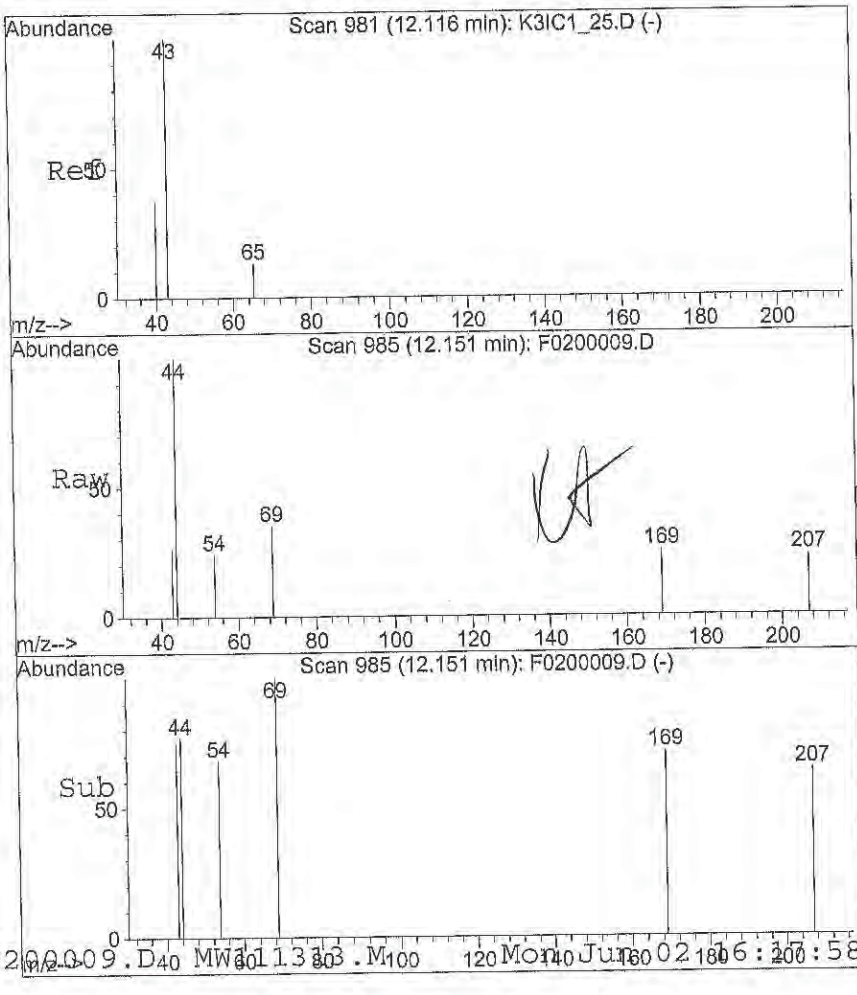


#37
cis-1,3-Dichloropropene
Concen: 0.07 ug/L
RT: 11.91 min Scan# 956
Delta R.T. 0.04 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

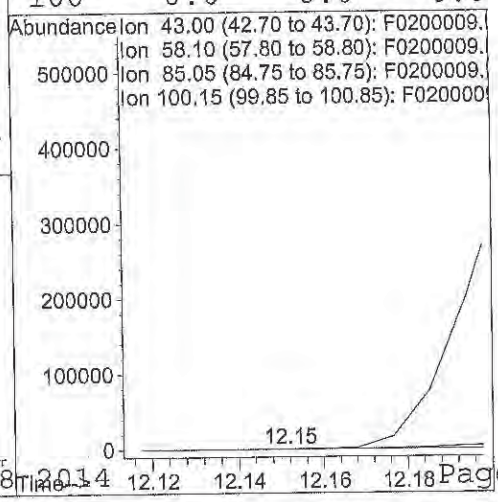


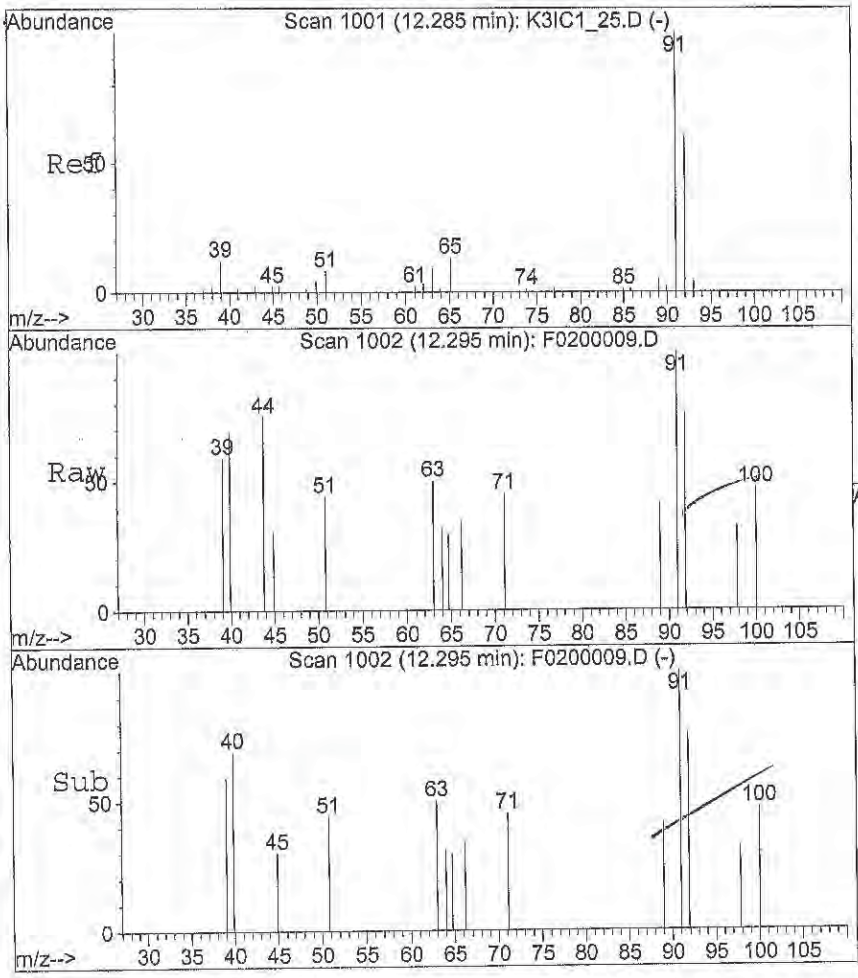


#40
(MIBK) 4-Methyl-2-Pentanone
Concen: 0.40 ug/L
RT: 12.15 min Scan# 985
Delta R.T. 0.04 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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

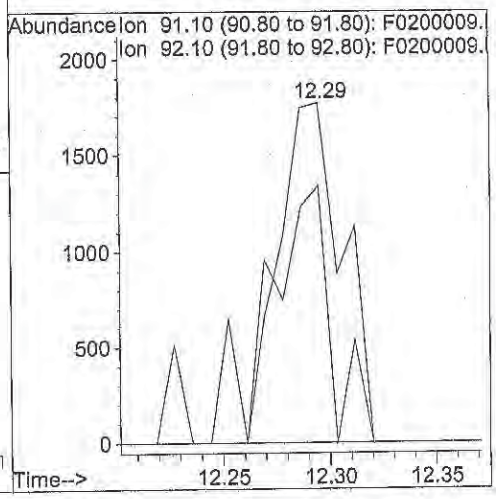


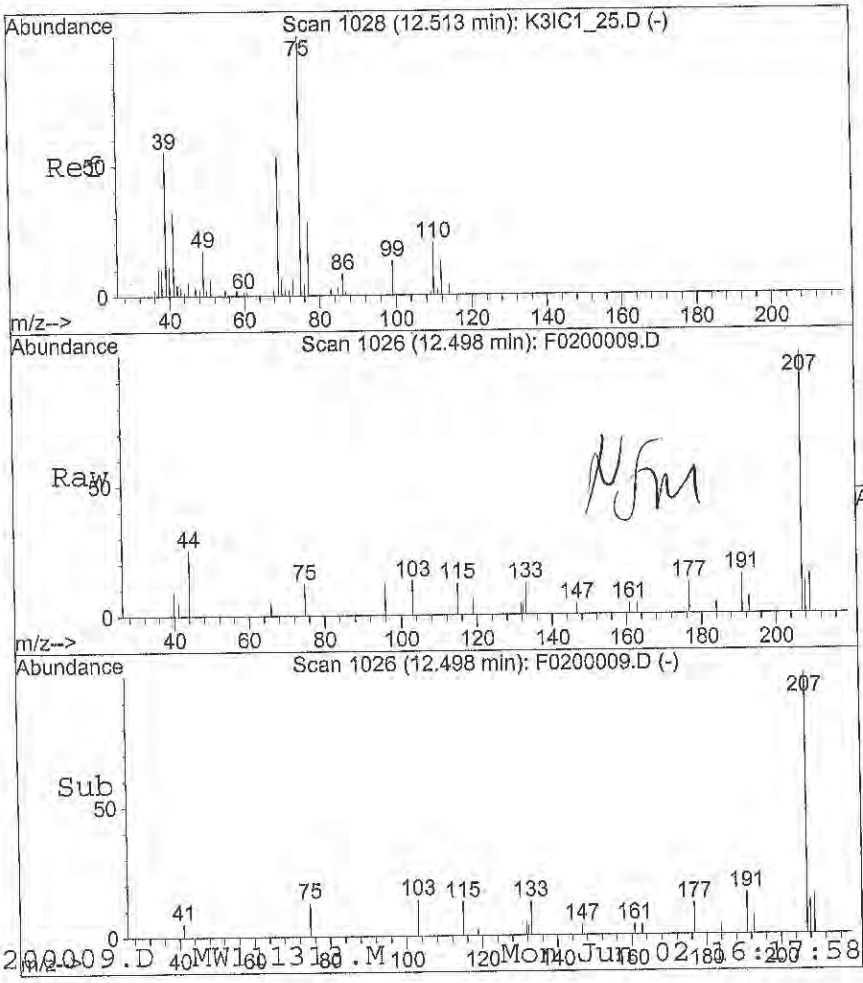


#41
Toluene
Concen: 0.27 ug/L
RT: 12.29 min Scan# 1002
Delta R.T. 0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 91 Resp: 4013

Ion	Ratio	Lower	Upper
91	100		
92	60.8	47.4	71.0

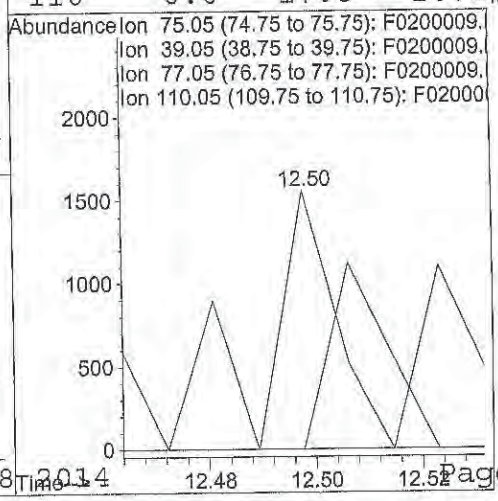


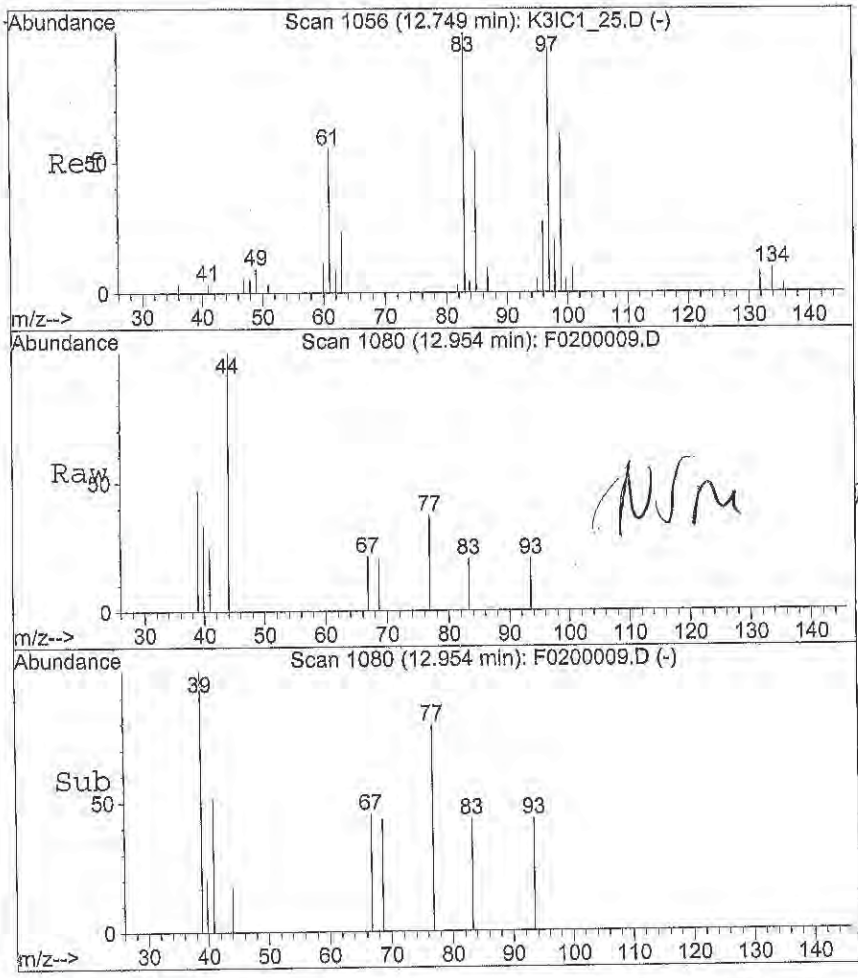


#42
trans-1,3-Dichloropropene
Concen: 0.21 ug/L
RT: 12.50 min Scan# 1026
Delta R.T. -0.02 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

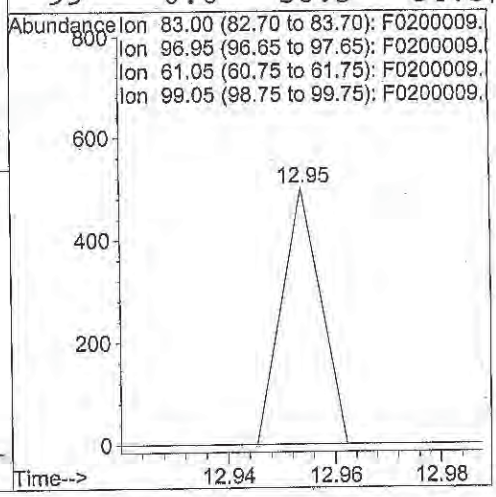


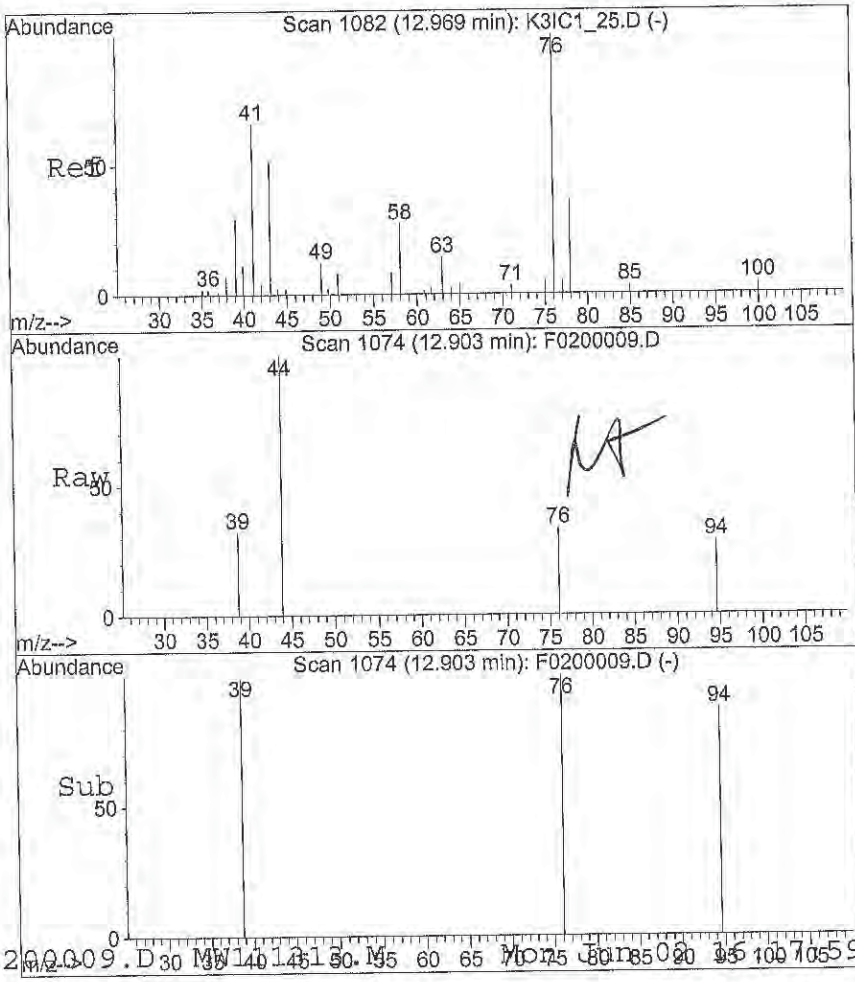


#43
1,1,2-Trichloroethane
Concen: 0.09 ug/L
RT: 12.95 min Scan# 1080
Delta R.T. 0.20 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

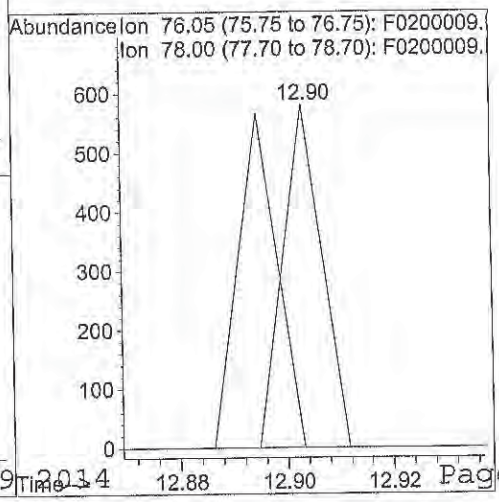


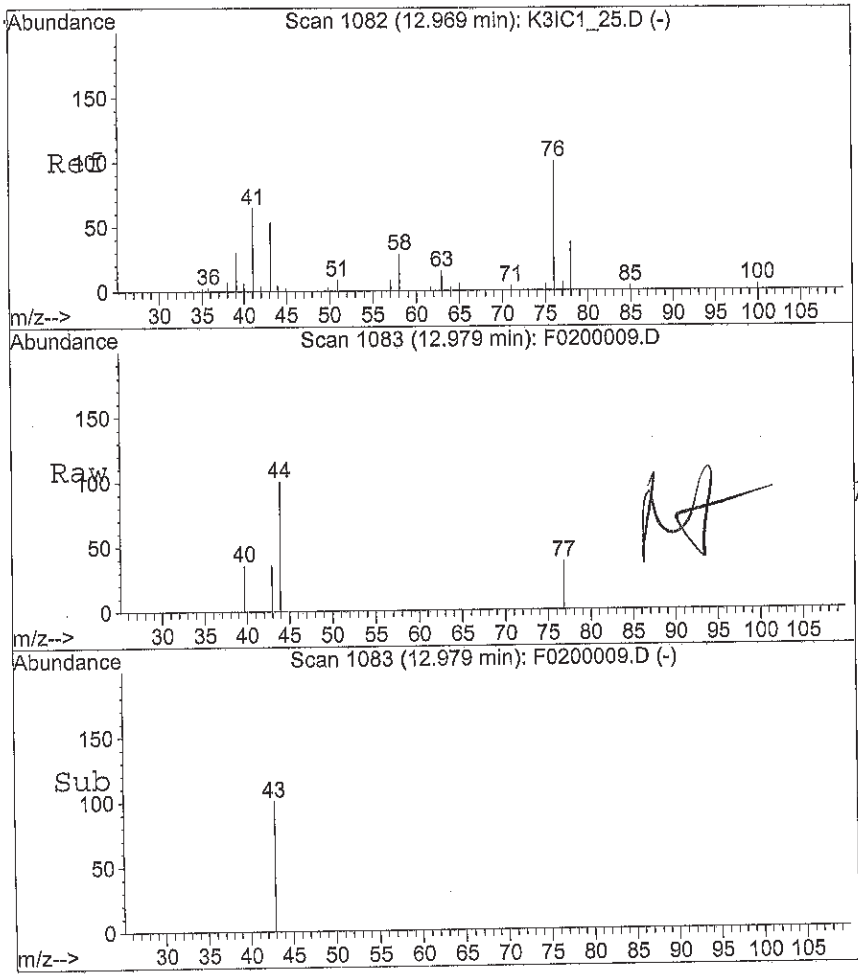


#45
1,3-Dichloropropane
Concen: 0.06 ug/L
RT: 12.90 min Scan# 1074
Delta R.T. -0.07 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 76 Resp: 294

Ion	Ratio	Lower	Upper
76	100		
78	97.3	26.9	40.3#

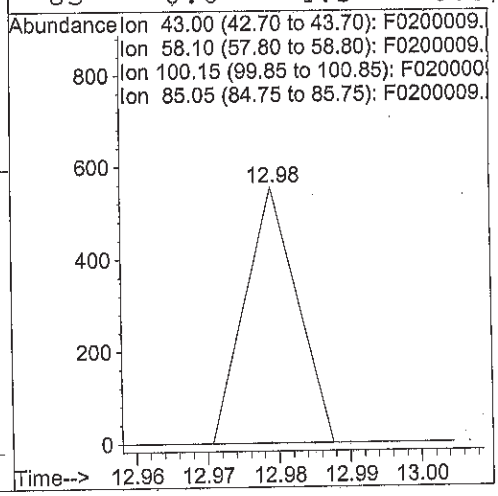


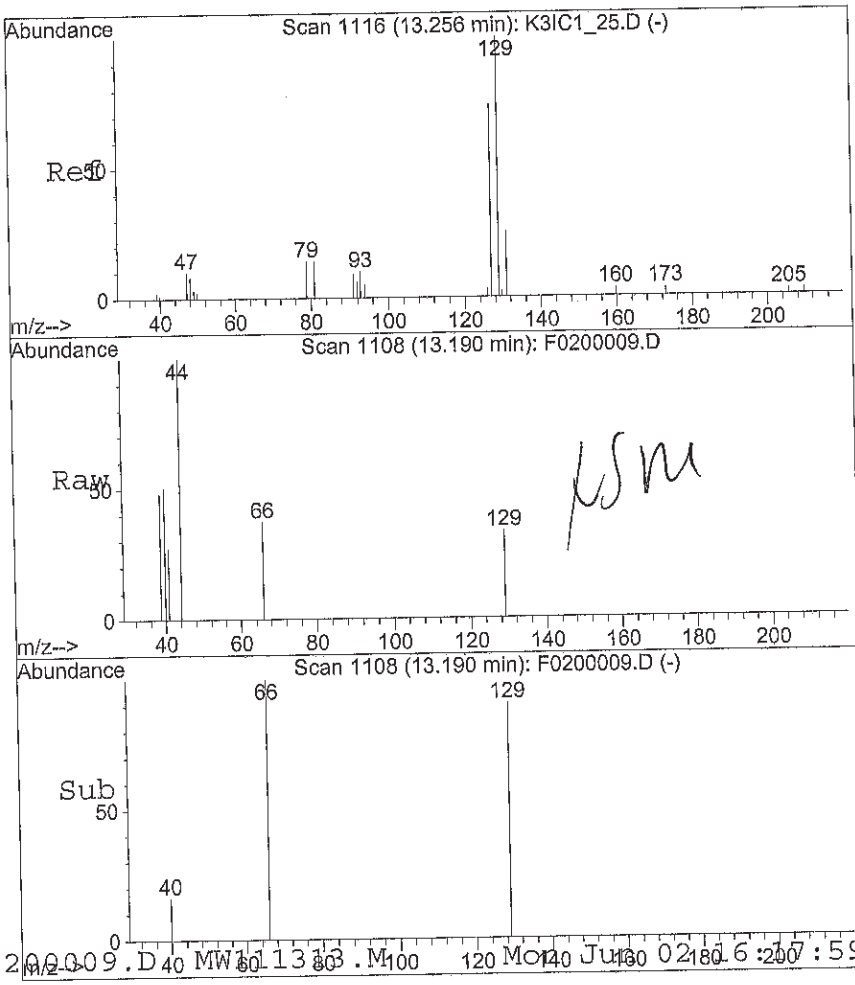


#46
2-Hexanone
Concen: 0.12 ug/L
RT: 12.98 min Scan# 1083
Delta R.T. 0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

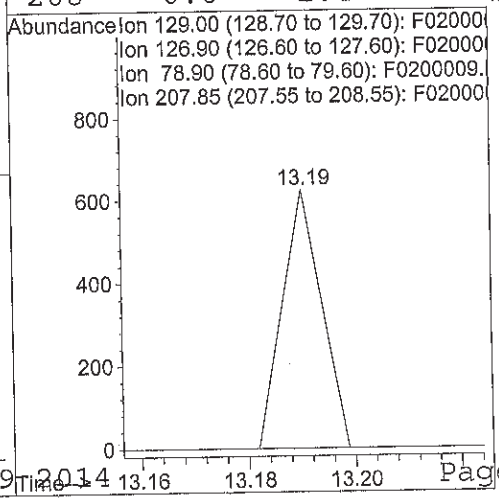


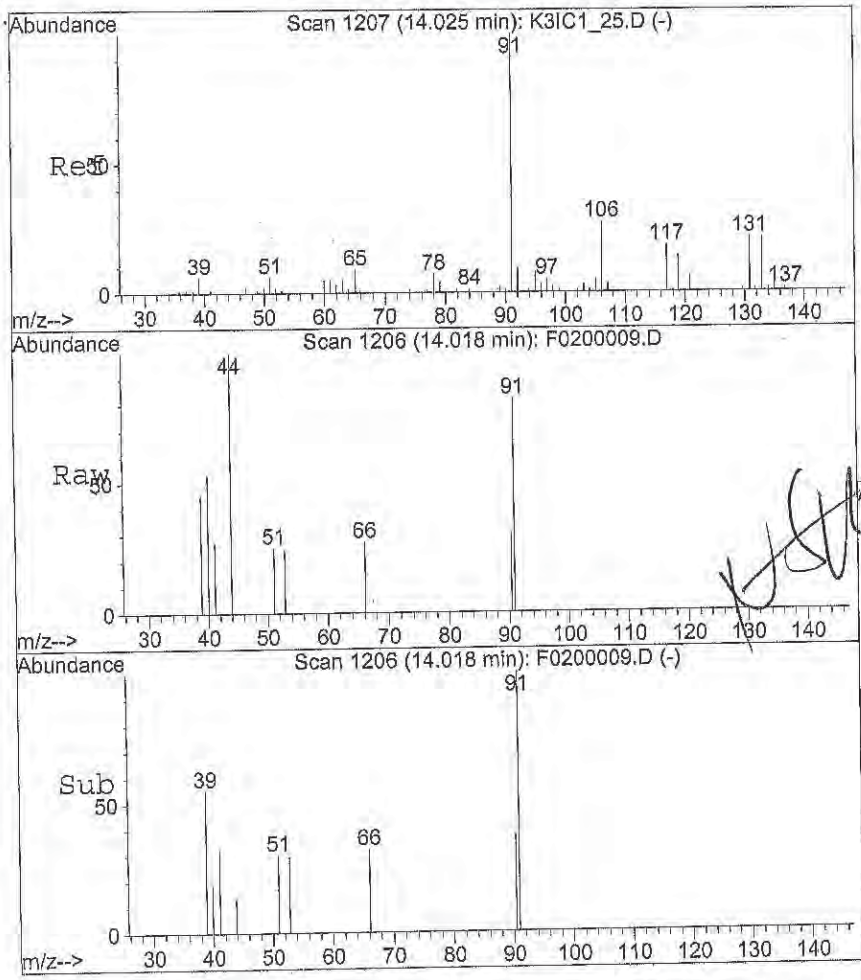


#47
Dibromochloromethane
Concen: 0.08 ug/L
RT: 13.19 min Scan# 1108
Delta R.T. -0.07 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

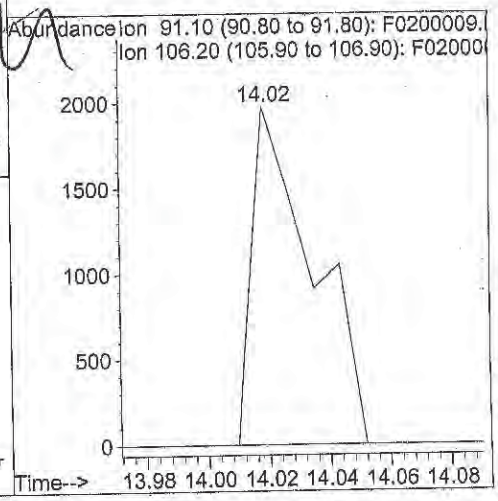


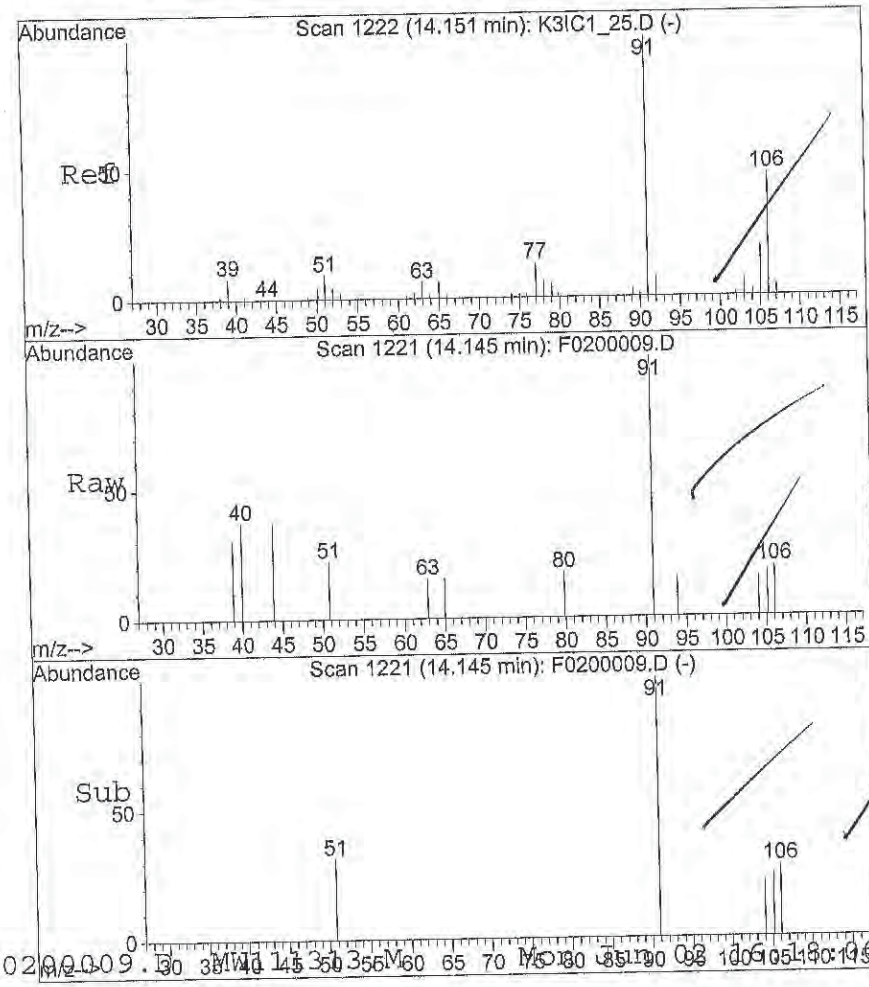


#51
Ethylbenzene
Concen: 0.16 ug/L
RT: 14.02 min Scan# 1206
Delta R.T. -0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 91 Resp: 2743

Ion	Ratio	Lower	Upper
91	100		
106	0.0	23.5	35.3#

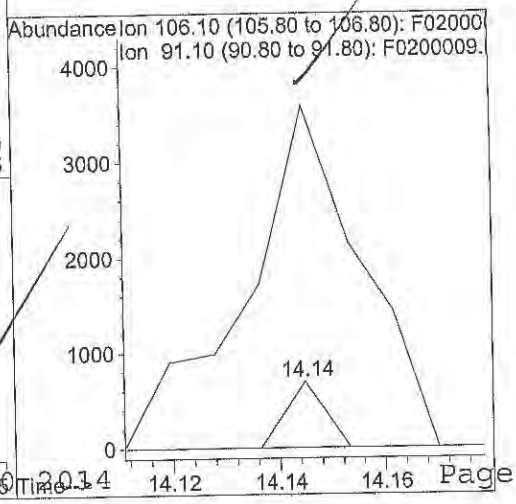


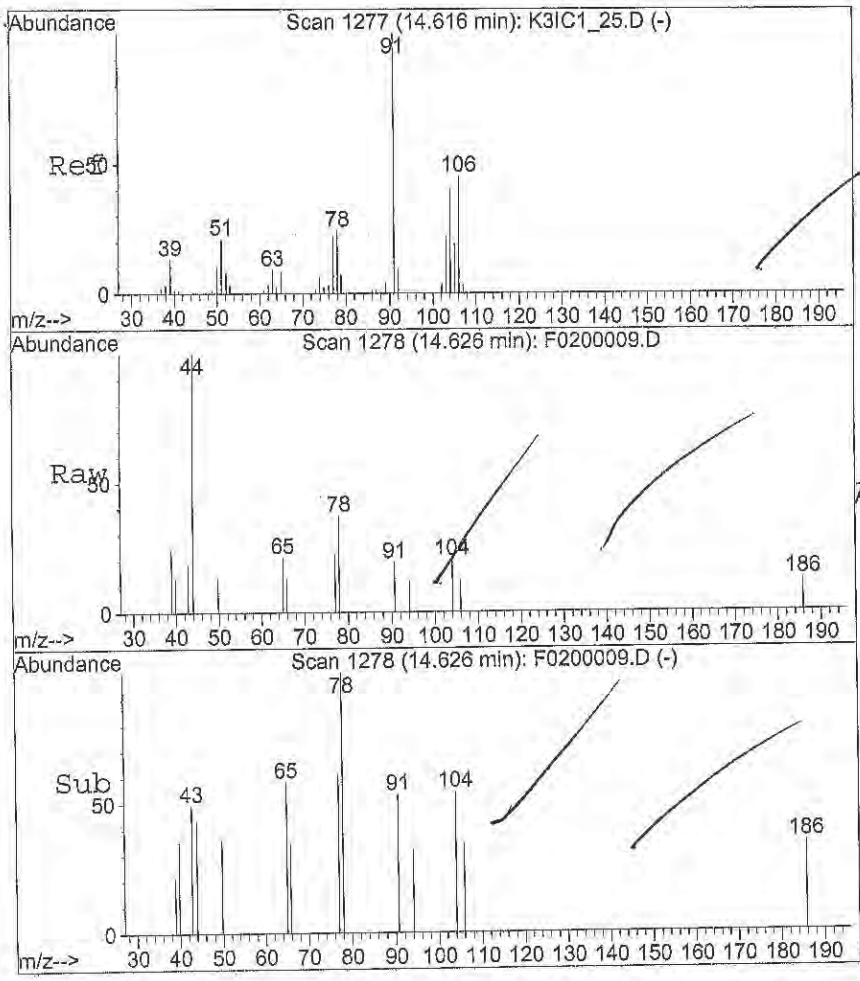


#52
m,p-Xylenes
Concen: 0.06 ug/L
RT: 14.14 min Scan# 1221
Delta R.T. -0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion:106 Resp: 349

