

Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL092418\  
 Data File : VL032530.D  
 Acq On : 25 Sep 2018 4:58  
 Operator : SY/AP  
 Sample : J5034-01  
 Misc : 400ml/MSVOA L  
 ALS Vial : 1 Sample Multiplier: 1

Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 GAC-EFF-DUP-092018

Manual Integrations  
 APPROVED

MMDadoda  
 9/27/2018 12:31:35 PM

Quant Time: Sep 26 17:45:12 2018  
 Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL092418AIR.M  
 Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Tue Sep 26 17:45:12 2018  
 QLast Update : Tue Sep 25 05:17:15 2018  
 Response via : Initial Calibration

| Internal Standards      | R.T.  | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------|-------|------|----------|-------|-------|----------|
| 1) Bromochloromethane   | 5.79  | 49   | 1413830  | 10.00 | ppbv  | -0.02    |
| 33) 1,4-Difluorobenzene | 7.32  | 114  | 3297113  | 10.00 | ppbv  | -0.02    |
| 55) Chlorobenzene-d5    | 12.27 | 117  | 2902812  | 10.00 | ppbv  | -0.03    |

| System Monitoring Compounds |        |       |          |          |      |         |
|-----------------------------|--------|-------|----------|----------|------|---------|
| 68) 1-Bromo-4-Fluorobenzene | 14.61  | 95    | 2188026  | 10.00    | ppbv | -0.03   |
| Spiked Amount               | 10.000 | Range | 65 - 135 | Recovery | =    | 100.00% |

| Target Compounds               | R.T. | QIon | Response | Conc   | Units  | Ovalue |
|--------------------------------|------|------|----------|--------|--------|--------|
| 2) Dichlorodifluoromethane     | 3.09 | 85   | 68923    | 0.527  | ppbv   | 96     |
| 5) Vinyl Chloride              | 3.31 | 62   | 23781    | 0.343  | ppbv   | 95     |
| 7) Chloroethane                | 3.62 | 64   | 16767    | 0.679  | ppbv   | 94     |
| 9) Propene                     | 3.07 | 41   | 283499m  | 5.557  | ppbv   |        |
| 11) Trichlorofluoromethane     | 4.02 | 101  | 155709   | 1.002  | ppbv   | 95     |
| 12) 1,1,2-Trichlorotrifluoroet | 4.58 | 101  | 127043   | 1.000  | ppbv   | 100    |
| 13) Ethanol                    | 3.67 | 45   | 999078   | 65.156 | ppbv   | 97     |
| 15) Acetone                    | 3.94 | 43   | 289738m  | 2.335  | ppbv   |        |
| 18) 1,1-Dichloroethene         | 4.37 | 96   | 14385    | 0.242  | ppbv # | 78     |
| 19) Isopropyl Alcohol          | 4.05 | 45   | 189152   | 2.188  | ppbv # | 96     |
| 20) Methylene Chloride         | 4.43 | 84   | 124391   | 2.070  | ppbv   | 96     |
| 22) trans-1,2-Dichloroethene   | 4.99 | 96   | 12040m   | 0.215  | ppbv   |        |
| 24) 1,1-Dichloroethane         | 5.11 | 63   | 1560444  | 8.545  | ppbv   | 100    |
| 26) Hexane                     | 5.81 | 57   | 201674   | 1.483  | ppbv # | 69     |
| 29) Chloroform                 | 5.87 | 83   | 437251   | 2.095  | ppbv   | 96     |
| 30) Cyclohexane                | 7.28 | 84   | 577285   | 5.212  | ppbv   | 98     |
| 31) cis-1,2-Dichloroethene     | 5.67 | 61   | 1399757  | 10.805 | ppbv   | 98     |
| 32) 1,1,1-Trichloroethane      | 6.65 | 97   | 4864972  | 21.874 | ppbv   | 98     |
| 34) 2-Butanone                 | 5.37 | 43   | 18432    | 0.094  | ppbv   | 100    |
| 35) Carbon Tetrachloride       | 7.17 | 117  | 42665    | 0.186  | ppbv   | 97     |
| 38) Trichloroethene            | 7.99 | 130  | 5452628  | 53.462 | ppbv   | 99     |
| 41) Tetrahydrofuran            | 6.19 | 42   | 84807    | 0.795  | ppbv   | 98     |

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

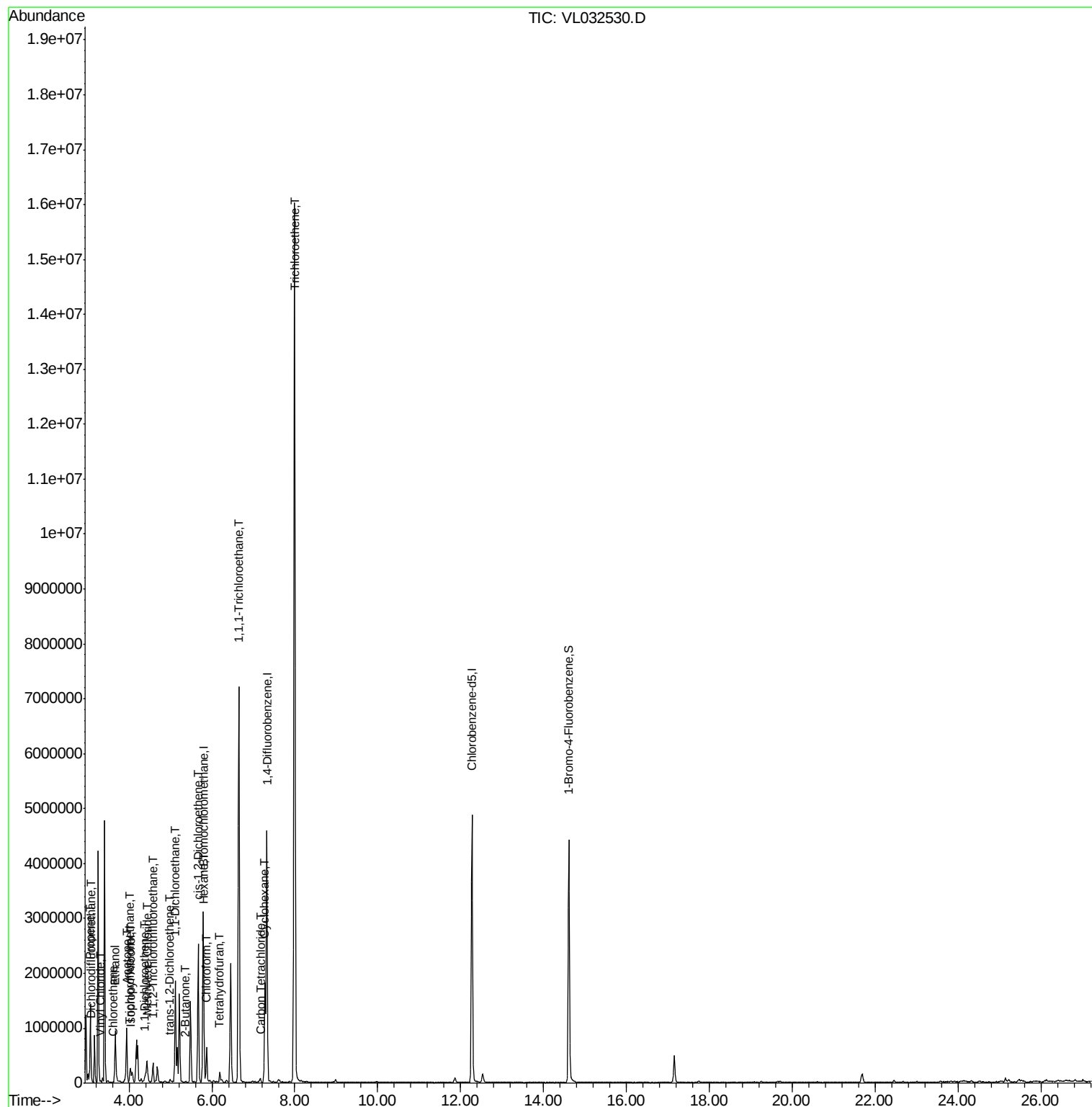
Data Path : Z:\V0ASRV\HPCHEM1\MSVOA L\DATA\VL092418\  
Data File : VL032530.D  
Acq On : 25 Sep 2018 4:58  
Operator : SY/AP  
Sample : J5034-01  
Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

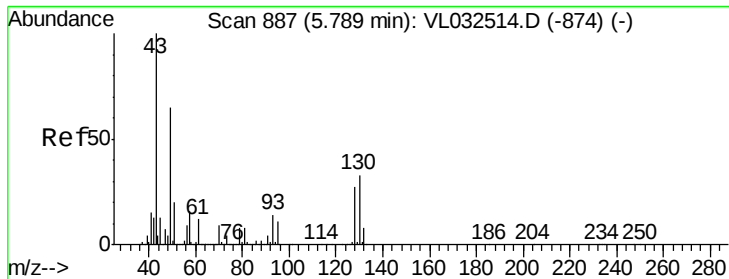
Instrument :  
MSVOA\_L  
ClientSampleId :  
GAC-EFF-DUP-092018

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9/27/2018 12:31:35 PM

Quant Time: Sep 26 17:45:12 2018  
Quant Method : Z:\V0ASRV\HPCHEM1\MSVOA L\METHODS\VL092418AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Tue Sep  
QLast Update : Tue Sep 25 05:17:15 2018  
Response via : Initial Calibration





#1

Bromochloromethane

Concen: 10.000 ppbv

RT: 5.79 min Scan# 886

Delta R.T. -0.02 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

Instrument :

MSVOA\_L

ClientSampleId :

GAC-EFF-DUP-092018

Tot Ion: 49 Resp: 1413830

Ion Ratio Lower Upper

49 100

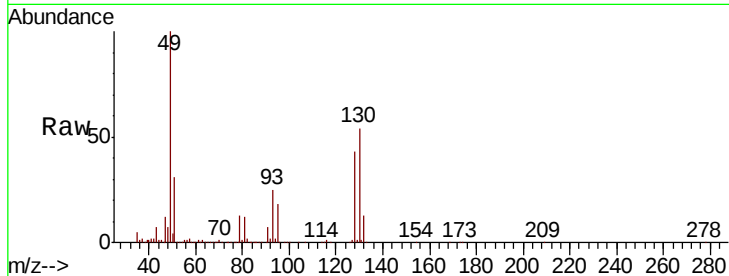
128 43.8 20.7 62.1

130 55.7 26.6 79.7

Manual Integrations  
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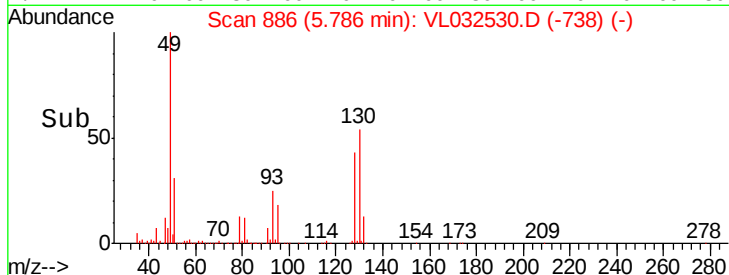


