

APPENDIX B

Soil Vapor Monitoring Report

12 May 2021

Sadique Ahmed
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Re: Soil Vapor Monitoring Report – Year 5
365 Bond Street
Brooklyn, New York
BCP Site No. C224174
Langan Project No.: 100287503

Dear Mr. Ahmed:

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) has prepared this letter report to summarize periodic soil vapor sampling during the fifth year of passive sub-membrane depressurization system (SMDS) operation at 365 Bond Street in Brooklyn, New York (the “site”). The soil vapor monitoring was conducted in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved Site Management Plan (SMP) dated September 2015, prepared by Langan.

Background

The site is located at 365 Bond Street in the City of Brooklyn, Kings County, New York and is identified as Block 458 and Lot 1 on the New York City Tax Map. The site is approximately 2.066 acres and is located on the city block bordered by First Street to the north, Second Street to the south, the Gowanus Canal to the east, and Bond Street to the west. Site location is shown on Figure 1.

The site was remediated under the NYSDEC Brownfield Cleanup Program in accordance with a NYSDEC-approved Interim Remedial Measures Work Plan (IRM) and Remedial Action Work Plan (RAWP), as described in the September 2015 Final Engineering Report (FER) and Construction Completion Report (CCR). As part of the remediation, soil vapor mitigation measures included installation of a sub-membrane piping network for a passive SMDS and a vapor barrier membrane beneath the ground floor slab of the building. The SMDS as-built layout is shown on Figure 2.

The site was redeveloped as a five- to twelve-story mixed-use commercial/residential building with a partial basement that was opened for residential occupation in April 2016. The building is being operated in accordance with the SMP which in part specifies that periodic soil vapor monitoring be completed to assess the effectiveness of the remedy. The SMP specifies that monitoring occur annually during the heating season unless otherwise required by NYSDEC to assess system effectiveness and determine if expansion to an active SMDS is warranted. It should be noted that the annual sampling for Year 4 was scheduled to take place in March 2020 prior to the end of the heating season; however, due to the onset of the COVID-19 pandemic, sampling could not be performed.

SMDS Inspection and Soil Vapor Sampling

On 8 April 2021, Langan conducted a visual inspection of the above-ground SMDS components prior to collecting sub-membrane soil vapor samples. The results of the inspection confirmed that all system components are in good condition. Langan also completed field screening of the soil vapor using a RAE Systems photo-ionization detector (PID) capable of detecting volatile organic compound (VOC) in the parts per billion (ppb) range. System performance was evaluated using a TSI 9515 VelociCalc which obtained vacuum readings at each sample port (V2, V3 and V5). Current and previous field screening data are provided in Table 1. VOC readings detected with the PID at the sample ports ranged from 0 ppb to 7 ppb and vacuum measurements at the sample ports ranged from 0.012 inches water to 0.031 inches water. The field screening results indicate that very low levels of VOCs are present in the soil vapor collection system and that a vacuum condition exists that is removing these vapors from beneath the membrane. A copy of the passive SMDS inspection checklist and field data is provided in Attachment A.

Following the inspection and field screening, three sub-membrane soil vapor samples were collected using Summa canisters that were connected to each sample port via an approximately 3-foot length of Teflon-lined polyethylene tubing. Quality assurance/quality control (QA/QC) included collection of a duplicate sample (at the V3 location) and an ambient air sample from the exterior of the building. All samples were collected in accordance with the New York State Department of Health (NYSDOH) October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York. Samples were collected in laboratory-cleaned and certified evacuated 6-L stainless steel Summa canisters with flow control regulators supplied by the laboratory. The regulators were set to collect each sub-membrane soil vapor sample over a 2-hour sampling period (a flow-rate of <200-ml per minute) as per United States Environmental Protection Agency (USEPA) / Interstate Technology and Regulatory Council (ITRC) soil vapor sampling guidance. Each sub-membrane soil vapor sample was numbered and recorded in a field log book. Samples were transferred to the laboratory immediately after field sampling was completed, and stored below a maximum room temperature of 30° Celsius. Chain-of-custody forms were utilized to document custody for the acquisition, possession, and analysis. All soil vapor and ambient air samples were submitted under chain of custody to York Analytical Laboratories, Inc. of Stratford, Connecticut (York) a NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory. Soil vapor and ambient air samples were laboratory analyzed for VOCs via the USEPA TO-15 Method. A copy of the Summa canister log is provided in Attachment A.

Laboratory Analytical Results

The sub-membrane soil vapor analytical results were compared to the NYSDOH Matrices A, B, and C of the NYSDOH Guidance for Evaluating Soil Vapor Intrusion. A summary of the sub-membrane soil vapor analytical results from this sampling event is provided in Table 2 and shown on Figure 3. The complete laboratory report for the April 2021 sampling event is provided in Attachment B.

The following compounds are included in the decision matrices in the NYSDOH Final Guidance on Soil Vapor Intrusion dated October 2006 and appended in May 2007 and May 2017:

- Carbon tetrachloride
- 1,1,1-Trichloroethane (1,1,1-TCA)

- Cis-1,2-Dichloroethylene (cis-1,2-DCE)
- Methylene chloride
- Trichloroethylene (TCE)
- Tetrachloroethylene (PCE)
- 1,1-Dichloroethylene
- Vinyl Chloride

Concentrations of 1,1,1-TCA, 1,1-dichloroethylene, and vinyl chloride were not detected in any of the sub-membrane soil vapor samples collected.

As shown in Table 2, laboratory analytical results revealed low concentrations of NYSDOH Matrix VOCs in the sub-slab soil vapor. For the purposes of data evaluation, due to the presence of the SMDS, the vapor barrier, and the building foundation, it is reasonably anticipated that indoor air concentrations of VOCs originating from soil vapor do not exist inside the building.

Analytical results for carbon tetrachloride in sub-slab soil vapor were compared to the NYSDOH Vapor Intrusion Decision Matrix A. Carbon tetrachloride was detected in soil vapor at all three sample ports at concentrations ranging from of 0.348 $\mu\text{g}/\text{m}^3$ at sample location V2 to 0.451 $\mu\text{g}/\text{m}^3$ at sample location V3. Therefore, as the concentrations detected in soil vapor were below the Matrix A soil vapor threshold of 6 $\mu\text{g}/\text{m}^3$ and are not expected to affect indoor air quality, no additional actions are needed to address human exposures.

Analytical results for cis-1,2-DCE in sub-slab soil vapor were compared to the NYSDOH Vapor Intrusion Decision Matrix A. Cis-1,2-DCE was not detected in soil vapor at V3 but was detected at a concentration of 0.584 $\mu\text{g}/\text{m}^3$ at sample location V2 and at a concentration of 1.14 $\mu\text{g}/\text{m}^3$ at sample location V5. Therefore, as the concentrations detected in soil vapor were below the Matrix A soil vapor threshold of 6 $\mu\text{g}/\text{m}^3$ and are not expected to affect indoor air quality, no additional actions are needed to address human exposures.

Analytical results for methylene chloride in sub-slab soil vapor were compared to the NYSDOH Vapor Intrusion Decision Matrix B. Methylene chloride was detected in soil vapor at all three sample ports at concentrations ranging from 7.1 $\mu\text{g}/\text{m}^3$ at sample location V3 to 28.5 $\mu\text{g}/\text{m}^3$ at sample location V2. Therefore, as the concentrations of methylene chloride detected in soil vapor were below the Matrix B soil vapor threshold of 100 $\mu\text{g}/\text{m}^3$ and are not expected to affect indoor air quality, no additional actions are needed to address human exposures.

Analytical results for TCE in sub-slab soil vapor were compared to the NYSDOH Vapor Intrusion Decision Matrix A. TCE was not detected in soil vapor at V3 but was detected at a concentration of 0.792 $\mu\text{g}/\text{m}^3$ at sample location V2 and at a concentration of 0.688 $\mu\text{g}/\text{m}^3$ at sample location V5. Therefore, as the concentrations detected in soil vapor were below the Matrix A soil vapor threshold of 6 $\mu\text{g}/\text{m}^3$ and are not expected to affect indoor air quality, no additional actions are needed to address human exposures.

Analytical results for PCE in sub-slab soil vapor were compared to the NYSDOH Vapor Intrusion Decision Matrix B. PCE was not detected in soil vapor at V3 but was detected at a concentration of 1.75 $\mu\text{g}/\text{m}^3$ at sample location V2 and at a concentration of 2.17 $\mu\text{g}/\text{m}^3$ at sample location V5. Therefore, as the concentrations of PCE detected in soil vapor were below the Matrix B soil vapor threshold of 100 $\mu\text{g}/\text{m}^3$ and are not expected to affect indoor air quality, no additional actions are needed to address human exposures.

Several other VOCs were detected in soil vapor samples. Total VOC concentrations in the soil vapor samples ranged from 82.649 $\mu\text{g}/\text{m}^3$ (V5) to 95.62 $\mu\text{g}/\text{m}^3$ (V2). Benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX) were detected in soil vapor at concentrations of 27.8 $\mu\text{g}/\text{m}^3$ (V5) to 42.1 $\mu\text{g}/\text{m}^3$ (V3).

Based on the remediation completed to date, the source of these vapors is likely residual contamination in soil that is being addressed by operation of the SMDS.

Historical sub-slab soil vapor analytical results are shown on Table 3. Comparison of the Year 5 monitoring analytical results to results from the four sampling events completed in Year 1 generally revealed a decrease in concentrations of total VOCs and BTEX in all three sampling locations. A comparison of the Year 5 monitoring analytical results to the Year 3 sampling event results reveals that total VOCs concentrations have generally remained stable or increased by less than one order of magnitude and BTEX concentrations have generally remained stable. Chlorinated VOCs were detected at concentrations requiring no further action when compared against the Matrix A, Matrix B, and Matrix C Vapor Intrusion thresholds during all seven sampling events.

Validation Overview

Data validation was completed for all sub-membrane soil vapor and ambient air results in accordance with the QAPP provided in the September 2015 SMP which included verification of sample results, verification of the identification of sample results, and recalculation of 10% of all sample results. Following data validation, a Data Usability Summary Report (DUSR) was prepared for all samples (and related QA/QC samples) collected during the monitoring event. The DUSR presents the results of the data validation, including a summary assessment of laboratory data packages, sample preservation and COC procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method. All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%. The DUSR is included in Attachment C. Associated raw data is provided as Attachment B.


Conclusions

Based on the findings of this SMDS inspection and soil vapor monitoring event, the vacuum being produced in the SMDS is sufficient to effectively mitigate potential vapor intrusion concerns at the site. A vacuum condition was observed at each of the three sample ports (V2, V3, and V5) and the sub-membrane soil vapor concentrations for chlorinated VOCs were detected below the NYSDOH Vapor Intrusion Decision Matrix thresholds requiring further action.

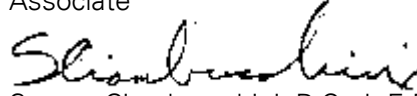
Based on these findings, continued operation of the passive SMDS is sufficient in order to mitigate any potential impacts to the building interior indoor air quality and, system expansion as an active SMDS is not required at this time. The operation, maintenance, and monitoring (OM&M) protocols provided in the SMP for this passive SMDS will consist of continued monitoring of the system annually during the heating season unless otherwise required by NYSDEC.

Sincerely,

**Langan Engineering, Environmental, Surveying,
Landscape Architecture and Geology, D.P.C.**



Christopher McMahon, CHMM
Associate



Steven Ciambuschini, P.G., L.E.P.
Senior Principal

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Enclosure(s): Table 1 – SMDS Screening Results
Table 2 – Summary of Sub-Slab Soil Vapor Analytical Results
Table 3 – Historical Sub-Slab Soil Vapor Analytical Results
Figure 1 – Site Location Map
Figure 2 – Sample Location Plan
Figure 3 – Sub-Slab Soil Vapor Analytical Results
Attachment A – Field Logs
Attachment B – Laboratory Analytical Results
Attachment C – Data Usability Summary Report (DUSR)

cc: Jennifer Jennings – LSG 365 Bond Street, LLC
Allyson Kritzer, Jessica Friscia – Langan

TABLES

Table 1
Soil Vapor Monitoring Report - Year 5
Field Screening Results

365 Bond Street
Brooklyn, New York
NYSDEC BCP Site No.: C224174
Langan Project No.: 100287503

Parameter	PID	PID	PID	PID	PID	PID	PID
Monitoring Event	Year 1, Month 1	Year 1, Month 3	Year 1, Month 6	Year 1, Month 12	Year 2	Year 3	Year 5
Date	5/20/2016	7/20/2016	10/20/2016	4/20/2017	2/13/2018	2/27/2019	4/8/2021
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Sample Port							
V2	329	239	373	1,058	637	70	7
V3	309	1,602	401	539	658	20	4
V5	257	0	363	717	640	10	0

Parameter	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
Monitoring Event	Month 1	Month 3	Month 6	Month 12	Year 2	Year 3	Year 5
Date	5/20/2017	7/20/2017	10/20/2016	4/20/2017	2/13/2018	2/27/2019	4/8/2021
Units	in. H2O	in. H2O	in. H2O	in. H2O	in. H2O	in. H2O	in. H2O
Sample Port							
V2	0.015	0.011	0.012	0.017	0.064	0.057	0.031
V3	0.005	0.006	0.009	0.011	0.029	0.025	0.012
V5	0.018	0.015	0.024	0.009	0.021	0.020	0.024

Notes:

ppb: parts per billion
in. H2O: inches of water

**Table 2
Soil Vapor Monitoring Report - Year 5
Soil Vapor Analytical Results**

**365 Bond Street
Brooklyn, New York
NYSDEC BCP Site No.: C224174
Langan Project No.: 100287503**

Location Sample ID Laboratory ID Sample Date Sample Type	NYSDOH Decision Matrices Minimum Concentrations	AMBIENT-1 871_AMBIENT-1 21D0348-05 4/8/2021 AA	V2 873_V2 21D0348-02 4/8/2021 SV	V3 874_V3 21D0348-03 4/8/2021 SV	V3 875_DUP-1 21D0348-04 4/8/2021 SV	V5 872_V5 21D0348-01 4/8/2021 SV
Volatile Organic Compounds ($\mu\text{g}/\text{m}^3$)						
1,1,1,2-Tetrachloroethane	~	0.585 U	1.26 U	1.23 U	1.13 U	1.1 U
1,1,1-Trichloroethane	100	0.465 U	1.01 U	0.979 U	0.896 U	0.874 U
1,1,2,2-Tetrachloroethane	~	0.585 U	1.26 U	1.23 U	1.13 U	1.1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	~	0.653 U	1.41 U	1.37 U	1.26 U	1.23 U
1,1,2-Trichloroethane	~	0.465 U	1.01 U	0.979 U	0.896 U	0.874 U
1,1-Dichloroethane	~	0.345 U	0.746 U	0.726 U	0.665 U	0.648 U
1,1-Dichloroethene	6	0.169 U	0.365 U	0.356 U	0.326 U	0.317 U
1,2,4-Trichlorobenzene	~	0.632 U	1.37 U	1.33 U	1.22 U	1.19 U
1,2,4-Trimethylbenzene	~	0.419 U	5.07 D	4.14 D	3.71 D	3.86 D
1,2-Dibromoethane (Ethylene Dibromide)	~	0.655 U	1.42 U	1.38 U	1.26 U	1.23 U
1,2-Dichlorobenzene	~	0.512 U	1.11 U	1.08 U	0.987 U	0.963 U
1,2-Dichloroethane	~	0.345 U	0.745 U	0.726 U	0.665 U	0.648 U
1,2-Dichloropropane	~	0.394 U	0.851 U	0.829 U	0.759 U	0.74 U
1,2-Dichlorotetrafluoroethane	~	0.596 U	1.29 U	1.25 U	1.15 U	1.12 U
1,3,5-Trimethylbenzene (Mesitylene)	~	0.419 U	1.36 D	1.15 D	1.05 D	1.02 D
1,3-Butadiene	~	0.565 U	1.22 U	1.19 U	1.09 U	1.06 U
1,3-Dichlorobenzene	~	0.512 U	1.11 U	1.08 U	0.987 U	0.963 U
1,3-Dichloropropane	~	0.394 U	0.851 U	0.829 U	0.759 U	0.74 U
1,4-Dichlorobenzene	~	0.512 U	1.11 U	1.08 U	0.987 U	0.963 U
1,4-Dioxane (P-Dioxane)	~	0.614 U	1.33 U	1.29 U	1.18 U	1.15 U
2-Hexanone	~	0.698 U	1.51 U	1.47 U	1.35 U	1.31 U
4-Ethyltoluene	~	0.419 U	4.35 D	3.7 D	3.23 D	3.31 D
Acetone	~	4.76 D	2.63 D	7.46 J	4.41 J	3.23 D
Acrylonitrile	~	0.185 U	0.4 U	0.389 U	0.356 U	0.347 U
Allyl Chloride (3-Chloropropene)	~	1.33 U	2.88 U	2.81 U	2.57 U	2.51 U
Benzene	~	0.517 D	2.94 D	5.33 D	4.98 D	2.05 D
Benzyl Chloride	~	0.441 U	0.954 U	0.929 U	0.85 U	0.829 U
Bromodichloromethane	~	0.571 U	1.23 U	1.2 U	1.1 U	1.07 U
Bromoethene	~	0.373 U	0.806 U	0.785 U	0.718 U	0.7 U
Bromoform	~	0.881 U	1.9 U	1.85 U	1.7 U	1.65 U
Bromomethane	~	0.331 U	0.715 U	0.697 U	0.638 U	0.622 U
Carbon Disulfide	~	0.318 D	0.574 D	0.559 D	0.511 D	0.897 D
Carbon Tetrachloride	6	0.375 D	0.348 D	0.451 D	0.31 D	0.403 D
Chlorobenzene	~	0.392 U	0.848 U	0.826 U	0.756 U	0.737 U
Chloroethane	~	0.225 U	0.486 U	0.473 U	0.433 U	0.422 U
Chloroform	~	0.416 U	0.899 U	0.876 U	0.802 U	1.49 D
Chloromethane	~	0.897 D	1.07 D	0.963 D	0.916 D	1.59 D
Cis-1,2-Dichloroethene	6	0.169 U	0.584 D	0.356 U	0.326 U	1.14 D
Cis-1,3-Dichloropropene	~	0.387 U	0.836 U	0.814 U	0.745 U	0.727 U
Cyclohexane	~	0.293 U	0.697 D	1.48 D	1.36 D	0.551 D
Dibromochloromethane	~	0.726 U	1.57 U	1.53 U	1.4 U	1.36 U
Dichlorodifluoromethane	~	2.02 D	2.19 D	2.31 D	1.79 D	2.22 D
Ethyl Acetate	~	0.614 U	1.33 U	1.29 U	1.18 U	1.15 U
Ethylbenzene	~	0.37 U	2.88 D	3.27 D	2.85 D	2.57 D
Hexachlorobutadiene	~	0.909 U	1.96 U	1.91 U	1.75 U	1.71 U
Isopropanol	~	2.47 D	2.35 D	5.95 D	4.76 D	4.6 D
M,P-Xylene	~	0.962 D	10.9 D	11.8 D	10.7 D	9.52 D
Methyl Ethyl Ketone (2-Butanone)	~	0.653 D	0.815 D	1.59 J	1.07 J	1.23 D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	0.349 U	2.04 D	2.35 D	1.75 D	3.08 D
Methyl Methacrylate	~	0.767 D	2.19 D	1.62 J	2.22 J	1.84 D
Methylene Chloride	100	3.08 D	28.5 D	7.1 J	11.5 J	15.8 D
n-Heptane	~	0.349 D	1.28 D	2.57 D	2.56 D	1.12 D
n-Hexane	~	0.781 D	2.14 D	6.01 D	4.98 D	1.69 D
o-Xylene (1,2-Dimethylbenzene)	~	0.37 U	4.24 D	4.6 D	4.06 D	3.55 D
Propylene	~	0.147 U	0.317 U	0.309 U	0.283 U	0.276 U
Styrene	~	0.363 U	0.785 U	0.764 U	0.699 U	0.682 U
Tert-Butyl Methyl Ether	~	0.307 U	0.664 U	0.647 U	0.592 U	0.577 U
Tetrachloroethene (PCE)	100	0.925 D	1.75 D	1.22 U	1.11 U	2.17 D
Tetrahydrofuran	~	0.503 U	1.58 D	1.32 D	1.65 D	1.13 D
Toluene	~	1.73 D	10.9 D	17.1 D	13.4 D	10.1 D
Trans-1,2-Dichloroethene	~	0.338 U	0.73 U	0.711 U	0.651 U	0.635 U
Trans-1,3-Dichloropropene	~	0.387 U	0.836 U	0.814 U	0.745 U	0.727 U
Trichloroethene (TCE)	6	0.114 U	0.792 D	0.241 U	0.221 U	0.688 D
Trichlorofluoromethane	~	1.15 D	1.45 D	1.51 D	1.2 D	1.8 D
Vinyl Acetate	~	0.3 UJ	0.649 UJ	0.632 UJ	0.578 UJ	0.564 UJ
Vinyl Chloride	6	0.109 U	0.235 U	0.229 U	0.21 U	0.205 U
Total CVOCs	~	0.925	3.13	ND	ND	3.99
Total BTEX	~	3.21	31.9	42.1	35.9	27.8
Total VOCs	~	21.754	95.62	94.333	84.967	82.649

Notes:

- Soil vapor sample analytical results are compared to the minimum soil vapor concentrations at which mitigation is recommended as set forth in the New York State Department of Health (NYSDOH) October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York Decision Matrices for Sub-Slab Vapor and Indoor Air and subsequent updates (2017).
- Ambient air sample analytical results are shown for reference only.
- Sample 875_DUP-1 is a duplicate of parent sample 874_V3.
- ~ = Regulatory limit for this analyte does not exist
- $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter
- AA = Ambient Air
- SV = Soil Vapor
- Total BTEX = calculation from BTEX results above the Limit of Detection
- Total VOC = calculation from VOC results above the Limit of Detection

Qualifiers:

- D = The concentration reported is a result of a diluted sample.
- J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ = The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.
- U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

Table 3
Soil Vapor Monitoring Report - Year 5
Historical Soil Vapor Analytical Results

365 Bond Street
Brooklyn, New York
NYSDEC BCP Site No.: C224174
Langan Project No.: 100287503

Notes:

1. Soil vapor sample analytical results are compared to the minimum soil vapor concentrations at which mitigation is recommended as set forth in the New York State Department of Health (NYSDOH) October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York Decision Matrices for Sub-Slab Vapor and Indoor Air and subsequent updates (2017).
2. Detected analytical results above the minimum soil vapor concentrations recommending mitigation are bolded and shaded.
3. Analytical results with reporting limits (RL) above the minimum soil vapor concentrations recommending mitigation are italicized.
4. Sample 0763/Dup-1_20160520 is a duplicate sample of 0762/V2_20160520; sample 0780/DUP-1_072016 is a duplicate sample of 779; sample 796/DUP-1-20161020 is a duplicate sample of 795; sample 818/DUP-1 is a duplicate sample of 817; sample 863/DUP-1 is a duplicate sample of 863; sample 868 DUP-1 is a duplicate sample of 867 V3_20190227; sample 928_DUP-1 is a duplicate sample of 926_V2; and sample 875_DUP-1 is a duplicate sample of 874_V3.
5. ~ = Regulatory limit for this analyte does not exist
6. $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter
7. SV = Soil Vapor
8. Total BTEX = calculation from BTEX results above the Limit of Detection
9. Total VOC = calculation from VOC results above the Limit of Detection

Qualifiers:

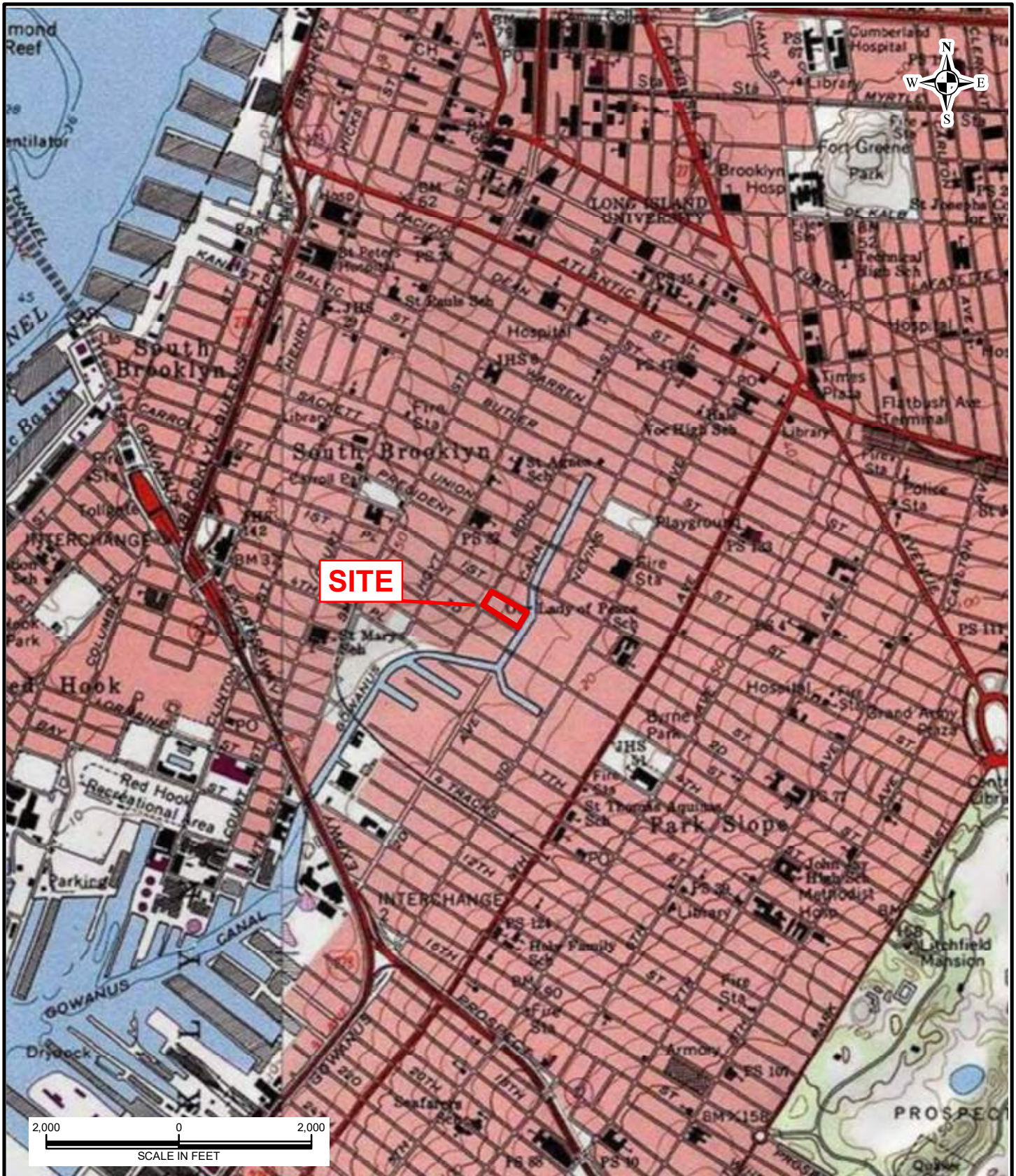
D = The concentration reported is a result of a diluted sample.

J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

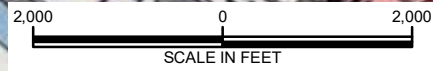
UJ = The analyte was not detected at a level greater than or equal to the RL; however, the reported RL is approximate and may be inaccurate or imprecise.

U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

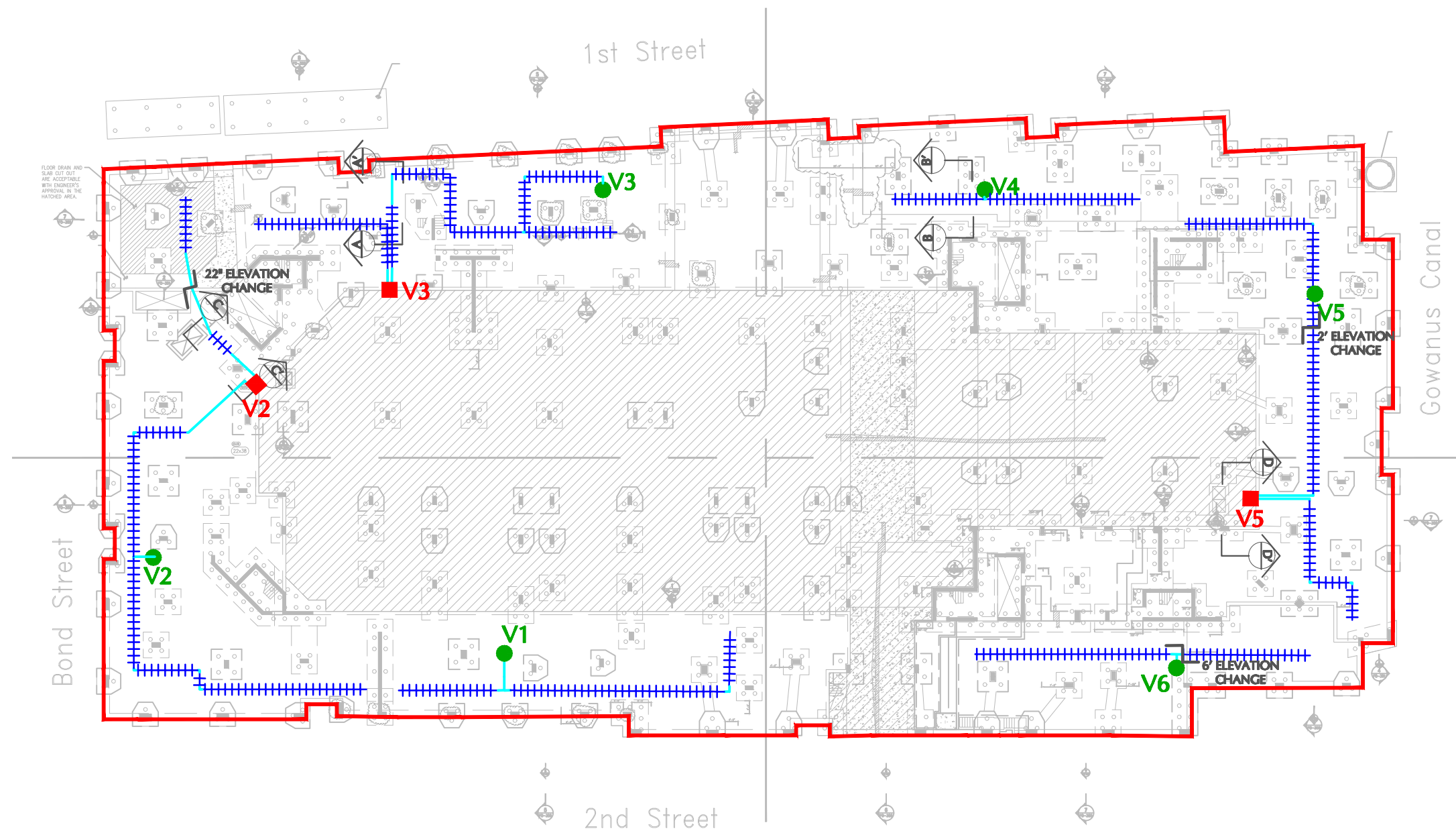
FIGURES



SITE



<p>LANGAN 300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com</p> <p>Langan Engineering & Environmental Services, Inc. Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. Langan International LLC Collectively known as Langan</p> <p>NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400</p>	<p>Project</p> <p>365 BOND STREET DEVELOPMENT</p> <p>BLOCK No. 458, LOT No. 1</p> <p>BROOKLYN</p> <p>KINGS COUNTY NEW YORK</p>	<p>Drawing Title</p> <p>SITE LOCATION MAP</p>	<p>Project No.</p> <p>100287503</p> <p>Date</p> <p>3/20/2019</p> <p>Scale</p> <p>1"=2000'</p> <p>Drawn By</p> <p>amf</p> <p>Last Revised</p> <p>4/20/2021</p>	<p>Figure</p> <p>1</p>
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- LEGEND:**
- BUILDING EXTERIOR
 - SUBGRADE PARKING AREA
 - +++++ INSTALLED BELOW GRADE HORIZONTAL WELL SMDS SCREEN (4" SCHEDULE 80 PVC, 10-SLOT)
 - INSTALLED BELOW GRADE PVC PIPE (4" SCHEDULE 80 PVC)
 - V3 INSTALLED VENT PIPE WITH "T" FITTING AND ISOLATION BALL VALVE (OVERHEAD VERTICAL MANIFOLD, 4" CAST IRON PIPE)
 - INSTALLED VALVE BOX WITH ISOLATION VALVE AND SAMPLE PORTS

- NOTES:**
1. ALL VERTICAL VENT PIPING IS CONSTRUCTED FROM CAST IRON AND ALL BELOW GRADE PIPING IS CONSTRUCTED FROM SCHEDULE 80 PVC.
 2. THE INSTALLED SMDS WELL SCREENS AND MANIFOLD ARE DESIGNED TO BE OPERATED AS A "PASSIVE" VAPOR MITIGATION SYSTEM AND POTENTIALLY CAN BE CONVERTED TO AN "ACTIVE" VAPOR MITIGATION SYSTEM WITH THE ADDITION OF FANS/BLOWERS.
 3. FOUNDATION ELEMENTS PRESENTED HEREIN ARE BASED ON 100% FOUNDATION (1ST FLOOR/GARAGE) OVERALL PLAN F0-100 DATED MARCH 28, 2014.
 4. SIGNED AND SEALED AS-BUILT DRAWINGS WERE SUBMITTED IN THE SEPTEMBER 2015 SMP, CCR, AND FER.









<p>LANGAN</p> <p>300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. Langan Engineering and Environmental Services, Inc. Langan CT, Inc. Langan International LLC Collectively known as Langan</p>	<p>Project</p> <p>365 BOND STREET DEVELOPMENT</p> <p>365 BOND STREET</p> <p>BROOKLYN NEW YORK</p>	<p>Drawing Title</p> <p>SAMPLE LOCATION PLAN</p>	<p>Project No. 100287501</p> <p>Date MARCH 20, 2019</p> <p>Scale AS SHOWN</p> <p>Drawn By JR</p> <p>Submission Date APRIL 20, 2021</p>	<p>Drawing No.</p> <p style="font-size: 2em;">2</p>

Sample ID	874_V3	875_DUP-1
Sample Date	4/8/2021	4/8/2021
Sample Type	SV	SV
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
Benzene	5.33	4.98
Carbon Tetrachloride	0.451	0.31
Chloroethane	ND	ND
Cis-1,2-Dichloroethene	ND	ND
Ethylbenzene	3.27	2.85
M,P-Xylene	11.8	10.7
Methylene Chloride	7.1	11.5
o-Xylene (1,2-Dimethylbenzene)	4.6	4.06
Tetrachloroethene (PCE)	ND	ND
Toluene	17.1	13.4
Trans-1,2-Dichloroethene	ND	ND
Trichloroethene (TCE)	ND	ND
Vinyl Chloride	ND	ND
Total BTEX	42.1	35.9

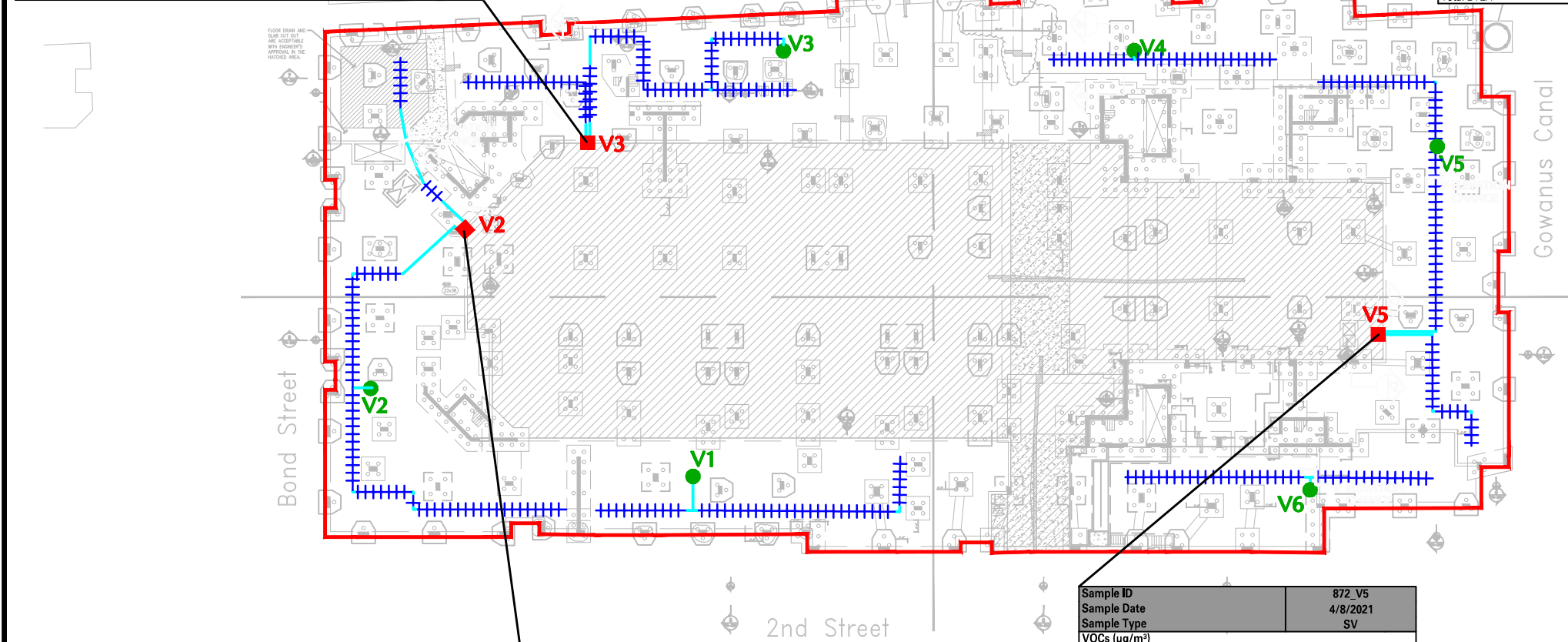
Sample ID	871_AMBIENT-1
Sample Date	4/8/2021
Sample Type	AA
VOCs (µg/m³)	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
Benzene	0.517
Carbon Tetrachloride	0.375
Chloroethane	ND
Cis-1,2-Dichloroethene	ND
Ethylbenzene	ND
M,P-Xylene	0.962
Methylene Chloride	3.08
o-Xylene (1,2-Dimethylbenzene)	ND
Tetrachloroethene (PCE)	0.925
Toluene	1.73
Trans-1,2-Dichloroethene	ND
Trichloroethene (TCE)	ND
Vinyl Chloride	ND
Total BTEX	3.21

LEGEND:

-  BUILDING EXTERIOR
-  SUBGRADE PARKING AREA
-  INSTALLED BELOW GRADE HORIZONTAL WELL SMDS SCREEN (4" SCHEDULE 80 PVC, 10-SLOT)
-  INSTALLED BELOW GRADE PVC PIPE (4" SCHEDULE 80 PVC)
-  INSTALLED VENT PIPE WITH "T" FITTING AND ISOLATION BALL VALVE (OVERHEAD VERTICAL MANIFOLD, 4" CAST IRON PIPE)
-  INSTALLED VALVE BOX WITH ISOLATION VALVE AND SAMPLE PORTS

NOTES:

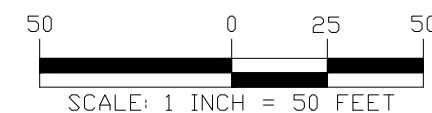
- ALL VERTICAL VENT PIPING IS CONSTRUCTED FROM CAST IRON AND ALL BELOW GRADE PIPING IS CONSTRUCTED FROM SCHEDULE 80 PVC.
- THE INSTALLED SMDS WELL SCREENS AND MANIFOLD ARE DESIGNED TO BE OPERATED AS A "PASSIVE" VAPOR MITIGATION SYSTEM AND POTENTIALLY CAN BE CONVERTED TO AN "ACTIVE" VAPOR MITIGATION SYSTEM WITH THE ADDITION OF FANS/BLOWERS.
- FOUNDATION ELEMENTS PRESENTED HEREIN ARE BASED ON 100% FOUNDATION (1ST FLOOR/GARAGE) OVERALL PLAN F0-100 DATED MARCH 28, 2014.
- SIGNED AND SEALED AS-BUILT DRAWINGS WERE SUBMITTED IN THE SEPTEMBER 2015 SMP, CCR, AND FER.



Analyte	CAS Number	NYSDOH Decision Matrices Minimum Concentrations
VOCs (µg/m³)		
1,1,1-Trichloroethane	71-55-6	100
1,1-Dichloroethane	75-34-3	~
1,1-Dichloroethene	75-35-4	6
Benzene	71-43-2	~
Carbon Tetrachloride	56-23-5	6
Chloroethane	75-00-3	~
Cis-1,2-Dichloroethene	156-59-2	6
Ethylbenzene	100-41-4	~
M,P-Xylene	179601-23-1	~
Methylene Chloride	75-09-2	100
o-Xylene (1,2-Dimethylbenzene)	95-47-6	~
Tetrachloroethene (PCE)	127-18-4	100
Toluene	108-88-3	~
Trans-1,2-Dichloroethene	156-60-5	~
Trichloroethene (TCE)	79-01-6	6
Vinyl Chloride	75-01-4	6
Total BTEX	~	~

Sample ID	873_V2
Sample Date	4/8/2021
Sample Type	SV
VOCs (µg/m³)	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
Benzene	2.94
Carbon Tetrachloride	0.348
Chloroethane	ND
Cis-1,2-Dichloroethene	0.584
Ethylbenzene	2.88
M,P-Xylene	10.9
Methylene Chloride	28.5
o-Xylene (1,2-Dimethylbenzene)	4.24
Tetrachloroethene (PCE)	1.75
Toluene	10.9
Trans-1,2-Dichloroethene	ND
Trichloroethene (TCE)	0.792
Vinyl Chloride	ND
Total BTEX	31.9

Sample ID	872_V5
Sample Date	4/8/2021
Sample Type	SV
VOCs (µg/m³)	
1,1,1-Trichloroethane	ND
1,1-Dichloroethane	ND
1,1-Dichloroethene	ND
Benzene	2.05
Carbon Tetrachloride	0.403
Chloroethane	ND
Cis-1,2-Dichloroethene	1.14
Ethylbenzene	2.57
M,P-Xylene	9.52
Methylene Chloride	15.8
o-Xylene (1,2-Dimethylbenzene)	3.55
Tetrachloroethene (PCE)	2.17
Toluene	10.1
Trans-1,2-Dichloroethene	ND
Trichloroethene (TCE)	0.688
Vinyl Chloride	ND
Total BTEX	27.8



Notes:

- Soil vapor sample analytical results are compared to the minimum soil vapor concentrations at which mitigation is recommended as set forth in the New York State Department of Health (NYSDOH) October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York. Decision Matrices for Sub-Slab Vapor and Indoor Air and subsequent updates (2017).
- Ambient air sample analytical results are shown for reference only.
- ~ = Regulatory limit or CAS number for this analyte does not exist.
- µg/m³ = micrograms per cubic meter.
- AA = Ambient Air
- SV = Soil Vapor
- Total BTEX = calculation from BTEX results above the Limit of Detection

Qualifiers:

D = The concentration reported is a result of a diluted sample.
 J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

<p>LANGAN</p> <p>300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com</p> <p>Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. Langan Engineering and Environmental Services, Inc. Langan CT, Inc. Langan International LLC Collectively known as Langan</p>	Project	Drawing Title	Project No.	Drawing No.	
		365 BOND STREET DEVELOPMENT	SUMMARY OF SUB-SLAB SOIL VAPOR ANALYTICAL RESULTS	100287501	3
		365 BOND STREET		Date MARCH 22, 2019	
		BROOKLYN NEW YORK		Scale AS SHOWN	
			Drawn By JR	Last Revised APRIL 30, 2021	

ATTACHMENT A

Field Logs

PASSIVE SUB-SLAB DEPRESSURIZATION SYSTEM INSPECTION CHECKLIST

Site Name: 365 Bond Street Location: Brooklyn, NY Project Number: 100287501

Inspector Name: Esther Arthur Date: 4/8/2021 Weather Conditions: Clear/Sunny

Reason for Inspection (i.e., routine, severe condition, etc.): Annual Inspection/Periodic Review Report

When was the last rain event? 4/1/2021 (light rain)

Current Temperature: 55-60°F

Current Barometric Pressure: 30.18 in

Valve Manifolds		
Location	PID (ppb)	Vacuum (in. H2O)
V2	7	-0.031
V3	4	-0.012
V5	0	-0.024

Comments

Riser Pipes Exhaust		
Location	PID (ppb)	Air Flow (CFM)
V1	3	2.18
V2	20	0.31
V3	11	0.11
V4	7	0.92
V5	12	0.68
V6	14	4.12

Comments

Inspection Comments
 No changes have been made since the 2019 Annual Inspection

Emergency Contact Information		
Name	Title	Phone Number
Christopher Cusumano	Building Management	718-705-8413
Steven Ciambuschini	Langan Qualified Environmental Professional	973-560-4900 (office) 973-560-4982 (direct)
Christopher McMahon	Langan Project Manager	973-560-4900 (office) 973-560-4861 (direct)
Jennifer Jennings	Lighstone Representative	718-564-6531 (direct)
Sadique Ahmed	NYSDEC Case Manager	518-402-9656 (office)

PASSIVE SUB-SLAB DEPRESSURIZATION SYSTEM INSPECTION CHECKLIST

SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site: 365 Bond Street, Brooklyn, New York

Samplers: Esther Arthur

Date: 4/8/2021

Sample #	873	874	872	875	871
Location	V2	V3	V5	DUP-1	Ambient-1
Summa Canister ID	23156	37802	16694	28301	17352
Flow Controller ID	7416	13573	7270	6872	7268
PID Test of SSDS Air	7 ppb	4 ppb	0 ppb	4 ppb	0 ppb
Pressure Gauge - before sampling	29.25	28.78	29.93	28.74	29.51
Sample Time (Start)	8:02	8:30	7:42	8:30	8:38
Sample Time (Stop)	10:02	10:30	9:42	10:30	14:30
Total Sample Time (min)	120	120	120	120	352
Pressure Gauge - after sampling	5.19	6.17	4.8	4.35	3
Sample Volume	6L	6L	6L	6L	6L
Canister Pressure Went to Ambient Pressure?	YES / <input checked="" type="radio"/> NO	YES / <input checked="" type="radio"/> NO	YES / <input checked="" type="radio"/> NO	YES / <input checked="" type="radio"/> NO	YES / <input checked="" type="radio"/> NO
Associated Ambient Air Sample Number	Ambient-1	Ambient-1	Ambient-1	Ambient-1	N/A
Weather 24 hours before and during sampling	Sunny and Clear, 50-60°F				
General Comments	Ambient-1 placed on 1st Street sidewalk. 875/DUP-1 parent sample is 874/V3				

ATTACHMENT B

Laboratory Analytical Report

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Technical Report

prepared for:

Langan Engineering & Environmental Services (NJ)

300 Kimball Drive, 4th Floor

Parsipanny NJ, 07054-2172

Attention: Jessica Friscia

Report Date: 04/12/2021

Client Project ID: 100287505

York Project (SDG) No.: 21D0348

CT Cert. No. PH-0723

New Jersey Cert. No. CT005 and NY037



New York Cert. Nos. 10854 and 12058

PA Cert. No. 68-04440

120 RESEARCH DRIVE
www.YORKLAB.com

STRATFORD, CT 06615
(203) 325-1371

132-02 89th AVENUE
FAX (203) 357-0166

RICHMOND HILL, NY 11418
ClientServices@yorklab.com

Report Date: 04/12/2021
Client Project ID: 100287505
York Project (SDG) No.: 21D0348

Langan Engineering & Environmental Services (NJ)
300 Kimball Drive, 4th Floor
Parsipanny NJ, 07054-2172
Attention: Jessica Friscia

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on April 08, 2021 and listed below. The project was identified as your project: **100287505**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

<u>York Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
21D0348-01	872_V5	Soil Vapor	04/08/2021	04/08/2021
21D0348-02	873_V2	Soil Vapor	04/08/2021	04/08/2021
21D0348-03	874_V3	Soil Vapor	04/08/2021	04/08/2021
21D0348-04	875_DUP-1	Soil Vapor	04/08/2021	04/08/2021
21D0348-05	871_Ambient-1	Outdoor Ambient Air	04/08/2021	04/08/2021

General Notes for York Project (SDG) No.: 21D0348

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By:



Benjamin Gulizia
Laboratory Director

Date: 04/12/2021





Sample Information

Client Sample ID: 872_V5

York Sample ID: 21D0348-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 9:42 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	1.10	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
71-55-6	1,1,1-Trichloroethane	ND		ug/m ³	0.874	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	1.10	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m ³	1.23	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	0.874	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.648	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.317	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	1.19	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
95-63-6	1,2,4-Trimethylbenzene	3.86		ug/m ³	0.787	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
106-93-4	1,2-Dibromoethane	ND		ug/m ³	1.23	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	0.963	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.648	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.740	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	1.12	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
108-67-8	1,3,5-Trimethylbenzene	1.02		ug/m ³	0.787	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
106-99-0	1,3-Butadiene	ND		ug/m ³	1.06	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	0.963	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.740	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	0.963	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
123-91-1	1,4-Dioxane	ND		ug/m ³	1.15	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
78-93-3	2-Butanone	1.23		ug/m ³	0.472	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
591-78-6	* 2-Hexanone	ND		ug/m ³	1.31	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
107-05-1	3-Chloropropene	ND		ug/m ³	2.51	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ



Sample Information

Client Sample ID: 872_V5

York Sample ID: 21D0348-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 9:42 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-10-1	4-Methyl-2-pentanone	3.08		ug/m ³	0.656	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
67-64-1	Acetone	3.23		ug/m ³	0.761	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
107-13-1	Acrylonitrile	ND		ug/m ³	0.347	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
71-43-2	Benzene	2.05		ug/m ³	0.511	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
100-44-7	Benzyl chloride	ND		ug/m ³	0.829	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-27-4	Bromodichloromethane	ND		ug/m ³	1.07	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-25-2	Bromoform	ND		ug/m ³	1.65	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
74-83-9	Bromomethane	ND		ug/m ³	0.622	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-15-0	Carbon disulfide	0.897		ug/m ³	0.499	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
56-23-5	Carbon tetrachloride	0.403		ug/m ³	0.252	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
108-90-7	Chlorobenzene	ND		ug/m ³	0.737	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-00-3	Chloroethane	ND		ug/m ³	0.422	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
67-66-3	Chloroform	1.49		ug/m ³	0.782	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
74-87-3	Chloromethane	1.59		ug/m ³	0.331	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	1.14		ug/m ³	0.317	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m ³	0.727	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
110-82-7	Cyclohexane	0.551		ug/m ³	0.551	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
124-48-1	Dibromochloromethane	ND		ug/m ³	1.36	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-71-8	Dichlorodifluoromethane	2.22		ug/m ³	0.792	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
141-78-6	* Ethyl acetate	ND		ug/m ³	1.15	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
100-41-4	Ethyl Benzene	2.57		ug/m ³	0.695	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
87-68-3	Hexachlorobutadiene	ND		ug/m ³	1.71	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
67-63-0	Isopropanol	4.60		ug/m ³	0.787	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
80-62-6	Methyl Methacrylate	1.84		ug/m ³	0.655	1.601	EPA TO-15	04/08/2021 22:00	04/09/2021 09:37	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			



Sample Information

Client Sample ID: 872_V5

York Sample ID: 21D0348-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 9:42 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

Table with columns: CAS No., Parameter, Result, Flag, Units, Reported to LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Rows include Methyl tert-butyl ether (MTBE), Methylene chloride, n-Heptane, n-Hexane, o-Xylene, p- & m- Xylenes, p-Ethyltoluene, Propylene, Styrene, Tetrachloroethylene, Tetrahydrofuran, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropylene, Trichloroethylene, Trichlorofluoromethane (Freon 11), Vinyl acetate, Vinyl bromide, Vinyl Chloride.

Sample Information

Client Sample ID: 873_V2

York Sample ID: 21D0348-02

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 10:02 am

04/08/2021



Sample Information

Client Sample ID: 873_V2

York Sample ID: 21D0348-02

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 10:02 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOO	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	1.26	1.842	EPA TO-15 Certifications:	04/08/2021 22:00	04/09/2021 06:27	LLJ
71-55-6	1,1,1-Trichloroethane	ND		ug/m ³	1.01	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	1.26	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m ³	1.41	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	1.01	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.746	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.365	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	1.37	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
95-63-6	1,2,4-Trimethylbenzene	5.07		ug/m ³	0.905	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
106-93-4	1,2-Dibromoethane	ND		ug/m ³	1.42	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	1.11	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.745	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.851	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	1.29	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
108-67-8	1,3,5-Trimethylbenzene	1.36		ug/m ³	0.906	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
106-99-0	1,3-Butadiene	ND		ug/m ³	1.22	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	1.11	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.851	1.842	EPA TO-15 Certifications:	04/08/2021 22:00	04/09/2021 06:27	LLJ
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	1.11	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
123-91-1	1,4-Dioxane	ND		ug/m ³	1.33	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
78-93-3	2-Butanone	0.815		ug/m ³	0.543	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
591-78-6	* 2-Hexanone	ND		ug/m ³	1.51	1.842	EPA TO-15 Certifications:	04/08/2021 22:00	04/09/2021 06:27	LLJ
107-05-1	3-Chloropropene	ND		ug/m ³	2.88	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ
108-10-1	4-Methyl-2-pentanone	2.04		ug/m ³	0.755	1.842	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 06:27	LLJ



Sample Information

Client Sample ID: 873_V2

York Sample ID: 21D0348-02

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 10:02 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

Table with columns: CAS No., Parameter, Result, Flag, Units, Reported to LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Rows include Acetone, Acrylonitrile, Benzene, Benzyl chloride, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropylene, Cyclohexane, Dibromochloromethane, Dichlorodifluoromethane, Ethyl acetate, Ethyl Benzene, Hexachlorobutadiene, Isopropanol, Methyl Methacrylate, Methyl tert-butyl ether (MTBE).



Sample Information

Client Sample ID: 873_V2

York Sample ID: 21D0348-02

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 10:02 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

Table with 11 columns: CAS No., Parameter, Result, Flag, Units, Reported to LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Rows include Methylene chloride, n-Heptane, n-Hexane, o-Xylene, p- & m- Xylenes, p-Ethyltoluene, Propylene, Styrene, Tetrachloroethylene, Tetrahydrofuran, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropylene, Trichloroethylene, Trichlorofluoromethane (Freon 11), Vinyl acetate, Vinyl bromide, Vinyl Chloride.

Sample Information

Client Sample ID: 874_V3

York Sample ID: 21D0348-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 10:30 am

04/08/2021



Sample Information

Client Sample ID: 874_V3

York Sample ID: 21D0348-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 10:30 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOO	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	1.23	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications:				
71-55-6	1,1,1-Trichloroethane	ND		ug/m ³	0.979	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	1.23	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m ³	1.37	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	0.979	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.726	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.356	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	1.33	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
95-63-6	1,2,4-Trimethylbenzene	4.14		ug/m ³	0.882	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
106-93-4	1,2-Dibromoethane	ND		ug/m ³	1.38	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	1.08	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.726	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.829	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	1.25	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
108-67-8	1,3,5-Trimethylbenzene	1.15		ug/m ³	0.882	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
106-99-0	1,3-Butadiene	ND		ug/m ³	1.19	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	1.08	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.829	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications:				
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	1.08	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
123-91-1	1,4-Dioxane	ND		ug/m ³	1.29	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
78-93-3	2-Butanone	1.59		ug/m ³	0.529	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
591-78-6	* 2-Hexanone	ND		ug/m ³	1.47	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications:				
107-05-1	3-Chloropropene	ND		ug/m ³	2.81	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
108-10-1	4-Methyl-2-pentanone	2.35		ug/m ³	0.735	1.794	EPA TO-15	04/08/2021 22:00	04/09/2021 07:31	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				



Sample Information

Client Sample ID: 874_V3

York Sample ID: 21D0348-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 10:30 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

Table with columns: CAS No., Parameter, Result, Flag, Units, Reported to LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Rows include Acetone, Acrylonitrile, Benzene, Benzyl chloride, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropylene, Cyclohexane, Dibromochloromethane, Dichlorodifluoromethane, Ethyl acetate, Ethyl Benzene, Hexachlorobutadiene, Isopropanol, Methyl Methacrylate, Methyl tert-butyl ether (MTBE).



Sample Information

Client Sample ID: 874_V3

York Sample ID: 21D0348-03

Table with 5 columns: York Project (SDG) No., Client Project ID, Matrix, Collection Date/Time, Date Received. Values: 21D0348, 100287505, Soil Vapor, April 8, 2021 10:30 am, 04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

Main data table with columns: CAS No., Parameter, Result, Flag, Units, Reported to LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Lists various chemical compounds and their concentrations.

Sample Information

Client Sample ID: 875_DUP-1

York Sample ID: 21D0348-04

Table with 5 columns: York Project (SDG) No., Client Project ID, Matrix, Collection Date/Time, Date Received. Values: 21D0348, 100287505, Soil Vapor, April 8, 2021 10:30 am, 04/08/2021



Sample Information

Client Sample ID: 875_DUP-1

York Sample ID: 21D0348-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 10:30 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOO	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	1.13	1.642	EPA TO-15 Certifications:	04/08/2021 22:00	04/09/2021 08:34	LLJ
71-55-6	1,1,1-Trichloroethane	ND		ug/m ³	0.896	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	1.13	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m ³	1.26	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	0.896	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.665	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.326	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	1.22	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
95-63-6	1,2,4-Trimethylbenzene	3.71		ug/m ³	0.807	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
106-93-4	1,2-Dibromoethane	ND		ug/m ³	1.26	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	0.987	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.665	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.759	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	1.15	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
108-67-8	1,3,5-Trimethylbenzene	1.05		ug/m ³	0.807	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
106-99-0	1,3-Butadiene	ND		ug/m ³	1.09	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	0.987	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.759	1.642	EPA TO-15 Certifications:	04/08/2021 22:00	04/09/2021 08:34	LLJ
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	0.987	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
123-91-1	1,4-Dioxane	ND		ug/m ³	1.18	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
78-93-3	2-Butanone	1.07		ug/m ³	0.484	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
591-78-6	* 2-Hexanone	ND		ug/m ³	1.35	1.642	EPA TO-15 Certifications:	04/08/2021 22:00	04/09/2021 08:34	LLJ
107-05-1	3-Chloropropene	ND		ug/m ³	2.57	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ
108-10-1	4-Methyl-2-pentanone	1.75		ug/m ³	0.673	1.642	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 08:34	LLJ



Sample Information

Client Sample ID: 875_DUP-1

York Sample ID: 21D0348-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 10:30 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-64-1	Acetone	4.41		ug/m ³	0.780	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
107-13-1	Acrylonitrile	ND		ug/m ³	0.356	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
71-43-2	Benzene	4.98		ug/m ³	0.525	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
100-44-7	Benzyl chloride	ND		ug/m ³	0.850	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-27-4	Bromodichloromethane	ND		ug/m ³	1.10	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-25-2	Bromoform	ND		ug/m ³	1.70	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
74-83-9	Bromomethane	ND		ug/m ³	0.638	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-15-0	Carbon disulfide	0.511		ug/m ³	0.511	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
56-23-5	Carbon tetrachloride	0.310		ug/m ³	0.258	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
108-90-7	Chlorobenzene	ND		ug/m ³	0.756	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-00-3	Chloroethane	ND		ug/m ³	0.433	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
67-66-3	Chloroform	ND		ug/m ³	0.802	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
74-87-3	Chloromethane	0.916		ug/m ³	0.339	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m ³	0.326	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m ³	0.745	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
110-82-7	Cyclohexane	1.36		ug/m ³	0.565	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
124-48-1	Dibromochloromethane	ND		ug/m ³	1.40	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-71-8	Dichlorodifluoromethane	1.79		ug/m ³	0.812	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
141-78-6	* Ethyl acetate	ND		ug/m ³	1.18	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications:			
100-41-4	Ethyl Benzene	2.85		ug/m ³	0.713	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
87-68-3	Hexachlorobutadiene	ND		ug/m ³	1.75	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
67-63-0	Isopropanol	4.76		ug/m ³	0.807	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
80-62-6	Methyl Methacrylate	2.22		ug/m ³	0.672	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m ³	0.592	1.642	EPA TO-15	04/08/2021 22:00	04/09/2021 08:34	LLJ
							Certifications: NELAC-NY12058,NJDEP-Queens			



Sample Information

Client Sample ID: 875_DUP-1

York Sample ID: 21D0348-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Soil Vapor

April 8, 2021 10:30 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

Table with 11 columns: CAS No., Parameter, Result, Flag, Units, Reported to LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Rows include Methylene chloride, n-Heptane, n-Hexane, o-Xylene, p- & m- Xylenes, p-Ethyltoluene, Propylene, Styrene, Tetrachloroethylene, Tetrahydrofuran, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropylene, Trichloroethylene, Trichlorofluoromethane (Freon 11), Vinyl acetate, Vinyl bromide, Vinyl Chloride.

Sample Information

Client Sample ID: 871_Ambient-1

York Sample ID: 21D0348-05

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Outdoor Ambient Ai

April 8, 2021 8:38 am

04/08/2021



Sample Information

Client Sample ID: 871_Ambient-1

York Sample ID: 21D0348-05

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Outdoor Ambient Ai

April 8, 2021 8:38 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOO	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	0.585	0.852	EPA TO-15 Certifications:	04/08/2021 22:00	04/09/2021 10:47	LLJ
71-55-6	1,1,1-Trichloroethane	ND		ug/m ³	0.465	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	0.585	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m ³	0.653	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	0.465	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.345	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.169	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	0.632	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m ³	0.419	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
106-93-4	1,2-Dibromoethane	ND		ug/m ³	0.655	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	0.512	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.345	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.394	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	0.596	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m ³	0.419	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
106-99-0	1,3-Butadiene	ND		ug/m ³	0.565	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	0.512	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.394	0.852	EPA TO-15 Certifications:	04/08/2021 22:00	04/09/2021 10:47	LLJ
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	0.512	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
123-91-1	1,4-Dioxane	ND		ug/m ³	0.614	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
78-93-3	2-Butanone	0.653		ug/m ³	0.251	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
591-78-6	* 2-Hexanone	ND		ug/m ³	0.698	0.852	EPA TO-15 Certifications:	04/08/2021 22:00	04/09/2021 10:47	LLJ
107-05-1	3-Chloropropene	ND		ug/m ³	1.33	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ
108-10-1	4-Methyl-2-pentanone	ND		ug/m ³	0.349	0.852	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	04/08/2021 22:00	04/09/2021 10:47	LLJ



Sample Information

Client Sample ID: 871_Ambient-1

York Sample ID: 21D0348-05

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Outdoor Ambient Ai

April 8, 2021 8:38 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-64-1	Acetone	4.76		ug/m ³	0.405	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
107-13-1	Acrylonitrile	ND		ug/m ³	0.185	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
71-43-2	Benzene	0.517		ug/m ³	0.272	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
100-44-7	Benzyl chloride	ND		ug/m ³	0.441	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
75-27-4	Bromodichloromethane	ND		ug/m ³	0.571	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
75-25-2	Bromoform	ND		ug/m ³	0.881	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
74-83-9	Bromomethane	ND		ug/m ³	0.331	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
75-15-0	Carbon disulfide	0.318		ug/m ³	0.265	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
56-23-5	Carbon tetrachloride	0.375		ug/m ³	0.134	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
108-90-7	Chlorobenzene	ND		ug/m ³	0.392	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
75-00-3	Chloroethane	ND		ug/m ³	0.225	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
67-66-3	Chloroform	ND		ug/m ³	0.416	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
74-87-3	Chloromethane	0.897		ug/m ³	0.176	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m ³	0.169	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m ³	0.387	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
110-82-7	Cyclohexane	ND		ug/m ³	0.293	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
124-48-1	Dibromochloromethane	ND		ug/m ³	0.726	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
75-71-8	Dichlorodifluoromethane	2.02		ug/m ³	0.421	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
141-78-6	* Ethyl acetate	ND		ug/m ³	0.614	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications:				
100-41-4	Ethyl Benzene	ND		ug/m ³	0.370	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
87-68-3	Hexachlorobutadiene	ND		ug/m ³	0.909	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
67-63-0	Isopropanol	2.47		ug/m ³	0.419	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
80-62-6	Methyl Methacrylate	0.767		ug/m ³	0.349	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m ³	0.307	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
						Certifications: NELAC-NY12058,NJDEP-Queens				



Sample Information

Client Sample ID: 871_Ambient-1

York Sample ID: 21D0348-05

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

21D0348

100287505

Outdoor Ambient Ai

April 8, 2021 8:38 am

04/08/2021

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-09-2	Methylene chloride	3.08		ug/m ³	0.592	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
142-82-5	n-Heptane	0.349		ug/m ³	0.349	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
110-54-3	n-Hexane	0.781		ug/m ³	0.300	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
95-47-6	o-Xylene	ND		ug/m ³	0.370	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
179601-23-1	p- & m- Xylenes	0.962		ug/m ³	0.740	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
622-96-8	* p-Ethyltoluene	ND		ug/m ³	0.419	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
115-07-1	* Propylene	ND		ug/m ³	0.147	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
100-42-5	Styrene	ND		ug/m ³	0.363	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
127-18-4	Tetrachloroethylene	0.925		ug/m ³	0.578	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
109-99-9	* Tetrahydrofuran	ND		ug/m ³	0.503	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
108-88-3	Toluene	1.73		ug/m ³	0.321	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m ³	0.338	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m ³	0.387	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
79-01-6	Trichloroethylene	ND		ug/m ³	0.114	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
75-69-4	Trichlorofluoromethane (Freon 11)	1.15		ug/m ³	0.479	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
108-05-4	Vinyl acetate	ND		ug/m ³	0.300	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
593-60-2	Vinyl bromide	ND		ug/m ³	0.373	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ
75-01-4	Vinyl Chloride	ND		ug/m ³	0.109	0.852	EPA TO-15	04/08/2021 22:00	04/09/2021 10:47	LLJ



CASE NARRATIVE

York Project/SDG No.: 21D0348
Client: Langan Engineering & Environmental Services (NJ)
Client Project ID: 100287505
Prepared for: Jessica Friscia

Introduction

This Case Narrative applies only to the following samples submitted to our laboratory on **04/08/2021 21:14** as detailed on the chain-of-custody form.

The 5 sample(s) were received intact, unless otherwise noted.

Chain-of-custody was maintained from receipt through analysis in the laboratory.

Methodology

All preparation and analyses were conducted according to EPA Compendium Method TO-15 guidance.

Client Sample Information and Non-Conformances

<u>Laboratory ID</u>	<u>Sample Name</u>	<u>Matrix</u>
21D0348-01	872_V5	Air
21D0348-02	873_V2	Air
21D0348-03	874_V3	Air
21D0348-04	875_DUP-1	Air
21D0348-05	871_Ambient-1	Air

Any additional Client Sample Non-conformances are detailed in the proceeding Case Narrative Non-Conformance Summary tables.

No other problems were encountered during analysis.

QC Sample Non-Conformances

Any QC Sample Non-conformances (SCV, CCV, BS, MS, DUP) are detailed in the proceeding Case Narrative Non-Conformance Summary tables.

No other problems were encountered during analysis.

York Project/SDG no.: 21D0348 Statement

We certify that these data are in compliance with SOP requirements both technically and for completeness for other than the conditions stated above. Release of the data contained in the hard copy report and any electronic data deliverables has been authorized by the Laboratory Manager as verified by the signature on this laboratory report.

Approved by: Ben Gulizia



Laboratory Director

Date: 04/12/2021

York Analytical Laboratories, Inc.
Formulae Used for Sample Calculations

1. Volatiles in Air (ppbv)

Cx (ppbv) = Compound concentration, ppbv (parts per billion by volume)

$$C_x = \frac{(A_x)(C_{is})(DF)}{(A_{is})(RRF)}$$

2. Volatiles in Air (ug/m³)

Cx (ug/m³) = Compound concentration in ug/m³

$$C_x (\text{ug/m}^3) = \frac{(\text{ppbv} \times \text{Molecular wt.})}{(24.45)}$$

WHERE:

Cx = concentration of analyte as ug/L or ug/kg

Ax = Area of the characteristic ion for the compound to be measured, counts.

Ais = Area of the characteristic ion for the specific internal standard, counts.

IS = Concentration of the internal standard spiking mixture, ng

RRF = Mean relative response factor from the initial calibration.

DF = Dilution factor calculated as described in section 2. If no dilution is performed, DF = 1

Cis = Concentration of the internal standard spiking mixture, ppbv



Case Narrative Non-Conformance Summary

Laboratory: York Analytical Laboratories, Inc.	Client:	
Project:	Lab Project No:	
Laboratory Sample ID(s): -01 - -05	Sampling Date(s):	04/08/2021 - 04/08/2021
Review Date(s): -	Laboratory Reviewer(s):	

QC Sample Nonconformances

Batch ID: Y1D0934 **Affected Samples:** See Batch Summary

QC Sample ID	Analyte - CAS No.	Result	Type of QC Nonconformance	%REC	%REC Limits	Bias	RPD	RPD Limit	Bias	Notes
Y1D0934-CCV1	Vinyl acetate - 108-05-4	6.81 ppbv	Calibration Check	68.1	70-130	Low Bias				

No Sample Nonconformances Found

Notes: Other nonconformances, if any, are detailed in the Data Quality Assessment worksheets.

For multiple surrogate analyses such as semi-volatiles, volatiles, etc, single surrogate excursions do not necessarily indicate a bias in the sample. Samples with multiple surrogate excursions may exhibit a bias in the results.

Definitions:

- LCS - Laboratory Control Sample
- LCS dup - Laboratory Control Sample Duplicate
- MS - Matrix Spike
- MSD - Matrix Spike Duplicate
- BS - Blank Spike also called LCS
- BSD - Blank Spike Duplicate also called LCS dup
- SRM - Standard Reference Material
- DUP - Duplicate



QC DATA QUALIFIERS

LabID	Analysis	Analyte	Qualifier	Definition
Y1D0934-CCV1	Volatile Organics, EPA TO15 Full List	Vinyl acetate	TO-CCV	The value reported is ESTIMATED for this compound due to its behavior during continuing calibration verification (>30% Difference from initial calibration).



Analytical Batch Summary

Batch ID: BD10445

Preparation Method: EPA TO15 PREP

Prepared By: LLJ

YORK Sample ID	Client Sample ID	Preparation Date
21D0348-01	872_V5	04/08/21
21D0348-02	873_V2	04/08/21
21D0348-03	874_V3	04/08/21
21D0348-04	875_DUP-1	04/08/21
21D0348-05	871_Ambient-1	04/08/21
BD10445-BLK1	Blank	04/08/21
BD10445-BS1	LCS	04/08/21
BD10445-DUP1	Duplicate	04/08/21



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BD10445 - EPA TO15 PREP

Blank (BD10445-BLK1)

Prepared: 04/08/2021 Analyzed: 04/09/2021

1,1,1,2-Tetrachloroethane	ND	0.687	ug/m ³								
1,1,1-Trichloroethane	ND	0.546	"								
1,1,2,2-Tetrachloroethane	ND	0.687	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.766	"								
1,1,2-Trichloroethane	ND	0.546	"								
1,1-Dichloroethane	ND	0.405	"								
1,1-Dichloroethylene	ND	0.198	"								
1,2,4-Trichlorobenzene	ND	0.742	"								
1,2,4-Trimethylbenzene	ND	0.492	"								
1,2-Dibromoethane	ND	0.768	"								
1,2-Dichlorobenzene	ND	0.601	"								
1,2-Dichloroethane	ND	0.405	"								
1,2-Dichloropropane	ND	0.462	"								
1,2-Dichlorotetrafluoroethane	ND	0.699	"								
1,3,5-Trimethylbenzene	ND	0.492	"								
1,3-Butadiene	ND	0.664	"								
1,3-Dichlorobenzene	ND	0.601	"								
1,3-Dichloropropane	ND	0.462	"								
1,4-Dichlorobenzene	ND	0.601	"								
1,4-Dioxane	ND	0.721	"								
2-Butanone	ND	0.295	"								
2-Hexanone	ND	0.819	"								
3-Chloropropene	ND	1.57	"								
4-Methyl-2-pentanone	ND	0.410	"								
Acetone	ND	0.475	"								
Acrylonitrile	ND	0.217	"								
Benzene	ND	0.319	"								
Benzyl chloride	ND	0.518	"								
Bromodichloromethane	ND	0.670	"								
Bromoform	ND	1.03	"								
Bromomethane	ND	0.388	"								
Carbon disulfide	ND	0.311	"								
Carbon tetrachloride	ND	0.157	"								
Chlorobenzene	ND	0.460	"								
Chloroethane	ND	0.264	"								
Chloroform	ND	0.488	"								
Chloromethane	ND	0.207	"								
cis-1,2-Dichloroethylene	ND	0.198	"								
cis-1,3-Dichloropropylene	ND	0.454	"								
Cyclohexane	ND	0.344	"								
Dibromochloromethane	ND	0.852	"								
Dichlorodifluoromethane	ND	0.495	"								
Ethyl acetate	ND	0.721	"								
Ethyl Benzene	ND	0.434	"								
Hexachlorobutadiene	ND	1.07	"								
Isopropanol	ND	0.492	"								
Methyl Methacrylate	ND	0.409	"								
Methyl tert-butyl ether (MTBE)	ND	0.361	"								
Methylene chloride	ND	0.695	"								
n-Heptane	ND	0.410	"								



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting	Units	Spike	Source*	%REC	%REC	Limits	Flag	RPD	Flag
		Limit			Result					Limit	

Batch BD10445 - EPA TO15 PREP

Blank (BD10445-BLK1)

Prepared: 04/08/2021 Analyzed: 04/09/2021

n-Hexane	ND	0.352	ug/m ³								
o-Xylene	ND	0.434	"								
p- & m- Xylenes	ND	0.868	"								
p-Ethyltoluene	ND	0.492	"								
Propylene	ND	0.172	"								
Styrene	ND	0.426	"								
Tetrachloroethylene	ND	0.678	"								
Tetrahydrofuran	ND	0.590	"								
Toluene	ND	0.377	"								
trans-1,2-Dichloroethylene	ND	0.396	"								
trans-1,3-Dichloropropylene	ND	0.454	"								
Trichloroethylene	ND	0.134	"								
Trichlorofluoromethane (Freon 11)	ND	0.562	"								
Vinyl acetate	ND	0.352	"								
Vinyl bromide	ND	0.437	"								
Vinyl Chloride	ND	0.0639	"								

LCS (BD10445-BS1)

Prepared: 04/08/2021 Analyzed: 04/09/2021

1,1,1,2-Tetrachloroethane	9.09		ppbv	10.0	90.9	70-130					
1,1,1-Trichloroethane	9.21		"	10.0	92.1	70-130					
1,1,2,2-Tetrachloroethane	8.86		"	10.0	88.6	70-130					
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.69		"	10.0	86.9	70-130					
1,1,2-Trichloroethane	9.36		"	10.0	93.6	70-130					
1,1-Dichloroethane	8.41		"	10.0	84.1	70-130					
1,1-Dichloroethylene	8.32		"	10.0	83.2	70-130					
1,2,4-Trichlorobenzene	7.74		"	10.0	77.4	70-130					
1,2,4-Trimethylbenzene	9.38		"	10.0	93.8	70-130					
1,2-Dibromoethane	9.28		"	10.0	92.8	70-130					
1,2-Dichlorobenzene	8.25		"	10.0	82.5	70-130					
1,2-Dichloroethane	8.84		"	10.0	88.4	70-130					
1,2-Dichloropropane	9.04		"	10.0	90.4	70-130					
1,2-Dichlorotetrafluoroethane	9.47		"	10.0	94.7	70-130					
1,3,5-Trimethylbenzene	9.33		"	10.0	93.3	70-130					
1,3-Butadiene	9.11		"	10.0	91.1	70-130					
1,3-Dichlorobenzene	8.41		"	10.0	84.1	70-130					
1,3-Dichloropropane	8.98		"	10.0	89.8	70-130					
1,4-Dichlorobenzene	8.36		"	10.0	83.6	70-130					
1,4-Dioxane	7.92		"	10.0	79.2	70-130					
2-Butanone	8.42		"	10.0	84.2	70-130					
2-Hexanone	9.11		"	10.0	91.1	70-130					
3-Chloropropene	9.09		"	10.0	90.9	70-130					
4-Methyl-2-pentanone	9.14		"	10.0	91.4	70-130					
Acetone	7.45		"	10.0	74.5	70-130					
Acrylonitrile	8.79		"	10.0	87.9	70-130					
Benzene	8.62		"	10.0	86.2	70-130					
Benzyl chloride	9.78		"	10.0	97.8	70-130					
Bromodichloromethane	9.71		"	10.0	97.1	70-130					
Bromoform	10.0		"	10.0	100	70-130					
Bromomethane	9.29		"	10.0	92.9	70-130					
Carbon disulfide	8.67		"	10.0	86.7	70-130					
Carbon tetrachloride	8.94		"	10.0	89.4	70-130					



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting	Units	Spike Level	Source*	%REC	%REC Limits	Flag	RPD	RPD	Flag
		Limit			Result					Limit	

Batch BD10445 - EPA TO15 PREP

LCS (BD10445-BS1)

Prepared: 04/08/2021 Analyzed: 04/09/2021

Chlorobenzene	8.44		ppbv	10.0		84.4	70-130				
Chloroethane	9.20		"	10.0		92.0	70-130				
Chloroform	8.75		"	10.0		87.5	70-130				
Chloromethane	8.44		"	10.0		84.4	70-130				
cis-1,2-Dichloroethylene	8.27		"	10.0		82.7	70-130				
cis-1,3-Dichloropropylene	9.65		"	10.0		96.5	70-130				
Cyclohexane	9.23		"	10.0		92.3	70-130				
Dibromochloromethane	9.90		"	10.0		99.0	70-130				
Dichlorodifluoromethane	8.45		"	10.0		84.5	70-130				
Ethyl acetate	8.77		"	10.0		87.7	70-130				
Ethyl Benzene	9.03		"	10.0		90.3	70-130				
Hexachlorobutadiene	8.57		"	10.0		85.7	70-130				
Isopropanol	7.39		"	10.0		73.9	70-130				
Methyl Methacrylate	9.43		"	10.0		94.3	70-130				
Methyl tert-butyl ether (MTBE)	9.06		"	10.0		90.6	70-130				
Methylene chloride	7.97		"	10.0		79.7	70-130				
n-Heptane	9.33		"	10.0		93.3	70-130				
n-Hexane	8.01		"	10.0		80.1	70-130				
o-Xylene	9.56		"	10.0		95.6	70-130				
p- & m- Xylenes	18.6		"	20.0		93.0	70-130				
p-Ethyltoluene	9.44		"	10.0		94.4	70-130				
Propylene	7.88		"	10.0		78.8	70-130				
Styrene	9.52		"	10.0		95.2	70-130				
Tetrachloroethylene	8.73		"	10.0		87.3	70-130				
Tetrahydrofuran	8.31		"	10.0		83.1	70-130				
Toluene	9.05		"	10.0		90.5	70-130				
trans-1,2-Dichloroethylene	8.70		"	10.0		87.0	70-130				
trans-1,3-Dichloropropylene	9.90		"	10.0		99.0	70-130				
Trichloroethylene	8.82		"	10.0		88.2	70-130				
Trichlorofluoromethane (Freon 11)	9.02		"	10.0		90.2	70-130				
Vinyl acetate	7.97		"	10.0		79.7	70-130				
Vinyl bromide	9.11		"	10.0		91.1	70-130				
Vinyl Chloride	8.22		"	10.0		82.2	70-130				



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting	Units	Spike	Source*	%REC	%REC	Flag	RPD		
		Limit		Level	Result				Limits	RPD	Limit
Batch BD10445 - EPA TO15 PREP											
Duplicate (BD10445-DUP1)	*Source sample: 21D0348-05 (871_Ambient-1)							Prepared: 04/08/2021 Analyzed: 04/09/2021			
1,1,1,2-Tetrachloroethane	ND	0.585	ug/m ³		ND					25	
1,1,1-Trichloroethane	ND	0.465	"		ND					25	
1,1,2,2-Tetrachloroethane	ND	0.585	"		ND					25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.653	"		ND					25	
1,1,2-Trichloroethane	ND	0.465	"		ND					25	
1,1-Dichloroethane	ND	0.345	"		ND					25	
1,1-Dichloroethylene	ND	0.169	"		ND					25	
1,2,4-Trichlorobenzene	ND	0.632	"		ND					25	
1,2,4-Trimethylbenzene	0.335	0.419	"		0.335				0.00	25	
1,2-Dibromoethane	ND	0.655	"		ND					25	
1,2-Dichlorobenzene	ND	0.512	"		ND					25	
1,2-Dichloroethane	ND	0.345	"		ND					25	
1,2-Dichloropropane	ND	0.394	"		ND					25	
1,2-Dichlorotetrafluoroethane	ND	0.596	"		ND					25	
1,3,5-Trimethylbenzene	ND	0.419	"		ND					25	
1,3-Butadiene	ND	0.565	"		ND					25	
1,3-Dichlorobenzene	ND	0.512	"		ND					25	
1,3-Dichloropropane	ND	0.394	"		ND					25	
1,4-Dichlorobenzene	ND	0.512	"		ND					25	
1,4-Dioxane	ND	0.614	"		ND					25	
2-Butanone	0.628	0.251	"		0.653				3.92	25	
2-Hexanone	ND	0.698	"		ND					25	
3-Chloropropene	ND	1.33	"		ND					25	
4-Methyl-2-pentanone	ND	0.349	"		ND					25	
Acetone	4.78	0.405	"		4.76				0.425	25	
Acrylonitrile	ND	0.185	"		ND					25	
Benzene	0.490	0.272	"		0.517				5.41	25	
Benzyl chloride	ND	0.441	"		ND					25	
Bromodichloromethane	ND	0.571	"		ND					25	
Bromoform	ND	0.881	"		ND					25	
Bromomethane	ND	0.331	"		ND					25	
Carbon disulfide	0.292	0.265	"		0.318				8.70	25	
Carbon tetrachloride	0.375	0.134	"		0.375				0.00	25	
Chlorobenzene	ND	0.392	"		ND					25	
Chloroethane	ND	0.225	"		ND					25	
Chloroform	ND	0.416	"		ND					25	
Chloromethane	0.950	0.176	"		0.897				5.71	25	
cis-1,2-Dichloroethylene	ND	0.169	"		ND					25	
cis-1,3-Dichloropropylene	ND	0.387	"		ND					25	
Cyclohexane	ND	0.293	"		ND					25	
Dibromochloromethane	ND	0.726	"		ND					25	
Dichlorodifluoromethane	2.06	0.421	"		2.02				2.06	25	
Ethyl acetate	0.338	0.614	"		0.338				0.00	25	
Ethyl Benzene	0.259	0.370	"		0.259				0.00	25	
Hexachlorobutadiene	ND	0.909	"		ND					25	
Isopropanol	2.41	0.419	"		2.47				2.58	25	
Methyl Methacrylate	0.767	0.349	"		0.767				0.00	25	
Methyl tert-butyl ether (MTBE)	ND	0.307	"		ND					25	
Methylene chloride	3.02	0.592	"		3.08				1.94	25	
n-Heptane	0.349	0.349	"		0.349				0.00	25	
n-Hexane	0.751	0.300	"		0.781				3.92	25	



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting	Units	Spike	Source*	%REC		Flag	RPD	RPD	Limit	Flag
		Limit		Level	Result	Limits	Limit					

Batch BD10445 - EPA TO15 PREP

Duplicate (BD10445-DUP1)	*Source sample: 21D0348-05 (871_Ambient-1)							Prepared: 04/08/2021 Analyzed: 04/09/2021				
o-Xylene	0.333	0.370	ug/m ³		0.333				0.00		25	
p- & m- Xylenes	0.962	0.740	"		0.962				0.00		25	
p-Ethyltoluene	ND	0.419	"		ND						25	
Propylene	ND	0.147	"		ND						25	
Styrene	ND	0.363	"		ND						25	
Tetrachloroethylene	0.925	0.578	"		0.925				0.00		25	
Tetrahydrofuran	ND	0.503	"		ND						25	
Toluene	1.70	0.321	"		1.73				1.87		25	
trans-1,2-Dichloroethylene	ND	0.338	"		ND						25	
trans-1,3-Dichloropropylene	ND	0.387	"		ND						25	
Trichloroethylene	ND	0.114	"		ND						25	
Trichlorofluoromethane (Freon 11)	1.15	0.479	"		1.15				0.00		25	
Vinyl acetate	ND	0.300	"		ND						25	
Vinyl bromide	ND	0.373	"		ND						25	
Vinyl Chloride	ND	0.0544	"		ND						25	



Sample and Data Qualifiers Relating to This Work Order

TO-CCV The value reported is ESTIMATED for this compound due to its behavior during continuing calibration verification (>30% Difference from initial calibration).

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.



Laboratory Chain-of-Custody Record

York Project (SDG) No.: 21D0348

Samples Received: 04/08/2021 21:14 By: Taylor M. Pasquance Logged In: 04/08/2021 17:14 By: Kristina M. Blocker

- Sample Conditions:**
- Custody Seals
 - Containers Intact
 - COC/Labels Agree
 - Preservation Confirmed
 - Cooler Temperature Confirmed
 - COC Complete
 - Chain of Custody Form Received
 - Appropriate Sample Volumes Received
 - Appropriate Sample Containers Submitted
 - Samples Submitted within Holding Times
 - Corrective Action Form Required

Preparation Chain-of-Custody

Sample ID	Reason Prep	Prep Start Date	Prep End Date	Prep Analyst
21D0348-01	EPA TO15 PREP	04/08/2021 22:00	04/08/2021 22:00	Lie Ling Jauw
21D0348-02	EPA TO15 PREP	04/08/2021 22:00	04/08/2021 22:00	Lie Ling Jauw
21D0348-03	EPA TO15 PREP	04/08/2021 22:00	04/08/2021 22:00	Lie Ling Jauw
21D0348-04	EPA TO15 PREP	04/08/2021 22:00	04/08/2021 22:00	Lie Ling Jauw
21D0348-05	EPA TO15 PREP	04/08/2021 22:00	04/08/2021 22:00	Lie Ling Jauw

Analysis Chain-of-Custody

Sample ID	Reason Analysis	Analysis Start Date	Analysis End Date	Analyst
21D0348-01	VOA, TO15 MASTER	04/08/2021 22:00	04/09/2021 9:37	Lie Ling Jauw
21D0348-02	VOA, TO15 MASTER	04/08/2021 22:00	04/09/2021 6:27	Lie Ling Jauw
21D0348-03	VOA, TO15 MASTER	04/08/2021 22:00	04/09/2021 7:31	Lie Ling Jauw
21D0348-04	VOA, TO15 MASTER	04/08/2021 22:00	04/09/2021 8:34	Lie Ling Jauw
21D0348-05	VOA, TO15 MASTER	04/08/2021 22:00	04/09/2021 10:47	Lie Ling Jauw



York Analytical Laboratories, Inc.
 120 Reservoir Drive
 Stratford, CT 06615
 clientservices@yorklab.com
 www.yorklab.com

Field Chain-of-Custody Record - AIR

YORK Project No.
 21 00 303

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document. This document serves as your written authorization for YORK to proceed with the analysis requested below. Signature holds you to YORK's Standard Terms & Conditions.

YOUR INFORMATION

Company: LONDON Report To: SAME

Address: 300 Emball Drive City: SAME

State: Pennsylvania Zip: 19114

Phone: 973-560-4900 Fax: 973-560-4900

Contact: Jess. Frasca

Event: YUSUKE LANGAN LOM

YORK Project Number: 100287505

YOUR Project Name: 365 Bond Street

YOUR POB: 365 Bond Street

Turn-Around Time: Standard (5-7 Day)

Air Matrix Codes

AI - Indoor Ambient Air
 AO - Outdoor Amb. Air
 AE - Vapor Emission with PROXO Leakmate
 AS - Seal Vapor (SOS) - Sus

Report / EDD Type (circle selection)

CT RCP Summary Report Standard Excess EDD
 CT RCP DA Report E-Data (Standard)
 NJ DEP Removal Deliv. NYSDOC EDUIS
 NJ/DOH NJ/DOH NJ/DOH SRP HazSite

YORK Reg. Comp.
 Compared to the following Regulations (please list):

Certified Canisters: Batch BA Individual BA

Sample Identification	Date/Time Sampled	Air Matrix	Canister Volume (L)	Flow Cont. ID	Analysis Requested
872 / 85 VS	4/8/2014 0742-0744	AS	29.93	16694	10-15 VOCs
873 / V2	4/8/2014 0800-1002	AS	49.28-78.04	23156	
874 / V3	4/8/2014 0830-1030	AS	38.78	31802	
875 / DUP-1	4/8/2014 0830-1030	AS	28.74	28301	
871 / Ambient-1	4/8/2014 0830	AO	29.51	17352	

Reporting Units: ug/m³ BA BA BA BA BA

Comments: 1 spare samms canister not used

Detection Limits Required

5 L Ugm: NYSDOC VI Lunde BA

Routing Survey: BA Other: BA

Sampling Media

6 Liter Canister Tedlar Bag

Signature: BA Date: 4/8/14

Signature: BA Date: 4/8/14

Signature: BA Date: 4/8/14

Signature: BA Date: 4/8/14

York Analytical Laboratories, Inc.

SDG: 21D0348

CLASS: AIR

METHOD: EPA TO-15

DATA PACKAGE COVER PAGE

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Client Sample Id:

872_V5

873_V2

874_V3

875_DUP-1

871_Ambient-1

Lab Sample Id:

21D0348-01

21D0348-02

21D0348-03

21D0348-04

21D0348-05

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the project narrative. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the

Signature:



Name:

Benjamin Gulizia

Date:

4/12/2021

Title:

Laboratory Director

AIR QC Summary

DUPLICATES

871 Ambient-1

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Matrix: Air

Laboratory ID: BD10445-DUP1

Batch: BD10445

Lab Source ID: 21D0348-05

Preparation: EPA TO15 PREP

Initial/Final: 400 mL / 400 mL

Source Sample Name: 871_Ambient-1

% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/m ³)	C	DUPLICATE CONCENTRATION (ug/m ³)	C	RPD %	Q	METHOD
1,1,1,2-Tetrachloroethane	25	ND		ND				EPA TO-15
1,1,1-Trichloroethane	25	ND		ND				EPA TO-15
1,1,2,2-Tetrachloroethane	25	ND		ND				EPA TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	25	ND		ND				EPA TO-15
1,1,2-Trichloroethane	25	ND		ND				EPA TO-15
1,1-Dichloroethane	25	ND		ND				EPA TO-15
1,1-Dichloroethylene	25	ND		ND				EPA TO-15
1,2,4-Trichlorobenzene	25	ND		ND				EPA TO-15
1,2,4-Trimethylbenzene	25	ND		ND				EPA TO-15
1,2-Dibromoethane	25	ND		ND				EPA TO-15
1,2-Dichlorobenzene	25	ND		ND				EPA TO-15
1,2-Dichloroethane	25	ND		ND				EPA TO-15
1,2-Dichloropropane	25	ND		ND				EPA TO-15
1,2-Dichlorotetrafluoroethane	25	ND		ND				EPA TO-15
1,3,5-Trimethylbenzene	25	ND		ND				EPA TO-15
1,3-Butadiene	25	ND		ND				EPA TO-15
1,3-Dichlorobenzene	25	ND		ND				EPA TO-15
1,3-Dichloropropane	25	ND		ND				EPA TO-15
1,4-Dichlorobenzene	25	ND		ND				EPA TO-15
1,4-Dioxane	25	ND		ND				EPA TO-15
2-Butanone	25	0.653		0.628		3.92		EPA TO-15
2-Hexanone	25	ND		ND				EPA TO-15
3-Chloropropene	25	ND		ND				EPA TO-15
4-Methyl-2-pentanone	25	ND		ND				EPA TO-15
Acetone	25	4.76		4.78		0.425		EPA TO-15
Acrylonitrile	25	ND		ND				EPA TO-15
Benzene	25	0.517		0.490		5.41		EPA TO-15
Benzyl chloride	25	ND		ND				EPA TO-15

DUPLICATES

871 Ambient-1

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Matrix: Air

Laboratory ID: BD10445-DUP1

Batch: BD10445

Lab Source ID: 21D0348-05

Preparation: EPA TO15 PREP

Initial/Final: 400 mL / 400 mL

Source Sample Name: 871 Ambient-1

% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ppbv)	C	DUPLICATE CONCENTRATION (ppbv)	C	RPD %	Q	METHOD
Bromochloromethane		10.0		10.0				EPA TO-15
Bromodichloromethane	25	ND		ND				EPA TO-15
Bromoform	25	ND		ND				EPA TO-15
Bromomethane	25	ND		ND				EPA TO-15
Carbon disulfide	25	0.318		0.292		8.70		EPA TO-15
Carbon tetrachloride	25	0.375		0.375		0.00		EPA TO-15
Chlorobenzene	25	ND		ND				EPA TO-15
Chloroethane	25	ND		ND				EPA TO-15
Chloroform	25	ND		ND				EPA TO-15
Chloromethane	25	0.897		0.950		5.71		EPA TO-15
cis-1,2-Dichloroethylene	25	ND		ND				EPA TO-15
cis-1,3-Dichloropropylene	25	ND		ND				EPA TO-15
Cyclohexane	25	ND		ND				EPA TO-15
Dibromochloromethane	25	ND		ND				EPA TO-15
Dichlorodifluoromethane	25	2.02		2.06		2.06		EPA TO-15
Ethyl acetate	25	ND		ND				EPA TO-15
Ethyl Benzene	25	ND		ND				EPA TO-15
Hexachlorobutadiene	25	ND		ND				EPA TO-15
Isopropanol	25	2.47		2.41		2.58		EPA TO-15
ISTD: 1,4-Difluorobenzene		10.0		10.0				EPA TO-15
ISTD: d5-Chlorobenzene		10.0		10.0				EPA TO-15
Methyl Methacrylate	25	0.767		0.767		0.00		EPA TO-15
Methyl tert-butyl ether (MTBE)	25	ND		ND				EPA TO-15
Methylene chloride	25	3.08		3.02		1.94		EPA TO-15
n-Heptane	25	0.349		0.349		0.00		EPA TO-15
n-Hexane	25	0.781		0.751		3.92		EPA TO-15
o-Xylene	25	ND		ND				EPA TO-15
p- & m- Xylenes	25	0.962		0.962		0.00		EPA TO-15

DUPLICATES

871 Ambient-1

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Matrix: Air

Laboratory ID: BD10445-DUP1

Batch: BD10445

Lab Source ID: 21D0348-05

Preparation: EPA TO15 PREP

Initial/Final: 400 mL / 400 mL

Source Sample Name: 871 Ambient-1

% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/m ³)	C	DUPLICATE CONCENTRATION (ug/m ³)	C	RPD %	Q	METHOD
p-Ethyltoluene	25	ND		ND				EPA TO-15
Propylene	25	ND		ND				EPA TO-15
Styrene	25	ND		ND				EPA TO-15
Tetrachloroethylene	25	0.925		0.925		0.00		EPA TO-15
Tetrahydrofuran	25	ND		ND				EPA TO-15
Toluene	25	1.73		1.70		1.87		EPA TO-15
trans-1,2-Dichloroethylene	25	ND		ND				EPA TO-15
trans-1,3-Dichloropropylene	25	ND		ND				EPA TO-15
Trichloroethylene	25	ND		ND				EPA TO-15
Trichlorofluoromethane (Freon 11)	25	1.15		1.15		0.00		EPA TO-15
Vinyl acetate	25	ND		ND				EPA TO-15
Vinyl bromide	25	ND		ND				EPA TO-15
Vinyl Chloride	25	ND		ND				EPA TO-15

* Values outside of QC limits

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 Data File : TQ214178.D
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 Operator : LLJ
 Sample : BD10445-DUP1
 Misc : QBTO2040821A 21D0348-05 0.533X/750ML
 ALS Vial : 16 Sample Multiplier: 0.852
 InstName : TO15_AIR2

Quant Time: Apr 09 14:31:52 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

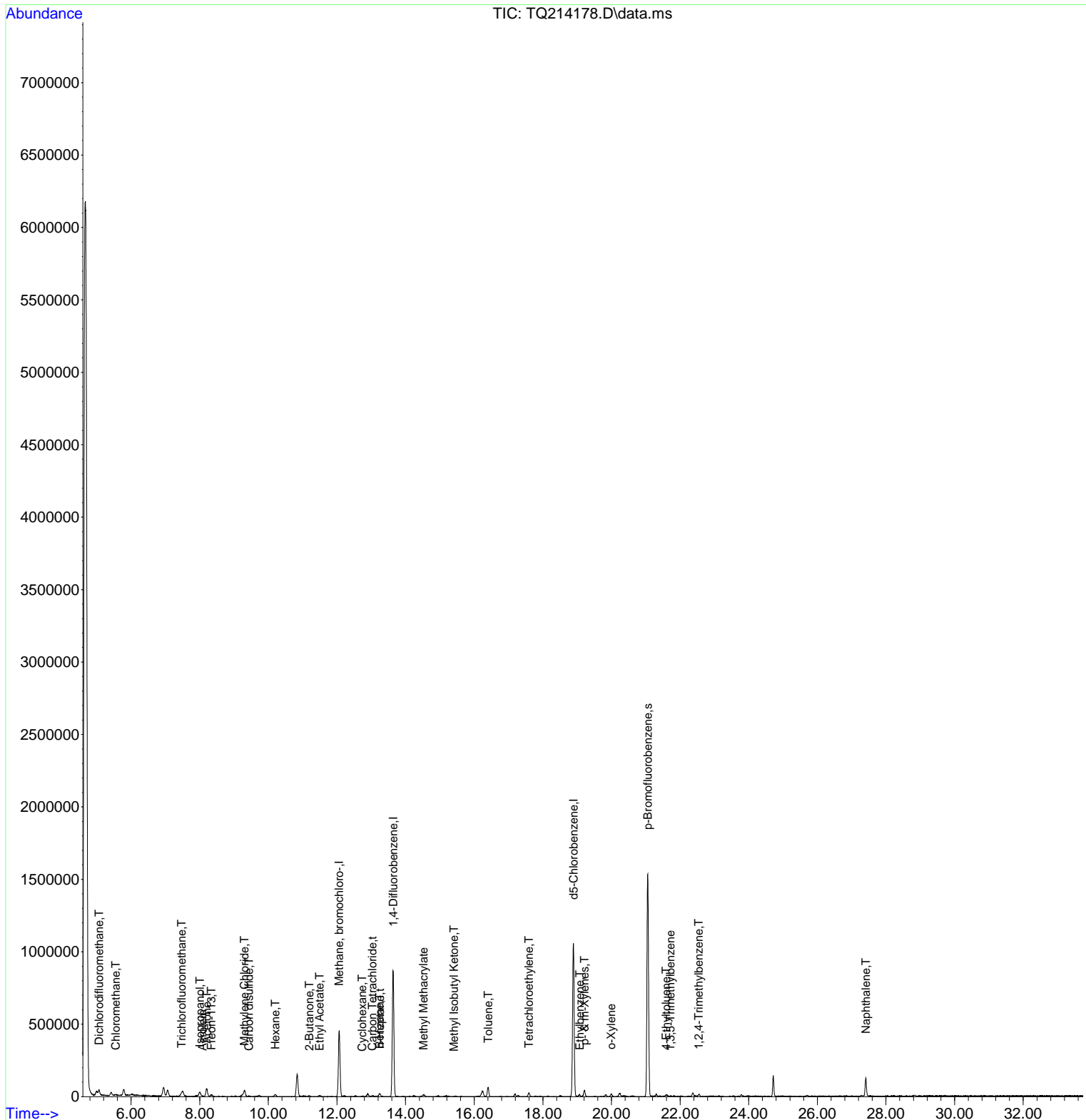
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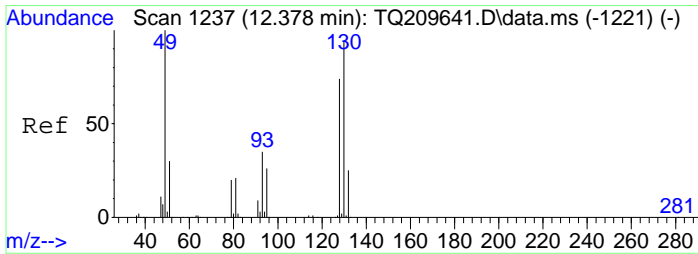
Internal Standards						
1) Methane, bromochloro-	12.062	49	244545	10.00	ppbv	# 0.00
37) 1,4-Difluorobenzene	13.635	114	1344822	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.892	117	1258666	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.056	95	1050136	9.30	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	93.00%	
Target Compounds						
						Qvalue
3) Dichlorodifluoromethane	5.063	85	56909	0.49	ppbv	# 94
5) Chloromethane	5.555	50	8845	0.54	ppbv	71
11) Trichlorofluoromethane	7.468	101	29722	0.24	ppbv	# 95
12) Isopropanol	7.998	45	64469	1.15	ppbv	99
13) Acrolein	8.082	56	1320m	0.11	ppbv	
14) Acetone	8.198	43	119252	2.36	ppbv	95
15) Freon-113	8.333	101	6607m	0.07	ppbv	
18) Methylene Chloride	9.300	49	32319	1.02	ppbv	# 77
20) Carbon disulfide	9.432	76	11197	0.11	ppbv	# 83
23) Hexane	10.198	57	11931	0.25	ppbv	# 65
26) 2-Butanone	11.191	43	12606	0.25	ppbv	# 76
27) Ethyl Acetate	11.487	43	6128	0.11	ppbv	# 40
32) Cyclohexane	12.731	56	2562m	0.06	ppbv	
33) Carbon Tetrachloride	13.024	117	8063m	0.07	ppbv	
35) Benzene	13.239	78	22085	0.18	ppbv	# 54
36) n-Heptane	13.249	43	3938	0.10	ppbv	# 84
40) Methyl Methacrylate	14.512	69	8469m	0.22	ppbv	
43) Methyl Isobutyl Ketone	15.410	43	1884m	0.03	ppbv	
45) Toluene	16.406	91	87777	0.53	ppbv	99
50) Tetrachloroethylene	17.593	166	15389m	0.16	ppbv	
56) Ethylbenzene	19.075	91	16502	0.07	ppbv	100
57) p- & m-Xylenes	19.213	91	46961	0.26	ppbv	98
58) o-Xylene	19.985	91	16107	0.09	ppbv	# 91
65) 4-Ethyltoluene	21.589	105	19364m	0.07	ppbv	
66) 1,3,5-Trimethylbenzene	21.715	105	5217m	0.02	ppbv	
68) 1,2,4-Trimethylbenzene	22.541	105	18720	0.08	ppbv	# 91
78) Naphthalene	27.409	128	188066	0.35	ppbv	100

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

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214178.D
 Acq On : 9 Apr 2021 11:57 am
 Operator : LLJ
 Sample : BD10445-DUP1
 Misc : QBTO2040821A 21D0348-05 0.533X/750ML
 ALS Vial : 16 Sample Multiplier: 0.852
 InstName : TO15_AIR2

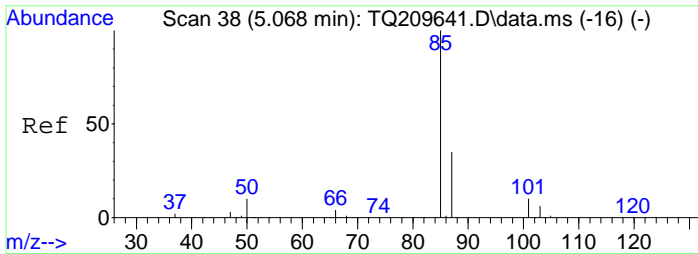
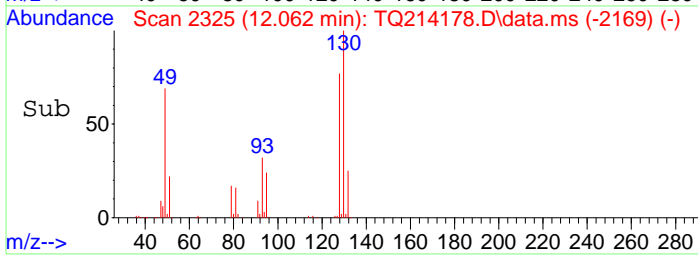
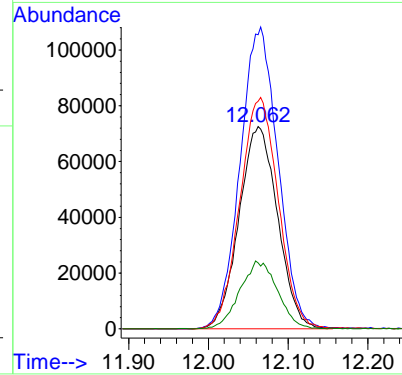
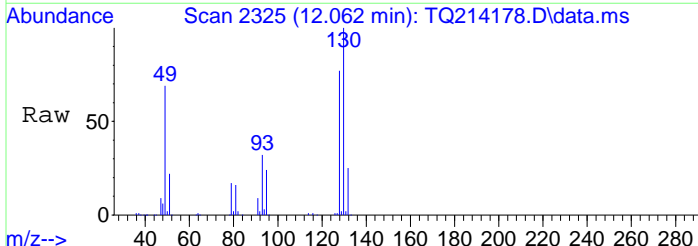
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 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration





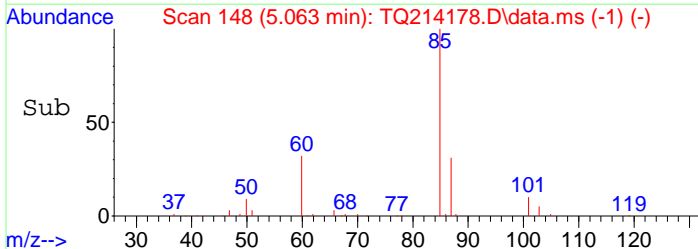
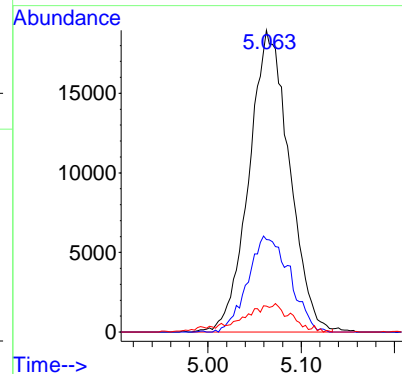
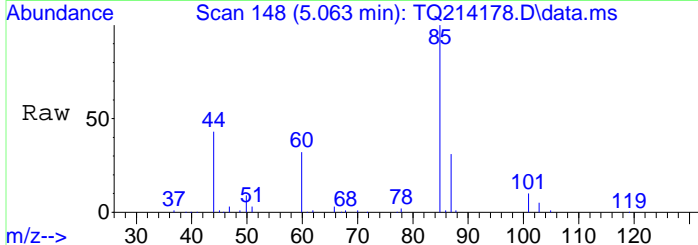
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.062 min Scan# 2325
 Delta R.T. 0.000 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

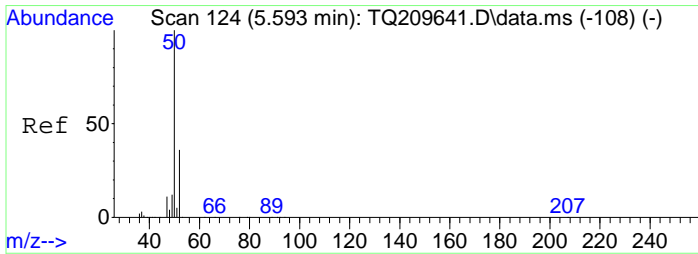
Tgt Ion	Resp	Lower	Upper
49	100		
130	146.8	48.1	99.9#
128	113.8	38.3	79.5#
51	32.7	20.3	42.3



#3
 Dichlorodifluoromethane
 Concen: 0.49 ppbv
 RT: 5.063 min Scan# 148
 Delta R.T. -0.009 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

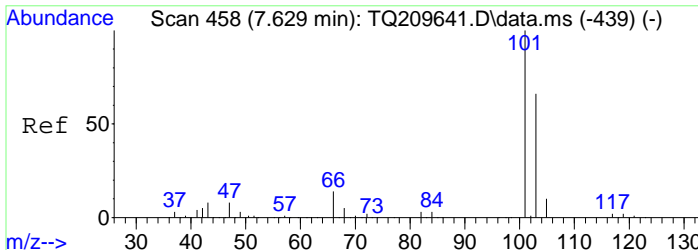
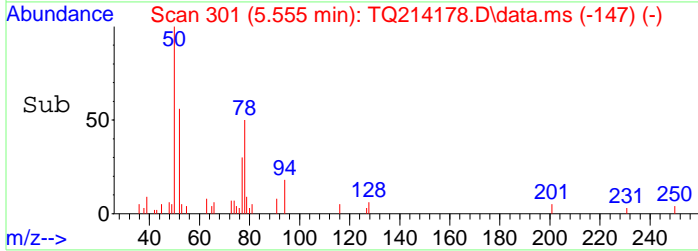
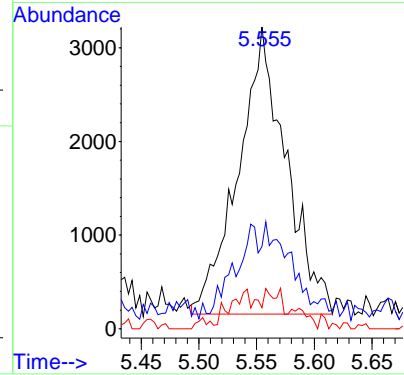
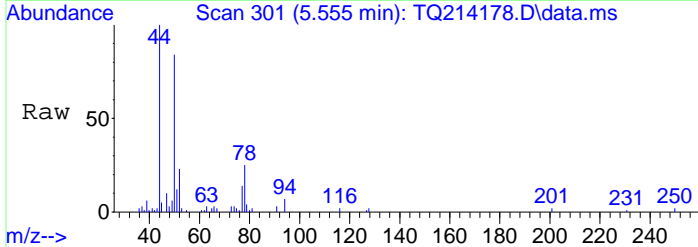
Tgt Ion	Resp	Lower	Upper
85	100		
87	33.0	20.9	43.5
50	3.3	7.2	15.0#





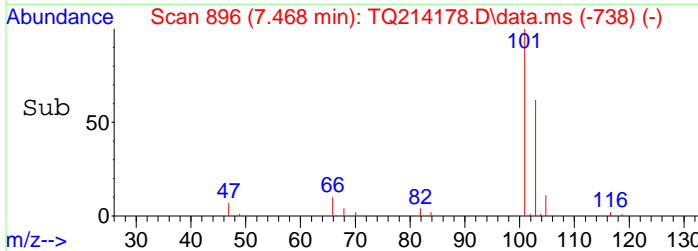
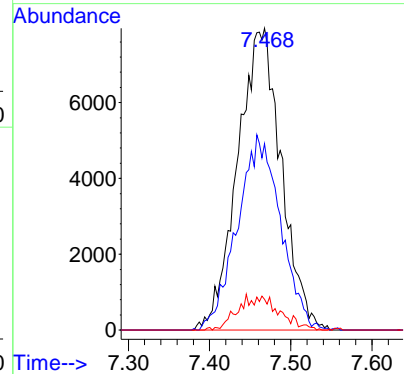
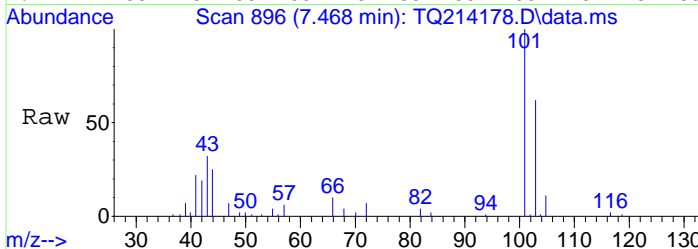
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 Chloromethane
 Concen: 0.54 ppbv
 RT: 5.555 min Scan# 301
 Delta R.T. -0.006 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

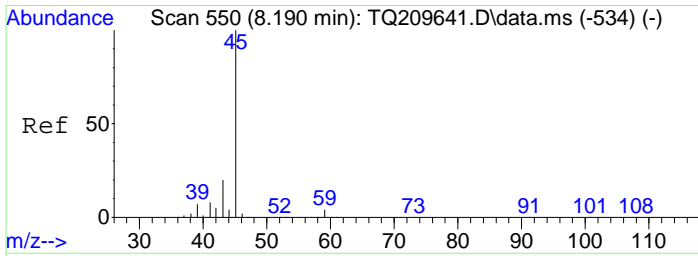
Tgt Ion	Resp	Lower	Upper
50	100		
52	13.0	0.0	65.2
49	6.0	0.0	19.6



#11
 Trichlorofluoromethane
 Concen: 0.24 ppbv
 RT: 7.468 min Scan# 896
 Delta R.T. 0.007 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

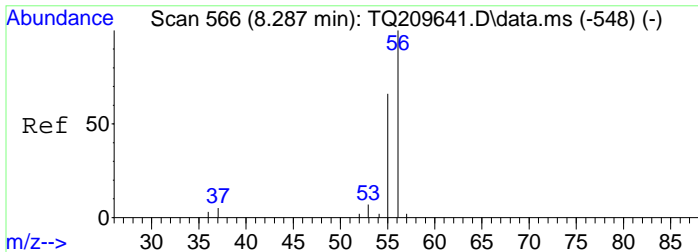
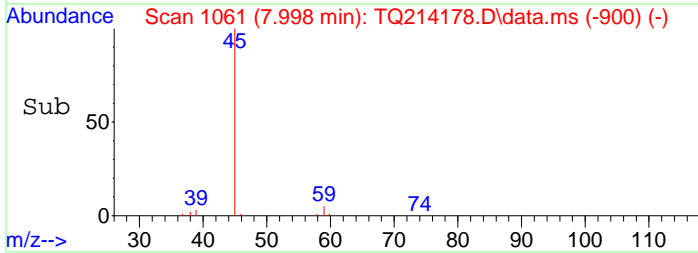
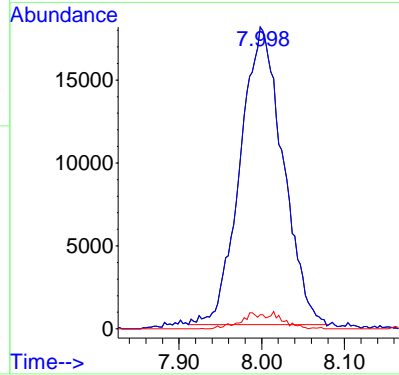
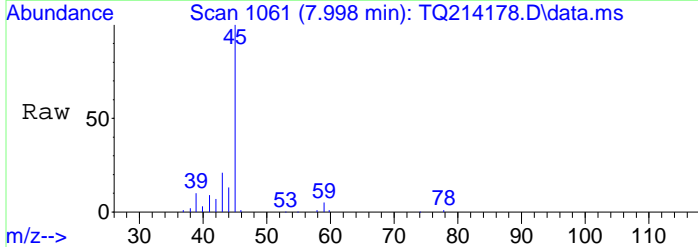
Tgt Ion	Resp	Lower	Upper
101	100		
103	63.7	42.3	87.8
66	4.1	7.8	16.2#





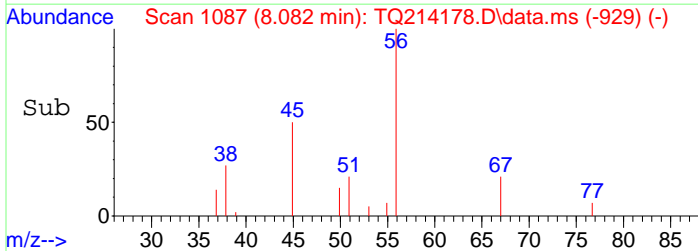
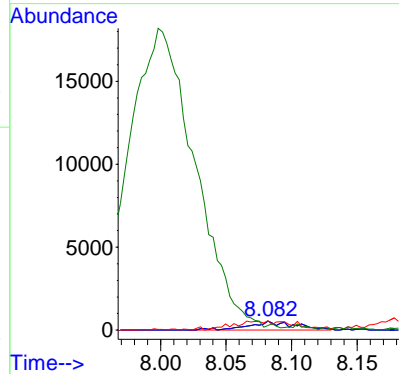
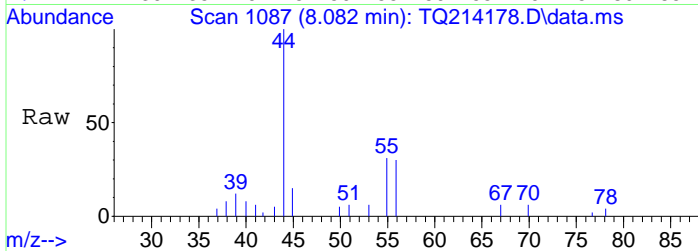
#12
 Isopropanol
 Concen: 1.15 ppbv
 RT: 7.998 min Scan# 1061
 Delta R.T. 0.019 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

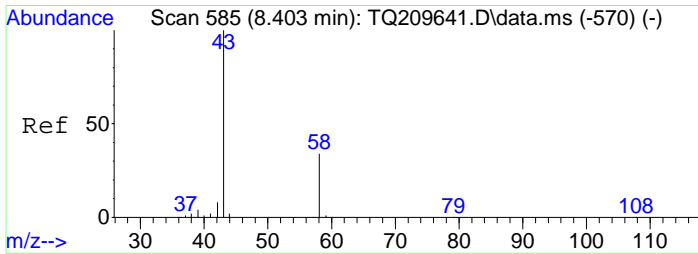
Tgt Ion	Resp	Lower	Upper
45	64469		
45	100		
45	100.0	65.0	135.0
59	1.3	0.0	10.0



#13
 Acrolein
 Concen: 0.11 ppbv m
 RT: 8.082 min Scan# 1087
 Delta R.T. 0.007 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

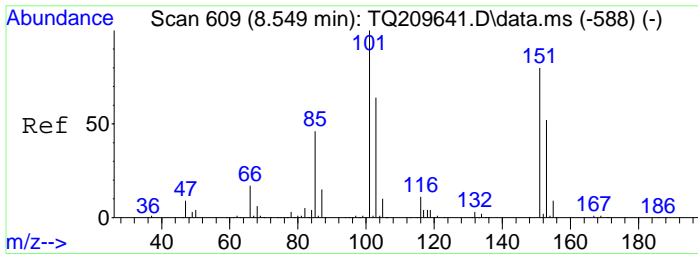
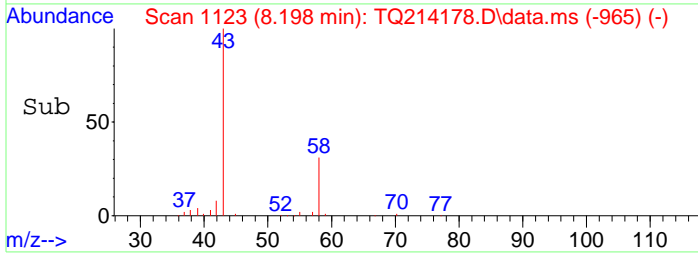
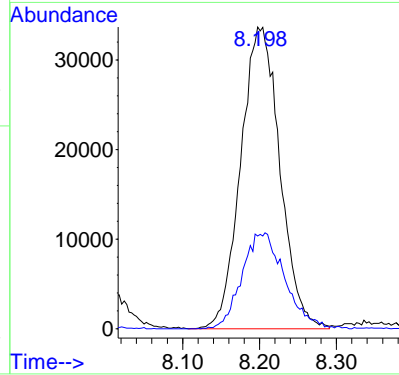
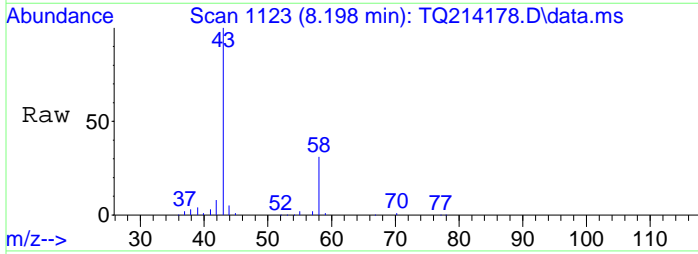
Tgt Ion	Resp	Lower	Upper
56	1320		
56	100		
56	51.1	80.0	120.0#
55	67.1	40.0	120.0
45	4884.0	17.5	52.5#





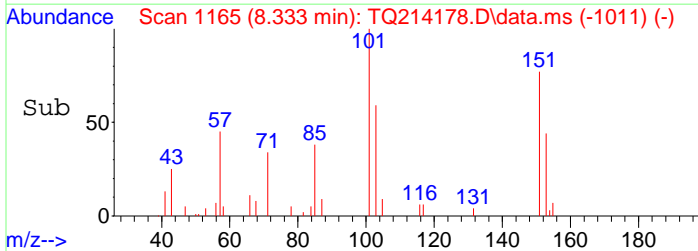
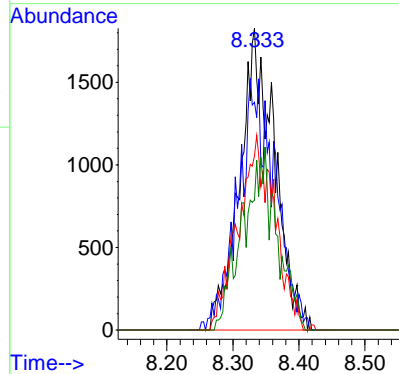
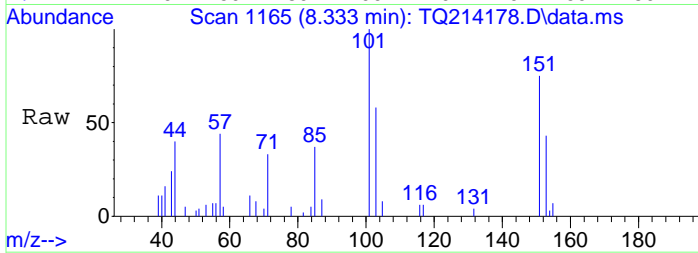
#14
 Acetone
 Concen: 2.36 ppbv
 RT: 8.198 min Scan# 1123
 Delta R.T. 0.007 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

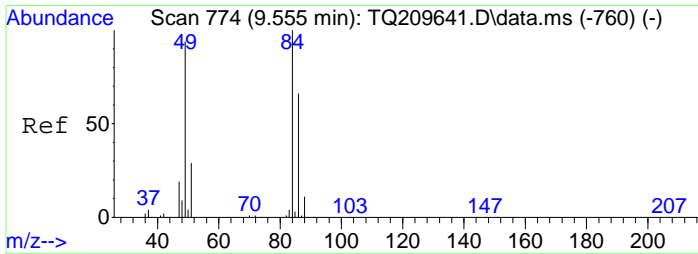
Tgt Ion: 43 Resp: 119252
 Ion Ratio Lower Upper
 43 100
 58 34.7 20.9 43.3



#15
 Freon-113
 Concen: 0.07 ppbv m
 RT: 8.333 min Scan# 1165
 Delta R.T. -0.003 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

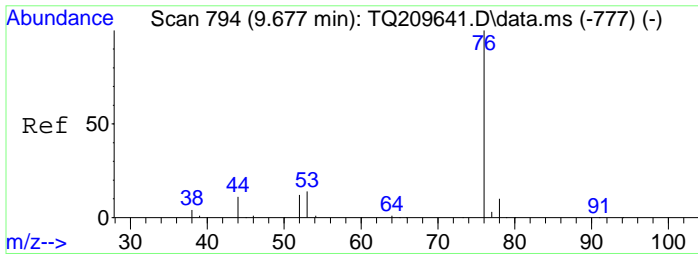
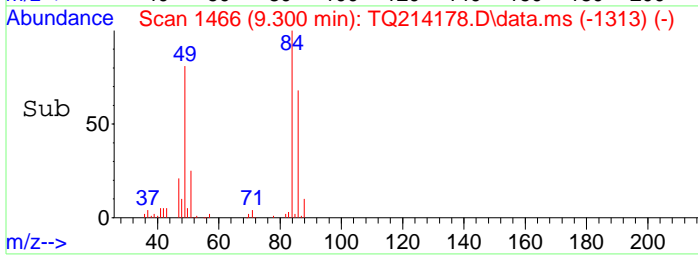
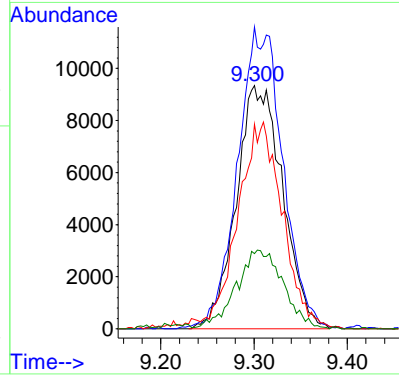
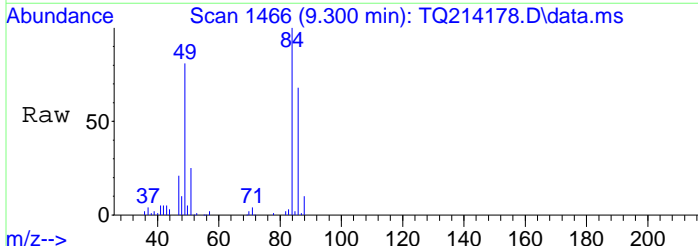
Tgt Ion: 101 Resp: 6607
 Ion Ratio Lower Upper
 101 100
 151 31.6 50.5 104.9#
 103 15.5 42.0 87.2#
 153 0.0 32.4 67.4#