Ion	Ratio	Lower	Upper
106	100		
91	1563.0	177.1	265.7#

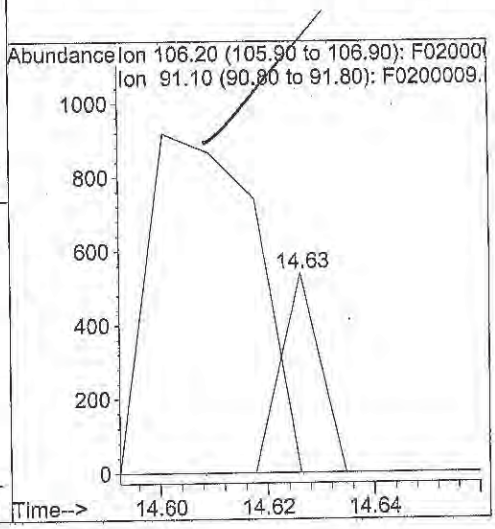


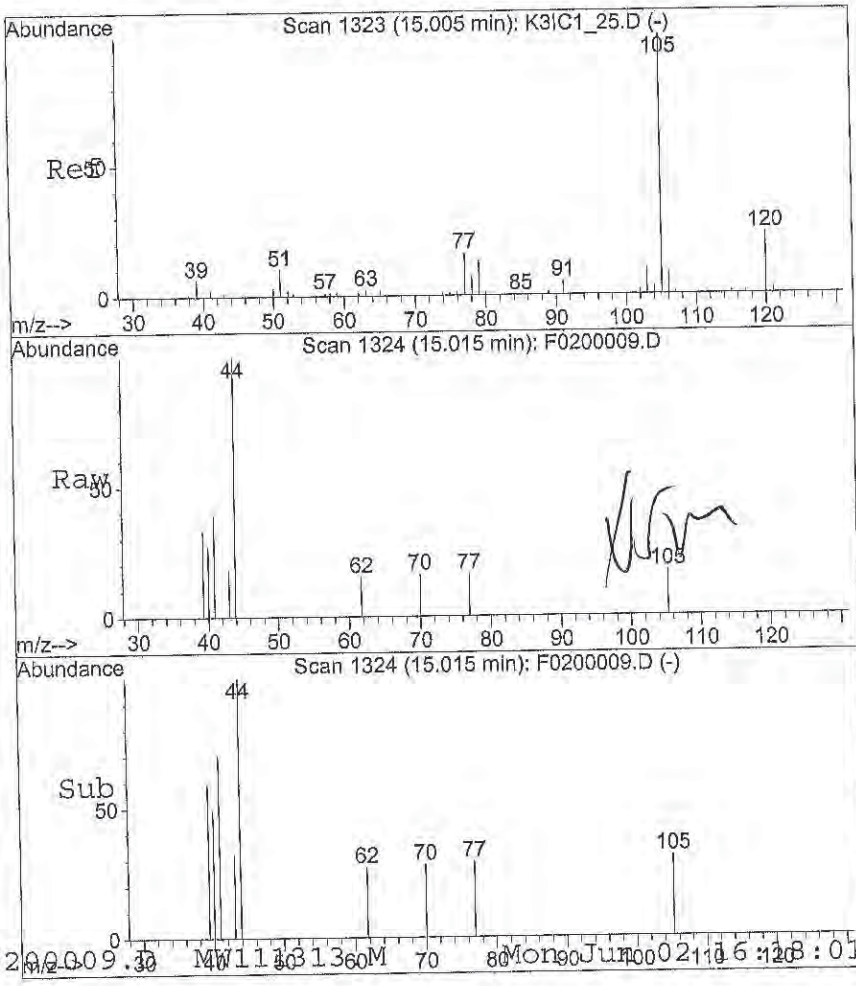


#53
o-Xylene
Concen: 0.05 ug/L
RT: 14.63 min Scan# 1278
Delta R.T. 0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion:106 Resp: 273

Ion	Ratio	Lower	Upper
106	100		
91	0.0	179.0	268.6#

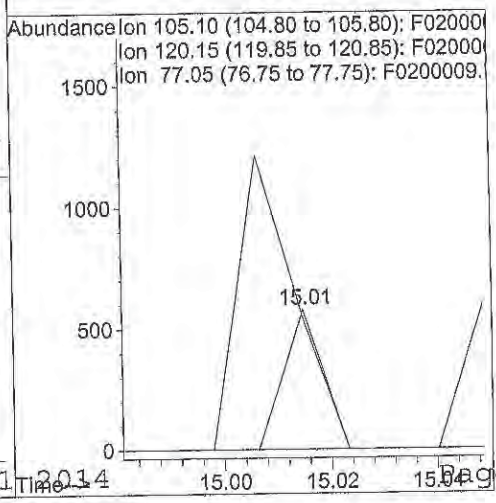


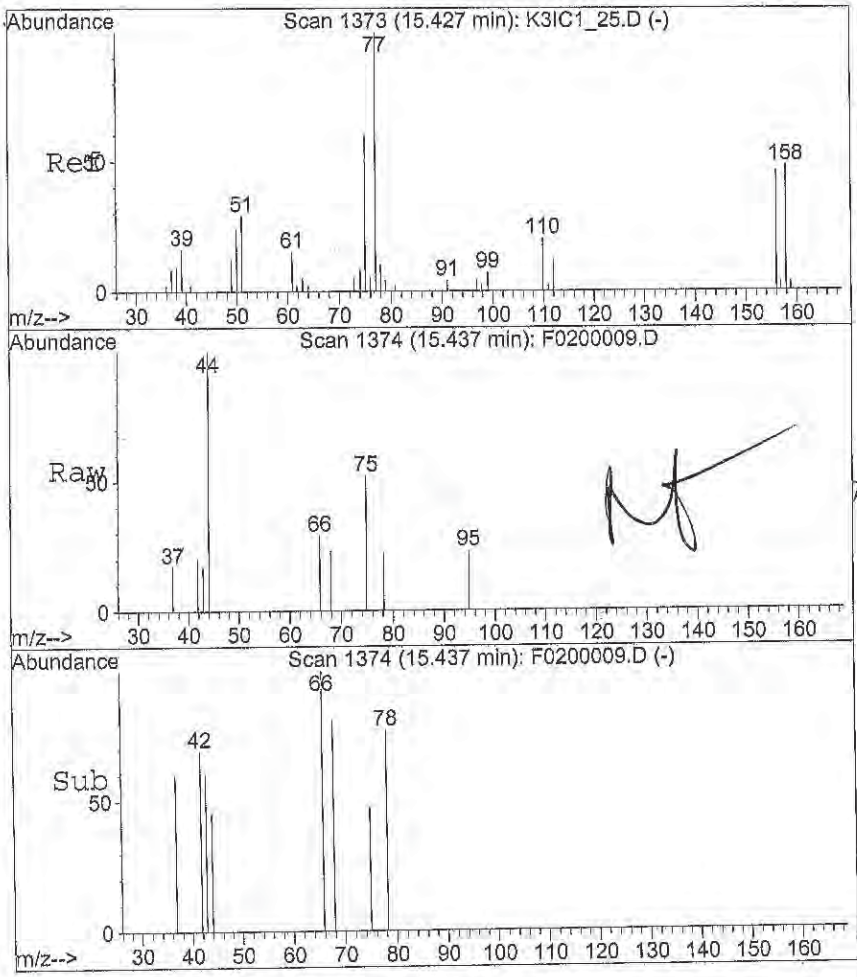


#56
Isopropylbenzene
Concen: 0.02 ug/L
RT: 15.01 min Scan# 1324
Delta R.T. 0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

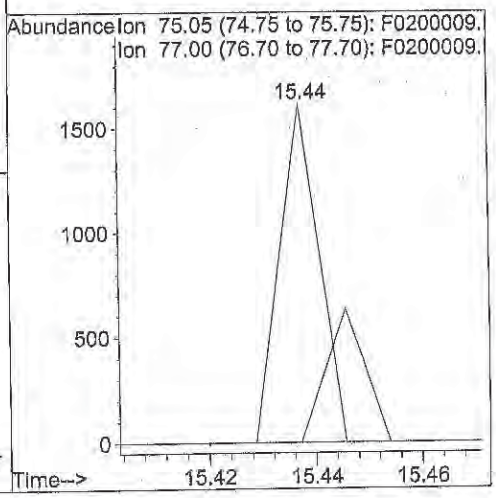


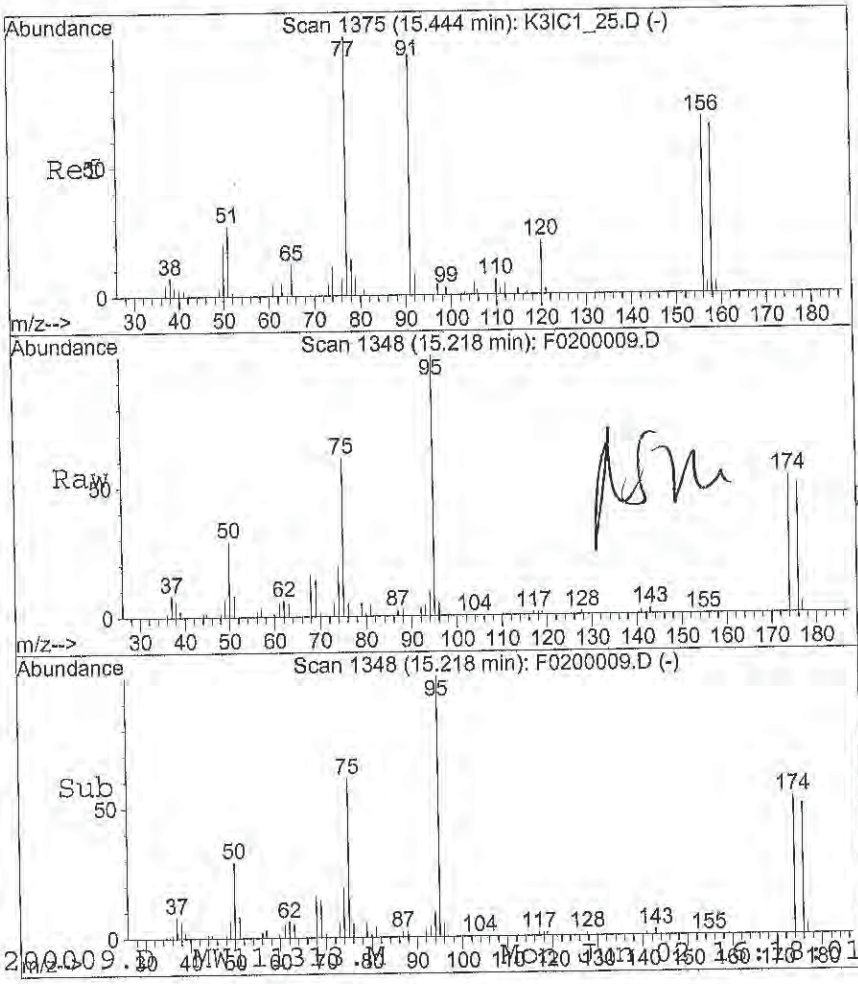


#57
1,2,3-Trichloropropane
Concen: 0.18 ug/L
RT: 15.44 min Scan# 1374
Delta R.T. 0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 75 Resp: 819

Ion	Ratio	Lower	Upper
75	100		
77	39.1	31.2	46.8

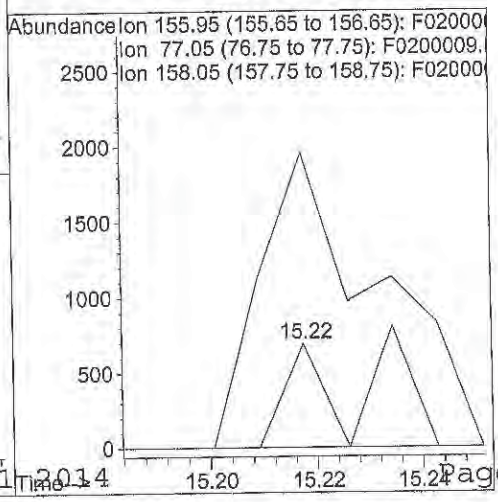


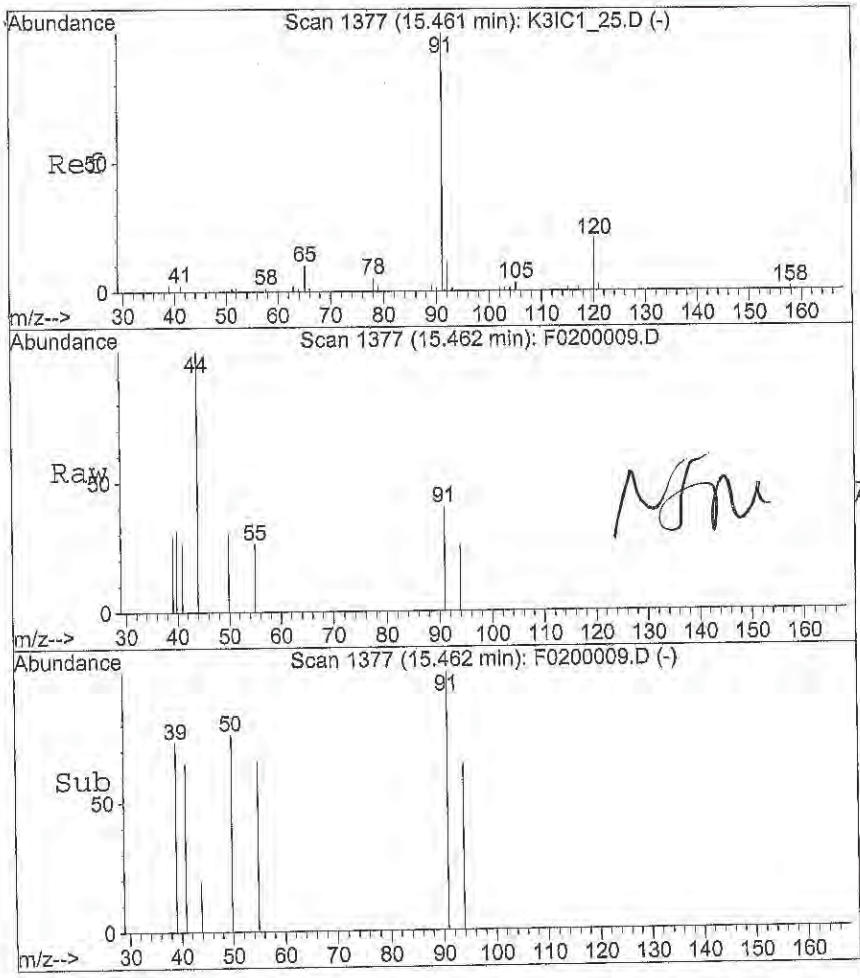


#61
Bromobenzene
Concen: 0.08 ug/L
RT: 15.22 min Scan# 1348
Delta R.T. -0.23 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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

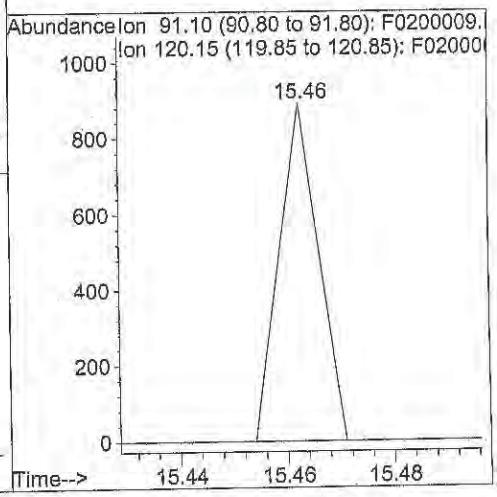


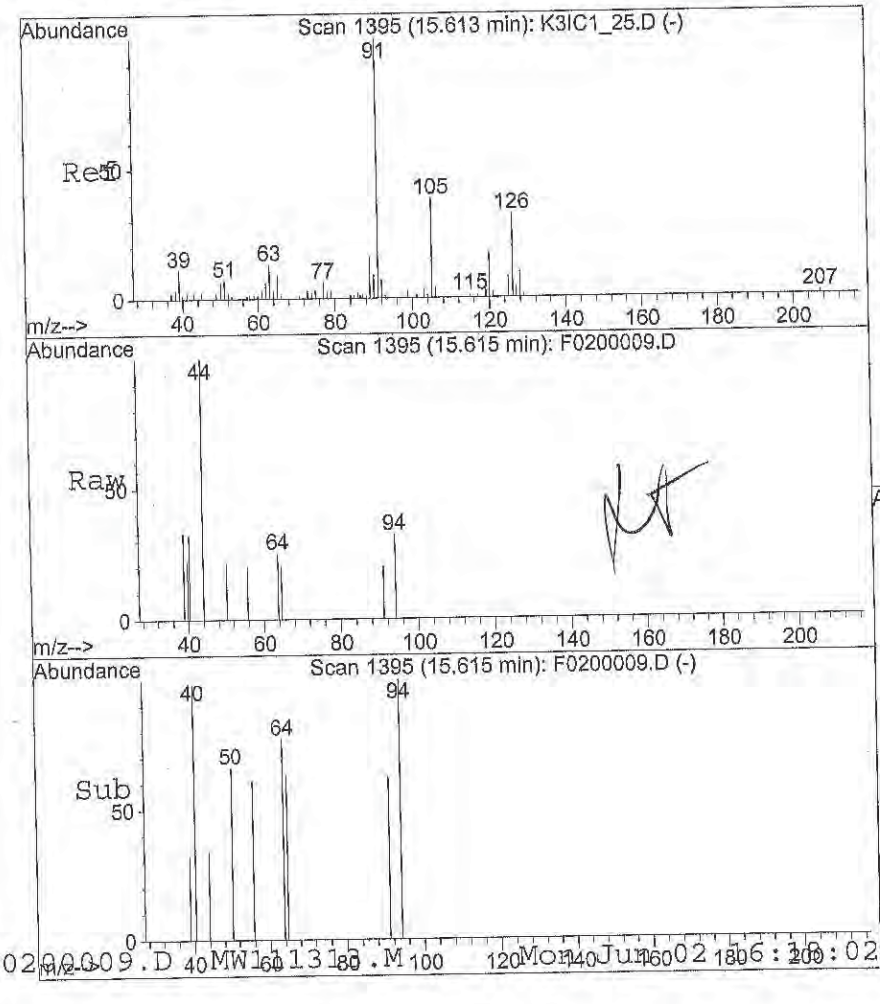


#62
n-Propylbenzene
Concen: 0.02 ug/L
RT: 15.46 min Scan# 1377
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 91 Resp: 452

Ion	Ratio	Lower	Upper
91	100		
120	0.0	16.1	24.1#

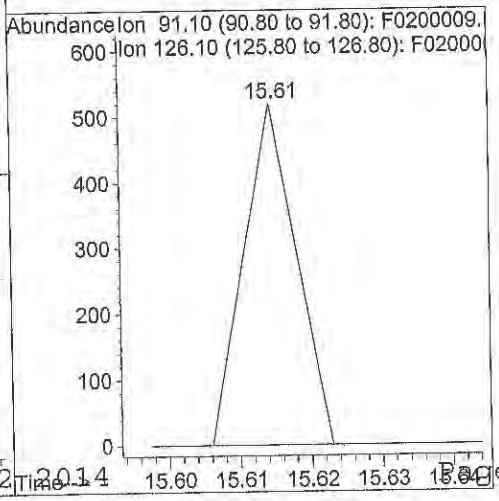


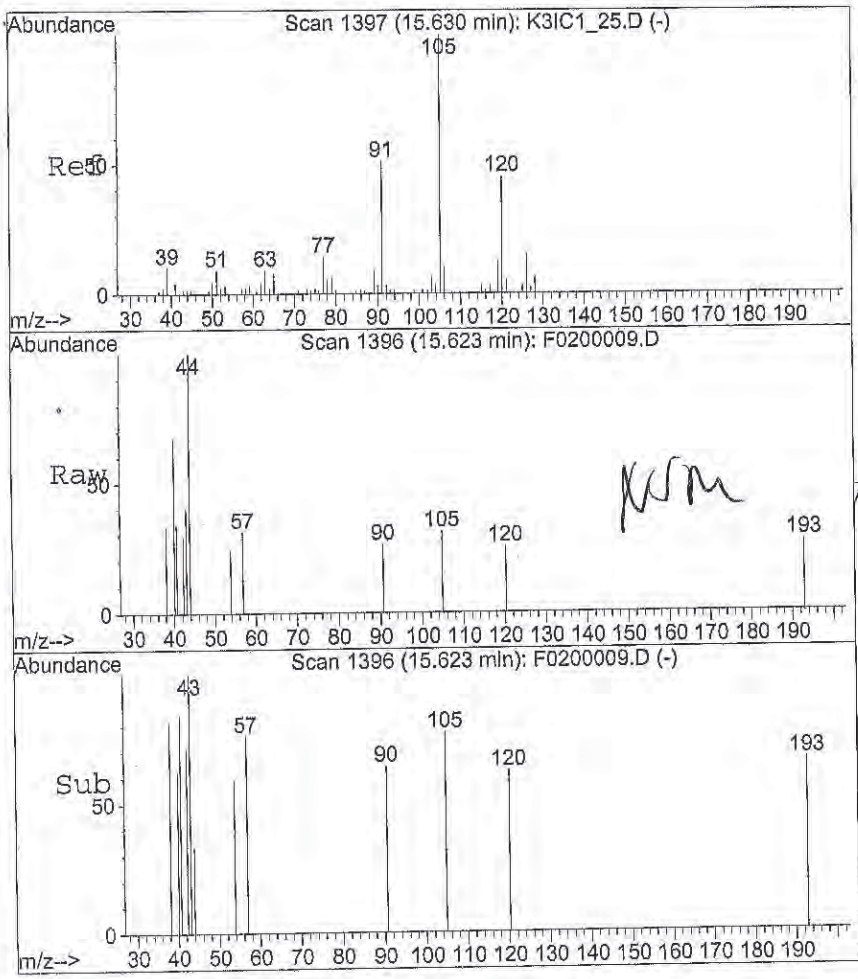


#63
2-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.61 min Scan# 1395
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 91 Resp: 264

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.0	36.0#

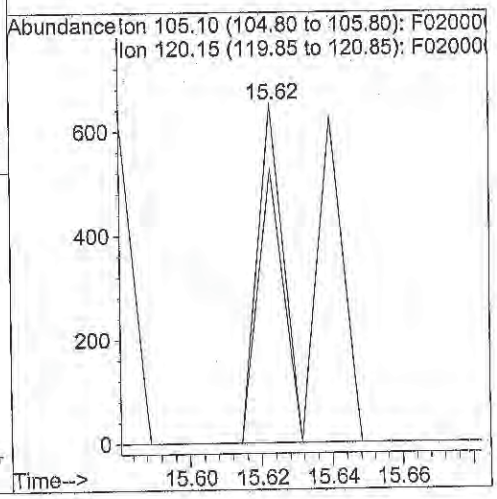


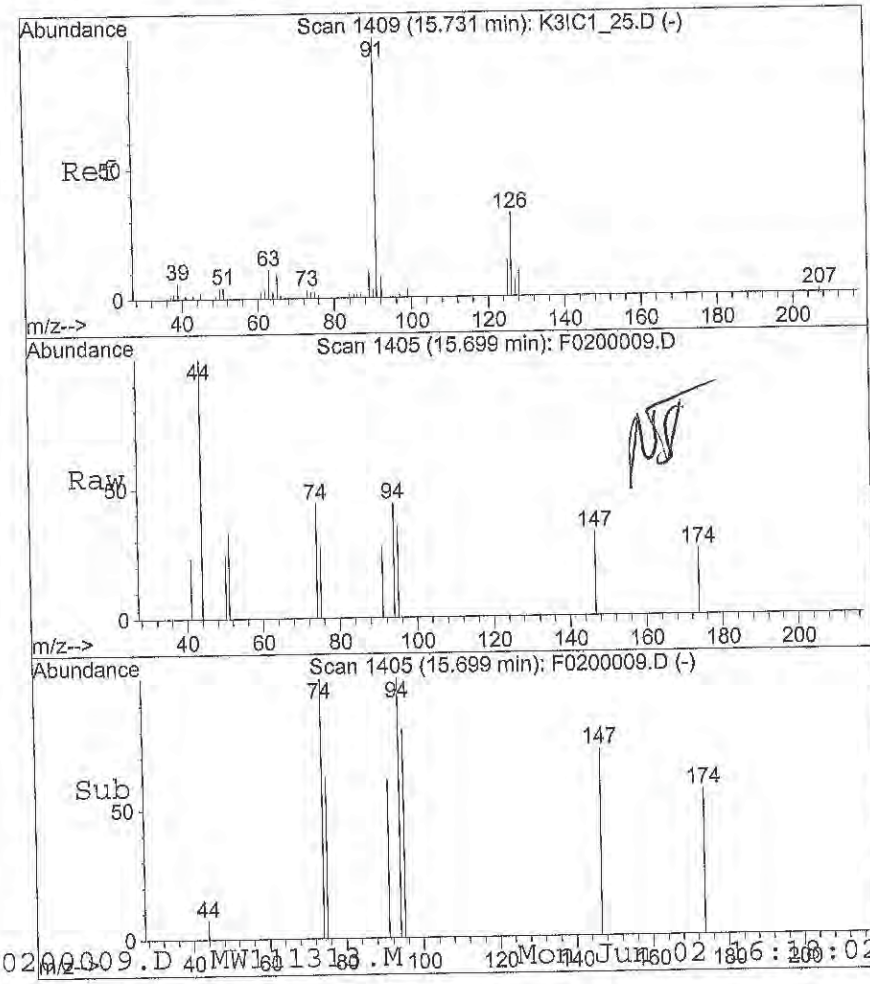


#64
1,3,5-Trimethylbenzene
Concen: 0.04 ug/L
RT: 15.62 min Scan# 1396
Delta R.T. -0.01 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion:105 Resp: 647

Ion	Ratio	Lower	Upper
105	100		
120	41.4	36.4	54.6

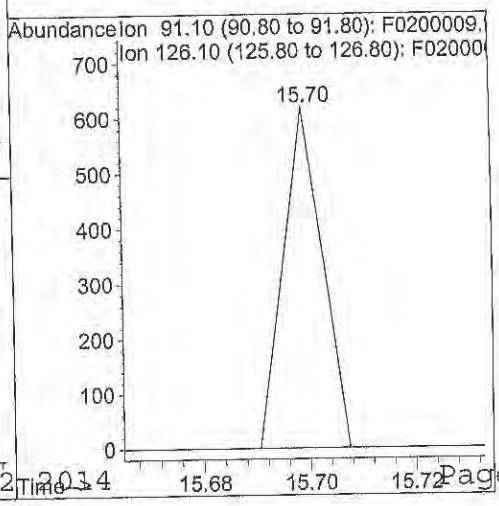


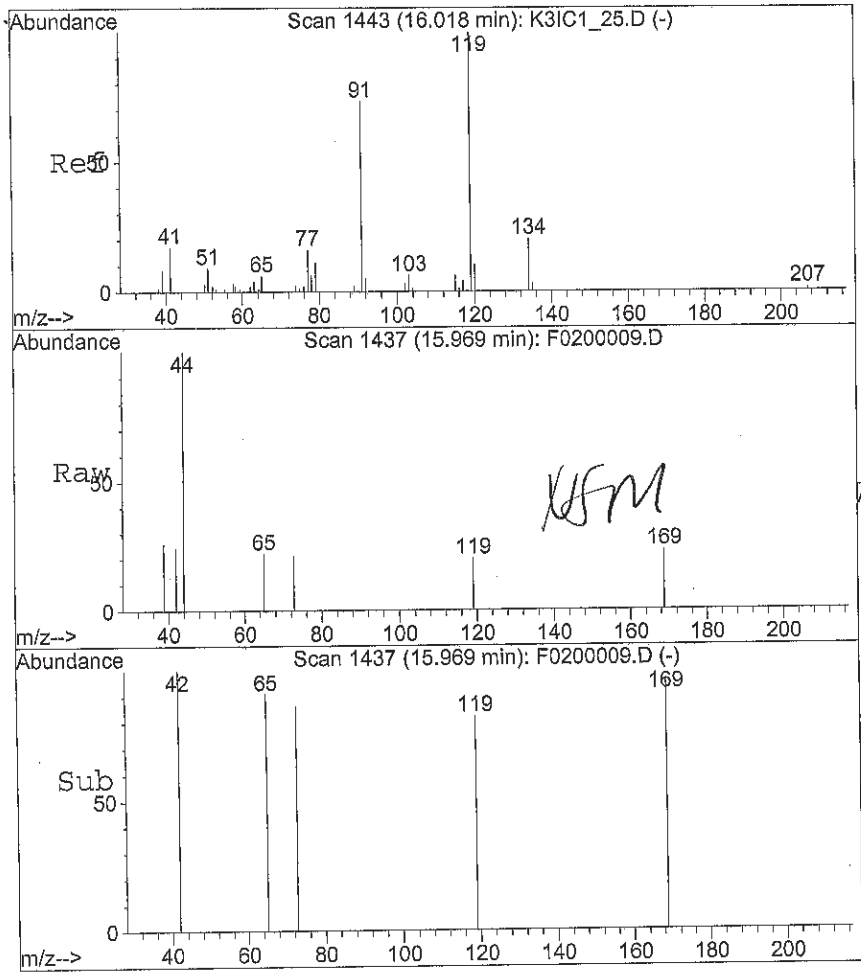


#65
4-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.70 min Scan# 1405
Delta R.T. -0.03 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion: 91 Resp: 314

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.6	36.8#

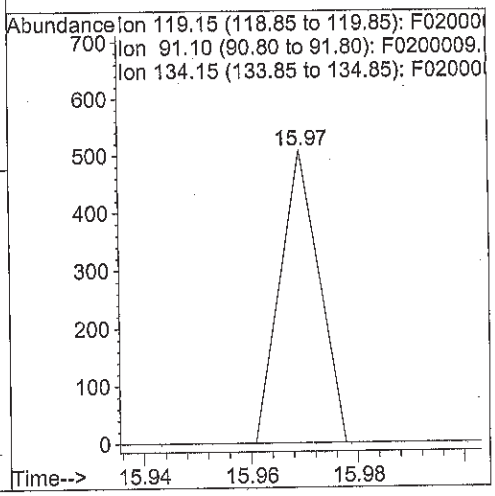


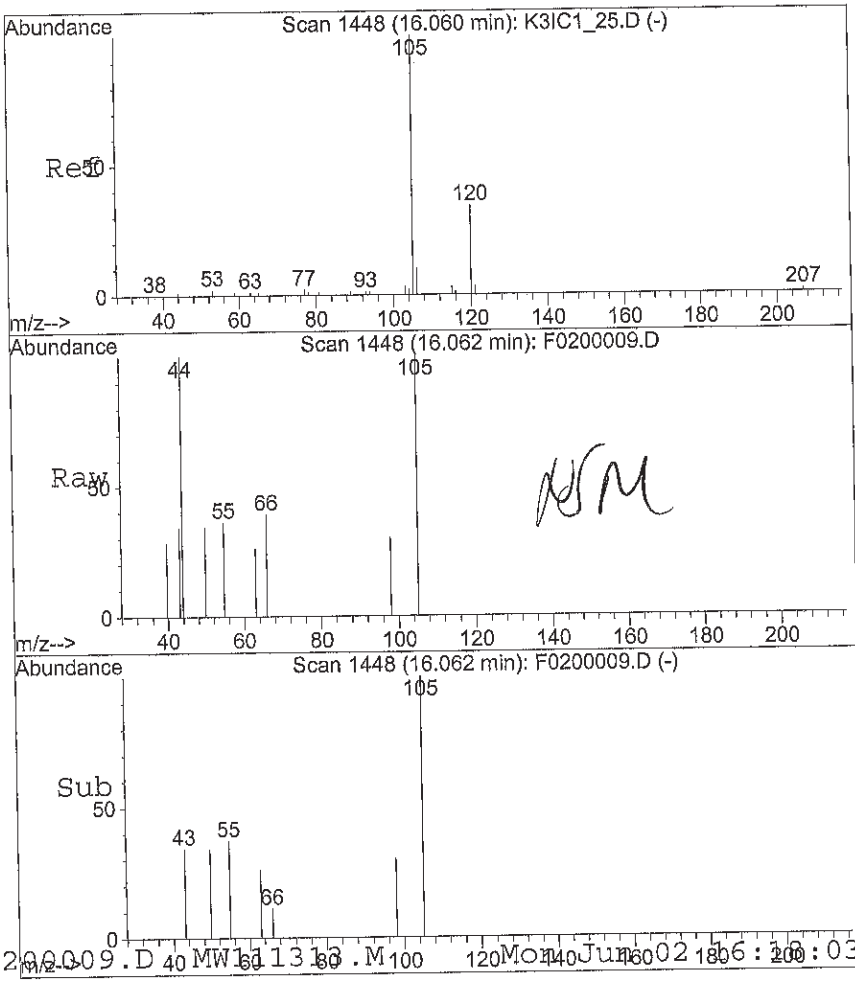


#66
tert-Butylbenzene
Concen: 0.02 ug/L
RT: 15.97 min Scan# 1437
Delta R.T. -0.05 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

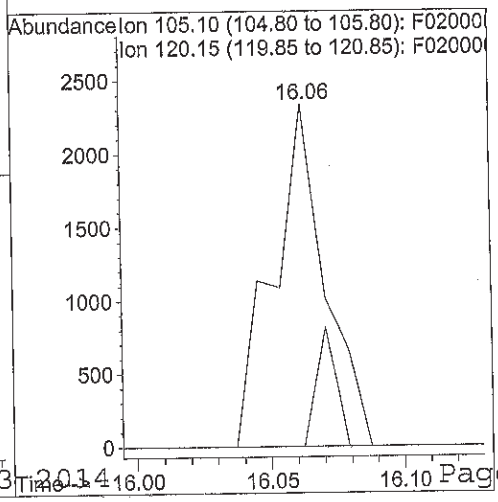


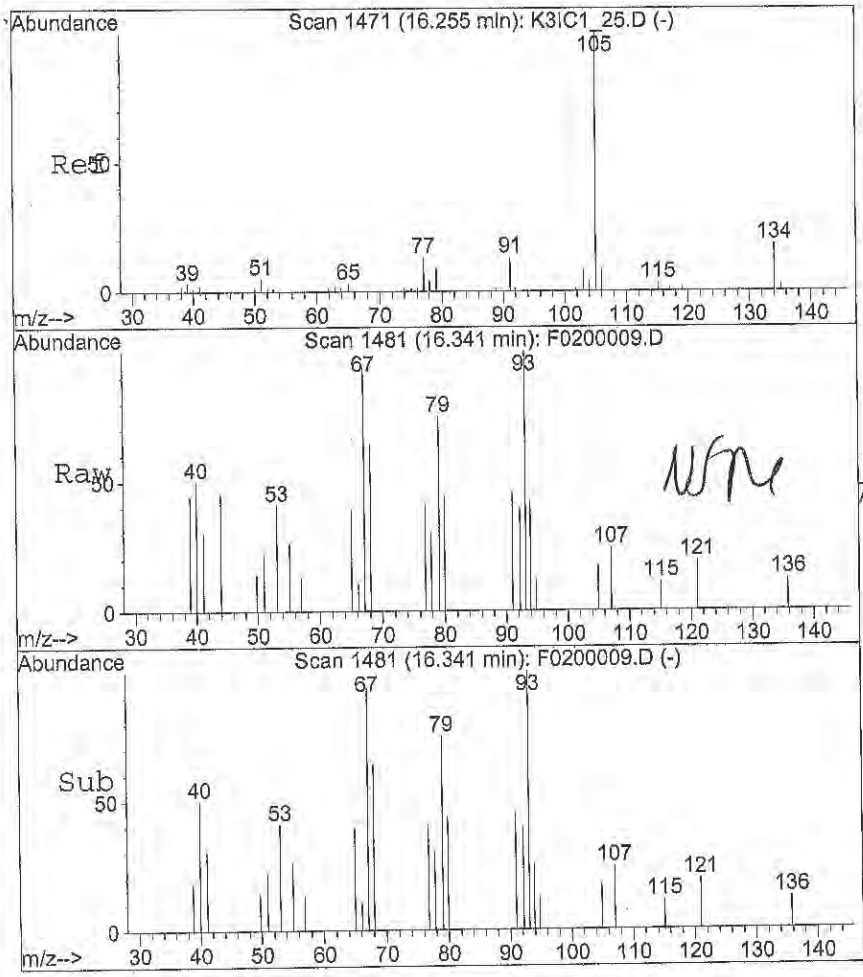


#67
1,2,4-Trimethylbenzene
Concen: 0.21 ug/L
RT: 16.06 min Scan# 1448
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion:105 Resp: 3161