Abundance Ion 49.10 (48.80 to 49.80): VL0

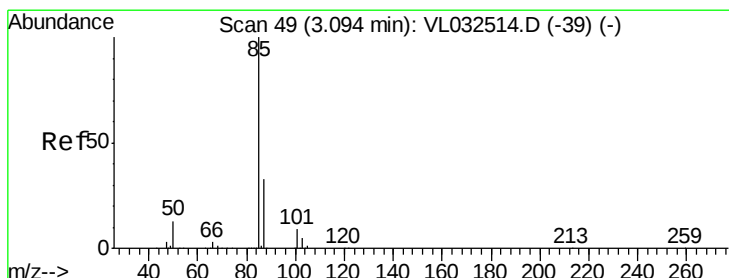
Ion 128.00 (127.70 to 128.70): V

Ion 130.00 (129.70 to 130.70): V

Time-->



Time-->



#2

Dichlorodifluoromethane

Concen: 0.527 ppbv

RT: 3.09 min Scan# 48

Delta R.T. -0.02 min

Lab File: VL032530.D

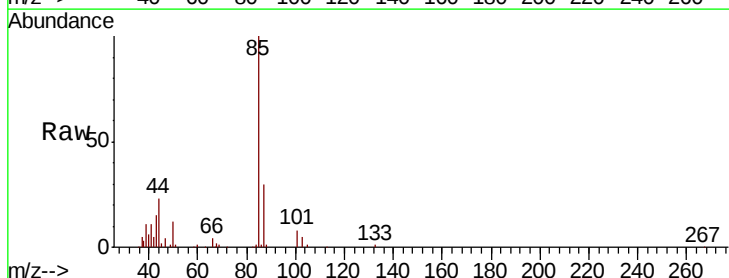
Acq: 25 Sep 2018 4:58

Tgt Ion: 85 Resp: 68923

Ion Ratio Lower Upper

85 100

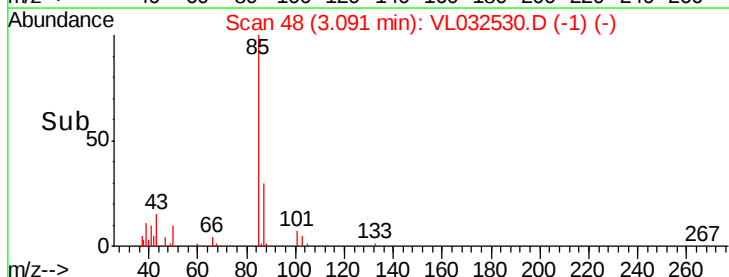
87 30.5 26.2 39.4



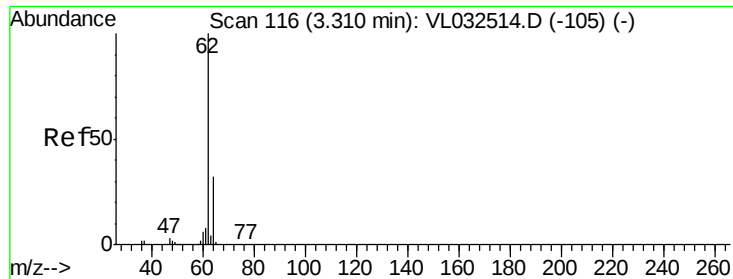
Abundance Ion 85.00 (84.70 to 85.70): VL0

Ion 87.00 (86.70 to 87.70): VL0

Time-->



Time-->



#5

Vinyl Chloride

Concen: 0.343 ppbv

RT: 3.31 min Scan# 116

Delta R.T. -0.01 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

Instrument :

MSVOA\_L

ClientSampleId :

GAC-EFF-DUP-092018

Tot Ion: 62 Resp: 23781

Ion Ratio Lower Upper

62 100

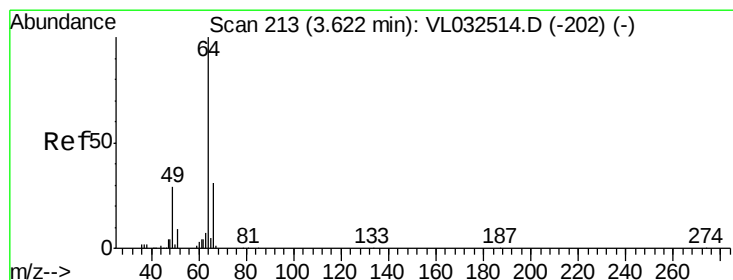
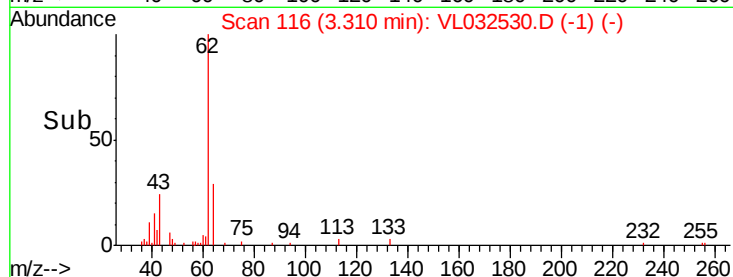
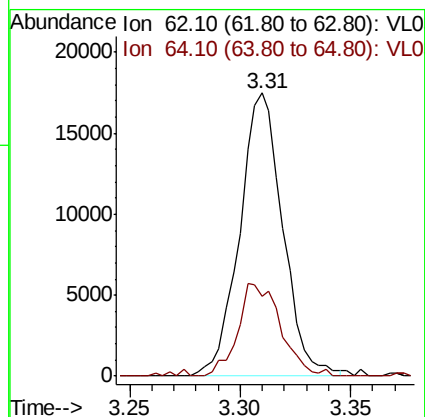
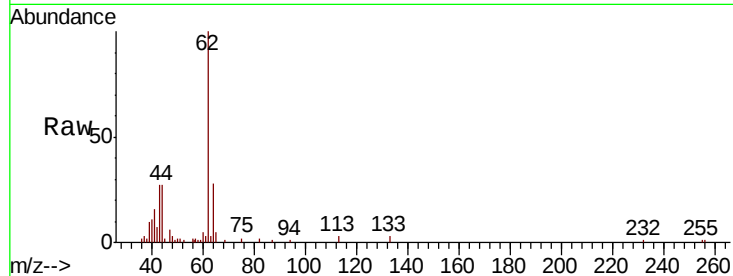
64 28.6 25.0 37.6

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#7

Chloroethane

Concen: 0.679 ppbv

RT: 3.62 min Scan# 213

Delta R.T. -0.01 min

Lab File: VL032530.D

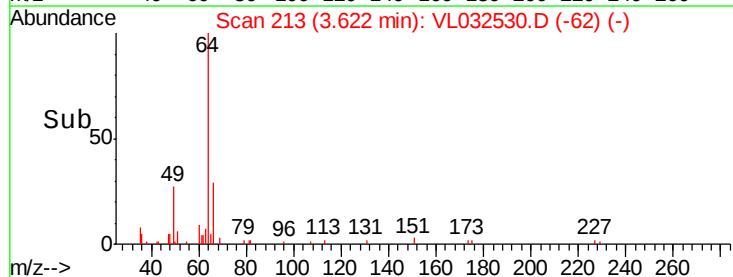
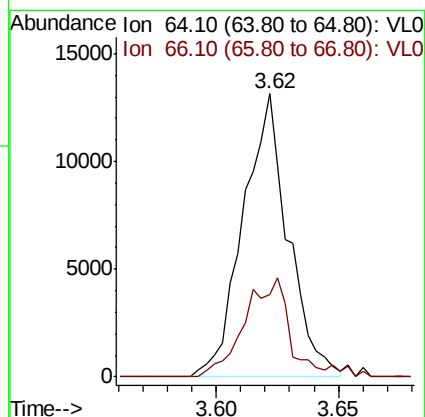
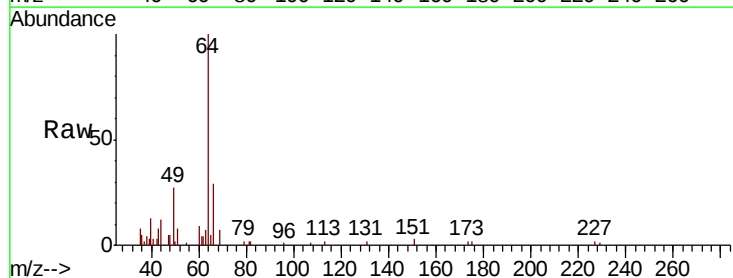
Acq: 25 Sep 2018 4:58

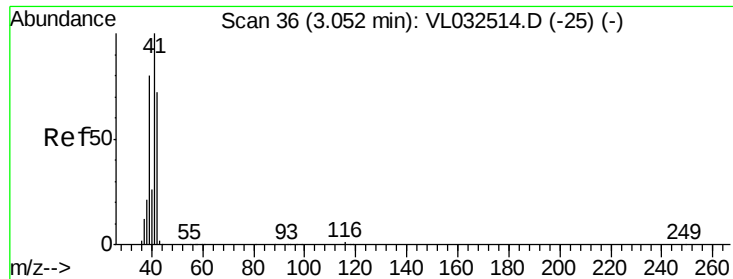
Tgt Ion: 64 Resp: 16767

Ion Ratio Lower Upper

64 100

66 28.9 25.8 38.6





#9

Propene

Concen: 5.557 ppbv m

RT: 3.07 min Scan# 40

Delta R.T. -0.00 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

Instrument :

MSVOA\_L

ClientSampleId :