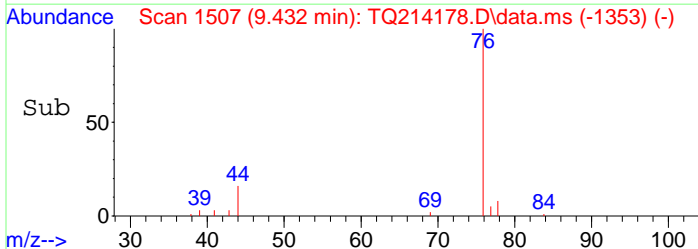
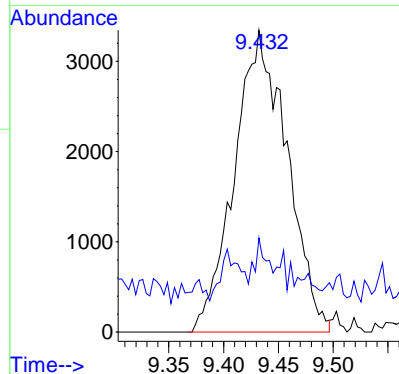
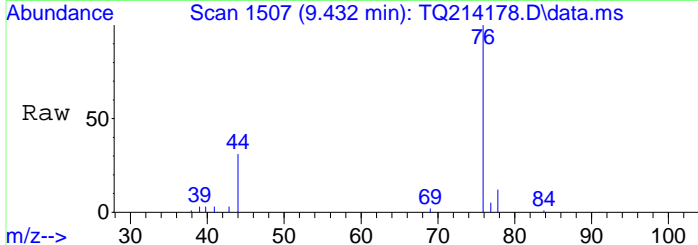
#18
 Methylene Chloride
 Concen: 1.02 ppbv
 RT: 9.300 min Scan# 1466
 Delta R.T. -0.007 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

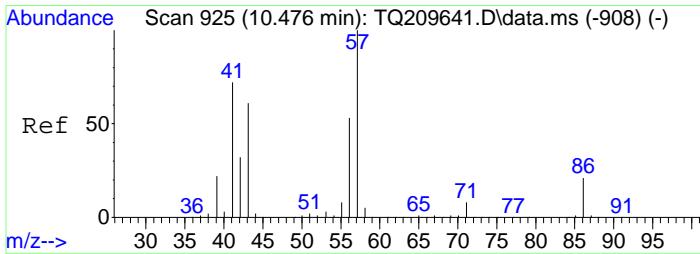
Tgt Ion	Resp	Lower	Upper
49	100		
84	63.1	49.9	103.5
86	81.4	31.8	66.0#
51	32.8	20.2	41.9



#20
 Carbon disulfide
 Concen: 0.11 ppbv
 RT: 9.432 min Scan# 1507
 Delta R.T. -0.004 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

Tgt Ion	Resp	Lower	Upper
76	100		
44	6.2	8.3	17.3#

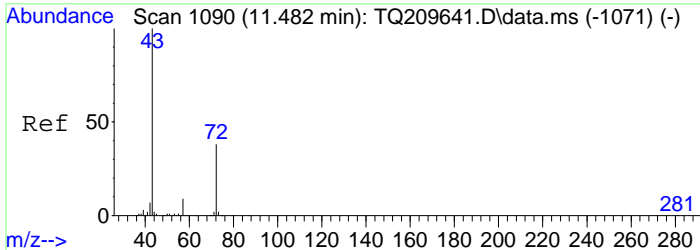
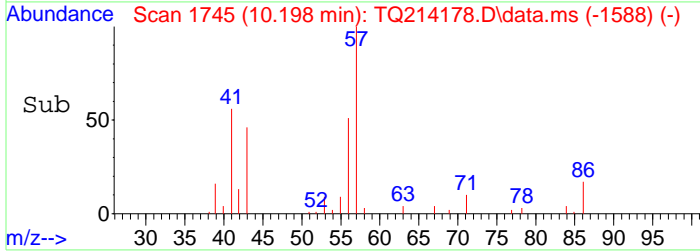
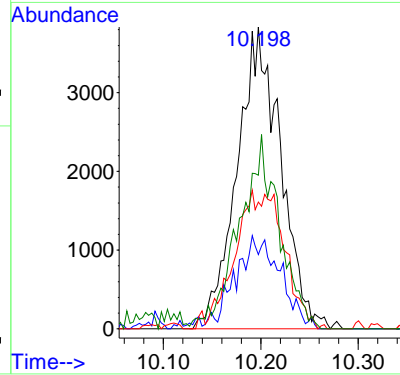
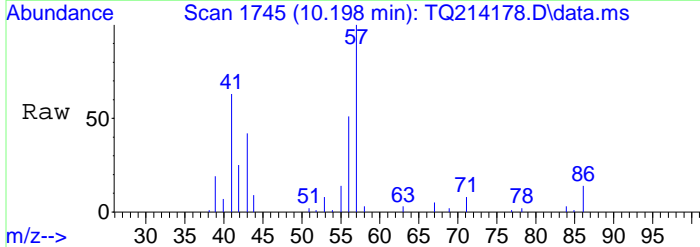




#23
Hexane
Concen: 0.25 ppbv
RT: 10.198 min Scan# 1745
Delta R.T. 0.003 min
Lab File: TQ214178.D
Acq: 9 Apr 2021 11:57 am

Tgt Ion: 57 Resp: 11931

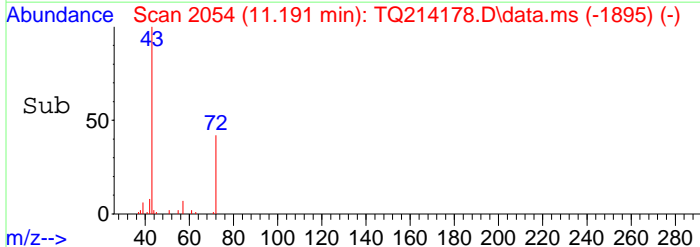
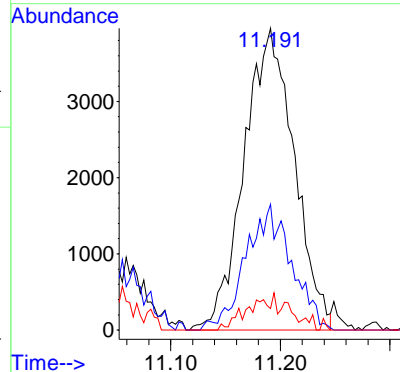
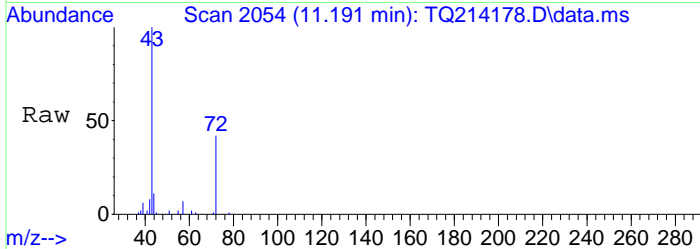
Ion	Ratio	Lower	Upper
57	100		
42	13.8	21.6	45.0#
43	26.4	42.0	87.2#
56	38.7	33.3	69.1

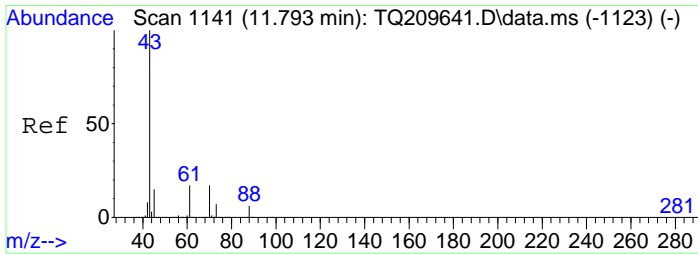


#26
2-Butanone
Concen: 0.25 ppbv
RT: 11.191 min Scan# 2054
Delta R.T. 0.010 min
Lab File: TQ214178.D
Acq: 9 Apr 2021 11:57 am

Tgt Ion: 43 Resp: 12606

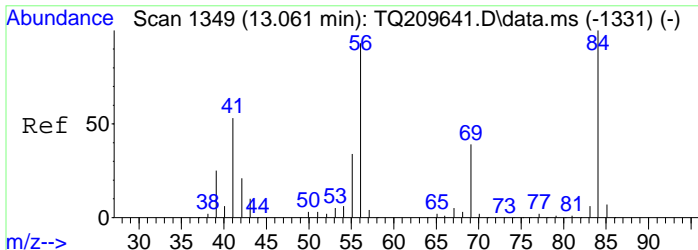
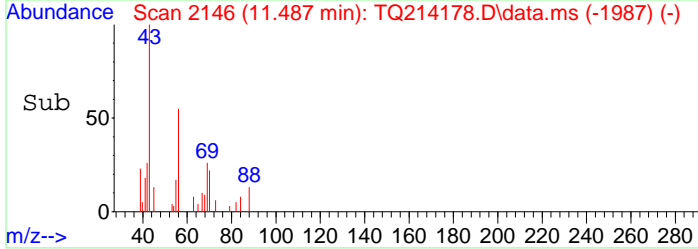
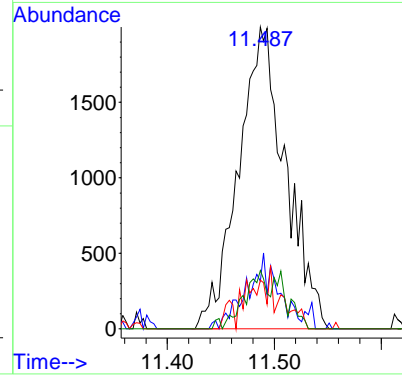
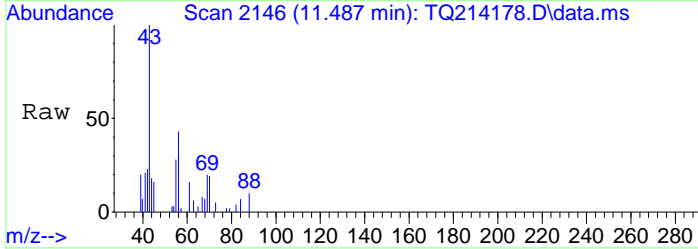
Ion	Ratio	Lower	Upper
43	100		
72	37.3	16.1	33.5#
57	0.0	4.9	10.3#





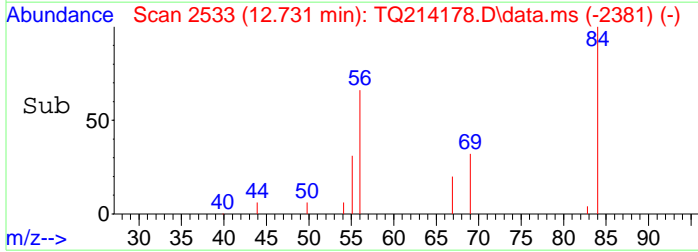
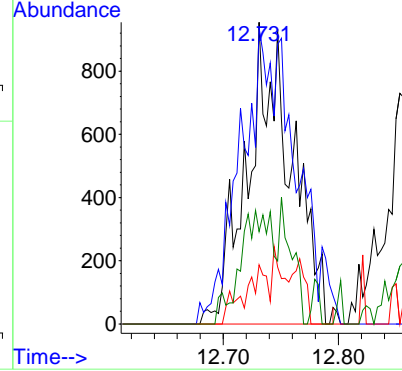
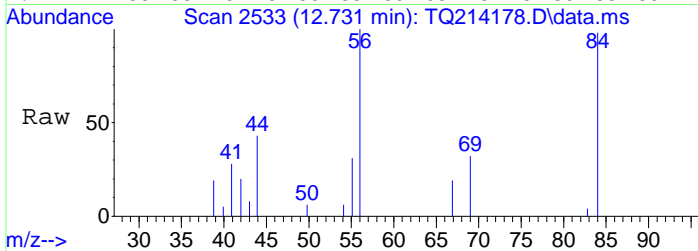
#27
Ethyl Acetate
Concen: 0.11 ppbv
RT: 11.487 min Scan# 2146
Delta R.T. 0.010 min
Lab File: TQ214178.D
Acq: 9 Apr 2021 11:57 am

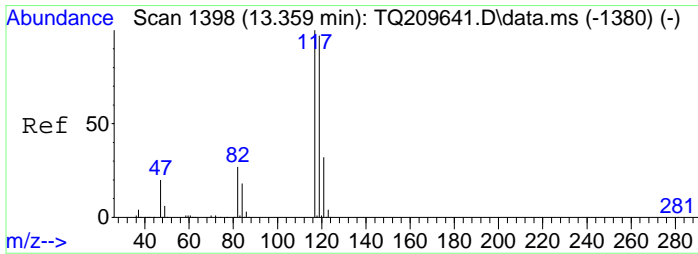
Tgt Ion	Resp	Lower	Upper
43	100		
61	15.1	51.4	106.8#
45	0.0	9.4	19.6#
70	9.4	7.5	15.5



#32
Cyclohexane
Concen: 0.06 ppbv m
RT: 12.731 min Scan# 2533
Delta R.T. -0.010 min
Lab File: TQ214178.D
Acq: 9 Apr 2021 11:57 am

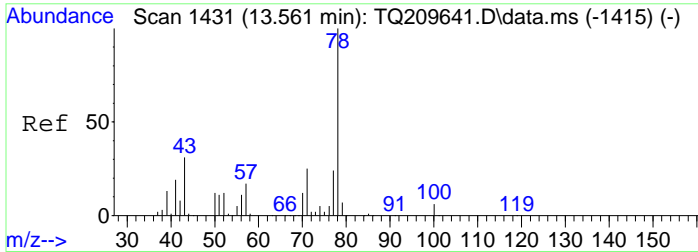
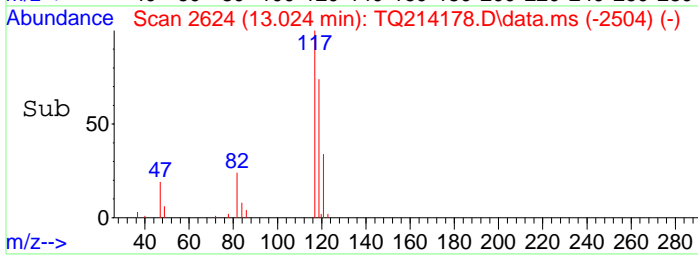
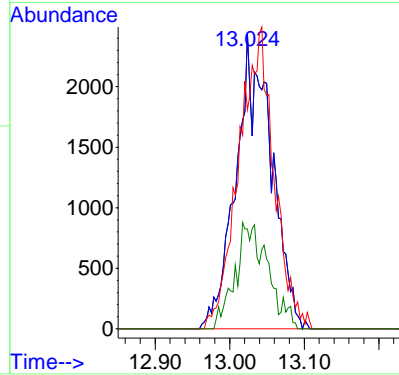
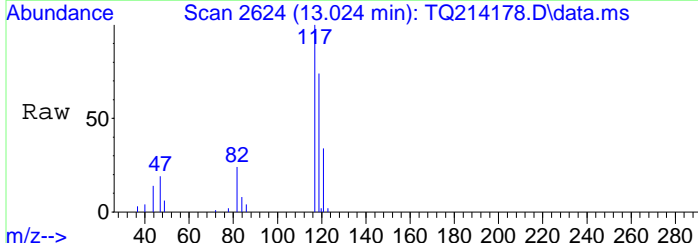
Tgt Ion	Resp	Lower	Upper
56	100		
84	30.5	54.1	112.3#
42	0.0	15.3	31.7#
55	0.0	23.5	48.7#





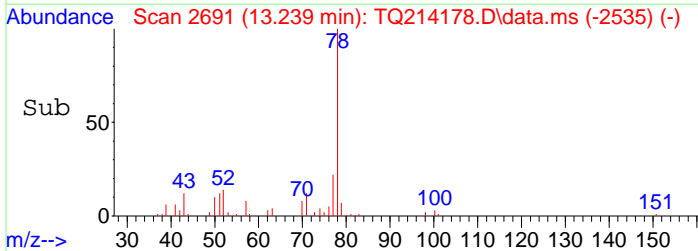
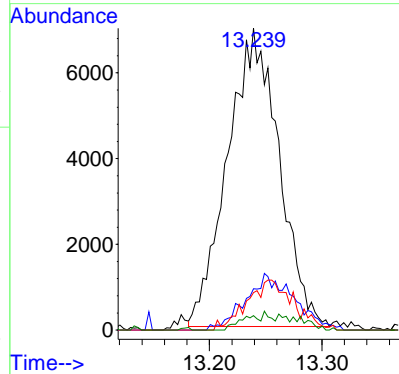
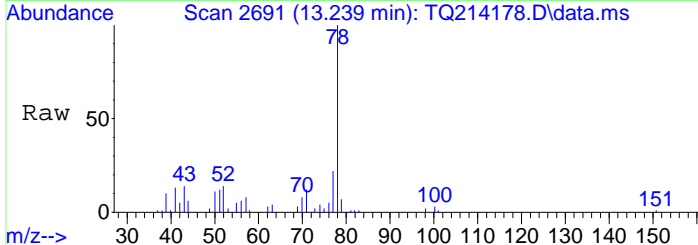
#33
 Carbon Tetrachloride
 Concen: 0.07 ppbv m
 RT: 13.024 min Scan# 2624
 Delta R.T. -0.013 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

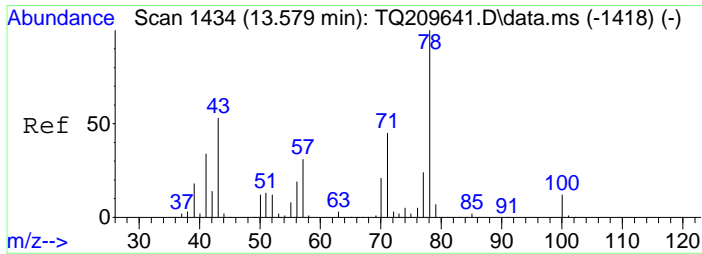
Tgt Ion	Resp	Lower	Upper
117	8063		
117	100		
117	53.1	80.0	120.0#
119	0.0	76.9	115.3#
121	0.0	21.7	40.3#



#35
 Benzene
 Concen: 0.18 ppbv
 RT: 13.239 min Scan# 2691
 Delta R.T. 0.000 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

Tgt Ion	Resp	Lower	Upper
78	22085		
78	100		
43	17.8	37.5	77.9#
71	11.6	22.0	45.8#
42	0.0	8.8	18.4#

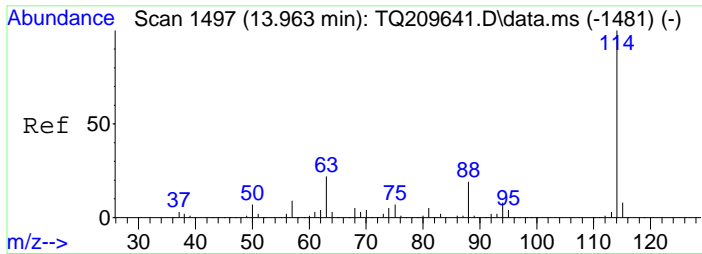
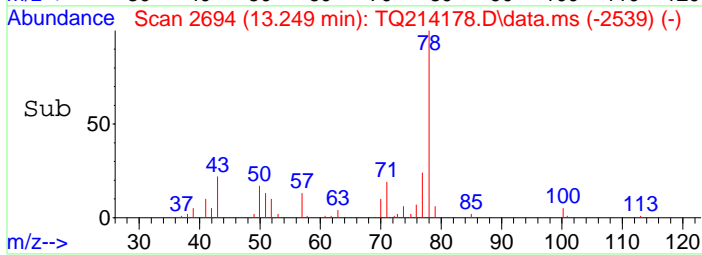
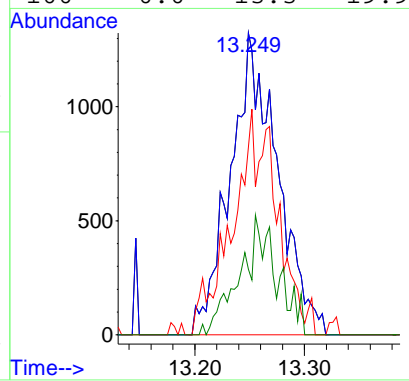
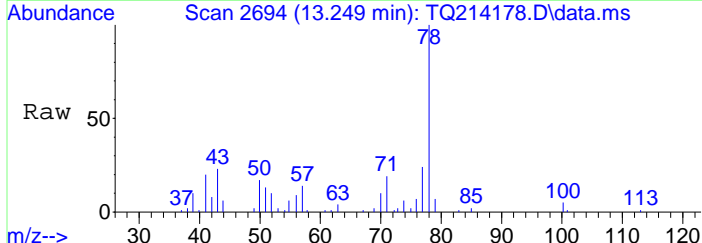




#36
 n-Heptane
 Concen: 0.10 ppbv
 RT: 13.249 min Scan# 2694
 Delta R.T. -0.003 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

Tgt Ion: 43 Resp: 3938

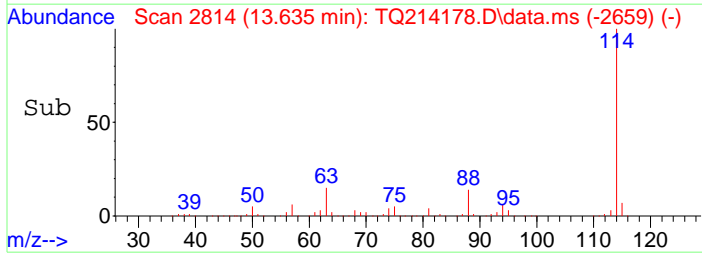
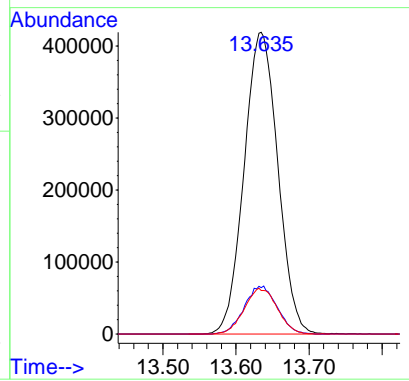
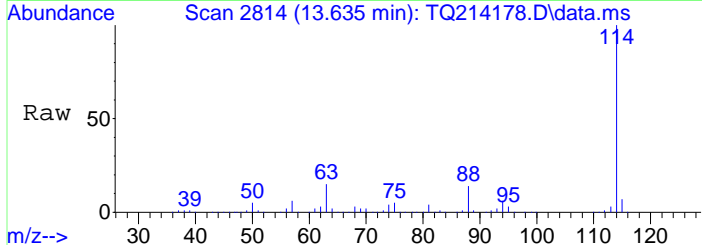
Ion	Ratio	Lower	Upper
43	100		
43	100.0	80.0	120.0
57	24.8	42.6	64.0#
100	0.0	13.3	19.9#

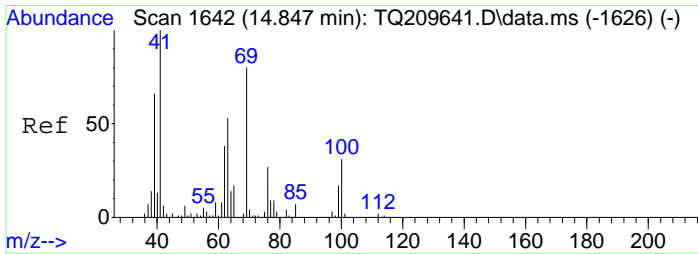


#37
 1,4-Difluorobenzene
 Concen: 10.00 ppbv
 RT: 13.635 min Scan# 2814
 Delta R.T. -0.000 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

Tgt Ion: 114 Resp: 1344822

Ion	Ratio	Lower	Upper
114	100		
63	15.6	12.9	26.9
88	14.9	10.7	22.3

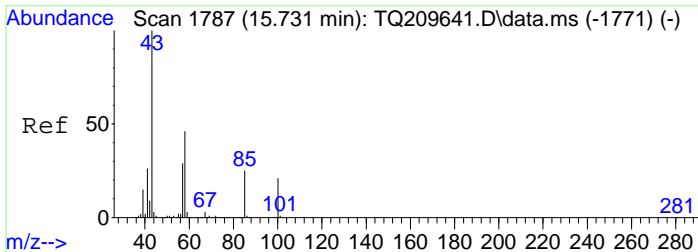
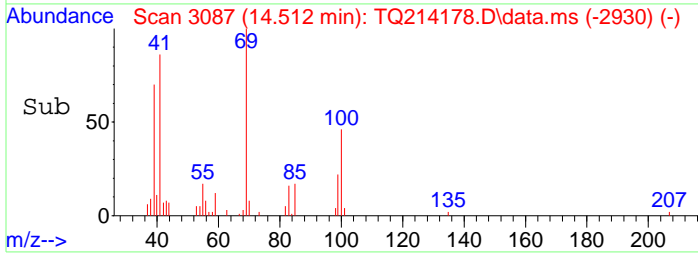
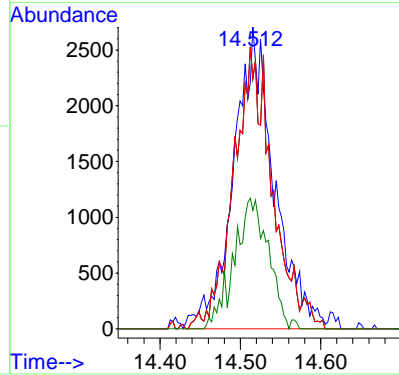
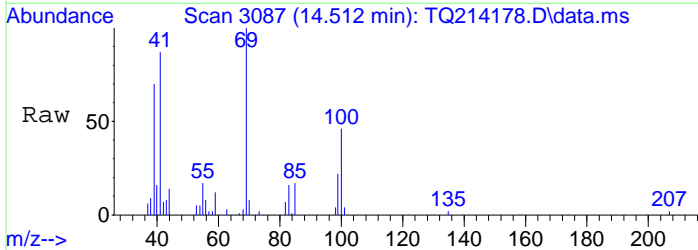




#40
Methyl Methacrylate
Concen: 0.22 ppbv m
RT: 14.512 min Scan# 3087
Delta R.T. 0.003 min
Lab File: TQ214178.D
Acq: 9 Apr 2021 11:57 am

Tgt Ion: 69 Resp: 8469

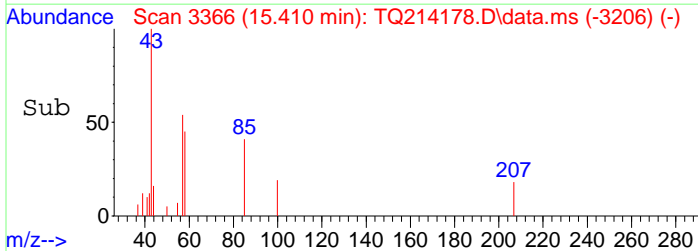
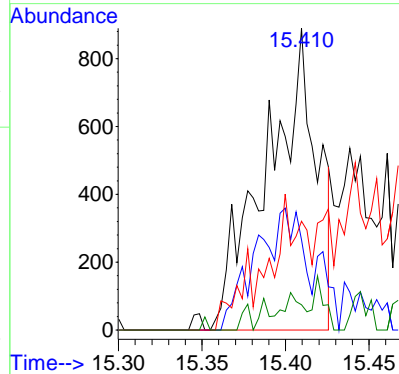
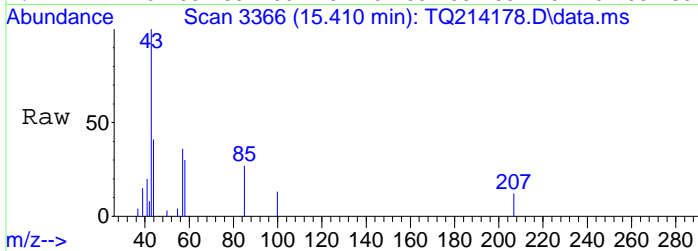
Ion	Ratio	Lower	Upper
69	100		
41	0.0	70.0	210.0#
69	60.9	50.0	150.0
100	0.0	17.5	52.5#

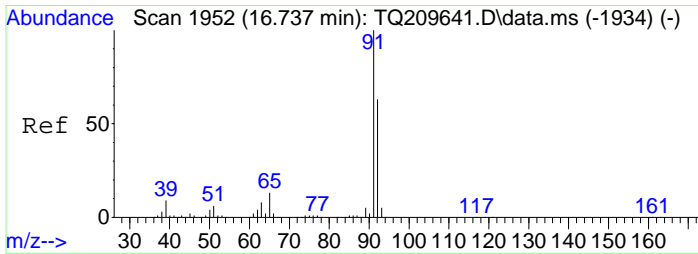


#43
Methyl Isobutyl Ketone
Concen: 0.03 ppbv m
RT: 15.410 min Scan# 3366
Delta R.T. 0.016 min
Lab File: TQ214178.D
Acq: 9 Apr 2021 11:57 am

Tgt Ion: 43 Resp: 1884

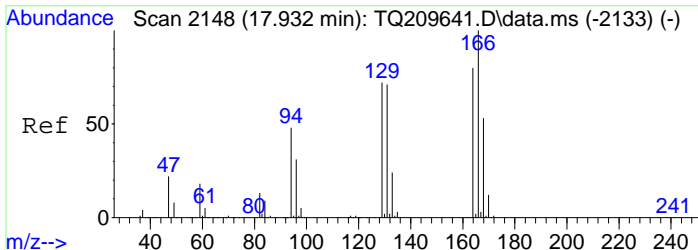
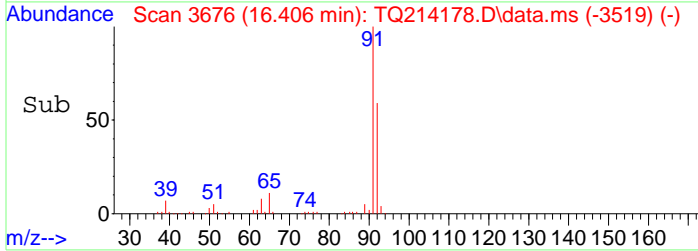
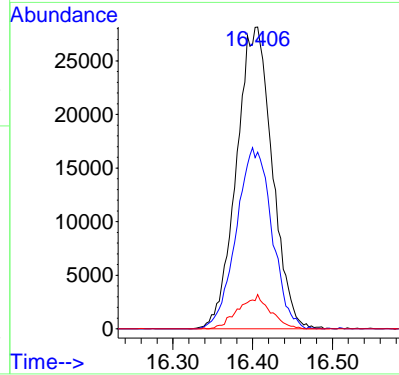
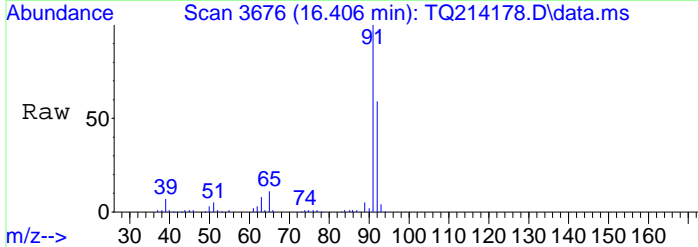
Ion	Ratio	Lower	Upper
43	100		
58	0.0	25.1	52.1#
57	0.0	15.5	32.3#
42	0.0	5.0	15.0#





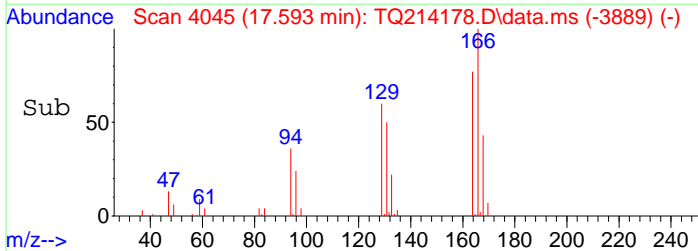
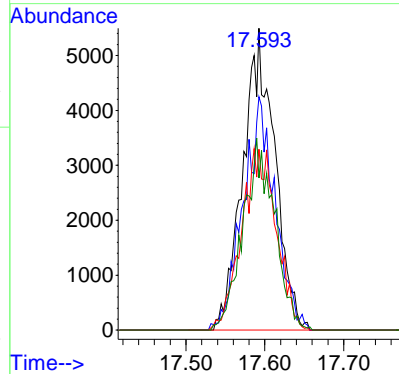
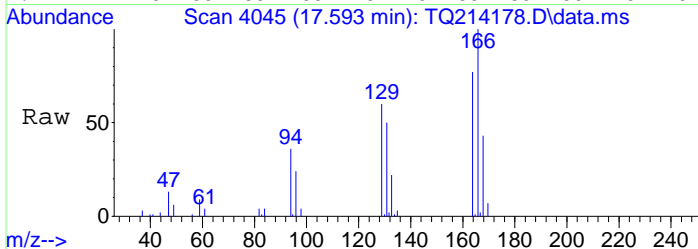
#45
 Toluene
 Concen: 0.53 ppbv
 RT: 16.406 min Scan# 3676
 Delta R.T. 0.006 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

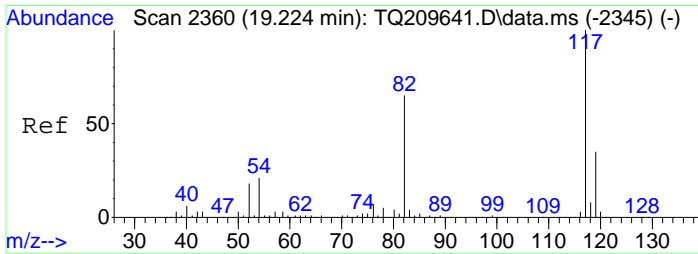
Tgt Ion	Resp	Lower	Upper
91	100		
92	59.9	38.7	80.3
65	10.0	7.5	15.5



#50
 Tetrachloroethylene
 Concen: 0.16 ppbv m
 RT: 17.593 min Scan# 4045
 Delta R.T. 0.003 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

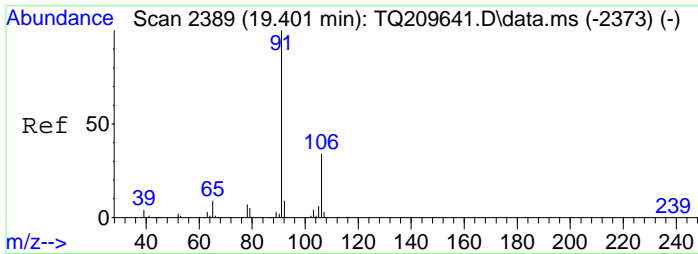
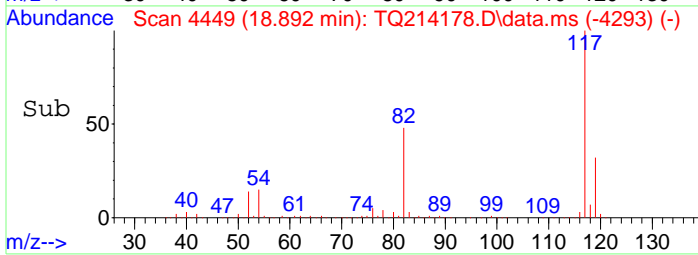
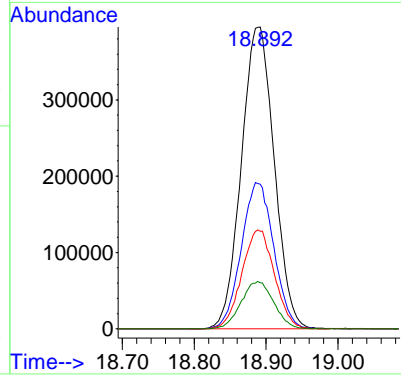
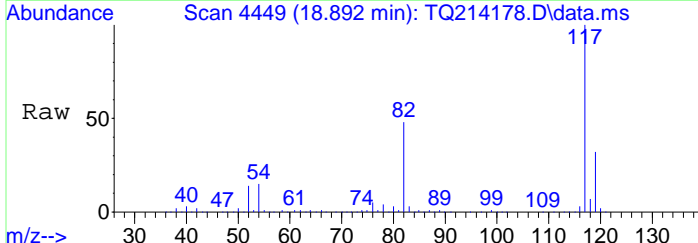
Tgt Ion	Resp	Lower	Upper
166	100		
164	77.2	51.0	106.0
129	41.9	48.1	99.9#
131	63.0	46.3	96.3





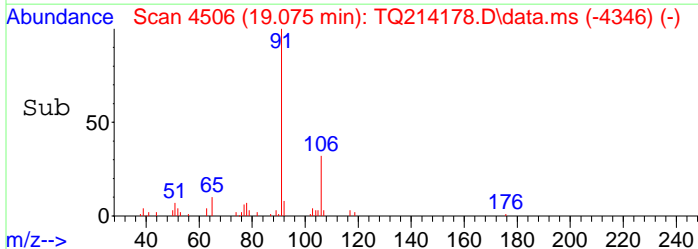
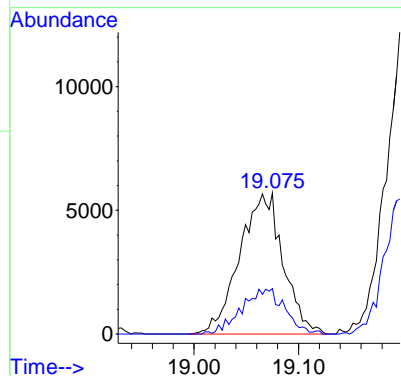
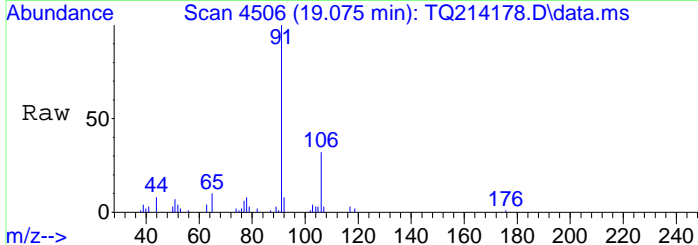
#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 18.892 min Scan# 4449
 Delta R.T. 0.003 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

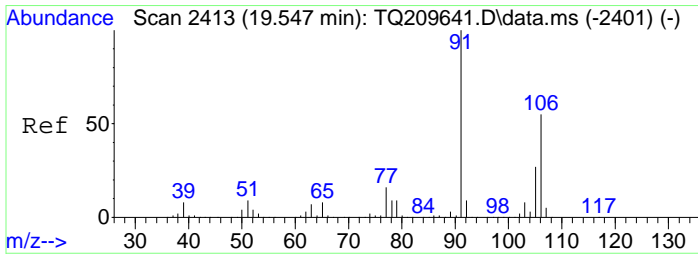
Tgt Ion	Resp	Lower	Upper
117	1258666		
82	47.9	37.1	77.1
119	32.5	22.1	45.9
54	15.6	13.8	28.6



#56
 Ethylbenzene
 Concen: 0.07 ppbv
 RT: 19.075 min Scan# 4506
 Delta R.T. 0.013 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

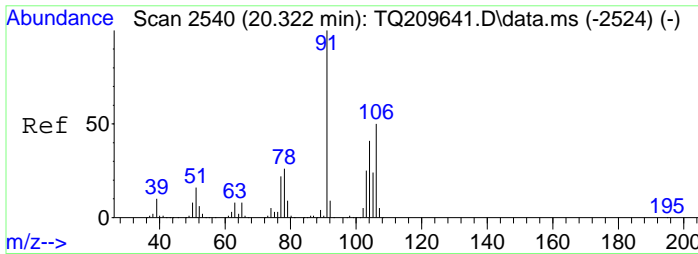
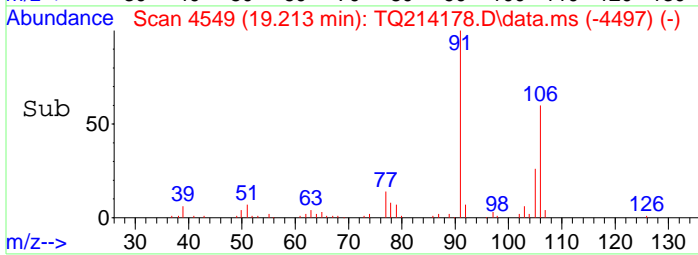
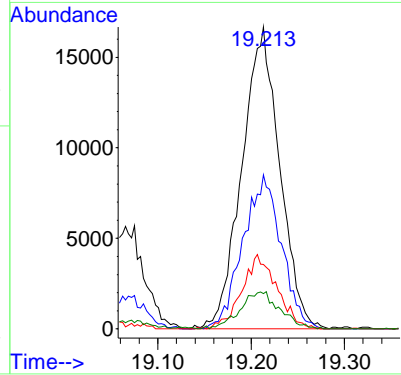
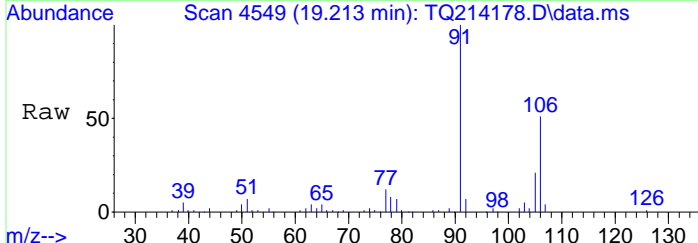
Tgt Ion	Resp	Lower	Upper
91	16502		
106	31.5	20.5	42.7





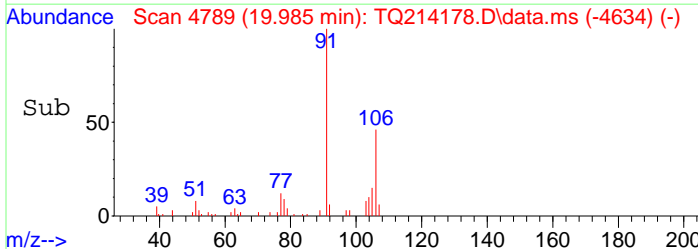
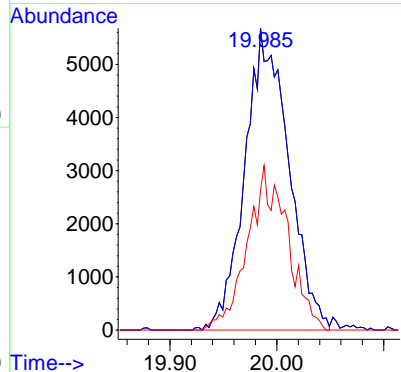
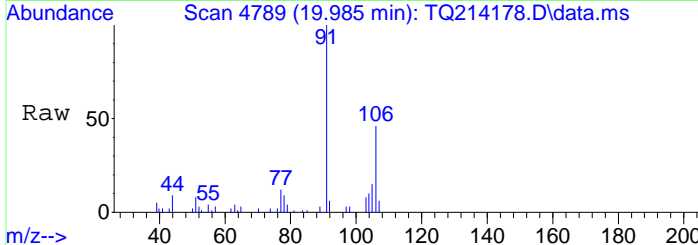
#57
 p- & m-Xylenes
 Concen: 0.26 ppbv
 RT: 19.213 min Scan# 4549
 Delta R.T. 0.006 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

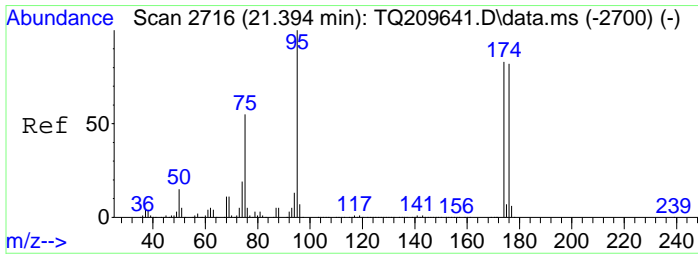
Tgt Ion	Resp	Lower	Upper
91	46961		
106	51.7	32.6	67.8
105	22.9	14.5	30.1
77	12.9	8.5	17.7



#58
 o-Xylene
 Concen: 0.09 ppbv
 RT: 19.985 min Scan# 4789
 Delta R.T. -0.003 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

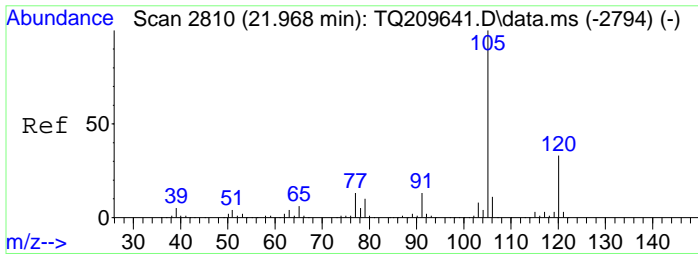
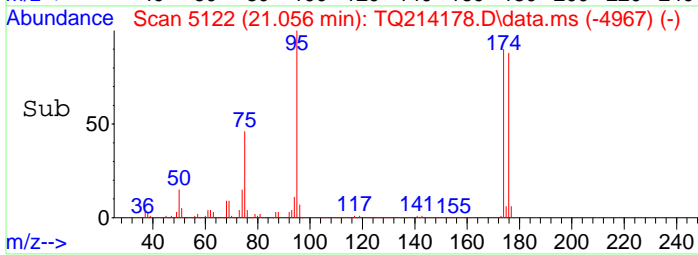
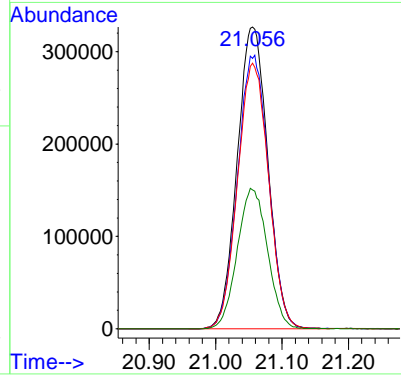
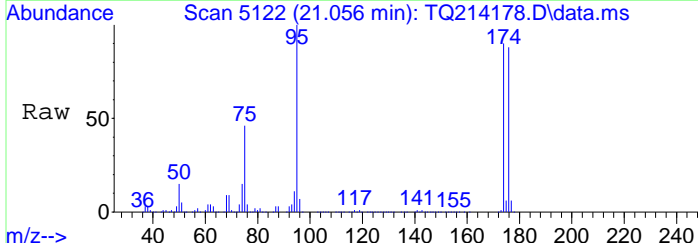
Tgt Ion	Resp	Lower	Upper
91	16107		
91	100.0	80.0	120.0
106	28.6	38.2	57.2#





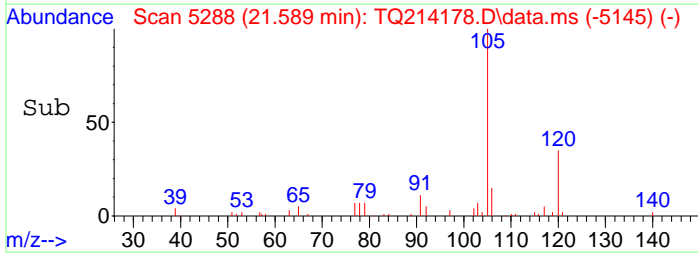
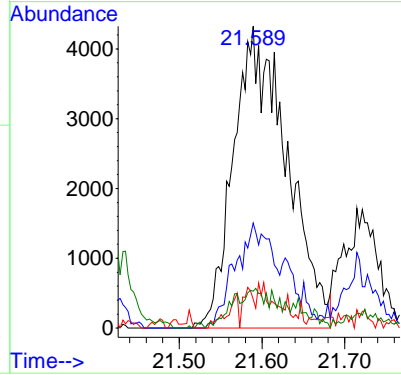
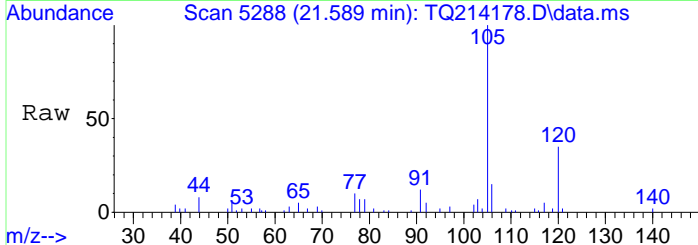
#64
 p-Bromofluorobenzene
 Concen: 9.30 ppbv
 RT: 21.056 min Scan# 5122
 Delta R.T. -0.000 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

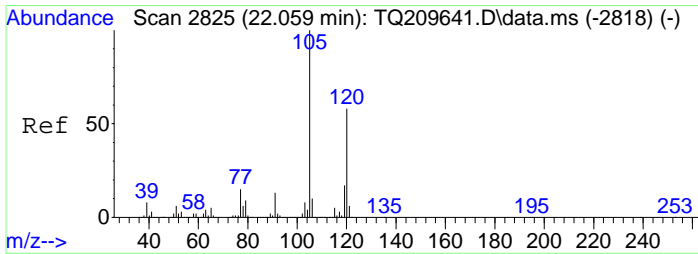
Tgt Ion	Resp	Lower	Upper
95	1050136		
174	91.5	53.2	110.6
176	88.8	51.6	107.2
75	45.9	30.7	63.7



#65
 4-Ethyltoluene
 Concen: 0.07 ppbv m
 RT: 21.589 min Scan# 5288
 Delta R.T. -0.042 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

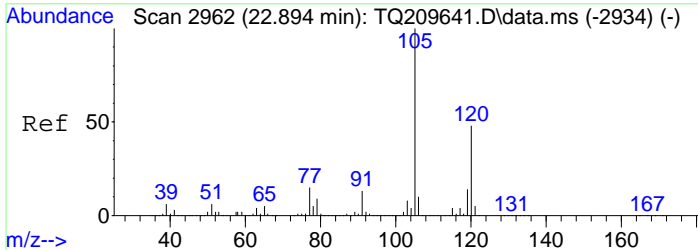
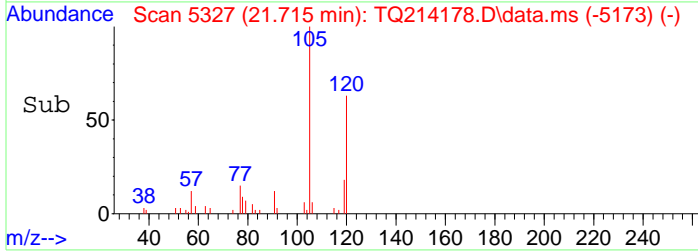
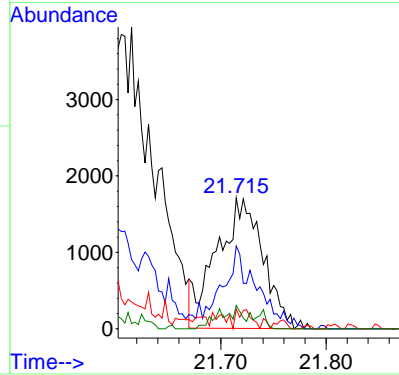
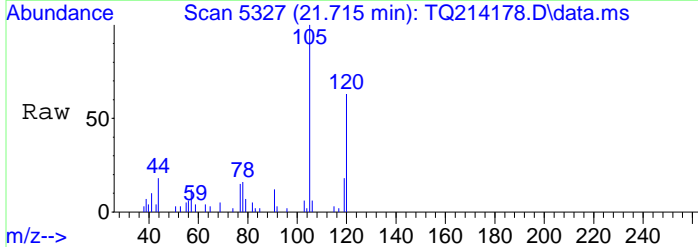
Tgt Ion	Resp	Lower	Upper
105	19364		
120	3.1	19.6	40.8#
77	0.0	7.3	15.3#
91	0.0	7.1	14.7#





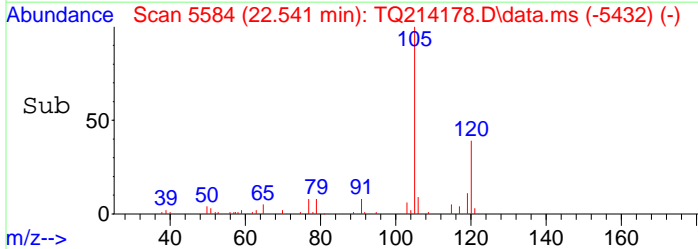
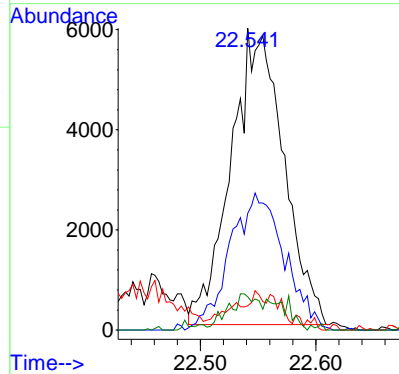
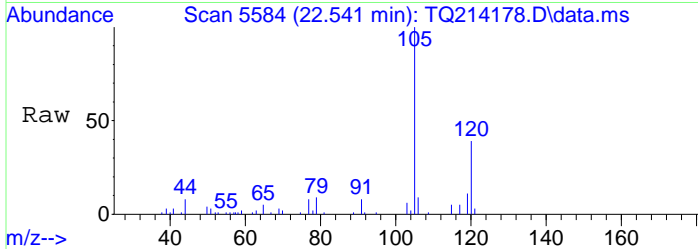
#66
 1,3,5-Trimethylbenzene
 Concen: 0.02 ppbv m
 RT: 21.715 min Scan# 5327
 Delta R.T. -0.003 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

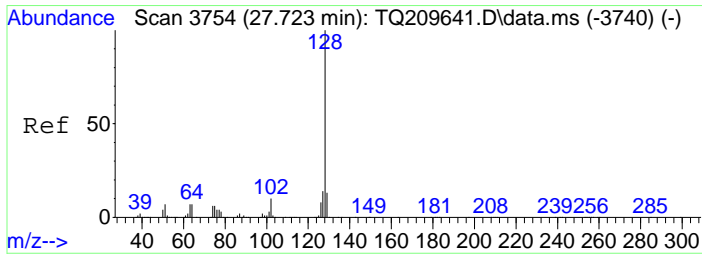
Tgt Ion	Resp	Lower	Upper
105	5217		
120	21.6	39.2	58.8#
77	0.0	10.1	15.1#
119	0.0	6.1	18.3#



#68
 1,2,4-Trimethylbenzene
 Concen: 0.08 ppbv
 RT: 22.541 min Scan# 5584
 Delta R.T. -0.010 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

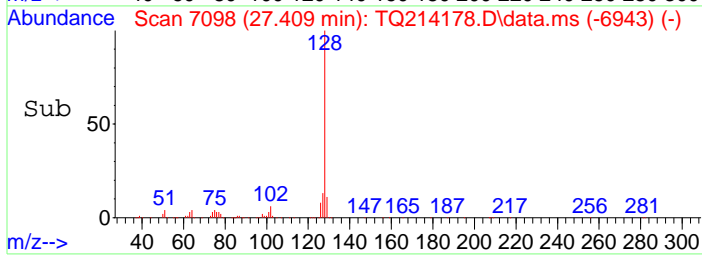
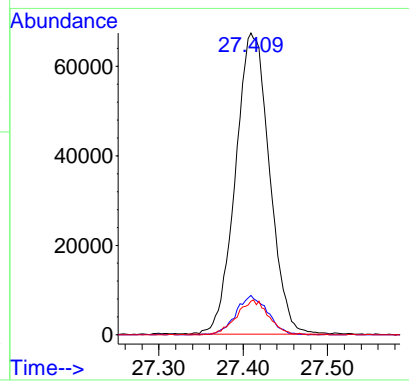
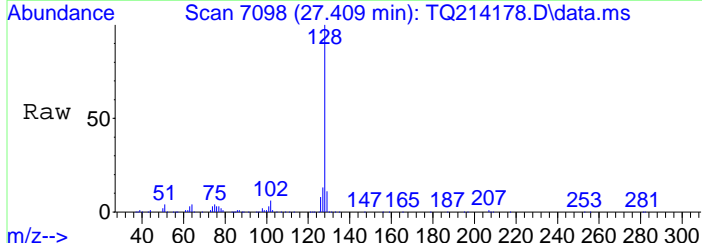
Tgt Ion	Resp	Lower	Upper
105	18720		
120	47.7	30.2	62.6
77	0.0	8.1	16.9#
119	6.4	7.8	16.2#





#78
 Naphthalene
 Concen: 0.35 ppbv
 RT: 27.409 min Scan# 7098
 Delta R.T. -0.003 min
 Lab File: TQ214178.D
 Acq: 9 Apr 2021 11:57 am

Tgt Ion	Resp	Lower	Upper
128	188066		
127	12.4	8.1	16.9
129	10.9	7.1	14.7



FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 21D0348Client: Langan Engineering & Environmental Services (NJ)Project: 100287505Matrix: AirBatch: BD10445Laboratory ID: BD10445-BS1Preparation: EPA TO15 PREPInitial/Final: 400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	10.0	9.09	90.9	70 - 130
1,1,1-Trichloroethane	10.0	9.21	92.1	70 - 130
1,1,2,2-Tetrachloroethane	10.0	8.86	88.6	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.0	8.69	86.9	70 - 130
1,1,2-Trichloroethane	10.0	9.36	93.6	70 - 130
1,1-Dichloroethane	10.0	8.41	84.1	70 - 130
1,1-Dichloroethylene	10.0	8.32	83.2	70 - 130
1,2,4-Trichlorobenzene	10.0	7.74	77.4	70 - 130
1,2,4-Trimethylbenzene	10.0	9.38	93.8	70 - 130
1,2-Dibromoethane	10.0	9.28	92.8	70 - 130
1,2-Dichlorobenzene	10.0	8.25	82.5	70 - 130
1,2-Dichloroethane	10.0	8.84	88.4	70 - 130
1,2-Dichloropropane	10.0	9.04	90.4	70 - 130
1,2-Dichlorotetrafluoroethane	10.0	9.47	94.7	70 - 130
1,3,5-Trimethylbenzene	10.0	9.33	93.3	70 - 130
1,3-Butadiene	10.0	9.11	91.1	70 - 130
1,3-Dichlorobenzene	10.0	8.41	84.1	70 - 130
1,3-Dichloropropane	10.0	8.98	89.8	70 - 130
1,4-Dichlorobenzene	10.0	8.36	83.6	70 - 130
1,4-Dioxane	10.0	7.92	79.2	70 - 130
2-Butanone	10.0	8.42	84.2	70 - 130
2-Hexanone	10.0	9.11	91.1	70 - 130
3-Chloropropene	10.0	9.09	90.9	70 - 130
4-Methyl-2-pentanone	10.0	9.14	91.4	70 - 130
Acetone	10.0	7.45	74.5	70 - 130
Acrylonitrile	10.0	8.79	87.9	70 - 130
Benzene	10.0	8.62	86.2	70 - 130
Benzyl chloride	10.0	9.78	97.8	70 - 130
Bromodichloromethane	10.0	9.71	97.1	70 - 130
Bromoform	10.0	10.0	100	70 - 130

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 21D0348Client: Langan Engineering & Environmental Services (NJ)Project: 100287505Matrix: AirBatch: BD10445Laboratory ID: BD10445-BS1Preparation: EPA TO15 PREPInitial/Final: 400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
Bromomethane	10.0	9.29	92.9	70 - 130
Carbon disulfide	10.0	8.67	86.7	70 - 130
Carbon tetrachloride	10.0	8.94	89.4	70 - 130
Chlorobenzene	10.0	8.44	84.4	70 - 130
Chloroethane	10.0	9.20	92.0	70 - 130
Chloroform	10.0	8.75	87.5	70 - 130
Chloromethane	10.0	8.44	84.4	70 - 130
cis-1,2-Dichloroethylene	10.0	8.27	82.7	70 - 130
cis-1,3-Dichloropropylene	10.0	9.65	96.5	70 - 130
Cyclohexane	10.0	9.23	92.3	70 - 130
Dibromochloromethane	10.0	9.90	99.0	70 - 130
Dichlorodifluoromethane	10.0	8.45	84.5	70 - 130
Ethyl acetate	10.0	8.77	87.7	70 - 130
Ethyl Benzene	10.0	9.03	90.3	70 - 130
Hexachlorobutadiene	10.0	8.57	85.7	70 - 130
Isopropanol	10.0	7.39	73.9	70 - 130
Methyl Methacrylate	10.0	9.43	94.3	70 - 130
Methyl tert-butyl ether (MTBE)	10.0	9.06	90.6	70 - 130
Methylene chloride	10.0	7.97	79.7	70 - 130
n-Heptane	10.0	9.33	93.3	70 - 130
n-Hexane	10.0	8.01	80.1	70 - 130
o-Xylene	10.0	9.56	95.6	70 - 130
p- & m- Xylenes	20.0	18.6	93.0	70 - 130
p-Ethyltoluene	10.0	9.44	94.4	70 - 130
Propylene	10.0	7.88	78.8	70 - 130
Styrene	10.0	9.52	95.2	70 - 130
Tetrachloroethylene	10.0	8.73	87.3	70 - 130
Tetrahydrofuran	10.0	8.31	83.1	70 - 130
Toluene	10.0	9.05	90.5	70 - 130
trans-1,2-Dichloroethylene	10.0	8.70	87.0	70 - 130

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Air
 Batch: BD10445 Laboratory ID: BD10445-BS1
 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropylene	10.0	9.90	99.0	70 - 130
Trichloroethylene	10.0	8.82	88.2	70 - 130
Trichlorofluoromethane (Freon 11)	10.0	9.02	90.2	70 - 130
Vinyl acetate	10.0	7.97	79.7	70 - 130
Vinyl bromide	10.0	9.11	91.1	70 - 130
Vinyl Chloride	10.0	8.22	82.2	70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

PREPARATION BATCH SUMMARY**EPA TO-15**

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Batch: BD10445 Batch Matrix: Air Preparation: EPA TO15 PREP

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
872_V5	21D0348-01	TQ214176.D	04/08/21 22:00	
873_V2	21D0348-02	TQ214173.D	04/08/21 22:00	
874_V3	21D0348-03	TQ214174.D	04/08/21 22:00	
875_DUP-1	21D0348-04	TQ214175.D	04/08/21 22:00	
871_Ambient-1	21D0348-05	TQ214177.D	04/08/21 22:00	
Blank	BD10445-BLK1	TQ214172.D	04/08/21 22:00	
LCS	BD10445-BS1	TQ214167.D	04/08/21 22:00	
871_Ambient-1	BD10445-DUP1	TQ214178.D	04/08/21 22:00	

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Air Laboratory ID: BD10445-BLK1 File ID: TQ214172.D
 Prepared: 04/08/21 22:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 04/09/21 05:24 Instrument: TO15 AIR2
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	0.687	U
71-55-6	1,1,1-Trichloroethane	0.546	U
79-34-5	1,1,2,2-Tetrachloroethane	0.687	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.766	U
79-00-5	1,1,2-Trichloroethane	0.546	U
75-34-3	1,1-Dichloroethane	0.405	U
75-35-4	1,1-Dichloroethylene	0.198	U
120-82-1	1,2,4-Trichlorobenzene	0.742	U
95-63-6	1,2,4-Trimethylbenzene	0.492	U
106-93-4	1,2-Dibromoethane	0.768	U
95-50-1	1,2-Dichlorobenzene	0.601	U
107-06-2	1,2-Dichloroethane	0.405	U
78-87-5	1,2-Dichloropropane	0.462	U
76-14-2	1,2-Dichlorotetrafluoroethane	0.699	U
108-67-8	1,3,5-Trimethylbenzene	0.492	U
106-99-0	1,3-Butadiene	0.664	U
541-73-1	1,3-Dichlorobenzene	0.601	U
142-28-9	1,3-Dichloropropane	0.462	U
106-46-7	1,4-Dichlorobenzene	0.601	U
123-91-1	1,4-Dioxane	0.721	U
78-93-3	2-Butanone	0.295	U
591-78-6	2-Hexanone	0.819	U
107-05-1	3-Chloropropene	1.57	U
108-10-1	4-Methyl-2-pentanone	0.410	U
67-64-1	Acetone	0.475	U
107-13-1	Acrylonitrile	0.217	U
71-43-2	Benzene	0.319	U
100-44-7	Benzyl chloride	0.518	U
75-27-4	Bromodichloromethane	0.670	U
75-25-2	Bromoform	1.03	U

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Air Laboratory ID: BD10445-BLK1 File ID: TQ214172.D
 Prepared: 04/08/21 22:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 04/09/21 05:24 Instrument: TO15_AIR2
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
74-83-9	Bromomethane	0.388	U
75-15-0	Carbon disulfide	0.311	U
56-23-5	Carbon tetrachloride	0.157	U
108-90-7	Chlorobenzene	0.460	U
75-00-3	Chloroethane	0.264	U
67-66-3	Chloroform	0.488	U
74-87-3	Chloromethane	0.207	U
156-59-2	cis-1,2-Dichloroethylene	0.198	U
10061-01-5	cis-1,3-Dichloropropylene	0.454	U
110-82-7	Cyclohexane	0.344	U
124-48-1	Dibromochloromethane	0.852	U
75-71-8	Dichlorodifluoromethane	0.495	U
141-78-6	Ethyl acetate	0.721	U
100-41-4	Ethyl Benzene	0.434	U
87-68-3	Hexachlorobutadiene	1.07	U
67-63-0	Isopropanol	0.492	U
80-62-6	Methyl Methacrylate	0.409	U
1634-04-4	Methyl tert-butyl ether (MTBE)	0.361	U
75-09-2	Methylene chloride	0.695	U
142-82-5	n-Heptane	0.410	U
110-54-3	n-Hexane	0.352	U
95-47-6	o-Xylene	0.434	U
179601-23-1	p- & m- Xylenes	0.868	U
622-96-8	p-Ethyltoluene	0.492	U
115-07-1	Propylene	0.172	U
100-42-5	Styrene	0.426	U
127-18-4	Tetrachloroethylene	0.678	U
109-99-9	Tetrahydrofuran	0.590	U
108-88-3	Toluene	0.377	U
156-60-5	trans-1,2-Dichloroethylene	0.396	U

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Air Laboratory ID: BD10445-BLK1 File ID: TQ214172.D
 Prepared: 04/08/21 22:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 04/09/21 05:24 Instrument: TO15_AIR2
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
10061-02-6	trans-1,3-Dichloropropylene	0.454	U
79-01-6	Trichloroethylene	0.134	U
75-69-4	Trichlorofluoromethane (Freon 11)	0.562	U
108-05-4	Vinyl acetate	0.352	U
593-60-2	Vinyl bromide	0.437	U
75-01-4	Vinyl Chloride	0.0639	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	200245	12.056	189488	12.075	
ISTD: 1,4-Difluorobenzene	1113397	13.628	1051211	13.641	
ISTD: d5-Chlorobenzene	1039464	18.889	1007357	18.885	

FORM V**MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK****EPA TO-15**Laboratory: York Analytical Laboratories, Inc.SDG: 21D0348Client: Langan Engineering & Environmental Services (NJ)Project: 100287505Lab File ID: TQ213543.DInjection Date: 03/05/21Instrument ID: TO15_AIR2Injection Time: 00:16Sequence: Y1C0832Lab Sample ID: Y1C0832-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	13.8	PASS
75	30 - 66% of 95	44.7	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.92	PASS
173	Less than 2% of 174	0.575	PASS
174	50 - 120% of 95	87	PASS
175	4 - 9% of 174	7.12	PASS
176	93 - 101% of 174	96.7	PASS
177	5 - 9% of 176	6.66	PASS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 21D0348Client: Langan Engineering & Environmental Services (NJ)Project: 100287505Lab File ID: TQ214165.DInjection Date: 04/08/21Instrument ID: TO15_AIR2Injection Time: 22:10Sequence: Y1D0934Lab Sample ID: Y1D0934-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	13.6	PASS
75	30 - 66% of 95	46.4	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.5	PASS
173	Less than 2% of 174	0.713	PASS
174	50 - 120% of 95	86.2	PASS
175	4 - 9% of 174	6.97	PASS
176	93 - 101% of 174	96.3	PASS
177	5 - 9% of 176	6.73	PASS

FORM V**ANALYSIS BATCH (SEQUENCE) SUMMARY****EPA TO-15**Laboratory: York Analytical Laboratories, Inc.SDG: 21D0348Client: Langan Engineering & Environmental Services (NJ)Project: 100287505Sequence: Y1C0832Instrument: TO15 AIR2Calibration: YC10005

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	Y1C0832-TUN1	TQ213543.D	03/05/21 00:16
Cal Standard	Y1C0832-CAL1	TQ213544.D	03/05/21 01:12
Cal Standard	Y1C0832-CAL2	TQ213545.D	03/05/21 02:08
Cal Standard	Y1C0832-CAL3	TQ213546.D	03/05/21 03:05
Cal Standard	Y1C0832-CAL4	TQ213547.D	03/05/21 04:03
Cal Standard	Y1C0832-CAL5	TQ213548.D	03/05/21 05:06
Cal Standard	Y1C0832-CAL6	TQ213549.D	03/05/21 06:02
Cal Standard	Y1C0832-CAL7	TQ213550.D	03/05/21 06:59
Cal Standard	Y1C0832-CAL8	TQ213551.D	03/05/21 08:00
Cal Standard	Y1C0832-CAL9	TQ213552.D	03/05/21 09:03
Cal Standard	Y1C0832-CALA	TQ213553.D	03/05/21 10:10
Secondary Cal Check	Y1C0832-SCV1	TQ213556.D	03/05/21 13:49

FORM V**ANALYSIS BATCH (SEQUENCE) SUMMARY****EPA TO-15**Laboratory: York Analytical Laboratories, Inc.SDG: 21D0348Client: Langan Engineering & Environmental Services (NJ)Project: 100287505Sequence: Y1D0934Instrument: TO15 AIR2Calibration: YC10005

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	Y1D0934-TUN1	TQ214165.D	04/08/21 22:10
Calibration Check	Y1D0934-CCV1	TQ214166.D	04/08/21 23:09
LCS	BD10445-BS1	TQ214167.D	04/09/21 00:07
Blank	BD10445-BLK1	TQ214172.D	04/09/21 05:24
873_V2	21D0348-02	TQ214173.D	04/09/21 06:27
874_V3	21D0348-03	TQ214174.D	04/09/21 07:31
875_DUP-1	21D0348-04	TQ214175.D	04/09/21 08:34
872_V5	21D0348-01	TQ214176.D	04/09/21 09:37
871_Ambient-1	21D0348-05	TQ214177.D	04/09/21 10:47
871_Ambient-1	BD10445-DUP1	TQ214178.D	04/09/21 11:57

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Sequence: Y1C0832

Instrument: TO15 AIR2

Calibration: YC10005

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (Y1C0832-CAL1)									
Lab File ID: TQ213544.D					Analyzed: 03/05/21 01:12				
Bromochloromethane	248540	12.072	197391	12.062	126	60 - 140	0.0100	+/-0.33	
ISTD: 1,4-Difluorobenzene	1365801	13.634	1149480	13.635	119	60 - 140	-0.0010	+/-0.33	
ISTD: d5-Chlorobenzene	1235475	18.888	1089276	18.889	113	60 - 140	-0.0010	+/-0.33	
Cal Standard (Y1C0832-CAL2)									
Lab File ID: TQ213545.D					Analyzed: 03/05/21 02:08				
Bromochloromethane	217491	12.066	197391	12.062	110	60 - 140	0.0040	+/-0.33	
ISTD: 1,4-Difluorobenzene	1236479	13.631	1149480	13.635	108	60 - 140	-0.0040	+/-0.33	
ISTD: d5-Chlorobenzene	1132297	18.885	1089276	18.889	104	60 - 140	-0.0040	+/-0.33	
Cal Standard (Y1C0832-CAL3)									
Lab File ID: TQ213546.D					Analyzed: 03/05/21 03:05				
Bromochloromethane	201714	12.069	197391	12.062	102	60 - 140	0.0070	+/-0.33	
ISTD: 1,4-Difluorobenzene	1150323	13.632	1149480	13.635	100	60 - 140	-0.0030	+/-0.33	
ISTD: d5-Chlorobenzene	1068983	18.885	1089276	18.889	98	60 - 140	-0.0040	+/-0.33	
Cal Standard (Y1C0832-CAL4)									
Lab File ID: TQ213547.D					Analyzed: 03/05/21 04:03				
Bromochloromethane	197641	12.075	197391	12.062	100	60 - 140	0.0130	+/-0.33	
ISTD: 1,4-Difluorobenzene	1135964	13.638	1149480	13.635	99	60 - 140	0.0030	+/-0.33	
ISTD: d5-Chlorobenzene	1056270	18.889	1089276	18.889	97	60 - 140	0.0000	+/-0.33	
Cal Standard (Y1C0832-CAL5)									
Lab File ID: TQ213548.D					Analyzed: 03/05/21 05:06				
Bromochloromethane	192443	12.072	197391	12.062	97	60 - 140	0.0100	+/-0.33	
ISTD: 1,4-Difluorobenzene	1118164	13.638	1149480	13.635	97	60 - 140	0.0030	+/-0.33	
ISTD: d5-Chlorobenzene	1039911	18.888	1089276	18.889	95	60 - 140	-0.0010	+/-0.33	
Cal Standard (Y1C0832-CAL6)									
Lab File ID: TQ213549.D					Analyzed: 03/05/21 06:02				
Bromochloromethane	191165	12.066	197391	12.062	97	60 - 140	0.0040	+/-0.33	
ISTD: 1,4-Difluorobenzene	1114320	13.635	1149480	13.635	97	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	1053101	18.885	1089276	18.889	97	60 - 140	-0.0040	+/-0.33	
Cal Standard (Y1C0832-CAL7)									
Lab File ID: TQ213550.D					Analyzed: 03/05/21 06:59				
Bromochloromethane	197391	12.062	197391	12.062	100	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	1149480	13.635	1149480	13.635	100	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	1089276	18.889	1089276	18.889	100	60 - 140	0.0000	+/-0.33	
Cal Standard (Y1C0832-CAL8)									
Lab File ID: TQ213551.D					Analyzed: 03/05/21 08:00				
Bromochloromethane	231090	12.075	197391	12.062	117	60 - 140	0.0130	+/-0.33	
ISTD: 1,4-Difluorobenzene	1281393	13.641	1149480	13.635	111	60 - 140	0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1153946	18.892	1089276	18.889	106	60 - 140	0.0030	+/-0.33	
Cal Standard (Y1C0832-CAL9)									
Lab File ID: TQ213552.D					Analyzed: 03/05/21 09:03				
Bromochloromethane	259345	12.082	197391	12.062	131	60 - 140	0.0200	+/-0.33	
ISTD: 1,4-Difluorobenzene	1413340	13.641	1149480	13.635	123	60 - 140	0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1233652	18.892	1089276	18.889	113	60 - 140	0.0030	+/-0.33	

FORM VIII

**INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15**

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Sequence: Y1C0832

Instrument: TO15 AIR2

Calibration: YC10005

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (Y1C0832-CALA)			Lab File ID: TQ213553.D			Analyzed: 03/05/21 10:10			
Bromochloromethane	285204	12.075	197391	12.062	144	60 - 140	0.0130	+/-0.33	*
ISTD: 1,4-Difluorobenzene	1504000	13.641	1149480	13.635	131	60 - 140	0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1248885	18.895	1089276	18.889	115	60 - 140	0.0060	+/-0.33	
Secondary Cal Check (Y1C0832-SCV1)			Lab File ID: TQ213556.D			Analyzed: 03/05/21 13:49			
Bromochloromethane	272623	12.075	197391	12.062	138	60 - 140	0.0130	+/-0.33	
ISTD: 1,4-Difluorobenzene	1469178	13.644	1149480	13.635	128	60 - 140	0.0090	+/-0.33	
ISTD: d5-Chlorobenzene	1316791	18.895	1089276	18.889	121	60 - 140	0.0060	+/-0.33	

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15Laboratory: York Analytical Laboratories, Inc.SDG: 21D0348Client: Langan Engineering & Environmental Services (NJ)Project: 100287505Sequence: Y1D0934Instrument: TO15 AIR2Calibration: YC10005

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (Y1D0934-CCV1)									
Lab File ID: TQ214166.D					Analyzed: 04/08/21 23:09				
Bromochloromethane	189488	12.075				60 - 140		+/-0.33	
ISTD: 1,4-Difluorobenzene	1051211	13.641				60 - 140		+/-0.33	
ISTD: d5-Chlorobenzene	1007357	18.885				60 - 140		+/-0.33	
LCS (BD10445-BS1)									
Lab File ID: TQ214167.D					Analyzed: 04/09/21 00:07				
Bromochloromethane	224559	12.079	189488	12.075	119	60 - 140	0.0040	+/-0.33	
ISTD: 1,4-Difluorobenzene	1223173	13.638	1051211	13.641	116	60 - 140	-0.0030	+/-0.33	
ISTD: d5-Chlorobenzene	1146406	18.889	1007357	18.885	114	60 - 140	0.0040	+/-0.33	
Blank (BD10445-BLK1)									
Lab File ID: TQ214172.D					Analyzed: 04/09/21 05:24				
Bromochloromethane	200245	12.056	189488	12.075	106	60 - 140	-0.0190	+/-0.33	
ISTD: 1,4-Difluorobenzene	1113397	13.628	1051211	13.641	106	60 - 140	-0.0130	+/-0.33	
ISTD: d5-Chlorobenzene	1039464	18.889	1007357	18.885	103	60 - 140	0.0040	+/-0.33	
873_V2 (21D0348-02)									
Lab File ID: TQ214173.D					Analyzed: 04/09/21 06:27				
Bromochloromethane	186832	12.059	189488	12.075	99	60 - 140	-0.0160	+/-0.33	
ISTD: 1,4-Difluorobenzene	1052000	13.632	1051211	13.641	100	60 - 140	-0.0090	+/-0.33	
ISTD: d5-Chlorobenzene	986763	18.889	1007357	18.885	98	60 - 140	0.0040	+/-0.33	
874_V3 (21D0348-03)									
Lab File ID: TQ214174.D					Analyzed: 04/09/21 07:31				
Bromochloromethane	188336	12.066	189488	12.075	99	60 - 140	-0.0090	+/-0.33	
ISTD: 1,4-Difluorobenzene	1072609	13.635	1051211	13.641	102	60 - 140	-0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1032080	18.885	1007357	18.885	102	60 - 140	0.0000	+/-0.33	
875_DUP-1 (21D0348-04)									
Lab File ID: TQ214175.D					Analyzed: 04/09/21 08:34				
Bromochloromethane	231910	12.059	189488	12.075	122	60 - 140	-0.0160	+/-0.33	
ISTD: 1,4-Difluorobenzene	1363774	13.632	1051211	13.641	130	60 - 140	-0.0090	+/-0.33	
ISTD: d5-Chlorobenzene	1212250	18.889	1007357	18.885	120	60 - 140	0.0040	+/-0.33	
872_V5 (21D0348-01)									
Lab File ID: TQ214176.D					Analyzed: 04/09/21 09:37				
Bromochloromethane	238540	12.04	189488	12.075	126	60 - 140	-0.0350	+/-0.33	
ISTD: 1,4-Difluorobenzene	1324423	13.622	1051211	13.641	126	60 - 140	-0.0190	+/-0.33	
ISTD: d5-Chlorobenzene	1236921	18.885	1007357	18.885	123	60 - 140	0.0000	+/-0.33	
871_Ambient-1 (21D0348-05)									
Lab File ID: TQ214177.D					Analyzed: 04/09/21 10:47				
Bromochloromethane	246907	12.059	189488	12.075	130	60 - 140	-0.0160	+/-0.33	
ISTD: 1,4-Difluorobenzene	1359242	13.632	1051211	13.641	129	60 - 140	-0.0090	+/-0.33	
ISTD: d5-Chlorobenzene	1262443	18.889	1007357	18.885	125	60 - 140	0.0040	+/-0.33	
Duplicate (BD10445-DUP1)									
Lab File ID: TQ214178.D					Analyzed: 04/09/21 11:57				
Bromochloromethane	244545	12.062	189488	12.075	129	60 - 140	-0.0130	+/-0.33	
ISTD: 1,4-Difluorobenzene	1344822	13.635	1051211	13.641	128	60 - 140	-0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1258666	18.892	1007357	18.885	125	60 - 140	0.0070	+/-0.33	

HOLDING TIME SUMMARY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
872_V5	04/08/21 09:42	04/08/21 21:14	04/08/21 22:00	0.51	30.00	04/09/21 09:37	1.00	30.00	
873_V2	04/08/21 10:02	04/08/21 21:14	04/08/21 22:00	0.50	30.00	04/09/21 06:27	0.85	30.00	
874_V3	04/08/21 10:30	04/08/21 21:14	04/08/21 22:00	0.48	30.00	04/09/21 07:31	0.88	30.00	
875_DUP-1	04/08/21 10:30	04/08/21 21:14	04/08/21 22:00	0.48	30.00	04/09/21 08:34	0.92	30.00	
871_Ambient-1	04/08/21 08:38	04/08/21 21:14	04/08/21 22:00	0.56	30.00	04/09/21 10:47	1.09	30.00	

METHOD DETECTION AND REPORTING LIMITS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Matrix: Air

Instrument: TO15_AIR2

Analyte	LOD	LOQ	Units
1,1,1,2-Tetrachloroethane	0.41	0.7	ug/m ³
1,1,1-Trichloroethane	0.47	0.55	ug/m ³
1,1,2,2-Tetrachloroethane	0.34	0.7	ug/m ³
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.75	0.78	ug/m ³
1,1,2-Trichloroethane	0.24	0.55	ug/m ³
1,1-Dichloroethane	0.34	0.41	ug/m ³
1,1-Dichloroethylene	0.1	0.2	ug/m ³
1,2,4-Trichlorobenzene	0.6	0.75	ug/m ³
1,2,4-Trimethylbenzene	0.3	0.5	ug/m ³
1,2-Dibromoethane	0.31	0.78	ug/m ³
1,2-Dichlorobenzene	0.4	0.61	ug/m ³
1,2-Dichloroethane	0.26	0.41	ug/m ³
1,2-Dichloropropane	0.24	0.47	ug/m ³
1,2-Dichlorotetrafluoroethane	0.7	0.71	ug/m ³
1,3,5-Trimethylbenzene	0.27	0.5	ug/m ³
1,3-Butadiene	0.086	0.68	ug/m ³
1,3-Dichlorobenzene	0.41	0.61	ug/m ³
1,3-Dichloropropane	0.15	0.47	ug/m ³
1,4-Dichlorobenzene	0.37	0.61	ug/m ³
1,4-Dioxane	0.3	0.73	ug/m ³
2-Butanone	0.18	0.3	ug/m ³
2-Hexanone	0.17	0.83	ug/m ³
3-Chloropropene	0.24	1.6	ug/m ³
4-Methyl-2-pentanone	0.35	0.42	ug/m ³
Acetone	0.24	0.48	ug/m ³
Acrylonitrile	0.17	0.22	ug/m ³
Benzene	0.32	0.32	ug/m ³
Benzyl chloride	0.28	0.53	ug/m ³
Bromodichloromethane	0.23	0.68	ug/m ³
Bromoform	0.52	1.1	ug/m ³
Bromomethane	0.39	0.39	ug/m ³
Carbon disulfide	0.3	0.32	ug/m ³
Carbon tetrachloride	0.16	0.16	ug/m ³
Chlorobenzene	0.26	0.47	ug/m ³
Chloroethane	0.17	0.27	ug/m ³
Chloroform	0.46	0.5	ug/m ³

METHOD DETECTION AND REPORTING LIMITS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Matrix: Air

Instrument: TO15 AIR2

Analyte	LOD	LOQ	Units
Chloromethane	0.1	0.21	ug/m ³
cis-1,2-Dichloroethylene	0.1	0.2	ug/m ³
cis-1,3-Dichloropropylene	0.19	0.46	ug/m ³
Cyclohexane	0.3	0.35	ug/m ³
Dibromochloromethane	0.42	0.87	ug/m ³
Dichlorodifluoromethane	0.45	0.5	ug/m ³
Ethyl acetate	0.25	0.73	ug/m ³
Ethyl Benzene	0.3	0.44	ug/m ³
Hexachlorobutadiene	0.92	1.1	ug/m ³
Isopropanol	0.24	0.5	ug/m ³
Methyl Methacrylate	0.13	0.42	ug/m ³
Methyl tert-butyl ether (MTBE)	0.36	0.37	ug/m ³
Methylene chloride	0.25	0.71	ug/m ³
n-Heptane	0.18	0.42	ug/m ³
n-Hexane	0.29	0.36	ug/m ³
o-Xylene	0.11	0.44	ug/m ³
p- & m- Xylenes	0.63	0.88	ug/m ³
p-Ethyltoluene	0.38	0.5	ug/m ³
Propylene	0.074	0.18	ug/m ³
Styrene	0.26	0.43	ug/m ³
Tetrachloroethylene	0.34	0.69	ug/m ³
Tetrahydrofuran	0.16	0.6	ug/m ³
Toluene	0.23	0.38	ug/m ³
trans-1,2-Dichloroethylene	0.32	0.4	ug/m ³
trans-1,3-Dichloropropylene	0.42	0.46	ug/m ³
Trichloroethylene	0.14	0.14	ug/m ³
Trichlorofluoromethane (Freon 11)	0.43	0.57	ug/m ³
Vinyl acetate	0.22	0.36	ug/m ³
Vinyl bromide	0.43	0.44	ug/m ³
Vinyl Chloride	0.11	0.065	ug/m ³

AIR Sample Data

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Soil Vapor Laboratory ID: 21D0348-01 File ID: TQ214176.D
 Sampled: 04/08/21 09:42 Prepared: 04/08/21 22:00 Analyzed: 04/09/21 09:37
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.6	1.10	U
71-55-6	1,1,1-Trichloroethane	1.6	0.874	U
79-34-5	1,1,2,2-Tetrachloroethane	1.6	1.10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.6	1.23	U
79-00-5	1,1,2-Trichloroethane	1.6	0.874	U
75-34-3	1,1-Dichloroethane	1.6	0.648	U
75-35-4	1,1-Dichloroethylene	1.6	0.317	U
120-82-1	1,2,4-Trichlorobenzene	1.6	1.19	U
95-63-6	1,2,4-Trimethylbenzene	1.6	3.86	D
106-93-4	1,2-Dibromoethane	1.6	1.23	U
95-50-1	1,2-Dichlorobenzene	1.6	0.963	U
107-06-2	1,2-Dichloroethane	1.6	0.648	U
78-87-5	1,2-Dichloropropane	1.6	0.740	U
76-14-2	1,2-Dichlorotetrafluoroethane	1.6	1.12	U
108-67-8	1,3,5-Trimethylbenzene	1.6	1.02	D
106-99-0	1,3-Butadiene	1.6	1.06	U
541-73-1	1,3-Dichlorobenzene	1.6	0.963	U
142-28-9	1,3-Dichloropropane	1.6	0.740	U
106-46-7	1,4-Dichlorobenzene	1.6	0.963	U
123-91-1	1,4-Dioxane	1.6	1.15	U
78-93-3	2-Butanone	1.6	1.23	D
591-78-6	2-Hexanone	1.6	1.31	U
107-05-1	3-Chloropropene	1.6	2.51	U
108-10-1	4-Methyl-2-pentanone	1.6	3.08	D
67-64-1	Acetone	1.6	3.23	D
107-13-1	Acrylonitrile	1.6	0.347	U
71-43-2	Benzene	1.6	2.05	D
100-44-7	Benzyl chloride	1.6	0.829	U
75-27-4	Bromodichloromethane	1.6	1.07	U
75-25-2	Bromoform	1.6	1.65	U
74-83-9	Bromomethane	1.6	0.622	U
75-15-0	Carbon disulfide	1.6	0.897	D
56-23-5	Carbon tetrachloride	1.6	0.403	D
108-90-7	Chlorobenzene	1.6	0.737	U
75-00-3	Chloroethane	1.6	0.422	U
67-66-3	Chloroform	1.6	1.49	D
74-87-3	Chloromethane	1.6	1.59	D
156-59-2	cis-1,2-Dichloroethylene	1.6	1.14	D
10061-01-5	cis-1,3-Dichloropropylene	1.6	0.727	U
110-82-7	Cyclohexane	1.6	0.551	D

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Soil Vapor Laboratory ID: 21D0348-01 File ID: TQ214176.D
 Sampled: 04/08/21 09:42 Prepared: 04/08/21 22:00 Analyzed: 04/09/21 09:37
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
124-48-1	Dibromochloromethane	1.6	1.36	U
75-71-8	Dichlorodifluoromethane	1.6	2.22	D
141-78-6	Ethyl acetate	1.6	1.15	U
100-41-4	Ethyl Benzene	1.6	2.57	D
87-68-3	Hexachlorobutadiene	1.6	1.71	U
67-63-0	Isopropanol	1.6	4.60	D
80-62-6	Methyl Methacrylate	1.6	1.84	D
1634-04-4	Methyl tert-butyl ether (MTBE)	1.6	0.577	U
75-09-2	Methylene chloride	1.6	15.8	D
142-82-5	n-Heptane	1.6	1.12	D
110-54-3	n-Hexane	1.6	1.69	D
95-47-6	o-Xylene	1.6	3.55	D
179601-23-1	p- & m- Xylenes	1.6	9.52	D
622-96-8	p-Ethyltoluene	1.6	3.31	D
115-07-1	Propylene	1.6	0.276	U
100-42-5	Styrene	1.6	0.682	U
127-18-4	Tetrachloroethylene	1.6	2.17	D
109-99-9	Tetrahydrofuran	1.6	1.13	D
108-88-3	Toluene	1.6	10.1	D
156-60-5	trans-1,2-Dichloroethylene	1.6	0.635	U
10061-02-6	trans-1,3-Dichloropropylene	1.6	0.727	U
79-01-6	Trichloroethylene	1.6	0.688	D
75-69-4	Trichlorofluoromethane (Freon 11)	1.6	1.80	D
108-05-4	Vinyl acetate	1.6	0.564	U
593-60-2	Vinyl bromide	1.6	0.700	U
75-01-4	Vinyl Chloride	1.6	0.205	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	238540	12.04	189488	12.075	
ISTD: 1,4-Difluorobenzene	1324423	13.622	1051211	13.641	
ISTD: d5-Chlorobenzene	1236921	18.885	1007357	18.885	

* Values outside of QC limits

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214176.D
 Acq On : 9 Apr 2021 9:37 am
 Operator : LLJ
 Sample : 21D0348-01
 Misc : QBTO2040821A 1X/400ML
 ALS Vial : 12 Sample Multiplier: 1.601
 InstName : TO15_AIR2

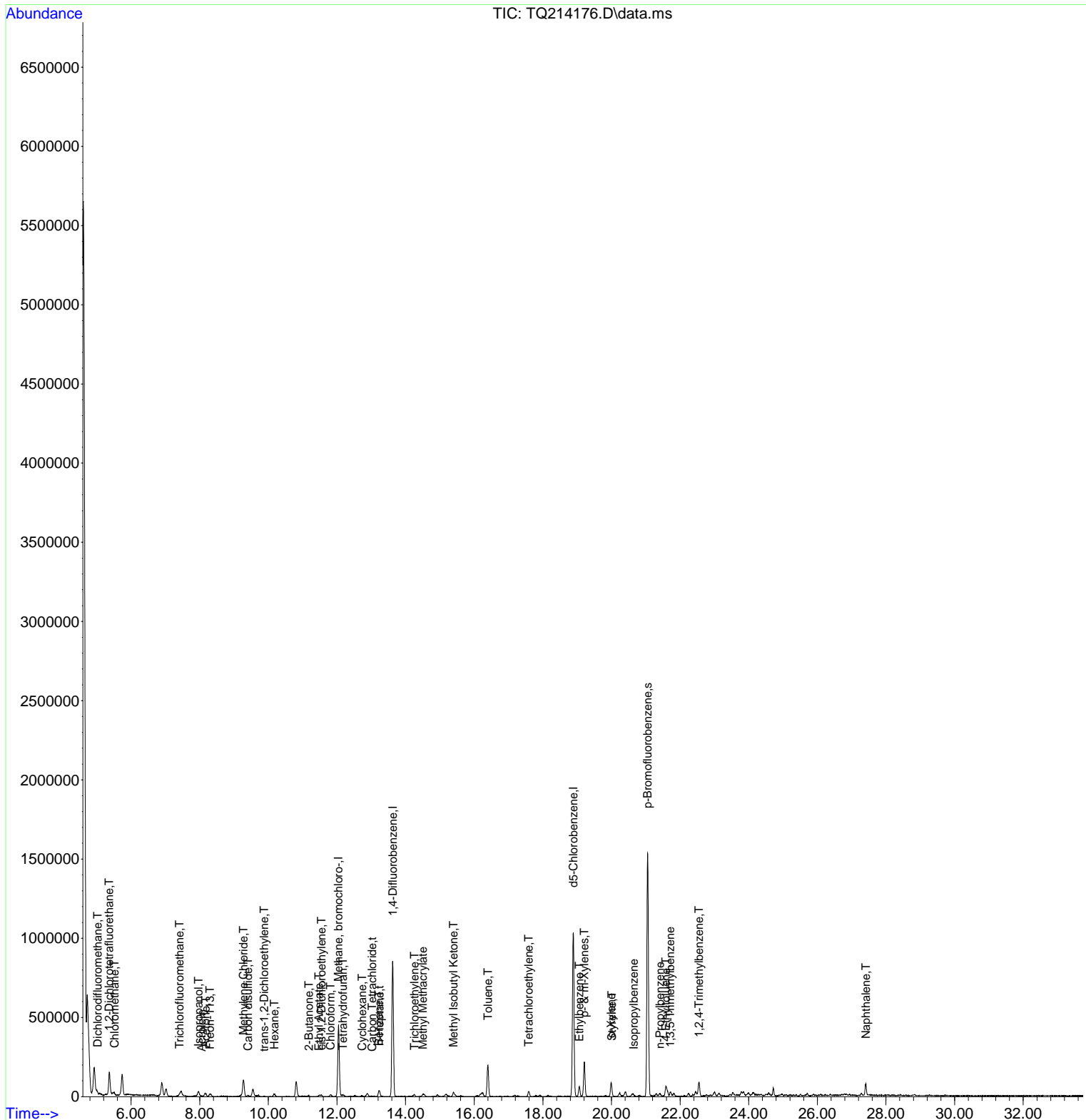
Quant Time: Apr 09 12:20:55 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

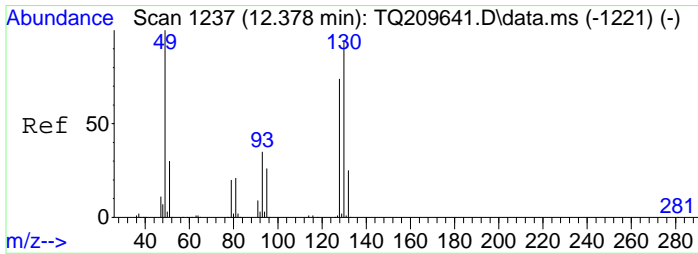
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.040	49	238540	10.00	ppbv	#-0.02
37) 1,4-Difluorobenzene	13.622	114	1324423	10.00	ppbv	-0.01
53) d5-Chlorobenzene	18.885	117	1236921	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.052	95	1040918	9.38	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	93.80%	
Target Compounds						
						Qvalue
3) Dichlorodifluoromethane	5.021	85	31840	0.28	ppbv	# 52
4) 1,2-Dichlorotetrafluor...	5.352	85	7613	0.09	ppbv	# 37
5) Chloromethane	5.510	50	7717m	0.48	ppbv	
11) Trichlorofluoromethane	7.407	101	23984	0.20	ppbv	# 69
12) Isopropanol	7.960	45	64377	1.17	ppbv	100
13) Acrolein	8.053	56	645m	0.05	ppbv	
14) Acetone	8.169	43	41843	0.85	ppbv	# 78
15) Freon-113	8.294	101	3116m	0.04	ppbv	
18) Methylene Chloride	9.275	49	87913	2.84	ppbv	# 62
20) Carbon disulfide	9.403	76	17211	0.18	ppbv	# 78
22) trans-1,2-Dichloroethy...	9.870	61	994m	0.02	ppbv	
23) Hexane	10.169	57	13487	0.30	ppbv	# 84
26) 2-Butanone	11.172	43	12738m	0.26	ppbv	
27) Ethyl Acetate	11.471	43	2617m	0.05	ppbv	
28) cis-1,2-Dichloroethylene	11.545	61	8640	0.18	ppbv	# 63
29) Chloroform	11.805	83	17685	0.19	ppbv	# 92
30) Tetrahydrofuran	12.169	42	6212m	0.24	ppbv	
32) Cyclohexane	12.731	56	4100	0.10	ppbv	# 55
33) Carbon Tetrachloride	13.021	117	4052m	0.04	ppbv	
35) Benzene	13.220	78	47810	0.40	ppbv	# 47
36) n-Heptane	13.236	43	6569	0.17	ppbv	# 92
38) Trichloroethylene	14.259	95	4911m	0.08	ppbv	
40) Methyl Methacrylate	14.496	69	10444m	0.28	ppbv	
43) Methyl Isobutyl Ketone	15.394	43	27884	0.47	ppbv	# 88
45) Toluene	16.397	91	275933	1.68	ppbv	99
50) Tetrachloroethylene	17.583	166	19205m	0.20	ppbv	
56) Ethylbenzene	19.059	91	84502	0.37	ppbv	# 75
57) p- & m-Xylenes	19.204	91	239984	1.37	ppbv	99
58) o-Xylene	19.988	91	88784	0.51	ppbv	99
59) Styrene	20.004	104	10917	0.08	ppbv	# 100
61) n-Propylbenzene	21.406	91	26010	0.08	ppbv	98
62) Isopropylbenzene	20.644	105	7501	0.03	ppbv	98
65) 4-Ethyltoluene	21.586	105	114488	0.42	ppbv	# 83
66) 1,3,5-Trimethylbenzene	21.712	105	29807	0.13	ppbv	# 64
68) 1,2,4-Trimethylbenzene	22.548	105	115300	0.49	ppbv	# 95
78) Naphthalene	27.409	128	108878	0.21	ppbv	100

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

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214176.D
 Acq On : 9 Apr 2021 9:37 am
 Operator : LLJ
 Sample : 21D0348-01
 Misc : QBTO2040821A 1X/400ML
 ALS Vial : 12 Sample Multiplier: 1.601
 InstName : TO15_AIR2

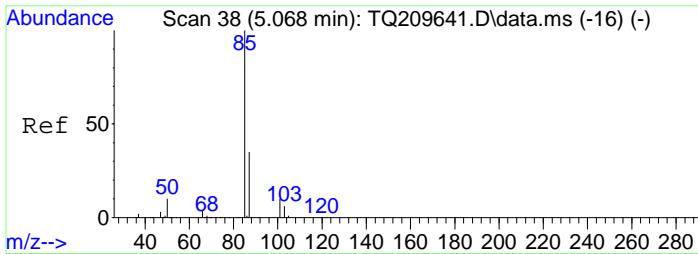
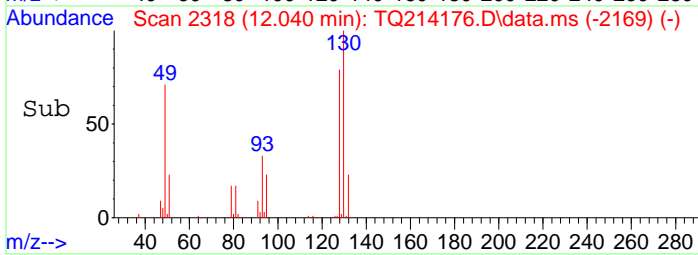
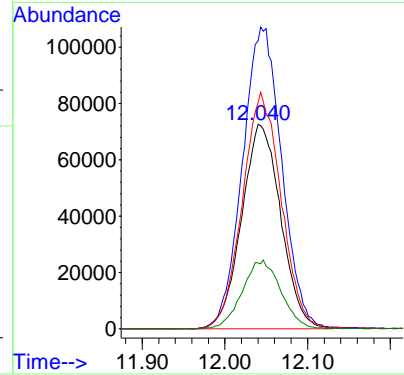
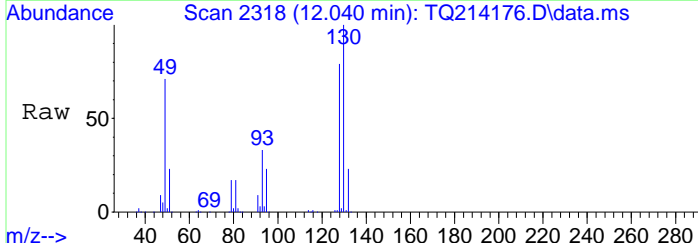
Quant Time: Apr 09 12:20:55 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration





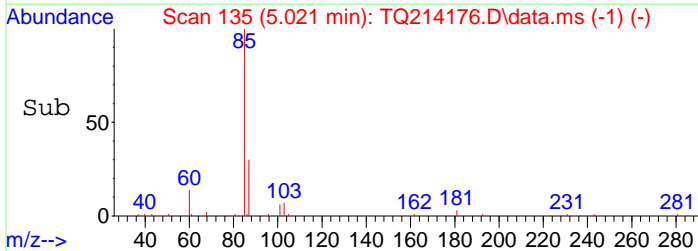
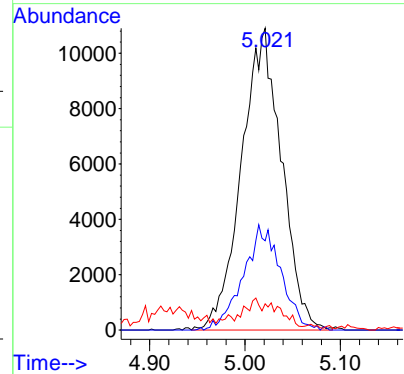
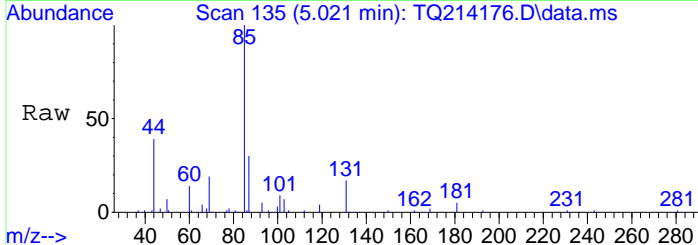
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.040 min Scan# 2318
 Delta R.T. -0.022 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

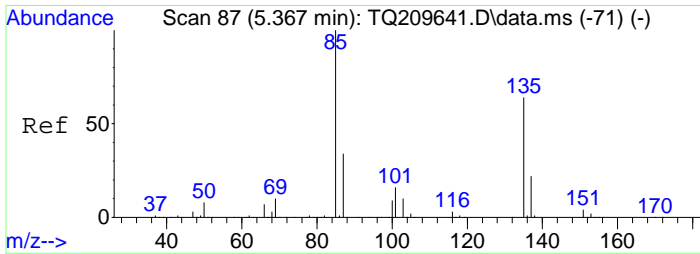
Tgt Ion	Resp	Lower	Upper
49	100		
130	148.3	48.1	99.9#
128	114.2	38.3	79.5#
51	33.2	20.3	42.3



#3
 Dichlorodifluoromethane
 Concen: 0.28 ppbv
 RT: 5.021 min Scan# 135
 Delta R.T. -0.051 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

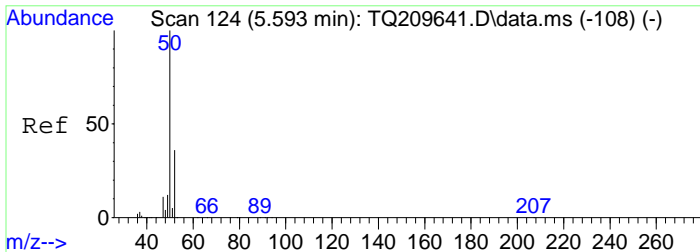
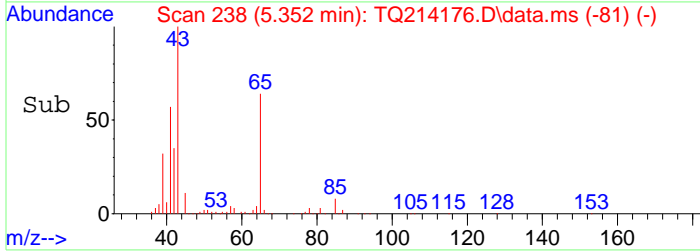
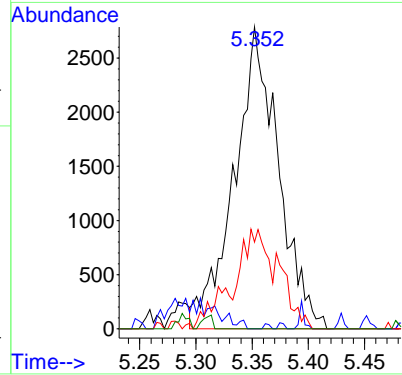
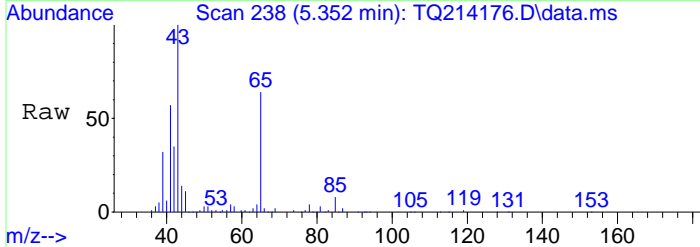
Tgt Ion	Resp	Lower	Upper
85	100		
87	0.0	20.9	43.5#
50	3.5	7.2	15.0#





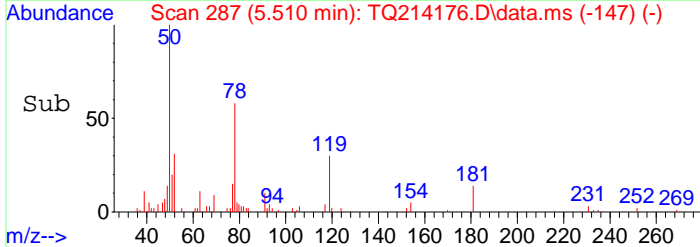
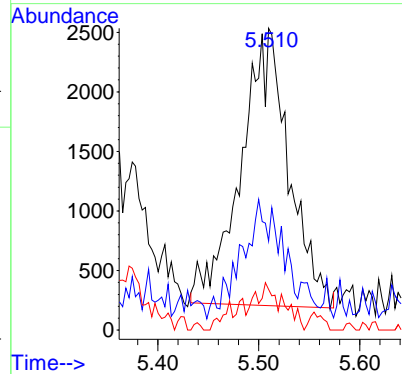
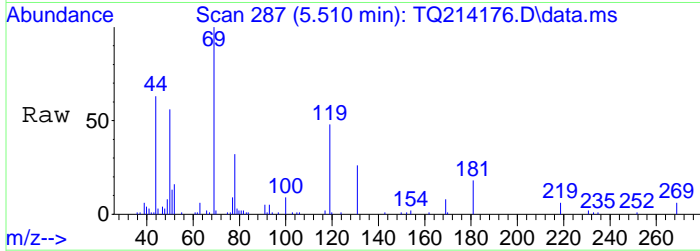
#4
 1,2-Dichlorotetrafluorethane
 Concen: 0.09 ppbv
 RT: 5.352 min Scan# 238
 Delta R.T. 0.006 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

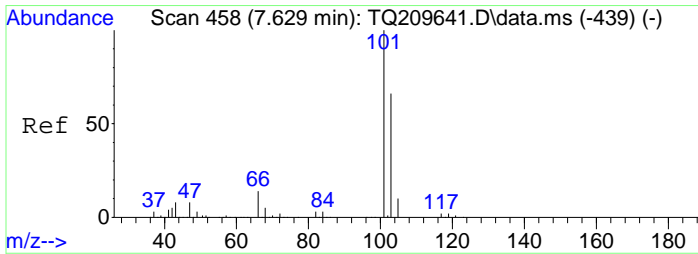
Tgt Ion	Resp	Lower	Upper
85	100		
135	0.0	47.0	97.6#
87	19.3	20.9	43.5#
137	0.0	15.0	31.2#



#5
 Chloromethane
 Concen: 0.48 ppbv m
 RT: 5.510 min Scan# 287
 Delta R.T. -0.051 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

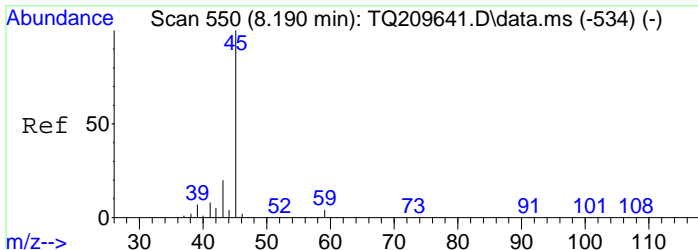
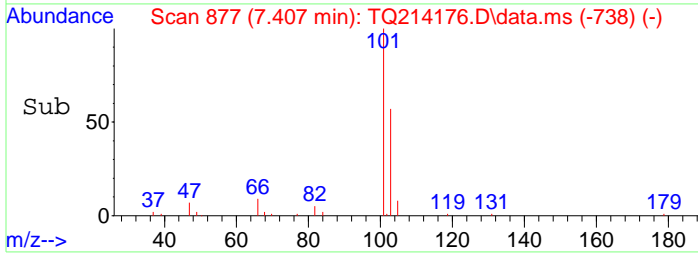
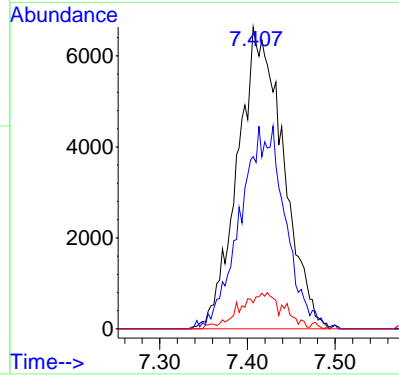
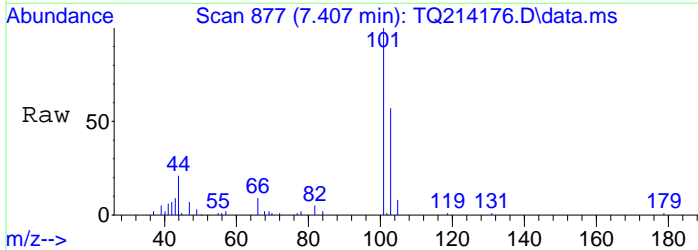
Tgt Ion	Resp	Lower	Upper
50	100		
52	0.0	0.0	65.2
49	0.0	0.0	19.6





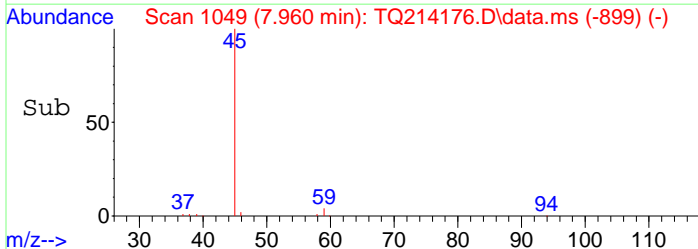
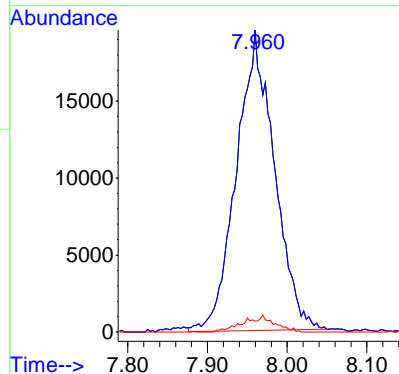
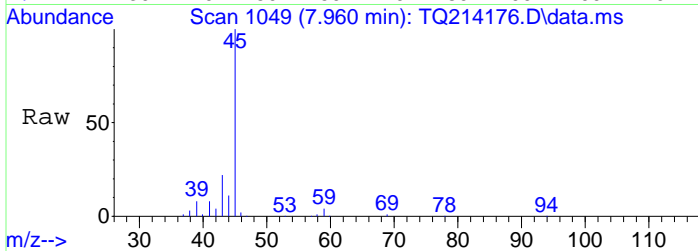
#11
 Trichlorofluoromethane
 Concen: 0.20 ppbv
 RT: 7.407 min Scan# 877
 Delta R.T. -0.054 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

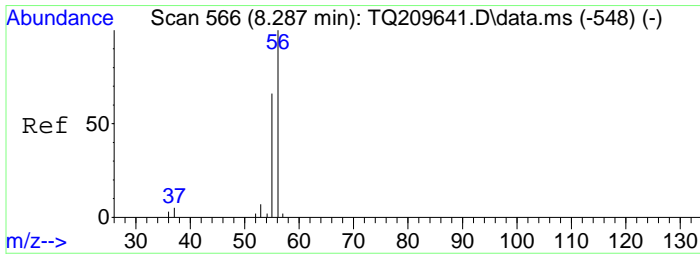
Tgt Ion	Resp	Lower	Upper
101	23984		
103	39.3	42.3	87.8#
66	2.7	7.8	16.2#



#12
 Isopropanol
 Concen: 1.17 ppbv
 RT: 7.960 min Scan# 1049
 Delta R.T. -0.019 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

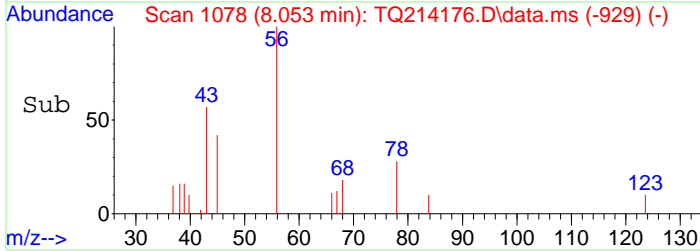
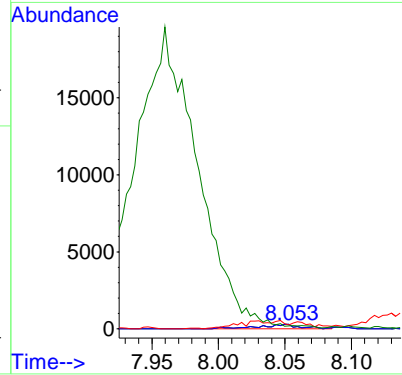
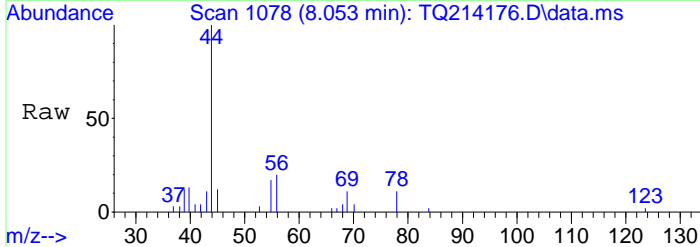
Tgt Ion	Resp	Lower	Upper
45	64377		
45	100.0	65.0	135.0
59	2.5	0.0	10.0





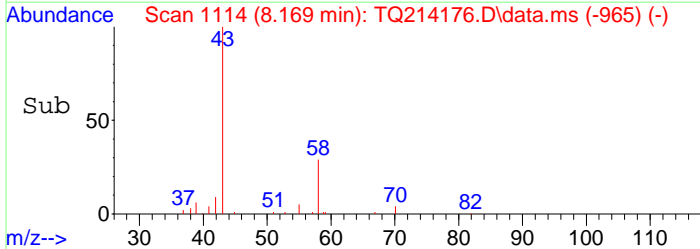
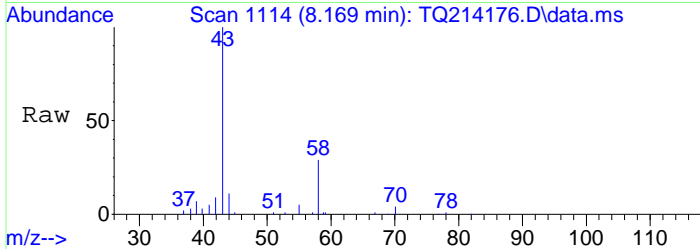
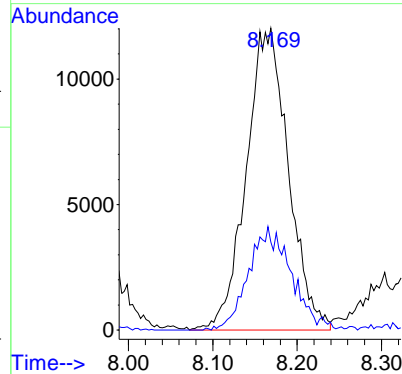
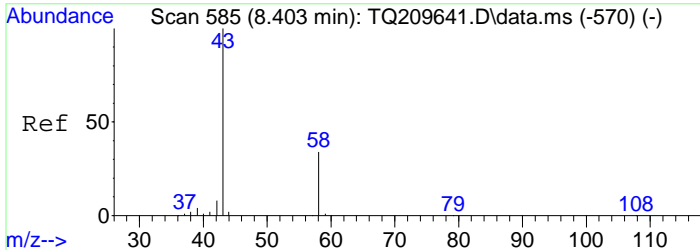
#13
 Acrolein
 Concen: 0.05 ppbv m
 RT: 8.053 min Scan# 1078
 Delta R.T. -0.022 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

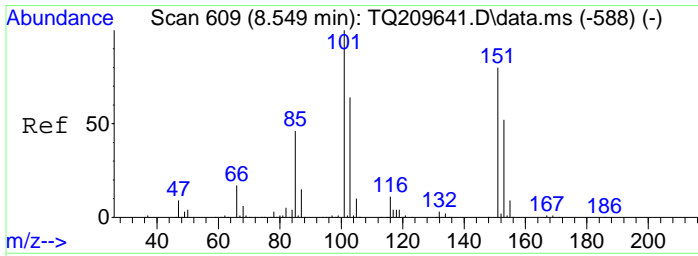
Tgt Ion	Resp	Lower	Upper
56	100		
56	172.2	80.0	120.0#
55	0.0	40.0	120.0#
45	0.0	17.5	52.5#



#14
 Acetone
 Concen: 0.85 ppbv
 RT: 8.169 min Scan# 1114
 Delta R.T. -0.022 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

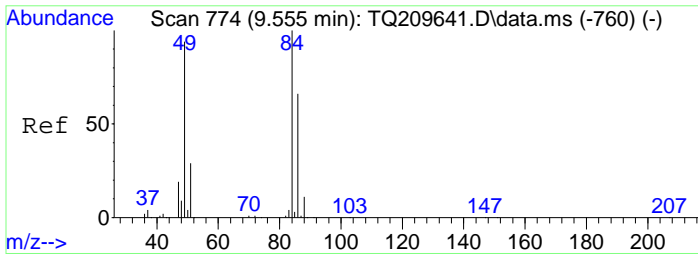
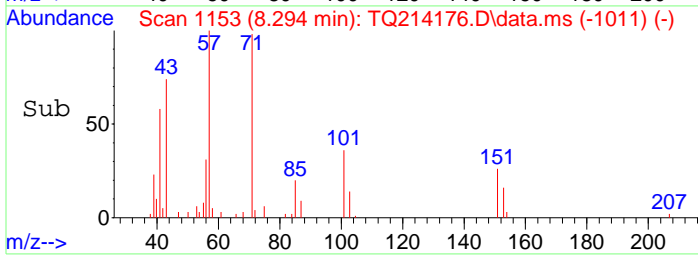
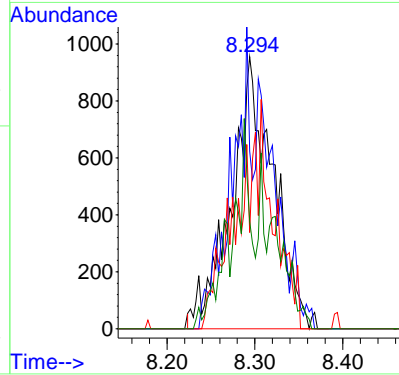
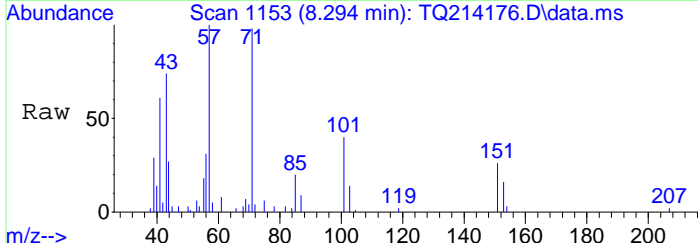
Tgt Ion	Resp	Lower	Upper
43	100		
58	19.8	20.9	43.3#





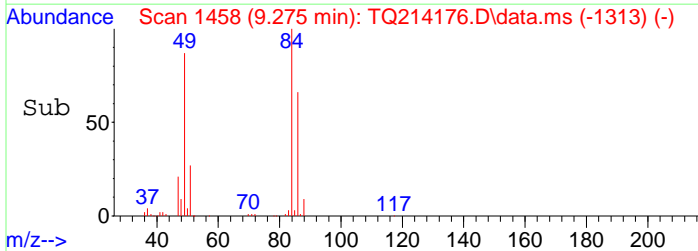
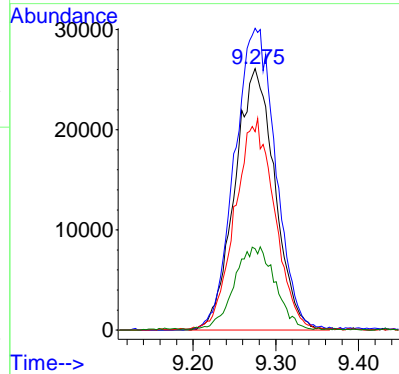
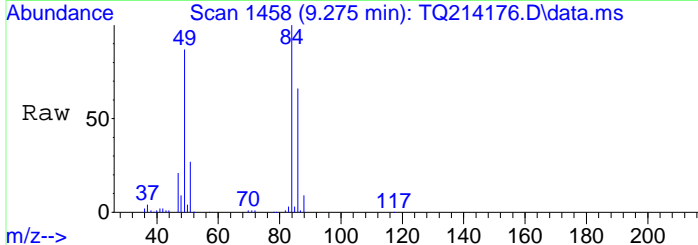
#15
 Freon-113
 Concen: 0.04 ppbv m
 RT: 8.294 min Scan# 1153
 Delta R.T. -0.042 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

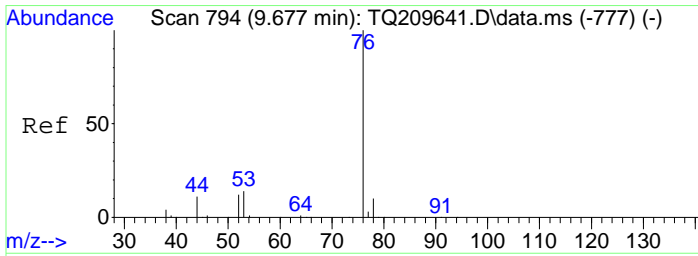
Tgt Ion	Resp	Lower	Upper
101	3116		
151	29.5	50.5	104.9#
103	0.0	42.0	87.2#
153	0.0	32.4	67.4#



#18
 Methylene Chloride
 Concen: 2.84 ppbv
 RT: 9.275 min Scan# 1458
 Delta R.T. -0.032 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

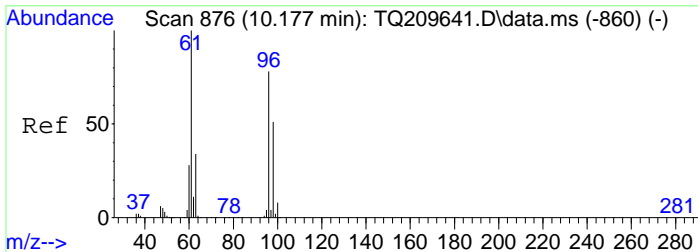
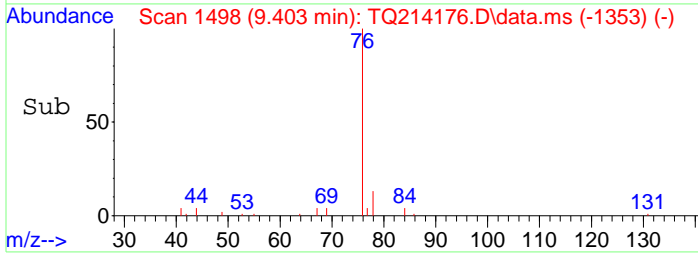
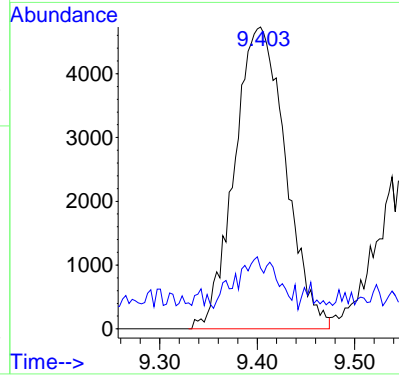
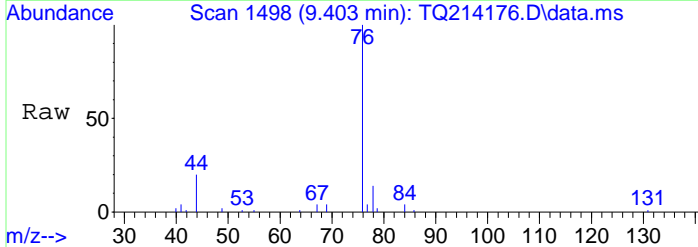
Tgt Ion	Resp	Lower	Upper
49	87913		
84	118.8	49.9	103.5#
86	79.0	31.8	66.0#
51	32.3	20.2	41.9





