

Data Path : Z:\voasrv\HPCHEM1\MSVOA\_L\Data\VL111825\  
 Data File : VL043218.D  
 Acq On : 18 Nov 2025 18:15  
 Operator : SY/MD  
 Sample : Q3650-03  
 Misc : 400mL/MSVOA\_L  
 ALS Vial : 1 Sample Multiplier: 1

Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 IA1

Quant Time: Nov 19 01:38:10 2025  
 Quant Method : Z:\voasrv\HPCHEM1\MSVOA\_L\methods\VL111825AIR.M  
 Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 26 06:05:16 2022  
 QLast Update : Wed Nov 19 01:11:25 2025  
 Response via : Initial Calibration

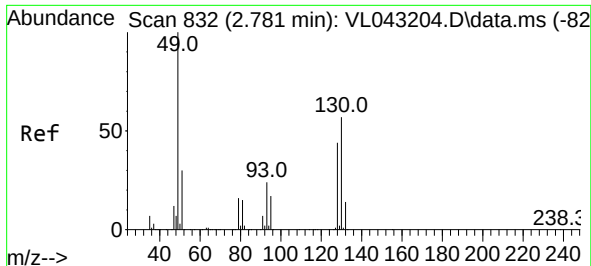
| Compound                      | R.T. QIon |       | Response | Conc     | Units      | Dev(Min) |
|-------------------------------|-----------|-------|----------|----------|------------|----------|
| -----                         |           |       |          |          |            |          |
| Internal Standards            |           |       |          |          |            |          |
| 1) Bromochloromethane         | 2.787     | 49    | 98200    | 10.000   | ppbv       | 0.00     |
| 33) 1,4-Difluorobenzene       | 3.955     | 114   | 259525   | 10.000   | ppbv       | 0.00     |
| 55) Chlorobenzene-d5          | 8.875     | 117   | 203499   | 10.000   | ppbv       | 0.00     |
| System Monitoring Compounds   |           |       |          |          |            |          |
| 68) 1-Bromo-4-Fluorobenzene   | 10.370    | 95    | 154823   | 10.379   | ppbv       | 0.00     |
| Spiked Amount                 | 10.000    | Range | 65 - 135 | Recovery | = 103.800% |          |
| Target Compounds              |           |       |          |          |            |          |
|                               |           |       |          |          | Qvalue     |          |
| 2) Dichlorodifluoromethane    | 1.499     | 85    | 5572     | 0.402    | ppbv       | 99       |
| 3) Chlorodifluoromethane      | 1.476     | 51    | 4358     | 0.320    | ppbv       | 98       |
| 4) Chloromethane              | 1.531     | 50    | 2438     | 0.471    | ppbv       | 98       |
| 9) Propene                    | 1.489     | 41    | 4038     | 0.698    | ppbv #     | 86       |
| 11) Trichlorofluoromethane    | 1.877     | 101   | 2694     | 0.201    | ppbv       | 87       |
| 12) 1,1,2-Trichlorotrifluo... | 2.143     | 101   | 596      | 0.057    | ppbv       | 89       |
| 13) Ethanol                   | 1.722     | 45    | 89190    | 43.851   | ppbv       | 99       |
| 15) Acetone                   | 1.835     | 43    | 695771   | 50.997   | ppbv       | 100      |
| 16) 1,3-Butadiene             | 1.622     | 39    | 1543     | 0.254    | ppbv #     | 29       |
| 17) tert-Butyl alcohol        | 2.042     | 59    | 830      | 0.046    | ppbv #     | 27       |
| 19) Isopropyl Alcohol         | 1.884     | 45    | 73444    | 9.527    | ppbv #     | 1        |
| 20) Methylene Chloride        | 2.062     | 84    | 4770     | 0.436    | ppbv #     | 89       |
| 23) Vinyl Acetate             | 2.457     | 43    | 961      | 0.058    | ppbv #     | 86       |
| 25) Ethyl Acetate             | 2.835     | 43    | 10417    | 0.354    | ppbv #     | 76       |
| 26) Hexane                    | 2.826     | 57    | 2400     | 0.186    | ppbv #     | 12       |
| 27) Carbon Disulfide          | 2.149     | 76    | 603      | 0.046    | ppbv #     | 1        |
| 31) cis-1,2-Dichloroethene    | 2.839     | 61    | 1105     | 0.086    | ppbv #     | 33       |
| 34) 2-Butanone                | 2.557     | 43    | 4492     | 0.245    | ppbv       | 98       |
| 35) Carbon Tetrachloride      | 3.758     | 117   | 925      | 0.047    | ppbv #     | 75       |
| 36) Benzene                   | 3.651     | 78    | 1368     | 0.055    | ppbv #     | 90       |
| 39) 1,2-Dichloropropane       | 3.955     | 63    | 66445    | 7.304    | ppbv #     | 26       |
| 43) Methyl Methacrylate       | 4.878     | 69    | 6270     | 0.475    | ppbv       | 92       |
| 53) Toluene                   | 6.923     | 91    | 14272    | 0.485    | ppbv       | 94       |
| 58) Ethyl Benzene             | 9.529     | 91    | 1485     | 0.038    | ppbv       | 95       |
| 59) m/p-Xylene                | 9.551     | 91    | 1512     | 0.048    | ppbv #     | 31       |
| 60) o-Xylene                  | 9.963     | 91    | 1029     | 0.033    | ppbv #     | 34       |
| 61) Styrene                   | 9.869     | 104   | 1164     | 0.085    | ppbv #     | 53       |
| 74) 1,2,4-Trimethylbenzene    | 11.532    | 105   | 3182     | 0.091    | ppbv #     | 56       |
| 79) Naphthalene               | 13.513    | 128   | 999      | 0.032    | ppbv #     | 83       |
| -----                         |           |       |          |          |            |          |

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

**Instrument :**  
MSVOA\_L  
**ClientSampleId :**  
IA1

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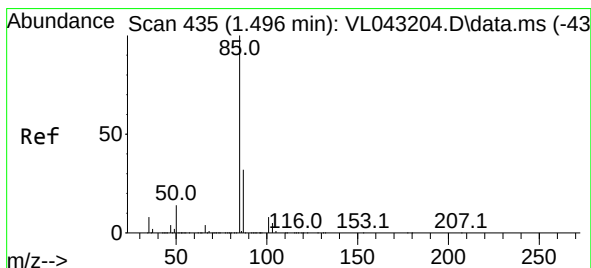
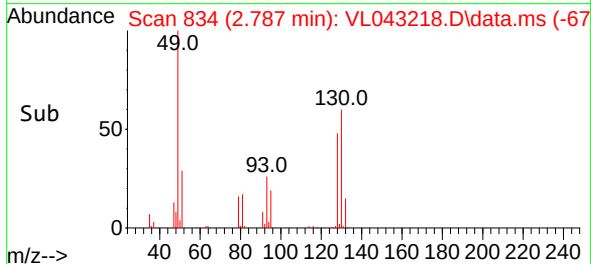
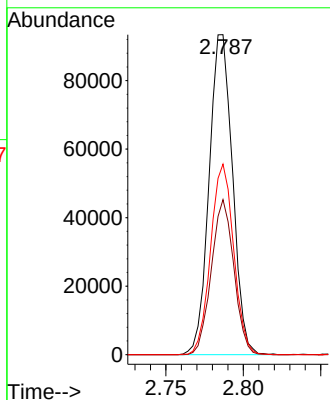
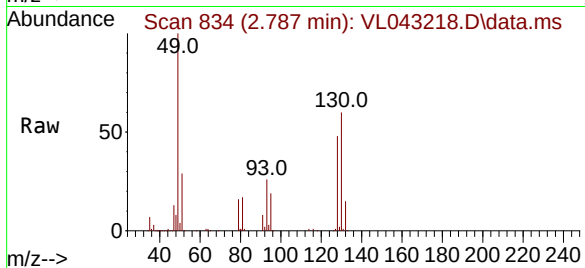




#1  
Bromochloromethane  
Concen: 10.000 ppbv  
RT: 2.787 min Scan# 832  
Delta R.T. 0.006 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

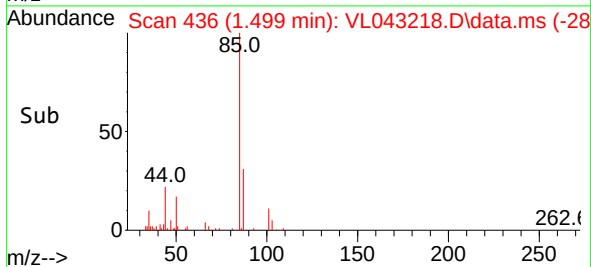
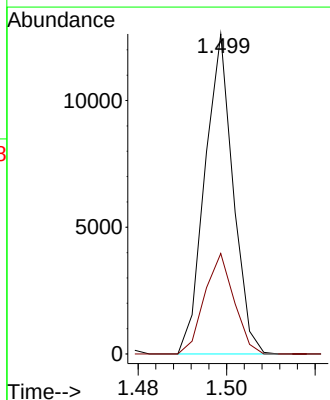
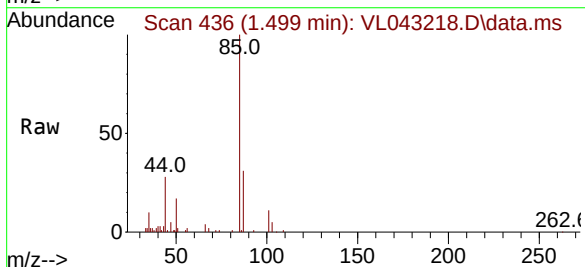
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA1

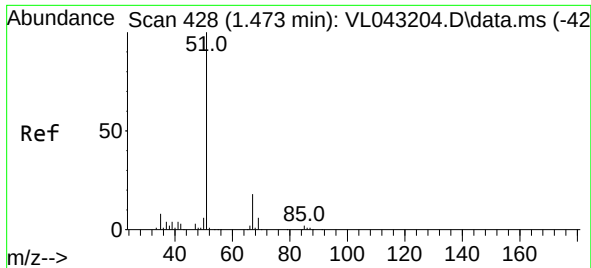
Tgt Ion: 49 Resp: 98200  
Ion Ratio Lower Upper  
49 100  
128 46.6 23.0 69.0  
130 58.6 29.9 89.7



#2  
Dichlorodifluoromethane  
Concen: 0.402 ppbv  
RT: 1.499 min Scan# 436  
Delta R.T. 0.003 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

