

Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL111820\  
 Data File : VL035983.D  
 Acq On : 18 Nov 2020 21:26  
 Operator : SY/AP  
 Sample : L4781-02DUP  
 Misc : 400ml/MSVOA L  
 ALS Vial : 1 Sample Multiplier: 1

Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 IA2DUP

Quant Time: Nov 19 08:12:43 2020  
 Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL110320AIR.M  
 Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_LWed Nov 04 02:40:06 2020  
 QLast Update : Wed Nov 04 02:40:06 2020  
 Response via : Initial Calibration

| Internal Standards      | R.T.  | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------|-------|------|----------|-------|-------|----------|
| 1) Bromochloromethane   | 5.63  | 49   | 1122687  | 10.00 | ppbv  | -0.04    |
| 33) 1,4-Difluorobenzene | 7.13  | 114  | 3912878  | 10.00 | ppbv  | -0.05    |
| 55) Chlorobenzene-d5    | 12.04 | 117  | 3556760  | 10.00 | ppbv  | -0.05    |

System Monitoring Compounds

|                             |        |       |          |          |      |         |
|-----------------------------|--------|-------|----------|----------|------|---------|
| 68) 1-Bromo-4-Fluorobenzene | 14.37  | 95    | 2661341  | 10.53    | ppbv | -0.05   |
| Spiked Amount               | 10.000 | Range | 65 - 135 | Recovery | =    | 105.30% |

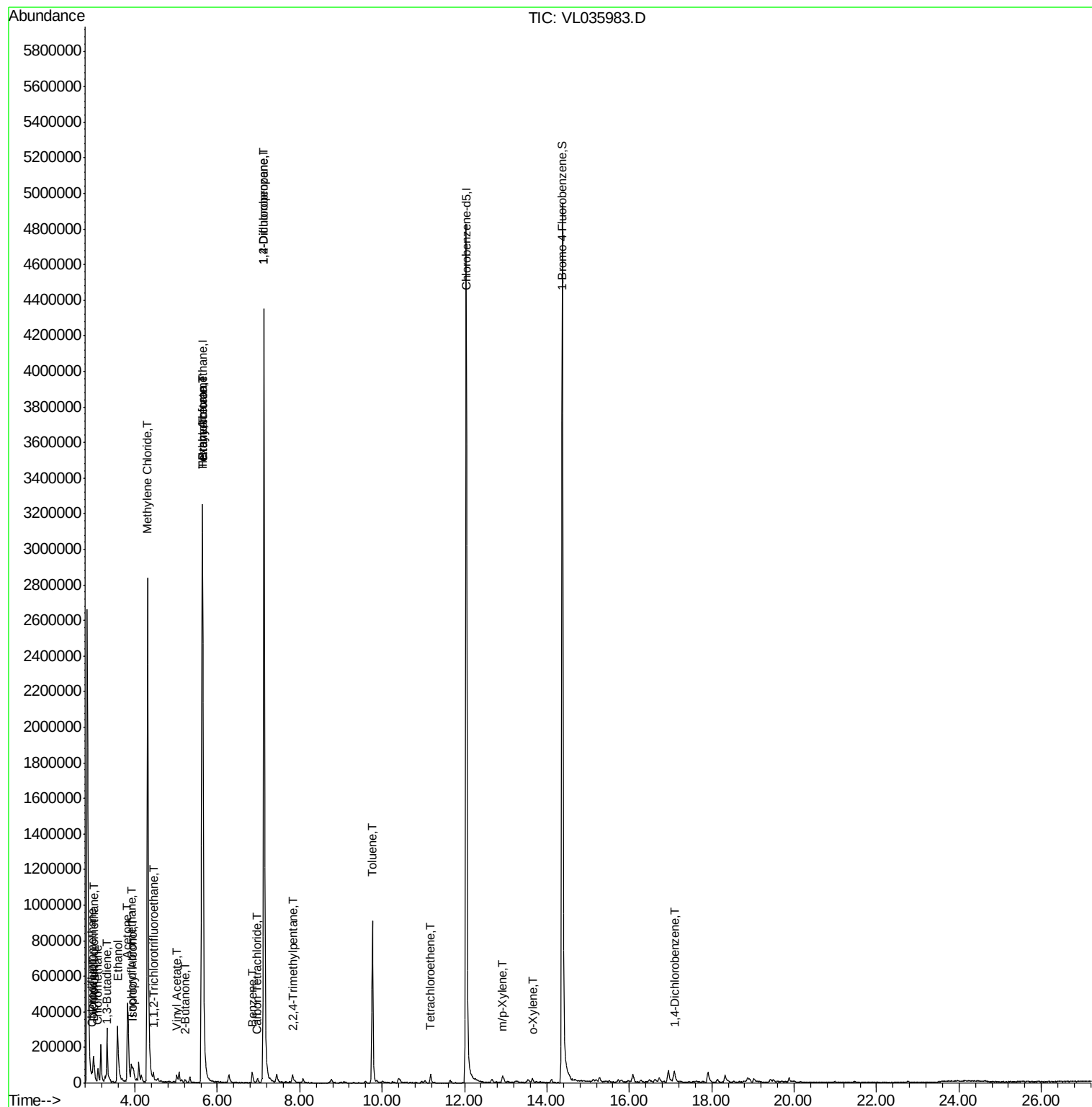
| Target Compounds               | R.T.  | QIon | Response | Conc   | Units  | Ovalue |
|--------------------------------|-------|------|----------|--------|--------|--------|
| 2) Dichlorodifluoromethane     | 3.02  | 85   | 55238    | 0.261  | ppbv   | 94     |
| 3) Chlorodifluoromethane       | 2.96  | 51   | 67636    | 0.503  | ppbv # | 86     |
| 4) Chloromethane               | 3.11  | 50   | 32472    | 0.497  | ppbv   | 97     |
| 9) Propene                     | 2.99  | 41   | 40468    | 0.822  | ppbv   | 90     |
| 11) Trichlorofluoromethane     | 3.92  | 101  | 67894    | 0.256  | ppbv   | 97     |
| 12) 1,1,2-Trichlorotrifluoroet | 4.45  | 101  | 8898     | 0.045  | ppbv # | 37     |
| 13) Ethanol                    | 3.57  | 45   | 441336   | 41.341 | ppbv   | 100    |
| 15) Acetone                    | 3.82  | 43   | 570757   | 4.755  | ppbv   | 95     |
| 16) 1,3-Butadiene              | 3.30  | 39   | 2198     | 0.043  | ppbv # | 1      |
| 19) Isopropyl Alcohol          | 3.94  | 45   | 89069    | 1.208  | ppbv # | 67     |
| 20) Methylene Chloride         | 4.31  | 84   | 1557600  | 18.434 | ppbv   | 99     |
| 23) Vinyl Acetate              | 5.03  | 43   | 6640     | 0.039  | ppbv # | 8      |
| 25) Ethyl Acetate              | 5.65  | 43   | 551689   | 2.333  | ppbv # | 73     |
| 26) Hexane                     | 5.65  | 57   | 921501   | 7.067  | ppbv # | 47     |
| 34) 2-Butanone                 | 5.21  | 43   | 9496     | 0.075  | ppbv # | 24     |
| 35) Carbon Tetrachloride       | 6.97  | 117  | 13943    | 0.067  | ppbv   | 94     |
| 36) Benzene                    | 6.85  | 78   | 56712    | 0.195  | ppbv   | 99     |
| 39) 1,2-Dichloropropane        | 7.13  | 63   | 803927   | 8.209  | ppbv # | 30     |
| 41) Tetrahydrofuran            | 5.65  | 42   | 294185   | 4.078  | ppbv # | 38     |
| 44) 2,2,4-Trimethylpentane     | 7.83  | 57   | 19243    | 0.050  | ppbv # | 36     |
| 52) Tetrachloroethene          | 11.18 | 164  | 8312     | 0.060  | ppbv   | 86     |
| 53) Toluene                    | 9.76  | 91   | 764436   | 2.178  | ppbv   | 97     |
| 59) m/p-Xylene                 | 12.94 | 91   | 16309    | 0.044  | ppbv # | 28     |
| 60) o-Xylene                   | 13.65 | 91   | 16181    | 0.045  | ppbv   | 95     |
| 76) 1,4-Dichlorobenzene        | 17.10 | 146  | 10134    | 0.039  | ppbv # | 16     |

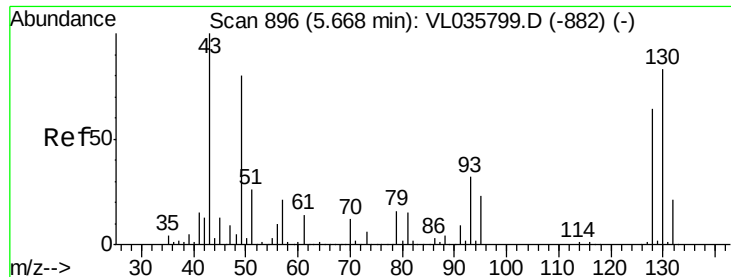
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\V0ASRV\HPCHEM1\MSVOA L\DATA\VL111820\  
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Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Wed Nov 04 02:40:06 2020  
QLast Update : Wed Nov 04 02:40:06 2020  
Response via : Initial Calibration





#1

Bromochloromethane

Concen: 10.000 ppbv

RT: 5.63 min Scan# 883

Delta R.T. -0.04 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

Instrument :

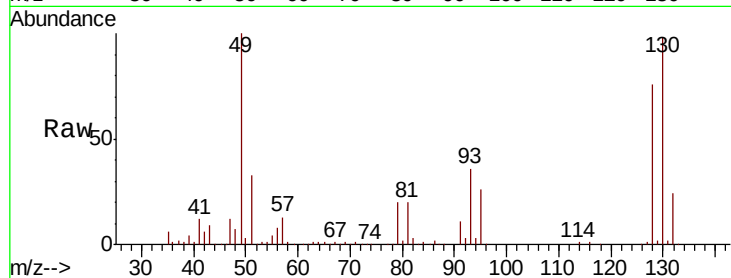
MSVOA\_L

ClientSampleId :

IA2DUP

Tot Ion: 49 Resp: 1122687

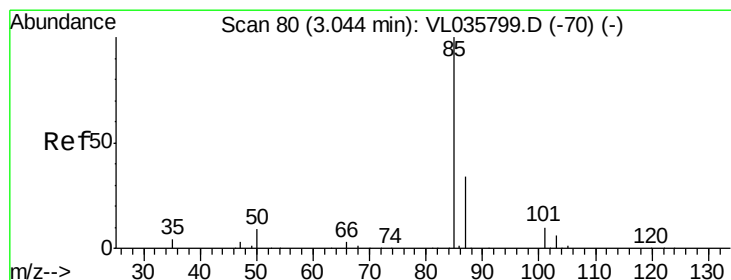
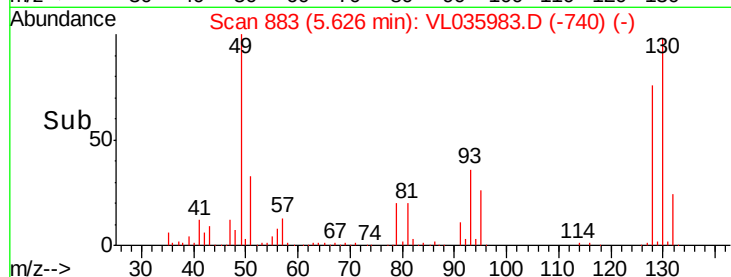
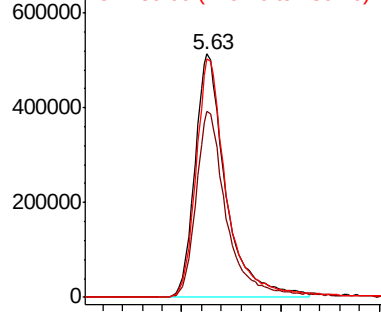
| Ion | Ratio | Lower | Upper |
|-----|-------|-------|-------|
| 49  | 100   |       |       |
| 128 | 77.2  | 41.5  | 124.6 |
| 130 | 98.9  | 53.7  | 161.1 |