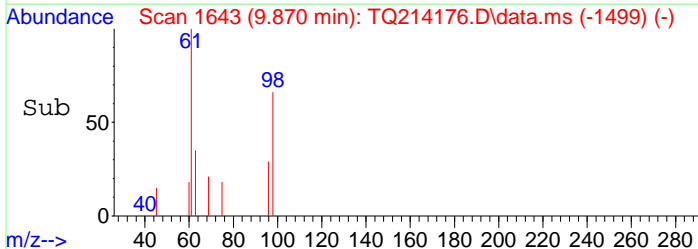
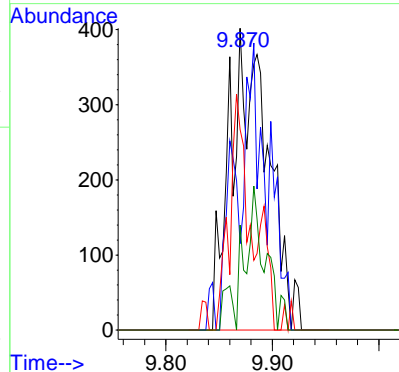
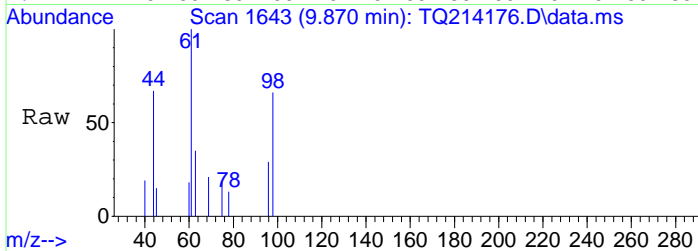
#20
 Carbon disulfide
 Concen: 0.18 ppbv
 RT: 9.403 min Scan# 1498
 Delta R.T. -0.033 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

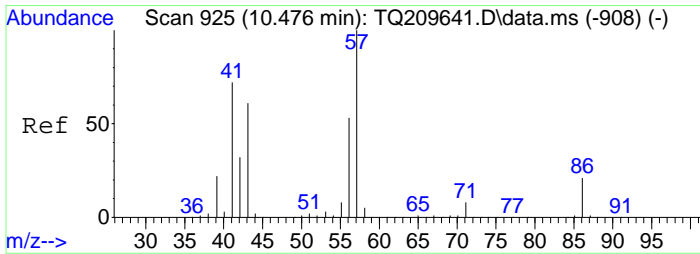
Tgt Ion	Resp	Lower	Upper
76	17211		
44	100	4.0	17.3#



#22
 trans-1,2-Dichloroethylene
 Concen: 0.02 ppbv m
 RT: 9.870 min Scan# 1643
 Delta R.T. -0.038 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

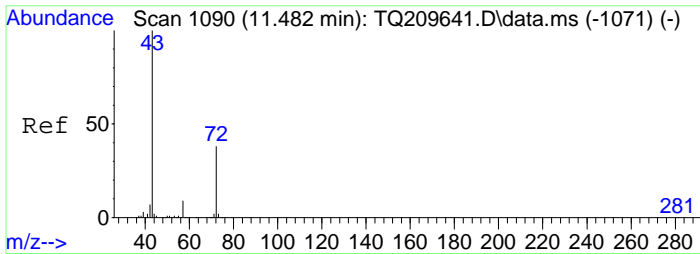
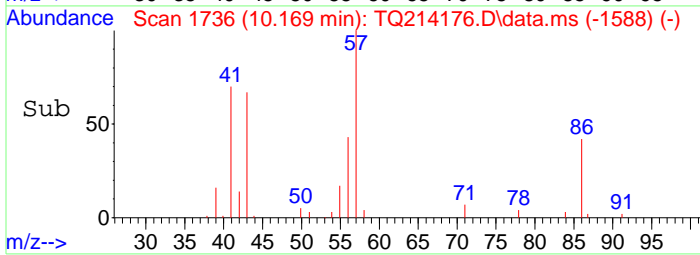
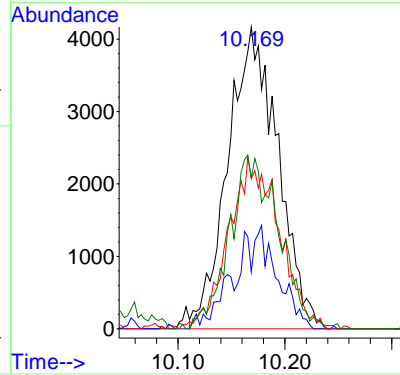
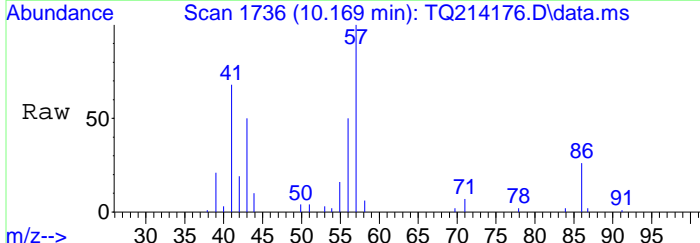
Tgt Ion	Resp	Lower	Upper
61	994		
96	100	0.0	92.2#
98	100	0.0	58.9#
63	100	0.0	43.6#





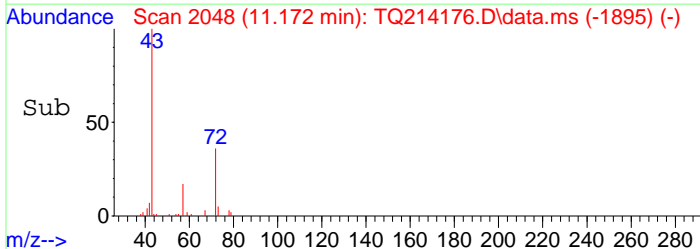
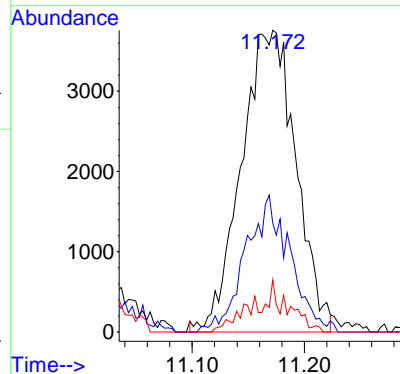
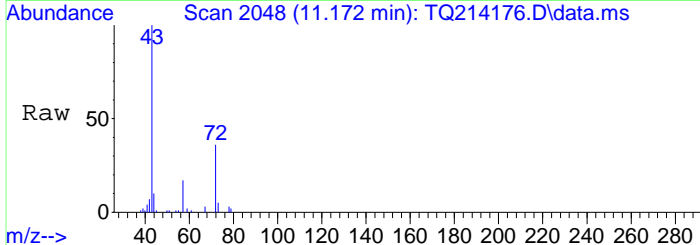
#23
Hexane
Concen: 0.30 ppbv
RT: 10.169 min Scan# 1736
Delta R.T. -0.025 min
Lab File: TQ214176.D
Acq: 9 Apr 2021 9:37 am

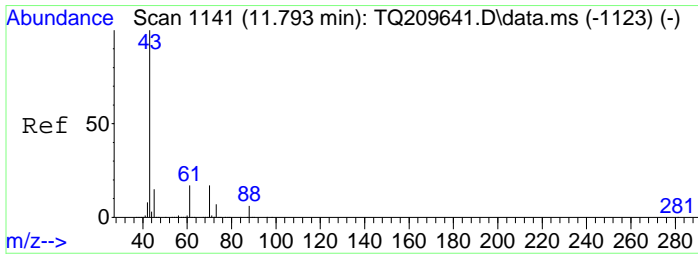
Tgt Ion	Resp	Lower	Upper
57	13487		
42	15.9	21.6	45.0#
43	57.2	42.0	87.2
56	41.1	33.3	69.1



#26
2-Butanone
Concen: 0.26 ppbv m
RT: 11.172 min Scan# 2048
Delta R.T. -0.009 min
Lab File: TQ214176.D
Acq: 9 Apr 2021 9:37 am

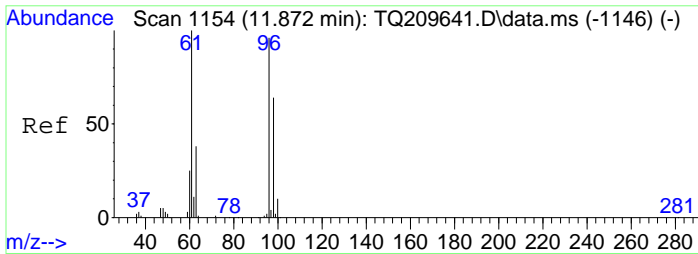
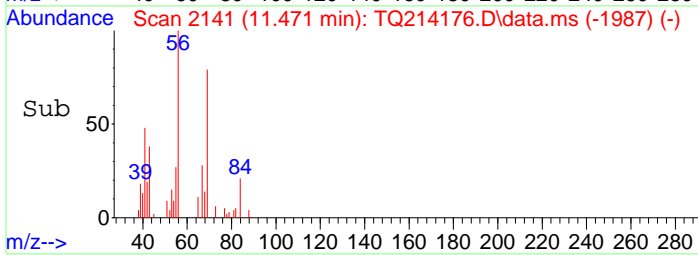
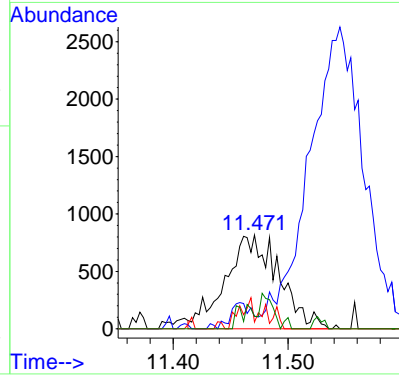
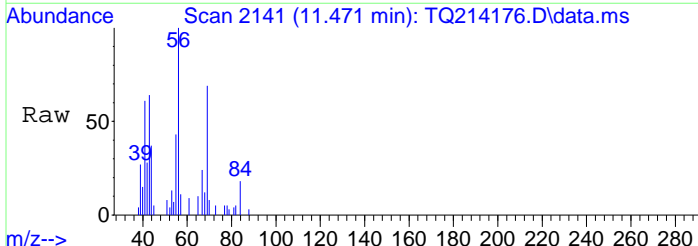
Tgt Ion	Resp	Lower	Upper
43	12738		
72	36.5	16.1	33.5#
57	0.0	4.9	10.3#





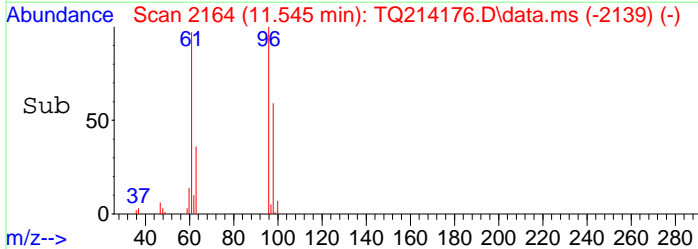
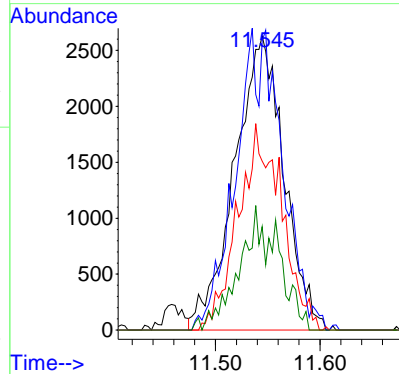
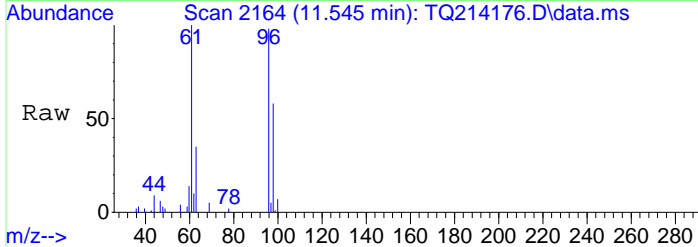
#27
 Ethyl Acetate
 Concen: 0.05 ppbv m
 RT: 11.471 min Scan# 2141
 Delta R.T. -0.006 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

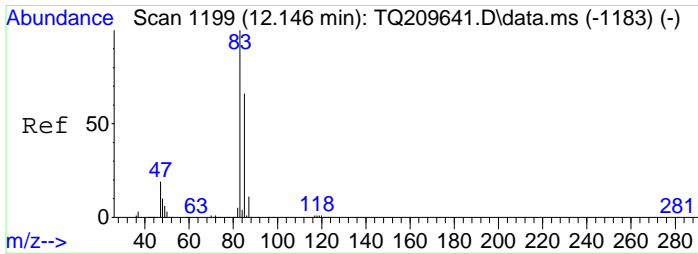
Tgt Ion	Resp	Lower	Upper
43	2617		
61	330.1	51.4	106.8#
45	0.0	9.4	19.6#
70	0.0	7.5	15.5#



#28
 cis-1,2-Dichloroethylene
 Concen: 0.18 ppbv
 RT: 11.545 min Scan# 2164
 Delta R.T. -0.019 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

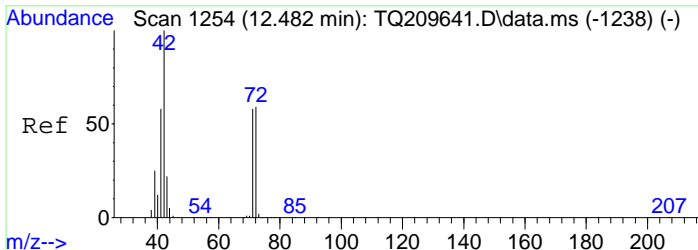
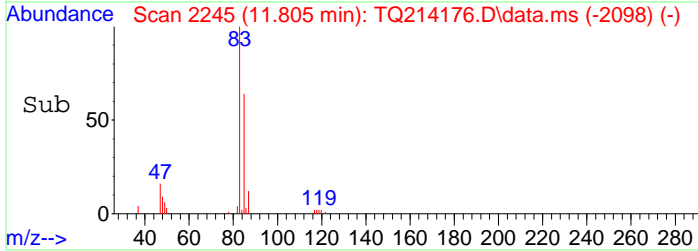
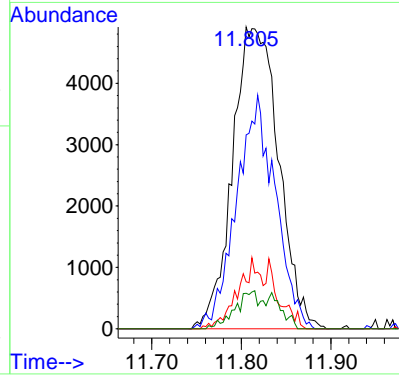
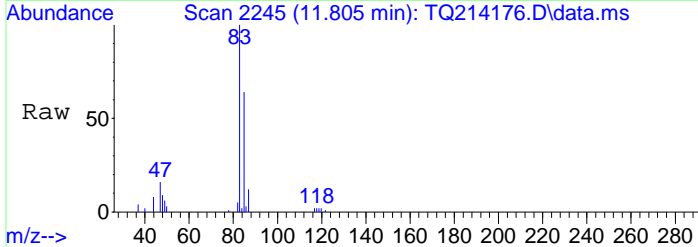
Tgt Ion	Resp	Lower	Upper
61	8640		
96	47.3	39.8	82.8
98	0.0	25.5	52.9#
63	6.3	17.3	35.9#





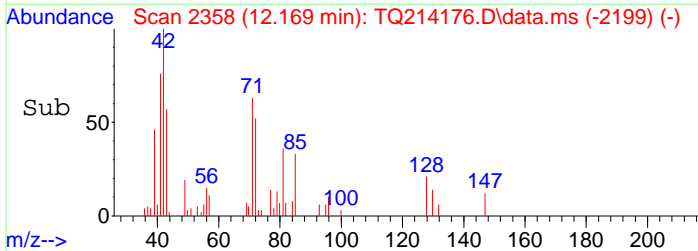
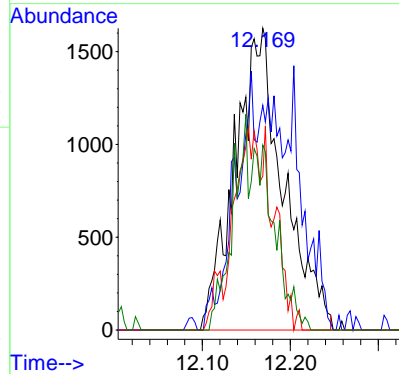
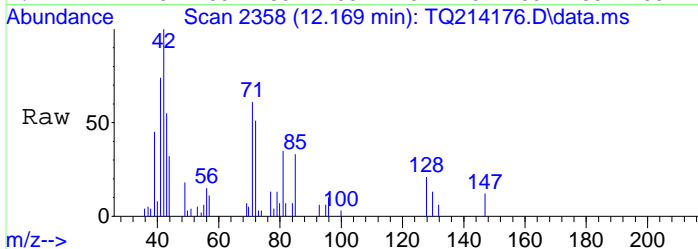
#29
 Chloroform
 Concen: 0.19 ppbv
 RT: 11.805 min Scan# 2245
 Delta R.T. -0.029 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

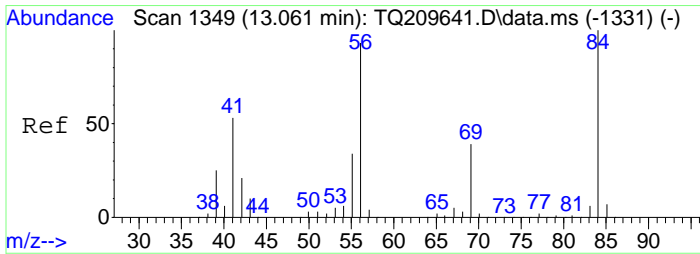
Tgt Ion	Resp	Lower	Upper
83	17685		
85	65.3	41.7	86.7
47	11.6	15.1	31.5#
87	6.4	6.7	13.9#



#30
 Tetrahydrofuran
 Concen: 0.24 ppbv m
 RT: 12.169 min Scan# 2358
 Delta R.T. 0.013 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

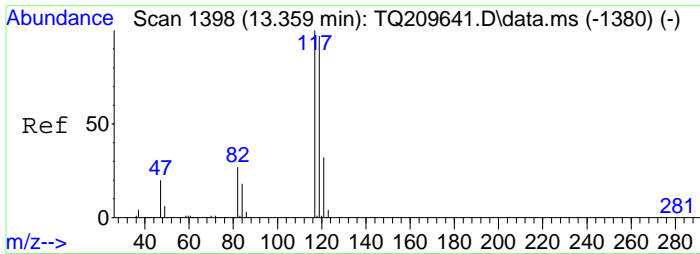
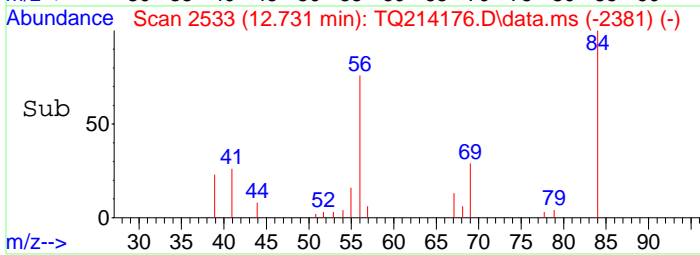
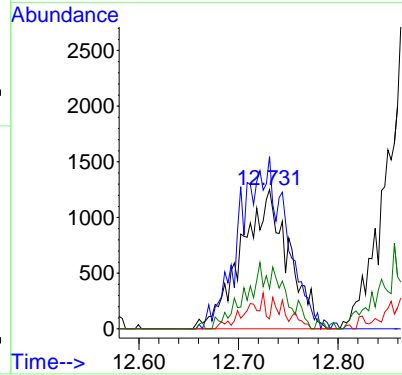
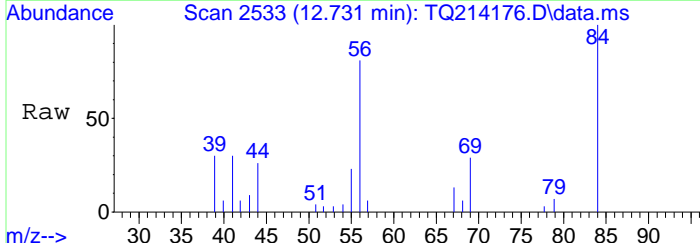
Tgt Ion	Resp	Lower	Upper
42	6212		
41	9.2	35.2	73.0#
72	25.4	27.2	56.6#
71	25.7	25.9	53.7#





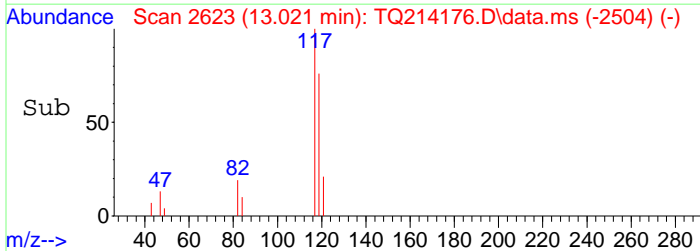
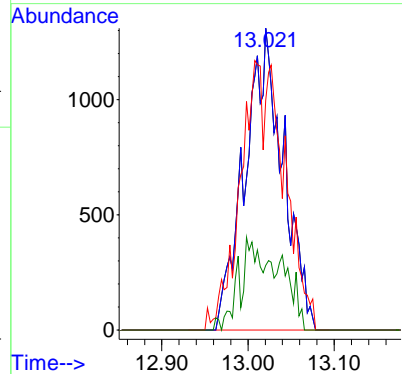
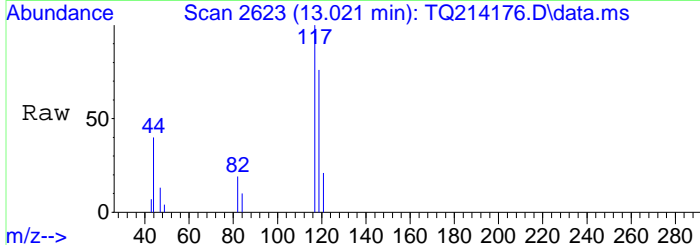
#32
 Cyclohexane
 Concen: 0.10 ppbv
 RT: 12.731 min Scan# 2533
 Delta R.T. -0.010 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

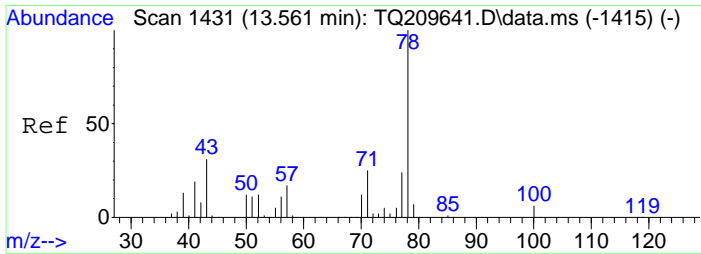
Tgt Ion	Resp	Ion Ratio	Lower	Upper
56	4100	100		
84		34.3	54.1	112.3#
42		0.0	15.3	31.7#
55		22.7	23.5	48.7#



#33
 Carbon Tetrachloride
 Concen: 0.04 ppbv m
 RT: 13.021 min Scan# 2623
 Delta R.T. -0.016 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

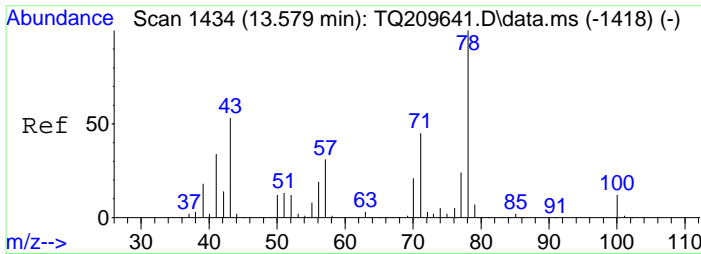
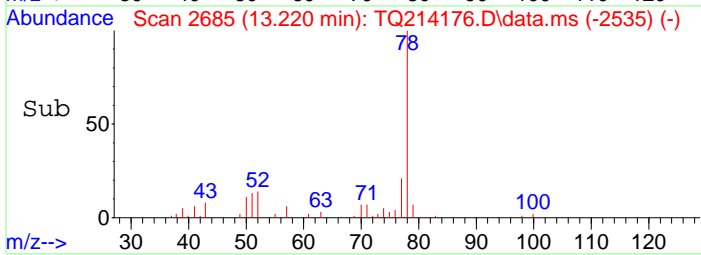
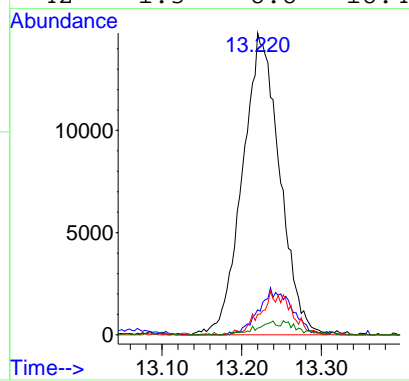
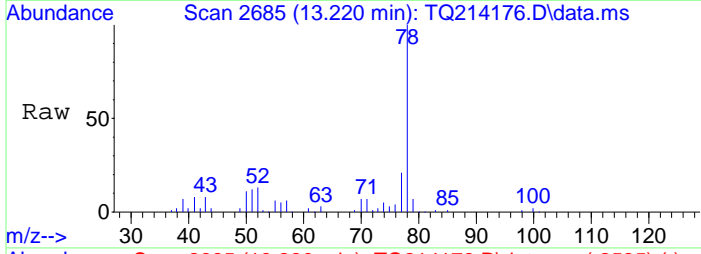
Tgt Ion	Resp	Ion Ratio	Lower	Upper
117	4052	100		
117		30.0	80.0	120.0#
119		14.2	76.9	115.3#
121		0.0	21.7	40.3#





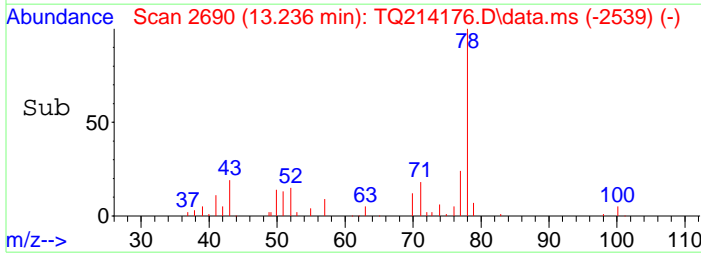
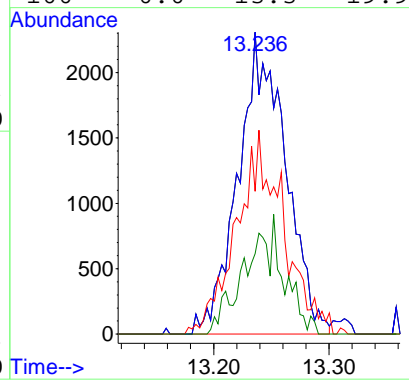
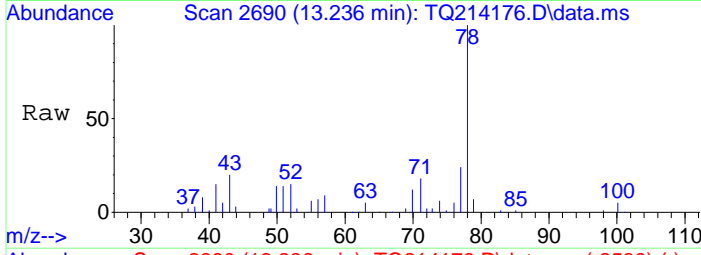
#35
Benzene
Concen: 0.40 ppbv
RT: 13.220 min Scan# 2685
Delta R.T. -0.019 min
Lab File: TQ214176.D
Acq: 9 Apr 2021 9:37 am

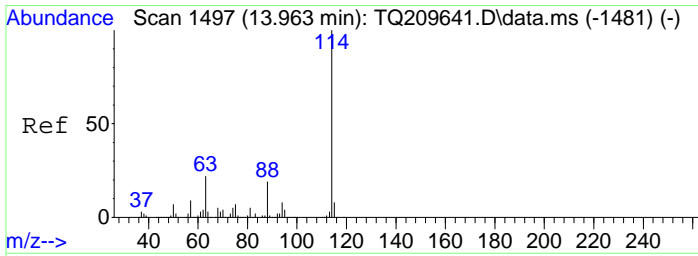
Tgt Ion	Resp	Lower	Upper
78	47810		
43	13.7	37.5	77.9#
71	5.0	22.0	45.8#
42	1.3	8.8	18.4#



#36
n-Heptane
Concen: 0.17 ppbv
RT: 13.236 min Scan# 2690
Delta R.T. -0.016 min
Lab File: TQ214176.D
Acq: 9 Apr 2021 9:37 am

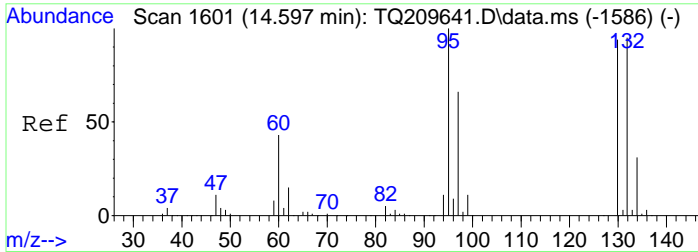
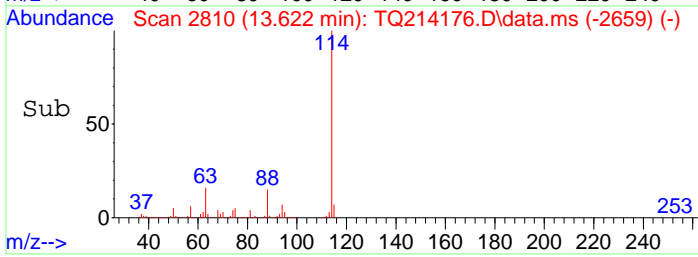
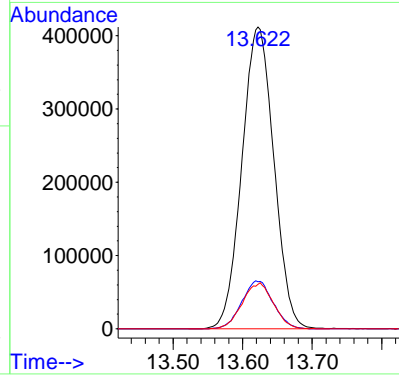
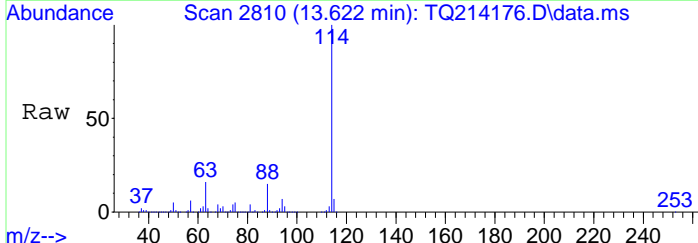
Tgt Ion	Resp	Lower	Upper
43	6569		
43	100.0	80.0	120.0
57	43.4	42.6	64.0
100	0.0	13.3	19.9#





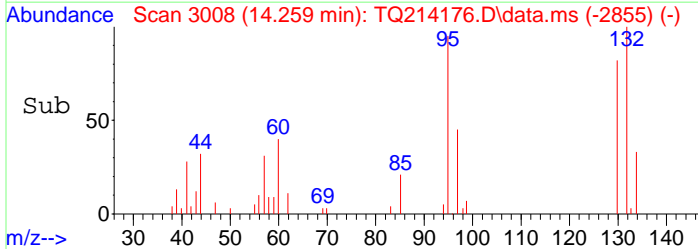
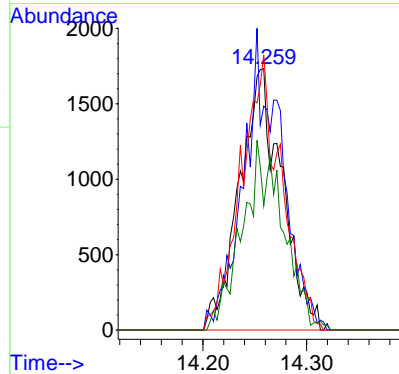
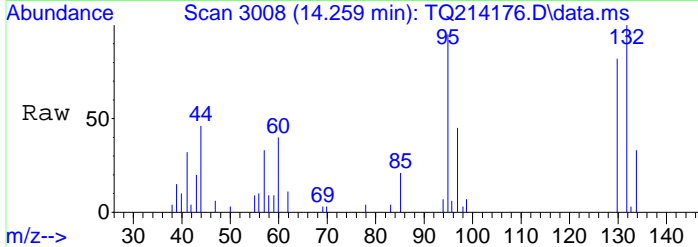
#37
 1,4-Difluorobenzene
 Concen: 10.00 ppbv
 RT: 13.622 min Scan# 2810
 Delta R.T. -0.013 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

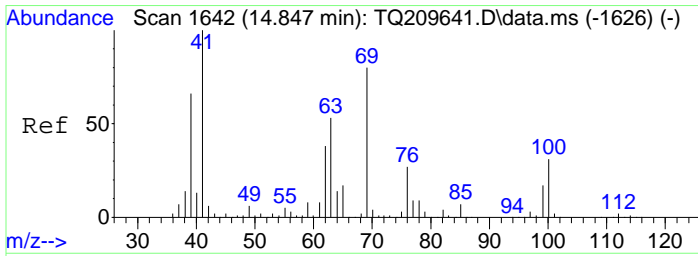
Tgt Ion	Resp	Lower	Upper
114	1324423		
63	15.6	12.9	26.9
88	14.9	10.7	22.3



#38
 Trichloroethylene
 Concen: 0.08 ppbv m
 RT: 14.259 min Scan# 3008
 Delta R.T. -0.010 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

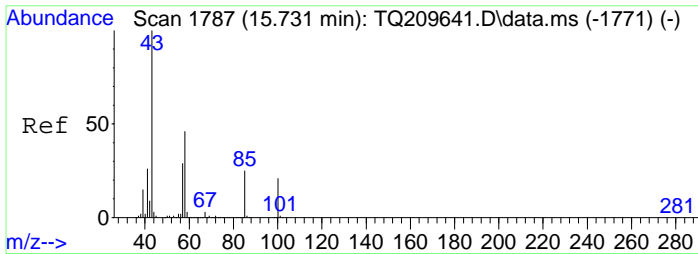
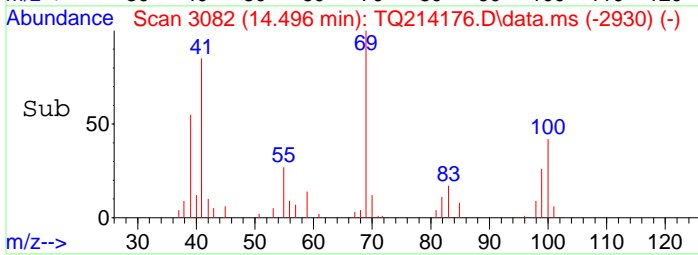
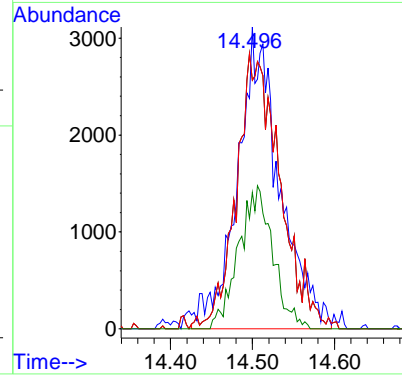
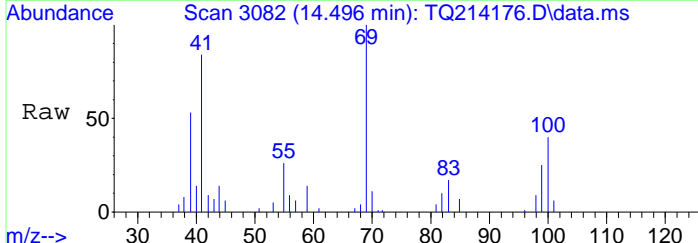
Tgt Ion	Resp	Lower	Upper
95	4911		
130	0.0	66.0	137.0#
132	72.7	63.3	131.5
97	30.1	41.9	87.1#





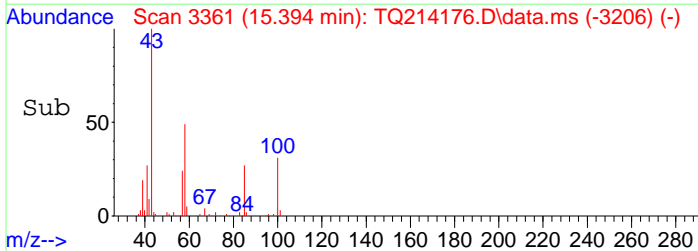
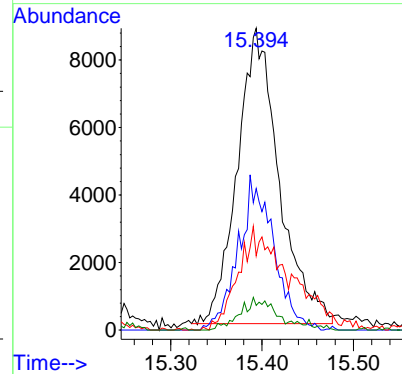
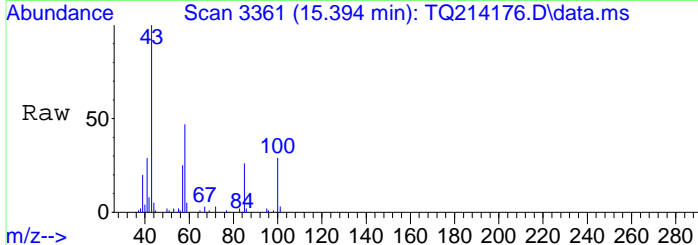
#40
 Methyl Methacrylate
 Concen: 0.28 ppbv m
 RT: 14.496 min Scan# 3082
 Delta R.T. -0.013 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

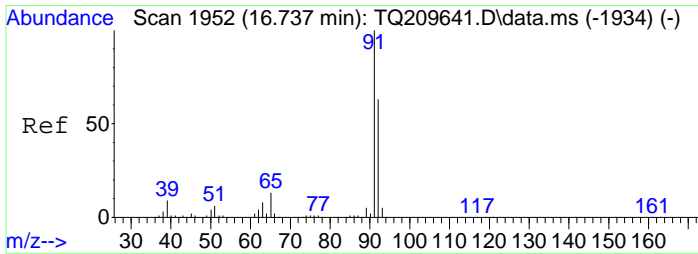
Tgt Ion	Resp	Lower	Upper
69	10444		
41	40.8	70.0	210.0#
69	37.6	50.0	150.0#
100	40.7	17.5	52.5



#43
 Methyl Isobutyl Ketone
 Concen: 0.47 ppbv
 RT: 15.394 min Scan# 3361
 Delta R.T. -0.001 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

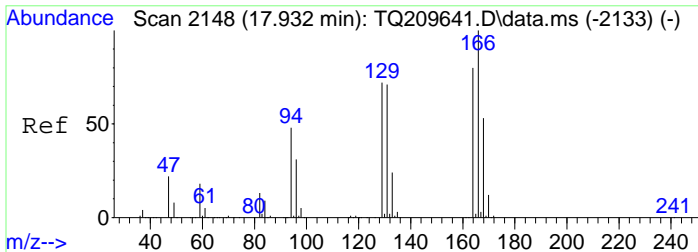
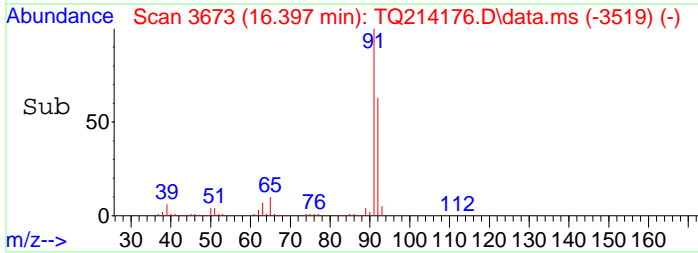
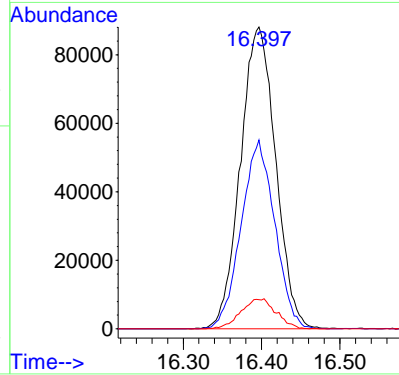
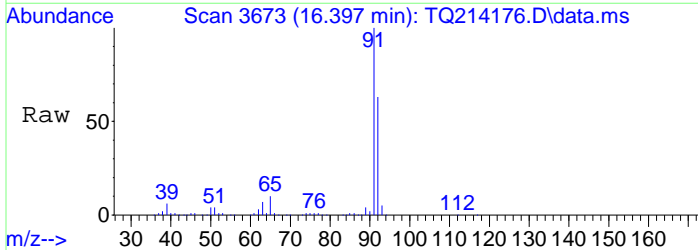
Tgt Ion	Resp	Lower	Upper
43	27884		
58	43.7	25.1	52.1
57	15.4	15.5	32.3#
42	4.1	5.0	15.0#





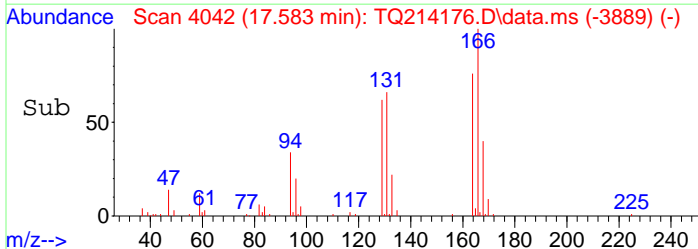
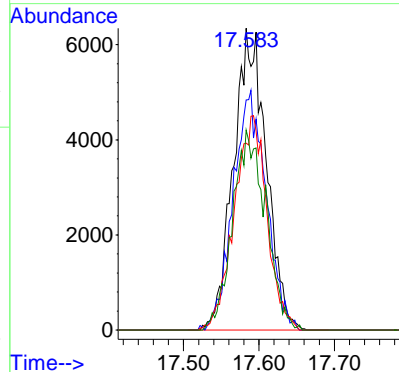
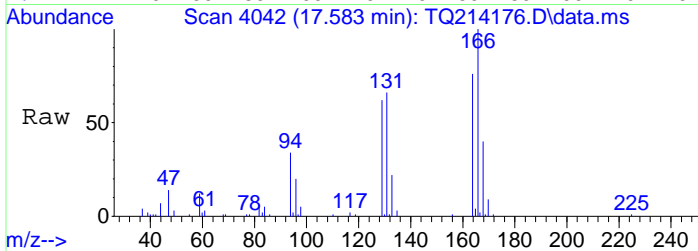
#45
 Toluene
 Concen: 1.68 ppbv
 RT: 16.397 min Scan# 3673
 Delta R.T. -0.003 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

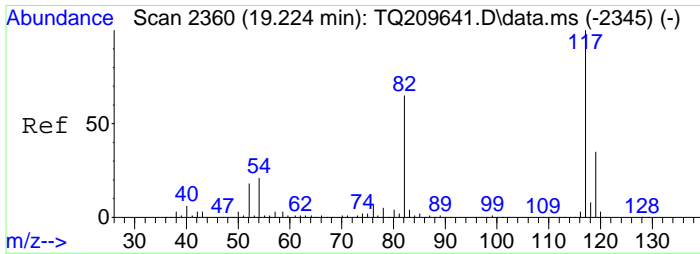
Tgt Ion	Resp	Lower	Upper
91	100		
92	59.7	38.7	80.3
65	9.9	7.5	15.5



#50
 Tetrachloroethylene
 Concen: 0.20 ppbv m
 RT: 17.583 min Scan# 4042
 Delta R.T. -0.007 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

Tgt Ion	Resp	Lower	Upper
166	100		
164	79.7	51.0	106.0
129	70.4	48.1	99.9
131	67.4	46.3	96.3

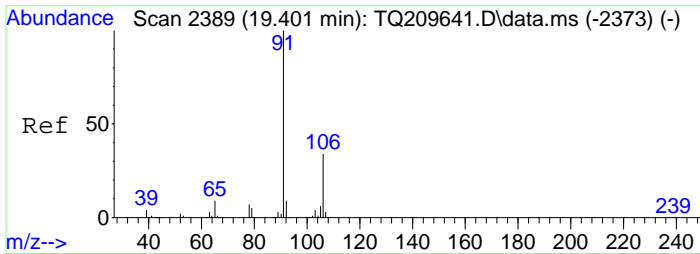
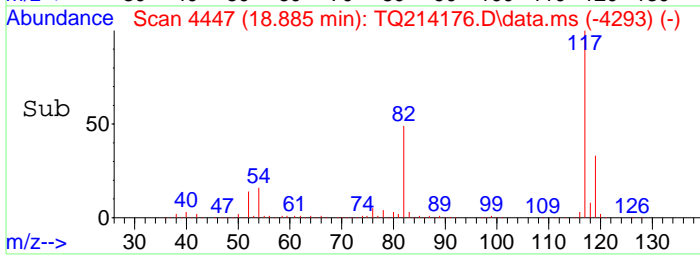
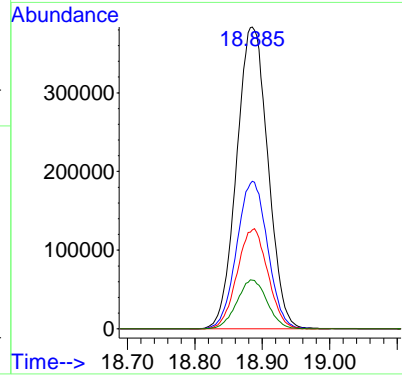
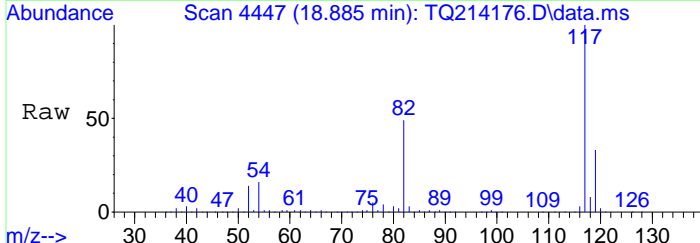




#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 18.885 min Scan# 4447
 Delta R.T. -0.004 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

Tgt Ion: 117 Resp: 1236921

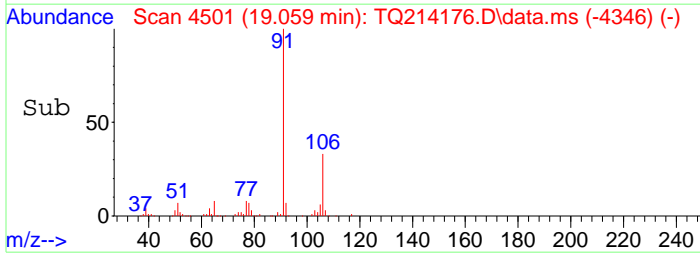
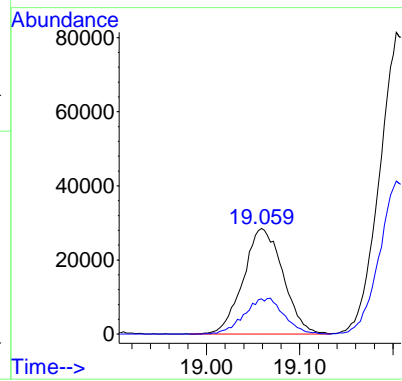
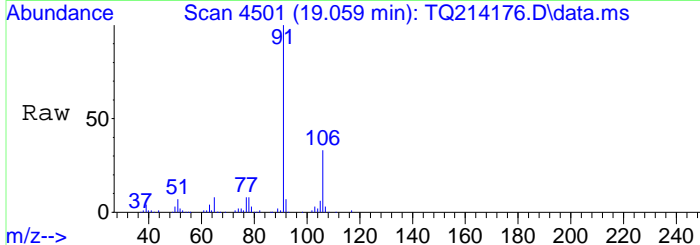
Ion	Ratio	Lower	Upper
117	100		
82	48.3	37.1	77.1
119	32.6	22.1	45.9
54	15.8	13.8	28.6

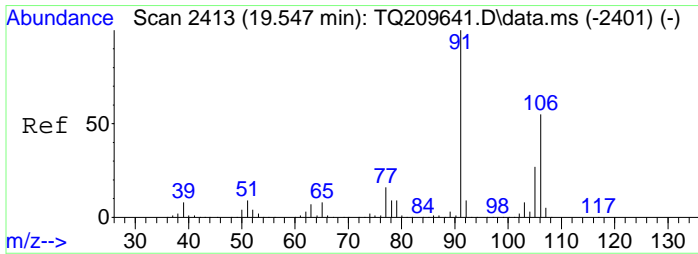


#56
 Ethylbenzene
 Concen: 0.37 ppbv
 RT: 19.059 min Scan# 4501
 Delta R.T. -0.003 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

Tgt Ion: 91 Resp: 84502

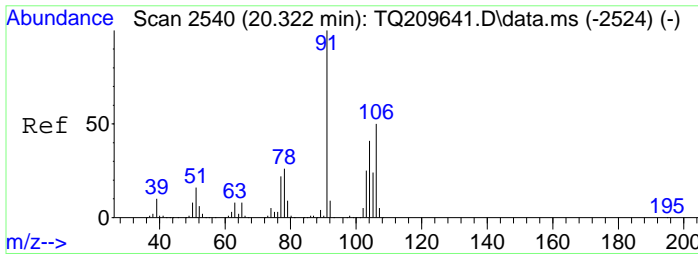
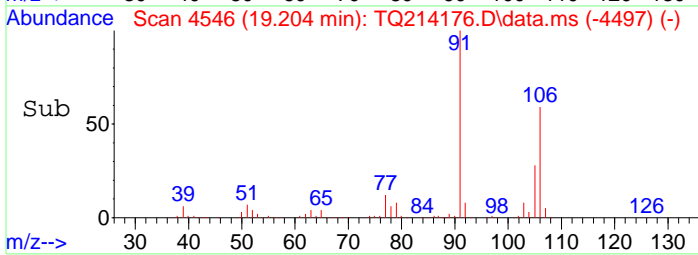
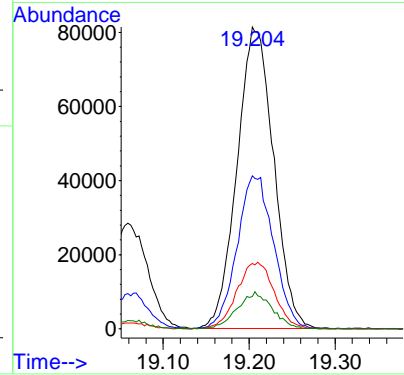
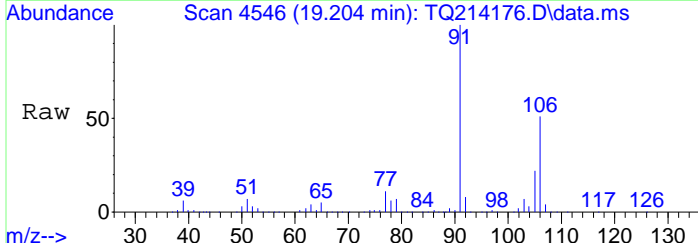
Ion	Ratio	Lower	Upper
91	100		
106	18.0	20.5	42.7#





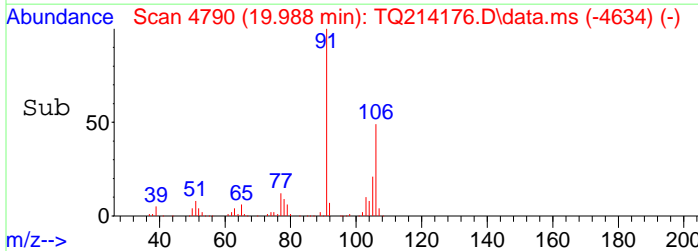
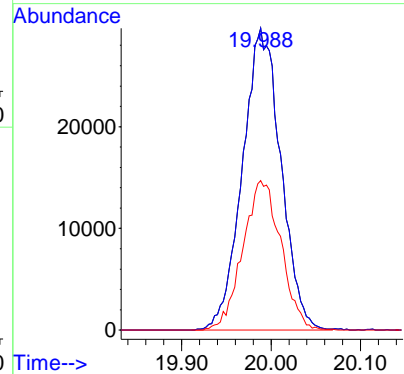
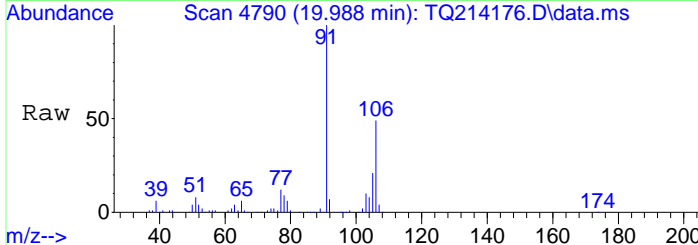
#57
 p- & m-Xylenes
 Concen: 1.37 ppbv
 RT: 19.204 min Scan# 4546
 Delta R.T. -0.003 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

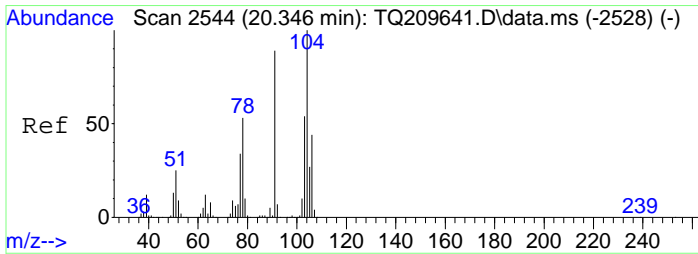
Tgt Ion	Resp	Lower	Upper
91	239984		
106	50.8	32.6	67.8
105	22.6	14.5	30.1
77	11.5	8.5	17.7



#58
 o-Xylene
 Concen: 0.51 ppbv
 RT: 19.988 min Scan# 4790
 Delta R.T. 0.000 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

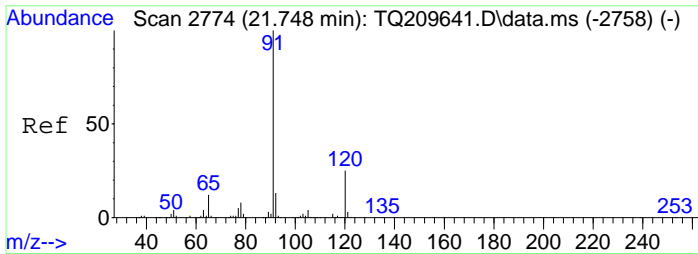
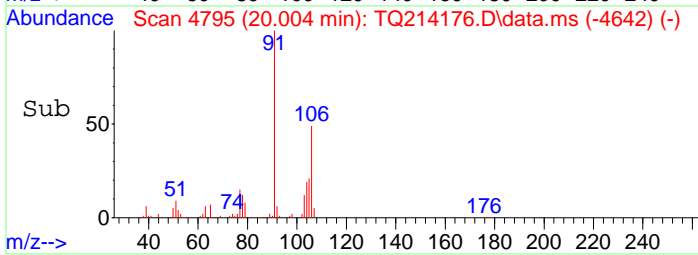
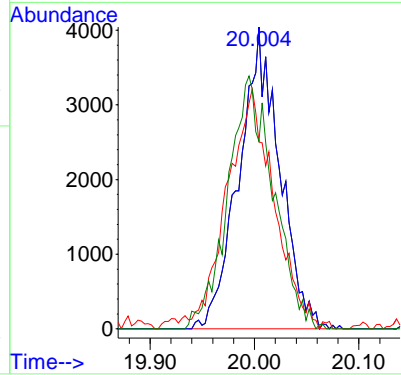
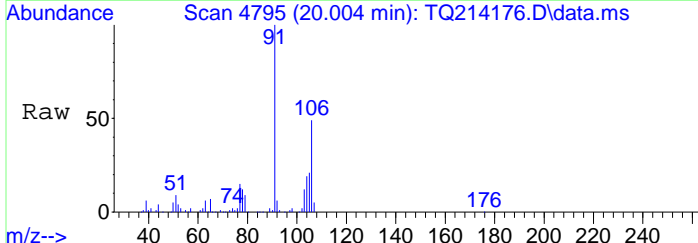
Tgt Ion	Resp	Lower	Upper
91	88784		
91	100.0	80.0	120.0
106	49.2	38.2	57.2





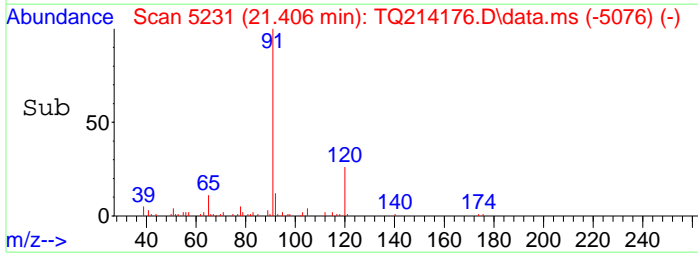
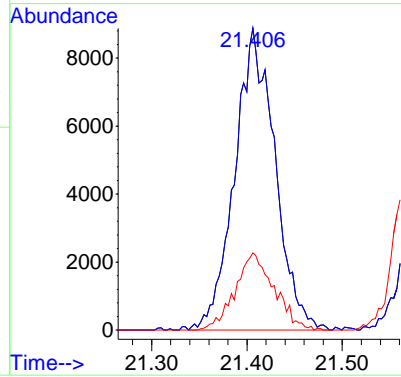
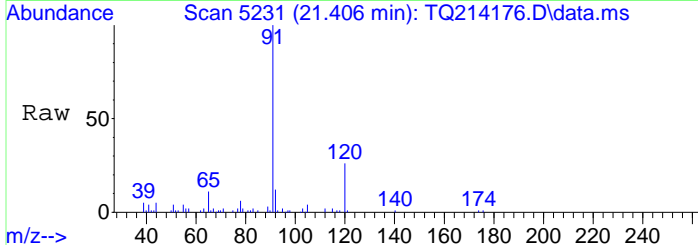
#59
 Styrene
 Concen: 0.08 ppbv
 RT: 20.004 min Scan# 4795
 Delta R.T. -0.007 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

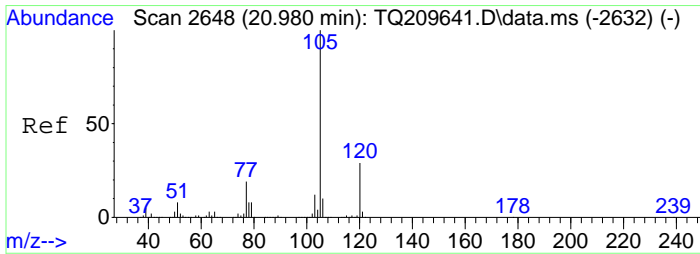
Tgt Ion	Resp	Lower	Upper
104	10917		
104	100		
104	100.0	65.0	135.0
78	0.0	0.0	0.0
103	0.0	0.0	0.0



#61
 n-Propylbenzene
 Concen: 0.08 ppbv
 RT: 21.406 min Scan# 5231
 Delta R.T. -0.003 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

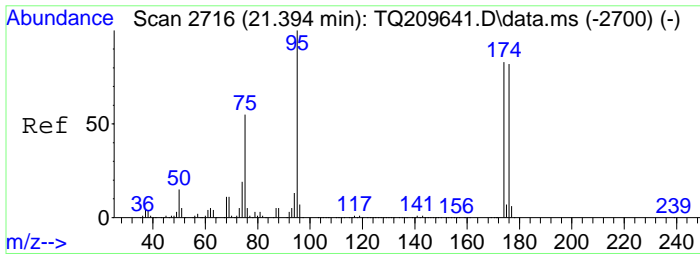
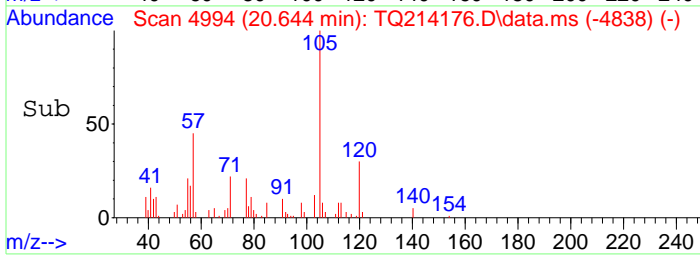
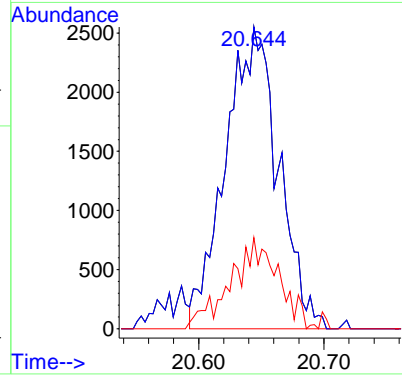
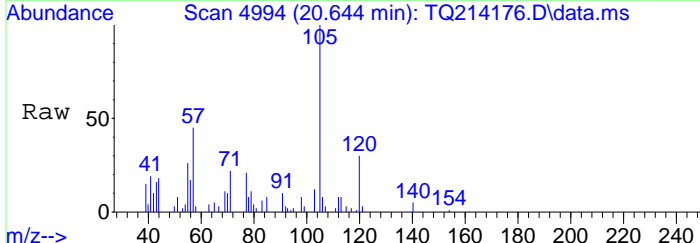
Tgt Ion	Resp	Lower	Upper
91	26010		
91	100		
91	100.0	80.0	120.0
120	24.8	10.0	30.0





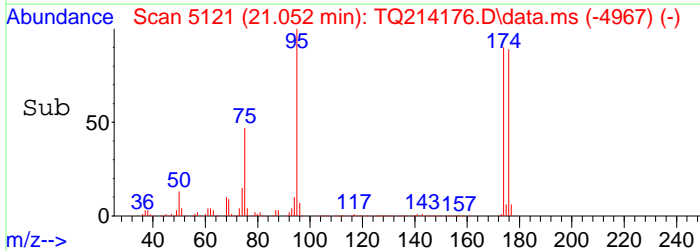
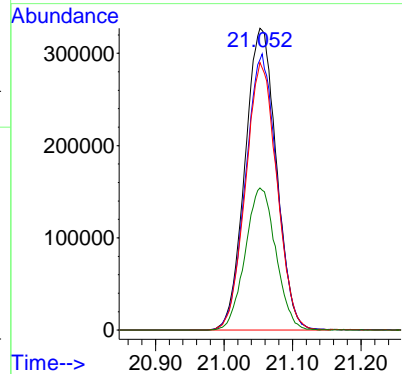
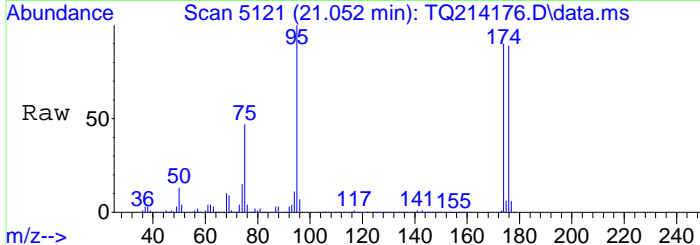
#62
 Isopropylbenzene
 Concen: 0.03 ppbv
 RT: 20.644 min Scan# 4994
 Delta R.T. 0.000 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

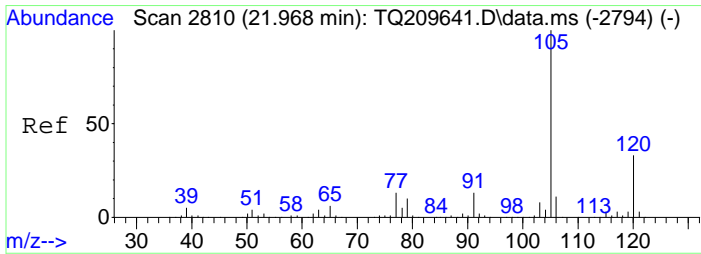
Tgt Ion	Resp	Lower	Upper
105	7501		
105	100		
105	100.0	80.0	120.0
120	13.9	10.0	30.0



#64
 p-Bromofluorobenzene
 Concen: 9.38 ppbv
 RT: 21.052 min Scan# 5121
 Delta R.T. -0.004 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

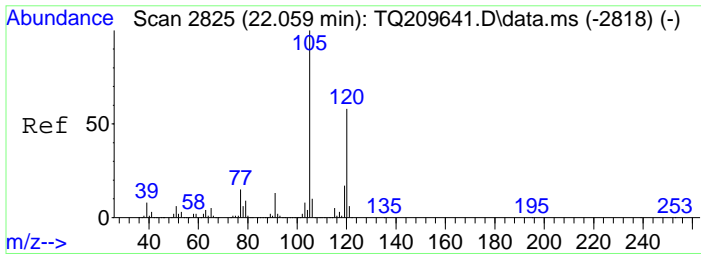
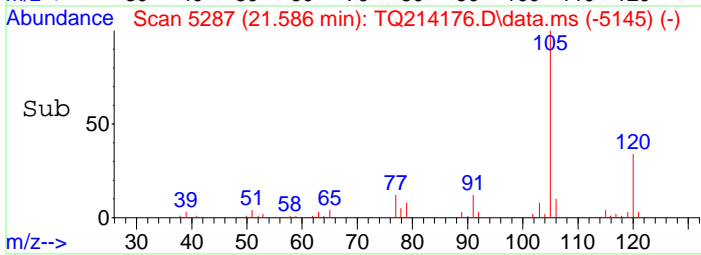
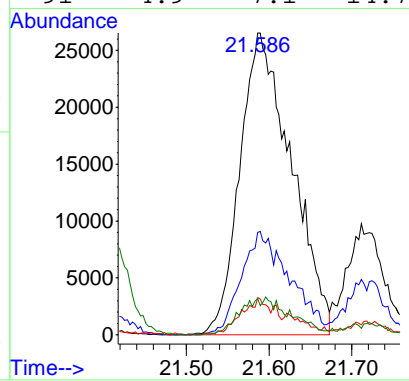
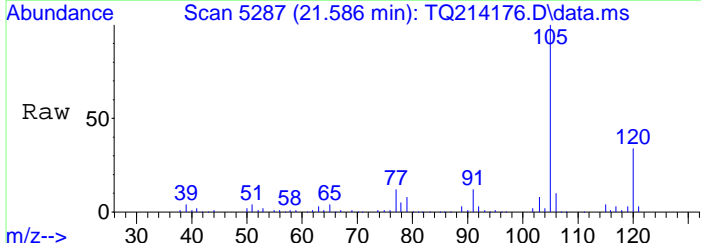
Tgt Ion	Resp	Lower	Upper
95	1040918		
95	100		
174	91.2	53.2	110.6
176	88.0	51.6	107.2
75	46.1	30.7	63.7





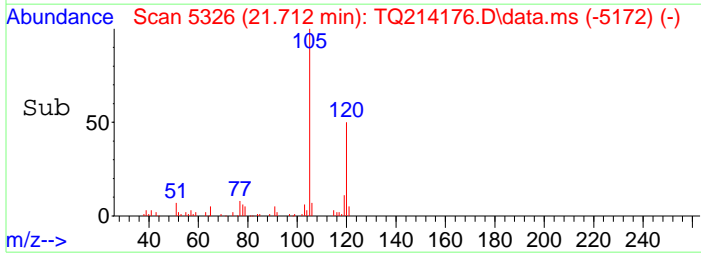
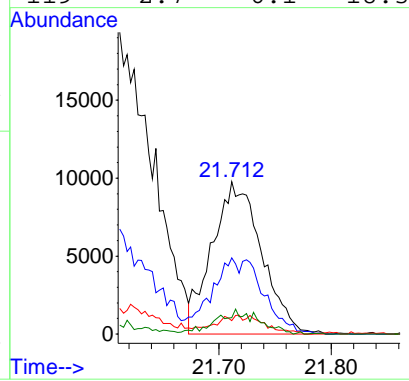
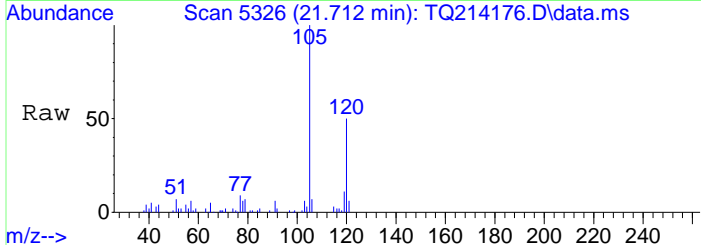
#65
 4-Ethyltoluene
 Concen: 0.42 ppbv
 RT: 21.586 min Scan# 5287
 Delta R.T. -0.045 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

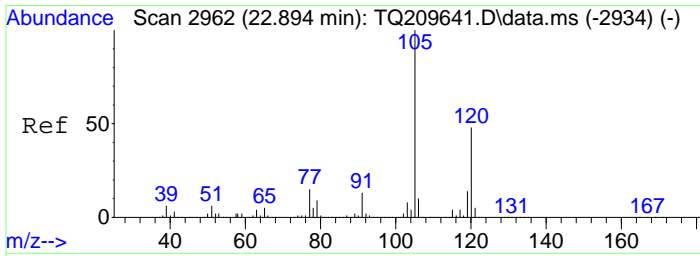
Tgt Ion	Resp	Lower	Upper
105	114488		
120	19.9	19.6	40.8
77	6.5	7.3	15.3#
91	4.9	7.1	14.7#



#66
 1,3,5-Trimethylbenzene
 Concen: 0.13 ppbv
 RT: 21.712 min Scan# 5326
 Delta R.T. -0.006 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

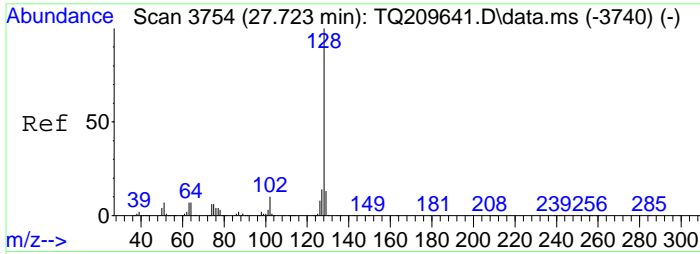
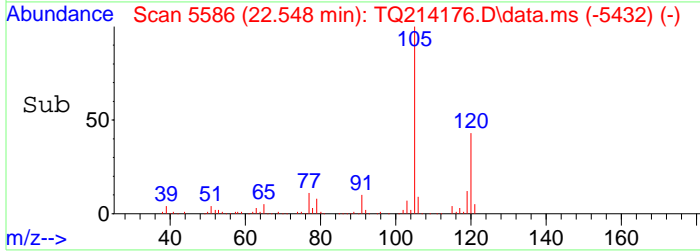
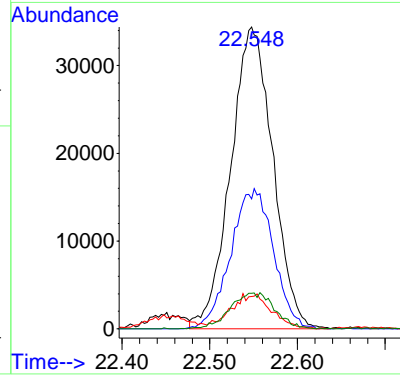
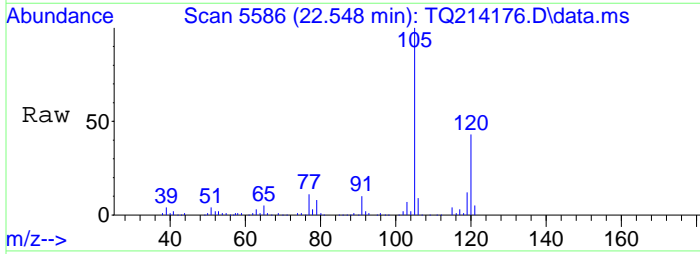
Tgt Ion	Resp	Lower	Upper
105	29807		
120	21.1	39.2	58.8#
77	2.4	10.1	15.1#
119	2.7	6.1	18.3#





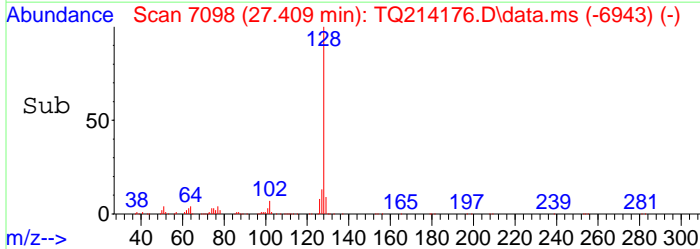
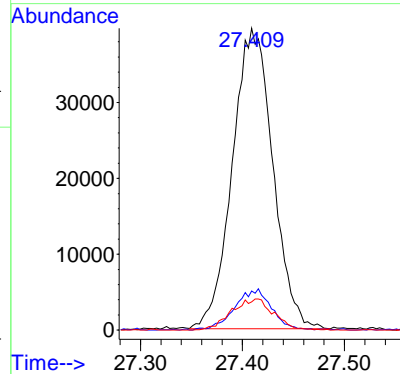
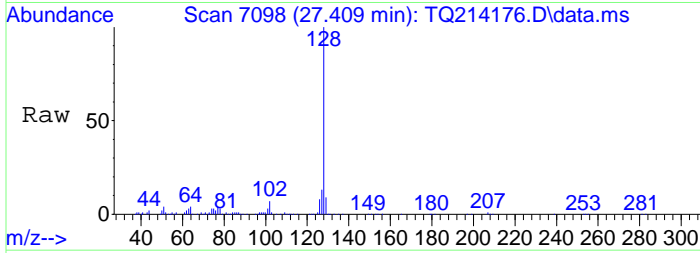
#68
 1,2,4-Trimethylbenzene
 Concen: 0.49 ppbv
 RT: 22.548 min Scan# 5586
 Delta R.T. -0.003 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

Tgt Ion	Resp	Lower	Upper
105	115300		
120	46.9	30.2	62.6
77	3.5	8.1	16.9#
119	12.6	7.8	16.2



#78
 Naphthalene
 Concen: 0.21 ppbv
 RT: 27.409 min Scan# 7098
 Delta R.T. -0.003 min
 Lab File: TQ214176.D
 Acq: 9 Apr 2021 9:37 am

Tgt Ion	Resp	Lower	Upper
128	108878		
127	12.5	8.1	16.9
129	10.8	7.1	14.7



Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Soil Vapor Laboratory ID: 21D0348-02 File ID: TQ214173.D
 Sampled: 04/08/21 10:02 Prepared: 04/08/21 22:00 Analyzed: 04/09/21 06:27
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.84	1.26	U
71-55-6	1,1,1-Trichloroethane	1.84	1.01	U
79-34-5	1,1,2,2-Tetrachloroethane	1.84	1.26	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.84	1.41	U
79-00-5	1,1,2-Trichloroethane	1.84	1.01	U
75-34-3	1,1-Dichloroethane	1.84	0.746	U
75-35-4	1,1-Dichloroethylene	1.84	0.365	U
120-82-1	1,2,4-Trichlorobenzene	1.84	1.37	U
95-63-6	1,2,4-Trimethylbenzene	1.84	5.07	D
106-93-4	1,2-Dibromoethane	1.84	1.42	U
95-50-1	1,2-Dichlorobenzene	1.84	1.11	U
107-06-2	1,2-Dichloroethane	1.84	0.745	U
78-87-5	1,2-Dichloropropane	1.84	0.851	U
76-14-2	1,2-Dichlorotetrafluoroethane	1.84	1.29	U
108-67-8	1,3,5-Trimethylbenzene	1.84	1.36	D
106-99-0	1,3-Butadiene	1.84	1.22	U
541-73-1	1,3-Dichlorobenzene	1.84	1.11	U
142-28-9	1,3-Dichloropropane	1.84	0.851	U
106-46-7	1,4-Dichlorobenzene	1.84	1.11	U
123-91-1	1,4-Dioxane	1.84	1.33	U
78-93-3	2-Butanone	1.84	0.815	D
591-78-6	2-Hexanone	1.84	1.51	U
107-05-1	3-Chloropropene	1.84	2.88	U
108-10-1	4-Methyl-2-pentanone	1.84	2.04	D
67-64-1	Acetone	1.84	2.63	D
107-13-1	Acrylonitrile	1.84	0.400	U
71-43-2	Benzene	1.84	2.94	D
100-44-7	Benzyl chloride	1.84	0.954	U
75-27-4	Bromodichloromethane	1.84	1.23	U
75-25-2	Bromoform	1.84	1.90	U
74-83-9	Bromomethane	1.84	0.715	U
75-15-0	Carbon disulfide	1.84	0.574	D
56-23-5	Carbon tetrachloride	1.84	0.348	D
108-90-7	Chlorobenzene	1.84	0.848	U
75-00-3	Chloroethane	1.84	0.486	U
67-66-3	Chloroform	1.84	0.899	U
74-87-3	Chloromethane	1.84	1.07	D
156-59-2	cis-1,2-Dichloroethylene	1.84	0.584	D
10061-01-5	cis-1,3-Dichloropropylene	1.84	0.836	U
110-82-7	Cyclohexane	1.84	0.697	D

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Soil Vapor Laboratory ID: 21D0348-02 File ID: TQ214173.D
 Sampled: 04/08/21 10:02 Prepared: 04/08/21 22:00 Analyzed: 04/09/21 06:27
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
124-48-1	Dibromochloromethane	1.84	1.57	U
75-71-8	Dichlorodifluoromethane	1.84	2.19	D
141-78-6	Ethyl acetate	1.84	1.33	U
100-41-4	Ethyl Benzene	1.84	2.88	D
87-68-3	Hexachlorobutadiene	1.84	1.96	U
67-63-0	Isopropanol	1.84	2.35	D
80-62-6	Methyl Methacrylate	1.84	2.19	D
1634-04-4	Methyl tert-butyl ether (MTBE)	1.84	0.664	U
75-09-2	Methylene chloride	1.84	28.5	D
142-82-5	n-Heptane	1.84	1.28	D
110-54-3	n-Hexane	1.84	2.14	D
95-47-6	o-Xylene	1.84	4.24	D
179601-23-1	p- & m- Xylenes	1.84	10.9	D
622-96-8	p-Ethyltoluene	1.84	4.35	D
115-07-1	Propylene	1.84	0.317	U
100-42-5	Styrene	1.84	0.785	U
127-18-4	Tetrachloroethylene	1.84	1.75	D
109-99-9	Tetrahydrofuran	1.84	1.58	D
108-88-3	Toluene	1.84	10.9	D
156-60-5	trans-1,2-Dichloroethylene	1.84	0.730	U
10061-02-6	trans-1,3-Dichloropropylene	1.84	0.836	U
79-01-6	Trichloroethylene	1.84	0.792	D
75-69-4	Trichlorofluoromethane (Freon 11)	1.84	1.45	D
108-05-4	Vinyl acetate	1.84	0.649	U
593-60-2	Vinyl bromide	1.84	0.806	U
75-01-4	Vinyl Chloride	1.84	0.235	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	186832	12.059	189488	12.075	
ISTD: 1,4-Difluorobenzene	1052000	13.632	1051211	13.641	
ISTD: d5-Chlorobenzene	986763	18.889	1007357	18.885	

* Values outside of QC limits

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214173.D
 Acq On : 9 Apr 2021 6:27 am
 Operator : LLJ
 Sample : 21D0384-02
 Misc : QBTO2040821A 1X/400ML
 ALS Vial : 13 Sample Multiplier: 1.842
 InstName : TO15_AIR2

Quant Time: Apr 09 09:33:16 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

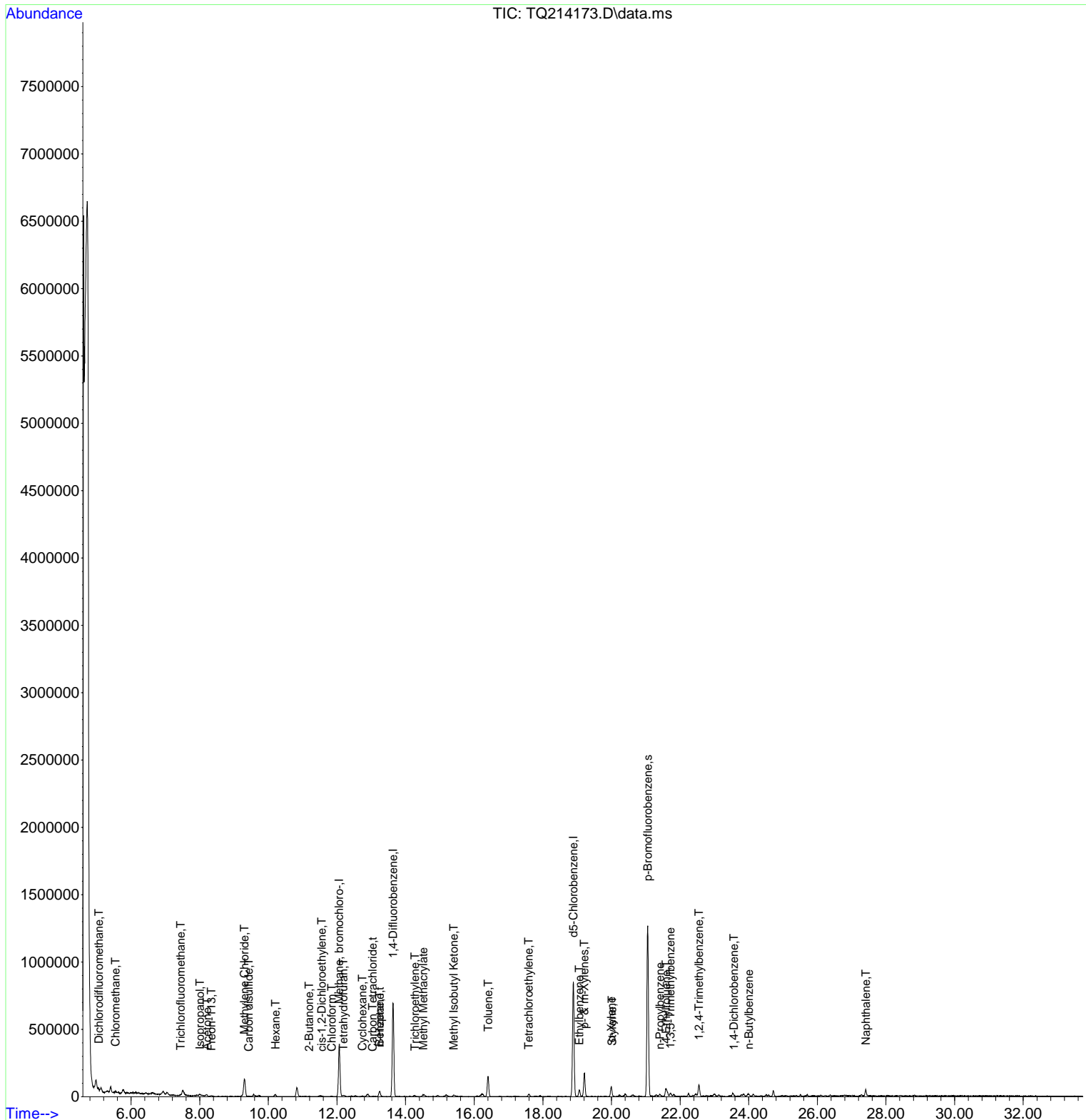
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

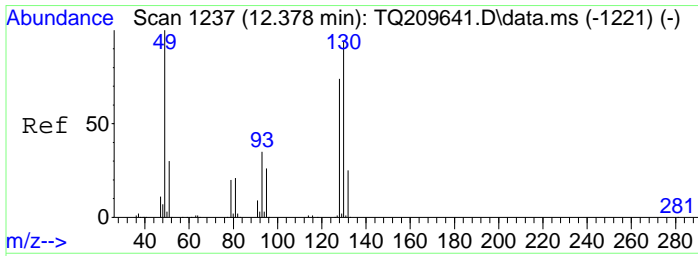
Internal Standards						
1) Methane, bromochloro-	12.059	49	186832	10.00	ppbv	# 0.00
37) 1,4-Difluorobenzene	13.632	114	1052000	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.889	117	986763	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.056	95	858329	9.69	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	96.90%	
Target Compounds						
						Qvalue
3) Dichlorodifluoromethane	5.060	85	21321	0.24	ppbv	# 92
5) Chloromethane	5.535	50	3453m	0.28	ppbv	
11) Trichlorofluoromethane	7.445	101	13326m	0.14	ppbv	
12) Isopropanol	7.998	45	22234	0.52	ppbv	# 99
14) Acetone	8.204	43	23108	0.60	ppbv	94
15) Freon-113	8.333	101	2224m	0.03	ppbv	
18) Methylene Chloride	9.300	49	107760	4.45	ppbv	# 62
20) Carbon disulfide	9.426	76	7588	0.10	ppbv	# 68
23) Hexane	10.201	57	11649	0.33	ppbv	# 72
26) 2-Butanone	11.181	43	5751	0.15	ppbv	# 84
28) cis-1,2-Dichloroethylene	11.554	61	2847m	0.08	ppbv	
29) Chloroform	11.841	83	5652	0.08	ppbv	# 49
30) Tetrahydrofuran	12.181	42	5978m	0.29	ppbv	
32) Cyclohexane	12.741	56	3447m	0.11	ppbv	
33) Carbon Tetrachloride	13.033	117	2216	0.03	ppbv	# 65
35) Benzene	13.239	78	46302	0.50	ppbv	# 40
36) n-Heptane	13.246	43	5258m	0.17	ppbv	
38) Trichloroethylene	14.268	95	3915	0.08	ppbv	# 74
40) Methyl Methacrylate	14.509	69	8812	0.29	ppbv	# 41
43) Methyl Isobutyl Ketone	15.403	43	12592m	0.27	ppbv	
45) Toluene	16.403	91	204825	1.57	ppbv	99
50) Tetrachloroethylene	17.583	166	10673	0.14	ppbv	# 74
56) Ethylbenzene	19.062	91	66925	0.36	ppbv	99
57) p- & m-Xylenes	19.207	91	190436	1.36	ppbv	99
58) o-Xylene	19.991	91	73493	0.53	ppbv	100
59) Styrene	20.014	104	9233m	0.08	ppbv	
61) n-Propylbenzene	21.409	91	22569m	0.09	ppbv	
65) 4-Ethyltoluene	21.589	105	104464	0.48	ppbv	# 75
66) 1,3,5-Trimethylbenzene	21.718	105	27559	0.15	ppbv	# 63
68) 1,2,4-Trimethylbenzene	22.544	105	105859	0.56	ppbv	98
72) 1,4-Dichlorobenzene	23.564	146	3492m	0.02	ppbv	
74) n-Butylbenzene	24.001	91	7886m	0.04	ppbv	
78) Naphthalene	27.412	128	67718	0.16	ppbv	# 91

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

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214173.D
 Acq On : 9 Apr 2021 6:27 am
 Operator : LLJ
 Sample : 21D0384-02
 Misc : QBTO2040821A 1X/400ML
 ALS Vial : 13 Sample Multiplier: 1.842
 InstName : TO15_AIR2

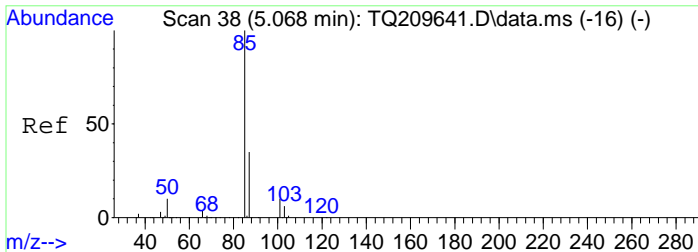
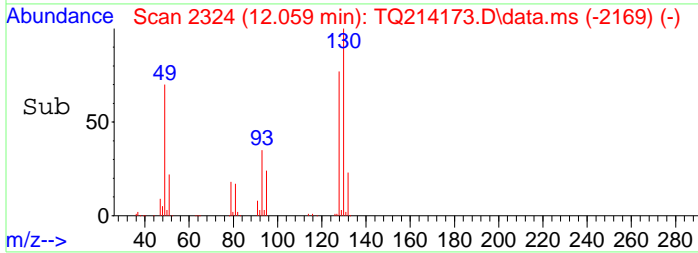
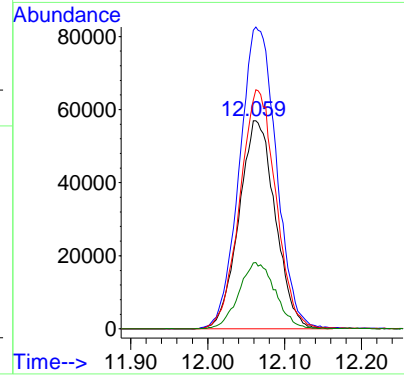
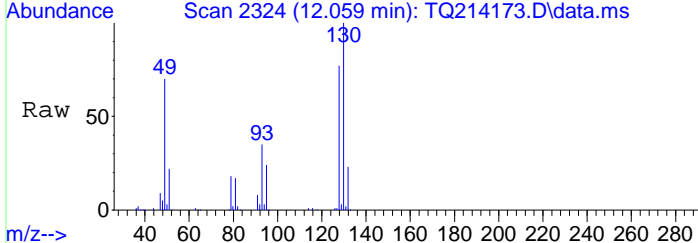
Quant Time: Apr 09 09:33:16 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration





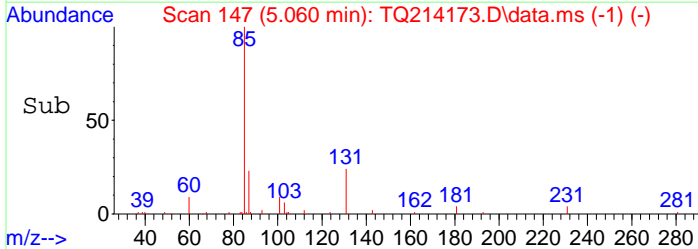
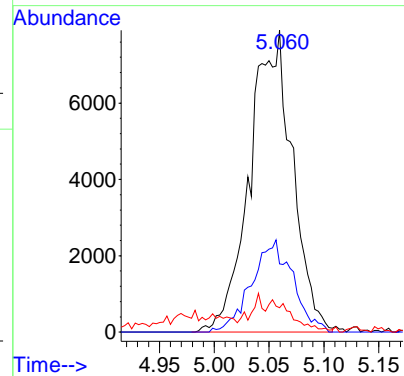
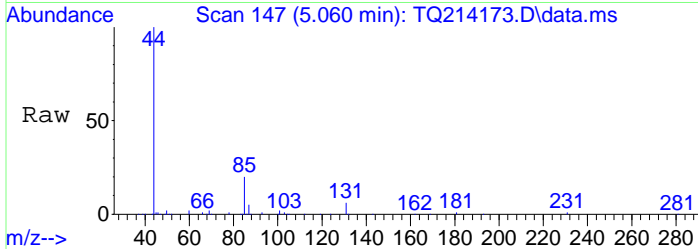
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.059 min Scan# 2324
 Delta R.T. -0.003 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

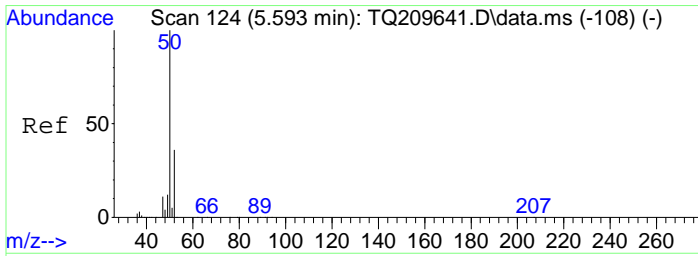
Tgt Ion	Resp	Lower	Upper
49	100		
130	147.2	48.1	99.9#
128	113.8	38.3	79.5#
51	32.0	20.3	42.3



#3
 Dichlorodifluoromethane
 Concen: 0.24 ppbv
 RT: 5.060 min Scan# 147
 Delta R.T. -0.012 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

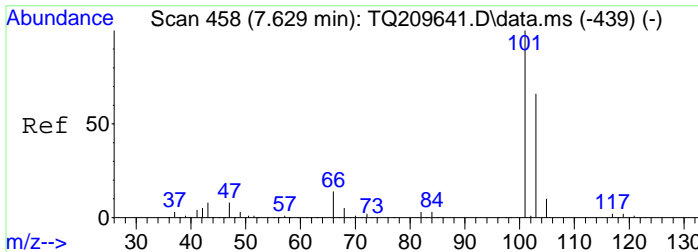
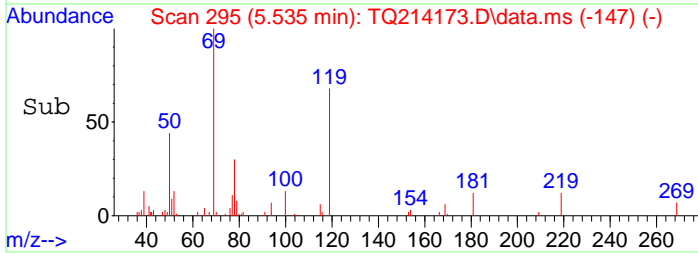
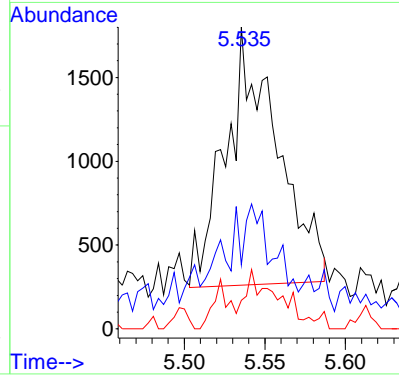
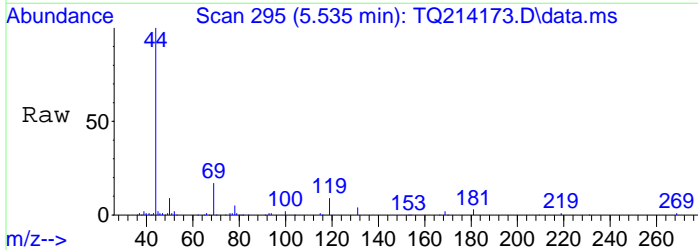
Tgt Ion	Resp	Lower	Upper
85	100		
87	29.5	20.9	43.5
50	5.2	7.2	15.0#





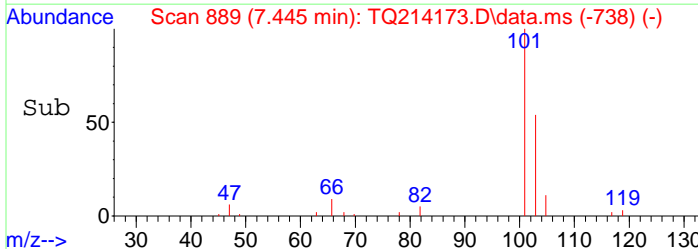
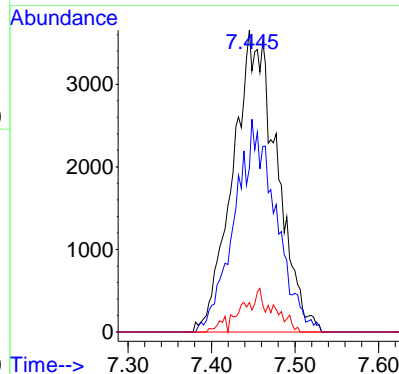
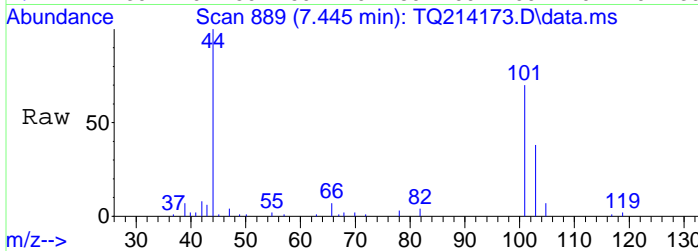
#5
 Chloromethane
 Concen: 0.28 ppbv m
 RT: 5.535 min Scan# 295
 Delta R.T. -0.026 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

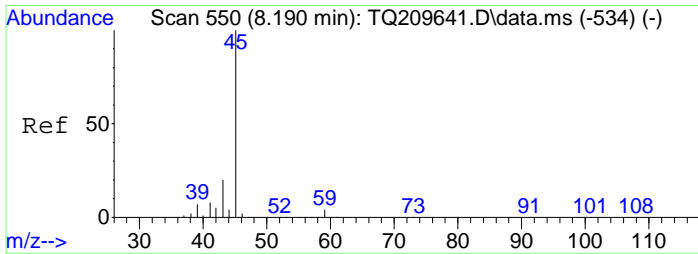
Tgt Ion	Resp	Lower	Upper
50	100		
52	0.0	0.0	65.2
49	0.0	0.0	19.6



#11
 Trichlorofluoromethane
 Concen: 0.14 ppbv m
 RT: 7.445 min Scan# 889
 Delta R.T. -0.016 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

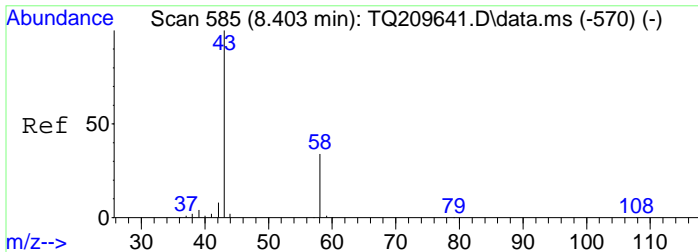
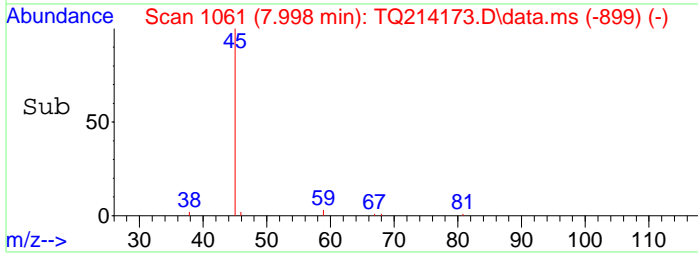
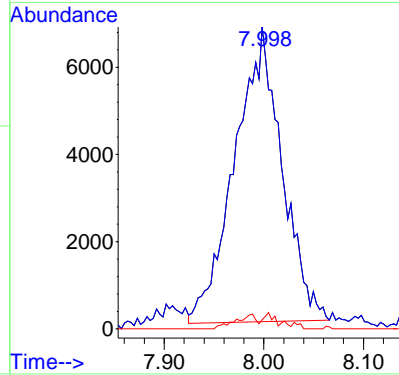
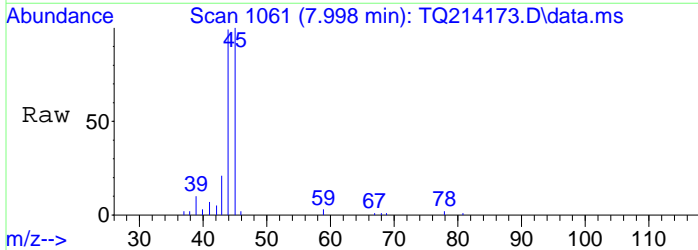
Tgt Ion	Resp	Lower	Upper
101	100		
103	66.2	42.3	87.8
66	0.0	7.8	16.2#





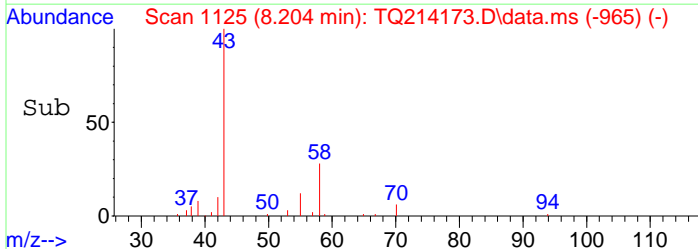
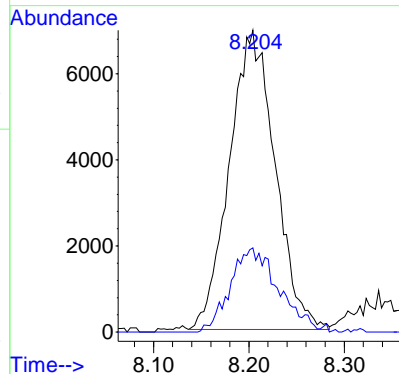
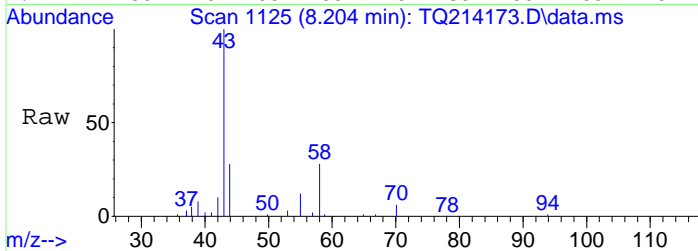
#12
 Isopropanol
 Concen: 0.52 ppbv
 RT: 7.998 min Scan# 1061
 Delta R.T. 0.019 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

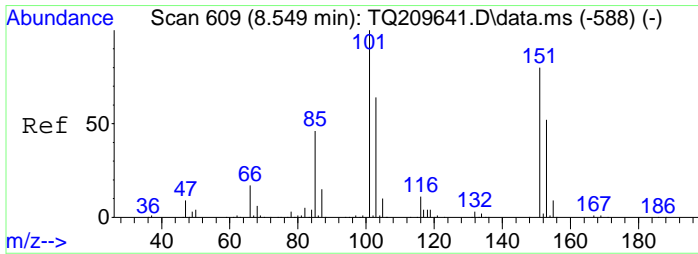
Tgt Ion	Resp	Lower	Upper
45	100		
45	100.0	65.0	135.0
59	0.0	0.0	10.0



#14
 Acetone
 Concen: 0.60 ppbv
 RT: 8.204 min Scan# 1125
 Delta R.T. 0.013 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

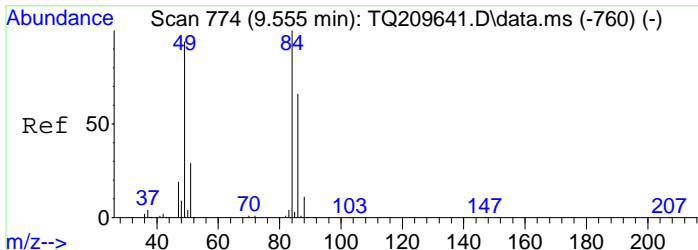
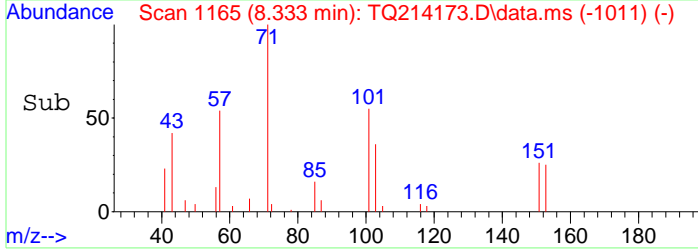
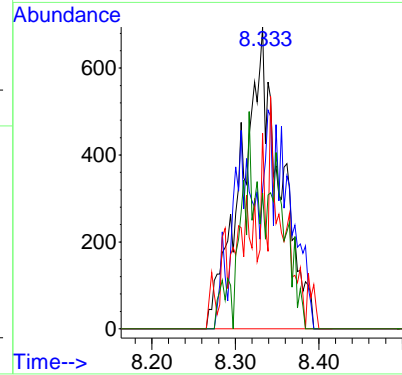
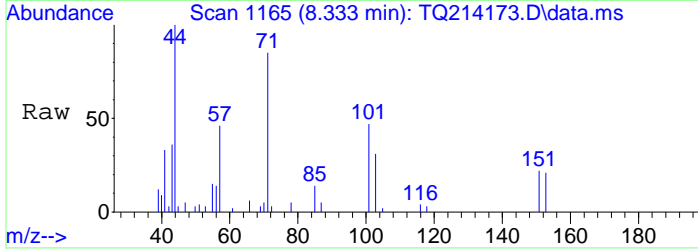
Tgt Ion	Resp	Lower	Upper
43	100		
58	28.5	20.9	43.3





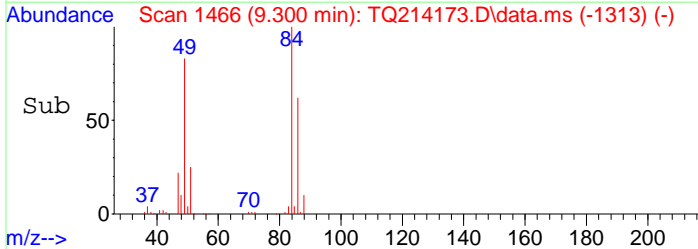
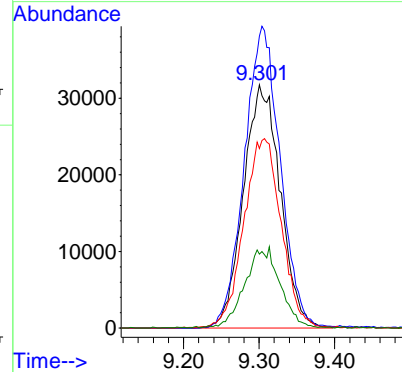
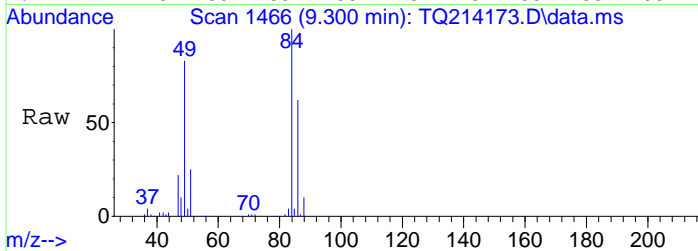
#15
 Freon-113
 Concen: 0.03 ppbv m
 RT: 8.333 min Scan# 1165
 Delta R.T. -0.003 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

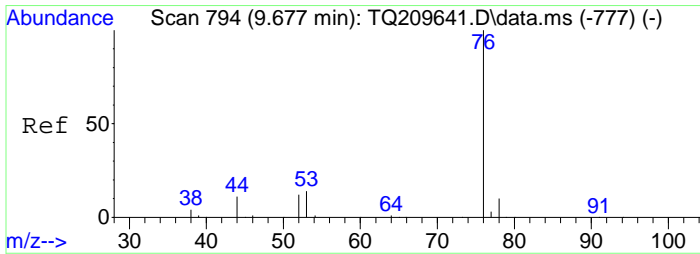
Tgt Ion	Resp	Lower	Upper
101	2224		
151	25.4	50.5	104.9#
103	0.0	42.0	87.2#
153	0.0	32.4	67.4#



#18
 Methylene Chloride
 Concen: 4.45 ppbv
 RT: 9.300 min Scan# 1466
 Delta R.T. -0.007 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

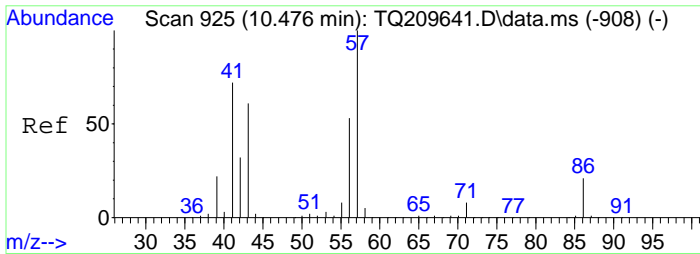
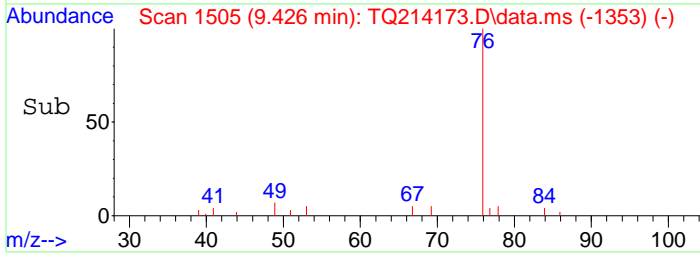
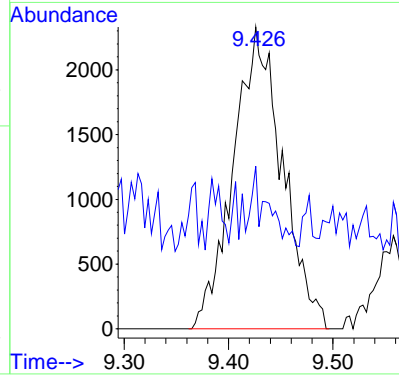
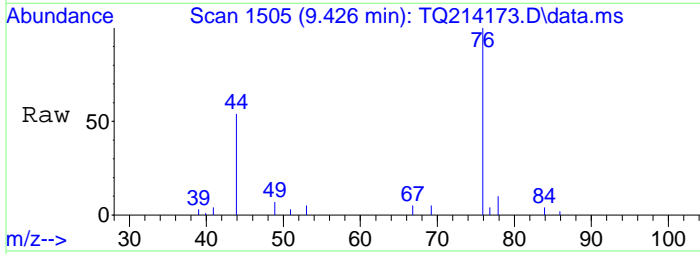
Tgt Ion	Resp	Lower	Upper
49	107760		
84	120.6	49.9	103.5#
86	78.5	31.8	66.0#
51	31.0	20.2	41.9





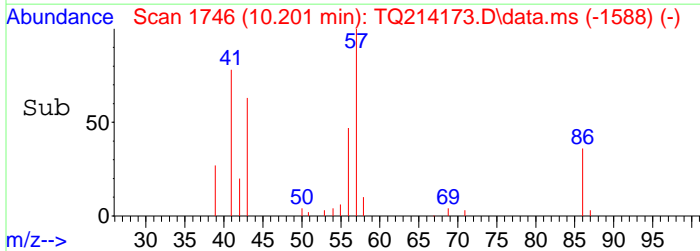
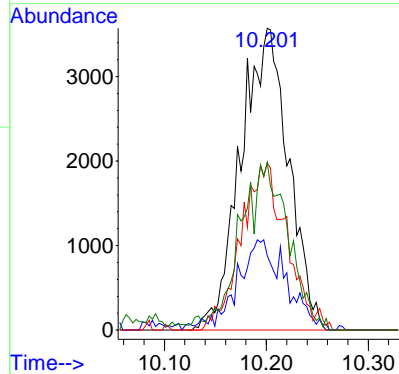
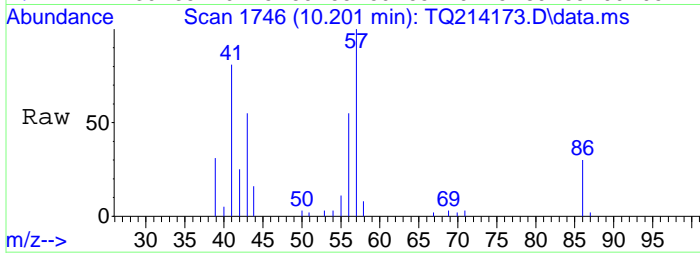
#20
 Carbon disulfide
 Concen: 0.10 ppbv
 RT: 9.426 min Scan# 1505
 Delta R.T. -0.010 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

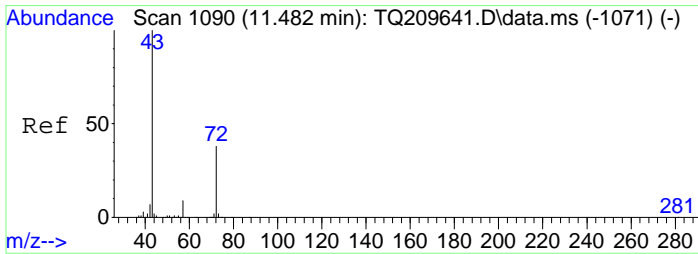
Tgt Ion: 76 Resp: 7588
 Ion Ratio Lower Upper
 76 100
 44 0.0 8.3 17.3#



#23
 Hexane
 Concen: 0.33 ppbv
 RT: 10.201 min Scan# 1746
 Delta R.T. 0.007 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

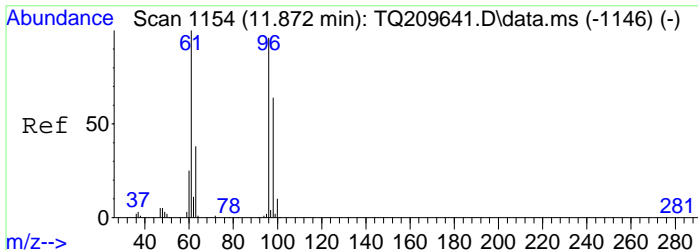
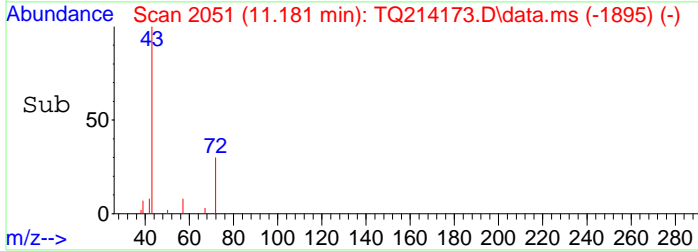
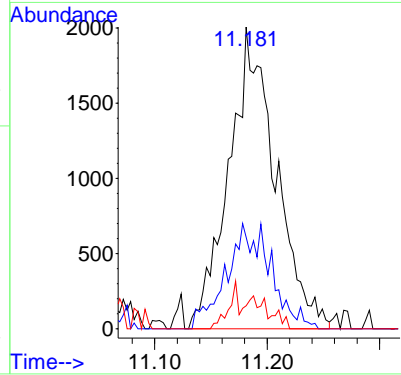
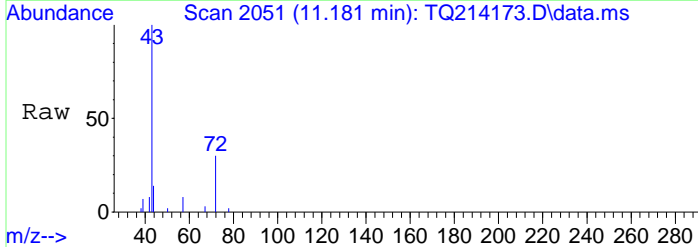
Tgt Ion: 57 Resp: 11649
 Ion Ratio Lower Upper
 57 100
 42 0.0 21.6 45.0#
 43 51.9 42.0 87.2
 56 35.9 33.3 69.1





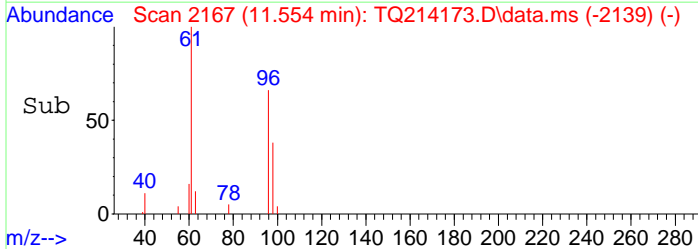
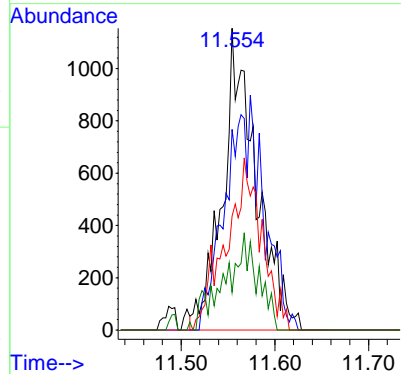
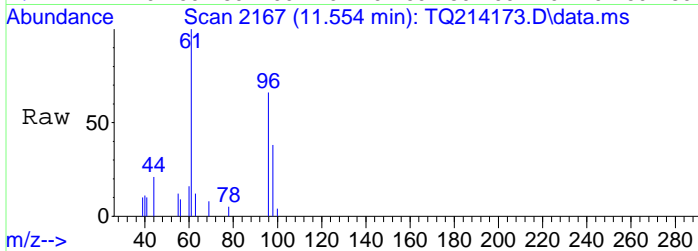
#26
 2-Butanone
 Concen: 0.15 ppbv
 RT: 11.181 min Scan# 2051
 Delta R.T. 0.000 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

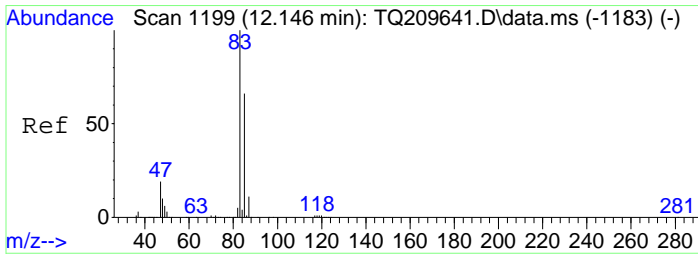
Tgt Ion	Resp	Lower	Upper
43	100		
72	18.0	16.1	33.5
57	0.0	4.9	10.3#



#28
 cis-1,2-Dichloroethylene
 Concen: 0.08 ppbv m
 RT: 11.554 min Scan# 2167
 Delta R.T. -0.010 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

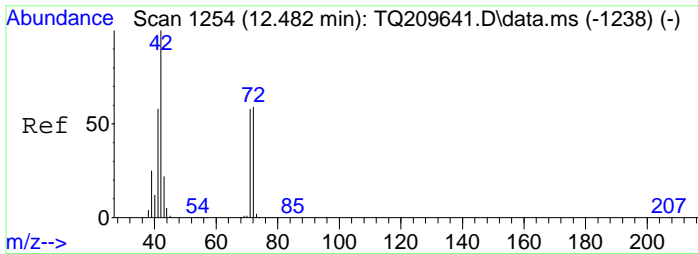
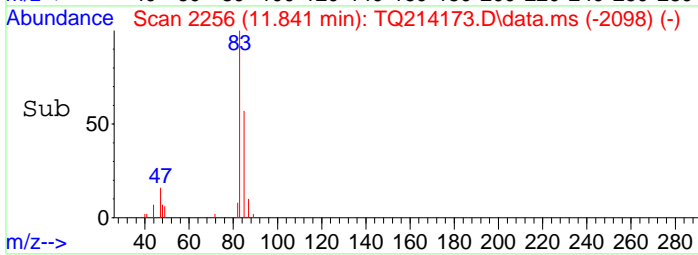
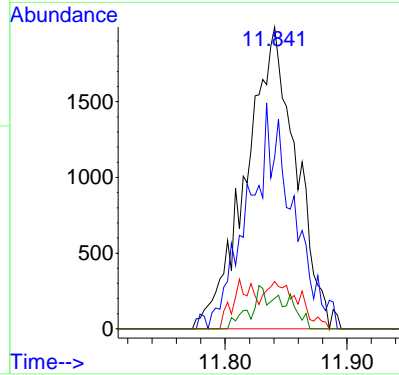
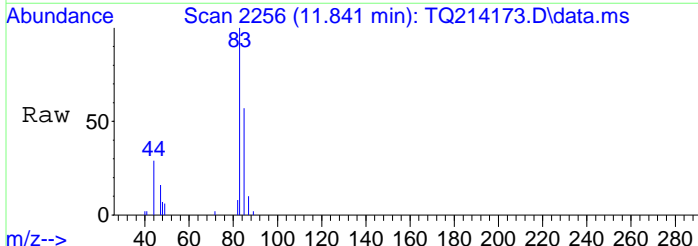
Tgt Ion	Resp	Lower	Upper
61	100		
96	50.9	39.8	82.8
98	45.0	25.5	52.9
63	0.0	17.3	35.9#





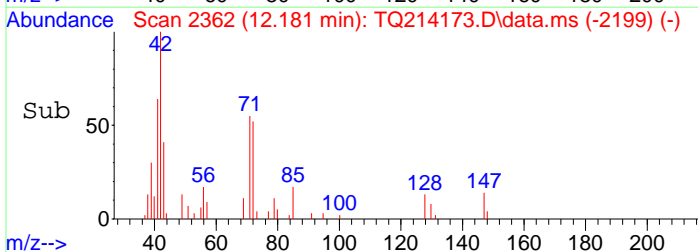
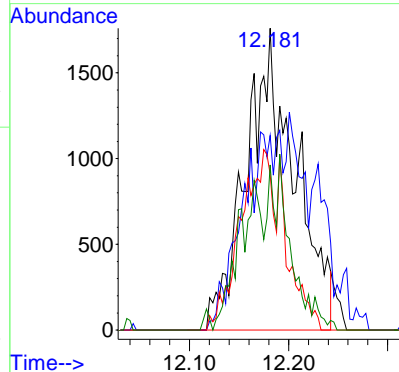
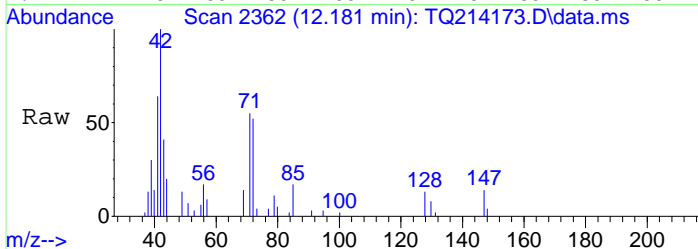
#29
 Chloroform
 Concen: 0.08 ppbv
 RT: 11.841 min Scan# 2256
 Delta R.T. 0.007 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

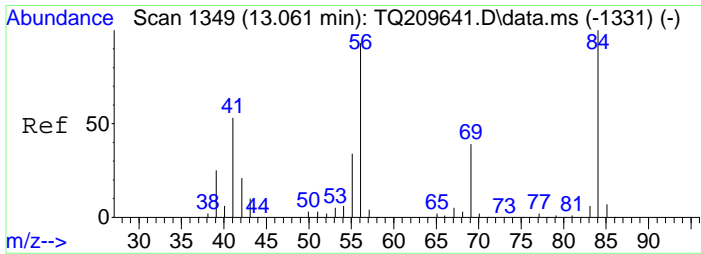
Tgt Ion	Resp	Lower	Upper
83	100		
85	20.1	41.7	86.7#
47	0.0	15.1	31.5#
87	0.0	6.7	13.9#



#30
 Tetrahydrofuran
 Concen: 0.29 ppbv m
 RT: 12.181 min Scan# 2362
 Delta R.T. 0.025 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

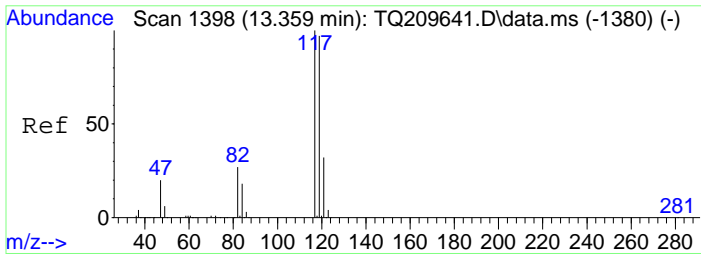
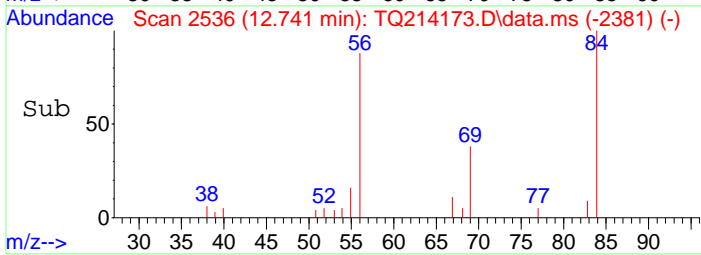
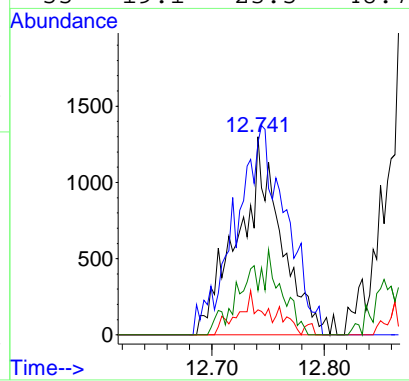
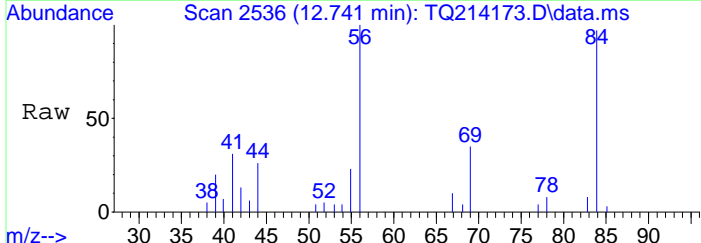
Tgt Ion	Resp	Lower	Upper
42	100		
41	0.0	35.2	73.0#
72	0.0	27.2	56.6#
71	10.9	25.9	53.7#