Tgt Ion: 85 Resp: 5572  
Ion Ratio Lower Upper  
85 100  
87 31.4 25.4 38.2

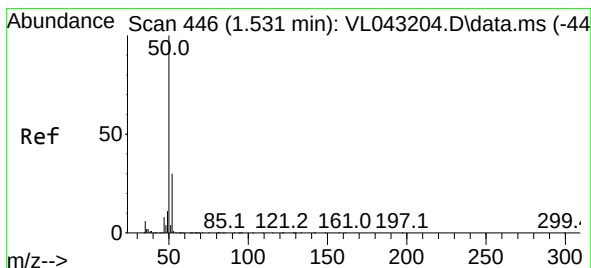
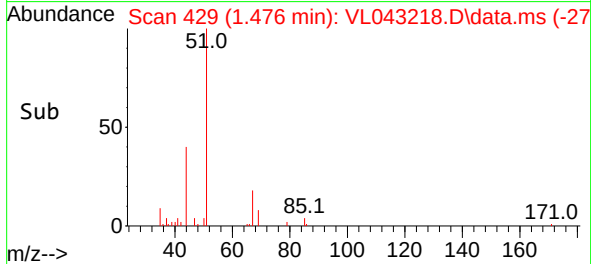
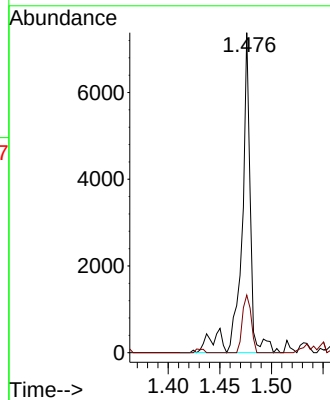
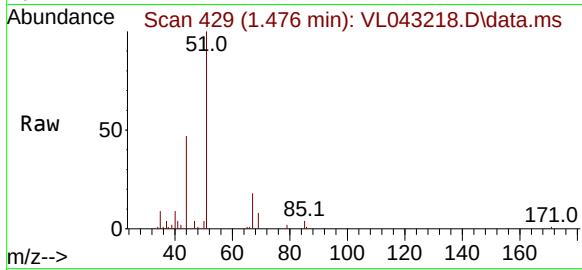




#3  
Chlorodifluoromethane  
Concen: 0.320 ppbv  
RT: 1.476 min Scan# 41  
Delta R.T. 0.003 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

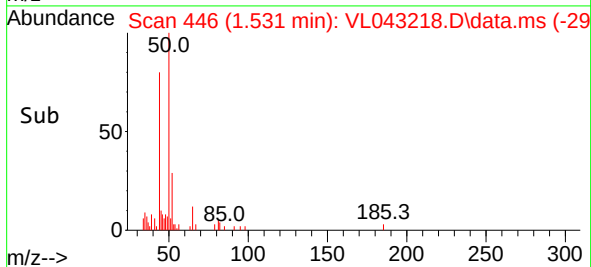
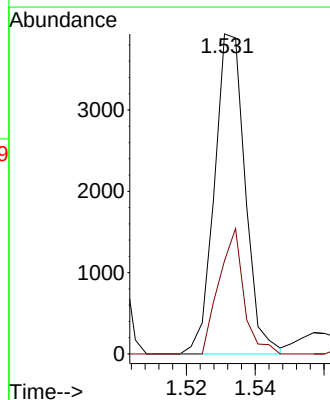
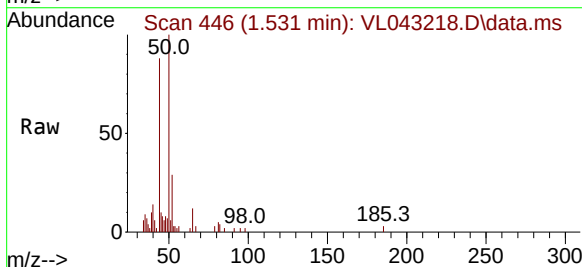
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA1

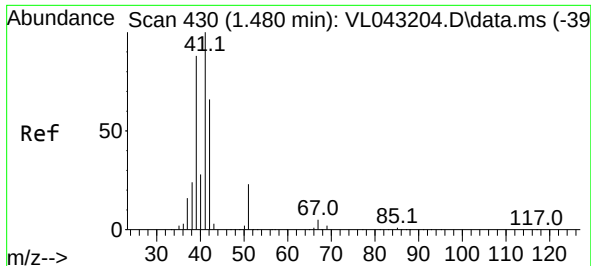
Tgt Ion: 51 Resp: 4358  
Ion Ratio Lower Upper  
51 100  
67 17.7 14.9 22.3



#4  
Chloromethane  
Concen: 0.471 ppbv  
RT: 1.531 min Scan# 446  
Delta R.T. -0.000 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

Tgt Ion: 50 Resp: 2438  
Ion Ratio Lower Upper  
50 100  
52 29.2 24.1 36.1





#9

Propene

Concen: 0.698 ppbv

RT: 1.489 min Scan# 41

Delta R.T. 0.009 min

Lab File: VL043218.D

Acq: 18 Nov 2025 18:15

Instrument :

MSVOA\_L

ClientSampleId :

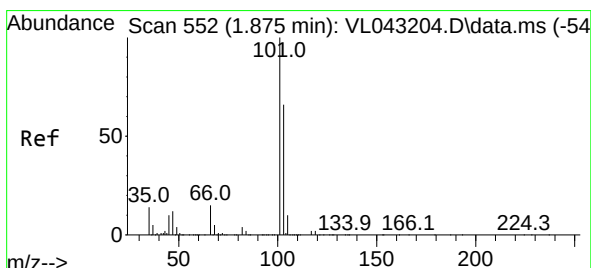
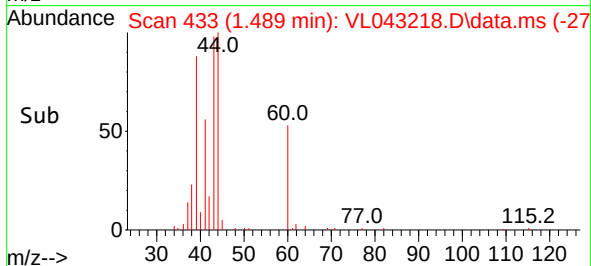
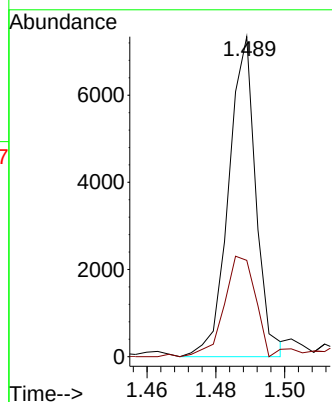
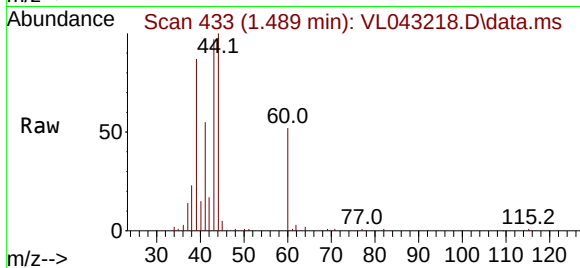
IA1

Tgt Ion: 41 Resp: 4038

Ion Ratio Lower Upper

41 100

42 0.0 3.7 5.5#



#11

Trichlorofluoromethane

Concen: 0.201 ppbv

RT: 1.877 min Scan# 553

Delta R.T. 0.003 min

Lab File: VL043218.D

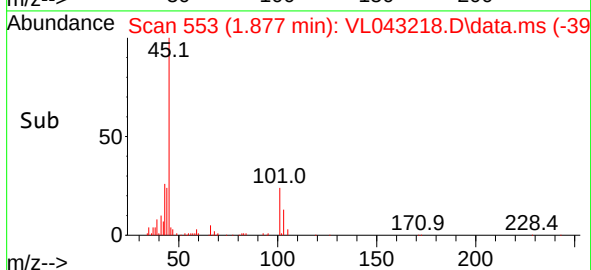
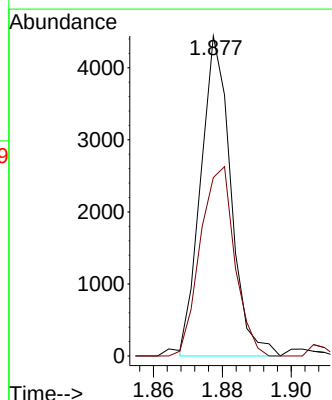
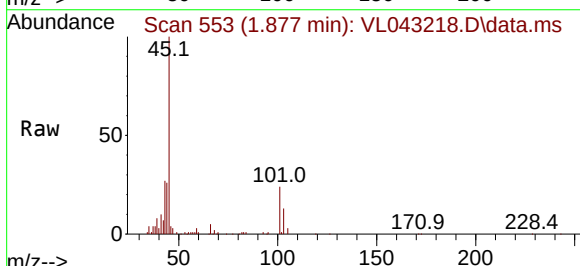
Acq: 18 Nov 2025 18:15

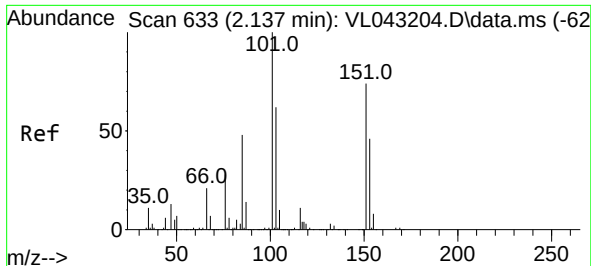
Tgt Ion:101 Resp: 2694

Ion Ratio Lower Upper

101 100

103 55.8 52.6 79.0

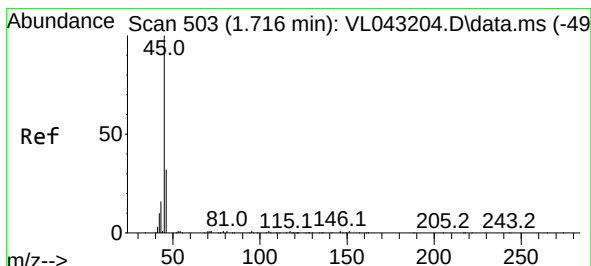
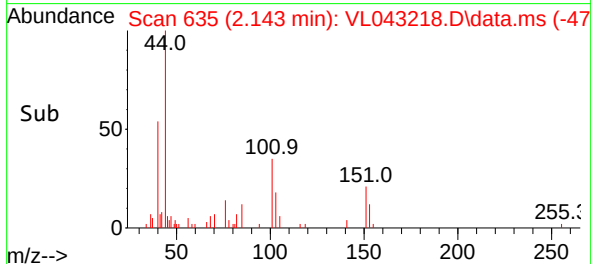
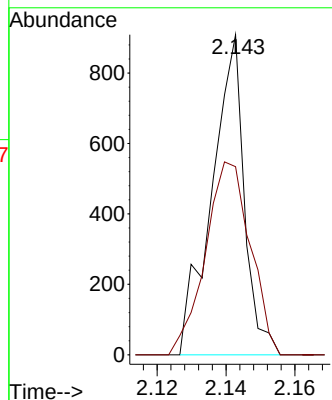
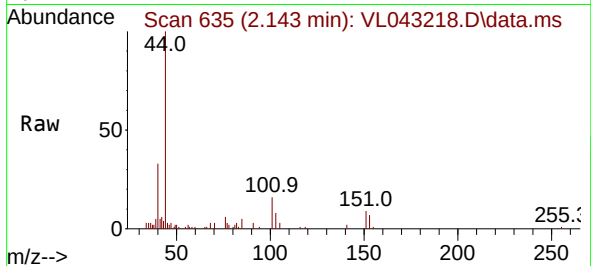




