

Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL111621\  
 Data File : VL038037.D  
 Acq On : 16 Nov 2021 13:10  
 Operator : SY/AP  
 Sample : M4526-01DL 2X  
 Misc : 400mL/MSVOA L  
 ALS Vial : 1 Sample Multiplier: 1

Instrument :  
 MSVOA\_L  
 ClientSampleId :

Quant Time: Nov 17 06:40:38 2021  
 Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL111621AIR.M  
 Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_LTue Nov 16 09:59:16 2021  
 QLast Update : Tue Nov 16 09:59:16 2021  
 Response via : Initial Calibration

| Internal Standards      | R.T.  | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------|-------|------|----------|-------|-------|----------|
| 1) Bromochloromethane   | 5.66  | 49   | 876640   | 10.00 | ppbv  | 0.00     |
| 33) 1,4-Difluorobenzene | 7.17  | 114  | 2652418  | 10.00 | ppbv  | 0.00     |
| 55) Chlorobenzene-d5    | 12.07 | 117  | 2353438  | 10.00 | ppbv  | 0.00     |

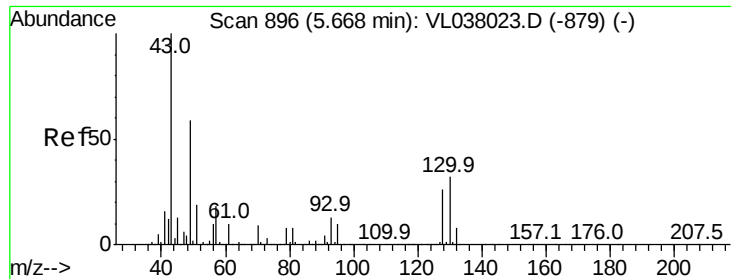
System Monitoring Compounds

|                             |        |       |          |          |      |         |
|-----------------------------|--------|-------|----------|----------|------|---------|
| 68) 1-Bromo-4-Fluorobenzene | 14.40  | 95    | 1713861  | 10.08    | ppbv | 0.00    |
| Spiked Amount               | 10.000 | Range | 65 - 135 | Recovery | =    | 100.80% |

| Target Compounds               | R.T.  | QIon | Response | Conc   | Units  | Ovalue |
|--------------------------------|-------|------|----------|--------|--------|--------|
| 5) Vinyl Chloride              | 3.26  | 62   | 756654   | 9.721  | ppbv   | 95     |
| 7) Chloroethane                | 3.26  | 64   | 244915   | 8.946  | ppbv # | 46     |
| 9) Propene                     | 3.02  | 41   | 2689     | 0.031  | ppbv # | 28     |
| 10) Heptane                    | 8.11  | 43   | 2163285  | 10.226 | ppbv   | 100    |
| 12) 1,1,2-Trichlorotrifluoroet | 4.48  | 101  | 1042436  | 7.632  | ppbv   | 98     |
| 13) Ethanol                    | 3.61  | 45   | 303      | 0.040  | ppbv # | 100    |
| 14) Bromoethene                | 3.74  | 108  | 5342     | 0.094  | ppbv # | 87     |
| 15) Acetone                    | 3.87  | 43   | 21175    | 0.205  | ppbv # | 86     |
| 20) Methylene Chloride         | 4.34  | 84   | 116089   | 1.920  | ppbv   | 99     |
| 24) 1,1-Dichloroethane         | 5.00  | 63   | 1338157  | 10.050 | ppbv   | 99     |
| 25) Ethyl Acetate              | 5.68  | 43   | 1375268  | 5.672  | ppbv # | 76     |
| 26) Hexane                     | 5.68  | 57   | 2011997  | 16.518 | ppbv # | 44     |
| 30) Cyclohexane                | 7.12  | 84   | 1364534  | 9.948  | ppbv   | 97     |
| 34) 2-Butanone                 | 5.68  | 43   | 1323736  | 15.131 | ppbv # | 53     |
| 36) Benzene                    | 6.88  | 78   | 2431884  | 9.638  | ppbv   | 99     |
| 39) 1,2-Dichloropropane        | 7.16  | 63   | 613174   | 6.287  | ppbv # | 33     |
| 41) Tetrahydrofuran            | 5.68  | 42   | 714241   | 11.377 | ppbv # | 50     |
| 42) Bromodichloromethane       | 7.78  | 83   | 6131     | 0.033  | ppbv # | 83     |
| 44) 2,2,4-Trimethylpentane     | 8.11  | 57   | 1080821  | 2.494  | ppbv # | 1      |
| 47) 1,1,2-Trichloroethane      | 9.46  | 97   | 3504     | 0.035  | ppbv # | 86     |
| 48) Dibromochloromethane       | 10.29 | 129  | 1495790  | 9.287  | ppbv   | 100    |
| 53) Toluene                    | 9.79  | 91   | 2767245  | 9.379  | ppbv   | 100    |
| 54) 1,2-Dibromoethane          | 10.60 | 107  | 2346432  | 16.906 | ppbv   | 98     |

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





#1

Bromochloromethane

Concen: 10.000 ppbv

RT: 5.66 Instrument:

Delta R.T. MSVOA\_L

Lab File: ClientSampleId:

Acq: 16 Nov 2021 13:10

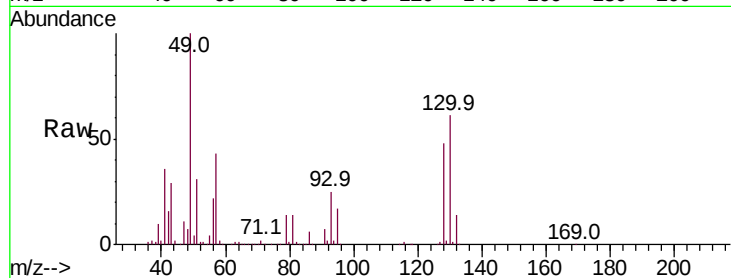
Tot Ion: 49 Resp: 876640

Ion Ratio Lower Upper

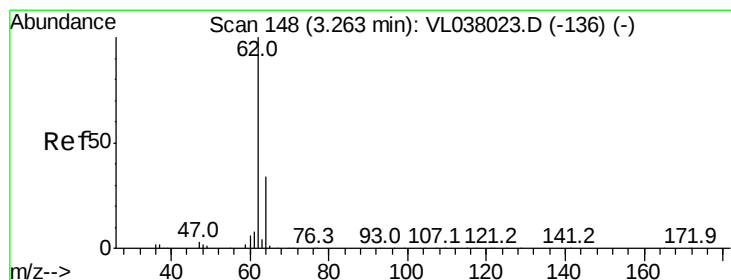
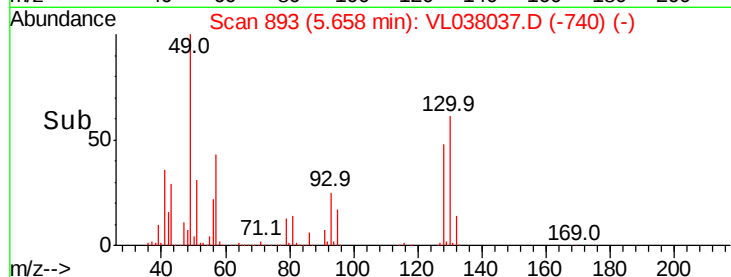
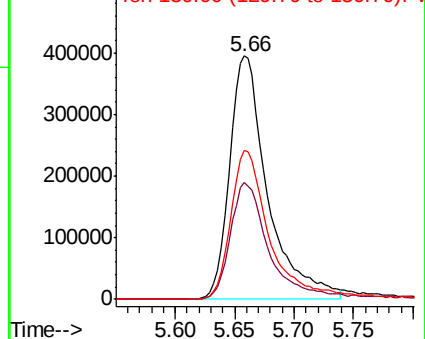
49 100

128 51.1 23.4 70.2

130 64.8 29.1 87.3



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



#5

Vinyl Chloride

Concen: 9.721 ppbv

RT: 3.26 min Scan# 147

Delta R.T. -0.00 min

Lab File: VL038037.D

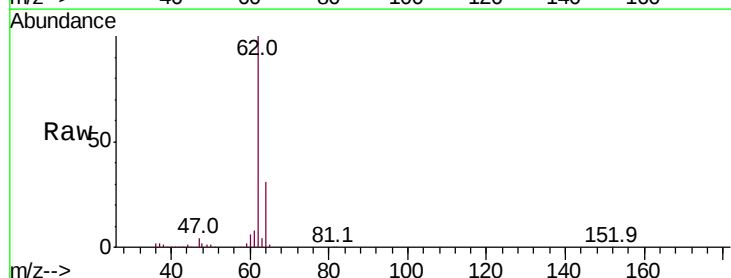
Acq: 16 Nov 2021 13:10

Tgt Ion: 62 Resp: 756654

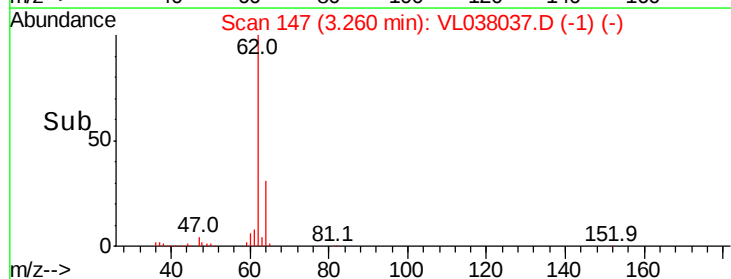
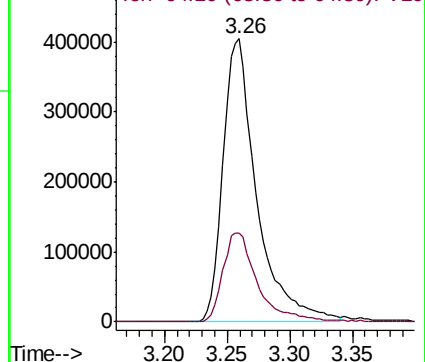
Ion Ratio Lower Upper