Ion	Ratio	Lower	Upper
105	100		
120	13.1	33.8	50.8#

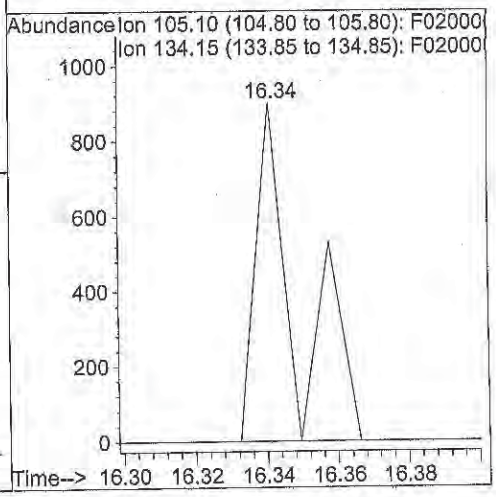


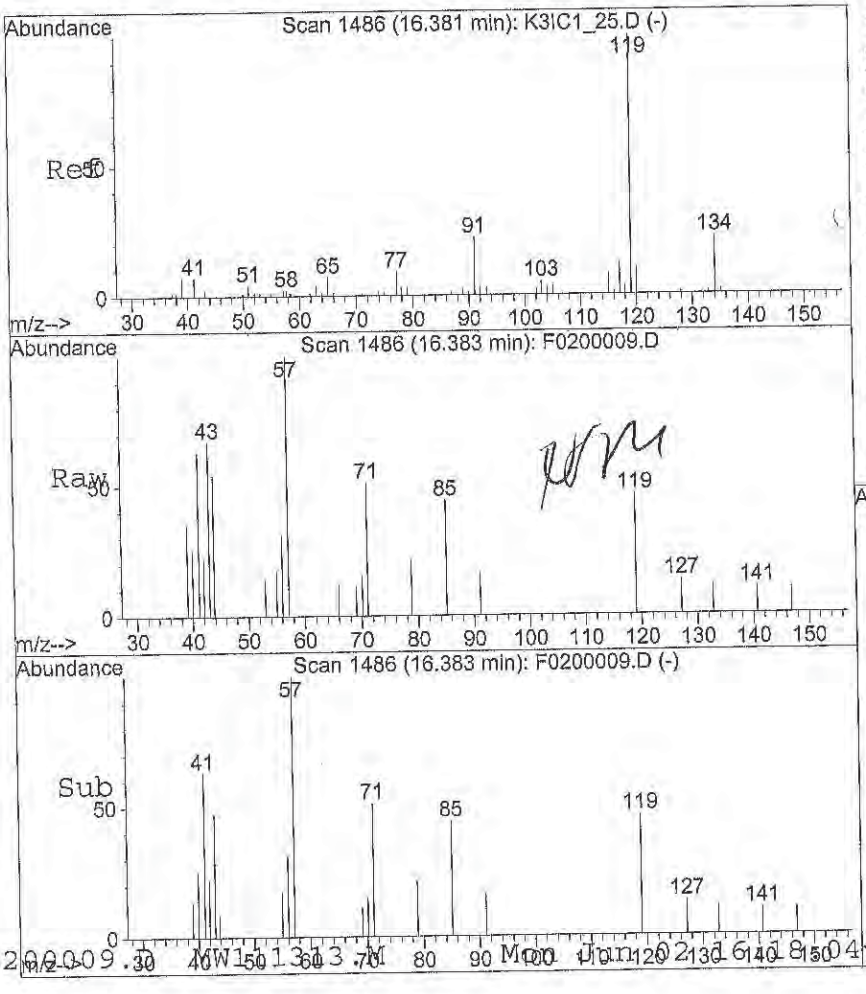


#68
sec-Butylbenzene
Concen: 0.04 ug/L
RT: 16.34 min Scan# 1481
Delta R.T. 0.09 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

Tgt Ion:105 Resp: 724

Ion	Ratio	Lower	Upper
105	100		
134	0.0	13.0	19.6#

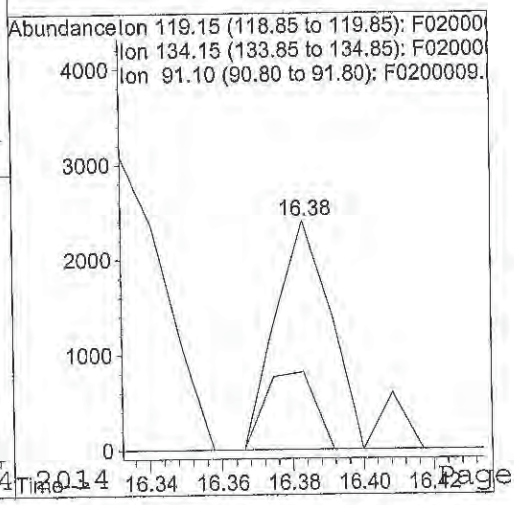


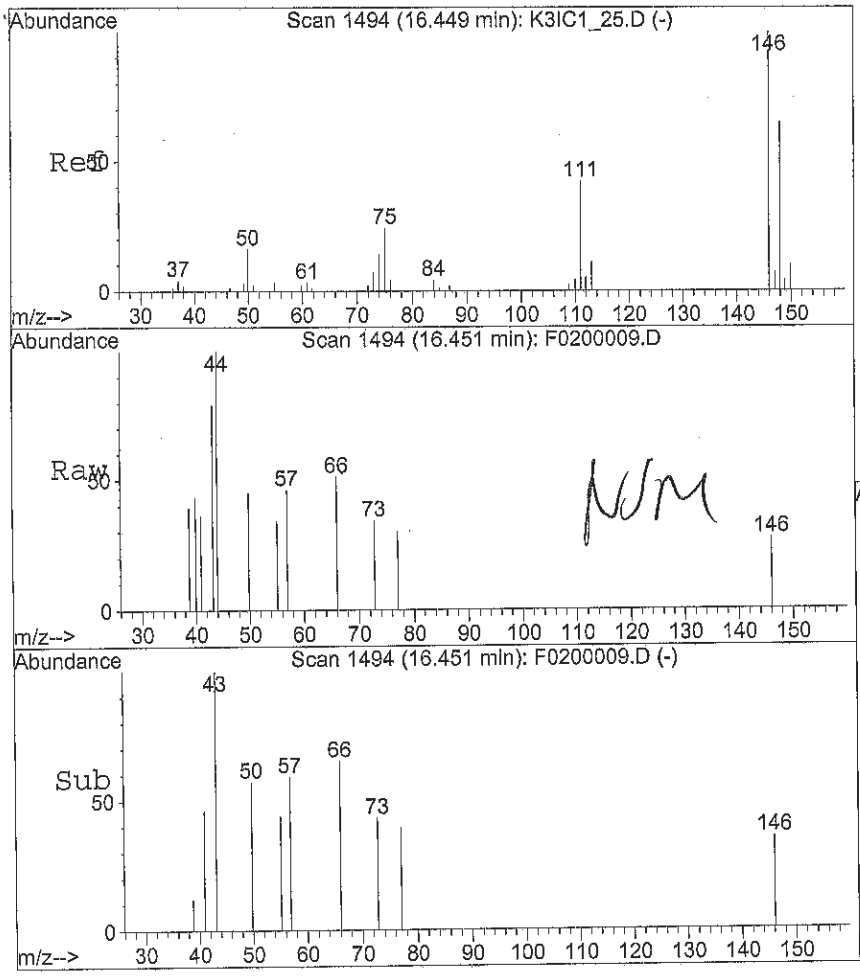


#69
p-Isopropyltoluene
Concen: 0.16 ug/L
RT: 16.38 min Scan# 1486
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

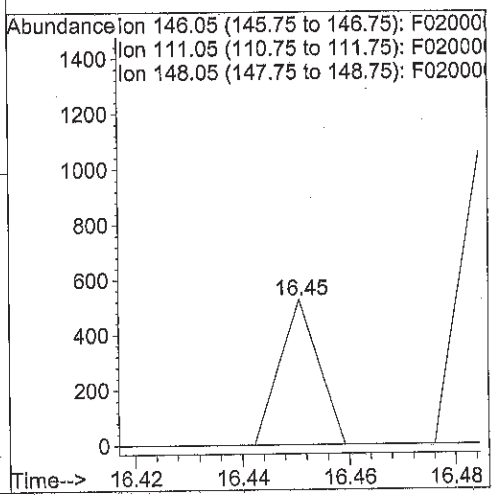


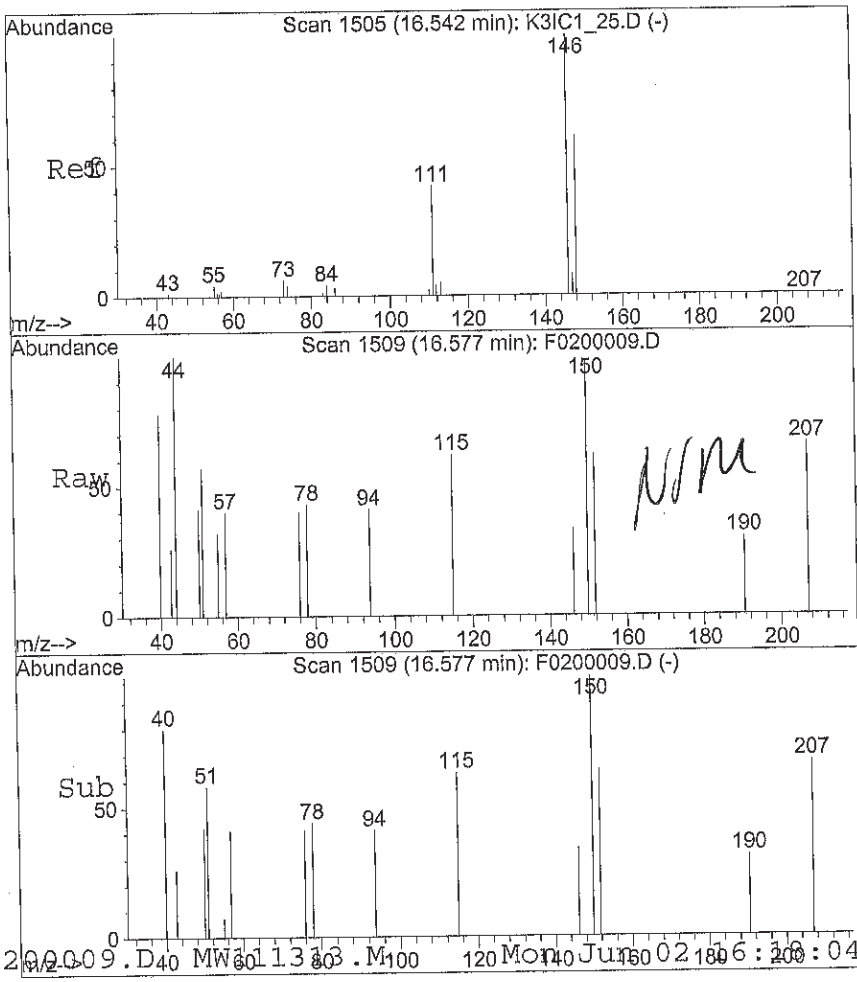


#70
1,3-Dichlorobenzene
Concen: 0.03 ug/L
RT: 16.45 min Scan# 1494
Delta R.T. 0.00 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

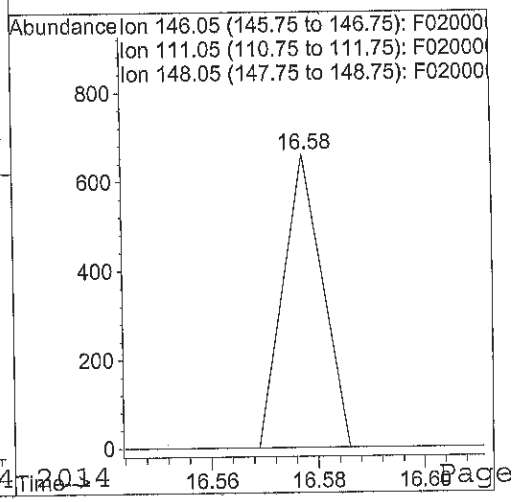


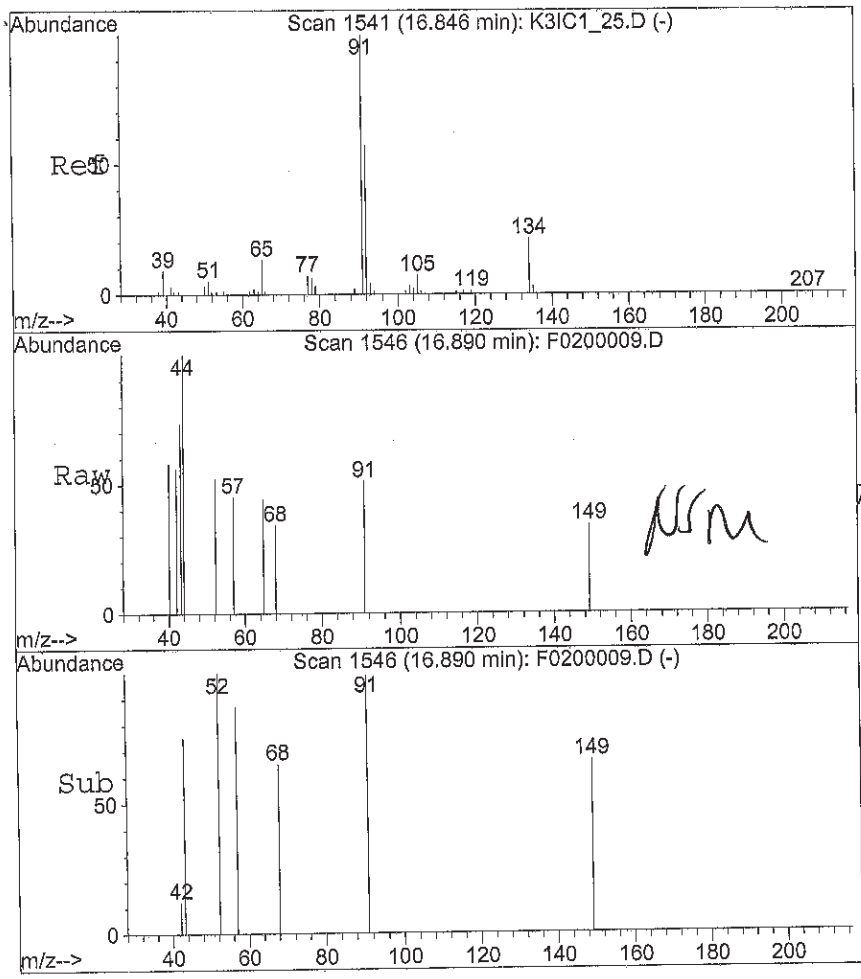


#71
1,4-Dichlorobenzene
Concen: 0.04 ug/L
RT: 16.58 min Scan# 1509
Delta R.T. 0.04 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

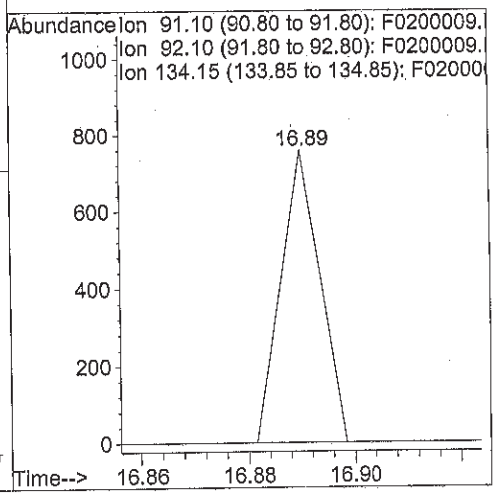


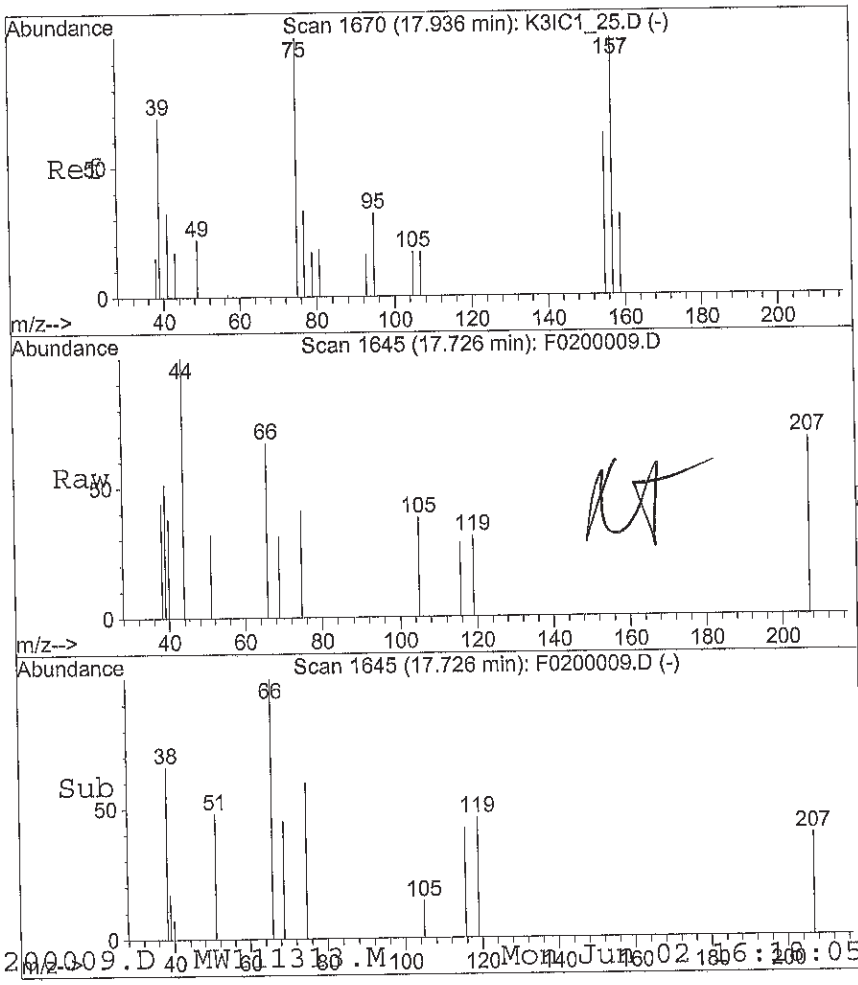


#72
n-Butylbenzene
Concen: 0.02 ug/L
RT: 16.89 min Scan# 1546
Delta R.T. 0.04 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#

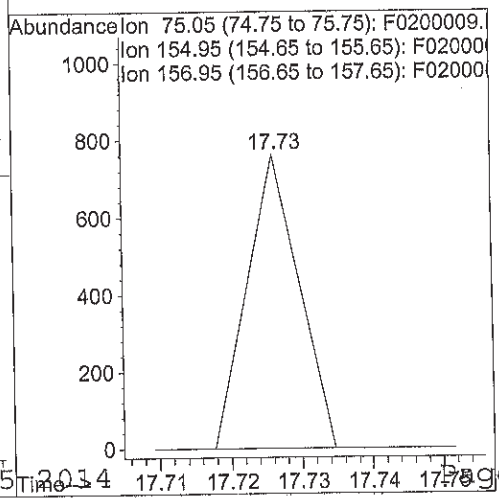




#74
1,2-Dibromo-3-chloropropane
Concen: 1.45 ug/L
RT: 17.73 min Scan# 1645
Delta R.T. -0.21 min
Lab File: F0200009.D
Acq: 2 Jun 2014 3:49 pm

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#



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\060214L3\F0200009.D Vial: 8
Acq On : 2 Jun 2014 3:49 pm Operator: DN
Sample : 3F40201-08 Inst : GC/MS Ins
Misc : 100cc SVL-505-SA5C-SV-15.0-16.0 Multiplr: 10.00
MS Integration Params: rteint.p
Quant Time: Jun 3 7:42 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	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

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

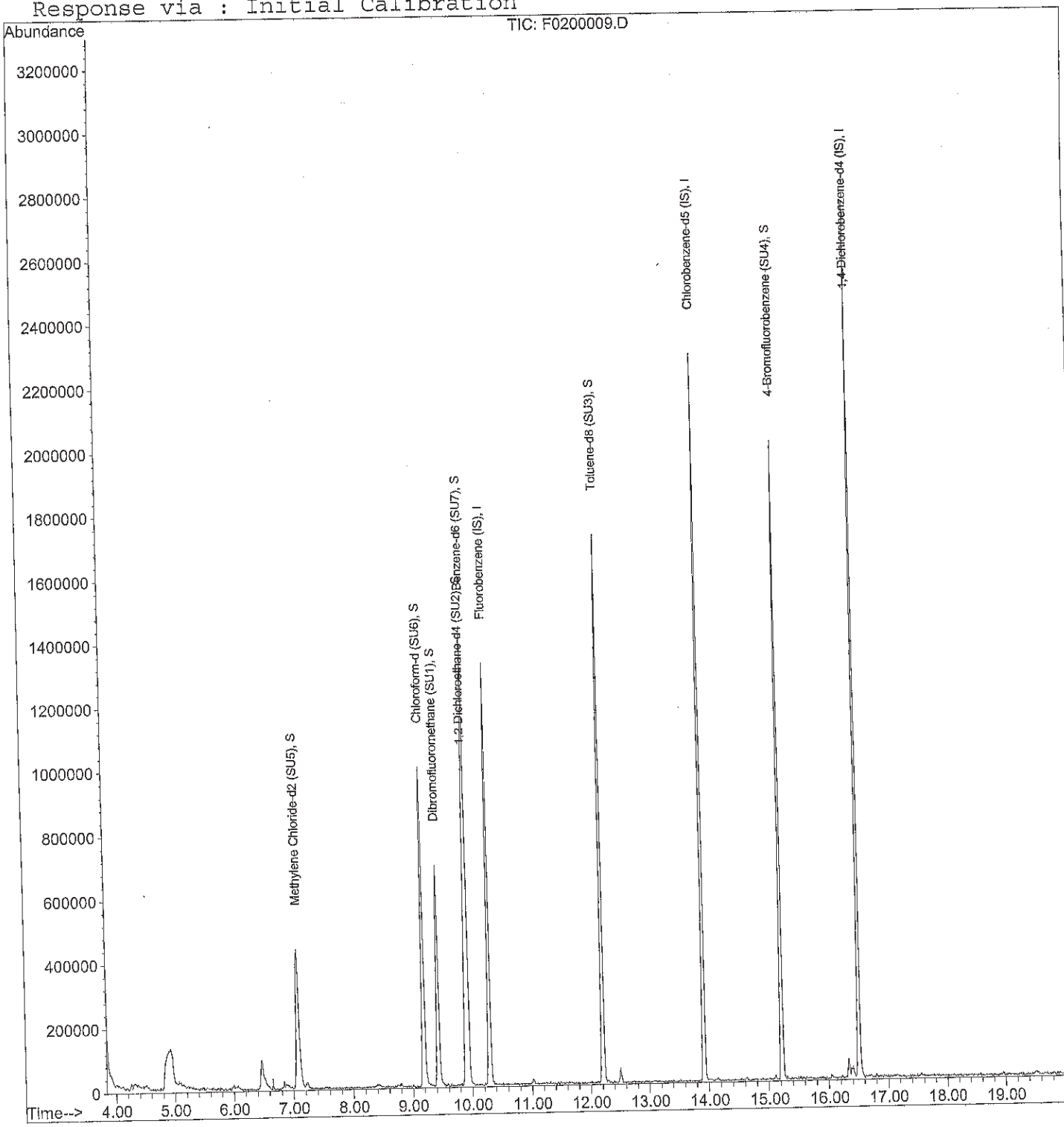
Quantitation Report

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



Quantitation Report (QT Reviewed)

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

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

Quantitation Report (QT Reviewed)

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

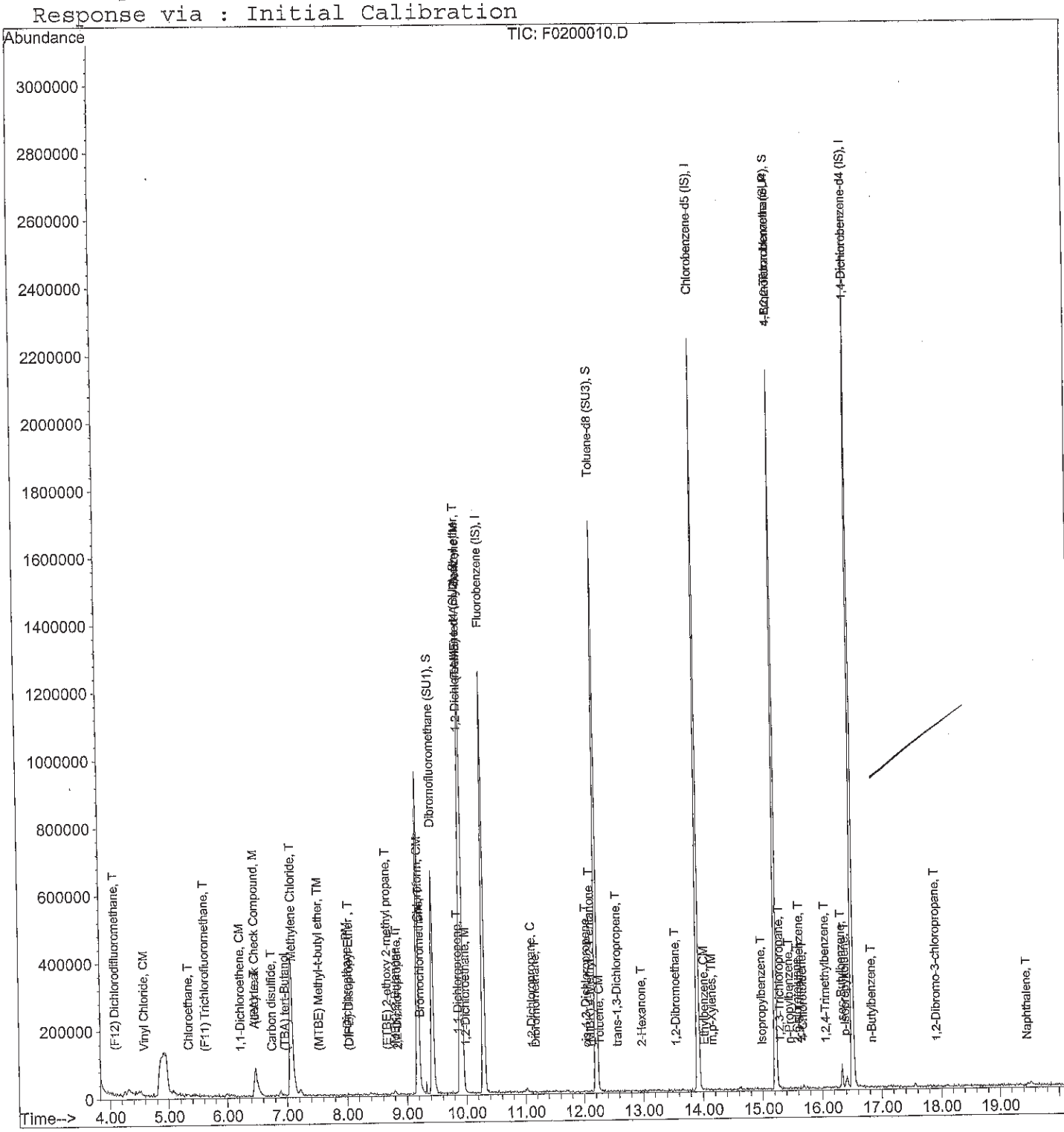
Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
Title : 8260B GC/MS #3 ICAL 11/13/13 DN
Last Update : Wed Nov 13 19:38:32 2013
Response via : Initial Calibration
DataAcq Meth : MW111313

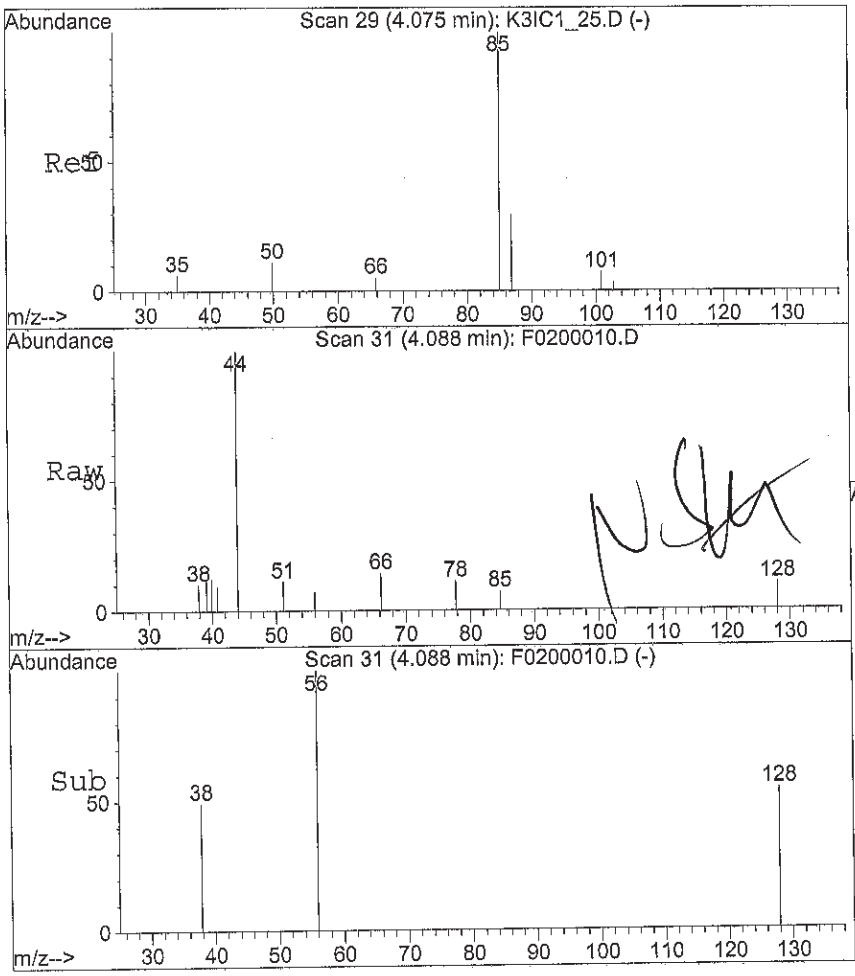
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
31) Benzene	9.92	78	9790	0.94 ~~ug/L~~ #	65
32) 1,2-Dichloroethane	10.00	62	363	0.10 ~~ug/L~~ #	43
34) 1,2-Dichloropropane	11.12	63	272	0.11 ~~ug/L~~ #	50
35) Dibromomethane	11.18	93	409	0.21 ~~ug/L~~ #	5
37) cis-1,3-Dichloropropene	12.05	75	285	0.07 ~~ug/L~~ #	1
40) (MIBK) 4-Methyl-2-Pentanon	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 # 0.0012	1
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

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

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

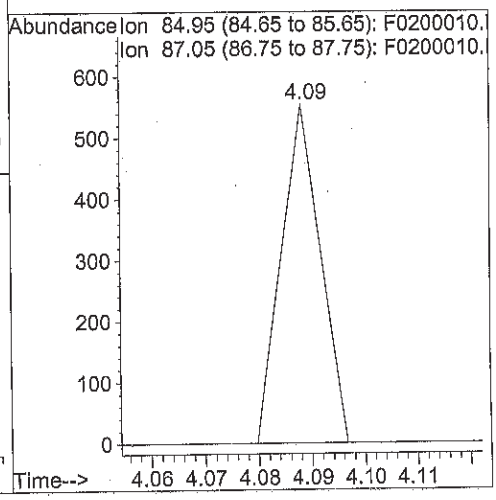


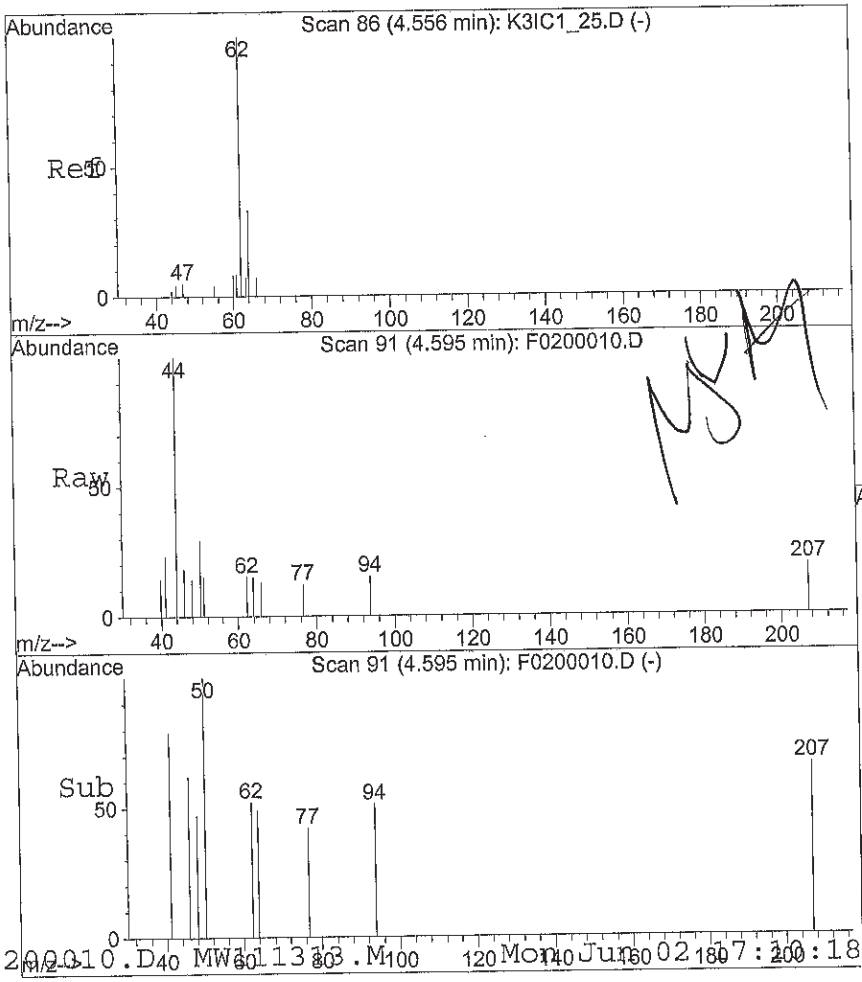


#3
(F12) Dichlorodifluoromethane
Concen: 0.10 ug/L
RT: 4.09 min Scan# 31
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 85 Resp: 281

Ion	Ratio	Lower	Upper
85	100		
87	0.0	24.6	37.0#

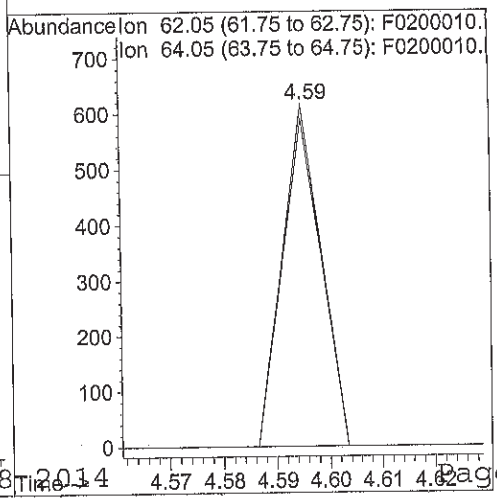


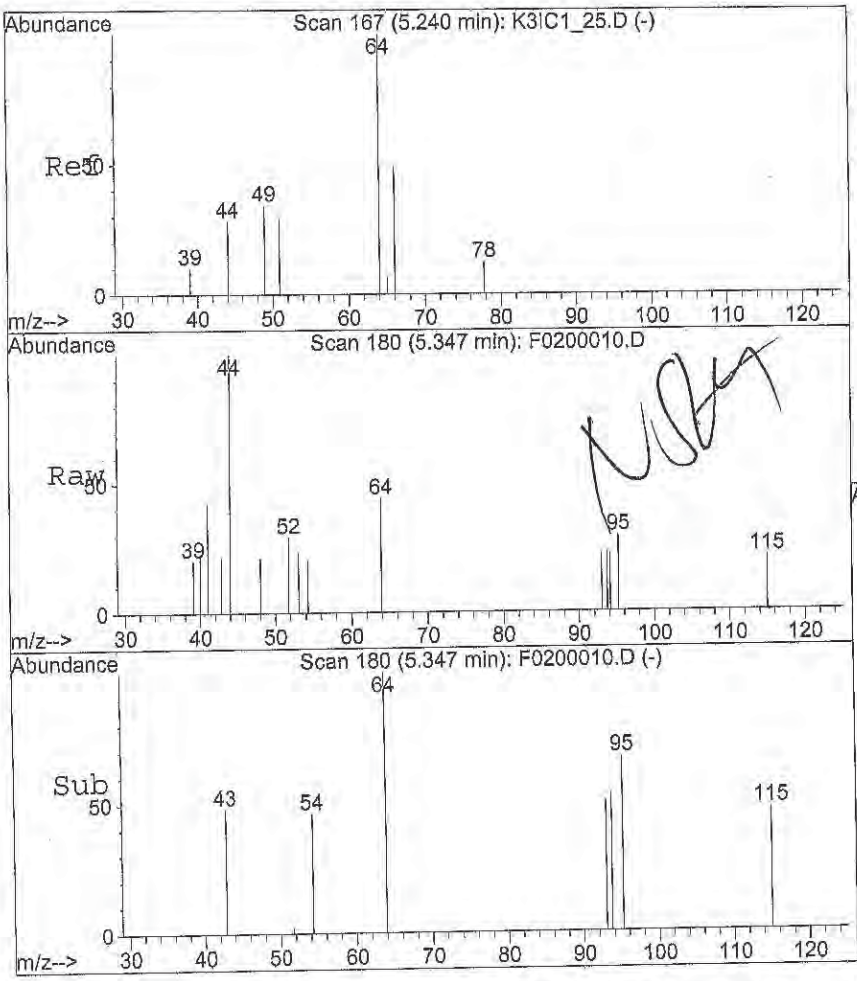


#5
Vinyl Chloride
Concen: 0.16 ug/L
RT: 4.59 min Scan# 91
Delta R.T. 0.04 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 62 Resp: 312