Abundance Ion 49.10 (48.80 to 49.80): VL0

Ion 128.00 (127.70 to 128.70): V

Ion 130.00 (129.70 to 130.70): V



#2

Dichlorodifluoromethane

Concen: 0.261 ppbv

RT: 3.02 min Scan# 72

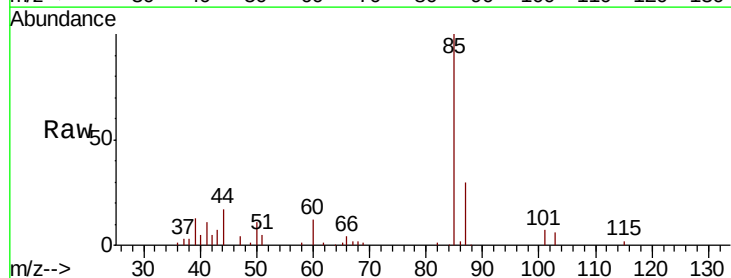
Delta R.T. -0.03 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

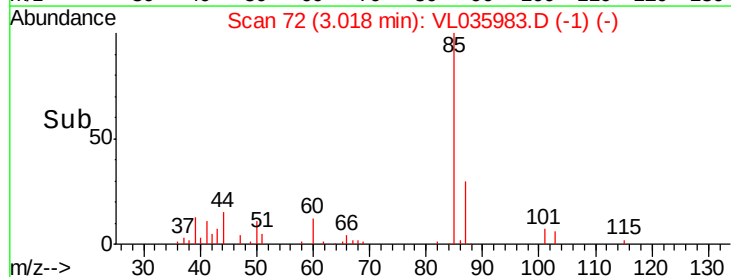
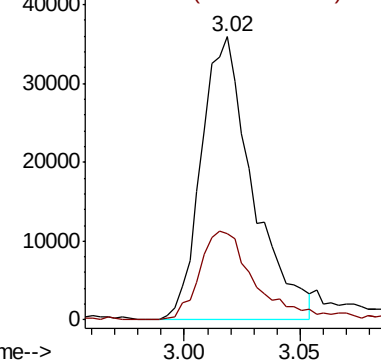
Tgt Ion: 85 Resp: 55238

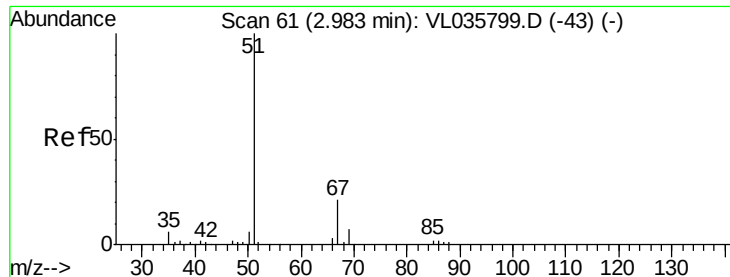
| Ion | Ratio | Lower | Upper |
|-----|-------|-------|-------|
| 85  | 100   |       |       |
| 87  | 30.3  | 27.1  | 40.7  |



Abundance Ion 85.00 (84.70 to 85.70): VL0

Ion 87.00 (86.70 to 87.70): VL0





#3

Chlorodifluoromethane

Concen: 0.503 ppbv

RT: 2.96 min Scan# 53

Delta R.T. -0.03 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

Instrument :

MSVOA\_L

ClientSampleId :

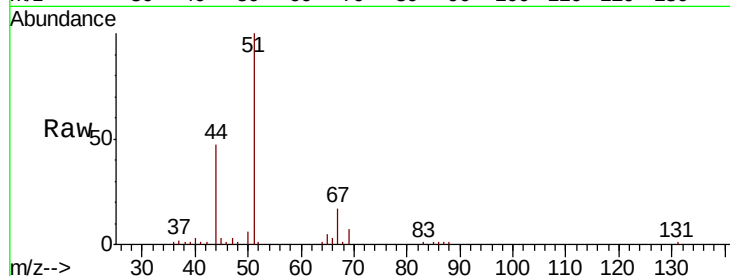
IA2DUP

Tot Ion: 51 Resp: 67636

Ion Ratio Lower Upper

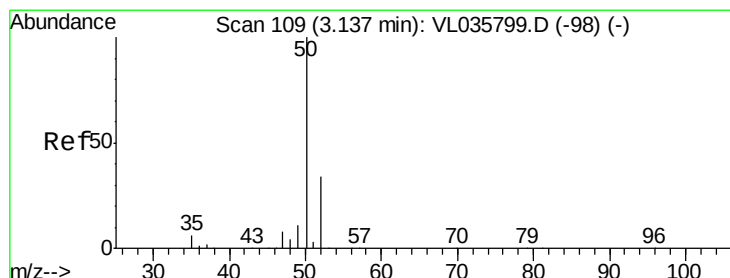
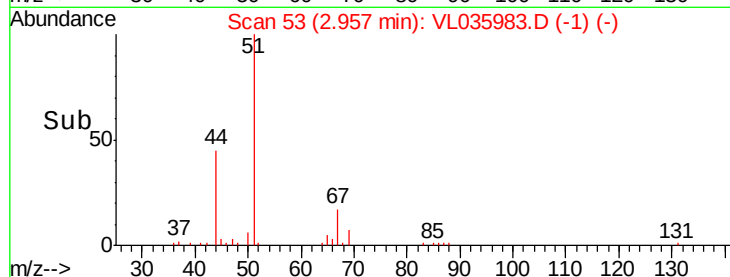
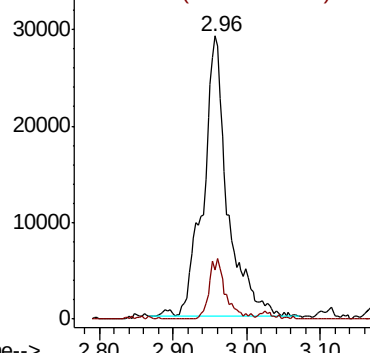
51 100

67 14.5 17.0 25.4#



Abundance Ion 51.00 (50.70 to 51.70): VL0

Ion 67.00 (66.70 to 67.70): VL0



#4

Chloromethane

Concen: 0.497 ppbv

RT: 3.11 min Scan# 101

Delta R.T. -0.03 min

Lab File: VL035983.D

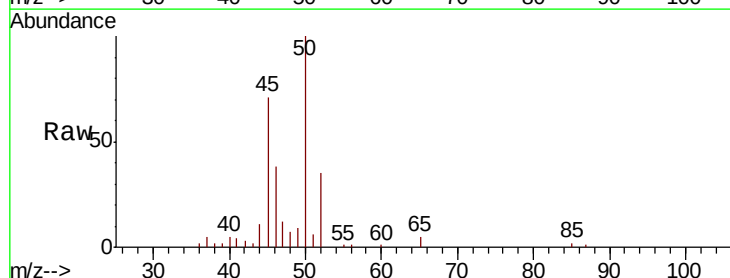
Acq: 18 Nov 2020 21:26

Tgt Ion: 50 Resp: 32472

Ion Ratio Lower Upper

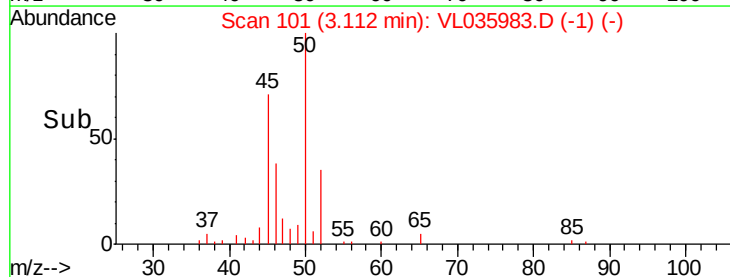
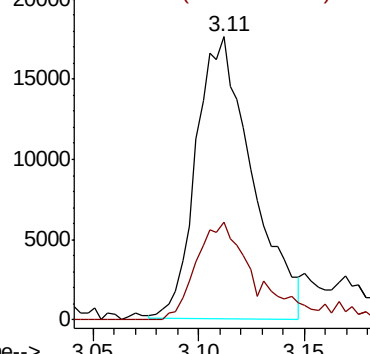
50 100

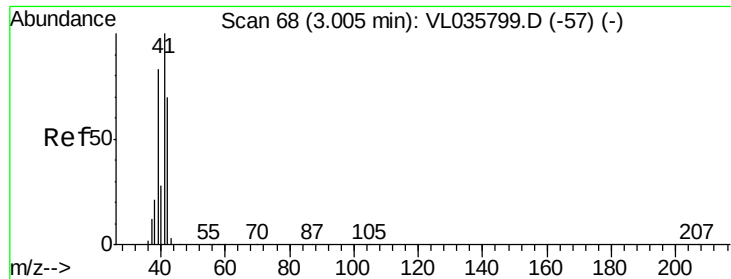
52 35.6 27.1 40.7



Abundance Ion 50.10 (49.80 to 50.80): VL0

Ion 52.10 (51.80 to 52.80): VL0





#9

Propene

Concen: 0.822 ppbv

RT: 2.99 min Scan# 62

Delta R.T. -0.02 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

Instrument :

MSVOA\_L

ClientSampleId :

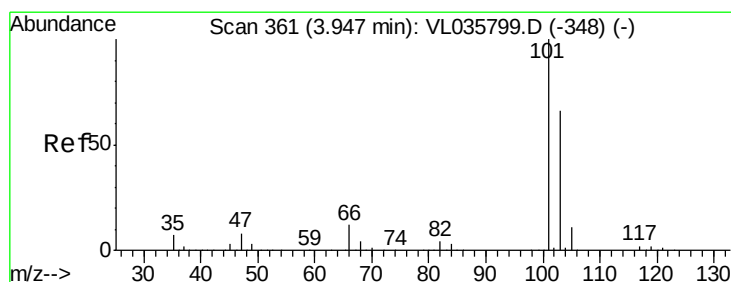
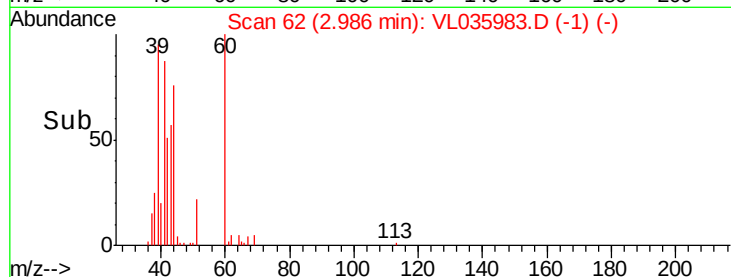
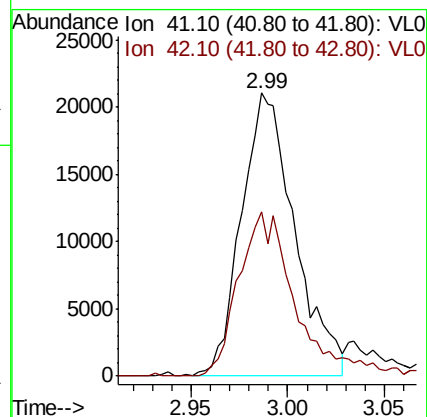
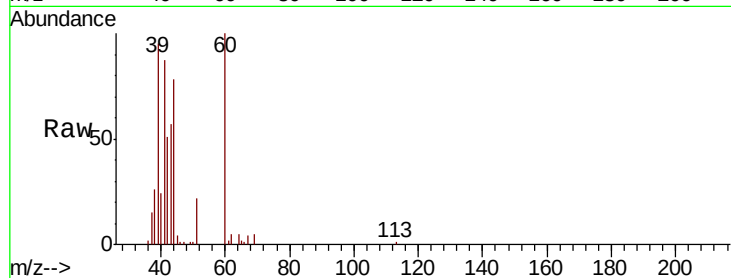
IA2DUP

