

Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL051220\
 Data File : VL034990.D
 Acq On : 12 May 2020 17:04
 Operator : SY/AP
 Sample : L2567-02
 Misc : 400ml/MSVOA L
 ALS Vial : 1 Sample Multiplier: 1

Instrument :
 MSVOA_L
 ClientSampleId :
 IA-5

Manual Integrations
 APPROVED

MMDadoda
 5/13/2020 5:11:53 PM

Quant Time: May 14 13:08:29 2020
 Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL050620AIR.M
 Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA_LWed May 0
 QLast Update : Wed May 06 14:49:39 2020
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	5.66	49	1040915	10.00	ppbv	0.00
33) 1,4-Difluorobenzene	7.18	114	2419107	10.00	ppbv	0.00
55) Chlorobenzene-d5	12.11	117	2260962	10.00	ppbv	0.00

System Monitoring Compounds

68) 1-Bromo-4-Fluorobenzene	14.45	95	1890300	10.33	ppbv	0.00
Spiked Amount	10.000	Range	65 - 135	Recovery	=	103.30%

Target Compounds	R.T.	QIon	Response	Conc	Units	Ovalue
2) Dichlorodifluoromethane	3.00	85	40175	0.272	ppbv #	86
3) Chlorodifluoromethane	2.94	51	37608m	0.316	ppbv	
4) Chloromethane	3.10	50	36496	0.536	ppbv	93
9) Propene	2.98	41	191572m	3.715	ppbv	
10) Heptane	8.13	43	154046	1.192	ppbv	100
11) Trichlorofluoromethane	3.92	101	49473	0.325	ppbv	95
13) Ethanol	3.61	45	17615910	1035.190	ppbv	89
15) Acetone	3.82	43	2635591m	19.152	ppbv	
19) Isopropyl Alcohol	3.99	45	7466811	81.362	ppbv #	98
20) Methylene Chloride	4.32	84	426179	9.355	ppbv	96
26) Hexane	5.67	57	1096497	10.942	ppbv #	62
29) Chloroform	5.75	83	20828m	0.127	ppbv	
30) Cyclohexane	7.13	84	49704m	0.643	ppbv	
34) 2-Butanone	5.23	43	166503	1.107	ppbv	99
35) Carbon Tetrachloride	7.01	117	9608m	0.063	ppbv	
36) Benzene	6.89	78	163097	0.818	ppbv	94
38) Trichloroethene	7.84	130	107858	1.396	ppbv	93
41) Tetrahydrofuran	6.04	42	141617	1.789	ppbv	98
44) 2,2,4-Trimethylpentane	7.87	57	361017	1.018	ppbv #	84
52) Tetrachloroethene	11.25	164	657352m	9.269	ppbv	
53) Toluene	9.83	91	9915298	46.897	ppbv	88
58) Ethyl Benzene	12.73	91	680563	2.434	ppbv	99
59) m/p-Xylene	13.00	91	1793084	7.289	ppbv #	58
60) o-Xylene	13.72	91	572706	2.359	ppbv	99
61) Styrene	13.56	104	493641	3.213	ppbv	99
64) n-propylbenzene	15.59	120	17509m	0.188	ppbv	
72) 4-Ethyltoluene	15.87	105	86630	0.320	ppbv #	94
73) 1,3,5-Trimethylbenzene	16.03	105	76530m	0.290	ppbv	
74) 1,2,4-Trimethylbenzene	16.79	105	313289	1.089	ppbv #	76
79) Naphthalene	22.26	128	32576m	0.145	ppbv	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

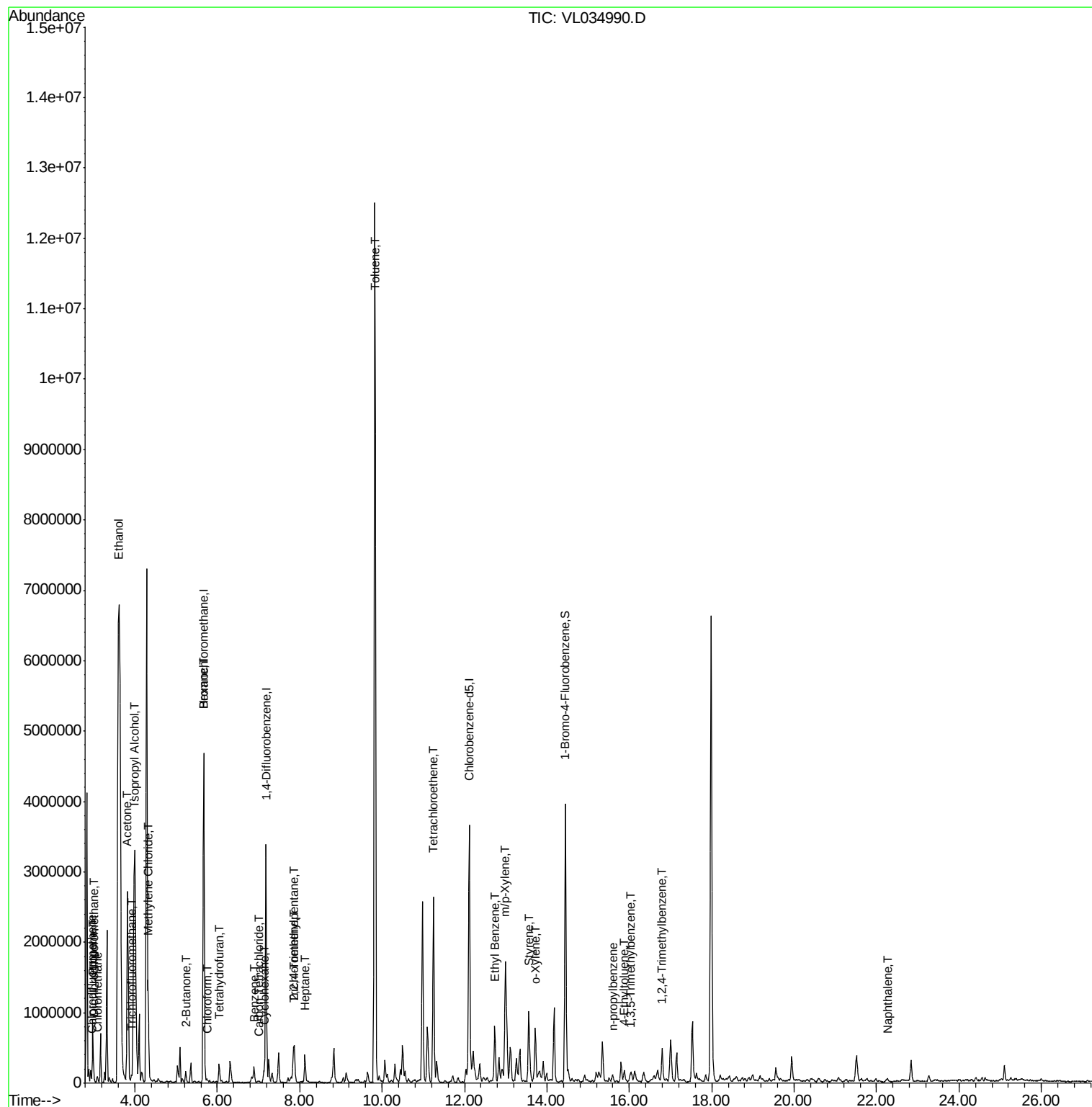
Data Path : Z:\V0ASRV\HPCHEM1\MSVOA L\DATA\VL051220\
Data File : VL034990.D
Acq On : 12 May 2020 17:04
Operator : SY/AP
Sample : L2567-02
Misc : 400ml/MSVOA L
ALS Vial : 1 Sample Multiplier: 1

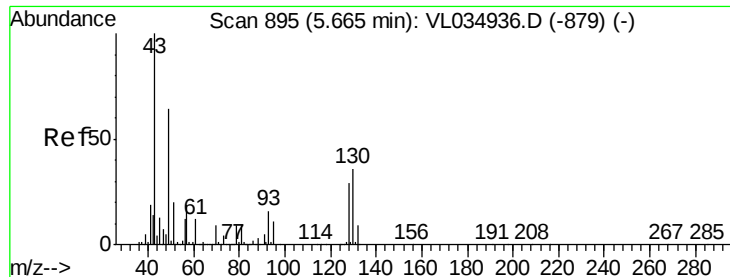
Instrument :
MSVOA_L
ClientSampleId :
IA-5

Manual Integrations
APPROVED

MMDadoda
5/13/2020 5:11:53 PM

Quant Time: May 14 13:08:29 2020
Quant Method : Z:\V0ASRV\HPCHEM1\MSVOA L\METHODS\VL050620AIR.M
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA_L Wed May
QLast Update : Wed May 06 14:49:39 2020
Response via : Initial Calibration





#1

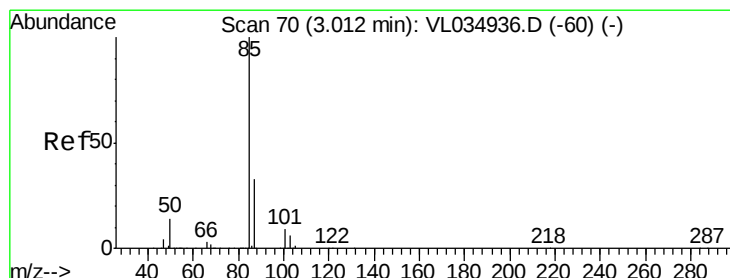
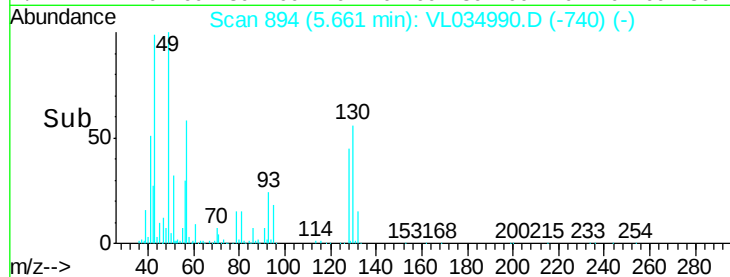
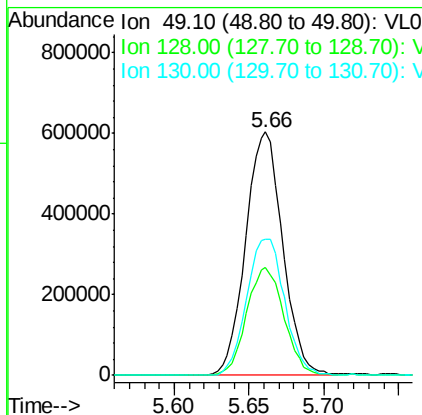
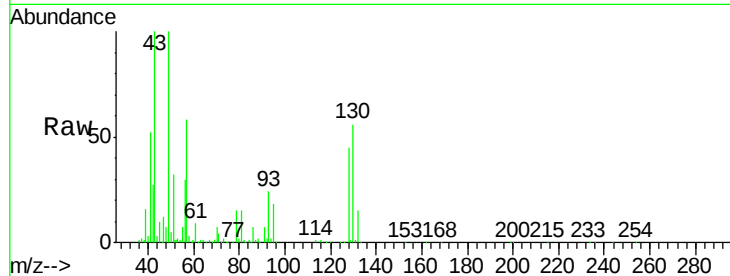
Bromochloromethane
 Concen: 10.000 ppbv
 RT: 5.66 min Scan# 894
 Delta R.T. -0.00 min
 Lab File: VL034990.D
 Acq: 12 May 2020 17:04

Instrument :
 MSVOA_L
 ClientSampled :
 IA-5

Tot Ion	Ratio	Lower	Upper
49	100		
128	45.1	22.1	66.5
130	57.3	29.1	87.3

Manual Integrations
 APPROVED

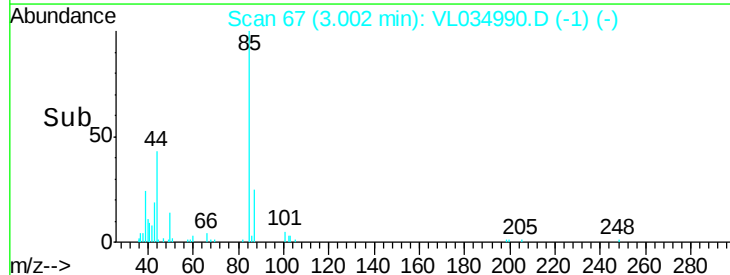
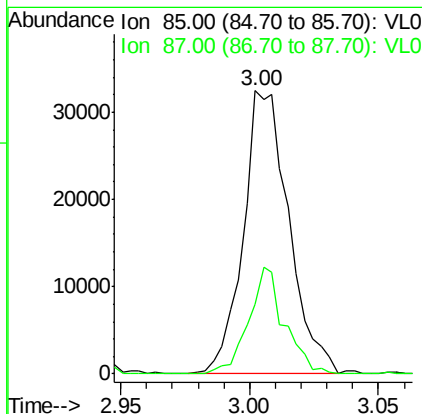
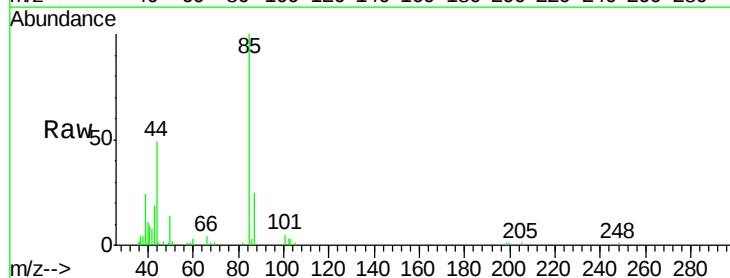
MMDadoda
 5/13/2020 5:11:53 PM