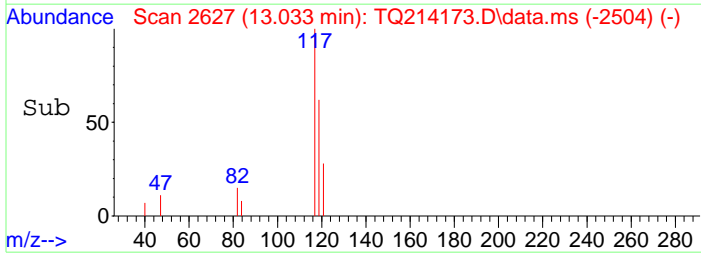
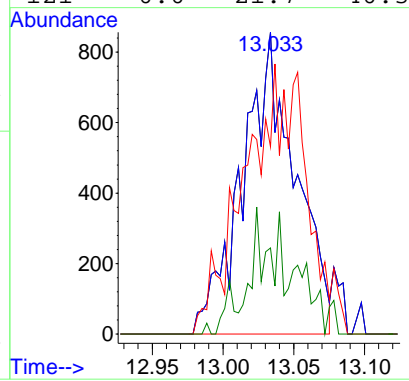
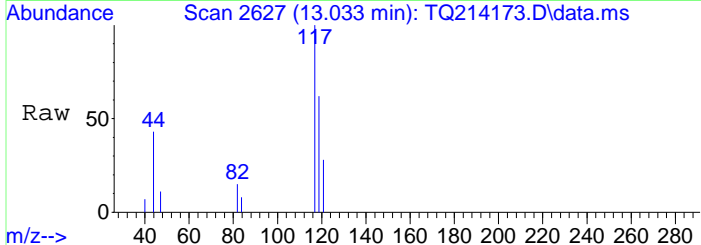
#32
 Cyclohexane
 Concen: 0.11 ppbv m
 RT: 12.741 min Scan# 2536
 Delta R.T. -0.000 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

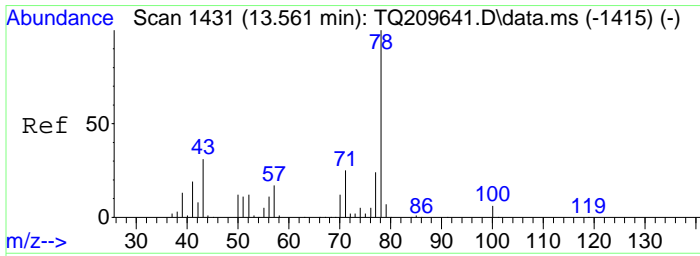
Tgt Ion	Resp	Lower	Upper
56	3447		
84	100	54.1	112.3#
42	0.0	15.3	31.7#
55	19.1	23.5	48.7#



#33
 Carbon Tetrachloride
 Concen: 0.03 ppbv
 RT: 13.033 min Scan# 2627
 Delta R.T. -0.004 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

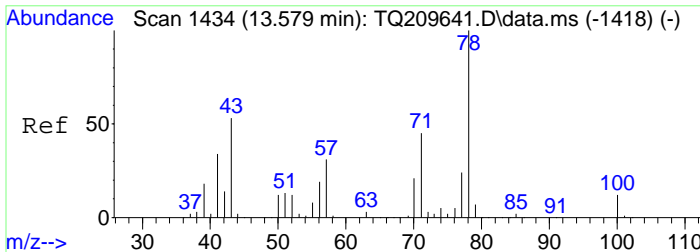
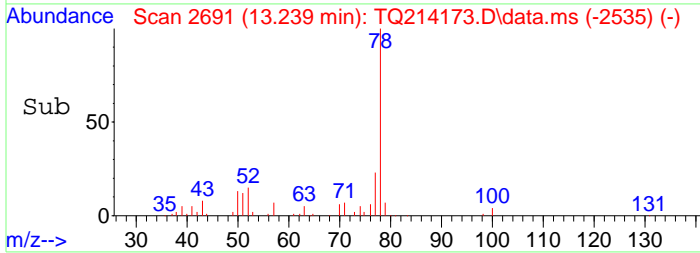
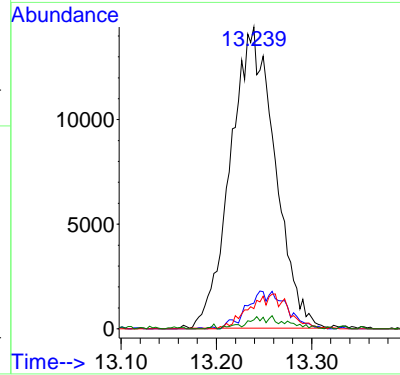
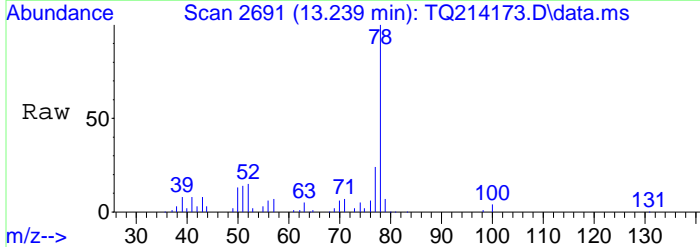
Tgt Ion	Resp	Lower	Upper
117	2216		
117	100	80.0	120.0
119	33.3	76.9	115.3#
121	0.0	21.7	40.3#





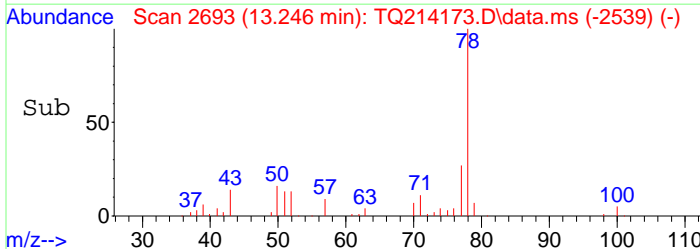
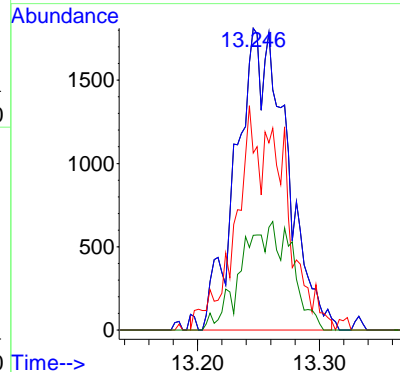
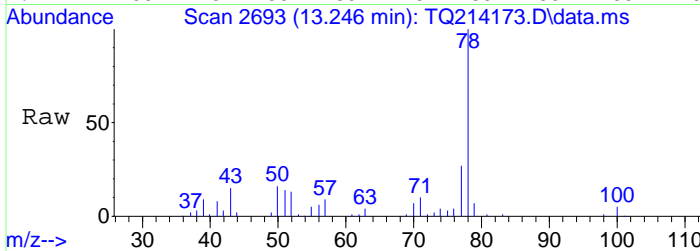
#35
Benzene
Concen: 0.50 ppbv
RT: 13.239 min Scan# 2691
Delta R.T. 0.000 min
Lab File: TQ214173.D
Acq: 9 Apr 2021 6:27 am

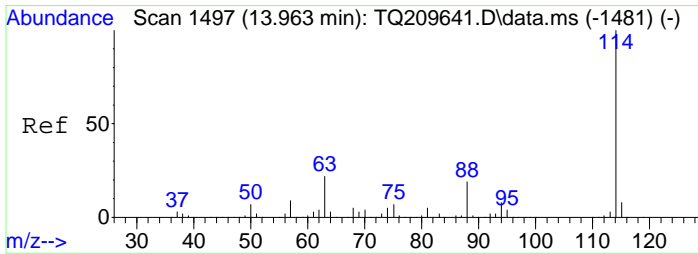
Tgt Ion	Resp	Lower	Upper
78	100		
43	3.9	37.5	77.9#
71	4.9	22.0	45.8#
42	0.0	8.8	18.4#



#36
n-Heptane
Concen: 0.17 ppbv m
RT: 13.246 min Scan# 2693
Delta R.T. -0.006 min
Lab File: TQ214173.D
Acq: 9 Apr 2021 6:27 am

Tgt Ion	Resp	Lower	Upper
43	100		
43	34.5	80.0	120.0#
57	0.0	42.6	64.0#
100	15.6	13.3	19.9

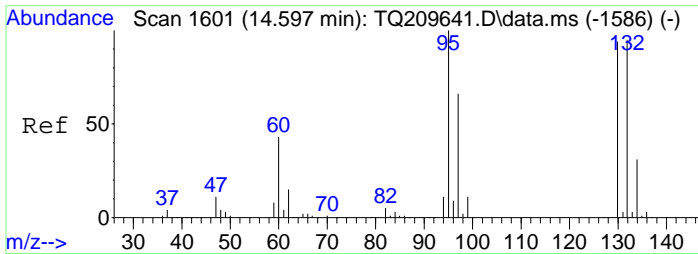
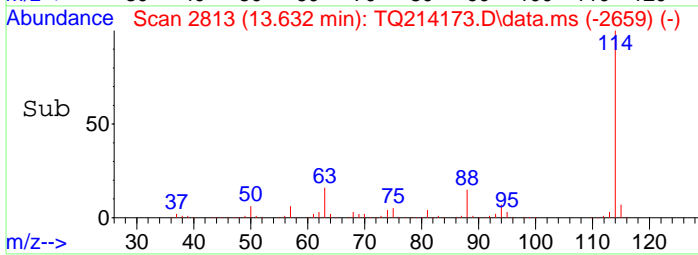
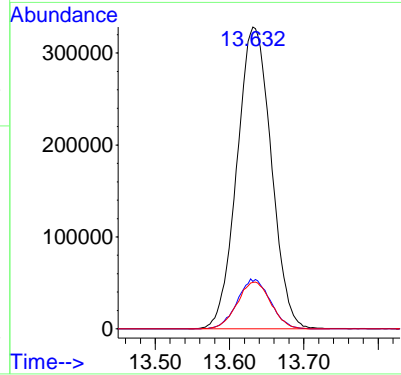
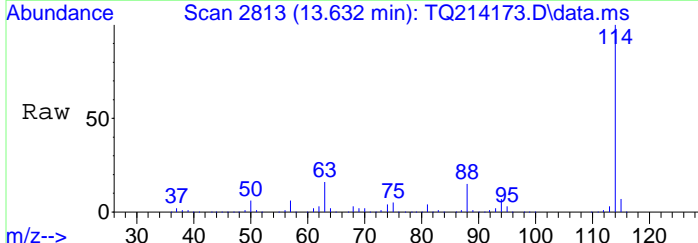




#37
 1,4-Difluorobenzene
 Concen: 10.00 ppbv
 RT: 13.632 min Scan# 2813
 Delta R.T. -0.003 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

Tgt Ion: 114 Resp: 1052000

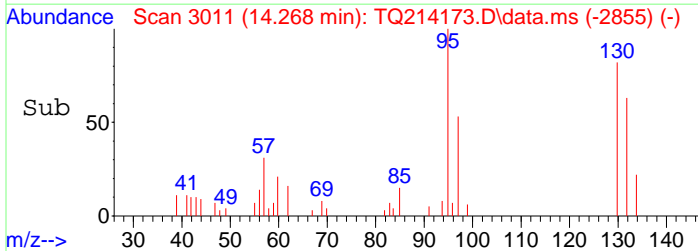
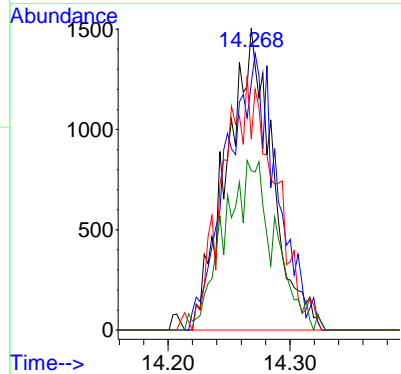
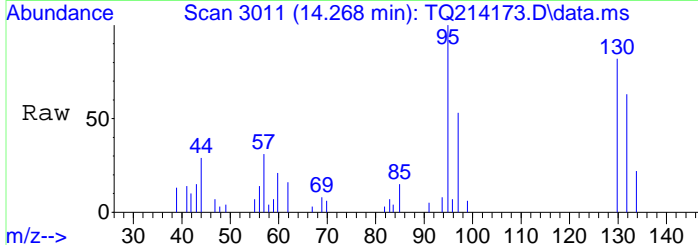
Ion	Ratio	Lower	Upper
114	100		
63	16.0	12.9	26.9
88	15.3	10.7	22.3

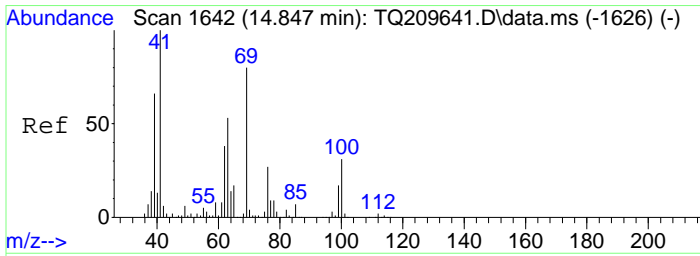


#38
 Trichloroethylene
 Concen: 0.08 ppbv
 RT: 14.268 min Scan# 3011
 Delta R.T. 0.000 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

Tgt Ion: 95 Resp: 3915

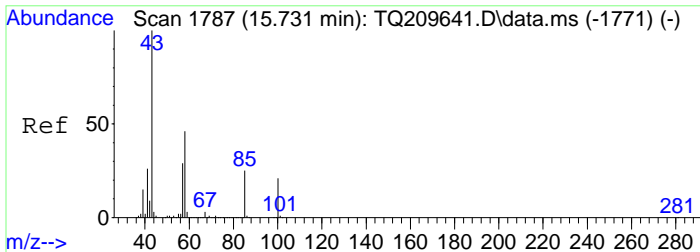
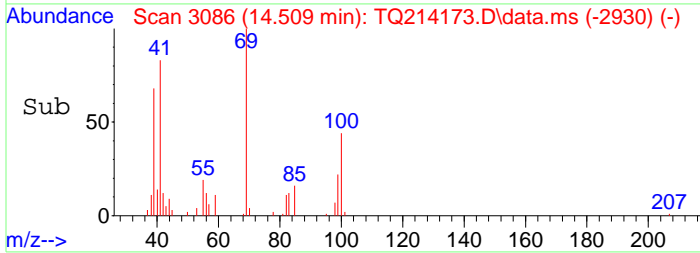
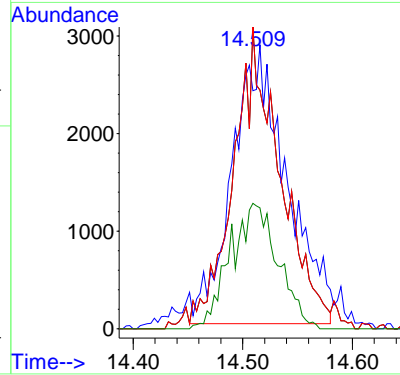
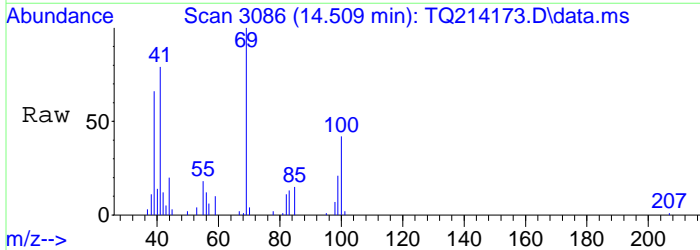
Ion	Ratio	Lower	Upper
95	100		
130	101.3	66.0	137.0
132	41.0	63.3	131.5#
97	49.6	41.9	87.1





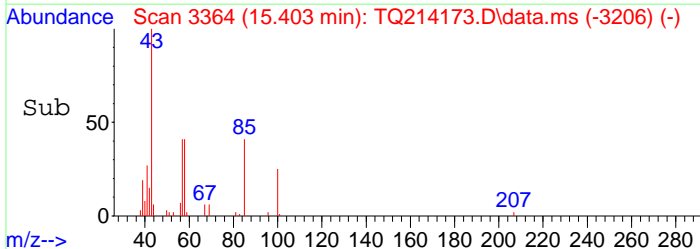
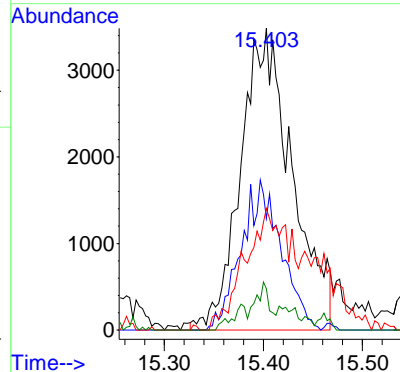
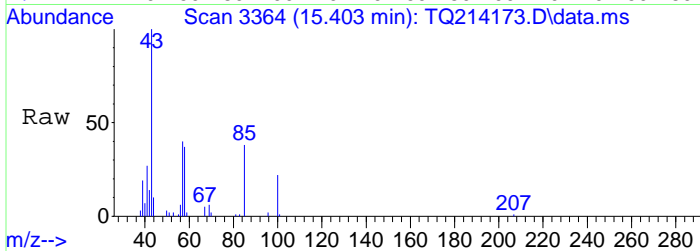
#40
Methyl Methacrylate
Concen: 0.29 ppbv
RT: 14.509 min Scan# 3086
Delta R.T. 0.000 min
Lab File: TQ214173.D
Acq: 9 Apr 2021 6:27 am

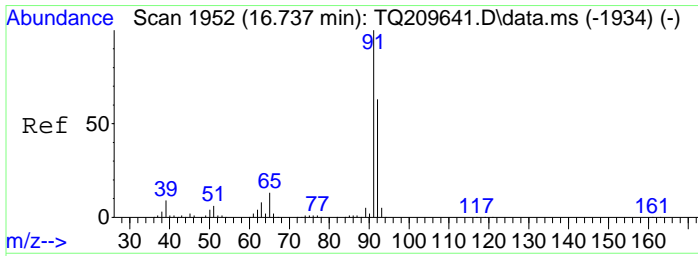
Tgt Ion	Resp	Lower	Upper
69	100		
41	0.0	70.0	210.0#
69	100.0	50.0	150.0
100	33.9	17.5	52.5



#43
Methyl Isobutyl Ketone
Concen: 0.27 ppbv m
RT: 15.403 min Scan# 3364
Delta R.T. 0.009 min
Lab File: TQ214173.D
Acq: 9 Apr 2021 6:27 am

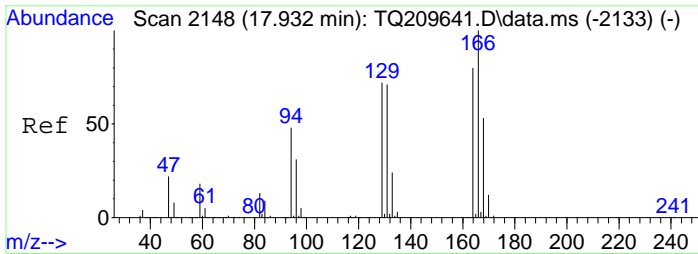
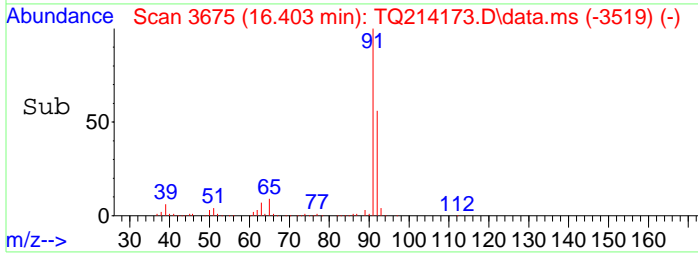
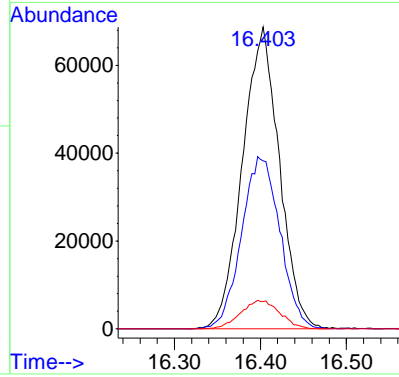
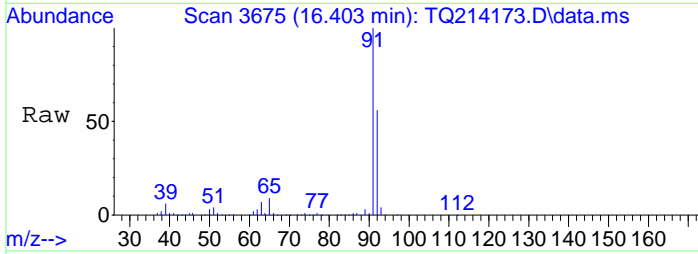
Tgt Ion	Resp	Lower	Upper
43	100		
58	14.7	25.1	52.1#
57	0.0	15.5	32.3#
42	0.0	5.0	15.0#





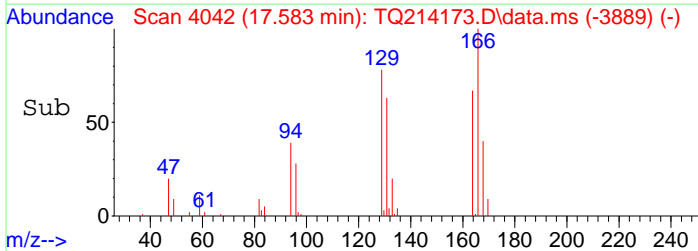
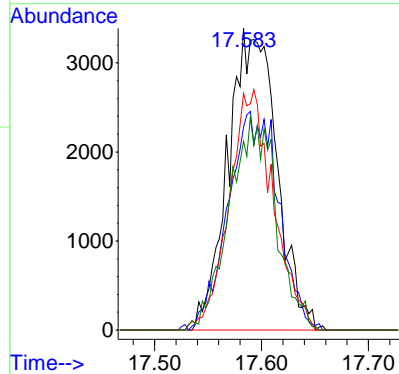
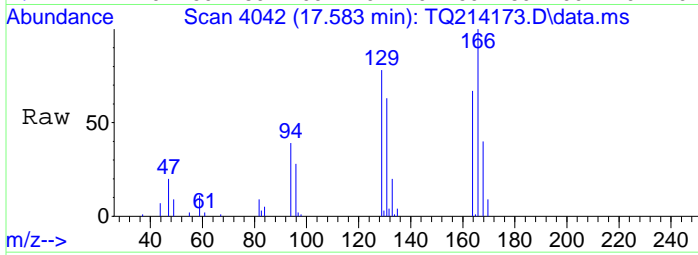
#45
Toluene
Concen: 1.57 ppbv
RT: 16.403 min Scan# 3675
Delta R.T. 0.003 min
Lab File: TQ214173.D
Acq: 9 Apr 2021 6:27 am

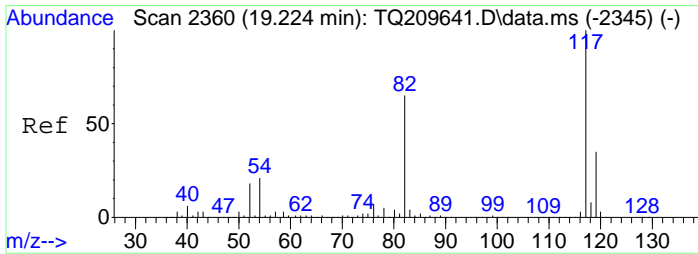
Tgt Ion	Resp	Lower	Upper
91	100		
92	59.5	38.7	80.3
65	10.0	7.5	15.5



#50
Tetrachloroethylene
Concen: 0.14 ppbv
RT: 17.583 min Scan# 4042
Delta R.T. -0.007 min
Lab File: TQ214173.D
Acq: 9 Apr 2021 6:27 am

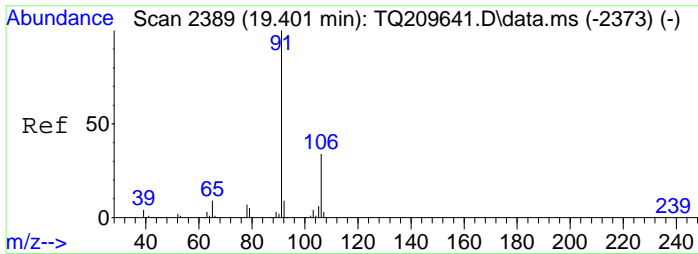
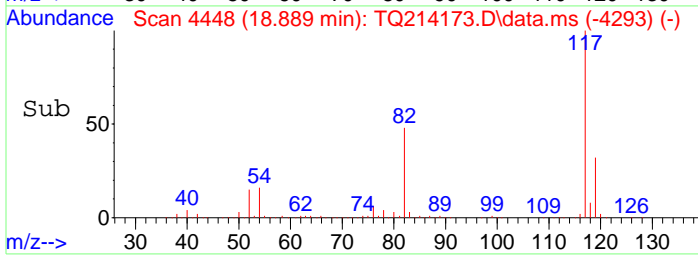
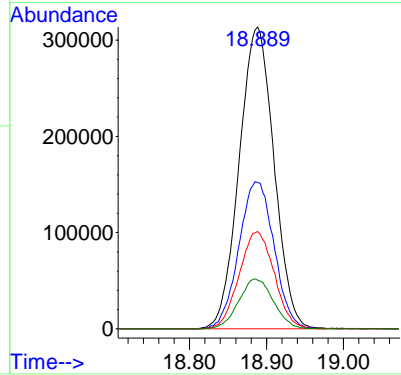
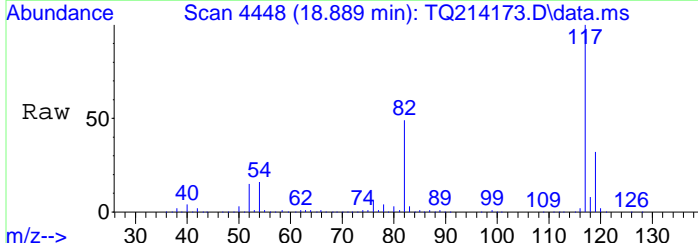
Tgt Ion	Resp	Lower	Upper
166	100		
164	39.8	51.0	106.0#
129	72.7	48.1	99.9
131	45.1	46.3	96.3#





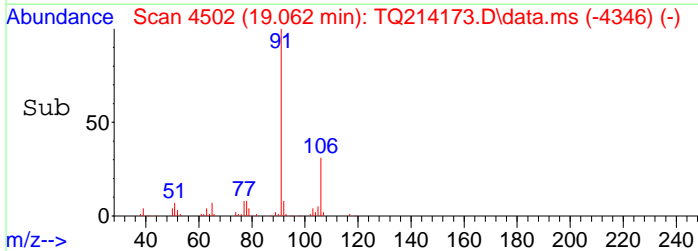
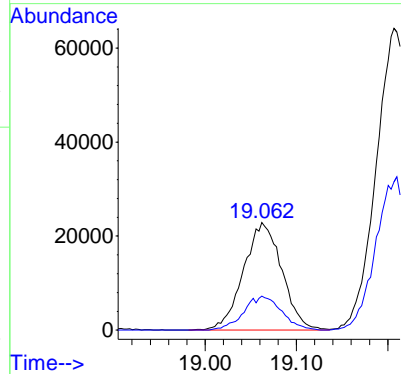
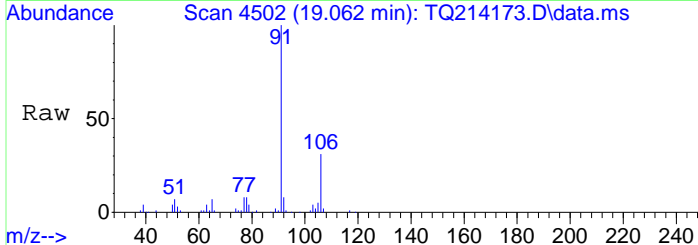
#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 18.889 min Scan# 4448
 Delta R.T. -0.000 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

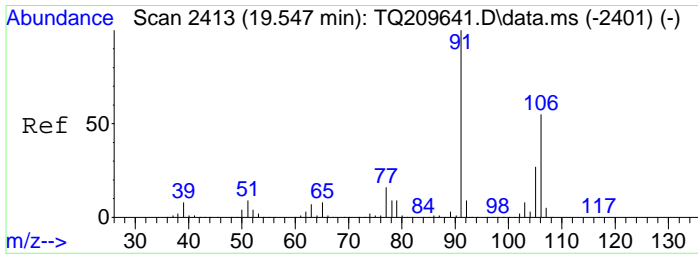
Tgt Ion	Resp	Lower	Upper
117	986763		
82	49.3	37.1	77.1
119	32.4	22.1	45.9
54	16.5	13.8	28.6



#56
 Ethylbenzene
 Concen: 0.36 ppbv
 RT: 19.062 min Scan# 4502
 Delta R.T. 0.000 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

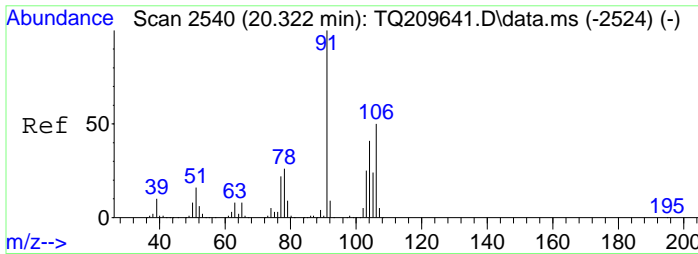
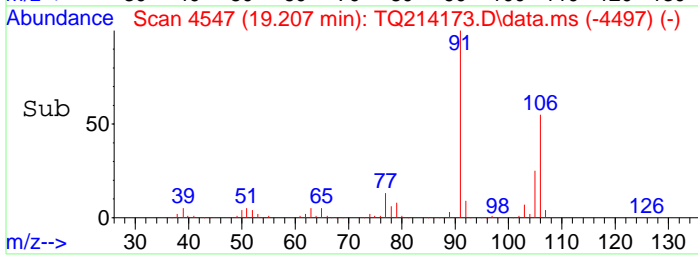
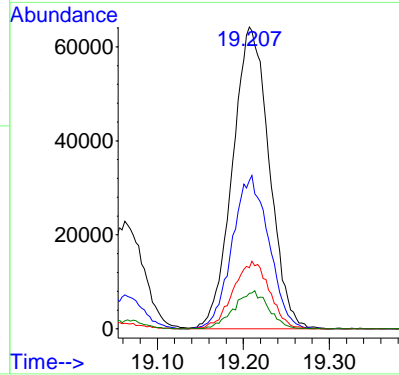
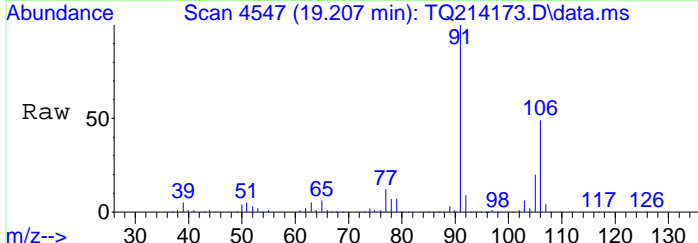
Tgt Ion	Resp	Lower	Upper
91	66925		
106	31.1	20.5	42.7





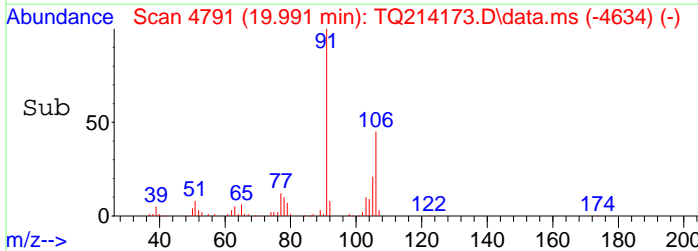
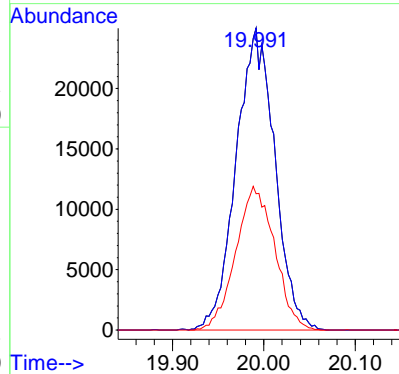
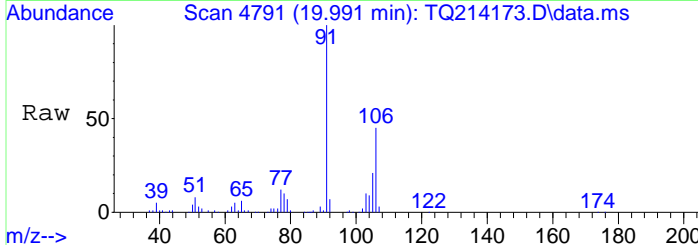
#57
 p- & m-Xylenes
 Concen: 1.36 ppbv
 RT: 19.207 min Scan# 4547
 Delta R.T. -0.000 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

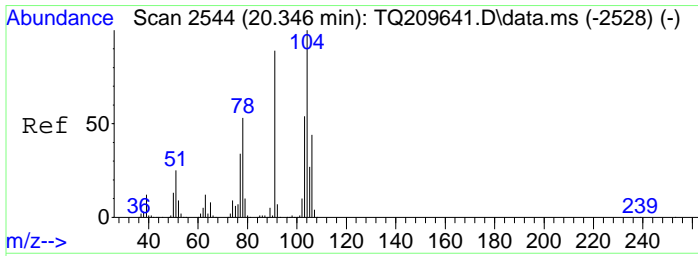
Tgt Ion	Resp	Lower	Upper
91	190436		
106	50.7	32.6	67.8
105	22.3	14.5	30.1
77	11.8	8.5	17.7



#58
 o-Xylene
 Concen: 0.53 ppbv
 RT: 19.991 min Scan# 4791
 Delta R.T. 0.003 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

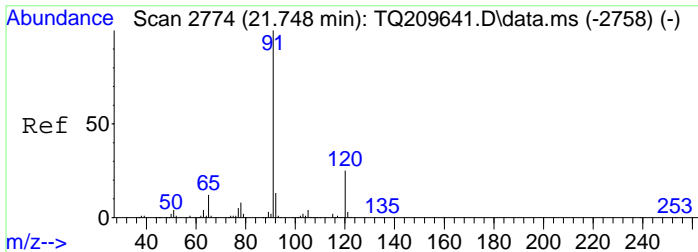
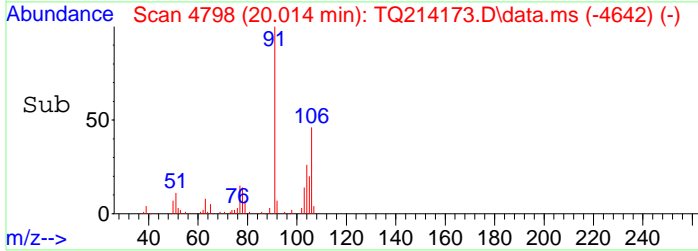
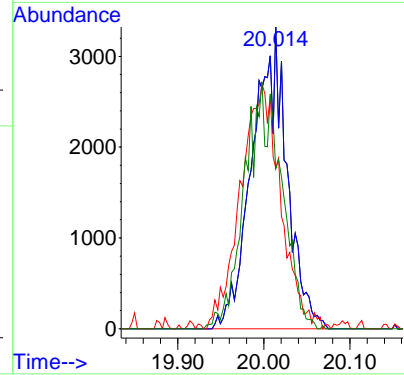
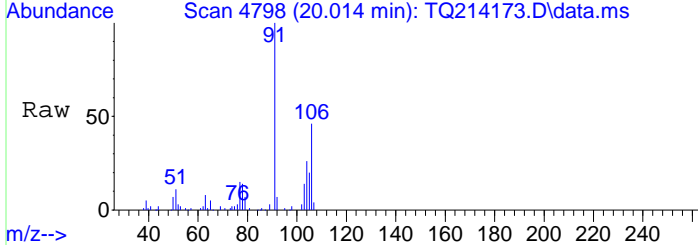
Tgt Ion	Resp	Lower	Upper
91	73493		
91	100.0	80.0	120.0
106	47.9	38.2	57.2





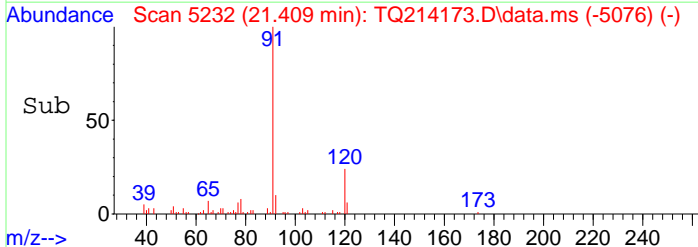
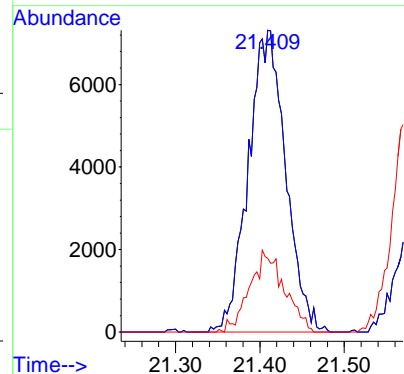
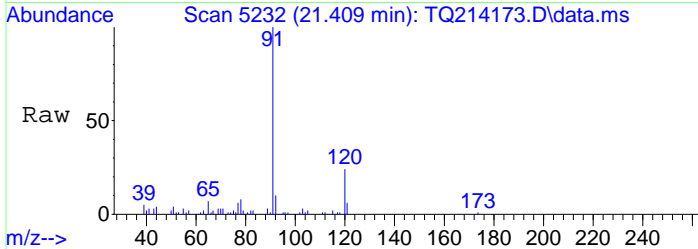
#59
 Styrene
 Concen: 0.08 ppbv m
 RT: 20.014 min Scan# 4798
 Delta R.T. 0.003 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

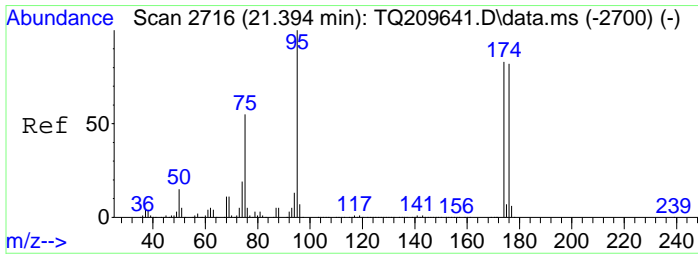
Tgt Ion	Resp	Lower	Upper
104	9233		
104	100		
104	39.3	65.0	135.0#
78	0.0	0.0	0.0
103	0.0	0.0	0.0



#61
 n-Propylbenzene
 Concen: 0.09 ppbv m
 RT: 21.409 min Scan# 5232
 Delta R.T. 0.000 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

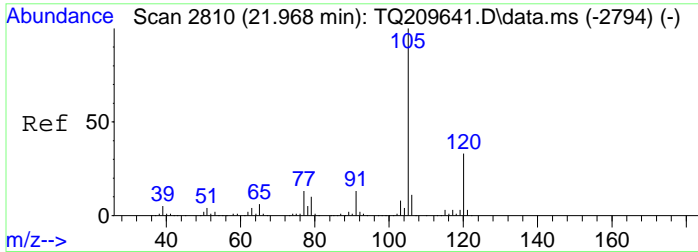
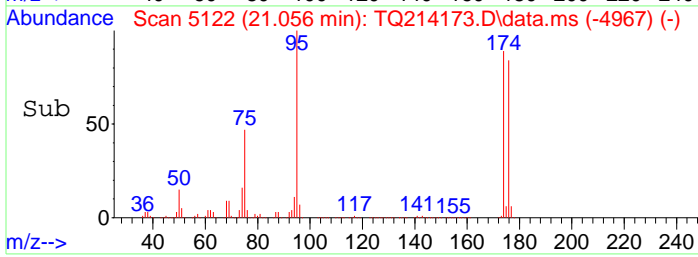
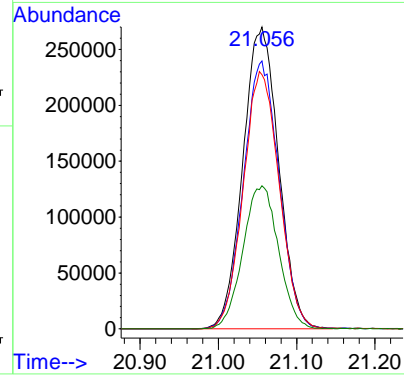
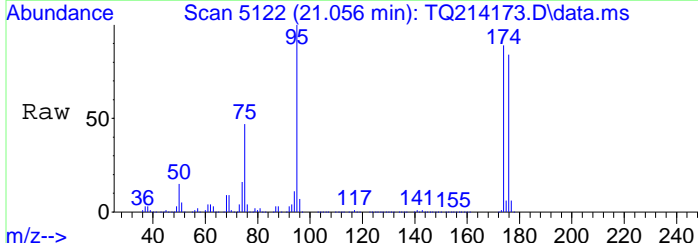
Tgt Ion	Resp	Lower	Upper
91	22569		
91	100		
91	48.2	80.0	120.0#
120	25.0	10.0	30.0





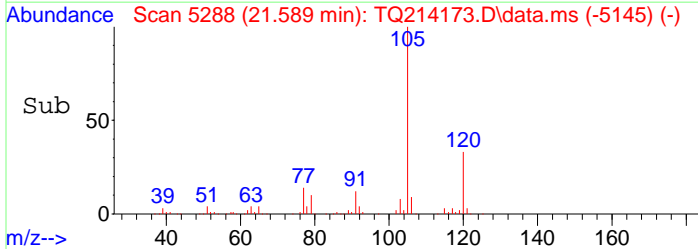
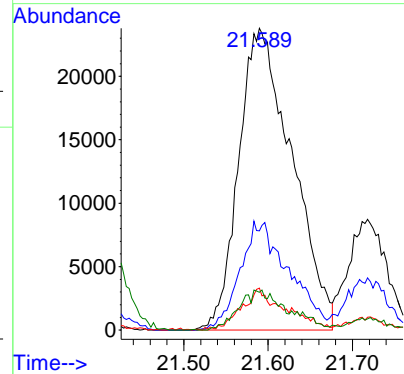
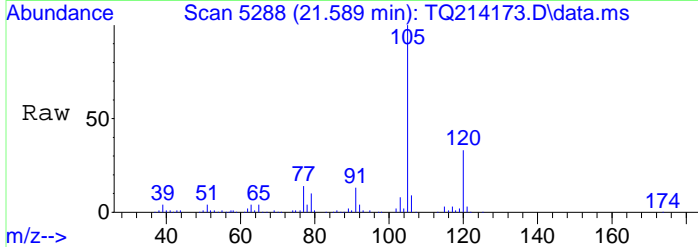
#64
 p-Bromofluorobenzene
 Concen: 9.69 ppbv
 RT: 21.056 min Scan# 5122
 Delta R.T. -0.000 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

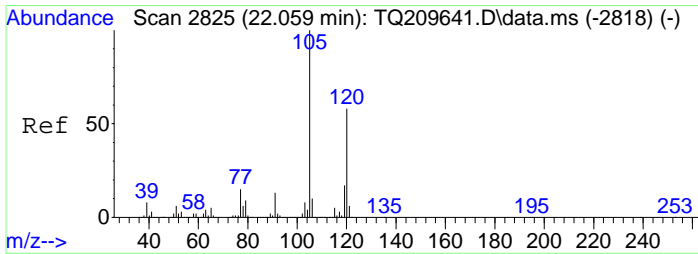
Tgt Ion	Resp	Lower	Upper
95	858329		
174	88.5	53.2	110.6
176	85.5	51.6	107.2
75	47.3	30.7	63.7



#65
 4-Ethyltoluene
 Concen: 0.48 ppbv
 RT: 21.589 min Scan# 5288
 Delta R.T. -0.042 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

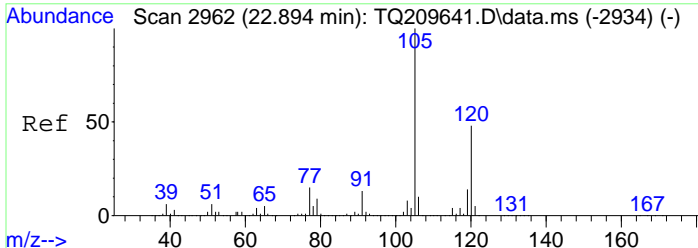
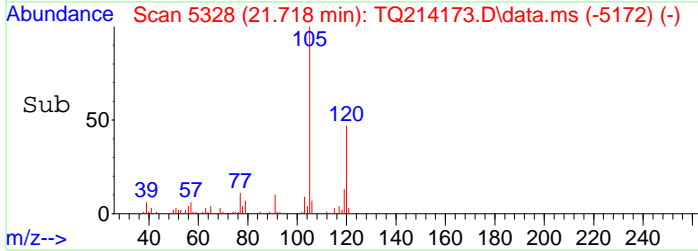
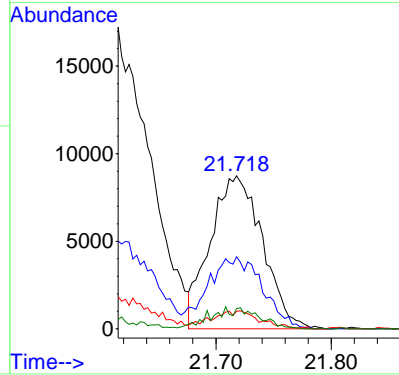
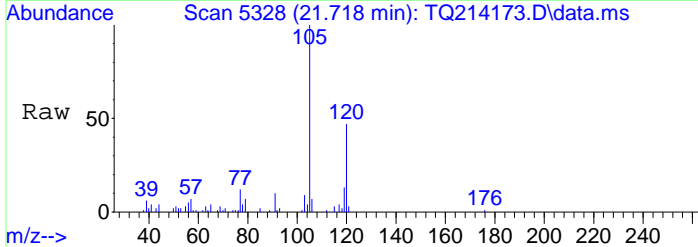
Tgt Ion	Resp	Lower	Upper
105	104464		
120	13.5	19.6	40.8#
77	8.3	7.3	15.3
91	1.0	7.1	14.7#





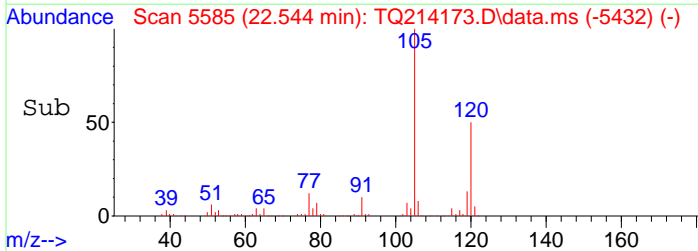
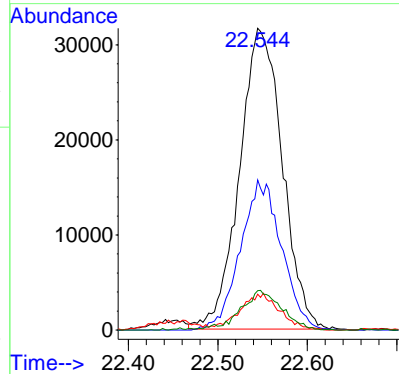
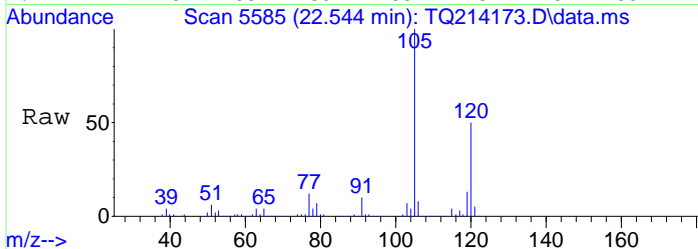
#66
 1,3,5-Trimethylbenzene
 Concen: 0.15 ppbv
 RT: 21.718 min Scan# 5328
 Delta R.T. 0.000 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

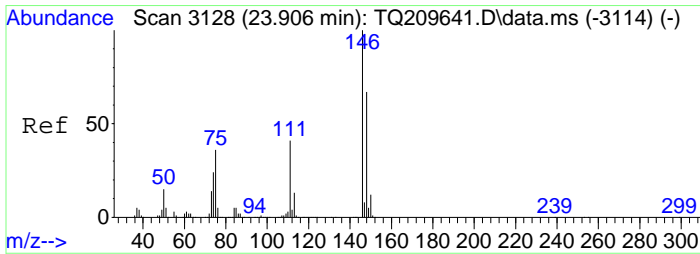
Tgt Ion	Resp	Lower	Upper
105	27559		
120	16.6	39.2	58.8#
77	4.9	10.1	15.1#
119	6.6	6.1	18.3



#68
 1,2,4-Trimethylbenzene
 Concen: 0.56 ppbv
 RT: 22.544 min Scan# 5585
 Delta R.T. -0.007 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

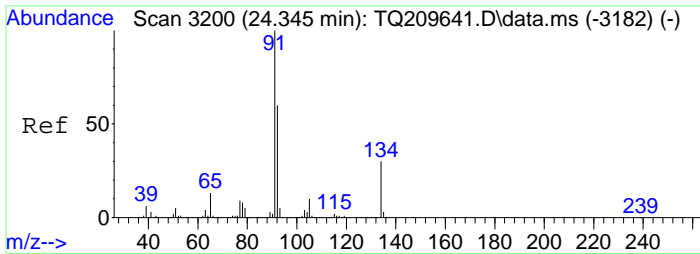
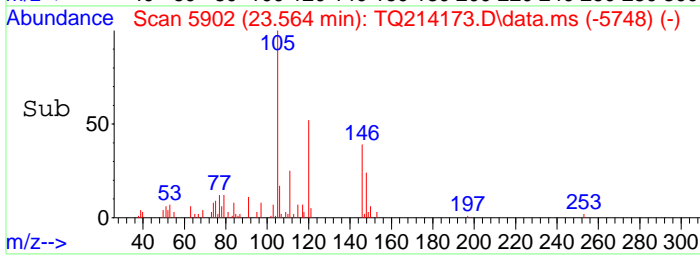
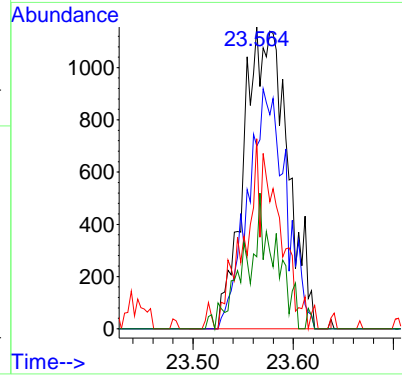
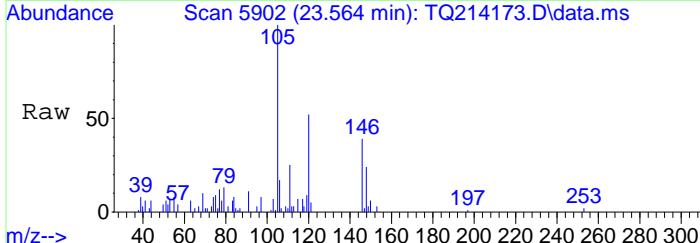
Tgt Ion	Resp	Lower	Upper
105	105859		
120	47.9	30.2	62.6
77	11.2	8.1	16.9
119	11.9	7.8	16.2





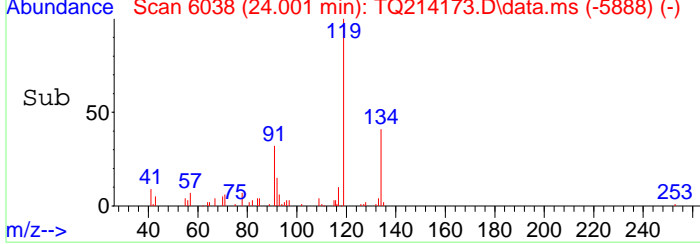
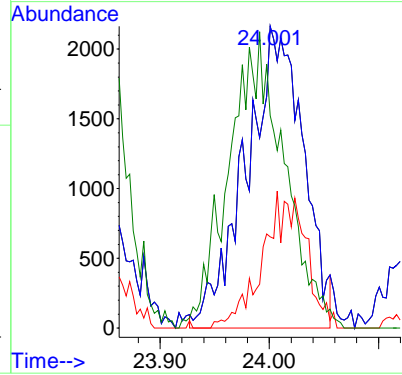
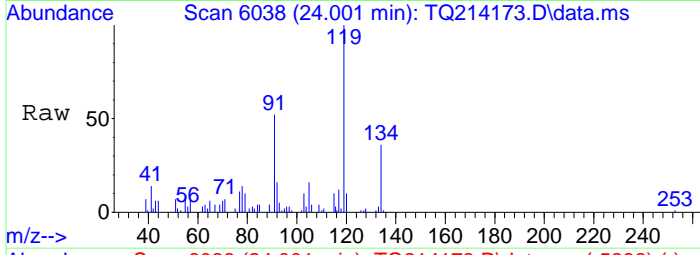
#72
 1,4-Dichlorobenzene
 Concen: 0.02 ppbv m
 RT: 23.564 min Scan# 5902
 Delta R.T. -0.006 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

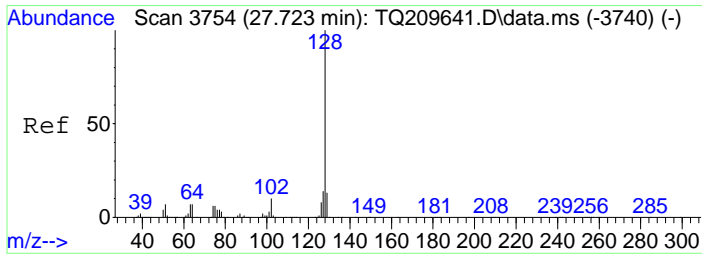
Tgt Ion	Resp	Lower	Upper
146	100		
148	0.0	41.6	86.4#
111	22.4	24.8	51.6#
75	0.0	19.0	39.6#



#74
 n-Butylbenzene
 Concen: 0.04 ppbv m
 RT: 24.001 min Scan# 6038
 Delta R.T. -0.016 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

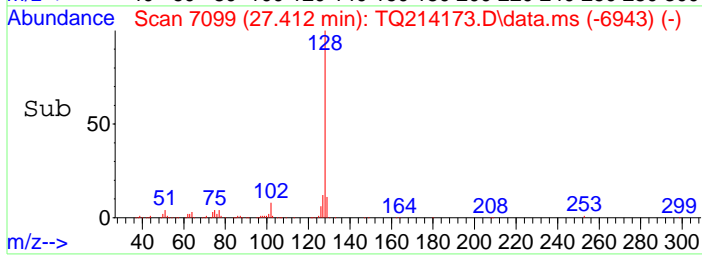
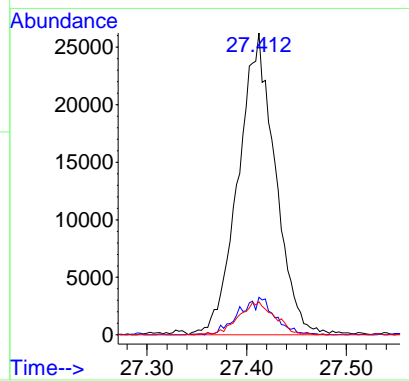
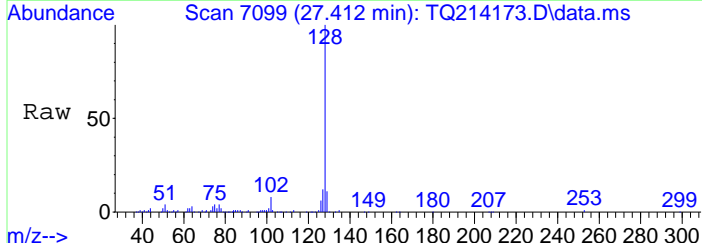
Tgt Ion	Resp	Lower	Upper
91	100		
91	20.3	80.0	120.0#
92	15.7	44.0	66.0#
134	22.4	12.5	37.5





#78
 Naphthalene
 Concen: 0.16 ppbv
 RT: 27.412 min Scan# 7099
 Delta R.T. 0.000 min
 Lab File: TQ214173.D
 Acq: 9 Apr 2021 6:27 am

Tgt Ion	Resp	Lower	Upper
128	67718		
127	6.0	8.1	16.9#
129	10.8	7.1	14.7



Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Soil Vapor Laboratory ID: 21D0348-03 File ID: TQ214174.D
 Sampled: 04/08/21 10:30 Prepared: 04/08/21 22:00 Analyzed: 04/09/21 07:31
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.79	1.23	U
71-55-6	1,1,1-Trichloroethane	1.79	0.979	U
79-34-5	1,1,2,2-Tetrachloroethane	1.79	1.23	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.79	1.37	U
79-00-5	1,1,2-Trichloroethane	1.79	0.979	U
75-34-3	1,1-Dichloroethane	1.79	0.726	U
75-35-4	1,1-Dichloroethylene	1.79	0.356	U
120-82-1	1,2,4-Trichlorobenzene	1.79	1.33	U
95-63-6	1,2,4-Trimethylbenzene	1.79	4.14	D
106-93-4	1,2-Dibromoethane	1.79	1.38	U
95-50-1	1,2-Dichlorobenzene	1.79	1.08	U
107-06-2	1,2-Dichloroethane	1.79	0.726	U
78-87-5	1,2-Dichloropropane	1.79	0.829	U
76-14-2	1,2-Dichlorotetrafluoroethane	1.79	1.25	U
108-67-8	1,3,5-Trimethylbenzene	1.79	1.15	D
106-99-0	1,3-Butadiene	1.79	1.19	U
541-73-1	1,3-Dichlorobenzene	1.79	1.08	U
142-28-9	1,3-Dichloropropane	1.79	0.829	U
106-46-7	1,4-Dichlorobenzene	1.79	1.08	U
123-91-1	1,4-Dioxane	1.79	1.29	U
78-93-3	2-Butanone	1.79	1.59	D
591-78-6	2-Hexanone	1.79	1.47	U
107-05-1	3-Chloropropene	1.79	2.81	U
108-10-1	4-Methyl-2-pentanone	1.79	2.35	D
67-64-1	Acetone	1.79	7.46	D
107-13-1	Acrylonitrile	1.79	0.389	U
71-43-2	Benzene	1.79	5.33	D
100-44-7	Benzyl chloride	1.79	0.929	U
75-27-4	Bromodichloromethane	1.79	1.20	U
75-25-2	Bromoform	1.79	1.85	U
74-83-9	Bromomethane	1.79	0.697	U
75-15-0	Carbon disulfide	1.79	0.559	D
56-23-5	Carbon tetrachloride	1.79	0.451	D
108-90-7	Chlorobenzene	1.79	0.826	U
75-00-3	Chloroethane	1.79	0.473	U
67-66-3	Chloroform	1.79	0.876	U
74-87-3	Chloromethane	1.79	0.963	D
156-59-2	cis-1,2-Dichloroethylene	1.79	0.356	U
10061-01-5	cis-1,3-Dichloropropylene	1.79	0.814	U
110-82-7	Cyclohexane	1.79	1.48	D

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Soil Vapor Laboratory ID: 21D0348-03 File ID: TQ214174.D
 Sampled: 04/08/21 10:30 Prepared: 04/08/21 22:00 Analyzed: 04/09/21 07:31
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
124-48-1	Dibromochloromethane	1.79	1.53	U
75-71-8	Dichlorodifluoromethane	1.79	2.31	D
141-78-6	Ethyl acetate	1.79	1.29	U
100-41-4	Ethyl Benzene	1.79	3.27	D
87-68-3	Hexachlorobutadiene	1.79	1.91	U
67-63-0	Isopropanol	1.79	5.95	D
80-62-6	Methyl Methacrylate	1.79	1.62	D
1634-04-4	Methyl tert-butyl ether (MTBE)	1.79	0.647	U
75-09-2	Methylene chloride	1.79	7.10	D
142-82-5	n-Heptane	1.79	2.57	D
110-54-3	n-Hexane	1.79	6.01	D
95-47-6	o-Xylene	1.79	4.60	D
179601-23-1	p- & m- Xylenes	1.79	11.8	D
622-96-8	p-Ethyltoluene	1.79	3.70	D
115-07-1	Propylene	1.79	0.309	U
100-42-5	Styrene	1.79	0.764	U
127-18-4	Tetrachloroethylene	1.79	1.22	U
109-99-9	Tetrahydrofuran	1.79	1.32	D
108-88-3	Toluene	1.79	17.1	D
156-60-5	trans-1,2-Dichloroethylene	1.79	0.711	U
10061-02-6	trans-1,3-Dichloropropylene	1.79	0.814	U
79-01-6	Trichloroethylene	1.79	0.241	U
75-69-4	Trichlorofluoromethane (Freon 11)	1.79	1.51	D
108-05-4	Vinyl acetate	1.79	0.632	U
593-60-2	Vinyl bromide	1.79	0.785	U
75-01-4	Vinyl Chloride	1.79	0.229	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	188336	12.066	189488	12.075	
ISTD: 1,4-Difluorobenzene	1072609	13.635	1051211	13.641	
ISTD: d5-Chlorobenzene	1032080	18.885	1007357	18.885	

* Values outside of QC limits

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214174.D
 Acq On : 9 Apr 2021 7:31 am
 Operator : LLJ
 Sample : 21D0348-03
 Misc : QBTO2040821A 1X/400ML
 ALS Vial : 14 Sample Multiplier: 1.794
 InstName : TO15_AIR2

Quant Time: Apr 09 09:38:52 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

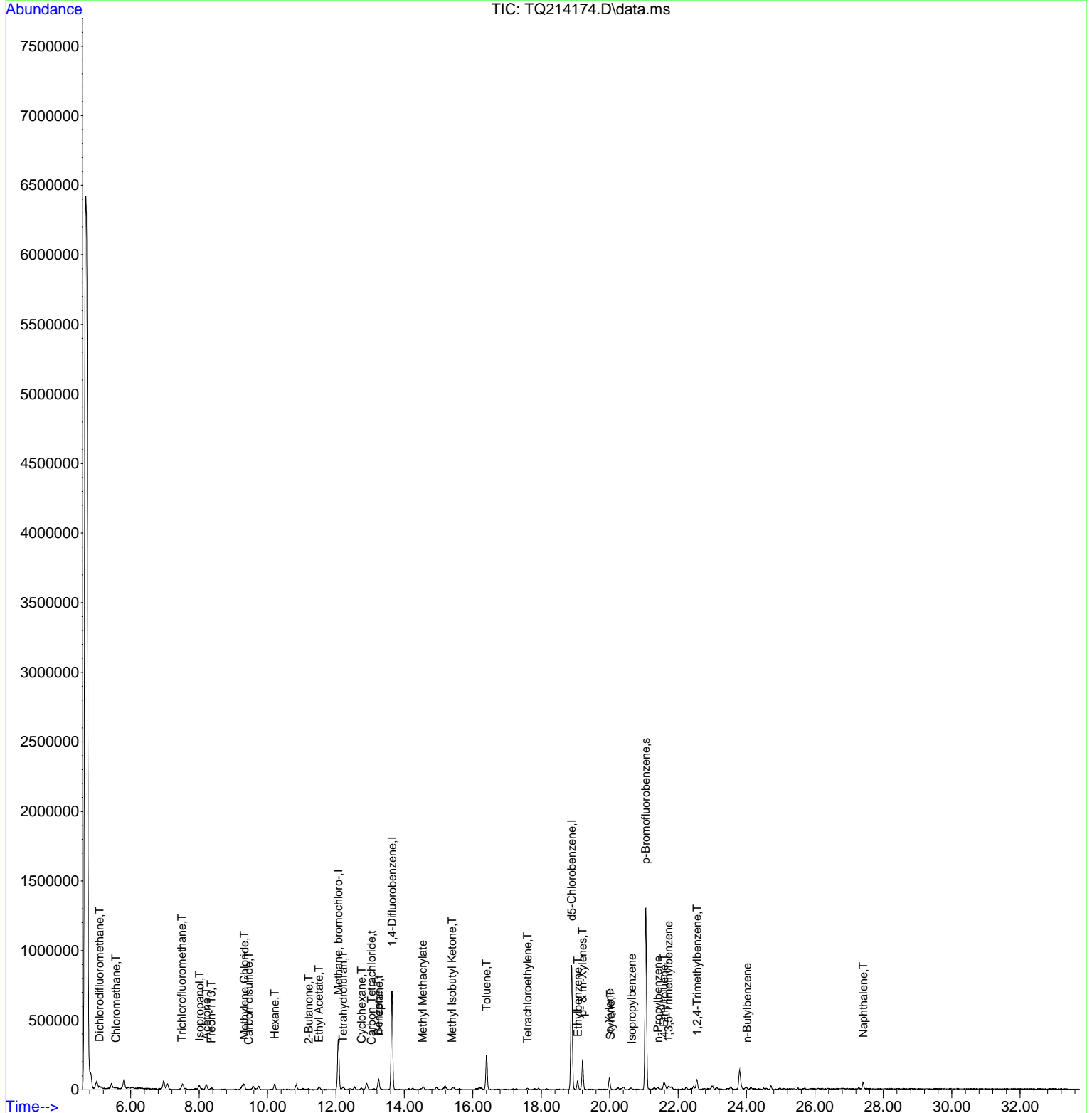
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

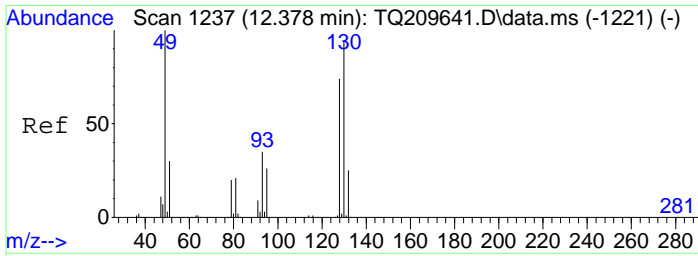
Internal Standards						
1) Methane, bromochloro-	12.066	49	188336	10.00	ppbv	# 0.00
37) 1,4-Difluorobenzene	13.635	114	1072609	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.885	117	1032080	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.052	95	887992	9.59	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	95.90%	
Target Compounds						
						Qvalue
3) Dichlorodifluoromethane	5.088	85	23094	0.26	ppbv	# 93
5) Chloromethane	5.568	50	3270m	0.26	ppbv	
11) Trichlorofluoromethane	7.487	101	13923m	0.15	ppbv	
12) Isopropanol	8.005	45	58571	1.35	ppbv	# 99
14) Acetone	8.207	43	67811	1.75	ppbv	99
15) Freon-113	8.346	101	2442m	0.04	ppbv	
18) Methylene Chloride	9.320	49	27777	1.14	ppbv	# 58
20) Carbon disulfide	9.445	76	7513m	0.10	ppbv	
23) Hexane	10.207	57	34328	0.95	ppbv	# 83
26) 2-Butanone	11.194	43	11835	0.30	ppbv	# 83
27) Ethyl Acetate	11.493	43	3266m	0.08	ppbv	
30) Tetrahydrofuran	12.204	42	5235m	0.25	ppbv	
32) Cyclohexane	12.747	56	7649m	0.24	ppbv	
33) Carbon Tetrachloride	13.037	117	3313m	0.04	ppbv	
35) Benzene	13.239	78	87175	0.93	ppbv	# 47
36) n-Heptane	13.252	43	10668	0.35	ppbv	# 76
40) Methyl Methacrylate	14.535	69	6648m	0.22	ppbv	
43) Methyl Isobutyl Ketone	15.397	43	15197	0.32	ppbv	# 90
45) Toluene	16.397	91	336573	2.53	ppbv	99
50) Tetrachloroethylene	17.599	166	5583m	0.07	ppbv	
56) Ethylbenzene	19.065	91	81453	0.42	ppbv	96
57) p- & m-Xylenes	19.207	91	220145	1.51	ppbv	99
58) o-Xylene	19.988	91	85240	0.59	ppbv	100
59) Styrene	20.017	104	9832m	0.09	ppbv	
61) n-Propylbenzene	21.413	91	22253m	0.09	ppbv	
62) Isopropylbenzene	20.644	105	6688	0.03	ppbv	99
65) 4-Ethyltoluene	21.593	105	95375	0.42	ppbv	# 87
66) 1,3,5-Trimethylbenzene	21.715	105	24141	0.13	ppbv	# 94
68) 1,2,4-Trimethylbenzene	22.551	105	91671	0.47	ppbv	# 97
74) n-Butylbenzene	24.011	91	6633m	0.03	ppbv	
78) Naphthalene	27.412	128	72486	0.16	ppbv	99

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

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214174.D
 Acq On : 9 Apr 2021 7:31 am
 Operator : LLJ
 Sample : 21D0348-03
 Misc : QBTO2040821A 1X/400ML
 ALS Vial : 14 Sample Multiplier: 1.794
 InstName : TO15_AIR2

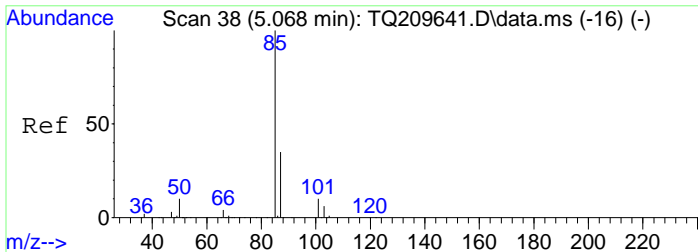
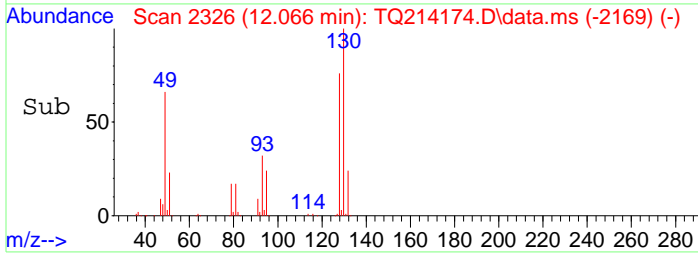
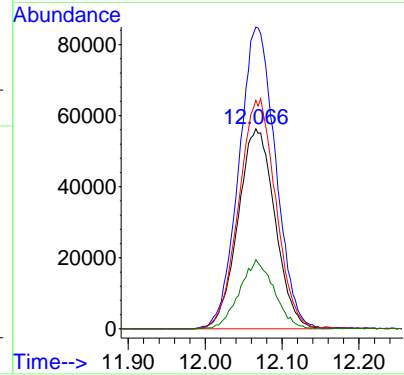
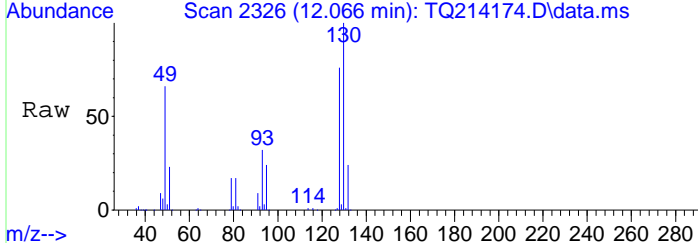
Quant Time: Apr 09 09:38:52 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration





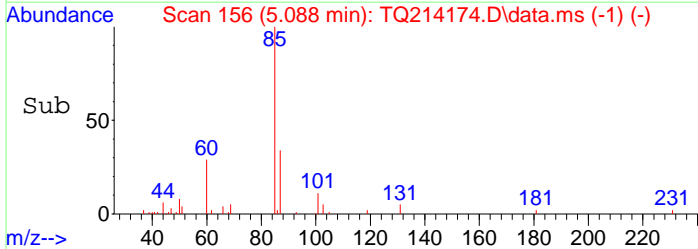
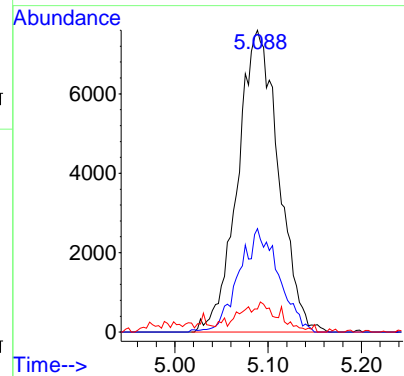
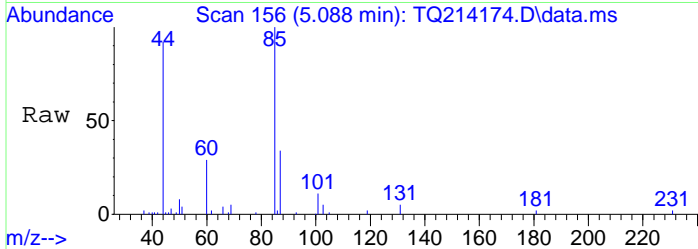
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.066 min Scan# 2326
 Delta R.T. 0.004 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

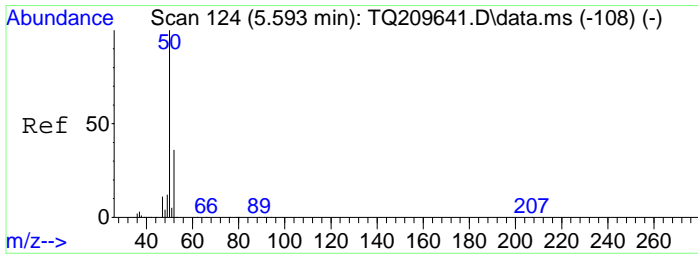
Tgt Ion	Resp	Lower	Upper
49	188336		
130	149.4	48.1	99.9#
128	114.6	38.3	79.5#
51	32.4	20.3	42.3



#3
 Dichlorodifluoromethane
 Concen: 0.26 ppbv
 RT: 5.088 min Scan# 156
 Delta R.T. 0.016 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

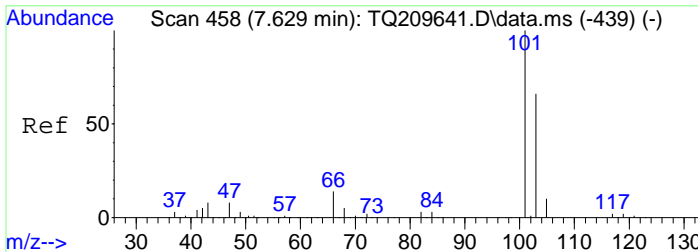
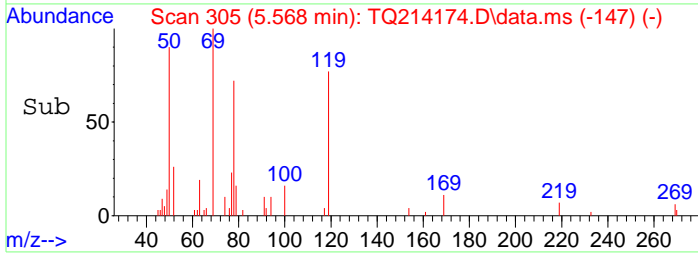
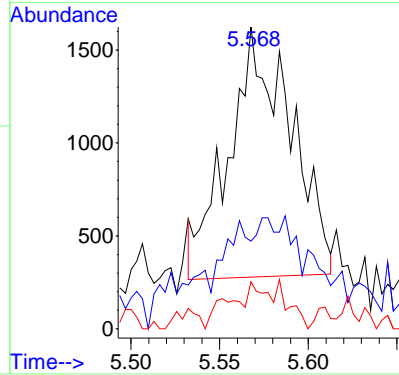
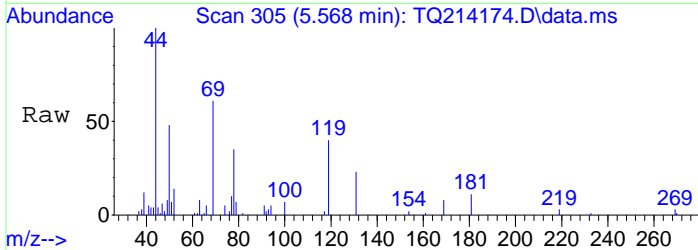
Tgt Ion	Resp	Lower	Upper
85	23094		
87	33.3	20.9	43.5
50	2.2	7.2	15.0#





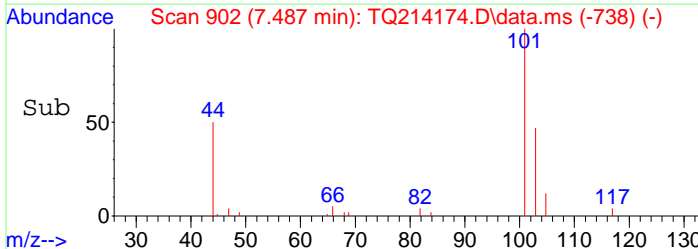
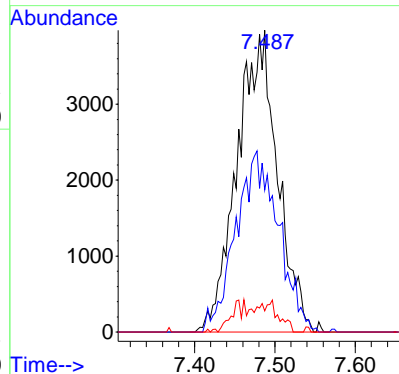
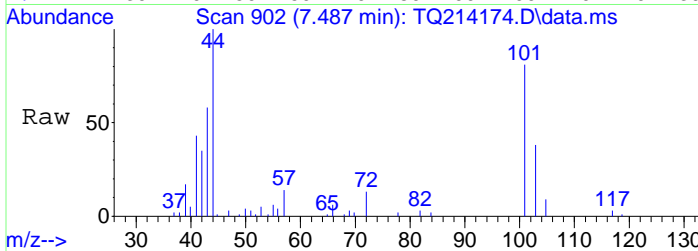
#5
 Chloromethane
 Concen: 0.26 ppbv m
 RT: 5.568 min Scan# 305
 Delta R.T. 0.007 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

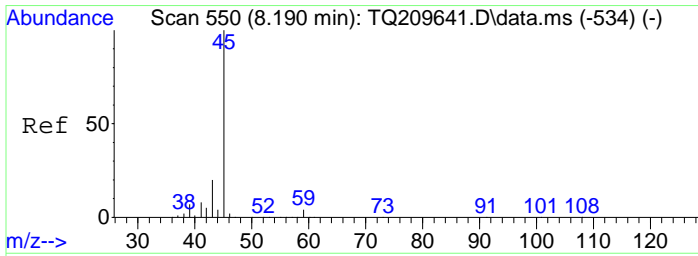
Tgt Ion	Resp	Lower	Upper
50	100		
52	0.0	0.0	65.2
49	0.0	0.0	19.6



#11
 Trichlorofluoromethane
 Concen: 0.15 ppbv m
 RT: 7.487 min Scan# 902
 Delta R.T. 0.026 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

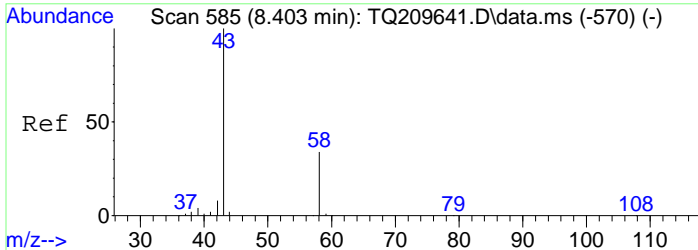
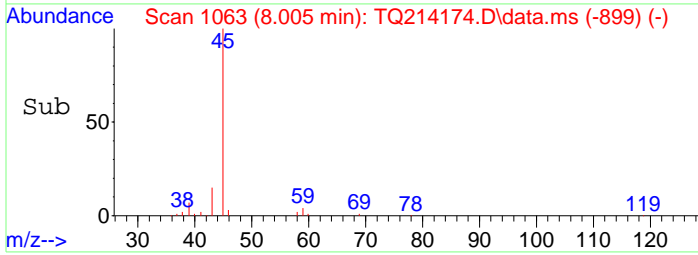
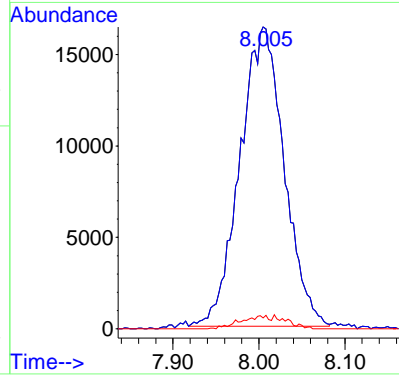
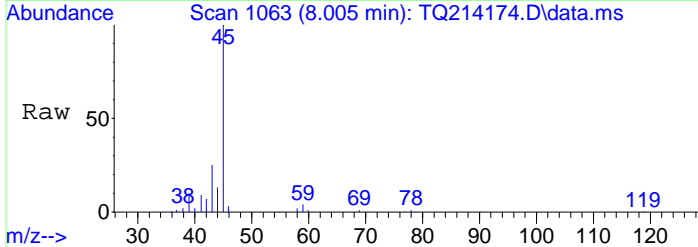
Tgt Ion	Resp	Lower	Upper
101	100		
103	0.0	42.3	87.8#
66	0.0	7.8	16.2#





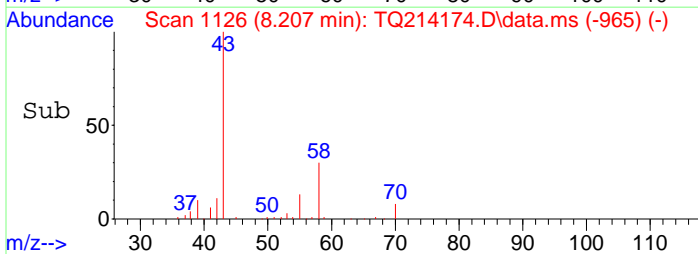
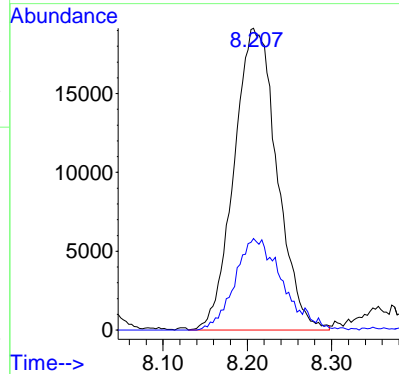
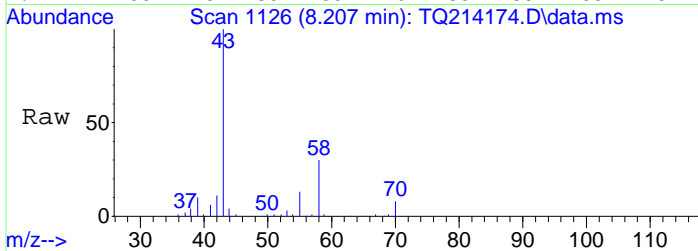
#12
 Isopropanol
 Concen: 1.35 ppbv
 RT: 8.005 min Scan# 1063
 Delta R.T. 0.026 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

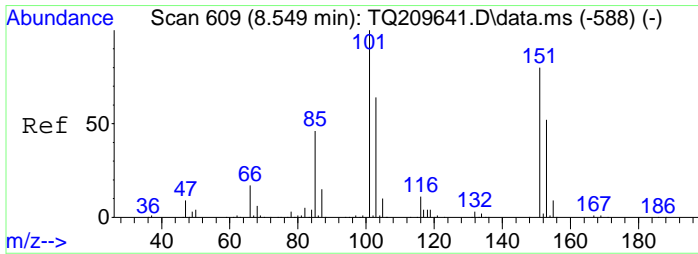
Tgt Ion	Resp	Lower	Upper
45	58571		
45	100		
45	100.0	65.0	135.0
59	0.0	0.0	10.0



#14
 Acetone
 Concen: 1.75 ppbv
 RT: 8.207 min Scan# 1126
 Delta R.T. 0.016 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

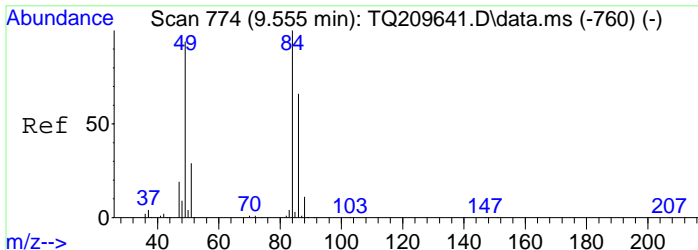
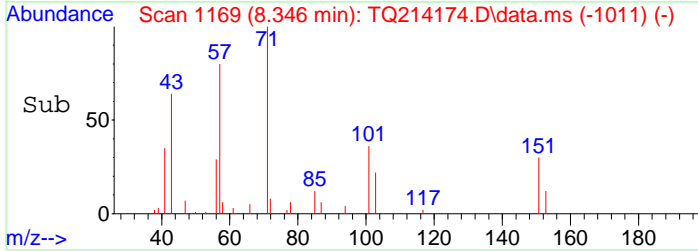
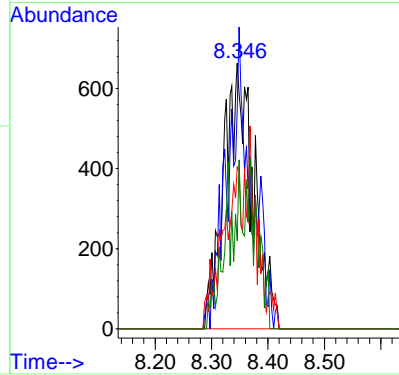
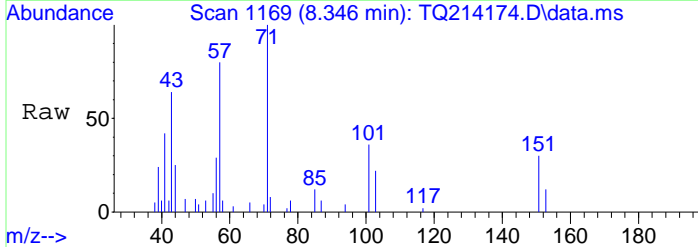
Tgt Ion	Resp	Lower	Upper
43	67811		
43	100		
58	31.7	20.9	43.3





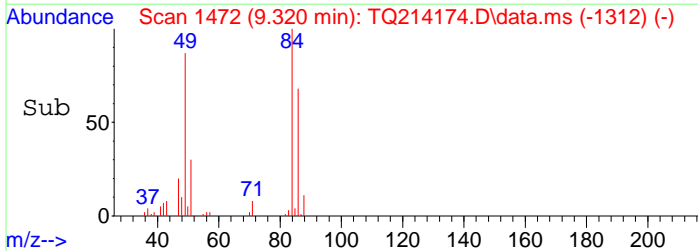
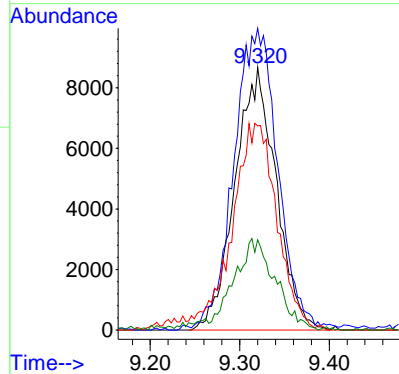
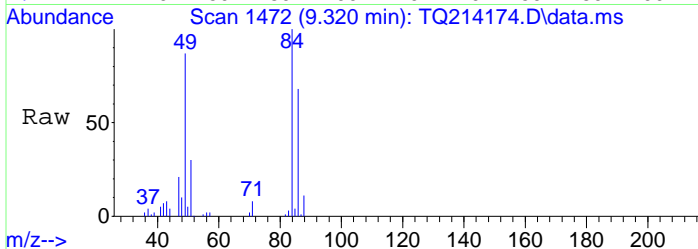
#15
 Freon-113
 Concen: 0.04 ppbv m
 RT: 8.346 min Scan# 1169
 Delta R.T. 0.010 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

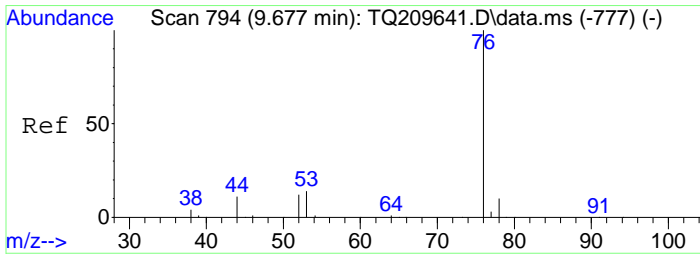
Tgt Ion	Resp	Lower	Upper
101	2442		
101	100		
151	0.0	50.5	104.9#
103	0.0	42.0	87.2#
153	0.0	32.4	67.4#



#18
 Methylene Chloride
 Concen: 1.14 ppbv
 RT: 9.320 min Scan# 1472
 Delta R.T. 0.013 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

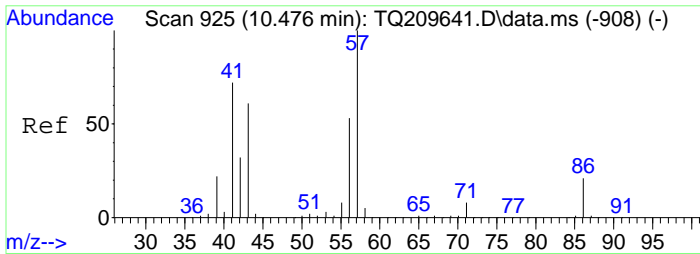
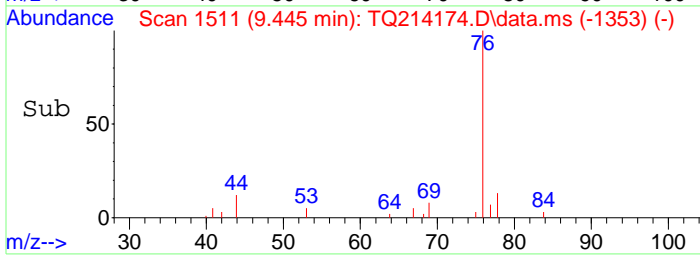
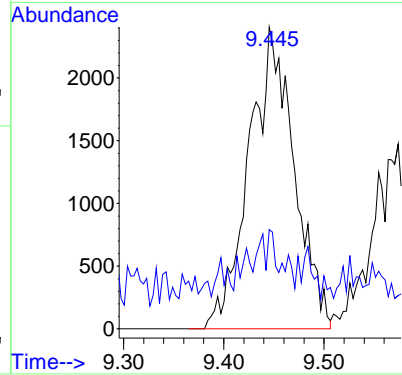
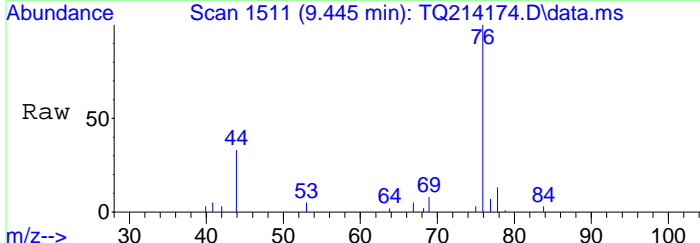
Tgt Ion	Resp	Lower	Upper
49	27777		
49	100		
84	120.8	49.9	103.5#
86	83.1	31.8	66.0#
51	34.5	20.2	41.9





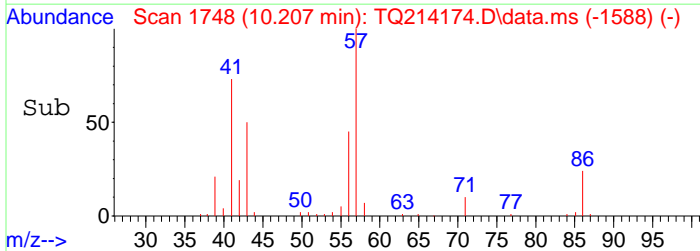
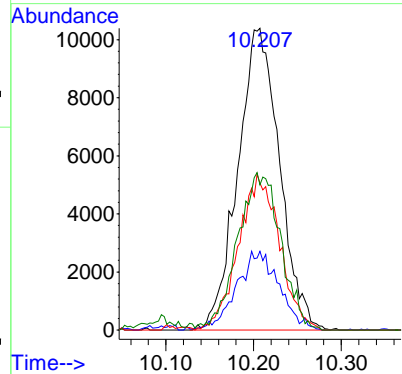
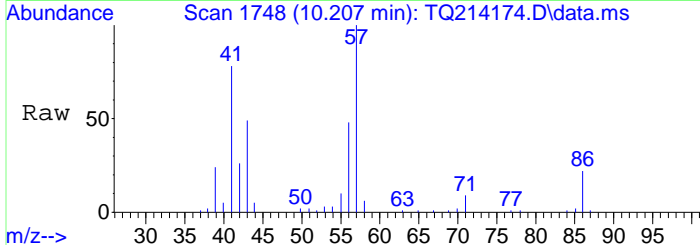
#20
 Carbon disulfide
 Concen: 0.10 ppbv m
 RT: 9.445 min Scan# 1511
 Delta R.T. 0.009 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

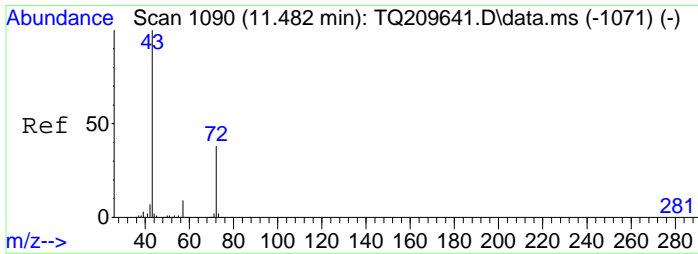
Tgt Ion	Resp	Lower	Upper
76	100		
44	0.0	8.3	17.3#



#23
 Hexane
 Concen: 0.95 ppbv
 RT: 10.207 min Scan# 1748
 Delta R.T. 0.013 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

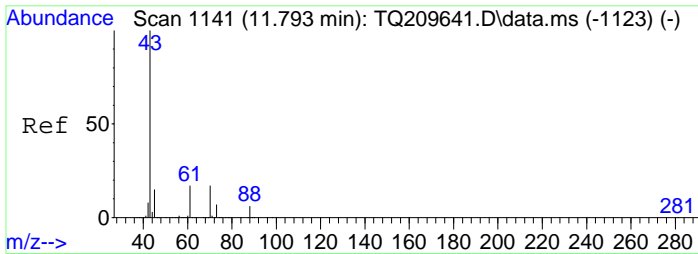
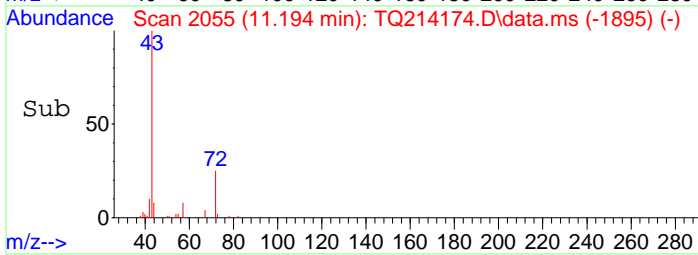
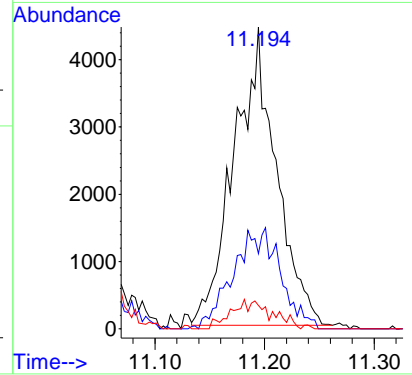
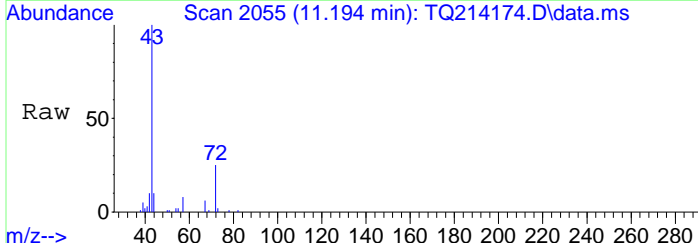
Tgt Ion	Resp	Lower	Upper
57	100		
42	13.0	21.6	45.0#
43	50.8	42.0	87.2
56	54.2	33.3	69.1





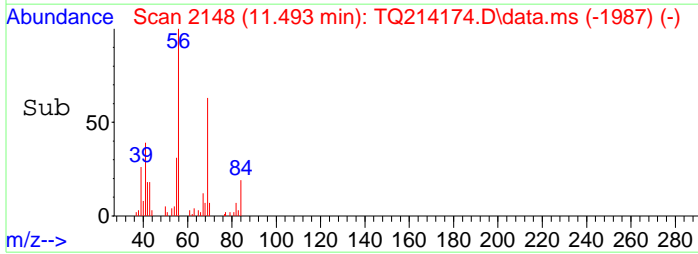
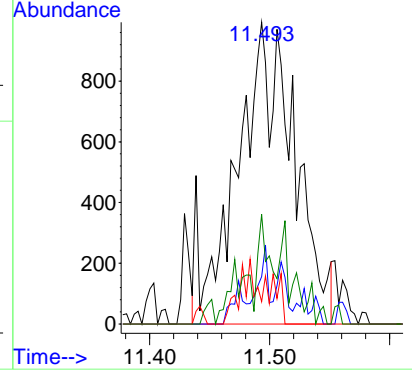
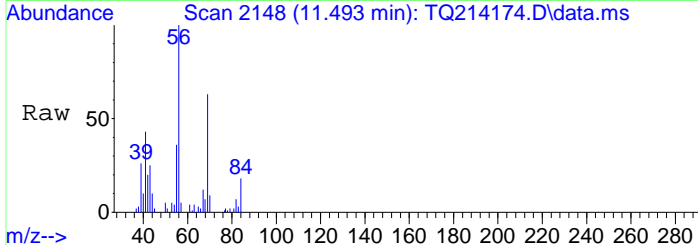
#26
 2-Butanone
 Concen: 0.30 ppbv
 RT: 11.194 min Scan# 2055
 Delta R.T. 0.013 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

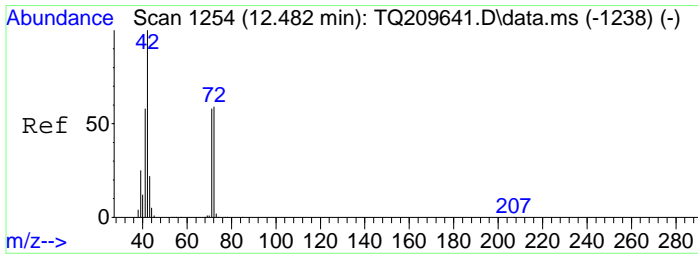
Tgt Ion	Resp	Lower	Upper
43	100		
72	16.9	16.1	33.5
57	0.0	4.9	10.3#



#27
 Ethyl Acetate
 Concen: 0.08 ppbv m
 RT: 11.493 min Scan# 2148
 Delta R.T. 0.016 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

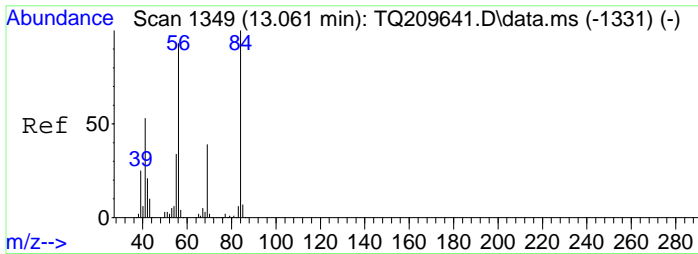
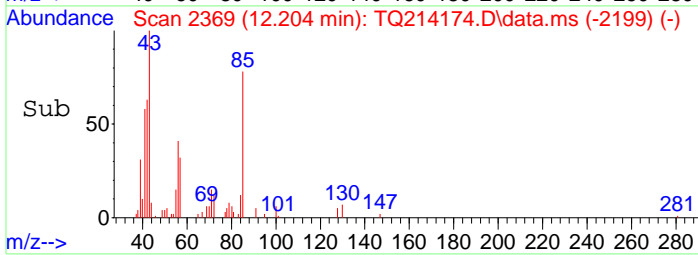
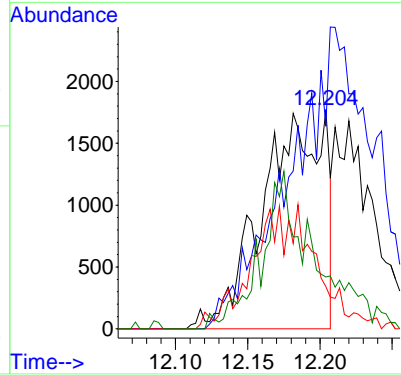
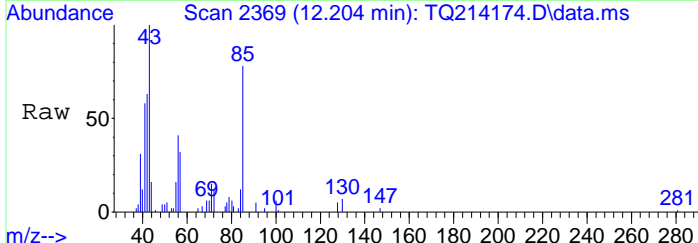
Tgt Ion	Resp	Lower	Upper
43	100		
61	0.0	51.4	106.8#
45	0.0	9.4	19.6#
70	0.0	7.5	15.5#





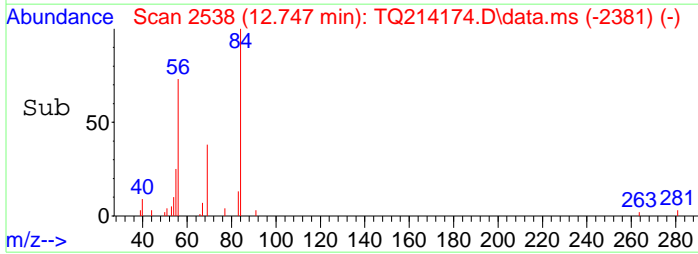
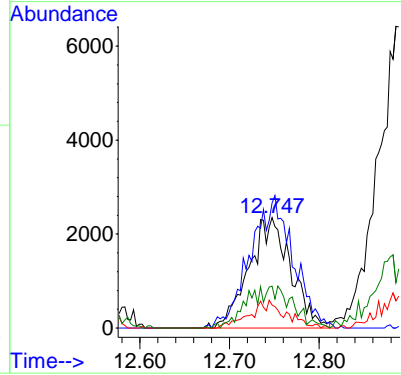
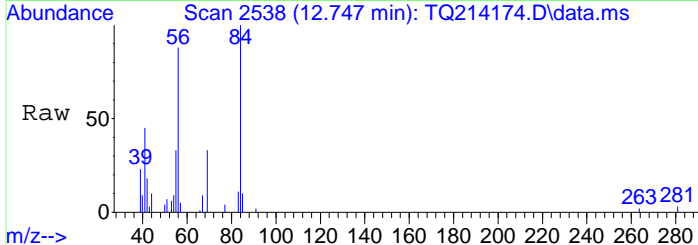
#30
 Tetrahydrofuran
 Concen: 0.25 ppbv m
 RT: 12.204 min Scan# 2369
 Delta R.T. 0.048 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

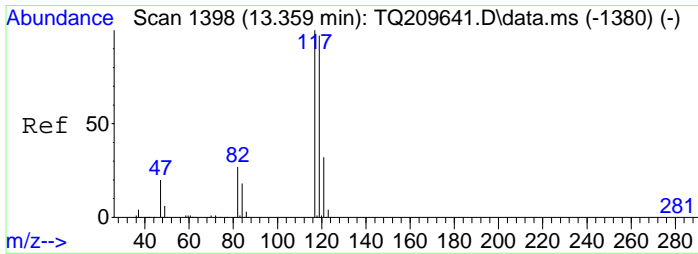
Tgt Ion	Resp	Lower	Upper
42	100		
41	0.0	35.2	73.0#
72	0.0	27.2	56.6#
71	0.0	25.9	53.7#



#32
 Cyclohexane
 Concen: 0.24 ppbv m
 RT: 12.747 min Scan# 2538
 Delta R.T. 0.006 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

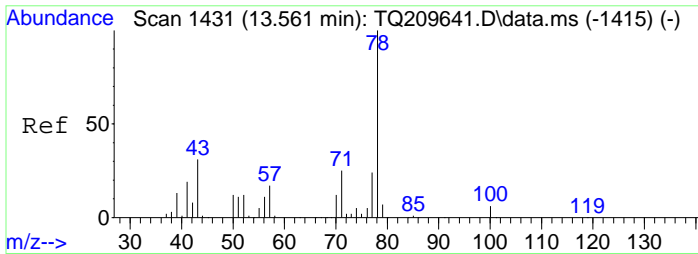
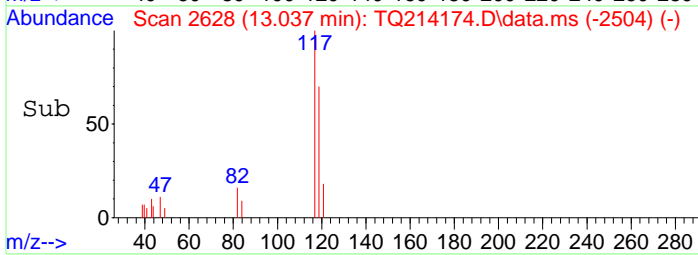
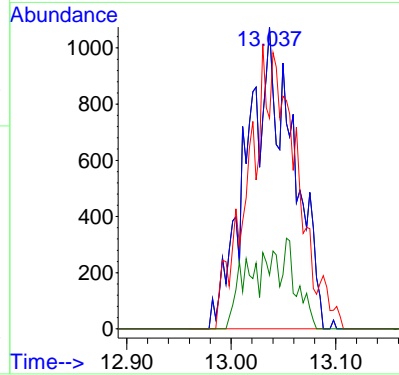
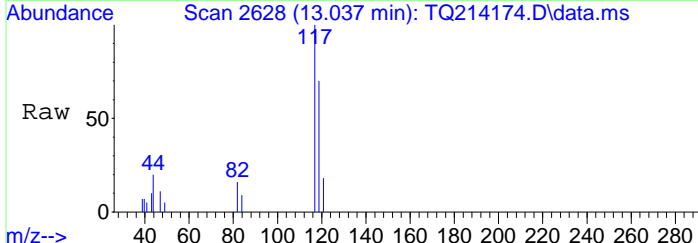
Tgt Ion	Resp	Lower	Upper
56	100		
84	52.5	54.1	112.3#
42	10.3	15.3	31.7#
55	13.2	23.5	48.7#





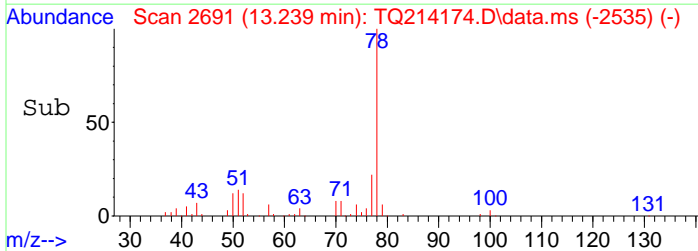
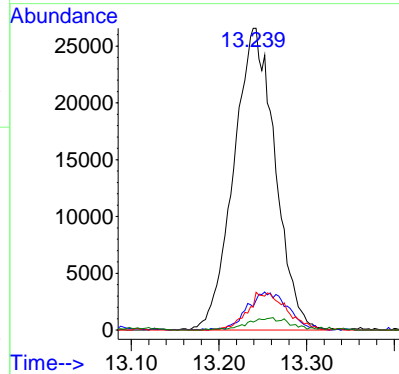
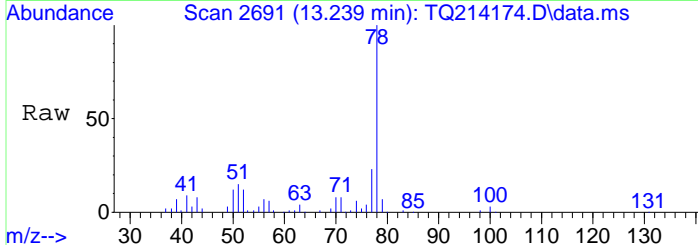
#33
 Carbon Tetrachloride
 Concen: 0.04 ppbv m
 RT: 13.037 min Scan# 2628
 Delta R.T. -0.000 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

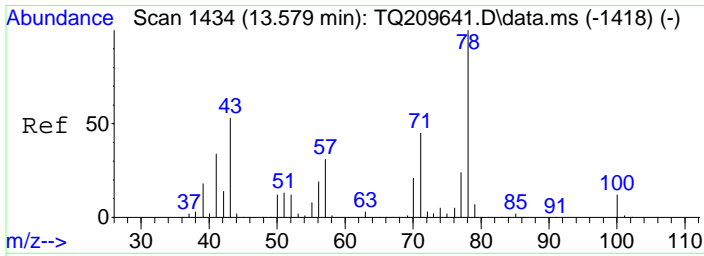
Tgt Ion	Resp	Lower	Upper
117	3313		
117	100		
117	35.0	80.0	120.0#
119	37.5	76.9	115.3#
121	0.0	21.7	40.3#



#35
 Benzene
 Concen: 0.93 ppbv
 RT: 13.239 min Scan# 2691
 Delta R.T. 0.000 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

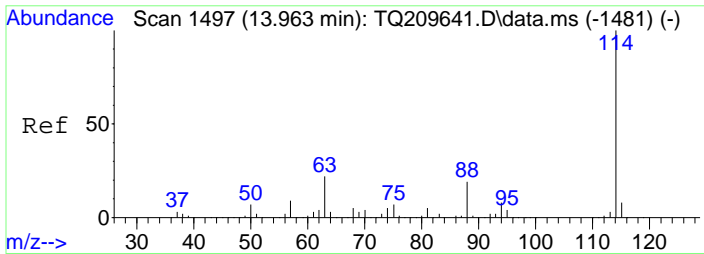
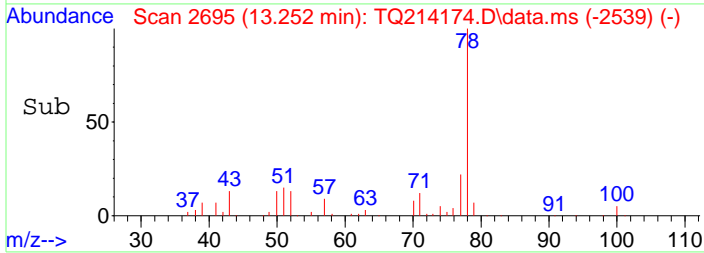
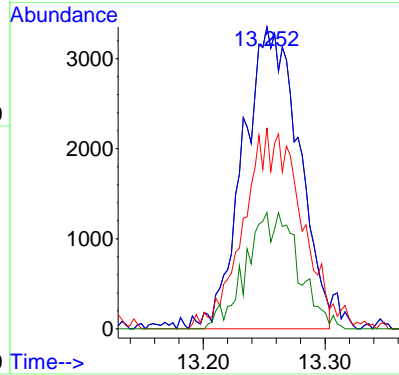
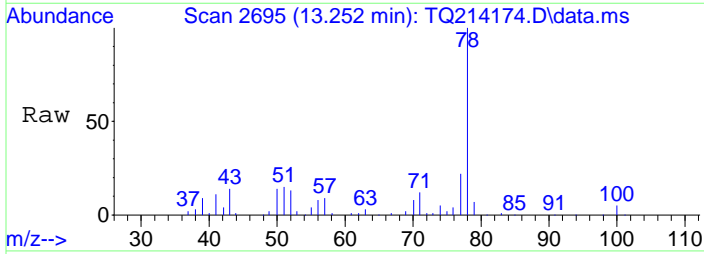
Tgt Ion	Resp	Lower	Upper
78	87175		
78	100		
43	12.2	37.5	77.9#
71	5.4	22.0	45.8#
42	3.0	8.8	18.4#





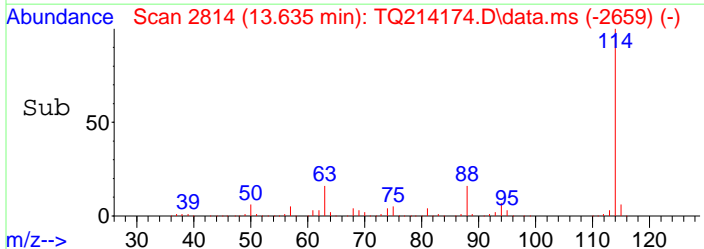
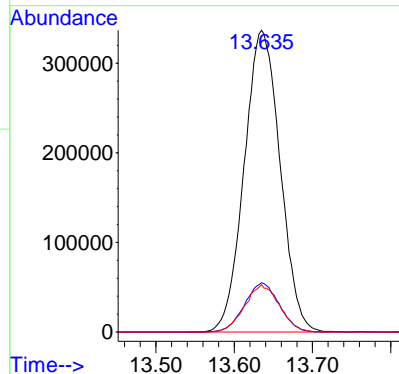
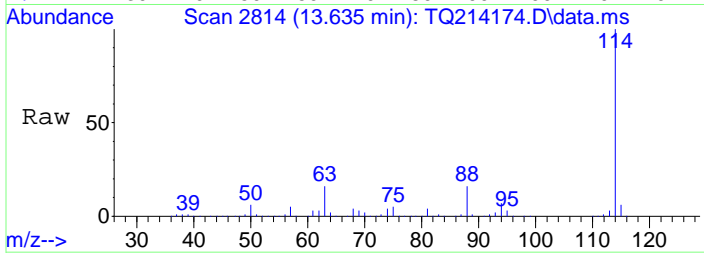
#36
 n-Heptane
 Concen: 0.35 ppbv
 RT: 13.252 min Scan# 2695
 Delta R.T. 0.000 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

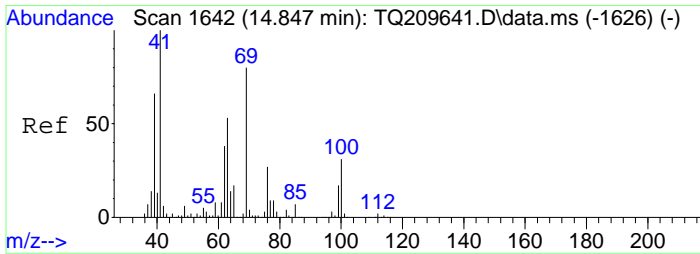
Tgt Ion	Resp	Lower	Upper
43	10668		
43	100	80.0	120.0
57	0.0	42.6	64.0#
100	14.9	13.3	19.9



#37
 1,4-Difluorobenzene
 Concen: 10.00 ppbv
 RT: 13.635 min Scan# 2814
 Delta R.T. -0.000 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

Tgt Ion	Resp	Lower	Upper
114	1072609		
114	100	12.9	26.9
63	15.9	12.9	26.9
88	15.3	10.7	22.3

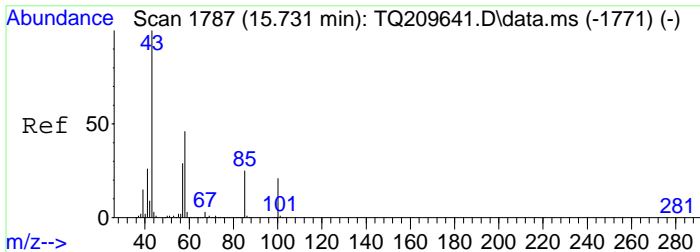
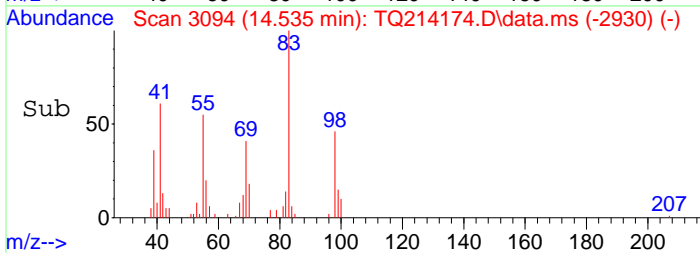
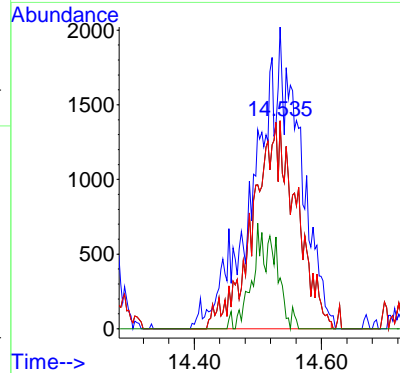
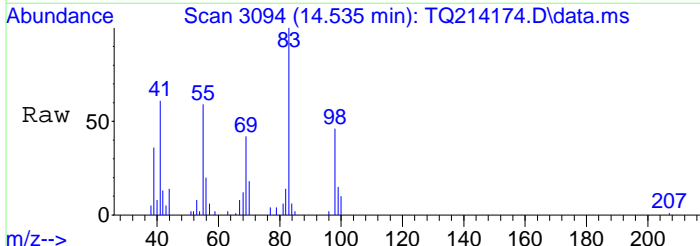




#40
Methyl Methacrylate
Concen: 0.22 ppbv m
RT: 14.535 min Scan# 3094
Delta R.T. 0.026 min
Lab File: TQ214174.D
Acq: 9 Apr 2021 7:31 am

Tgt Ion: 69 Resp: 6648

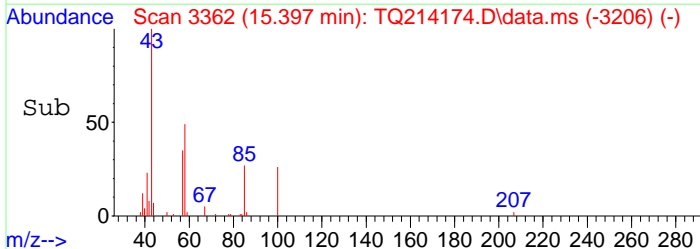
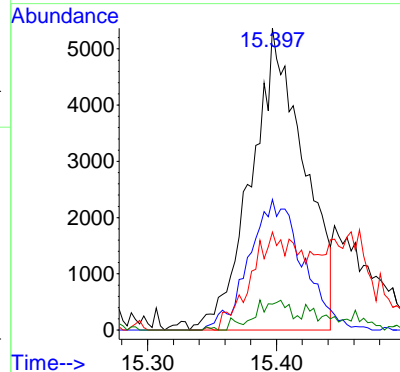
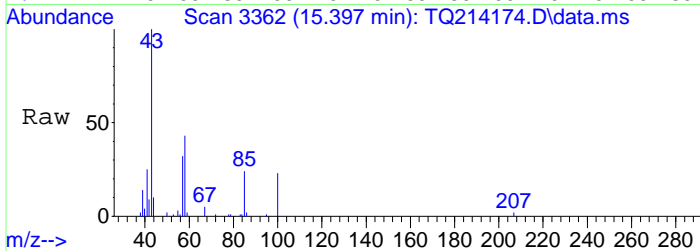
Ion	Ratio	Lower	Upper
69	100		
41	25.0	70.0	210.0#
69	26.7	50.0	150.0#
100	11.7	17.5	52.5#

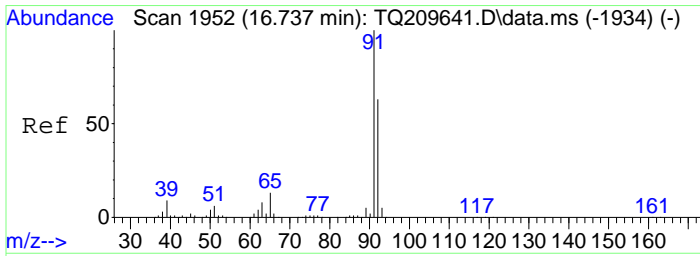


#43
Methyl Isobutyl Ketone
Concen: 0.32 ppbv
RT: 15.397 min Scan# 3362
Delta R.T. 0.003 min
Lab File: TQ214174.D
Acq: 9 Apr 2021 7:31 am

Tgt Ion: 43 Resp: 15197

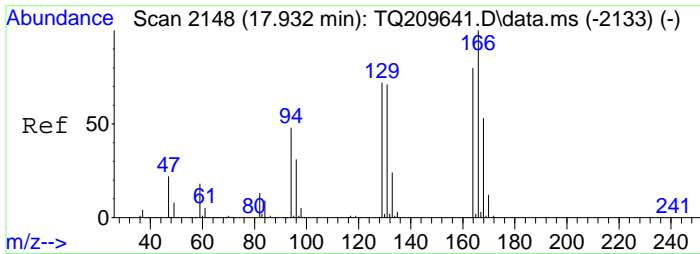
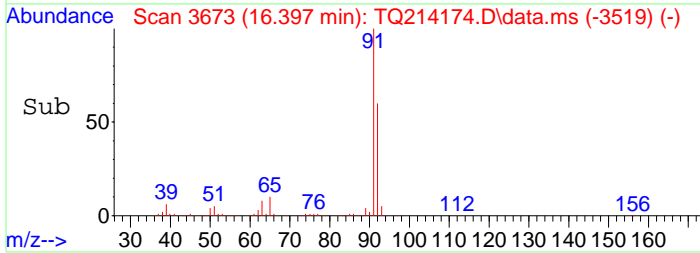
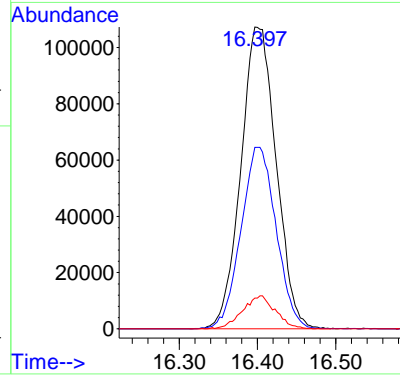
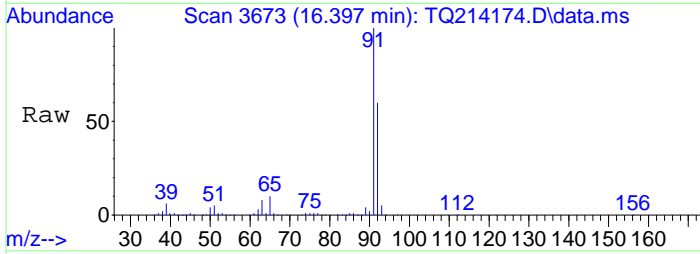
Ion	Ratio	Lower	Upper
43	100		
58	44.4	25.1	52.1
57	20.0	15.5	32.3
42	4.5	5.0	15.0#





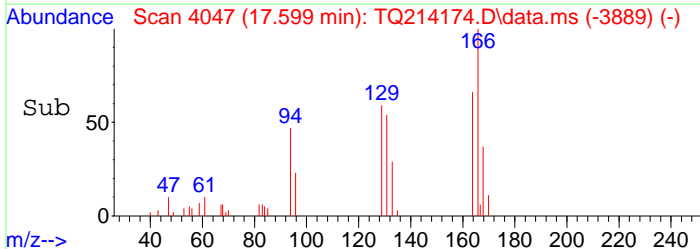
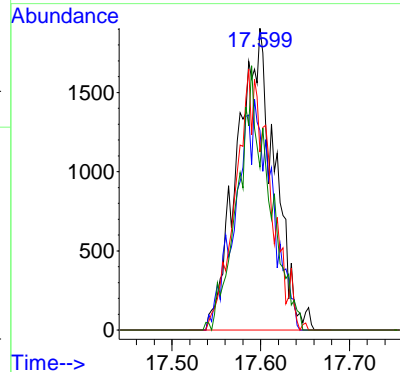
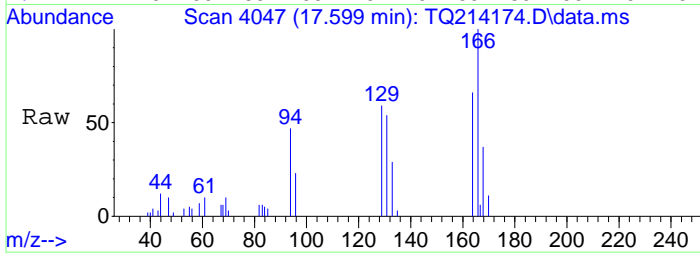
#45
Toluene
Concen: 2.53 ppbv
RT: 16.397 min Scan# 3673
Delta R.T. -0.003 min
Lab File: TQ214174.D
Acq: 9 Apr 2021 7:31 am