Tot Ion: 41 Resp: 40468

Ion Ratio Lower Upper

41 100

42 61.8 56.2 84.4



#11

Trichlorofluoromethane

Concen: 0.256 ppbv

RT: 3.92 min Scan# 351

Delta R.T. -0.03 min

Lab File: VL035983.D

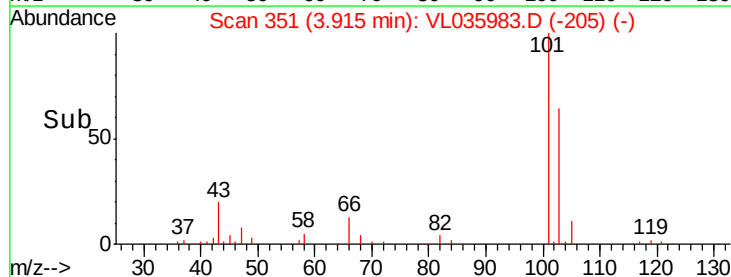
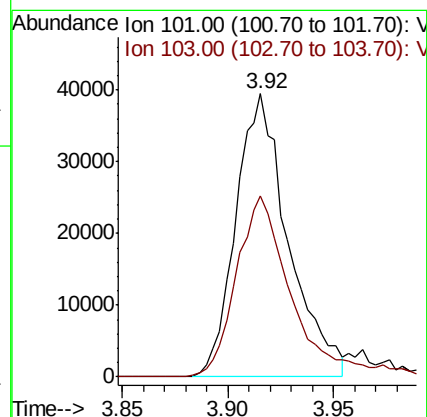
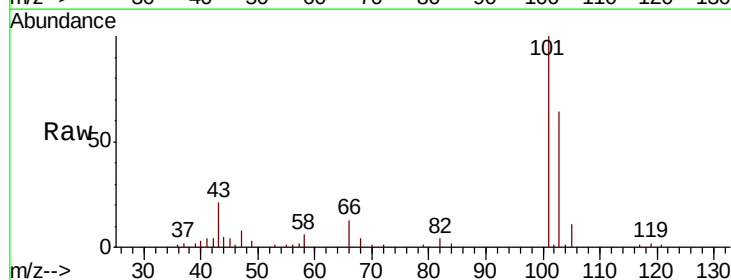
Acq: 18 Nov 2020 21:26

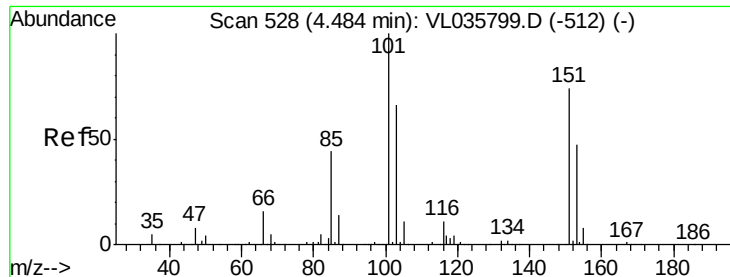
Tgt Ion: 101 Resp: 67894

Ion Ratio Lower Upper

101 100

103 63.5 53.0 79.4





#12

1,1,2-Trichlorotrifluoroethane

Concen: 0.045 ppbv

RT: 4.45 min Scan# 517

Delta R.T. -0.04 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

Instrument :

MSVOA\_L

ClientSampleId :

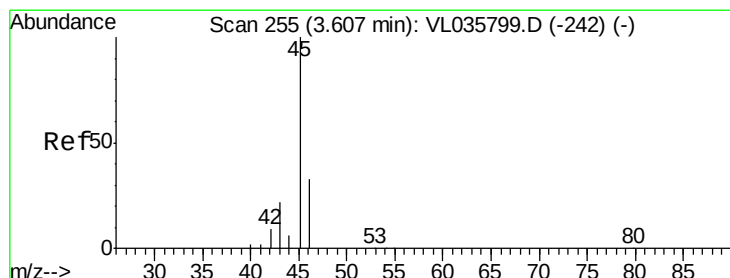
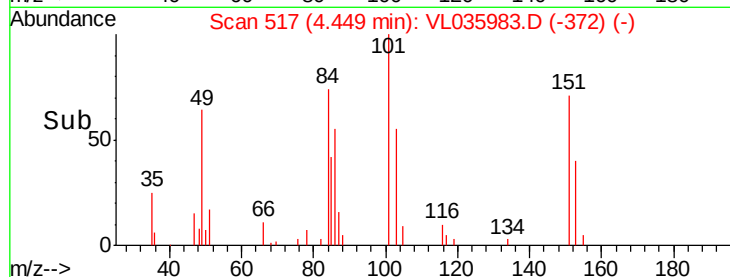
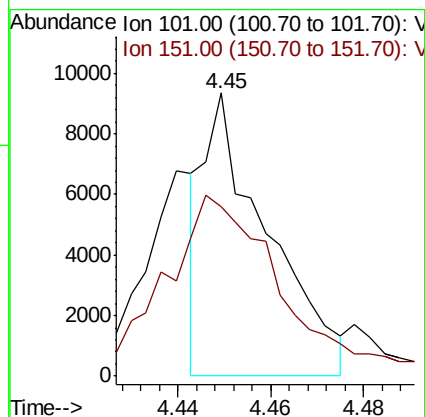
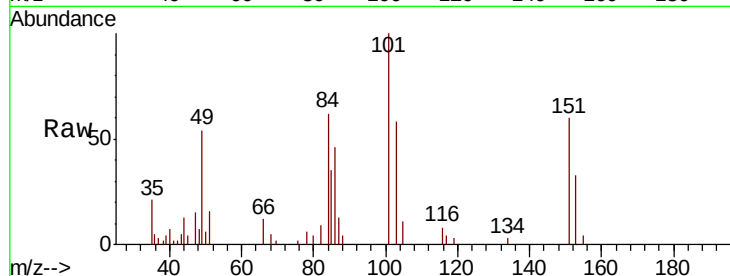
IA2DUP

Tot Ion:101 Resp: 8898

Ion Ratio Lower Upper

101 100

151 126.9 58.9 88.3#



#13

Ethanol

Concen: 41.341 ppbv

RT: 3.57 min Scan# 245

Delta R.T. -0.03 min

Lab File: VL035983.D

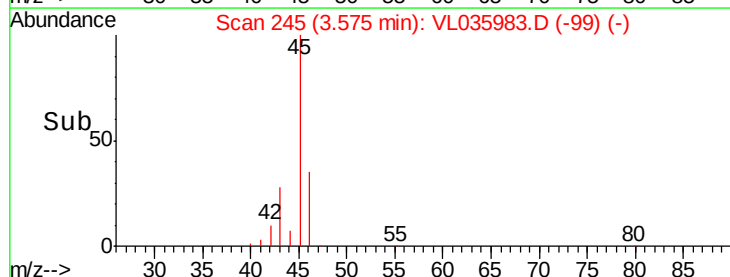
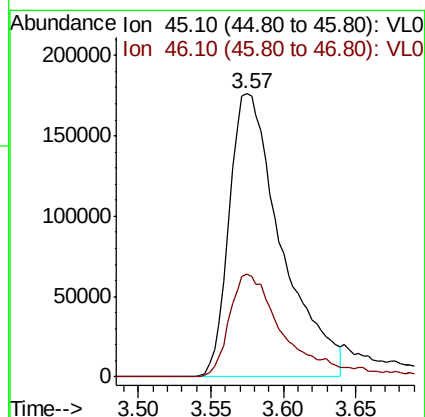
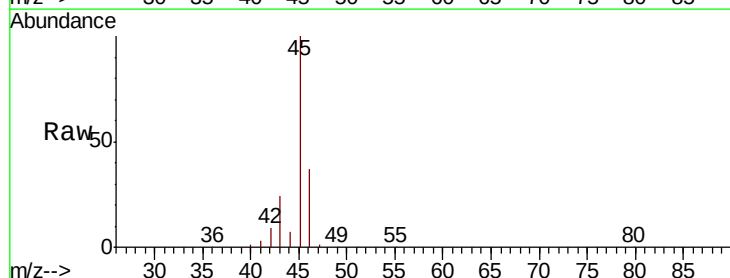
Acq: 18 Nov 2020 21:26

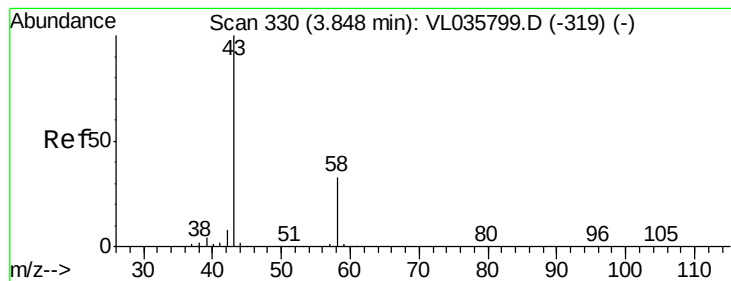
Tgt Ion: 45 Resp: 441336

Ion Ratio Lower Upper

45 100

46 40.4 16.1 64.5





#15

Acetone

Concen: 4.755 ppbv

RT: 3.82 min Scan# 320

Delta R.T. -0.03 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

Instrument :

MSVOA\_L

ClientSampleId :

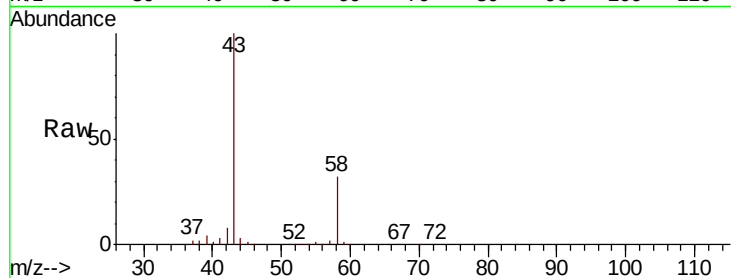
IA2DUP

Tot Ion: 43 Resp: 570757

Ion Ratio Lower Upper

43 100

58 31.5 27.5 41.3



Abundance Ion 43.10 (42.80 to 43.80): VL0

Ion 58.10 (57.80 to 58.80): VL0

3.82

250000

200000

150000

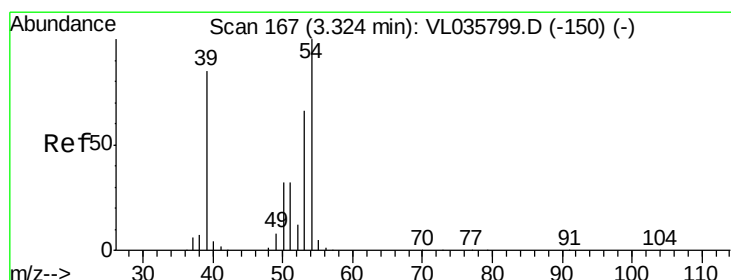
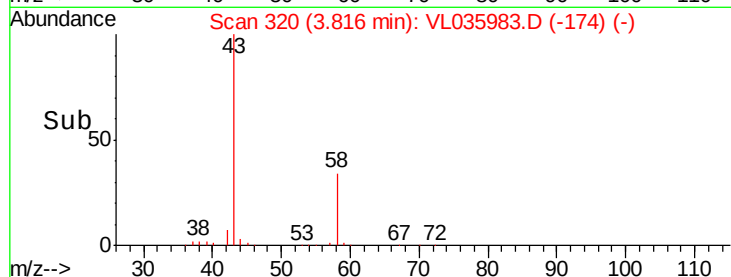
100000