GAC-EFF-DUP-092018

Tot Ion: 41 Resp: 283499

Ion Ratio Lower Upper

41 100

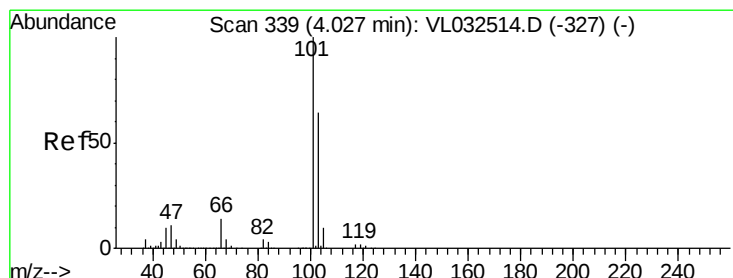
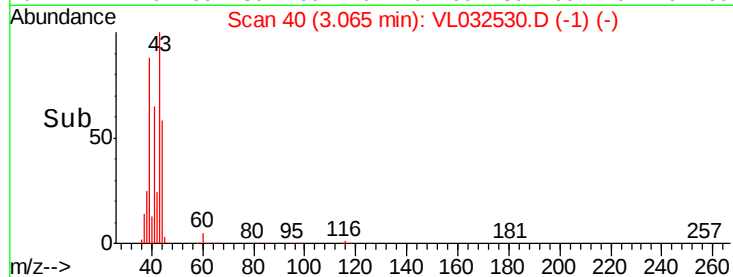
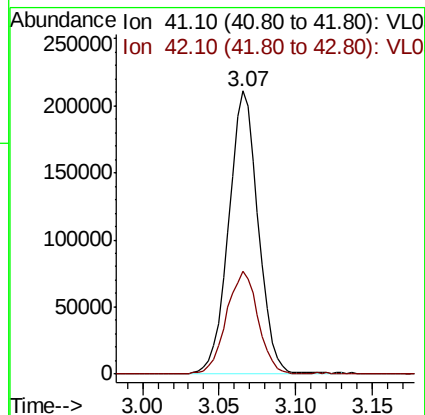
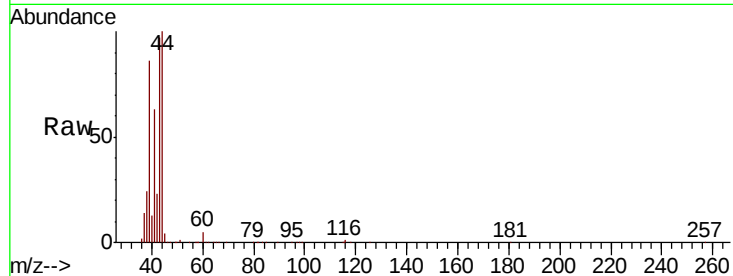
42 278.9 56.6 84.8#

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#11

Trichlorofluoromethane

Concen: 1.002 ppbv

RT: 4.02 min Scan# 338

Delta R.T. -0.02 min

Lab File: VL032530.D

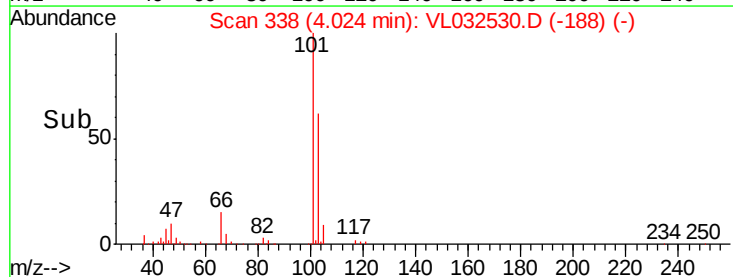
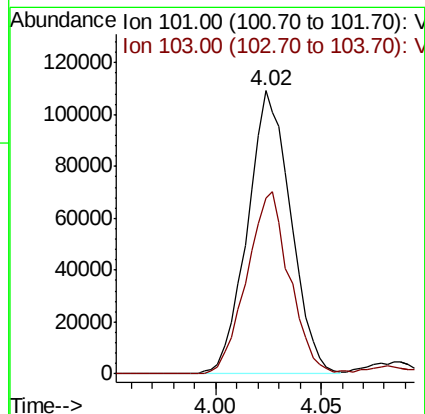
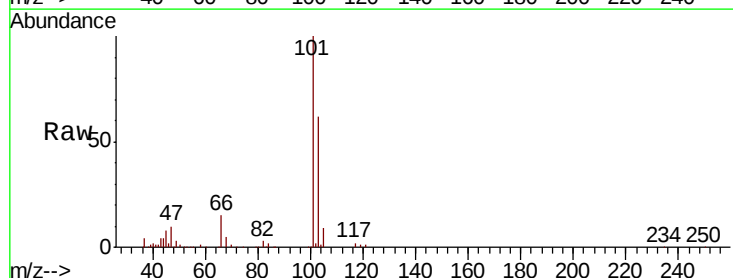
Acq: 25 Sep 2018 4:58

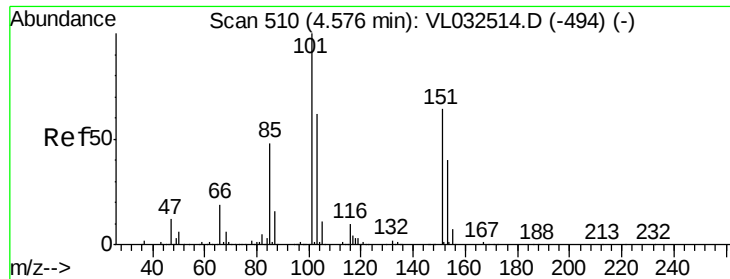
Tgt Ion: 101 Resp: 155709

Ion Ratio Lower Upper

101 100

103 62.0 52.8 79.2





#12

1,1,2-Trichlorotrifluoroethane

Concen: 1.000 ppbv

RT: 4.58 min Scan# 510

Delta R.T. -0.02 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

Instrument :

MSVOA\_L

ClientSampleId :

GAC-EFF-DUP-092018

Tot Ion: 101 Resp: 127043

Ion Ratio Lower Upper

101 100

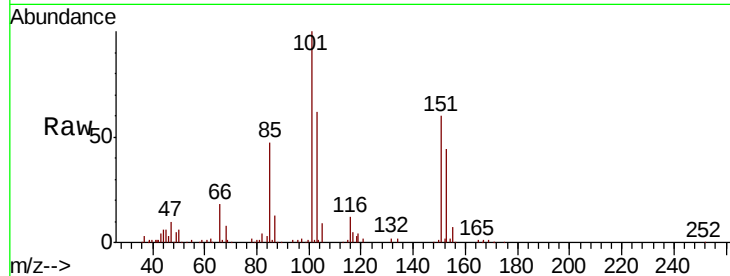
151 65.7 52.6 78.8

Manual Integrations

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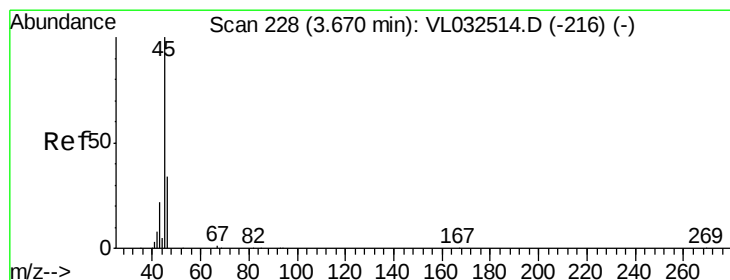
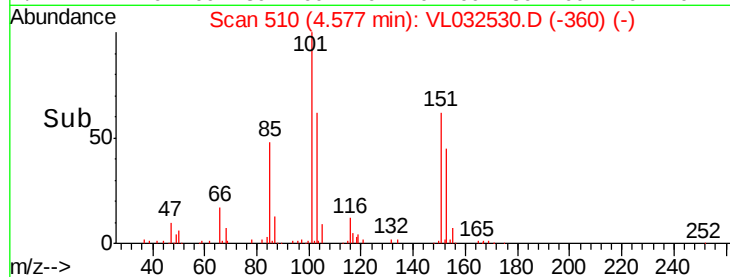
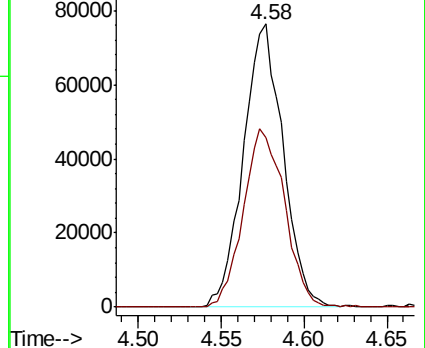
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Abundance Ion 101.00 (100.70 to 101.70): V

Ion 151.00 (150.70 to 151.70): V



#13

Ethanol

Concen: 65.156 ppbv

RT: 3.67 min Scan# 227

Delta R.T. -0.02 min

Lab File: VL032530.D

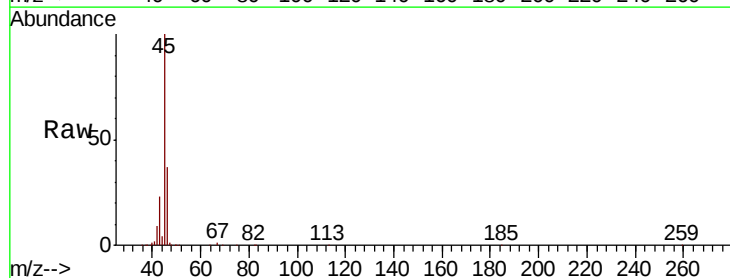
Acq: 25 Sep 2018 4:58

Tgt Ion: 45 Resp: 999078

Ion Ratio Lower Upper

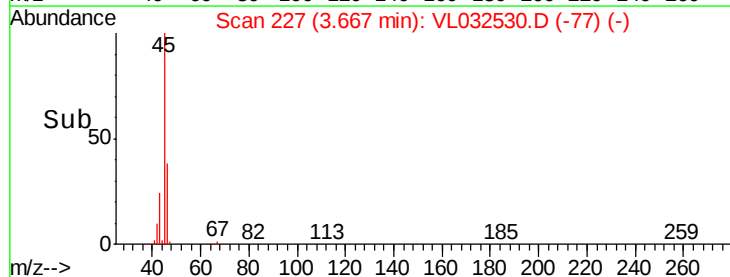
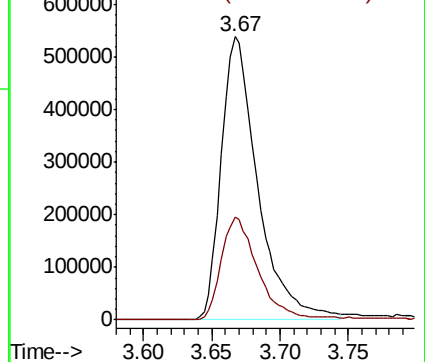
45 100