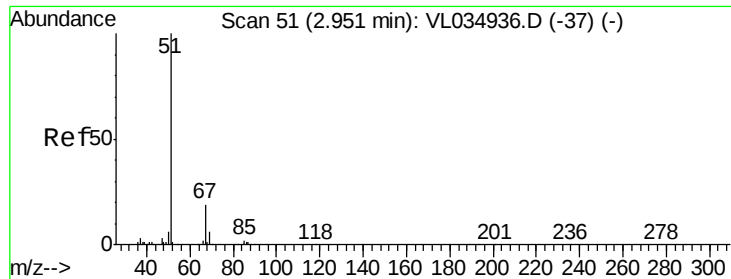


#2

Dichlorodifluoromethane
 Concen: 0.272 ppbv
 RT: 3.00 min Scan# 67
 Delta R.T. -0.01 min
 Lab File: VL034990.D
 Acq: 12 May 2020 17:04

Tgt Ion	Ratio	Lower	Upper
85	100		
87	24.7	26.2	39.2





#3

Chlorodifluoromethane

Concen: 0.316 ppbv

RT: 2.94 min Scan# 49

Delta R.T. -0.01 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

Instrument :

MSVOA_L

ClientSampled :

IA-5

Tot Ion: 51 Resp: 37608

Ion Ratio Lower Upper

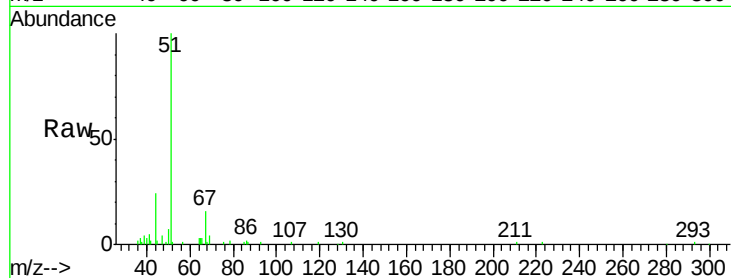
51 100

67 20.2 15.0 22.6

Manual Integrations
APPROVED

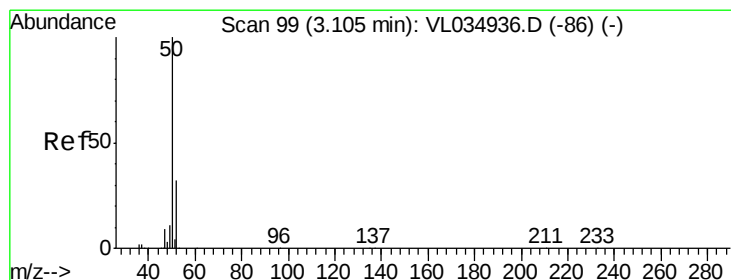
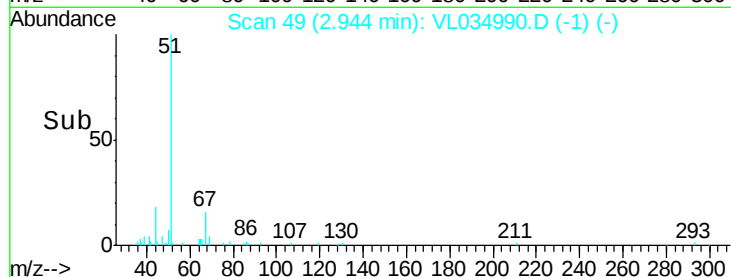
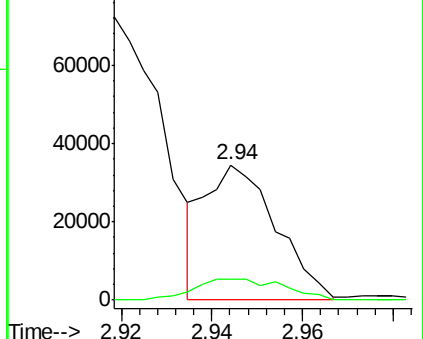
MMDadoda

5/13/2020 5:11:53 PM



Abundance Ion 51.00 (50.70 to 51.70): VL0

Ion 67.00 (66.70 to 67.70): VL0



#4

Chloromethane

Concen: 0.536 ppbv

RT: 3.10 min Scan# 97

Delta R.T. -0.01 min

Lab File: VL034990.D

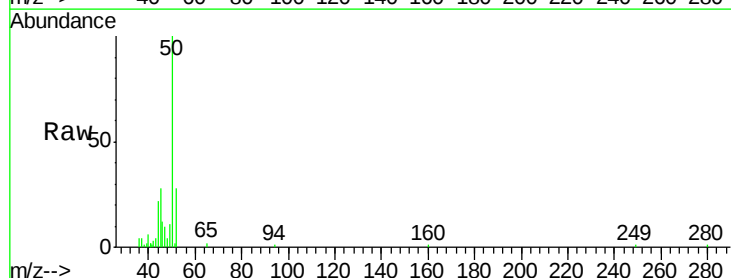
Acq: 12 May 2020 17:04

Tgt Ion: 50 Resp: 36496

Ion Ratio Lower Upper

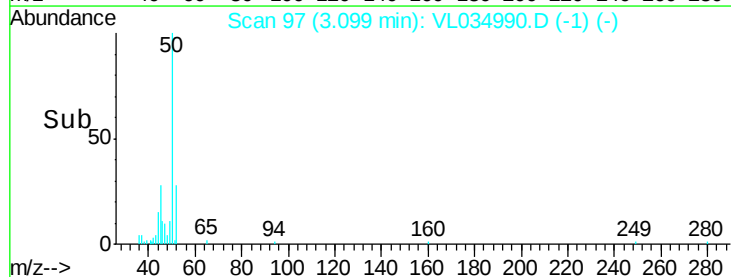
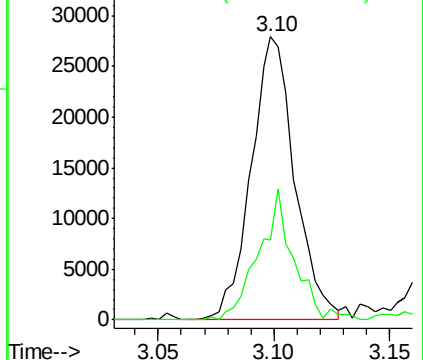
50 100

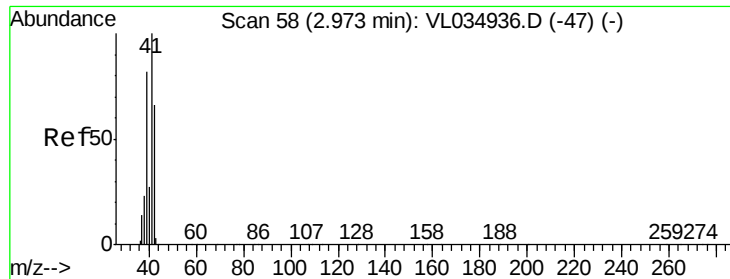
52 28.0 25.4 38.2



Abundance Ion 50.10 (49.80 to 50.80): VL0

Ion 52.10 (51.80 to 52.80): VL0





#9

Propene

Concen: 3.715 ppbv m

RT: 2.98 min Scan# 60

Delta R.T. 0.01 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

Instrument :

MSVOA_L

ClientSampled :

IA-5

Tot Ion: 41 Resp: 191572

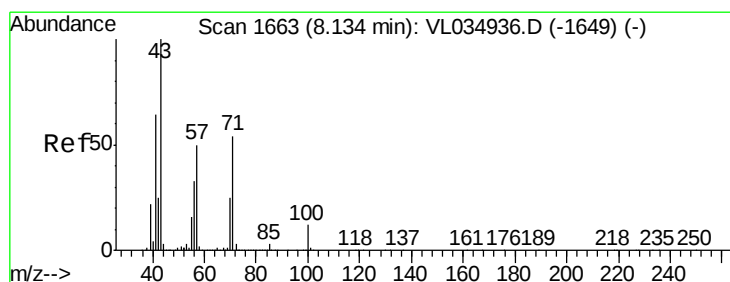
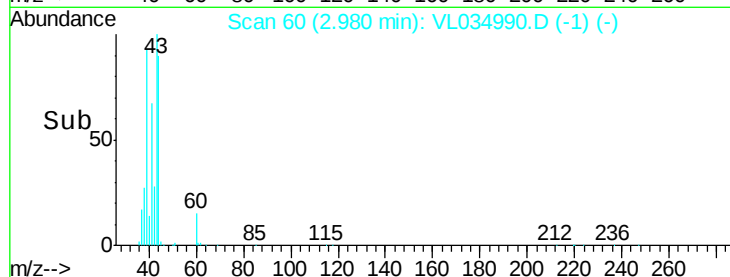
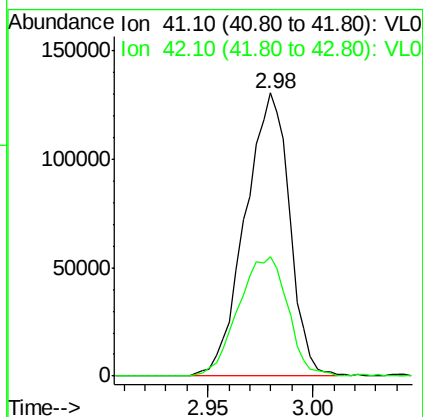
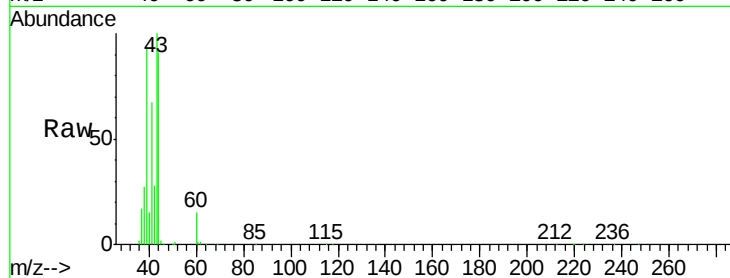
Ion Ratio Lower Upper

41 100

42 60.6 54.5 81.7

Manual Integrations
APPROVED

MMDadoda
5/13/2020 5:11:53 PM



#10

Heptane

Concen: 1.192 ppbv

RT: 8.13 min Scan# 1661

Delta R.T. -0.01 min

Lab File: VL034990.D

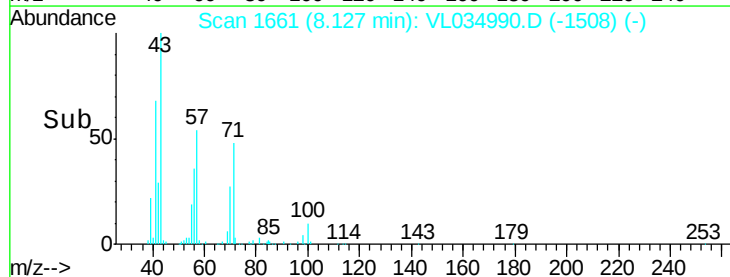
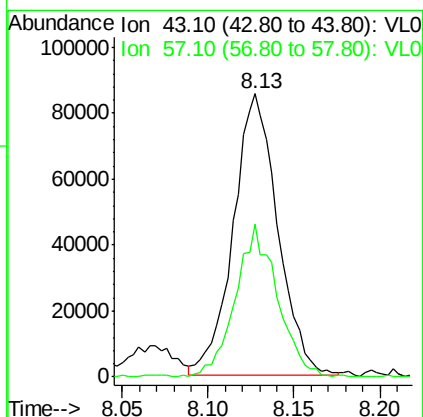
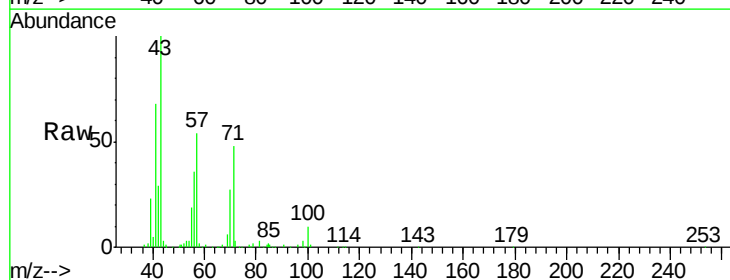
Acq: 12 May 2020 17:04

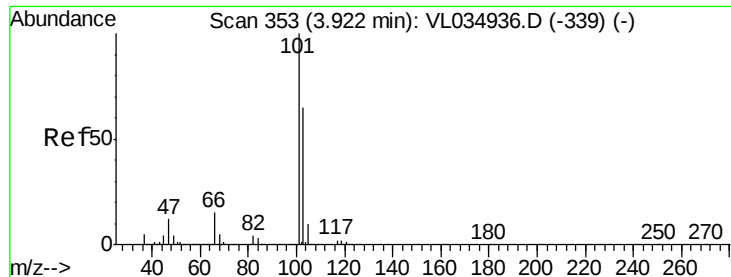
Tgt Ion: 43 Resp: 154046

Ion Ratio Lower Upper

43 100

57 51.4 41.1 61.7





#11

Trichlorofluoromethane

Concen: 0.325 ppbv

RT: 3.92 min Scan# 351

Delta R.T. -0.01 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

Instrument :

MSVOA_L

ClientSampleId :