50000

0

Time-->

3.75 3.80 3.85 3.90



#16

1,3-Butadiene

Concen: 0.043 ppbv

RT: 3.30 min Scan# 159

Delta R.T. -0.03 min

Lab File: VL035983.D

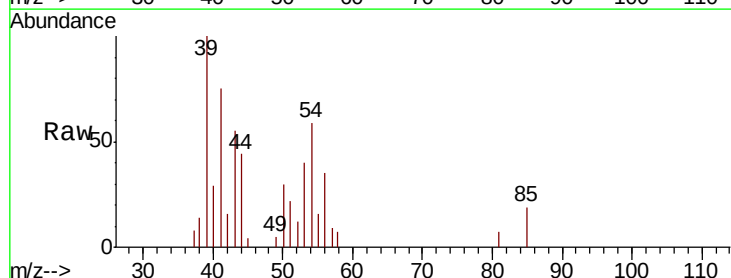
Acq: 18 Nov 2020 21:26

Tgt Ion: 39 Resp: 2198

Ion Ratio Lower Upper

39 100

54 317.2 87.1 130.7#



Abundance Ion 39.10 (38.80 to 39.80): VL0

Ion 54.10 (53.80 to 54.80): VL0

6000

5000

4000

3000

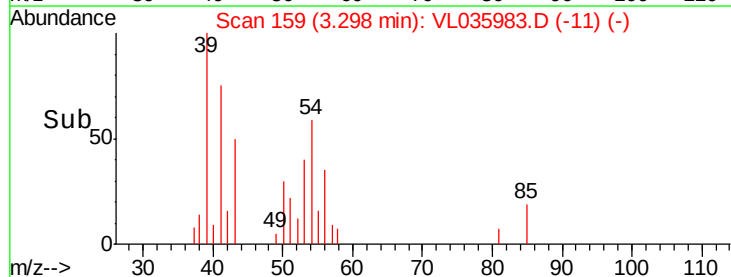
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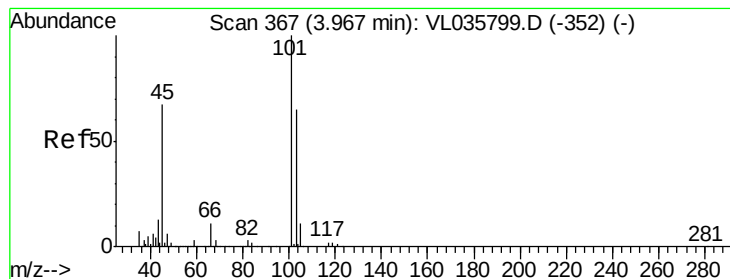
1000

0

Time-->

3.29 3.29 3.30





#19

Isopropyl Alcohol

Concen: 1.208 ppbv

RT: 3.94 min Scan# 360

Delta R.T. -0.02 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

Instrument :

MSVOA\_L

ClientSampleId :

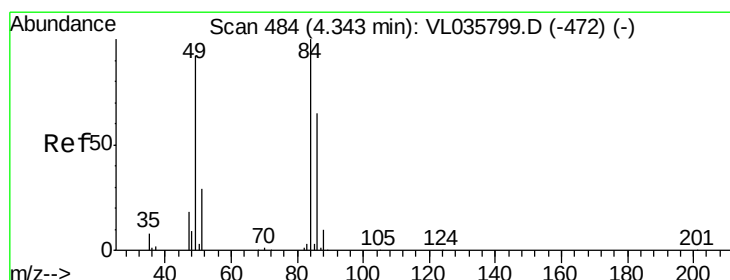
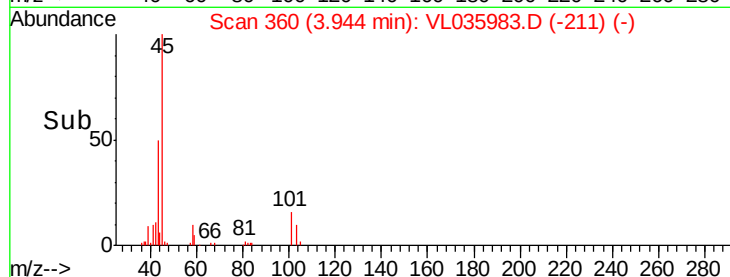
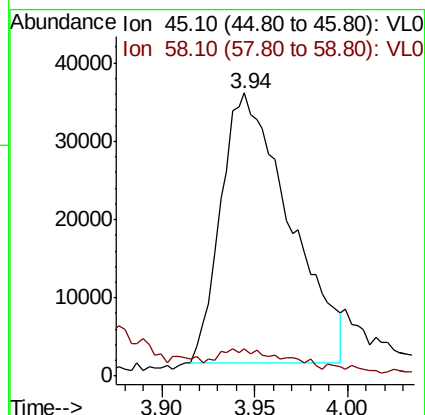
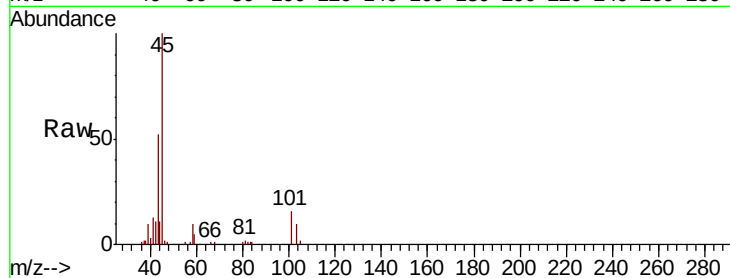
IA2DUP

Tot Ion: 45 Resp: 89069

Ion Ratio Lower Upper

45 100

58 14.0 2.6 3.8#



#20

Methylene Chloride

Concen: 18.434 ppbv

RT: 4.31 min Scan# 473

Delta R.T. -0.04 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

Tgt Ion: 84 Resp: 1557600

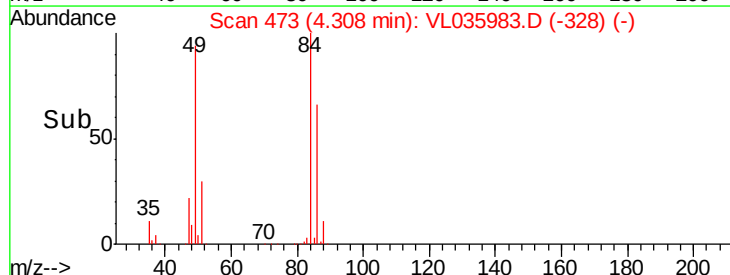
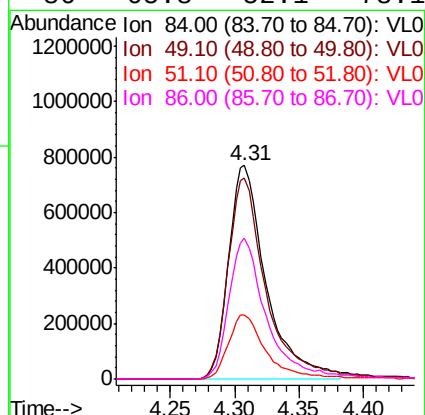
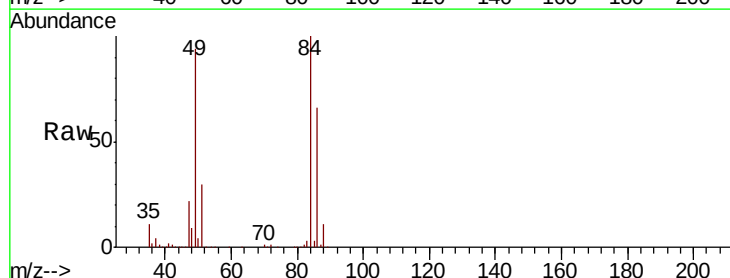
Ion Ratio Lower Upper

84 100

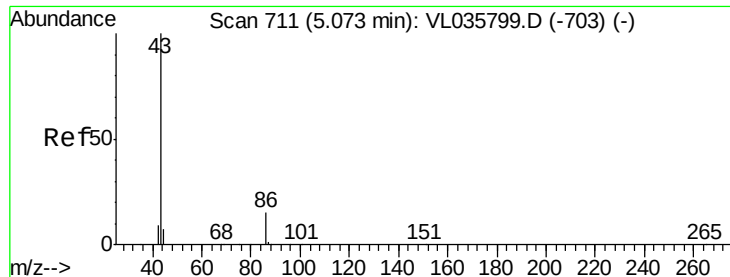
49 93.8 73.8 110.8

51 30.1 23.0 34.4

86 65.8 52.1 78.1



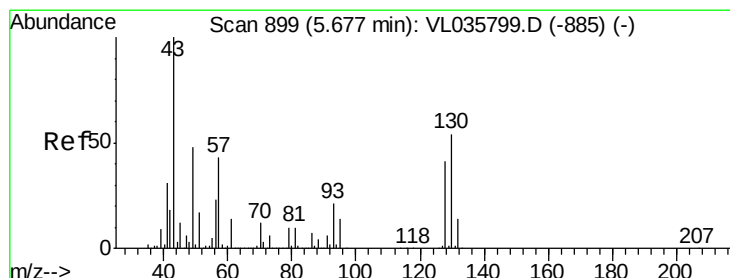
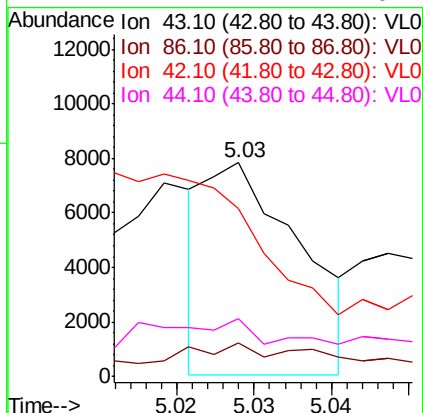
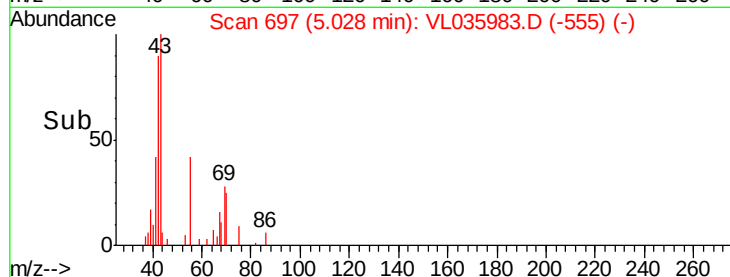
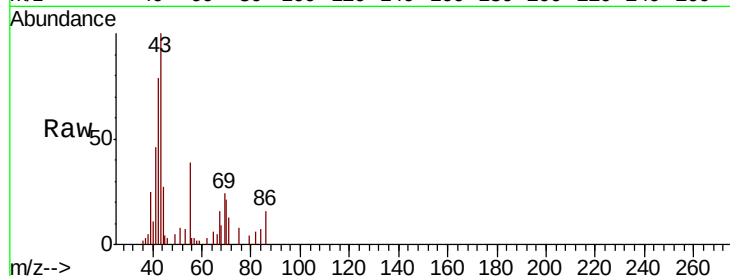