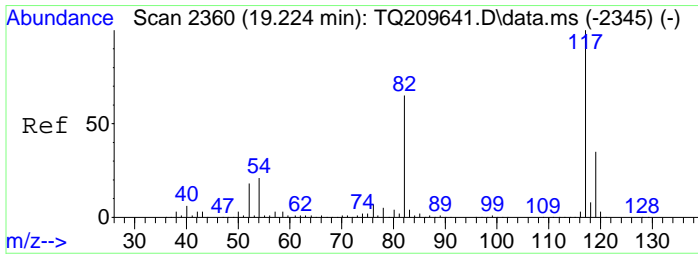
Tgt Ion	Resp	Lower	Upper
91	100		
92	60.0	38.7	80.3
65	10.2	7.5	15.5



#50
Tetrachloroethylene
Concen: 0.07 ppbv m
RT: 17.599 min Scan# 4047
Delta R.T. 0.009 min
Lab File: TQ214174.D
Acq: 9 Apr 2021 7:31 am

Tgt Ion	Resp	Lower	Upper
166	100		
164	39.5	51.0	106.0#
129	0.0	48.1	99.9#
131	72.7	46.3	96.3

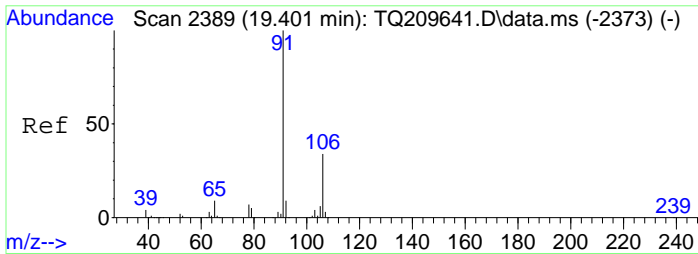
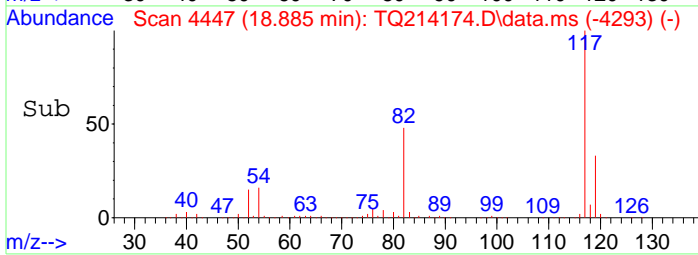
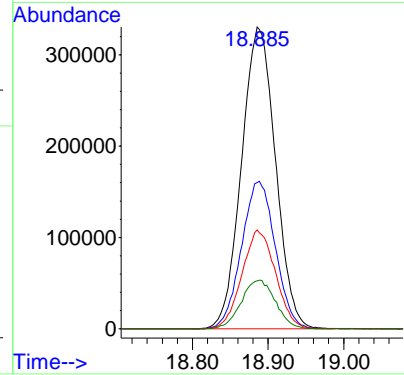
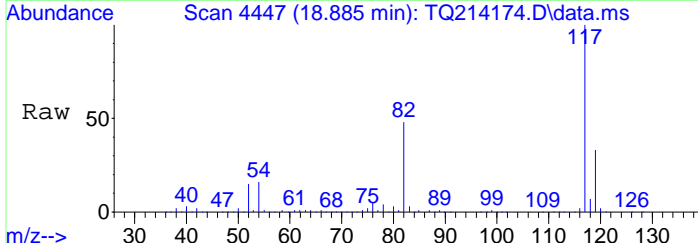




#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 18.885 min Scan# 4447
 Delta R.T. -0.004 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

Tgt Ion: 117 Resp: 1032080

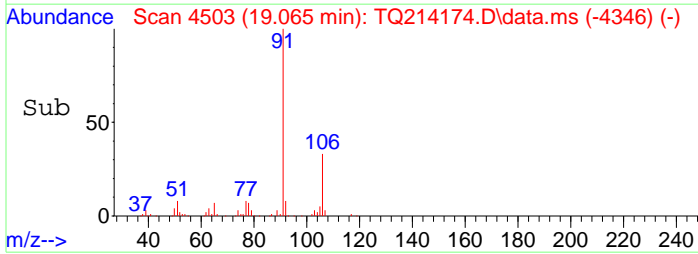
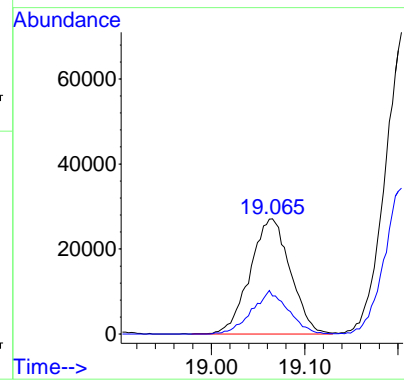
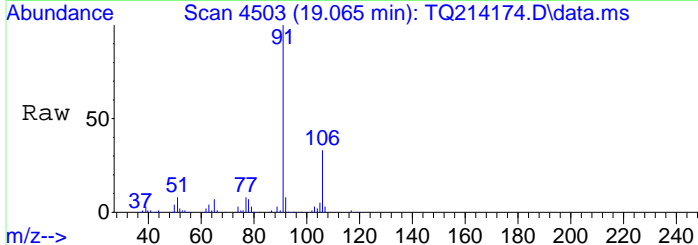
Ion	Ratio	Lower	Upper
117	100		
82	48.8	37.1	77.1
119	32.4	22.1	45.9
54	16.3	13.8	28.6

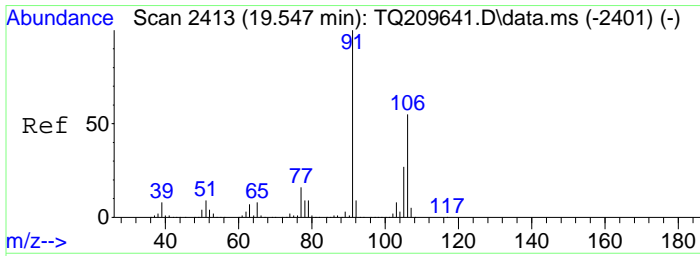


#56
 Ethylbenzene
 Concen: 0.42 ppbv
 RT: 19.065 min Scan# 4503
 Delta R.T. 0.003 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

Tgt Ion: 91 Resp: 81453

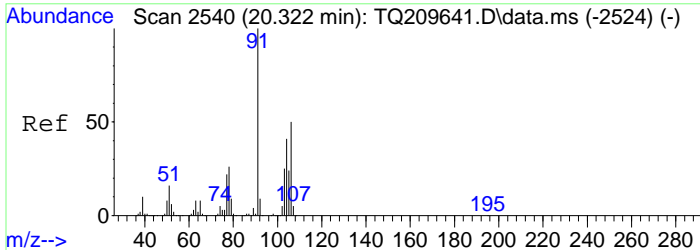
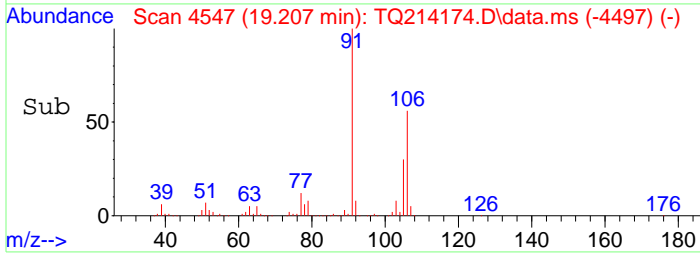
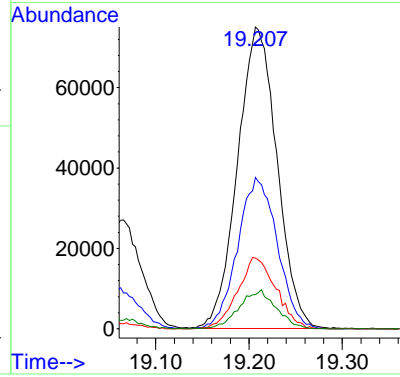
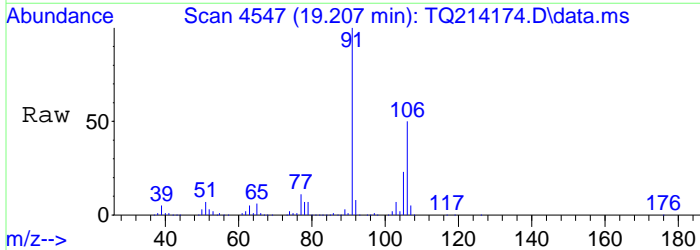
Ion	Ratio	Lower	Upper
91	100		
106	34.1	20.5	42.7





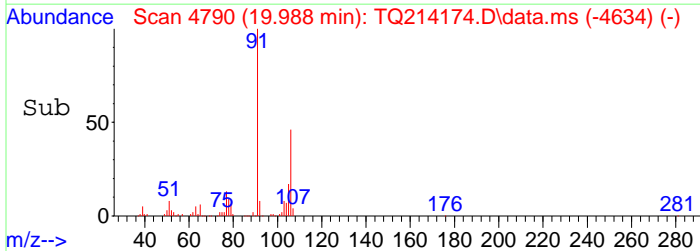
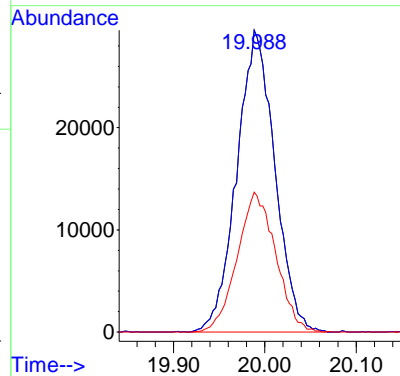
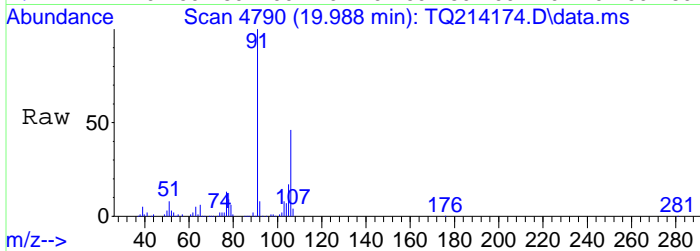
#57
 p- & m-Xylenes
 Concen: 1.51 ppbv
 RT: 19.207 min Scan# 4547
 Delta R.T. -0.000 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

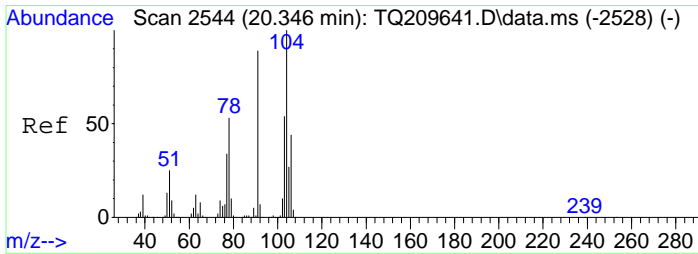
Tgt Ion	91	Resp	220145	Lower	Upper
Ion Ratio	100				
	106	50.6		32.6	67.8
	105	23.0		14.5	30.1
	77	12.2		8.5	17.7



#58
 o-Xylene
 Concen: 0.59 ppbv
 RT: 19.988 min Scan# 4790
 Delta R.T. 0.000 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

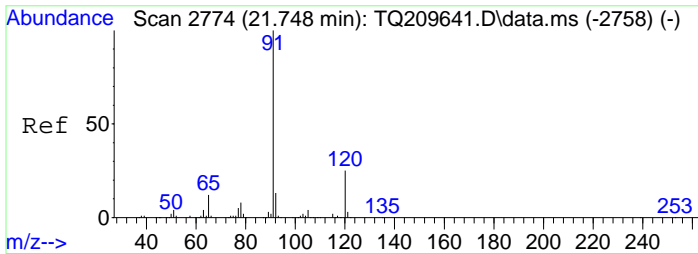
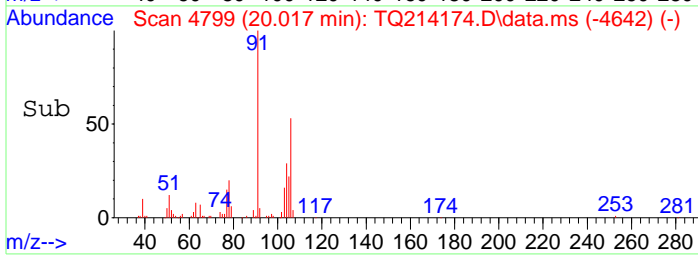
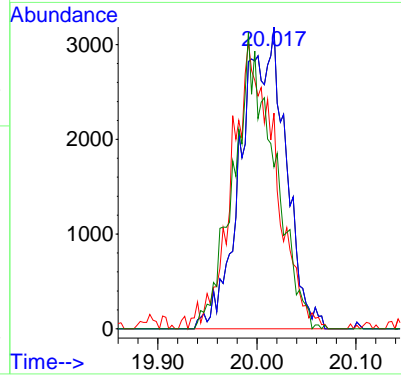
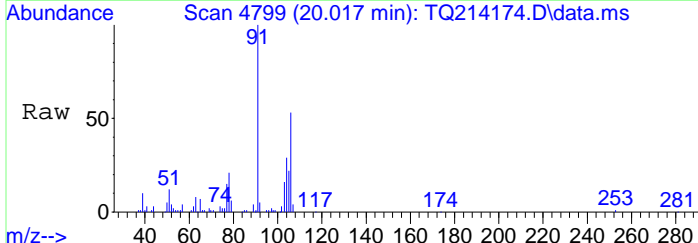
Tgt Ion	91	Resp	85240	Lower	Upper
Ion Ratio	100				
	91	100.0		80.0	120.0
	106	47.0		38.2	57.2





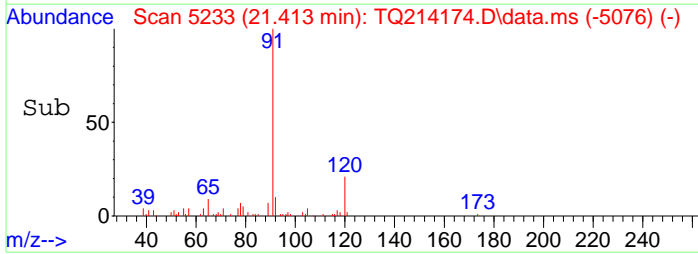
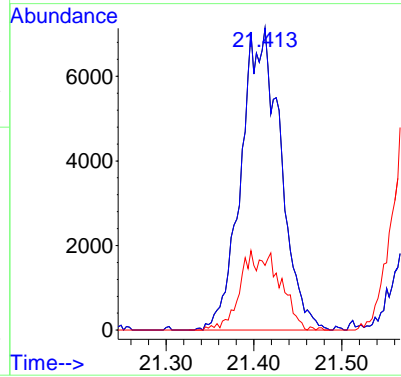
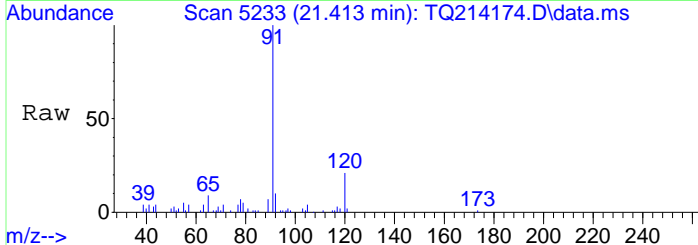
#59
 Styrene
 Concen: 0.09 ppbv m
 RT: 20.017 min Scan# 4799
 Delta R.T. 0.006 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

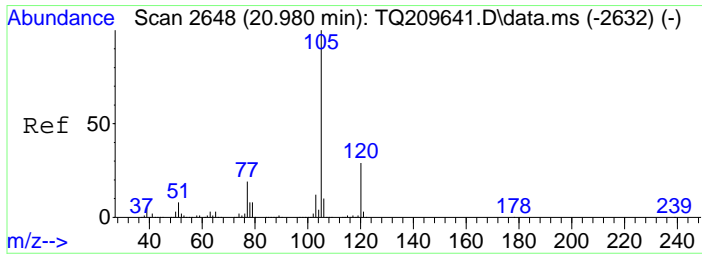
Tgt Ion	Resp	Lower	Upper
104	9832		
104	100		
104	41.6	65.0	135.0#
78	0.0	0.0	0.0
103	0.0	0.0	0.0



#61
 n-Propylbenzene
 Concen: 0.09 ppbv m
 RT: 21.413 min Scan# 5233
 Delta R.T. 0.004 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

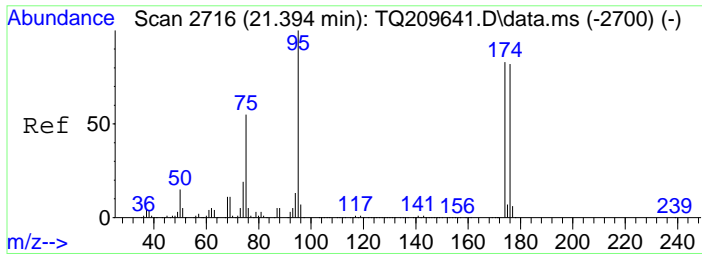
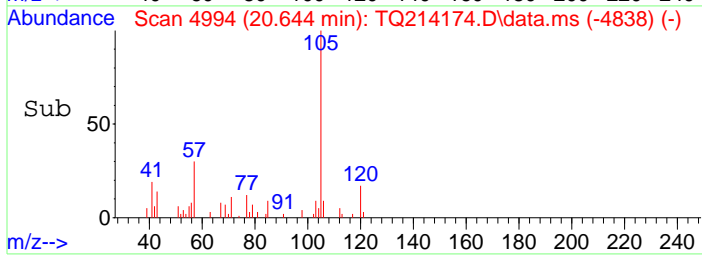
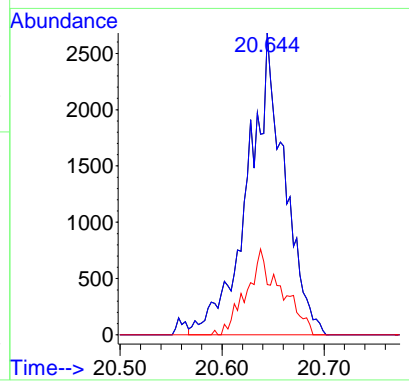
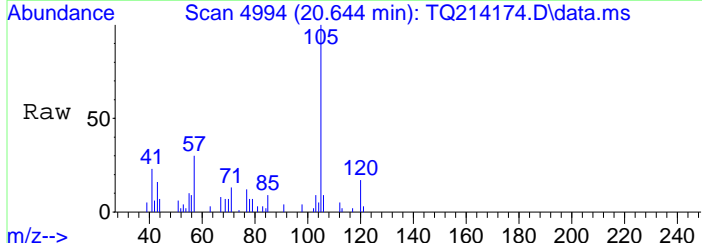
Tgt Ion	Resp	Lower	Upper
91	22253		
91	100		
91	37.6	80.0	120.0#
120	11.3	10.0	30.0





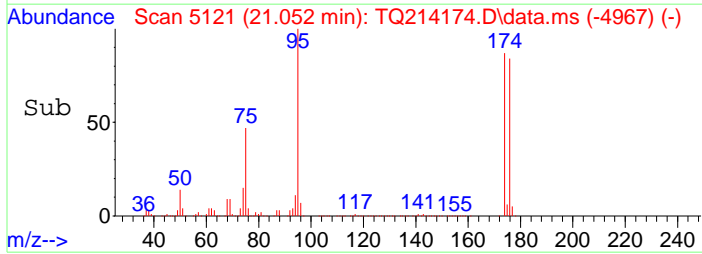
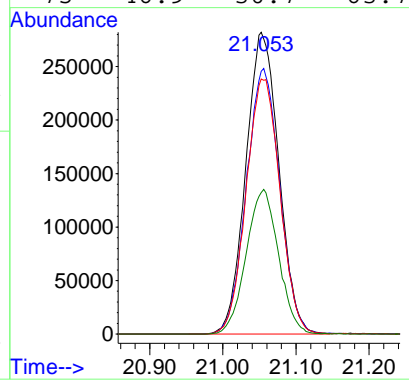
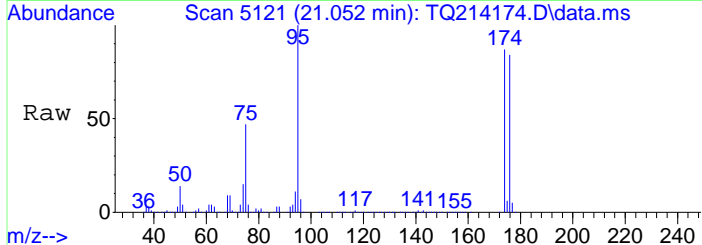
#62
 Isopropylbenzene
 Concen: 0.03 ppbv
 RT: 20.644 min Scan# 4994
 Delta R.T. 0.000 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

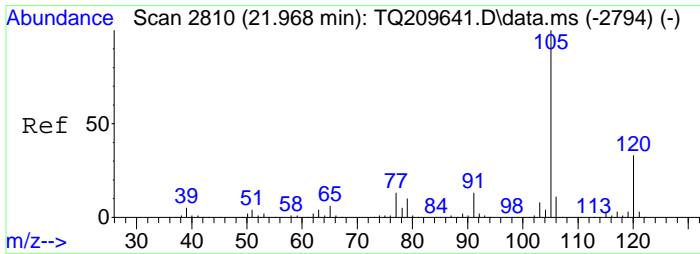
Tgt Ion	Resp	Lower	Upper
105	6688		
105	100		
105	100.0	80.0	120.0
120	16.4	10.0	30.0



#64
 p-Bromofluorobenzene
 Concen: 9.59 ppbv
 RT: 21.052 min Scan# 5121
 Delta R.T. -0.004 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

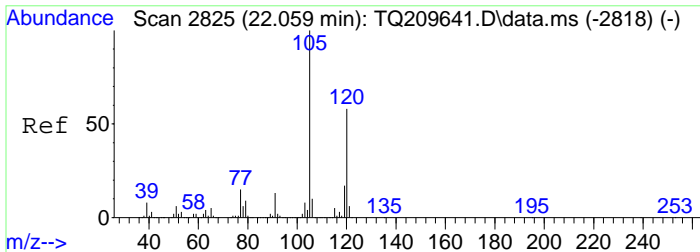
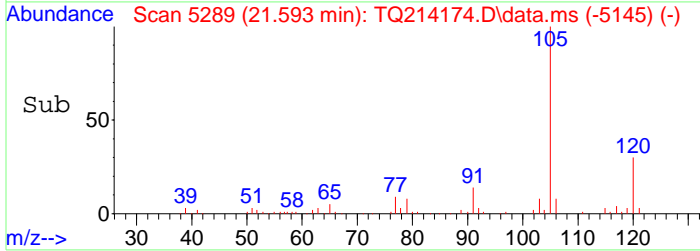
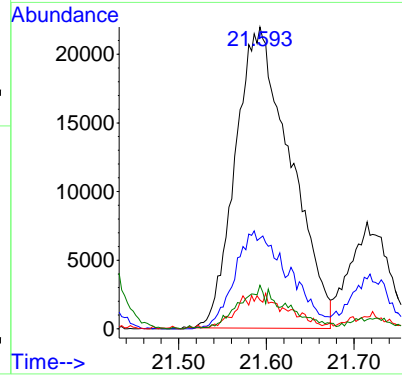
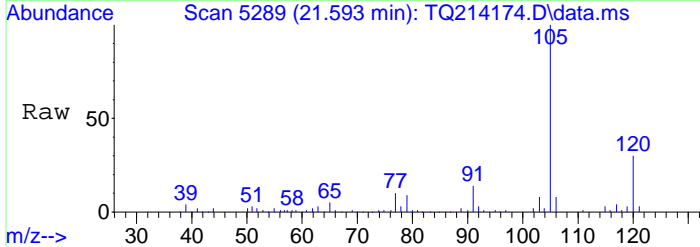
Tgt Ion	Resp	Lower	Upper
95	887992		
95	100		
174	88.7	53.2	110.6
176	86.6	51.6	107.2
75	46.9	30.7	63.7





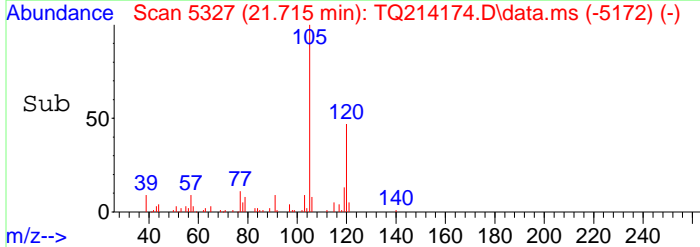
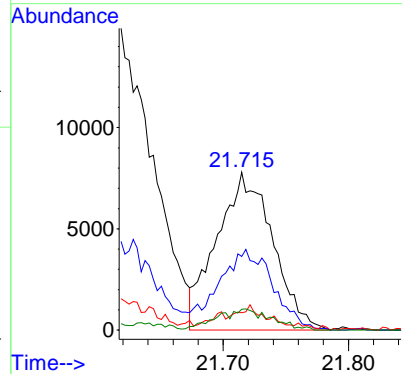
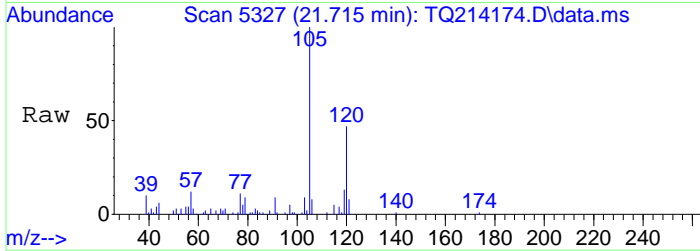
#65
 4-Ethyltoluene
 Concen: 0.42 ppbv
 RT: 21.593 min Scan# 5289
 Delta R.T. -0.038 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

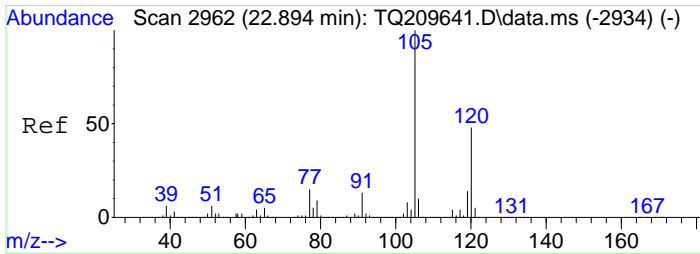
Tgt Ion	Resp	Lower	Upper
105	95375		
120	24.9	19.6	40.8
77	2.9	7.3	15.3#
91	6.3	7.1	14.7#



#66
 1,3,5-Trimethylbenzene
 Concen: 0.13 ppbv
 RT: 21.715 min Scan# 5327
 Delta R.T. -0.003 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

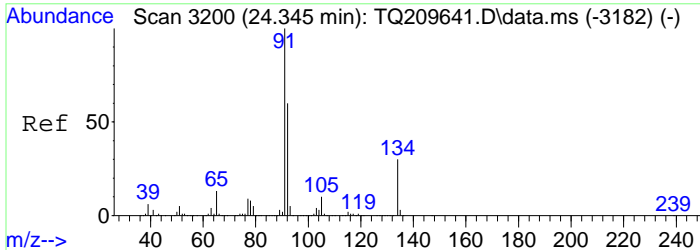
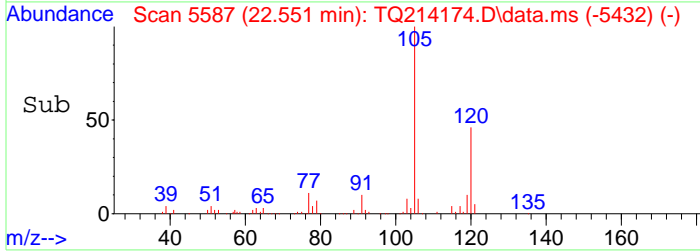
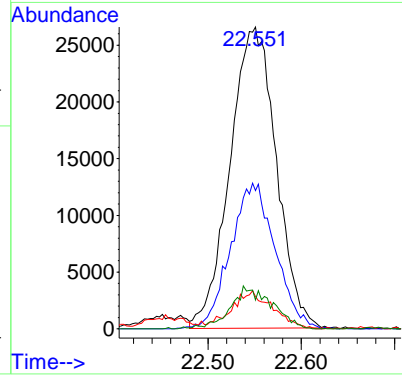
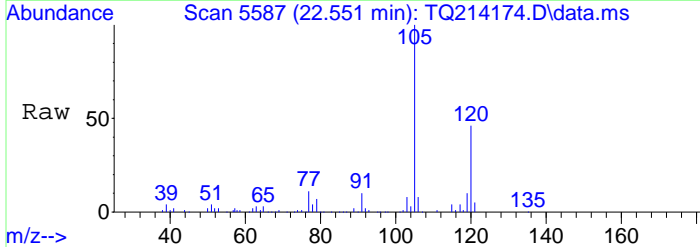
Tgt Ion	Resp	Lower	Upper
105	24141		
120	49.9	39.2	58.8
77	5.7	10.1	15.1#
119	7.3	6.1	18.3





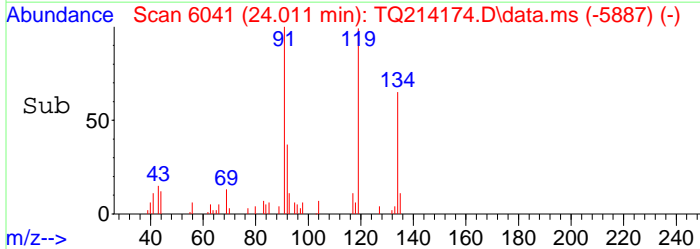
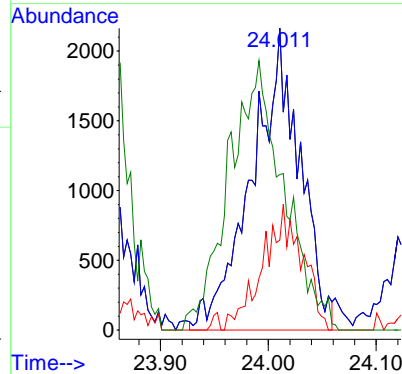
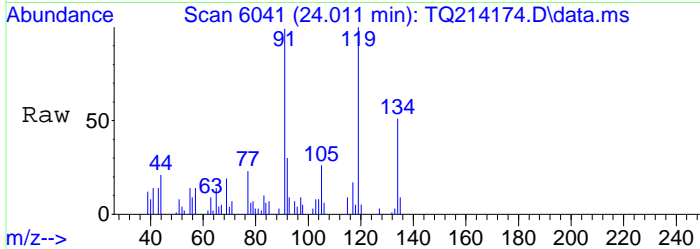
#68
 1,2,4-Trimethylbenzene
 Concen: 0.47 ppbv
 RT: 22.551 min Scan# 5587
 Delta R.T. -0.000 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

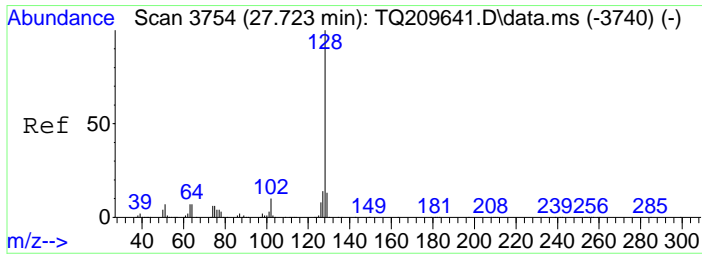
Tgt Ion	Resp	Lower	Upper
105	91671		
120	46.7	30.2	62.6
77	11.2	8.1	16.9
119	6.3	7.8	16.2#



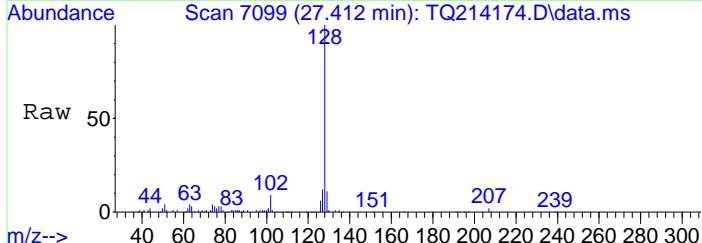
#74
 n-Butylbenzene
 Concen: 0.03 ppbv m
 RT: 24.011 min Scan# 6041
 Delta R.T. -0.006 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am

Tgt Ion	Resp	Lower	Upper
91	6633		
91	100		
91	49.0	80.0	120.0#
92	30.3	44.0	66.0#
134	0.0	12.5	37.5#



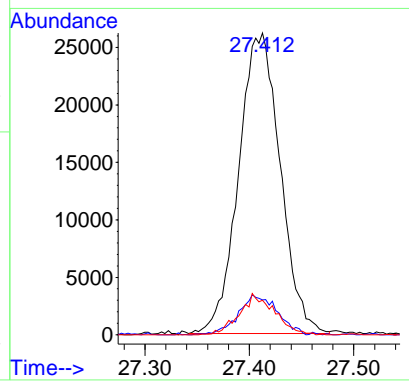
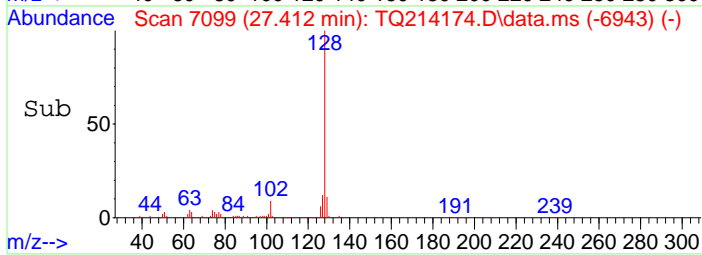


#78
 Naphthalene
 Concen: 0.16 ppbv
 RT: 27.412 min Scan# 7099
 Delta R.T. 0.000 min
 Lab File: TQ214174.D
 Acq: 9 Apr 2021 7:31 am



Tgt Ion:128 Resp: 72486

Ion	Ratio	Lower	Upper
128	100		
127	12.5	8.1	16.9
129	11.6	7.1	14.7



Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Soil Vapor Laboratory ID: 21D0348-04 File ID: TQ214175.D
 Sampled: 04/08/21 10:30 Prepared: 04/08/21 22:00 Analyzed: 04/09/21 08:34
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.64	1.13	U
71-55-6	1,1,1-Trichloroethane	1.64	0.896	U
79-34-5	1,1,2,2-Tetrachloroethane	1.64	1.13	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.64	1.26	U
79-00-5	1,1,2-Trichloroethane	1.64	0.896	U
75-34-3	1,1-Dichloroethane	1.64	0.665	U
75-35-4	1,1-Dichloroethylene	1.64	0.326	U
120-82-1	1,2,4-Trichlorobenzene	1.64	1.22	U
95-63-6	1,2,4-Trimethylbenzene	1.64	3.71	D
106-93-4	1,2-Dibromoethane	1.64	1.26	U
95-50-1	1,2-Dichlorobenzene	1.64	0.987	U
107-06-2	1,2-Dichloroethane	1.64	0.665	U
78-87-5	1,2-Dichloropropane	1.64	0.759	U
76-14-2	1,2-Dichlorotetrafluoroethane	1.64	1.15	U
108-67-8	1,3,5-Trimethylbenzene	1.64	1.05	D
106-99-0	1,3-Butadiene	1.64	1.09	U
541-73-1	1,3-Dichlorobenzene	1.64	0.987	U
142-28-9	1,3-Dichloropropane	1.64	0.759	U
106-46-7	1,4-Dichlorobenzene	1.64	0.987	U
123-91-1	1,4-Dioxane	1.64	1.18	U
78-93-3	2-Butanone	1.64	1.07	D
591-78-6	2-Hexanone	1.64	1.35	U
107-05-1	3-Chloropropene	1.64	2.57	U
108-10-1	4-Methyl-2-pentanone	1.64	1.75	D
67-64-1	Acetone	1.64	4.41	D
107-13-1	Acrylonitrile	1.64	0.356	U
71-43-2	Benzene	1.64	4.98	D
100-44-7	Benzyl chloride	1.64	0.850	U
75-27-4	Bromodichloromethane	1.64	1.10	U
75-25-2	Bromoform	1.64	1.70	U
74-83-9	Bromomethane	1.64	0.638	U
75-15-0	Carbon disulfide	1.64	0.511	D
56-23-5	Carbon tetrachloride	1.64	0.310	D
108-90-7	Chlorobenzene	1.64	0.756	U
75-00-3	Chloroethane	1.64	0.433	U
67-66-3	Chloroform	1.64	0.802	U
74-87-3	Chloromethane	1.64	0.916	D
156-59-2	cis-1,2-Dichloroethylene	1.64	0.326	U
10061-01-5	cis-1,3-Dichloropropylene	1.64	0.745	U
110-82-7	Cyclohexane	1.64	1.36	D

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Soil Vapor Laboratory ID: 21D0348-04 File ID: TQ214175.D
 Sampled: 04/08/21 10:30 Prepared: 04/08/21 22:00 Analyzed: 04/09/21 08:34
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
124-48-1	Dibromochloromethane	1.64	1.40	U
75-71-8	Dichlorodifluoromethane	1.64	1.79	D
141-78-6	Ethyl acetate	1.64	1.18	U
100-41-4	Ethyl Benzene	1.64	2.85	D
87-68-3	Hexachlorobutadiene	1.64	1.75	U
67-63-0	Isopropanol	1.64	4.76	D
80-62-6	Methyl Methacrylate	1.64	2.22	D
1634-04-4	Methyl tert-butyl ether (MTBE)	1.64	0.592	U
75-09-2	Methylene chloride	1.64	11.5	D
142-82-5	n-Heptane	1.64	2.56	D
110-54-3	n-Hexane	1.64	4.98	D
95-47-6	o-Xylene	1.64	4.06	D
179601-23-1	p- & m- Xylenes	1.64	10.7	D
622-96-8	p-Ethyltoluene	1.64	3.23	D
115-07-1	Propylene	1.64	0.283	U
100-42-5	Styrene	1.64	0.699	U
127-18-4	Tetrachloroethylene	1.64	1.11	U
109-99-9	Tetrahydrofuran	1.64	1.65	D
108-88-3	Toluene	1.64	13.4	D
156-60-5	trans-1,2-Dichloroethylene	1.64	0.651	U
10061-02-6	trans-1,3-Dichloropropylene	1.64	0.745	U
79-01-6	Trichloroethylene	1.64	0.221	U
75-69-4	Trichlorofluoromethane (Freon 11)	1.64	1.20	D
108-05-4	Vinyl acetate	1.64	0.578	U
593-60-2	Vinyl bromide	1.64	0.718	U
75-01-4	Vinyl Chloride	1.64	0.210	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	231910	12.059	189488	12.075	
ISTD: 1,4-Difluorobenzene	1363774	13.632	1051211	13.641	
ISTD: d5-Chlorobenzene	1212250	18.889	1007357	18.885	

* Values outside of QC limits

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214175.D
 Acq On : 9 Apr 2021 8:34 am
 Operator : LLJ
 Sample : 21D0348-04
 Misc : QBTO2040821A 1X/400ML
 ALS Vial : 15 Sample Multiplier: 1.642
 InstName : TO15_AIR2

Quant Time: Apr 09 09:43:52 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

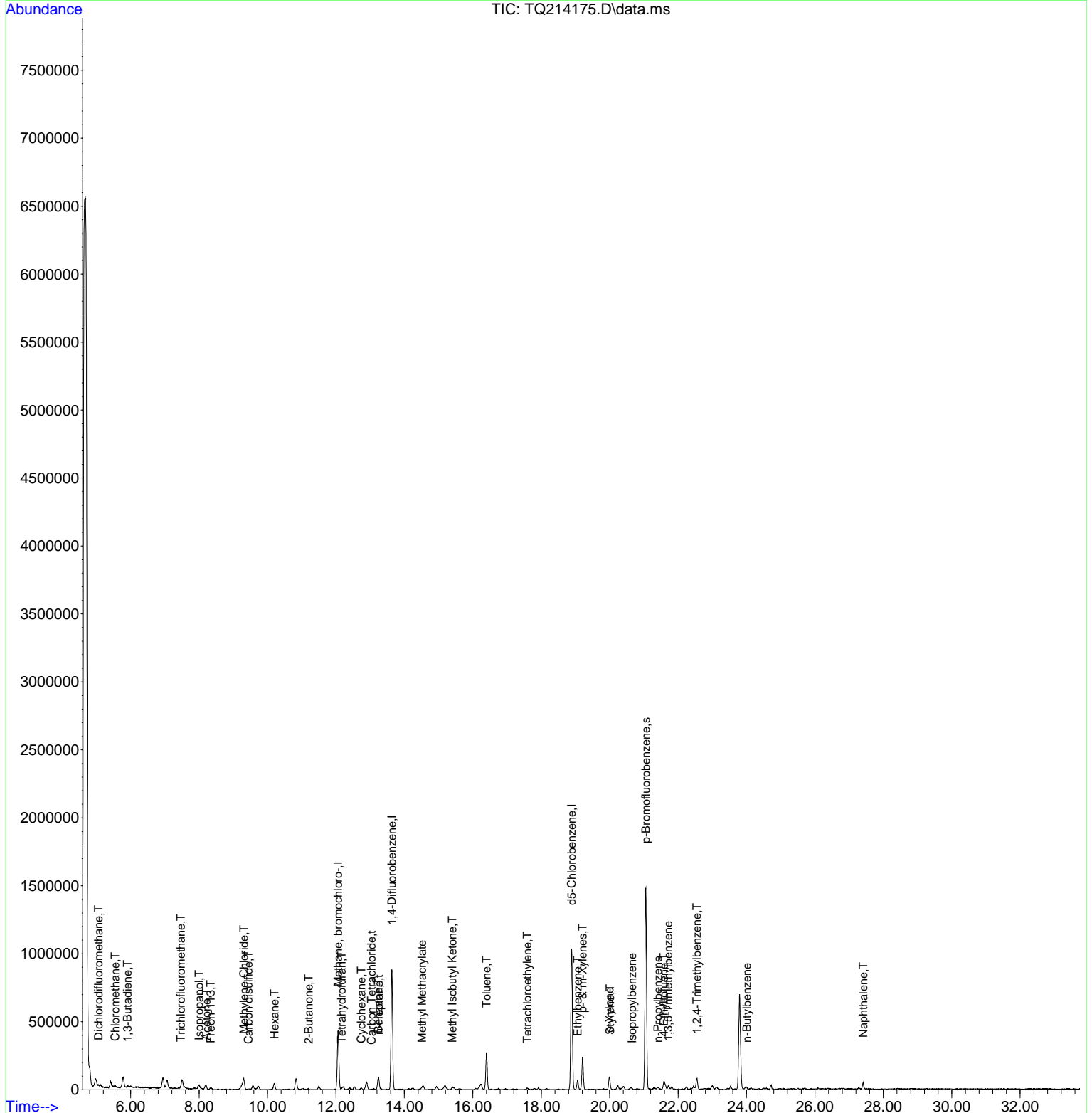
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

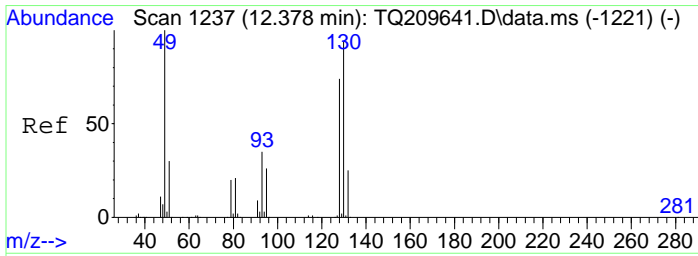
Internal Standards						
1) Methane, bromochloro-	12.059	49	231910	10.00	ppbv	# 0.00
37) 1,4-Difluorobenzene	13.632	114	1363774	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.889	117	1212250	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.056	95	1017013	9.35	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	93.50%	
Target Compounds						
						Qvalue
3) Dichlorodifluoromethane	5.060	85	24612	0.22	ppbv	# 94
5) Chloromethane	5.542	50	4216m	0.27	ppbv	
7) 1,3-Butadiene	5.908	54	2180m	0.14	ppbv	
11) Trichlorofluoromethane	7.461	101	14554m	0.13	ppbv	
12) Isopropanol	7.992	45	63133	1.18	ppbv	99
14) Acetone	8.204	43	53905	1.13	ppbv	96
15) Freon-113	8.333	101	3057m	0.04	ppbv	
18) Methylene Chloride	9.304	49	60596	2.02	ppbv	# 61
20) Carbon disulfide	9.436	76	9928m	0.10	ppbv	
23) Hexane	10.198	57	38405	0.86	ppbv	# 71
26) 2-Butanone	11.194	43	10708m	0.22	ppbv	
30) Tetrahydrofuran	12.162	42	8735m	0.34	ppbv	
32) Cyclohexane	12.738	56	9500	0.24	ppbv	# 65
33) Carbon Tetrachloride	13.037	117	3701m	0.03	ppbv	
35) Benzene	13.239	78	109156	0.95	ppbv	# 34
36) n-Heptane	13.252	43	14205	0.38	ppbv	# 88
40) Methyl Methacrylate	14.506	69	12991m	0.33	ppbv	
43) Methyl Isobutyl Ketone	15.400	43	15848m	0.26	ppbv	
45) Toluene	16.400	91	365273	2.16	ppbv	99
50) Tetrachloroethylene	17.590	166	6213	0.06	ppbv	# 64
56) Ethylbenzene	19.062	91	89900	0.40	ppbv	97
57) p- & m-Xylenes	19.210	91	258044	1.50	ppbv	99
58) o-Xylene	19.988	91	97222	0.57	ppbv	99
59) Styrene	20.004	104	11938	0.09	ppbv	# 100
61) n-Propylbenzene	21.409	91	23982	0.08	ppbv	98
62) Isopropylbenzene	20.654	105	6888	0.03	ppbv	100
65) 4-Ethyltoluene	21.583	105	105980	0.40	ppbv	# 93
66) 1,3,5-Trimethylbenzene	21.712	105	28340m	0.13	ppbv	
68) 1,2,4-Trimethylbenzene	22.544	105	105487	0.46	ppbv	# 96
74) n-Butylbenzene	24.004	91	7288m	0.03	ppbv	
78) Naphthalene	27.409	128	63646	0.12	ppbv	99

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

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214175.D
 Acq On : 9 Apr 2021 8:34 am
 Operator : LLJ
 Sample : 21D0348-04
 Misc : QBTO2040821A 1X/400ML
 ALS Vial : 15 Sample Multiplier: 1.642
 InstName : TO15_AIR2

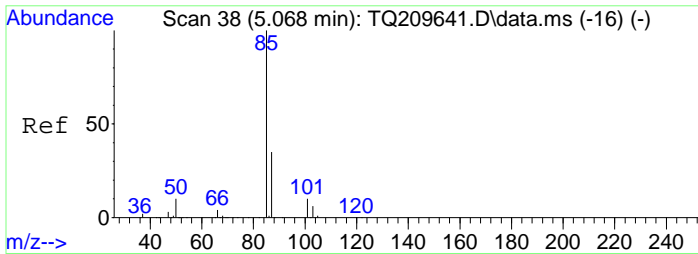
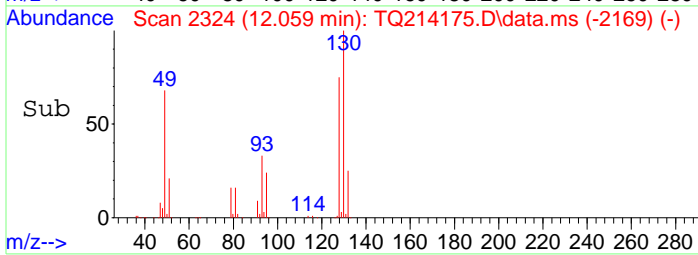
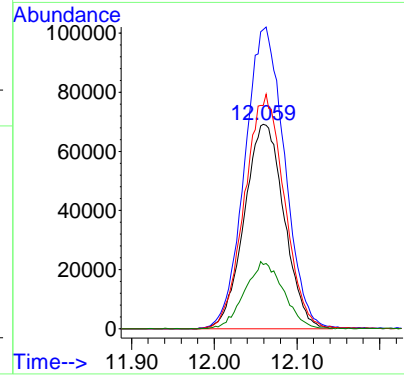
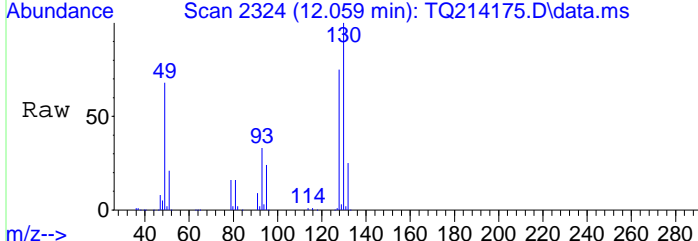
Quant Time: Apr 09 09:43:52 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration





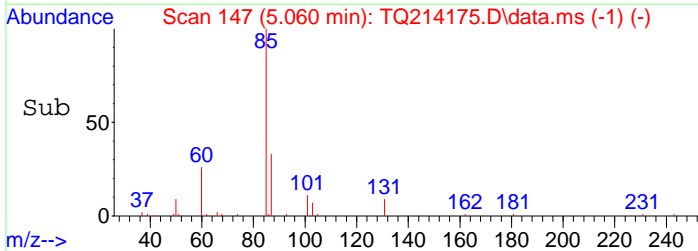
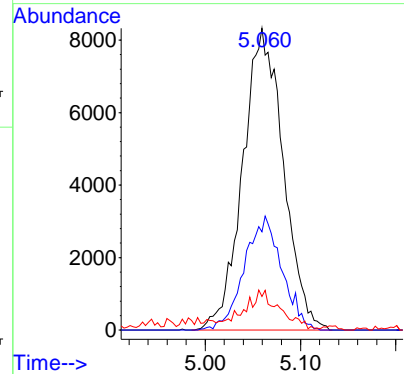
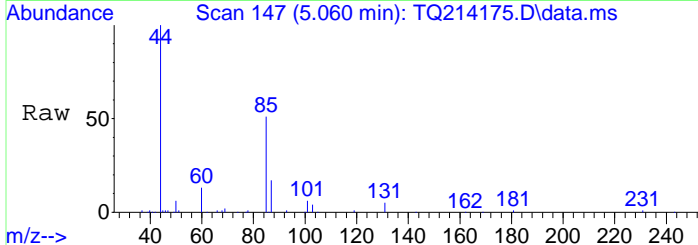
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.059 min Scan# 2324
 Delta R.T. -0.003 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

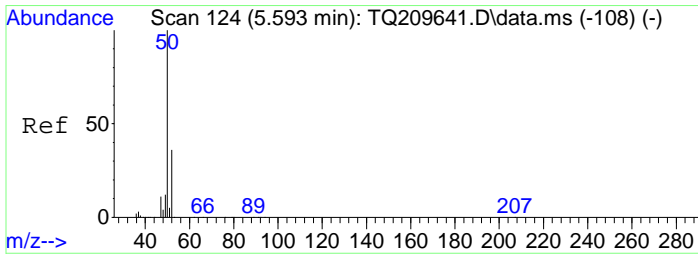
Tgt Ion	Resp	Lower	Upper
49	100		
130	147.2	48.1	99.9#
128	113.7	38.3	79.5#
51	31.7	20.3	42.3



#3
 Dichlorodifluoromethane
 Concen: 0.22 ppbv
 RT: 5.060 min Scan# 147
 Delta R.T. -0.012 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

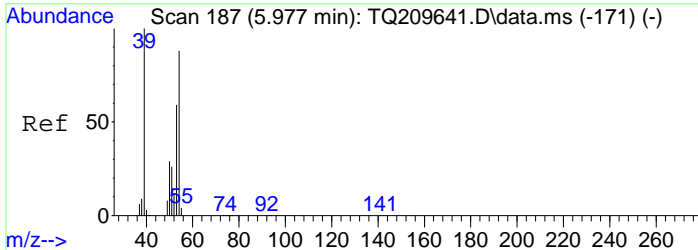
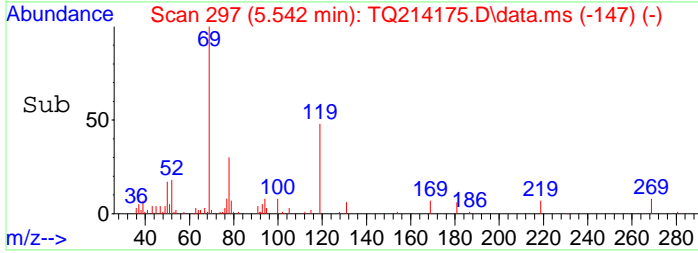
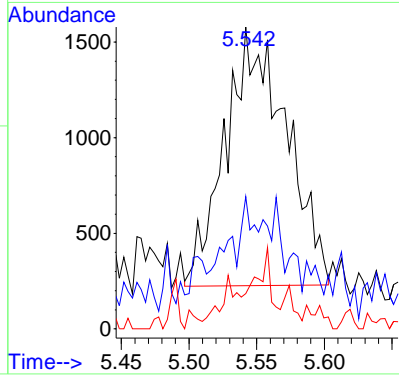
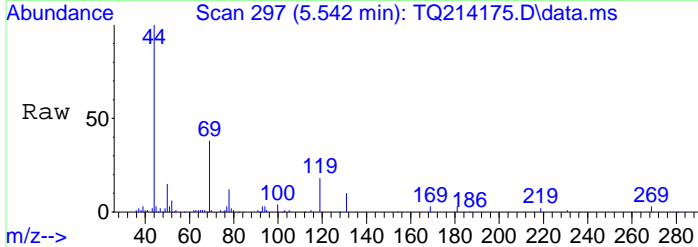
Tgt Ion	Resp	Lower	Upper
85	100		
87	34.9	20.9	43.5
50	7.0	7.2	15.0#





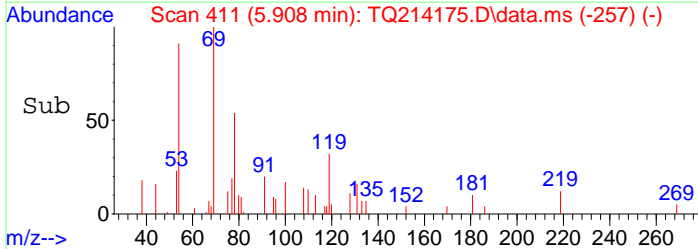
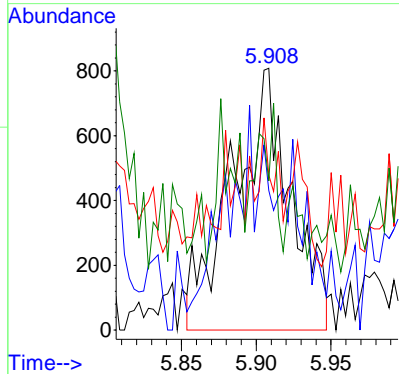
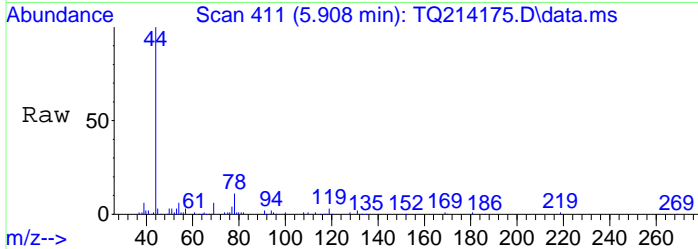
#5
 Chloromethane
 Concen: 0.27 ppbv m
 RT: 5.542 min Scan# 297
 Delta R.T. -0.019 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

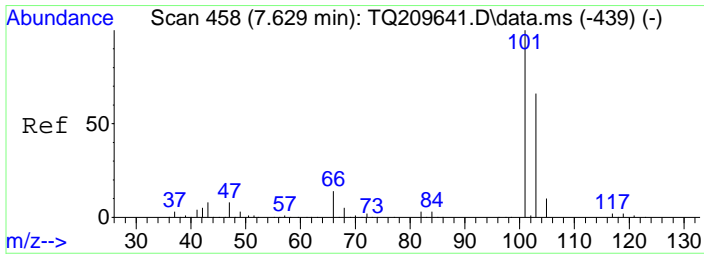
Tgt Ion	Resp	Lower	Upper
50	4216		
52	0.0	0.0	65.2
49	0.0	0.0	19.6



#7
 1,3-Butadiene
 Concen: 0.14 ppbv m
 RT: 5.908 min Scan# 411
 Delta R.T. -0.004 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

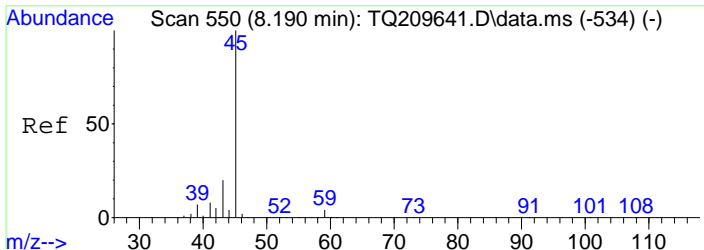
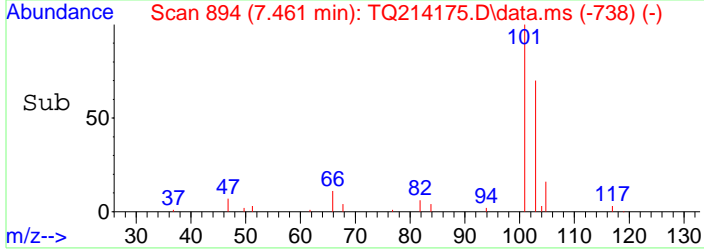
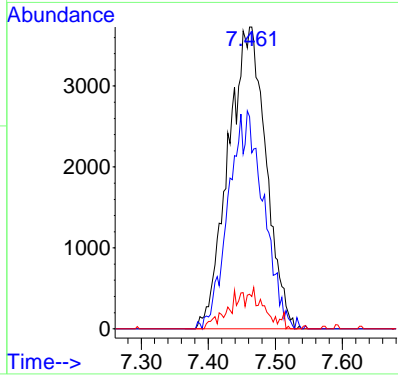
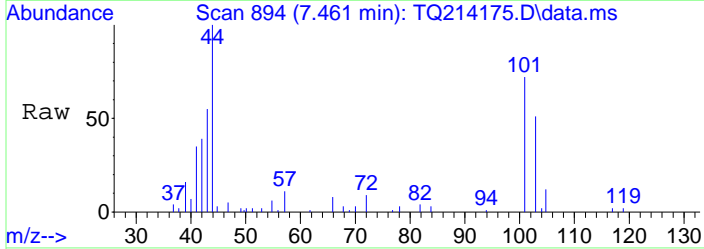
Tgt Ion	Resp	Lower	Upper
54	2180		
53	0.0	44.6	92.6#
51	0.0	19.2	40.0#
50	0.0	20.7	43.1#





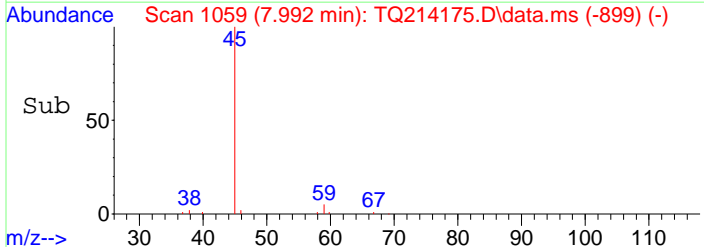
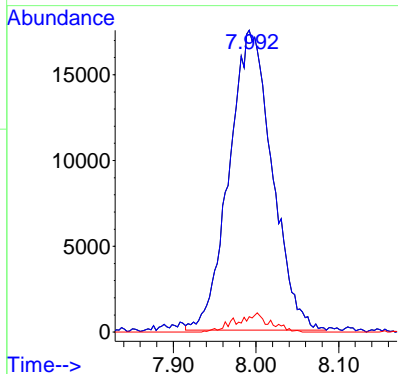
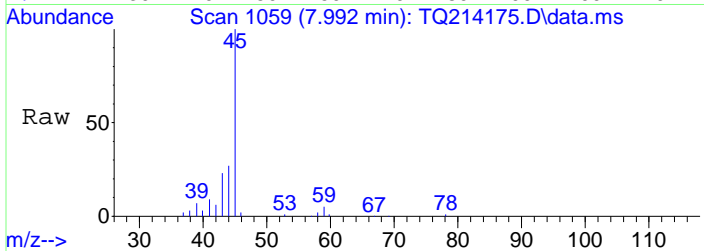
#11
 Trichlorofluoromethane
 Concen: 0.13 ppbv m
 RT: 7.461 min Scan# 894
 Delta R.T. 0.000 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

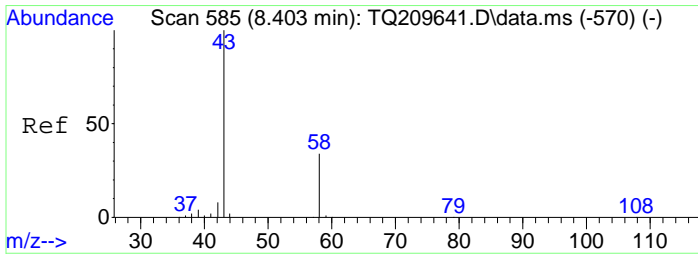
Tgt Ion	Resp	Lower	Upper
101	14554		
103	33.8	42.3	87.8#
66	0.0	7.8	16.2#



#12
 Isopropanol
 Concen: 1.18 ppbv
 RT: 7.992 min Scan# 1059
 Delta R.T. 0.013 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

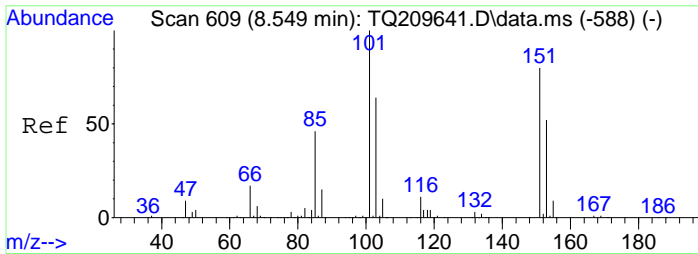
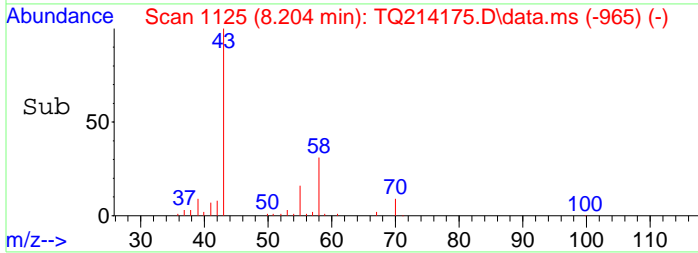
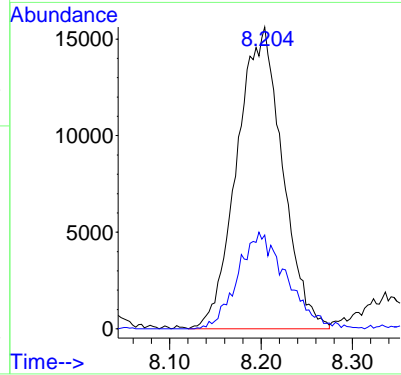
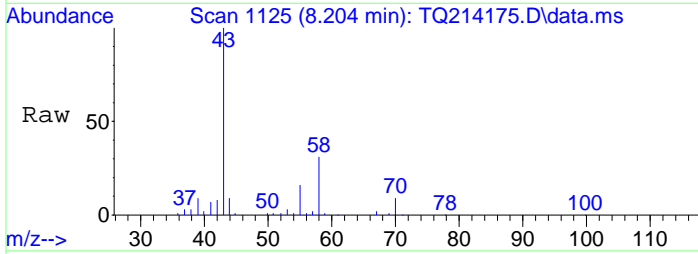
Tgt Ion	Resp	Lower	Upper
45	63133		
45	100.0	65.0	135.0
59	1.1	0.0	10.0





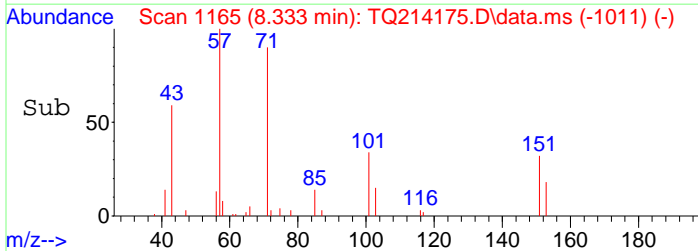
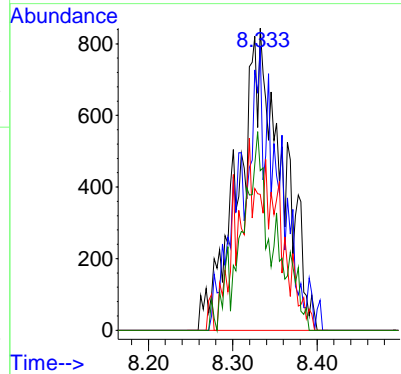
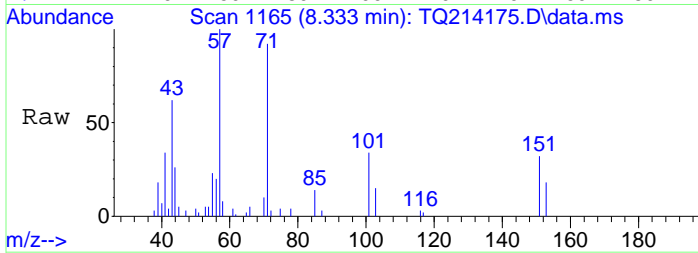
#14
 Acetone
 Concen: 1.13 ppbv
 RT: 8.204 min Scan# 1125
 Delta R.T. 0.013 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

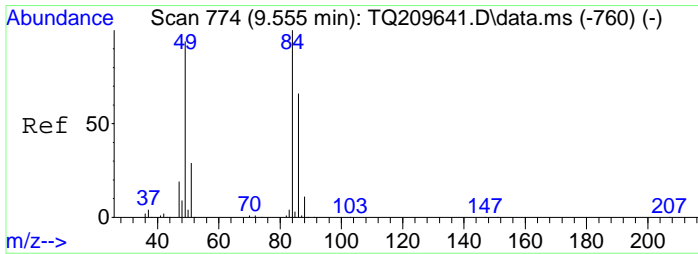
Tgt Ion	Resp	Lower	Upper
43	100		
58	34.1	20.9	43.3



#15
 Freon-113
 Concen: 0.04 ppbv m
 RT: 8.333 min Scan# 1165
 Delta R.T. -0.003 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

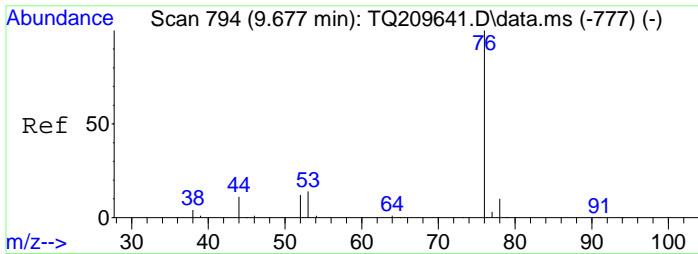
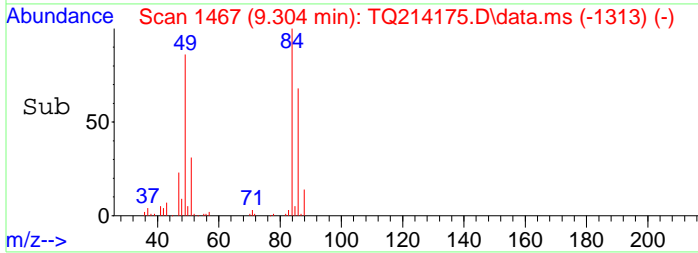
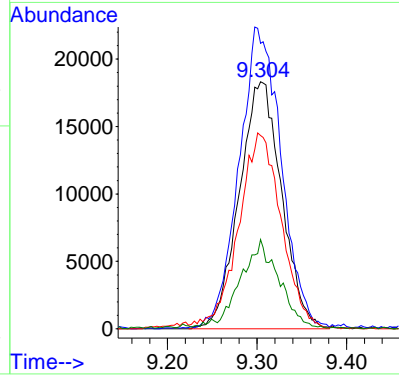
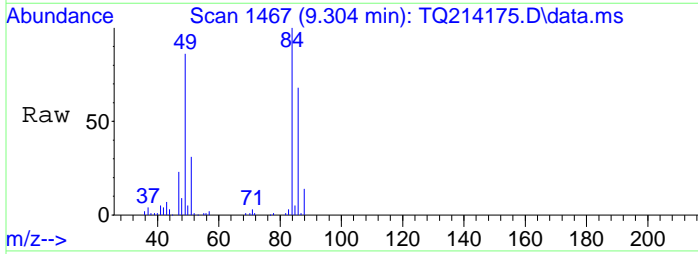
Tgt Ion	Resp	Lower	Upper
101	100		
151	21.3	50.5	104.9#
103	0.0	42.0	87.2#
153	0.0	32.4	67.4#





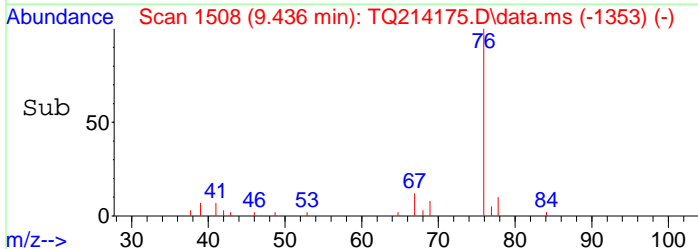
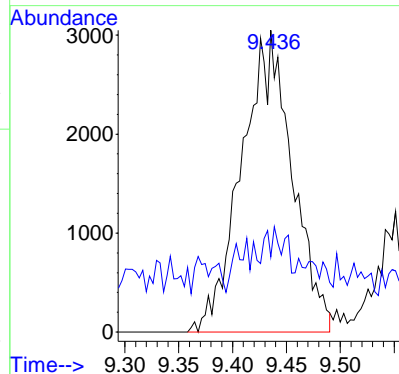
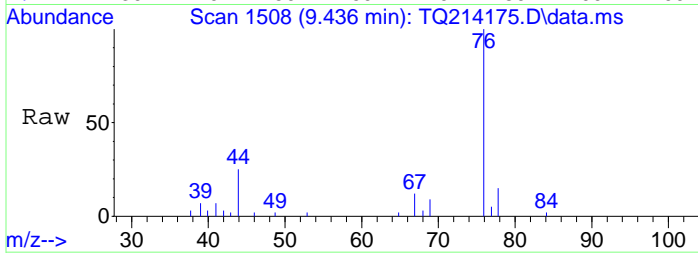
#18
 Methylene Chloride
 Concen: 2.02 ppbv
 RT: 9.304 min Scan# 1467
 Delta R.T. -0.003 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

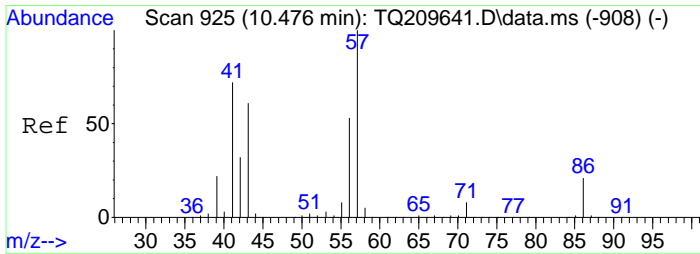
Tgt Ion	Resp	Lower	Upper
49	60596		
84	121.1	49.9	103.5#
86	79.3	31.8	66.0#
51	31.5	20.2	41.9



#20
 Carbon disulfide
 Concen: 0.10 ppbv m
 RT: 9.436 min Scan# 1508
 Delta R.T. -0.000 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

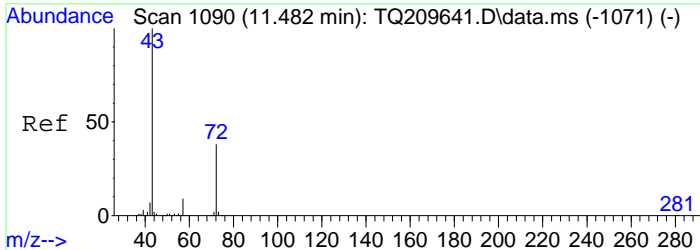
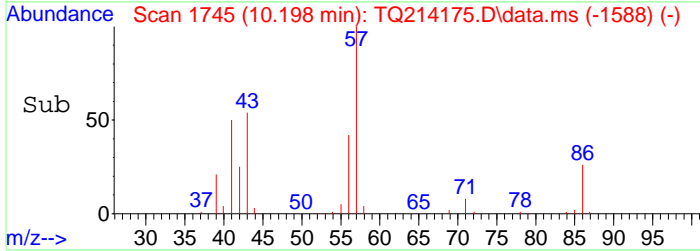
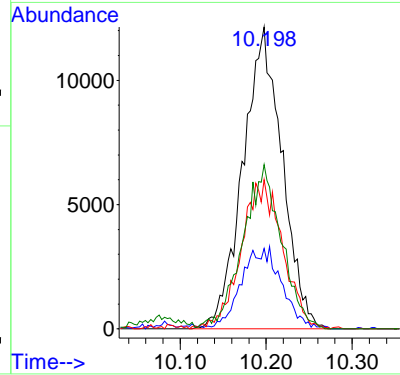
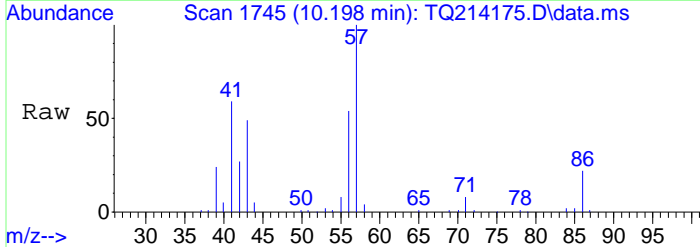
Tgt Ion	Resp	Lower	Upper
76	9928		
44	0.0	8.3	17.3#





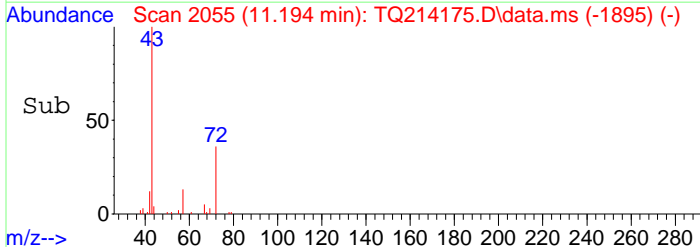
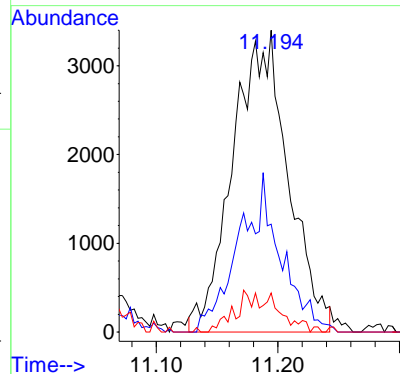
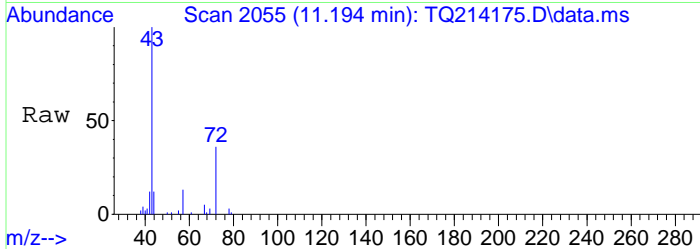
#23
Hexane
Concen: 0.86 ppbv
RT: 10.198 min Scan# 1745
Delta R.T. 0.004 min
Lab File: TQ214175.D
Acq: 9 Apr 2021 8:34 am

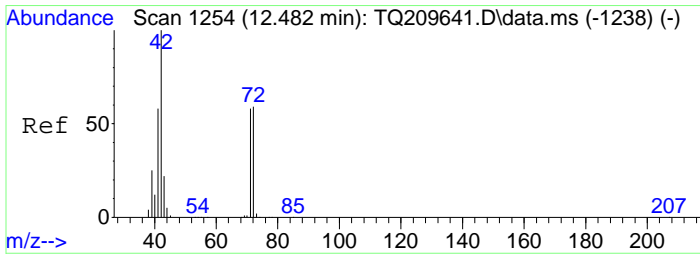
Tgt Ion	Resp	Lower	Upper
57	38405		
42	13.9	21.6	45.0#
43	26.6	42.0	87.2#
56	53.1	33.3	69.1



#26
2-Butanone
Concen: 0.22 ppbv m
RT: 11.194 min Scan# 2055
Delta R.T. 0.013 min
Lab File: TQ214175.D
Acq: 9 Apr 2021 8:34 am

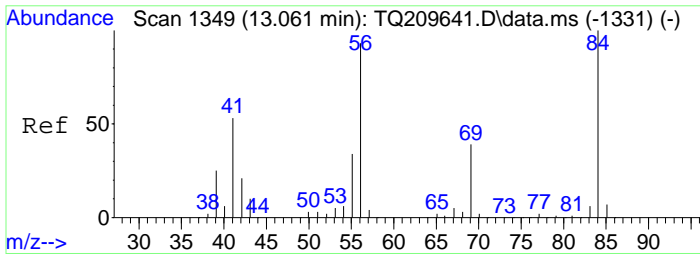
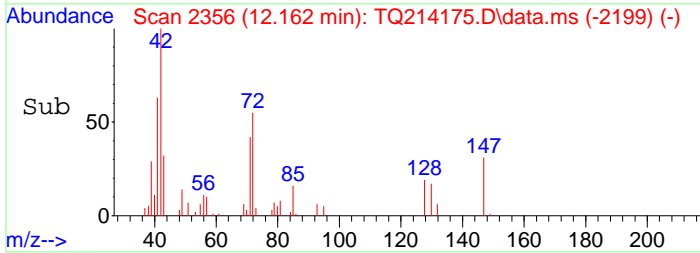
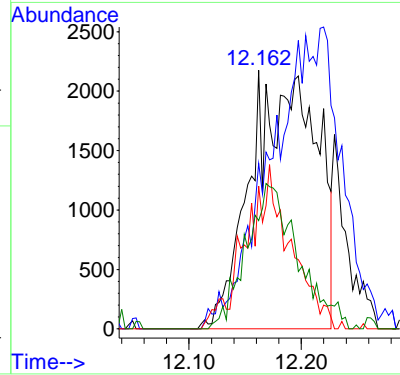
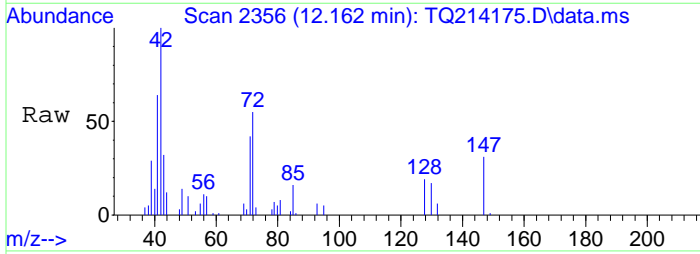
Tgt Ion	Resp	Lower	Upper
43	10708		
72	21.3	16.1	33.5
57	0.0	4.9	10.3#





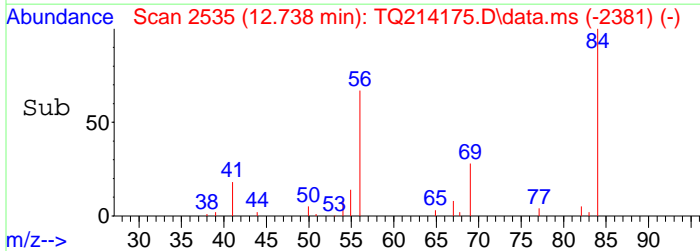
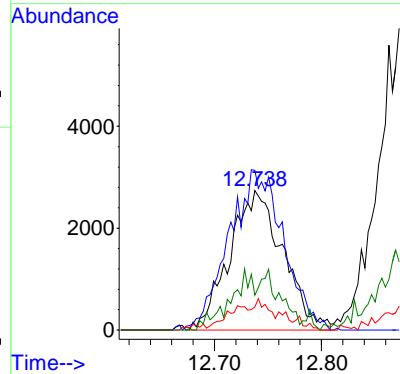
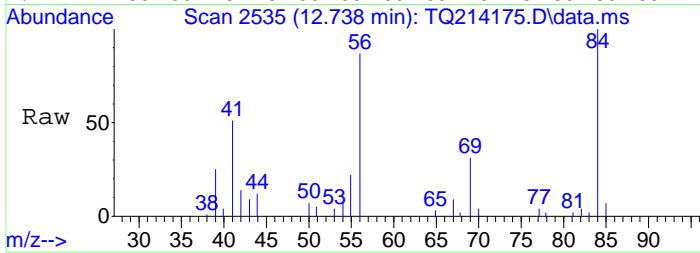
#30
 Tetrahydrofuran
 Concen: 0.34 ppbv m
 RT: 12.162 min Scan# 2356
 Delta R.T. 0.006 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

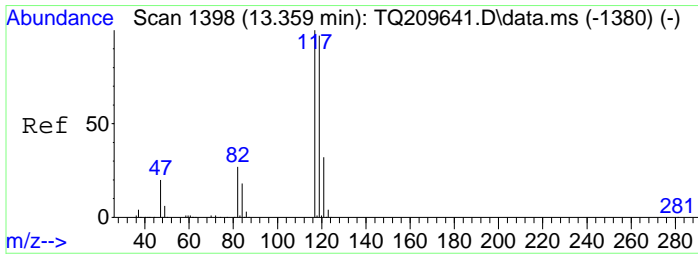
Tgt Ion	Resp	Lower	Upper
42	8735		
41	27.8	35.2	73.0#
72	40.6	27.2	56.6
71	44.7	25.9	53.7



#32
 Cyclohexane
 Concen: 0.24 ppbv
 RT: 12.738 min Scan# 2535
 Delta R.T. -0.003 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

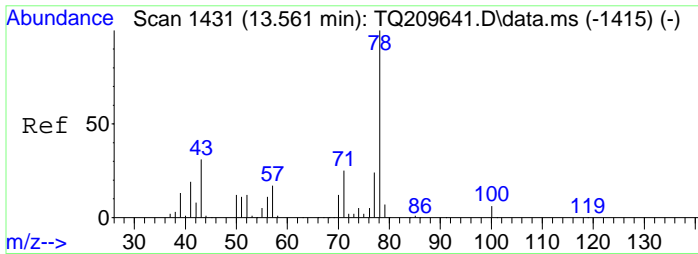
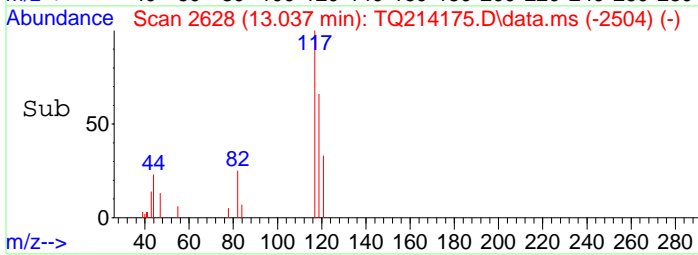
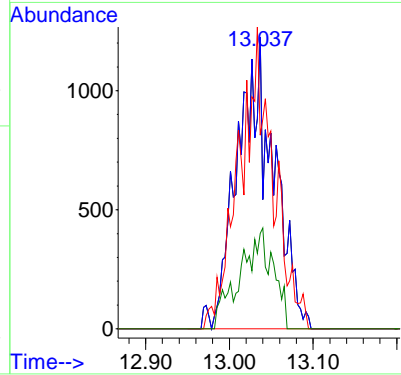
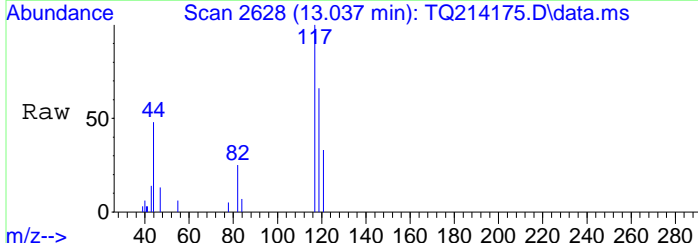
Tgt Ion	Resp	Lower	Upper
56	9500		
84	116.6	54.1	112.3#
42	6.3	15.3	31.7#
55	18.9	23.5	48.7#





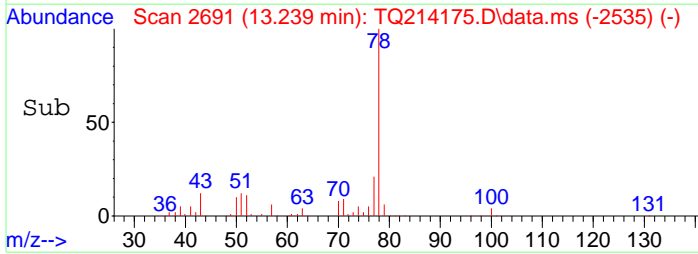
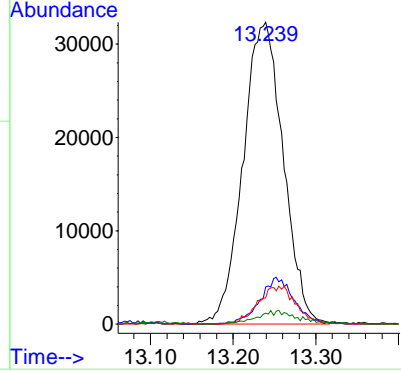
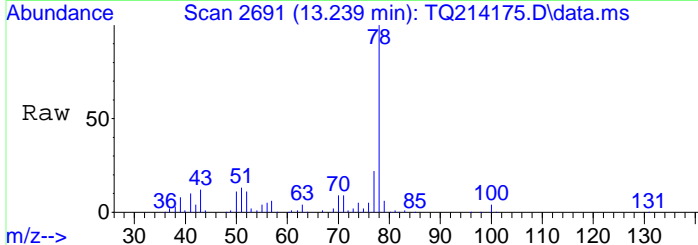
#33
 Carbon Tetrachloride
 Concen: 0.03 ppbv m
 RT: 13.037 min Scan# 2628
 Delta R.T. -0.000 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

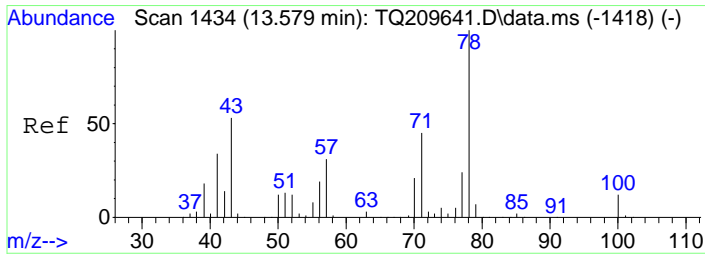
Tgt Ion	Resp	Lower	Upper
117	3701		
117	100		
117	39.0	80.0	120.0#
119	14.1	76.9	115.3#
121	0.0	21.7	40.3#



#35
 Benzene
 Concen: 0.95 ppbv
 RT: 13.239 min Scan# 2691
 Delta R.T. 0.000 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

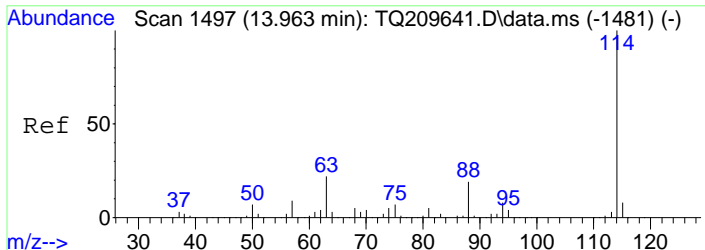
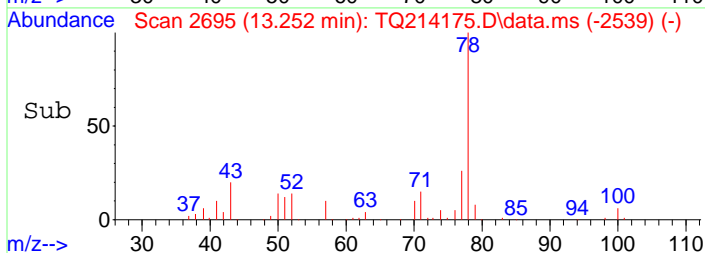
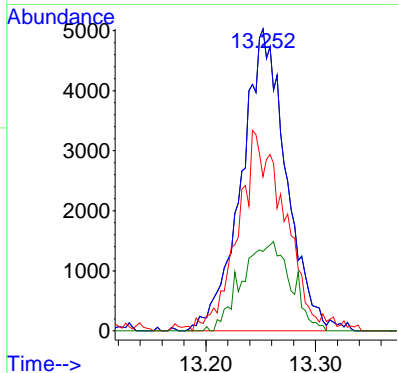
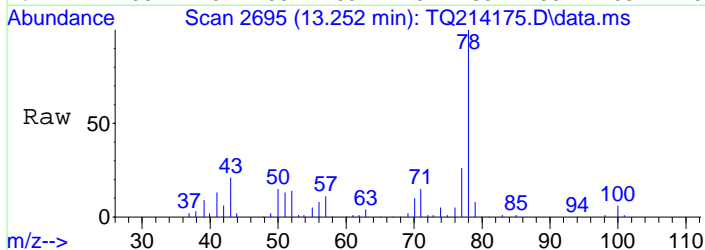
Tgt Ion	Resp	Lower	Upper
78	109156		
78	100		
43	0.0	37.5	77.9#
71	0.0	22.0	45.8#
42	1.8	8.8	18.4#





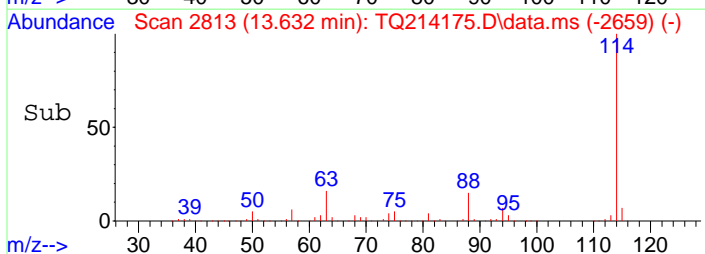
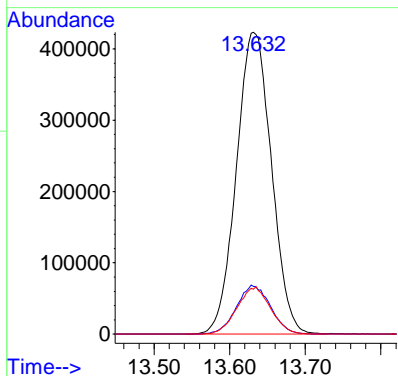
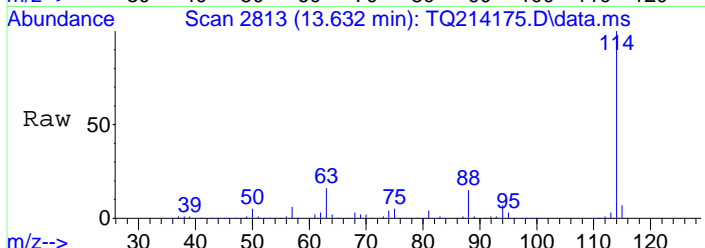
#36
 n-Heptane
 Concen: 0.38 ppbv
 RT: 13.252 min Scan# 2695
 Delta R.T. 0.000 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

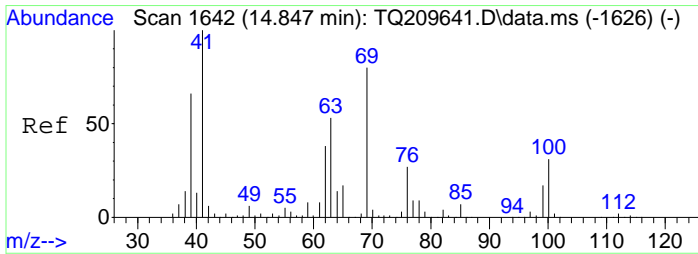
Tgt Ion	Resp	Lower	Upper
43	100		
43	100.0	80.0	120.0
57	35.2	42.6	64.0#
100	0.0	13.3	19.9#



#37
 1,4-Difluorobenzene
 Concen: 10.00 ppbv
 RT: 13.632 min Scan# 2813
 Delta R.T. -0.003 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

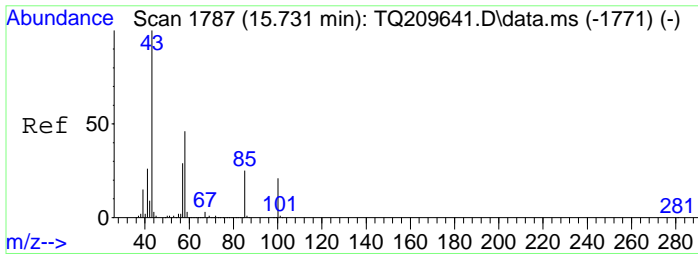
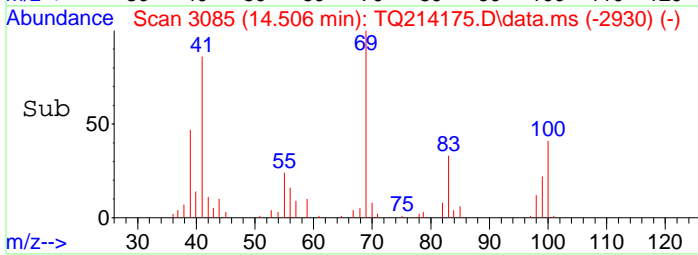
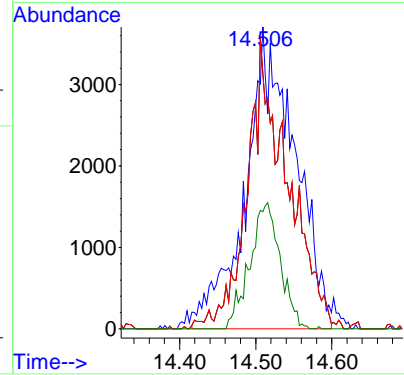
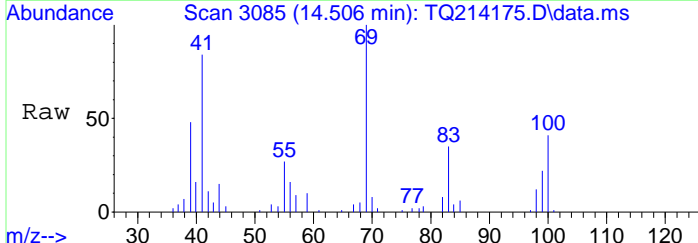
Tgt Ion	Resp	Lower	Upper
114	100		
63	15.7	12.9	26.9
88	14.9	10.7	22.3





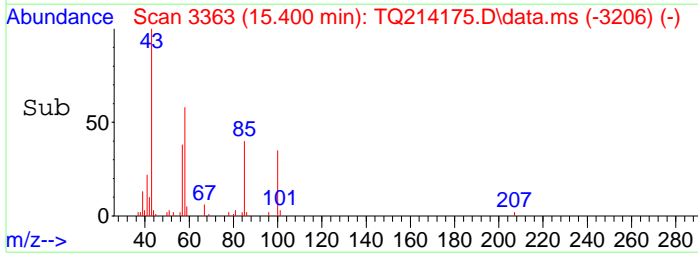
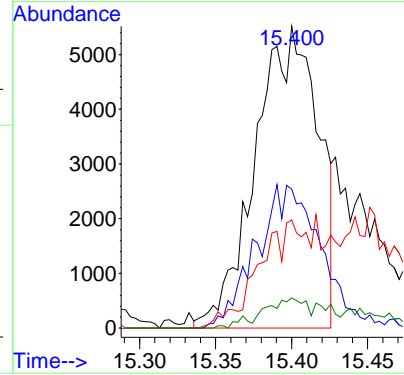
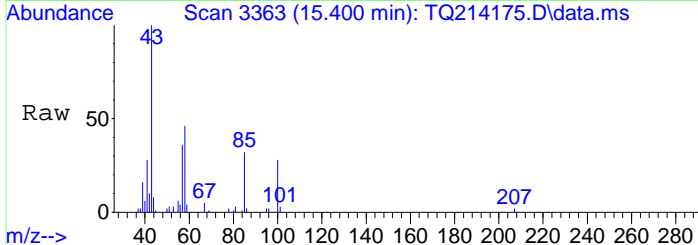
#40
 Methyl Methacrylate
 Concen: 0.33 ppbv m
 RT: 14.506 min Scan# 3085
 Delta R.T. -0.003 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

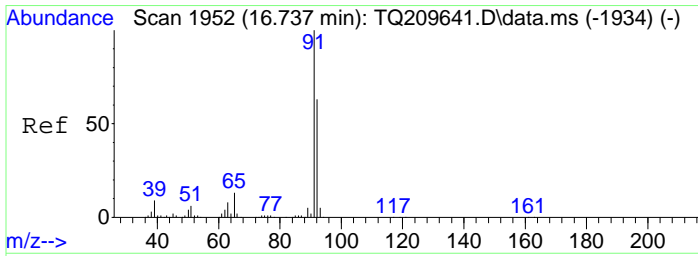
Tgt Ion	Resp	Lower	Upper
69	12991		
41	33.7	70.0	210.0#
69	55.5	50.0	150.0
100	0.0	17.5	52.5#



#43
 Methyl Isobutyl Ketone
 Concen: 0.26 ppbv m
 RT: 15.400 min Scan# 3363
 Delta R.T. 0.006 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

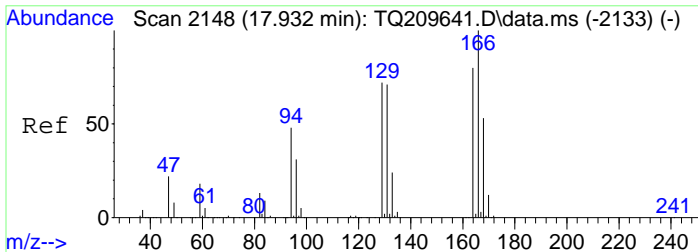
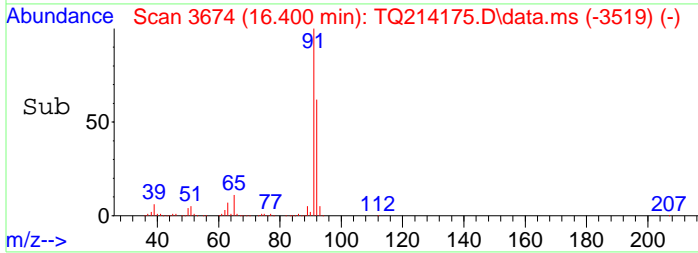
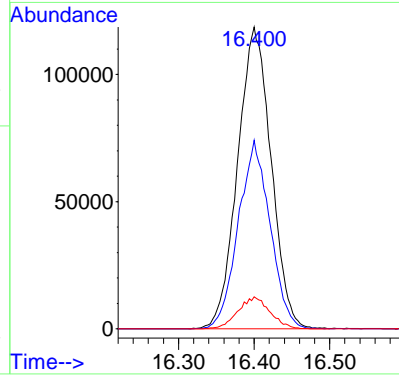
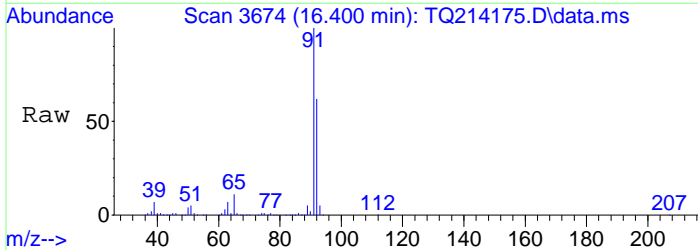
Tgt Ion	Resp	Lower	Upper
43	15848		
58	21.1	25.1	52.1#
57	14.9	15.5	32.3#
42	0.0	5.0	15.0#





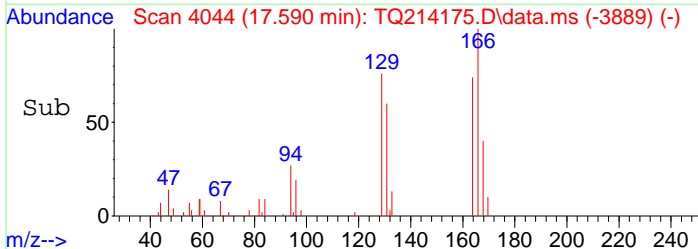
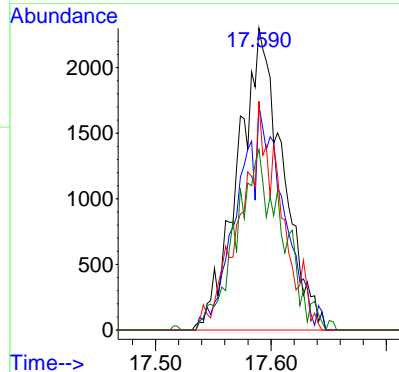
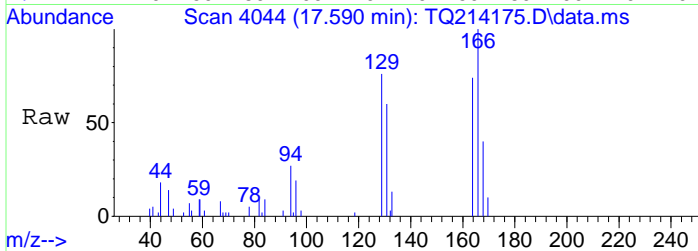
#45
 Toluene
 Concen: 2.16 ppbv
 RT: 16.400 min Scan# 3674
 Delta R.T. -0.000 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

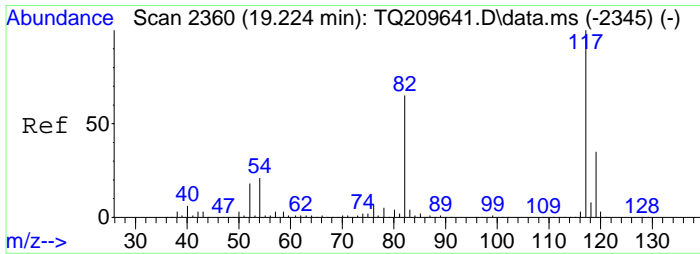
Tgt Ion	Resp	Lower	Upper
91	100		
92	59.2	38.7	80.3
65	10.1	7.5	15.5



#50
 Tetrachloroethylene
 Concen: 0.06 ppbv
 RT: 17.590 min Scan# 4044
 Delta R.T. -0.000 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

Tgt Ion	Resp	Lower	Upper
166	100		
164	41.1	51.0	106.0#
129	39.8	48.1	99.9#
131	51.7	46.3	96.3

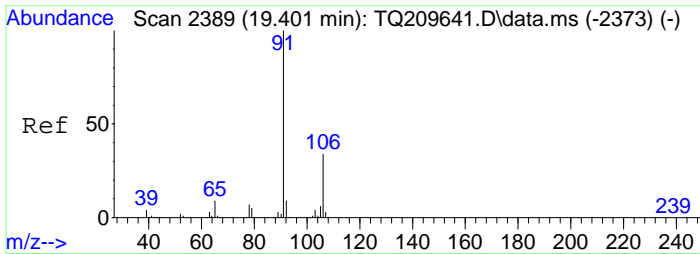
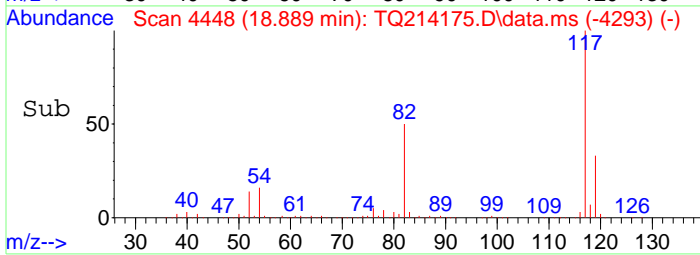
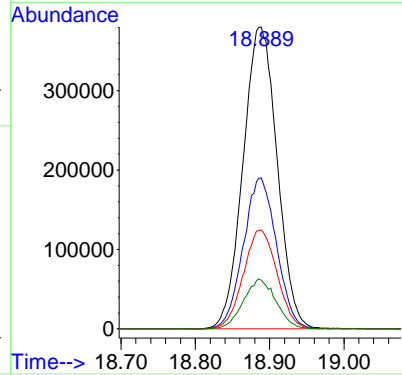
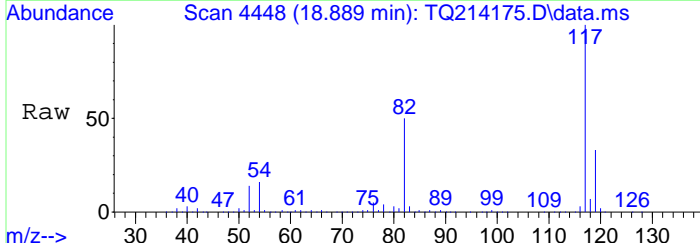




#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 18.889 min Scan# 4448
 Delta R.T. -0.000 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

Tgt Ion: 117 Resp: 1212250

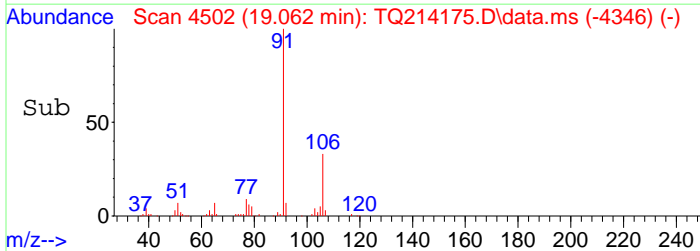
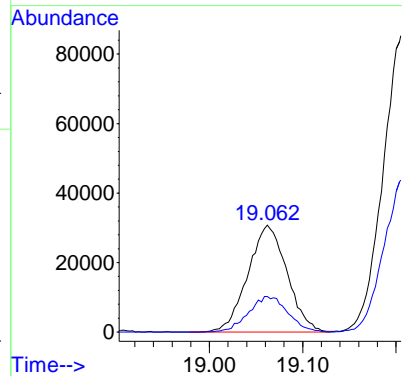
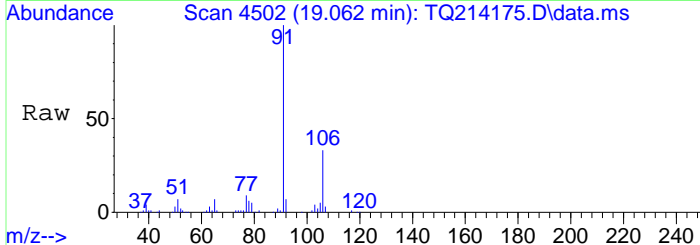
Ion	Ratio	Lower	Upper
117	100		
82	48.8	37.1	77.1
119	32.4	22.1	45.9
54	15.8	13.8	28.6

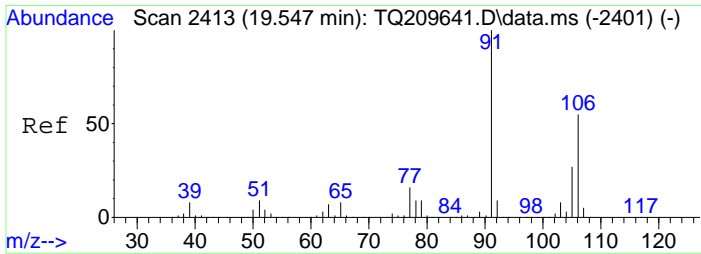


#56
 Ethylbenzene
 Concen: 0.40 ppbv
 RT: 19.062 min Scan# 4502
 Delta R.T. 0.000 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

Tgt Ion: 91 Resp: 89900

Ion	Ratio	Lower	Upper
91	100		
106	33.5	20.5	42.7

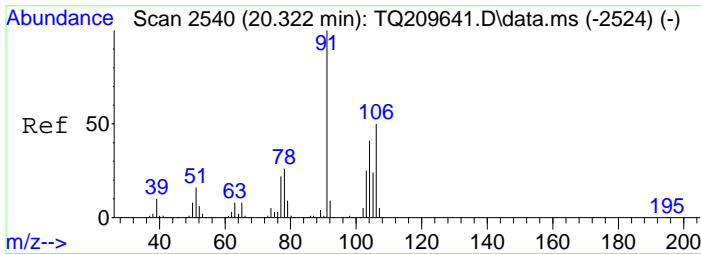
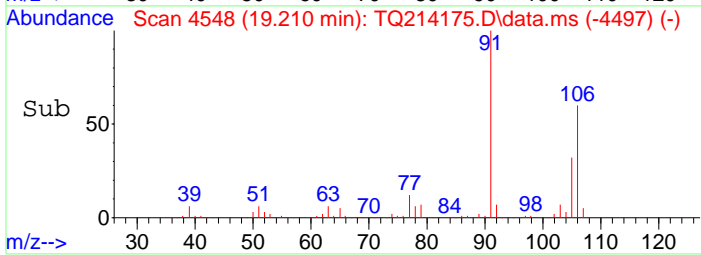
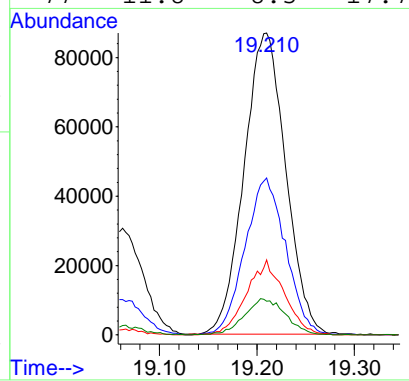
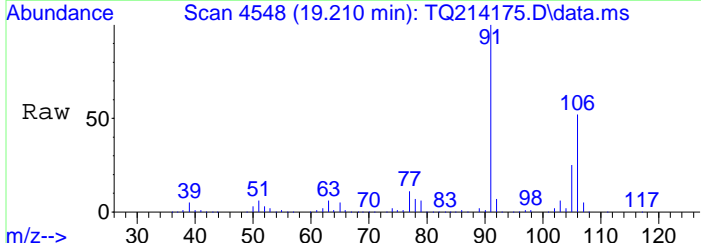




#57
 p- & m-Xylenes
 Concen: 1.50 ppbv
 RT: 19.210 min Scan# 4548
 Delta R.T. 0.003 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

Tgt Ion: 91 Resp: 258044

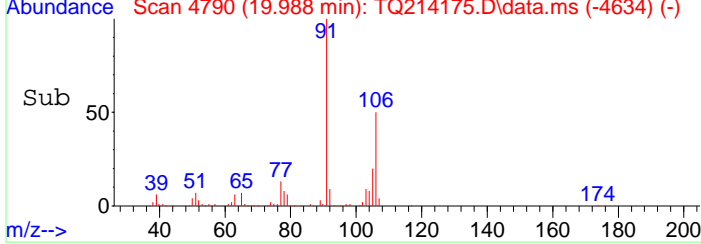
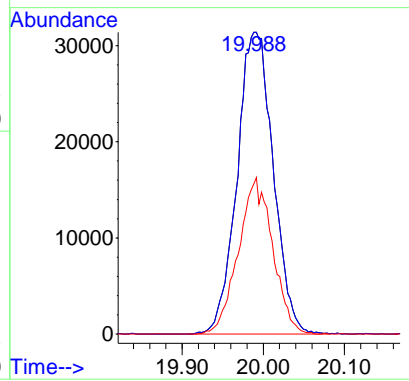
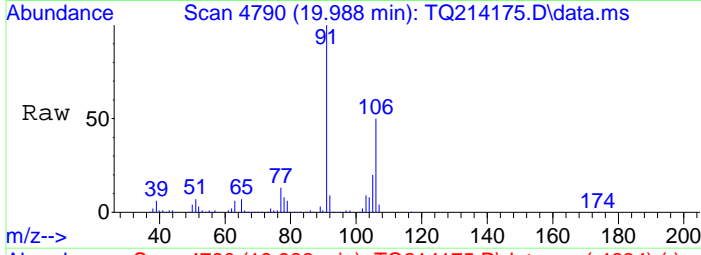
Ion	Ratio	Lower	Upper
91	100		
106	50.9	32.6	67.8
105	22.6	14.5	30.1
77	11.8	8.5	17.7

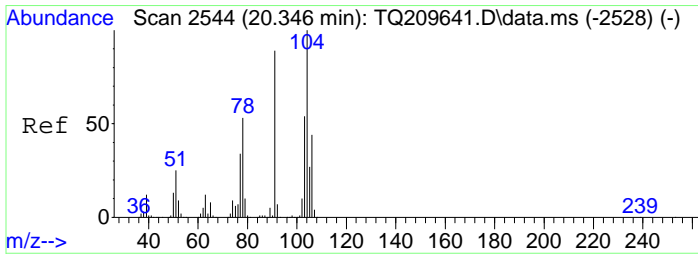


#58
 o-Xylene
 Concen: 0.57 ppbv
 RT: 19.988 min Scan# 4790
 Delta R.T. 0.000 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

Tgt Ion: 91 Resp: 97222

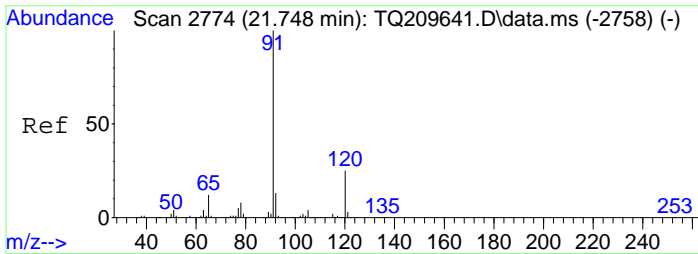
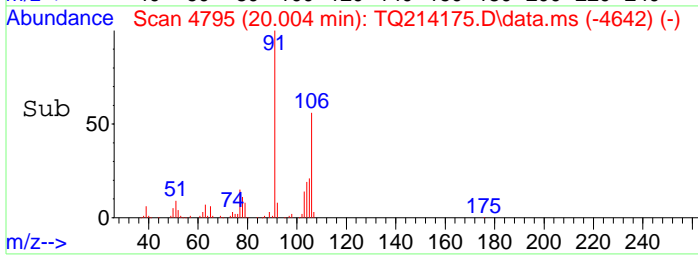
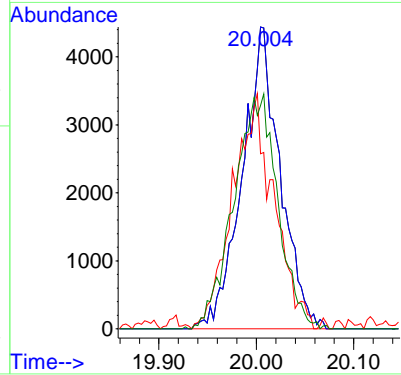
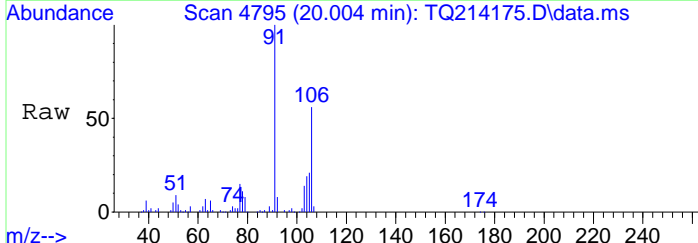
Ion	Ratio	Lower	Upper
91	100		
91	100.0	80.0	120.0
106	49.1	38.2	57.2





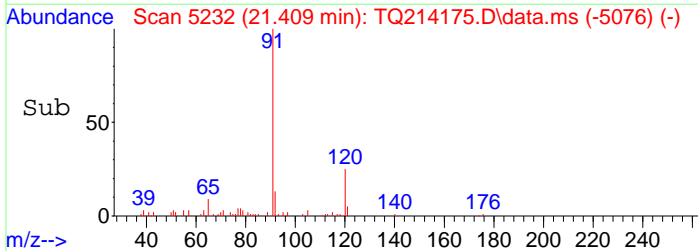
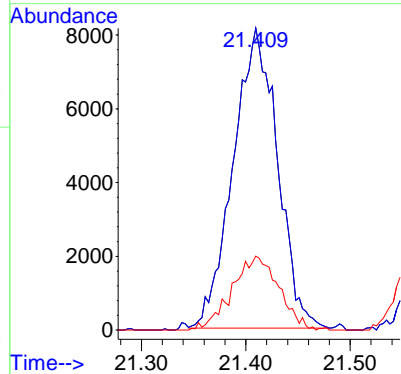
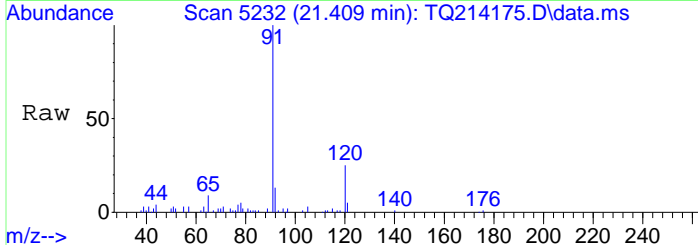
#59
 Styrene
 Concen: 0.09 ppbv
 RT: 20.004 min Scan# 4795
 Delta R.T. -0.007 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

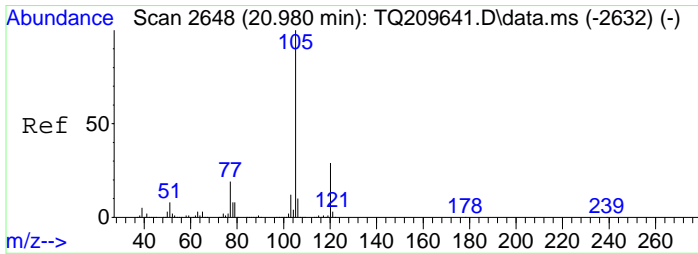
Tgt Ion	Resp	Lower	Upper
104	11938		
104	100		
104	100.0	65.0	135.0
78	0.0	0.0	0.0
103	90.8	0.0	0.0#



#61
 n-Propylbenzene
 Concen: 0.08 ppbv
 RT: 21.409 min Scan# 5232
 Delta R.T. 0.000 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

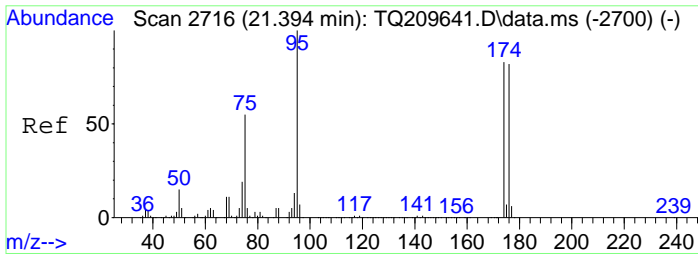
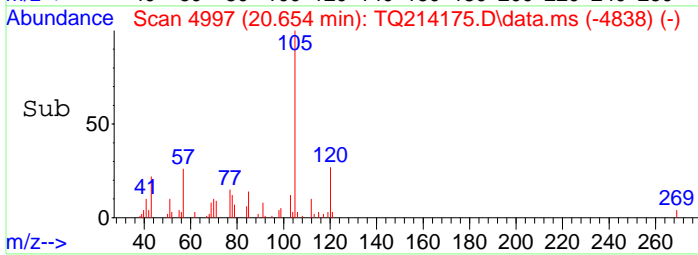
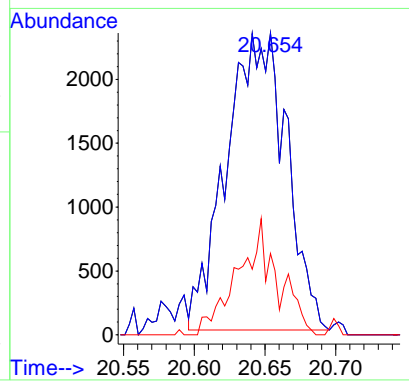
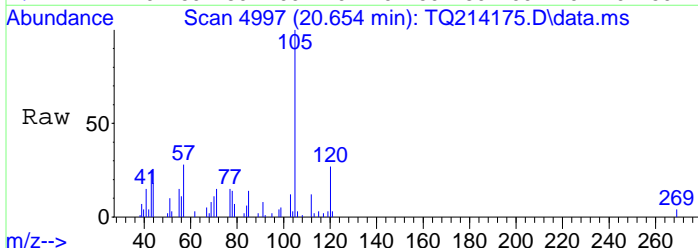
Tgt Ion	Resp	Lower	Upper
91	23982		
91	100		
91	100.0	80.0	120.0
120	26.0	10.0	30.0





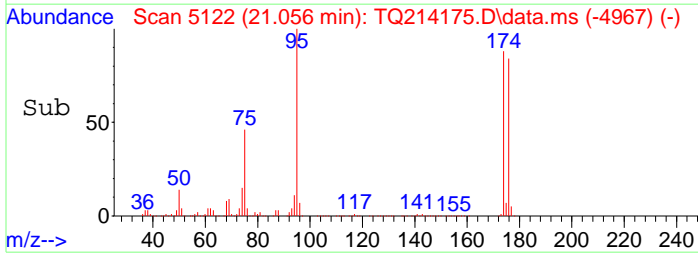
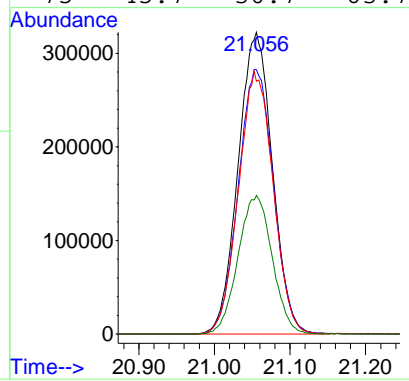
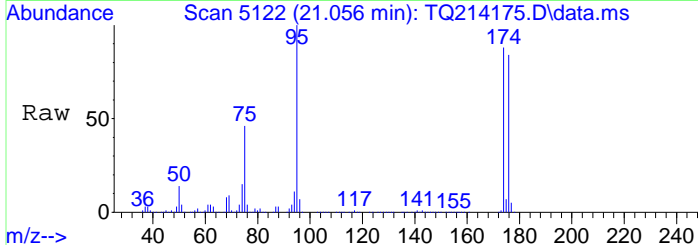
#62
 Isopropylbenzene
 Concen: 0.03 ppbv
 RT: 20.654 min Scan# 4997
 Delta R.T. 0.010 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

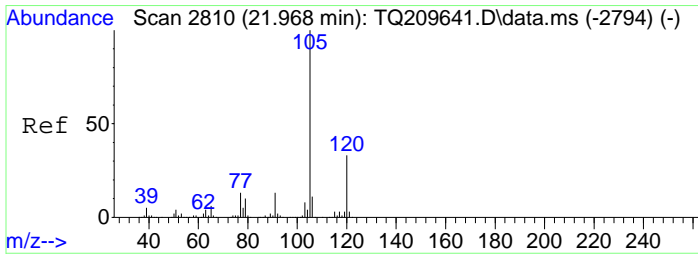
Tgt Ion	Resp	Lower	Upper
105	6888		
105	100		
105	100.0	80.0	120.0
120	20.8	10.0	30.0



#64
 p-Bromofluorobenzene
 Concen: 9.35 ppbv
 RT: 21.056 min Scan# 5122
 Delta R.T. -0.000 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

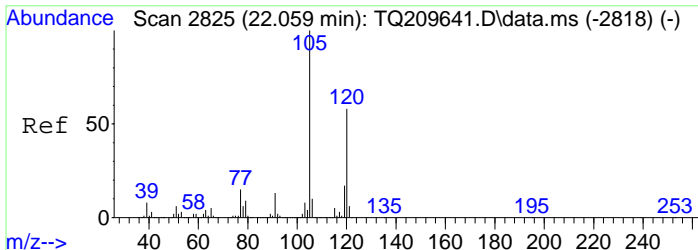
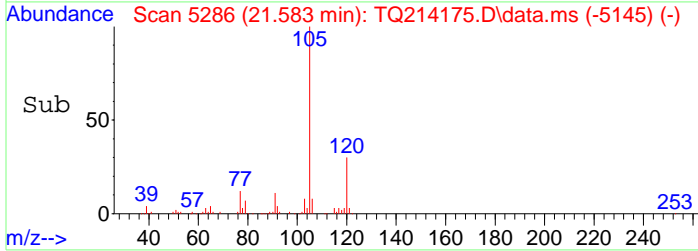
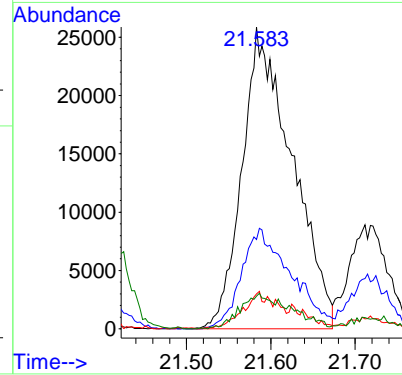
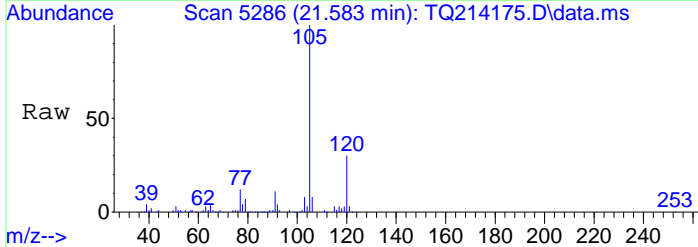
Tgt Ion	Resp	Lower	Upper
95	1017013		
95	100		
174	90.0	53.2	110.6
176	87.6	51.6	107.2
75	45.7	30.7	63.7