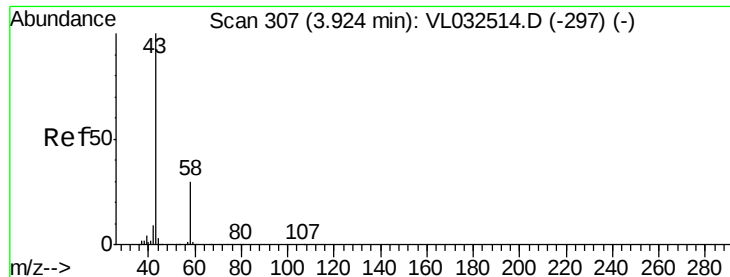
46 37.3 14.2 56.8



Abundance Ion 45.10 (44.80 to 45.80): VL0

Ion 46.10 (45.80 to 46.80): VL0





#15

Acetone

Concen: 2.335 ppbv m

RT: 3.94 min Scan# 311

Delta R.T. -0.00 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

Instrument :

MSVOA\_L

ClientSampleId :

GAC-EFF-DUP-092018

Tot Ion: 43 Resp: 289738

Ion Ratio Lower Upper

43 100

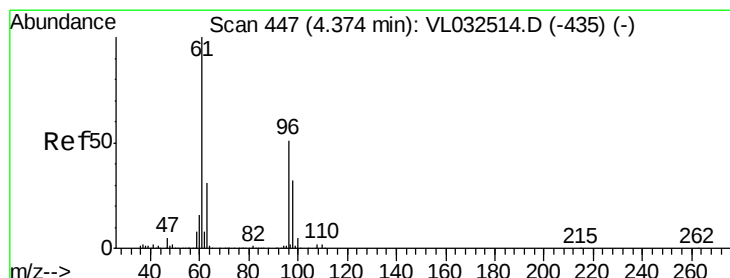
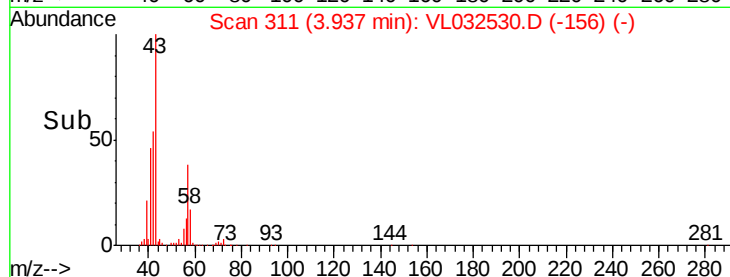
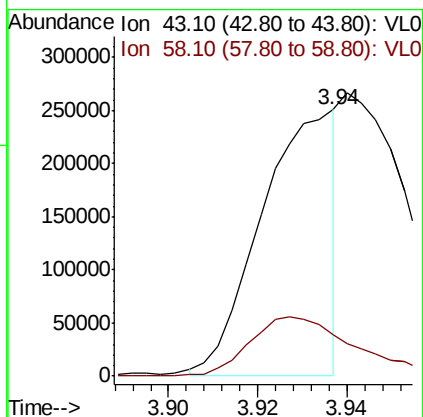
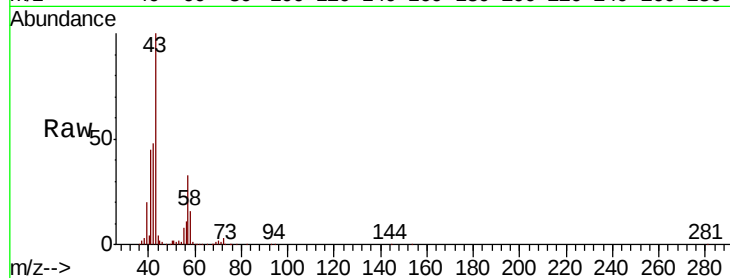
58 32.0 22.6 33.8

Manual Integrations

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#18

1,1-Dichloroethene

Concen: 0.242 ppbv

RT: 4.37 min Scan# 447

Delta R.T. -0.02 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

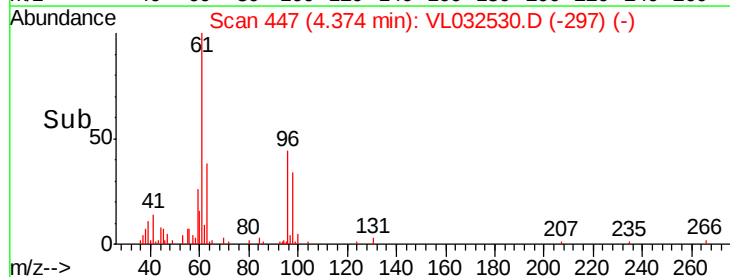
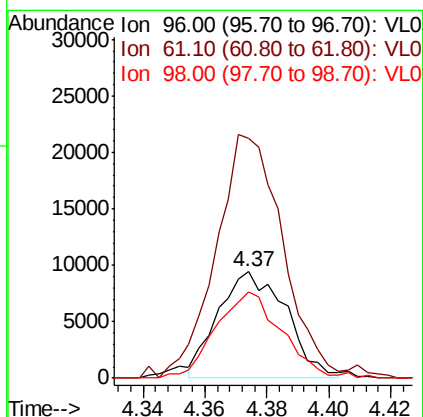
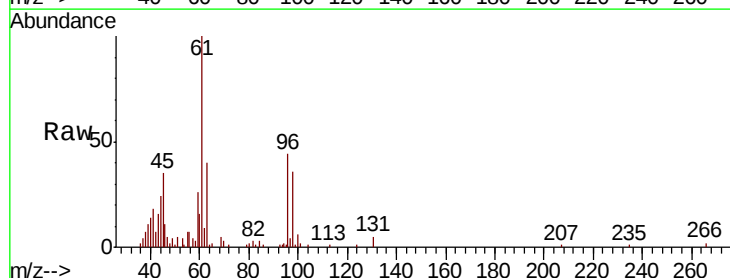
Tgt Ion: 96 Resp: 14385

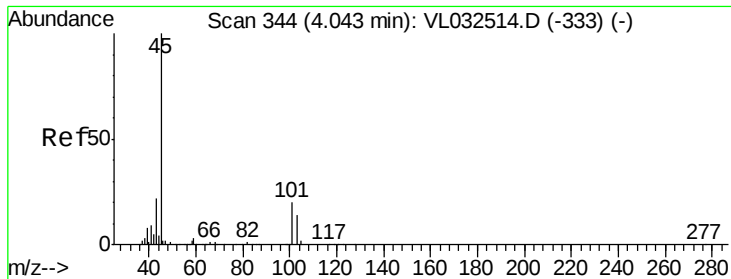
Ion Ratio Lower Upper

96 100

61 230.6 159.2 238.8

98 82.6 51.0 76.4#





#19

Isopropyl Alcohol

Concen: 2.188 ppbv

RT: 4.05 min Scan# 346

Delta R.T. -0.01 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

Instrument :

MSVOA\_L

ClientSampleId :

GAC-EFF-DUP-092018

Tot Ion: 45 Resp: 189152

Ion Ratio Lower Upper

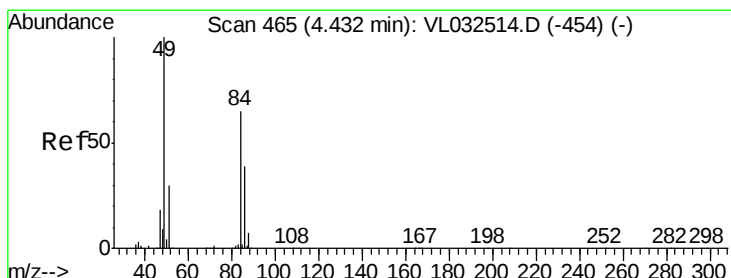
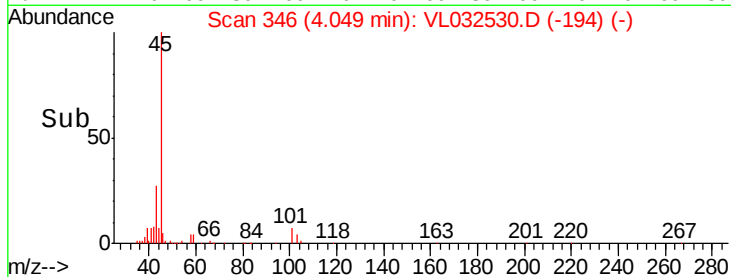
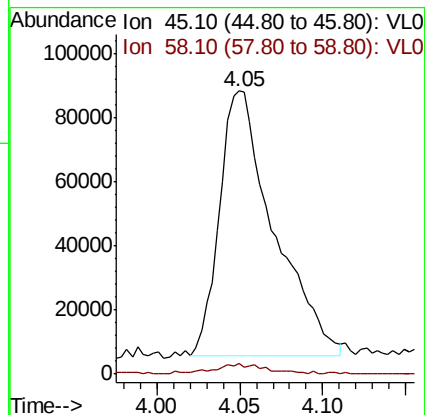
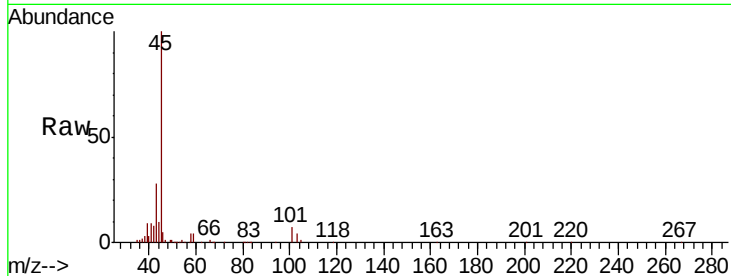
45 100

58 3.8 2.0 3.0#

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#20

Methylene Chloride

Concen: 2.070 ppbv

RT: 4.43 min Scan# 465

Delta R.T. -0.02 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

Tgt Ion: 84 Resp: 124391

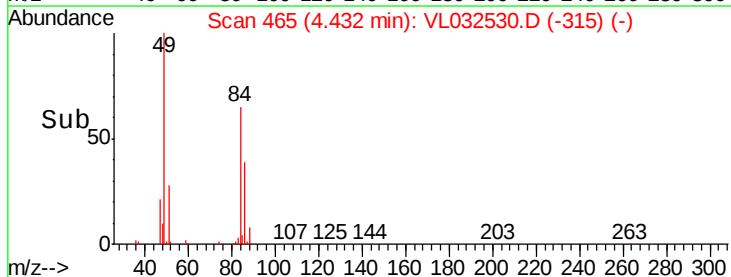
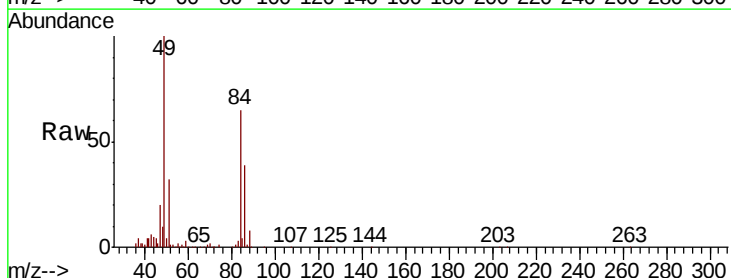
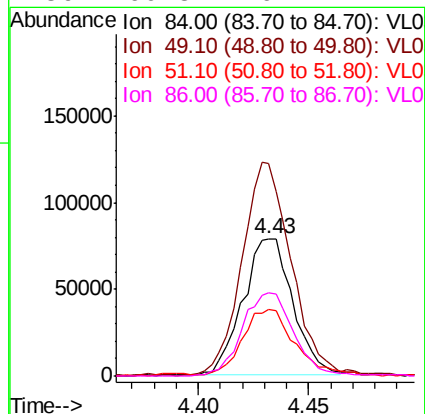
Ion Ratio Lower Upper