Ion	Ratio	Lower	Upper
62	100		
64	95.8	25.6	38.4#

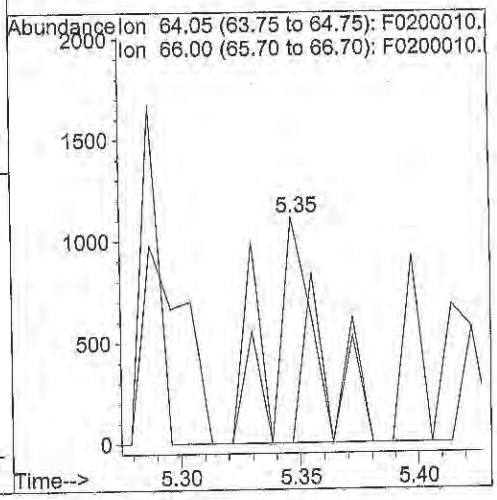


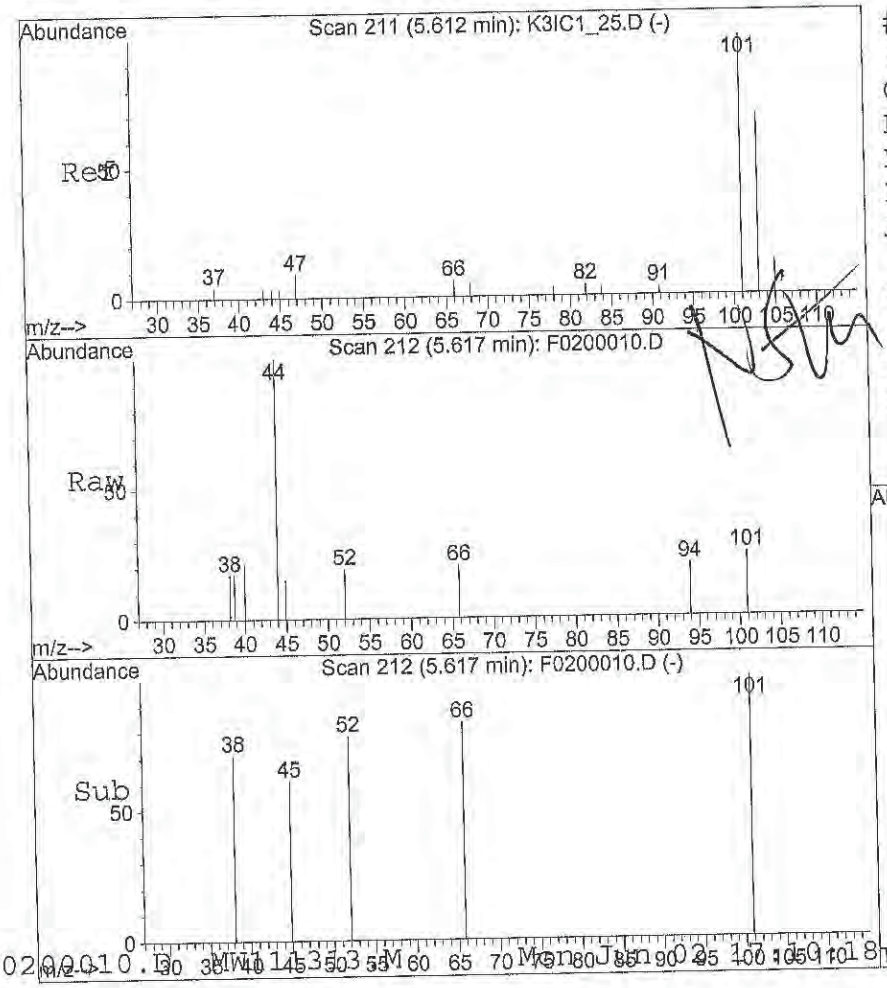


#7
Chloroethane
Concen: 2.28 ug/L
RT: 5.35 min Scan# 180
Delta R.T. 0.11 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 64 Resp: 1470

Ion	Ratio	Lower	Upper
64	100		
66	47.1	35.4	53.0

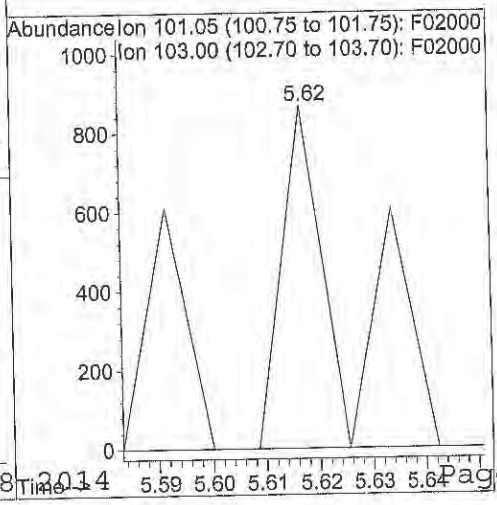


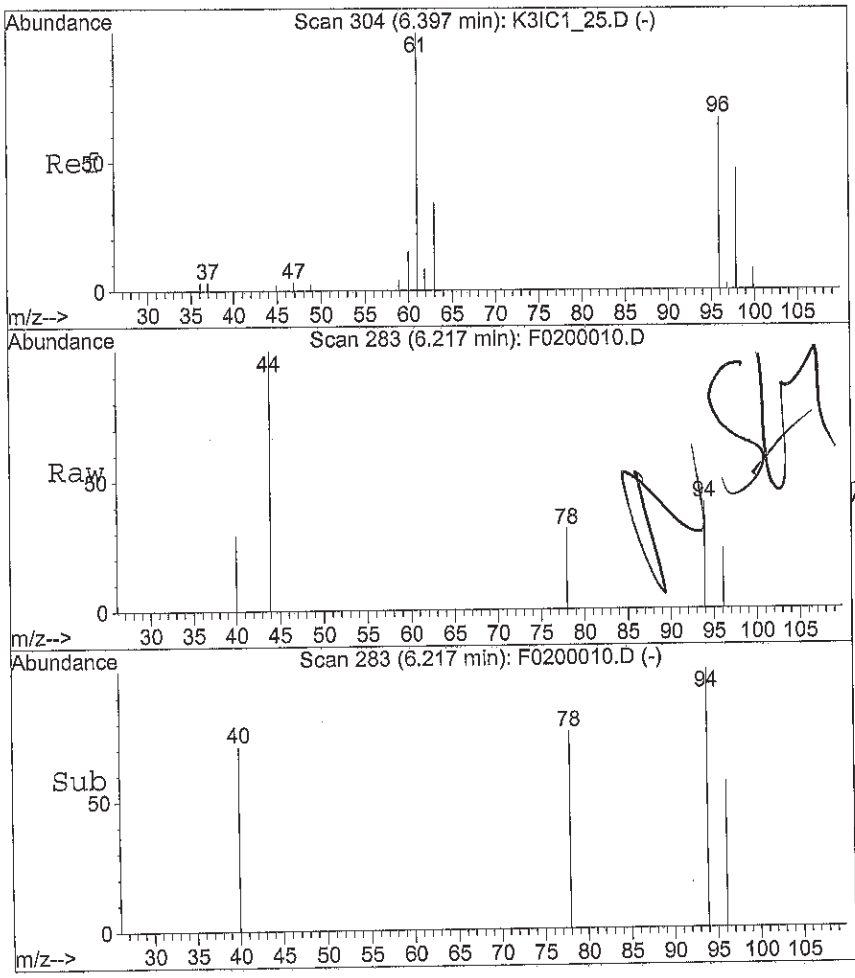


#8
(F11) Trichlorofluoromethane
Concen: 0.14 ug/L
RT: 5.62 min Scan# 212
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion:101 Resp: 439

Ion	Ratio	Lower	Upper
101	100		
103	69.9	54.5	81.7

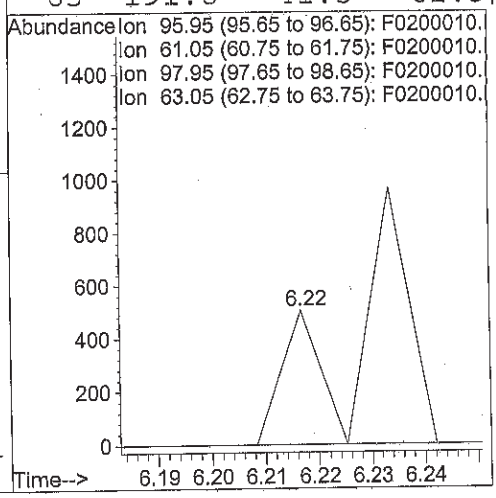


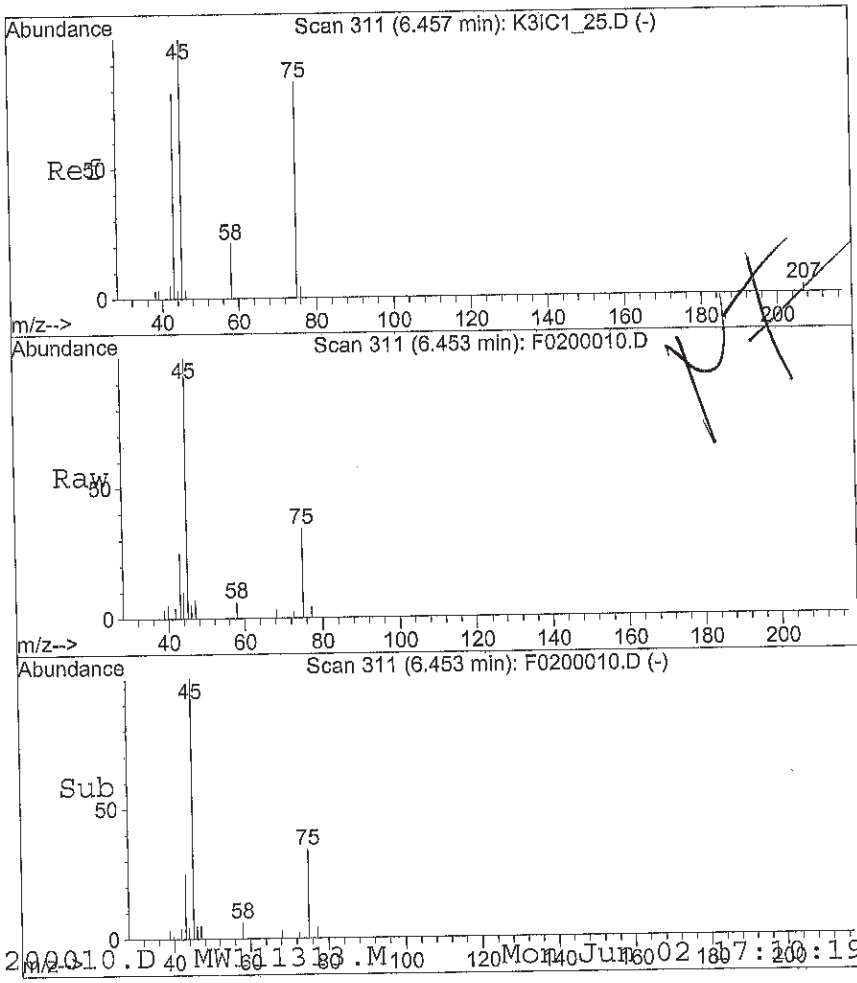


#10
1,1-Dichloroethene
Concen: 0.10 ug/L
RT: 6.22 min Scan# 283
Delta R.T. -0.18 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

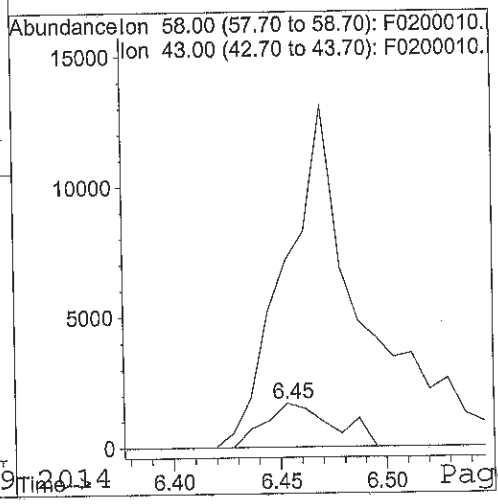


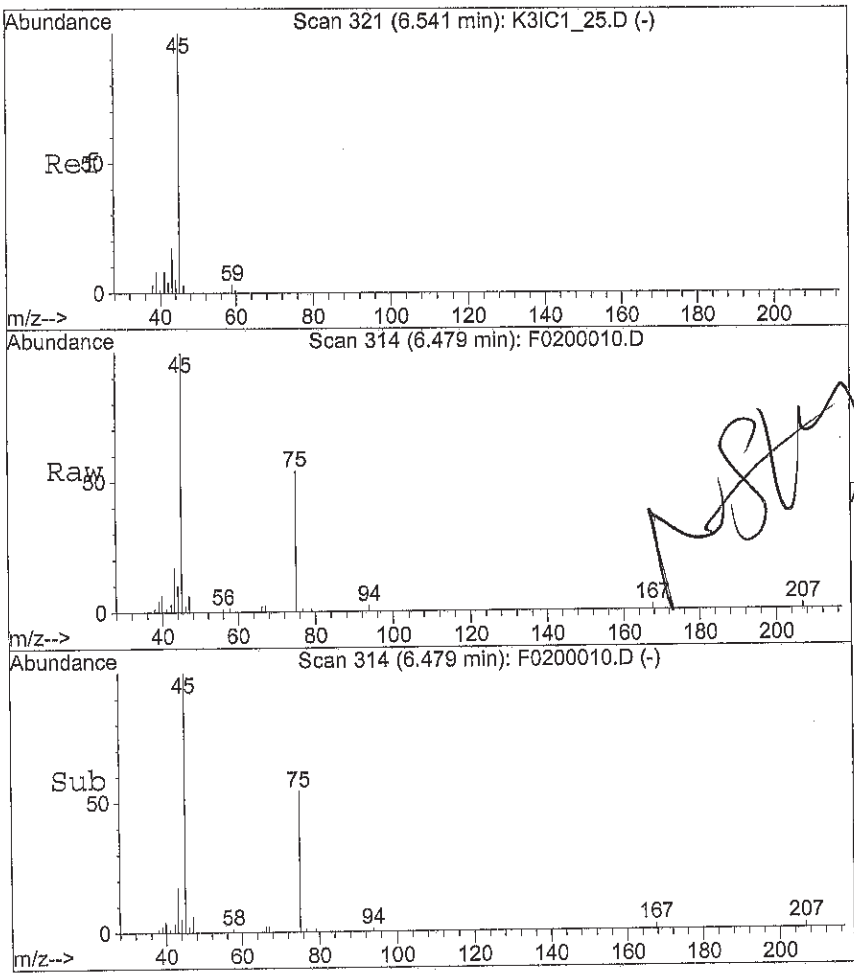


#11
Acetone
Concen: 3.78 ug/L
RT: 6.45 min Scan# 311
Delta R.T. -0.00 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 58 Resp: 3776

Ion	Ratio	Lower	Upper
58	100		
43	885.9	360.9	541.3#

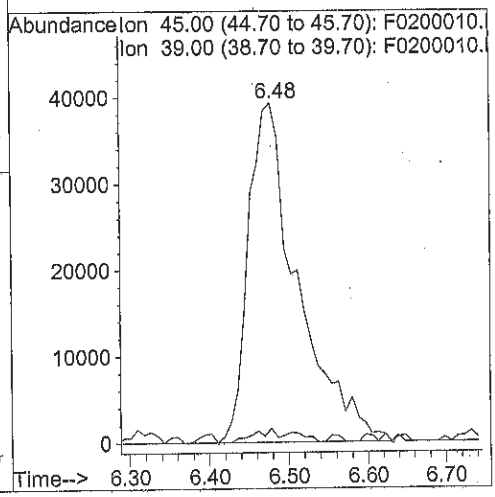


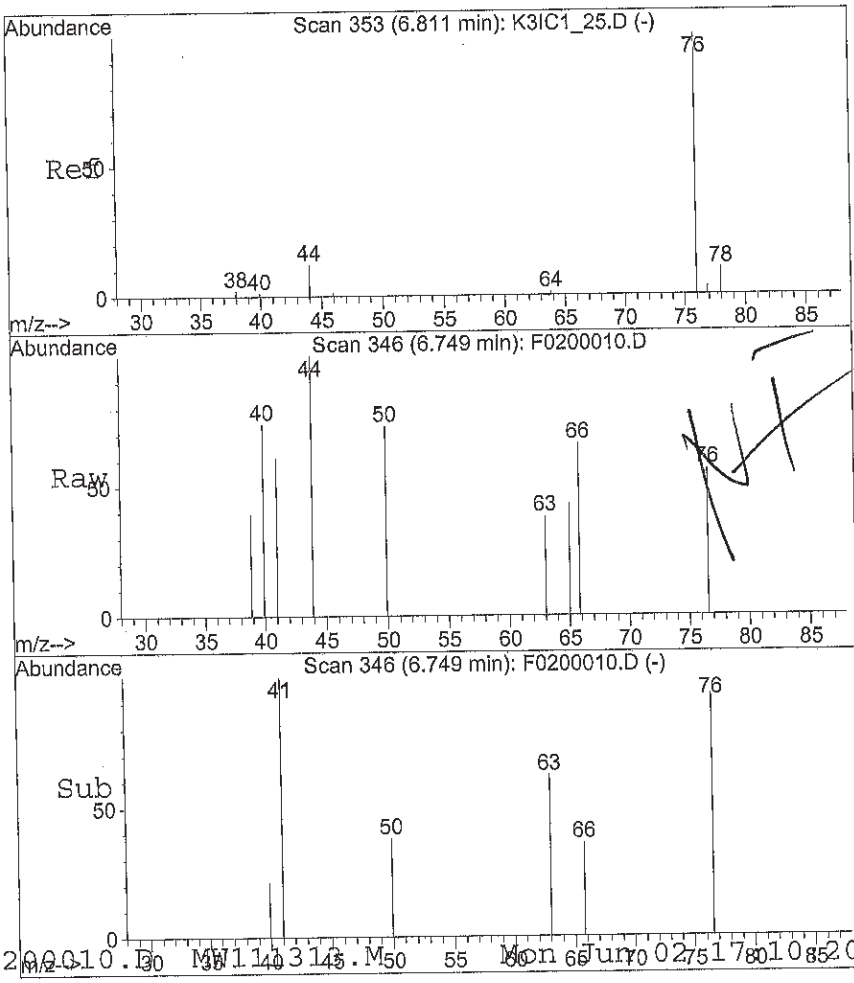


#12
(IPA) Leak Check Compound
Concen: 1272.75 ug/L
RT: 6.48 min Scan# 314
Delta R.T. -0.06 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 45 Resp: 169105

Ion	Ratio	Lower	Upper
45	100		
39	1.2	4.9	7.3#

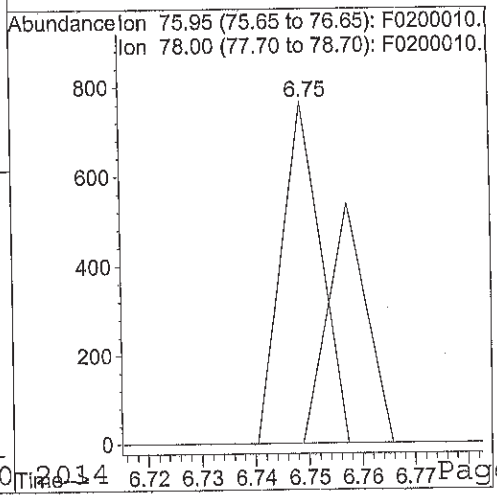


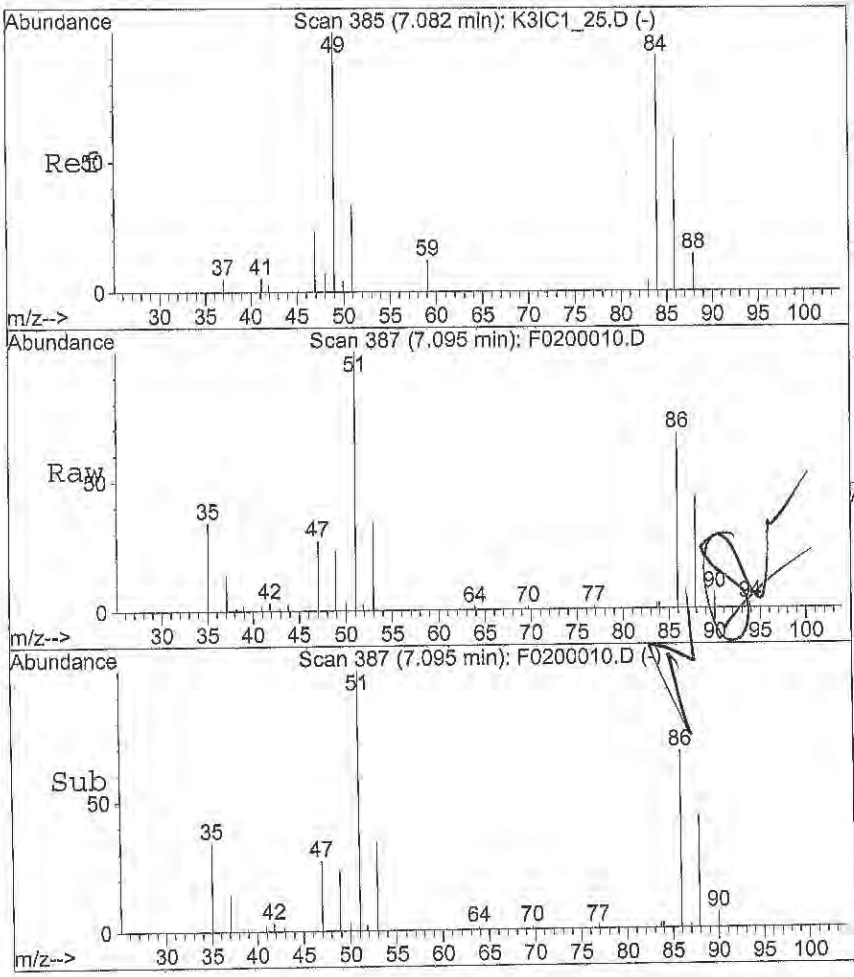


#13
Carbon disulfide
Concen: 0.04 ug/L
RT: 6.75 min Scan# 346
Delta R.T. -0.06 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 76 Resp: 388

Ion	Ratio	Lower	Upper
76	100		
78	70.4	7.0	10.4#

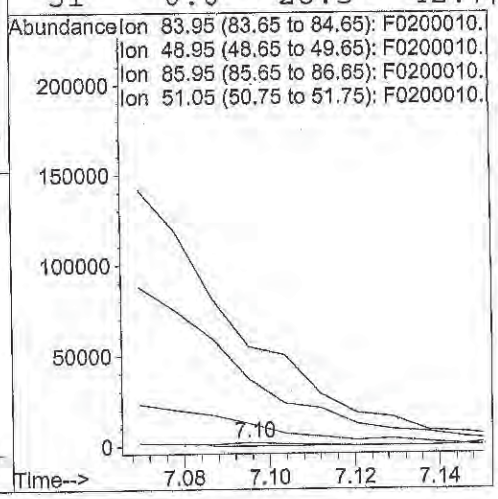


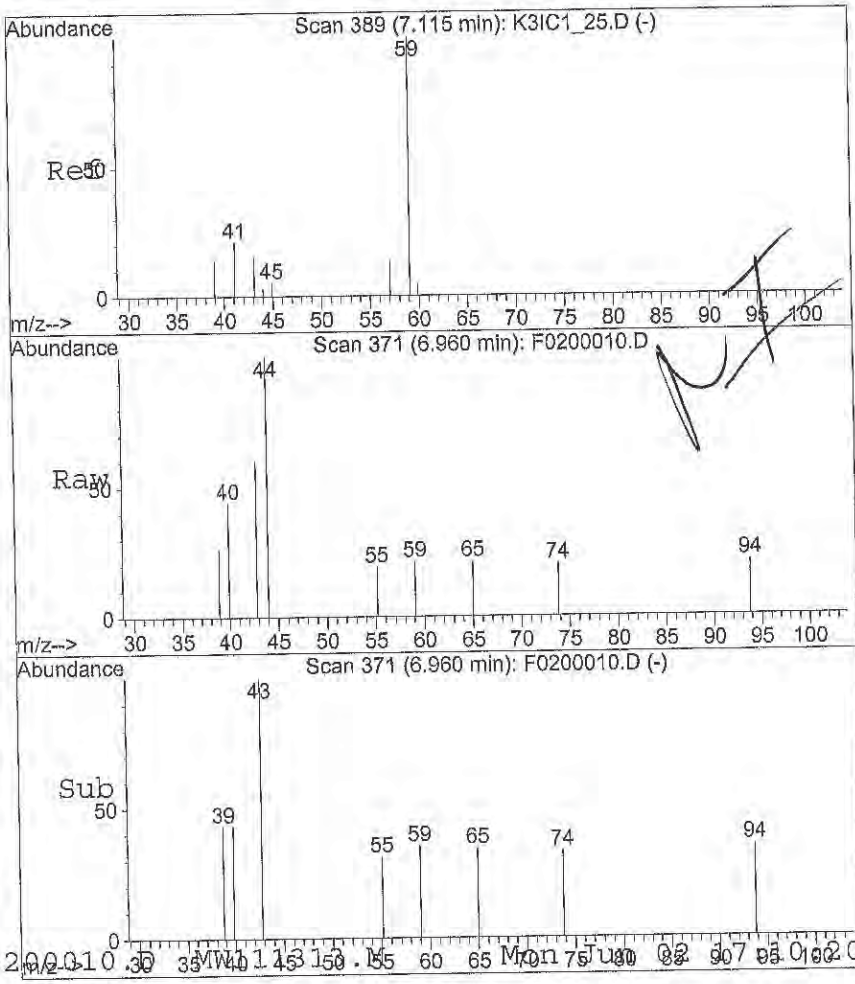


#14
Methylene Chloride
Concen: 0.60 ug/L
RT: 7.10 min Scan# 387
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

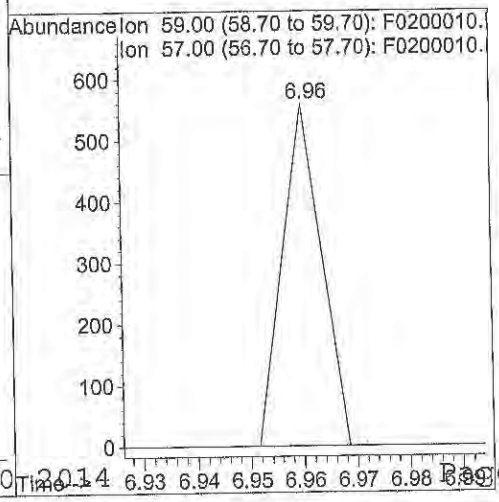


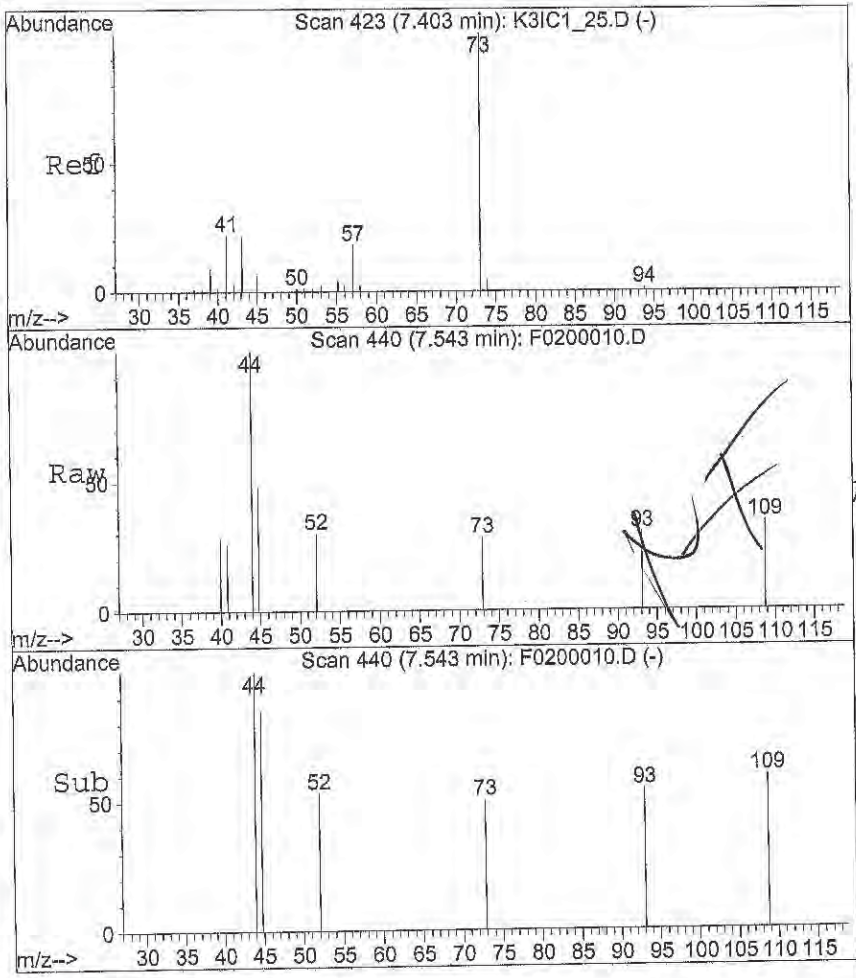


#15
(TBA) tert-Butanol
Concen: 1.50 ug/L
RT: 6.96 min Scan# 371
Delta R.T. -0.16 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 59 Resp: 283

Ion	Ratio	Lower	Upper
59	100		
57	0.0	6.4	9.6#

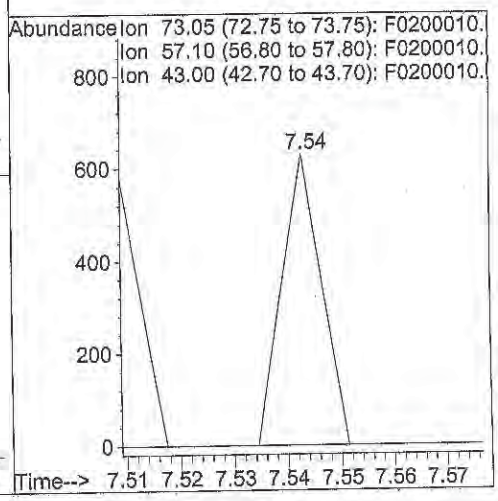


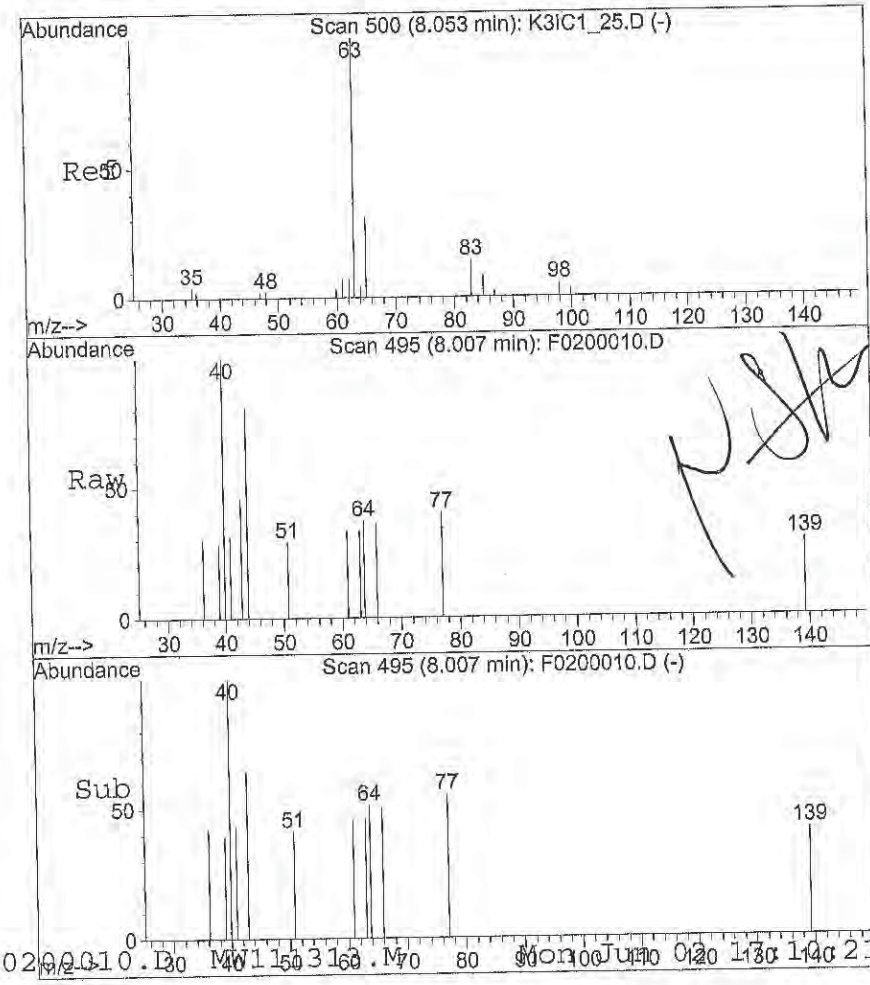


#16
(MTBE) Methyl-t-butyl ether
Concen: 0.05 ug/L
RT: 7.54 min Scan# 440
Delta R.T. 0.14 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

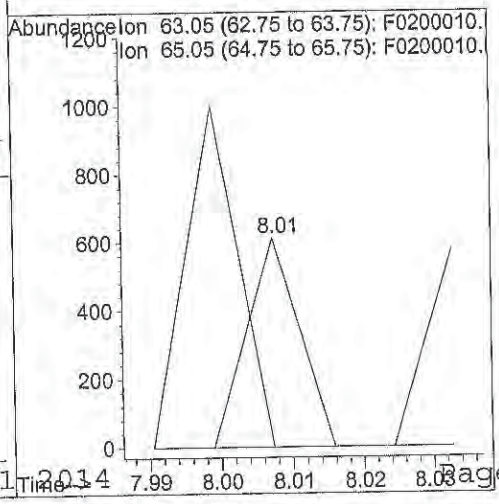


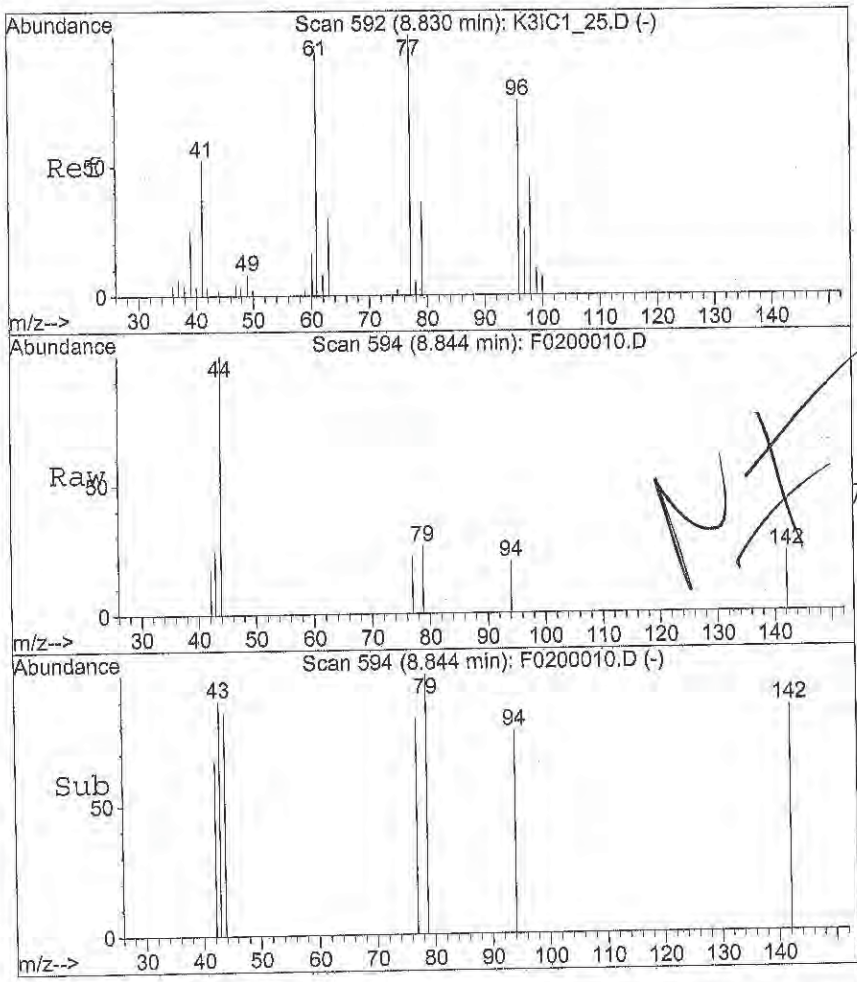


#18
1,1-Dichloroethane
Concen: 0.06 ug/L
RT: 8.01 min Scan# 495
Delta R.T. -0.05 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 63 Resp: 310