#12  
1,1,2-Trichlorotrifluoroethane  
Concen: 0.057 ppbv  
RT: 2.143 min Scan# 61  
Delta R.T. 0.006 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

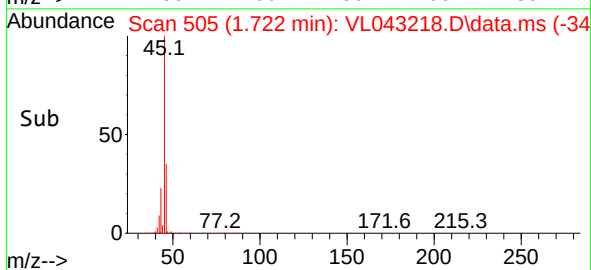
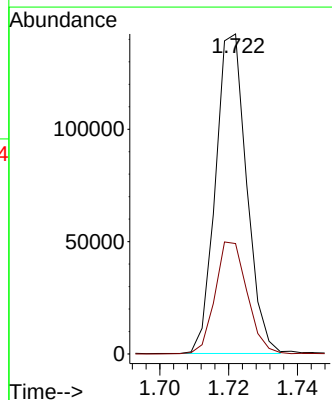
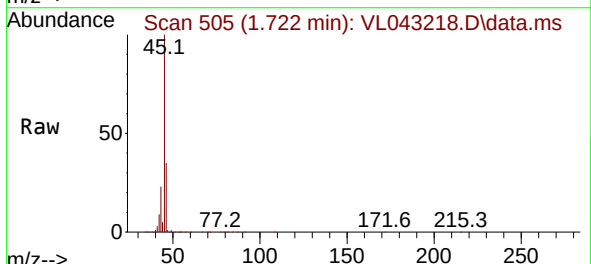
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA1

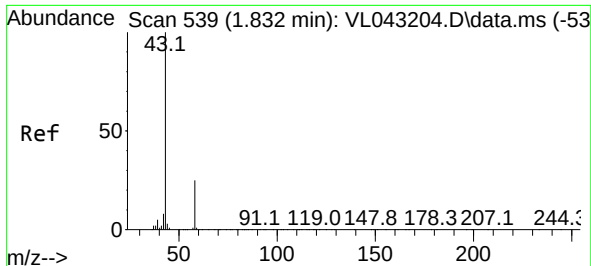
Tgt Ion:101 Resp: 596  
Ion Ratio Lower Upper  
101 100  
151 83.2 59.2 88.8



#13  
Ethanol  
Concen: 43.851 ppbv  
RT: 1.722 min Scan# 505  
Delta R.T. 0.006 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

Tgt Ion: 45 Resp: 89190  
Ion Ratio Lower Upper  
45 100  
46 36.5 15.0 59.8

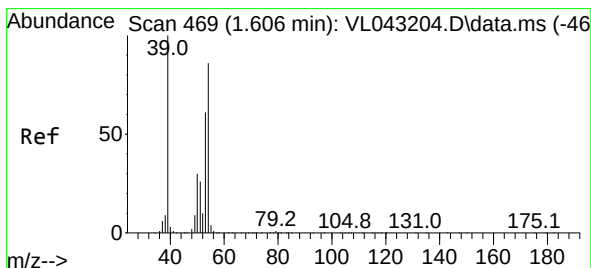
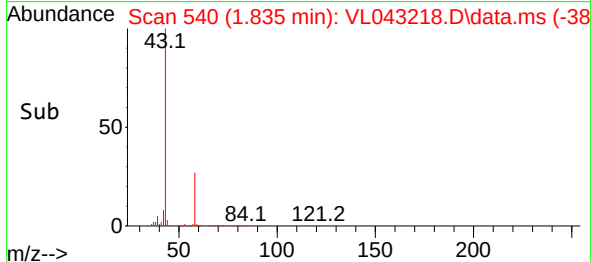
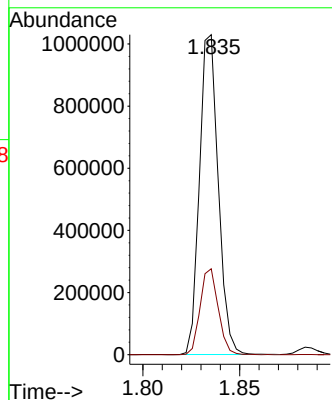
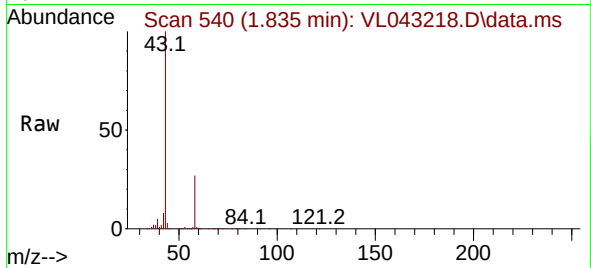




#15  
Acetone  
Concen: 50.997 ppbv  
RT: 1.835 min Scan# 54  
Delta R.T. 0.003 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

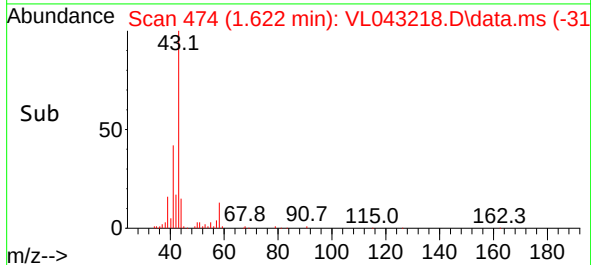
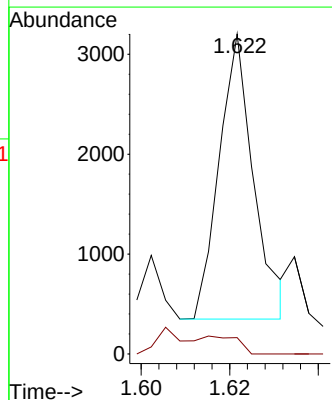
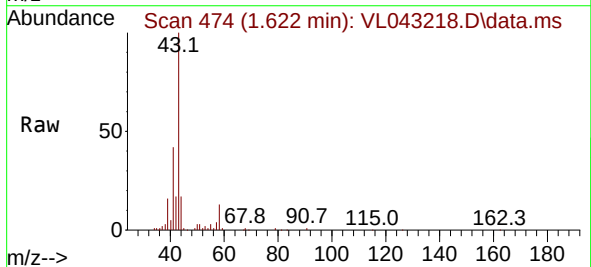
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA1

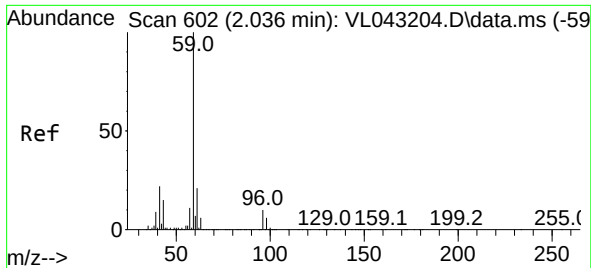
Tgt Ion: 43 Resp: 695771  
Ion Ratio Lower Upper  
43 100  
58 25.9 20.7 31.1



#16  
1,3-Butadiene  
Concen: 0.254 ppbv  
RT: 1.622 min Scan# 474  
Delta R.T. 0.016 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

Tgt Ion: 39 Resp: 1543  
Ion Ratio Lower Upper  
39 100  
54 13.9 59.4 89.2#

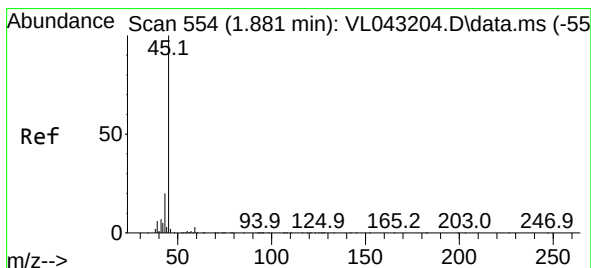
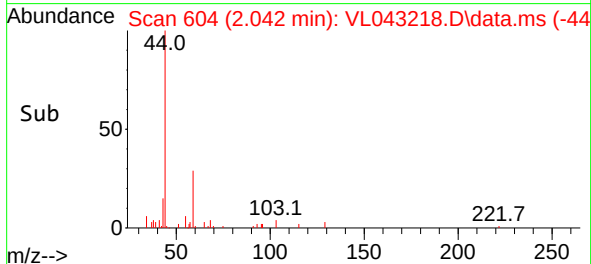
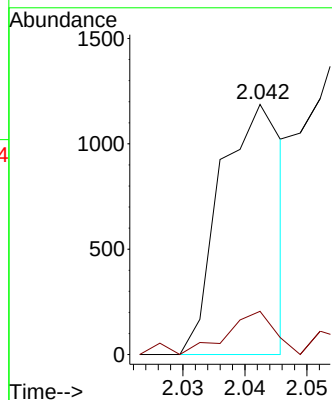
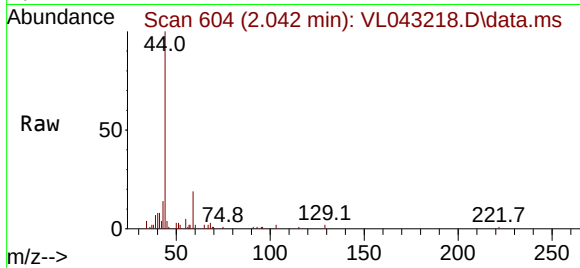




#17  
tert-Butyl alcohol  
Concen: 0.046 ppbv  
RT: 2.042 min Scan# 602  
Delta R.T. 0.006 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