IA-5

Tot Ion:101 Resp: 49473

Ion Ratio Lower Upper

101 100

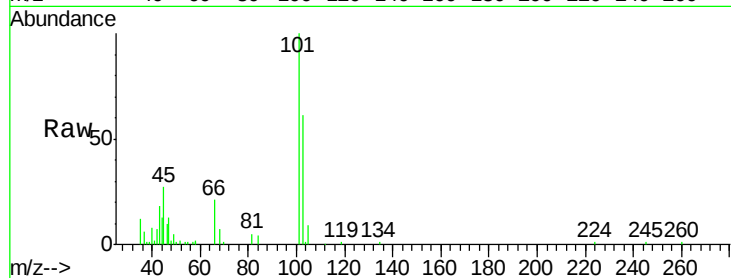
103 60.7 51.9 77.9

Manual Integrations

APPROVED

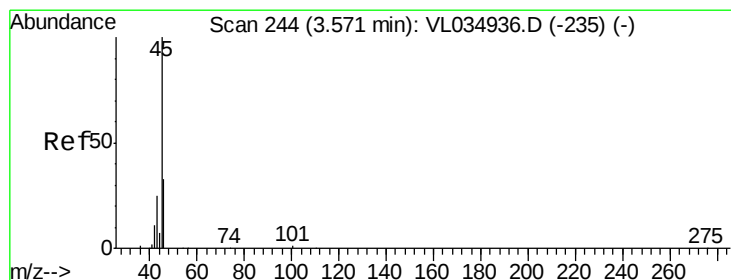
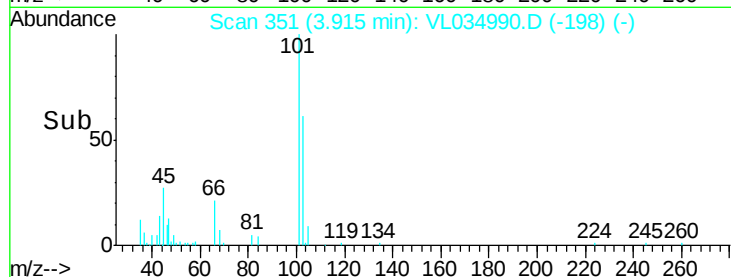
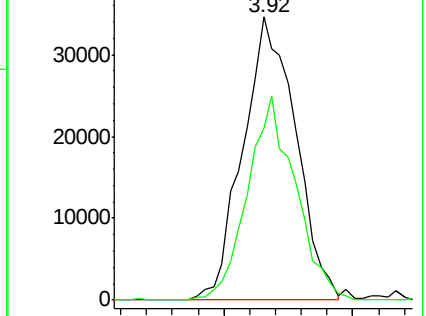
MMDadoda

5/13/2020 5:11:53 PM



Abundance Ion 101.00 (100.70 to 101.70): V

Ion 103.00 (102.70 to 103.70): V



#13

Ethanol

Concen: 1035.190 ppbv

RT: 3.61 min Scan# 256

Delta R.T. 0.04 min

Lab File: VL034990.D

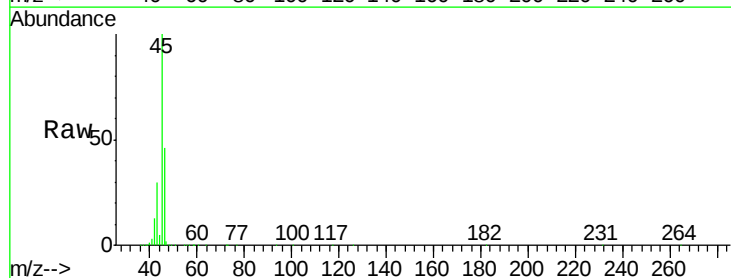
Acq: 12 May 2020 17:04

Tgt Ion: 45 Resp:17615910

Ion Ratio Lower Upper

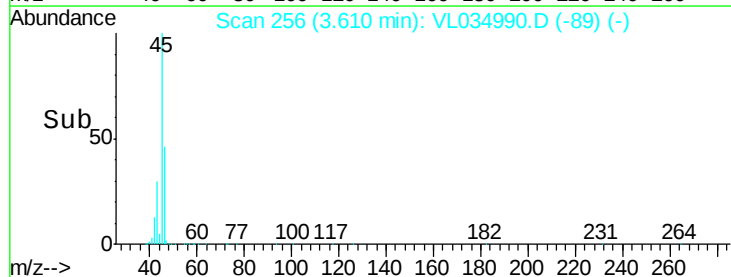
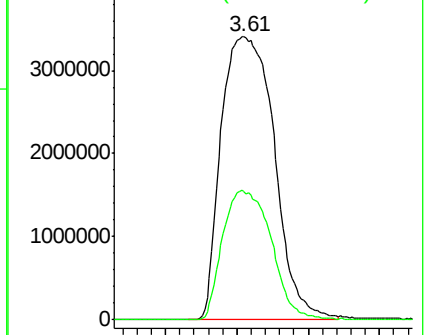
45 100

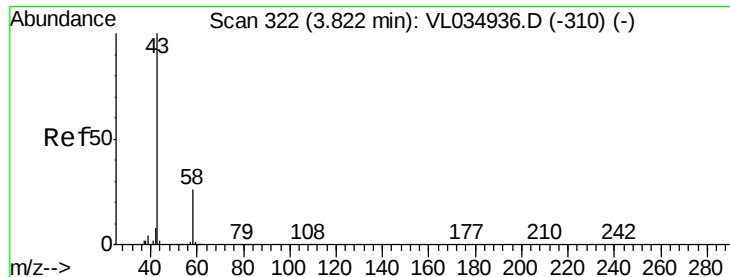
46 42.2 14.3 57.3



Abundance Ion 45.10 (44.80 to 45.80): VL0

Ion 46.10 (45.80 to 46.80): VL0





#15

Acetone

Concen: 19.152 ppbv m

RT: 3.82 min Scan# 320

Delta R.T. -0.01 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

Tot Ion: 43 Resp: 2635591

Ion Ratio Lower Upper

43 100

58 29.7 21.7 32.5

Instrument :

MSVOA_L

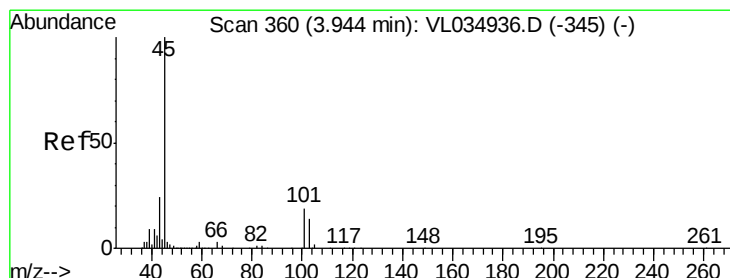
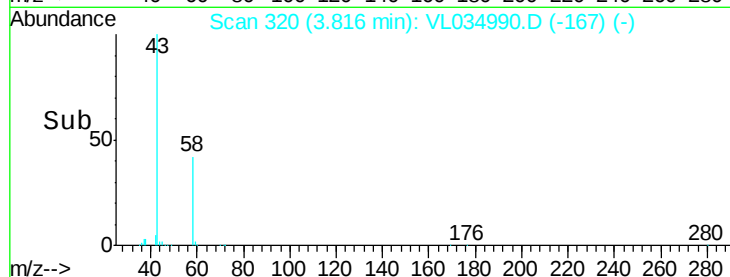
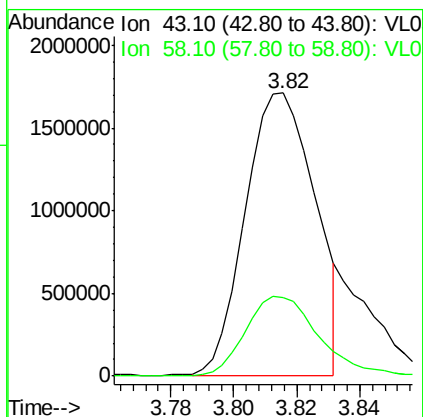
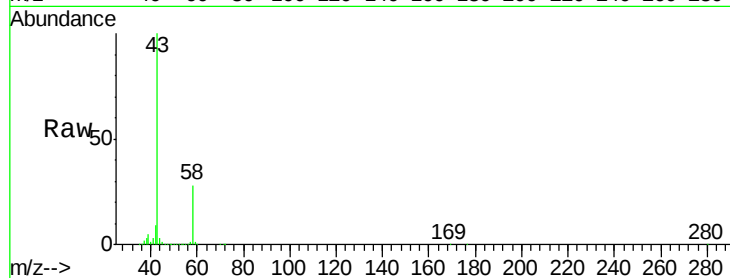
ClientSampled :

IA-5

Manual Integrations
APPROVED

MMDadoda

5/13/2020 5:11:53 PM



#19

Isopropyl Alcohol

Concen: 81.362 ppbv

RT: 3.99 min Scan# 374

Delta R.T. 0.04 min

Lab File: VL034990.D

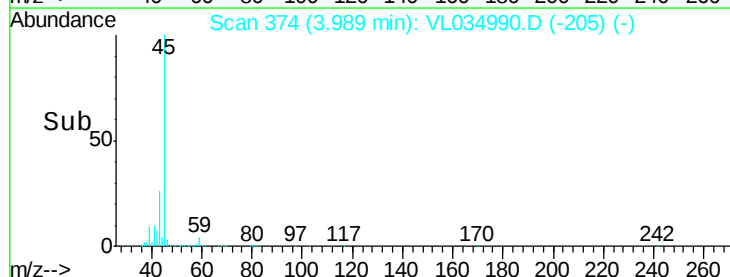
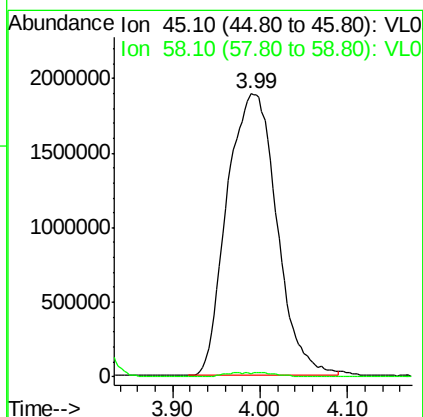
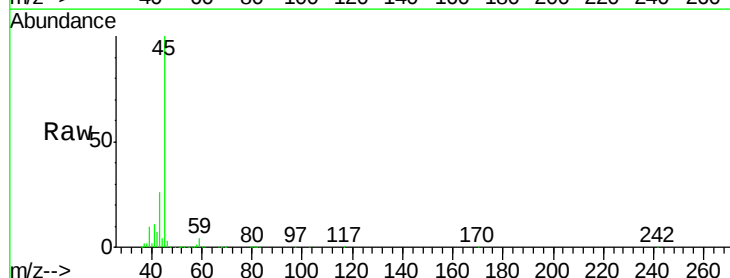
Acq: 12 May 2020 17:04

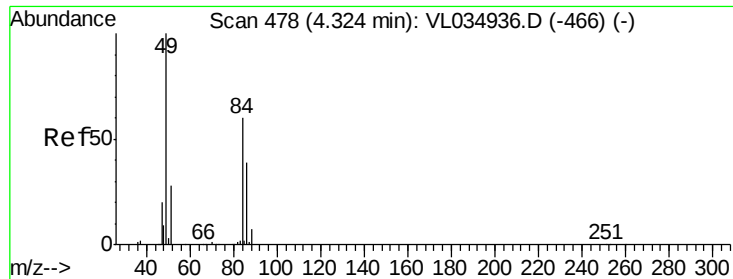
Tgt Ion: 45 Resp: 7466811

Ion Ratio Lower Upper

45 100

58 1.6 1.7 2.5#





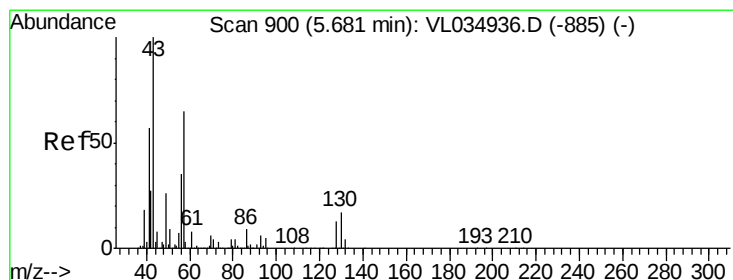
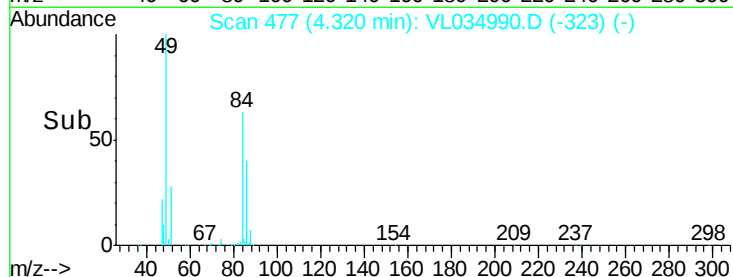
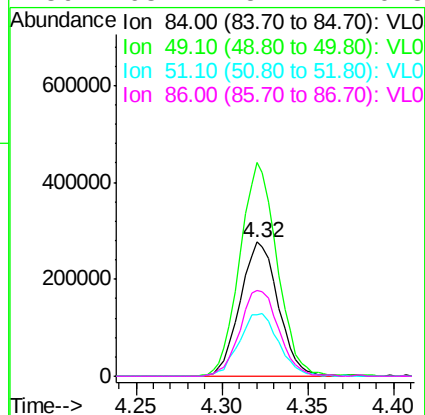
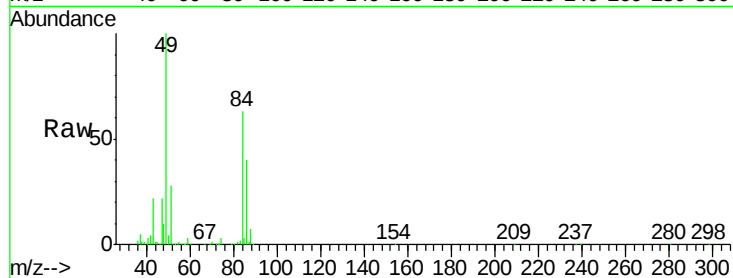
#20
Methvlene Chloride
Concen: 9.355 ppbv
RT: 4.32 min Scan# 477
Delta R.T. -0.00 min
Lab File: VL034990.D
Acq: 12 May 2020 17:04