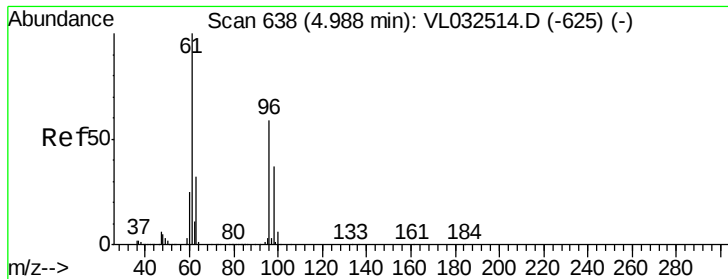
84 100

49 154.3 119.1 178.7

51 48.7 35.2 52.8

86 60.8 49.4 74.2





#22

trans-1,2-Dichloroethene

Concen: 0.215 ppbv m

RT: 4.99 min Scan# 639

Delta R.T. -0.01 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

Instrument :

MSVOA\_L

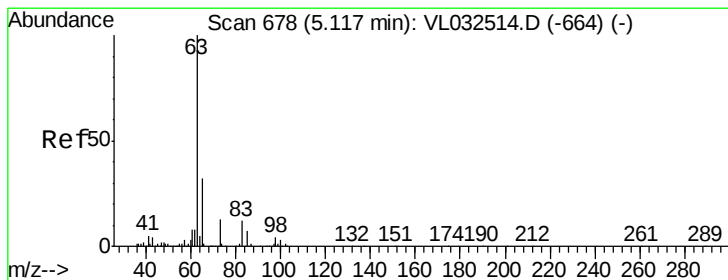
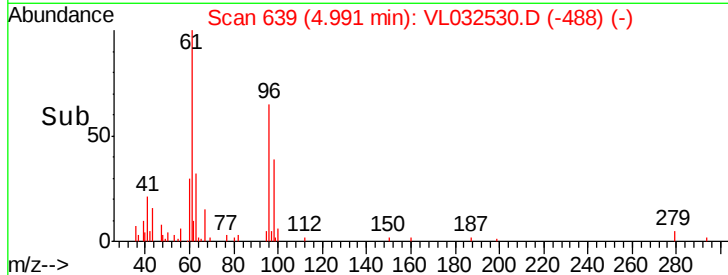
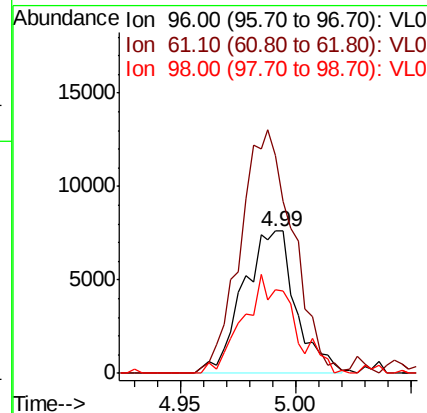
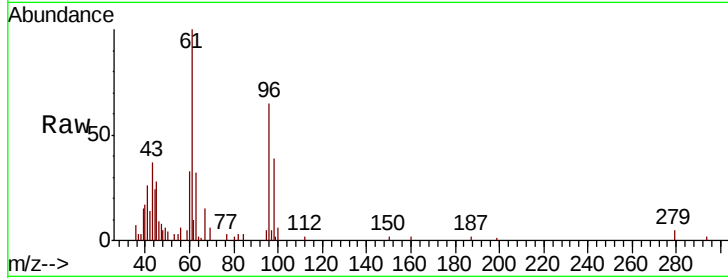
ClientSampleId :

GAC-EFF-DUP-092018

|           |       |       |       |
|-----------|-------|-------|-------|
| Tot Ion:  | 96    | Resp: | 12040 |
| Ion Ratio | Lower | Upper |       |
| 96        | 100   |       |       |
| 61        | 152.8 | 136.2 | 204.4 |
| 98        | 59.0  | 50.4  | 75.6  |

Manual Integrations  
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#24

1,1-Dichloroethane

Concen: 8.545 ppbv

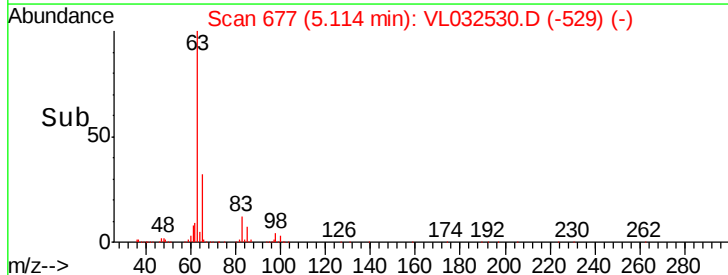
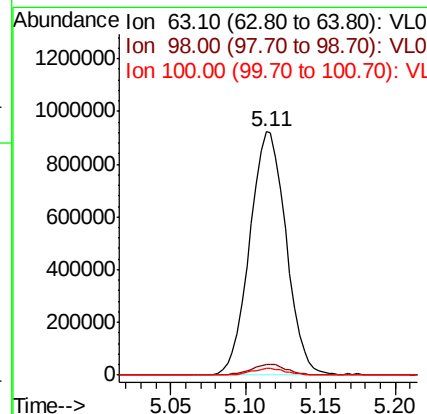
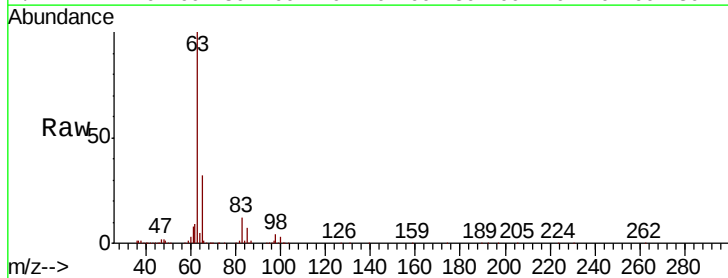
RT: 5.11 min Scan# 677

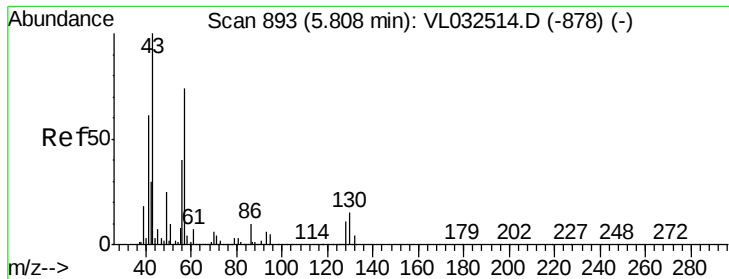
Delta R.T. -0.02 min

Lab File: VL032530.D

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|           |       |       |         |
|-----------|-------|-------|---------|
| Tgt Ion:  | 63    | Resp: | 1560444 |
| Ion Ratio | Lower | Upper |         |
| 63        | 100   |       |         |
| 98        | 4.2   | 2.1   | 6.5     |
| 100       | 2.8   | 1.5   | 4.4     |





#26

Hexane

Concen: 1.483 ppbv

RT: 5.81 min Scan# 893

Delta R.T. -0.02 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

Instrument :

MSVOA\_L

ClientSampleId :

GAC-EFF-DUP-092018

Tot Ion: 57 Resp: 201674

Ion Ratio Lower Upper

57 100

41 93.6 69.0 103.4

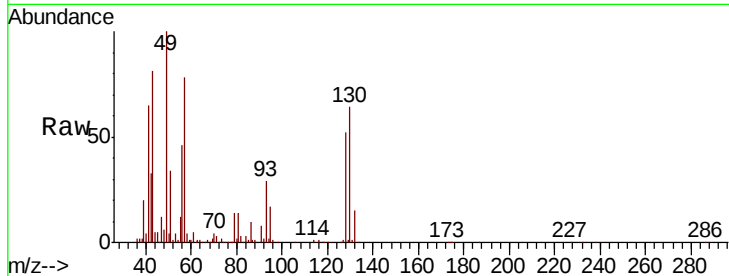
43 143.8 172.1 258.1#

56 59.6 42.2 63.2

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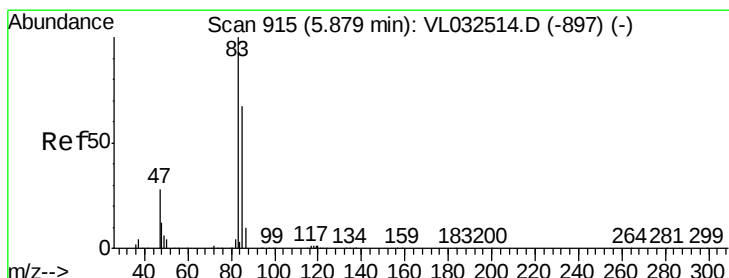
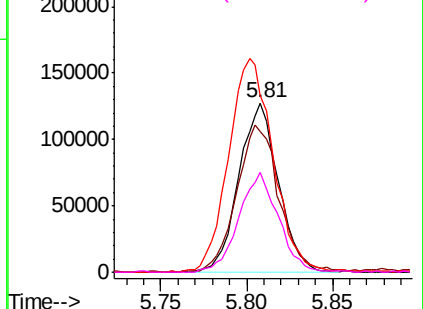
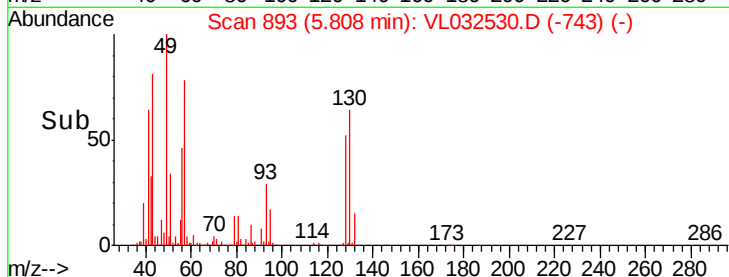