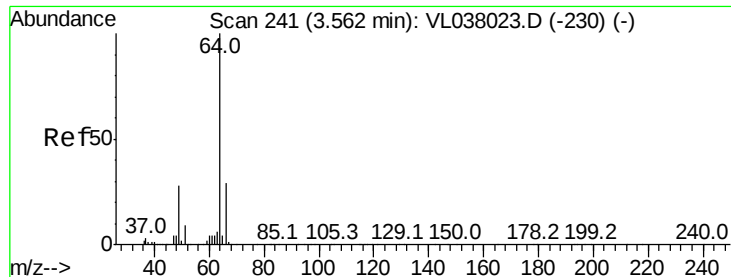
62 100

64 31.3 27.4 41.0



Abundance Ion 62.10 (61.80 to 62.80): VL0  
Ion 64.10 (63.80 to 64.80): VL0





#7

Chloroethane

Concen: 8.946 ppbv

RT: 3.26 Instrument:

Delta R.T. MSVOA\_1

Lab File: ClientSampleId:

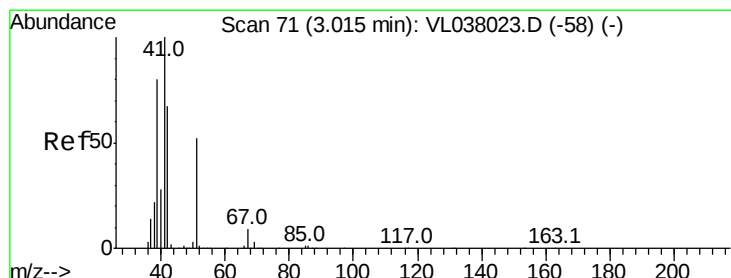
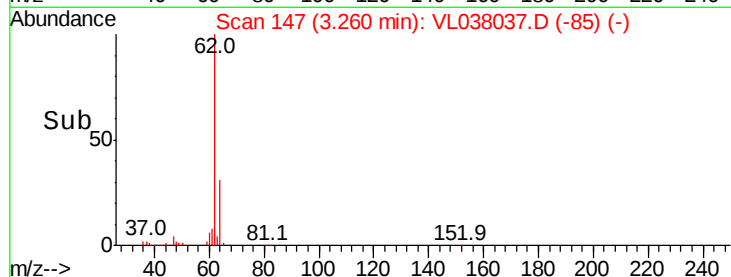
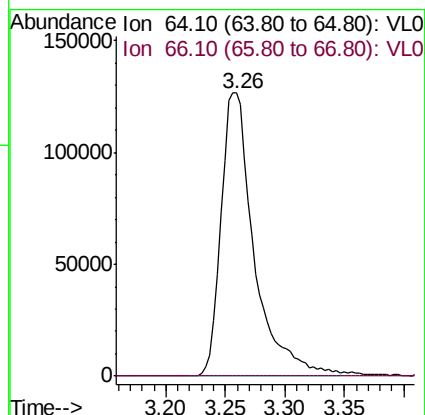
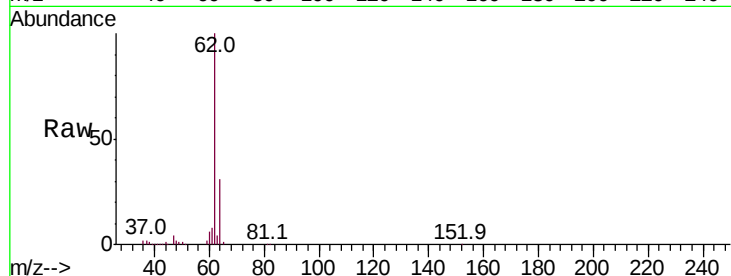
Acq: 16 Nov 2021 13:10

Tot Ion: 64 Resp: 244915

Ion Ratio Lower Upper

64 100

66 0.0 23.1 34.7#



#9

Propene

Concen: 0.031 ppbv

RT: 3.02 min Scan# 71

Delta R.T. 0.00 min

Lab File: VL038037.D

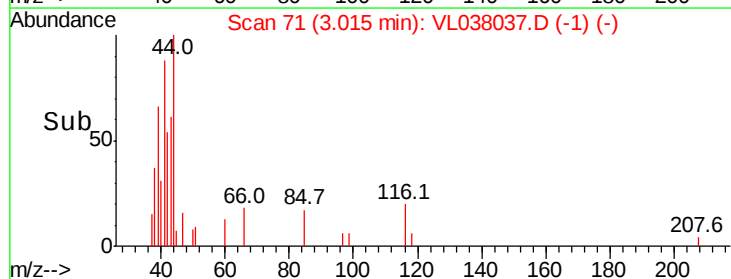
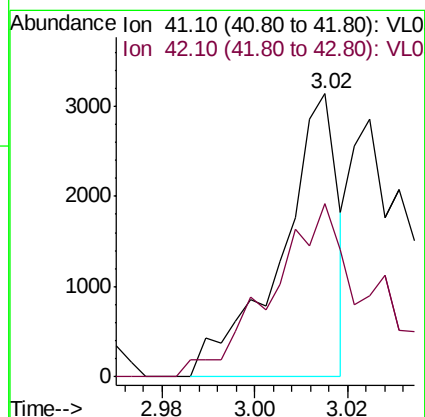
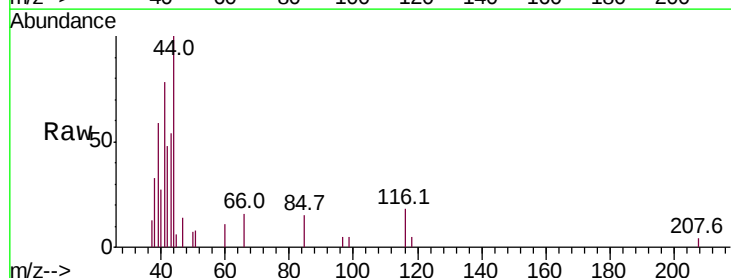
Acq: 16 Nov 2021 13:10

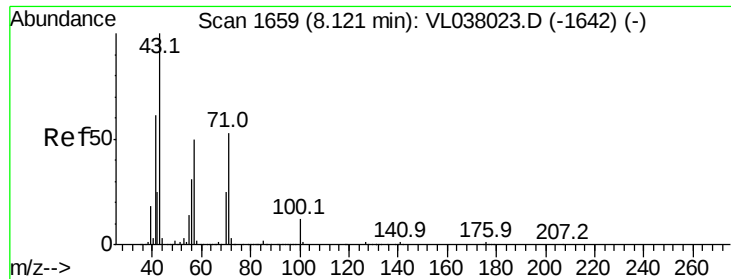
Tgt Ion: 41 Resp: 2689

Ion Ratio Lower Upper

41 100

42 128.3 55.4 83.0#





#10

Heptane

Concen: 10.226 ppbv

RT: 8.11 Instrument:

Delta R.T. MSVOA\_L

Lab File: ClientSampleId:

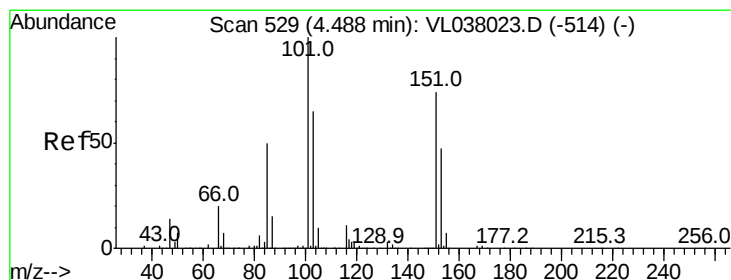
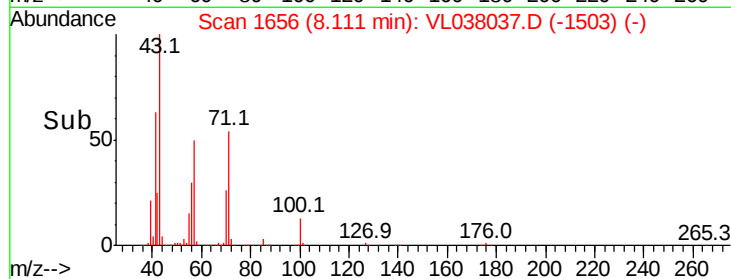
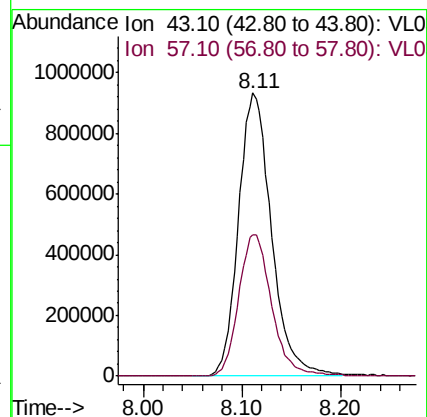
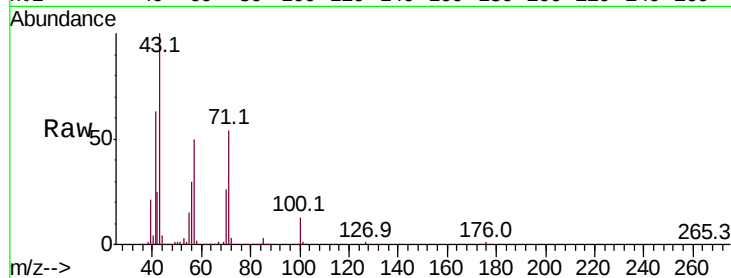
Acq: 16 Nov 2021 13:10

Tot Ion: 43 Resp: 2163285

Ion Ratio Lower Upper

43 100

57 50.4 40.2 60.2



#12

1,1,2-Trichlorotrifluoroethane

Concen: 7.632 ppbv

RT: 4.48 min Scan# 527

Delta R.T. -0.01 min

Lab File: VL038037.D

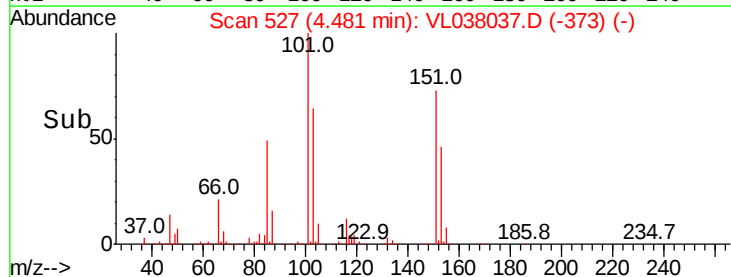
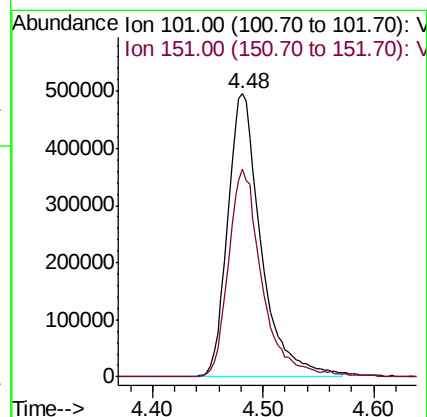
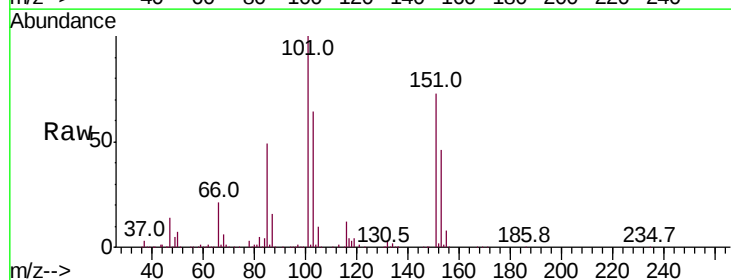
Acq: 16 Nov 2021 13:10