Ion	Ratio	Lower	Upper
63	100		
65	163.5	25.8	38.8#

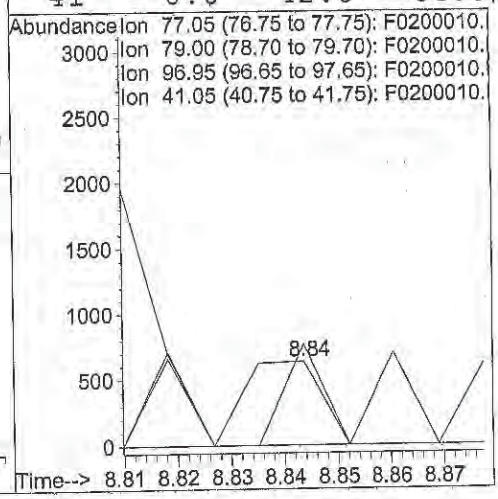


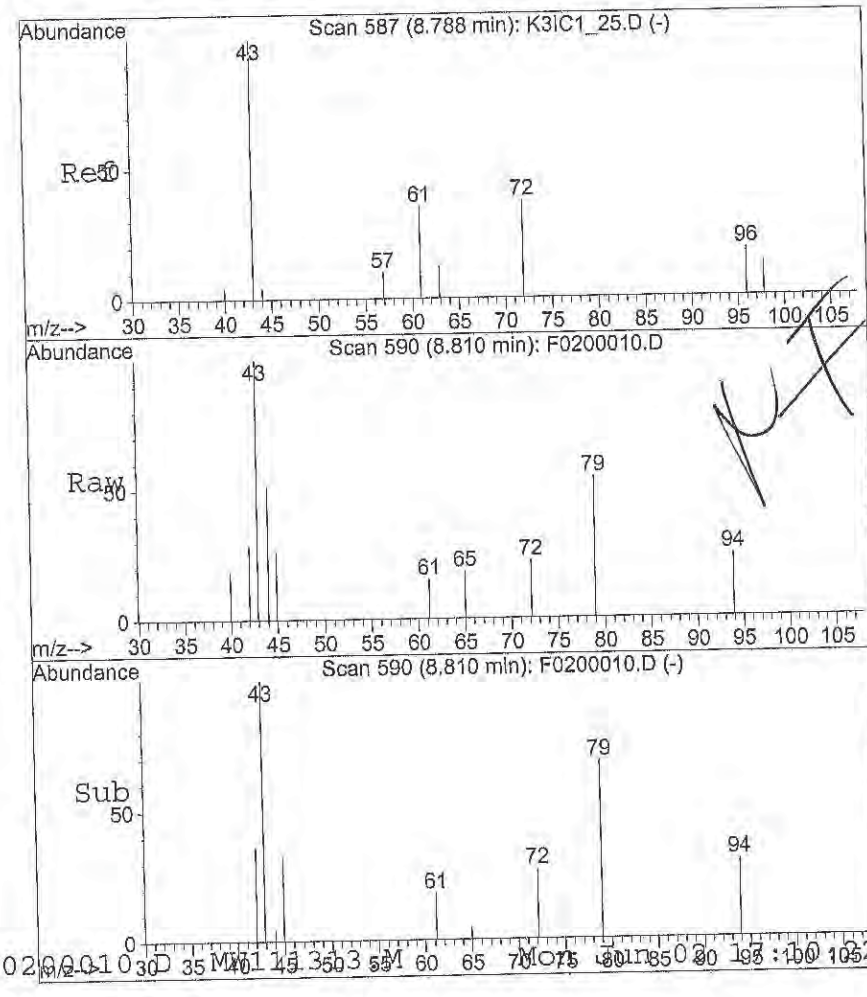


#20
2,2-Dichloropropane
Concen: 0.15 ug/L
RT: 8.84 min Scan# 594
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

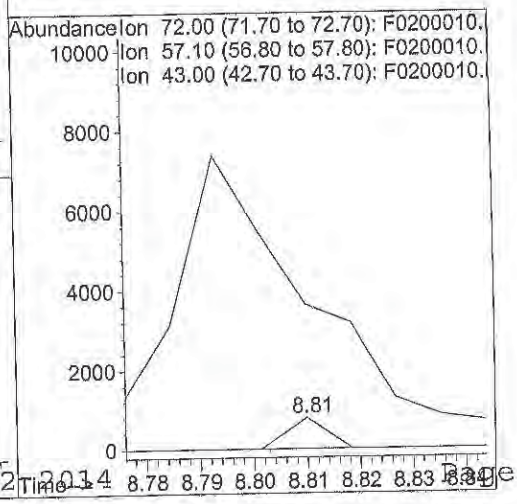


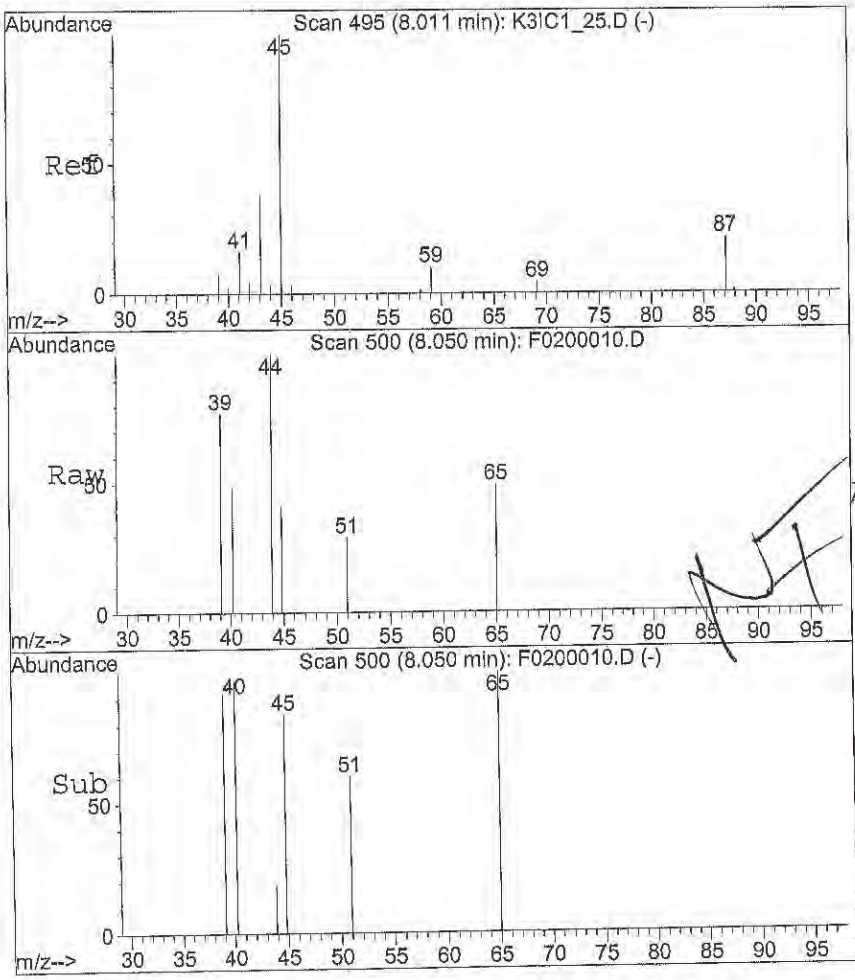


#21
(MEK) 2-Butanone
Concen: 1.28 ug/L
RT: 8.81 min Scan# 590
Delta R.T. 0.02 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

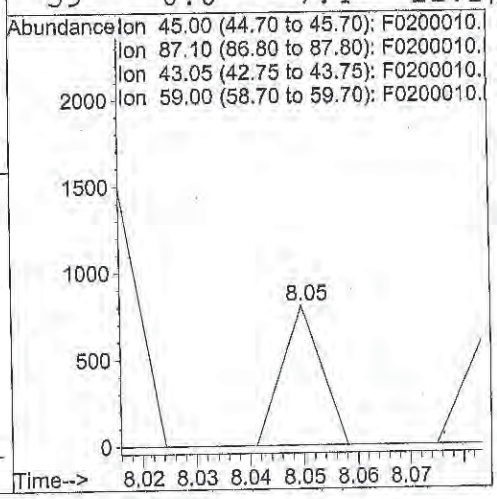


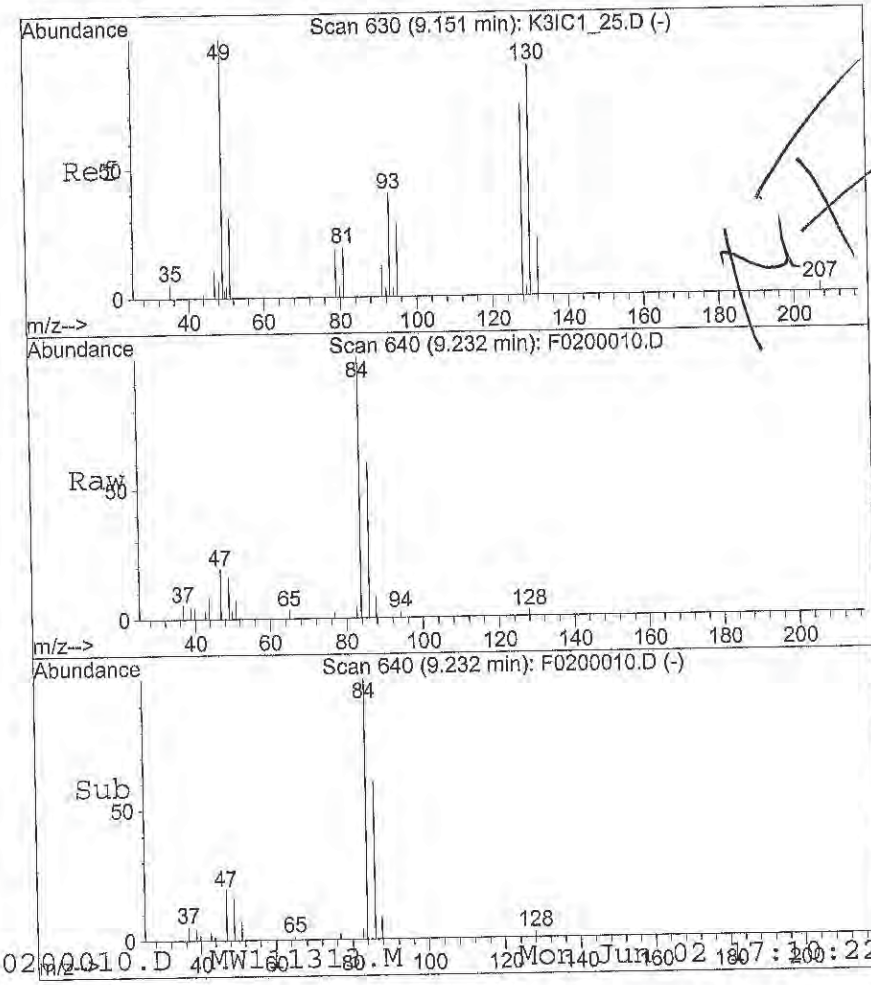


#22
(DIPE) Diisopropyl Ether
Concen: 0.05 ug/L
RT: 8.05 min Scan# 500
Delta R.T. 0.04 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

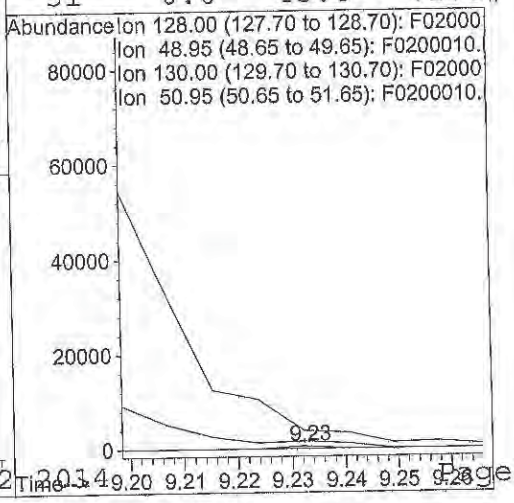


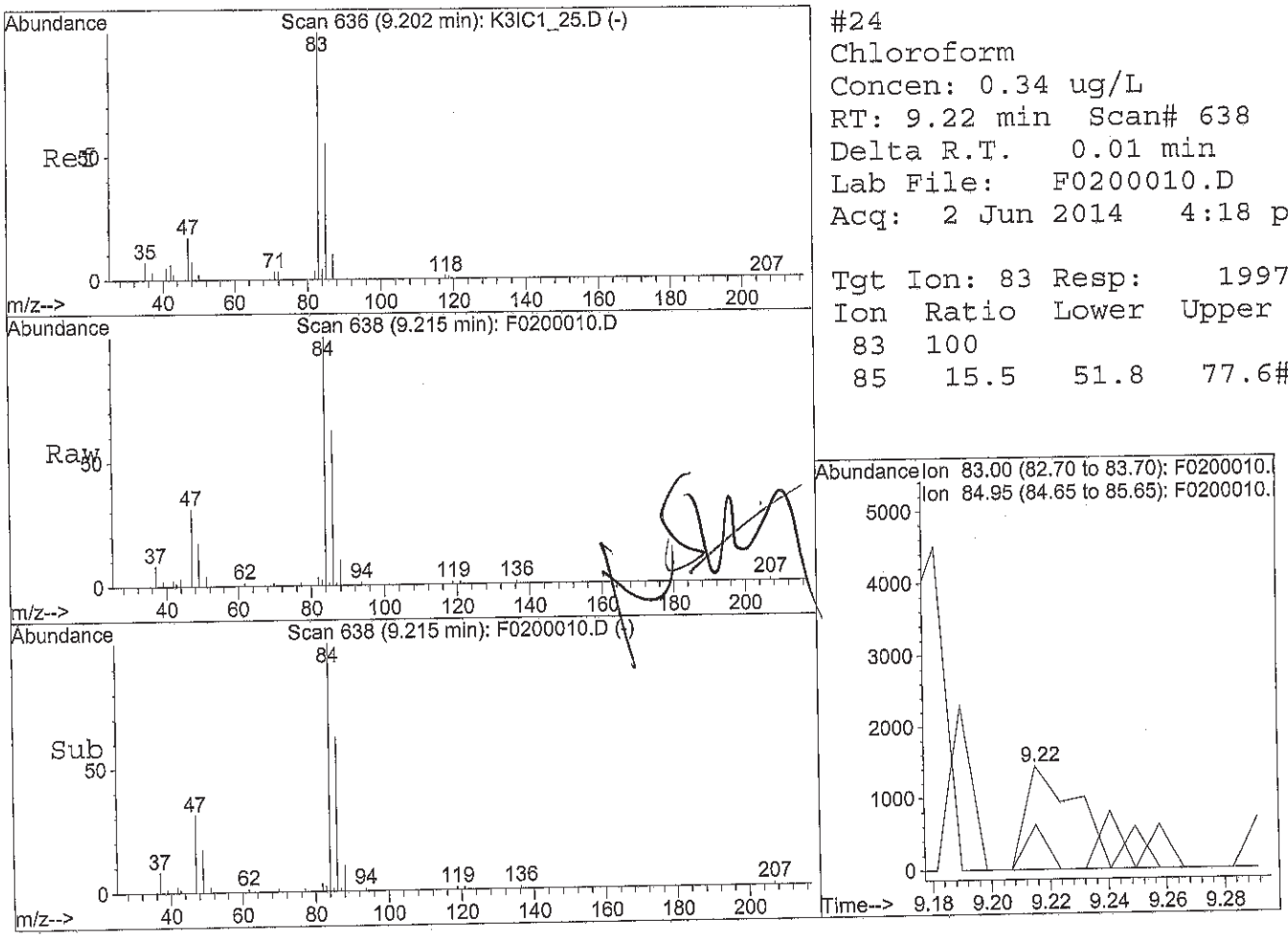


#23
Bromochloromethane
Concen: 0.19 ug/L
RT: 9.23 min Scan# 640
Delta R.T. 0.08 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

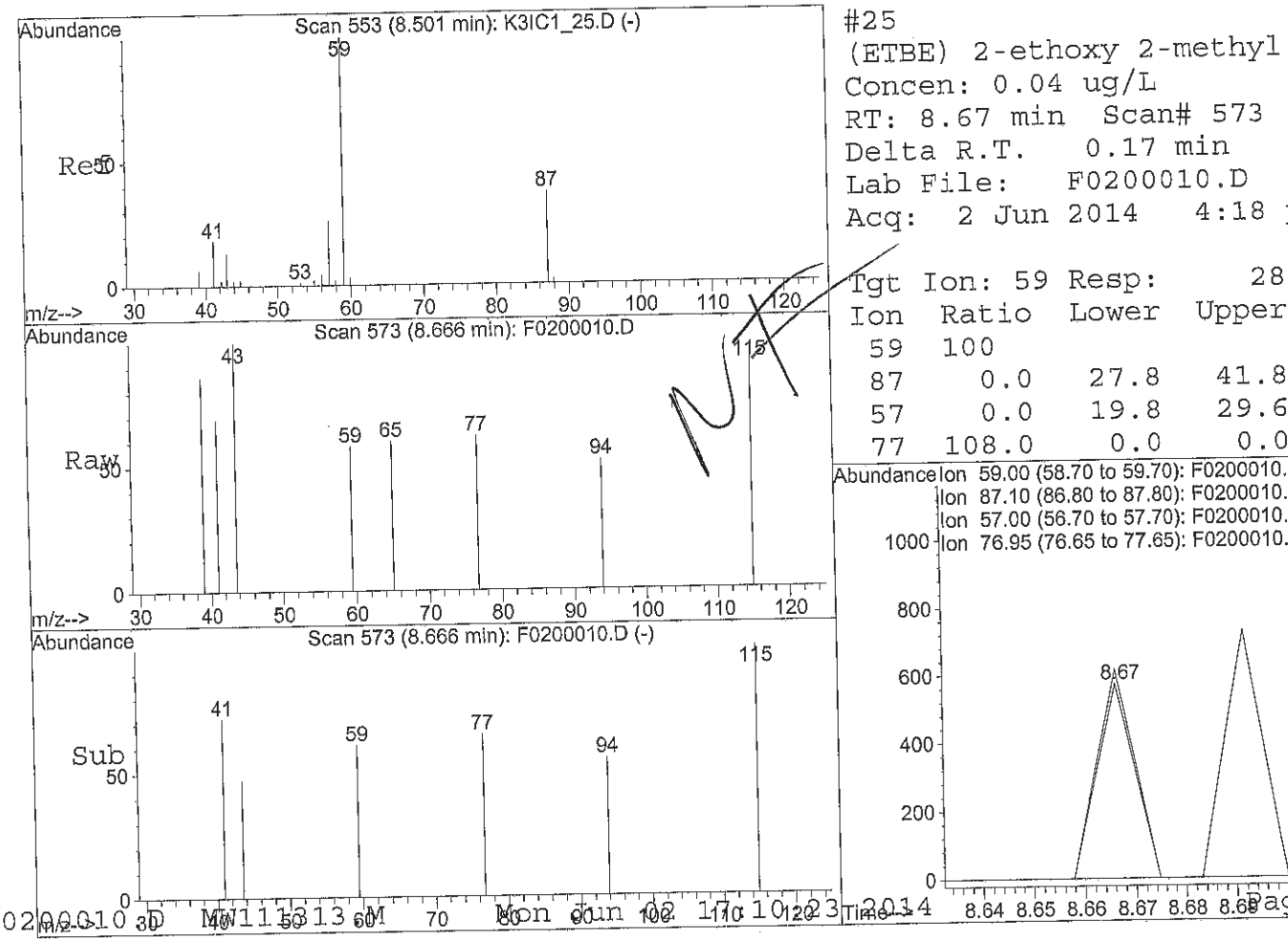




#24
Chloroform
Concen: 0.34 ug/L
RT: 9.22 min Scan# 638
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 83 Resp: 1997

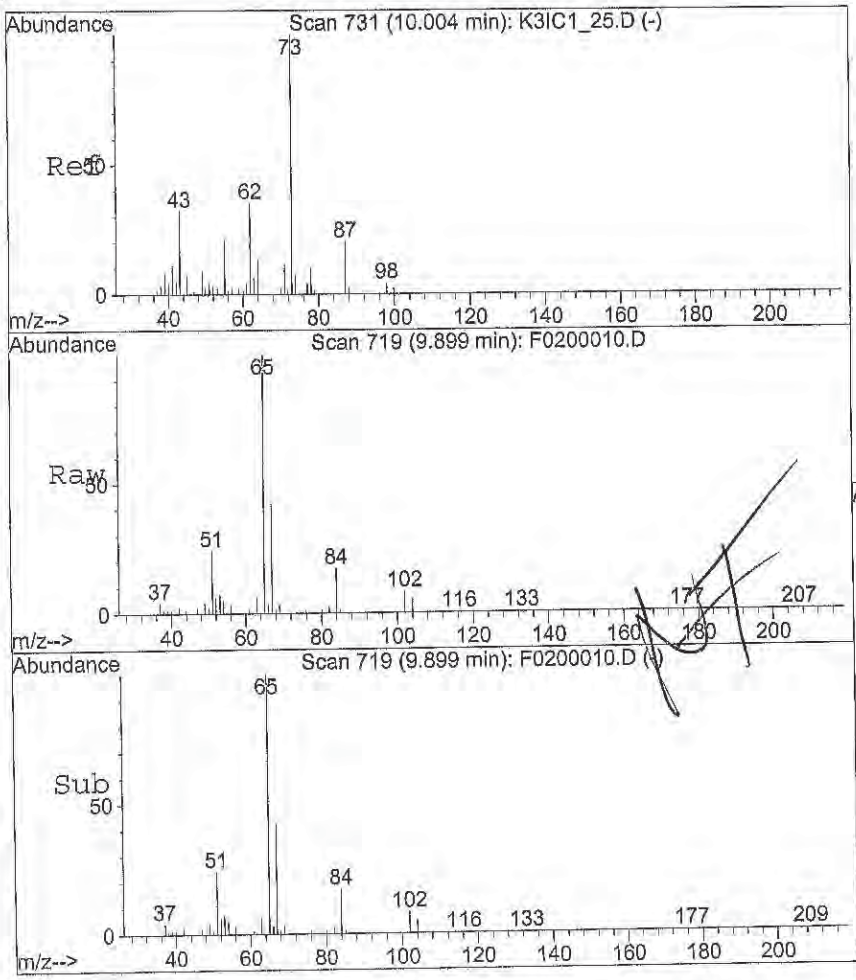
Ion	Ratio	Lower	Upper
83	100		
85	15.5	51.8	77.6#



#25
(ETBE) 2-ethoxy 2-methyl propar
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

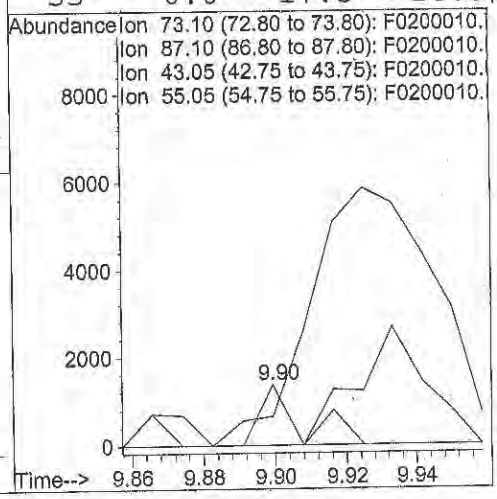
Ion	Ratio	Lower	Upper
59	100		
87	0.0	27.8	41.8#
57	0.0	19.8	29.6#
77	108.0	0.0	0.0#

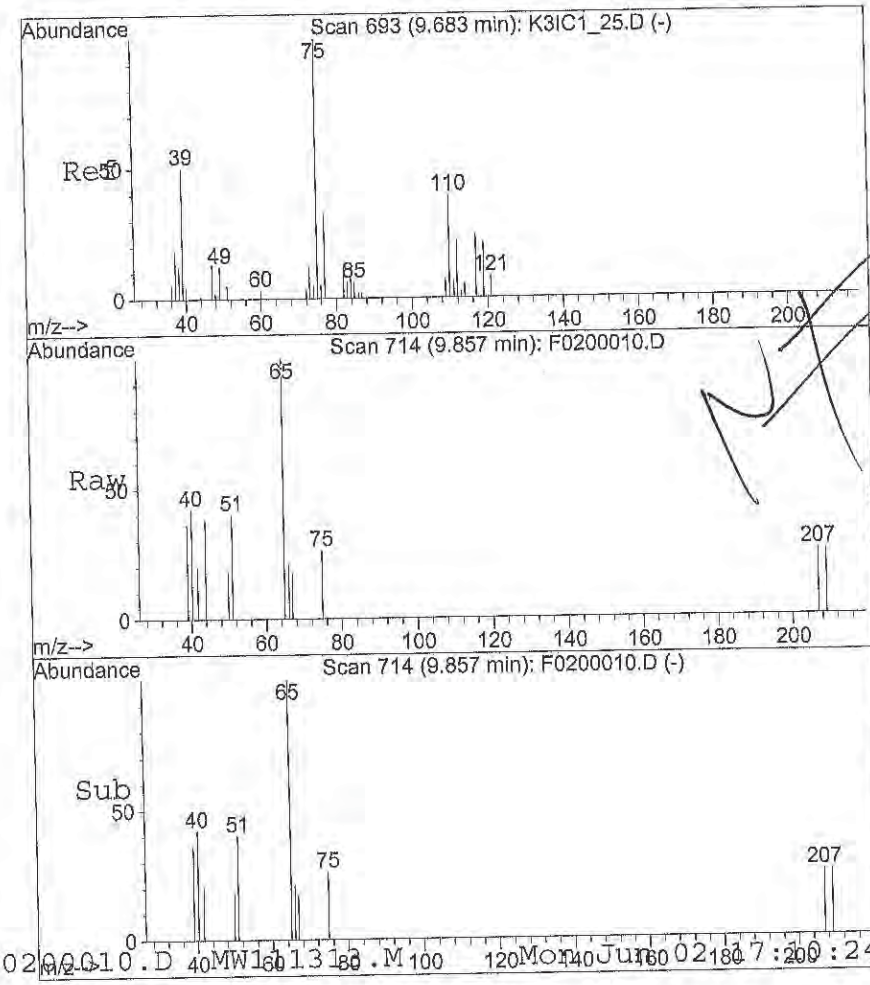


#27
(TAME) tert-Amyl methyl ether
Concen: 0.16 ug/L
RT: 9.90 min Scan# 719
Delta R.T. -0.10 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

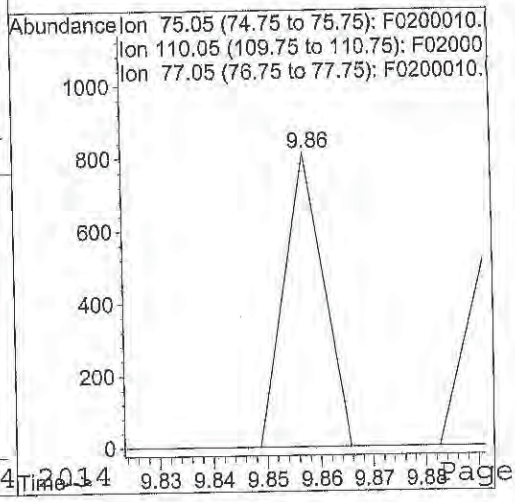


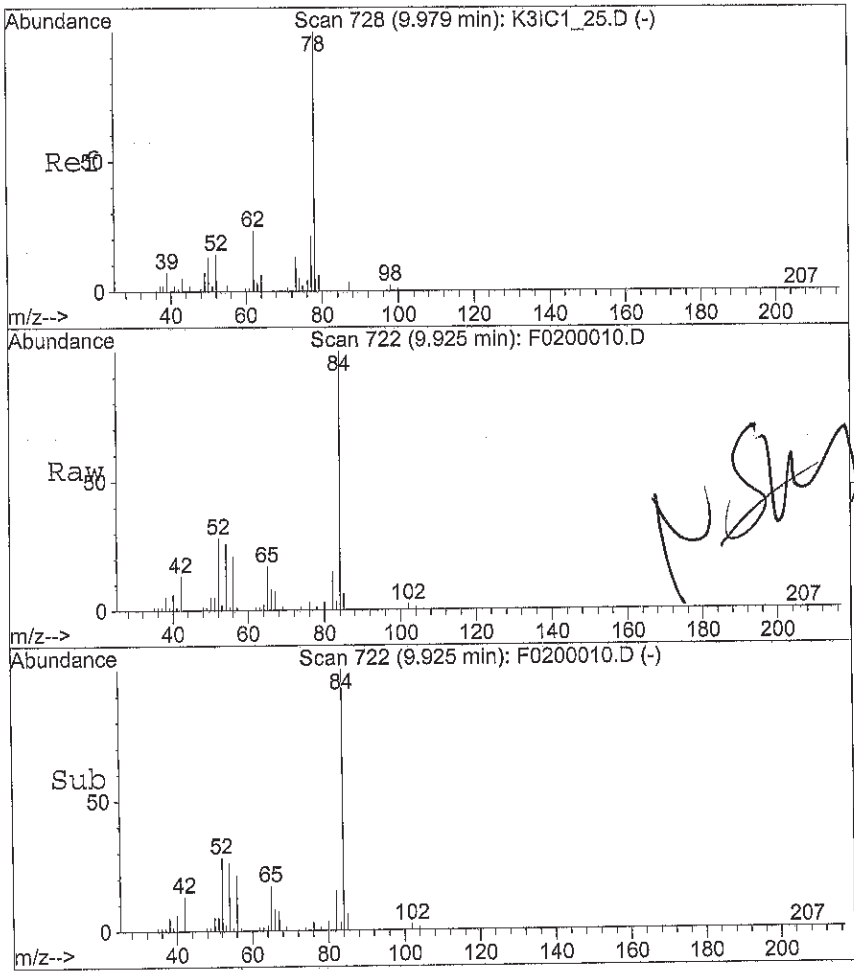


#29
1,1-Dichloropropene
Concen: 0.10 ug/L
RT: 9.86 min Scan# 714
Delta R.T. 0.17 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

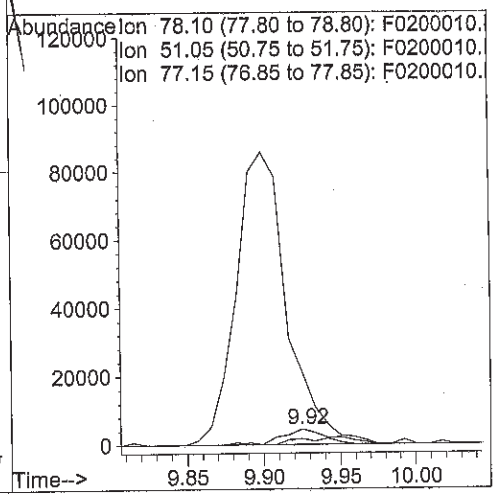


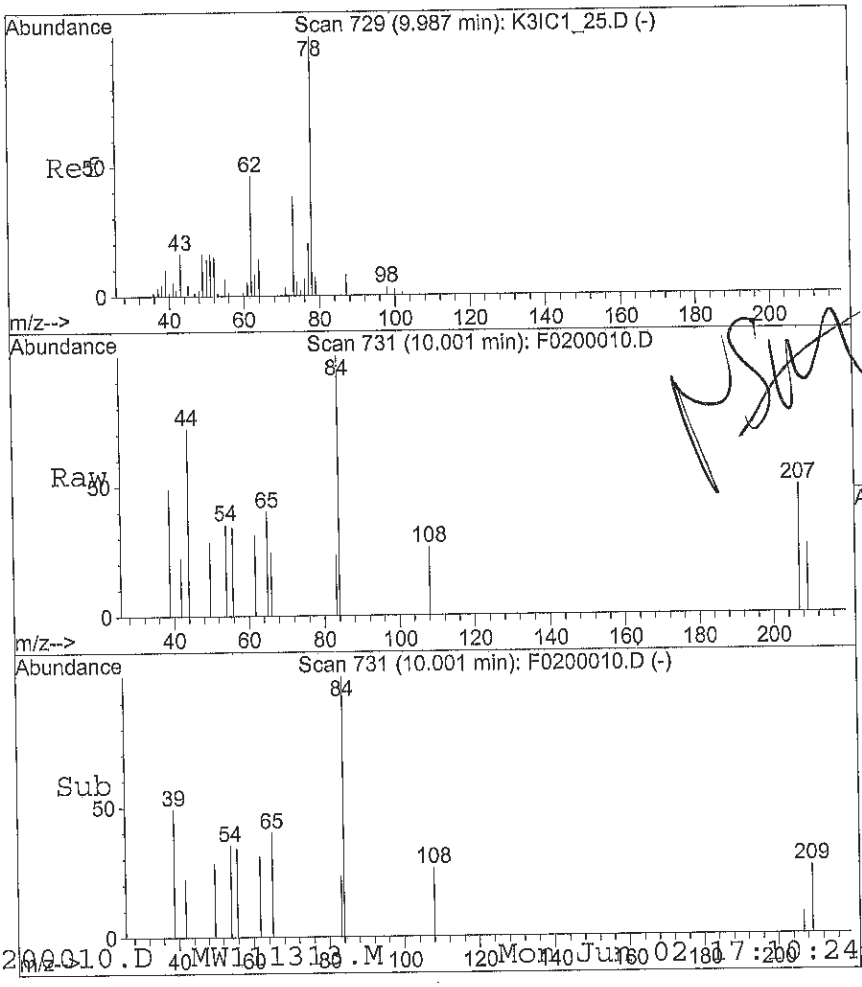


#31
Benzene
Concen: 0.94 ug/L
RT: 9.92 min Scan# 722
Delta R.T. -0.05 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

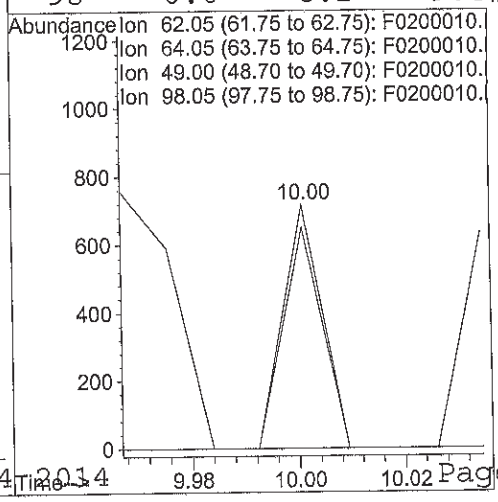


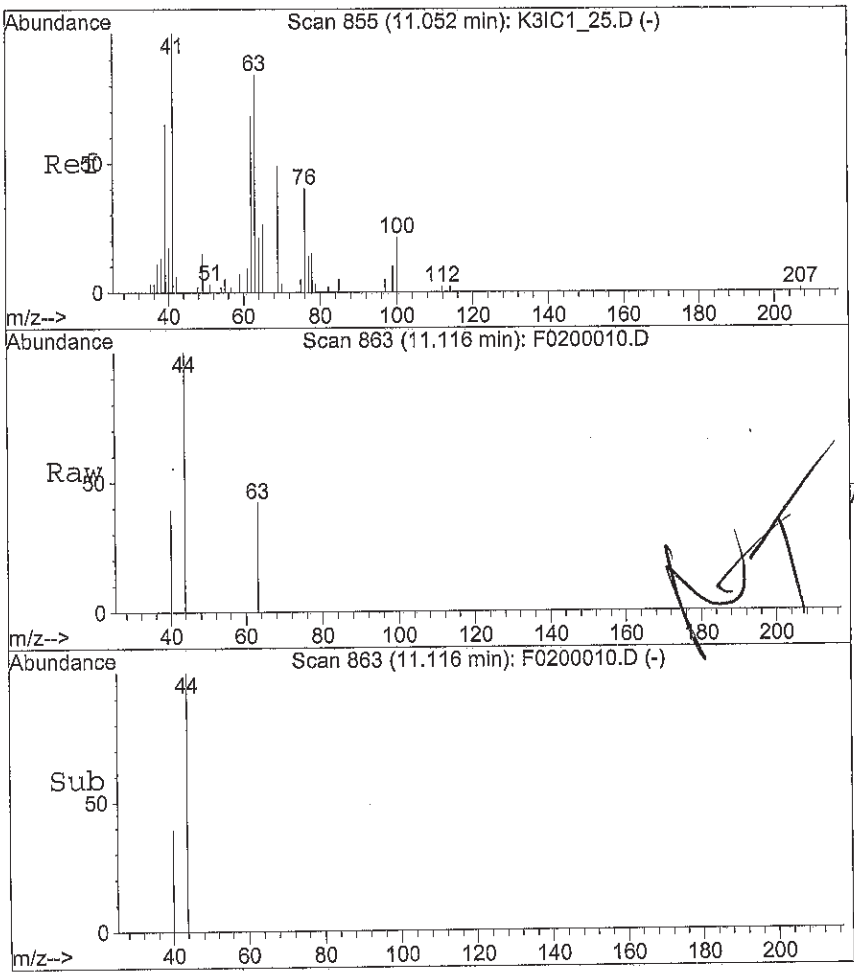


#32
1,2-Dichloroethane
Concen: 0.10 ug/L
RT: 10.00 min Scan# 731
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