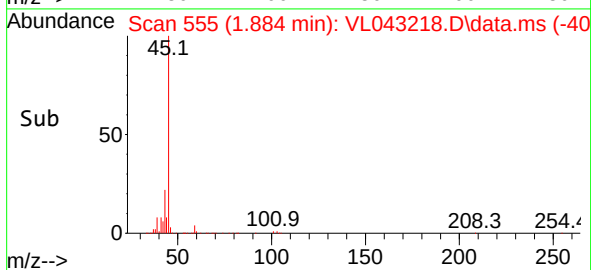
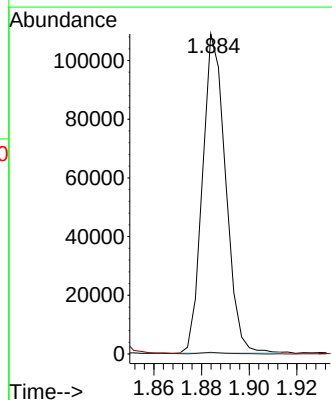
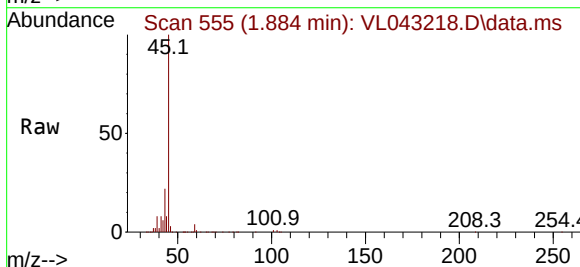
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA1

Tgt Ion: 59 Resp: 830  
Ion Ratio Lower Upper  
59 100  
57 39.0 9.0 13.4#

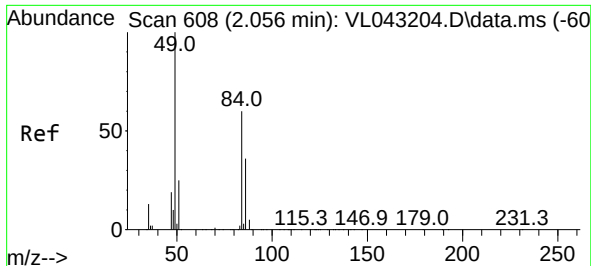


#19  
Isopropyl Alcohol  
Concen: 9.527 ppbv  
RT: 1.884 min Scan# 555  
Delta R.T. 0.003 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

Tgt Ion: 45 Resp: 73444  
Ion Ratio Lower Upper  
45 100  
58 245.2 31.3 46.9#





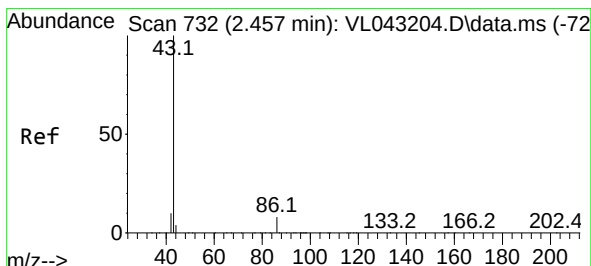
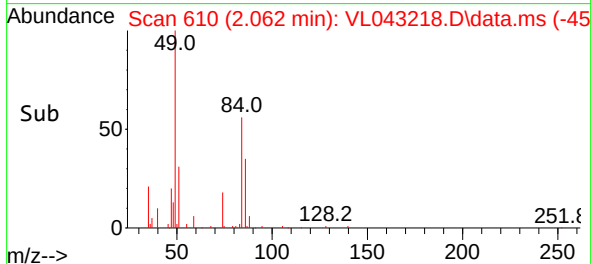
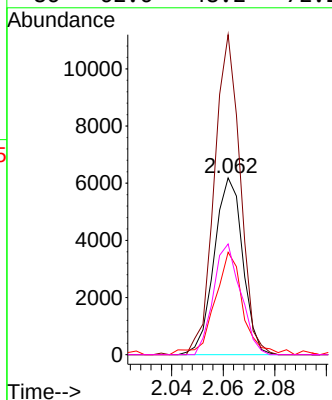
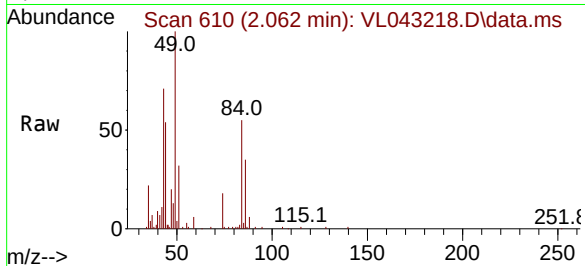


#20  
Methylene Chloride  
Concen: 0.436 ppbv  
RT: 2.062 min Scan# 610  
Delta R.T. 0.006 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

Instrument :  
MSVOA\_L  
ClientSampleId :  
IA1

Tgt Ion: 84 Resp: 4770

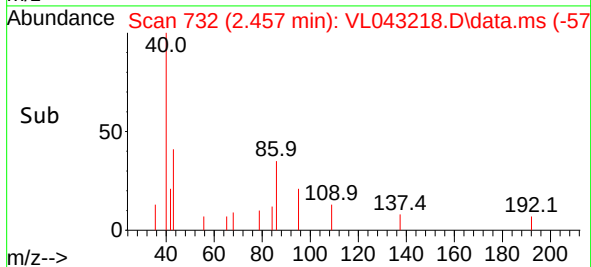
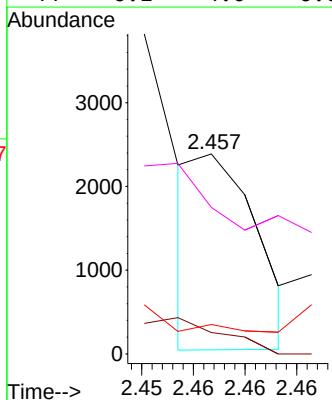
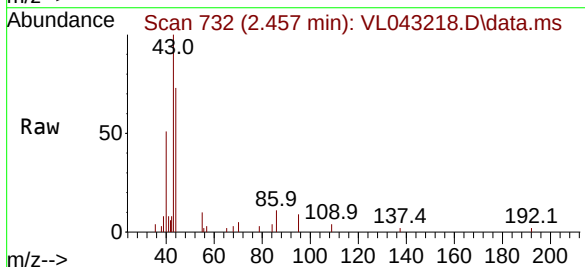
| Ion | Ratio | Lower | Upper |
|-----|-------|-------|-------|
| 84  | 100   |       |       |
| 49  | 181.1 | 132.9 | 199.3 |
| 51  | 56.7  | 34.8  | 52.2# |
| 86  | 62.6  | 48.2  | 72.2  |

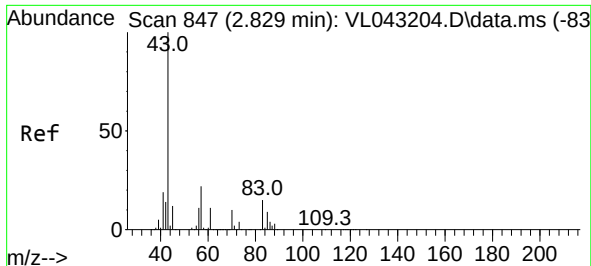


#23  
Vinyl Acetate  
Concen: 0.058 ppbv  
RT: 2.457 min Scan# 732  
Delta R.T. -0.000 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

Tgt Ion: 43 Resp: 961

| Ion | Ratio | Lower | Upper |
|-----|-------|-------|-------|
| 43  | 100   |       |       |
| 86  | 16.3  | 6.2   | 9.2#  |
| 42  | 5.8   | 8.0   | 12.0# |
| 44  | 6.1   | 4.0   | 6.0#  |

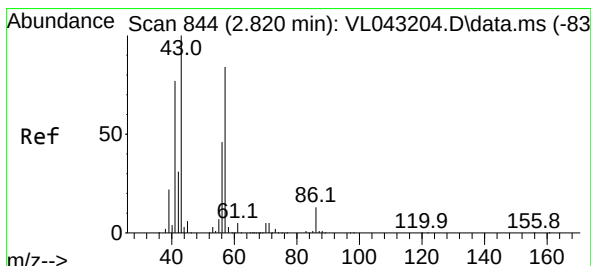
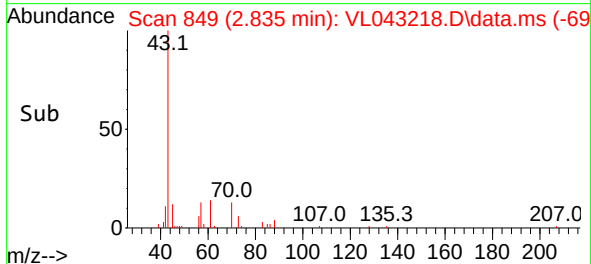
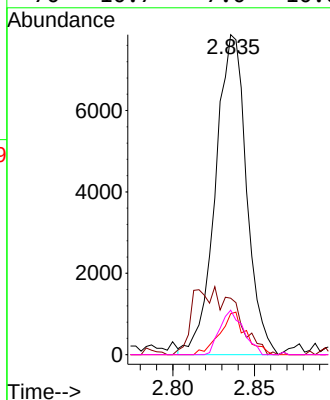
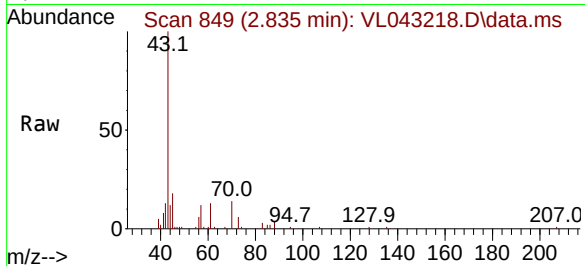




#25  
Ethyl Acetate  
Concen: 0.354 ppbv  
RT: 2.835 min Scan# 847  
Delta R.T. 0.006 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