#23  
 Vinyl Acetate  
 Concen: 0.039 ppbv  
 RT: 5.03 min Scan# 697  
 Delta R.T. -0.04 min  
 Lab File: VL035983.D  
 Acq: 18 Nov 2020 21:26

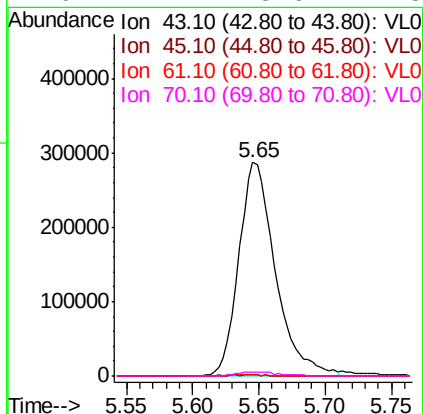
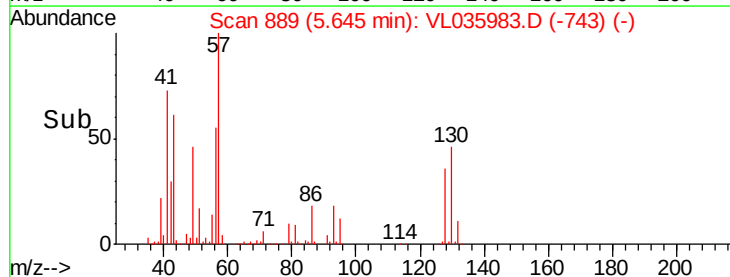
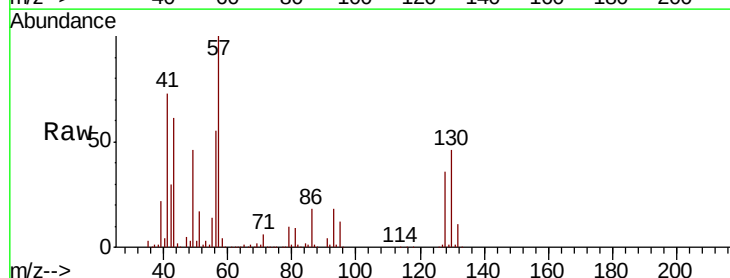
Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 IA2DUP

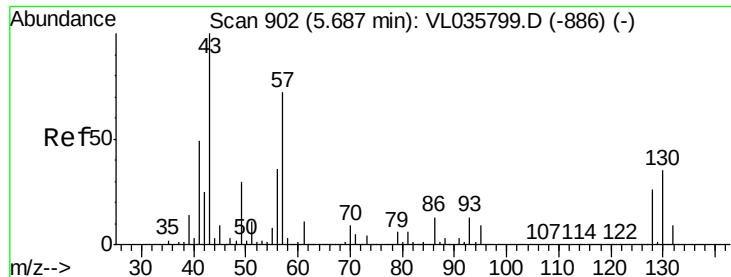
|          |       |       |       |
|----------|-------|-------|-------|
| Tot Ion: | 43    | Resp: | 6640  |
| Ion      | Ratio | Lower | Upper |
| 43       | 100   |       |       |
| 86       | 13.0  | 9.8   | 14.6  |
| 42       | 92.8  | 8.1   | 12.1# |
| 44       | 22.1  | 4.2   | 6.4#  |



#25  
 Ethyl Acetate  
 Concen: 2.333 ppbv  
 RT: 5.65 min Scan# 889  
 Delta R.T. -0.03 min  
 Lab File: VL035983.D  
 Acq: 18 Nov 2020 21:26

|          |       |       |        |
|----------|-------|-------|--------|
| Tgt Ion: | 43    | Resp: | 551689 |
| Ion      | Ratio | Lower | Upper  |
| 43       | 100   |       |        |
| 45       | 0.7   | 8.5   | 12.7#  |
| 61       | 0.6   | 10.7  | 16.1#  |
| 70       | 2.4   | 8.6   | 12.8#  |

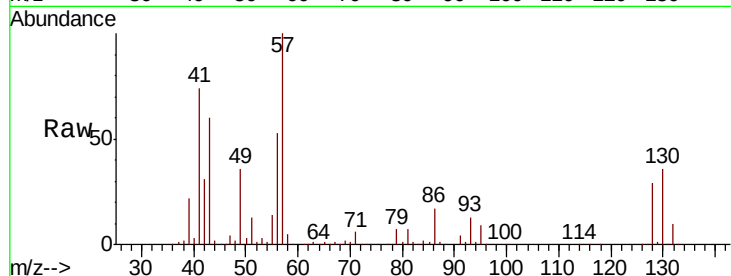




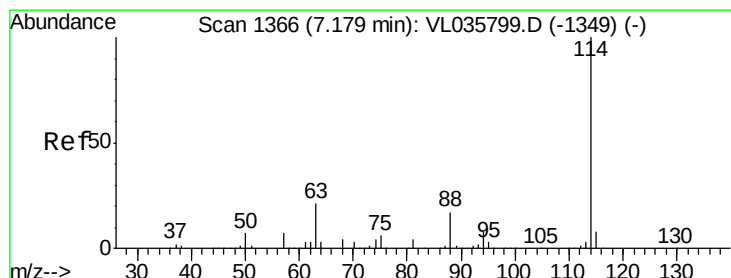
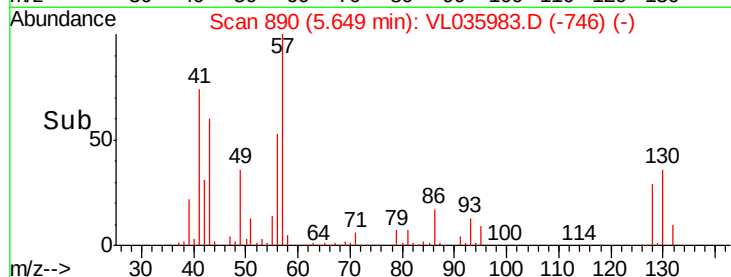
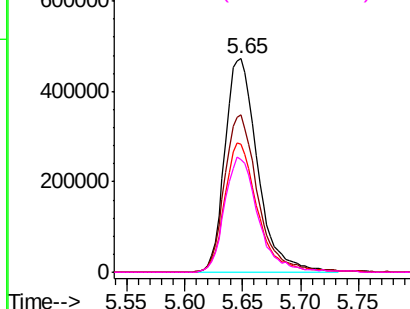
#26  
Hexane  
Concen: 7.067 ppbv  
RT: 5.65 min Scan# 890  
Delta R.T. -0.04 min  
Lab File: VL035983.D  
Acq: 18 Nov 2020 21:26

Instrument :  
MSVOA\_L  
ClientSampleId :  
IA2DUP

Tot Ion: 57 Resp: 921501  
Ion Ratio Lower Upper  
57 100  
41 75.8 58.9 88.3  
43 61.1 150.2 225.2#  
56 55.8 42.4 63.6

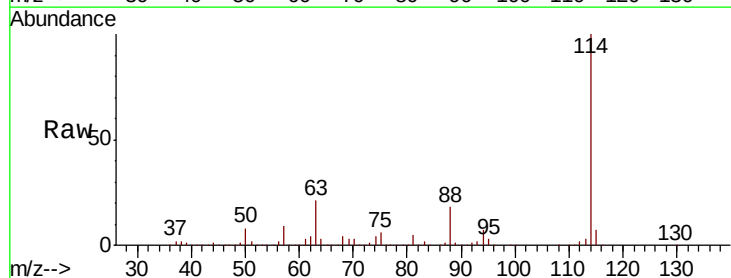


Abundance Ion 57.10 (56.80 to 57.80): VL0  
Ion 41.10 (40.80 to 41.80): VL0  
Ion 43.10 (42.80 to 43.80): VL0  
Ion 56.10 (55.80 to 56.80): VL0

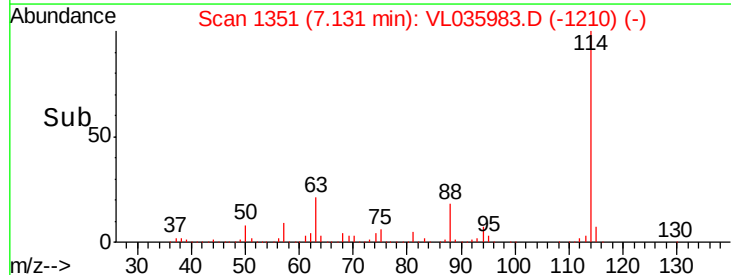
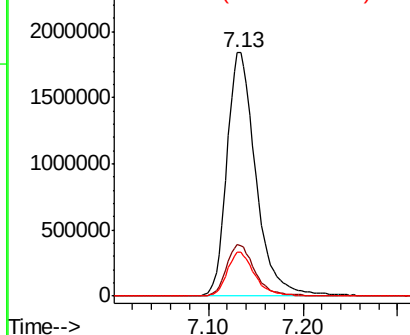


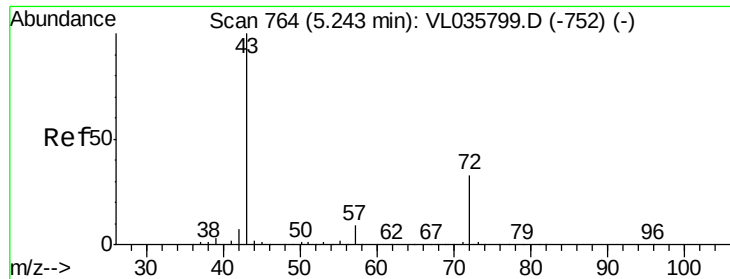
#33  
1,4-Difluorobenzene  
Concen: 10.000 ppbv  
RT: 7.13 min Scan# 1351  
Delta R.T. -0.05 min  
Lab File: VL035983.D  
Acq: 18 Nov 2020 21:26

Tgt Ion: 114 Resp: 3912878  
Ion Ratio Lower Upper  
114 100  
63 20.9 16.1 24.1  
88 17.4 13.7 20.5



Abundance Ion 114.10 (113.80 to 114.80): V  
Ion 63.10 (62.80 to 63.80): VL0  
Ion 88.10 (87.80 to 88.80): VL0

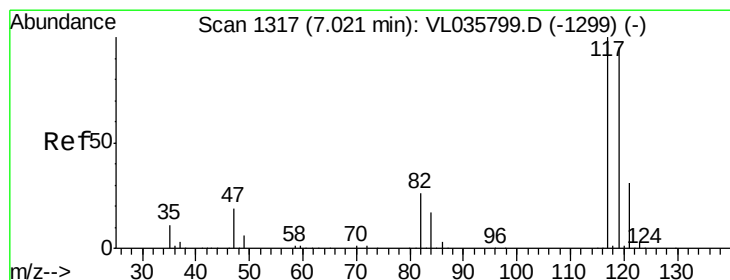
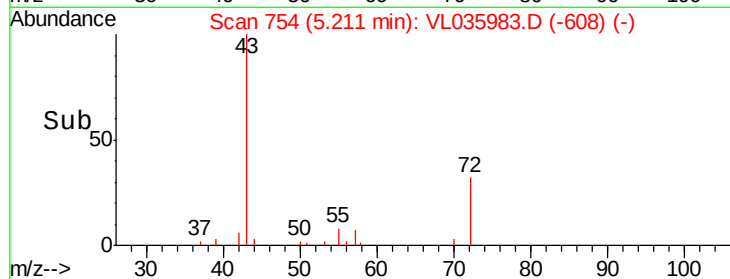
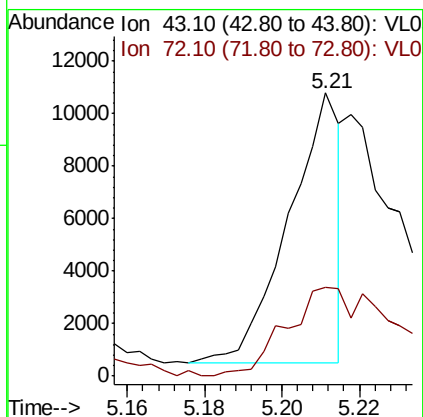
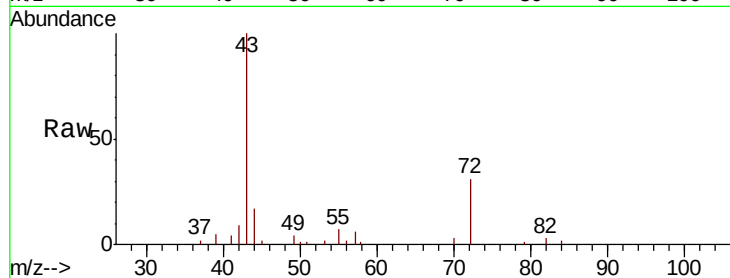