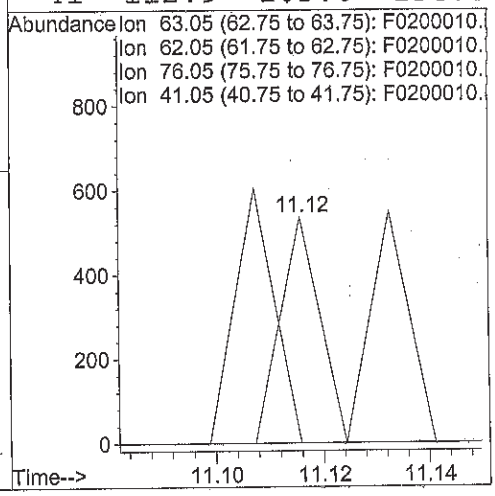


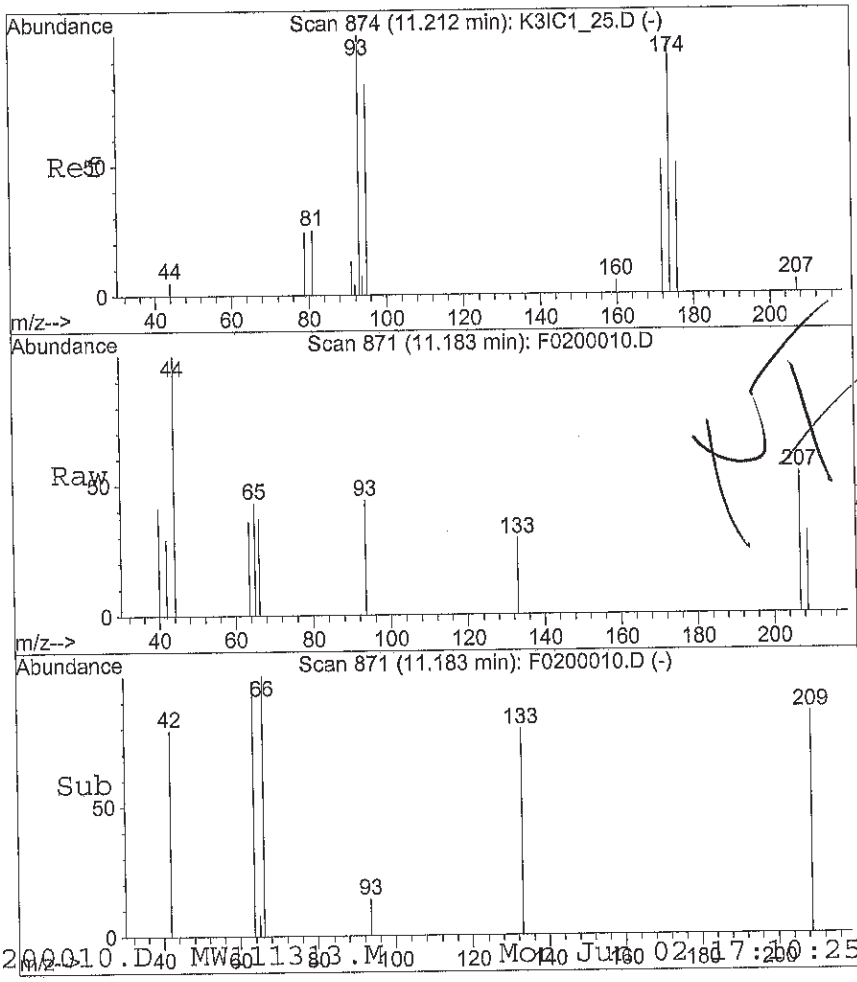


#34
1,2-Dichloropropane
Concen: 0.11 ug/L
RT: 11.12 min Scan# 863
Delta R.T. 0.06 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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

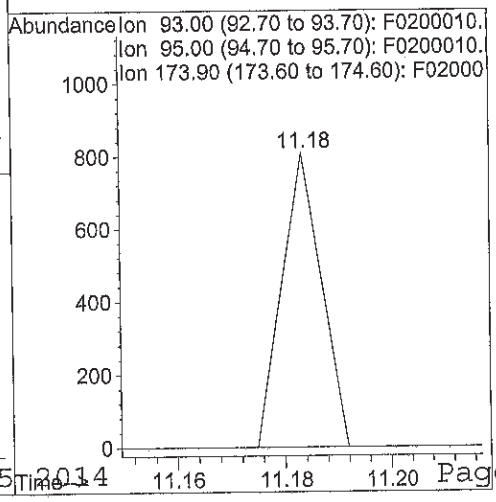


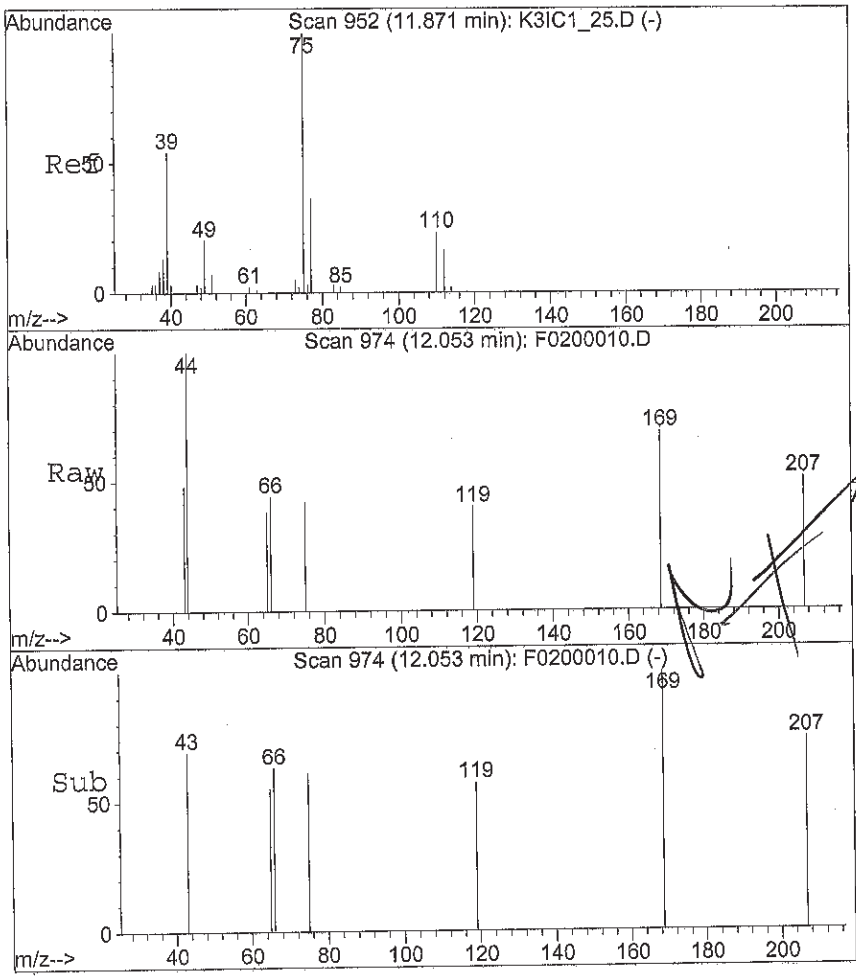


#35
Dibromomethane
Concen: 0.21 ug/L
RT: 11.18 min Scan# 871
Delta R.T. -0.03 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

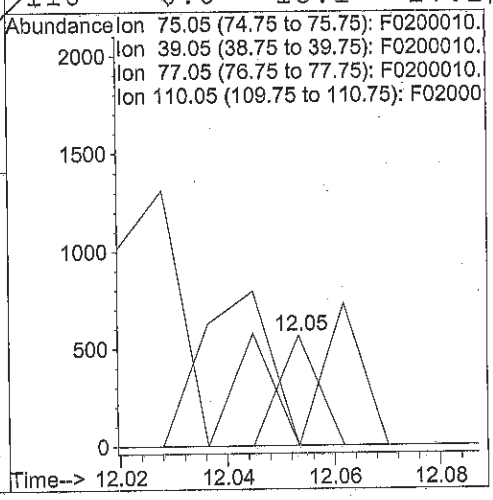


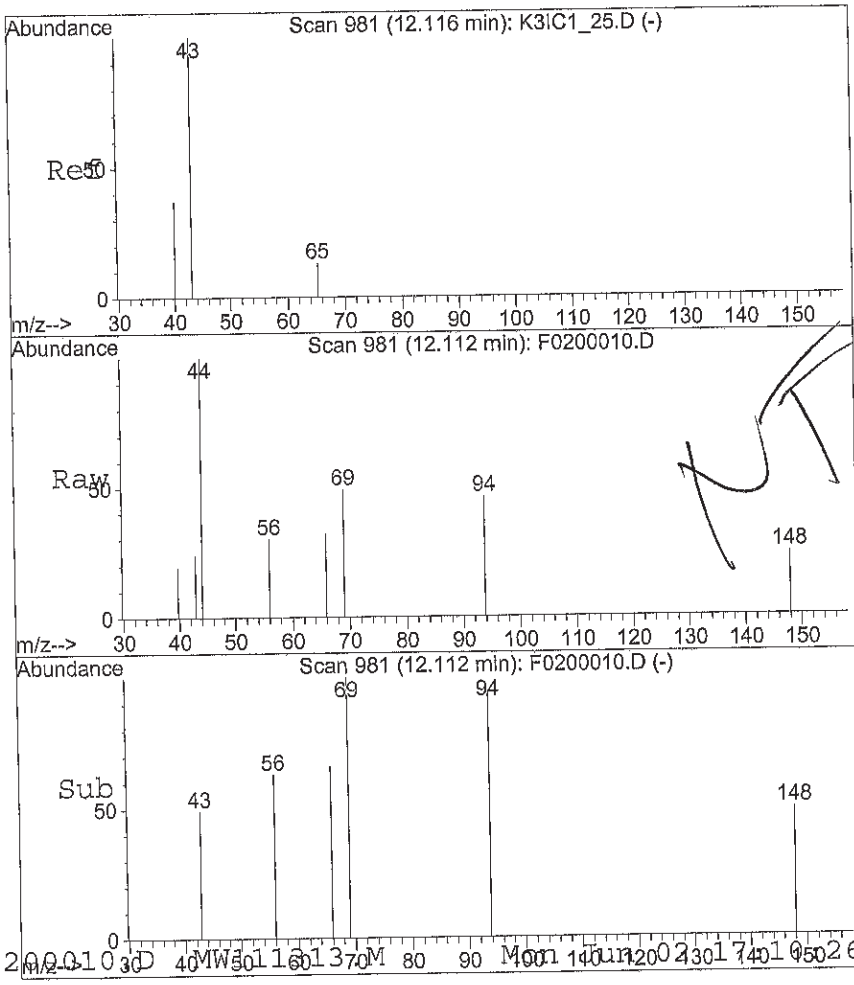


#37
cis-1,3-Dichloropropene
Concen: 0.07 ug/L
RT: 12.05 min Scan# 974
Delta R.T. 0.18 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

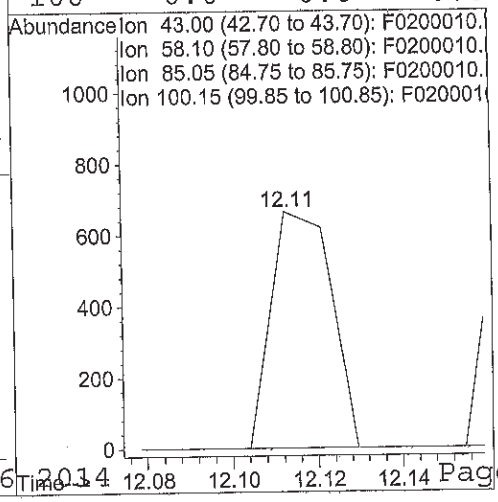


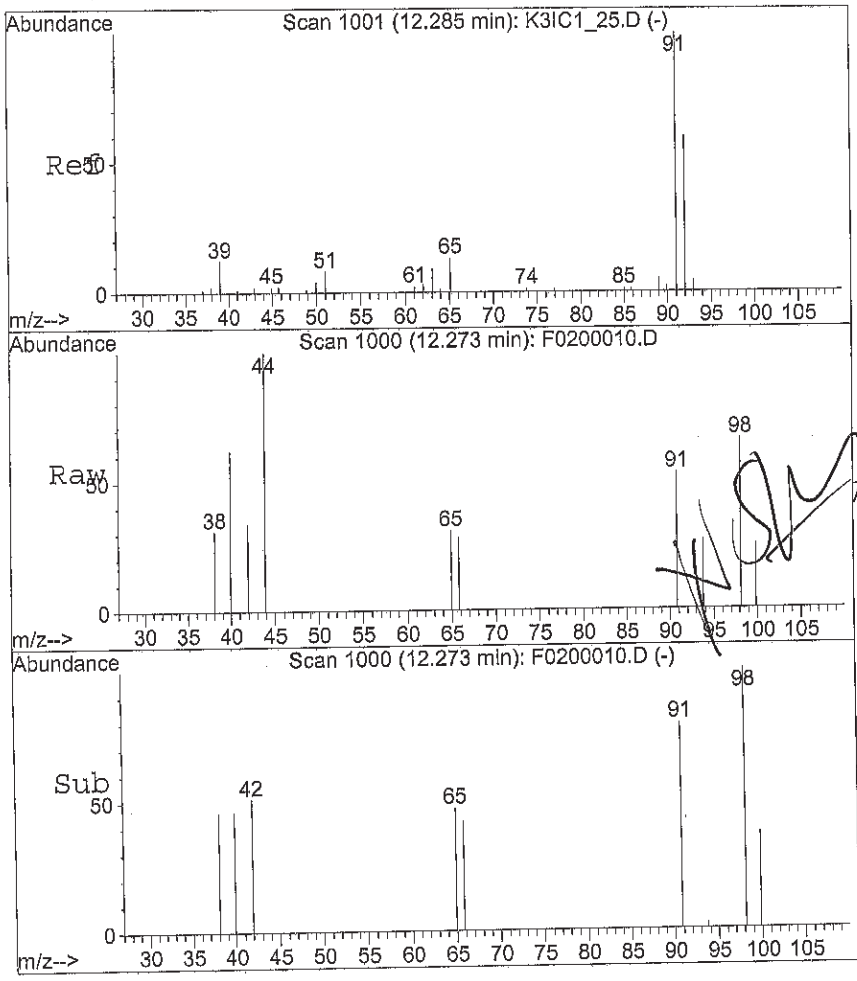


#40
(MIBK) 4-Methyl-2-Pentanone
Concen: 0.30 ug/L
RT: 12.11 min Scan# 981
Delta R.T. -0.00 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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

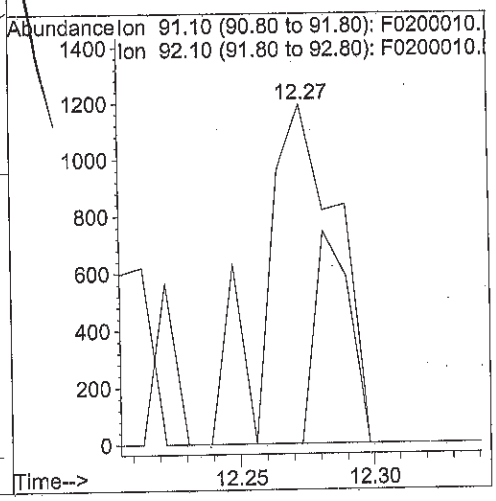


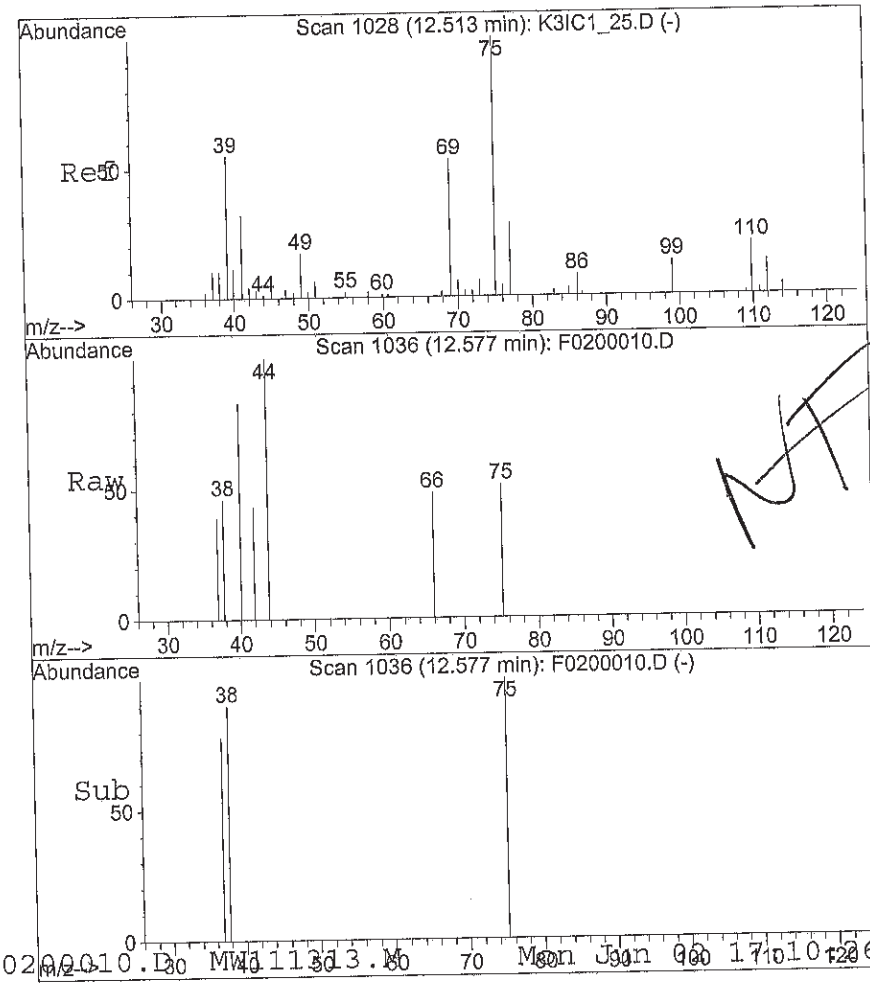


#41
Toluene
Concen: 0.15 ug/L
RT: 12.27 min Scan# 1000
Delta R.T. -0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 91 Resp: 2249

Ion	Ratio	Lower	Upper
91	100		
92	30.0	47.4	71.0#

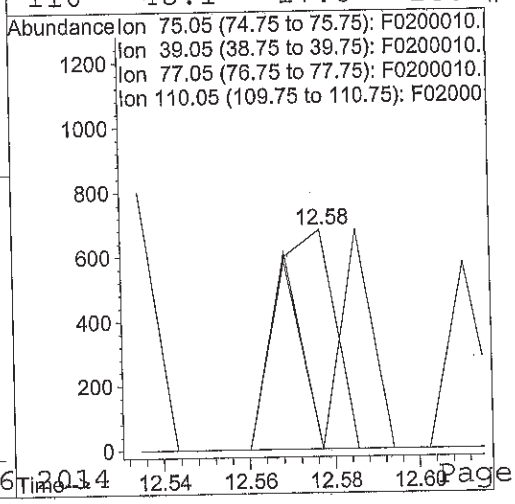


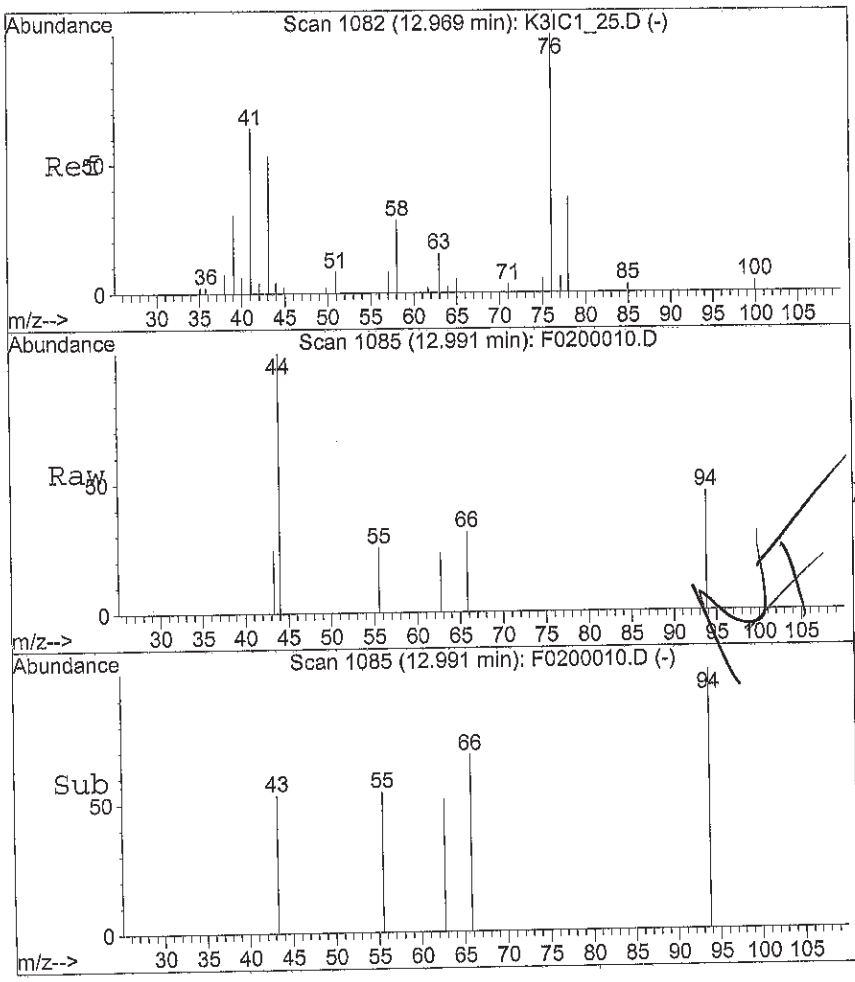


#42
trans-1,3-Dichloropropene
Concen: 0.13 ug/L
RT: 12.58 min Scan# 1036
Delta R.T. 0.06 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 75 Resp: 647

Ion	Ratio	Lower	Upper
75	100		
39	53.3	53.6	80.4#
77	45.6	25.4	38.2#
110	48.1	17.6	26.4#

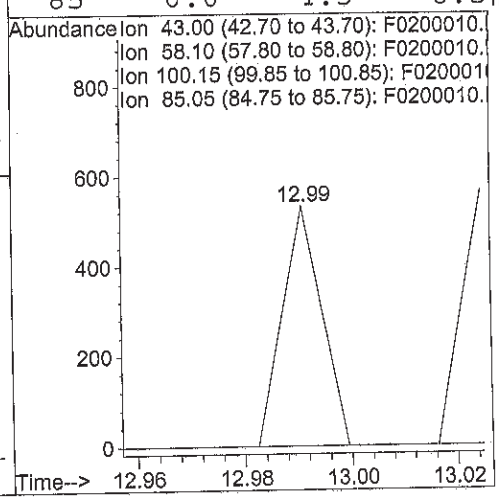


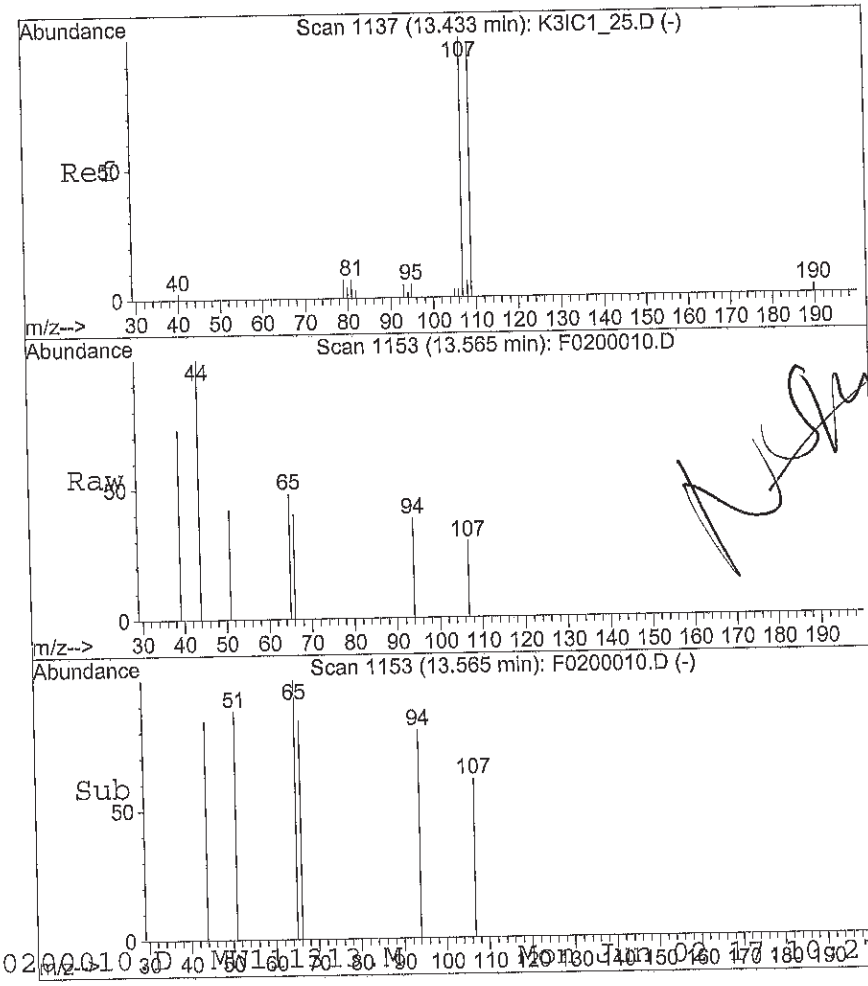


#46
2-Hexanone
Concen: 0.11 ug/L
RT: 12.99 min Scan# 1085
Delta R.T. 0.02 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

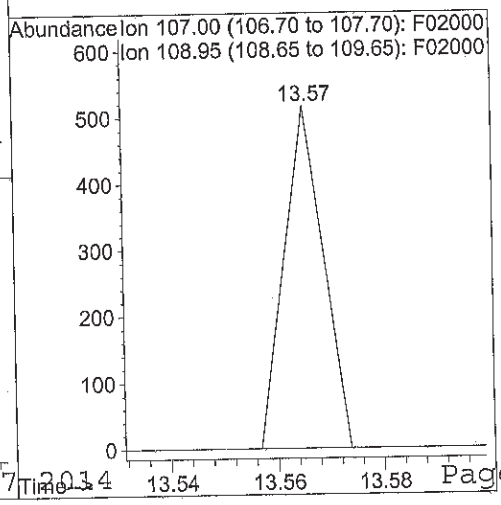


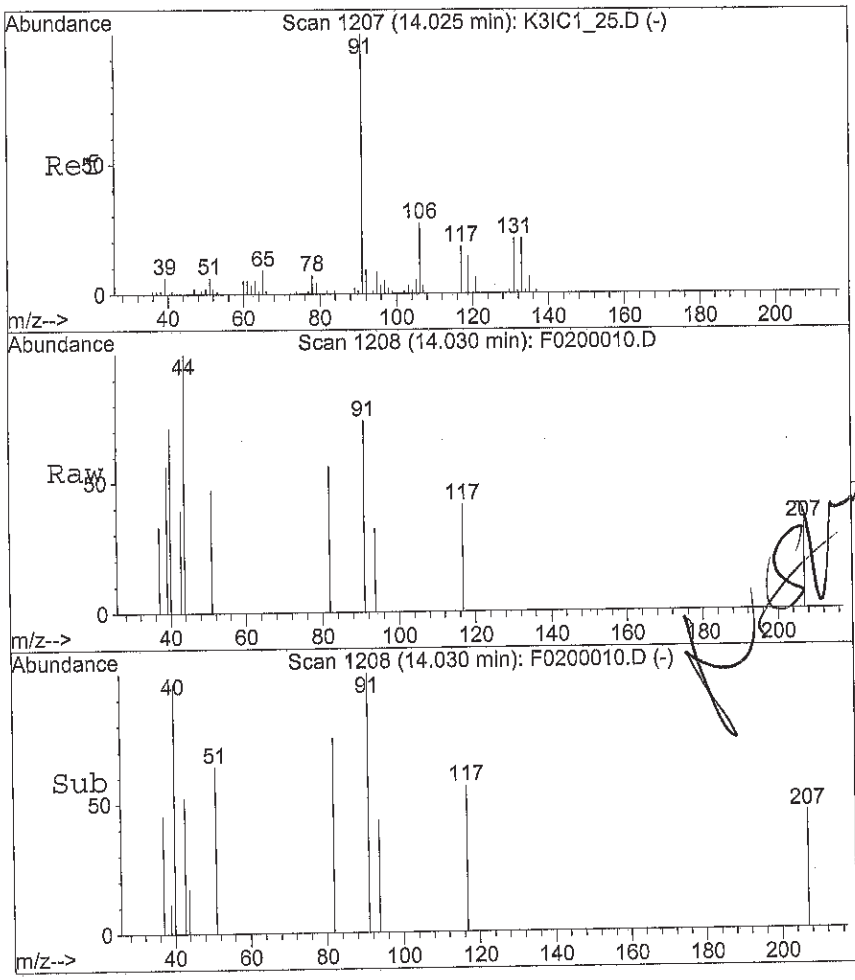


#48
1,2-Dibromoethane
Concen: 0.08 ug/L
RT: 13.57 min Scan# 1153
Delta R.T. 0.13 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion:107 Resp: 261

Ion	Ratio	Lower	Upper
107	100		
109	0.0	74.4	111.6#

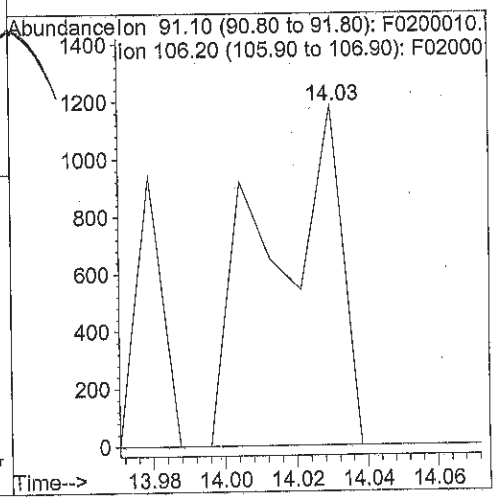


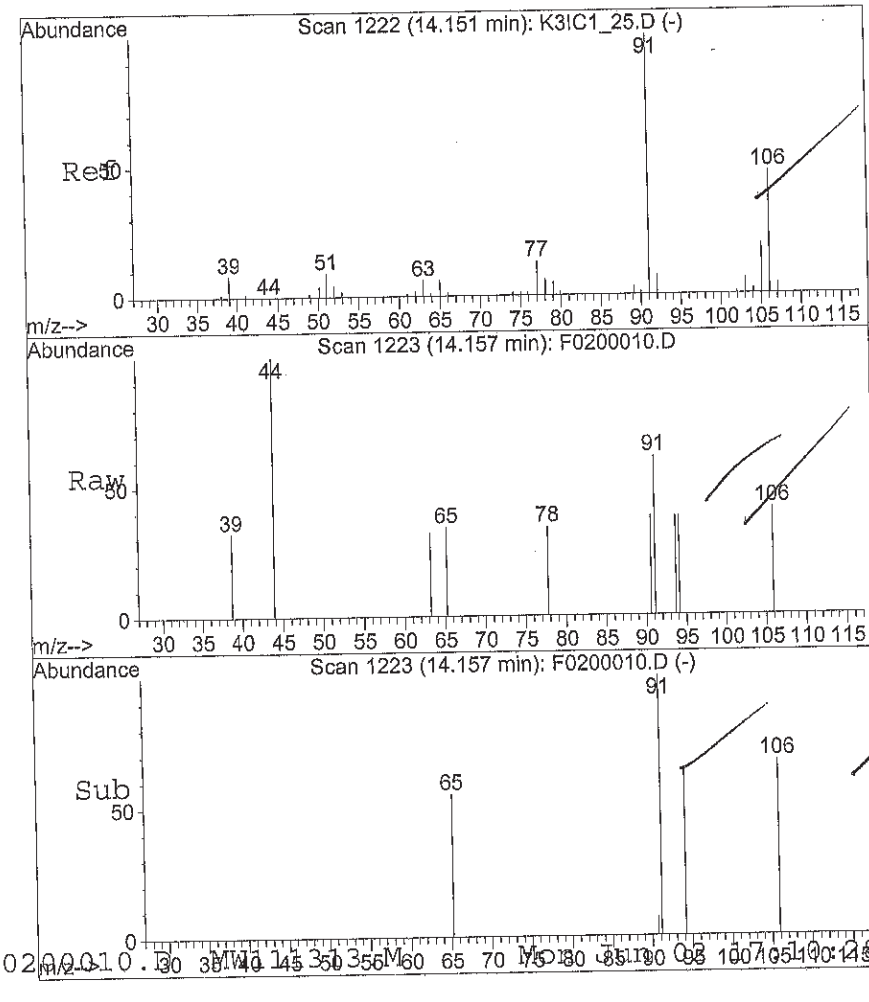


#51
Ethylbenzene
Concen: 0.10 ug/L
RT: 14.03 min Scan# 1208
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 91 Resp: 1668

Ion	Ratio	Lower	Upper
91	100		
106	0.0	23.5	35.3#

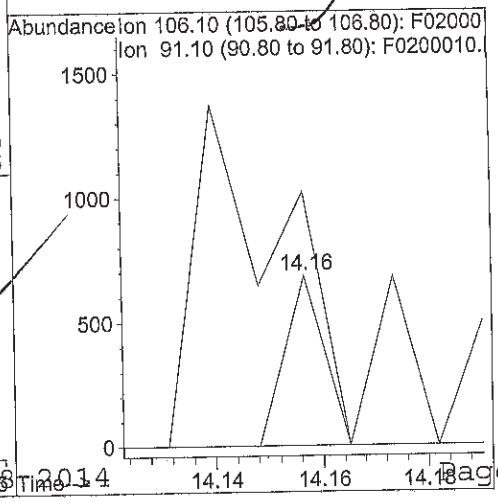


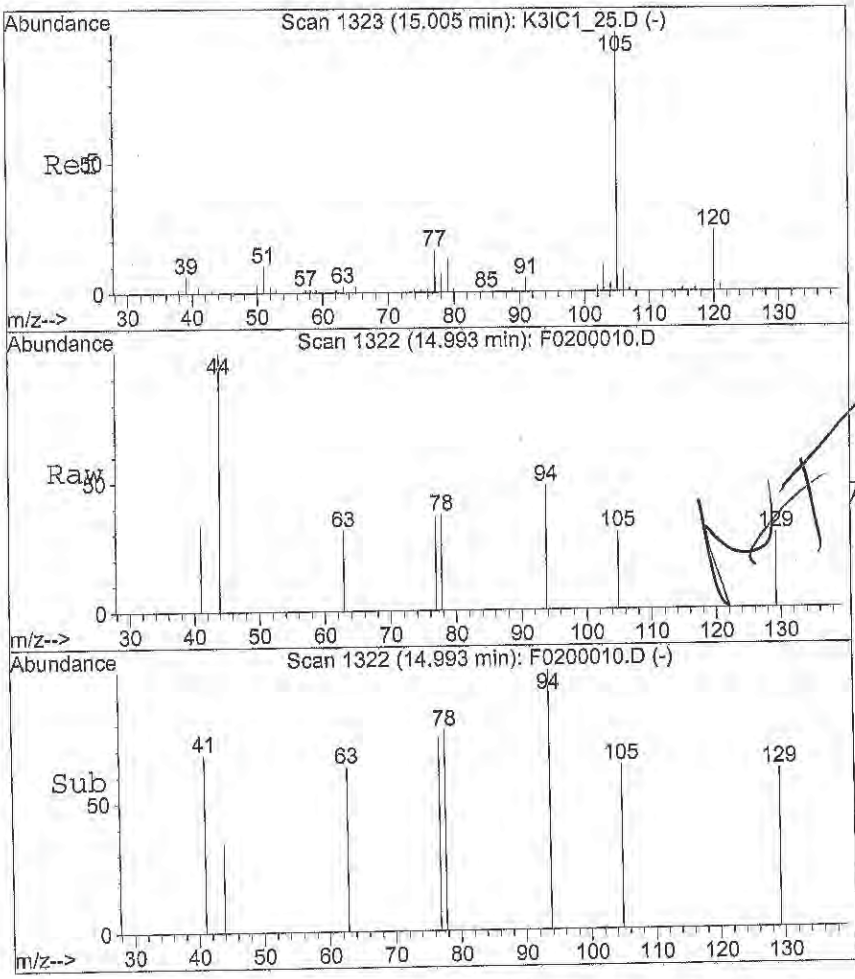


#52
m,p-Xylenes
Concen: 0.06 ug/L
RT: 14.16 min Scan# 1223
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion:106 Resp: 348