Abundance Ion 57.10 (56.80 to 57.80): VL0

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



#29

Chloroform

Concen: 2.095 ppbv

RT: 5.87 min Scan# 913

Delta R.T. -0.02 min

Lab File: VL032530.D

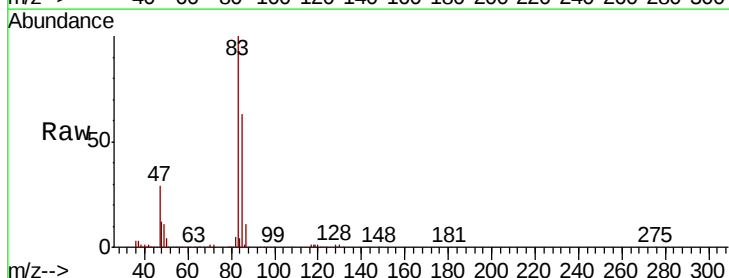
Acq: 25 Sep 2018 4:58

Tgt Ion: 83 Resp: 437251

Ion Ratio Lower Upper

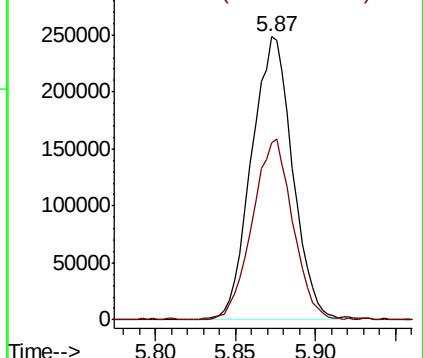
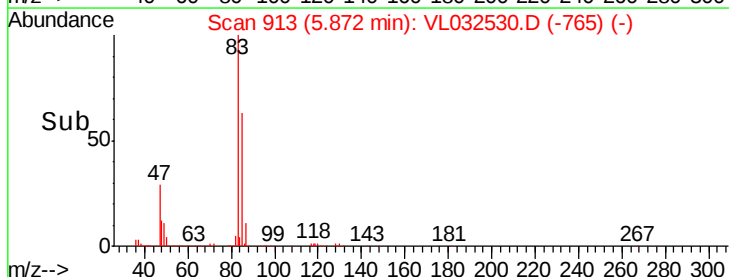
83 100

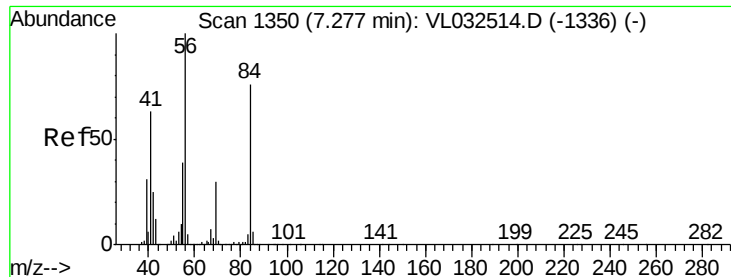
85 62.3 52.5 78.7



Abundance Ion 83.00 (82.70 to 83.70): VL0

Ion 85.00 (84.70 to 85.70): VL0





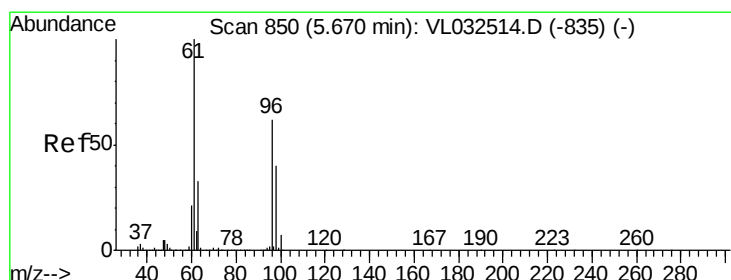
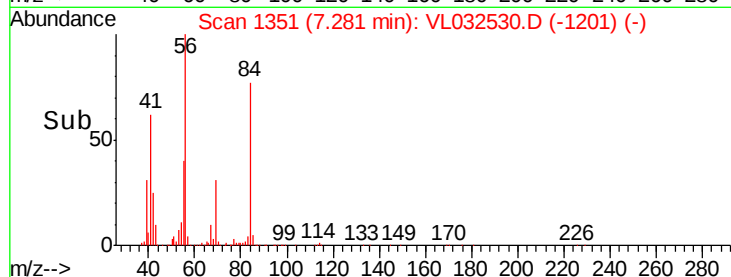
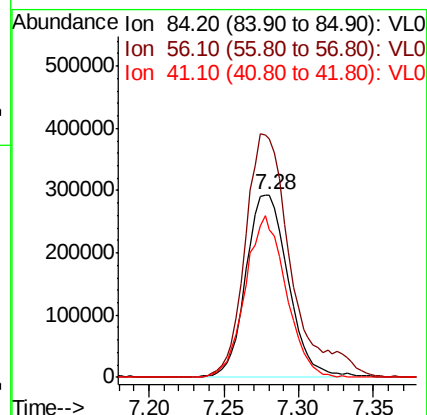
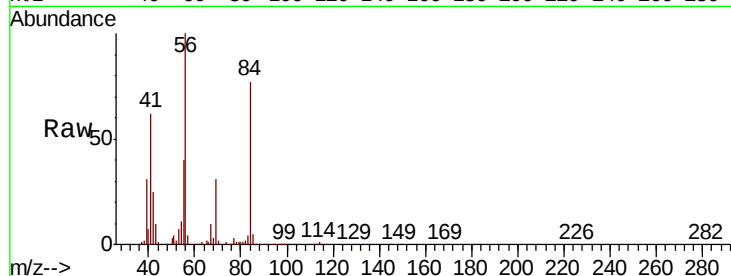
#30  
Cvclohexane  
Concen: 5.212 ppbv  
RT: 7.28 min Scan# 1351  
Delta R.T. -0.02 min  
Lab File: VL032530.D  
Acq: 25 Sep 2018 4:58

Instrument :  
MSVOA\_L  
ClientSampleId :  
GAC-EFF-DUP-092018

| Tot Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 84      | 100   |       |       |
| 56      | 145.1 | 113.5 | 170.3 |
| 41      | 85.1  | 68.1  | 102.1 |

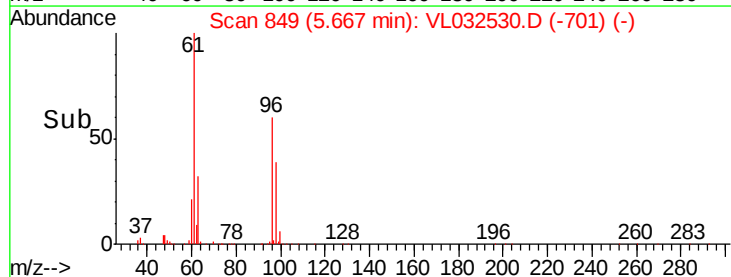
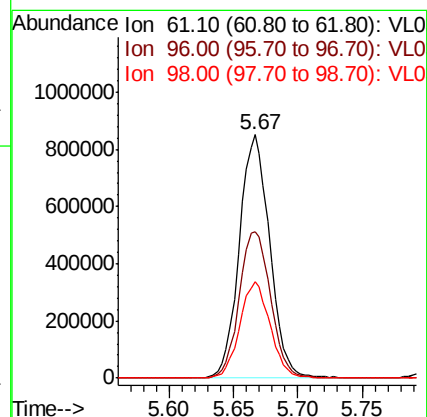
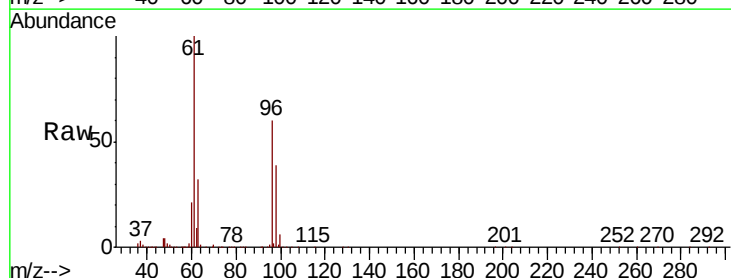
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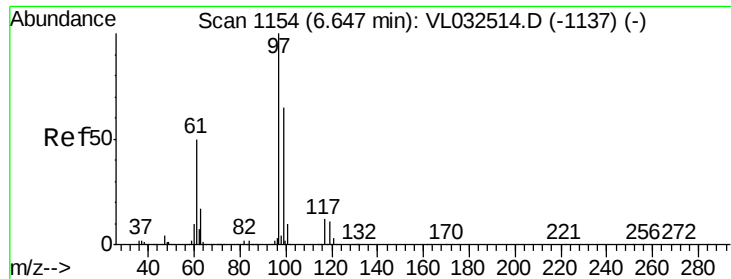
MMDadoda  
9/27/2018 12:31:35 PM



#31  
cis-1,2-Dichloroethene  
Concen: 10.805 ppbv  
RT: 5.67 min Scan# 849  
Delta R.T. -0.02 min  
Lab File: VL032530.D  
Acq: 25 Sep 2018 4:58

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 61      | 100   |       |       |
| 96      | 60.0  | 49.2  | 73.8  |
| 98      | 39.4  | 30.7  | 46.1  |





#32

1,1,1-Trichloroethane

Concen: 21.874 ppbv

RT: 6.65 min Scan# 1154

Delta R.T. -0.02 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

Instrument :

MSVOA\_L

ClientSampleId :