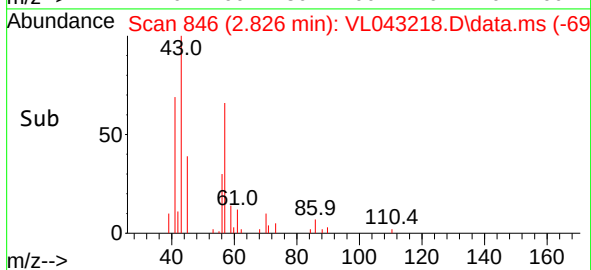
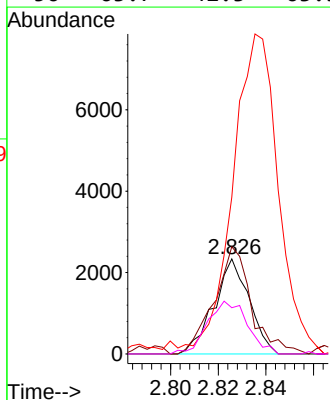
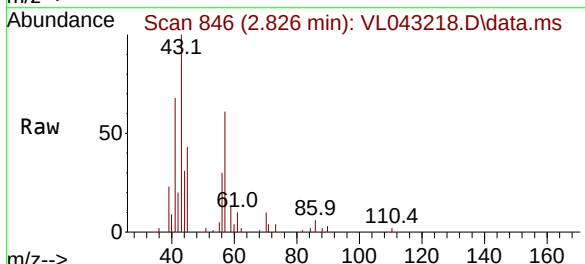
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA1

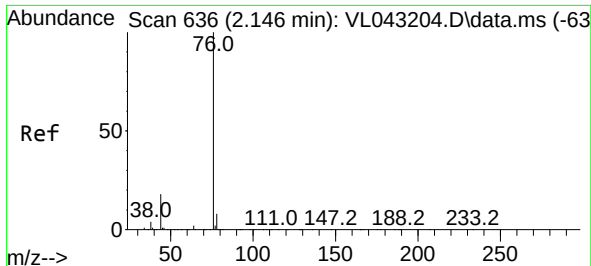
|          |       |       |       |
|----------|-------|-------|-------|
| Tgt Ion: | 43    | Resp: | 10417 |
| Ion      | Ratio | Lower | Upper |
| 43       | 100   |       |       |
| 45       | 30.5  | 8.1   | 12.1# |
| 61       | 11.1  | 7.0   | 10.4# |
| 70       | 10.7  | 7.0   | 10.6# |



#26  
Hexane  
Concen: 0.186 ppbv  
RT: 2.826 min Scan# 846  
Delta R.T. 0.006 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

|          |       |       |        |
|----------|-------|-------|--------|
| Tgt Ion: | 57    | Resp: | 2400   |
| Ion      | Ratio | Lower | Upper  |
| 57       | 100   |       |        |
| 41       | 124.7 | 74.6  | 111.8# |
| 43       | 431.2 | 179.0 | 268.4# |
| 56       | 63.7  | 42.3  | 63.5#  |





#27

Carbon Disulfide

Concen: 0.046 ppbv

RT: 2.149 min Scan# 61

Delta R.T. 0.003 min

Lab File: VL043218.D

Acq: 18 Nov 2025 18:15

Instrument :

MSVOA\_L

ClientSampleId :

IA1

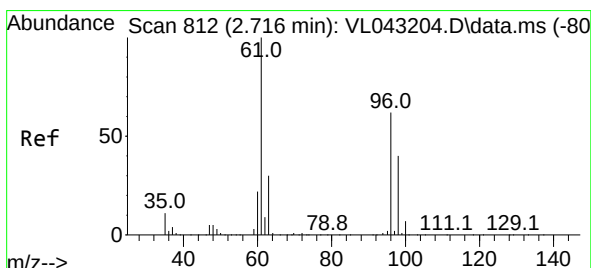
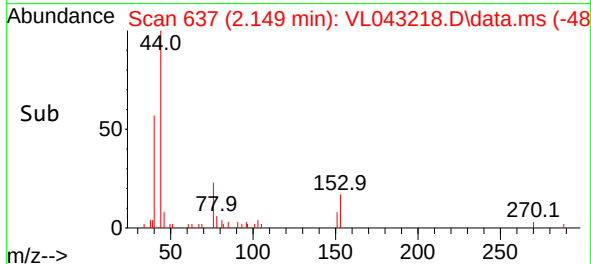
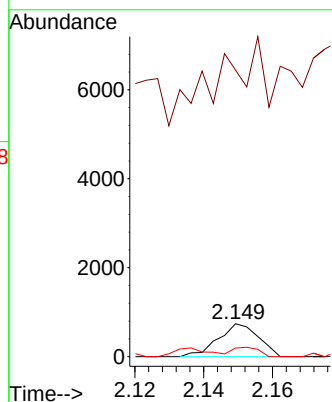
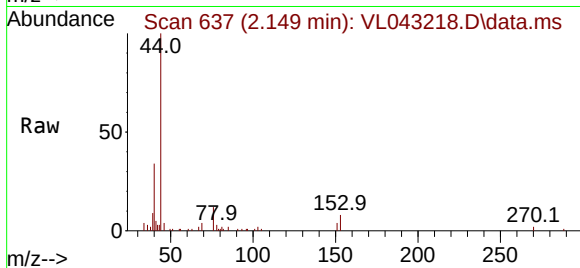
Tgt Ion: 76 Resp: 603

Ion Ratio Lower Upper

76 100

44 493.2 16.1 24.1#

78 45.8 9.6 14.4#



#31

cis-1,2-Dichloroethene

Concen: 0.086 ppbv

RT: 2.839 min Scan# 850

Delta R.T. 0.123 min

Lab File: VL043218.D

Acq: 18 Nov 2025 18:15

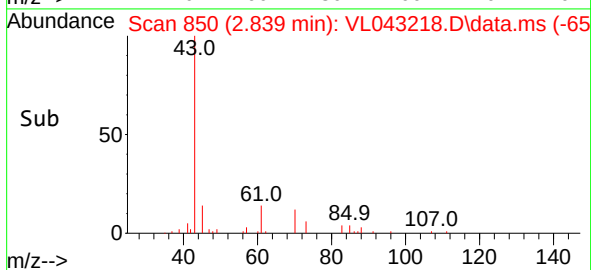
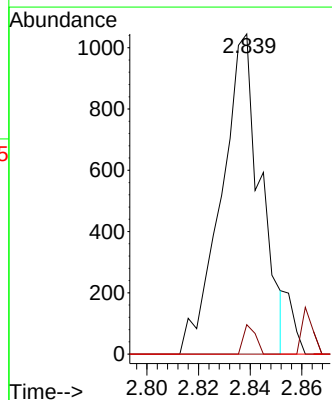
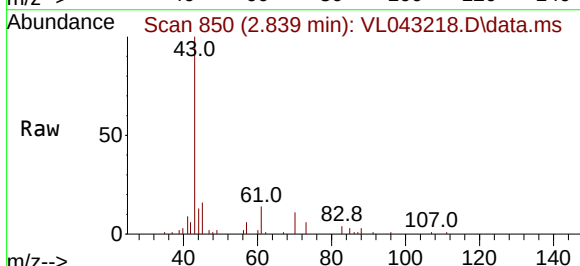
Tgt Ion: 61 Resp: 1105

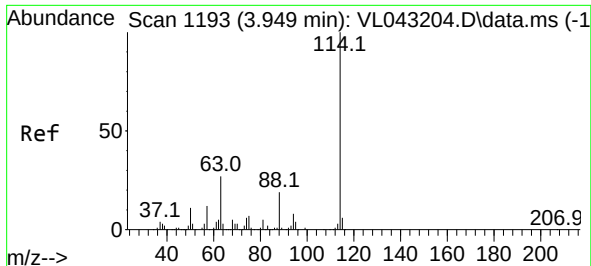
Ion Ratio Lower Upper

61 100

96 9.2 49.3 73.9#

98 0.0 32.1 48.1#

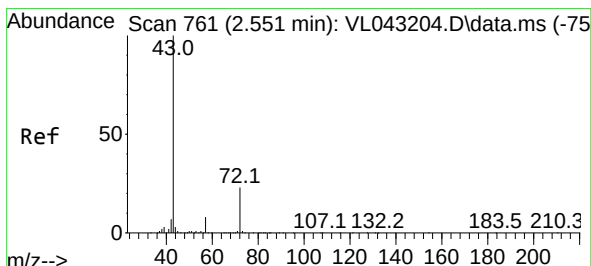
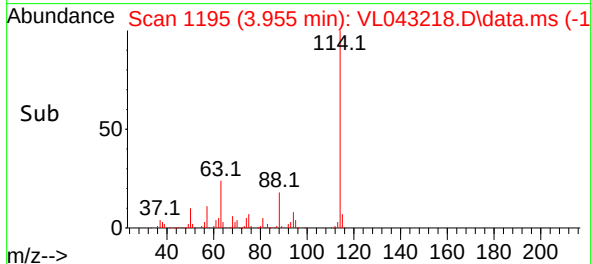
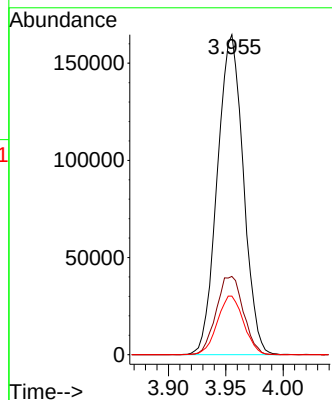
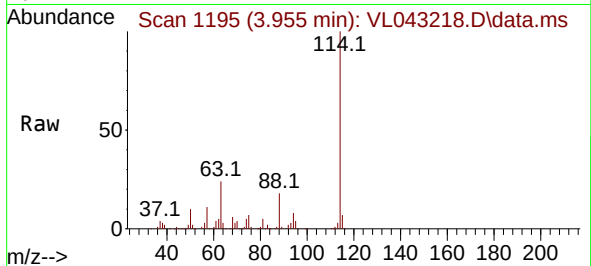




#33  
 1,4-Difluorobenzene  
 Concen: 10.000 ppbv  
 RT: 3.955 min Scan# 1193  
 Delta R.T. 0.006 min  
 Lab File: VL043218.D  
 Acq: 18 Nov 2025 18:15

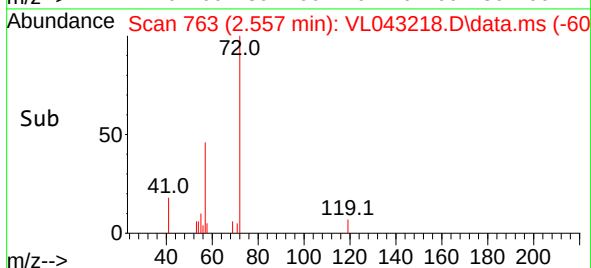
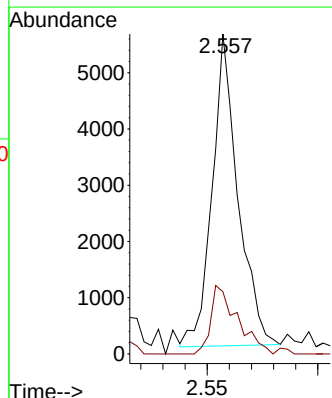
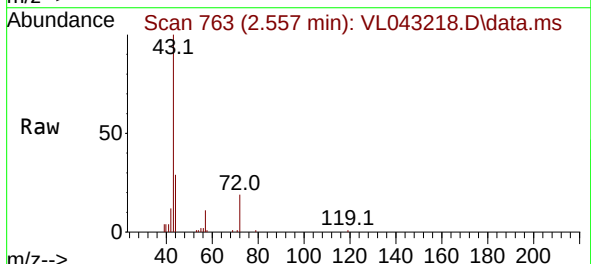
Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 IA1