#34  
2-Butanone  
Concen: 0.075 ppbv  
RT: 5.21 min Scan# 754  
Delta R.T. -0.03 min  
Lab File: VL035983.D  
Acq: 18 Nov 2020 21:26

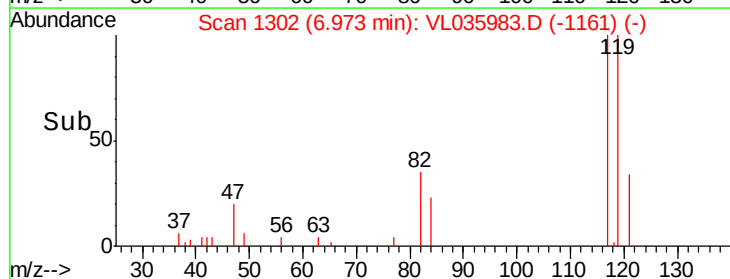
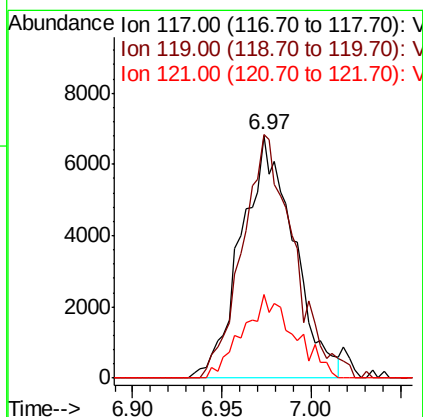
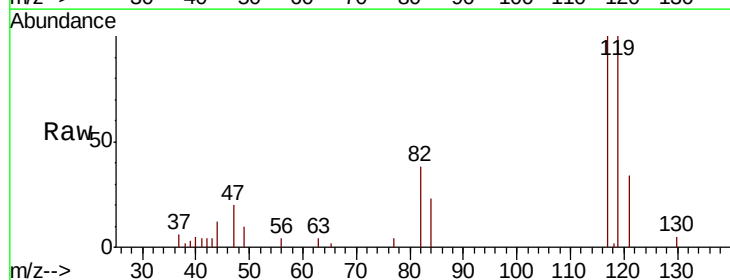
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA2DUP

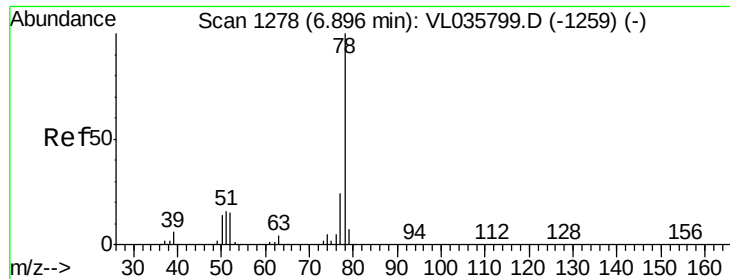
Tot Ion: 43 Resp: 9496  
Ion Ratio Lower Upper  
43 100  
72 76.2 26.5 39.7#



#35  
Carbon Tetrachloride  
Concen: 0.067 ppbv  
RT: 6.97 min Scan# 1302  
Delta R.T. -0.05 min  
Lab File: VL035983.D  
Acq: 18 Nov 2020 21:26

Tgt Ion: 117 Resp: 13943  
Ion Ratio Lower Upper  
117 100  
119 100.4 75.6 113.4  
121 34.3 25.1 37.7





#36

Benzene

Concen: 0.195 ppbv

RT: 6.85 min Scan# 1263

Delta R.T. -0.05 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

Instrument :

MSVOA\_L

ClientSampleId :

IA2DUP

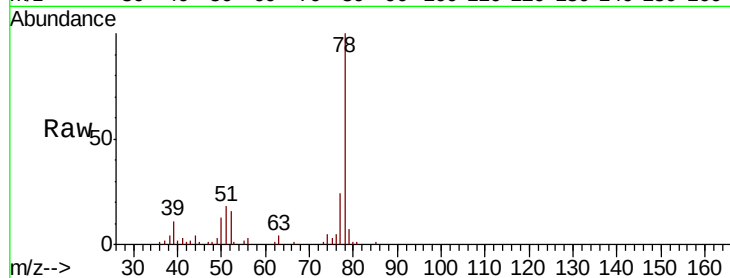
Tot Ion: 78 Resp: 56712

Ion Ratio Lower Upper

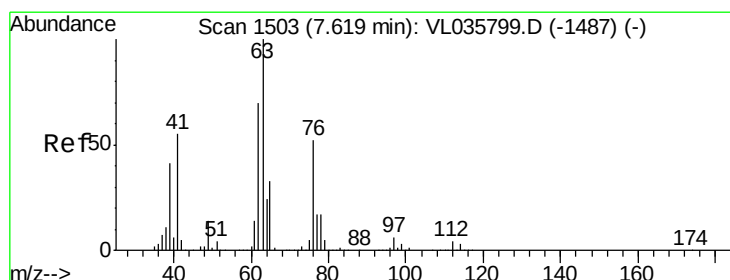
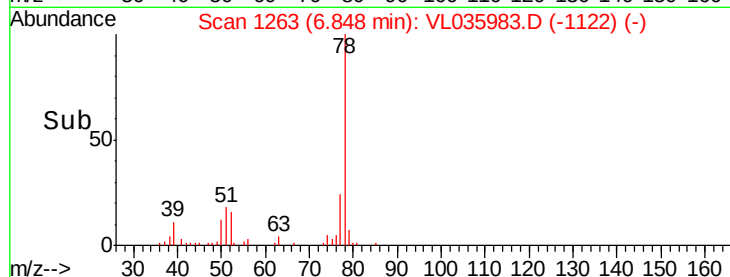
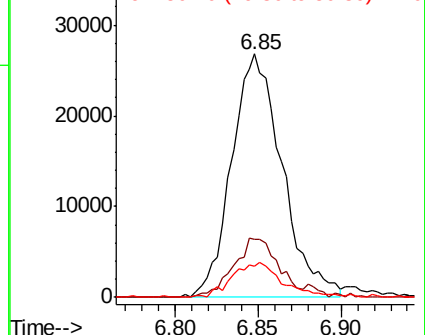
78 100

77 24.1 19.3 28.9

50 12.8 11.4 17.2



Abundance Ion 78.10 (77.80 to 78.80): VL0  
Ion 77.10 (76.80 to 77.80): VL0  
Ion 50.10 (49.80 to 50.80): VL0



#39

1,2-Dichloropropane

Concen: 8.209 ppbv

RT: 7.13 min Scan# 1351

Delta R.T. -0.49 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

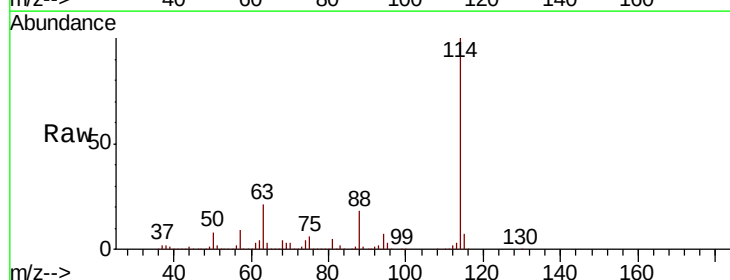
Tgt Ion: 63 Resp: 803927

Ion Ratio Lower Upper

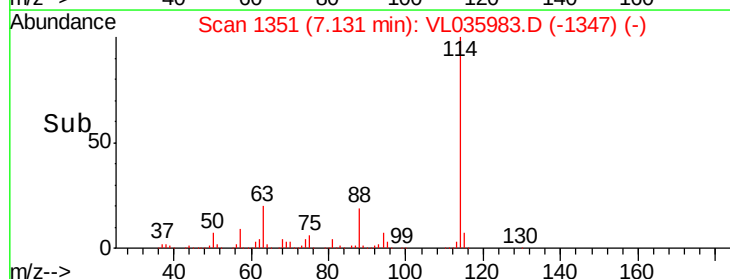
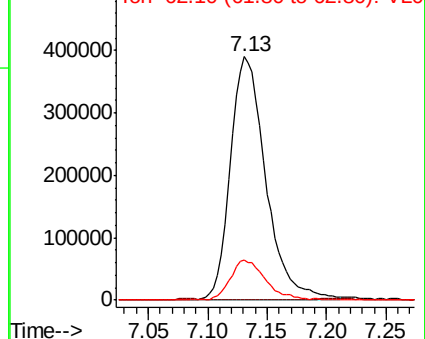
63 100

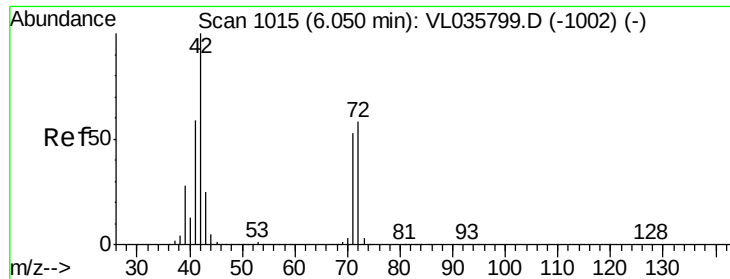
41 0.0 43.8 65.6#

62 16.7 56.2 84.2#



Abundance Ion 63.10 (62.80 to 63.80): VL0  
Ion 41.10 (40.80 to 41.80): VL0  
Ion 62.10 (61.80 to 62.80): VL0





#41

Tetrahydrofuran

Concen: 4.078 ppbv

RT: 5.65 min Scan# 890

Delta R.T. -0.40 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

Instrument :

MSVOA\_L

ClientSampleId :