Instrument :
MSVOA_L
ClientSampleId :
IA-5

Tot Ion	Ion	Ratio	Lower	Upper
84	100			
49	159.0	132.5	198.7	
51	45.0	38.4	57.6	
86	63.4	51.2	76.8	

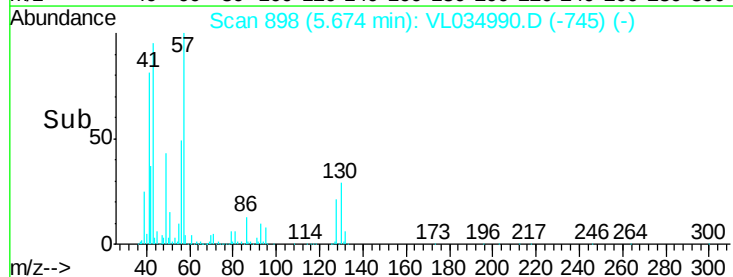
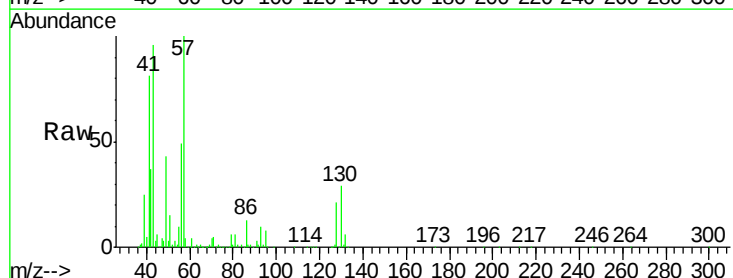
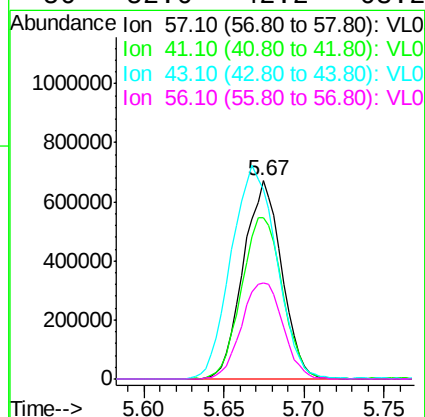
Manual Integrations
APPROVED

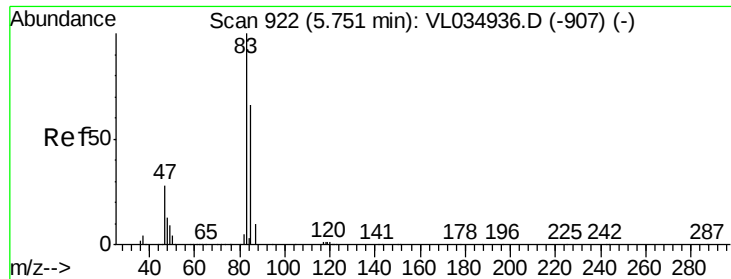
MMDadoda
5/13/2020 5:11:53 PM



#26
Hexane
Concen: 10.942 ppbv
RT: 5.67 min Scan# 898
Delta R.T. -0.01 min
Lab File: VL034990.D
Acq: 12 May 2020 17:04

Tgt Ion	Ion	Ratio	Lower	Upper
57	100			
41	87.4	72.7	109.1	
43	128.0	182.1	273.1#	
56	52.6	42.2	63.2	





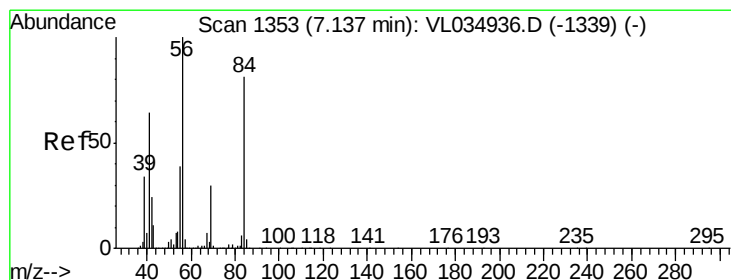
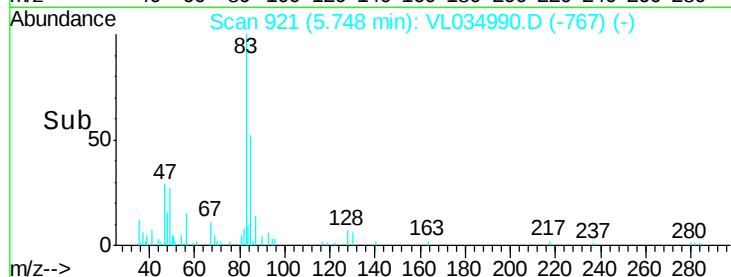
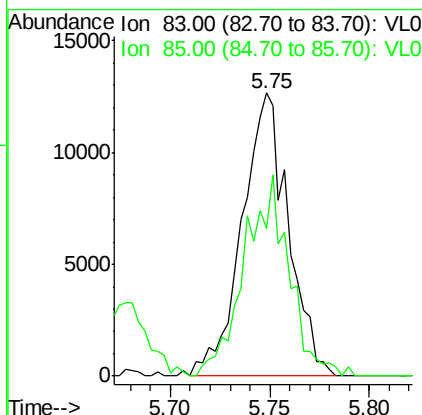
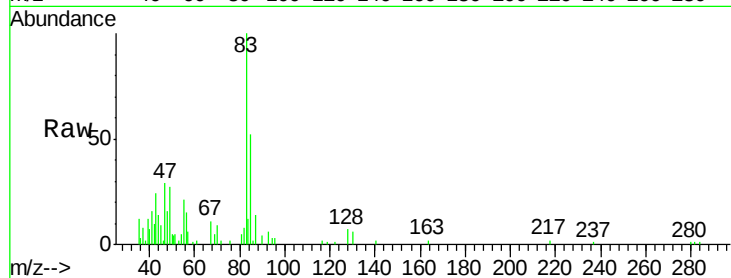
#29
Chloroform
Concen: 0.127 ppbv m
RT: 5.75 min Scan# 921
Delta R.T. -0.00 min
Lab File: VL034990.D
Acq: 12 May 2020 17:04

Instrument :
MSVOA_L
ClientSampleId :
IA-5

Tot Ion	Ratio	Lower	Upper
83	100		
85	52.2	53.0	79.6#

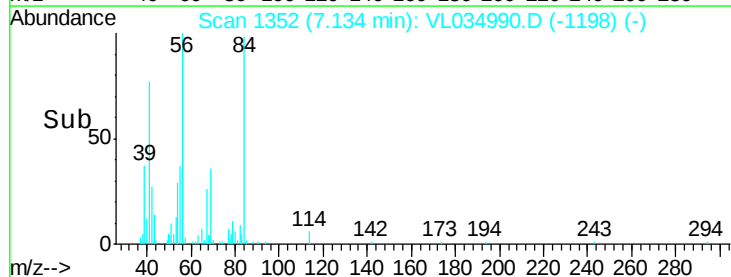
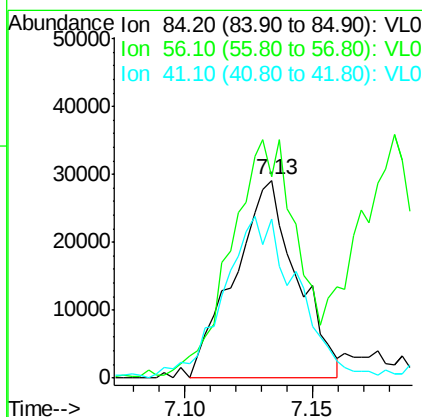
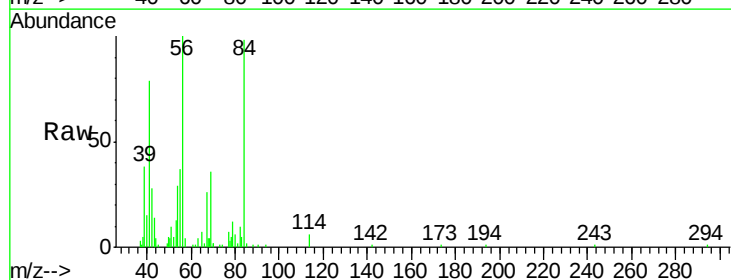
Manual Integrations
APPROVED

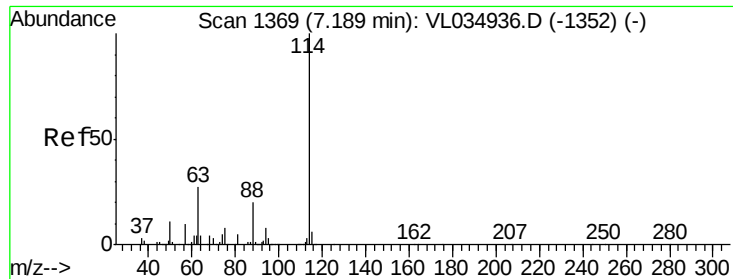
MMDadoda
5/13/2020 5:11:53 PM



#30
Cyclohexane
Concen: 0.643 ppbv m
RT: 7.13 min Scan# 1352
Delta R.T. -0.00 min
Lab File: VL034990.D
Acq: 12 May 2020 17:04

Tgt Ion	Ratio	Lower	Upper
84	100		
56	128.5	111.4	167.2
41	96.2	66.7	100.1





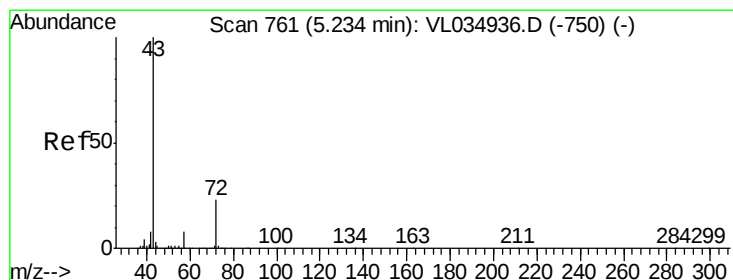
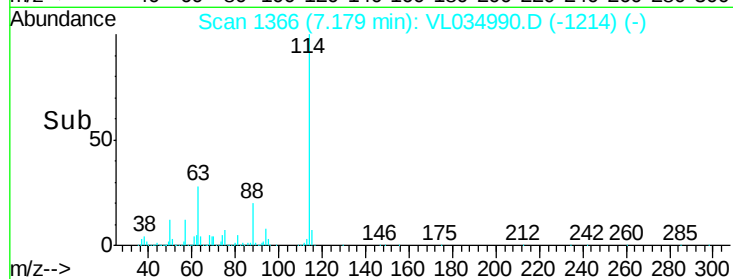
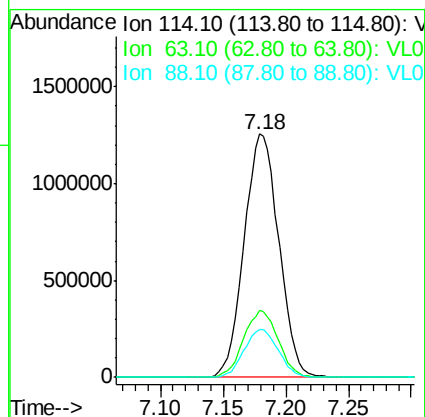
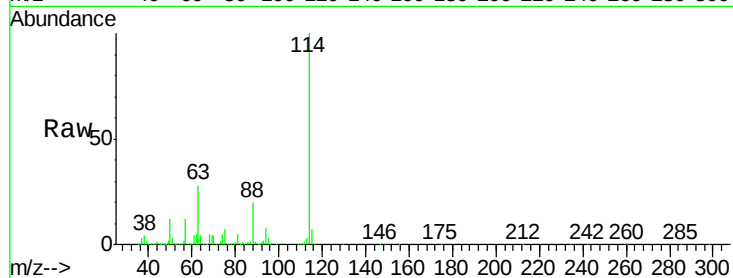
#33
 1,4-Difluorobenzene
 Concen: 10.000 ppbv
 RT: 7.18 min Scan# 1366
 Delta R.T. -0.01 min
 Lab File: VL034990.D
 Acq: 12 May 2020 17:04