GAC-EFF-DUP-092018

Tot Ion: 97 Resp: 4864972

Ion Ratio Lower Upper

97 100

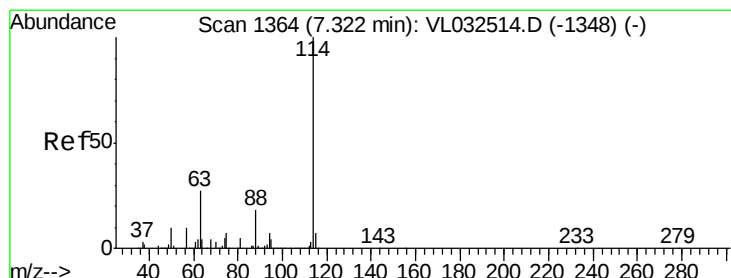
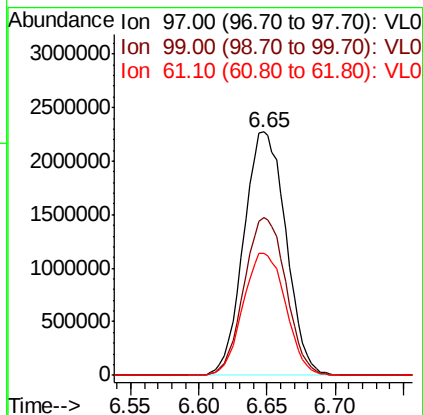
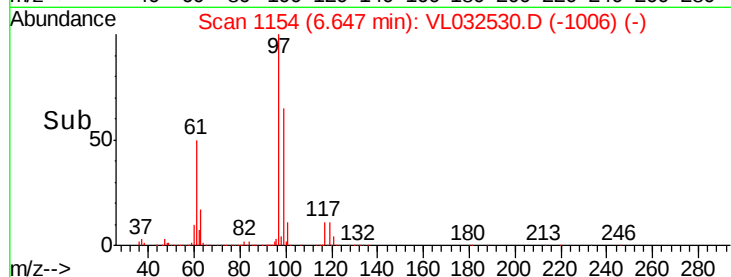
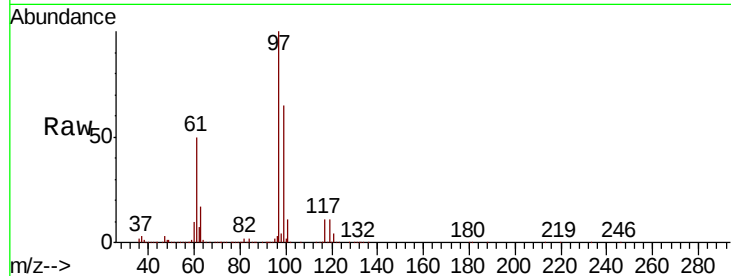
99 64.6 52.1 78.1

61 51.0 42.5 63.7

Manual Integrations  
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#33

1,4-Difluorobenzene

Concen: 10.000 ppbv

RT: 7.32 min Scan# 1364

Delta R.T. -0.02 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

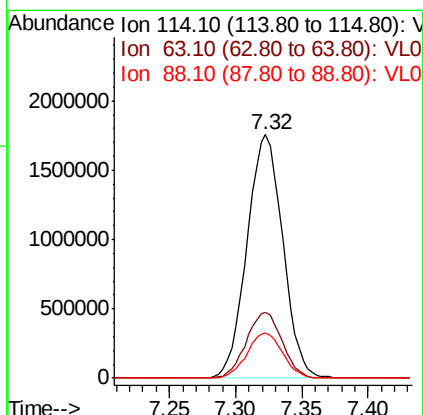
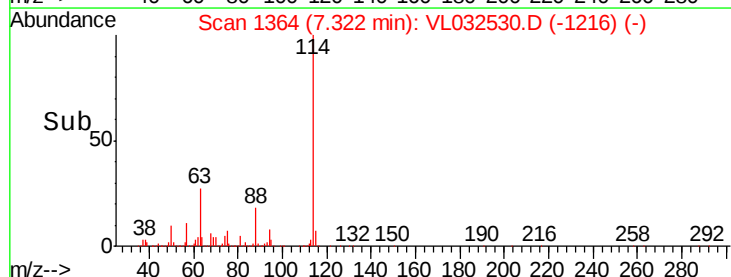
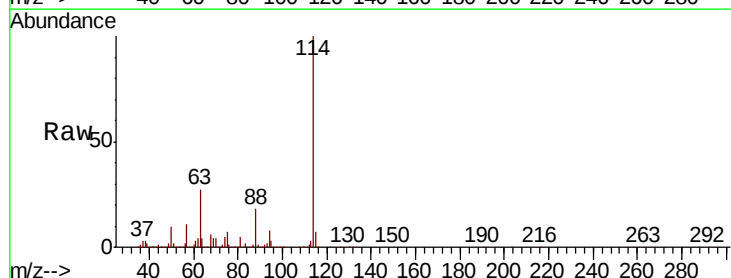
Tgt Ion: 114 Resp: 3297113

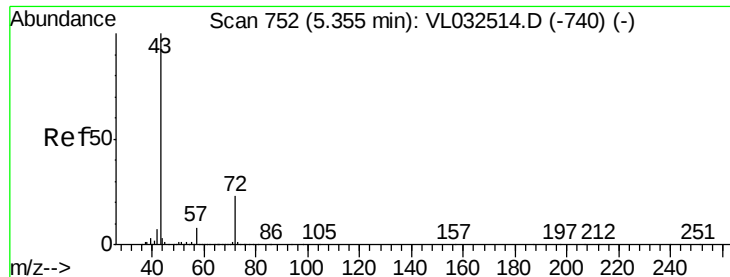
Ion Ratio Lower Upper

114 100

63 27.2 22.2 33.4

88 18.5 15.0 22.4





#34

2-Butanone

Concen: 0.094 ppbv

RT: 5.37 min Scan# 756

Delta R.T. -0.01 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

Instrument :

MSVOA\_L

ClientSampleId :

GAC-EFF-DUP-092018

Tot Ion: 43 Resp: 18432

Ion Ratio Lower Upper

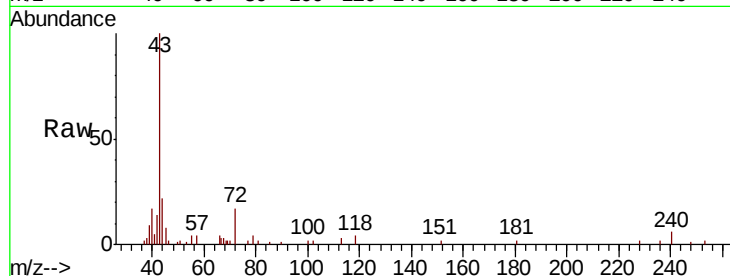
43 100

72 22.3 17.8 26.6

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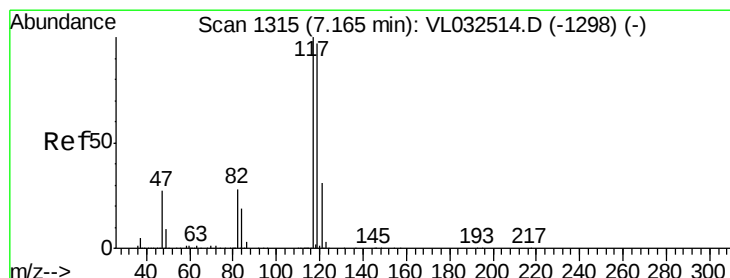
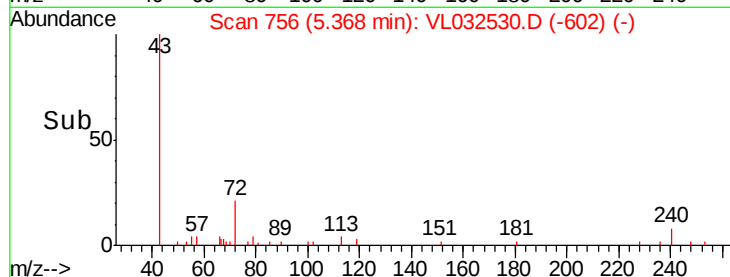
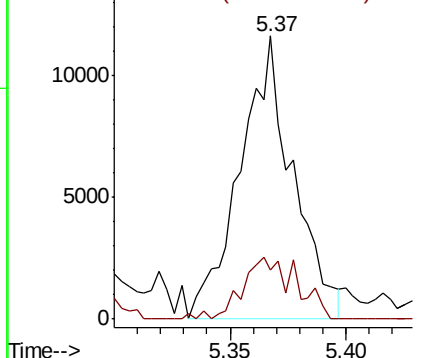
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Abundance Ion 43.10 (42.80 to 43.80): VL0

Ion 72.10 (71.80 to 72.80): VL0



#35

Carbon Tetrachloride

Concen: 0.186 ppbv

RT: 7.17 min Scan# 1316

Delta R.T. -0.02 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

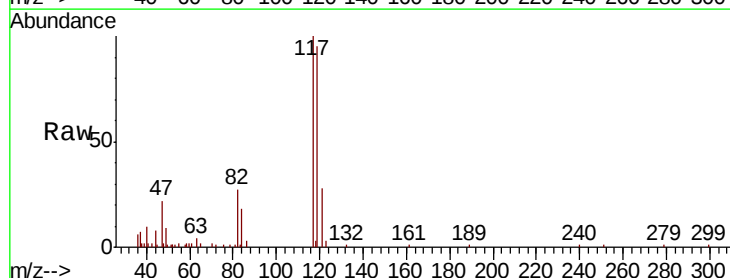
Tgt Ion: 117 Resp: 42665

Ion Ratio Lower Upper

117 100

119 93.7 76.6 115.0

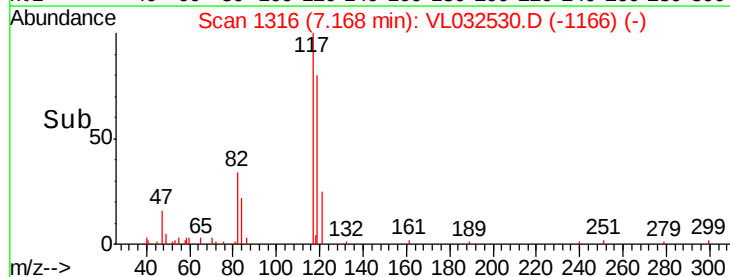
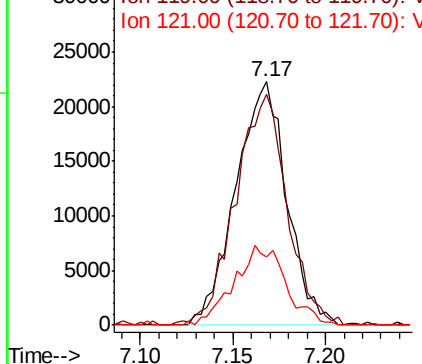
121 27.9 24.6 36.8