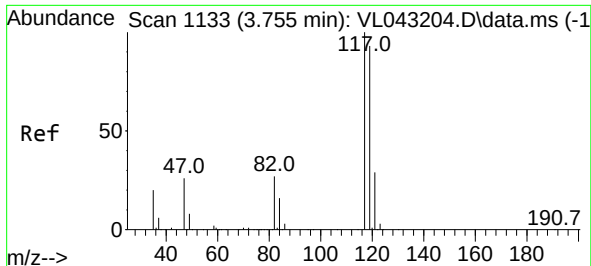
Tgt Ion:114 Resp: 259525  
 Ion Ratio Lower Upper  
 114 100  
 63 25.6 21.0 31.6  
 88 18.5 14.9 22.3



#34  
 2-Butanone  
 Concen: 0.245 ppbv  
 RT: 2.557 min Scan# 763  
 Delta R.T. 0.006 min  
 Lab File: VL043218.D  
 Acq: 18 Nov 2025 18:15

Tgt Ion: 43 Resp: 4492  
 Ion Ratio Lower Upper  
 43 100  
 72 23.4 18.1 27.1

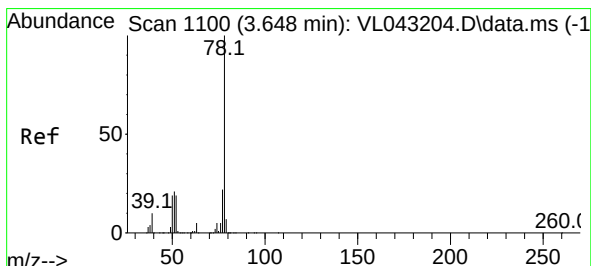
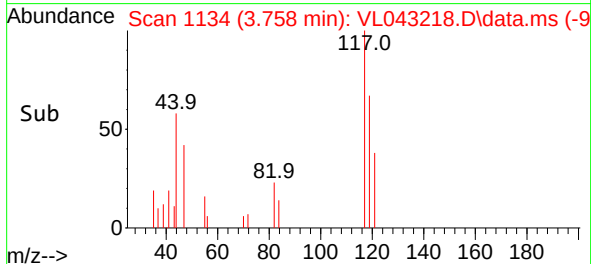
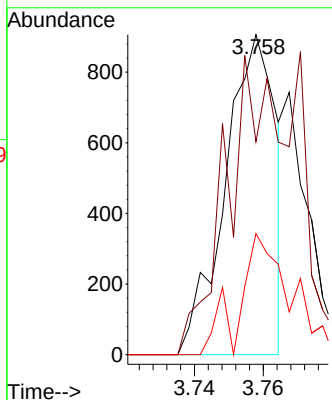
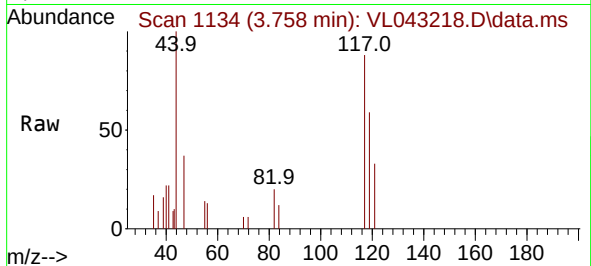




#35  
Carbon Tetrachloride  
Concen: 0.047 ppbv  
RT: 3.758 min Scan# 1133  
Delta R.T. 0.003 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

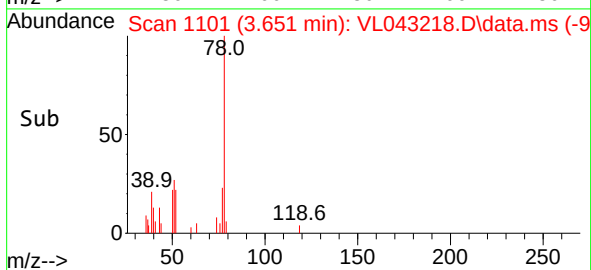
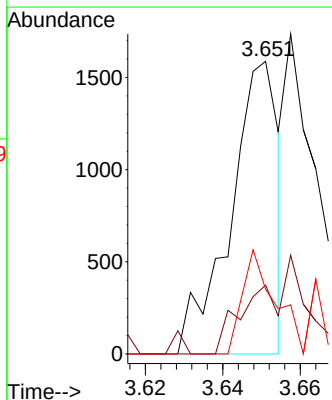
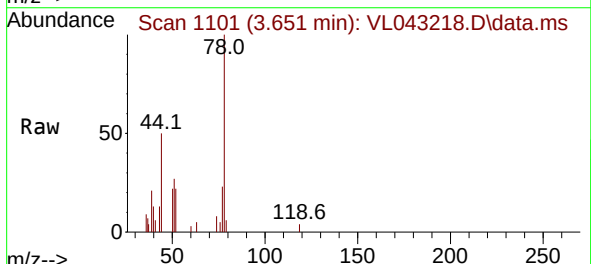
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA1

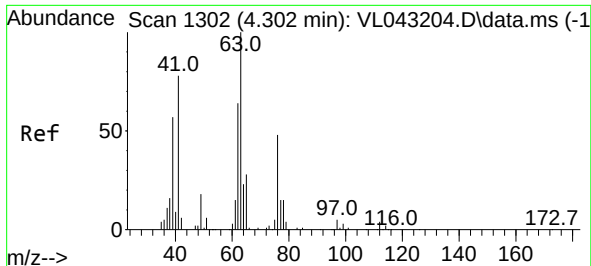
Tgt Ion:117 Resp: 925  
Ion Ratio Lower Upper  
117 100  
119 66.6 74.6 112.0#  
121 37.9 23.2 34.8#



#36  
Benzene  
Concen: 0.055 ppbv  
RT: 3.651 min Scan# 1101  
Delta R.T. 0.003 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

Tgt Ion: 78 Resp: 1368  
Ion Ratio Lower Upper  
78 100  
77 15.6 17.5 26.3#  
50 22.2 15.5 23.3





#39

1,2-Dichloropropane

Concen: 7.304 ppbv

RT: 3.955 min Scan# 1195

Delta R.T. -0.347 min

Lab File: VL043218.D

Acq: 18 Nov 2025 18:15

Instrument :

MSVOA\_L

ClientSampleId :

IA1

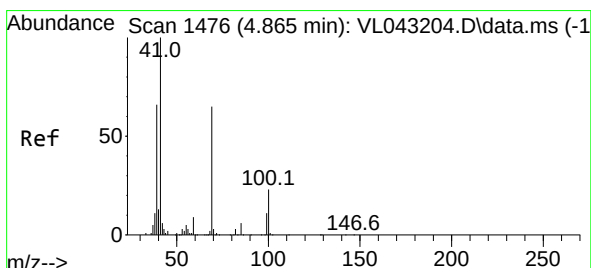
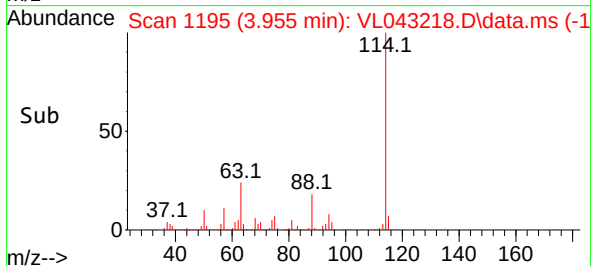
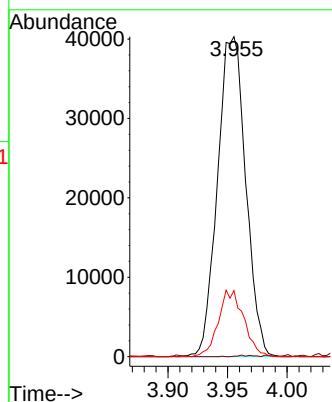
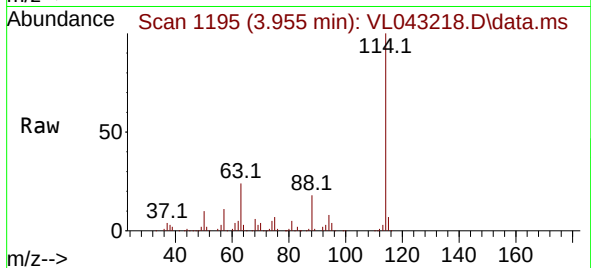
Tgt Ion: 63 Resp: 66445

Ion Ratio Lower Upper

63 100

41 0.0 62.6 93.8#

62 20.7 51.0 76.6#



#43

Methyl Methacrylate

Concen: 0.475 ppbv

RT: 4.878 min Scan# 1480

Delta R.T. 0.013 min

Lab File: VL043218.D

Acq: 18 Nov 2025 18:15

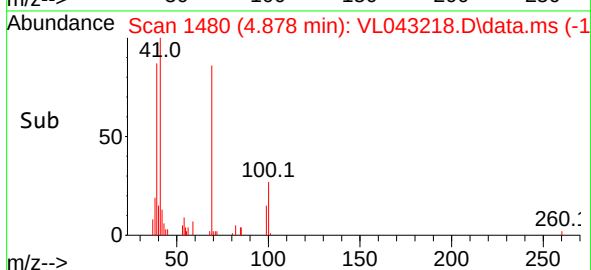
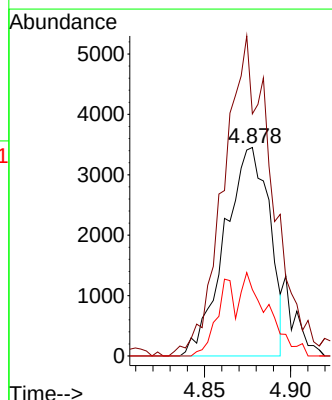
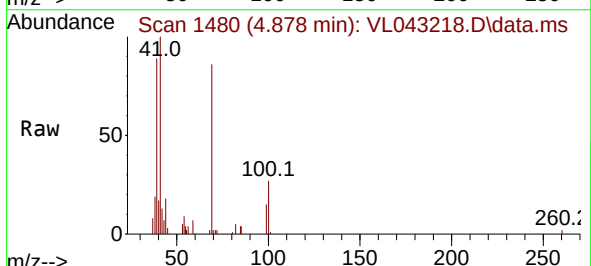
Tgt Ion: 69 Resp: 6270