Ion	Ratio	Lower	Upper
106	100		
91	614.9	177.1	265.7#

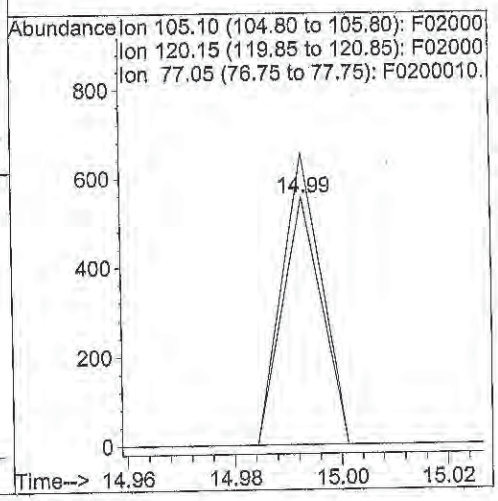


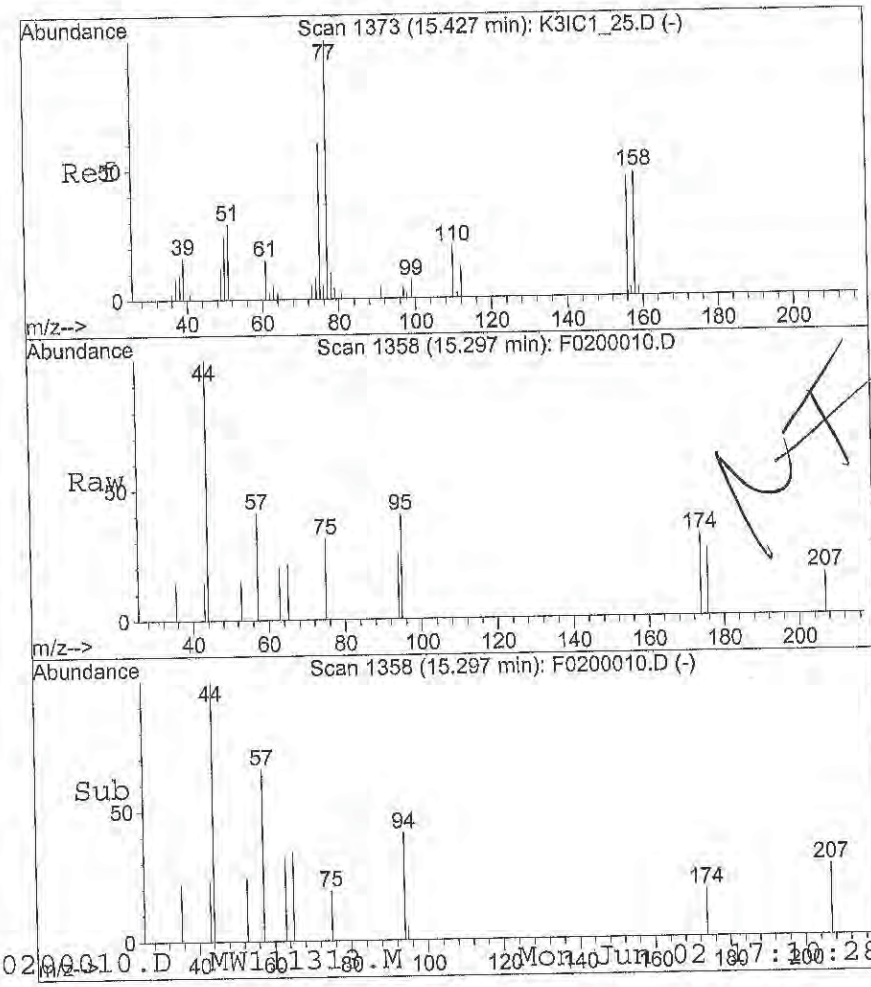


#56
Isopropylbenzene
Concen: 0.02 ug/L
RT: 14.99 min Scan# 1322
Delta R.T. -0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

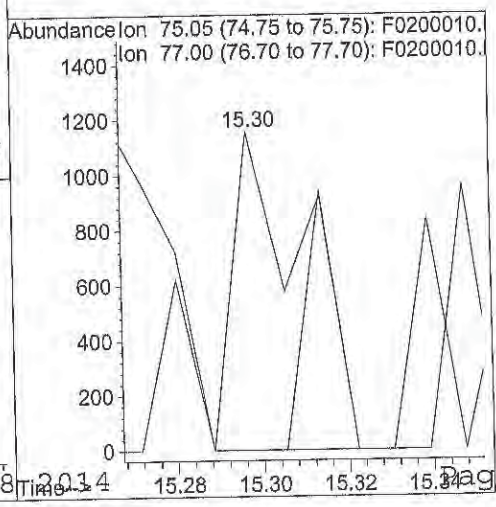


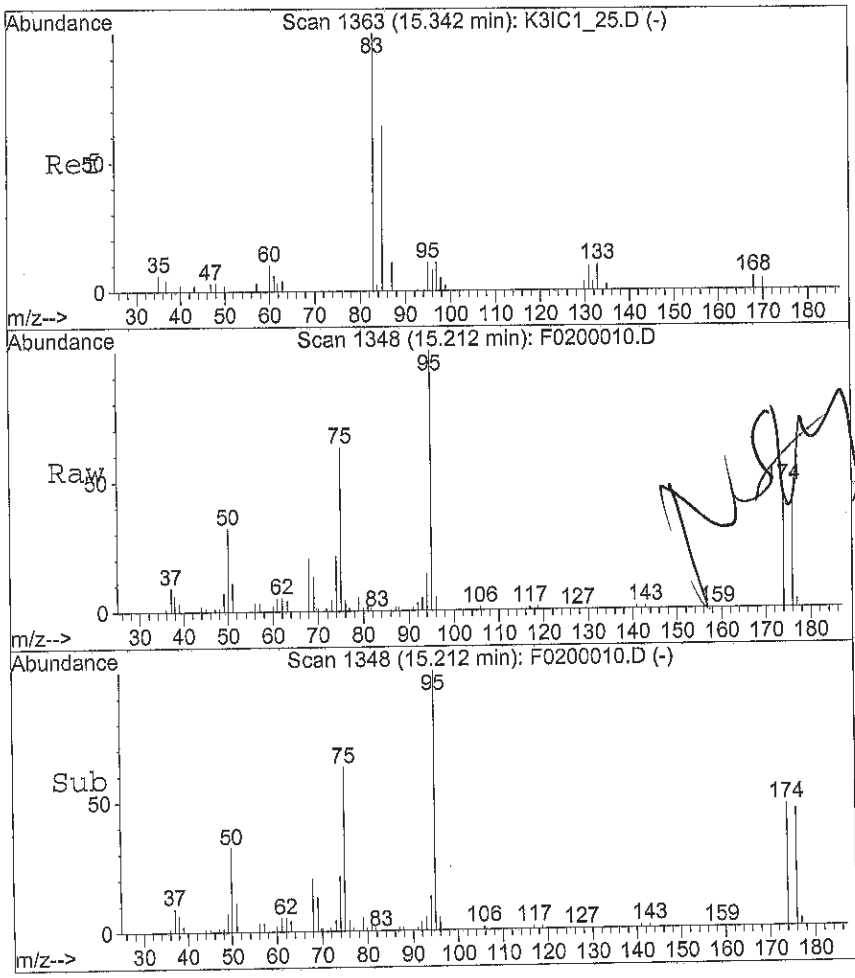


#57
1,2,3-Trichloropropane
Concen: 0.30 ug/L
RT: 15.30 min Scan# 1358
Delta R.T. -0.13 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 75 Resp: 1346

Ion	Ratio	Lower	Upper
75	100		
77	35.4	31.2	46.8

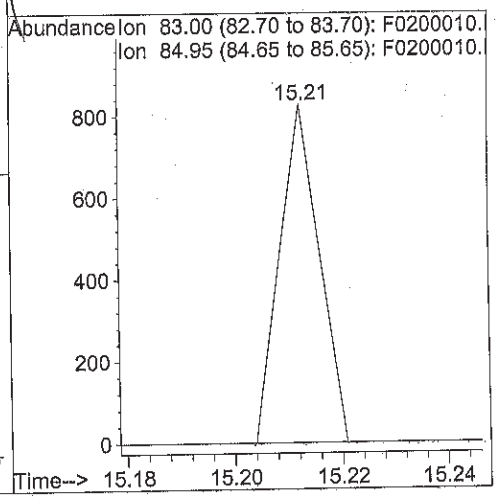


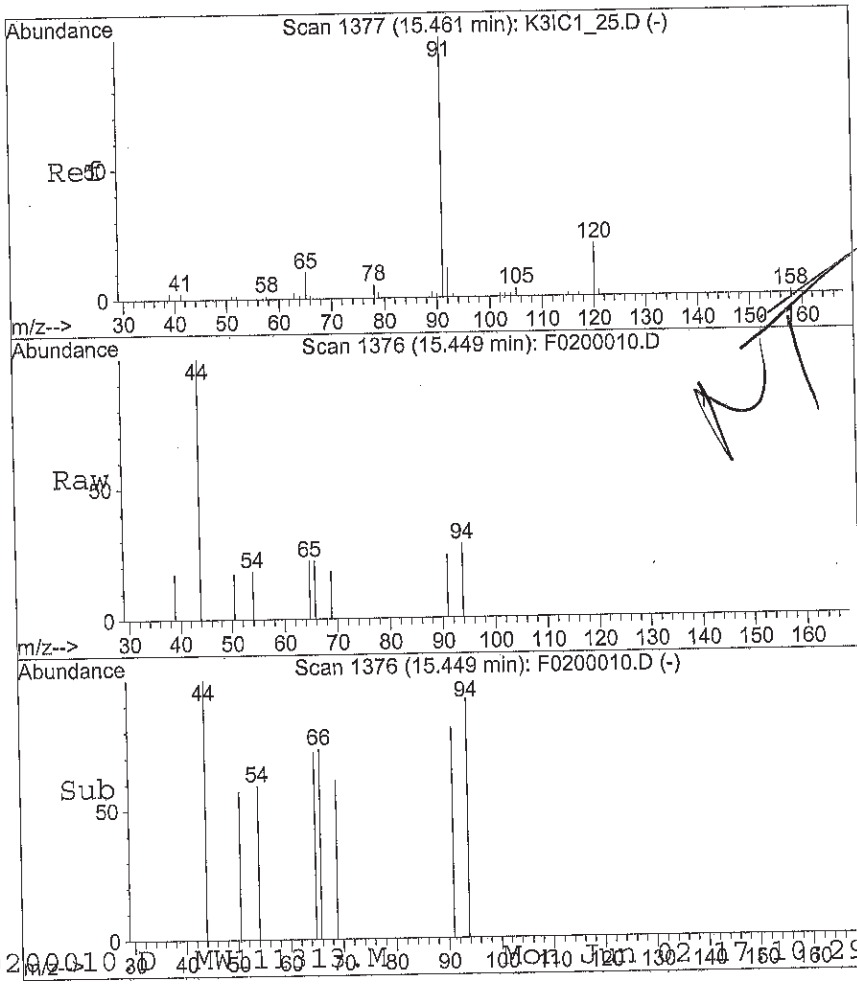


#60
1,1,2,2-Tetrachloroethane
Concen: 0.10 ug/L
RT: 15.21 min Scan# 1348
Delta R.T. -0.13 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 83 Resp: 419

Ion	Ratio	Lower	Upper
83	100		
85	0.0	51.2	76.8#

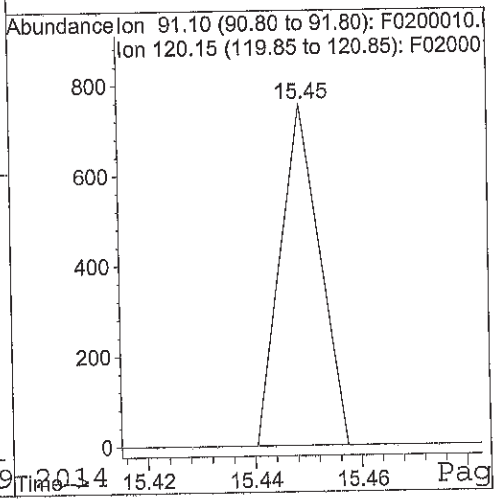


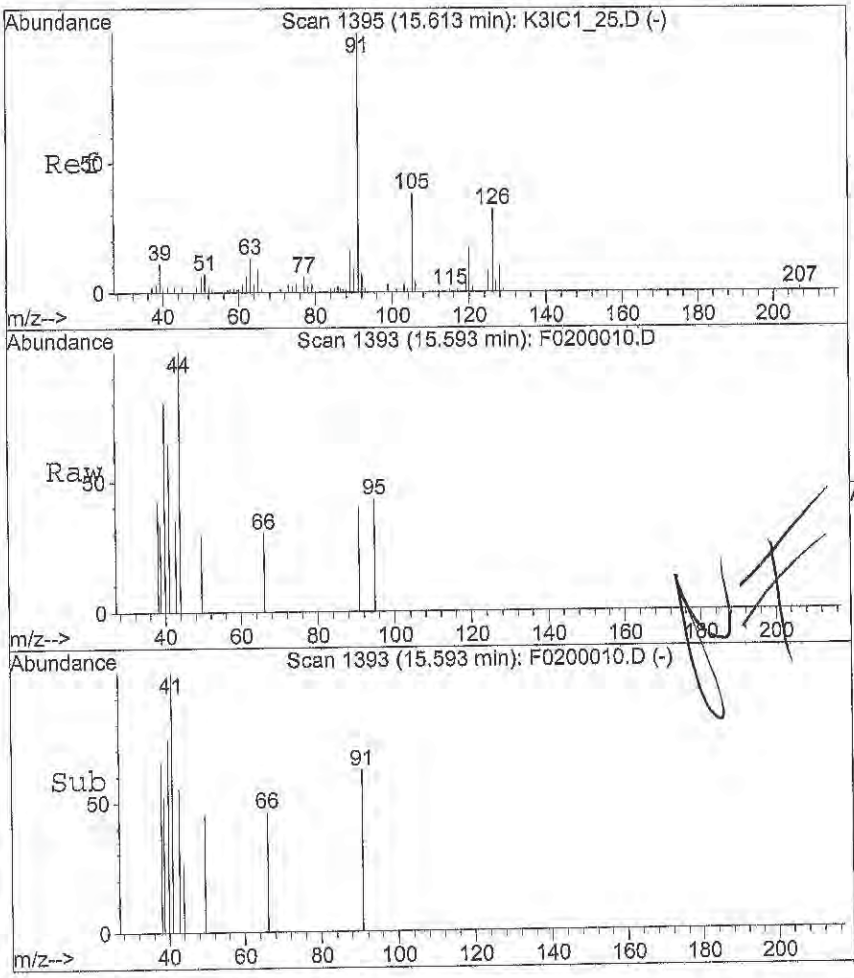


#62
n-Propylbenzene
Concen: 0.02 ug/L
RT: 15.45 min Scan# 1376
Delta R.T. -0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 91 Resp: 384

Ion	Ratio	Lower	Upper
91	100		
120	0.0	16.1	24.1#

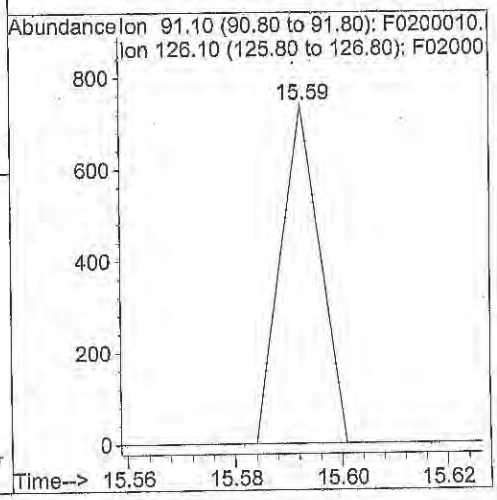


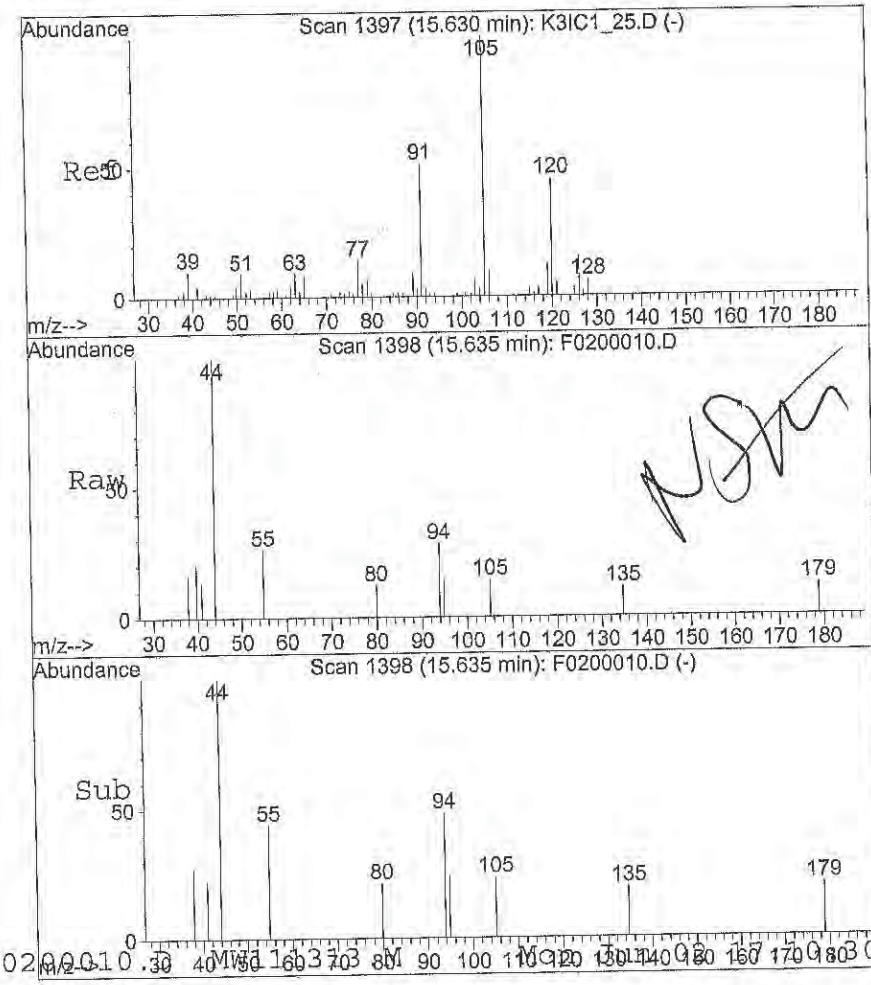


#63
2-Chlorotoluene
Concen: 0.03 ug/L
RT: 15.59 min Scan# 1393
Delta R.T. -0.02 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 91 Resp: 375

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.0	36.0#

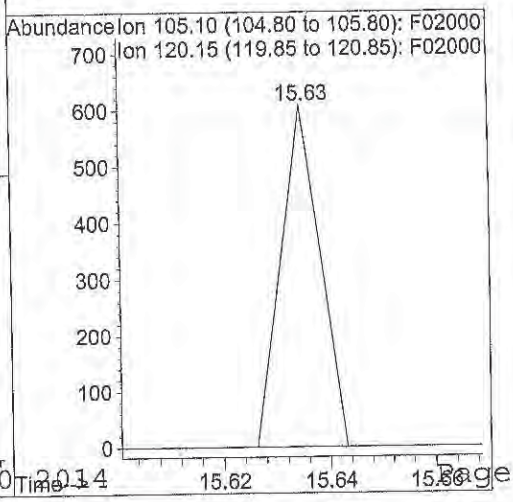


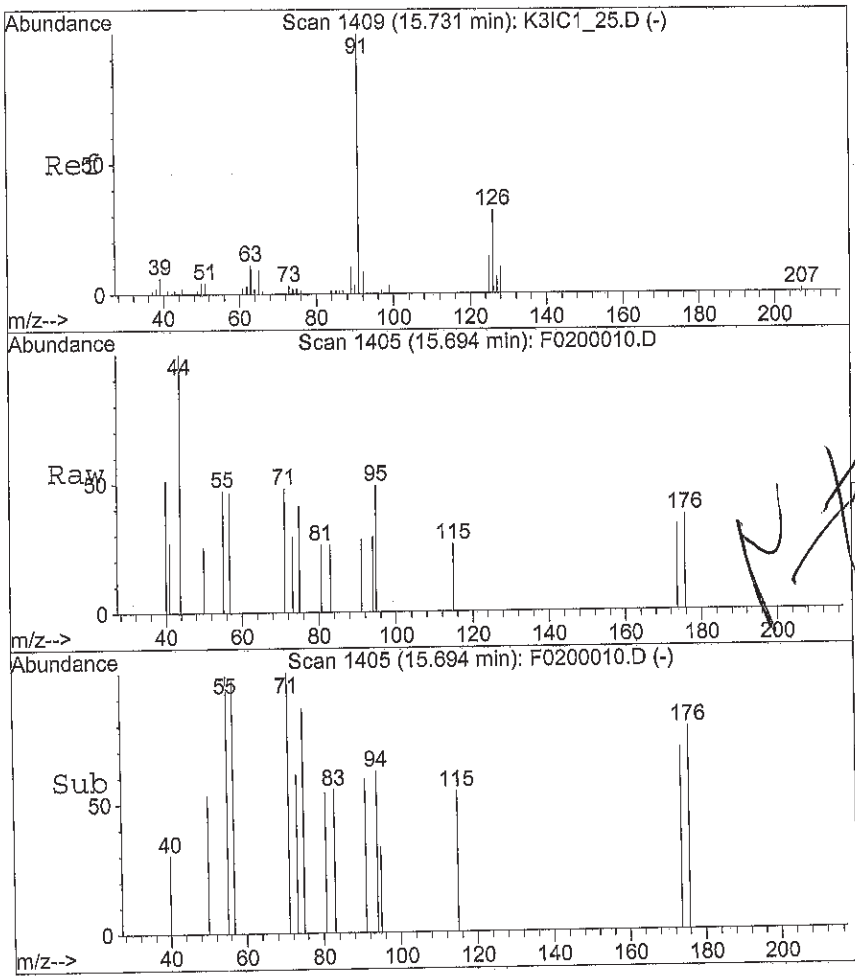


#64
1,3,5-Trimethylbenzene
Concen: 0.02 ug/L
RT: 15.63 min Scan# 1398
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion:105 Resp: 308

Ion	Ratio	Lower	Upper
105	100		
120	0.0	36.4	54.6#

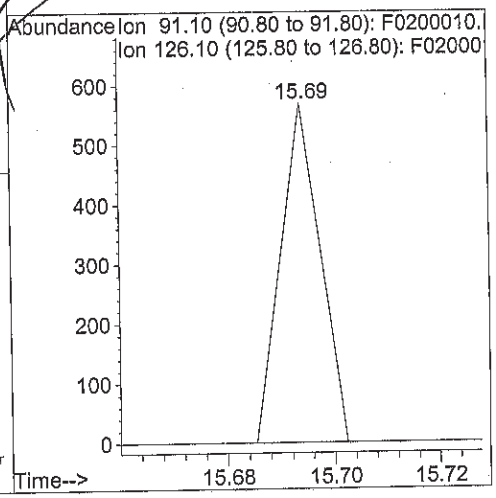


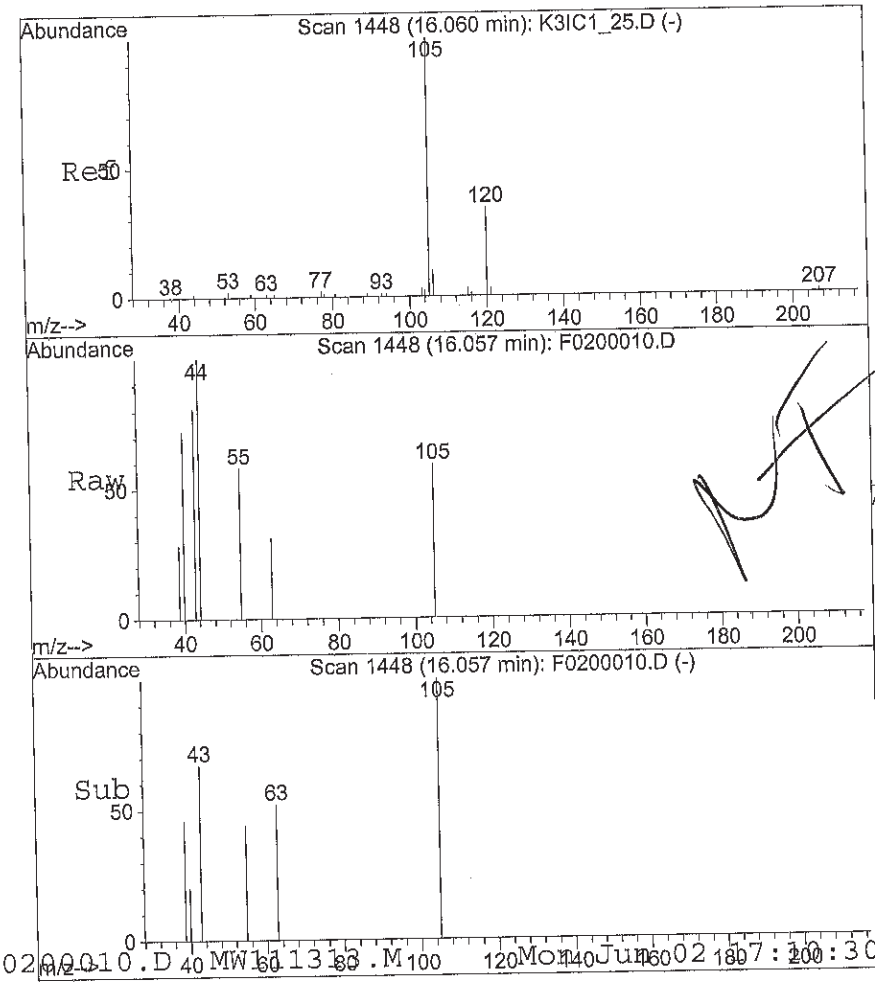


#65
4-Chlorotoluene
Concen: 0.02 ug/L
RT: 15.69 min Scan# 1405
Delta R.T. -0.04 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 91 Resp: 288

Ion	Ratio	Lower	Upper
91	100		
126	0.0	24.6	36.8#

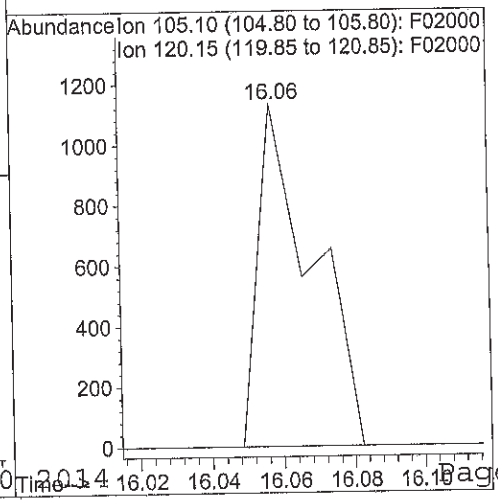


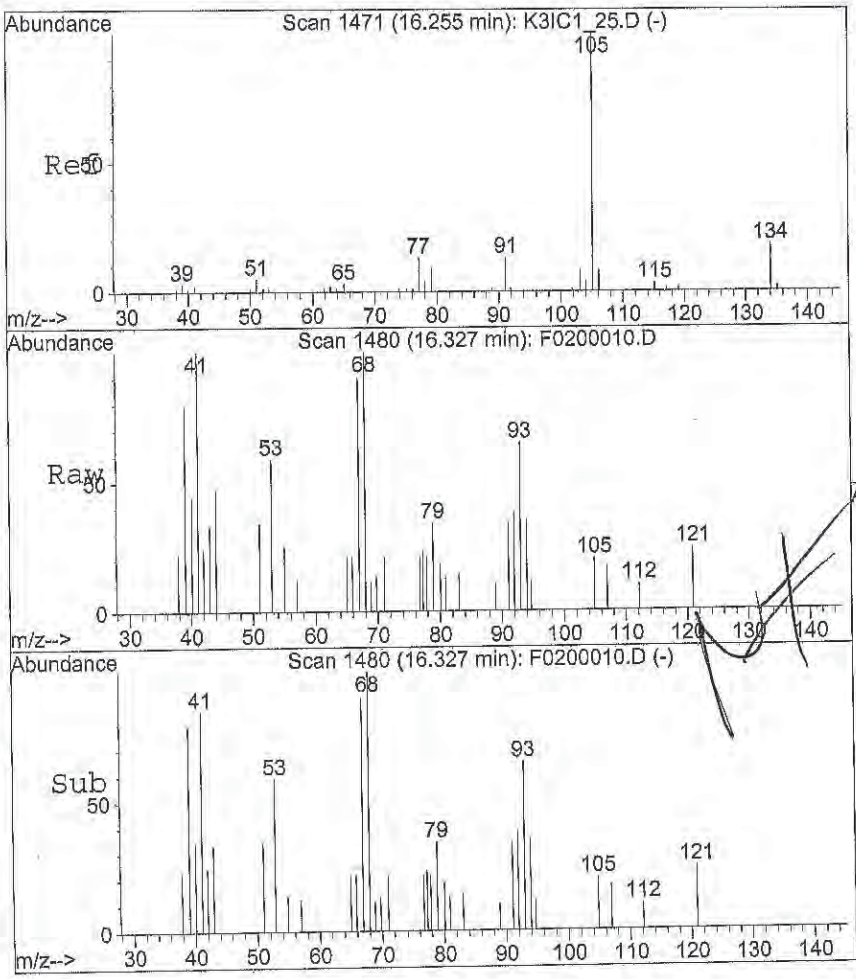


#67
1,2,4-Trimethylbenzene
Concen: 0.08 ug/L
RT: 16.06 min Scan# 1448
Delta R.T. -0.00 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion:105 Resp: 1190

Ion	Ratio	Lower	Upper
105	100		
120	0.0	33.8	50.8#

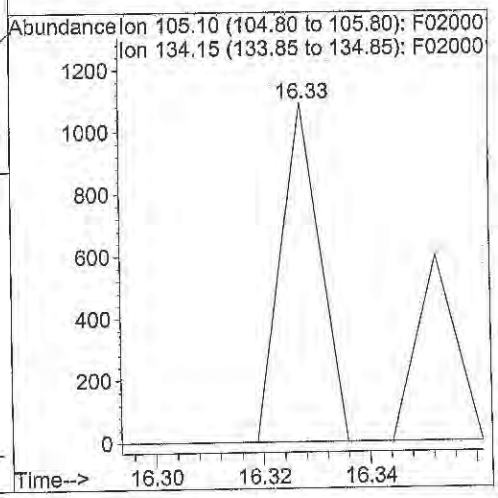


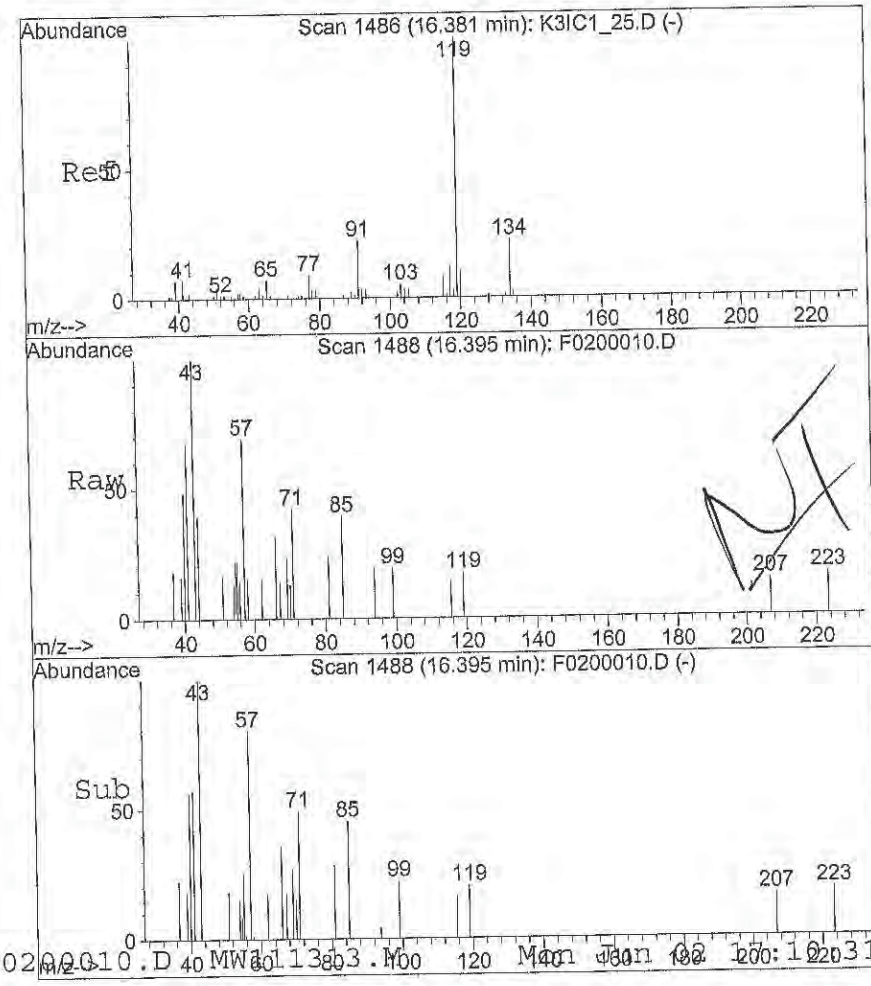


#68
sec-Butylbenzene
Concen: 0.03 ug/L
RT: 16.33 min Scan# 1480
Delta R.T. 0.07 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion:105 Resp: 551

Ion	Ratio	Lower	Upper
105	100		
134	0.0	13.0	19.6#

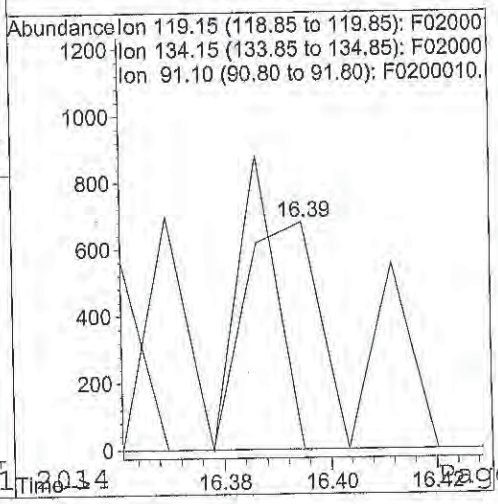


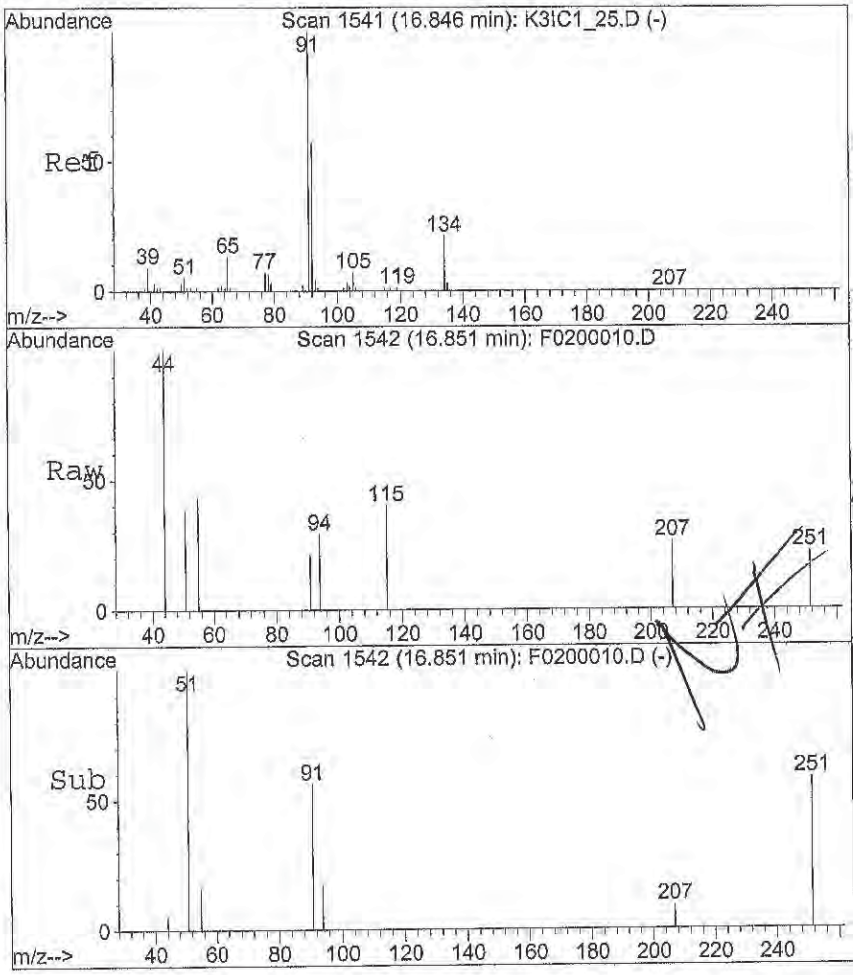


#69
p-Isopropyltoluene
Concen: 0.04 ug/L
RT: 16.39 min Scan# 1488
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