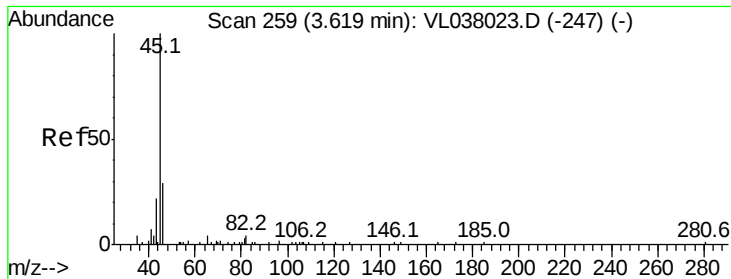
Tgt Ion:101 Resp: 1042436

Ion Ratio Lower Upper

101 100

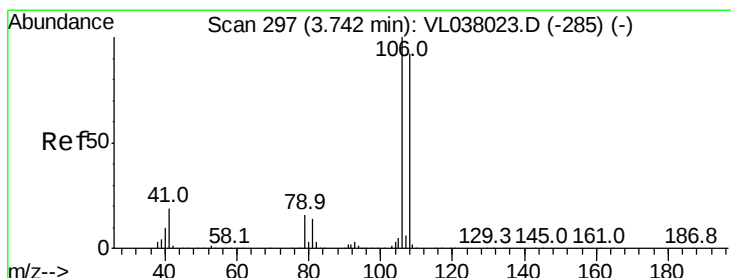
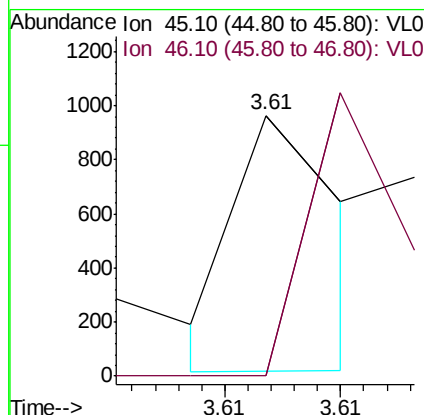
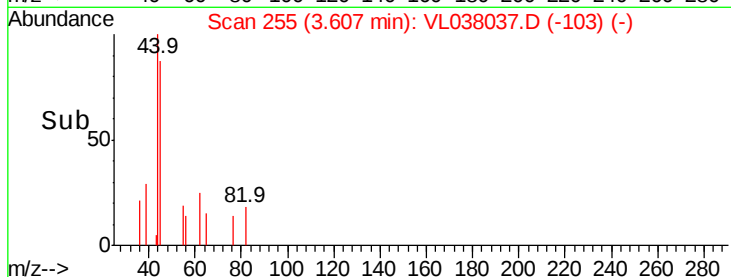
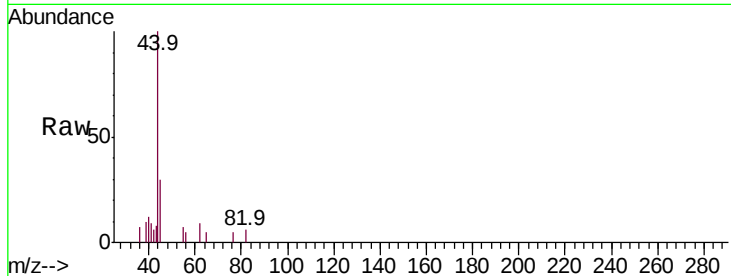
151 74.3 57.8 86.8





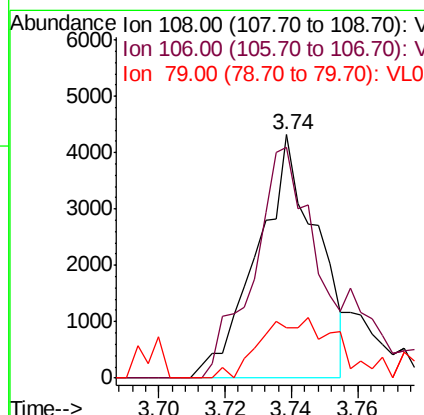
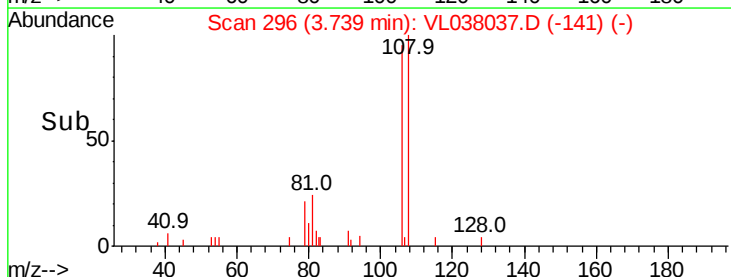
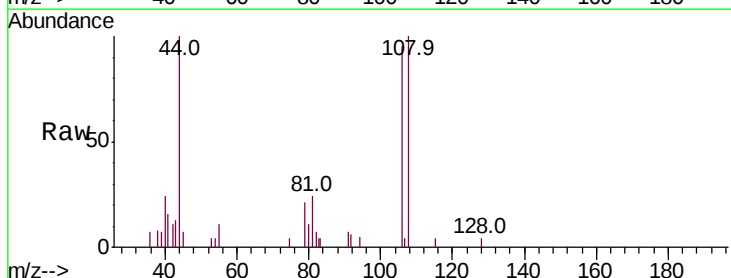
#13  
 Ethanol  
 Concen: 0.040 ppbv  
 RT: 3.61 min  
 Delta R.T. MSVOA\_L  
 Lab File: ClientSampleId :  
 Acq: 16 Nov 2021 13:10

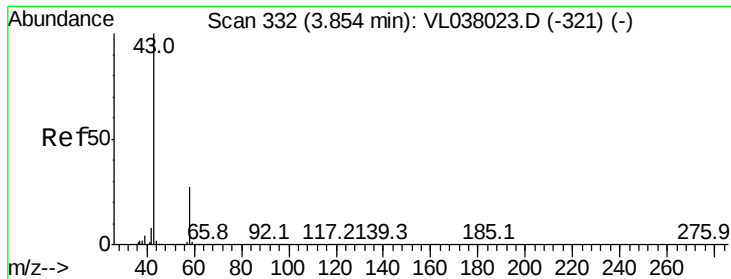
Tot Ion: 45 Resp: 303  
 Ion Ratio Lower Upper  
 45 100  
 46 556.8 0.0 0.0#



#14  
 Bromoethene  
 Concen: 0.094 ppbv  
 RT: 3.74 min Scan# 296  
 Delta R.T. -0.00 min  
 Lab File: VL038037.D  
 Acq: 16 Nov 2021 13:10

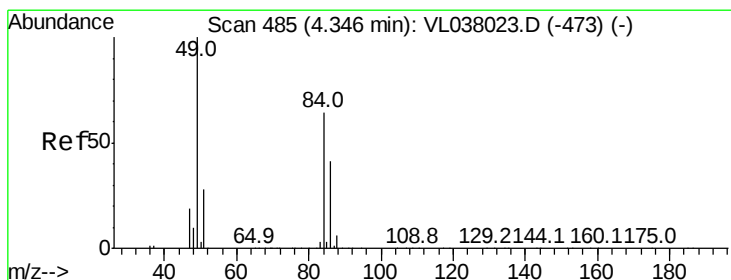
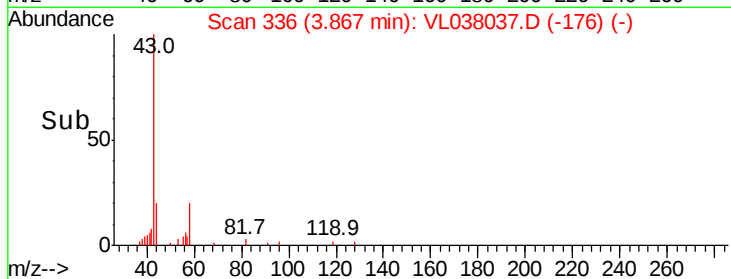
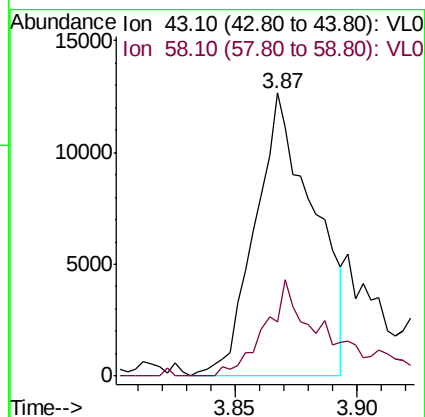
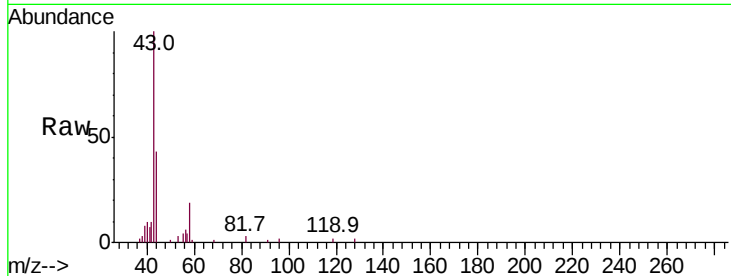
Tgt Ion:108 Resp: 5342  
 Ion Ratio Lower Upper  
 108 100  
 106 123.0 90.4 135.6  
 79 35.3 14.5 21.7#