IA2DUP

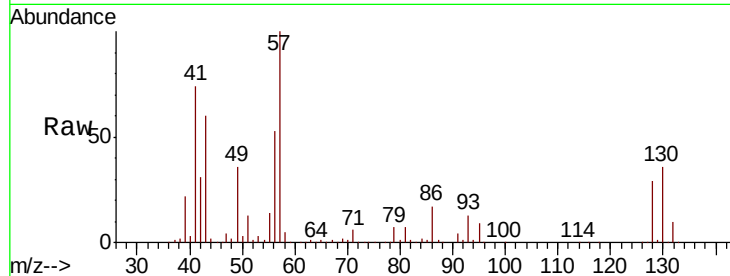
Tot Ion: 42 Resp: 294185

Ion Ratio Lower Upper

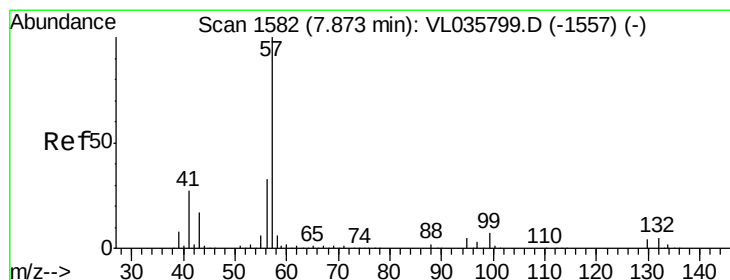
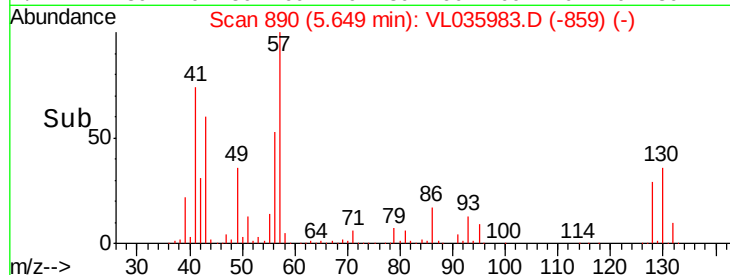
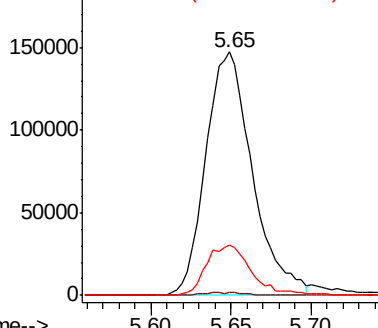
42 100

72 1.2 45.4 68.0#

71 20.0 43.4 65.2#



Abundance Ion 42.10 (41.80 to 42.80): VL0  
Ion 72.10 (71.80 to 72.80): VL0  
Ion 71.10 (70.80 to 71.80): VL0



#44

2,2,4-Trimethylpentane

Concen: 0.050 ppbv

RT: 7.83 min Scan# 1567

Delta R.T. -0.05 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

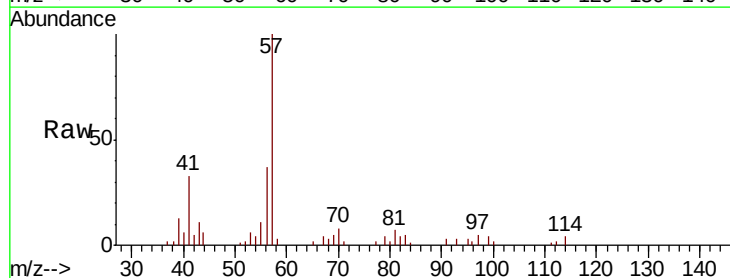
Tgt Ion: 57 Resp: 19243

Ion Ratio Lower Upper

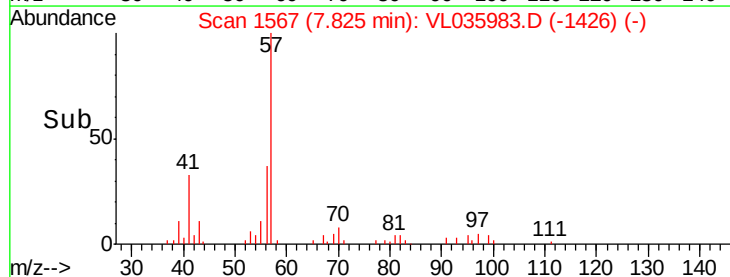
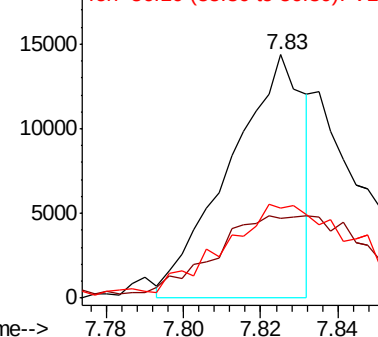
57 100

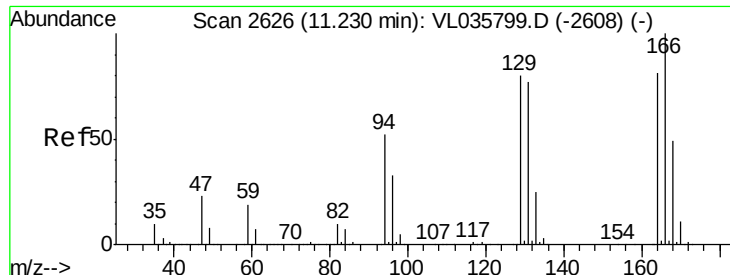
41 0.0 21.0 31.4#

56 73.2 25.4 38.0#



Abundance Ion 57.10 (56.80 to 57.80): VL0  
Ion 41.10 (40.80 to 41.80): VL0  
Ion 56.10 (55.80 to 56.80): VL0





#52

Tetrachloroethene

Concen: 0.060 ppbv

RT: 11.18 min Scan# 2609

Delta R.T. -0.05 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

Instrument :

MSVOA\_L

ClientSampleId :

IA2DUP

Tot Ion:164 Resp: 8312

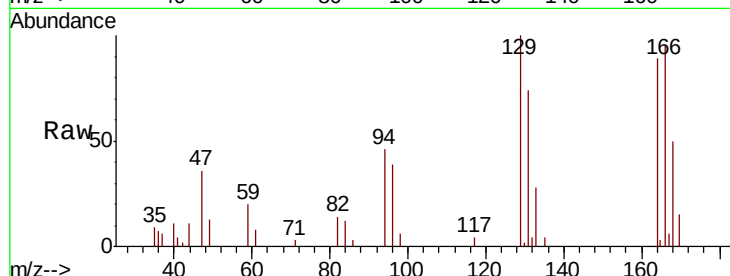
Ion Ratio Lower Upper

164 100

166 107.6 99.3 148.9

129 112.7 79.3 118.9

131 83.5 76.5 114.7

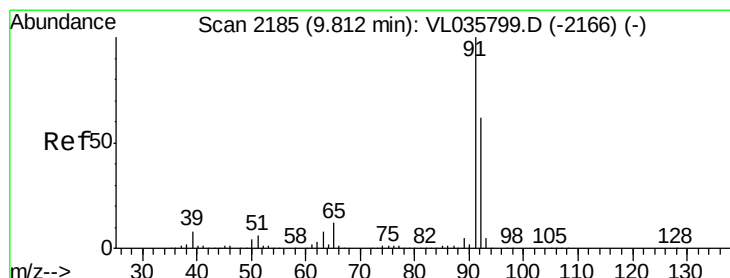
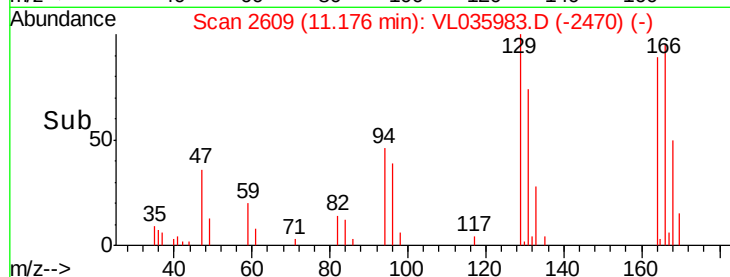
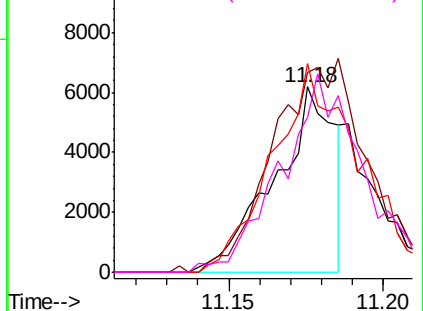


Abundance Ion 163.90 (163.60 to 164.60): V

Ion 165.90 (165.60 to 166.60): V

Ion 129.00 (128.70 to 129.70): V

Ion 131.00 (130.70 to 131.70): V



#53

Toluene

Concen: 2.178 ppbv

RT: 9.76 min Scan# 2170

Delta R.T. -0.05 min

Lab File: VL035983.D

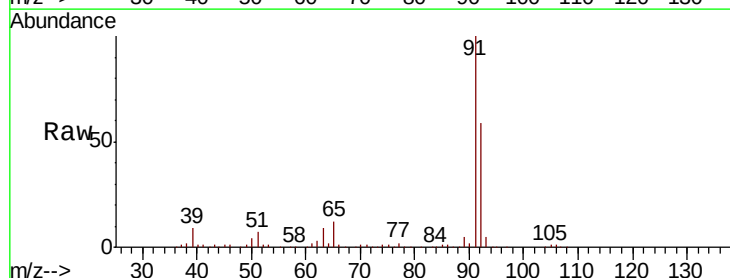
Acq: 18 Nov 2020 21:26

Tgt Ion: 91 Resp: 764436

Ion Ratio Lower Upper

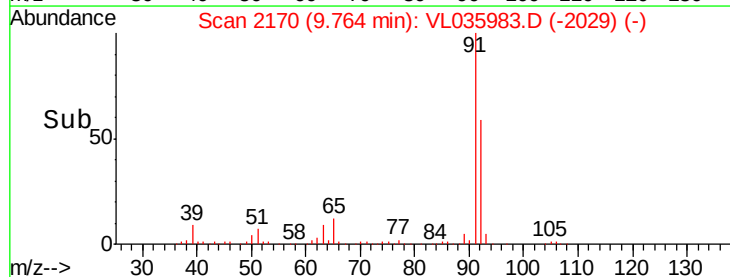
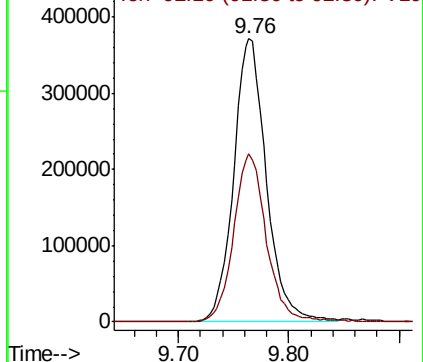
91 100