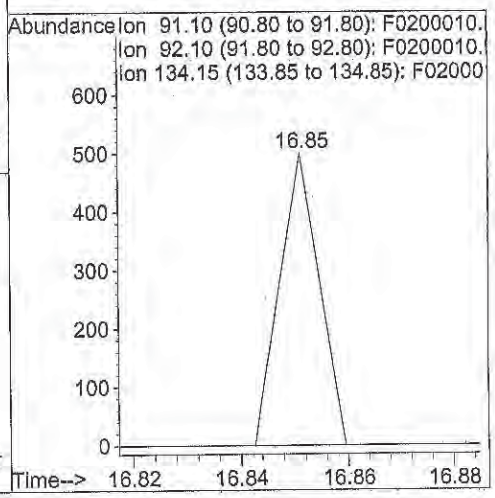


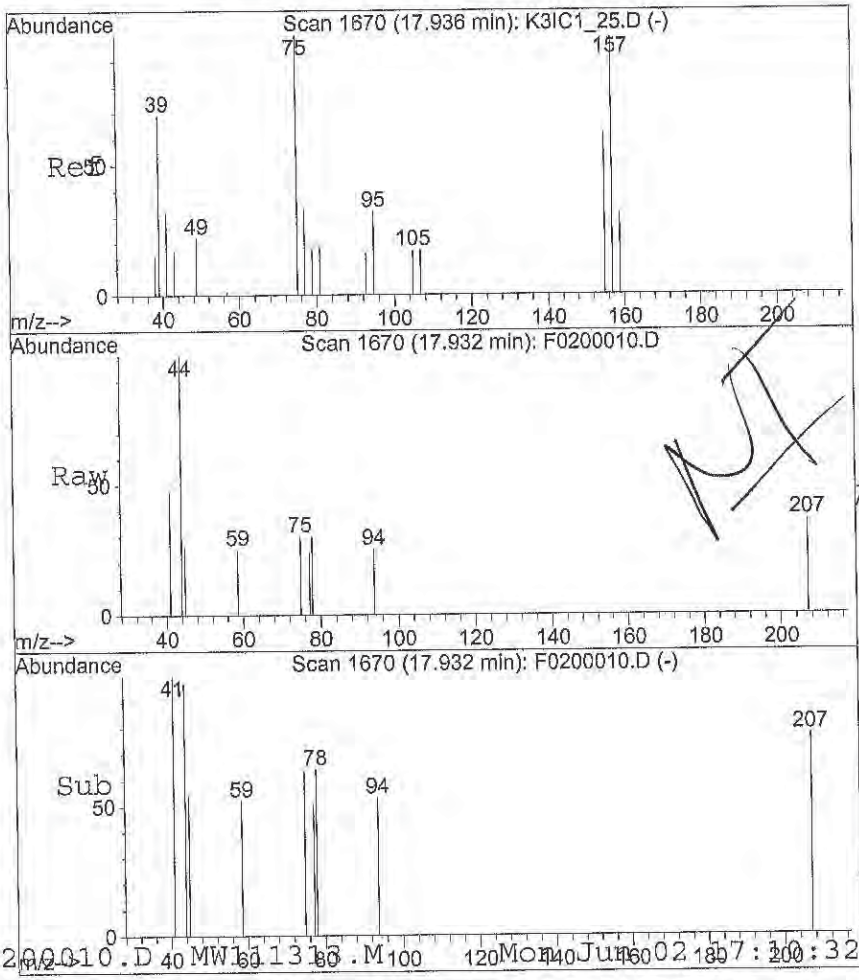


#72
n-Butylbenzene
Concen: 0.01 ug/L
RT: 16.85 min Scan# 1542
Delta R.T. 0.01 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

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#

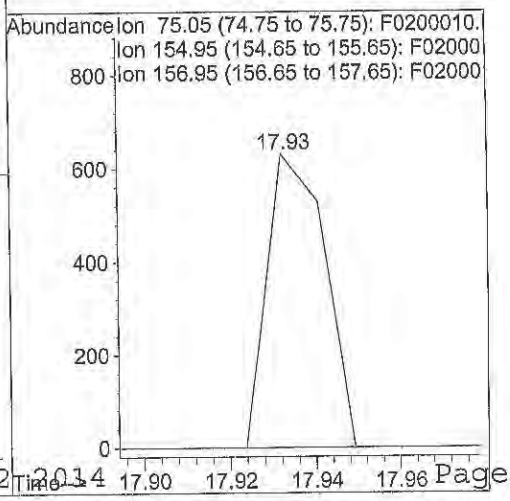


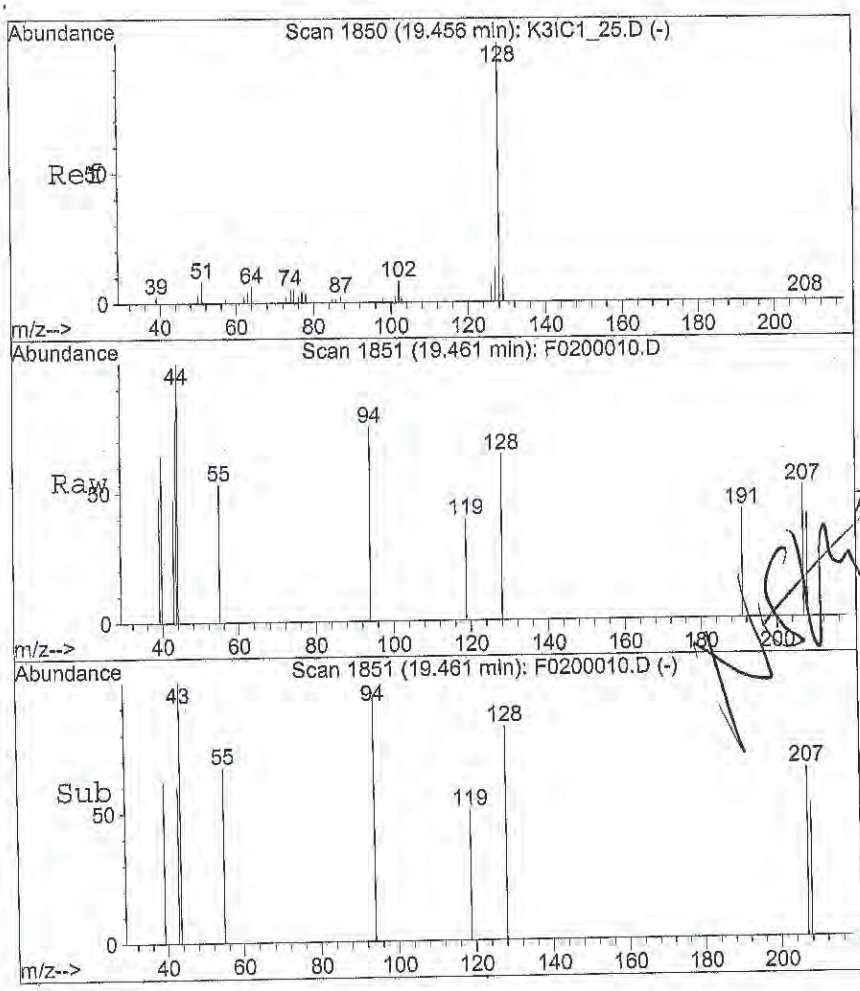


#74
1,2-Dibromo-3-chloropropane
Concen: 1.74 ug/L
RT: 17.93 min Scan# 1670
Delta R.T. -0.00 min
Lab File: F0200010.D
Acq: 2 Jun 2014 4:18 pm

Tgt Ion: 75 Resp: 588

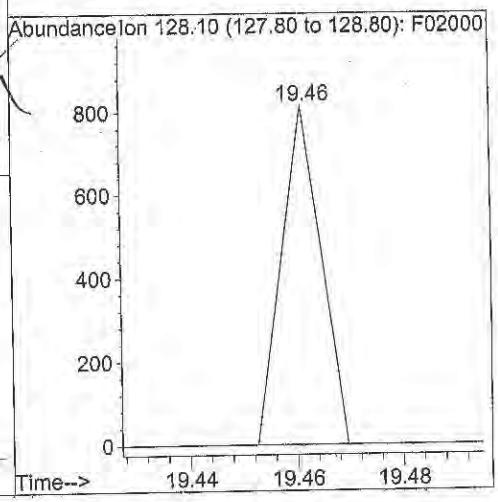
Ion	Ratio	Lower	Upper
75	100		
155	0.0	59.2	88.8#
157	0.0	77.0	115.6#





#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



Quantitation Report (QT Reviewed)

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 3 7:44 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	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

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

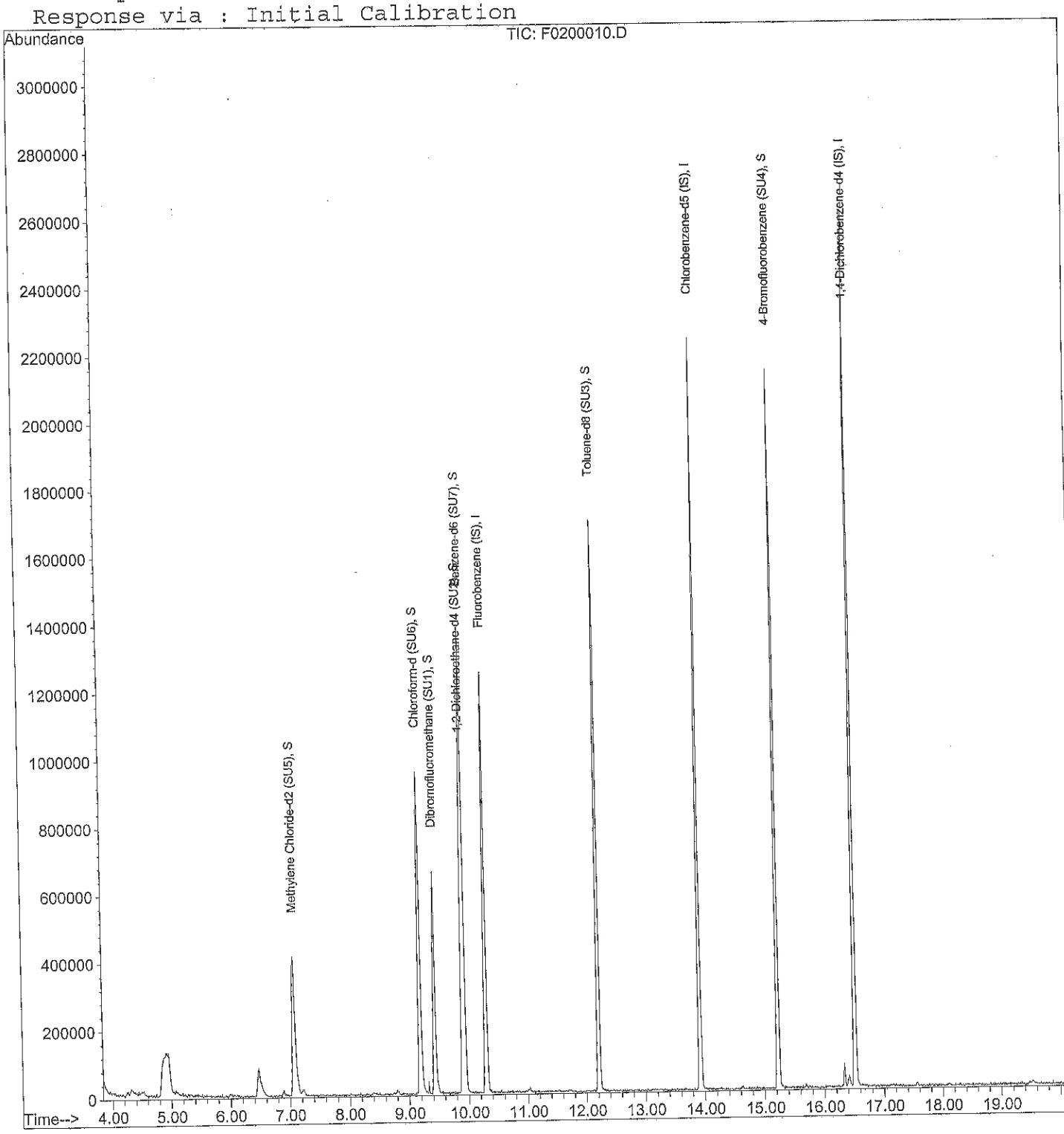
Quantitation Report

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



Quantitation Report (QT Reviewed)

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

Quantitation Report (QT Reviewed)

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-Pentanon	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

Quantitation Report (QT Reviewed)

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

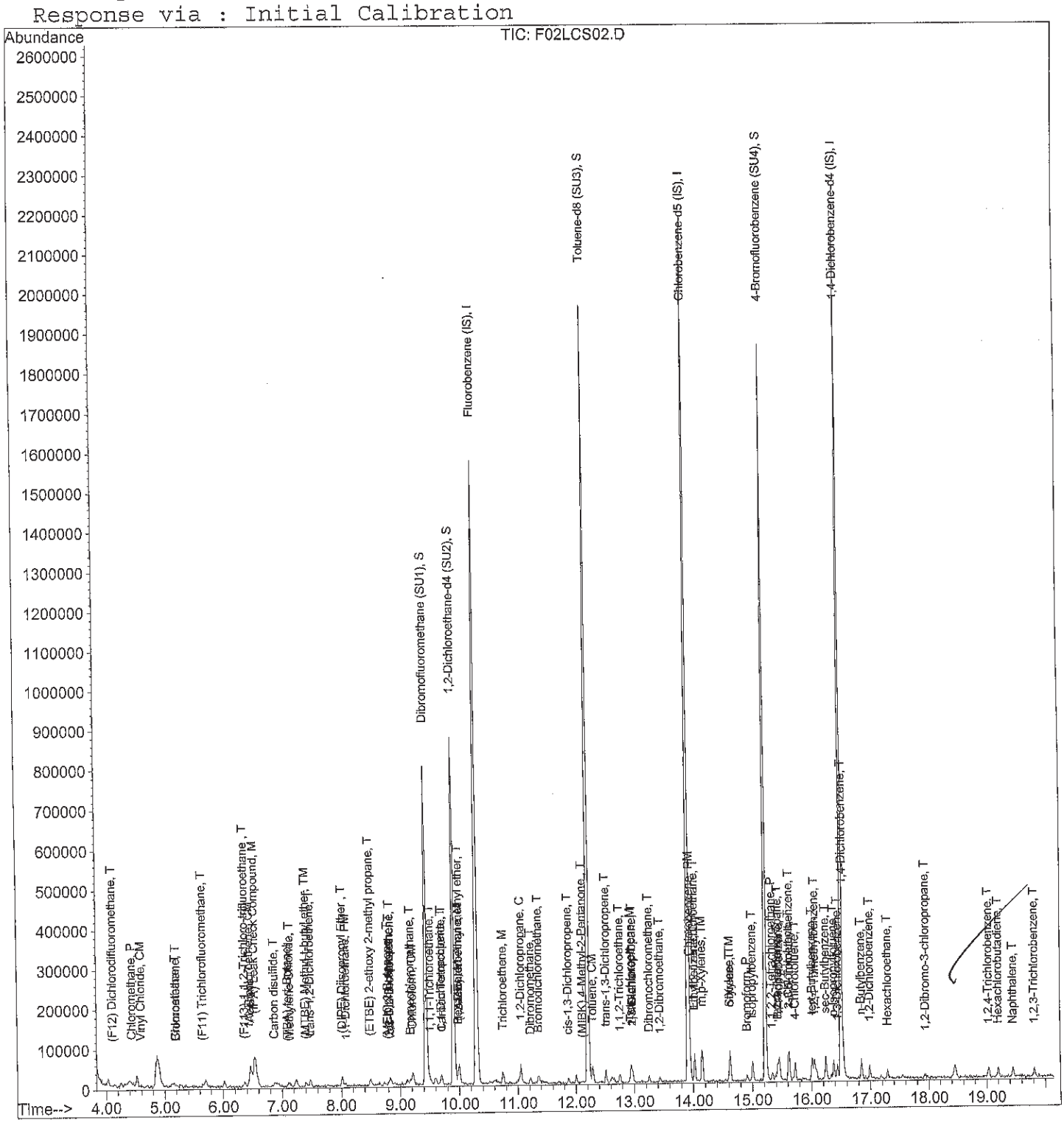
Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
67) 1,2,4-Trimethylbenzene	16.06	105	25285	0.20	ug/L		89
68) sec-Butylbenzene	16.24	105	30195	0.19	ug/L	#	91
69) p-Isopropyltoluene	16.38	119	27942	0.21	ug/L		92
70) 1,3-Dichlorobenzene	16.45	146	9722	0.14	ug/L	#	76
71) 1,4-Dichlorobenzene	16.54	146	12785	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

Quantitation Report

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

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. 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

EST
ENVIRONMENTAL SUPPORT TECHNOLOGIES

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13 Raw Data for Analyzed Samples Including Chromatograms, Quantitation Reports and Spectra

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: MWH Americas
Address: 250 North Madison Avenue
Pasadena, Ca
Project Manager: Sarah Von Raesfield

Sampler Name: Mike Marello
EST Project#: EST2754
Site Location: SSFL
Phone: ( )

Page: of
Custody Seals:
Email:

Turnaround Time: (Check one)
Normal:
Rush: X

Sample Receipt
Intact: Yes: X No:
On Ice: Yes: No: X N/A
Custody Seals: Yes: No: X
N/A (Received on Site):

Sample Name	Sample Matrix	Container Type	# of Container	Sampling Date	Sampling Time	Preservative Type	Purge Volume (ml)	Vacuum (inches of H_2O)	8260B VOC's						Special Instructions
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: 06/03/14 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.

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	**Reported:**
	Project Manager:	Sarah Von Raesfield	17-Jun-14 08:54

Volatile Organic Compounds

Environmental Support Technologies

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Equipment Blank (3F42327021 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	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*98.4 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*95.4 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*		*75-125*	"	"	"	"	
Surrogate: Benzene-d6		*89.0 %*		*70-140*	"	"	"	"	
Surrogate: Chloroform-d		*116 %*		*70-140*	"	"	"	"	
Surrogate: Methylene chloride-d2		*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
SVL0/ 230SA90SV04./ 0/ ./ (3F42327026 1 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	
7XX0Trichloroethane	**2.77**	0.020	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.020	"	"	"	"	"	"	
7XX0Trichloro0tri,luoroethane	**2./ 4**	0.020	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	"	"	"	"	"	"	
7X0Dichloroethene	**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
SVL0/340SA90SV0-.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
SVL0934 SA90 SV0-.20 5.2 (3F42327 0241 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
SVL0/ 250SA/ C0SV0/ .20- .2 (3F42327[illegible]2/ 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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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/ 250SA/ C0SV072./ 077./ (3F42327Q2-1 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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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
SVL0/290SA/C0SV09.6908.6/ (3F42327025 1 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	"	"	"	"	"	"	
meta0and 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	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*112 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*99.0 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.9 %*		*75-125*	"	"	"	"	
Surrogate: Benzene-d6		*77.5 %*		*70-140*	"	"	"	"	
Surrogate: Chloroform-d		*106 %*		*70-140*	"	"	"	"	
Surrogate: Methylene chloride-d2		*65.5 %*		*70-140*	"	"	"	"	*S-GC*

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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
SVL0/3/08A/C08V0/.20-.2 (3F42327029 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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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
SVL0/3/08A/C08V072.2077.2 (3F42327028)1 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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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
SVL0/3/08A/C08V07/.207-.2 (3F42327072 1 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	"	"	"	"	"	"	
meta0and para0f ylenes	**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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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/ C0SV0/ .20- .2 (3F42327077 1 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	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*	*75-125*		"	"	"	"	
Surrogate: Toluene-d8		*90.5 %*	*75-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*112 %*	*75-125*		"	"	"	"	
Surrogate: Benzene-d6		*103 %*	*70-140*		"	"	"	"	
Surrogate: Chloroform-d		*109 %*	*70-140*		"	"	"	"	
Surrogate: Methylene chloride-d2		*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 (3F42327076 1 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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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
FB02-2374 (3F42327-0731 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	"	"	"	"	"	"	
7XX0Trichloro0tri,luoroethane	**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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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 0 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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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 0 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										
LCS (34F23270BS71				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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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 0 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										
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*			

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 0 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										
Duplicate (34F23270DUP71		**Source: 3F4232702 6**		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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16510 Aston Street, Irvine, California 92606
Telephone: (949) 679-9500 Fax: (949) 679-9501

Notes and De,initions

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

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.

SUMMARY OF INITIAL CALIBRATION

Rerun sample @ 5ppb @ Most.

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	Linear
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	Linear
7)	T	Chloroethane	0.030	0.106	0.066	0.102	0.098	0.089	0.082	35.53	Quadratic
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	Quadratic
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	Not in use.
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	Not in use.
41)	CM	Toluene	2.231	1.790	1.660	1.584	1.518	1.441	1.704	16.71	

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

Quantitation Report (QT Reviewed)

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

Quantitation Report (QT Reviewed)

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-Pentanon	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

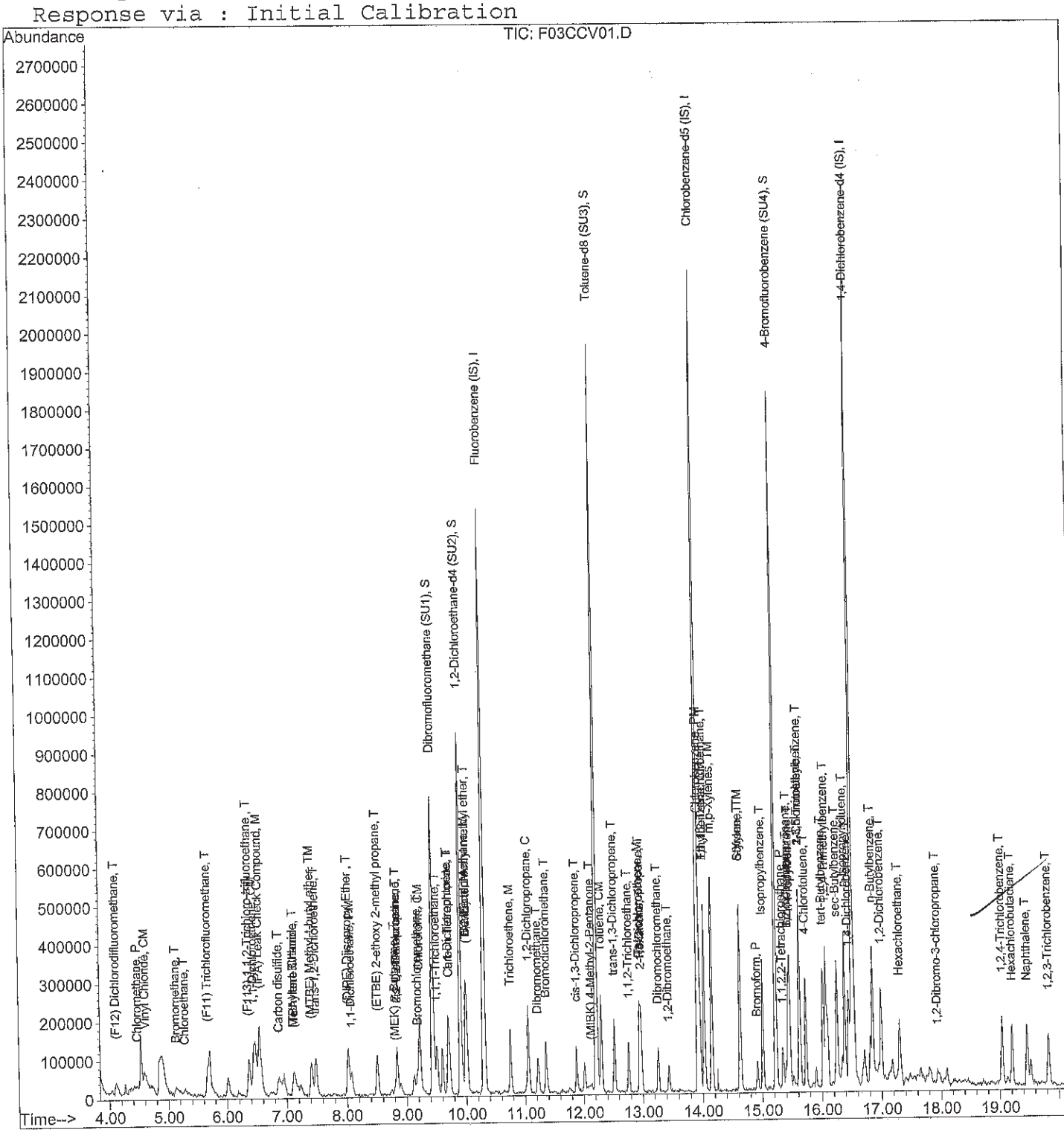
Quant Method : C:\HPCHEM\1\METHODS\MW111313.M (RTE Integrator)
Title : 8260B GC/MS #3 ICAL 11/13/13 DN
Last Update : Wed Nov 13 19:38:32 2013
Response via : Initial Calibration
DataAcq Meth : MW111313

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

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

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	2.6	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

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

Evaluate Continuing Calibration 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

Vial: 9
Operator: DN
Inst : GC/MS Ins
Multiplr: 1.00

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

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) 1590180	(CLBD 1163370	(1,4- 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

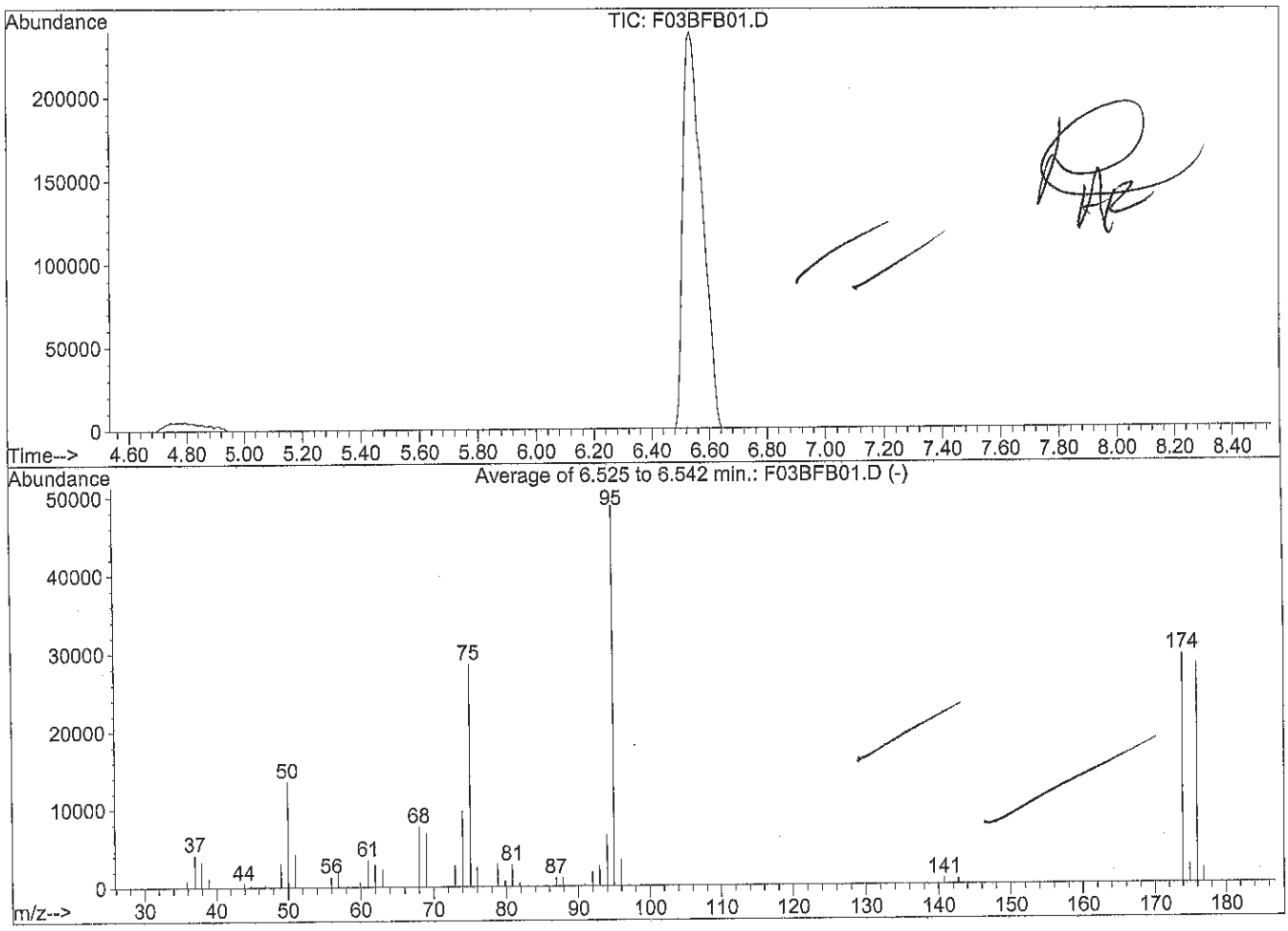
t - fails 12hr time check * - fails criteria

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

F03BFB01.D MW111313.M Tue Jun 03 05:55:20 2014

INJECTION LOG

Injection Log

Directory: c:\hpchem\1\data\060314l3

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/H20	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___

MWH SSFL , CA

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

File No.	Port No.	Sample Lab No.	Sample ID	Amount	Dilution Factor	Bulb Surr added	Time Sample Loaded	Time Sample Analyzed	Glass Bulb #	PID READING
F403BFB1	1	50uL BFB1	12HRS TUNING	1uL	1x	PASS	@	546		
CCV1	9	1.25/2.5/12.5 CCV1	8260 STARDARD	20mL	1x	545	546	604		
BS1	9	34F0301-BS1	8260 1.25/2.5/12.5 ug/L LCS	20mL	1x	615	616	634		
BLK1	1	34F0301-BLK1	METHOD BLANK	100cc	1x	715	716	731		
1	2	3F40301-01	EQUIPMENT BLANK	100cc	1x	750	751	800	3	0.0
2	1	3F40301-02	SVL-503-SA8-SV-4.5-5.5	100cc	1x	755	756	829	11	0.0
3	2	34F0301-DUP1	SVL-503-SA8-SV-4.5-5.5	100cc	1x	755	756	859	11	0.0
4	3	3F40301-03	SVL-534-SA8-SV-6.0-7.0	100cc	1x	834	835	929	6	0.0
5	4	3F40301-04	SVL-834-SA8-SV-6.0-7.0	100cc	1x	834	835	959	12	0.0
6	5	3F40301-05	SVL-507-SA5C-SV-5.0-6.0	100cc	1x	915	916	1027	2	0.7
7	6	3F40301-06	SVL-507-SA5C-SV-10.5-11.5	100cc	1x	941	942	1056	13	1.2
8	7	3F40301-07	SVL-508-SA5C-SV-8.25-9.25	100cc	1x	1014	1015	1125	1	0.6
9	8	3F40301-08	SVL-535-SA5C-SV-5.0-6.0	100cc	1x	1059	1100	1154	10	1.5
10	1	3F40301-09	SVL-535-SA5C-SV-10.0-11.0	100cc	1x	1122	1123	1227	7	2.1
11	2	3F40301-10	SVL-535-SA5C-SV-15.0-16.0	100cc	1x	1150	1151	1256	4	0.8
12	3	3F40301-11	SVL-543-SA5C-SV-5.0-6.0	100cc	1x	1256	1257	1325	5	1.7
13	4	3F40301-12	SVL-543-SA5C-SV-11.0-12.0	100cc	1x	1315	1316	1354	9	0.0
10	1	3F40301-13	FB-060314	100cc	1x	1338	1339	1423	8	0.0
BSD1	9	34F0301-BSD1	8260 1.25/2.5/12.5 ug/L LCS	20mL	1x	1435	1436	1452		

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
Auroroa, Colorado 80014
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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

			Number of Results Qualified as Estimated Nondetects or Estimated Detects	
Method	**Total Number of Samples**	**Total Number of Sample Results**	**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 5× and 10× rules. Target compound detects less than or equal to 5× a blank detect and common laboratory contaminant compound detects less than or equal to 10× 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 5× and 10× 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

			Number of Results Estimated for Recovery or Precision		Number of Results Rejecte
Method	**Total Number of Samples**	**Total Number of Results**	**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 LSC/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/LSCD 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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤15%.

- Blanks: The ambient air method blank had a detect for m,p-xylene reported at 0.0080(J) µg/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 ≤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 20× 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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤15%.

- Blanks: The ambient air method blank had a detect for toluene reported at 0.013(J) µg/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 ≤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	

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	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

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	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	

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-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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤15%.

- Blanks: The ambient air method blank had a detect for toluene reported at 0.0118(J) µg/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 ≤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

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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-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	

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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	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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤15%.

- Blanks: The ambient air method blank had a detect for toluene reported at 0.0048(J) µg/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 ≤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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤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 ≤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 ≤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 ≤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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤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 ≤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	

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	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

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	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	

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	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

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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	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	

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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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤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 ≤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

Analysis Method 8260B

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	

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	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

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-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	

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	0.0036	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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤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 ≤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 ≤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

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	0.035	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	

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-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	

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-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

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	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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤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 ≤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

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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	0.037	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	

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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	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	

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-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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤15% or the correlation coefficients ≥0.995. The %D for 1,1,2,2-tetrachloroethane exceeded the control limit of ≤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 ≤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

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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-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	

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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	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	

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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-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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤15% or the correlation coefficients ≥0.995. The %D for 1,1,1,2-tetrachloroethane exceeded the control limit of ≤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 ≤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 ≤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 ≤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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤15% or the correlation coefficients ≥0.995.

  The continuing calibration %D exceeded the control limit of ≤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 ≤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 ≤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 5× 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	

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-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

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	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	

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	0.02	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	

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-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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤15% or the correlation coefficients ≥0.995.

  The continuing calibration %D exceeded the control limit of ≤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 ≤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 ≤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 ≤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	

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	0.023	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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤15% or the correlation coefficients ≥0.995. All continuing calibration %Ds were ≤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	

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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	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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤15% or the correlation coefficients ≥0.995.

  The continuing calibration %D exceeded the control limit of ≤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 ≤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 ≤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

Analysis Method 8260B

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	

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	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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤30%. Continuing calibration %Ds were ≤30%.

- Blanks: Methylene chloride was detected in the method blank at 0.0020 µg/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 µg/L) and o-xylene (0.0018 µg/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 µg/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 2×. 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

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:	14-06-0002
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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤30%. Continuing calibration %Ds were ≤30%.

- Blanks: Methylene chloride was detected in the method blank at 0.0021 µg/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 µg/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 2×. 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	

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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

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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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤30%. Continuing calibration %Ds were ≤30%.

- Blanks: Methylene chloride was detected in the method blank at 0.0016 µg/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 µg/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 µg/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 2×. 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	

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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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤30%. Initial and continuing calibration %Ds were ≤30%.

- Blanks: Methylene chloride was detected in the method blank at 0.0017 µg/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 2×. In order to report trichlorofluoromethane within the linear range of the calibration, the compound was reported from a 4.4× 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			

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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
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:	280-56665-1
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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤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 ±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	

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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	0.056	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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤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 ±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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤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 ±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	

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	

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	

Analysis Method TO-15

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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤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 ≤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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤30%. The continuing calibration %Ds were ≤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 µg/L), ethylbenzene (0.00096 µg/L), m,p-xylene (0.0028 µg/L), and o-xylene (0.0018 µg/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.

- o 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	10×
	Trichlorofluoromethane	25×
	m,p-Xylene	10×
SVL-526-SA5B-5.0-6.0	Toluene	10×
	Trichlorofluoromethane	200×
	m,p-Xylene	10×
SVL-530-SA5B-SV-6.75-7.75	Trichlorofluoromethane	200×

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	

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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	0.01	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	

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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	0.00089	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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤30%. The continuing calibration %Ds were ≤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			

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	0.0056	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	

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	0.00096	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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤30%. The continuing calibration %Ds were ≤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	10×
	Trichloroethene	10×
SVL-524-SA8-SV-4.5-5.5	Toluene	10×
	m,p-Xylene	10×
SVL-812-SA8-SV-8.0-9.0	Chloroform	10×
	Trichloroethene	10×

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			

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	0.0056	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			

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	0.0056	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	

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	0.0056	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	

Analysis Method TO-15

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	

Analysis Method TO-15

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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤30%. The continuing calibration %Ds were ≤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	2×	Matrix interference
SVL-504-SA5A-SV-15.0-16.0	All analytes	2×	Matrix interference
SVL-504-SA5A-SV-20.0-21.0	All analytes	2×	Matrix interference
SVL-504-SA5A-SV-25.0-26.0	All analytes	10×	Matrix interference
SVL-504-SA5A-SV-5.0-6.0	All Analytes	2×	Matrix interference
SVL-509-SA5A-SV-20.0-21.0	m,p-Xylene	10×	Linear range

Validated Sample Result Forms: 1481734

Analysis Method TO-15

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	

Analysis Method TO-15

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	

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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			

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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	

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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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤30%. The continuing calibration %Ds were ≤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	5×	Matrix interference
SVL-565-SA5A-SV-5.0-6.0	m,p-Xylene	10×	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	

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	0.0013	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			

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	0.0056	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	

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	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

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤30%. The continuing calibration %Ds were ≤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

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
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 ≤30%. The continuing calibration %Ds were ≤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 10× 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

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	0.0056	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	