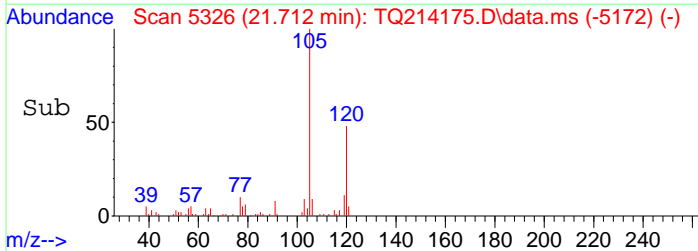
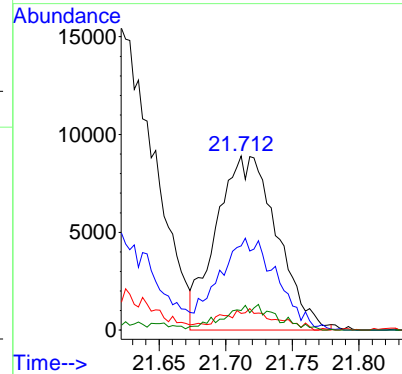
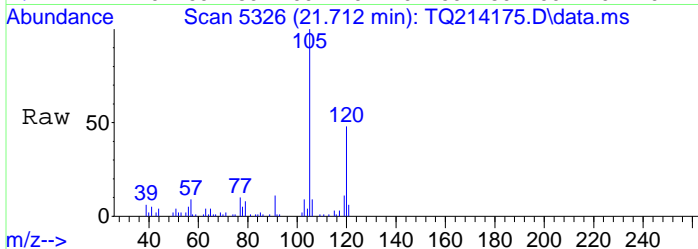
#65
 4-Ethyltoluene
 Concen: 0.40 ppbv
 RT: 21.583 min Scan# 5286
 Delta R.T. -0.048 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

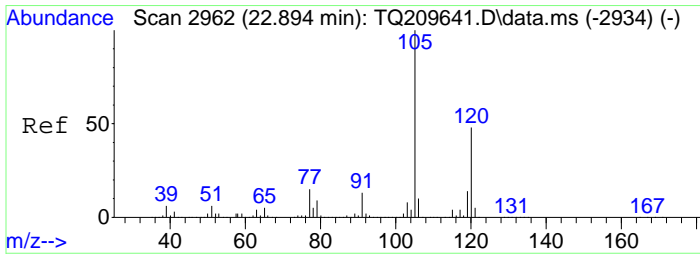
Tgt Ion	Resp	Lower	Upper
105	105980		
120	28.5	19.6	40.8
77	5.2	7.3	15.3#
91	7.4	7.1	14.7



#66
 1,3,5-Trimethylbenzene
 Concen: 0.13 ppbv m
 RT: 21.712 min Scan# 5326
 Delta R.T. -0.006 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

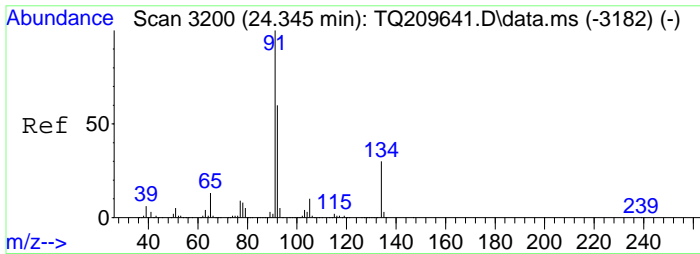
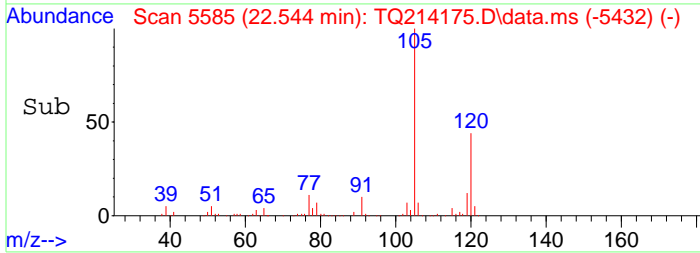
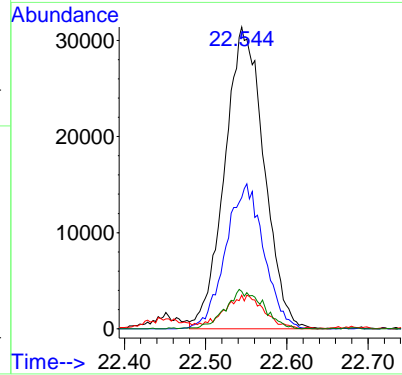
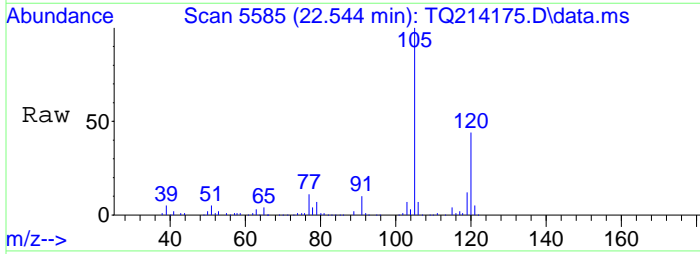
Tgt Ion	Resp	Lower	Upper
105	28340		
120	49.9	39.2	58.8
77	7.5	10.1	15.1#
119	2.7	6.1	18.3#





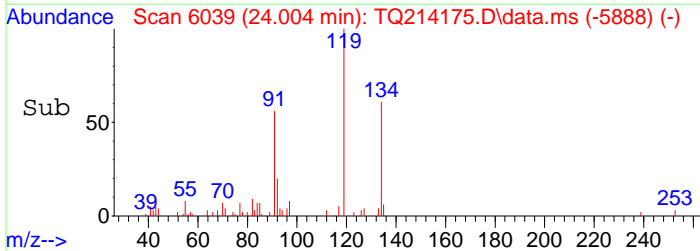
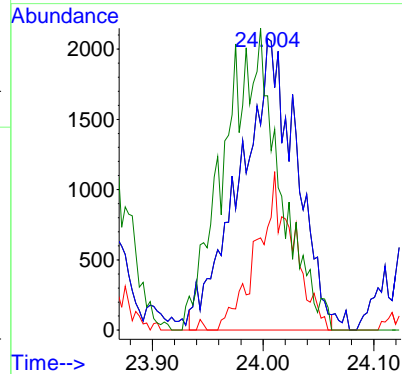
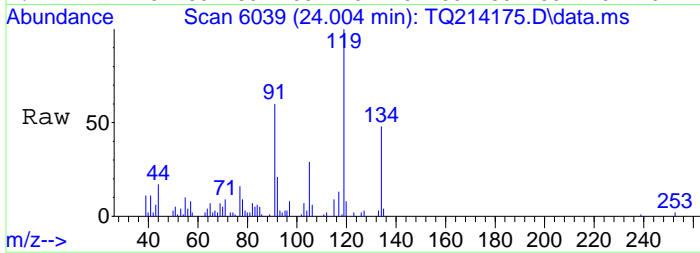
#68
 1,2,4-Trimethylbenzene
 Concen: 0.46 ppbv
 RT: 22.544 min Scan# 5585
 Delta R.T. -0.007 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

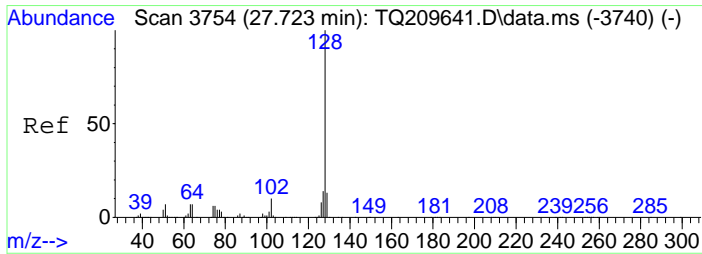
Tgt Ion	Resp	Lower	Upper
105	105487		
120	46.6	30.2	62.6
77	4.5	8.1	16.9#
119	12.5	7.8	16.2



#74
 n-Butylbenzene
 Concen: 0.03 ppbv m
 RT: 24.004 min Scan# 6039
 Delta R.T. -0.013 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

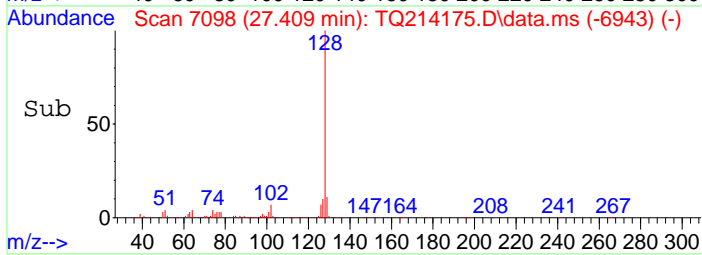
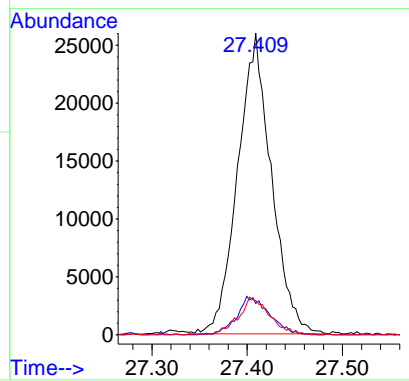
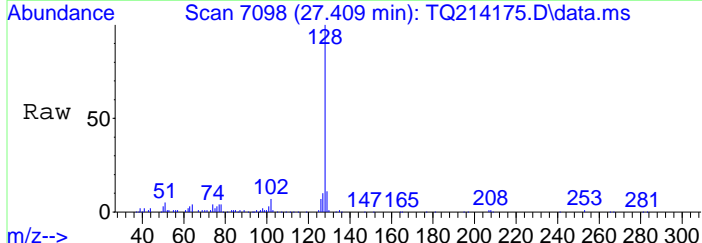
Tgt Ion	Resp	Lower	Upper
91	7288		
91	100		
91	21.9	80.0	120.0#
92	34.9	44.0	66.0#
134	0.0	12.5	37.5#





#78
 Naphthalene
 Concen: 0.12 ppbv
 RT: 27.409 min Scan# 7098
 Delta R.T. -0.003 min
 Lab File: TQ214175.D
 Acq: 9 Apr 2021 8:34 am

Tgt Ion	Resp	Lower	Upper
128	63646		
127	12.5	8.1	16.9
129	11.6	7.1	14.7



Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Outdoor Ambient Air Laboratory ID: 21D0348-05 File ID: TQ214177.D
 Sampled: 04/08/21 08:38 Prepared: 04/08/21 22:00 Analyzed: 04/09/21 10:47
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	0.852	0.585	U
71-55-6	1,1,1-Trichloroethane	0.852	0.465	U
79-34-5	1,1,2,2-Tetrachloroethane	0.852	0.585	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.852	0.653	U
79-00-5	1,1,2-Trichloroethane	0.852	0.465	U
75-34-3	1,1-Dichloroethane	0.852	0.345	U
75-35-4	1,1-Dichloroethylene	0.852	0.169	U
120-82-1	1,2,4-Trichlorobenzene	0.852	0.632	U
95-63-6	1,2,4-Trimethylbenzene	0.852	0.419	U
106-93-4	1,2-Dibromoethane	0.852	0.655	U
95-50-1	1,2-Dichlorobenzene	0.852	0.512	U
107-06-2	1,2-Dichloroethane	0.852	0.345	U
78-87-5	1,2-Dichloropropane	0.852	0.394	U
76-14-2	1,2-Dichlorotetrafluoroethane	0.852	0.596	U
108-67-8	1,3,5-Trimethylbenzene	0.852	0.419	U
106-99-0	1,3-Butadiene	0.852	0.565	U
541-73-1	1,3-Dichlorobenzene	0.852	0.512	U
142-28-9	1,3-Dichloropropane	0.852	0.394	U
106-46-7	1,4-Dichlorobenzene	0.852	0.512	U
123-91-1	1,4-Dioxane	0.852	0.614	U
78-93-3	2-Butanone	0.852	0.653	D
591-78-6	2-Hexanone	0.852	0.698	U
107-05-1	3-Chloropropene	0.852	1.33	U
108-10-1	4-Methyl-2-pentanone	0.852	0.349	U
67-64-1	Acetone	0.852	4.76	D
107-13-1	Acrylonitrile	0.852	0.185	U
71-43-2	Benzene	0.852	0.517	D
100-44-7	Benzyl chloride	0.852	0.441	U
75-27-4	Bromodichloromethane	0.852	0.571	U
75-25-2	Bromoform	0.852	0.881	U
74-83-9	Bromomethane	0.852	0.331	U
75-15-0	Carbon disulfide	0.852	0.318	D
56-23-5	Carbon tetrachloride	0.852	0.375	D
108-90-7	Chlorobenzene	0.852	0.392	U
75-00-3	Chloroethane	0.852	0.225	U
67-66-3	Chloroform	0.852	0.416	U
74-87-3	Chloromethane	0.852	0.897	D
156-59-2	cis-1,2-Dichloroethylene	0.852	0.169	U
10061-01-5	cis-1,3-Dichloropropylene	0.852	0.387	U
110-82-7	Cyclohexane	0.852	0.293	U

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Outdoor Ambient Air Laboratory ID: 21D0348-05 File ID: TQ214177.D
 Sampled: 04/08/21 08:38 Prepared: 04/08/21 22:00 Analyzed: 04/09/21 10:47
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
124-48-1	Dibromochloromethane	0.852	0.726	U
75-71-8	Dichlorodifluoromethane	0.852	2.02	D
141-78-6	Ethyl acetate	0.852	0.614	U
100-41-4	Ethyl Benzene	0.852	0.370	U
87-68-3	Hexachlorobutadiene	0.852	0.909	U
67-63-0	Isopropanol	0.852	2.47	D
80-62-6	Methyl Methacrylate	0.852	0.767	D
1634-04-4	Methyl tert-butyl ether (MTBE)	0.852	0.307	U
75-09-2	Methylene chloride	0.852	3.08	D
142-82-5	n-Heptane	0.852	0.349	D
110-54-3	n-Hexane	0.852	0.781	D
95-47-6	o-Xylene	0.852	0.370	U
179601-23-1	p- & m- Xylenes	0.852	0.962	D
622-96-8	p-Ethyltoluene	0.852	0.419	U
115-07-1	Propylene	0.852	0.147	U
100-42-5	Styrene	0.852	0.363	U
127-18-4	Tetrachloroethylene	0.852	0.925	D
109-99-9	Tetrahydrofuran	0.852	0.503	U
108-88-3	Toluene	0.852	1.73	D
156-60-5	trans-1,2-Dichloroethylene	0.852	0.338	U
10061-02-6	trans-1,3-Dichloropropylene	0.852	0.387	U
79-01-6	Trichloroethylene	0.852	0.114	U
75-69-4	Trichlorofluoromethane (Freon 11)	0.852	1.15	D
108-05-4	Vinyl acetate	0.852	0.300	U
593-60-2	Vinyl bromide	0.852	0.373	U
75-01-4	Vinyl Chloride	0.852	0.109	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	246907	12.059	189488	12.075	
ISTD: 1,4-Difluorobenzene	1359242	13.632	1051211	13.641	
ISTD: d5-Chlorobenzene	1262443	18.889	1007357	18.885	

* Values outside of QC limits

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214177.D
 Acq On : 9 Apr 2021 10:47 am
 Operator : LLJ
 Sample : 21D0348-05
 Misc : QBTO2040821A 0.533X/750ML
 ALS Vial : 16 Sample Multiplier: 0.852
 InstName : TO15_AIR2

Quant Time: Apr 09 12:23:33 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

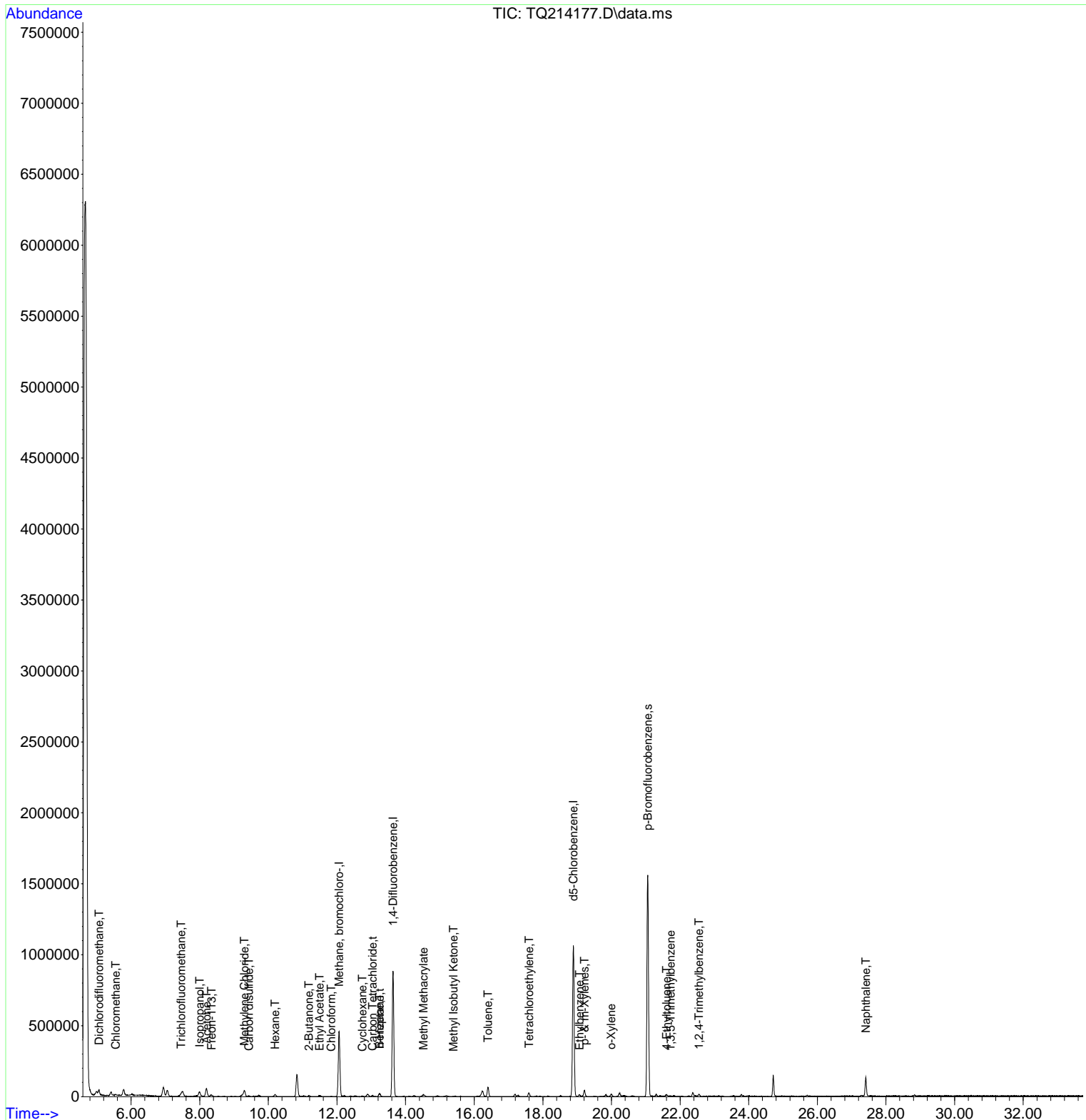
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

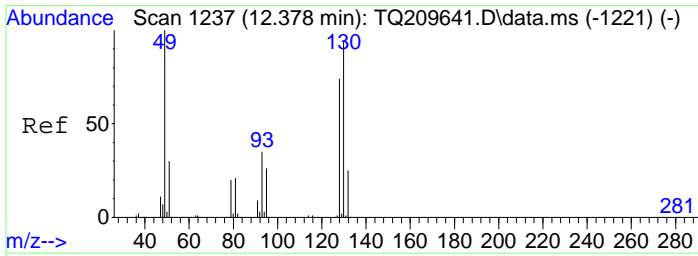
Internal Standards						
1) Methane, bromochloro-	12.059	49	246907	10.00	ppbv	# 0.00
37) 1,4-Difluorobenzene	13.632	114	1359242	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.889	117	1262443	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.056	95	1062328	9.38	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	93.80%	
Target Compounds						
						Qvalue
3) Dichlorodifluoromethane	5.063	85	57236	0.48	ppbv	# 95
5) Chloromethane	5.548	50	8442	0.51	ppbv	# 68
11) Trichlorofluoromethane	7.458	101	29803m	0.24	ppbv	
12) Isopropanol	7.992	45	67249	1.18	ppbv	100
14) Acetone	8.194	43	119753	2.35	ppbv	96
15) Freon-113	8.339	101	6759m	0.08	ppbv	
18) Methylene Chloride	9.297	49	33369m	1.04	ppbv	
20) Carbon disulfide	9.429	76	11694	0.12	ppbv	# 68
23) Hexane	10.188	57	12082	0.26	ppbv	# 72
26) 2-Butanone	11.178	43	13198	0.26	ppbv	# 94
27) Ethyl Acetate	11.487	43	5984	0.11	ppbv	# 24
29) Chloroform	11.825	83	2482m	0.03	ppbv	
32) Cyclohexane	12.738	56	2481m	0.06	ppbv	
33) Carbon Tetrachloride	13.030	117	8474m	0.07	ppbv	
35) Benzene	13.239	78	23316	0.19	ppbv	# 47
36) n-Heptane	13.246	43	4054m	0.10	ppbv	
40) Methyl Methacrylate	14.516	69	8469m	0.22	ppbv	
43) Methyl Isobutyl Ketone	15.397	43	1854	0.03	ppbv	# 46
45) Toluene	16.400	91	90719	0.54	ppbv	99
50) Tetrachloroethylene	17.596	166	15424	0.16	ppbv	# 69
56) Ethylbenzene	19.065	91	16786	0.07	ppbv	96
57) p- & m-Xylenes	19.213	91	47155	0.26	ppbv	# 96
58) o-Xylene	19.988	91	16731	0.09	ppbv	100
65) 4-Ethyltoluene	21.602	105	20184m	0.07	ppbv	
66) 1,3,5-Trimethylbenzene	21.721	105	5318m	0.02	ppbv	
68) 1,2,4-Trimethylbenzene	22.548	105	19913	0.08	ppbv	# 71
78) Naphthalene	27.412	128	193555	0.36	ppbv	100

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

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214177.D
 Acq On : 9 Apr 2021 10:47 am
 Operator : LLJ
 Sample : 21D0348-05
 Misc : QBTO2040821A 0.533X/750ML
 ALS Vial : 16 Sample Multiplier: 0.852
 InstName : TO15_AIR2

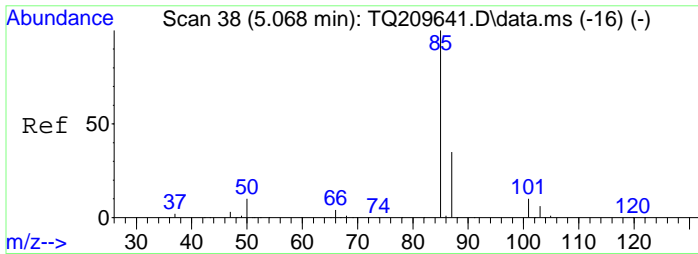
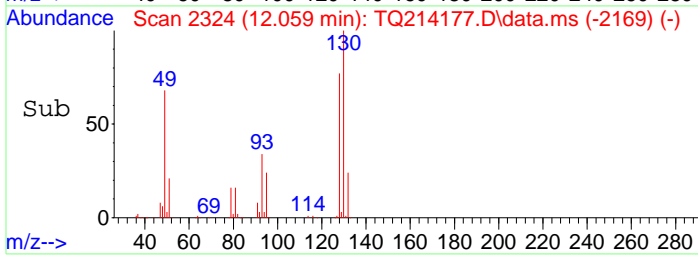
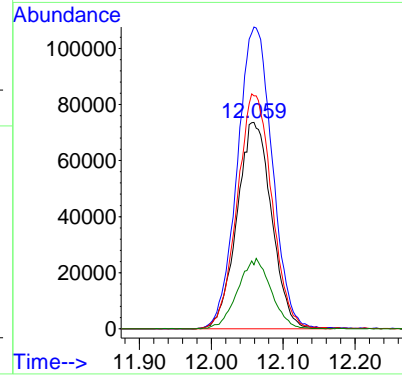
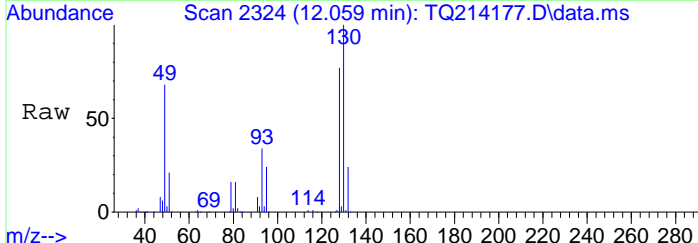
Quant Time: Apr 09 12:23:33 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration





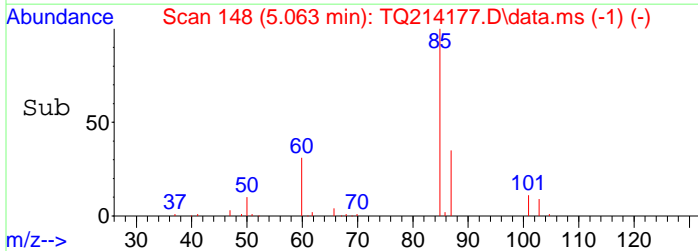
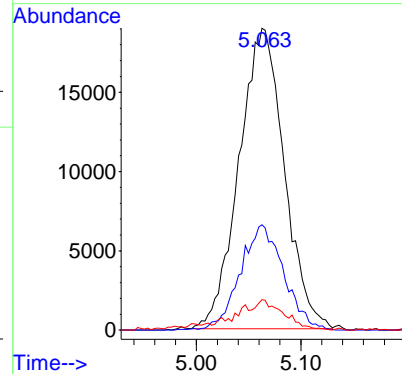
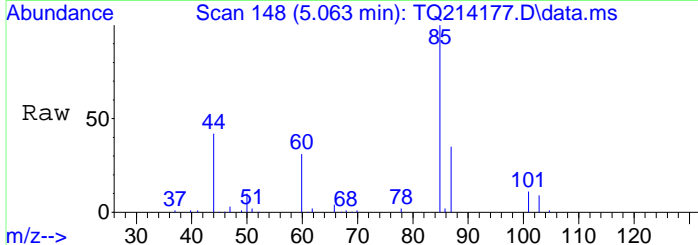
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.059 min Scan# 2324
 Delta R.T. -0.003 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

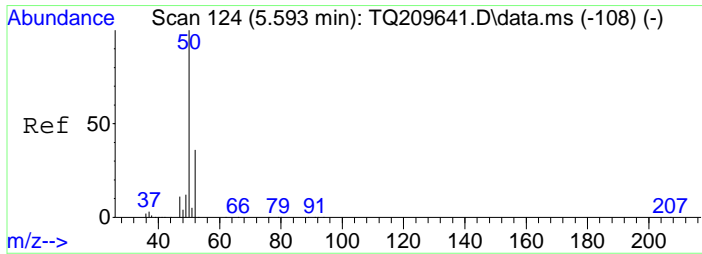
Tgt Ion	Resp	Lower	Upper
49	100		
130	147.0	48.1	99.9#
128	113.5	38.3	79.5#
51	32.9	20.3	42.3



#3
 Dichlorodifluoromethane
 Concen: 0.48 ppbv
 RT: 5.063 min Scan# 148
 Delta R.T. -0.009 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

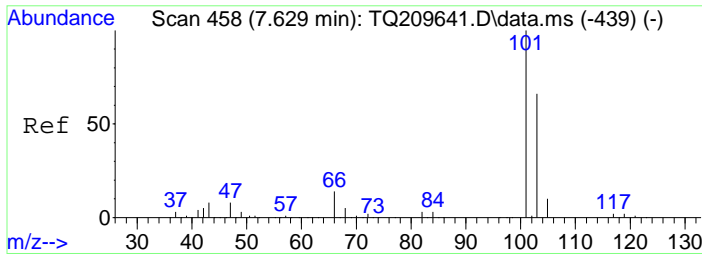
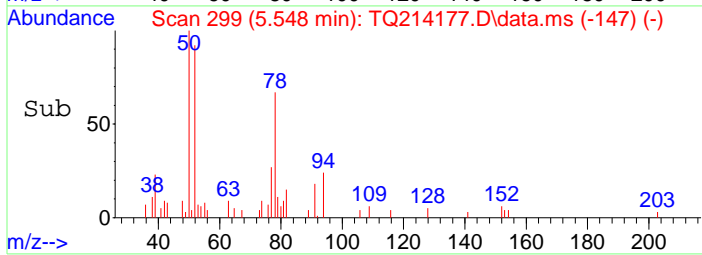
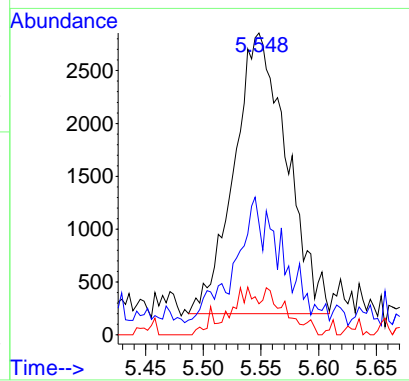
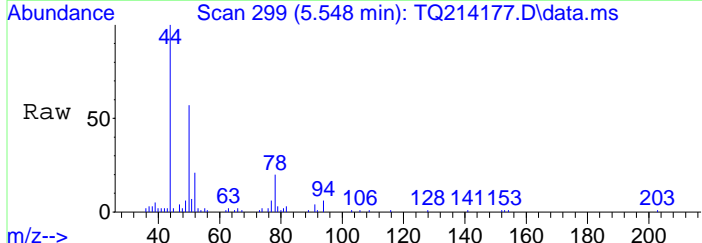
Tgt Ion	Resp	Lower	Upper
85	100		
87	33.7	20.9	43.5
50	6.3	7.2	15.0#





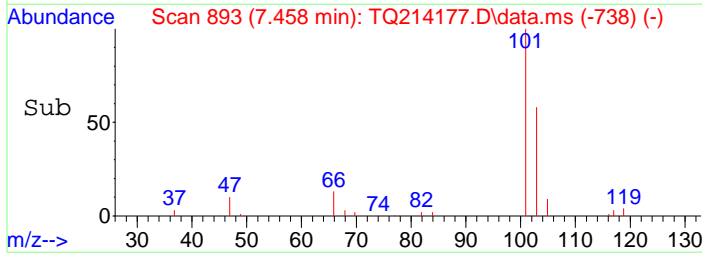
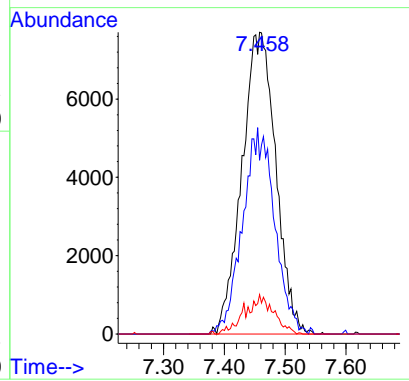
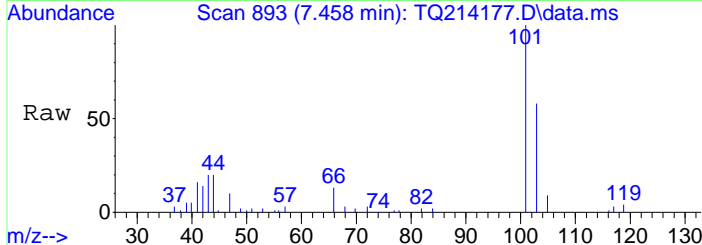
#5
 Chloromethane
 Concen: 0.51 ppbv
 RT: 5.548 min Scan# 299
 Delta R.T. -0.013 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

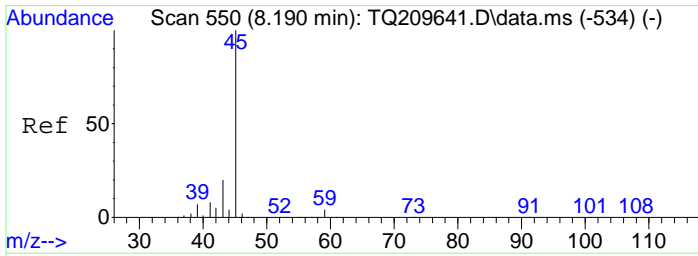
Tgt Ion	Resp	Lower	Upper
50	100		
52	13.4	0.0	65.2
49	0.0	0.0	19.6



#11
 Trichlorofluoromethane
 Concen: 0.24 ppbv m
 RT: 7.458 min Scan# 893
 Delta R.T. -0.003 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

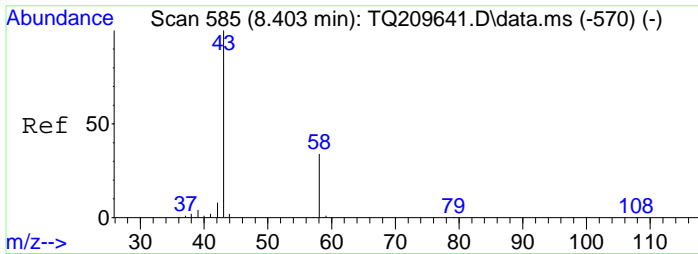
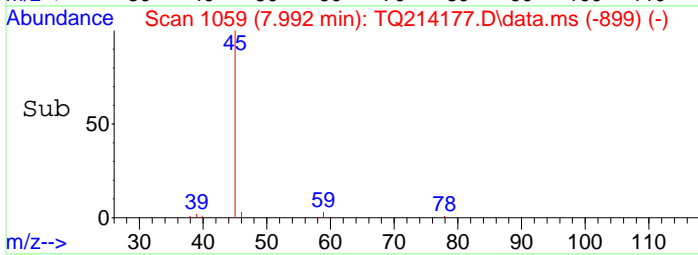
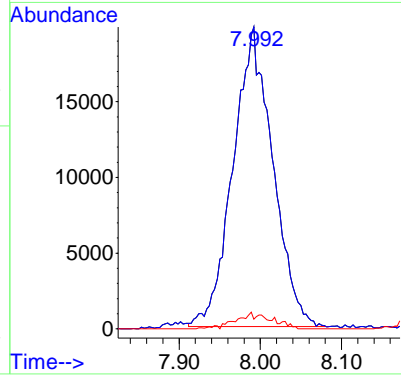
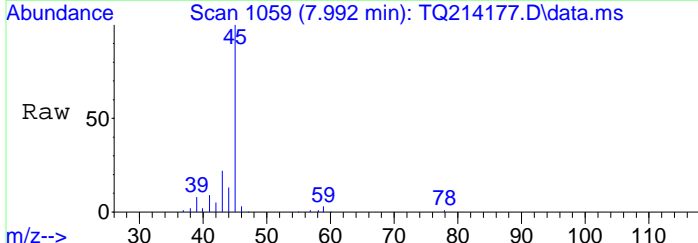
Tgt Ion	Resp	Lower	Upper
101	100		
103	28.9	42.3	87.8#
66	7.5	7.8	16.2#





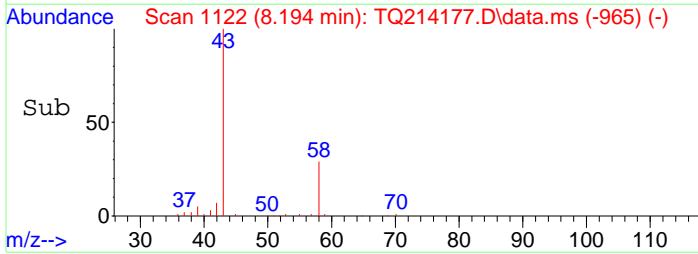
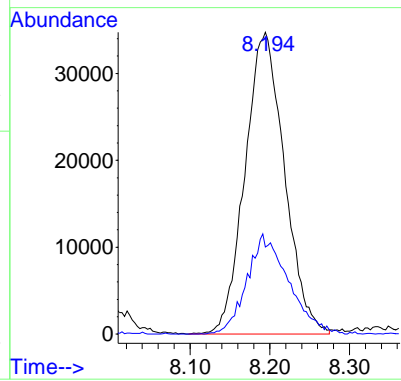
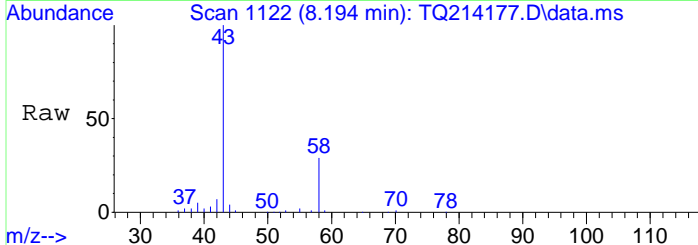
#12
 Isopropanol
 Concen: 1.18 ppbv
 RT: 7.992 min Scan# 1059
 Delta R.T. 0.013 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

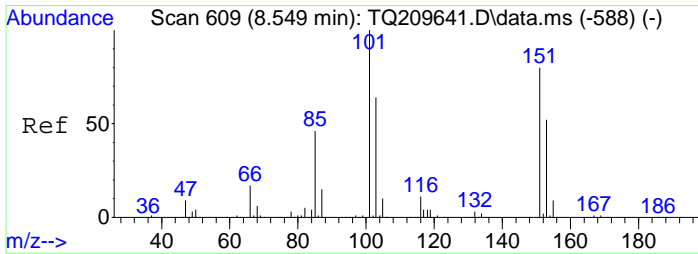
Tgt Ion	Resp	Lower	Upper
45	67249		
45	100		
45	100.0	65.0	135.0
59	2.3	0.0	10.0



#14
 Acetone
 Concen: 2.35 ppbv
 RT: 8.194 min Scan# 1122
 Delta R.T. 0.003 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

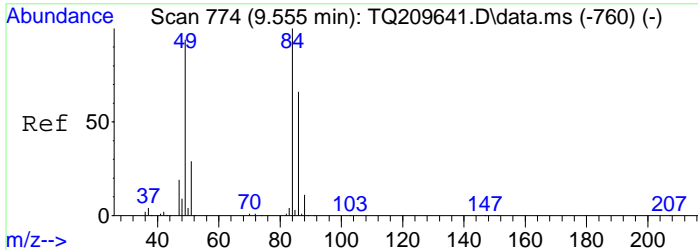
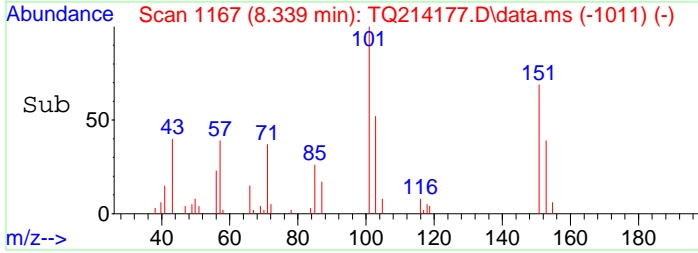
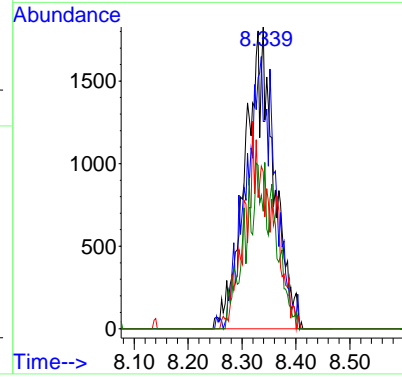
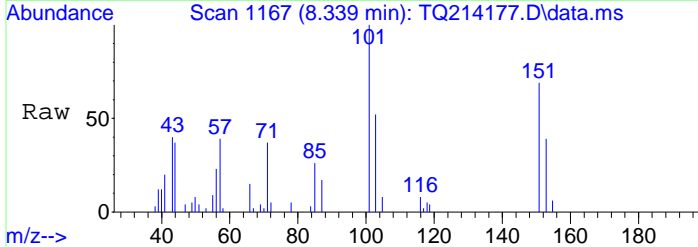
Tgt Ion	Resp	Lower	Upper
43	119753		
43	100		
58	34.5	20.9	43.3





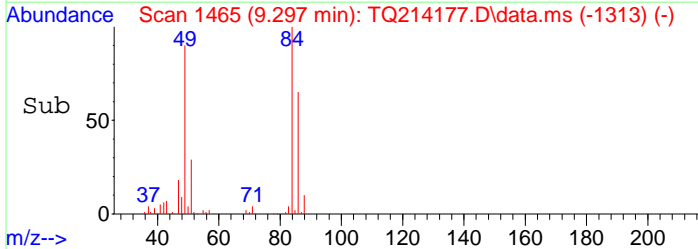
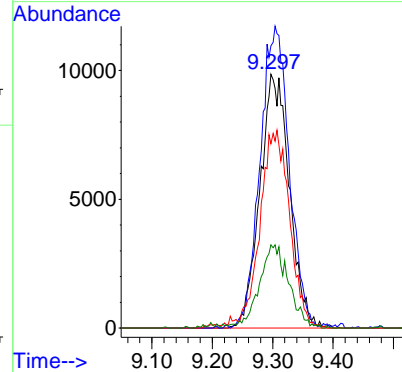
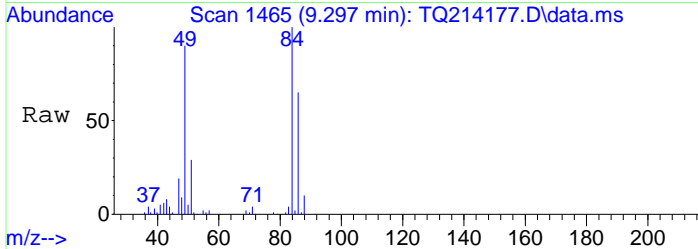
#15
 Freon-113
 Concen: 0.08 ppbv m
 RT: 8.339 min Scan# 1167
 Delta R.T. 0.003 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

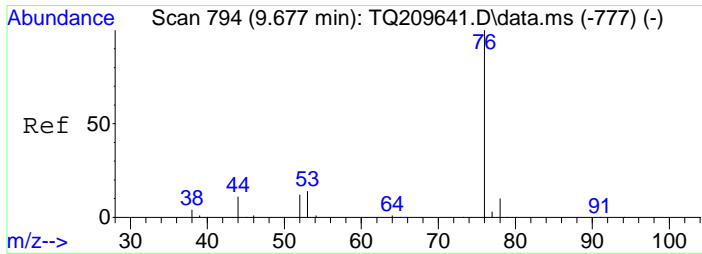
Tgt Ion	Resp	Lower	Upper
101	6759		
151	41.3	50.5	104.9#
103	7.8	42.0	87.2#
153	0.0	32.4	67.4#



#18
 Methylene Chloride
 Concen: 1.04 ppbv m
 RT: 9.297 min Scan# 1465
 Delta R.T. -0.010 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

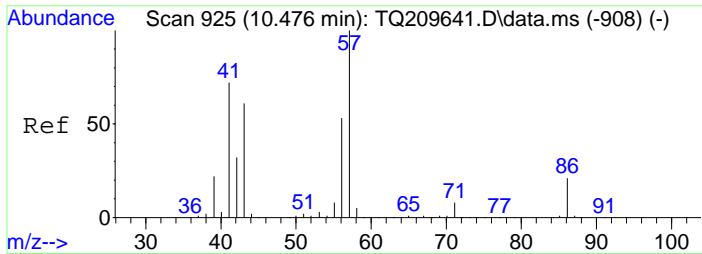
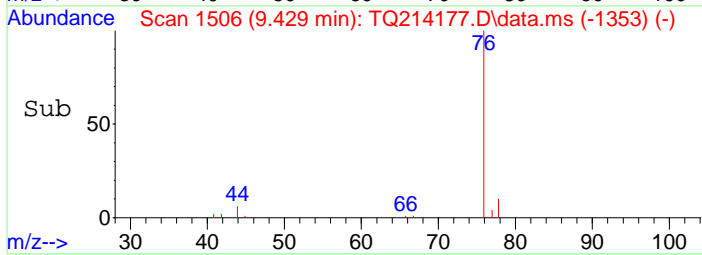
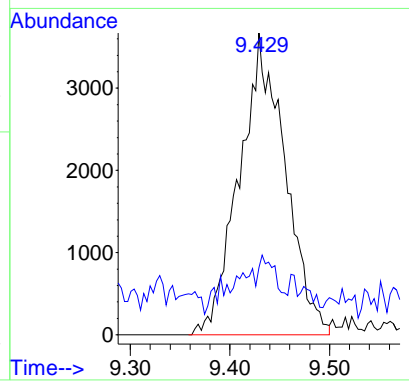
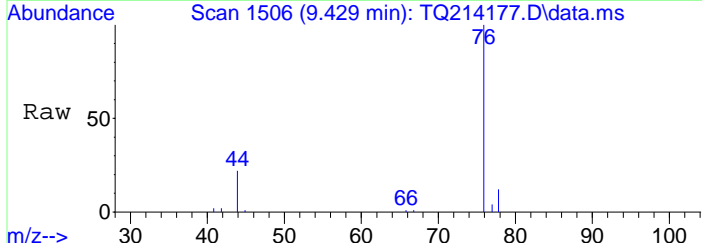
Tgt Ion	Resp	Lower	Upper
49	33369		
84	117.9	49.9	103.5#
86	77.6	31.8	66.0#
51	32.9	20.2	41.9





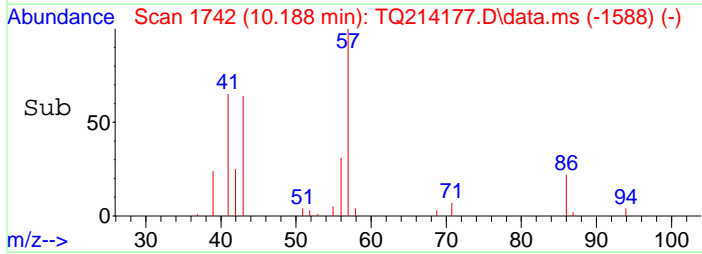
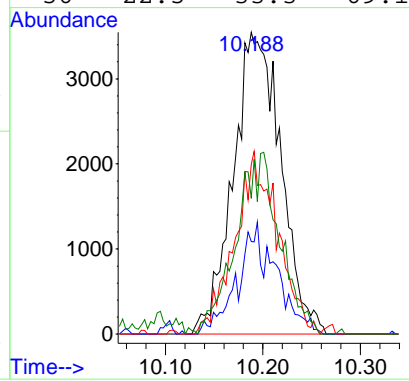
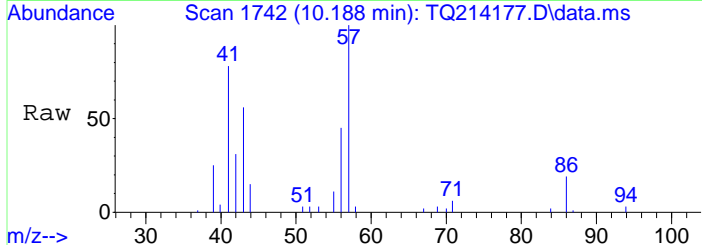
#20
 Carbon disulfide
 Concen: 0.12 ppbv
 RT: 9.429 min Scan# 1506
 Delta R.T. -0.007 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

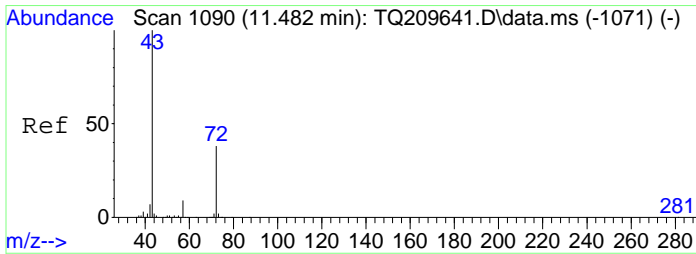
Tgt Ion	Resp	Lower	Upper
76	11694		
44	0.0	8.3	17.3#



#23
 Hexane
 Concen: 0.26 ppbv
 RT: 10.188 min Scan# 1742
 Delta R.T. -0.006 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

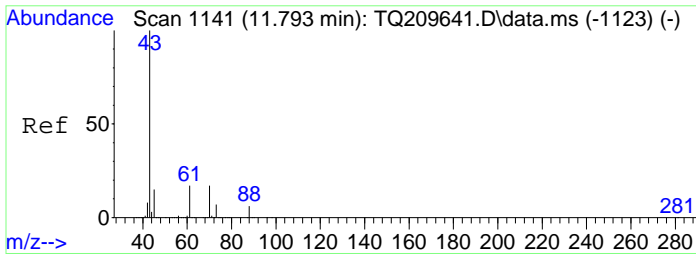
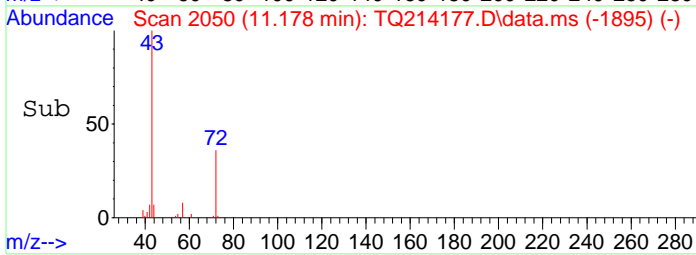
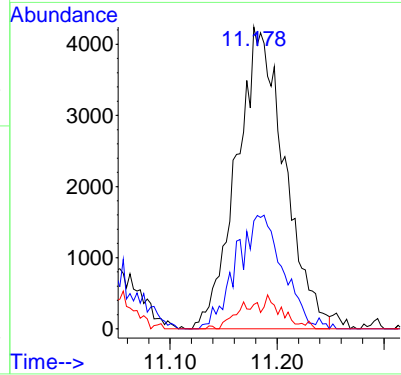
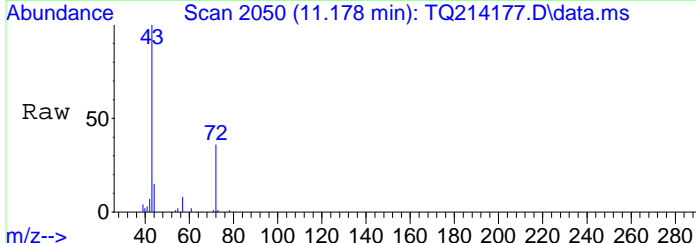
Tgt Ion	Resp	Lower	Upper
57	12082		
42	12.3	21.6	45.0#
43	54.1	42.0	87.2
56	22.5	33.3	69.1#





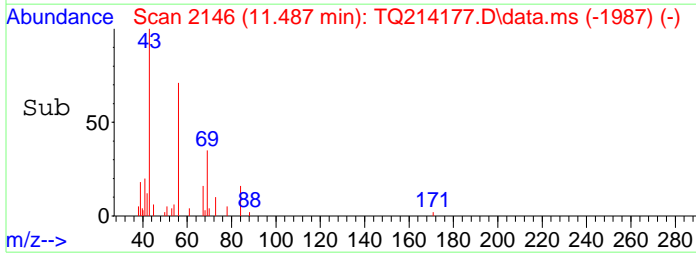
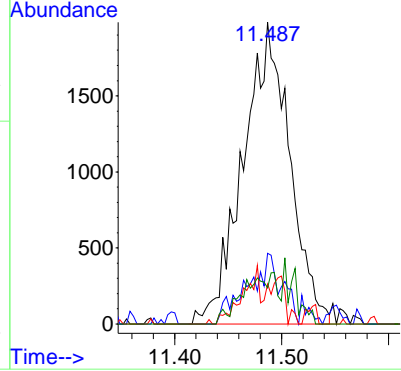
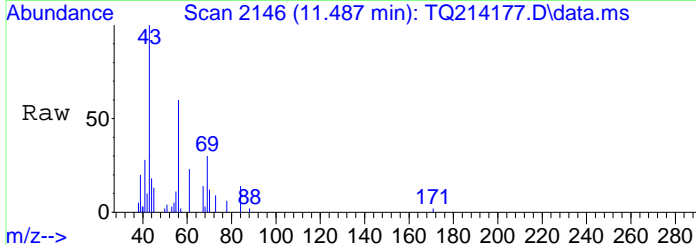
#26
 2-Butanone
 Concen: 0.26 ppbv
 RT: 11.178 min Scan# 2050
 Delta R.T. -0.003 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

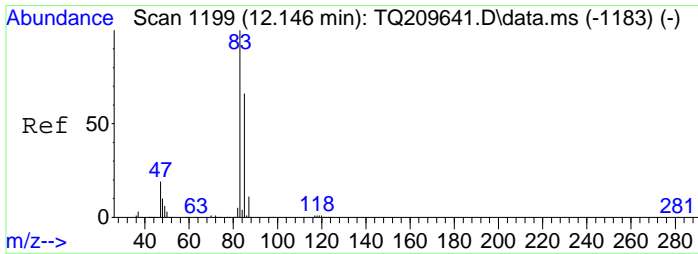
Tgt Ion	Resp	Lower	Upper
43	13198		
72	25.5	16.1	33.5
57	0.0	4.9	10.3#



#27
 Ethyl Acetate
 Concen: 0.11 ppbv
 RT: 11.487 min Scan# 2146
 Delta R.T. 0.010 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

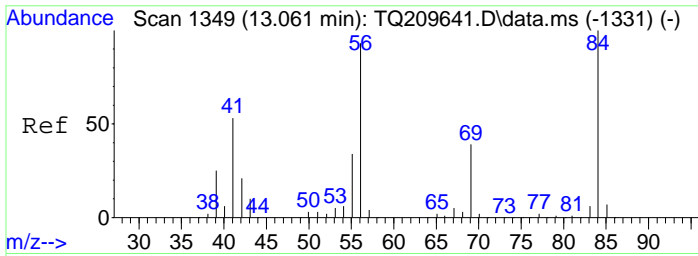
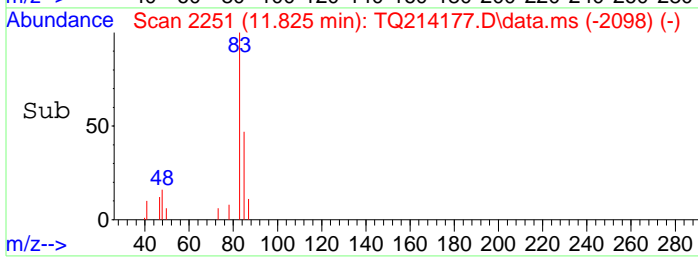
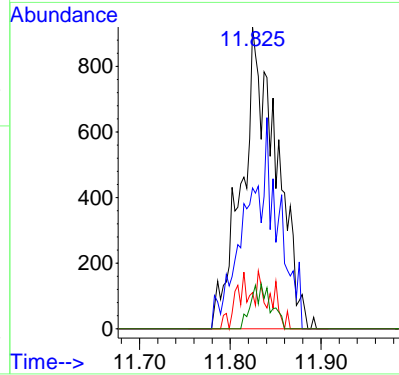
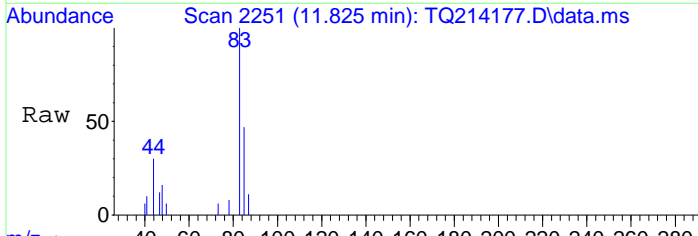
Tgt Ion	Resp	Lower	Upper
43	5984		
61	0.0	51.4	106.8#
45	0.0	9.4	19.6#
70	0.0	7.5	15.5#





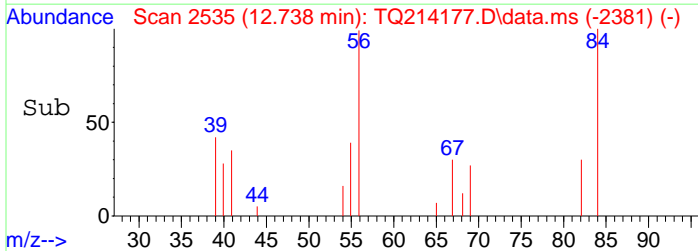
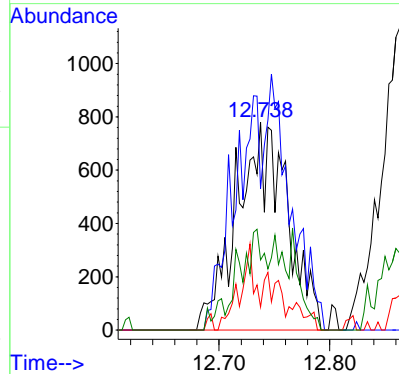
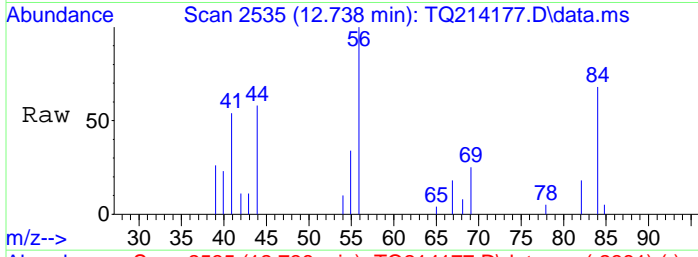
#29
 Chloroform
 Concen: 0.03 ppbv m
 RT: 11.825 min Scan# 2251
 Delta R.T. -0.009 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

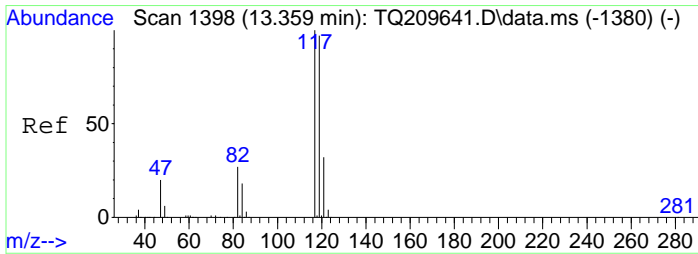
Tgt Ion	Resp	Lower	Upper
83	100		
85	32.8	41.7	86.7#
47	0.0	15.1	31.5#
87	0.0	6.7	13.9#



#32
 Cyclohexane
 Concen: 0.06 ppbv m
 RT: 12.738 min Scan# 2535
 Delta R.T. -0.003 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

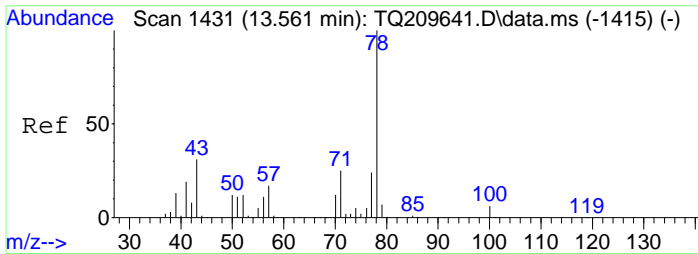
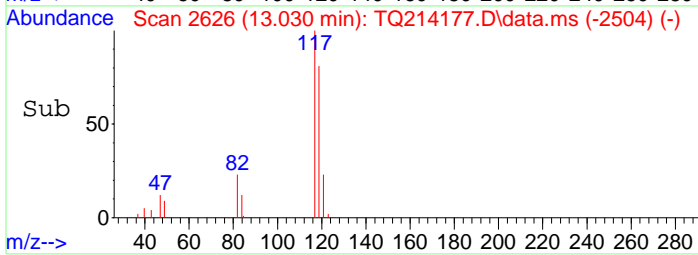
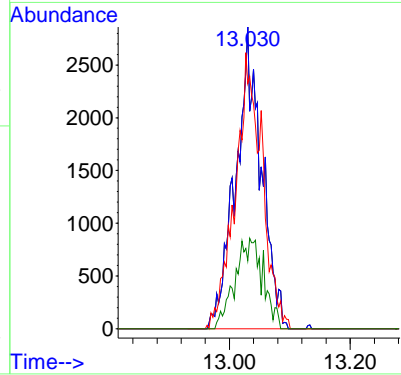
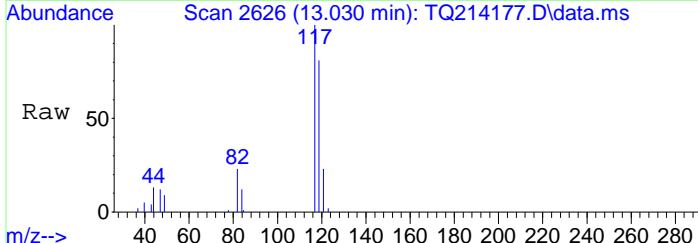
Tgt Ion	Resp	Lower	Upper
56	100		
84	62.7	54.1	112.3
42	0.0	15.3	31.7#
55	0.0	23.5	48.7#





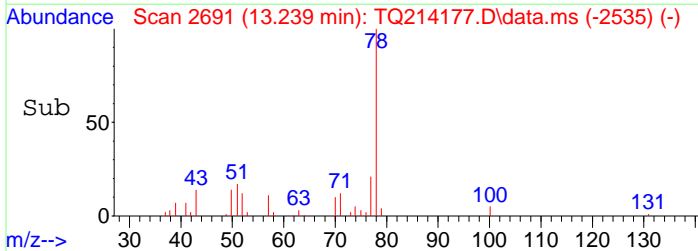
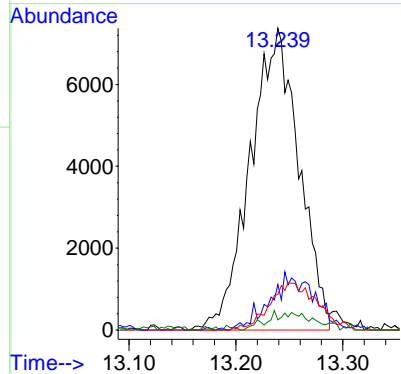
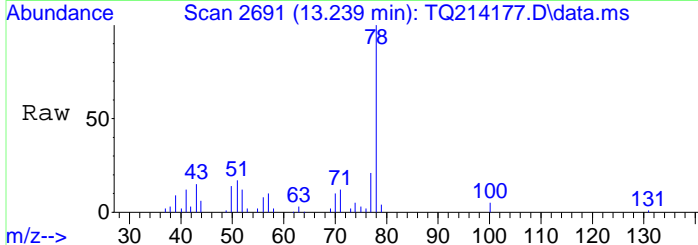
#33
 Carbon Tetrachloride
 Concen: 0.07 ppbv m
 RT: 13.030 min Scan# 2626
 Delta R.T. -0.007 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

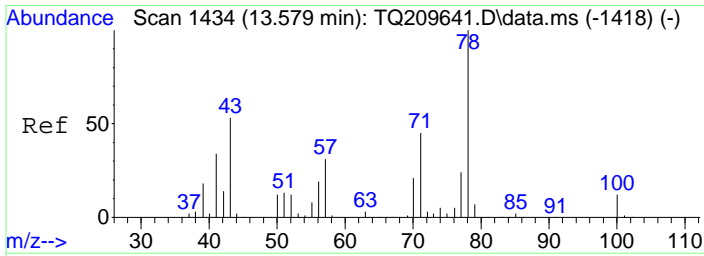
Tgt Ion	Resp	Lower	Upper
117	100		
117	20.0	80.0	120.0#
119	0.0	76.9	115.3#
121	6.8	21.7	40.3#



#35
 Benzene
 Concen: 0.19 ppbv
 RT: 13.239 min Scan# 2691
 Delta R.T. 0.000 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

Tgt Ion	Resp	Lower	Upper
78	100		
43	6.4	37.5	77.9#
71	15.0	22.0	45.8#
42	0.0	8.8	18.4#

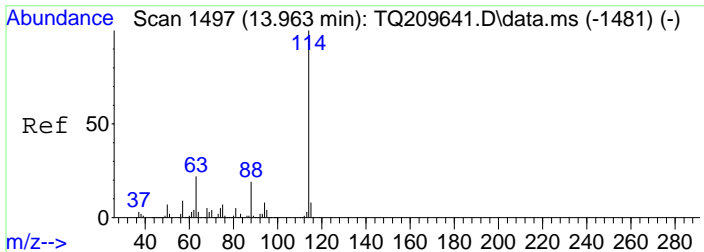
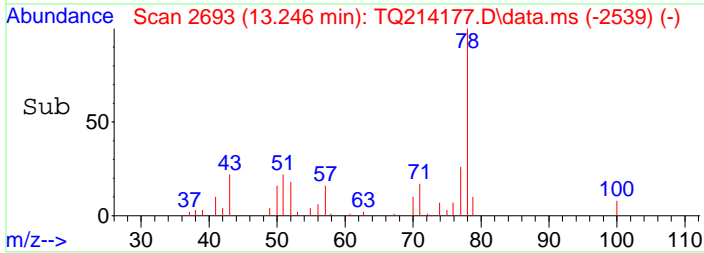
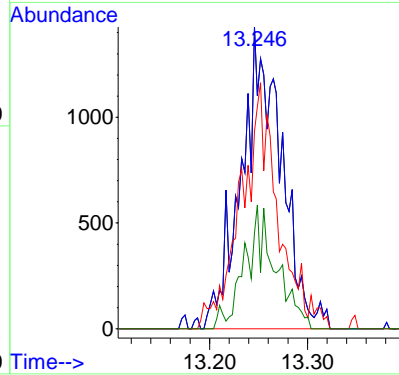
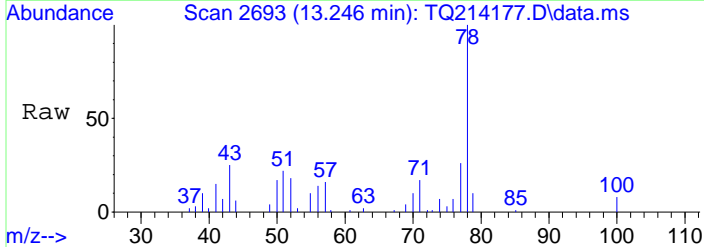




#36
 n-Heptane
 Concen: 0.10 ppbv m
 RT: 13.246 min Scan# 2693
 Delta R.T. -0.006 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

Tgt Ion: 43 Resp: 4054

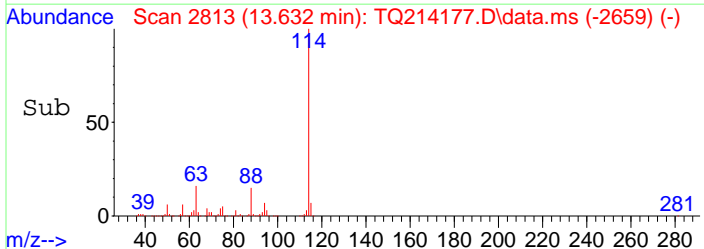
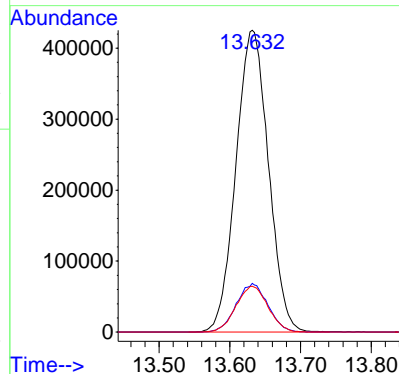
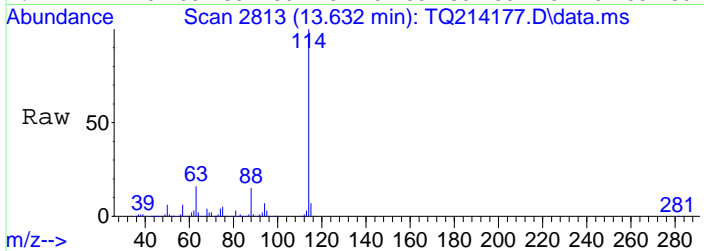
Ion	Ratio	Lower	Upper
43	100		
43	36.6	80.0	120.0#
57	48.8	42.6	64.0
100	0.0	13.3	19.9#

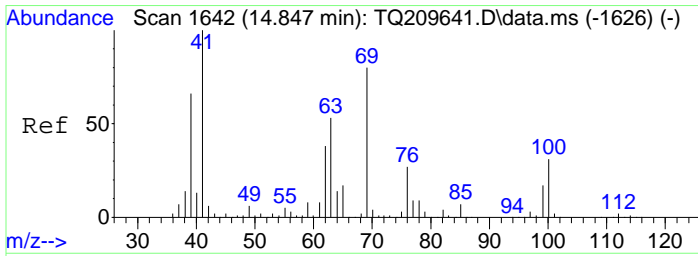


#37
 1,4-Difluorobenzene
 Concen: 10.00 ppbv
 RT: 13.632 min Scan# 2813
 Delta R.T. -0.003 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

Tgt Ion: 114 Resp: 1359242

Ion	Ratio	Lower	Upper
114	100		
63	15.7	12.9	26.9
88	15.0	10.7	22.3

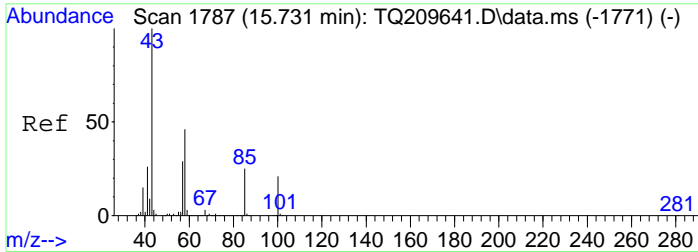
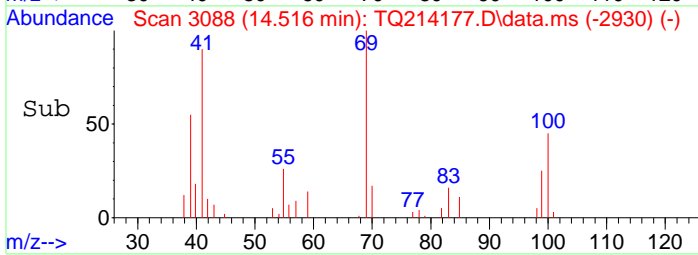
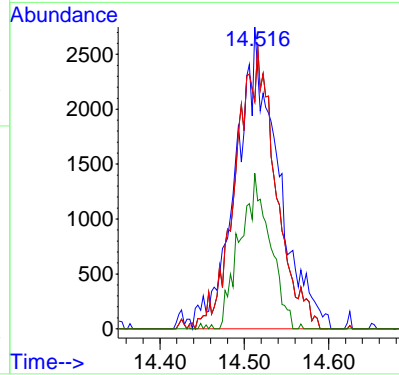
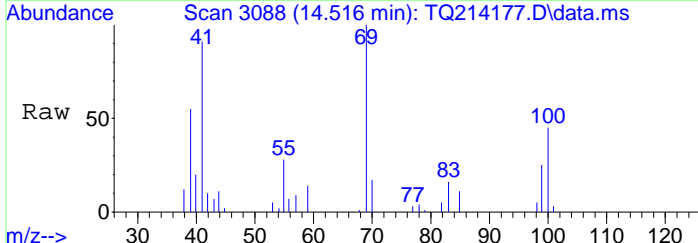




#40
 Methyl Methacrylate
 Concen: 0.22 ppbv m
 RT: 14.516 min Scan# 3088
 Delta R.T. 0.007 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

Tgt Ion: 69 Resp: 8469

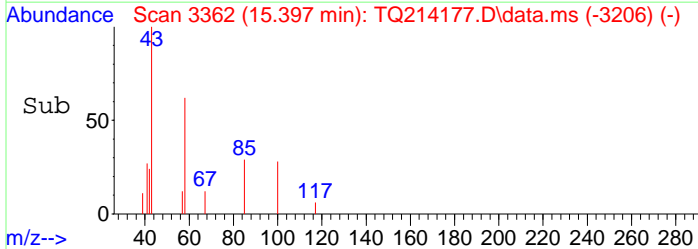
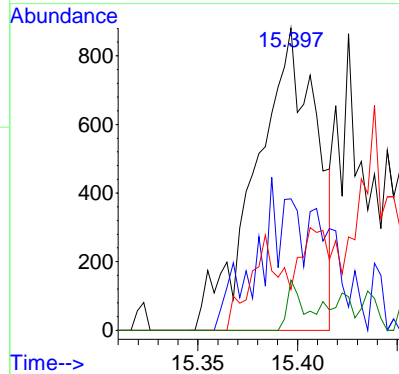
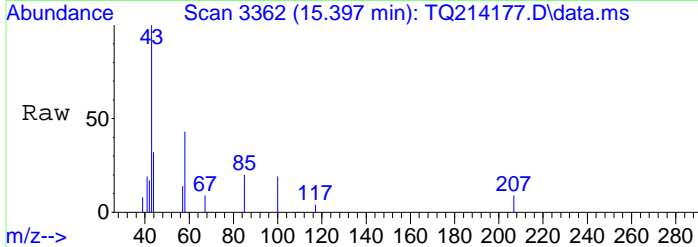
Ion	Ratio	Lower	Upper
69	100		
41	0.0	70.0	210.0#
69	43.1	50.0	150.0#
100	0.0	17.5	52.5#

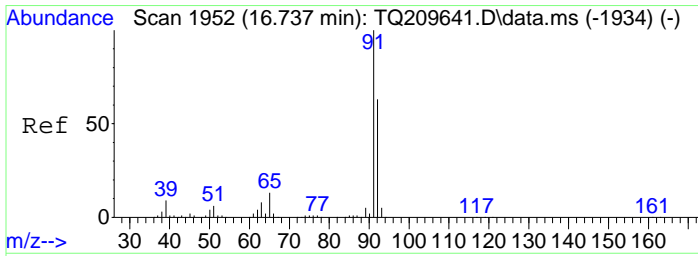


#43
 Methyl Isobutyl Ketone
 Concen: 0.03 ppbv
 RT: 15.397 min Scan# 3362
 Delta R.T. 0.003 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

Tgt Ion: 43 Resp: 1854

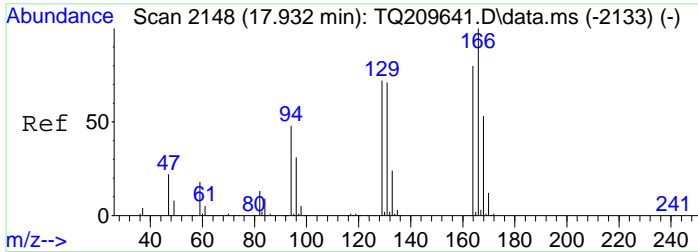
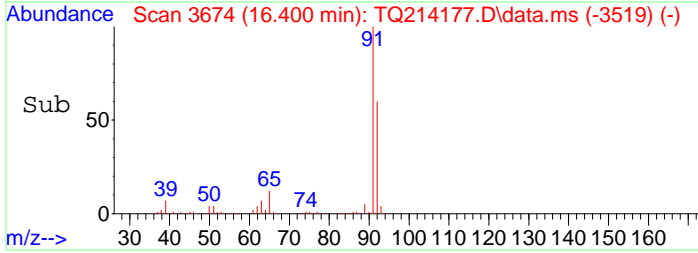
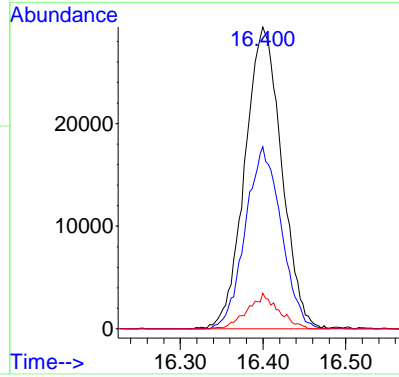
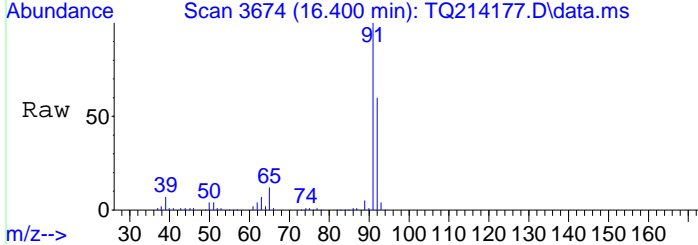
Ion	Ratio	Lower	Upper
43	100		
58	0.0	25.1	52.1#
57	0.0	15.5	32.3#
42	0.0	5.0	15.0#





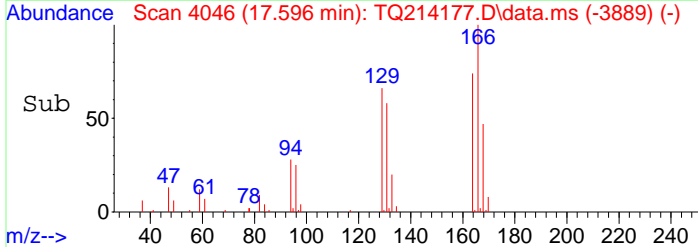
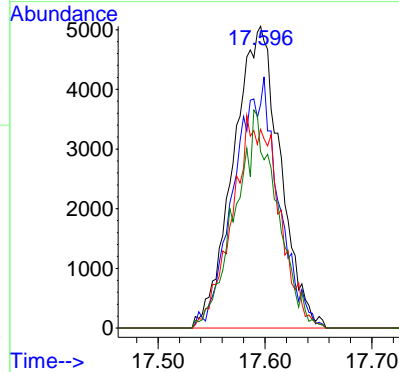
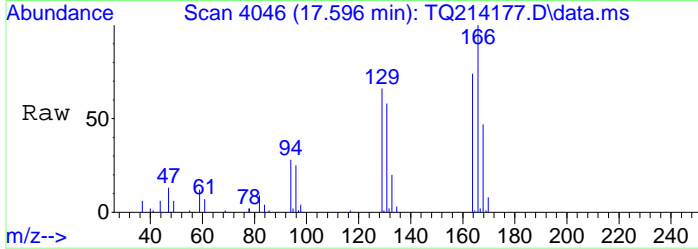
#45
 Toluene
 Concen: 0.54 ppbv
 RT: 16.400 min Scan# 3674
 Delta R.T. -0.000 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

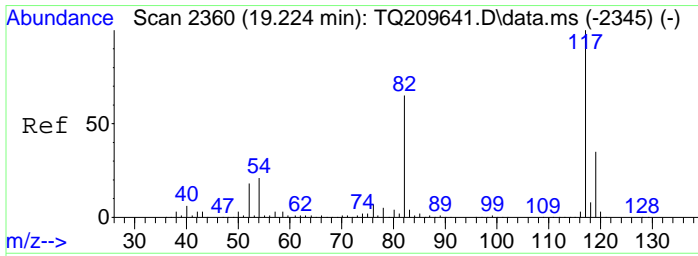
Tgt Ion	Resp	Lower	Upper
91	100		
92	58.8	38.7	80.3
65	9.9	7.5	15.5



#50
 Tetrachloroethylene
 Concen: 0.16 ppbv
 RT: 17.596 min Scan# 4046
 Delta R.T. 0.006 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

Tgt Ion	Resp	Lower	Upper
166	100		
164	43.2	51.0	106.0#
129	37.9	48.1	99.9#
131	65.0	46.3	96.3

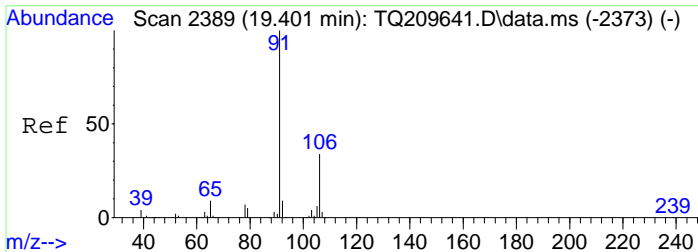
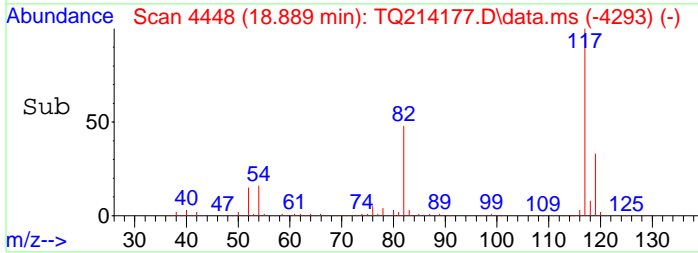
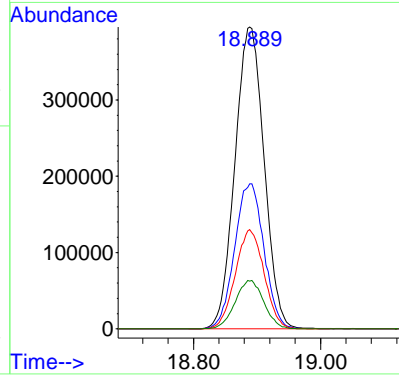
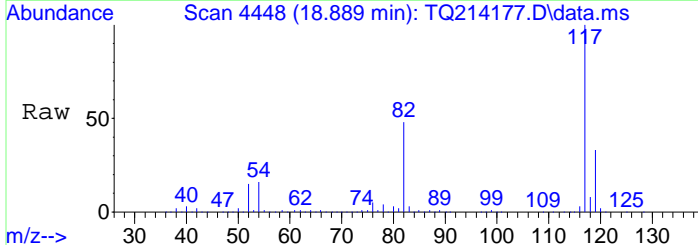




#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 18.889 min Scan# 4448
 Delta R.T. -0.000 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

Tgt Ion: 117 Resp: 1262443

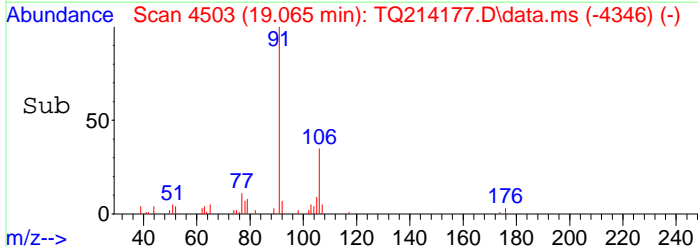
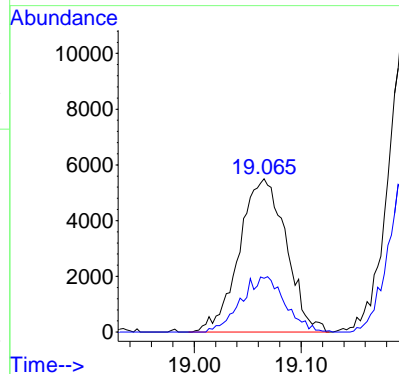
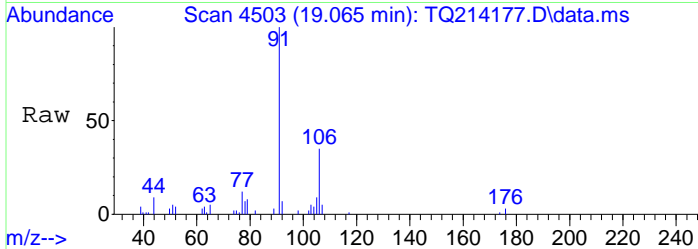
Ion	Ratio	Lower	Upper
117	100		
82	48.3	37.1	77.1
119	32.4	22.1	45.9
54	15.8	13.8	28.6

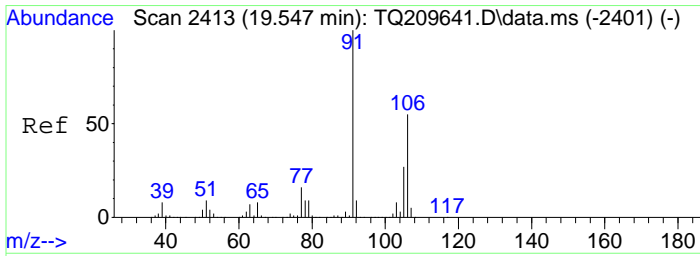


#56
 Ethylbenzene
 Concen: 0.07 ppbv
 RT: 19.065 min Scan# 4503
 Delta R.T. 0.003 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

Tgt Ion: 91 Resp: 16786

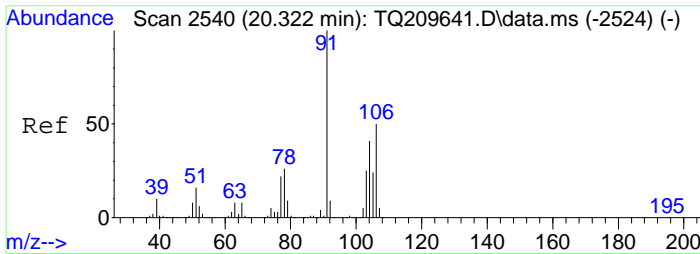
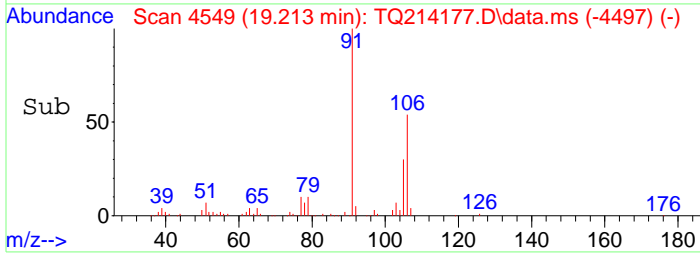
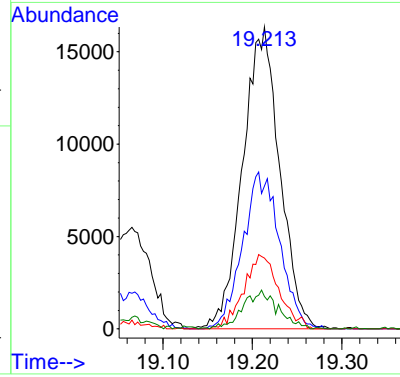
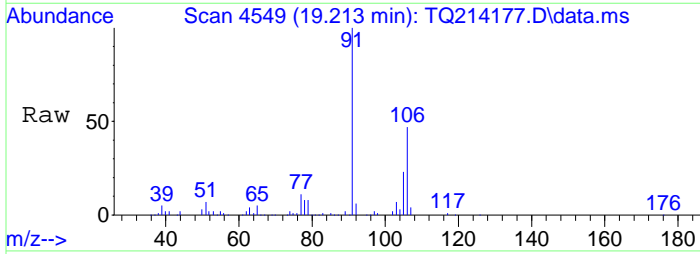
Ion	Ratio	Lower	Upper
91	100		
106	33.9	20.5	42.7





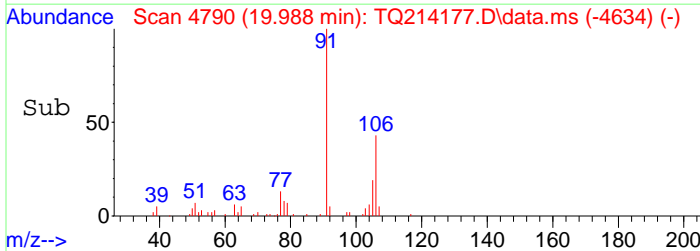
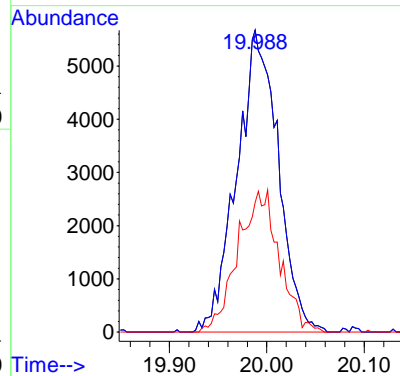
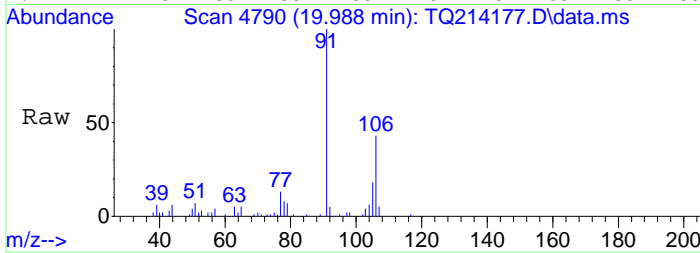
#57
 p- & m-Xylenes
 Concen: 0.26 ppbv
 RT: 19.213 min Scan# 4549
 Delta R.T. 0.006 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

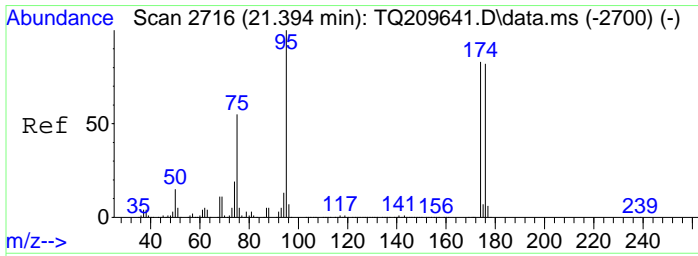
Tgt Ion	Resp	Lower	Upper
91	47155		
106	51.8	32.6	67.8
105	23.4	14.5	30.1
77	7.7	8.5	17.7#



#58
 o-Xylene
 Concen: 0.09 ppbv
 RT: 19.988 min Scan# 4790
 Delta R.T. 0.000 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

Tgt Ion	Resp	Lower	Upper
91	16731		
91	100.0	80.0	120.0
106	47.0	38.2	57.2

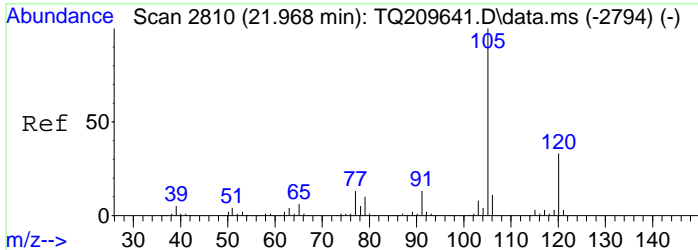
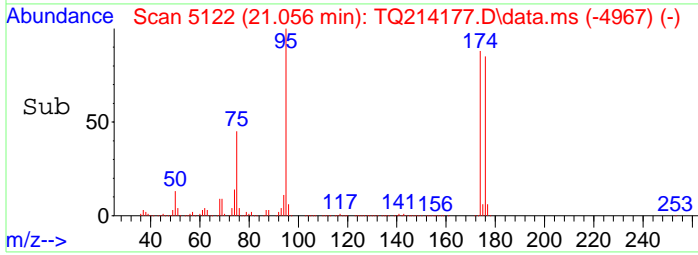
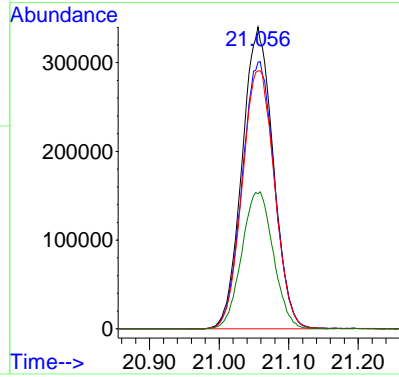
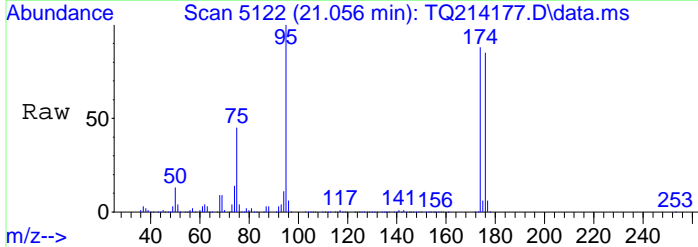




#64
 p-Bromofluorobenzene
 Concen: 9.38 ppbv
 RT: 21.056 min Scan# 5122
 Delta R.T. -0.000 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

Tgt Ion: 95 Resp: 1062328

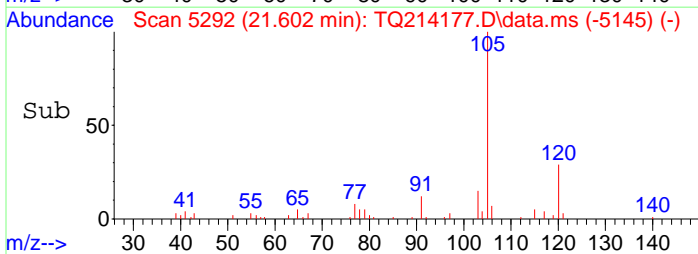
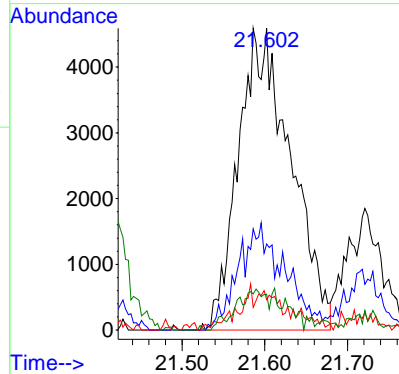
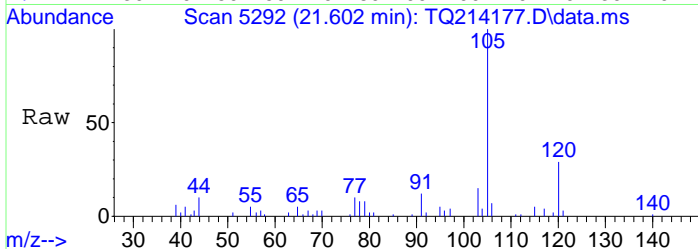
Ion	Ratio	Lower	Upper
95	100		
174	91.4	53.2	110.6
176	88.7	51.6	107.2
75	46.0	30.7	63.7

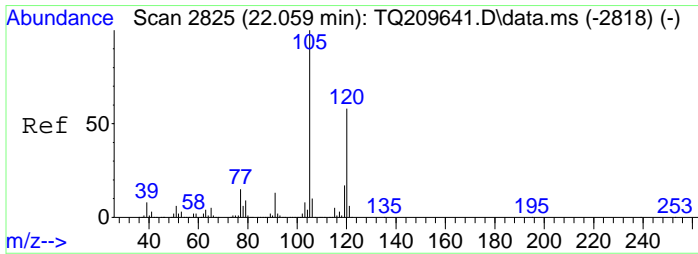


#65
 4-Ethyltoluene
 Concen: 0.07 ppbv m
 RT: 21.602 min Scan# 5292
 Delta R.T. -0.029 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

Tgt Ion: 105 Resp: 20184

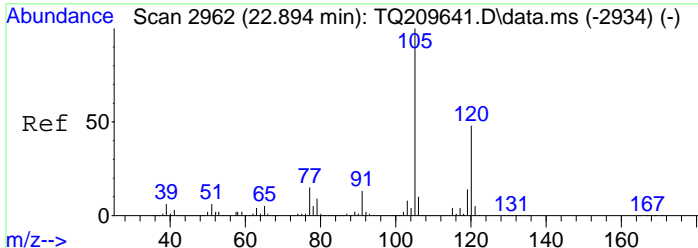
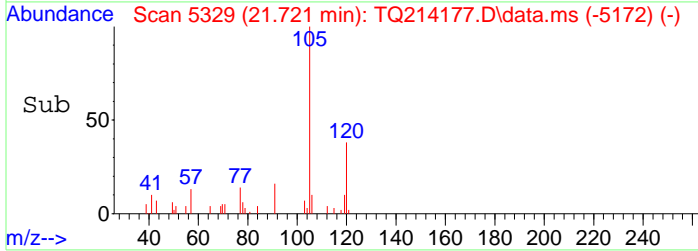
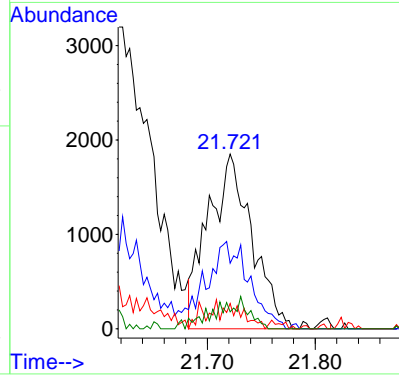
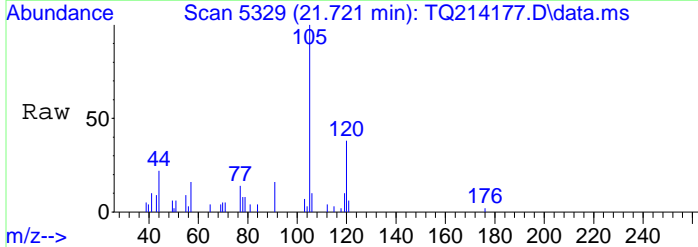
Ion	Ratio	Lower	Upper
105	100		
120	7.6	19.6	40.8#
77	0.0	7.3	15.3#
91	0.0	7.1	14.7#





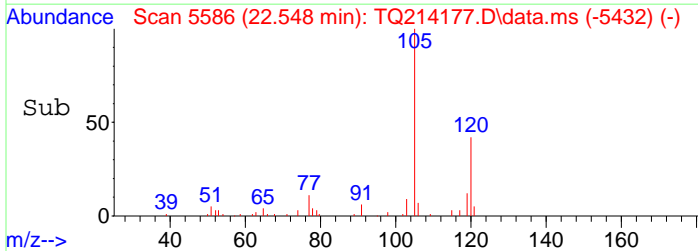
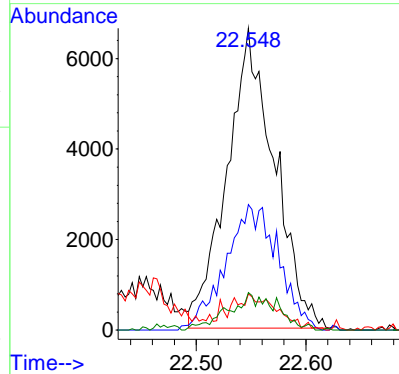
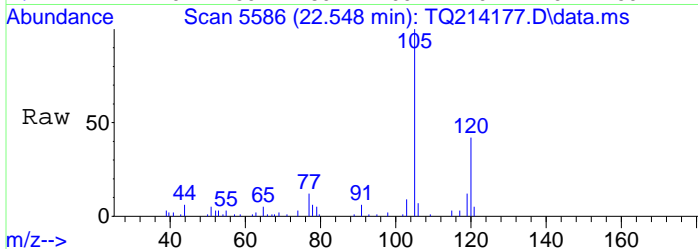
#66
 1,3,5-Trimethylbenzene
 Concen: 0.02 ppbv m
 RT: 21.721 min Scan# 5329
 Delta R.T. 0.003 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

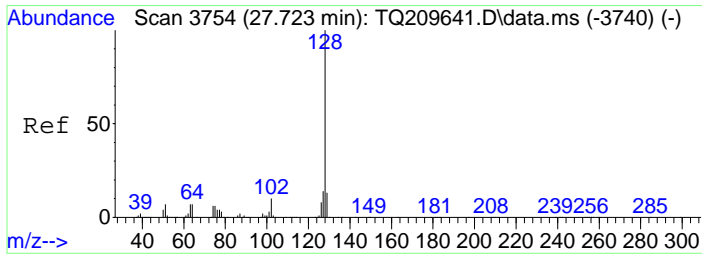
Tgt Ion	Resp	Lower	Upper
105	5318		
120	10.1	39.2	58.8#
77	0.0	10.1	15.1#
119	0.0	6.1	18.3#



#68
 1,2,4-Trimethylbenzene
 Concen: 0.08 ppbv
 RT: 22.548 min Scan# 5586
 Delta R.T. -0.003 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

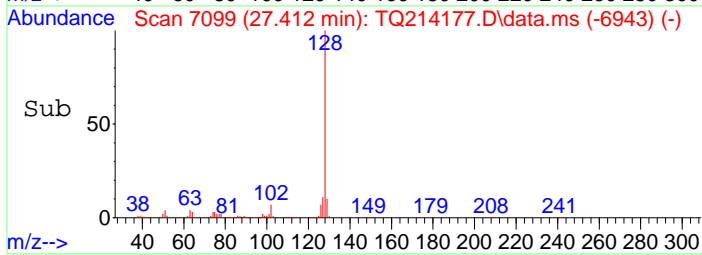
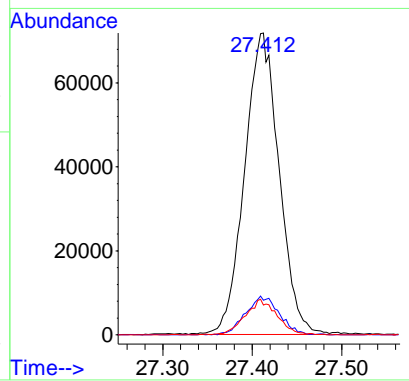
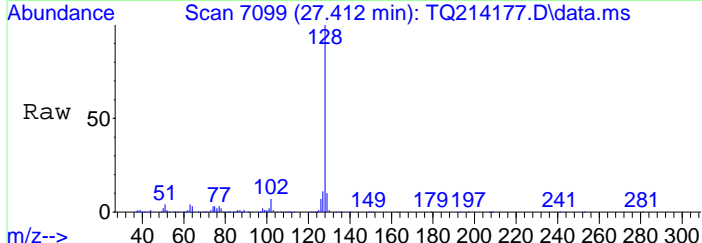
Tgt Ion	Resp	Lower	Upper
105	19913		
120	26.5	30.2	62.6#
77	0.0	8.1	16.9#
119	3.5	7.8	16.2#





#78
 Naphthalene
 Concen: 0.36 ppbv
 RT: 27.412 min Scan# 7099
 Delta R.T. 0.000 min
 Lab File: TQ214177.D
 Acq: 9 Apr 2021 10:47 am

Tgt Ion	Resp	Lower	Upper
128	193555		
127	12.5	8.1	16.9
129	10.9	7.1	14.7



AIR Standards Data

FORM VI

INITIAL CALIBRATION DATA

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Calibration: YC10005

Instrument: TO15 AIR2

Calibration Date: 03/05/21 00:16

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,1,1,2-Tetrachloroethane	0.025		0.05		0.1	0.6567925	0.2	0.6275384	0.5	0.6415741	3	0.8164333
1,1,1-Trichloroethane	0.025		0.05		0.1	4.388887	0.2	4.333868	0.5	4.311199	3	5.381616
1,1,2,2-Tetrachloroethane	0.025		0.05		0.1	0.90544	0.2	0.8881725	0.5	0.9029811	3	1.192121
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.025		0.05		0.1	4.038887	0.2	3.632091	0.5	3.631413	3	4.486752
1,1,2-Trichloroethane	0.025		0.05		0.1	0.4350952	0.2	0.4181911	0.5	0.4116212	3	0.5241732
1,1-Dichloroethane	0.025		0.05		0.1	2.709777	0.2	2.556909	0.5	2.423159	3	3.116993
1,1-Dichloroethylene	0.025	3.064296	0.05	2.533438	0.1	2.322099	0.2	2.088382	0.5	2.124369	3	2.716571
1,2,4-Trichlorobenzene	0.025		0.05		0.1	1.790113	0.2	1.625295	0.5	1.688471	3	1.807468
1,2,4-Trimethylbenzene	0.025		0.05		0.1	1.563542	0.2	1.768771	0.5	1.945763	3	2.35188
1,2-Dibromoethane	0.025		0.05		0.1	0.6550334	0.2	0.6618608	0.5	0.6409435	3	0.8700433
1,2-Dichlorobenzene	0.025		0.05		0.1	1.60807	0.2	1.489534	0.5	1.535862	3	1.704116
1,2-Dichloroethane	0.025		0.05		0.1	2.580882	0.2	2.478231	0.5	2.475434	3	3.050942
1,2-Dichloropropane	0.025		0.05		0.1	0.2747924	0.2	0.2577546	0.5	0.2489438	3	0.3065906
1,2-Dichlorotetrafluoroethane	0.025		0.05		0.1	3.633362	0.2	3.28019	0.5	3.28305	3	4.144779
1,3,5-Trimethylbenzene	0.025		0.05		0.1	1.776829	0.2	1.743446	0.5	1.887546	3	2.269776
1,3-Butadiene	0.025		0.05		0.1	0.6191935	0.2	0.7040543	0.5	0.6486076	3	0.7511138
1,3-Dichlorobenzene	0.025		0.05		0.1	1.580474	0.2	1.475759	0.5	1.516668	3	1.728793
1,3-Dichloropropane	0.025		0.05		0.1	0.5702746	0.2	0.5155533	0.5	0.5177058	3	0.6665829
1,4-Dichlorobenzene	0.025		0.05		0.1	1.588051	0.2	1.469984	0.5	1.557191	3	1.757198
1,4-Dioxane	0.025		0.05		0.1	0.3702438	0.2	0.3133462	0.5	0.2591927	3	0.2686302
2-Butanone	0.025		0.05		0.1	2.105456	0.2	2.070674	0.5	2.102129	3	2.42112
2-Hexanone	0.025		0.05		0.1	0.4267497	0.2	0.4141857	0.5	0.4558008	3	0.5267308
3-Chloropropene	0.025		0.05		0.1	1.153614	0.2	1.113129	0.5	1.053091	3	1.369044
4-Methyl-2-pentanone	0.025		0.05		0.1	0.4157093	0.2	0.409564	0.5	0.4436916	3	0.5232399
Acetone	0.025		0.05		0.1	3.600642	0.2	2.953335	0.5	2.610331	3	2.147464
Acrolein	0.025		0.05		0.1	0.6008507	0.2	0.5434095	0.5	0.4702691	3	0.5575637
Acrylonitrile	0.025		0.05		0.1	0.8298879	0.2	0.7893099	0.5	0.7743592	3	0.9553876
Benzene	0.025		0.05		0.1	5.580178	0.2	5.342262	0.5	5.027151	3	6.137281
Benzyl chloride	0.025		0.05		0.1	1.189635	0.2	1.245562	0.5	1.393985	3	2.12181
Bromodichloromethane	0.025		0.05		0.1	0.6942398	0.2	0.6661303	0.5	0.6759295	3	0.8935285
Bromoform	0.025		0.05		0.1	0.6465023	0.2	0.6784724	0.5	0.7188115	3	1.105225

FORM VI

INITIAL CALIBRATION DATA

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Calibration: YC10005

Instrument: TO15 AIR2

Calibration Date: 03/05/21 00:16

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Bromomethane	0.025		0.05		0.1	1.54724	0.2	1.540166	0.5	1.512136	3	1.489429
Carbon disulfide	0.025		0.05		0.1	4.209921	0.2	3.858511	0.5	3.828666	3	4.953435
Carbon tetrachloride	0.025	5.760039	0.05	5.131247	0.1	4.561904	0.2	4.444928	0.5	4.411488	3	5.743921
Chlorobenzene	0.025		0.05		0.1	1.394784	0.2	1.31865	0.5	1.223605	3	1.451865
Chloroethane	0.025		0.05		0.1	0.4124652	0.2	0.6215816	0.5	0.5738842	3	0.6843826
Chloroform	0.025		0.05		0.1	3.918419	0.2	4.035094	0.5	3.947143	3	4.787365
Chloromethane	0.025		0.05		0.1	0.8526924	0.2	0.6367606	0.5	0.7038967	3	0.743581
cis-1,2-Dichloroethylene	0.025	2.578257	0.05	2.373432	0.1	1.934918	0.2	1.862721	0.5	1.789829	3	2.315609
cis-1,3-Dichloropropylene	0.025		0.05		0.1	0.4575237	0.2	0.4410791	0.5	0.4380216	3	0.61529
Cyclohexane	0.025		0.05		0.1	1.698444	0.2	1.485016	0.5	1.569608	3	2.09878
Dibromochloromethane	0.025		0.05		0.1	0.7140603	0.2	0.7042477	0.5	0.7276392	3	1.043447
Dichlorodifluoromethane	0.025		0.05		0.1	5.250503	0.2	5.062209	0.5	4.720463	3	6.051125
Ethanol	0.025		0.05		0.1		0.2		0.5		3	
Ethyl acetate	0.025		0.05		0.1	2.38506	0.2	2.18654	0.5	2.109196	3	2.754113
Ethyl Benzene	0.025		0.05		0.1	1.882069	0.2	1.840817	0.5	1.805078	3	2.227086
Hexachlorobutadiene	0.025		0.05		0.1	1.377197	0.2	1.257396	0.5	1.209123	3	1.329436
Isopropanol	0.025		0.05		0.1	4.822174	0.2	3.412247	0.5	2.607733	3	2.379149
Isopropylbenzene	0.025		0.05		0.1	1.853725	0.2	1.78941	0.5	2.06133	3	2.676467
Methyl Methacrylate	0.025		0.05		0.1	0.256015	0.2	0.2428334	0.5	0.2571895	3	0.3600761
Methyl tert-butyl ether (MTBE)	0.025		0.05		0.1	4.666508	0.2	4.268092	0.5	4.401303	3	5.486046
Methylene chloride	0.025		0.05		0.1	2.51346	0.2	1.700811	0.5	1.392101	3	1.449795
Naphthalene	0.025		0.05		0.1	6.029469	0.2	5.232942	0.5	5.248891	3	4.524495
n-Butylbenzene	0.025		0.05		0.1	2.048302	0.2	2.017477	0.5	2.194938	3	2.603214
n-Decane	0.025		0.05		0.1		0.2		0.5		3	
n-Heptane	0.025		0.05		0.1	1.545257	0.2	1.493617	0.5	1.579273	3	2.057123
n-Hexane	0.025		0.05		0.1	2.737539	0.2	2.155423	0.5	1.820903	3	2.049085
n-Nonane	0.025		0.05		0.1		0.2		0.5		3	
n-octane	0.025		0.05		0.1		0.2		0.5		3	
n-pentane	0.025		0.05		0.1		0.2		0.5		3	
n-Propylbenzene	0.025		0.05		0.1	2.548029	0.2	2.456522	0.5	2.586894	3	3.079781
n-undecane	0.025		0.05		0.1		0.2		0.5		3	

FORM VI

INITIAL CALIBRATION DATA

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Calibration: YC10005

Instrument: TO15 AIR2

Calibration Date: 03/05/21 00:16

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
o-Xylene	0.025		0.05		0.1	1.301985	0.2	1.241255	0.5	1.37781	3	1.726957
p- & m- Xylenes	0.05		0.1		0.2	1.483232	0.4	1.413133	1	1.475472	6	1.737492
p-Ethyltoluene	0.025		0.05		0.1	1.925475	0.2	2.020932	0.5	2.162724	3	2.746514
p-Isopropyltoluene	0.025		0.05		0.1	1.914717	0.2	1.949076	0.5	2.254251	3	2.903001
Propylene	0.025		0.05		0.1	0.5473096	0.2	0.4993903	0.5	0.4219431	3	0.5435095
sec-Butylbenzene	0.025		0.05		0.1	2.376184	0.2	2.391245	0.5	2.640226	3	3.292989
Styrene	0.025		0.05		0.1	0.9798098	0.2	0.9566209	0.5	1.101787	3	1.412638
SURR: p-Bromofluorobenzene	10	0.8525085	10	0.8506876	10	0.8561979	10	0.8580922	10	0.8639201	10	0.8991844
tert-Butylbenzene	0.025		0.05		0.1	1.713685	0.2	1.65488	0.5	2.048579	3	2.509715
Tetrachloroethylene	0.025		0.05		0.1	0.8310709	0.2	0.7469867	0.5	0.735402	3	0.8863881
Tetrahydrofuran	0.025		0.05		0.1	1.207155	0.2	1.0428	0.5	1.087699	3	1.261144
Toluene	0.025		0.05		0.1	1.321977	0.2	1.237275	0.5	1.238405	3	1.476907
trans-1,2-Dichloroethylene	0.025		0.05		0.1	2.071745	0.2	2.090153	0.5	1.94468	3	2.361084
trans-1,3-Dichloropropylene	0.025		0.05		0.1	0.3935416	0.2	0.4063069	0.5	0.4380395	3	0.6304592
Trichloroethylene	0.025	0.6557324	0.05	0.5319945	0.1	0.4712589	0.2	0.4355772	0.5	0.417488	3	0.5463182
Trichlorofluoromethane (Freon 11)	0.025		0.05		0.1	5.294625	0.2	5.264849	0.5	5.008028	3	6.265042
Vinyl acetate	0.025		0.05		0.1	2.415301	0.2	2.290517	0.5	2.391046	3	3.292775
Vinyl bromide	0.025		0.05		0.1	1.702906	0.2	1.560405	0.5	1.564931	3	1.95034
Vinyl Chloride	0.025	1.448459	0.05	1.537535	0.1	0.8467434	0.2	0.8416776	0.5	0.9255728	3	1.099661

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 21D0348Client: Langan Engineering & Environmental Services (NJ)Project: 100287505Calibration: YC10005Instrument: TO15 AIR2Calibration Date: 03/05/21 00:16

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,1,1,2-Tetrachloroethane	10	0.7036527	20	0.6620089	30	0.6270885	50	0.6098228				
1,1,1-Trichloroethane	10	4.584105	20	4.131583	30	3.850579	50	3.580353				
1,1,2,2-Tetrachloroethane	10	1.030409	20	0.9564659	30	0.9254125	50	0.8955952				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10	3.710863	20	3.412997	30	3.199703	50	2.965981				
1,1,2-Trichloroethane	10	0.4379624	20	0.3905113	30	0.3604606	50	0.3391737				
1,1-Dichloroethane	10	2.596385	20	2.412631	30	2.278328	50	2.154445				
1,1-Dichloroethylene	10	2.314305	20	2.153038	30	2.065614	50	1.971869				
1,2,4-Trichlorobenzene	10	1.565707	20	1.388052	30	1.260619	50	1.110064				
1,2,4-Trimethylbenzene	10	2.076742	20	1.931843	30	1.841009	50	1.733338				
1,2-Dibromoethane	10	0.7734602	20	0.7108295	30	0.6619471	50	0.618879				
1,2-Dichlorobenzene	10	1.475496	20	1.340861	30	1.251014	50	1.15299				
1,2-Dichloroethane	10	2.618975	20	2.377284	30	2.222169	50	2.103792				
1,2-Dichloropropane	10	0.2590493	20	0.242815	30	0.2289506	50	0.220343				
1,2-Dichlorotetrafluoroethane	10	3.62206	20	3.2124	30	2.965631	50	2.858069				
1,3,5-Trimethylbenzene	10	2.002497	20	1.850093	30	1.760383	50	1.654815				
1,3-Butadiene	10	0.6807251	20	0.61835	30	0.6049599	50	0.6075749				
1,3-Dichlorobenzene	10	1.482455	20	1.362321	30	1.28243	50	1.186892				
1,3-Dichloropropane	10	0.5944392	20	0.5551217	30	0.5268869	50	0.5062532				
1,4-Dichlorobenzene	10	1.517589	20	1.398996	30	1.309092	50	1.208486				
1,4-Dioxane	10	0.2358101	20	0.2257012	30	0.2130674	50	0.2053033				
2-Butanone	10	2.100227	20	2.029168	30	1.947436	50	1.891826				
2-Hexanone	10	0.4665214	20	0.4331876	30	0.4095801	50	0.3888922				
3-Chloropropene	10	1.192501	20	1.151755	30	1.127682	50	1.093537				
4-Methyl-2-pentanone	10	0.4735576	20	0.4576597	30	0.440376	50	0.4321193				
Acetone	10	1.827728	20	1.706279	30	1.627947	50	1.56612				
Acrolein	10	0.4924946	20	0.4819746	30	0.4700251	50	0.4651365				
Acrylonitrile	10	0.8270742	20	0.8056493	30	0.789746	50	0.7704934				
Benzene	10	5.067009	20	4.567333	30	4.219705	50	3.860244				
Benzyl chloride	10	1.983097	20	1.892614	30	1.819937	50	1.69251				
Bromodichloromethane	10	0.7735315	20	0.7244663	30	0.6780727	50	0.647421				
Bromoform	10	0.9814345	20	0.9118577	30	0.8552012	50	0.8023855				

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 21D0348Client: Langan Engineering & Environmental Services (NJ)Project: 100287505Calibration: YC10005Instrument: TO15_AIR2Calibration Date: 03/05/21 00:16

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Bromomethane	10	1.305505	20	1.394898	30	1.369944	50	1.156144				
Carbon disulfide	10	4.317547	20	4.076418	30	3.898917	50	3.688756				
Carbon tetrachloride	10	4.912407	20	4.441884	30	4.117515	50	3.780198				
Chlorobenzene	10	1.242834	20	1.171465	30	1.11198	50	1.074711				
Chloroethane	10	0.5496198	20	0.5819897	30	0.5829018	50	0.5590546				
Chloroform	10	4.02878	20	3.691029	30	3.454297	50	3.224791				
Chloromethane	10	0.6556834	20	0.5956965	30	0.5917369	50	0.5864672				
cis-1,2-Dichloroethylene	10	1.978565	20	1.853934	30	1.779069	50	1.701992				
cis-1,3-Dichloropropylene	10	0.5573512	20	0.5330734	30	0.5101393	50	0.4968823				
Cyclohexane	10	1.840048	20	1.763229	30	1.709435	50	1.654516				
Dibromochloromethane	10	0.9347635	20	0.8563091	30	0.7938314	50	0.7400269				
Dichlorodifluoromethane	10	5.166791	20	4.393959	30	4.077728	50	3.647065				
Ethanol	10		20		30		50					
Ethyl acetate	10	2.377555	20	2.299537	30	2.204448	50	2.122641				
Ethyl Benzene	10	1.938314	20	1.830117	30	1.738651	50	1.639171				
Hexachlorobutadiene	10	1.067579	20	0.9016184	30	0.7909899	50	0.643923				
Isopropanol	10	2.01724	20	1.947423	30	1.899713	50	1.834122				
Isopropylbenzene	10	2.345537	20	2.144752	30	2.016199	50	1.853147				
Methyl Methacrylate	10	0.3167624	20	0.2973284	30	0.2791838	50	0.2689656				
Methyl tert-butyl ether (MTBE)	10	4.746184	20	4.440952	30	4.222631	50	3.998525				
Methylene chloride	10	1.209199	20	1.144762	30	1.104858	50	1.068167				
Naphthalene	10	3.944326	20	3.508586	30	3.085324	50	2.528443				
n-Butylbenzene	10	2.292823	20	2.103572	30	1.95661	50	1.772375				
n-Decane	10		20		30		50					
n-Heptane	10	1.768368	20	1.622515	30	1.534116	50	1.434589				
n-Hexane	10	1.727282	20	1.674384	30	1.615573	50	1.546048				
n-Nonane	10		20		30		50					
n-octane	10		20		30		50					
n-pentane	10		20		30		50					
n-Propylbenzene	10	2.694115	20	2.486898	30	2.324771	50	2.106047				
n-undecane	10		20		30		50					

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Calibration: YC10005

Instrument: TO15_AIR2

Calibration Date: 03/05/21 00:16

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
o-Xylene	10	1.513145	20	1.412464	30	1.347556	50	1.292945				
p- & m- Xylenes	20	1.485275	40	1.352455	60	1.24946	100	1.120782				
p-Ethyltoluene	10	2.372841	20	2.233504	30	2.086292	50	1.93642				
p-Isopropyltoluene	10	2.557351	20	2.354565	30	2.195196	50	1.995474				
Propylene	10	0.5081944	20	0.4474447	30	0.4464054	50	0.4278629				
sec-Butylbenzene	10	2.890463	20	2.644269	30	2.457297	50	2.227052				
Styrene	10	1.237751	20	1.141068	30	1.078633	50	1.032913				
SURR: p-Bromofluorobenzene	10	0.9159423	10	0.9257686	10	0.9554404	10	0.9965297				
tert-Butylbenzene	10	2.208495	20	2.041009	30	1.951797	50	1.847518				
Tetrachloroethylene	10	0.7568248	20	0.6710888	30	0.6025981	50	0.5444545				
Tetrahydrofuran	10	1.080976	20	1.053782	30	1.030184	50	1.001008				
Toluene	10	1.285504	20	1.189607	30	1.114056	50	1.046232				
trans-1,2-Dichloroethylene	10	2.042135	20	1.940021	30	1.849915	50	1.769693				
trans-1,3-Dichloropropylene	10	0.5683309	20	0.5376286	30	0.5110344	50	0.498948				
Trichloroethylene	10	0.4680064	20	0.448904	30	0.4240881	50	0.4089896				
Trichlorofluoromethane (Freon 11)	10	5.237179	20	4.666941	30	4.357233	50	4.010266				
Vinyl acetate	10	2.89731	20	2.774702	30	2.666587	50	2.542682				
Vinyl bromide	10	1.652938	20	1.566297	30	1.501256	50	1.419969				
Vinyl Chloride	10	0.9858707	20	0.8940781	30	0.8841119	50	0.8800431				

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 21D0348Client: Langan Engineering & Environmental Services (NJ)Project: 100287505Calibration: YC10005Instrument: TO15_AIR2Calibration Date: 03/05/21 00:16

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,1,1,2-Tetrachloroethane	0.6681139	9.93779	19.00787	2.879006E-02			30	
1,1,1-Trichloroethane	4.320274	12.38705	12.5805	5.351662E-02			30	
1,1,2,2-Tetrachloroethane	0.9620746	10.7982	20.819	1.463141E-02			30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	3.634836	13.07363	8.355625	0.1202057			30	
1,1,2-Trichloroethane	0.4146486	13.57976	16.85213	3.838811E-02			30	
1,1-Dichloroethane	2.531078	11.67803	10.579	7.495717E-02			30	
1,1-Dichloroethylene	2.335398	14.69621	8.577	0.1341755			30	
1,2,4-Trichlorobenzene	1.529474	16.56217	27.02038	4.183808E-03			30	
1,2,4-Trimethylbenzene	1.901611	12.57386	22.55275	1.837671E-02			30	
1,2-Dibromoethane	0.6991246	12.01784	18.16038	2.457715E-02			30	
1,2-Dichlorobenzene	1.444743	12.78021	24.27713	4.357063E-03			30	
1,2-Dichloroethane	2.488464	11.5021	13.11425	2.989951E-02			30	
1,2-Dichloropropane	0.2549049	10.63266	14.5	3.943562E-02			30	
1,2-Dichlorotetrafluoroethane	3.374943	12.2631	5.375875	0.2857393			30	
1,3,5-Trimethylbenzene	1.868173	10.33745	21.72025	1.715098E-02			30	
1,3-Butadiene	0.6543224	8.112059	5.943625	0.2907368			30	
1,3-Dichlorobenzene	1.451974	11.81113	23.38725	6.750253E-03			30	
1,3-Dichloropropane	0.5566022	9.682809	17.27963	2.639835E-02			30	
1,4-Dichlorobenzene	1.475823	11.60514	23.57463	1.029786E-02			30	
1,4-Dioxane	0.2614119	21.45268	14.81887	3.256755E-02			30	
2-Butanone	2.083504	7.555484	11.191	4.857025E-02			30	
2-Hexanone	0.440206	9.752177	16.86188	2.042332E-02			30	
3-Chloropropene	1.156794	8.257424	9.169	0.106117			30	
4-Methyl-2-pentanone	0.4494897	8.082328	15.39775	1.959477E-02			30	
Acetone	2.062743	25.94249	8.213143	0.1522569			30	
Acrolein	0.5102155	9.914777	8.101125	0.1885237			30	
Acrylonitrile	0.8177384	7.313065	9.411	0.1088809			30	
Benzene	4.975145	14.89206	13.245	3.582855E-02			30	
Benzyl chloride	1.667394	21.04261	23.72175	9.152882E-03				
Bromodichloromethane	0.719165	11.21372	14.86025	3.000756E-02			30	
Bromoform	0.8374863	18.89716	20.56775	6.129763E-03			30	
Bromomethane	1.414433	9.618288	6.73225	0.238311			30	

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 21D0348Client: Langan Engineering & Environmental Services (NJ)Project: 100287505Calibration: YC10005Instrument: TO15_AIR2Calibration Date: 03/05/21 00:16