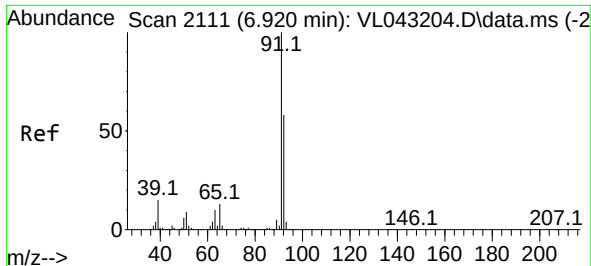
Ion Ratio Lower Upper

69 100

41 168.8 126.7 190.1

100 39.2 28.6 43.0

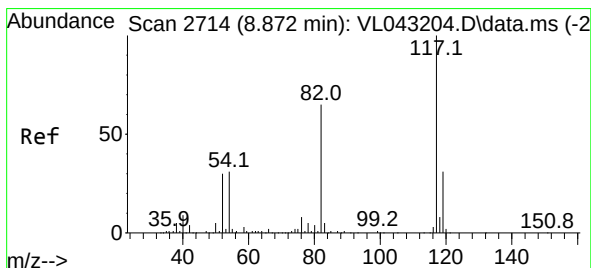
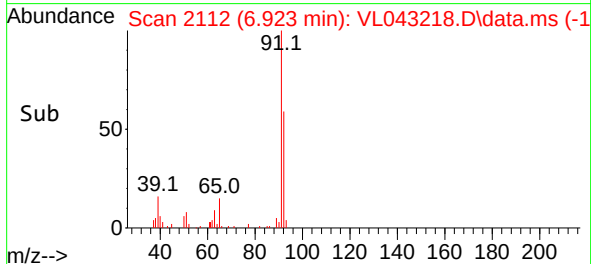
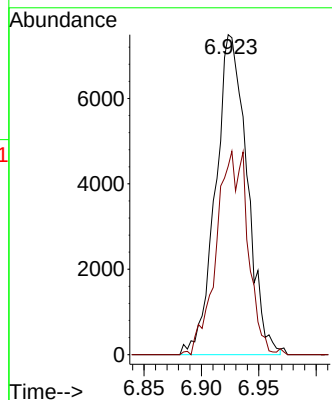
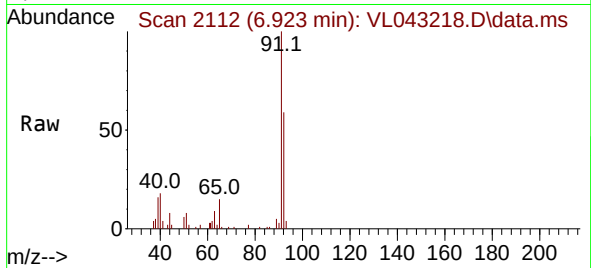




#53  
Toluene  
Concen: 0.485 ppbv  
RT: 6.923 min Scan# 2111  
Delta R.T. 0.003 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

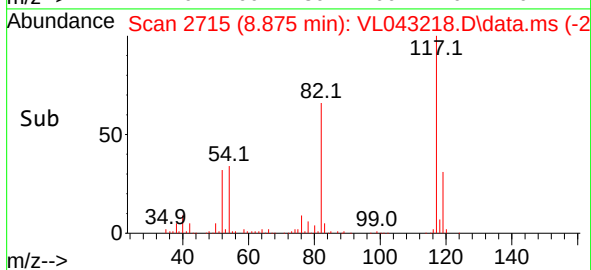
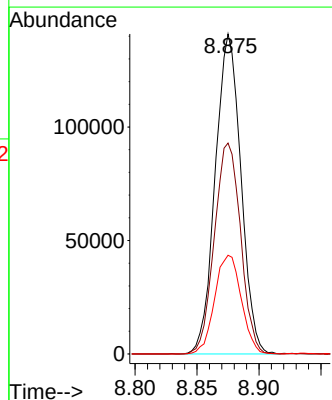
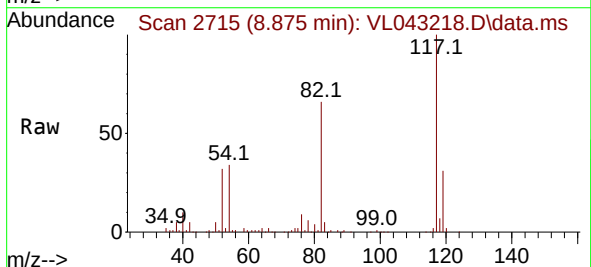
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA1

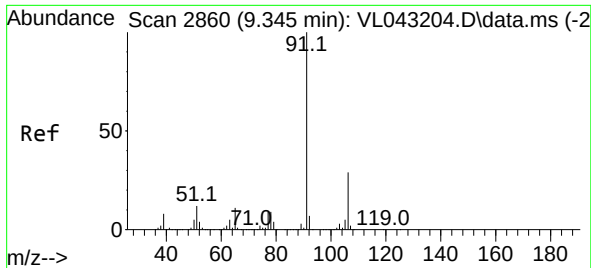
Tgt Ion: 91 Resp: 14272  
Ion Ratio Lower Upper  
91 100  
92 64.1 47.4 71.0



#55  
Chlorobenzene-d5  
Concen: 10.000 ppbv  
RT: 8.875 min Scan# 2715  
Delta R.T. 0.003 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

Tgt Ion: 117 Resp: 203499  
Ion Ratio Lower Upper  
117 100  
82 67.4 56.1 84.1  
119 32.2 25.0 37.6

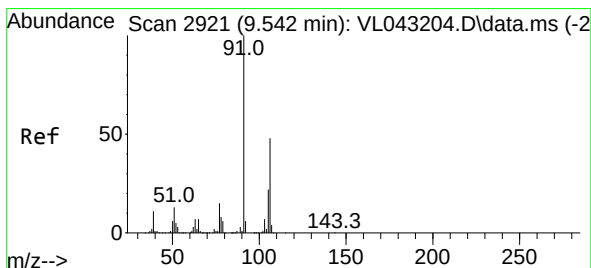
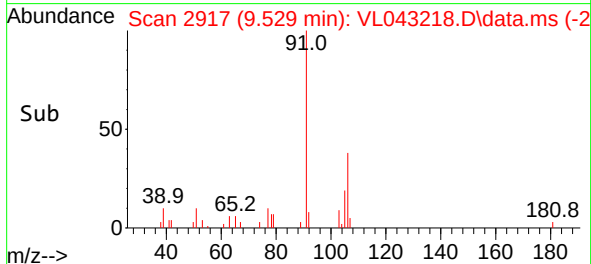
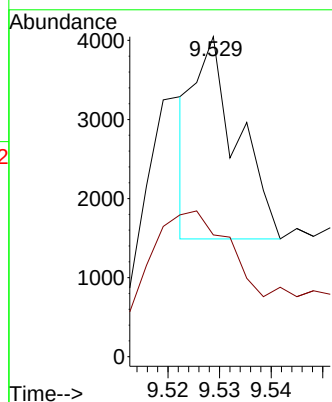
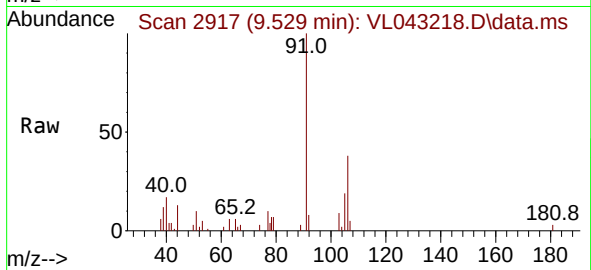




#58  
Ethyl Benzene  
Concen: 0.038 ppbv  
RT: 9.529 min Scan# 2917  
Delta R.T. 0.184 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

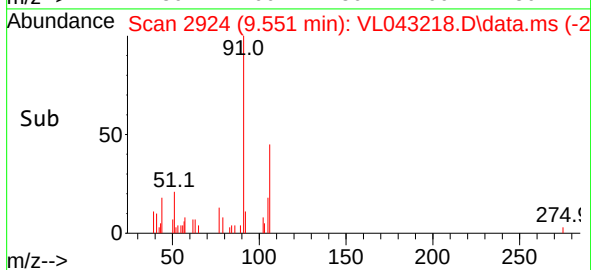
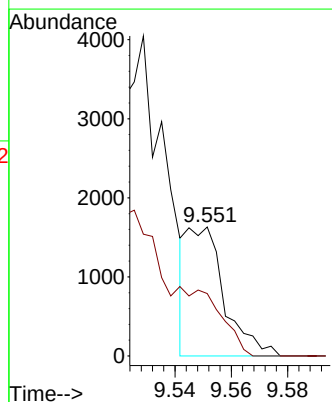
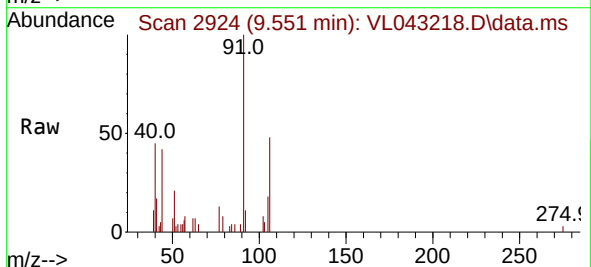
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA1

Tgt Ion: 91 Resp: 1485  
Ion Ratio Lower Upper  
91 100  
106 25.9 22.8 34.2

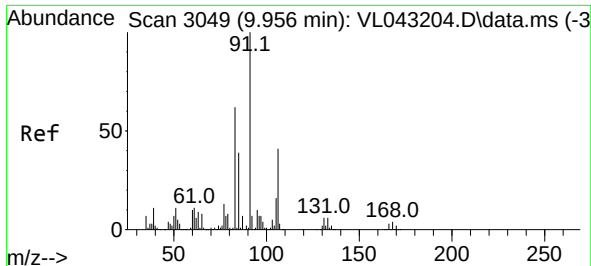


#59  
m/p-Xylene  
Concen: 0.048 ppbv  
RT: 9.551 min Scan# 2924  
Delta R.T. 0.009 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