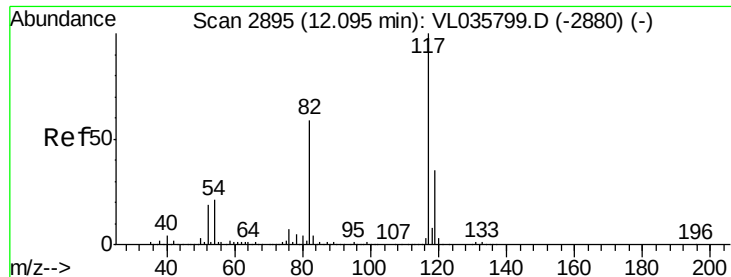
92 59.9 49.8 74.6



Abundance Ion 91.10 (90.80 to 91.80): VL0

Ion 92.10 (91.80 to 92.80): VL0

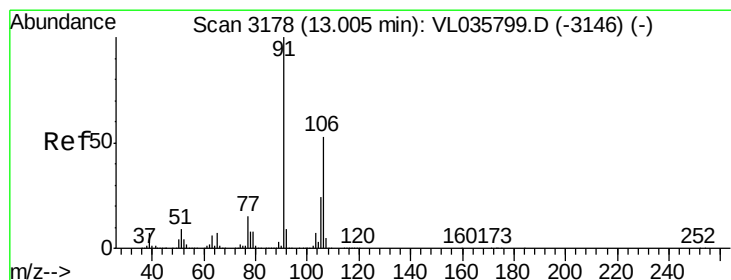
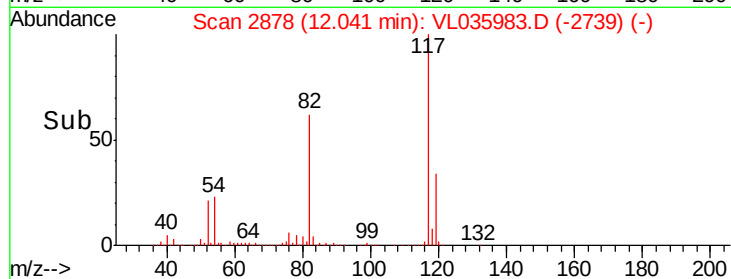
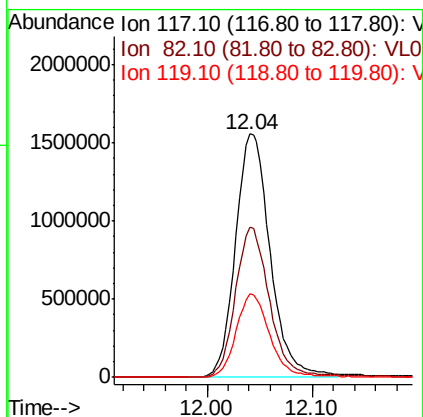
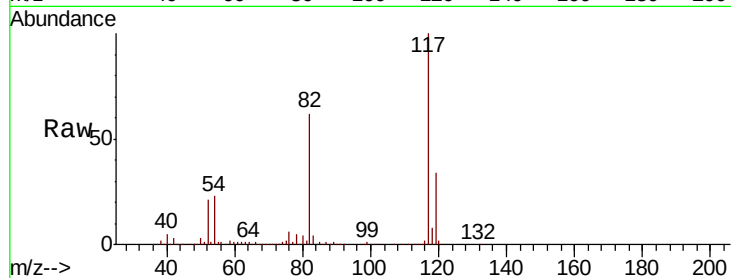




#55  
Chlorobenzene-d5  
Concen: 10.000 ppbv  
RT: 12.04 min Scan# 2878  
Delta R.T. -0.05 min  
Lab File: VL035983.D  
Acq: 18 Nov 2020 21:26

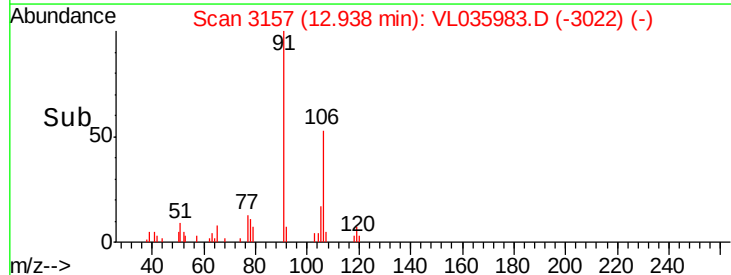
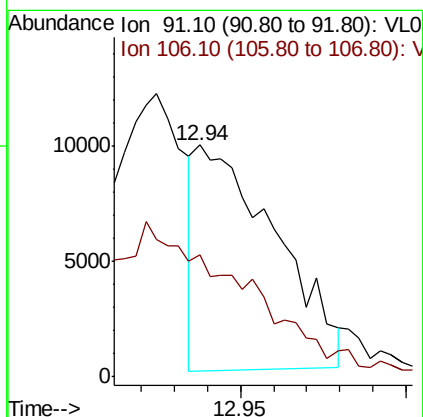
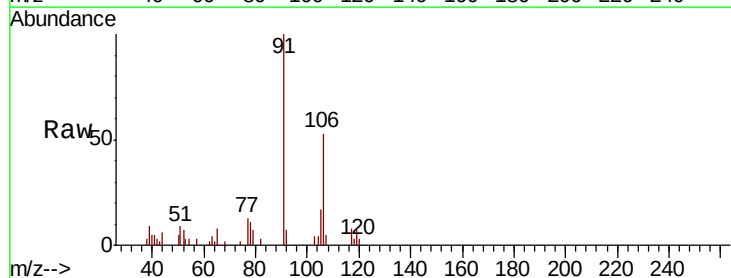
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA2DUP

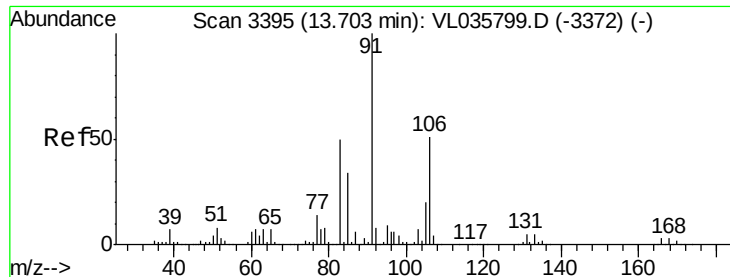
Tot Ion:117 Resp: 3556760  
Ion Ratio Lower Upper  
117 100  
82 62.0 50.6 76.0  
119 33.9 52.6 78.8#



#59  
m/p-Xylene  
Concen: 0.044 ppbv  
RT: 12.94 min Scan# 3157  
Delta R.T. -0.07 min  
Lab File: VL035983.D  
Acq: 18 Nov 2020 21:26

Tgt Ion: 91 Resp: 16309  
Ion Ratio Lower Upper  
91 100  
106 0.0 39.5 59.3#

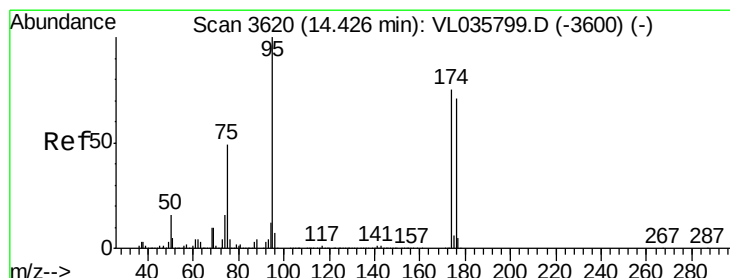
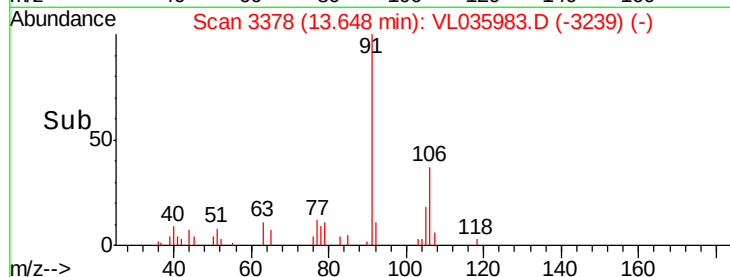
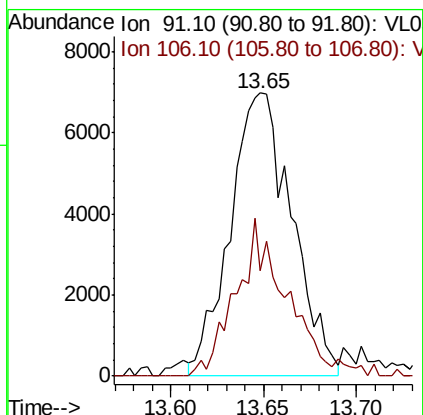
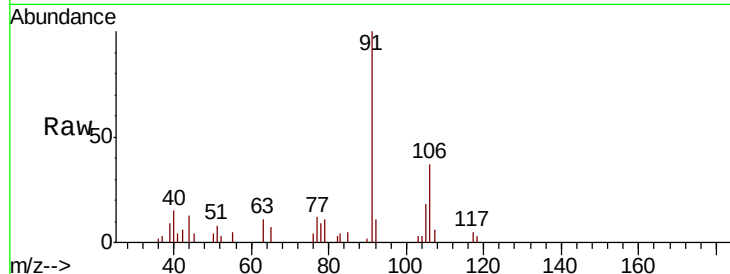




#60  
o-Xylene  
Concen: 0.045 ppbv  
RT: 13.65 min Scan# 3378  
Delta R.T. -0.05 min  
Lab File: VL035983.D  
Acq: 18 Nov 2020 21:26

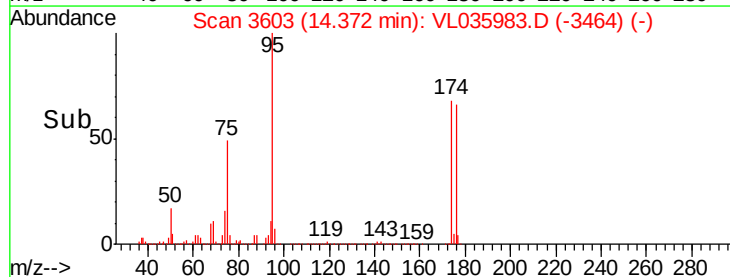
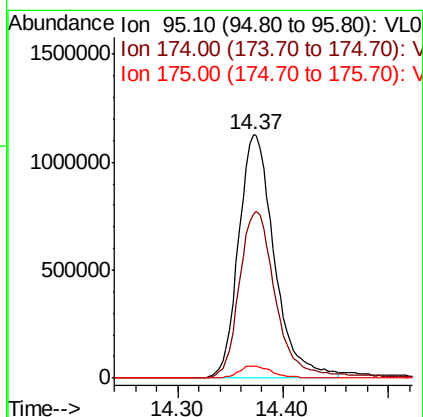
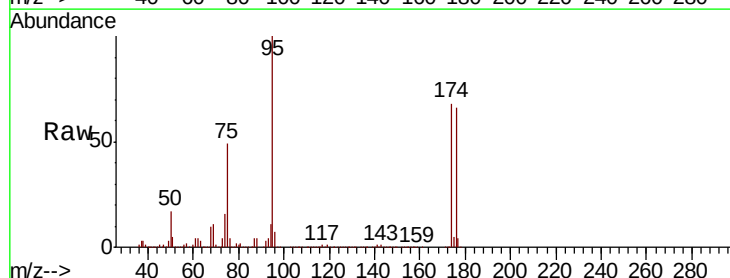
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA2DUP

Tot Ion: 91 Resp: 16181  
Ion Ratio Lower Upper  
91 100  
106 46.3 24.8 74.4

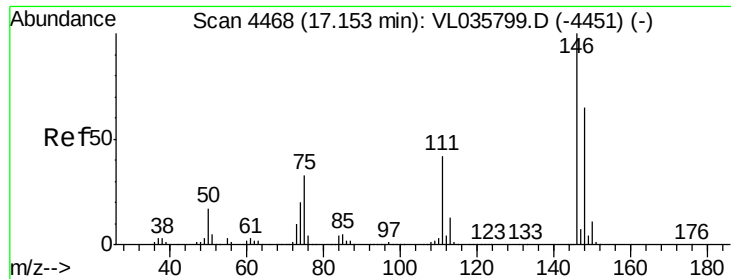


#68  
1-Bromo-4-Fluorobenzene  
Concen: 10.532 ppbv  
RT: 14.37 min Scan# 3603  
Delta R.T. -0.05 min  
Lab File: VL035983.D  
Acq: 18 Nov 2020 21:26

Tgt Ion: 95 Resp: 2661341  
Ion Ratio Lower Upper  
95 100  
174 71.1 59.8 89.6  
175 4.9 4.3 6.5







#76

1,4-Dichlorobenzene

Concen: 0.039 ppbv

RT: 17.10 min Scan# 4451

Delta R.T. -0.05 min

Lab File: VL035983.D

Acq: 18 Nov 2020 21:26

Instrument :

MSVOA\_L

ClientSampleId :

IA2DUP

Tot Ion:146 Resp: 10134

Ion Ratio Lower Upper

146 100

111 0.0 21.3 63.7#

148 141.9 33.0 99.0#