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Carbon disulfide	4.104021	9.788585	9.45325	8.403497E-02			30	
Carbon tetrachloride	4.730553	13.83415	13.0411	2.840443E-02			30	
Chlorobenzene	1.248737	10.61977	18.959	1.269171E-02			30	
Chloroethane	0.5707349	13.47745	6.90775	0.2642905			30	
Chloroform	3.885865	11.99751	11.84575	4.839831E-02			30	
Chloromethane	0.6708143	13.78626	5.590875	0.318375			30	
cis-1,2-Dichloroethylene	2.016833	14.75751	11.571	6.652221E-02			30	
cis-1,3-Dichloropropylene	0.5061701	12.17854	15.7475	4.232504E-02			30	
Cyclohexane	1.727384	10.76431	12.74788	4.519316E-02			30	
Dibromochloromethane	0.8142906	14.99686	17.78862	1.951144E-02			30	
Dichlorodifluoromethane	4.79623	15.74824	5.10625	0.3579027			30	
Ethanol							30	
Ethyl acetate	2.304886	9.11762	11.49125	6.209777E-02			30	
Ethyl Benzene	1.862663	9.278484	19.0645	2.929417E-02			30	
Hexachlorobutadiene	1.072158	25.02342	27.29337	1.993355E-02			30	
Isopropanol	2.299661	24.59603	8.001857	0.1724984			30	
Isopropylbenzene	2.092571	14.23063	20.6455	1.773201E-02			30	
Methyl Methacrylate	0.2847943	13.5859	14.5145	2.307271E-02			30	
Methyl tert-butyl ether (MTBE)	4.52878	10.04767	9.731	0.1287248			30	
Methylene chloride	1.29567	17.70131	9.323429	0.1089953			30	
Naphthalene	4.26281	28.27286	27.41288	1.085527E-02			30	
n-Butylbenzene	2.123664	11.70238	24.01775	1.030757E-02			30	
n-Decane							30	
n-Heptane	1.629357	12.21692	13.2595	4.427095E-02			30	
n-Hexane	1.91578	20.50411	10.20937	8.350279E-02			30	
n-Nonane							30	
n-octane							30	
n-pentane							30	
n-Propylbenzene	2.535382	11.17209	21.41025	2.152399E-02			30	
n-undecane							30	
o-Xylene	1.401765	11.09584	19.99113	6.201629E-03			30	
p- & m- Xylenes	1.414663	12.95554	19.21	1.865395E-02			30	

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 21D0348Client: Langan Engineering & Environmental Services (NJ)Project: 100287505Calibration: YC10005Instrument: TO15_AIR2Calibration Date: 03/05/21 00:16

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
p-Ethyltoluene	2.185588	12.46134	21.63188	1.554287E-02			30	
p-Isopropyltoluene	2.265454	14.92875	23.21687	1.993597E-02			30	
Propylene	0.4802575	10.5622	5.03075	0.3923062			30	
sec-Butylbenzene	2.614966	13.08469	22.94987	4.312012E-03			30	
Styrene	1.117653	13.35158	20.01237	9.65246E-03			30	
SURR: p-Bromofluorobenzene	0.9024181	5.63219	21.05689	1.206191E-02			30	
tert-Butylbenzene	1.99696	13.82973	22.4785	2.000407E-02			30	
Tetrachloroethylene	0.7218517	15.64758	17.59363	0.0265057			30	
Tetrahydrofuran	1.095594	8.300424	12.17413	9.611133E-02			30	
Toluene	1.238745	10.60746	16.40337	1.396811E-02			30	
trans-1,2-Dichloroethylene	2.008678	8.966137	9.923875	9.138617E-02			30	
trans-1,3-Dichloropropylene	0.4980361	16.47857	16.56075	1.937302E-02			30	
Trichloroethylene	0.4808357	15.99162	14.2732	3.549463E-02			30	
Trichlorofluoromethane (Freon 11)	5.01302	13.72941	7.483	0.1643539			30	
Vinyl acetate	2.658865	12.33049	10.52913	8.003039E-02			30	
Vinyl bromide	1.61488	9.942465	7.364375	0.1865342			30	
Vinyl Chloride	1.034375	24.57413	5.8609	0.2833654			30	

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213544.D
 Acq On : 5 Mar 2021 1:12 am
 Operator : LLJ
 Sample : SEQ-CAL1
 Misc : QBTO2030421A 0.025 PPBV
 ALS Vial : 2 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:49:40 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Sun Feb 21 17:32:29 2021
 Response via : Initial Calibration

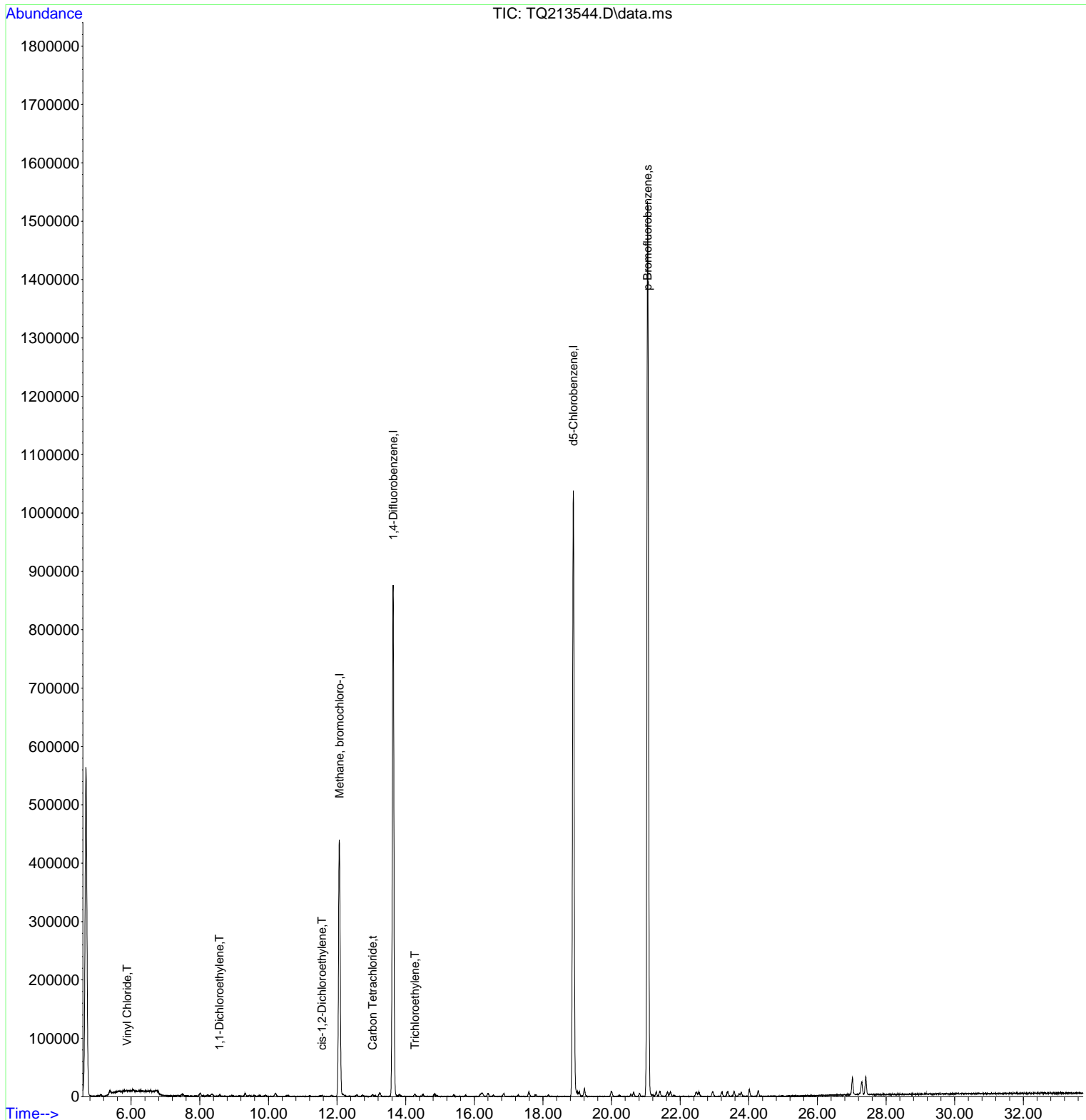
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.072	49	248540	10.00	ppbv	# 0.03
37) 1,4-Difluorobenzene	13.634	114	1365801	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.888	117	1235475	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.052	95	1053253	11.06	ppbv	0.00
Spiked Amount	10.000	Range	70 - 130	Recovery	=	110.60%
Target Compounds						
						Qvalue
6) Vinyl Chloride	5.882	62	900m	0.03	ppbv	
16) 1,1-Dichloroethylene	8.573	61	1904m	0.03	ppbv	
28) cis-1,2-Dichloroethylene	11.557	61	1602	0.03	ppbv	# 31
33) Carbon Tetrachloride	13.039	117	3579m	0.03	ppbv	
38) Trichloroethylene	14.268	95	2239	0.03	ppbv	# 63

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

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213544.D
 Acq On : 5 Mar 2021 1:12 am
 Operator : LLJ
 Sample : SEQ-CAL1
 Misc : QBTO2030421A 0.025 PPBV
 ALS Vial : 2 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:49:40 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Sun Feb 21 17:32:29 2021
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213545.D
 Acq On : 5 Mar 2021 2:08 am
 Operator : LLJ
 Sample : SEQ-CAL2
 Misc : QBTO2030421A 0.050 PPBV
 ALS Vial : 2 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 03:11:10 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Sun Feb 21 17:32:29 2021
 Response via : Initial Calibration

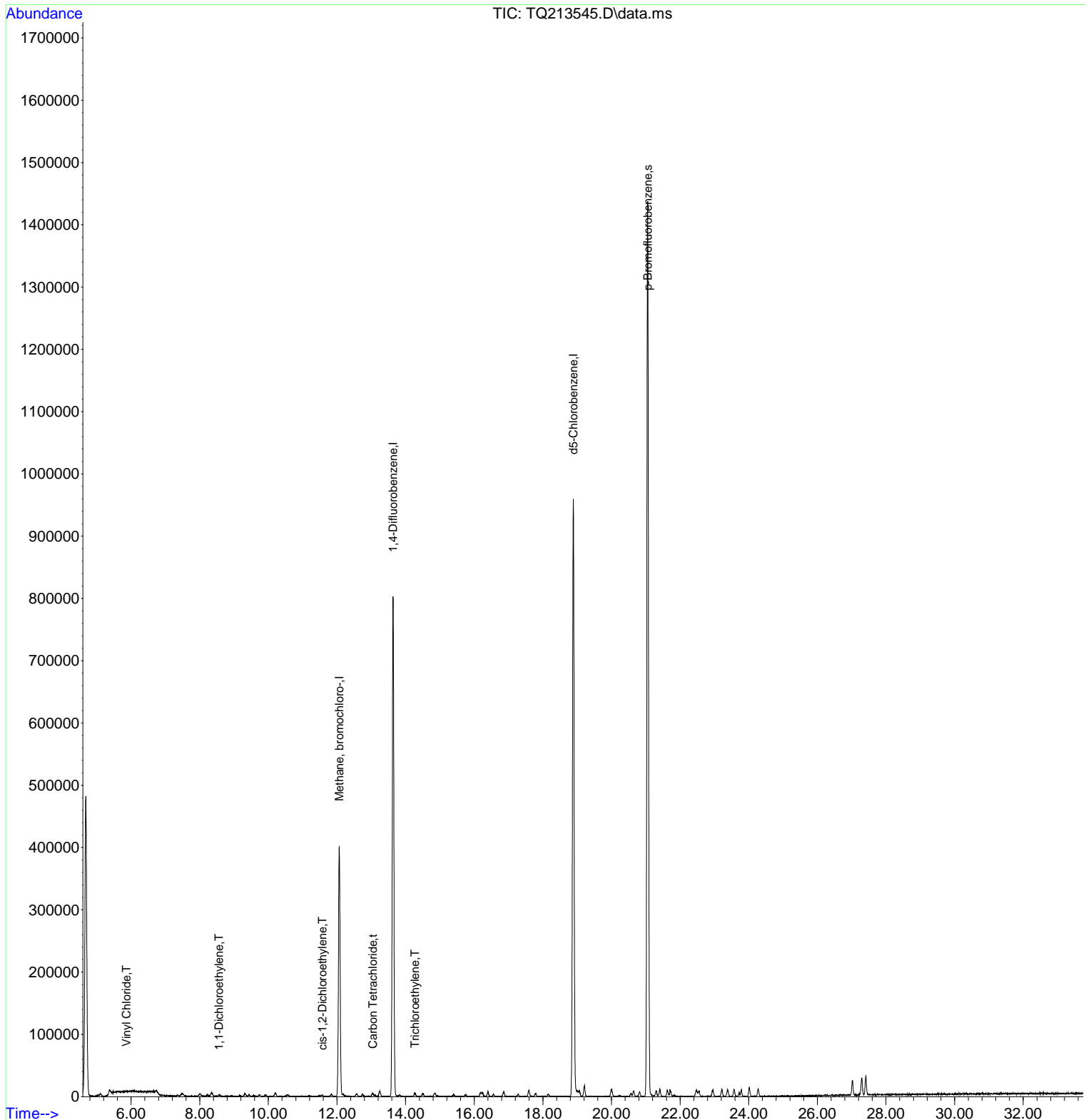
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.066	49	217491	10.00	ppbv	# 0.02
37) 1,4-Difluorobenzene	13.631	114	1236479	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.885	117	1132297	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.056	95	963231	11.03	ppbv	0.00
Spiked Amount	10.000	Range	70 - 130	Recovery	=	110.30%
Target Compounds						
						Qvalue
6) Vinyl Chloride	5.857	62	1672m	0.07	ppbv	
16) 1,1-Dichloroethylene	8.561	61	2755m	0.06	ppbv	
28) cis-1,2-Dichloroethylene	11.574	61	2581m	0.06	ppbv	
33) Carbon Tetrachloride	13.043	117	5580m	0.05	ppbv	
38) Trichloroethylene	14.268	95	3289m	0.05	ppbv	

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

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213545.D
 Acq On : 5 Mar 2021 2:08 am
 Operator : LLJ
 Sample : SEQ-CAL2
 Misc : QBTO2030421A 0.050 PPBV
 ALS Vial : 2 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 03:11:10 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Sun Feb 21 17:32:29 2021
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213546.D
 Acq On : 5 Mar 2021 3:05 am
 Operator : LLJ
 Sample : SEQ-CAL3
 Misc : QBTO2030421A 0.100 PPBV
 ALS Vial : 2 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:22:31 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:16:43 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.069	49	201714	10.00	ppbv	# 0.00
37) 1,4-Difluorobenzene	13.632	114	1150323	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.885	117	1068983	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.056	95	915261	11.00	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	110.00%	
Target Compounds						
						Qvalue
2) Propylene	5.037	42	1104m	0.18	ppbv	
3) Dichlorodifluoromethane	5.114	85	10591	0.12	ppbv	# 75
4) 1,2-Dichlorotetrafluor...	5.375	85	7329m	0.11	ppbv	
5) Chloromethane	5.600	50	1720m	0.13	ppbv	
6) Vinyl Chloride	5.860	62	1708m	0.08	ppbv	
7) 1,3-Butadiene	5.957	54	1249m	0.09	ppbv	
8) Bromomethane	6.728	94	3121m	0.11	ppbv	
9) Chloroethane	6.905	64	832m	0.09	ppbv	
10) Vinyl Bromide	7.371	106	3435m	0.11	ppbv	
11) Trichlorofluoromethane	7.474	101	10680m	0.10	ppbv	
12) Isopropanol	8.008	45	9727	0.20	ppbv	# 99
13) Acrolein	8.098	56	1212m	0.13	ppbv	
14) Acetone	8.217	43	7263	0.17	ppbv	# 68
15) Freon-113	8.362	101	8147m	0.11	ppbv	
16) 1,1-Dichloroethylene	8.577	61	4684	0.10	ppbv	91
17) 3-Chloropropene	9.162	41	2327m	0.10	ppbv	
18) Methylene Chloride	9.320	49	5070m	0.17	ppbv	
19) Acrylonitrile	9.410	53	1674	0.11	ppbv	97
20) Carbon disulfide	9.452	76	8492m	0.10	ppbv	
21) Methyl-tert-Butyl Ethe...	9.728	73	9413m	0.10	ppbv	
22) trans-1,2-Dichloroethy...	9.921	61	4179m	0.11	ppbv	
23) Hexane	10.207	57	5522	0.15	ppbv	# 58
24) Vinyl Acetate	10.519	43	4872m	0.09	ppbv	
25) 1,1-Dichloroethane	10.567	63	5466m	0.11	ppbv	
26) 2-Butanone	11.194	43	4247m	0.10	ppbv	
27) Ethyl Acetate	11.497	43	4811m	0.11	ppbv	
28) cis-1,2-Dichloroethylene	11.567	61	3903	0.09	ppbv	# 73
29) Chloroform	11.844	83	7904m	0.10	ppbv	
30) Tetrahydrofuran	12.178	42	2435m	0.12	ppbv	
31) 1,1,1-Trichlorethane	12.574	97	8853	0.10	ppbv	# 58
32) Cyclohexane	12.741	56	3426m	0.10	ppbv	
33) Carbon Tetrachloride	13.040	117	9202m	0.09	ppbv	
34) 1,2-Dichloroethane	13.114	62	5206m	0.10	ppbv	
35) Benzene	13.243	78	11256	0.11	ppbv	# 44
36) n-Heptane	13.249	43	3117m	0.10	ppbv	
38) Trichloroethylene	14.271	95	5421m	0.10	ppbv	
39) 1,2-Dichloropropane	14.506	63	3161m	0.11	ppbv	
40) Methyl Methacrylate	14.513	69	2945m	0.09	ppbv	
41) 1,4-Dioxane	14.815	88	4259m	0.18	ppbv	
42) Bromodichloromethane	14.857	83	7986	0.10	ppbv	# 90
43) Methyl Isobutyl Ketone	15.394	43	4782	0.10	ppbv	# 63
44) cis-1,3-Dichloropropene	15.734	75	5263m	0.09	ppbv	
45) Toluene	16.406	91	15207m	0.11	ppbv	
46) trans-1,3-Dichloropropene	16.558	75	4527	0.08	ppbv	# 85
47) 1,1,2-Trichlorethane	16.844	97	5005	0.11	ppbv	# 47
48) 2-Hexanone	16.860	43	4909m	0.12	ppbv	
49) 1,3-Dichloropropane	17.271	76	6560m	0.11	ppbv	

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213546.D
 Acq On : 5 Mar 2021 3:05 am
 Operator : LLJ
 Sample : SEQ-CAL3
 Misc : QBTO2030421A 0.100 PPBV
 ALS Vial : 2 Sample Multiplier: 1
 InstName : TO15_AIR2

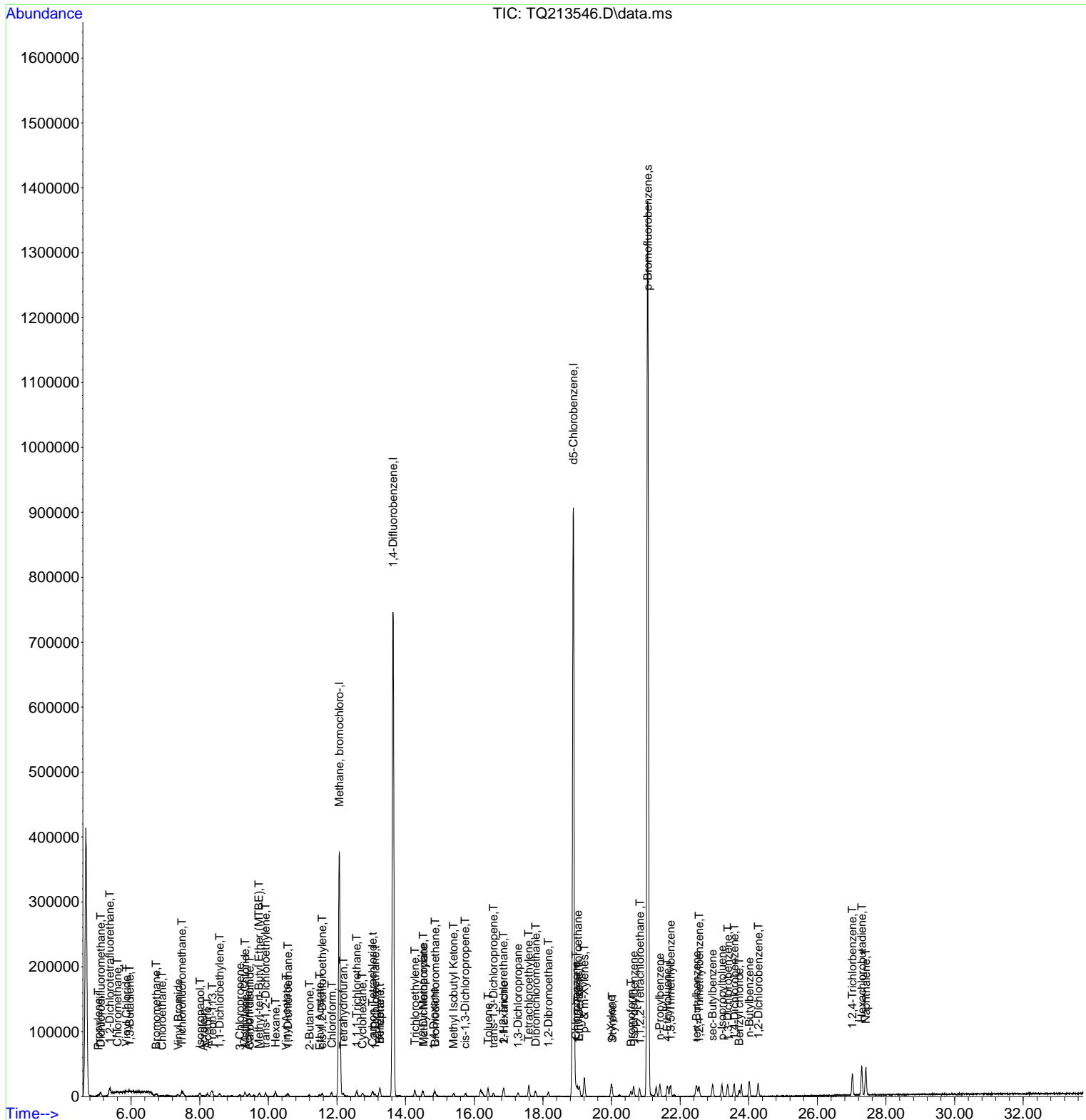
Quant Time: Mar 05 12:22:31 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:16:43 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Tetrachloroethylene	17.586	166	9560m	0.11	ppbv	
51) Dibromchloromethane	17.789	129	8214	0.09	ppbv #	67
52) 1,2-Dibromoethane	18.156	107	7535	0.10	ppbv	95
54) Chlorobenzene	18.959	112	14910	0.11	ppbv #	95
55) 1,1,1,2-Tetrachloroethane	19.011	131	7021m	0.09	ppbv	
56) Ethylbenzene	19.056	91	20119m	0.10	ppbv	
57) p- & m-Xylenes	19.207	91	31711	0.21	ppbv	98
58) o-Xylene	19.988	91	13918	0.09	ppbv	100
59) Styrene	20.020	104	10474	0.10	ppbv #	100
60) Bromoform	20.570	173	6911m	0.08	ppbv	
61) n-Propylbenzene	21.403	91	27238	0.11	ppbv	98
62) Isopropylbenzene	20.647	105	19816	0.09	ppbv	98
63) 1,1,2,2-Tetrachloroeth...	20.821	83	9679m	0.10	ppbv	
65) 4-Ethyltoluene	21.625	105	20583m	0.10	ppbv	
66) 1,3,5-Trimethylbenzene	21.721	105	18994m	0.09	ppbv	
67) tert-Butylbenzene	22.474	119	18319	0.08	ppbv	93
68) 1,2,4-Trimethylbenzene	22.557	105	16714m	0.09	ppbv	
69) sec-Butylbenzene	22.943	105	25401m	0.09	ppbv	
70) p-Isopropyltoluene	23.216	119	20468	0.08	ppbv #	88
71) 1,3-Dichlorobenzene	23.393	146	16895m	0.15	ppbv	
72) 1,4-Dichlorobenzene	23.576	146	16976	0.16	ppbv #	62
73) Benzyl chloride	23.718	91	12717	0.11	ppbv #	86
74) n-Butylbenzene	24.014	91	21896	0.12	ppbv	99
75) 1,2-Dichlorobenzene	24.277	146	17190	0.14	ppbv	94
76) 1,2,4-Trichlorobenzene	27.017	180	19136	0.28	ppbv #	92
77) Hexachlorobutadiene	27.293	225	14722	0.13	ppbv	99
78) Naphthalene	27.412	128	64454	0.31	ppbv #	93

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

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213546.D
 Acq On : 5 Mar 2021 3:05 am
 Operator : LLJ
 Sample : SEQ-CAL3
 Misc : QBTO2030421A 0.100 PPBV
 ALS Vial : 2 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:22:31 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:16:43 2021
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213547.D
 Acq On : 5 Mar 2021 4:03 am
 Operator : LLJ
 Sample : SEQ-CAL4
 Misc : QBTO2030421A 0.200 PPBV
 ALS Vial : 2 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:36:24 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:16:43 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.075	49	197641	10.00	ppbv	# 0.01
37) 1,4-Difluorobenzene	13.638	114	1135964	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.889	117	1056270	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.059	95	906377	11.02	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	110.20%	
Target Compounds						
						Qvalue
2) Propylene	5.063	42	1974m	0.33	ppbv	
3) Dichlorodifluoromethane	5.133	85	20010	0.23	ppbv	# 92
4) 1,2-Dichlorotetrafluor...	5.397	85	12966	0.20	ppbv	# 79
5) Chloromethane	5.616	50	2517m	0.19	ppbv	
6) Vinyl Chloride	5.876	62	3327m	0.16	ppbv	
7) 1,3-Butadiene	5.969	54	2783m	0.21	ppbv	
8) Bromomethane	6.748	94	6088m	0.22	ppbv	
9) Chloroethane	6.937	64	2457m	0.27	ppbv	
10) Vinyl Bromide	7.381	106	6168	0.19	ppbv	99
11) Trichlorofluoromethane	7.500	101	20811	0.20	ppbv	# 68
12) Isopropanol	8.024	45	13488	0.28	ppbv	# 99
13) Acrolein	8.130	56	2148m	0.24	ppbv	
14) Acetone	8.230	43	11674m	0.29	ppbv	
15) Freon-113	8.365	101	14357	0.20	ppbv	# 75
16) 1,1-Dichloroethylene	8.590	61	8255m	0.19	ppbv	
17) 3-Chloropropene	9.175	41	4400m	0.20	ppbv	
18) Methylene Chloride	9.339	49	6723m	0.24	ppbv	
19) Acrylonitrile	9.419	53	3120m	0.20	ppbv	
20) Carbon disulfide	9.458	76	15252m	0.19	ppbv	
21) Methyl-tert-Butyl Ethe...	9.751	73	16871	0.19	ppbv	# 57
22) trans-1,2-Dichloroethy...	9.937	61	8262m	0.21	ppbv	
23) Hexane	10.217	57	8520m	0.23	ppbv	
24) Vinyl Acetate	10.538	43	9054	0.18	ppbv	# 98
25) 1,1-Dichloroethane	10.587	63	10107	0.20	ppbv	# 6
26) 2-Butanone	11.198	43	8185	0.20	ppbv	# 79
27) Ethyl Acetate	11.500	43	8643	0.19	ppbv	# 31
28) cis-1,2-Dichloroethylene	11.577	61	7363m	0.18	ppbv	
29) Chloroform	11.847	83	15950	0.20	ppbv	# 87
30) Tetrahydrofuran	12.194	42	4122m	0.21	ppbv	
31) 1,1,1-Trichlorethane	12.587	97	17131m	0.20	ppbv	
32) Cyclohexane	12.751	56	5870m	0.18	ppbv	
33) Carbon Tetrachloride	13.040	117	17570	0.18	ppbv	# 77
34) 1,2-Dichloroethane	13.111	62	9796	0.19	ppbv	# 92
35) Benzene	13.239	78	21117m	0.22	ppbv	
36) n-Heptane	13.259	43	5904	0.19	ppbv	# 83
38) Trichloroethylene	14.281	95	9896	0.18	ppbv	# 69
39) 1,2-Dichloropropane	14.490	63	5856m	0.21	ppbv	
40) Methyl Methacrylate	14.516	69	5517m	0.18	ppbv	
41) 1,4-Dioxane	14.828	88	7119	0.30	ppbv	# 100
42) Bromodichloromethane	14.853	83	15134	0.18	ppbv	# 65
43) Methyl Isobutyl Ketone	15.397	43	9305	0.20	ppbv	# 78
44) cis-1,3-Dichloropropene	15.750	75	10021m	0.18	ppbv	
45) Toluene	16.403	91	28110	0.21	ppbv	# 97
46) trans-1,3-Dichloropropene	16.561	75	9231	0.17	ppbv	# 85
47) 1,1,2-Trichlorethane	16.844	97	9501m	0.20	ppbv	
48) 2-Hexanone	16.869	43	9410m	0.23	ppbv	
49) 1,3-Dichloropropane	17.284	76	11713	0.19	ppbv	91

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213547.D
 Acq On : 5 Mar 2021 4:03 am
 Operator : LLJ
 Sample : SEQ-CAL4
 Misc : QBTO2030421A 0.200 PPBV
 ALS Vial : 2 Sample Multiplier: 1
 InstName : TO15_AIR2

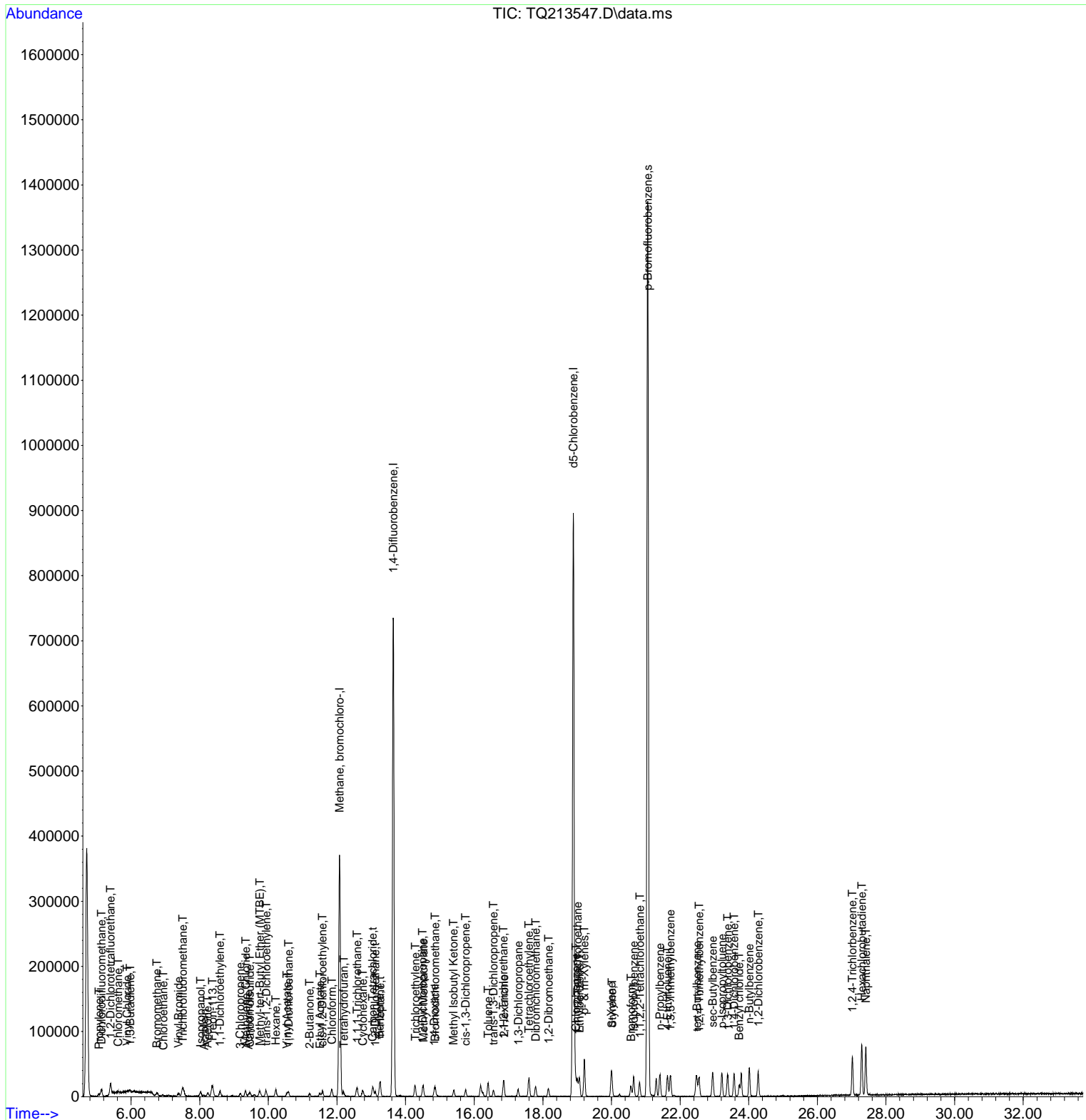
Quant Time: Mar 05 12:36:24 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:16:43 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Tetrachloroethylene	17.593	166	16971	0.21	ppbv	97
51) Dibromchloromethane	17.789	129	16000	0.17	ppbv #	94
52) 1,2-Dibromoethane	18.162	107	15037	0.20	ppbv #	62
54) Chlorobenzene	18.962	112	27857	0.22	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.004	131	13257	0.18	ppbv	91
56) Ethylbenzene	19.069	91	38888	0.20	ppbv	100
57) p- & m-Xylenes	19.207	91	59706	0.41	ppbv #	91
58) o-Xylene	19.995	91	26222	0.18	ppbv	99
59) Styrene	20.011	104	20209	0.19	ppbv #	100
60) Bromoform	20.570	173	14333	0.17	ppbv	98
61) n-Propylbenzene	21.413	91	51895	0.21	ppbv	98
62) Isopropylbenzene	20.644	105	37802	0.17	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	20.821	83	18763	0.19	ppbv #	97
65) 4-Ethyltoluene	21.631	105	42693	0.20	ppbv #	81
66) 1,3,5-Trimethylbenzene	21.718	105	36831	0.19	ppbv #	71
67) tert-Butylbenzene	22.486	119	34960	0.16	ppbv	91
68) 1,2,4-Trimethylbenzene	22.557	105	37366	0.19	ppbv #	67
69) sec-Butylbenzene	22.949	105	50516	0.18	ppbv	98
70) p-Isopropyltoluene	23.216	119	41175	0.17	ppbv	97
71) 1,3-Dichlorobenzene	23.387	146	31176m	0.28	ppbv	
72) 1,4-Dichlorobenzene	23.570	146	31054	0.30	ppbv #	87
73) Benzyl chloride	23.718	91	26313	0.23	ppbv	93
74) n-Butylbenzene	24.020	91	42620	0.24	ppbv	99
75) 1,2-Dichlorobenzene	24.277	146	31467	0.27	ppbv	96
76) 1,2,4-Trichlorobenzene	27.017	180	34335	0.51	ppbv	96
77) Hexachlorobutadiene	27.293	225	26563	0.23	ppbv #	91
78) Naphthalene	27.416	128	110548	0.55	ppbv	100

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

Data Path : C:\msdchem\1\data\030421\
Data File : TQ213547.D
Acq On : 5 Mar 2021 4:03 am
Operator : LLJ
Sample : SEQ-CAL4
Misc : QBTO2030421A 0.200 PPBV
ALS Vial : 2 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Mar 05 12:36:24 2021
Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Mar 05 12:16:43 2021
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213548.D
 Acq On : 5 Mar 2021 5:06 am
 Operator : LLJ
 Sample : SEQ-CAL5
 Misc : QBTO2030421A 0.500 PPBV
 ALS Vial : 2 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:39:37 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:37:40 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.072	49	192443	10.00	ppbv	# 0.01
37) 1,4-Difluorobenzene	13.638	114	1118164	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.888	117	1039911	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.052	95	898400	10.07	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	100.70%	
Target Compounds						
						Qvalue
2) Propylene	5.040	42	4060m	0.67	ppbv	
3) Dichlorodifluoromethane	5.117	85	45421	0.55	ppbv	# 53
4) 1,2-Dichlorotetrafluor...	5.384	85	31590	0.47	ppbv	# 68
5) Chloromethane	5.606	50	6773	0.53	ppbv	# 49
6) Vinyl Chloride	5.879	62	8906m	0.43	ppbv	
7) 1,3-Butadiene	5.950	54	6241m	0.50	ppbv	
8) Bromomethane	6.751	94	14550	0.56	ppbv	# 92
9) Chloroethane	6.911	64	5522m	0.57	ppbv	
10) Vinyl Bromide	7.378	106	15058m	0.49	ppbv	
11) Trichlorofluoromethane	7.484	101	48188	0.49	ppbv	# 95
12) Isopropanol	8.008	45	25092	0.55	ppbv	# 99
13) Acrolein	8.108	56	4525m	0.49	ppbv	
14) Acetone	8.223	43	25117	0.59	ppbv	96
15) Freon-113	8.355	101	34942m	0.50	ppbv	
16) 1,1-Dichloroethylene	8.590	61	20441	0.46	ppbv	# 77
17) 3-Chloropropene	9.165	41	10133m	0.47	ppbv	
18) Methylene Chloride	9.326	49	13395	0.49	ppbv	# 68
19) Acrylonitrile	9.419	53	7451	0.49	ppbv	95
20) Carbon disulfide	9.461	76	36840	0.48	ppbv	# 74
21) Methyl-tert-Butyl Ethe...	9.741	73	42350m	0.49	ppbv	
22) trans-1,2-Dichloroethy...	9.931	61	18712	0.49	ppbv	# 74
23) Hexane	10.210	57	17521	0.49	ppbv	88
24) Vinyl Acetate	10.529	43	23007	0.46	ppbv	# 98
25) 1,1-Dichloroethane	10.580	63	23316	0.48	ppbv	71
26) 2-Butanone	11.194	43	20227	0.52	ppbv	86
27) Ethyl Acetate	11.493	43	20295	0.47	ppbv	# 37
28) cis-1,2-Dichloroethylene	11.570	61	17222	0.44	ppbv	88
29) Chloroform	11.844	83	37980	0.51	ppbv	# 69
30) Tetrahydrofuran	12.185	42	10466	0.52	ppbv	# 80
31) 1,1,1-Trichlorethane	12.577	97	41483	0.49	ppbv	# 91
32) Cyclohexane	12.754	56	15103m	0.47	ppbv	
33) Carbon Tetrachloride	13.037	117	42448m	0.46	ppbv	
34) 1,2-Dichloroethane	13.114	62	23819	0.49	ppbv	# 91
35) Benzene	13.249	78	48372	0.52	ppbv	# 67
36) n-Heptane	13.262	43	15196	0.50	ppbv	# 90
38) Trichloroethylene	14.275	95	23341	0.43	ppbv	88
39) 1,2-Dichloropropane	14.506	63	13918m	0.50	ppbv	
40) Methyl Methacrylate	14.512	69	14379	0.47	ppbv	# 88
41) 1,4-Dioxane	14.821	88	14491	0.53	ppbv	# 100
42) Bromodichloromethane	14.860	83	37790	0.47	ppbv	# 92
43) Methyl Isobutyl Ketone	15.397	43	24806	0.52	ppbv	# 48
44) cis-1,3-Dichloropropene	15.754	75	24489	0.45	ppbv	# 87
45) Toluene	16.400	91	69237	0.51	ppbv	98
46) trans-1,3-Dichloropropene	16.554	75	24490	0.45	ppbv	# 83
47) 1,1,2-Trichlorethane	16.860	97	23013m	0.50	ppbv	
48) 2-Hexanone	16.863	43	25483	0.57	ppbv	# 96
49) 1,3-Dichloropropane	17.281	76	28944m	0.48	ppbv	

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213548.D
 Acq On : 5 Mar 2021 5:06 am
 Operator : LLJ
 Sample : SEQ-CAL5
 Misc : QBTO2030421A 0.500 PPBV
 ALS Vial : 2 Sample Multiplier: 1
 InstName : TO15_AIR2

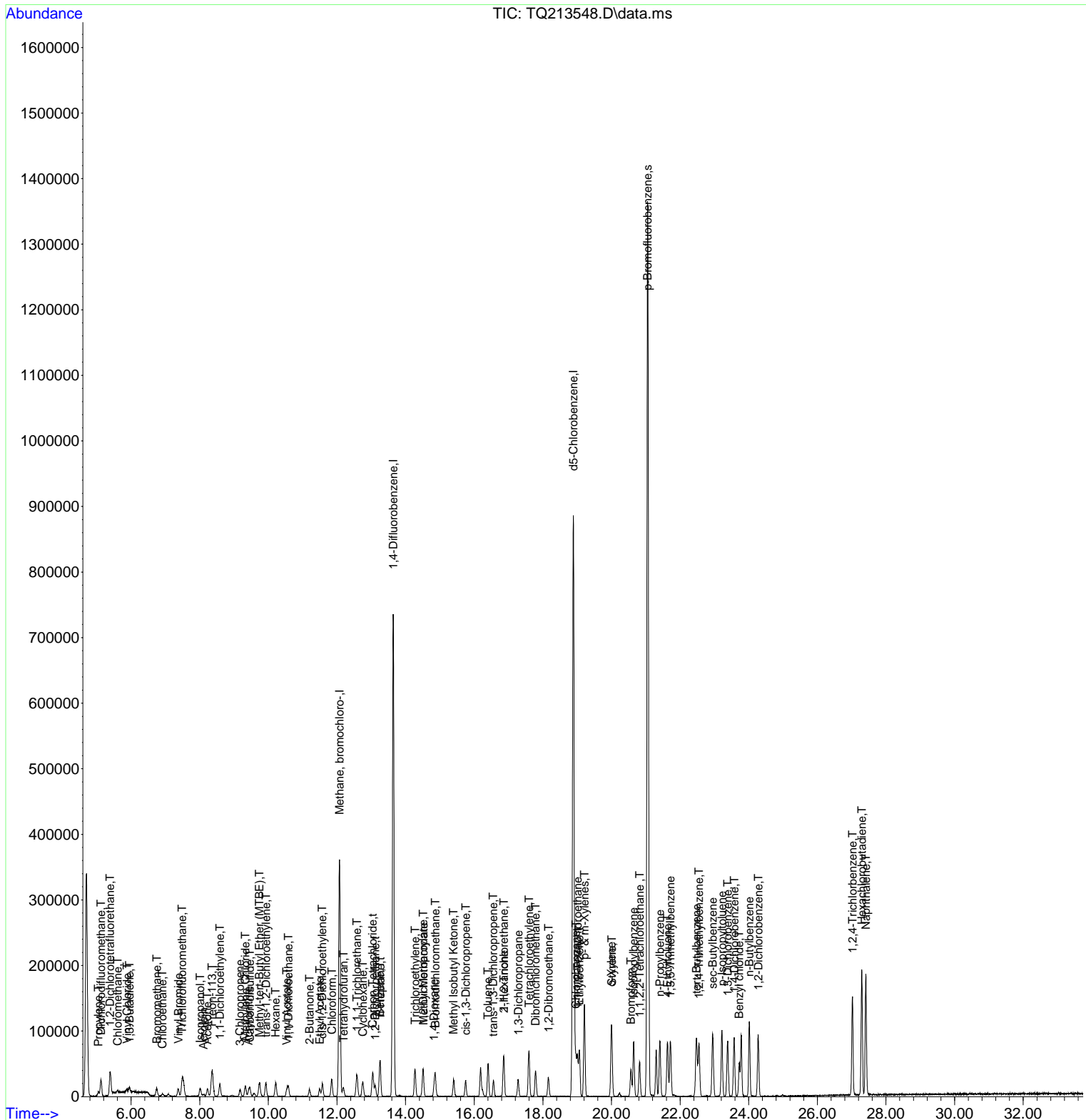
Quant Time: Mar 05 12:39:37 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:37:40 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Tetrachloroethylene	17.599	166	41115	0.51	ppbv	96
51) Dibromchloromethane	17.786	129	40681	0.45	ppbv #	98
52) 1,2-Dibromoethane	18.162	107	35834m	0.47	ppbv	
54) Chlorobenzene	18.959	112	63622	0.50	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.004	131	33359	0.47	ppbv	90
56) Ethylbenzene	19.062	91	93856	0.49	ppbv	96
57) p- & m-Xylenes	19.213	91	153436	1.05	ppbv #	96
58) o-Xylene	19.991	91	71640	0.49	ppbv	99
59) Styrene	20.007	104	57288	0.52	ppbv #	100
60) Bromoform	20.567	173	37375	0.43	ppbv #	95
61) n-Propylbenzene	21.412	91	134507	0.52	ppbv	97
62) Isopropylbenzene	20.641	105	107180	0.49	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	20.814	83	46951	0.48	ppbv	97
65) 4-Ethyltoluene	21.631	105	112452	0.51	ppbv #	95
66) 1,3,5-Trimethylbenzene	21.718	105	98144	0.50	ppbv #	94
67) tert-Butylbenzene	22.474	119	106517	0.50	ppbv	95
68) 1,2,4-Trimethylbenzene	22.547	105	101171	0.52	ppbv #	91
69) sec-Butylbenzene	22.946	105	137280	0.50	ppbv #	94
70) p-Isopropyltoluene	23.219	119	117211	0.49	ppbv #	79
71) 1,3-Dichlorobenzene	23.387	146	78860	0.60	ppbv #	92
72) 1,4-Dichlorobenzene	23.576	146	80967	0.63	ppbv	95
73) Benzyl chloride	23.721	91	72481	0.53	ppbv #	92
74) n-Butylbenzene	24.017	91	114127	0.56	ppbv #	76
75) 1,2-Dichlorobenzene	24.277	146	79858	0.58	ppbv	95
76) 1,2,4-Trichlorobenzene	27.023	180	87793	0.82	ppbv	97
77) Hexachlorobutadiene	27.293	225	62869	0.55	ppbv	99
78) Naphthalene	27.412	128	272919	0.84	ppbv	100

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

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213548.D
 Acq On : 5 Mar 2021 5:06 am
 Operator : LLJ
 Sample : SEQ-CAL5
 Misc : QBTO2030421A 0.500 PPBV
 ALS Vial : 2 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:39:37 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:37:40 2021
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213549.D
 Acq On : 5 Mar 2021 6:02 am
 Operator : LLJ
 Sample : SEQ-CAL6
 Misc : QBTO2030421A 3.00 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:40:33 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:40:17 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.066	49	191165	10.00	ppbv	# 0.00
37) 1,4-Difluorobenzene	13.635	114	1114320	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.885	117	1053101	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.056	95	946932	10.23	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	102.30%	
Target Compounds						
						Qvalue
2) Propylene	5.024	42	31170m	5.20	ppbv	
3) Dichlorodifluoromethane	5.104	85	347029	4.20	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.378	85	237701	3.60	ppbv	94
5) Chloromethane	5.584	50	42644	3.31	ppbv	72
6) Vinyl Chloride	5.857	62	63065	3.06	ppbv	98
7) 1,3-Butadiene	5.940	54	43076	3.42	ppbv #	67
8) Bromomethane	6.725	94	85418	3.25	ppbv	99
9) Chloroethane	6.908	64	39249	4.02	ppbv #	77
10) Vinyl Bromide	7.358	106	111851	3.69	ppbv	100
11) Trichlorofluoromethane	7.484	101	359297	3.71	ppbv	99
12) Isopropanol	7.998	45	136443	2.99	ppbv	100
13) Acrolein	8.101	56	31976	3.40	ppbv #	86
14) Acetone	8.210	43	123156	2.85	ppbv #	68
15) Freon-113	8.355	101	257313	3.73	ppbv	91
16) 1,1-Dichloroethylene	8.574	61	155794	3.52	ppbv	86
17) 3-Chloropropene	9.172	41	78514	3.66	ppbv #	84
18) Methylene Chloride	9.317	49	83145	3.06	ppbv #	71
19) Acrylonitrile	9.403	53	54791	3.62	ppbv #	96
20) Carbon disulfide	9.452	76	284077	3.70	ppbv #	83
21) Methyl-tert-Butyl Ethe...	9.728	73	314622	3.68	ppbv #	83
22) trans-1,2-Dichloroethy...	9.921	61	135407	3.57	ppbv	79
23) Hexane	10.207	57	117514	3.30	ppbv	90
24) Vinyl Acetate	10.529	43	188839	3.79	ppbv #	99
25) 1,1-Dichloroethane	10.574	63	178758	3.75	ppbv	76
26) 2-Butanone	11.191	43	138850	3.56	ppbv #	80
27) Ethyl Acetate	11.487	43	157947	3.67	ppbv #	44
28) cis-1,2-Dichloroethylene	11.567	61	132799	3.48	ppbv #	61
29) Chloroform	11.847	83	274553	3.70	ppbv #	95
30) Tetrahydrofuran	12.169	42	72326	3.57	ppbv #	68
31) 1,1,1-Trichlorethane	12.583	97	308633	3.71	ppbv	95
32) Cyclohexane	12.744	56	120364	3.76	ppbv #	71
33) Carbon Tetrachloride	13.040	117	329411	3.60	ppbv	100
34) 1,2-Dichloroethane	13.114	62	174970	3.64	ppbv #	86
35) Benzene	13.246	78	351970	3.77	ppbv #	79
36) n-Heptane	13.262	43	117975	3.89	ppbv #	72
38) Trichloroethylene	14.271	95	182632	3.44	ppbv	91
39) 1,2-Dichloropropane	14.496	63	102492	3.71	ppbv	83
40) Methyl Methacrylate	14.516	69	120372	3.91	ppbv	95
41) 1,4-Dioxane	14.818	88	89802	3.24	ppbv #	100
42) Bromodichloromethane	14.860	83	298703	3.75	ppbv	96
43) Methyl Isobutyl Ketone	15.397	43	174917	3.62	ppbv #	87
44) cis-1,3-Dichloropropene	15.744	75	205689	3.74	ppbv	94
45) Toluene	16.403	91	493724	3.63	ppbv	99
46) trans-1,3-Dichloropropene	16.564	75	210760	3.91	ppbv	95
47) 1,1,2-Trichlorethane	16.847	97	175229	3.86	ppbv	93
48) 2-Hexanone	16.860	43	176084	3.77	ppbv	95
49) 1,3-Dichloropropane	17.278	76	222836	3.68	ppbv #	84

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213549.D
 Acq On : 5 Mar 2021 6:02 am
 Operator : LLJ
 Sample : SEQ-CAL6
 Misc : QBTO2030421A 3.00 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

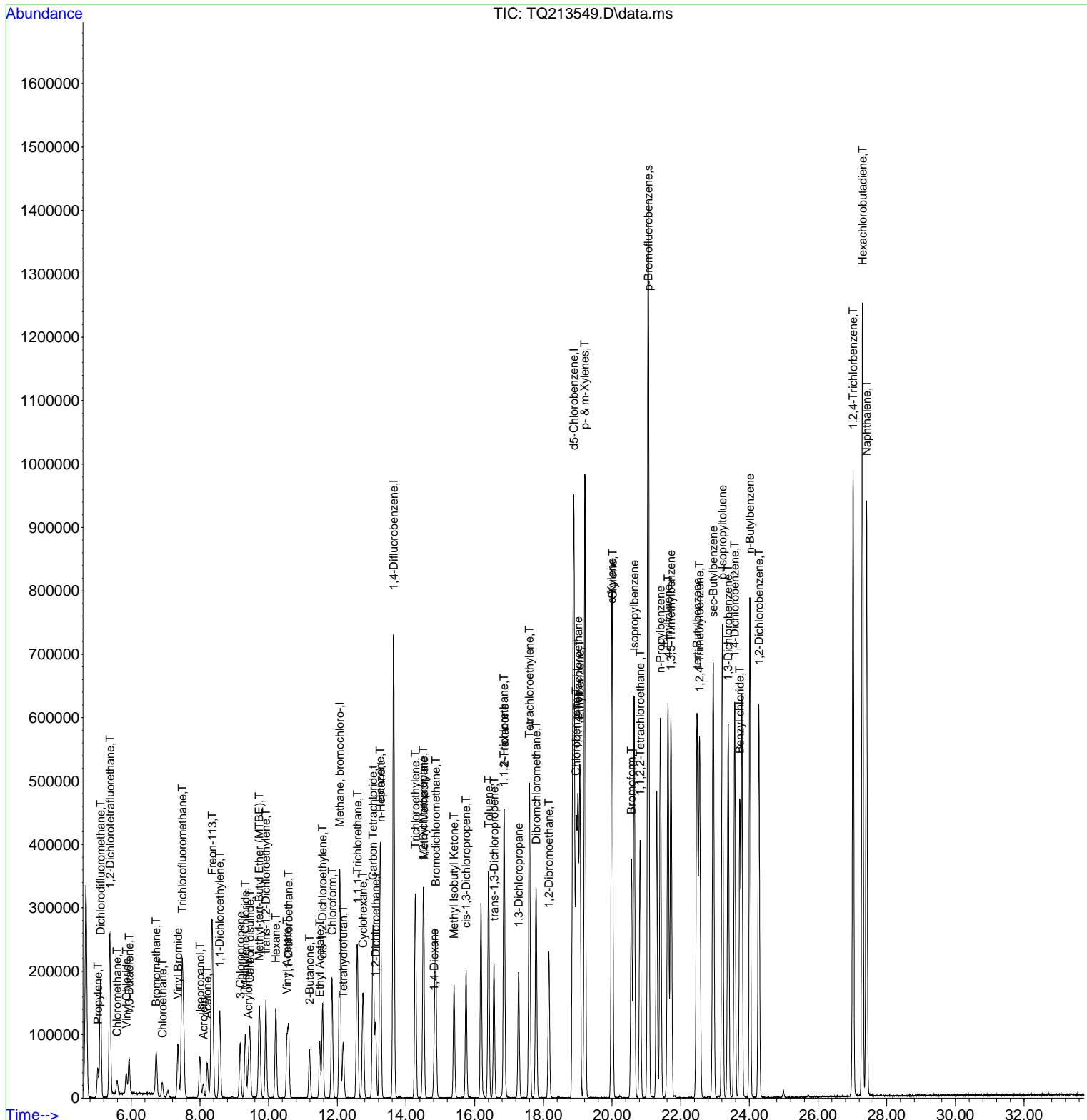
Quant Time: Mar 05 12:40:33 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:40:17 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Tetrachloroethylene	17.593	166	296316	3.69	ppbv	97
51) Dibromchloromethane	17.789	129	348820	3.88	ppbv	99
52) 1,2-Dibromoethane	18.155	107	290852	3.83	ppbv	98
54) Chlorobenzene	18.956	112	458688	3.53	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.007	131	257936	3.64	ppbv	90
56) Ethylbenzene	19.062	91	703604	3.61	ppbv	97
57) p- & m-Xylenes	19.207	91	1097853	7.34	ppbv	99
58) o-Xylene	19.988	91	545598	3.67	ppbv	100
59) Styrene	20.011	104	446295	3.86	ppbv #	100
60) Bromoform	20.567	173	349174	3.98	ppbv	99
61) n-Propylbenzene	21.409	91	972996	3.65	ppbv	98
62) Isopropylbenzene	20.647	105	845577	3.78	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	20.818	83	376627	3.75	ppbv	97
65) 4-Ethyltoluene	21.631	105	867707	3.79	ppbv	98
66) 1,3,5-Trimethylbenzene	21.715	105	717091	3.58	ppbv	97
67) tert-Butylbenzene	22.477	119	792895	3.68	ppbv #	78
68) 1,2,4-Trimethylbenzene	22.548	105	743030	3.68	ppbv #	93
69) sec-Butylbenzene	22.949	105	1040355	3.70	ppbv #	94
70) p-Isopropyltoluene	23.213	119	917146	3.78	ppbv	96
71) 1,3-Dichlorobenzene	23.380	146	546178	3.78	ppbv	97
72) 1,4-Dichlorobenzene	23.573	146	555152	3.89	ppbv	97
73) Benzyl chloride	23.721	91	670344	4.41	ppbv	94
74) n-Butylbenzene	24.017	91	822434	3.75	ppbv	99
75) 1,2-Dichlorobenzene	24.277	146	538382	3.67	ppbv	97
76) 1,2,4-Trichlorobenzene	27.020	180	571034	4.44	ppbv	98
77) Hexachlorobutadiene	27.293	225	420009	3.63	ppbv	99
78) Naphthalene	27.409	128	1429425	3.67	ppbv	100

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

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213549.D
 Acq On : 5 Mar 2021 6:02 am
 Operator : LLJ
 Sample : SEQ-CAL6
 Misc : QBTO2030421A 3.00 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:40:33 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:40:17 2021
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213550.D
 Acq On : 5 Mar 2021 6:59 am
 Operator : LLJ
 Sample : SEQ-CAL7
 Misc : QBTO2030421A 10.0 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:15:22 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Sun Feb 21 17:32:29 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.062	49	197391	10.00	ppbv	# 0.02
37) 1,4-Difluorobenzene	13.635	114	1149480	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.889	117	1089276	10.00	ppbv	# 0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.056	95	997714	11.88	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	118.80%	
Target Compounds						
						Qvalue
2) Propylene	4.998	42	100313	20.28	ppbv	93
3) Dichlorodifluoromethane	5.072	85	1019878	11.68	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.346	85	714962	10.71	ppbv	95
5) Chloromethane	5.561	50	129426	9.75	ppbv	97
6) Vinyl Chloride	5.825	62	194602	9.17	ppbv	98
7) 1,3-Butadiene	5.912	54	134369	10.08	ppbv	93
8) Bromomethane	6.703	94	257695	9.44	ppbv	99
9) Chloroethane	6.873	64	108490	12.14	ppbv	# 85
10) Vinyl Bromide	7.339	106	326275	10.34	ppbv	100
11) Trichlorofluoromethane	7.461	101	1033772	10.07	ppbv	99
12) Isopropanol	7.979	45	398185	8.25	ppbv	100
13) Acrolein	8.075	56	97214	10.94	ppbv	# 1
14) Acetone	8.191	43	360777	8.87	ppbv	# 69
15) Freon-113	8.336	101	732491	10.16	ppbv	91
16) 1,1-Dichloroethylene	8.558	61	456823	10.46	ppbv	87
17) 3-Chloropropene	9.153	41	235389	10.67	ppbv	# 76
18) Methylene Chloride	9.307	49	238685	8.41	ppbv	# 63
19) Acrylonitrile	9.391	53	163257	10.74	ppbv	# 94
20) Carbon disulfide	9.436	76	852245	10.79	ppbv	96
21) Methyl-tert-Butyl Ethe...	9.709	73	936854	10.63	ppbv	92
22) trans-1,2-Dichloroethy...	9.908	61	403099	10.45	ppbv	80
23) Hexane	10.194	57	340950	9.37	ppbv	90
24) Vinyl Acetate	10.516	43	571903	11.42	ppbv	# 99
25) 1,1-Dichloroethane	10.571	63	512503	10.29	ppbv	79
26) 2-Butanone	11.181	43	414566	10.41	ppbv	# 80
27) Ethyl Acetate	11.477	43	469308	10.65	ppbv	# 45
28) cis-1,2-Dichloroethylene	11.564	61	390551	9.61	ppbv	# 62
29) Chloroform	11.834	83	795245	10.24	ppbv	96
30) Tetrahydrofuran	12.156	42	213375	10.82	ppbv	# 66
31) 1,1,1-Trichlorethane	12.570	97	904861	10.35	ppbv	95
32) Cyclohexane	12.741	56	363209	10.98	ppbv	# 72
33) Carbon Tetrachloride	13.037	117	969665	10.03	ppbv	# 92
34) 1,2-Dichloroethane	13.107	62	516962	10.11	ppbv	# 98
35) Benzene	13.239	78	1000182	10.45	ppbv	# 81
36) n-Heptane	13.252	43	349060	11.19	ppbv	# 73
38) Trichloroethylene	14.268	95	537964	9.66	ppbv	91
39) 1,2-Dichloropropane	14.496	63	297772	10.52	ppbv	# 80
40) Methyl Methacrylate	14.509	69	364112	11.59	ppbv	# 91
41) 1,4-Dioxane	14.812	88	271059	11.27	ppbv	# 100
42) Bromodichloromethane	14.857	83	889159	10.60	ppbv	95
43) Methyl Isobutyl Ketone	15.394	43	544345	11.79	ppbv	# 87
44) cis-1,3-Dichloropropene	15.744	75	640664	11.41	ppbv	94
45) Toluene	16.400	91	1477661	10.79	ppbv	99
46) trans-1,3-Dichloropropene	16.557	75	653285	11.75	ppbv	95
47) 1,1,2-Trichlorethane	16.850	97	503429	10.75	ppbv	93
48) 2-Hexanone	16.857	43	536257	12.91	ppbv	# 94
49) 1,3-Dichloropropane	17.274	76	683296	11.19	ppbv	91

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213550.D
 Acq On : 5 Mar 2021 6:59 am
 Operator : LLJ
 Sample : SEQ-CAL7
 Misc : QBTO2030421A 10.0 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

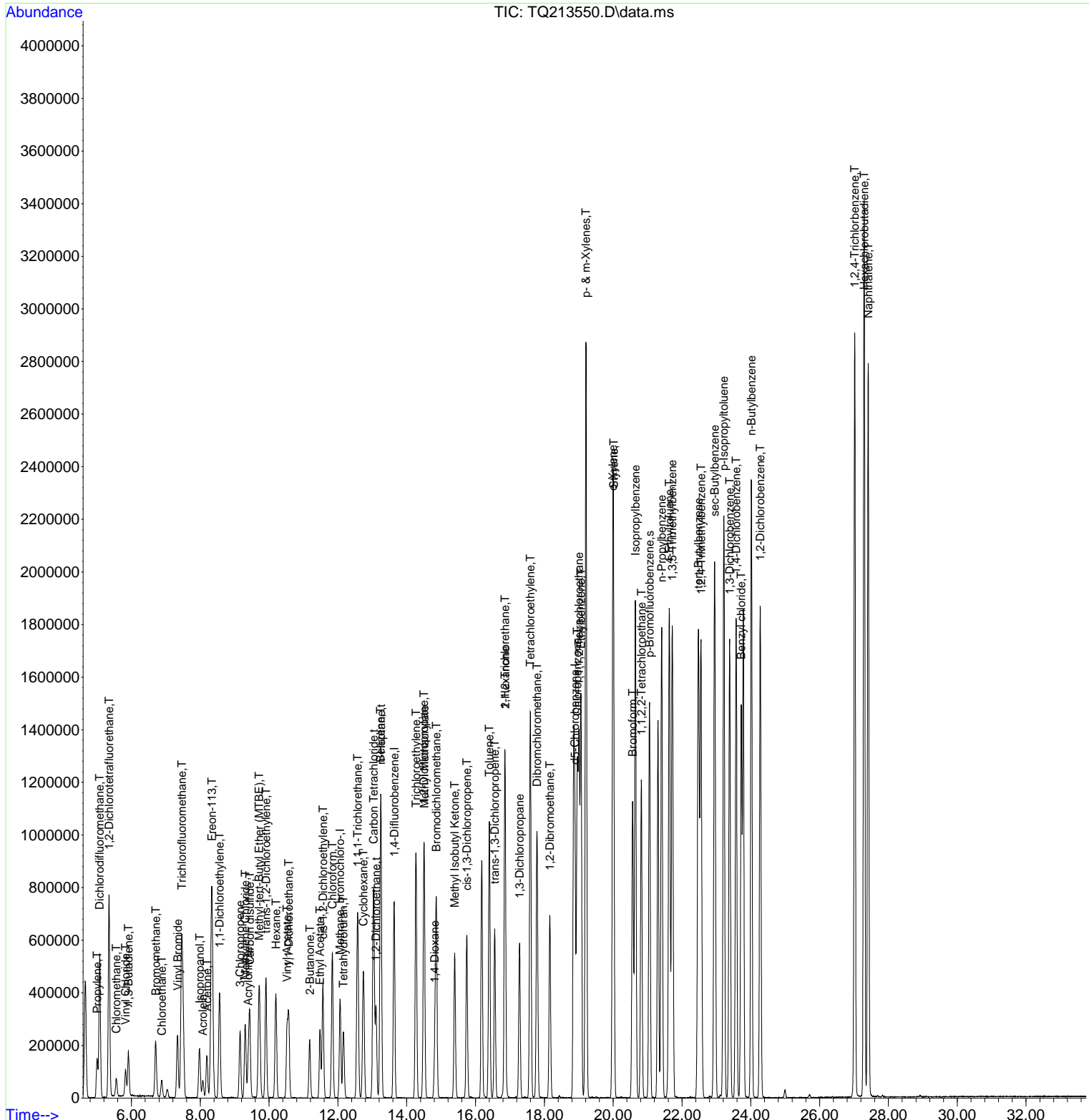
Quant Time: Mar 05 12:15:22 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Sun Feb 21 17:32:29 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Tetrachloroethylene	17.590	166	869955	10.45	ppbv	98
51) Dibromchloromethane	17.786	129	1074492	11.47	ppbv	99
52) 1,2-Dibromoethane	18.159	107	889077	11.56	ppbv	99
54) Chlorobenzene	18.956	112	1353789	10.27	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.001	131	766472	9.99	ppbv	89
56) Ethylbenzene	19.062	91	2111359	10.64	ppbv	98
57) p- & m-Xylenes	19.207	91	3235748	21.37	ppbv	99
58) o-Xylene	19.988	91	1648233	10.73	ppbv	100
59) Styrene	20.011	104	1348253	12.32	ppbv #	100
60) Bromoform	20.564	173	1069053	12.03	ppbv	99
61) n-Propylbenzene	21.409	91	2934635	11.35	ppbv	98
62) Isopropylbenzene	20.644	105	2554937	10.95	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	20.818	83	1122400	10.97	ppbv	97
65) 4-Ethyltoluene	21.631	105	2584679	11.92	ppbv	98
66) 1,3,5-Trimethylbenzene	21.718	105	2181272	10.63	ppbv	98
67) tert-Butylbenzene	22.474	119	2405661	10.72	ppbv	92
68) 1,2,4-Trimethylbenzene	22.551	105	2262145	11.31	ppbv #	92
69) sec-Butylbenzene	22.950	105	3148512	10.91	ppbv #	94
70) p-Isopropyltoluene	23.213	119	2785661	11.34	ppbv #	88
71) 1,3-Dichlorobenzene	23.384	146	1614803	14.48	ppbv	98
72) 1,4-Dichlorobenzene	23.570	146	1653073	16.41	ppbv	98
73) Benzyl chloride	23.721	91	2160140	19.70	ppbv	95
74) n-Butylbenzene	24.017	91	2497517	13.80	ppbv #	76
75) 1,2-Dichlorobenzene	24.274	146	1607222	13.51	ppbv	97
76) 1,2,4-Trichlorobenzene	27.020	180	1705487	29.93	ppbv	98
77) Hexachlorobutadiene	27.293	225	1162888	9.93	ppbv	98
78) Naphthalene	27.412	128	4296459	23.03	ppbv	99

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

Data Path : C:\msdchem\1\data\030421\
Data File : TQ213550.D
Acq On : 5 Mar 2021 6:59 am
Operator : LLJ
Sample : SEQ-CAL7
Misc : QBTO2030421A 10.0 PPBV
ALS Vial : 3 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Mar 05 12:15:22 2021
Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
Quant Title : TO15 VOC Analysis
QLast Update : Sun Feb 21 17:32:29 2021
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213551.D
 Acq On : 5 Mar 2021 8:00 am
 Operator : LLJ
 Sample : SEQ-CAL8
 Misc : QBTO2030421A 20.0 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:43:09 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:42:59 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.075	49	231090	10.00	ppbv	# 0.01
37) 1,4-Difluorobenzene	13.641	114	1281393	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.892	117	1153946	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.059	95	1068287	10.37	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	103.70%	
Target Compounds						
						Qvalue
2) Propylene	5.014	42	206800	26.94	ppbv	93
3) Dichlorodifluoromethane	5.092	85	2030800	20.20	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.365	85	1484707	18.57	ppbv	95
5) Chloromethane	5.577	50	275319	17.60	ppbv	97
6) Vinyl Chloride	5.850	62	413225	16.54	ppbv	98
7) 1,3-Butadiene	5.931	54	285789	18.71	ppbv	93
8) Bromomethane	6.725	94	644694	20.35	ppbv	99
9) Chloroethane	6.899	64	268984	21.98	ppbv	98
10) Vinyl Bromide	7.355	106	723911	19.53	ppbv	100
11) Trichlorofluoromethane	7.480	101	2156967	18.36	ppbv	99
12) Isopropanol	7.995	45	900060	16.09	ppbv	100
13) Acrolein	8.095	56	222759	19.30	ppbv #	1
14) Acetone	8.207	43	788608	15.00	ppbv	97
15) Freon-113	8.349	101	1577419	18.78	ppbv	92
16) 1,1-Dichloroethylene	8.574	61	995091	18.48	ppbv	86
17) 3-Chloropropene	9.165	41	532318	20.31	ppbv #	80
18) Methylene Chloride	9.320	49	529086	15.97	ppbv #	63
19) Acrylonitrile	9.410	53	372355	20.06	ppbv #	59
20) Carbon disulfide	9.451	76	1884039	20.10	ppbv	95
21) Methyl-tert-Butyl Ethe...	9.725	73	2052519	19.66	ppbv	92
22) trans-1,2-Dichloroethy...	9.918	61	896639	19.43	ppbv	81
23) Hexane	10.207	57	773867	17.78	ppbv	90
24) Vinyl Acetate	10.529	43	1282412	21.07	ppbv #	98
25) 1,1-Dichloroethane	10.580	63	1115070	19.15	ppbv	81
26) 2-Butanone	11.185	43	937841	19.69	ppbv #	80
27) Ethyl Acetate	11.490	43	1062800	20.19	ppbv #	45
28) cis-1,2-Dichloroethylene	11.574	61	856851	18.44	ppbv #	63
29) Chloroform	11.847	83	1705920	18.91	ppbv	96
30) Tetrahydrofuran	12.168	42	487037	19.61	ppbv #	68
31) 1,1,1-Trichlorethane	12.580	97	1909535	18.91	ppbv	95
32) Cyclohexane	12.744	56	814929	20.82	ppbv #	73
33) Carbon Tetrachloride	13.040	117	2052950	18.52	ppbv	100
34) 1,2-Dichloroethane	13.117	62	1098733	18.86	ppbv #	99
35) Benzene	13.246	78	2110930	18.50	ppbv #	81
36) n-Heptane	13.262	43	749894	20.21	ppbv #	91
38) Trichloroethylene	14.274	95	1150445	18.74	ppbv	93
39) 1,2-Dichloropropane	14.503	63	622283	19.35	ppbv #	80
40) Methyl Methacrylate	14.512	69	761989	21.22	ppbv #	91
41) 1,4-Dioxane	14.818	88	578424	17.83	ppbv #	100
42) Bromodichloromethane	14.863	83	1856652	20.08	ppbv	95
43) Methyl Isobutyl Ketone	15.397	43	1172884	20.84	ppbv #	87
44) cis-1,3-Dichloropropene	15.750	75	1366153	21.31	ppbv	94
45) Toluene	16.403	91	3048707	19.30	ppbv	99
46) trans-1,3-Dichloropropene	16.564	75	1377827	21.88	ppbv	95
47) 1,1,2-Trichlorethane	16.856	97	1000797	18.96	ppbv	93
48) 2-Hexanone	16.860	43	1110167	20.02	ppbv	95
49) 1,3-Dichloropropane	17.281	76	1422658	20.20	ppbv	91

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213551.D
 Acq On : 5 Mar 2021 8:00 am
 Operator : LLJ
 Sample : SEQ-CAL8
 Misc : QBTO2030421A 20.0 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

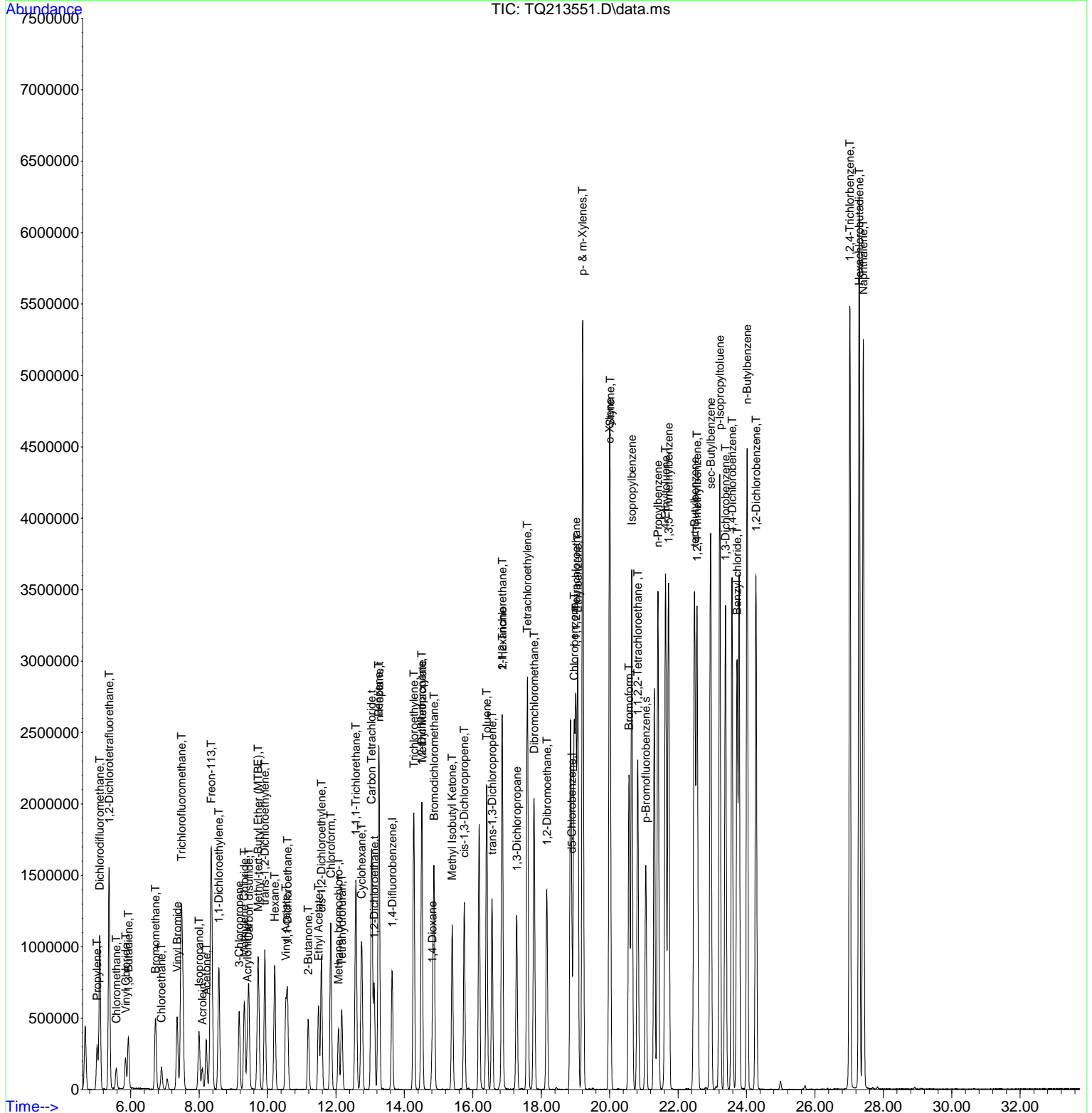
Quant Time: Mar 05 12:43:09 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:42:59 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Tetrachloroethylene	17.593	166	1719857	18.47	ppbv	99
51) Dibromchloromethane	17.789	129	2194537	21.00	ppbv	99
52) 1,2-Dibromoethane	18.162	107	1821704	20.50	ppbv	99
54) Chlorobenzene	18.959	112	2703615	18.80	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.011	131	1527845	19.66	ppbv #	89
56) Ethylbenzene	19.065	91	4223712	19.62	ppbv	98
57) p- & m-Xylenes	19.210	91	6242641	37.86	ppbv	100
58) o-Xylene	19.991	91	3259814	19.95	ppbv	100
59) Styrene	20.011	104	2633462	20.44	ppbv #	100
60) Bromoform	20.567	173	2104469	21.54	ppbv	99
61) n-Propylbenzene	21.412	91	5739493	19.44	ppbv	98
62) Isopropylbenzene	20.644	105	4949855	20.19	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	20.818	83	2207420	19.88	ppbv	97
65) 4-Ethyltoluene	21.631	105	5154687	20.29	ppbv	99
66) 1,3,5-Trimethylbenzene	21.724	105	4269814	19.49	ppbv	97
67) tert-Butylbenzene	22.480	119	4710429	20.05	ppbv #	78
68) 1,2,4-Trimethylbenzene	22.551	105	4458484	20.06	ppbv #	93
69) sec-Butylbenzene	22.953	105	6102688	19.90	ppbv	98
70) p-Isopropyltoluene	23.216	119	5434082	20.45	ppbv #	89
71) 1,3-Dichlorobenzene	23.387	146	3144091	18.92	ppbv	99
72) 1,4-Dichlorobenzene	23.576	146	3228731	19.28	ppbv	99
73) Benzyl chloride	23.724	91	4367949	23.77	ppbv	95
74) n-Butylbenzene	24.017	91	4854817	19.72	ppbv	98
75) 1,2-Dichlorobenzene	24.277	146	3094562	18.59	ppbv	98
76) 1,2,4-Trichlorobenzene	27.020	180	3203474	19.78	ppbv	98
77) Hexachlorobutadiene	27.293	225	2080838	16.45	ppbv	95
78) Naphthalene	27.412	128	8097438	17.20	ppbv	98

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

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213551.D
 Acq On : 5 Mar 2021 8:00 am
 Operator : LLJ
 Sample : SEQ-CAL8
 Misc : QBTO2030421A 20.0 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:43:09 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:42:59 2021
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213552.D
 Acq On : 5 Mar 2021 9:03 am
 Operator : LLJ
 Sample : SEQ-CAL9
 Misc : QBTO2030421A 30.0 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:44:36 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:44:14 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.082	49	259345	10.00	ppbv	# 0.02
37) 1,4-Difluorobenzene	13.641	114	1413340	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.892	117	1233652	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.059	95	1178681	10.62	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	106.20%	
Target Compounds						
						Qvalue
2) Propylene	5.043	42	347319	35.49	ppbv	94
3) Dichlorodifluoromethane	5.114	85	3172615	28.14	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.387	85	2307365	25.79	ppbv	96
5) Chloromethane	5.600	50	460392	26.25	ppbv	97
6) Vinyl Chloride	5.866	62	687870	24.58	ppbv	98
7) 1,3-Butadiene	5.950	54	470680	27.56	ppbv	93
8) Bromomethane	6.747	94	1065864	29.51	ppbv	99
9) Chloroethane	6.921	64	453518	32.43	ppbv	97
10) Vinyl Bromide	7.371	106	1168030	28.02	ppbv	100
11) Trichlorofluoromethane	7.497	101	3390080	25.77	ppbv	99
12) Isopropanol	8.008	45	1478043	23.40	ppbv	100
13) Acrolein	8.104	56	365696	28.04	ppbv #	1
14) Acetone	8.217	43	1266600	21.42	ppbv	98
15) Freon-113	8.368	101	2489481	26.34	ppbv	93
16) 1,1-Dichloroethylene	8.590	61	1607120	26.55	ppbv	86
17) 3-Chloropropene	9.185	41	877376	29.63	ppbv #	82
18) Methylene Chloride	9.329	49	859618	23.05	ppbv #	65
19) Acrylonitrile	9.423	53	614450	29.31	ppbv #	95
20) Carbon disulfide	9.461	76	3033494	28.70	ppbv	95
21) Methyl-tert-Butyl Ethe...	9.738	73	3285355	27.95	ppbv #	92
22) trans-1,2-Dichloroethy...	9.931	61	1439299	27.68	ppbv	82
23) Hexane	10.223	57	1256972	25.57	ppbv	90
24) Vinyl Acetate	10.541	43	2074698	30.21	ppbv #	99
25) 1,1-Dichloroethane	10.590	63	1772619	27.03	ppbv	82
26) 2-Butanone	11.194	43	1515173	28.16	ppbv #	81
27) Ethyl Acetate	11.496	43	1715138	28.84	ppbv #	45
28) cis-1,2-Dichloroethylene	11.583	61	1384178	26.46	ppbv #	64
29) Chloroform	11.853	83	2687564	26.49	ppbv	96
30) Tetrahydrofuran	12.175	42	801519	28.53	ppbv #	70
31) 1,1,1-Trichlorethane	12.590	97	2995885	26.42	ppbv	95
32) Cyclohexane	12.754	56	1330000	30.06	ppbv #	74
33) Carbon Tetrachloride	13.049	117	3203571	25.76	ppbv	100
34) 1,2-Dichloroethane	13.120	62	1728925	26.45	ppbv #	98
35) Benzene	13.252	78	3283078	25.49	ppbv #	82
36) n-Heptane	13.265	43	1193596	28.45	ppbv #	73
38) Trichloroethylene	14.278	95	1798142	26.49	ppbv	94
39) 1,2-Dichloropropane	14.503	63	970755	27.23	ppbv #	80
40) Methyl Methacrylate	14.519	69	1183745	29.78	ppbv	95
41) 1,4-Dioxane	14.821	88	903410	25.07	ppbv #	100
42) Bromodichloromethane	14.866	83	2875042	28.16	ppbv	95
43) Methyl Isobutyl Ketone	15.403	43	1867203	29.94	ppbv #	86
44) cis-1,3-Dichloropropene	15.750	75	2163001	30.47	ppbv	95
45) Toluene	16.406	91	4723618	27.05	ppbv	99
46) trans-1,3-Dichloropropene	16.564	75	2166796	31.09	ppbv	95
47) 1,1,2-Trichlorethane	16.860	97	1528360	26.22	ppbv	93
48) 2-Hexanone	16.863	43	1736628	28.23	ppbv #	73
49) 1,3-Dichloropropane	17.284	76	2234011	28.68	ppbv #	72

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213552.D
 Acq On : 5 Mar 2021 9:03 am
 Operator : LLJ
 Sample : SEQ-CAL9
 Misc : QBTO2030421A 30.0 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

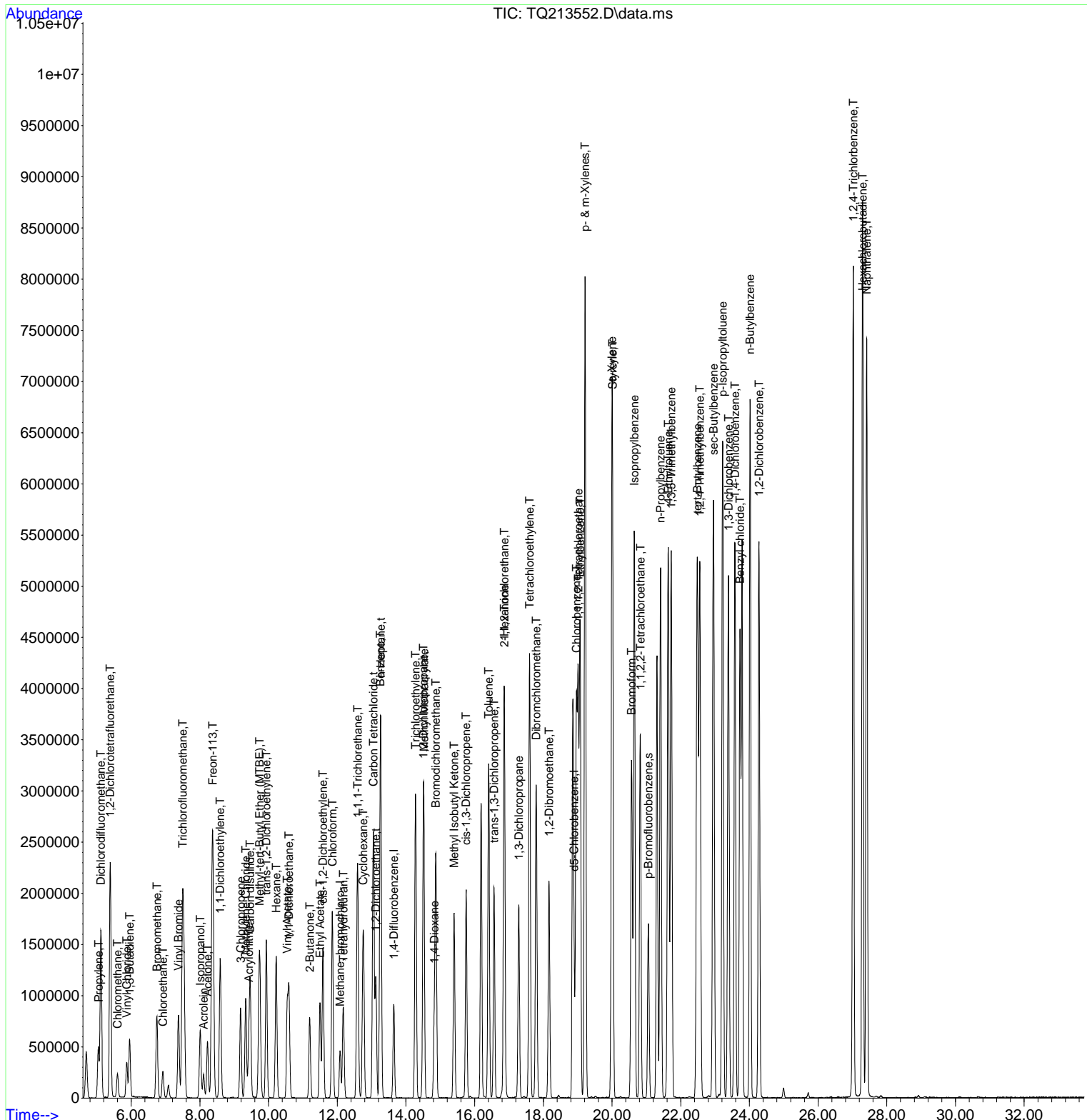
Quant Time: Mar 05 12:44:36 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:44:14 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Tetrachloroethylene	17.599	166	2555028	24.87	ppbv	99
51) Dibromchloromethane	17.792	129	3365861	29.20	ppbv	99
52) 1,2-Dibromoethane	18.165	107	2806669	28.55	ppbv	98
54) Chlorobenzene	18.959	112	4115389	26.69	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.011	131	2320827	27.93	ppbv	89
56) Ethylbenzene	19.068	91	6434669	27.90	ppbv	97
57) p- & m-Xylenes	19.213	91	9248392	52.37	ppbv	99
58) o-Xylene	19.994	91	4987245	28.51	ppbv	99
59) Styrene	20.014	104	3991975	28.82	ppbv #	100
60) Bromoform	20.567	173	3165062	30.18	ppbv	99
61) n-Propylbenzene	21.412	91	8603876	27.17	ppbv	98
62) Isopropylbenzene	20.647	105	7461865	28.46	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	20.821	83	3424911	28.72	ppbv	97
65) 4-Ethyltoluene	21.637	105	7721274	28.26	ppbv	98
66) 1,3,5-Trimethylbenzene	21.724	105	6515100	27.79	ppbv	98
67) tert-Butylbenzene	22.480	119	7223515	28.73	ppbv #	85
68) 1,2,4-Trimethylbenzene	22.554	105	6813494	28.57	ppbv #	85
69) sec-Butylbenzene	22.953	105	9094349	27.66	ppbv #	95
70) p-Isopropyltoluene	23.219	119	8124322	28.48	ppbv #	89
71) 1,3-Dichlorobenzene	23.390	146	4746218	26.35	ppbv	98
72) 1,4-Dichlorobenzene	23.576	146	4844892	26.59	ppbv	98
73) Benzyl chloride	23.724	91	6735506	33.21	ppbv	95
74) n-Butylbenzene	24.020	91	7241327	27.28	ppbv	98
75) 1,2-Dichlorobenzene	24.277	146	4629949	25.75	ppbv	98
76) 1,2,4-Trichlorobenzene	27.023	180	4665495	25.67	ppbv	98
77) Hexachlorobutadiene	27.293	225	2927419	21.64	ppbv	94
78) Naphthalene	27.415	128	11418653	22.01	ppbv	96

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

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213552.D
 Acq On : 5 Mar 2021 9:03 am
 Operator : LLJ
 Sample : SEQ-CAL9
 Misc : QBTO2030421A 30.0 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:44:36 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:44:14 2021
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213553.D
 Acq On : 5 Mar 2021 10:10 am
 Operator : LLJ
 Sample : SEQ-CALA
 Misc : QBTO2030421A 50.0 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:45:38 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:45:29 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.075	49	285204	10.00	ppbv	# 0.01
37) 1,4-Difluorobenzene	13.641	114	1504000	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.895	117	1248885	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.059	95	1244551	11.01	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	110.10%	
Target Compounds						
						Qvalue
2) Propylene	5.027	42	610141	50.05	ppbv	95
3) Dichlorodifluoromethane	5.104	85	5200788	41.88	ppbv	97
4) 1,2-Dichlorotetrafluor...	5.375	85	4075663	41.79	ppbv	99
5) Chloromethane	5.583	50	836314	43.54	ppbv	97
6) Vinyl Chloride	5.857	62	1254959	40.87	ppbv	98
7) 1,3-Butadiene	5.940	54	866414	46.35	ppbv	94
8) Bromomethane	6.731	94	1648685	40.78	ppbv	99
9) Chloroethane	6.908	64	797223	50.27	ppbv	97
10) Vinyl Bromide	7.362	106	2024904	44.09	ppbv	100
11) Trichlorofluoromethane	7.484	101	5718720	39.69	ppbv	99
12) Isopropanol	8.001	45	2615495	37.06	ppbv	100
13) Acrolein	8.098	56	663294	46.05	ppbv #	86
14) Acetone	8.214	43	2233318	34.39	ppbv	98
15) Freon-113	8.355	101	4229548	40.72	ppbv	94
16) 1,1-Dichloroethylene	8.583	61	2811925	42.26	ppbv	87
17) 3-Chloropropene	9.175	41	1559405	47.70	ppbv #	83
18) Methylene Chloride	9.326	49	1523227	37.07	ppbv #	66
19) Acrylonitrile	9.413	53	1098739	47.43	ppbv #	92
20) Carbon disulfide	9.455	76	5260240	45.12	ppbv	95
21) Methyl-tert-Butyl Ethe...	9.728	73	5701976	44.13	ppbv	93
22) trans-1,2-Dichloroethy...	9.924	61	2523617	44.11	ppbv	82
23) Hexane	10.210	57	2204696	40.62	ppbv	90
24) Vinyl Acetate	10.532	43	3625916	47.88	ppbv #	98
25) 1,1-Dichloroethane	10.583	63	3072282	42.55	ppbv	83
26) 2-Butanone	11.191	43	2697781	45.49	ppbv #	81
27) Ethyl Acetate	11.490	43	3026929	46.15	ppbv #	44
28) cis-1,2-Dichloroethylene	11.577	61	2427075	42.15	ppbv #	65
29) Chloroform	11.850	83	4598617	41.24	ppbv	96
30) Tetrahydrofuran	12.168	42	1427458	45.95	ppbv #	71
31) 1,1,1-Trichlorethane	12.583	97	5105655	41.05	ppbv	95
32) Cyclohexane	12.754	56	2359373	48.24	ppbv #	76
33) Carbon Tetrachloride	13.046	117	5390638	39.53	ppbv	100
34) 1,2-Dichloroethane	13.117	62	3000050	41.88	ppbv	100
35) Benzene	13.246	78	5504785	38.77	ppbv #	83
36) n-Heptane	13.265	43	2045753	44.14	ppbv #	91
38) Trichloroethylene	14.278	95	3075602	42.54	ppbv	96
39) 1,2-Dichloropropane	14.500	63	1656979	43.55	ppbv #	80
40) Methyl Methacrylate	14.519	69	2022621	47.78	ppbv #	90
41) 1,4-Dioxane	14.818	88	1543881	40.03	ppbv #	100
42) Bromodichloromethane	14.866	83	4868606	44.86	ppbv	95
43) Methyl Isobutyl Ketone	15.403	43	3249537	48.83	ppbv #	86
44) cis-1,3-Dichloropropene	15.754	75	3736555	49.35	ppbv	95
45) Toluene	16.406	91	7867664	42.32	ppbv	98
46) trans-1,3-Dichloropropene	16.564	75	3752089	50.53	ppbv	95
47) 1,1,2-Trichlorethane	16.856	97	2550586	41.12	ppbv	94
48) 2-Hexanone	16.863	43	2924469	44.49	ppbv	95
49) 1,3-Dichloropropane	17.284	76	3807024	45.86	ppbv	91

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213553.D
 Acq On : 5 Mar 2021 10:10 am
 Operator : LLJ
 Sample : SEQ-CALA
 Misc : QBTO2030421A 50.0 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

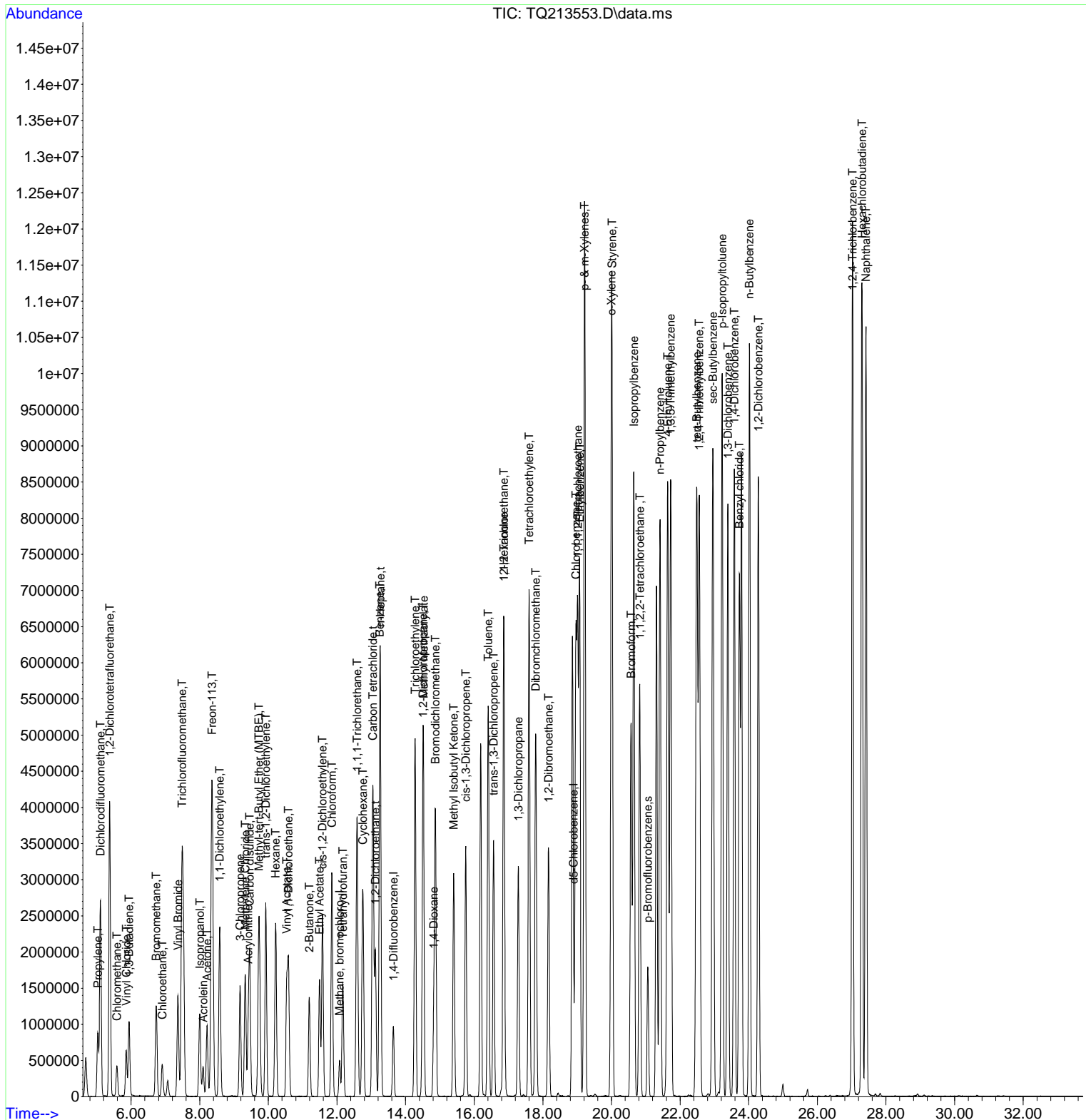
Quant Time: Mar 05 12:45:38 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:45:29 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Tetrachloroethylene	17.596	166	4094298	37.55	ppbv	97
51) Dibromchloromethane	17.789	129	5565002	45.48	ppbv	99
52) 1,2-Dibromoethane	18.162	107	4653970	44.47	ppbv	98
54) Chlorobenzene	18.962	112	6710951	42.94	ppbv #	86
55) 1,1,1,2-Tetrachloroethane	19.014	131	3807993	45.36	ppbv	90
56) Ethylbenzene	19.072	91	10235675	43.82	ppbv	95
57) p- & m-Xylenes	19.216	91	13997283	78.42	ppbv	94
58) o-Xylene	19.994	91	8073696	45.62	ppbv	100
59) Styrene	20.014	104	6449946	45.88	ppbv #	100
60) Bromoform	20.570	173	5010436	47.22	ppbv	98
61) n-Propylbenzene	21.412	91	13151052	41.01	ppbv	97
62) Isopropylbenzene	20.650	105	11571836	43.66	ppbv #	96
63) 1,1,2,2-Tetrachloroeth...	20.821	83	5592477	46.20	ppbv	96
65) 4-Ethyltoluene	21.638	105	12091830	43.73	ppbv	95
66) 1,3,5-Trimethylbenzene	21.724	105	10333374	43.65	ppbv	96
67) tert-Butylbenzene	22.483	119	11536688	45.45	ppbv #	78
68) 1,2,4-Trimethylbenzene	22.557	105	10823701	44.87	ppbv #	91
69) sec-Butylbenzene	22.956	105	13906656	41.88	ppbv #	93
70) p-Isopropyltoluene	23.223	119	12460594	43.24	ppbv #	89
71) 1,3-Dichlorobenzene	23.390	146	7411458	40.40	ppbv	96
72) 1,4-Dichlorobenzene	23.580	146	7546301	40.55	ppbv	96
73) Benzyl chloride	23.727	91	10568750	50.54	ppbv	93
74) n-Butylbenzene	24.020	91	11067464	41.14	ppbv	96
75) 1,2-Dichlorobenzene	24.281	146	7199762	39.40	ppbv	96
76) 1,2,4-Trichlorobenzene	27.023	180	6931709	36.54	ppbv	97
77) Hexachlorobutadiene	27.296	225	4020929	29.50	ppbv #	92
78) Naphthalene	27.415	128	15788672	29.60	ppbv	91

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

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213553.D
 Acq On : 5 Mar 2021 10:10 am
 Operator : LLJ
 Sample : SEQ-CALA
 Misc : QBTO2030421A 50.0 PPBV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 12:45:38 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:45:29 2021
 Response via : Initial Calibration



SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Calibration: YC10005

Laboratory ID: Y1C0832-SCV1

Sequence: Y1C0832

Standard ID: Y21C145

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
1,1,1,2-Tetrachloroethane	10.0	9.61	-3.9	30.00
1,1,1-Trichloroethane	10.0	8.85	-11.5	30.00
1,1,2,2-Tetrachloroethane	10.0	10.1	0.7	30.00
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.0	9.18	-8.2	30.00
1,1,2-Trichloroethane	10.0	9.81	-1.9	30.00
1,1-Dichloroethane	10.0	9.00	-10.0	30.00
1,1-Dichloroethylene	10.0	8.82	-11.8	30.00
1,2,4-Trichlorobenzene	10.0	8.74	-12.6	30.00
1,2,4-Trimethylbenzene	10.0	9.87	-1.3	30.00
1,2-Dibromoethane	10.0	9.95	-0.5	30.00
1,2-Dichlorobenzene	10.0	8.95	-10.5	30.00
1,2-Dichloroethane	10.0	8.56	-14.4	30.00
1,2-Dichloropropane	10.0	10.3	3.4	30.00
1,2-Dichlorotetrafluoroethane	10.0	9.01	-9.9	30.00
1,3,5-Trimethylbenzene	10.0	9.79	-2.1	30.00
1,3-Butadiene	10.0	9.37	-6.3	30.00
1,3-Dichlorobenzene	10.0	9.19	-8.1	30.00
1,3-Dichloropropane	10.0	9.82	-1.8	30.00
1,4-Dichlorobenzene	10.0	9.20	-8.0	30.00
1,4-Dioxane	10.0	8.37	-16.3	30.00
2-Butanone	10.0	9.51	-4.9	30.00
2-Hexanone	10.0	9.57	-4.3	30.00
3-Chloropropene	10.0	10.4	4.3	30.00
4-Methyl-2-pentanone	10.0	9.95	-0.5	30.00
Acetone	10.0	8.04	-19.6	30.00
Acrylonitrile	10.0	10.4	4.2	30.00
Benzene	10.0	9.36	-6.4	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Calibration: YC10005

Laboratory ID: Y1C0832-SCV1

Sequence: Y1C0832

Standard ID: Y21C145

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
Benzyl chloride	10.0	10.3	2.8	30.00
Bromodichloromethane	10.0	9.80	-2.0	30.00
Bromoform	10.0	10.4	4.0	30.00
Bromomethane	10.0	9.31	-6.9	30.00
Carbon disulfide	10.0	9.55	-4.5	30.00
Carbon tetrachloride	10.0	8.46	-15.4	30.00
Chlorobenzene	10.0	9.35	-6.5	30.00
Chloroethane	10.0	10.4	4.5	30.00
Chloroform	10.0	8.95	-10.5	30.00
Chloromethane	10.0	9.05	-9.5	30.00
cis-1,2-Dichloroethylene	10.0	8.89	-11.1	30.00
cis-1,3-Dichloropropylene	10.0	10.6	5.7	30.00
Cyclohexane	10.0	10.6	5.9	30.00
Dibromochloromethane	10.0	9.92	-0.8	30.00
Dichlorodifluoromethane	10.0	8.47	-15.3	30.00
Ethyl acetate	10.0	9.67	-3.3	30.00
Ethyl Benzene	10.0	9.89	-1.1	30.00
Hexachlorobutadiene	10.0	8.45	-15.5	30.00
Isopropanol	10.0	8.66	-13.4	30.00
Methyl Methacrylate	10.0	10.5	4.6	30.00
Methyl tert-butyl ether (MTBE)	10.0	9.44	-5.6	30.00
Methylene chloride	10.0	8.94	-10.6	30.00
n-Heptane	10.0	10.5	5.4	30.00
n-Hexane	10.0	9.24	-7.6	30.00
o-Xylene	10.0	10.2	1.5	30.00
p- & m- Xylenes	20.0	19.8	-1.2	30.00
p-Ethyltoluene	10.0	10.1	1.2	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 21D0348

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287505

Calibration: YC10005

Laboratory ID: Y1C0832-SCV1

Sequence: Y1C0832

Standard ID: Y21C145

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
Propylene	10.0	9.70	-3.0	30.00
Styrene	10.0	10.3	3.0	30.00
Tetrachloroethylene	10.0	9.22	-7.8	30.00
Tetrahydrofuran	10.0	9.81	-1.9	30.00
Toluene	10.0	9.60	-4.0	30.00
trans-1,2-Dichloroethylene	10.0	9.34	-6.6	30.00
trans-1,3-Dichloropropylene	10.0	10.5	4.6	30.00
Trichloroethylene	10.0	9.18	-8.2	30.00
Trichlorofluoromethane (Freon 11)	10.0	8.59	-14.1	30.00
Vinyl acetate	10.0	9.23	-7.7	30.00
Vinyl bromide	10.0	9.69	-3.1	30.00
Vinyl Chloride	10.0	8.63	-13.7	30.00

* Values outside of QC limits

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213556.D
 Acq On : 5 Mar 2021 1:49 pm
 Operator : LLJ
 Sample : SEQ-SCV1
 Misc : QBTO2030421A ICV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 14:23:25 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.075	49	272623	10.00	ppbv	# 0.01
37) 1,4-Difluorobenzene	13.644	114	1469178	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.895	117	1316791	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.062	95	1181585	10.00	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	100.00%	
Target Compounds						
						Qvalue
2) Propylene	5.040	42	127015	9.70	ppbv	95
3) Dichlorodifluoromethane	5.117	85	1107015	8.47	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.387	85	829334	9.01	ppbv	98
5) Chloromethane	5.596	50	165432	9.05	ppbv	97
6) Vinyl Chloride	5.867	62	243422	8.63	ppbv	100
7) 1,3-Butadiene	5.947	54	167179	9.37	ppbv	93
8) Bromomethane	6.741	94	359108	9.31	ppbv	99
9) Chloroethane	6.918	64	162637	10.45	ppbv	97
10) Vinyl Bromide	7.375	106	426790	9.69	ppbv	100
11) Trichlorofluoromethane	7.493	101	1173390	8.59	ppbv	99
12) Isopropanol	8.005	45	543213	8.66	ppbv	100
13) Acrolein	8.101	56	131955	9.49	ppbv #	1
14) Acetone	8.220	43	452095	8.04	ppbv	100
15) Freon-113	8.362	101	909409	9.18	ppbv	93
16) 1,1-Dichloroethylene	8.587	61	561398	8.82	ppbv	85
17) 3-Chloropropene	9.181	41	329035	10.43	ppbv #	87
18) Methylene Chloride	9.333	49	315705	8.94	ppbv #	64
19) Acrylonitrile	9.419	53	232234	10.42	ppbv #	96
20) Carbon disulfide	9.461	76	1069043	9.55	ppbv	93
21) Methyl-tert-Butyl Ethe...	9.731	73	1165803	9.44	ppbv	94
22) trans-1,2-Dichloroethy...	9.931	61	511690	9.34	ppbv	81
23) Hexane	10.217	57	482610	9.24	ppbv	90
24) Vinyl Acetate	10.538	43	668822	9.23	ppbv #	99
25) 1,1-Dichloroethane	10.583	63	621226	9.00	ppbv	77
26) 2-Butanone	11.194	43	540343	9.51	ppbv #	81
27) Ethyl Acetate	11.490	43	607690	9.67	ppbv #	45
28) cis-1,2-Dichloroethylene	11.577	61	488613	8.89	ppbv #	63
29) Chloroform	11.850	83	948013	8.95	ppbv	96
30) Tetrahydrofuran	12.175	42	293153	9.81	ppbv #	72
31) 1,1,1-Trichlorethane	12.583	97	1041990	8.85	ppbv	95
32) Cyclohexane	12.757	56	498656	10.59	ppbv #	76
33) Carbon Tetrachloride	13.046	117	1090527	8.46	ppbv	100
34) 1,2-Dichloroethane	13.117	62	580548	8.56	ppbv	100
35) Benzene	13.249	78	1270042	9.36	ppbv #	83
36) n-Heptane	13.265	43	468126	10.54	ppbv #	91
38) Trichloroethylene	14.275	95	648691	9.18	ppbv	92
39) 1,2-Dichloropropane	14.500	63	387157	10.34	ppbv	85
40) Methyl Methacrylate	14.519	69	437554	10.46	ppbv	97
41) 1,4-Dioxane	14.821	88	321373	8.37	ppbv #	100
42) Bromodichloromethane	14.863	83	1035011	9.80	ppbv	96
43) Methyl Isobutyl Ketone	15.400	43	657163	9.95	ppbv #	86
44) cis-1,3-Dichloropropane	15.750	75	786278	10.57	ppbv	94
45) Toluene	16.406	91	1746647	9.60	ppbv	99
46) trans-1,3-Dichloropropane	16.564	75	765488	10.46	ppbv	94
47) 1,1,2-Trichlorethane	16.860	97	597665	9.81	ppbv	92
48) 2-Hexanone	16.866	43	618964	9.57	ppbv	94
49) 1,3-Dichloropropane	17.284	76	803065	9.82	ppbv #	83

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213556.D
 Acq On : 5 Mar 2021 1:49 pm
 Operator : LLJ
 Sample : SEQ-SCV1
 Misc : QBTO2030421A ICV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

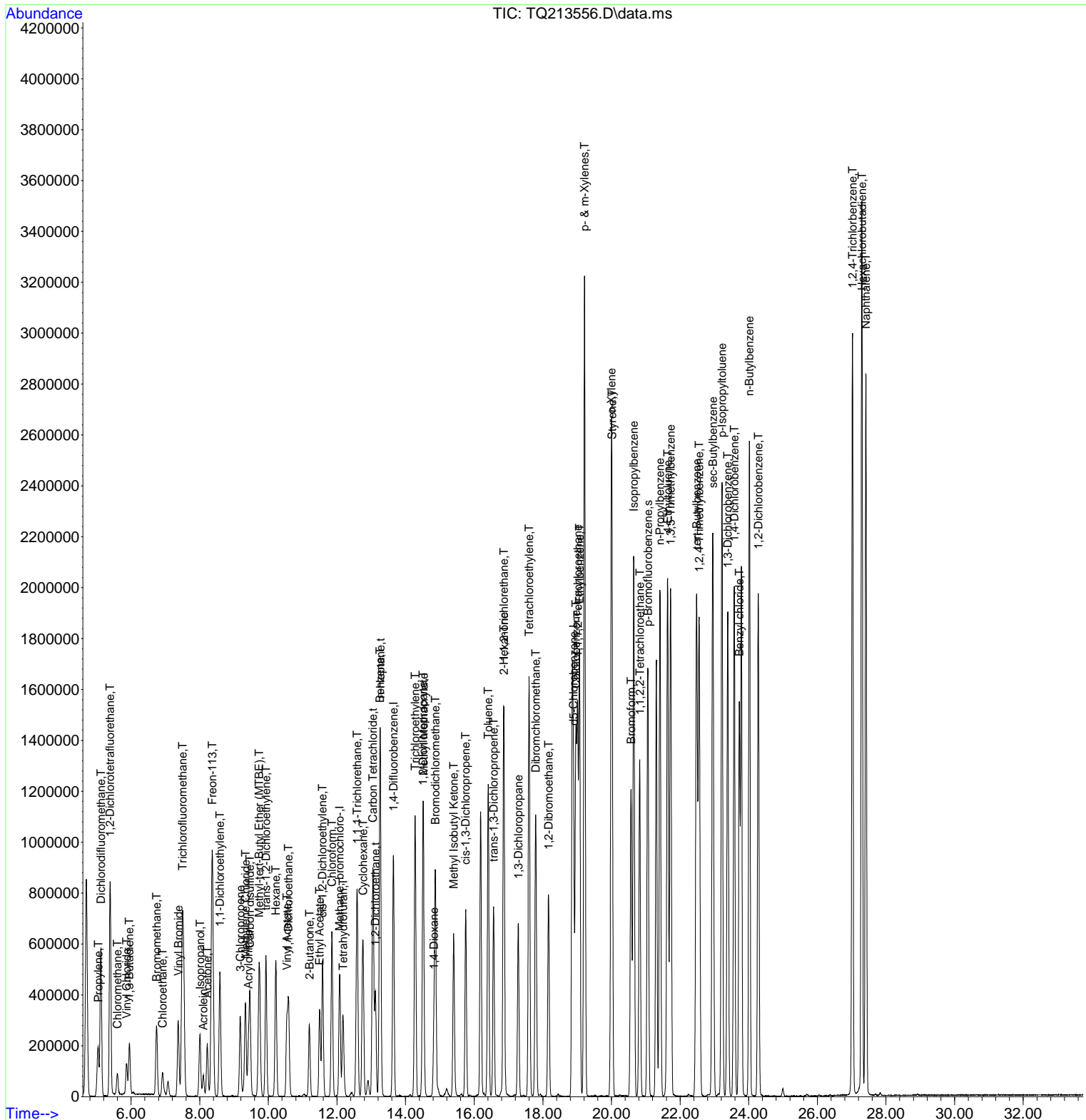
Quant Time: Mar 05 14:23:25 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Tetrachloroethylene	17.599	166	977447	9.22	ppbv	98
51) Dibromchloromethane	17.789	129	1186499	9.92	ppbv	99
52) 1,2-Dibromoethane	18.165	107	1021885	9.95	ppbv	99
54) Chlorobenzene	18.959	112	1538086	9.35	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.011	131	845744	9.61	ppbv	91
56) Ethylbenzene	19.065	91	2426118	9.89	ppbv	98
57) p- & m-Xylenes	19.213	91	3681108	19.76	ppbv	99
58) o-Xylene	19.995	91	1873178	10.15	ppbv	100
59) Styrene	20.014	104	1515205	10.30	ppbv #	100
60) Bromoform	20.570	173	1147083	10.40	ppbv	99
61) n-Propylbenzene	21.409	91	3272853	9.80	ppbv	98
62) Isopropylbenzene	20.647	105	2850597	10.35	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	20.821	83	1275826	10.07	ppbv	97
65) 4-Ethyltoluene	21.634	105	2913459	10.12	ppbv	98
66) 1,3,5-Trimethylbenzene	21.724	105	2408272	9.79	ppbv	98
67) tert-Butylbenzene	22.480	119	2658330	10.11	ppbv	92
68) 1,2,4-Trimethylbenzene	22.551	105	2471491	9.87	ppbv #	92
69) sec-Butylbenzene	22.953	105	3487241	10.13	ppbv #	96
70) p-Isopropyltoluene	23.220	119	3065007	10.27	ppbv #	89
71) 1,3-Dichlorobenzene	23.387	146	1756952	9.19	ppbv	98
72) 1,4-Dichlorobenzene	23.576	146	1787864	9.20	ppbv	98
73) Benzyl chloride	23.724	91	2257254	10.28	ppbv	95
74) n-Butylbenzene	24.020	91	2748590	9.83	ppbv #	76
75) 1,2-Dichlorobenzene	24.281	146	1702119	8.95	ppbv	98
76) 1,2,4-Trichlorobenzene	27.023	180	1759834	8.74	ppbv	98
77) Hexachlorobutadiene	27.297	225	1193513	8.45	ppbv	98
78) Naphthalene	27.412	128	4324405	7.70	ppbv	99

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

Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213556.D
 Acq On : 5 Mar 2021 1:49 pm
 Operator : LLJ
 Sample : SEQ-SCV1
 Misc : QBTO2030421A ICV
 ALS Vial : 3 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Mar 05 14:23:25 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration



FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Instrument ID: TO15_AIR2 Calibration: YC10005
 Lab File ID: TQ214166.D Calibration Date: 03/05/21 00:16
 Sequence: Y1D0934 Injection Date: 04/08/21
 Lab Sample ID: Y1D0934-CCV1 Injection Time: 23:09

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,1,1,2-Tetrachloroethane	A	10.0	8.96	0.6681139	0.5985485		-10.4	30
1,1,1-Trichloroethane	A	10.0	9.32	4.320274	4.028287		-6.8	30
1,1,2,2-Tetrachloroethane	A	10.0	8.62	0.9620746	0.8292353		-13.8	30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	A	10.0	9.03	3.634836	3.281527		-9.7	30
1,1,2-Trichloroethane	A	10.0	9.32	0.4146486	0.3865047		-6.8	30
1,1-Dichloroethane	A	10.0	8.92	2.531078	2.25819		-10.8	30
1,1-Dichloroethylene	A	10.0	8.63	2.335398	2.015378		-13.7	30
1,2,4-Trichlorobenzene	A	10.0	7.72	1.529474	1.181281		-22.8	30
1,2,4-Trimethylbenzene	A	10.0	9.32	1.901611	1.772765		-6.8	30
1,2-Dibromoethane	A	10.0	9.44	0.6991246	0.6602442		-5.6	30
1,2-Dichlorobenzene	A	10.0	8.23	1.444743	1.18972		-17.7	30
1,2-Dichloroethane	A	10.0	9.15	2.488464	2.277611		-8.5	30
1,2-Dichloropropane	A	10.0	9.11	0.2549049	0.2322873		-8.9	30
1,2-Dichlorotetrafluoroethane	A	10.0	9.59	3.374943	3.234944		-4.1	30
1,3,5-Trimethylbenzene	A	10.0	9.21	1.868173	1.72035		-7.9	30
1,3-Butadiene	A	10.0	8.84	0.6543224	0.5783532		-11.6	30
1,3-Dichlorobenzene	A	10.0	8.34	1.451974	1.210431		-16.6	30
1,3-Dichloropropane	A	10.0	9.15	0.5566022	0.5095209		-8.5	30
1,4-Dichlorobenzene	A	10.0	8.36	1.475823	1.233149		-16.4	30
1,4-Dioxane	A	10.0	7.28	0.2614119	0.1902244		-27.2	30
2-Butanone	A	10.0	8.51	2.083504	1.774038		-14.9	30
2-Hexanone	A	10.0	8.35	0.440206	0.3677026		-16.5	30
3-Chloropropene	A	10.0	8.85	1.156794	1.023848		-11.5	30
4-Methyl-2-pentanone	A	10.0	8.73	0.4494897	0.3924407		-12.7	30
Acetone	A	10.0	7.73	2.062743	1.593573		-22.7	30
Acrylonitrile	A	10.0	8.72	0.8177384	0.713375		-12.8	30
Benzene	A	10.0	8.91	4.975145	4.43245		-10.9	30
Benzyl chloride	A	10.0	8.39	1.667394	1.398618		-16.1	30
Bromodichloromethane	A	10.0	9.66	0.719165	0.6949585		-3.4	30

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Instrument ID: TO15_AIR2 Calibration: YC10005
 Lab File ID: TQ214166.D Calibration Date: 03/05/21 00:16
 Sequence: Y1D0934 Injection Date: 04/08/21
 Lab Sample ID: Y1D0934-CCV1 Injection Time: 23:09

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Bromoform	A	10.0	9.79	0.8374863	0.8195496		-2.1	30
Bromomethane	A	10.0	9.19	1.414433	1.299644		-8.1	30
Carbon disulfide	A	10.0	9.18	4.104021	3.765479		-8.2	30
Carbon tetrachloride	A	10.0	9.04	4.730553	4.277252		-9.6	30
Chlorobenzene	A	10.0	8.45	1.248737	1.054915		-15.5	30
Chloroethane	A	10.0	9.02	0.5707349	0.5147925		-9.8	30
Chloroform	A	10.0	9.07	3.885865	3.524434		-9.3	30
Chloromethane	A	10.0	8.26	0.6708143	0.5543042		-17.4	30
cis-1,2-Dichloroethylene	A	10.0	9.40	2.016833	1.896548		-6.0	30
cis-1,3-Dichloropropylene	A	10.0	9.41	0.5061701	0.4763344		-5.9	30
Cyclohexane	A	10.0	9.54	1.727384	1.648083		-4.6	30
Dibromochloromethane	A	10.0	10.0	0.8142906	0.8168265		0.3	30
Dichlorodifluoromethane	A	10.0	8.60	4.79623	4.125106		-14.0	30
Ethyl acetate	A	10.0	8.22	2.304886	1.894458		-17.8	30
Ethyl Benzene	A	10.0	8.98	1.862663	1.672585		-10.2	30
Hexachlorobutadiene	A	10.0	8.37	1.072158	0.8969243		-16.3	30
Isopropanol	A	10.0	7.34	2.299661	1.687125		-26.6	30
Methyl Methacrylate	A	10.0	9.18	0.2847943	0.2614994		-8.2	30
Methyl tert-butyl ether (MTBE)	A	10.0	9.21	4.52878	4.171219		-7.9	30
Methylene chloride	A	10.0	8.34	1.29567	1.080596		-16.6	30
n-Heptane	A	10.0	9.47	1.629357	1.542826		-5.3	30
n-Hexane	A	10.0	8.13	1.91578	1.556906		-18.7	30
o-Xylene	A	10.0	9.51	1.401765	1.333345		-4.9	30
p- & m- Xylenes	A	20.0	18.7	1.414663	1.321455		-6.6	30
p-Ethyltoluene	A	10.0	9.34	2.185588	2.041287		-6.6	30
Propylene	A	10.0	7.81	0.4802575	0.3750633		-21.9	30
Styrene	A	10.0	9.46	1.117653	1.057283		-5.4	30
Tetrachloroethylene	A	10.0	11.4	0.7218517	0.8221223		13.9	30
Tetrahydrofuran	A	10.0	8.36	1.095594	0.916058		-16.4	30

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Instrument ID: TO15_AIR2 Calibration: YC10005
 Lab File ID: TQ214166.D Calibration Date: 03/05/21 00:16
 Sequence: Y1D0934 Injection Date: 04/08/21
 Lab Sample ID: Y1D0934-CCV1 Injection Time: 23:09

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Toluene	A	10.0	9.25	1.238745	1.145675		-7.5	30
trans-1,2-Dichloroethylene	A	10.0	8.90	2.008678	1.787385		-11.0	30
trans-1,3-Dichloropropylene	A	10.0	9.67	0.4980361	0.4814114		-3.3	30
Trichloroethylene	A	10.0	9.79	0.4808357	0.4706477		-2.1	30
Trichlorofluoromethane (Freon 11)	A	10.0	9.70	5.01302	4.860556		-3.0	30
Vinyl acetate	A	10.0	6.81	2.658865	1.811529		-31.9	30 *
Vinyl bromide	A	10.0	8.76	1.61488	1.414422		-12.4	30
Vinyl Chloride	A	10.0	8.90	1.034375	0.9210399		-11.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214166.D
 Acq On : 8 Apr 2021 11:09 pm
 Operator : AS
 Sample : SEQ-CCV1
 Misc : QBTO2040821A CCV
 ALS Vial : 93 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Apr 08 23:56:38 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.075	49	189488	10.00	ppbv	# 0.01
37) 1,4-Difluorobenzene	13.641	114	1051211	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.885	117	1007357	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.052	95	930220	10.29	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	102.90%	
Target Compounds						
						Qvalue
2) Propylene	4.992	42	71070	7.81	ppbv	92
3) Dichlorodifluoromethane	5.072	85	781658	8.60	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.349	85	612983	9.59	ppbv	93
5) Chloromethane	5.558	50	105034	8.26	ppbv	97
6) Vinyl Chloride	5.828	62	174526	8.90	ppbv	98
7) 1,3-Butadiene	5.918	54	109591	8.84	ppbv	91
8) Bromomethane	6.709	94	246267	9.19	ppbv #	63
9) Chloroethane	6.889	64	97547	9.02	ppbv #	96
10) Vinyl Bromide	7.342	106	268016	8.76	ppbv	100
11) Trichlorofluoromethane	7.465	101	921017	9.70	ppbv	99
12) Isopropanol	7.995	45	319690	7.34	ppbv	100
13) Acrolein	8.085	56	72937	7.54	ppbv #	56
14) Acetone	8.201	43	301963	7.73	ppbv	96
15) Freon-113	8.346	101	621810	9.03	ppbv	93
16) 1,1-Dichloroethylene	8.567	61	381890	8.63	ppbv	86
17) 3-Chloropropene	9.162	41	194007	8.85	ppbv #	77
18) Methylene Chloride	9.310	49	204760	8.34	ppbv #	62
19) Acrylonitrile	9.407	53	135176	8.72	ppbv #	96
20) Carbon disulfide	9.439	76	713513	9.18	ppbv	96
21) Methyl-tert-Butyl Ethe...	9.722	73	790396	9.21	ppbv	93
22) trans-1,2-Dichloroethy...	9.911	61	338688	8.90	ppbv	80
23) Hexane	10.207	57	295015	8.13	ppbv	89
24) Vinyl Acetate	10.529	43	343263	6.81	ppbv #	98
25) 1,1-Dichloroethane	10.571	63	427900	8.92	ppbv #	60
26) 2-Butanone	11.185	43	336159	8.51	ppbv #	80
27) Ethyl Acetate	11.487	43	358977	8.22	ppbv #	43
28) cis-1,2-Dichloroethylene	11.567	61	359373	9.40	ppbv #	62
29) Chloroform	11.844	83	667838	9.07	ppbv	96
30) Tetrahydrofuran	12.165	42	173582	8.36	ppbv #	66
31) 1,1,1-Trichlorethane	12.577	97	763312	9.32	ppbv	94
32) Cyclohexane	12.751	56	312292	9.54	ppbv #	74
33) Carbon Tetrachloride	13.040	117	810488	9.04	ppbv #	92
34) 1,2-Dichloroethane	13.114	62	431580	9.15	ppbv	100
35) Benzene	13.246	78	839896	8.91	ppbv #	80
36) n-Heptane	13.262	43	292347	9.47	ppbv #	90
38) Trichloroethylene	14.275	95	494750	9.79	ppbv	94
39) 1,2-Dichloropropane	14.500	63	244183	9.11	ppbv	85
40) Methyl Methacrylate	14.512	69	274891	9.18	ppbv	93
41) 1,4-Dioxane	14.818	88	199966	7.28	ppbv #	100
42) Bromodichloromethane	14.863	83	730548	9.66	ppbv	95
43) Methyl Isobutyl Ketone	15.400	43	412538	8.73	ppbv #	84
44) cis-1,3-Dichloropropene	15.750	75	500728	9.41	ppbv	94
45) Toluene	16.403	91	1204346	9.25	ppbv	99
46) trans-1,3-Dichloropropene	16.564	75	506065	9.67	ppbv	95
47) 1,1,2-Trichlorethane	16.853	97	406298	9.32	ppbv	92
48) 2-Hexanone	16.860	43	386533	8.35	ppbv #	73
49) 1,3-Dichloropropane	17.281	76	535614	9.15	ppbv	91

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214166.D
 Acq On : 8 Apr 2021 11:09 pm
 Operator : AS
 Sample : SEQ-CCV1
 Misc : QBTO2040821A CCV
 ALS Vial : 93 Sample Multiplier: 1
 InstName : TO15_AIR2