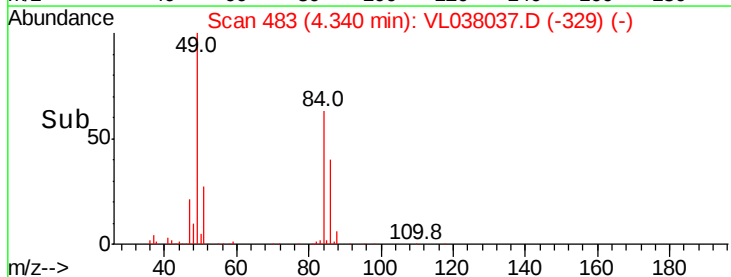
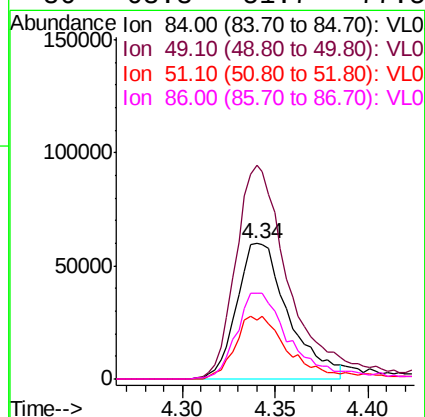
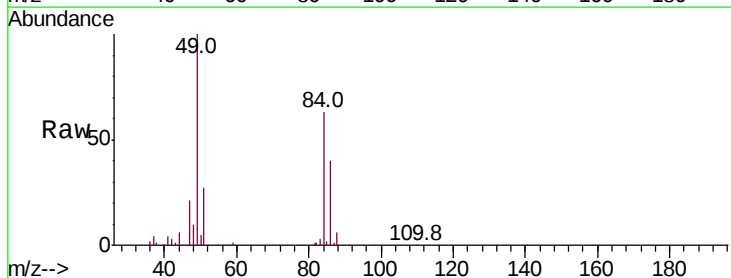
#15  
Acetone  
Concen: 0.205 ppbv  
RT: 3.87  
Delta R.T. MSVOA\_L  
Lab File: ClientSampleId:  
Acq: 16 Nov 2021 13:10

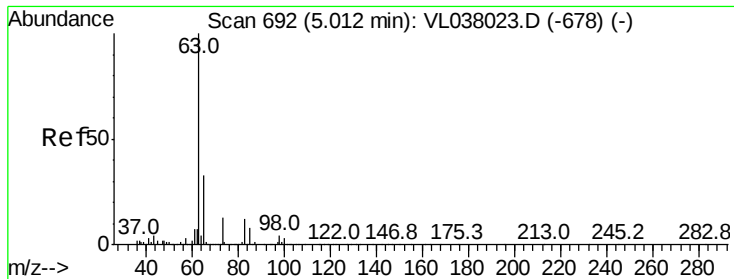
Tot Ion: 43 Resp: 21175  
Ion Ratio Lower Upper  
43 100  
58 36.0 23.0 34.4#



#20  
Methylene Chloride  
Concen: 1.920 ppbv  
RT: 4.34 min Scan# 483  
Delta R.T. -0.01 min  
Lab File: VL038037.D  
Acq: 16 Nov 2021 13:10

Tgt Ion: 84 Resp: 116089  
Ion Ratio Lower Upper  
84 100  
49 157.7 125.1 187.7  
51 43.2 35.3 52.9  
86 63.3 51.7 77.5





#24

1,1-Dichloroethane

Concen: 10.050 ppbv

RT: 5.00 Instrument:

Delta R.T. MSVOA\_L

Lab File: ClientSampleId:

Acq: 16 Nov 2021 13:10

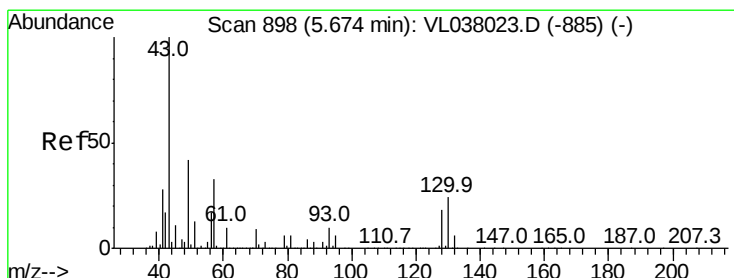
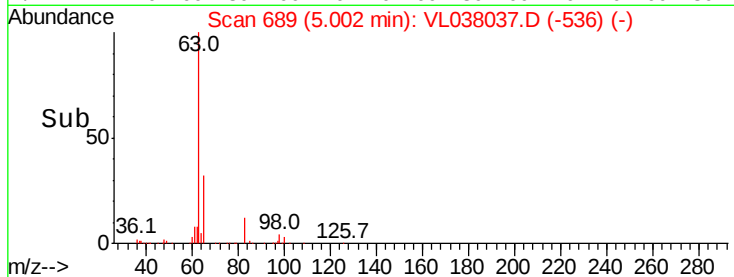
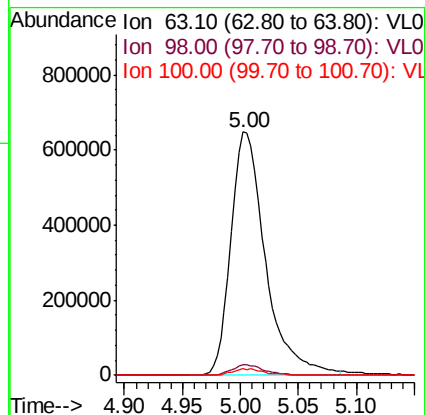
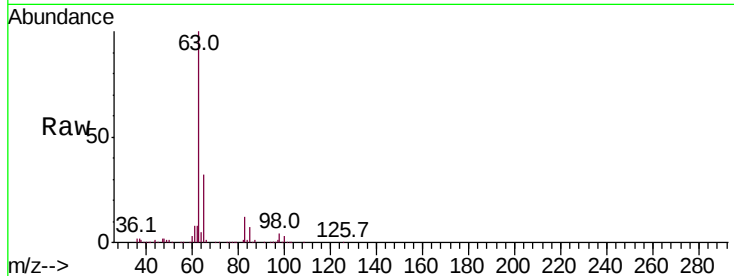
Tot Ion: 63 Resp: 1338157

Ion Ratio Lower Upper

63 100

98 4.1 2.3 6.9

100 2.7 1.5 4.4



#25

Ethyl Acetate

Concen: 5.672 ppbv

RT: 5.68 min Scan# 900

Delta R.T. 0.01 min

Lab File: VL038037.D

Acq: 16 Nov 2021 13:10

Tgt Ion: 43 Resp: 1375268

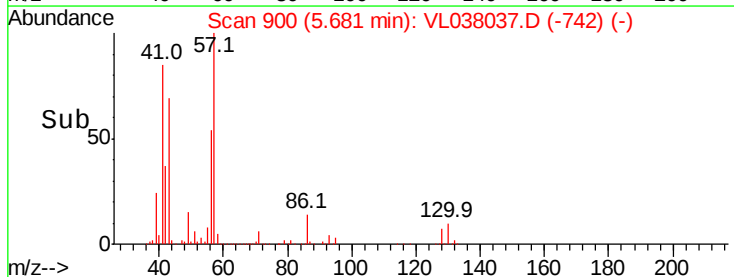
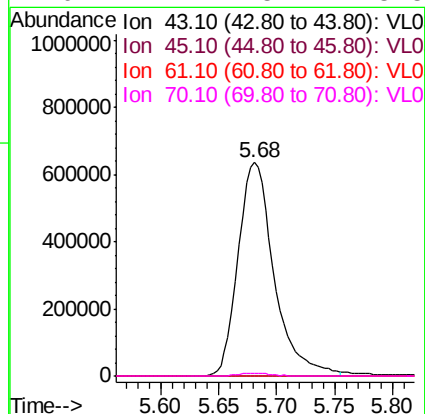
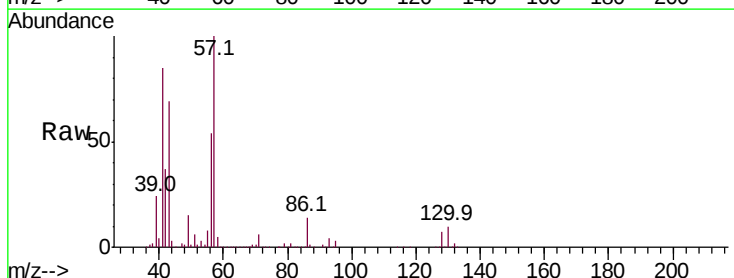
Ion Ratio Lower Upper

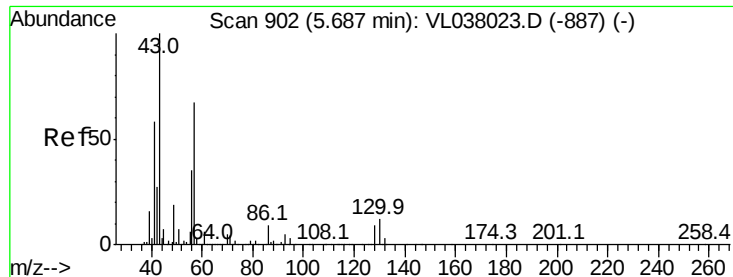
43 100

45 0.1 8.0 12.0#

61 0.1 8.3 12.5#

70 1.4 5.7 8.5#





#26

Hexane

Concen: 16.518 ppbv

RT: 5.68 Instrument:

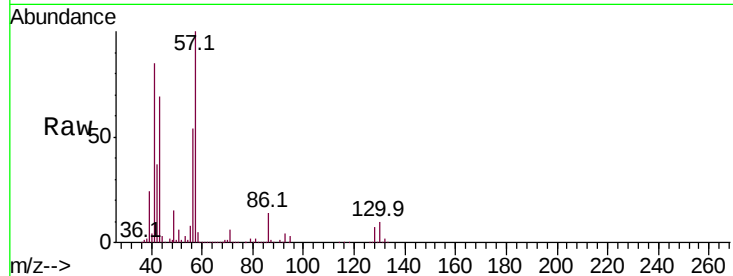
Delta R.T. MSVOA\_L

Lab File: ClientSampleId:

Acq: 16 Nov 2021 13:10

Tot Ion: 57 Resp: 2011997

| Ion | Ratio | Lower | Upper  |
|-----|-------|-------|--------|
| 57  | 100   |       |        |
| 41  | 84.2  | 70.8  | 106.2  |
| 43  | 69.7  | 169.4 | 254.0# |
| 56  | 52.4  | 41.8  | 62.8   |

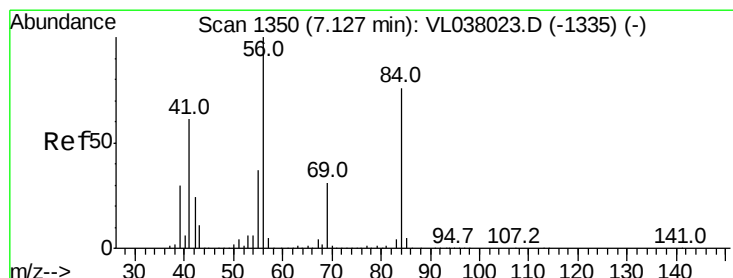
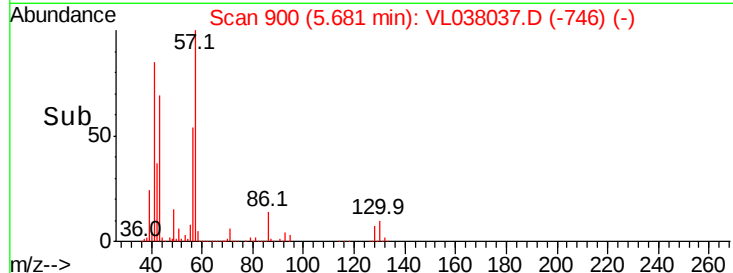
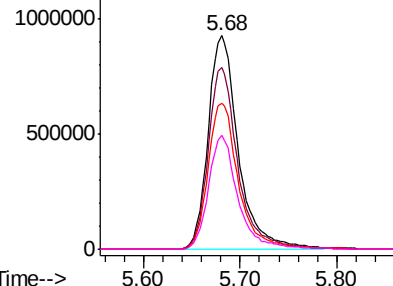


Abundance Ion 57.10 (56.80 to 57.80): VL0

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



#30

Cyclohexane

Concen: 9.948 ppbv

RT: 7.12 min Scan# 1348

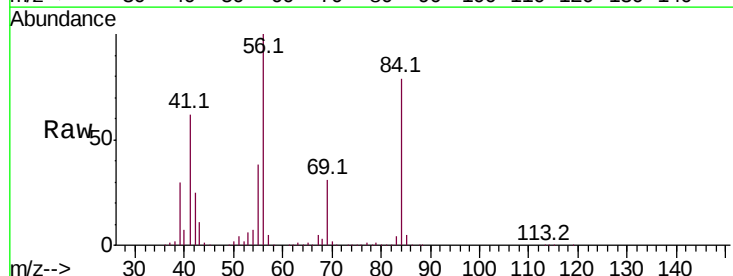
Delta R.T. -0.01 min

Lab File: VL038037.D

Acq: 16 Nov 2021 13:10

Tgt Ion: 84 Resp: 1364534

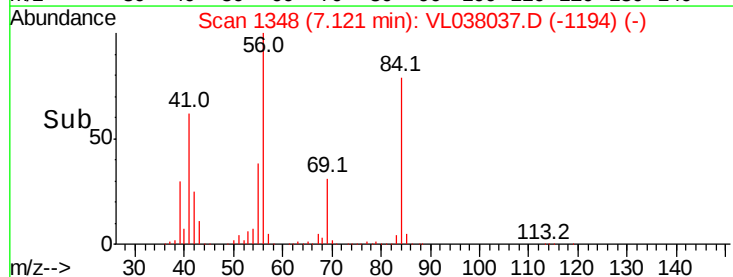
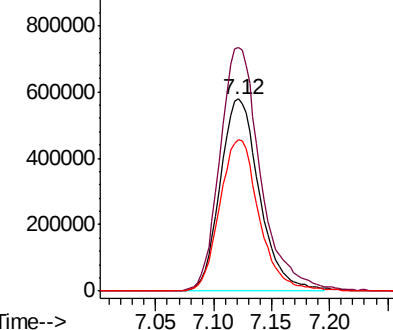
| Ion | Ratio | Lower | Upper |
|-----|-------|-------|-------|
| 84  | 100   |       |       |
| 56  | 132.1 | 109.5 | 164.3 |
| 41  | 79.6  | 65.1  | 97.7  |

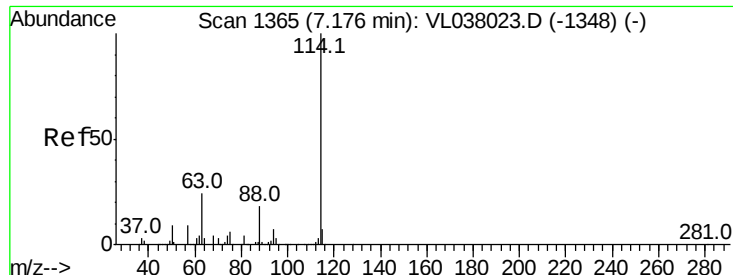


Abundance Ion 84.20 (83.90 to 84.90): VL0

Ion 56.10 (55.80 to 56.80): VL0

Ion 41.10 (40.80 to 41.80): VL0





#33

1,4-Difluorobenzene

Concen: 10.000 ppbv

RT: 7.17

Instrument: MSVOA\_1

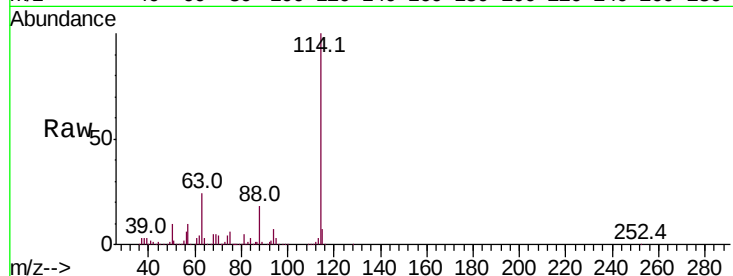
Delta R.T.:

Lab File: ClientSampleId:

Acq: 16 Nov 2021 13:10

Tot Ion:114 Resp: 2652418

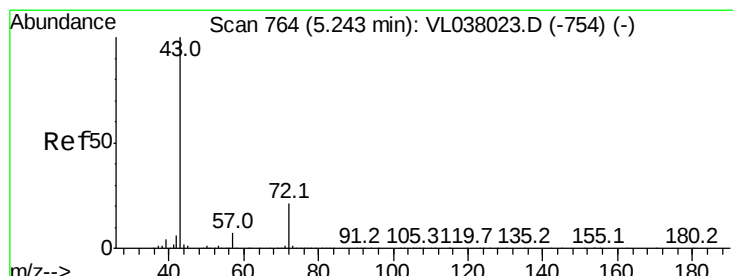
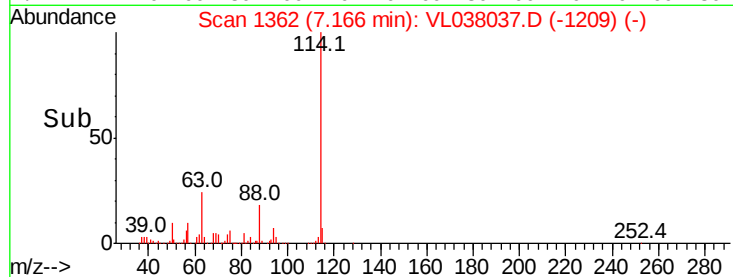
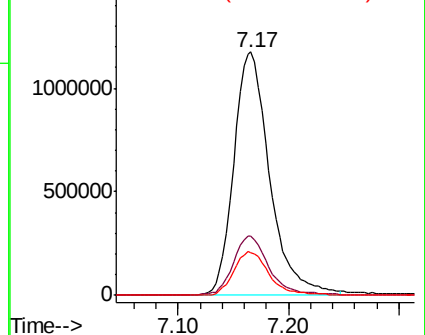
| Ion | Ratio | Lower | Upper |
|-----|-------|-------|-------|
| 114 | 100   |       |       |
| 63  | 24.8  | 19.8  | 29.6  |
| 88  | 17.9  | 14.6  | 21.8  |



Abundance Ion 114.10 (113.80 to 114.80): VL0

Ion 63.10 (62.80 to 63.80): VL0

Ion 88.10 (87.80 to 88.80): VL0



#34

2-Butanone

Concen: 15.131 ppbv

RT: 5.68 min Scan# 900

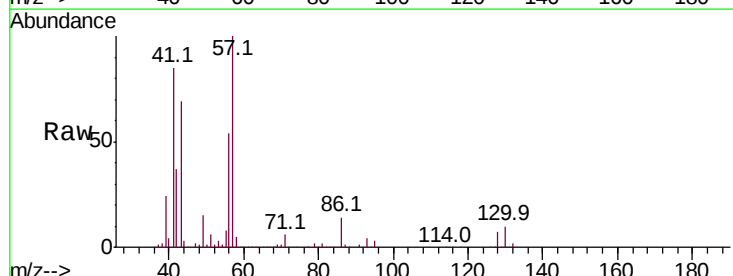
Delta R.T. 0.44 min

Lab File: VL038037.D

Acq: 16 Nov 2021 13:10

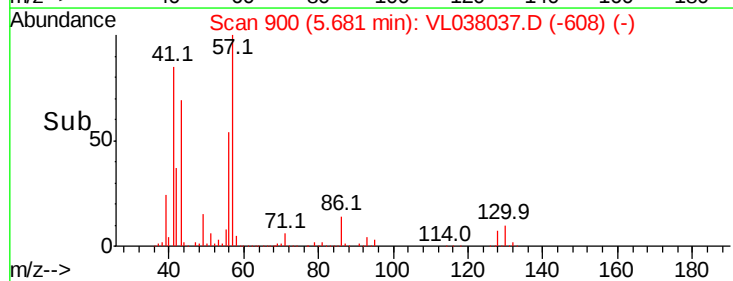
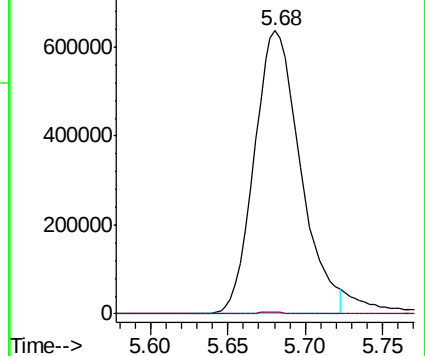
Tgt Ion: 43 Resp: 1323736