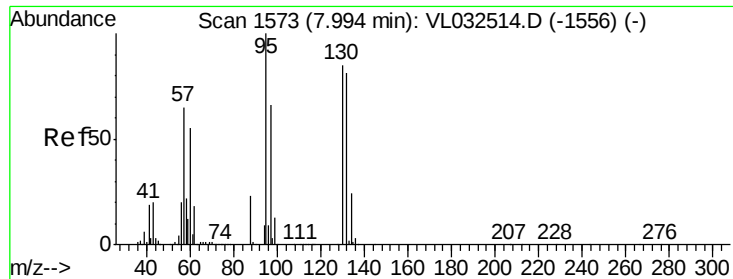


Abundance Ion 117.00 (116.70 to 117.70): V

Ion 119.00 (118.70 to 119.70): V

Ion 121.00 (120.70 to 121.70): V





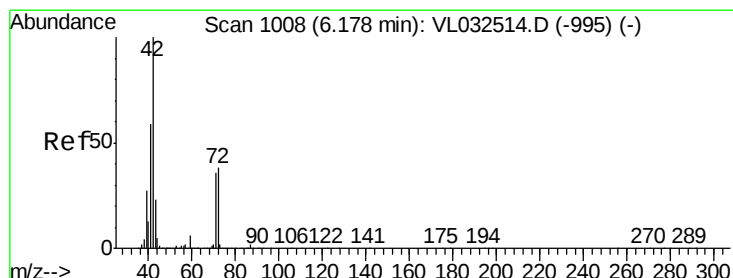
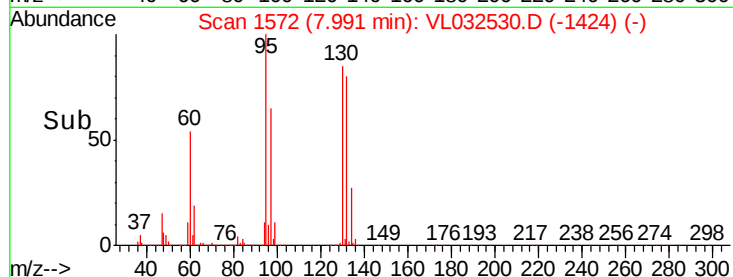
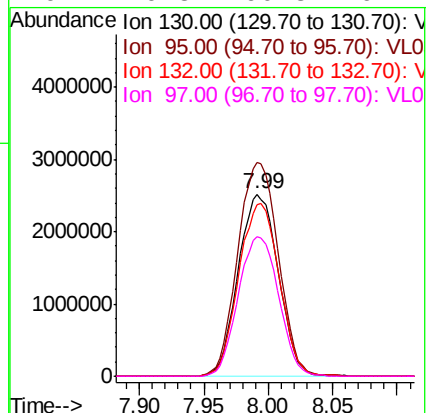
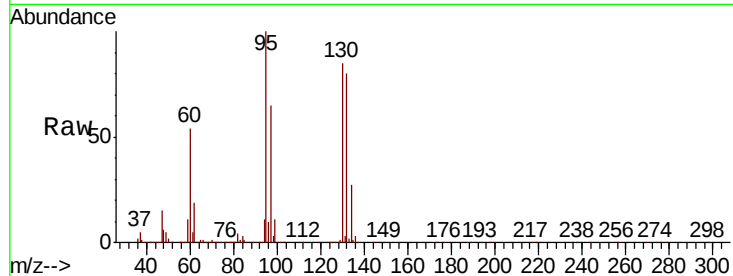
#38  
 Trichloroethene  
 Concen: 53.462 ppbv  
 RT: 7.99 min Scan# 1572  
 Delta R.T. -0.02 min  
 Lab File: VL032530.D  
 Acq: 25 Sep 2018 4:58

Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 GAC-EFF-DUP-092018

| Tot Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 130     | 100   |       |       |
| 95      | 117.5 | 94.2  | 141.4 |
| 132     | 94.4  | 76.2  | 114.4 |
| 97      | 76.8  | 60.8  | 91.2  |

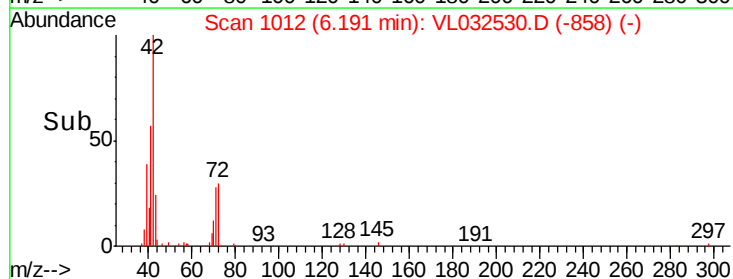
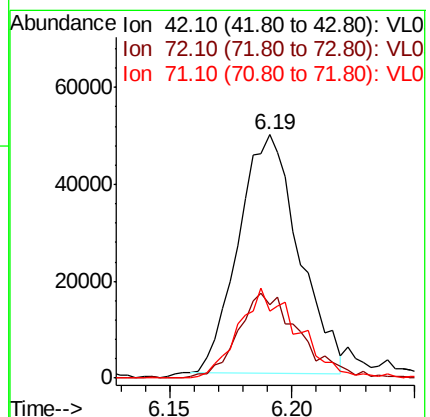
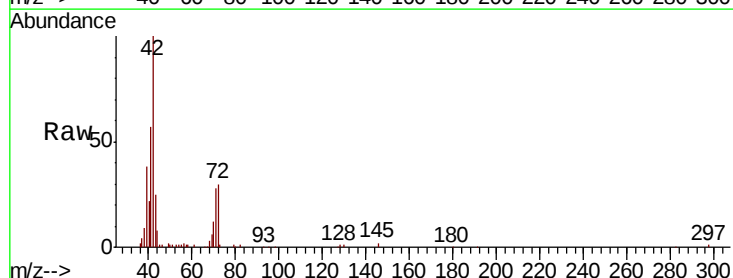
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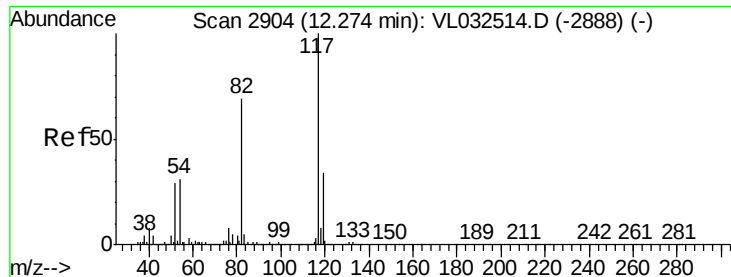
MMDadoda  
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#41  
 Tetrahydrofuran  
 Concen: 0.795 ppbv  
 RT: 6.19 min Scan# 1012  
 Delta R.T. -0.01 min  
 Lab File: VL032530.D  
 Acq: 25 Sep 2018 4:58

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 42      | 100   |       |       |
| 72      | 36.7  | 29.5  | 44.3  |
| 71      | 37.2  | 28.3  | 42.5  |





#55

Chlorobenzene-d5

Concen: 10.000 ppbv

RT: 12.27 min Scan# 2903

Delta R.T. -0.03 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

Instrument :

MSVOA\_L

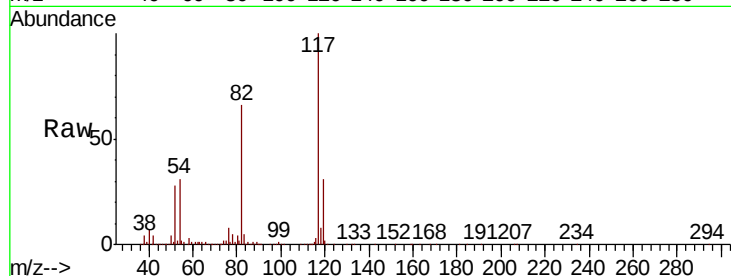
ClientSampleId :

GAC-EFF-DUP-092018

|           |       |       |         |
|-----------|-------|-------|---------|
| Tot Ion:  | 117   | Resp: | 2902812 |
| Ion Ratio | Lower | Upper |         |
| 117       | 100   |       |         |
| 82        | 67.7  | 53.0  | 79.6    |
| 119       | 32.7  | 45.9  | 68.9#   |

Manual Integrations  
APPROVED

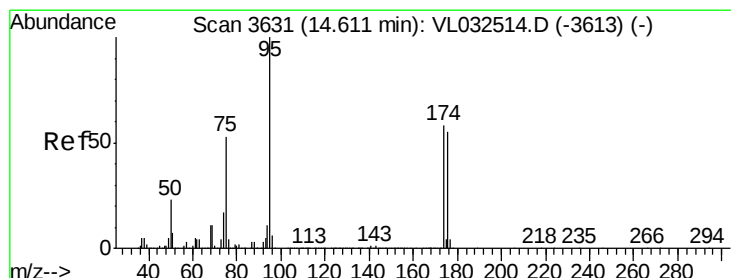
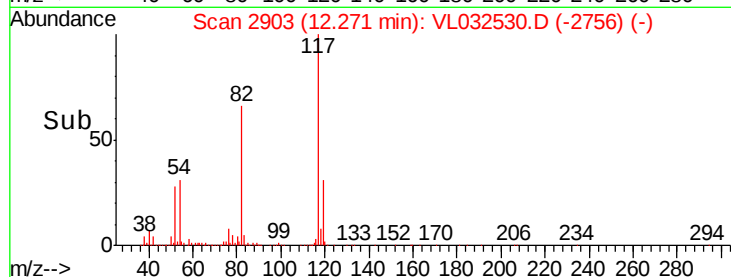
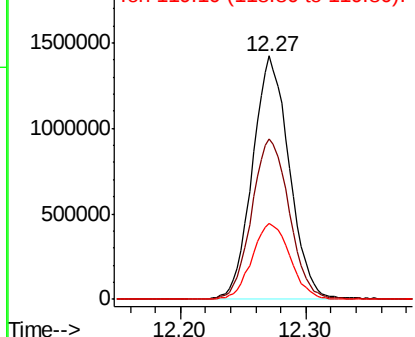
MMDadoda  
9/27/2018 12:31:35 PM



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: 9.995 ppbv

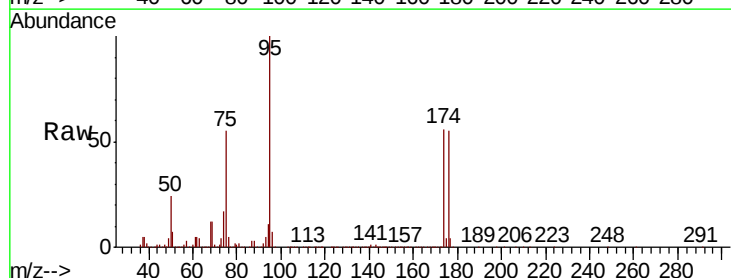
RT: 14.61 min Scan# 3630

Delta R.T. -0.03 min

Lab File: VL032530.D

Acq: 25 Sep 2018 4:58

|           |       |       |         |
|-----------|-------|-------|---------|
| Tgt Ion:  | 95    | Resp: | 2188026 |
| Ion Ratio | Lower | Upper |         |
| 95        | 100   |       |         |
| 174       | 57.9  | 46.3  | 69.5    |
| 175       | 4.1   | 3.4   | 5.0     |



Abundance Ion 95.10 (94.80 to 95.80): VL0

Ion 174.00 (173.70 to 174.70): V

Ion 175.00 (174.70 to 175.70): V