Instrument :
 MSVOA_L
 ClientSampleId :
 IA-5

Tot Ion	Ratio	Lower	Upper
114	100		
63	27.5	22.2	33.4
88	19.4	15.5	23.3

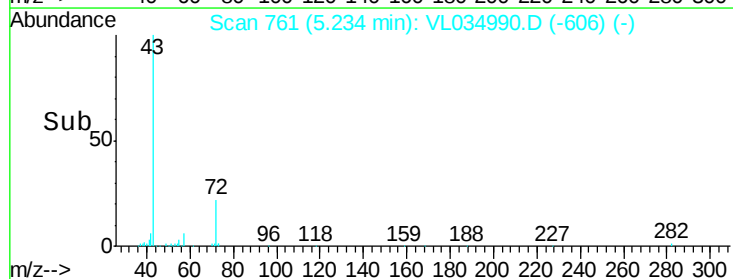
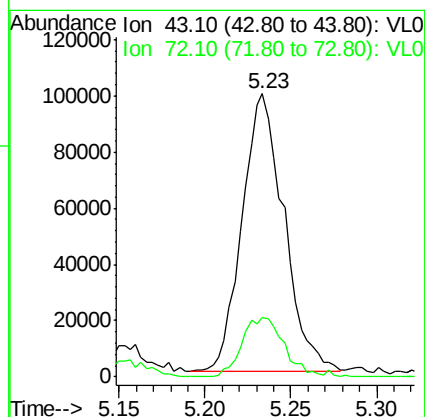
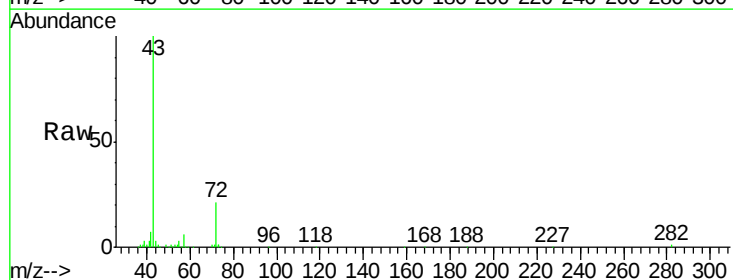
Manual Integrations
 APPROVED

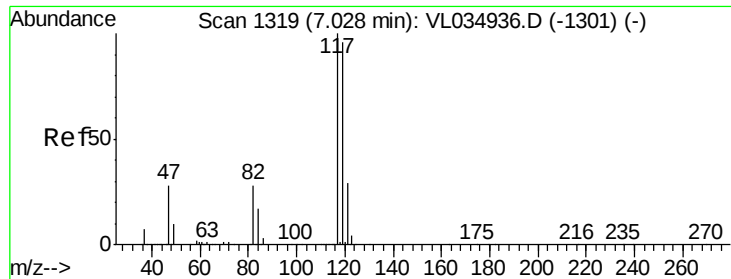
MMDadoda
 5/13/2020 5:11:53 PM



#34
 2-Butanone
 Concen: 1.107 ppbv
 RT: 5.23 min Scan# 761
 Delta R.T. -0.00 min
 Lab File: VL034990.D
 Acq: 12 May 2020 17:04

Tgt Ion	Ratio	Lower	Upper
43	100		
72	21.9	18.0	27.0





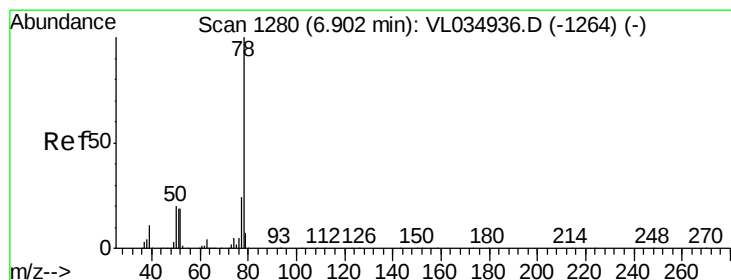
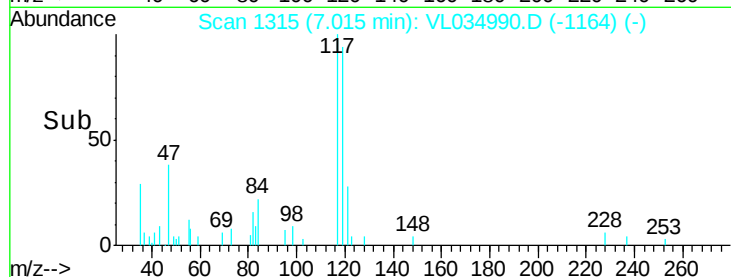
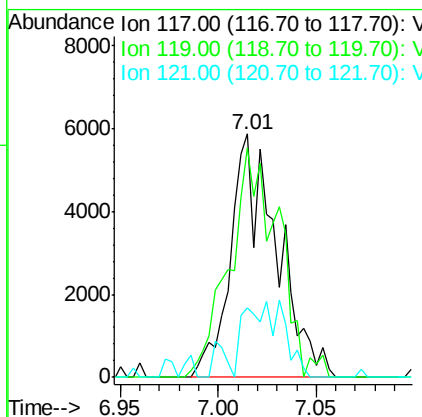
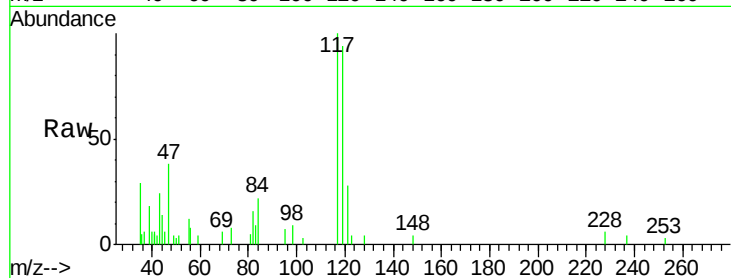
#35
Carbon Tetrachloride
Concen: 0.063 ppbv m
RT: 7.01 min Scan# 1315
Delta R.T. -0.01 min
Lab File: VL034990.D
Acq: 12 May 2020 17:04

Instrument :
MSVOA_L
ClientSampleId :
IA-5

Tot Ion	Ratio	Lower	Upper
117	100		
119	94.3	77.0	115.6
121	28.5	23.0	34.6

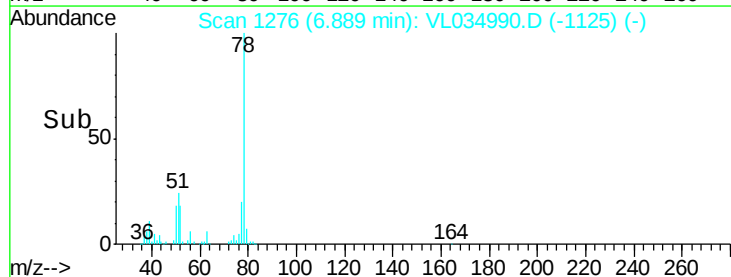
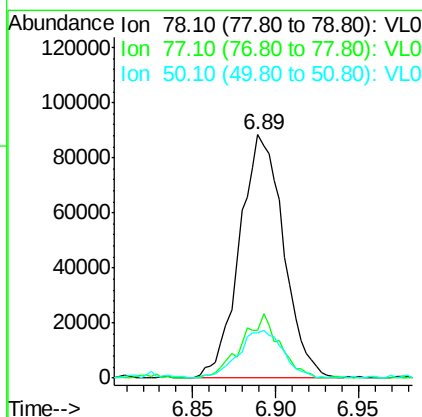
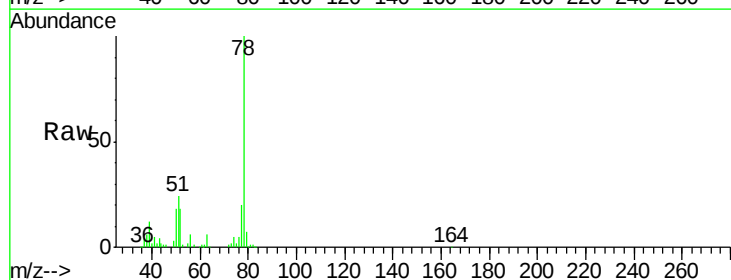
Manual Integrations
APPROVED

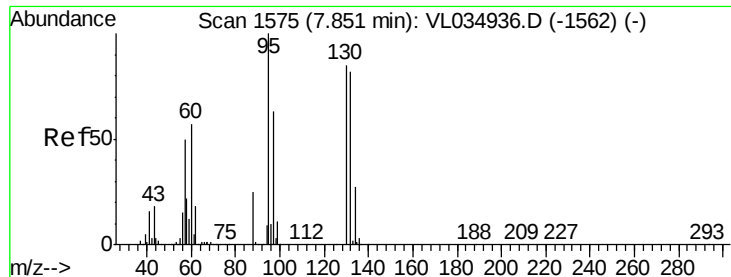
MMDadoda
5/13/2020 5:11:53 PM



#36
Benzene
Concen: 0.818 ppbv
RT: 6.89 min Scan# 1276
Delta R.T. -0.01 min
Lab File: VL034990.D
Acq: 12 May 2020 17:04

Tgt Ion	Ratio	Lower	Upper
78	100		
77	19.7	19.0	28.6
50	18.3	15.8	23.8





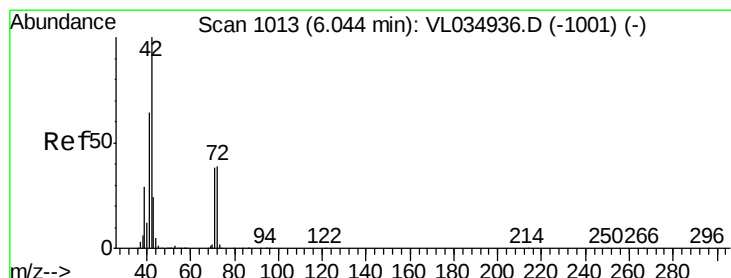
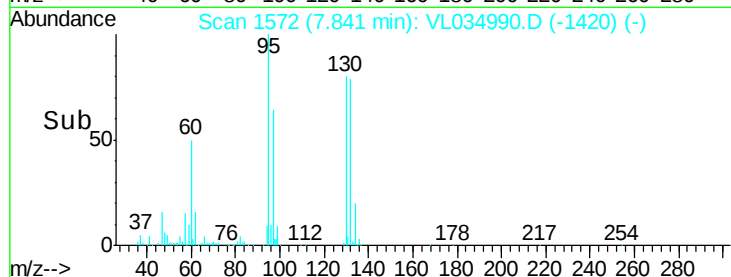
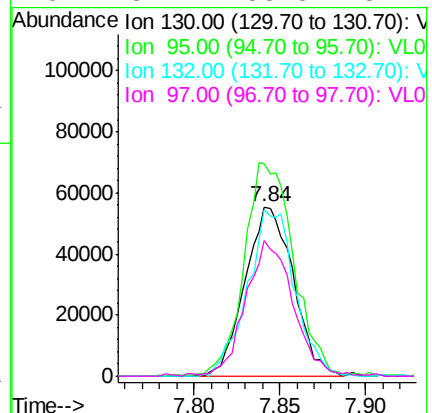
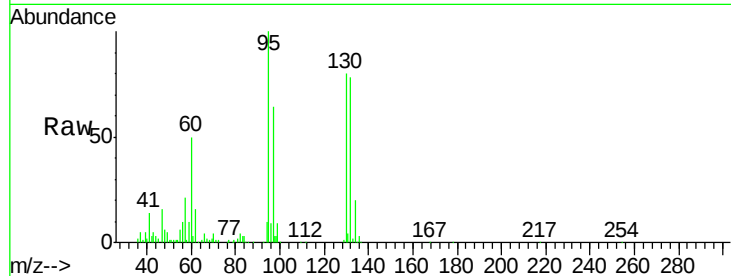
#38
 Trichloroethene
 Concen: 1.396 ppbv
 RT: 7.84 min Scan# 1572
 Delta R.T. -0.01 min
 Lab File: VL034990.D
 Acq: 12 May 2020 17:04

Instrument :
 MSVOA_L
 ClientSampleID :
 IA-5

Tot Ion	Ion	Ratio	Resp	Lower	Upper
130	100		107858		
95	125.2	93.4	140.0		
132	98.5	76.4	114.6		
97	82.4	58.5	87.7		

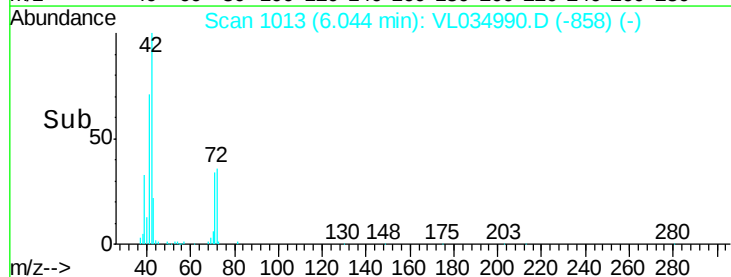
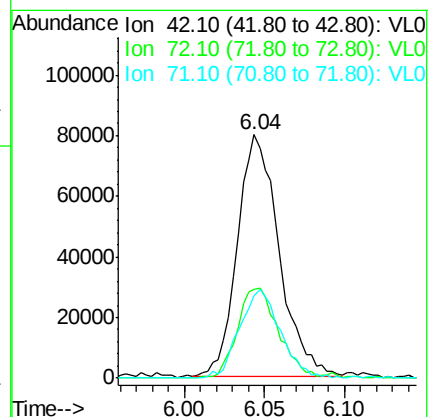
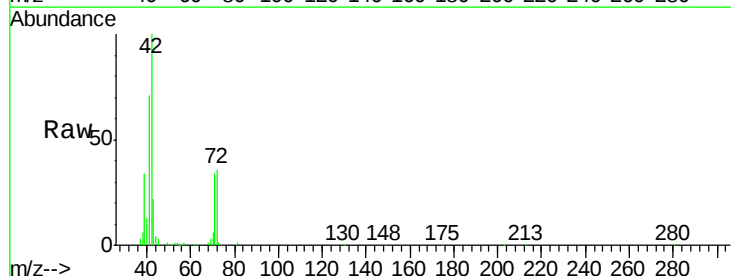
Manual Integrations
 APPROVED