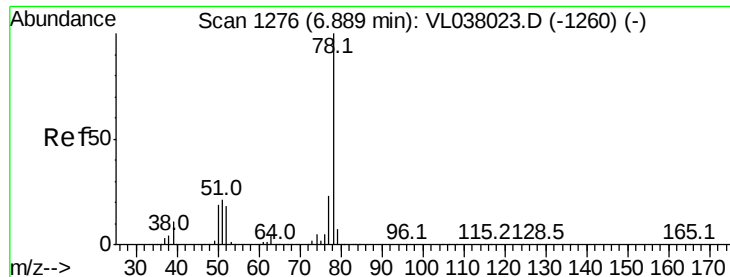
| Ion | Ratio | Lower | Upper |
|-----|-------|-------|-------|
| 43  | 100   |       |       |
| 72  | 0.0   | 18.2  | 27.2# |



Abundance Ion 43.10 (42.80 to 43.80): VL0

Ion 72.10 (71.80 to 72.80): VL0





#36

Benzene

Concen: 9.638 ppbv

RT: 6.88 Instrument:

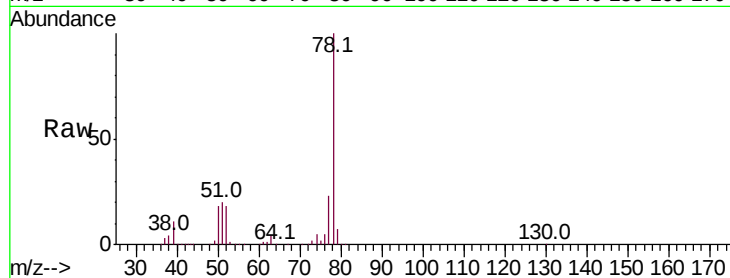
Delta R.T. MSVOA\_L

Lab File: ClientSampleId:

Acq: 16 Nov 2021 13:10

Tot Ion: 78 Resp: 2431884

| Ion | Ratio | Lower | Upper |
|-----|-------|-------|-------|
| 78  | 100   |       |       |
| 77  | 23.2  | 18.8  | 28.2  |
| 50  | 17.6  | 14.9  | 22.3  |

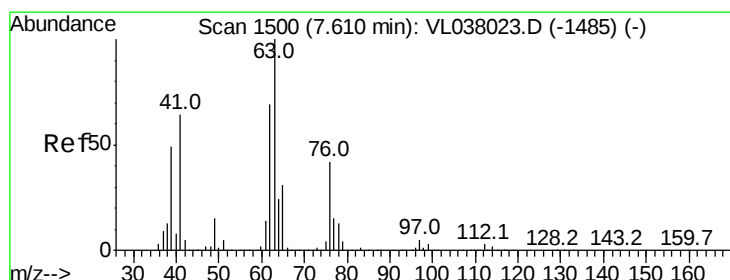
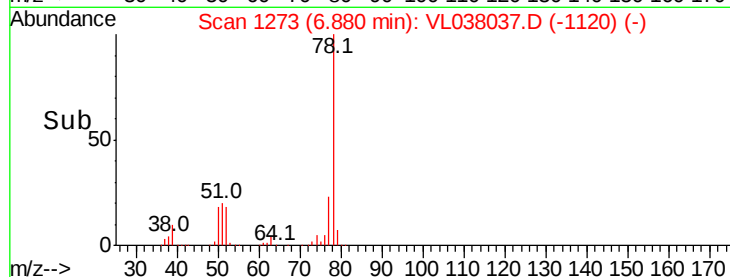
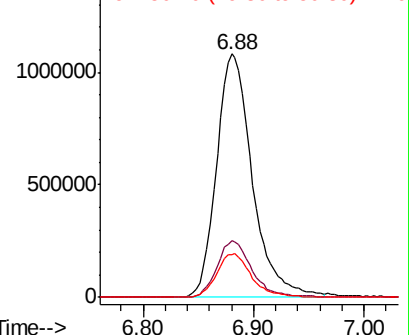


Abundance

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: 6.287 ppbv

RT: 7.16 min Scan# 1361

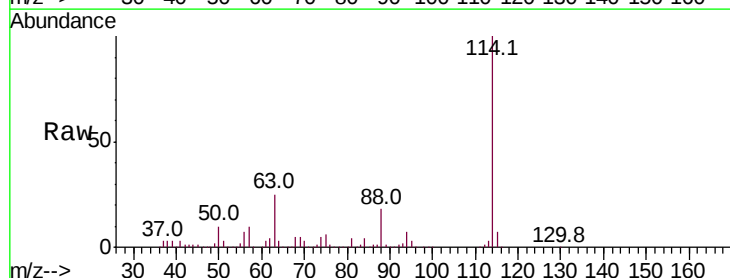
Delta R.T. -0.45 min

Lab File: VL038037.D

Acq: 16 Nov 2021 13:10

Tgt Ion: 63 Resp: 613174

| Ion | Ratio | Lower | Upper |
|-----|-------|-------|-------|
| 63  | 100   |       |       |
| 41  | 10.9  | 51.1  | 76.7# |
| 62  | 15.7  | 55.2  | 82.8# |

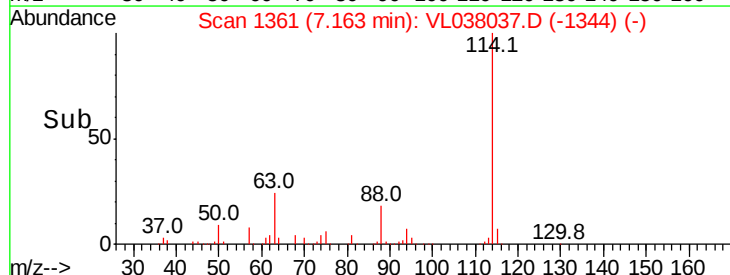
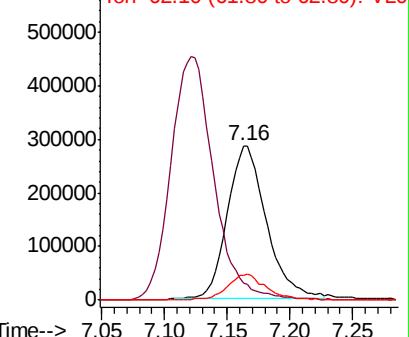


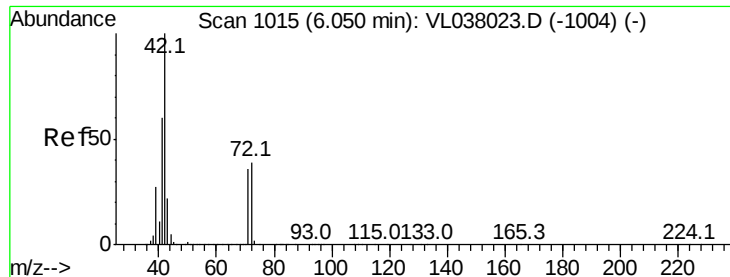
Abundance

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: 11.377 ppbv

RT: 5.68 Instrument:

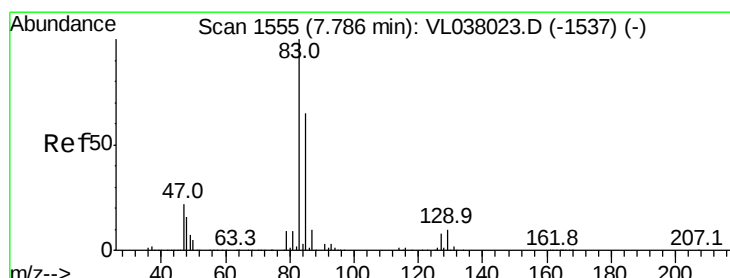
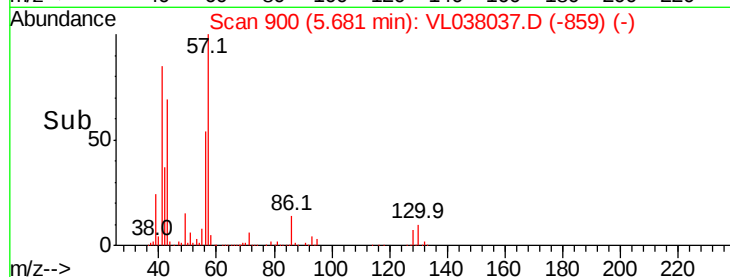
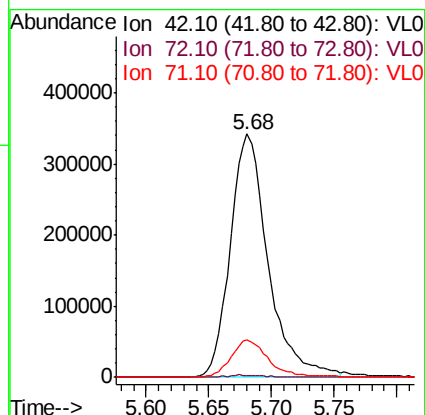
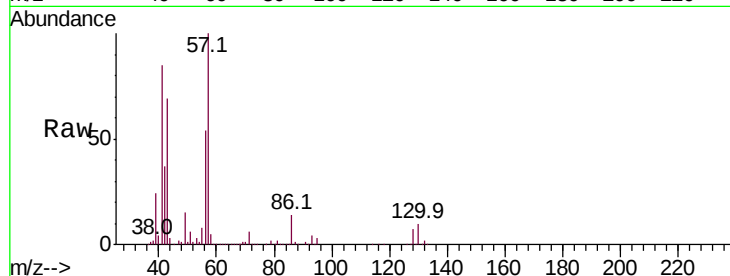
Delta R.T. MSVOA\_L

Lab File: ClientSampleId:

Acq: 16 Nov 2021 13:10

Tot Ion: 42 Resp: 714241

| Ion | Ratio | Lower | Upper |
|-----|-------|-------|-------|
| 42  | 100   |       |       |
| 72  | 1.0   | 31.3  | 46.9# |
| 71  | 15.6  | 29.7  | 44.5# |