Tgt Ion: 91 Resp: 1512  
Ion Ratio Lower Upper  
91 100  
106 0.0 36.1 54.1#



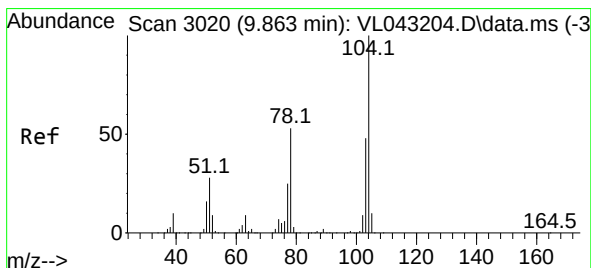
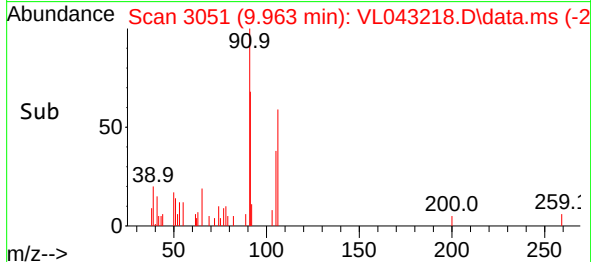
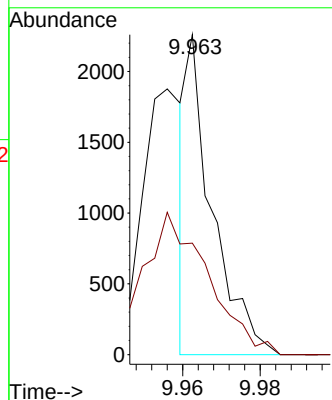
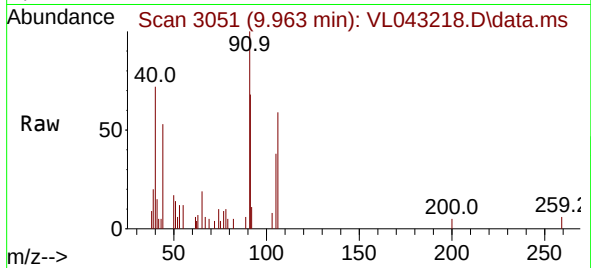




#60  
o-Xylene  
Concen: 0.033 ppbv  
RT: 9.963 min Scan# 3051  
Delta R.T. 0.006 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

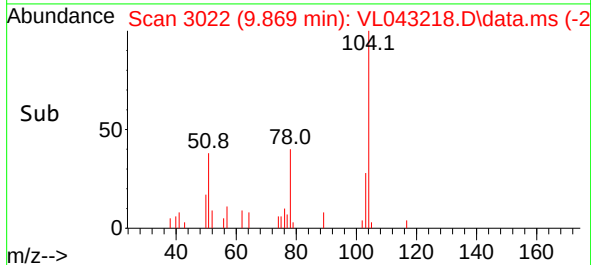
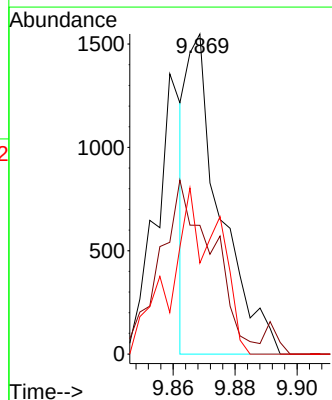
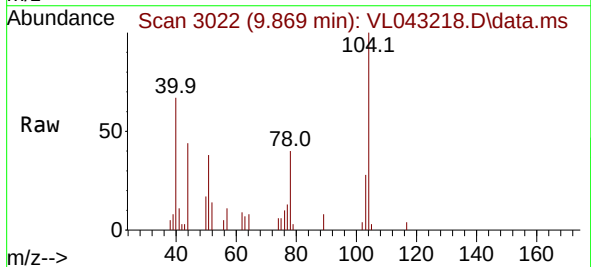
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA1

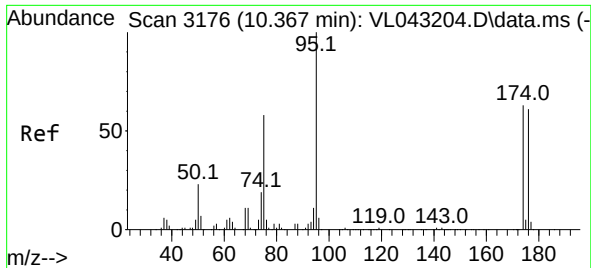
Tgt Ion: 91 Resp: 1029  
Ion Ratio Lower Upper  
91 100  
106 0.0 20.9 62.8#



#61  
Styrene  
Concen: 0.085 ppbv  
RT: 9.869 min Scan# 3022  
Delta R.T. 0.006 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

Tgt Ion: 104 Resp: 1164  
Ion Ratio Lower Upper  
104 100  
78 89.3 42.1 63.1#  
103 74.0 37.2 55.8#

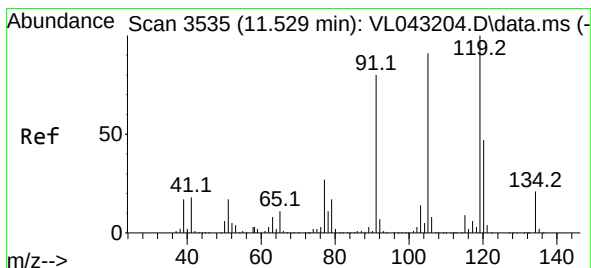
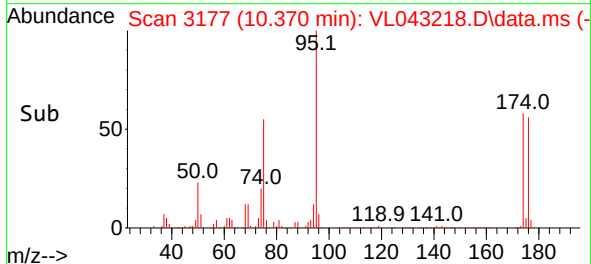
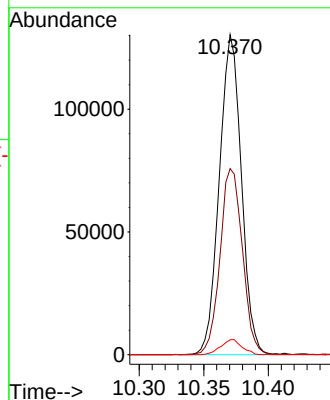
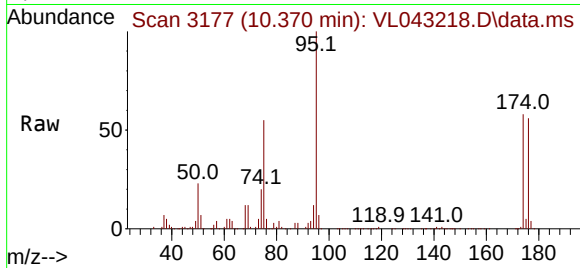




#68  
1-Bromo-4-Fluorobenzene  
Concen: 10.379 ppbv  
RT: 10.370 min Scan# 3176  
Delta R.T. 0.003 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

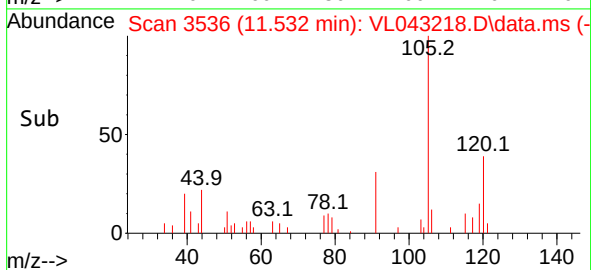
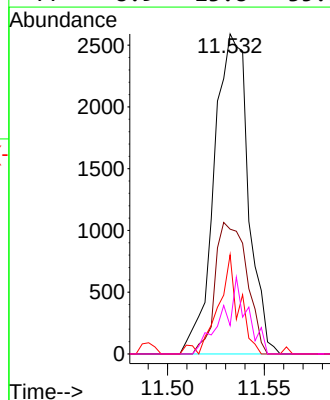
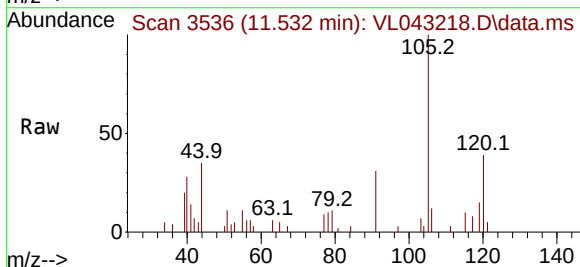
Instrument :  
MSVOA\_1  
ClientSampleId :  
IA1

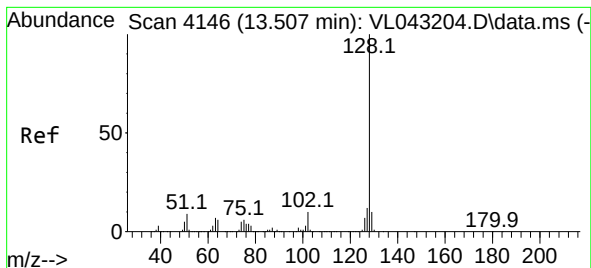
Tgt Ion: 95 Resp: 154823  
Ion Ratio Lower Upper  
95 100  
174 59.1 50.2 75.2  
175 4.6 4.1 6.1



#74  
1,2,4-Trimethylbenzene  
Concen: 0.091 ppbv  
RT: 11.532 min Scan# 3536  
Delta R.T. 0.003 min  
Lab File: VL043218.D  
Acq: 18 Nov 2025 18:15

Tgt Ion: 105 Resp: 3182  
Ion Ratio Lower Upper  
105 100  
120 39.0 41.7 62.5#  
91 31.0 70.0 105.0#  
77 8.9 23.8 35.8#





#79

Naphthalene

Concen: 0.032 ppbv

RT: 13.513 min Scan# 41

Delta R.T. 0.006 min

Lab File: VL043218.D

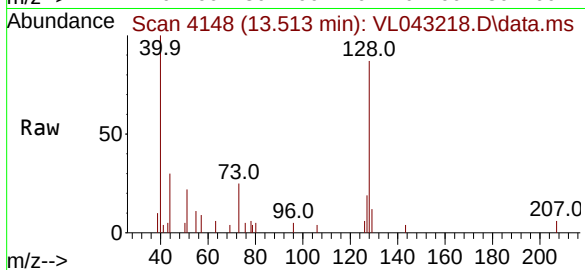
Acq: 18 Nov 2025 18:15

Instrument :

MSVOA\_L

ClientSampleId :

IA1



|           |      |       |       |
|-----------|------|-------|-------|
| Tgt Ion:  | 128  | Resp: | 999   |
| Ion Ratio | 100  | Lower | Upper |
| 128       | 100  |       |       |
| 127       | 22.0 | 9.9   | 14.9# |
| 129       | 13.3 | 8.4   | 12.6# |