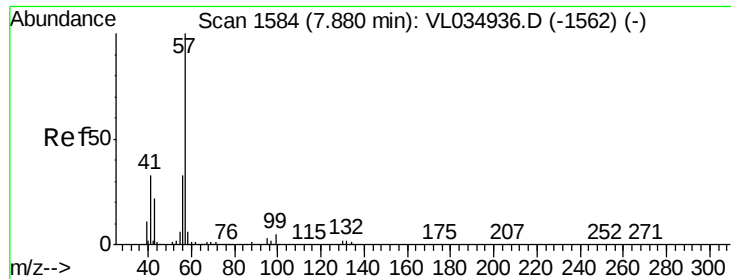
MMDadoda
 5/13/2020 5:11:53 PM



#41
 Tetrahydrofuran
 Concen: 1.789 ppbv
 RT: 6.04 min Scan# 1013
 Delta R.T. -0.00 min
 Lab File: VL034990.D
 Acq: 12 May 2020 17:04

Tgt Ion	Ion	Ratio	Resp	Lower	Upper
42	100		141617		
72	37.5	31.4	47.0		
71	36.3	29.8	44.8		





#44

2,2,4-Trimethylpentane

Concen: 1.018 ppbv

RT: 7.87 min Scan# 1582

Delta R.T. -0.01 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

Instrument :

MSVOA_L

ClientSampled :

IA-5

Tot Ion: 57 Resp: 361017
Ion Ratio Lower Upper

57 100

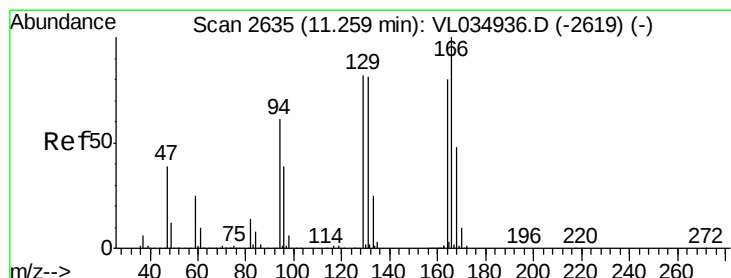
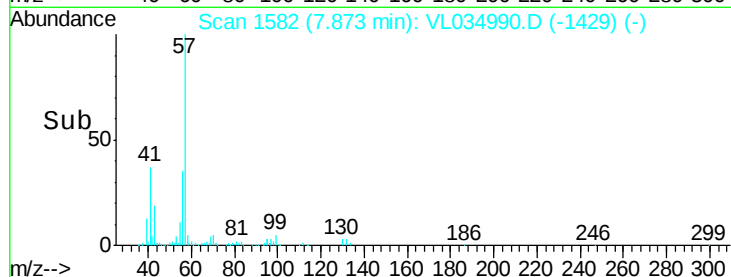
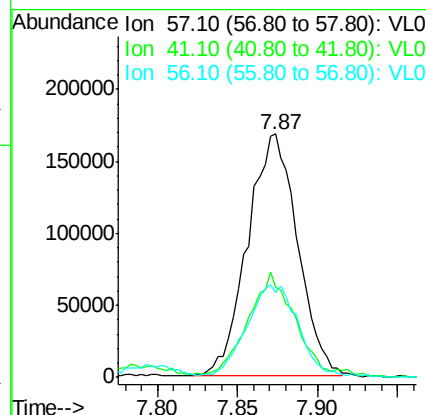
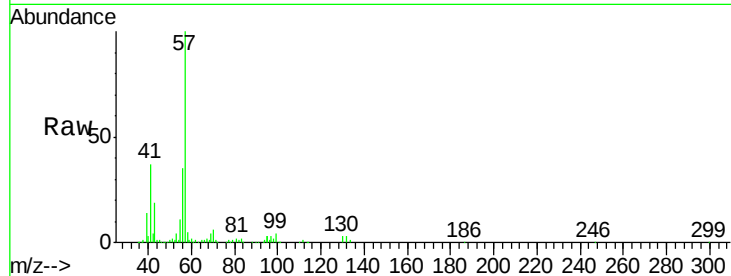
41 42.5 26.4 39.6#

56 40.1 25.5 38.3#

Manual Integrations
APPROVED

MMDadoda

5/13/2020 5:11:53 PM



#52

Tetrachloroethene

Concen: 9.269 ppbv m

RT: 11.25 min Scan# 2633

Delta R.T. -0.01 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

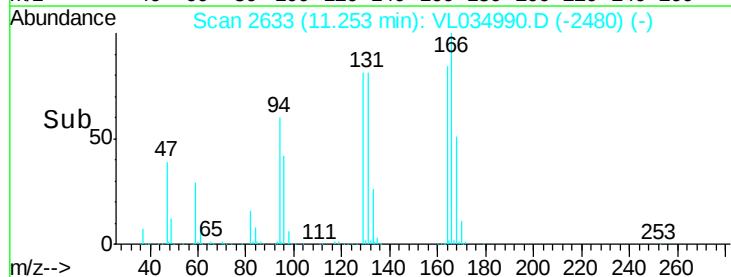
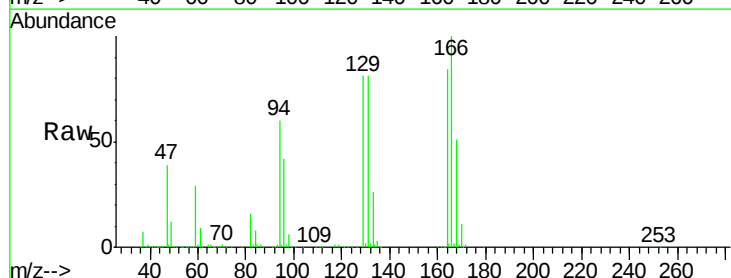
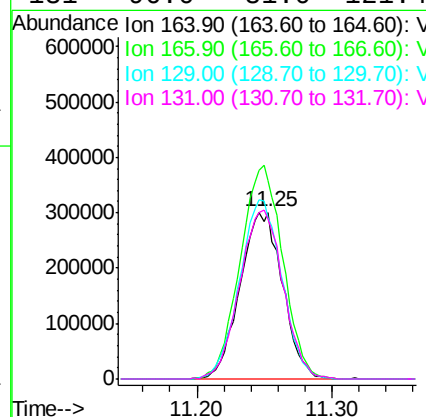
Tgt Ion:164 Resp: 657352
Ion Ratio Lower Upper

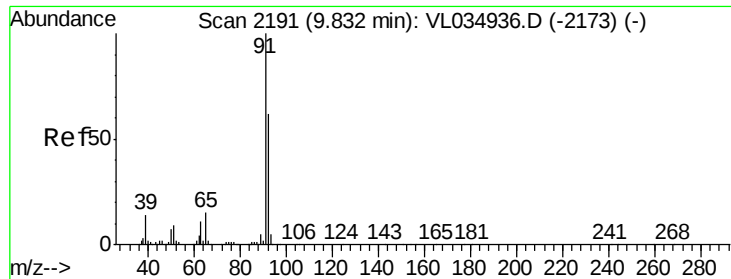
164 100

166 119.2 100.7 151.1

129 96.9 83.0 124.4

131 96.0 81.0 121.4





#53

Toluene

Concen: 46.897 ppbv

RT: 9.83 min Scan# 2189

Delta R.T. -0.01 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

Instrument :

MSVOA_L

ClientSampleId :

IA-5

Tot Ion: 91 Resp: 9915298

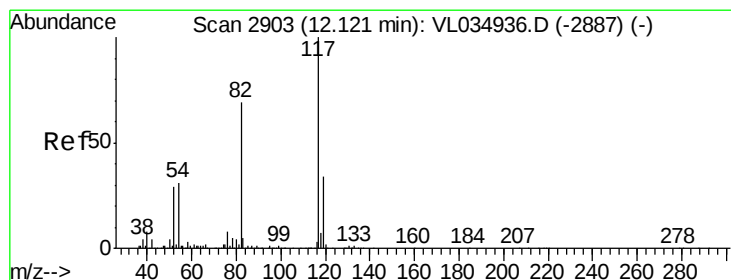
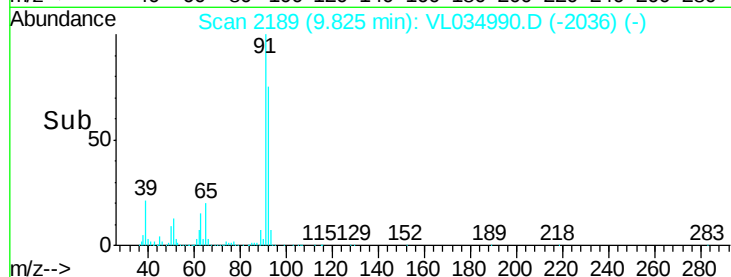
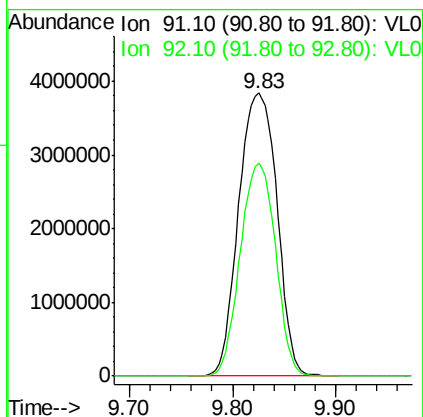
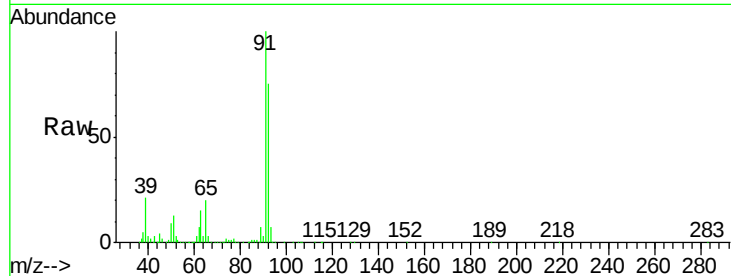
Ion Ratio Lower Upper

91 100

92 69.6 48.6 73.0

Manual Integrations
APPROVED

MMDadoda
5/13/2020 5:11:53 PM



#55

Chlorobenzene-d5

Concen: 10.000 ppbv

RT: 12.11 min Scan# 2901

Delta R.T. -0.01 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

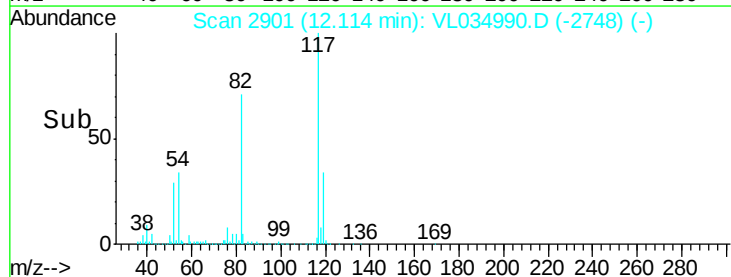
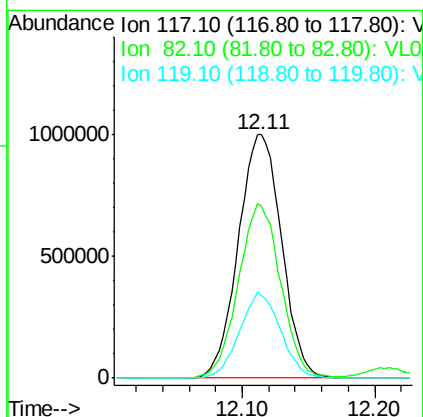
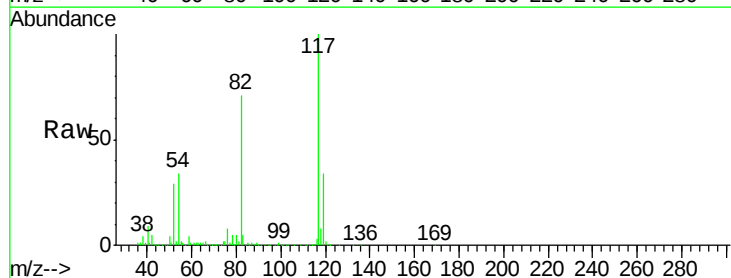
Tgt Ion: 117 Resp: 2260962

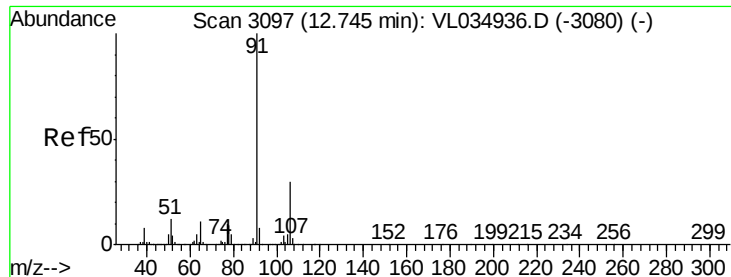
Ion Ratio Lower Upper

117 100

82 70.0 53.1 79.7

119 33.3 26.7 40.1





#58

Ethyl Benzene

Concen: 2.434 ppbv

RT: 12.73 min Scan# 3094

Delta R.T. -0.01 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

Instrument :

MSVOA_L

ClientSampled :