#42

Bromodichloromethane

Concen: 0.033 ppbv

RT: 7.78 min Scan# 1552

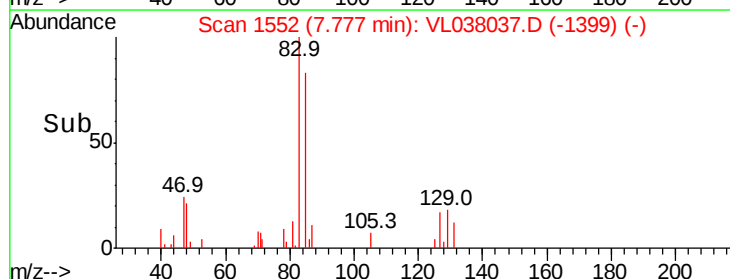
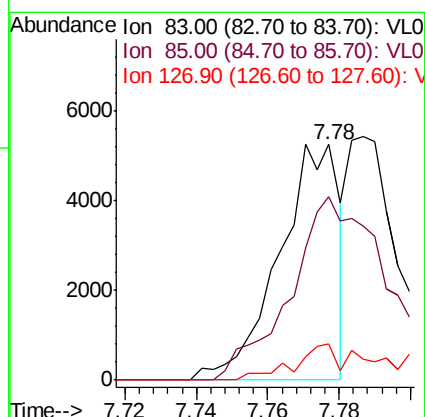
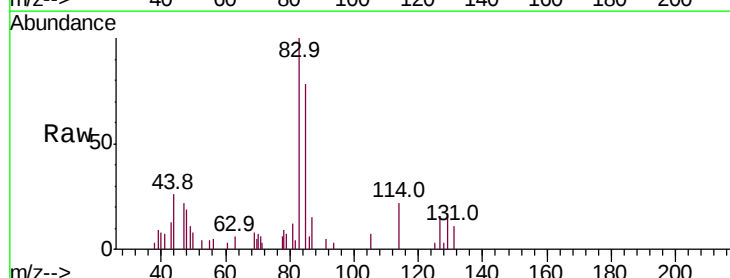
Delta R.T. -0.01 min

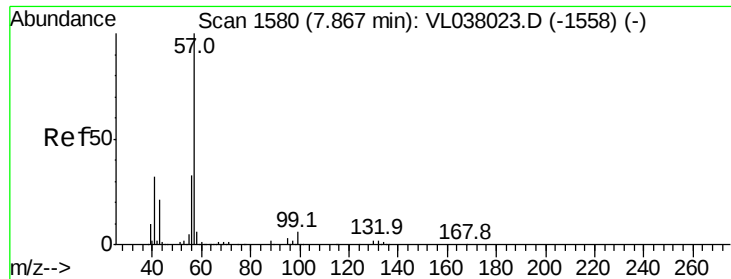
Lab File: VL038037.D

Acq: 16 Nov 2021 13:10

Tgt Ion: 83 Resp: 6131

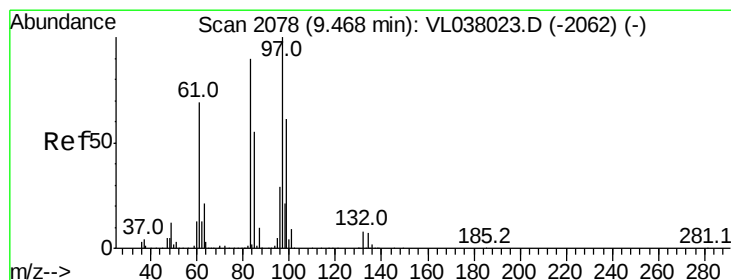
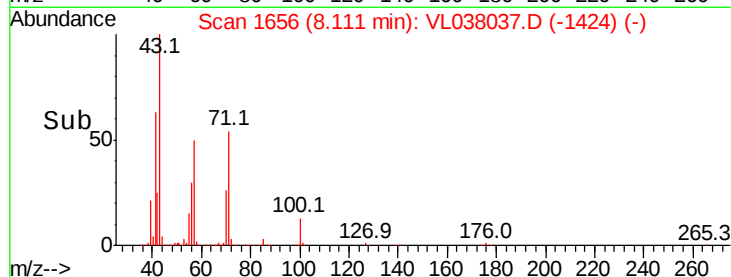
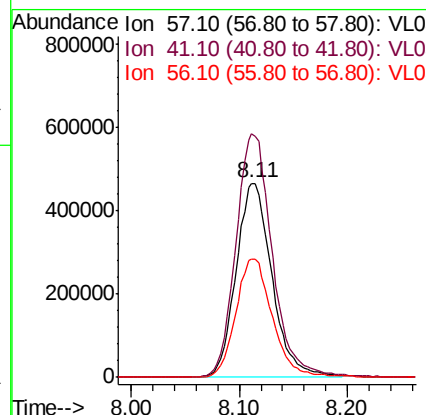
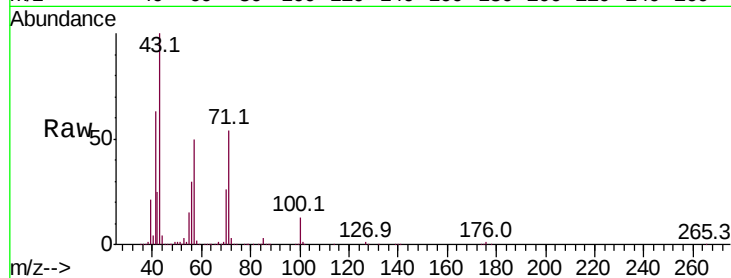
| Ion | Ratio | Lower | Upper |
|-----|-------|-------|-------|
| 83  | 100   |       |       |
| 85  | 77.9  | 51.6  | 77.4# |
| 127 | 15.5  | 6.6   | 10.0# |





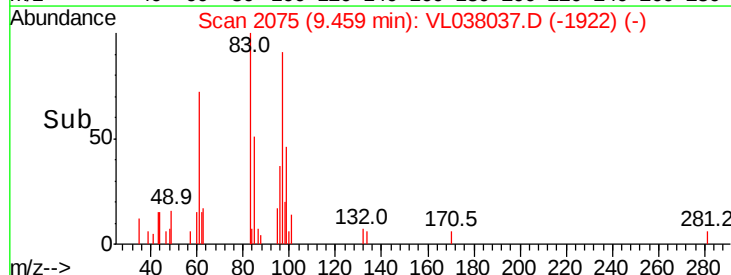
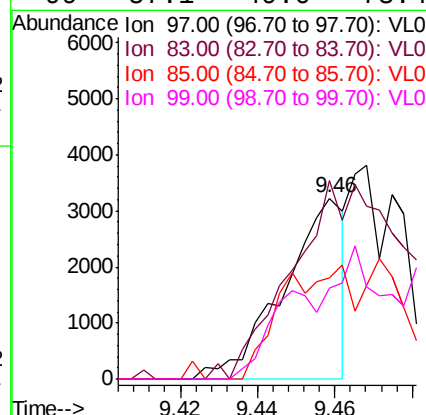
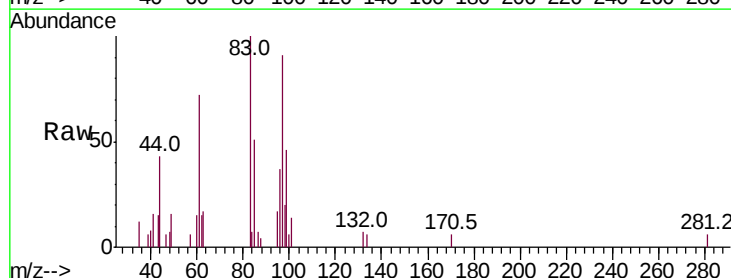
#44  
 2,2,4-Trimethylpentane  
 Concen: 2.494 ppbv  
 RT: 8.11  
 Delta R.T. MSVOA\_L  
 Lab File: ClientSampleId :  
 Acq: 16 Nov 2021 13:10

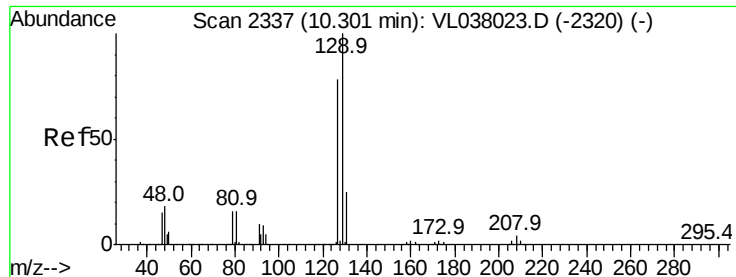
Tot Ion: 57 Resp: 1080821  
 Ion Ratio Lower Upper  
 57 100  
 41 128.1 26.2 39.2#  
 56 62.7 25.5 38.3#



#47  
 1,1,2-Trichloroethane  
 Concen: 0.035 ppbv  
 RT: 9.46 min Scan# 2075  
 Delta R.T. -0.01 min  
 Lab File: VL038037.D  
 Acq: 16 Nov 2021 13:10

Tgt Ion: 97 Resp: 3504  
 Ion Ratio Lower Upper  
 97 100  
 83 109.9 72.2 108.4#  
 85 45.9 43.8 65.8  
 99 57.1 49.0 73.4





#48

Dibromochloromethane

Concen: 9.287 ppbv

RT: 10.29

Delta R.T. MSVOA\_L

Lab File: ClientSampleId :

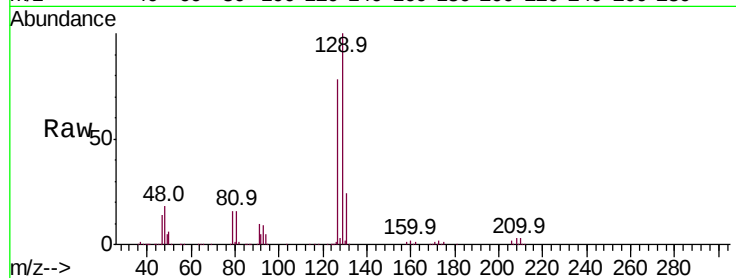
Acq: 16 Nov 2021 13:10

Tot Ion:129 Resp: 1495790

Ion Ratio Lower Upper

129 100

127 80.4 40.1 120.3



Abundance Ion 129.00 (128.70 to 129.70): V

Ion 127.00 (126.70 to 127.70): V

10.29

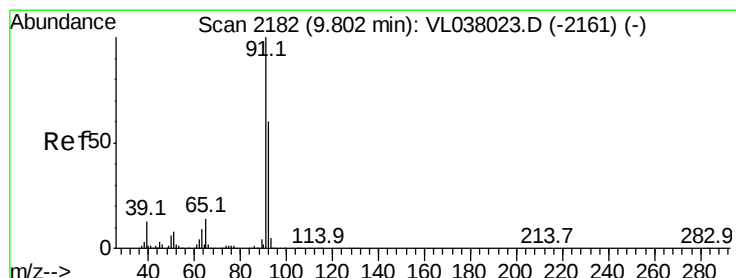
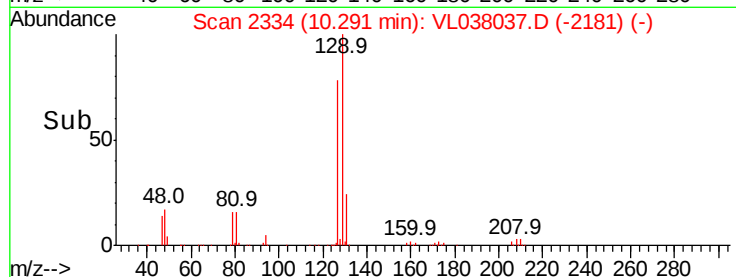
600000

400000

200000

0

Time-->



#53

Toluene

Concen: 9.379 ppbv

RT: 9.79 min Scan# 2179

Delta R.T. -0.01 min

Lab File: VL038037.D

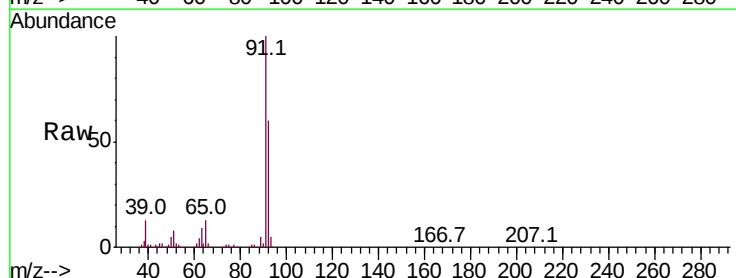
Acq: 16 Nov 2021 13:10

Tgt Ion: 91 Resp: 2767245

Ion Ratio Lower Upper

91 100

92 62.3 49.5 74.3



Abundance Ion 91.10 (90.80 to 91.80): VL0

Ion 92.10 (91.80 to 92.80): VL0

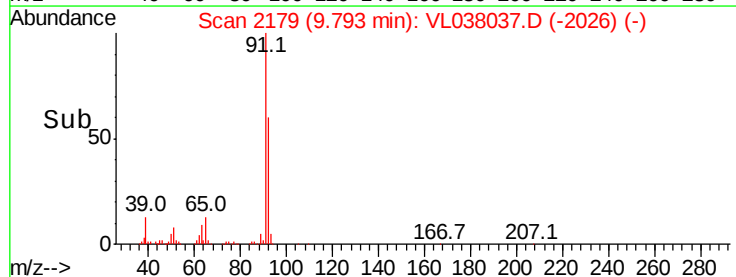
9.79

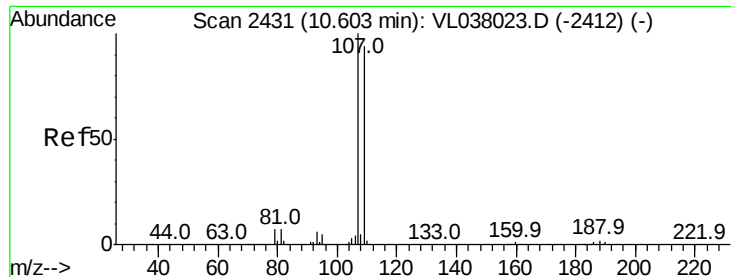
1000000

500000

0

Time-->





#54

1,2-Dibromoethane

Concen: 16.906 ppbv

RT: 10.60

Delta R.T. MSVOA\_L

Lab File: ClientSampleId :

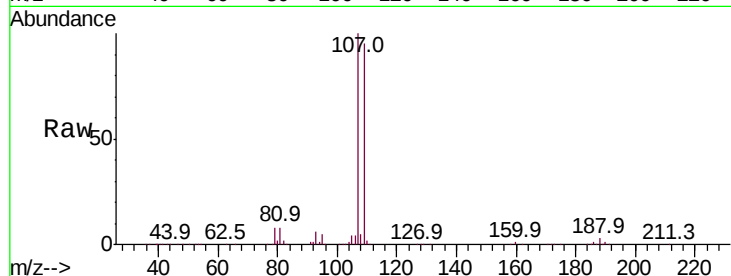
Acq: 16 Nov 2021 13:10

Tot Ion:107 Resp: 2346432

Ion Ratio Lower Upper

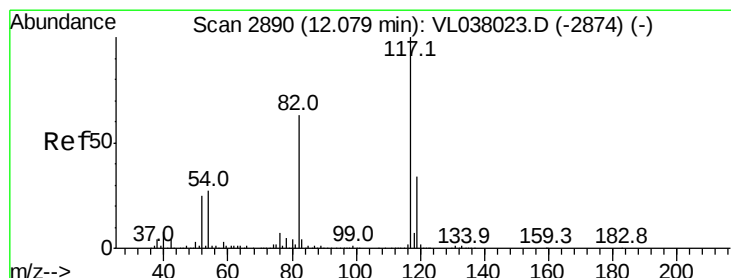
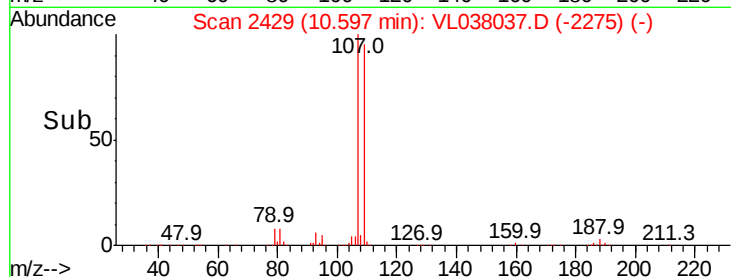
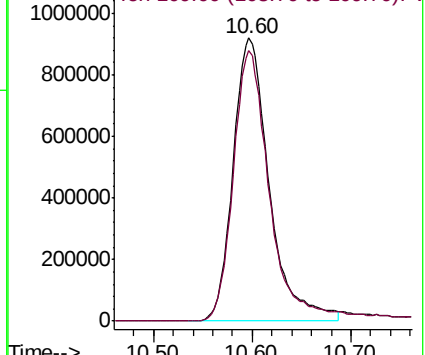
107 100

109 95.5 75.0 112.6



Abundance Ion 107.00 (106.70 to 107.70): V

Ion 109.00 (108.70 to 109.70): V



#55

Chlorobenzene-d5

Concen: 10.000 ppbv

RT: 12.07 min Scan# 2887

Delta R.T. -0.01 min

Lab File: VL038037.D

Acq: 16 Nov 2021 13:10

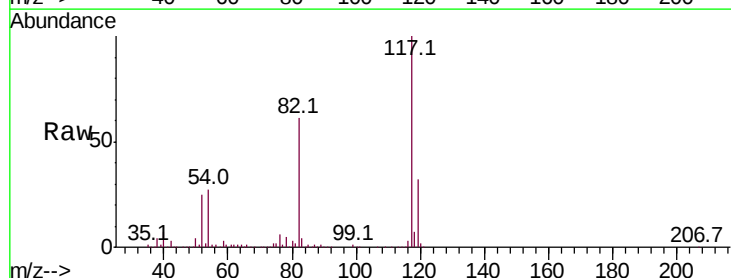
Tgt Ion:117 Resp: 2353438

Ion Ratio Lower Upper

117 100

82 67.2 50.0 75.0

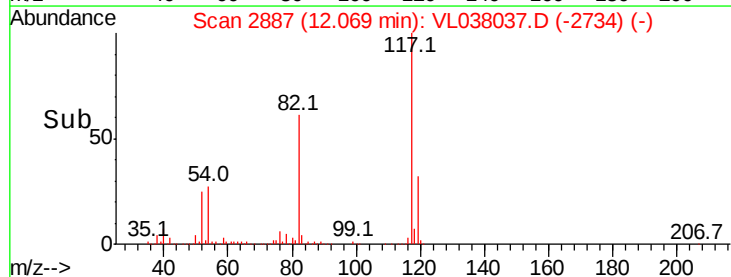
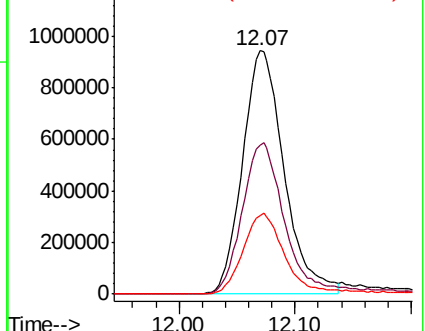
119 34.8 44.6 67.0#

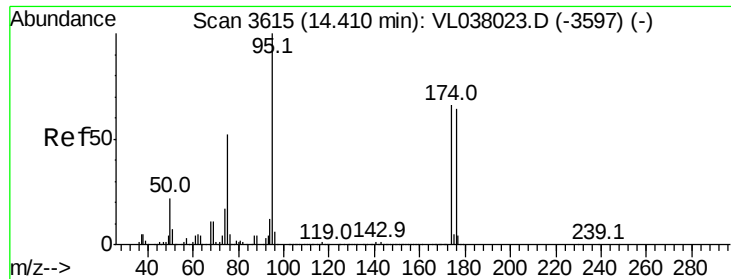


Abundance Ion 117.10 (116.80 to 117.80): V

Ion 82.10 (81.80 to 82.80): VL0

Ion 119.10 (118.80 to 119.80): V





#68

1-Bromo-4-Fluorobenzene

Concen: 10.079 ppbv

RT: 14.40

Delta R.T. MSVOA\_L

Lab File: ClientSampleId :

Acq: 16 Nov 2021 13:10

Tot Ion: 95 Resp: 1713861

Ion Ratio Lower Upper

95 100

174 69.3 55.0 82.6

175 5.1 4.2 6.2