IA-5

Tot Ion: 91 Resp: 680563

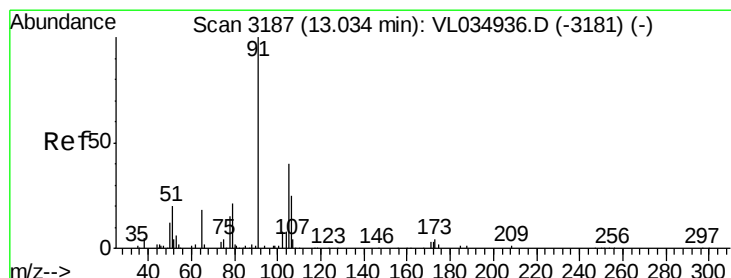
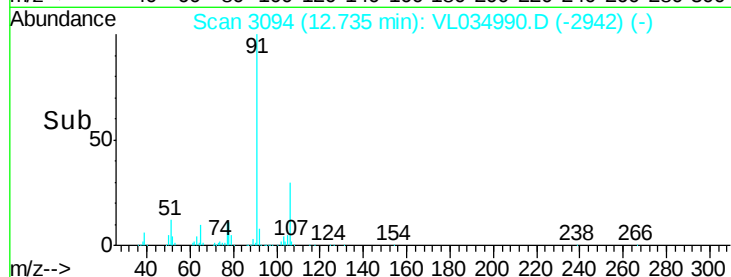
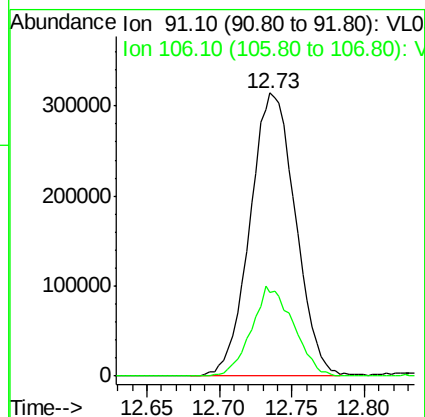
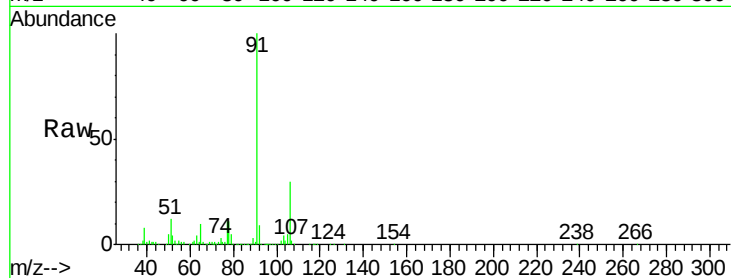
Ion Ratio Lower Upper

91 100

106 29.7 24.2 36.4

Manual Integrations
APPROVED

MMDadoda
5/13/2020 5:11:53 PM



#59

m/p-Xylene

Concen: 7.289 ppbv

RT: 13.00 min Scan# 3175

Delta R.T. -0.04 min

Lab File: VL034990.D

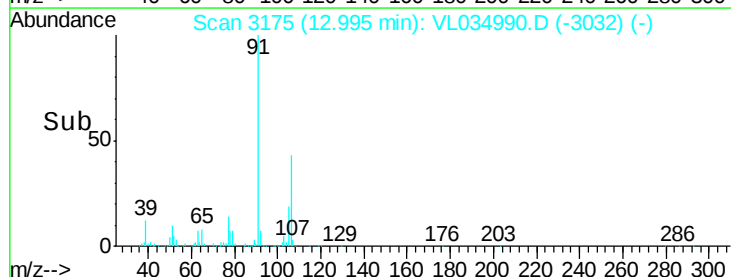
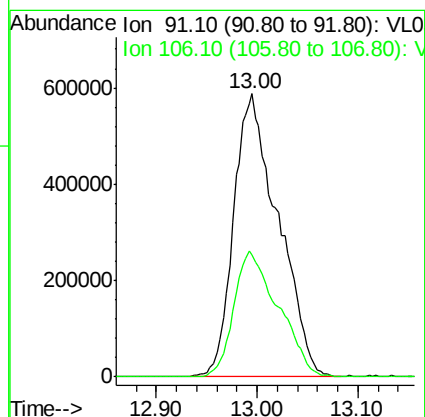
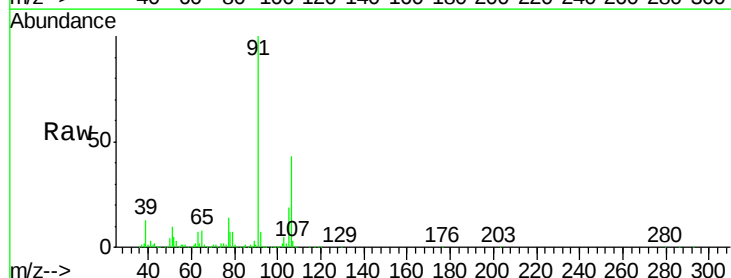
Acq: 12 May 2020 17:04

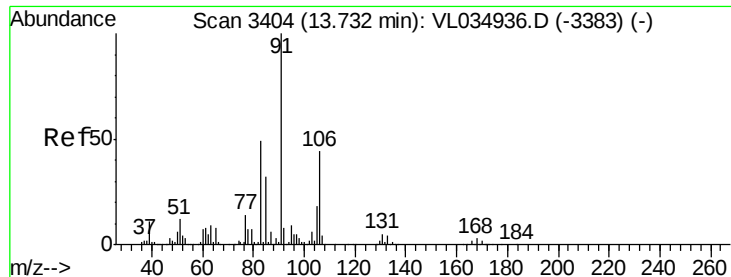
Tgt Ion: 91 Resp: 1793084

Ion Ratio Lower Upper

91 100

106 44.6 66.0 99.0#





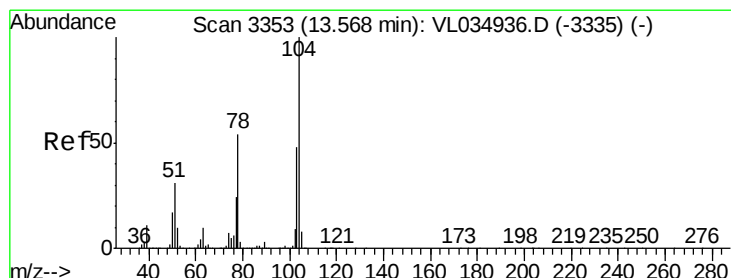
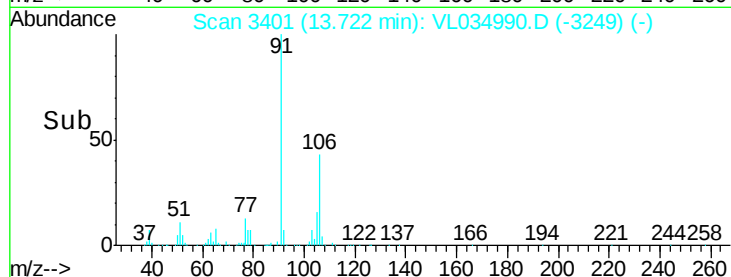
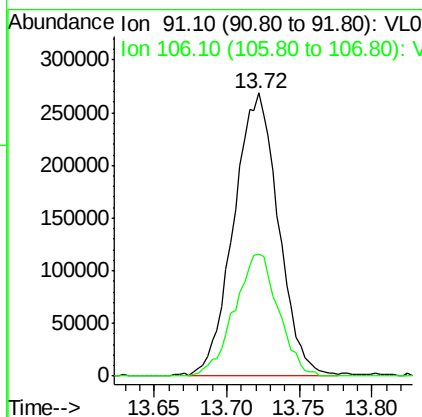
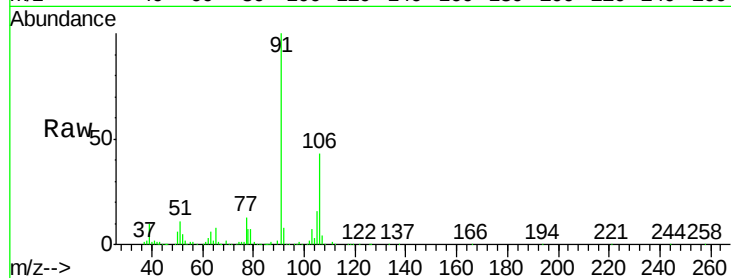
#60
o-Xylene
Concen: 2.359 ppbv
RT: 13.72 min Scan# 3401
Delta R.T. -0.01 min
Lab File: VL034990.D
Acq: 12 May 2020 17:04

Instrument :
MSVOA_L
ClientSampled :
IA-5

Tot Ion: 91 Resp: 572706
Ion Ratio Lower Upper
91 100
106 43.0 21.9 65.5

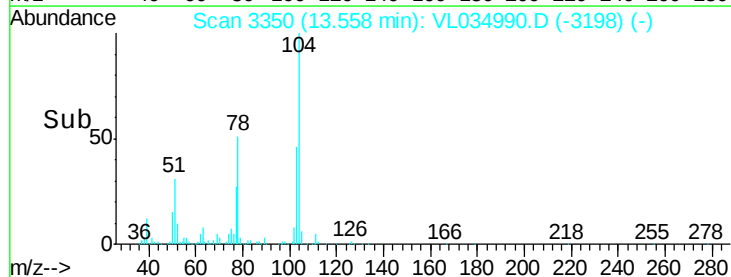
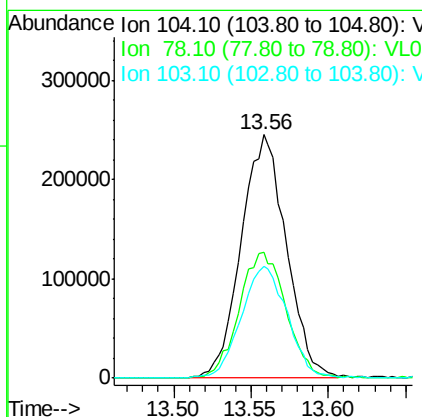
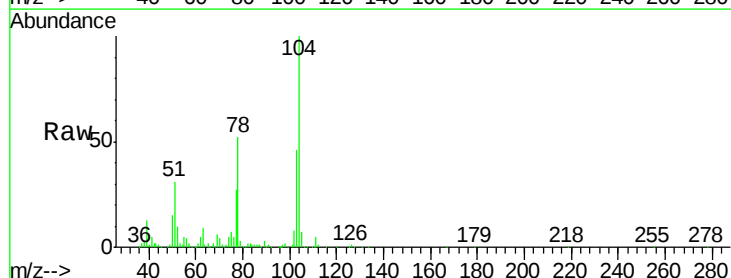
Manual Integrations
APPROVED

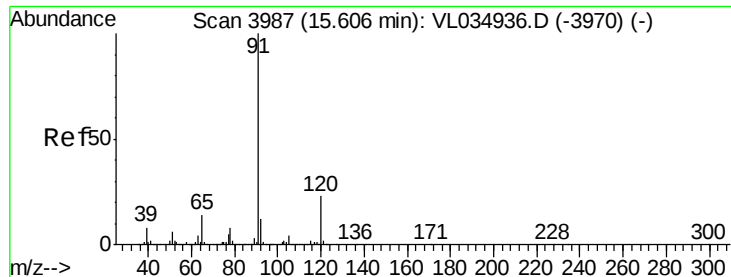
MMDadoda
5/13/2020 5:11:53 PM



#61
Styrene
Concen: 3.213 ppbv
RT: 13.56 min Scan# 3350
Delta R.T. -0.01 min
Lab File: VL034990.D
Acq: 12 May 2020 17:04

Tgt Ion: 104 Resp: 493641
Ion Ratio Lower Upper
104 100
78 54.5 43.7 65.5
103 47.5 38.8 58.2





#64

n-propylbenzene

Concen: 0.188 ppbv m

RT: 15.59 min Scan# 3982

Delta R.T. -0.02 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

Instrument :

MSVOA_L

ClientSampleId :

IA-5

Tot Ion:120 Resp: 17509

Ion Ratio Lower Upper

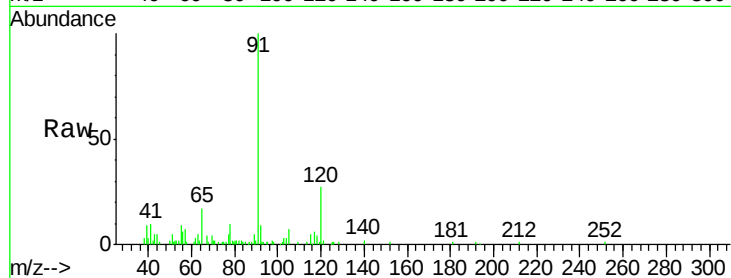
120 100

91 462.2 373.5 560.3

Manual Integrations
APPROVED

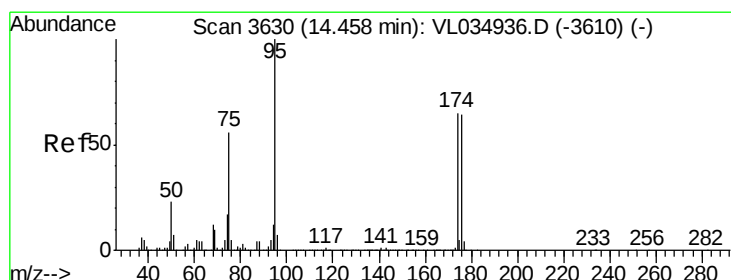
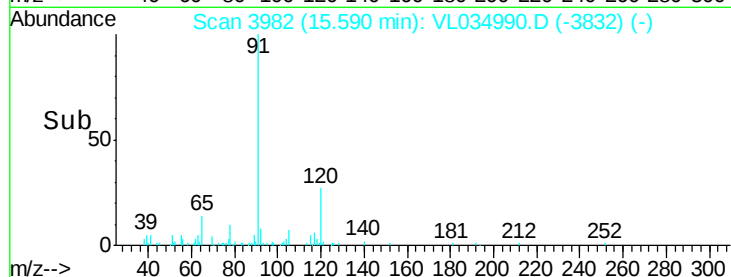
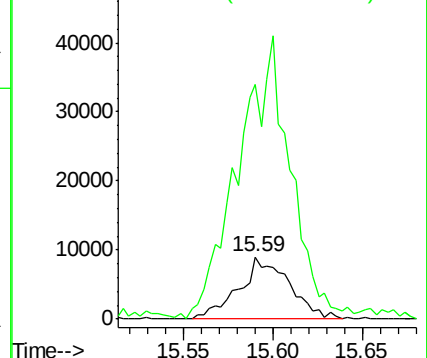
MMDadoda

5/13/2020 5:11:53 PM



Abundance Ion 120.20 (119.90 to 120.90): V

Ion 91.10 (90.80 to 91.80): VL0



#68

1-Bromo-4-Fluorobenzene

Concen: 10.329 ppbv

RT: 14.45 min Scan# 3628

Delta R.T. -0.01 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

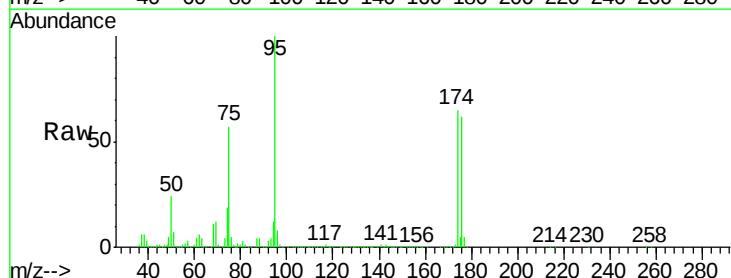
Tgt Ion: 95 Resp: 1890300

Ion Ratio Lower Upper

95 100

174 65.3 51.5 77.3

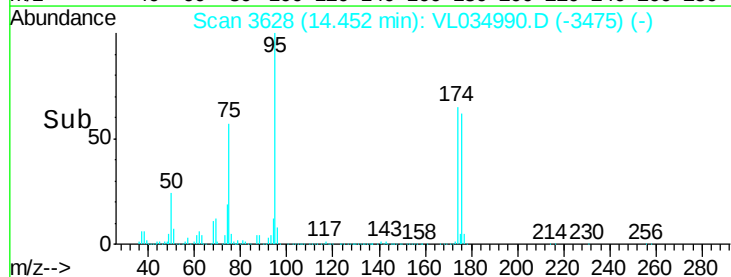
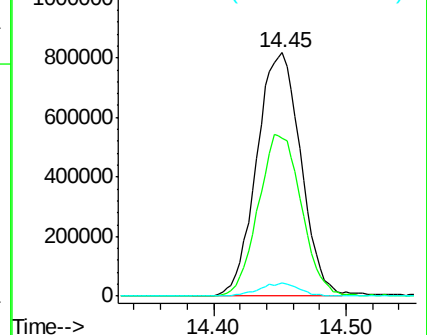
175 4.9 3.8 5.8

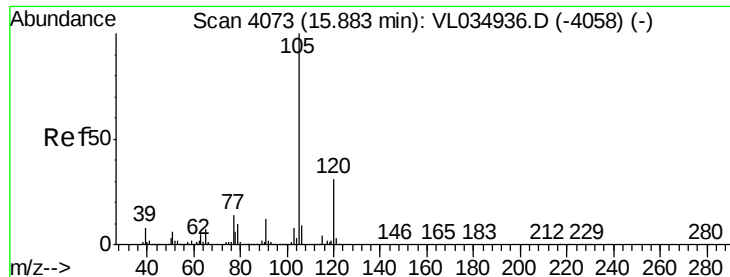


Abundance Ion 95.10 (94.80 to 95.80): VL0

Ion 174.00 (173.70 to 174.70): V

Ion 175.00 (174.70 to 175.70): V





#72

4-Ethyltoluene

Concen: 0.320 ppbv

RT: 15.87 min Scan# 4070

Delta R.T. -0.01 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

Instrument :

MSVOA_L

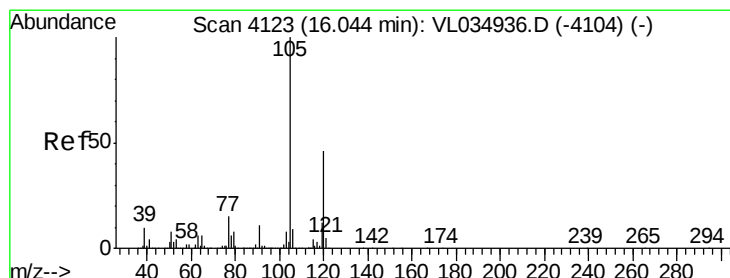
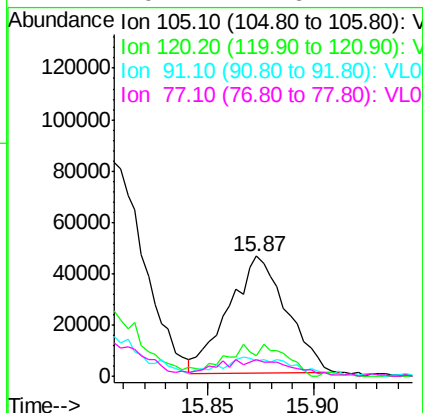
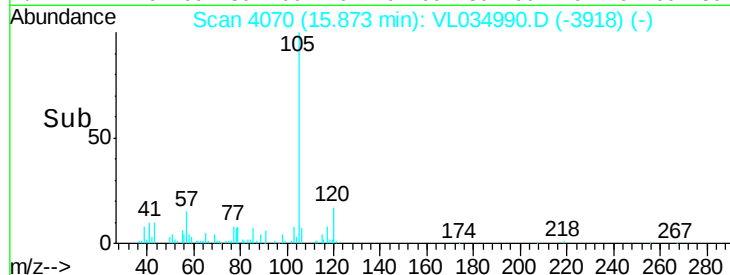
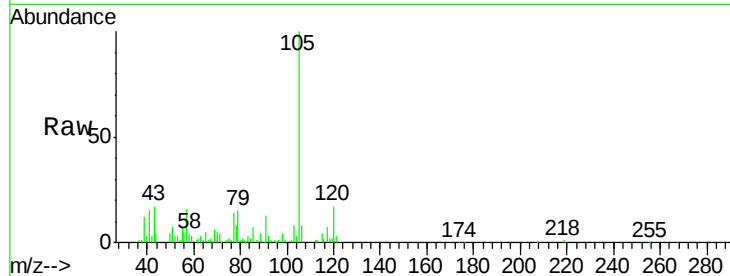
ClientSampled :

IA-5

Tot Ion:	105	Resp:	86630
Ion Ratio	Lower	Upper	
105	100		
120	29.4	23.8	35.8
91	17.6	10.6	15.8#
77	19.4	11.6	17.4#

Manual Integrations
APPROVED

MMDadoda
5/13/2020 5:11:53 PM



#73

1,3,5-Trimethylbenzene

Concen: 0.290 ppbv m

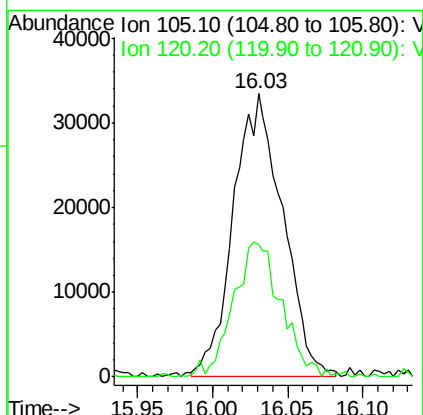
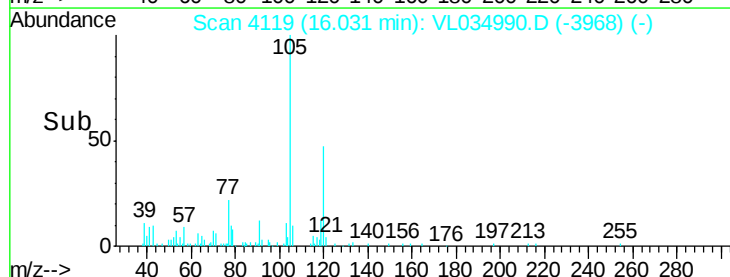
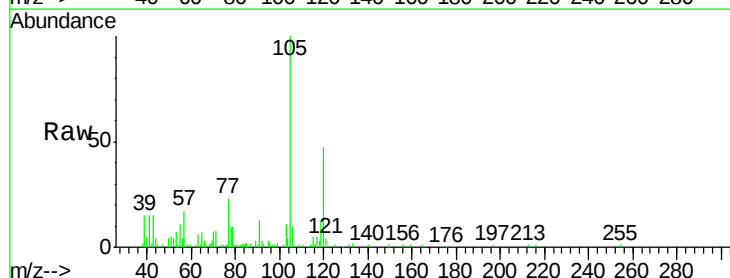
RT: 16.03 min Scan# 4119

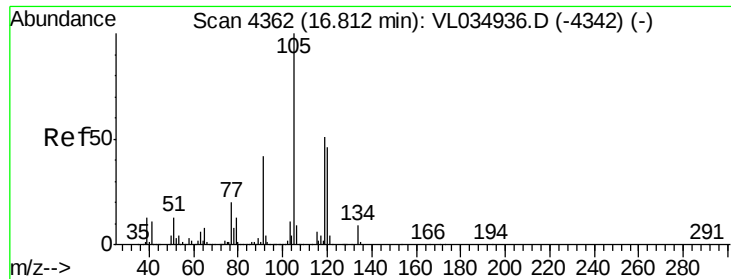
Delta R.T. -0.01 min

Lab File: VL034990.D

Acq: 12 May 2020 17:04

Tgt Ion:	105	Resp:	76530
Ion Ratio	Lower	Upper	
105	100		
120	46.8	36.4	54.6





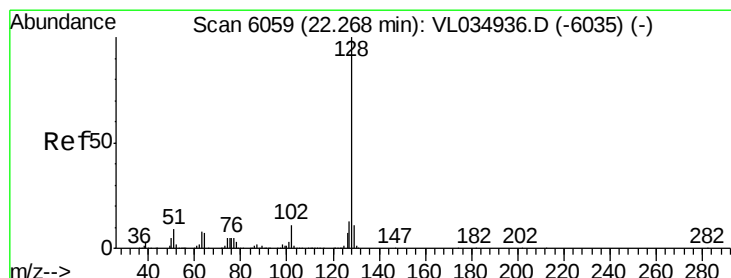
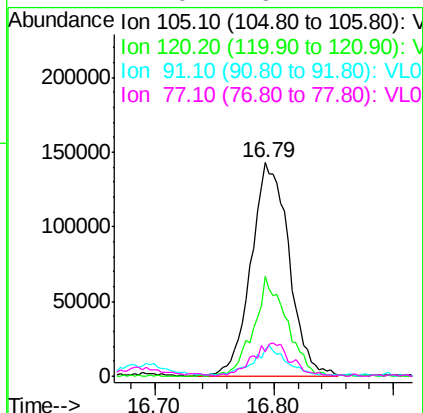
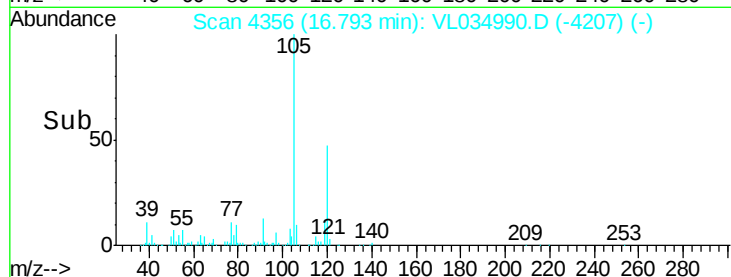
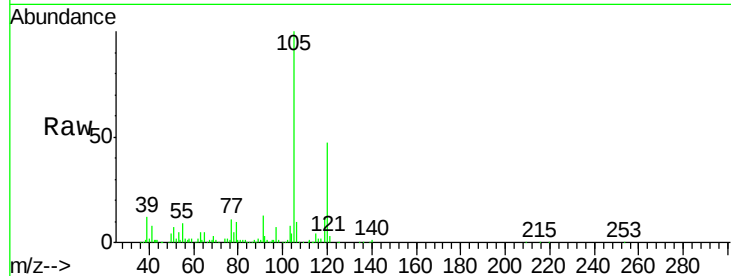
#74
 1,2,4-Trimethylbenzene
 Concen: 1.089 ppbv
 RT: 16.79 min Scan# 4356
 Delta R.T. -0.02 min
 Lab File: VL034990.D
 Acq: 12 May 2020 17:04

Instrument :
 MSVOA_L
 ClientSampled :
 IA-5

Tot Ion	Ratio	Resp	Lower	Upper
105	100	313289		
120	46.6		36.8	55.2
91	11.7		35.4	53.0#
77	11.0		16.2	24.2#

Manual Integrations
 APPROVED

MMDadoda
 5/13/2020 5:11:53 PM



#79
 Naphthalene
 Concen: 0.145 ppbv m
 RT: 22.26 min Scan# 6057
 Delta R.T. -0.01 min
 Lab File: VL034990.D
 Acq: 12 May 2020 17:04

Tgt Ion	Ratio	Resp	Lower	Upper
128	100	32576		
127	15.7		10.5	15.7
129	12.4		9.0	13.4