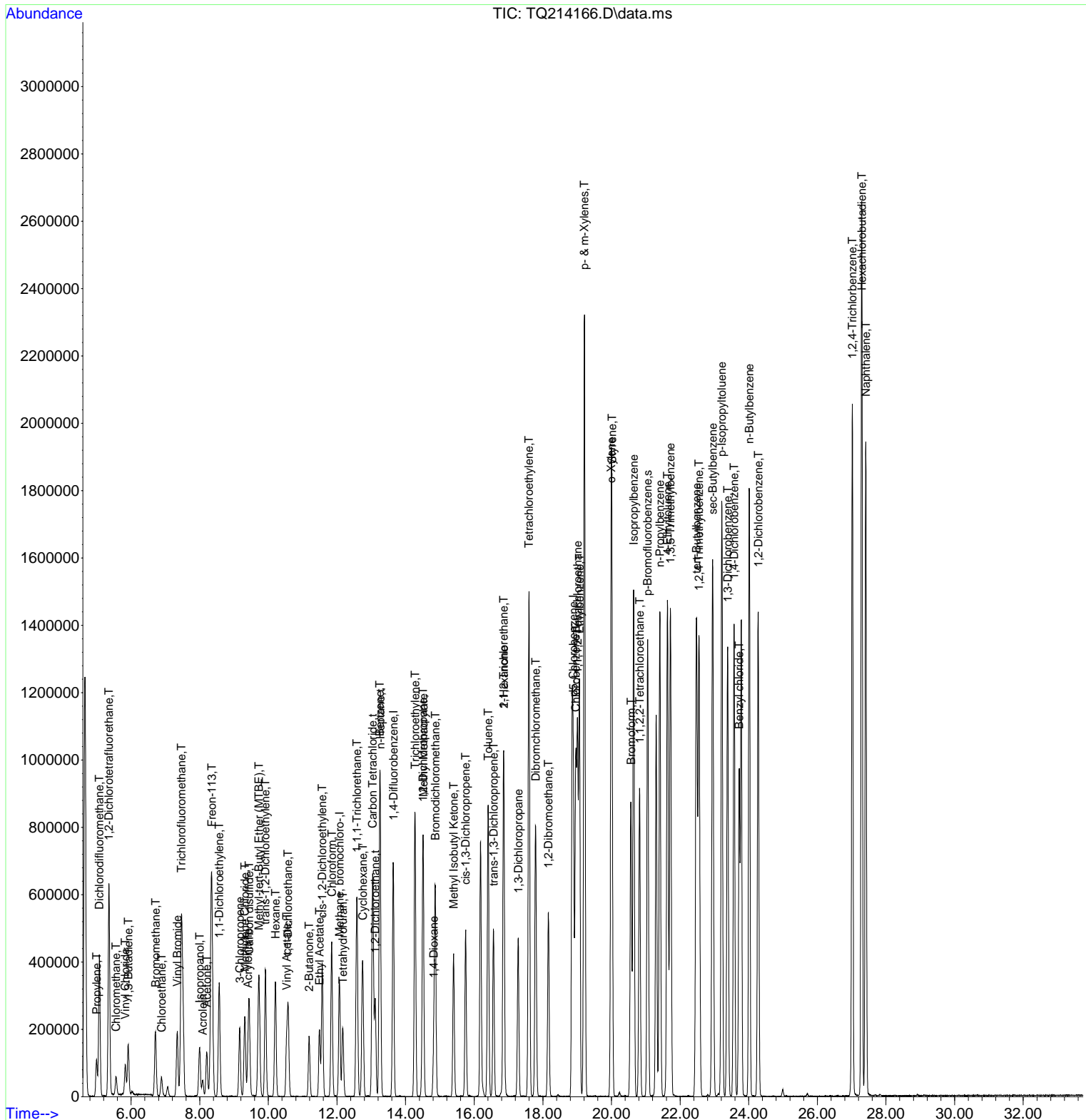
Quant Time: Apr 08 23:56:38 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Tetrachloroethylene	17.593	166	864224	11.39	ppbv	99
51) Dibromchloromethane	17.789	129	858657	10.03	ppbv	99
52) 1,2-Dibromoethane	18.159	107	694056	9.44	ppbv	99
54) Chlorobenzene	18.956	112	1062676	8.45	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.008	131	602952	8.96	ppbv #	89
56) Ethylbenzene	19.065	91	1684890	8.98	ppbv	99
57) p- & m-Xylenes	19.210	91	2662353	18.68	ppbv	99
58) o-Xylene	19.988	91	1343154	9.51	ppbv	100
59) Styrene	20.011	104	1065061	9.46	ppbv #	100
60) Bromoform	20.570	173	825579	9.79	ppbv	99
61) n-Propylbenzene	21.409	91	2303139	9.02	ppbv	98
62) Isopropylbenzene	20.644	105	2009506	9.53	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	20.818	83	835336	8.62	ppbv	97
65) 4-Ethyltoluene	21.631	105	2056305	9.34	ppbv	99
66) 1,3,5-Trimethylbenzene	21.718	105	1733007	9.21	ppbv	99
67) tert-Butylbenzene	22.477	119	1889533	9.39	ppbv #	85
68) 1,2,4-Trimethylbenzene	22.548	105	1785807	9.32	ppbv #	94
69) sec-Butylbenzene	22.946	105	2441117	9.27	ppbv	98
70) p-Isopropyltoluene	23.213	119	2166923	9.50	ppbv #	88
71) 1,3-Dichlorobenzene	23.387	146	1219336	8.34	ppbv	99
72) 1,4-Dichlorobenzene	23.570	146	1242221	8.36	ppbv	99
73) Benzyl chloride	23.718	91	1408908	8.39	ppbv	95
74) n-Butylbenzene	24.014	91	1884877	8.81	ppbv	99
75) 1,2-Dichlorobenzene	24.277	146	1198473	8.23	ppbv	98
76) 1,2,4-Trichlorobenzene	27.017	180	1189972	7.72	ppbv	98
77) Hexachlorobutadiene	27.293	225	903523	8.37	ppbv	97
78) Naphthalene	27.409	128	2925307	6.81	ppbv	100

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

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214166.D
 Acq On : 8 Apr 2021 11:09 pm
 Operator : AS
 Sample : SEQ-CCV1
 Misc : QBTO2040821A CCV
 ALS Vial : 93 Sample Multiplier: 1
 InstName : TO15_AIR2

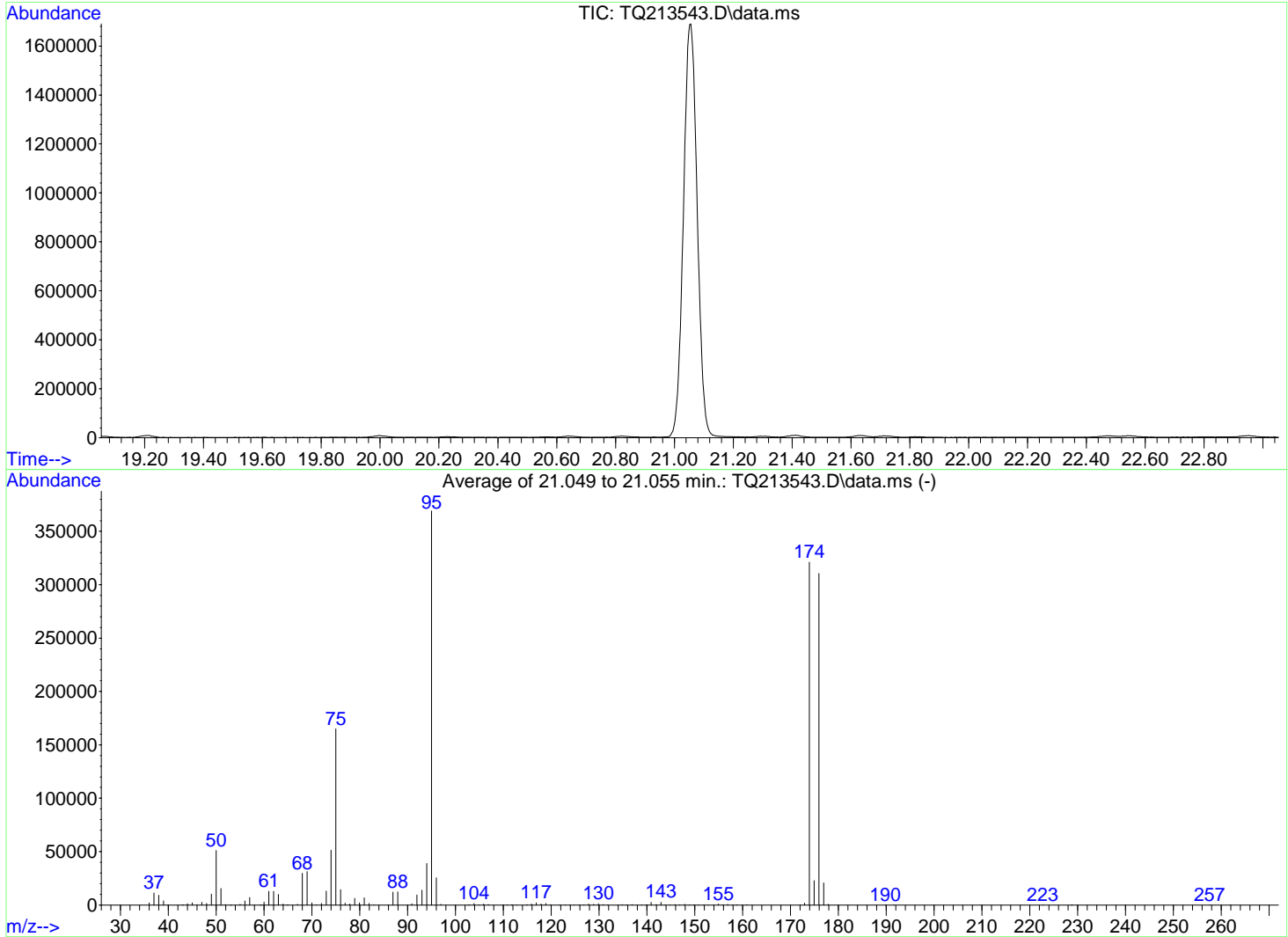
Quant Time: Apr 08 23:56:38 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\030421\
 Data File : TQ213543.D
 Acq On : 5 Mar 2021 12:16 am
 Operator : LLJ
 Sample : SEQ-TUN1
 Misc : QBTO2030421A TUNE
 ALS Vial : 1 Sample Multiplier: 1
 InstName : TO15_AIR2

Integration File: rteint.p

Method : C:\msdchem\1\methods\AIR-2-0046.M
 Title : TO15 VOC Analysis
 Last Update : Fri Mar 05 12:56:57 2021



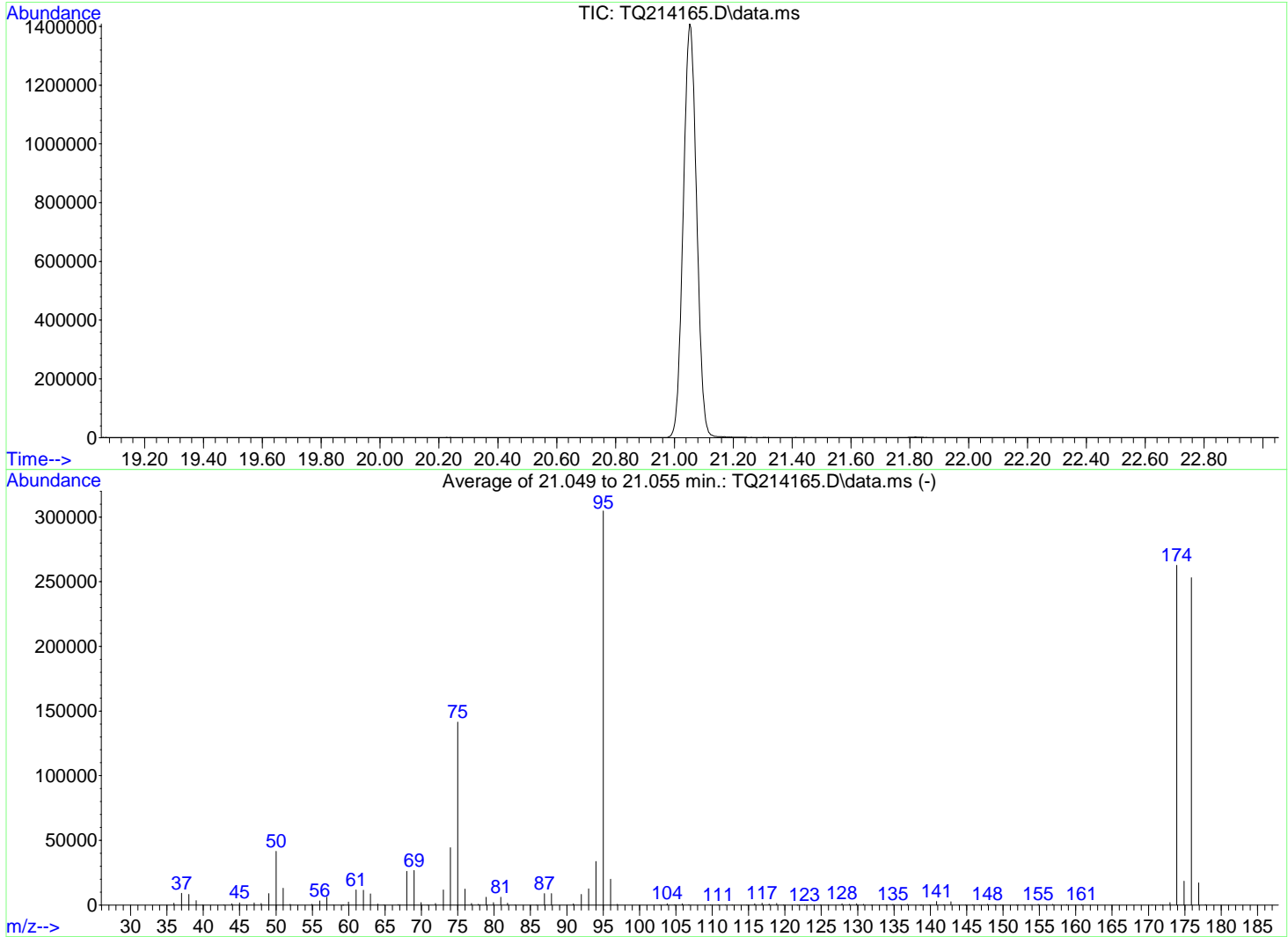
AutoFind: Scans 5120, 5121, 5122; Background Corrected with Scan 5091

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	13.8	51117	PASS
75	95	30	66	44.7	165077	PASS
95	95	100	100	100.0	369237	PASS
96	95	5	9	6.9	25563	PASS
173	174	0.00	2	0.6	1846	PASS
174	95	50	120	87.0	321109	PASS
175	174	4	9	7.1	22869	PASS
176	174	93	101	96.7	310592	PASS
177	176	5	9	6.7	20685	PASS

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214165.D
 Acq On : 8 Apr 2021 10:10 pm
 Operator : AS
 Sample : SEQ-TUN1
 Misc : QBTO2040821A TUNE
 ALS Vial : 92 Sample Multiplier: 1
 InstName : TO15_AIR2

Integration File: rteint.p

Method : C:\msdchem\1\methods\AIR-2-0046.M
 Title : TO15 VOC Analysis
 Last Update : Fri Mar 05 12:56:57 2021



AutoFind: Scans 5120, 5121, 5122; Background Corrected with Scan 5092

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	13.6	41411	PASS
75	95	30	66	46.4	141461	PASS
95	95	100	100	100.0	304875	PASS
96	95	5	9	6.5	19824	PASS
173	174	0.00	2	0.7	1874	PASS
174	95	50	120	86.2	262741	PASS
175	174	4	9	7.0	18309	PASS
176	174	93	101	96.3	253120	PASS
177	176	5	9	6.7	17040	PASS

METHOD BLANK RAW DATA

SDG: 21D0348
CLASS: AIR
METHOD: EPA TO-15

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Air Laboratory ID: BD10445-BLK1 File ID: TQ214172.D
 Prepared: 04/08/21 22:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 04/09/21 05:24 Instrument: TO15_AIR2
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	0.687	U
71-55-6	1,1,1-Trichloroethane	0.546	U
79-34-5	1,1,2,2-Tetrachloroethane	0.687	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.766	U
79-00-5	1,1,2-Trichloroethane	0.546	U
75-34-3	1,1-Dichloroethane	0.405	U
75-35-4	1,1-Dichloroethylene	0.198	U
120-82-1	1,2,4-Trichlorobenzene	0.742	U
95-63-6	1,2,4-Trimethylbenzene	0.492	U
106-93-4	1,2-Dibromoethane	0.768	U
95-50-1	1,2-Dichlorobenzene	0.601	U
107-06-2	1,2-Dichloroethane	0.405	U
78-87-5	1,2-Dichloropropane	0.462	U
76-14-2	1,2-Dichlorotetrafluoroethane	0.699	U
108-67-8	1,3,5-Trimethylbenzene	0.492	U
106-99-0	1,3-Butadiene	0.664	U
541-73-1	1,3-Dichlorobenzene	0.601	U
142-28-9	1,3-Dichloropropane	0.462	U
106-46-7	1,4-Dichlorobenzene	0.601	U
123-91-1	1,4-Dioxane	0.721	U
78-93-3	2-Butanone	0.295	U
591-78-6	2-Hexanone	0.819	U
107-05-1	3-Chloropropene	1.57	U
108-10-1	4-Methyl-2-pentanone	0.410	U
67-64-1	Acetone	0.475	U
107-13-1	Acrylonitrile	0.217	U
71-43-2	Benzene	0.319	U
100-44-7	Benzyl chloride	0.518	U
75-27-4	Bromodichloromethane	0.670	U
75-25-2	Bromoform	1.03	U

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Air Laboratory ID: BD10445-BLK1 File ID: TQ214172.D
 Prepared: 04/08/21 22:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 04/09/21 05:24 Instrument: TO15_AIR2
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
74-83-9	Bromomethane	0.388	U
75-15-0	Carbon disulfide	0.311	U
56-23-5	Carbon tetrachloride	0.157	U
108-90-7	Chlorobenzene	0.460	U
75-00-3	Chloroethane	0.264	U
67-66-3	Chloroform	0.488	U
74-87-3	Chloromethane	0.207	U
156-59-2	cis-1,2-Dichloroethylene	0.198	U
10061-01-5	cis-1,3-Dichloropropylene	0.454	U
110-82-7	Cyclohexane	0.344	U
124-48-1	Dibromochloromethane	0.852	U
75-71-8	Dichlorodifluoromethane	0.495	U
141-78-6	Ethyl acetate	0.721	U
100-41-4	Ethyl Benzene	0.434	U
87-68-3	Hexachlorobutadiene	1.07	U
67-63-0	Isopropanol	0.492	U
80-62-6	Methyl Methacrylate	0.409	U
1634-04-4	Methyl tert-butyl ether (MTBE)	0.361	U
75-09-2	Methylene chloride	0.695	U
142-82-5	n-Heptane	0.410	U
110-54-3	n-Hexane	0.352	U
95-47-6	o-Xylene	0.434	U
179601-23-1	p- & m- Xylenes	0.868	U
622-96-8	p-Ethyltoluene	0.492	U
115-07-1	Propylene	0.172	U
100-42-5	Styrene	0.426	U
127-18-4	Tetrachloroethylene	0.678	U
109-99-9	Tetrahydrofuran	0.590	U
108-88-3	Toluene	0.377	U
156-60-5	trans-1,2-Dichloroethylene	0.396	U

FORM I

**METHOD BLANK DATA SHEET
EPA TO-15**

Laboratory: York Analytical Laboratories, Inc. SDG: 21D0348
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287505
 Matrix: Air Laboratory ID: BD10445-BLK1 File ID: TQ214172.D
 Prepared: 04/08/21 22:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 04/09/21 05:24 Instrument: TO15_AIR2
 Batch: BD10445 Sequence: Y1D0934 Calibration: YC10005

CAS NO.	COMPOUND	CONC. (ug/m³)	Q
10061-02-6	trans-1,3-Dichloropropylene	0.454	U
79-01-6	Trichloroethylene	0.134	U
75-69-4	Trichlorofluoromethane (Freon 11)	0.562	U
108-05-4	Vinyl acetate	0.352	U
593-60-2	Vinyl bromide	0.437	U
75-01-4	Vinyl Chloride	0.0639	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	200245	12.056	189488	12.075	
ISTD: 1,4-Difluorobenzene	1113397	13.628	1051211	13.641	
ISTD: d5-Chlorobenzene	1039464	18.889	1007357	18.885	

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214172.D
 Acq On : 9 Apr 2021 5:24 am
 Operator : LLJ
 Sample : BD10445-BLK1
 Misc : QBTO2040821A
 ALS Vial : 92 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Apr 09 09:05:56 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

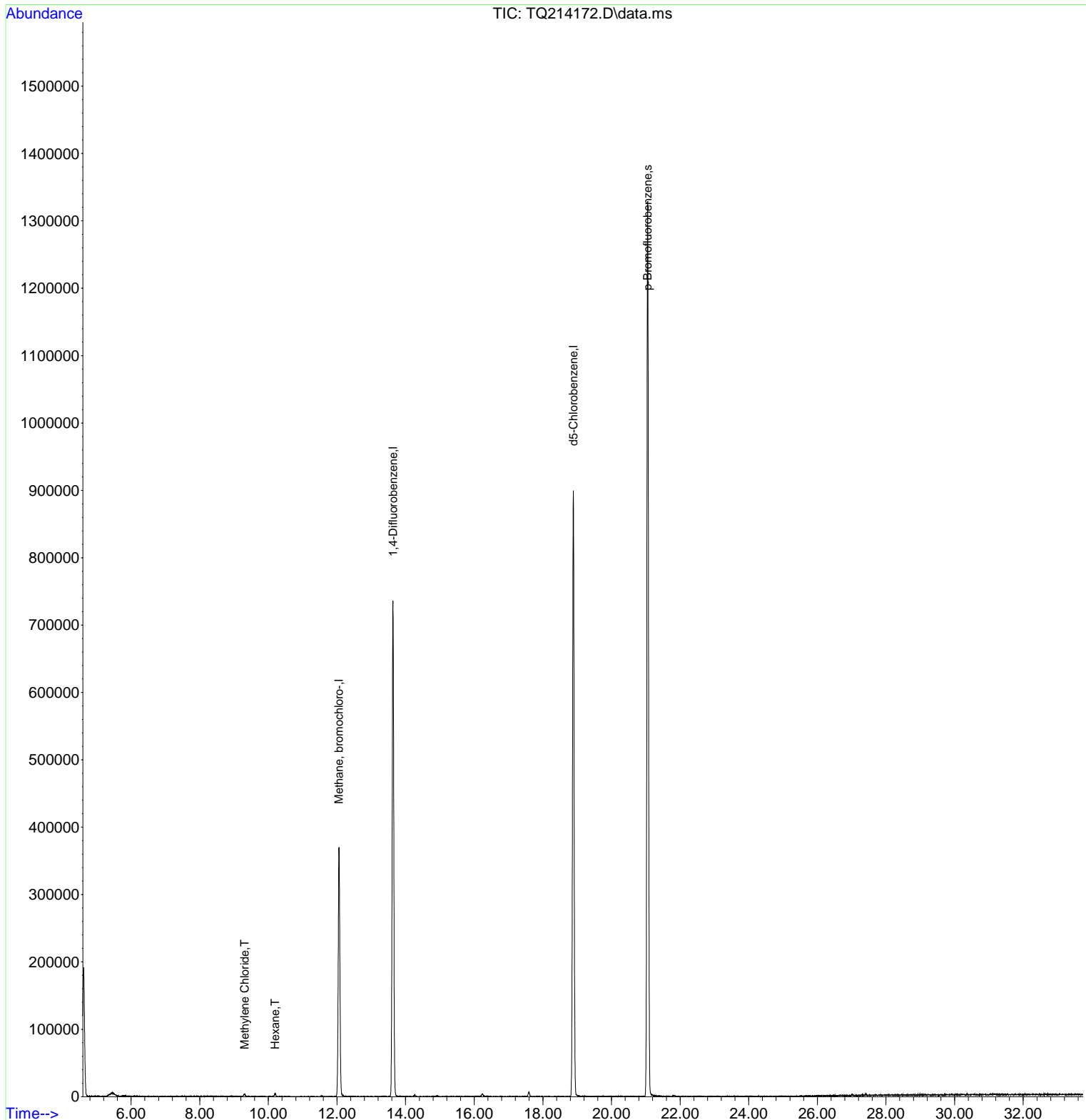
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

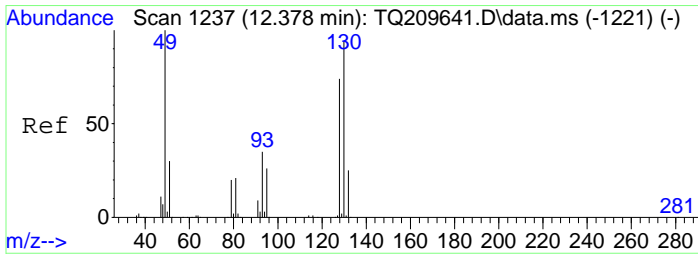
Internal Standards						
1) Methane, bromochloro-	12.056	49	200245	10.00	ppbv	# 0.00
37) 1,4-Difluorobenzene	13.628	114	1113397	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.889	117	1039464	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.052	95	919907	9.86	ppbv	0.00
Spiked Amount	10.000	Range	70 - 130	Recovery	=	98.60%
Target Compounds						
						Qvalue
18) Methylene Chloride	9.304	49	2683	0.10	ppbv	# 56
23) Hexane	10.191	57	3031m	0.08	ppbv	

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

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214172.D
 Acq On : 9 Apr 2021 5:24 am
 Operator : LLJ
 Sample : BD10445-BLK1
 Misc : QBTO2040821A
 ALS Vial : 92 Sample Multiplier: 1
 InstName : TO15_AIR2

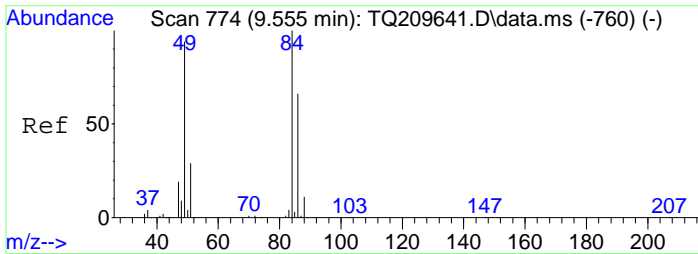
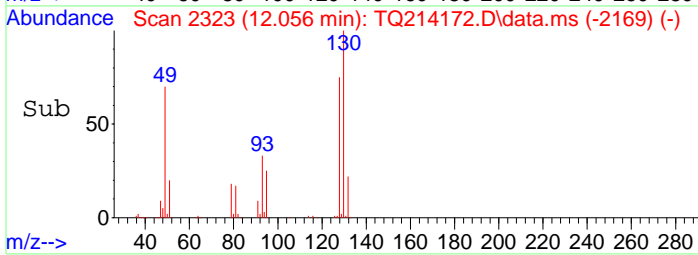
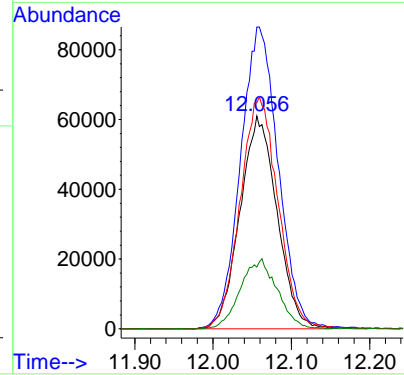
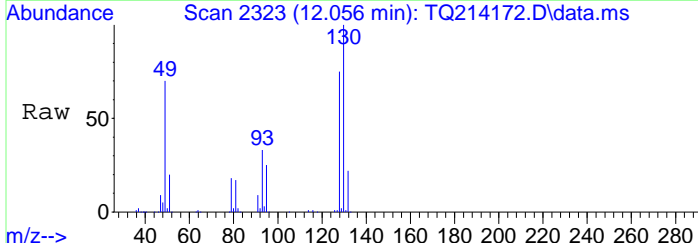
Quant Time: Apr 09 09:05:56 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration





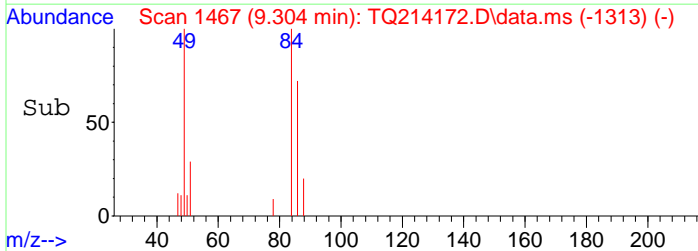
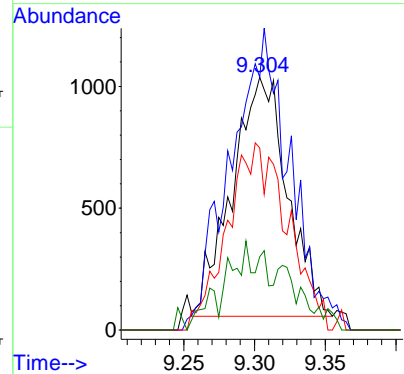
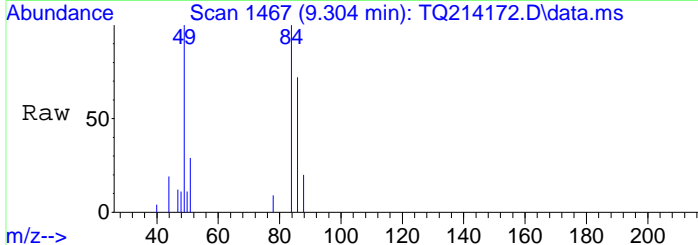
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.056 min Scan# 2323
 Delta R.T. -0.006 min
 Lab File: TQ214172.D
 Acq: 9 Apr 2021 5:24 am

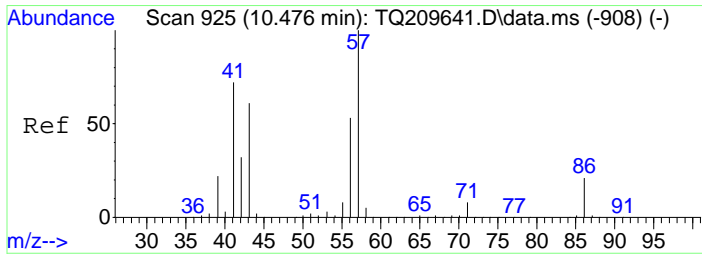
Tgt Ion	Resp	Lower	Upper
49	100		
130	144.8	48.1	99.9#
128	110.9	38.3	79.5#
51	32.8	20.3	42.3



#18
 Methylene Chloride
 Concen: 0.10 ppbv
 RT: 9.304 min Scan# 1467
 Delta R.T. -0.003 min
 Lab File: TQ214172.D
 Acq: 9 Apr 2021 5:24 am

Tgt Ion	Resp	Lower	Upper
49	100		
84	133.6	49.9	103.5#
86	51.0	31.8	66.0
51	0.0	20.2	41.9#

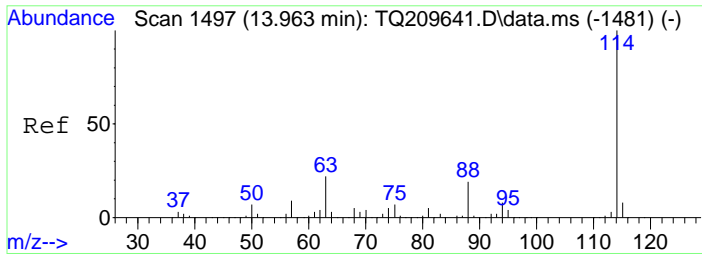
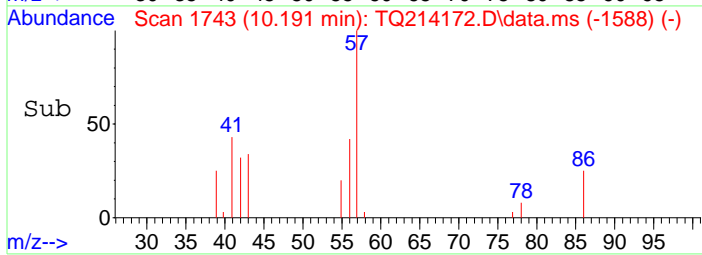
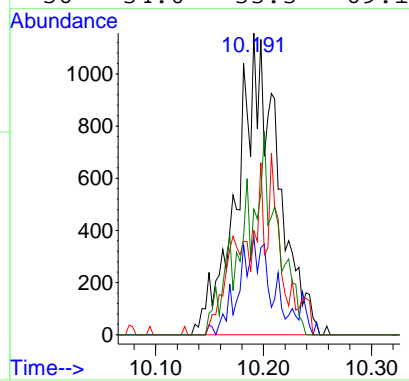
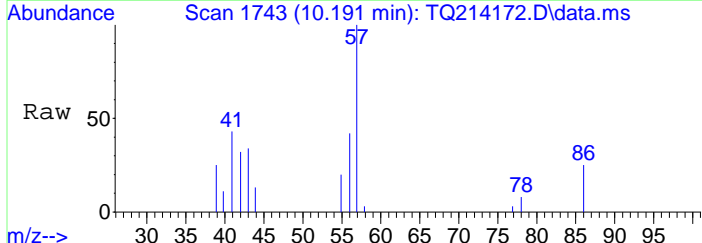




#23
Hexane
Concen: 0.08 ppbv m
RT: 10.191 min Scan# 1743
Delta R.T. -0.003 min
Lab File: TQ214172.D
Acq: 9 Apr 2021 5:24 am

Tgt Ion: 57 Resp: 3031

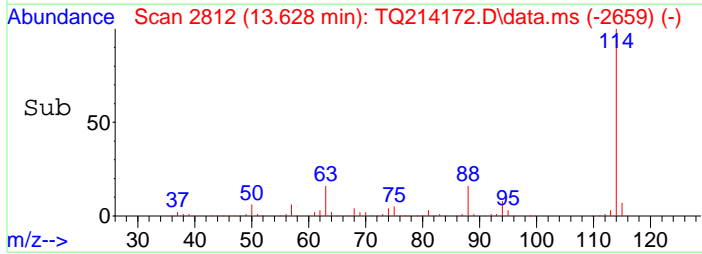
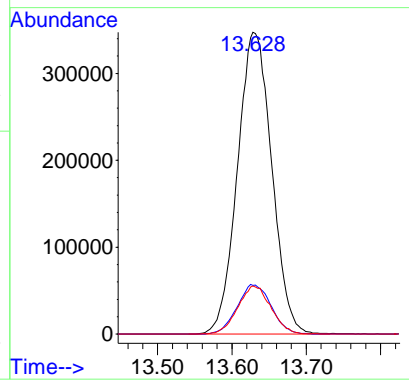
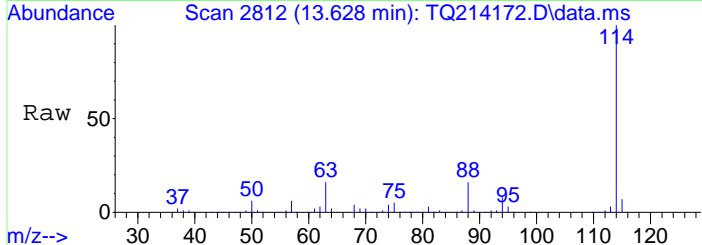
Ion	Ratio	Lower	Upper
57	100		
42	0.0	21.6	45.0#
43	0.0	42.0	87.2#
56	34.0	33.3	69.1

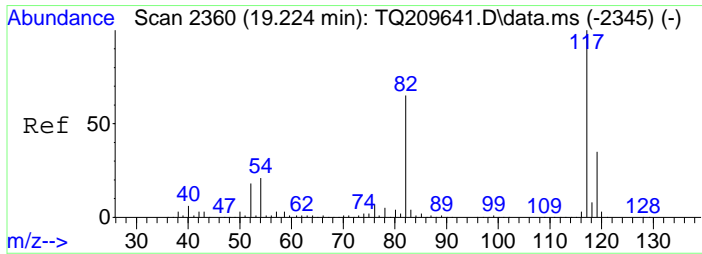


#37
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.628 min Scan# 2812
Delta R.T. -0.007 min
Lab File: TQ214172.D
Acq: 9 Apr 2021 5:24 am

Tgt Ion: 114 Resp: 1113397

Ion	Ratio	Lower	Upper
114	100		
63	16.3	12.9	26.9
88	15.5	10.7	22.3

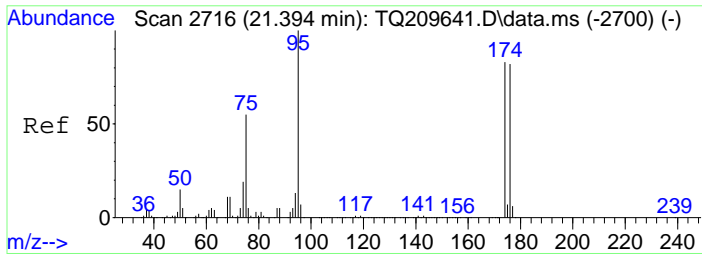
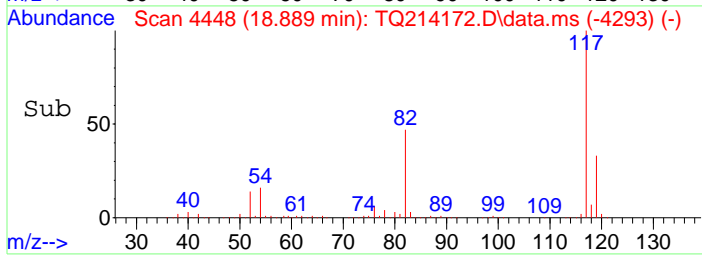
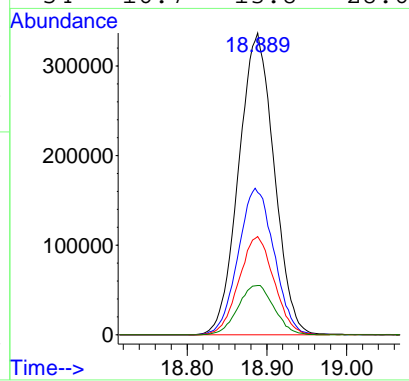
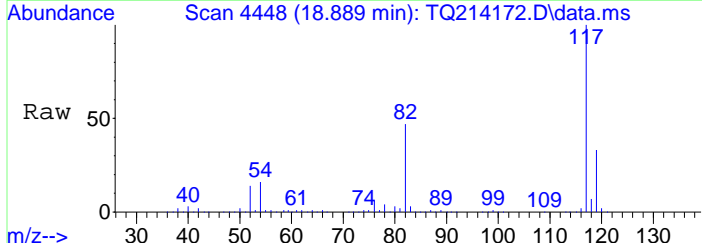




#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 18.889 min Scan# 4448
 Delta R.T. -0.000 min
 Lab File: TQ214172.D
 Acq: 9 Apr 2021 5:24 am

Tgt Ion: 117 Resp: 1039464

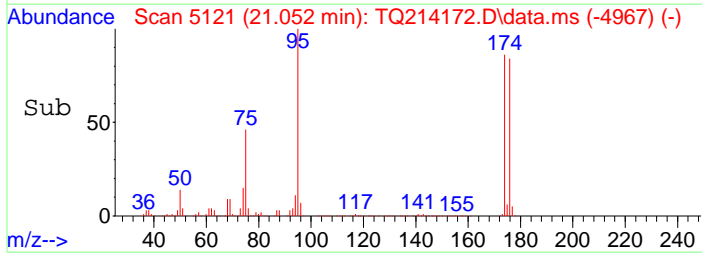
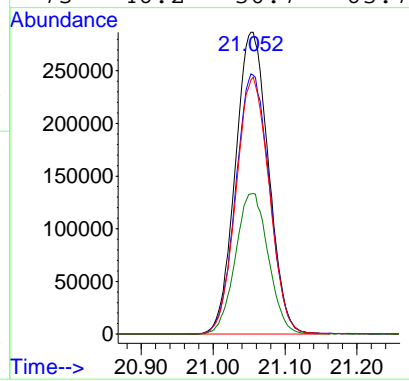
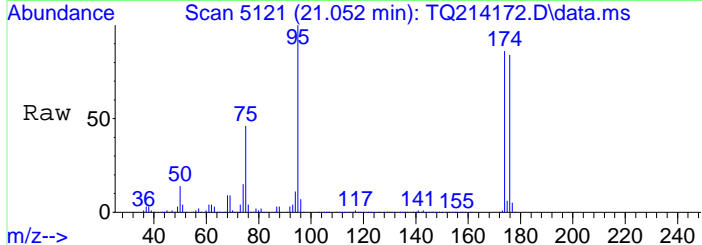
Ion	Ratio	Lower	Upper
117	100		
82	49.3	37.1	77.1
119	32.4	22.1	45.9
54	16.7	13.8	28.6



#64
 p-Bromofluorobenzene
 Concen: 9.86 ppbv
 RT: 21.052 min Scan# 5121
 Delta R.T. -0.004 min
 Lab File: TQ214172.D
 Acq: 9 Apr 2021 5:24 am

Tgt Ion: 95 Resp: 919907

Ion	Ratio	Lower	Upper
95	100		
174	87.3	53.2	110.6
176	85.0	51.6	107.2
75	46.2	30.7	63.7



LCS RAW DATA

SDG: 21D0348
CLASS: AIR
METHOD: EPA TO-15

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214167.D
 Acq On : 9 Apr 2021 12:07 am
 Operator : AS
 Sample : BD10445-BS1
 Misc : QBTO2040821A ICV
 ALS Vial : 94 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Apr 09 01:08:32 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.079	49	224559	10.00	ppbv	# 0.02
37) 1,4-Difluorobenzene	13.638	114	1223173	10.00	ppbv	0.00
53) d5-Chlorobenzene	18.889	117	1146406	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.052	95	1039319	10.10	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	101.00%	
Target Compounds						
						Qvalue
2) Propylene	5.024	42	84992	7.88	ppbv	89
3) Dichlorodifluoromethane	5.098	85	910108	8.45	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.371	85	717696	9.47	ppbv	93
5) Chloromethane	5.587	50	127092	8.44	ppbv	95
6) Vinyl Chloride	5.847	62	190903	8.22	ppbv	# 70
7) 1,3-Butadiene	5.934	54	133849	9.11	ppbv	# 90
8) Bromomethane	6.725	94	294950	9.29	ppbv	99
9) Chloroethane	6.902	64	117877	9.20	ppbv	96
10) Vinyl Bromide	7.362	106	330441	9.11	ppbv	100
11) Trichlorofluoromethane	7.481	101	1015877	9.02	ppbv	99
12) Isopropanol	8.001	45	381379	7.39	ppbv	100
13) Acrolein	8.098	56	92831	8.10	ppbv	# 1
14) Acetone	8.214	43	345207	7.45	ppbv	95
15) Freon-113	8.352	101	709661	8.69	ppbv	92
16) 1,1-Dichloroethylene	8.580	61	436252	8.32	ppbv	86
17) 3-Chloropropene	9.169	41	236123	9.09	ppbv	# 79
18) Methylene Chloride	9.326	49	231994	7.97	ppbv	# 62
19) Acrylonitrile	9.410	53	161368	8.79	ppbv	# 62
20) Carbon disulfide	9.452	76	798627	8.67	ppbv	96
21) Methyl-tert-Butyl Ethe...	9.731	73	921634	9.06	ppbv	# 92
22) trans-1,2-Dichloroethy...	9.924	61	392327	8.70	ppbv	81
23) Hexane	10.210	57	344673	8.01	ppbv	89
24) Vinyl Acetate	10.532	43	476162	7.97	ppbv	# 98
25) 1,1-Dichloroethane	10.580	63	478185	8.41	ppbv	72
26) 2-Butanone	11.191	43	393948	8.42	ppbv	# 81
27) Ethyl Acetate	11.490	43	453722	8.77	ppbv	# 44
28) cis-1,2-Dichloroethylene	11.577	61	374519	8.27	ppbv	# 62
29) Chloroform	11.847	83	763209	8.75	ppbv	96
30) Tetrahydrofuran	12.172	42	204407	8.31	ppbv	# 67
31) 1,1,1-Trichlorethane	12.583	97	893182	9.21	ppbv	94
32) Cyclohexane	12.751	56	358177	9.23	ppbv	# 74
33) Carbon Tetrachloride	13.043	117	949306	8.94	ppbv	100
34) 1,2-Dichloroethane	13.117	62	494178	8.84	ppbv	100
35) Benzene	13.246	78	963574	8.62	ppbv	# 81
36) n-Heptane	13.259	43	341383	9.33	ppbv	# 73
38) Trichloroethylene	14.278	95	519031	8.82	ppbv	95
39) 1,2-Dichloropropane	14.500	63	281720	9.04	ppbv	83
40) Methyl Methacrylate	14.516	69	328323	9.43	ppbv	93
41) 1,4-Dioxane	14.821	88	253279	7.92	ppbv	# 100
42) Bromodichloromethane	14.863	83	854438	9.71	ppbv	95
43) Methyl Isobutyl Ketone	15.397	43	502778	9.14	ppbv	# 86
44) cis-1,3-Dichloropropene	15.747	75	597563	9.65	ppbv	95
45) Toluene	16.406	91	1371375	9.05	ppbv	99
46) trans-1,3-Dichloropropene	16.564	75	603190	9.90	ppbv	95
47) 1,1,2-Trichlorethane	16.856	97	474977	9.36	ppbv	92
48) 2-Hexanone	16.863	43	490400	9.11	ppbv	94
49) 1,3-Dichloropropane	17.284	76	611191	8.98	ppbv	91

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214167.D
 Acq On : 9 Apr 2021 12:07 am
 Operator : AS
 Sample : BD10445-BS1
 Misc : QBTO2040821A ICV
 ALS Vial : 94 Sample Multiplier: 1
 InstName : TO15_AIR2

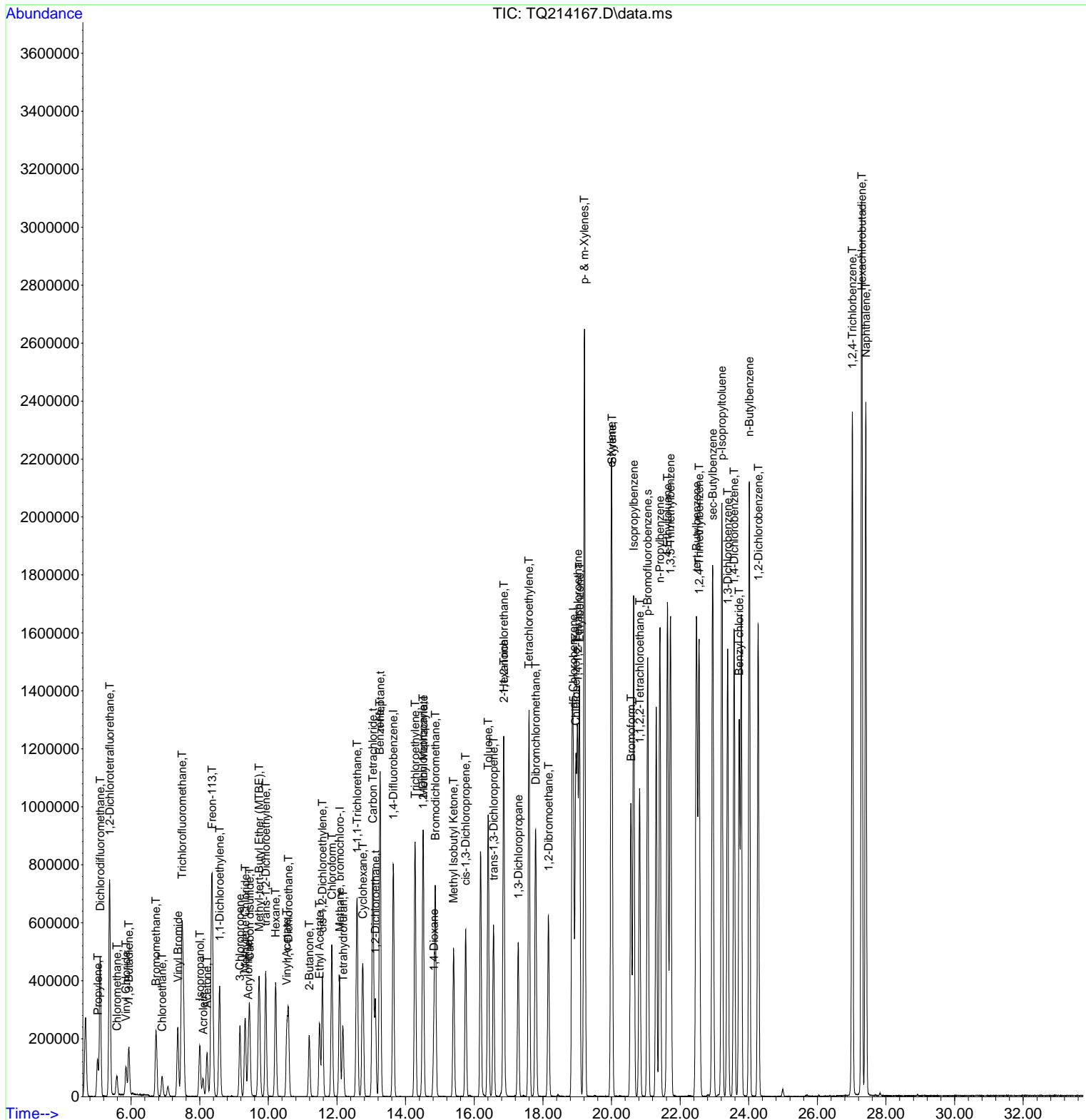
Quant Time: Apr 09 01:08:32 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Tetrachloroethylene	17.593	166	770813	8.73	ppbv	98
51) Dibromchloromethane	17.789	129	985830	9.90	ppbv	99
52) 1,2-Dibromoethane	18.162	107	793597	9.28	ppbv	98
54) Chlorobenzene	18.956	112	1208447	8.44	ppbv #	86
55) 1,1,1,2-Tetrachloroethane	19.011	131	696570	9.09	ppbv	89
56) Ethylbenzene	19.065	91	1928996	9.03	ppbv	98
57) p- & m-Xylenes	19.210	91	3017239	18.60	ppbv	99
58) o-Xylene	19.991	91	1536606	9.56	ppbv	99
59) Styrene	20.011	104	1219391	9.52	ppbv #	100
60) Bromoform	20.570	173	961001	10.01	ppbv	99
61) n-Propylbenzene	21.413	91	2625280	9.03	ppbv	98
62) Isopropylbenzene	20.647	105	2294994	9.57	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	20.818	83	976997	8.86	ppbv	96
65) 4-Ethyltoluene	21.631	105	2366086	9.44	ppbv	98
66) 1,3,5-Trimethylbenzene	21.718	105	1999233	9.33	ppbv	99
67) tert-Butylbenzene	22.477	119	2207742	9.64	ppbv	91
68) 1,2,4-Trimethylbenzene	22.551	105	2044154	9.38	ppbv #	93
69) sec-Butylbenzene	22.949	105	2818094	9.40	ppbv #	96
70) p-Isopropyltoluene	23.213	119	2531812	9.75	ppbv	97
71) 1,3-Dichlorobenzene	23.384	146	1400478	8.41	ppbv	98
72) 1,4-Dichlorobenzene	23.573	146	1414417	8.36	ppbv	99
73) Benzyl chloride	23.721	91	1869455	9.78	ppbv	96
74) n-Butylbenzene	24.017	91	2243218	9.21	ppbv #	76
75) 1,2-Dichlorobenzene	24.277	146	1366126	8.25	ppbv	98
76) 1,2,4-Trichlorobenzene	27.020	180	1357358	7.74	ppbv	98
77) Hexachlorobutadiene	27.293	225	1053379	8.57	ppbv	98
78) Naphthalene	27.412	128	3604503	7.38	ppbv	100

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

Data Path : C:\msdchem\1\data\040921\
 Data File : TQ214167.D
 Acq On : 9 Apr 2021 12:07 am
 Operator : AS
 Sample : BD10445-BS1
 Misc : QBTO2040821A ICV
 ALS Vial : 94 Sample Multiplier: 1
 InstName : TO15_AIR2

Quant Time: Apr 09 01:08:32 2021
 Quant Method : C:\msdchem\1\methods\AIR-2-0046.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Fri Mar 05 12:56:57 2021
 Response via : Initial Calibration



Batch Canister Certification Prep Logs

SUMMA Canister Cleaning/Preparation Log

Date of Cleaning	Analyst Initials	Canister Number	Lot Number	Temperature of Cleaning Oven (60°C)	Canister Cleaning System (1 or 2)	Number of cleaning cycles (4 or 6) *	Leak check Date (>24 hours)	Analyst Initials	GC/MS file name and date for canister certification
4/05/21	LF	37782	Q85040521A	60°C	3	15			
		36995							TD288669.D
		22084							
		18313							
		15525							
4/5/21	WJ	460	Q85040521B	60°C	3	15			TD288679.D
		20846							
		37802					-29.89	TMP	
		28298							
		36459							
		461							
		18316							
		16956							
		17352					-29.83	TMP	
		23706							
		483							
		23196							
		16694					-29.44	TMP	
		24110							
		465					-29.89	TMP	

* 6 or more cleaning cycles are required for canisters that contain high concentration of VOAs

SUMMA Canister Cleaning/Preparation Log

Date of Cleaning	Analyst Initials	Canister Number	Lot Number	Temperature of Cleaning Oven (60°C)	Canister Cleaning System (1 or 2)	Number of cleaning cycles (4 or 6) *	Leak check Date (>24 hours)	Analyst Initials	GC/MS file name and date for canister certification
		2315b					-29.81	TMP	
		28301					-29.38	TMP	
		16691							
		28387							
		36987							
		28855			3	15			
	MP	17353							
		16152							
		18303							
		18309							
		18305							
		37013							
		36988							
		22081							
		18307							
		Y63							
4/1/15	AS	37400	AS 4/1/15	100°C	2 AS 4/1/15	2			
4/6/21	AS	37386	085040621A	60°C	2 AS 4/1/15	2			TQ 2/4/14D
		20665							
		37007							

* 6 or more cleaning cycles are required for canisters that contain high concentration of VOAs

Batch Canister Certification

Data Path : D:\040621\
 Data File : TO288679.D
 Acq On : 7 Apr 2021 2:13 pm
 Operator : LLJ
 Sample : BD10288-BLK2
 Misc : QBTO1040621A Batch Cert Can Y60 QBS040521B
 ALS Vial : 4 Sample Multiplier: 1
 InstName : 5975C

Quant Time: Apr 12 10:01:08 2021
 Quant Method : C:\msdchem\1\methods\AIR132.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Mon Apr 05 17:06:27 2021
 Response via : Initial Calibration

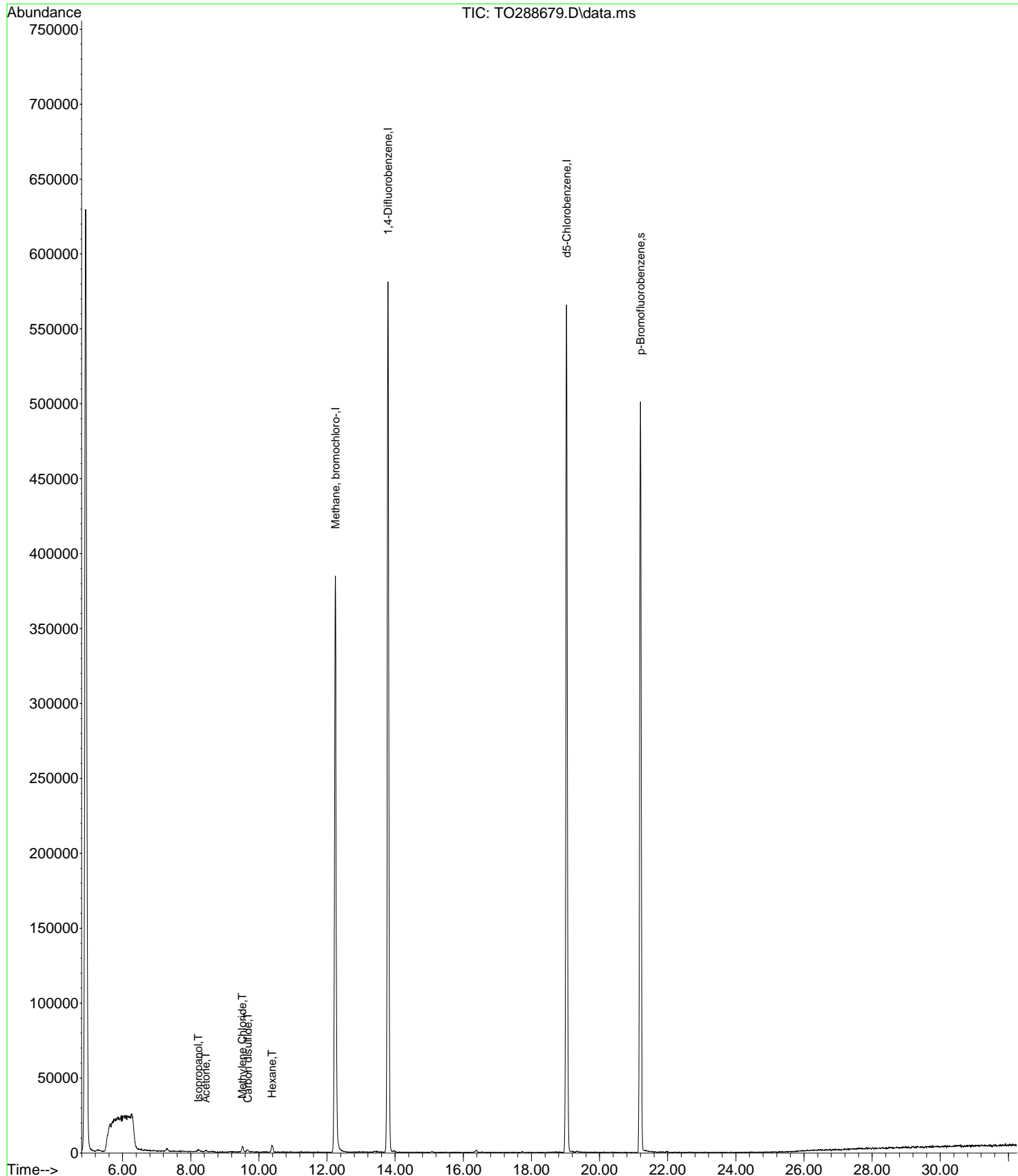
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.243	49	347063	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.791	114	789252	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.034	117	555924	10.00	ppbv	0.00
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.198	95	271147	7.65	ppbv	0.00
Spiked Amount	10.000	Range	70 - 130	Recovery	=	76.50%
Target Compounds						
						Qvalue
13) Isopropanol	8.219	45	3171	0.05	ppbv #	99
15) Acetone	8.439	43	1728	0.04	ppbv #	43
19) Methylene Chloride	9.512	49	4522	0.11	ppbv	85
21) Carbon disulfide	9.676	76	3949	0.05	ppbv #	74
24) Hexane	10.383	57	3668	0.07	ppbv #	59

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

Data Path : D:\040621\
Data File : TO288679.D
Acq On : 7 Apr 2021 2:13 pm
Operator : LLJ
Sample : BD10288-BLK2
Misc : QBT01040621A Batch Cert Can Y60 QBS040521B
ALS Vial : 4 Sample Multiplier: 1
InstName : 5975C

Quant Time: Apr 12 10:01:08 2021
Quant Method : C:\msdchem\1\methods\AIR132.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Apr 05 17:06:27 2021
Response via : Initial Calibration



BENCHSHEETS

SDG: 21D0348
CLASS: AIR
METHOD: EPA TO-15

PREPARATION BENCH SHEET-AIR : BD10445

Preparation Date: 04/08/2021 22:00

York Analytical Laboratories, Inc.

Printed: 4/12/2021 8:55:45AM

Matrix: Air

Preparation: EPA TO15 PREP

Lab Number	Analysis	Canister Vacuum (in. Hg) upon receipt	Final Canister Press. (psig) for Analysis	Qualifier	LCS No. &Source ID for Duplicate	Comments
21D0022-01 A	Volatile Organics, EPA TO15 Full List	-21.1	+5.2			From BD10395 by LJ on 04/
21D0022-02 A	Volatile Organics, EPA TO15 Full List	-6.91	+5.21			From BD10395 by LJ on 04/
21D0348-01 A	VOA, TO15 MASTER	-3.88	+5.79			
21D0348-02 A	VOA, TO15 MASTER	-5.2	+7.68			
21D0348-03 A	VOA, TO15 MASTER	-6.41	+6.04			
21D0348-04 A	VOA, TO15 MASTER	-4.58	+5.75			
21D0348-05 A	Volatile Organics, EPA TO15 Full List	-3.74	+5.86			Added for BatchQC in: BD1
21D0348-05 A	VOA, TO15 MASTER	-3.74	+5.86			
BD10445-BLK1	QC	NA	NA			
BD10445-BS1	QC	NA	NA		Y21C145	
BD10445-DUP1	QC	-3.74	+5.86		21D0348-05	

Preparations Performed by LLJ

Date: 04/08/2021 22:00

Injection Logs

York Analytical Laboratories, Inc.

TO15 Summa Canister Injection Log - System 2

Batch ID	Sample ID	Final Canister Press./Vac. In field	Canister Pressure/Vacuum Before Analysis (psig or in. Hg vac)	Add'l Press. for Analysis	Pressurization	ALS Inlet No.	Sample Vol. Used (ml)	Total Dilution Factor	Tune Time	COMMENTS	ISTD Vol. (ml)	Date	Analyst
	2100001-01	-4.80	-3.88	5.75	1.601	12	40	16.01	22.10		40	04/02/01	WJAS
	02	-5.19	-5.20	7.68	1.842	13	40	1.842			40		
	03	-6.17	-6.41	10.04	1.794	14	40	1.794			40		
	04	-4.35	-4.58	5.75	1.642	15	40	1.642			40		
	05	-3.10	-3.74	5.76	1.852	16	75	0.852		Rep	40		
	2101445-03	-6	-7.98	5.43	1.870	2	40	1.870			40		
	2100022-01	-1	-2.11	5.2	4.563	6	200	4.563	9.76		40		
	02	-7	-6.91	5.21	1.760	10	40	1.760			40		
	2100038-01	-1	-2.39	5.44	1.435	8	40	1.435			40		
	02	-4	-2.25	6.07	1.576	9	40	1.576			40		
	03					13	40				40		
	2100001-01	-11.60	-3.88	5.75	1.601	812	40	1.601			40		
	2100001-02					3	750	0.874			40		
	03					11	750				40		
	04					8	750				40		
	06					9	750				40		
											40		
											40		
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											40		

Media Request Form



York Analytical Laboratories, Inc.

Air Sampling Media Request e-Form

Date of Request: 04/06/2021

Date Media Needed to Log-In: _____

Order Completed on: _____

Requested By: Rich August

Completed By: _____

Order No.: **1087000**

Client: Langan NJ - site

Date of Request: 04/06/2021

Date to Client: 04/08/2021

Client Project ID: _____

Client Contact Person: Esther Arthur

Delivery Method (x): York Courier Client Pickup

Address for Drop Off: 365 Bond St
Brooklyn NY

Special instructions / Additional info: d/o at 7am

Type of Samples Expected (x):	Ambient Air	SV	Other
	1	5	

Type of Media Needed	Quantity	Indiv. Cert. (x)	Comments
Summa Canisters- 6 Liter	6		
Summa Canisters- 3 Liter			
Tedlar Bag, 1 L			
Flow controller, grab			
Flow controller, 30 minutes			
Flow controller, 1 hour			
Flow controller, 2 hour		5	
Flow controller, 4 hour			
Flow controller, 6 hour		1	
Flow controller, 8 hour			
Flow controller, 12 hour			
Flow controller, 24 hour			

Assets Provided under this Request

Summa Canister IDs	Indiv. Cert (x)	Flow Cont. ID
16694		7270
28301		6872
37802		13573
28156		7416
Y66		7360
17352		7268

ATTACHMENT C

Data Usability Summary Report

989 Lenox Drive Lawrenceville, NJ 08648 T: 609.282.8000
Mailing Address: 989 Lenox Drive Lawrenceville, NJ 08648

To: Allyson Kritzer, Langan Senior Staff Engineer

From: Joe Conboy, Langan Staff Chemist

Date: April 14, 2021

Re: Data Usability Summary Report
For 365 Bond Street
April 2021 Soil Vapor Samples
Langan Project No.: 100287501

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of air samples collected in April 2021 by Langan Engineering and Environmental Services ("Langan") at the 365 Bond Street site ("the site"). The samples were analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAP registration # 10854) for volatile organic compounds (VOCs) by the methods specified below.

- VOCs by USEPA Method TO-15

Table 1, attached, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-31, "Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15" (September 2016, Revision 6), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), and the specifics of the methods employed.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, internal standard area counts, target compound identification and quantification, chromatograms, and overall system performance.

Technical Memorandum

Data Usability Summary Report
For 365 Bond Street
April 2021 Soil Vapor Samples
Langan Project No.: 100287501
April 14, 2021 Page 2 of 3

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

- R** – The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
- J** – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ** – The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.
- U** – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.
- NJ** – The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified in Table 2 (attached).

REVIEW TABLE 2 (ATTACHED) FOR A LIST OF VALIDATOR-APPLIED QUALIFIERS

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by USEPA Method TO-15:

21D0348

The CCV analyzed on 4/8/2021 at 23:09 exhibited a %D above the control limit for vinyl acetate (-31.9%). The associated results in samples 871_AMBIENT-1_20210408, 872_V5_20210408,

Technical Memorandum

Data Usability Summary Report
For 365 Bond Street
April 2021 Soil Vapor Samples
Langan Project No.: 100287501
April 14, 2021 Page 3 of 3

873_V2_20210408, 874_V3_20210408, and 875_DUP-1_20210408 are qualified as "UJ" based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. No other deficiencies were identified.

FIELD DUPLICATE:

One field duplicate and parent sample pairs were collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than $\pm 1X$ the RL. For results greater than 5X the RL, analytes meet the precision criteria if the RPD is less than or equal to 30% for vapor. The following field duplicate and parent sample pairs were compared to the precision criteria:

- 875_DUP-1_20210408 and 874_V3_20210408

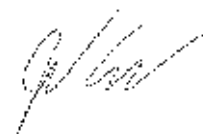
The field duplicate and parent sample (874_V3_20210408) exhibited RPDs above the control limit for acetone (51.4%), methyl ethyl ketone (2-butanone) (39.1%), methyl methacrylate (31.3%), and methylene chloride (47.3%). The associated results are qualified as "J" based on potential indeterminate bias.

CONCLUSION:

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:



Joe Conboy
Staff Chemist

10 April 2019

Sadique Ahmed
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

**Re: Soil Vapor Monitoring Report – Year 3
365 Bond Street
Brooklyn, New York
BCP Site No. C224174
Langan Project No.: 100287503**

Dear Mr. Ahmed:

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) has prepared this letter report to summarize periodic soil vapor sampling during the third year of passive sub-membrane depressurization system (SMDS) operation at 365 Bond Street in Brooklyn, New York (the "site"). The soil vapor monitoring was conducted in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved Site Management Plan (SMP), dated September 2015, prepared by Langan.

Background

The site is located at 365 Bond Street in the City of Brooklyn, Kings County, New York and is identified as Block 458 and Lot 1 on the New York City Tax Map. The site is approximately 2.066 acres and is located on the city block bordered by First Street to the north, Second Street to the south, the Gowanus Canal to the east, and Bond Street to the west. Site location is shown on Figure 1.

The site was remediated under the NYSDEC Brownfield Cleanup Program in accordance with a NYSDEC-approved Interim Remedial Measures Work Plan (IRM) and Remedial Action Work Plan (RAWP), as described in the September 2015 Final Engineering Report (FER) and Construction Completion Report (CCR). As part of the remediation, soil vapor mitigation measures included installation of a sub-membrane piping network for a passive SMDS and a vapor barrier membrane beneath the ground floor slab of the building. The SMDS as-built layout is shown on Figure 2.

The site was redeveloped as a five- to twelve-story mixed-use commercial/residential building with a partial basement that was opened for residential occupation in April 2016. The building is being operated in accordance with the SMP which in part specifies that periodic soil vapor monitoring be completed to assess the effectiveness of the remedy. The SMP specifies that monitoring occur annually during the heating season unless otherwise required by NYSDEC to assess system effectiveness and determine if expansion to an active SMDS is warranted.

SMDS Inspection and Soil Vapor Sampling

On 27 February 2019, Langan conducted a visual inspection of the above-ground SMDS system components prior to collecting sub-membrane soil vapor samples. The results of the inspection confirmed that all system components are in good condition. Langan also completed field screening of the soil vapor using a RAE Systems photo-ionization detector (PID) capable of detecting volatile organic compound (VOC) in the parts per billion (ppb) range. System performance was evaluated using a TSI 9515 VelociCalc which obtained vacuum readings at each sample port (V2, V3 and V5). Current and previous field screening data are provided in Table 1. VOC readings detected with the PID at the sample ports ranged from 10 ppb to 70 ppb and vacuum measurements at the sample ports ranged from 0.020 inches water to 0.057 inches water. The field screening results indicate that VOCs are present in the soil vapor collection system and that a vacuum condition exists that is removing these vapors from beneath the membrane. A copy of the passive SMDS inspection checklist and field data is provided in Attachment A.

Following the inspection and field screening, three sub-membrane soil vapor samples were collected using Summa canisters that were connected to each sample port via an approximately 3-foot length of Teflon-lined polyethylene tubing. Quality assurance/quality control (QA/QC) included collection of a duplicate sample (at the V3 location) and an ambient air sample from the exterior of the building. All samples were collected in accordance with the New York State Department of Health (NYSDOH) October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York. Samples were collected in laboratory-cleaned and certified evacuated 6-L stainless steel Summa canisters with flow control regulators supplied by the laboratory. The regulators were set to collect each sub-membrane soil vapor sample over a 2-hour sampling period (a flow-rate of <200-ml per minute) as per United States Environmental Protection Agency (USEPA) / Interstate Technology and Regulatory Council (ITRC) soil vapor sampling guidance. Each sub-membrane soil vapor sample was numbered and recorded in a field log book. Samples were transferred to the laboratory immediately after field sampling was completed, and stored below a maximum room temperature of 30° Celsius. Chain-of-custody forms were utilized to document custody for the acquisition, possession, and analysis. All soil vapor and ambient air samples were submitted under chain of custody to York Analytical Laboratories, Inc. of Stratford, Connecticut (York) a NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory. Soil vapor and ambient air samples were laboratory analyzed for VOCs via the USEPA TO-15 Method. A copy of the Summa canister log is provided in Attachment A.

Laboratory Analytical Results

The sub-membrane soil vapor analytical results were compared to the NYSDOH Matrices A, B, and C of the NYSDOH Guidance for Evaluating Soil Vapor Intrusion. A summary of the sub-membrane soil vapor analytical results from this sampling event is provided in Table 2 and shown on Figure 3. The complete laboratory report for the February 2019 sampling event is provided in Attachment B.

The following compounds are included in the decision matrices in the NYSDOH Final Guidance on Soil Vapor Intrusion dated October 2006 and appended in May 2007 and May 2017:

- Carbon tetrachloride
- 1,1,1-Trichloroethane (1,1,1-TCA)
- Cis-1,2-Dichloroethylene (cis-1,2-DCE)
- Methylene chloride
- Trichloroethylene (TCE)
- Tetrachloroethylene (PCE)
- 1,1-Dichloroethylene
- Vinyl Chloride

Concentrations of 1,1,1-TCA, 1,1-dichloroethylene, and vinyl chloride were not detected in any of the sub-membrane soil vapor samples collected.

As shown in Table 2, laboratory analytical results revealed low concentrations of NYSDOH Matrix VOCs in the sub-slab soil vapor. For the purposes of data evaluation, due to the presence of the SMDS, the vapor barrier, and the building foundation, it is reasonably anticipated that indoor air concentrations of VOCs originating from soil vapor do not exist inside the building.

Analytical results for carbon tetrachloride in sub-slab soil vapor were compared to the NYSDOH Vapor Intrusion Decision Matrix A. Carbon tetrachloride was detected in soil vapor at all three sample ports at concentrations ranging from 0.461 ug/m³ at sample location V5 to 0.481 ug/m³ at sample location V2. Therefore, as the concentrations detected in soil vapor were below the Matrix A soil vapor threshold of 6 ug/m³ and are not expected to affect indoor air quality, no additional actions are needed to address human exposures.

Analytical results for cis-1,2-DCE in sub-slab soil vapor were compared to the NYSDOH Vapor Intrusion Decision Matrix A. Cis-1,2-DCE was not detected in soil vapor at V3 but was detected at a concentration of 0.606 ug/m³ at sample location V2 and at a concentration of 1.74 ug/m³ at sample location V5. Therefore, as the concentrations detected in soil vapor were below the Matrix A soil vapor threshold of 6 ug/m³ and are not expected to affect indoor air quality, no additional actions are needed to address human exposures.

Analytical results for methylene chloride in sub-slab soil vapor were compared to the NYSDOH Vapor Intrusion Decision Matrix B. Methylene chloride was detected in soil vapor at all three sample ports at concentrations ranging from 1.27 ug/m³ at sample location V5 to 1.91 ug/m³ at sample location V2. Therefore, as the concentrations of methylene chloride detected in soil vapor were below the Matrix B soil vapor threshold of 100 ug/m³ and are not expected to affect indoor air quality, no additional actions are needed to address human exposures.

Analytical results for TCE in sub-slab soil vapor were compared to the NYSDOH Vapor Intrusion Decision Matrix A. TCE was not detected in soil vapor at V3 but was detected at a concentration of 0.904 ug/m³ at sample location V2 and at a concentration of 0.946 ug/m³ at sample location V5. Therefore, as the concentrations detected in soil vapor were below the Matrix A soil vapor threshold of 6 ug/m³ and are not expected to affect indoor air quality, no additional actions are needed to address human exposures.

Analytical results for PCE in sub-slab soil vapor were compared to the NYSDOH Vapor Intrusion Decision Matrix B. PCE was detected in soil vapor at all three sample ports at concentrations ranging from 0.613 ug/m³ at sample location V3 to 2.49 ug/m³ at sample location V5. Therefore, as the concentrations of PCE detected in soil vapor were below the Matrix B soil vapor threshold of 100 ug/m³ and are not expected to affect indoor air quality, no additional actions are needed to address human exposures.

Several other VOCs were detected in soil vapor samples. Total VOC concentrations in the soil vapor samples ranged from 78.30 ug/m³ (V5) to 93.52 ug/m³ (V3). Benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX) were detected in soil vapor at concentrations of 32.57 ug/m³ (V5) to 49.79 ug/m³ (V3).

Based on the remediation completed to date, the source of these vapors is likely residual contamination in soil that is being addressed by operation of the SMDS.

Historical sub-slab soil vapor analytical results are shown on Table 3. Comparison of the Year 3 monitoring analytical results to results from the four sampling events completed in Year 1 generally revealed a decrease in concentrations of total VOCs and BTEX in all three sampling locations. A comparison of the Year 3 monitoring analytical results to the Year 2 sampling event results reveals that total VOCs concentrations have generally remained stable and BTEX concentrations have generally remained stable or increased by less than one order of magnitude. Chlorinated VOCs were detected at concentrations requiring no further action when compared against the Matrix A, Matrix B, and Matrix C Vapor Intrusion thresholds during all six sampling events.

Validation Overview

Data validation was completed for all sub-membrane soil vapor and ambient air results in accordance with the QAPP provided in the September 2015 SMP which included verification of sample results, verification of the identification of sample results, and recalculation of 10% of all sample results. Following data validation, a Data Usability Summary Report (DUSR) was prepared for all samples (and related QA/QC samples) collected during the monitoring event. The DUSR presents the results of the data validation, including a summary assessment of laboratory data packages, sample preservation and COC procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method. All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%. The DUSR is included in Attachment C. Associated raw data is provided as Attachment B.

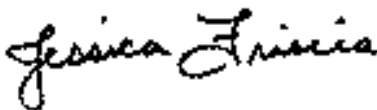
Conclusions

Based on the findings of this SMDS inspection and soil vapor monitoring event, the vacuum being produced in the SMDS is sufficient to effectively mitigate potential vapor intrusion concerns at the site. A vacuum condition was observed at each of the three sample ports (V2, V3, and V5) and the sub-membrane soil vapor concentrations for chlorinated VOCs were detected below the NYSDOH Vapor Intrusion Decision Matrix thresholds requiring further action.

Based on these findings, continued operation of the passive SMDS is sufficient in order to mitigate any potential impacts to the building interior indoor air quality and, system expansion as an active SMDS is not required at this time. The operation, maintenance, and monitoring (OM&M) protocols provided in the SMP for this passive SMDS will consist of continued monitoring of the system annually during the heating season unless otherwise required by NYSDEC.

Sincerely,

**Langan Engineering, Environmental, Surveying,
Landscape Architecture and Geology, D.P.C.**



Jessica Friscia, P.E.
Project Engineer



Steven A. Ciambuschini, P.G., L.E.P.
Principal / Vice President

JF:SAC:kn

Enclosure(s): Table 1 – SMDS Screening Results
Table 2 – Summary of Sub-Slab Soil Vapor Analytical Results
Table 3 – Historical Sub-Slab Soil Vapor Analytical Results
Figure 1 – Site Location Map
Figure 2 – Sample Location Plan
Figure 3 – Sub-Slab Soil Vapor Analytical Results
Attachment A – Field Logs
Attachment B – Laboratory Analytical Results
Attachment C – Data Usability Summary Report (DUSR)

cc: Leah Cataldo – LSG 365 Bond Street, LLC
Amanda Forsburg, Chris McMahon – Langan

TABLES

TABLE 1
FIELD SCREENING RESULTS

365 Bond Street
Brooklyn, New York

Parameter	PID	PID	PID	PID	PID	PID
Monitoring Event	Year 1, Month 1	Year 1, Month 3	Year 1, Month 6	Year 1, Month 12	Year 2	Year 3
Date	5/20/2016	7/20/2016	10/20/2016	4/20/2017	2/13/2018	2/27/2019
Units	ppb	ppb	ppb	ppb	ppb	ppb
Sample Port						
V2	329	239	373	1,058	637	70
V3	309	1,602	401	539	658	20
V5	257	0	363	717	640	10

Parameter	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
Monitoring Event	Month 1	Month 3	Month 6	Month 12	Year 2	Year 3
Date	5/20/2017	7/20/2017	10/20/2016	4/20/2017	2/13/2018	2/27/2019
Units	in. H2O	in. H2O	in. H2O	in. H2O	in. H2O	in. H2O
Sample Port						
V2	0.015	0.011	0.012	0.017	0.064	0.057
V3	0.005	0.006	0.009	0.011	0.029	0.025
V5	0.018	0.015	0.024	0.009	0.021	0.020

Notes:

ppb: parts per billion
in. H2O: inches of water

**TABLE 2
SUMMARY OF SOIL VAPOR ANALYTICAL RESULTS**

365 Bond Street
Brooklyn, New York

Sample ID		NYSDOH Decision Matrices	866/V2	867/V3	868/DUP-1	869/V5	870/Ambient-1
Lab Sample ID	CAS Number	Soil Vapor Concentration	19B1031-01	19B1031-02	19B1031-03	19B1031-04	19B1031-05
Sample Date		Threshold¹	2/27/2019	2/27/2019	2/27/2019	2/27/2019	2/27/2019
Units		ug/m ³	ug/m ³	ug/m ³	ug/m ³	ug/m ³	ug/m ³
Volatile Organic Compounds (VOCs)							
1,1-Dichloroethane	75-34-3	--	0.619 U	0.61 U	0.607 U	0.594 U	0.34 U
1,1-Dichloroethylene	75-35-4	6	0.606 U	0.597 U	0.595 U	0.582 U	0.333 U
1,1,1,2-Tetrachloroethane	630-20-6	--	1.05 U	1.03 U	1.03 U	1.01 U	0.577 U
1,1,1-Trichloroethane	71-55-6	100	0.834 U	0.822 U	0.818 U	0.8 U	0.458 U
1,1,2,2-Tetrachloroethane	79-34-5	--	1.05 U	1.03 U	1.03 U	1.01 U	0.577 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	--	1.17 U	1.15 U	1.15 U	1.12 U	0.644 U
1,1,2-Trichloroethane	79-00-5	--	0.834 U	0.822 U	0.818 U	0.8 U	0.458 U
1,2,4-Trichlorobenzene	120-82-1	--	1.13 U	1.12 U	1.11 U	1.09 U	0.623 U
1,2,4-Trimethylbenzene	95-63-6	--	6.46 D	4.44 D	4.57 D	3.53 D	0.413 U
1,2-Dibromoethane	106-93-4	--	1.17 U	1.16 U	1.15 U	1.13 U	0.645 U
1,2-Dichlorobenzene	95-50-1	--	0.919 U	0.905 U	0.902 U	0.882 U	0.505 U
1,2-Dichloroethane	107-06-2	--	0.619 U	0.609 U	0.607 U	0.594 U	0.34 U
1,2-Dichloropropane	78-87-5	--	0.707 U	0.696 U	0.693 U	0.678 U	0.388 U
1,2-Dichlorotetrafluoroethane	76-14-2	--	1.07 U	1.05 U	1.05 U	1.03 U	0.587 U
1,3,5-Trimethylbenzene	108-67-8	--	1.95 D	1.33 D	1.33 D	1.08 D	0.413 U
1,3-Butadiene	106-99-0	--	1.01 U	1 U	0.996 U	0.974 U	0.557 U
1,3-Dichlorobenzene	541-73-1	--	0.919 U	0.905 U	0.902 U	0.882 U	0.505 U
1,3-Dichloropropane	142-28-9	--	0.707 U	0.696 U	0.693 U	0.678 U	0.388 U
1,4-Dichlorobenzene	106-46-7	--	0.919 U	0.905 U	0.902 U	0.882 U	0.505 U
1,4-Dioxane	123-91-1	--	1.1 U	1.09 U	1.08 U	1.06 U	0.605 U
2-Butanone	78-93-3	--	2.34 D	1.51 D	1.68 D	2.16 D	0.743 D
2-Hexanone	591-78-6	--	4.64 U	4.01 U	4.06 U	4.39 D	2.27 D
4-Methyl-2-pentanone	108-10-1	--	2.57 D	2.9 D	2.89 D	2.88 D	0.344 U
Acetone	67-64-1	--	6.28 D	4.97 D	4.92 D	6.66 D	4.09 D
Acrylonitrile	107-13-1	--	0.332 U	0.327 U	0.326 U	0.318 U	0.182 U
Allyl Chloride (3-Chloropropene)	107-05-1	--	2.39 U	2.36 U	2.35 U	2.3 U	1.31 U
Benzene	71-43-2	--	2.78 D	7.94 D	8.29 D	2.39 D	1.05 D
Benzyl chloride	100-44-7	--	0.792 U	0.78 U	0.777 U	0.759 U	0.435 U
Bromodichloromethane	75-27-4	--	1.02 U	1.01 U	1 U	0.983 U	0.563 U
Bromoethene	593-60-2	--	0.669 U	0.659 U	0.656 U	0.642 U	0.367 U
Bromoform	75-25-2	--	1.58 UJ	1.56 UJ	1.55 UJ	1.52 UJ	0.868 UJ
Bromomethane	74-83-9	--	0.594 U	0.585 U	0.582 U	0.57 U	0.326 U
Carbon disulfide	75-15-0	--	0.476 D	0.469 U	0.467 U	0.594 D	0.262 U
Carbon tetrachloride	56-23-5	6	0.481 D	0.474 D	0.472 D	0.461 D	0.476 D
Chlorobenzene	108-90-7	--	0.704 U	0.693 U	0.691 U	0.675 U	0.387 U
Chloroethane	75-00-3	--	0.403 U	0.397 U	0.396 U	0.387 U	0.222 U
Chloroform	67-66-3	--	0.747 U	0.735 U	0.732 U	1.22 D	0.41 U
Chloromethane	74-87-3	--	3.54 D	1.31 D	1.27 D	0.757 D	1.34 D
cis-1,2-Dichloroethylene	156-59-2	6	0.606 D	0.597 U	0.595 U	1.74 D	0.333 U
cis-1,3-Dichloropropylene	10061-01-5	--	0.694 U	0.684 U	0.681 U	0.666 U	0.381 U
Cyclohexane	110-82-7	--	0.526 U	1.45 D	1.39 D	0.606 D	0.289 U
Dibromochloromethane	124-48-1	--	1.3 U	1.28 U	1.28 U	1.25 U	0.716 U
Dichlorodifluoromethane	75-71-8	--	2.12 J	2.23 J	2.45 J	2.39 D	1.74 D
Ethyl acetate	141-78-6	--	1.1 U	1.09 U	1.08 U	1.8 D	1.18 D
Ethyl Benzene	100-41-4	--	3.59 D	3.6 D	3.58 D	2.99 D	0.365 U
Hexachlorobutadiene	87-68-3	--	1.63 U	1.61 U	1.6 U	1.56 U	0.896 U
Isopropanol	67-63-0	--	1.13 D	1.04 D	1.03 D	1.3 D	0.867 D
Methyl Methacrylate	80-62-6	--	0.626 U	0.617 U	0.614 U	0.601 U	0.894 D
Methyl tert-butyl ether (MTBE)	1634-04-4	--	0.551 U	0.543 U	0.541 U	0.529 U	0.303 U
Methylene chloride	75-09-2	100	1.91 D	1.62 D	2.24 D	1.27 D	3.12 D
n-Heptane	142-82-5	--	1.32 D	3.27 D	3.44 D	1.26 D	0.379 D
n-Hexane	110-54-3	--	1.08 D	4.14 D	4.07 D	1.24 D	0.444 D
o-Xylene	95-47-6	--	5.05 D	4.45 D	4.49 D	3.69 D	0.365 D
p- & m- Xylenes	179601-23-1	--	14.3 D	13 D	13.2 D	10.4 D	1.02 D
p-Ethyltoluene	622-96-8	--	5.86 J	4.29 J	4.5 J	3.68 J	0.413 U
Propylene	115-07-1	--	0.263 U	6.87 D	7 D	0.252 U	0.145 U
Styrene	100-42-5	--	0.651 U	0.642 U	0.639 U	0.625 U	0.358 U
Tetrachloroethylene	127-18-4	100	2.18 D	0.613 D	0.61 D	2.49 D	0.741 D
Tetrahydrofuran	109-99-9	--	1.8 D	0.888 U	1.64 D	1.38 D	0.495 U
Toluene	108-88-3	--	12.4 D	20.8 D	21.5 D	13.1 D	1.77 D
trans-1,2-Dichloroethylene	156-60-5	--	0.606 U	0.597 U	0.595 U	0.582 U	0.333 U
trans-1,3-Dichloropropylene	10061-02-6	--	0.694 U	0.684 U	0.681 U	0.666 U	0.381 U
Trichloroethylene	79-01-6	6	0.904 D	0.202 U	0.202 U	0.946 D	0.135 D
Trichlorofluoromethane (Freon 11)	75-69-4	--	1.29 D	1.27 D	1.35 D	1.9 D	1.27 D
Vinyl acetate	108-05-4	--	0.538 U	0.53 U	0.528 U	0.517 U	0.296 U
Vinyl Chloride	75-01-4	6	0.391 U	0.385 U	0.383 U	0.375 U	0.215 U
Total VOCs²		--	82.42	93.52	97.91	78.30	23.89

Notes:
1: New York State Department of Health Guidance for Evaluating Soil Vapor Intrusion in the State of New York, amended May 2017
2: Total VOC concentration is calculated from results of compounds detected above the LOD (Limit of Detection).
ug/m³: microgram per cubic meter
Italicized results indicate the Reporting Limit (RL) is greater than or equal to the most stringent criteria.
Exceedances of regulatory criteria are highlighted and **bold**.
--- : No criteria identified
NA - Compound not analyzed

Q is the Qualifier Column with definitions as follows:
J: analyte detected at or above the MDL (method detection limit) but below the RL (Reporting Limit) - data is estimated
U: The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the LOQ (Limit of Quantitation)
D: result is from an analysis that required a dilution

TABLE 3
HISTORICAL SOIL VAPOR ANALYTICAL RESULTS
 365 Bond Street
 Brooklyn, New York

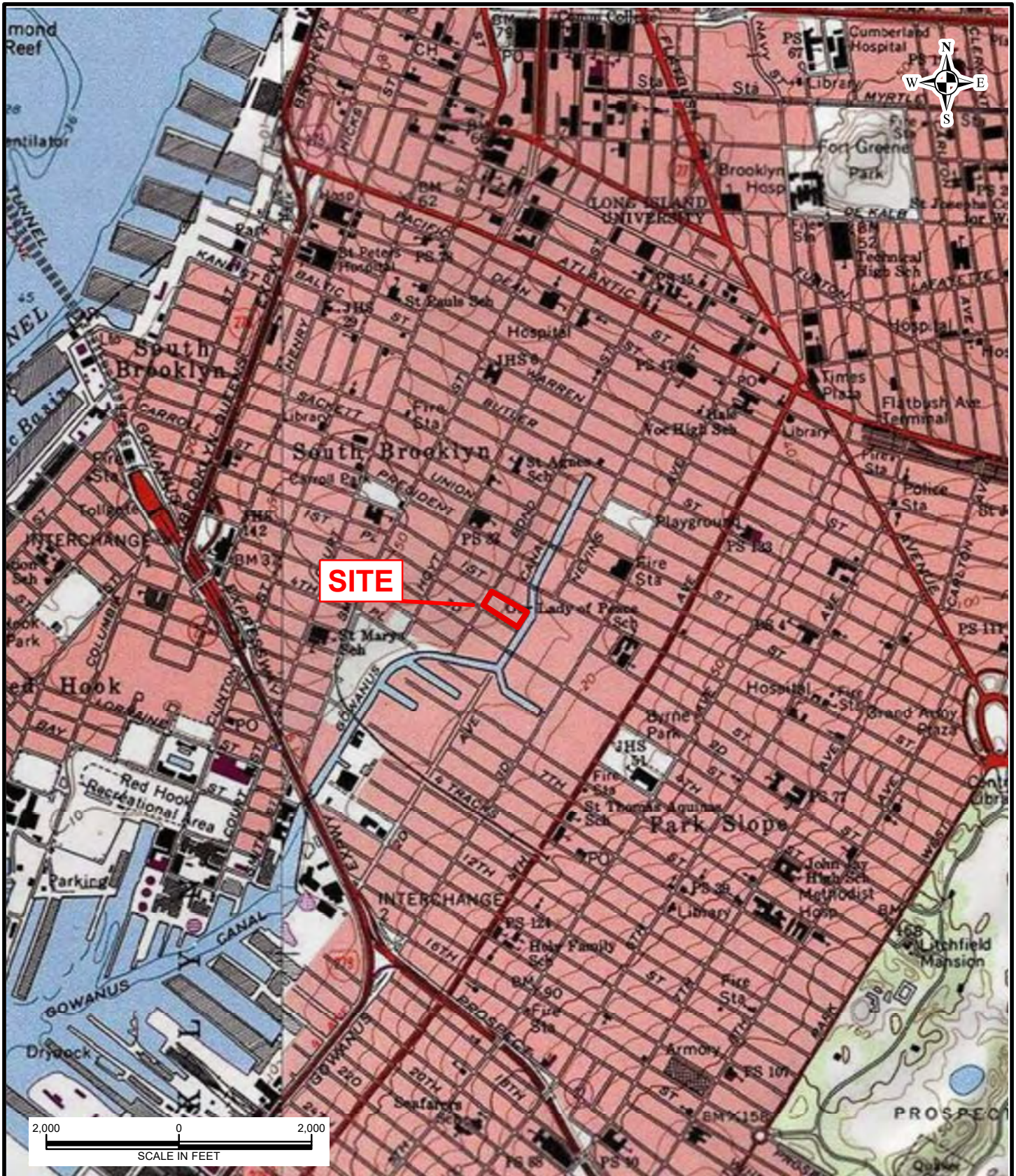
Sample ID	CAS Number	NYSDOH Decision Matrices Soil Vapor Concentration Threshold ¹ ug/m ³	0765/V5 16E0895-05 Month 1 5/20/2016 ug/m ³ Q		0781/V5 16G0744-05 Month 3 7/20/2016 ug/m ³ Q		797/V5 16J0713-05 Month 6 10/20/2016 ug/m ³ Q		819/V5 17D0833-05 Month 12 4/20/2017 ug/m ³ Q		864/V5 L1805020-05 Year 2 2/13/2018 ug/m ³ Q		869/V5 19B1031-04 Year 2 2/13/2018 ug/m ³ Q	
Lab Sample ID Monitoring Event Sample Date Units			Volatile Organic Compounds (VOCs)	0765/V5 16E0895-05 Month 1 5/20/2016 ug/m ³ Q	0781/V5 16G0744-05 Month 3 7/20/2016 ug/m ³ Q	797/V5 16J0713-05 Month 6 10/20/2016 ug/m ³ Q	819/V5 17D0833-05 Month 12 4/20/2017 ug/m ³ Q	864/V5 L1805020-05 Year 2 2/13/2018 ug/m ³ Q	869/V5 19B1031-04 Year 2 2/13/2018 ug/m ³ Q					
1,1-Dichloroethane	75-34-3	—	0.78 U	0.45 U	0.54 U	6.8 U	0.809 U	0.594 U						
1,1-Dichloroethylene	75-35-4	6	0.76 U	0.44 U	0.4 U	6.7 U	0.793 U	0.582 U						
1,1,1,2-Tetrachloroethane	630-20-6	—	1.3 U	0.76 U	0.69 U	12 U	NA	1.01 U						
1,1,1-Trichloroethane	71-55-6	100	1 U	0.61 U	0.55 U	9.2 U	1.09 U	0.8 U						
1,1,2-Tetrachloroethane	79-34-5	—	1.3 U	0.76 U	0.69 U	12 U	1.37 U	1.01 U						
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	—	1.5 U	0.85 U	0.77 U	13 U	1.53 U	1.12 U						
1,1,2-Trichloroethane	79-00-5	—	1 U	0.61 U	0.55 U	9.2 U	1.09 U	0.8 U						
1,2,4-Trichlorobenzene	120-82-1	—	1.4 U	0.82 U	0.74 U	12 U	1.48 U	1.09 U						
1,2,4-Trimethylbenzene	95-63-6	—	1.9 D	5.4 D	0.69 U	8.3 U	0.983 U	3.53 D						
1,2-Dibromoethane	106-93-4	—	1.5 U	0.85 U	0.77 U	13 U	1.54 U	1.13 U						
1,2-Dichlorobenzene	95-50-1	—	1.2 U	0.67 U	0.6 U	10 U	1.2 U	0.882 U						
1,2-Dichloroethane	107-06-2	—	0.78 U	0.45 U	0.4 U	6.8 U	0.809 U	0.594 U						
1,2-Dichloropropane	78-87-5	—	0.89 U	0.51 U	0.46 U	7.8 U	0.924 U	0.678 U						
1,2-Dichlorotetrafluoroethane	76-14-2	—	1.3 U	0.78 U	0.7 U	12 U	1.4 U	1.03 U						
1,3,5-Trimethylbenzene	108-67-8	—	0.94 U	0.55 U	0.49 U	8.3 U	0.983 U	1.08 D						
1,3-Butadiene	106-99-0	—	NA	NA	NA	NA	0.442 U	0.974 U						
1,3-Dichlorobenzene	541-73-1	—	1.2 U	0.67 U	0.6 U	10 U	1.2 U	0.882 U						
1,3-Dichloropropane	142-28-9	—	0.89 U	0.51 U	0.46 U	7.8 U	NA	0.678 U						
1,4-Dichlorobenzene	106-46-7	—	1.2 U	0.67 U	0.6 U	10 U	1.2 U	0.882 U						
1,4-Dioxane	123-91-1	—	1.4 U	0.8 U	0.72 U	12 U	0.721 U	1.06 U						
2-Butanone	78-93-3	—	15 D	7.6 D	0.35 U	280 D	4.07 U	2.16 D						
2-Hexanone	591-78-6	—	1.6 U	1.1 D	0.82 U	14 U	0.82 U	4.39 D						
4-Methyl-2-pentanone	108-10-1	—	0.78 U	0.46 U	0.41 U	6.9 U	2.05 U	2.88 D						
Acetone	67-64-1	—	73 D	41 D	1.8 U	350 D	25.2 U	6.66 D						
Acrylonitrile	107-13-1	—	0.42 U	0.24 U	0.22 U	3.6 U	NA	0.318 U						
Allyl Chloride (3-Chloropropene)	107-05-1	—	3 U	1.7 U	1.6 U	26 U	0.626 U	2.3 U						
Benzene	71-43-2	—	1.5 D	1.5 D	2.3 U	5.4 U	1.47 U	2.39 D						
Benzyl chloride	100-44-7	—	0.99 U	0.58 U	0.52 U	8.7 U	1.04 U	0.769 U						
Bromodichloromethane	75-27-4	—	1.3 U	0.74 U	0.67 U	11 U	1.34 U	0.983 U						
Bromoethene	593-60-2	—	0.84 U	0.49 U	0.44 U	7.3 U	0.874 U	0.642 U						
Bromoform	75-25-2	—	2 U	1.1 U	1 U	17 U	2.07 U	1.52 U						
Bromomethane	74-83-9	—	0.74 U	0.43 U	0.39 U	6.5 U	0.777 U	0.57 U						
Carbon disulfide	75-15-0	—	0.6 U	0.35 D	0.31 U	5.2 U	0.623 U	0.594 D						
Carbon tetrachloride	56-23-5	6	0.3 U	0.17 U	0.16 U	2.6 U	1.26 U	0.461 D						
Chlorobenzene	108-90-7	—	0.88 U	0.51 U	0.46 U	7.7 U	0.921 U	0.675 U						
Chloroethane	75-00-3	—	0.51 U	0.29 U	0.26 U	4.4 U	0.528 U	0.387 U						
Chloroform	67-66-3	—	2 D	2.3 D	0.49 U	8.2 U	1.15 U	1.22 D						
Chloromethane	74-87-3	—	2.3 D	5 D	0.21 U	3.5 U	3.76 U	0.757 D						
cis-1,2-Dichloroethylene	156-59-2	6	1.7 D	0.57 D	0.4 U	6.7 U	2.12 U	1.74 D						
cis-1,3-Dichloropropylene	10061-01-5	—	0.87 U	0.5 U	0.45 U	7.6 U	0.908 U	0.666 U						
Cyclohexane	110-82-7	—	1.1 D	0.61 D	0.34 U	5.8 U	0.688 U	0.606 D						
Dibromochloromethane	124-48-1	—	1.6 U	0.95 U	0.85 U	14 U	1.7 U	1.25 U						
Dichlorodifluoromethane	75-71-8	—	3.3 D	1.3 D	0.49 U	8.3 U	2.15 U	2.39 D						
Ethyl acetate	141-78-6	—	1.4 U	0.8 U	0.72 U	12 U	1.8 U	1.8 D						
Ethyl Benzene	100-41-4	—	3.4 D	3.9 D	1.2 U	7.3 U	0.869 U	2.99 D						
Hexachlorobutadiene	87-68-3	—	2 U	1.2 U	1.1 U	18 U	2.13 U	1.56 U						
Isopropanol	67-63-0	—	0.94 U	0.64 D	0.49 U	49 D	6.44 U	1.3 D						
Methyl Methacrylate	80-62-6	—	0.78 U	0.45 U	0.41 U	6.9 U	NA	0.601 U						
Methyl tert-butyl ether (MTBE)	1634-04-4	—	0.69 U	0.4 U	0.36 U	6.1 U	0.721 U	0.529 U						
Methylene chloride	75-09-2	100	3.9 D	0.77 U	0.69 U	12 U	1.74 U	1.27 D						
n-Heptane	142-82-5	—	1.9 D	1.6 D	0.57 U	6.9 U	0.82 U	1.26 D						
n-Hexane	110-54-3	—	18 D	2.6 D	0.7 U	5.9 U	1.02 U	1.24 D						
o-Xylene	95-47-6	—	4.7 D	0.48 U	1.3 U	7.3 U	0.869 U	3.69 D						
p- & m- Xylenes	179601-23-1	—	14 D	14 D	4.1 U	15 U	2.71 U	10.4 D						
p-Ethyltoluene	622-96-8	—	1.3 D	2.1 D	0.88 U	8.3 U	0.983 U	3.68 J						
Propylene	115-07-1	—	9.4 D	3.3 D	3.4 U	7.8 D	NA	0.252 U						
Styrene	100-42-5	—	0.82 U	0.47 U	0.43 U	7.2 U	0.852 U	0.625 U						
Tetrachloroethylene	127-18-4	100	3 D	1.7 D	0.17 U	8 D	2.55 U	2.49 D						
Tetrahydrofuran	109-99-9	—	38 D	13 D	0.59 U	120 D	2.87 U	1.38 D						
Toluene	108-88-3	—	10 D	19 D	7.2 U	16 D	10.3 U	13.1 D						
trans-1,2-Dichloroethylene	156-60-5	—	0.76 U	0.57 D	0.4 U	6.7 U	0.793 U	0.582 U						
trans-1,3-Dichloropropylene	10061-02-6	—	0.87 U	0.5 U	0.45 U	7.6 U	0.908 U	0.666 U						
Trichloroethylene	79-01-6	6	0.26 U	1.5 D	0.13 U	2.3 U	1.07 U	0.946 D						
Trichlorofluoromethane (Freon 11)	75-69-4	—	9.7 D	5.5 D	0.56 U	9.4 U	2.21 U	1.9 D						
Vinyl acetate	108-05-4	—	0.67 U	0.39 U	0.35 U	5.9 U	NA	0.517 U						
Vinyl Chloride	75-01-4	6	0.49 U	0.28 U	0.26 U	4.3 U	0.511 U	0.375 U						
Tert-Butyl Alcohol	75-65-0	—	NA	NA	NA	NA	1.52 U	NA						
Total VOCs ²	—	—	219.1	141.9	24.49	747.9	92.37	78.30						

Notes:

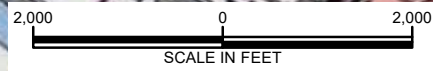
1: New York State Department of Health Guidance for Evaluating Soil Vapor Intrusion in the State of New York, amended May 2017
 2. Total VOC concentration is calculated from results of compounds detected above the LOD (Limit of Detection) or Method Detection Limit (MDL).
 ug/m³: microgram per cubic meter
 Exceedances of regulatory criteria are highlighted and **bold**.
 — : No criteria identified
 NA - Compound not analyzed

Q is the Qualifier Column with definitions as follows:
 J: analyte detected at or above the MDL (method detection limit) but below the RL (Reporting Limit) - data
 U: The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the LOQ

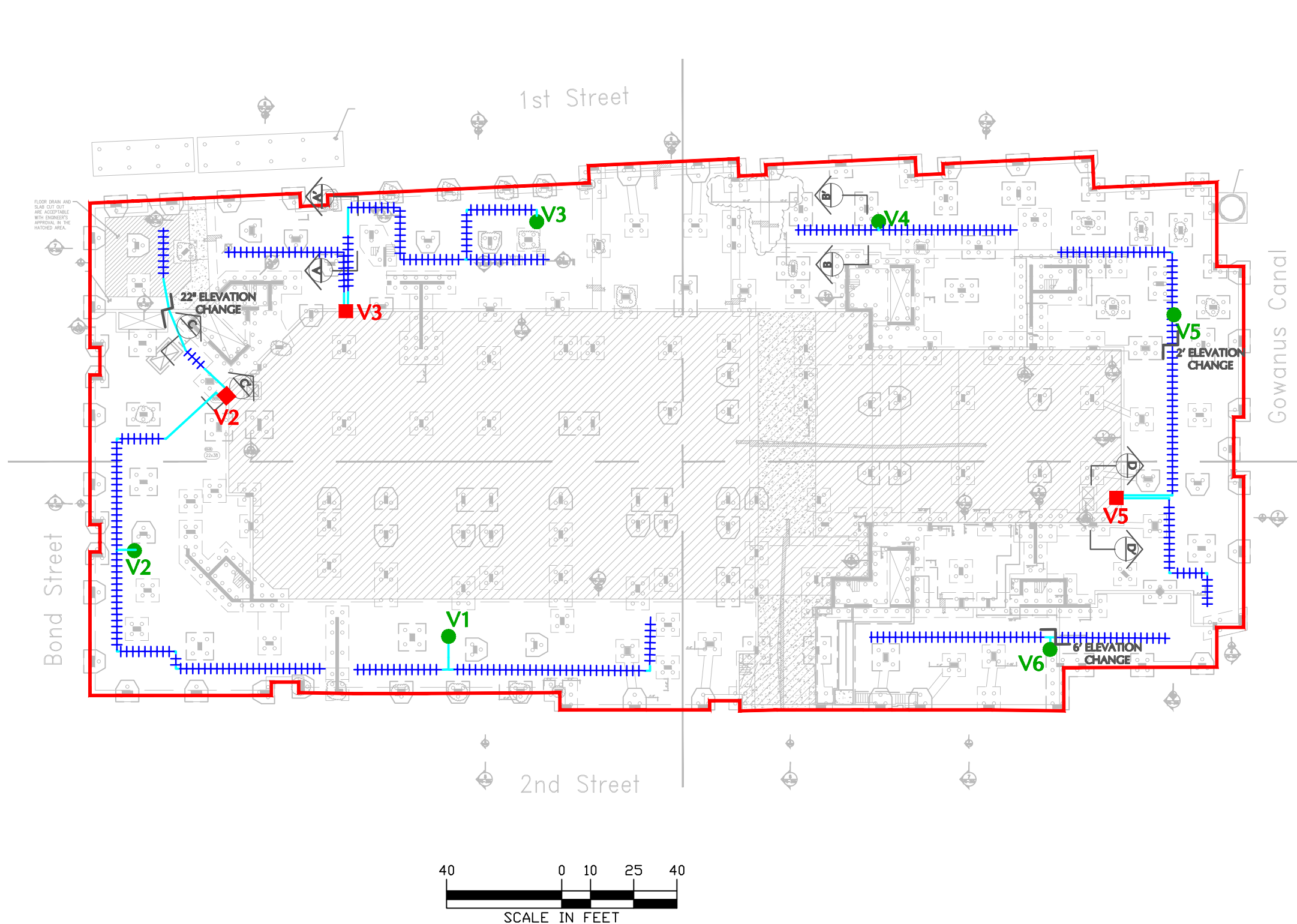
FIGURES



SITE



<p>LANGAN 300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com</p> <p>Langan Engineering & Environmental Services, Inc. Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. Langan International LLC Collectively known as Langan</p> <p>NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400</p>	<p>Project</p> <p>365 BOND STREET DEVELOPMENT</p> <p>BLOCK No. 458, LOT No. 1</p> <p>BROOKLYN</p> <p>KINGS COUNTY NEW YORK</p>	<p>Drawing Title</p> <p>SITE LOCATION MAP</p>	<p>Project No.</p> <p>100287503</p> <p>Date</p> <p>3/20/2019</p> <p>Scale</p> <p>1"=2000'</p> <p>Drawn By</p> <p>amf</p> <p>Last Revised</p> <p>3/26/2019</p>	<p>Figure</p> <p>1</p>
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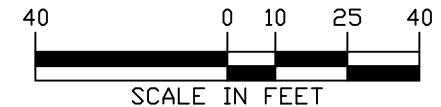


LEGEND:

- BUILDING EXTERIOR
- SUBGRADE PARKING AREA
- INSTALLED BELOW GRADE HORIZONTAL WELL SMDS SCREEN (4" SCHEDULE 80 PVC, 10-SLOT)
- INSTALLED BELOW GRADE PVC PIPE (4" SCHEDULE 80 PVC)
- V3 INSTALLED VENT PIPE WITH "T" FITTING AND ISOLATION BALL VALVE (OVERHEAD VERTICAL MANIFOLD, 4" CAST IRON PIPE)
- INSTALLED VALVE BOX WITH ISOLATION VALVE AND SAMPLE PORTS

NOTES:

1. ALL VERTICAL VENT PIPING IS CONSTRUCTED FROM CAST IRON AND ALL BELOW GRADE PIPING IS CONSTRUCTED FROM SCHEDULE 80 PVC.
2. THE INSTALLED SMDS WELL SCREENS AND MANIFOLD ARE DESIGNED TO BE OPERATED AS A "PASSIVE" VAPOR MITIGATION SYSTEM AND POTENTIALLY CAN BE CONVERTED TO AN "ACTIVE" VAPOR MITIGATION SYSTEM WITH THE ADDITION OF FANS/BLOWERS.
3. FOUNDATION ELEMENTS PRESENTED HEREIN ARE BASED ON 100% FOUNDATION (1ST FLOOR/GARAGE) OVERALL PLAN F0-100 DATED MARCH 28, 2014.
4. SIGNED AND SEALED AS-BUILT DRAWINGS WERE SUBMITTED IN THE SEPTEMBER 2015 SMP, CCR, AND FER.









<p>LANGAN 300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A. Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. Langan Engineering and Environmental Services, Inc. Langan CT, Inc. Langan International LLC Collectively known as Langan</p>	<p>Project 365 BOND STREET DEVELOPMENT 365 BOND STREET</p>	<p>Drawing Title SAMPLE LOCATION PLAN</p>	<p>Project No. 100287501</p>	<p>Drawing No. 2</p>
	<p>BROOKLYN NEW YORK</p>		<p>Date MARCH 20, 2019 Scale AS SHOWN Drawn By JR Submission Date MARCH 20, 2019</p>	

Sample ID	867/V3	868/DUP-1
Lab Sample ID	19B1031-02	19B1031-03
Sample Date	2/27/2019	2/27/2019
Units	ug/m3 Q	ug/m3 Q
Volatile Organic Compounds (VOCs)		
1,1-Dichloroethylene	0.597 U	0.595 U
1,1,1-Trichloroethane	0.822 U	0.818 U
Carbon tetrachloride	0.474 D	0.472 D
cis-1,2-Dichloroethylene	0.597 U	0.595 U
Methylene chloride	1.62 D	2.24 D
Tetrachloroethylene	0.613 D	0.61 D
Trichloroethylene	0.202 U	0.202 U
Vinyl Chloride	0.385 U	0.383 U
Total BTEX ²	49.79	51.06

Sample ID	866/V2
Lab Sample ID	19B1031-01
Sample Date	2/27/2019
Units	ug/m3 Q
Volatile Organic Compounds (VOCs)	
1,1-Dichloroethylene	0.606 U
1,1,1-Trichloroethane	0.834 U
Carbon tetrachloride	0.481 D
cis-1,2-Dichloroethylene	0.606 D
Methylene chloride	1.91 D
Tetrachloroethylene	2.18 D
Trichloroethylene	0.904 D
Vinyl Chloride	0.391 U
Total BTEX ²	38.12

Sample ID	869/V5
Lab Sample ID	19B1031-04
Sample Date	2/27/2019
Units	ug/m3 Q
Volatile Organic Compounds (VOCs)	
1,1-Dichloroethylene	0.582 U
1,1,1-Trichloroethane	0.8 U
Carbon tetrachloride	0.461 D
cis-1,2-Dichloroethylene	1.74 D
Methylene chloride	1.27 D
Tetrachloroethylene	2.49 D
Trichloroethylene	0.946 D
Vinyl Chloride	0.375 U
Total BTEX ²	32.57

LEGEND:

-  BUILDING EXTERIOR
-  SUBGRADE PARKING AREA
-  INSTALLED BELOW GRADE HORIZONTAL WELL SMDS SCREEN (4" SCHEDULE 80 PVC, 10-SLOT)
-  INSTALLED BELOW GRADE PVC PIPE (4" SCHEDULE 80 PVC)
-  V3 INSTALLED VENT PIPE WITH "T" FITTING AND ISOLATION BALL VALVE (OVERHEAD VERTICAL MANIFOLD, 4" CAST IRON PIPE)
-  INSTALLED VALVE BOX WITH ISOLATION VALVE AND SAMPLE PORTS

NOTES:

1. ALL VERTICAL VENT PIPING IS CONSTRUCTED FROM CAST IRON AND ALL BELOW GRADE PIPING IS CONSTRUCTED FROM SCHEDULE 80 PVC.
2. THE INSTALLED SMDS WELL SCREENS AND MANIFOLD ARE DESIGNED TO BE OPERATED AS A "PASSIVE" VAPOR MITIGATION SYSTEM AND POTENTIALLY CAN BE CONVERTED TO AN "ACTIVE" VAPOR MITIGATION SYSTEM WITH THE ADDITION OF FANS/BLOWERS.
3. FOUNDATION ELEMENTS PRESENTED HEREIN ARE BASED ON 100% FOUNDATION (1ST FLOOR/GARAGE) OVERALL PLAN F0-100 DATED MARCH 28, 2014.
4. SIGNED AND SEALED AS-BUILT DRAWINGS WERE SUBMITTED IN THE SEPTEMBER 2015 SMP, CCR, AND FER.

Notes:
 1: New York State Department of Health Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006, amended May 2017.
 2: Total BTEX concentration is the calculation from BTEX results above the LOD (Limit of Detection).

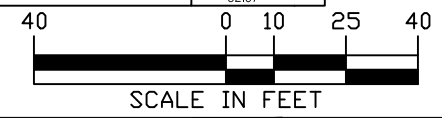
Soil Vapor Screening Criteria	NYSDOH Decision Matrices Soil Vapor Concentration Threshold ¹
	ug/m3
Volatile Organic Compounds (VOCs)	
1,1-Dichloroethylene	6
1,1,1-Trichloroethane	100
Carbon tetrachloride	6
cis-1,2-Dichloroethylene	6
Methylene chloride	100
Tetrachloroethylene	100
Trichloroethylene	6
Vinyl Chloride	6
Total BTEX ²	—

LANGAN
 300 Kimball Drive
 Parsippany, NJ 07054
 T: 973.560.4900 F: 973.560.4901 www.langan.com
 Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A.
 Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
 Langan Engineering and Environmental Services, Inc.
 Langan CT, Inc.
 Langan International LLC
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Project
365 BOND STREET DEVELOPMENT
 365 BOND STREET
 BROOKLYN NEW YORK

Drawing Title
SUMMARY OF SUB-SLAB SOIL VAPOR ANALYTICAL RESULTS

Project No.	100287501	Drawing No. 3
Date	MARCH 22, 2019	
Scale	AS SHOWN	
Drawn By	JR	
Last Revised	MARCH 22, 2019	



ATTACHMENT A

Field Logs

PASSIVE SUB-SLAB DEPRESSURIZATION SYSTEM INSPECTION CHECKLIST

Site Name: 365 Bond Street Location: Brooklyn, NY Project Number: 100287501

Inspector Name: A. Kritzer Date: 2/27/2019 Weather Conditions: Cloudy, 30°F

Reason for inspection (i.e., routine, severe condition, etc.): Annual Inspection | PRR

When was the last rain event? 2/24/2019

Current Temperature: 30°F

Current Barometric Pressure: 29.6 in

Valve Manifolds		
Location	PID (ppm)	Vacuum (in. H ₂ O)
V2	70 ppb	0.057
V3	20 ppb	0.025
V5	10 ppb	0.020

Comments

V5 does not have enclosure
V2 & V3 locked upon departure

Riser Pipes Exhaust		
Location	PID (ppm)	Air Flow (CFM)
V1	60 ppb	1.76
V2	50 ppb	2.16
V3	0 ppb	1.23
V4	0 ppb	2.39
V5	0 ppb	2.49
V6	20 ppb	2.23

Comments

Inspection Comments

No changes have been made since 2/2018 annual inspection

Emergency Contact Information		
Name	Title	Phone Number
Bruce Barron	Building Management	718-705-8413
Steven Cambuscini	Langan Qualified Environmental Professional	973-560-4900 (office) 973-560-4982 (direct)
Christopher McMahon	Langan Project Manager	973-560-4900 (office) 973-560-4861 (direct)
Leah Cataldo	Lighstone Representative	212-616-9969 (direct)
John Grathwol	NYSDEC Case Manager	518-402-9767 (office)

SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site: 365 Bond Street, Brooklyn, New York

Samplers: A. Kritzer

Date: 2/27/2019

Sample #	866	867	869	868	870		
Location	V2	V3	V5	DUP-1	Ambient-1		
Summa Canister ID	18301	28317	28801	17352	28852		
Flow Controller ID	Y47	Y23	7416	3350	Y24		
PfD Test of SSDS Air	70 ppb	20 ppb	10 ppb	20 ppb	0 ppb		
Pressure Gauge - before sampling	30.73	29.66	29.84	29.9	30.57		
Sample Time (Start)	0946	0940	0900	0940	0806		
Sample Time (Stop)	1211	1144	1130	1200	1516		
Total Sample Time (min)	145	124	150	140	430		
Pressure Gauge - after sampling	4.81	3.82	3.45	3.97	7.33		
Sample Volume	6L	6L	6L	6L	6L		
Canister Pressure Went to Ambient Pressure?	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO
Associated Ambient Air Sample Number	Ambient-1	Ambient-1	Ambient-1	Ambient-1	N/A	N/A	N/A
Weather 24 hours before and during sampling	2/26/2019: Sunny, 41°F		2/27/2019: Mostly cloudy, 30°F				
General Comments	Background ambient air = 0 ppm DUP-1 parent sample is V3						

ATTACHMENT B

Laboratory Analytical Report

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Technical Report

prepared for:

Langan Engineering & Environmental Services (NJ)

300 Kimball Drive

Parsipanny NJ, 07054

Attention: Jessica Friscia

Report Date: 03/12/2019

Client Project ID: 100287503

York Project (SDG) No.: 19B1031

CT Cert. No. PH-0723

New Jersey Cert. No. CT005 and NY037



New York Cert. Nos. 10854 and 12058

PA Cert. No. 68-04440

120 RESEARCH DRIVE
www.YORKLAB.com

STRATFORD, CT 06615
(203) 325-1371

132-02 89th AVENUE
FAX (203) 357-0166

RICHMOND HILL, NY 11418
ClientServices@yorklab.com

Report Date: 03/12/2019
Client Project ID: 100287503
York Project (SDG) No.: 19B1031

Langan Engineering & Environmental Services (NJ)
300 Kimball Drive
Parsipanny NJ, 07054
Attention: Jessica Friscia

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on February 28, 2019 and listed below. The project was identified as your project: **100287503**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

<u>York Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
19B1031-01	866/V2	Soil Vapor	02/27/2019	02/28/2019
19B1031-02	867/V3	Soil Vapor	02/27/2019	02/28/2019
19B1031-03	868/DUP-1	Soil Vapor	02/27/2019	02/28/2019
19B1031-04	869/V5	Soil Vapor	02/27/2019	02/28/2019
19B1031-05	870/Ambient-1	Outdoor Ambient Air	02/27/2019	02/28/2019

General Notes for York Project (SDG) No.: 19B1031

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By:



Benjamin Gulizia
Laboratory Director

Date: 03/12/2019





Sample Information

Client Sample ID: 866/V2

York Sample ID: 19B1031-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:46 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	1.05	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
71-55-6	1,1,1-Trichloroethane	ND		ug/m ³	0.834	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	1.05	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m ³	1.17	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	0.834	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.619	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.606	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	1.13	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
95-63-6	1,2,4-Trimethylbenzene	6.46		ug/m ³	0.752	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
106-93-4	1,2-Dibromoethane	ND		ug/m ³	1.17	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	0.919	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.619	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.707	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	1.07	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
108-67-8	1,3,5-Trimethylbenzene	1.95		ug/m ³	0.752	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
106-99-0	1,3-Butadiene	ND		ug/m ³	1.01	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	0.919	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.707	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	0.919	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
123-91-1	1,4-Dioxane	ND		ug/m ³	1.10	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
78-93-3	2-Butanone	2.34		ug/m ³	0.451	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
591-78-6	* 2-Hexanone	4.64	B	ug/m ³	1.88	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
107-05-1	3-Chloropropene	ND		ug/m ³	2.39	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS



Sample Information

Client Sample ID: 866/V2

York Sample ID: 19B1031-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:46 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-10-1	4-Methyl-2-pentanone	2.57		ug/m ³	0.626	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
67-64-1	Acetone	6.28		ug/m ³	0.726	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
107-13-1	Acrylonitrile	ND		ug/m ³	0.332	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
71-43-2	Benzene	2.78		ug/m ³	0.488	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
100-44-7	Benzyl chloride	ND		ug/m ³	0.792	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
75-27-4	Bromodichloromethane	ND		ug/m ³	1.02	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
75-25-2	Bromoform	ND		ug/m ³	1.58	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
74-83-9	Bromomethane	ND		ug/m ³	0.594	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
75-15-0	Carbon disulfide	0.476		ug/m ³	0.476	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
56-23-5	Carbon tetrachloride	0.481		ug/m ³	0.240	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
108-90-7	Chlorobenzene	ND		ug/m ³	0.704	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
75-00-3	Chloroethane	ND		ug/m ³	0.403	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
67-66-3	Chloroform	ND		ug/m ³	0.747	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
74-87-3	Chloromethane	3.54		ug/m ³	0.316	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
156-59-2	cis-1,2-Dichloroethylene	0.606		ug/m ³	0.606	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m ³	0.694	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
110-82-7	Cyclohexane	ND		ug/m ³	0.526	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
124-48-1	Dibromochloromethane	ND		ug/m ³	1.30	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
75-71-8	Dichlorodifluoromethane	2.12		ug/m ³	0.756	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
141-78-6	* Ethyl acetate	ND		ug/m ³	1.10	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
100-41-4	Ethyl Benzene	3.59		ug/m ³	0.664	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
87-68-3	Hexachlorobutadiene	ND		ug/m ³	1.63	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
67-63-0	Isopropanol	1.13		ug/m ³	0.752	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
80-62-6	Methyl Methacrylate	ND		ug/m ³	0.626	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS



Sample Information

Client Sample ID: 866/V2

York Sample ID: 19B1031-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:46 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m ³	0.551	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
75-09-2	Methylene chloride	1.91		ug/m ³	1.06	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
142-82-5	n-Heptane	1.32		ug/m ³	0.627	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
110-54-3	n-Hexane	1.08		ug/m ³	0.539	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
95-47-6	o-Xylene	5.05		ug/m ³	0.664	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
179601-23-1	p- & m- Xylenes	14.3		ug/m ³	1.33	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
622-96-8	* p-Ethyltoluene	5.86	TO-LC S-H	ug/m ³	0.752	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
115-07-1	* Propylene	ND		ug/m ³	0.263	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
100-42-5	Styrene	ND		ug/m ³	0.651	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
127-18-4	Tetrachloroethylene	2.18		ug/m ³	0.259	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
109-99-9	* Tetrahydrofuran	1.80		ug/m ³	0.902	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
108-88-3	Toluene	12.4		ug/m ³	0.576	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m ³	0.606	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m ³	0.694	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
79-01-6	Trichloroethylene	0.904		ug/m ³	0.205	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
75-69-4	Trichlorofluoromethane (Freon 11)	1.29		ug/m ³	0.859	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
108-05-4	Vinyl acetate	ND		ug/m ³	0.538	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
593-60-2	Vinyl bromide	ND		ug/m ³	0.669	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
75-01-4	Vinyl Chloride	ND		ug/m ³	0.391	1.529	EPA TO-15	03/05/2019 08:00	03/05/2019 18:38	AS
	Surrogate Recoveries	Result		Acceptance Range						
460-00-4	Surrogate: SURRE: p-Bromofluorobenzene	90.9 %		72-118						



Sample Information

Client Sample ID: 867/V3

York Sample ID: 19B1031-02

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:40 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	1.03	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
71-55-6	1,1,1-Trichloroethane	ND		ug/m ³	0.822	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	1.03	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m ³	1.15	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	0.822	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.610	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.597	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	1.12	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
95-63-6	1,2,4-Trimethylbenzene	4.44		ug/m ³	0.740	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
106-93-4	1,2-Dibromoethane	ND		ug/m ³	1.16	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	0.905	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.609	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.696	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	1.05	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
108-67-8	1,3,5-Trimethylbenzene	1.33		ug/m ³	0.740	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
106-99-0	1,3-Butadiene	ND		ug/m ³	1.00	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	0.905	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.696	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	0.905	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
123-91-1	1,4-Dioxane	ND		ug/m ³	1.09	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
78-93-3	2-Butanone	1.51		ug/m ³	0.444	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
591-78-6	* 2-Hexanone	4.01	B	ug/m ³	1.85	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
107-05-1	3-Chloropropene	ND		ug/m ³	2.36	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
108-10-1	4-Methyl-2-pentanone	2.90		ug/m ³	0.617	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS



Sample Information

Client Sample ID: 867/V3

York Sample ID: 19B1031-02

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:40 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

Table with columns: CAS No., Parameter, Result, Flag, Units, Reported to LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Rows include Acetone, Acrylonitrile, Benzene, Benzyl chloride, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropylene, Cyclohexane, Dibromochloromethane, Dichlorodifluoromethane, Ethyl acetate, Ethyl Benzene, Hexachlorobutadiene, Isopropanol, Methyl Methacrylate, Methyl tert-butyl ether (MTBE).



Sample Information

Client Sample ID: 867/V3

York Sample ID: 19B1031-02

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:40 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-09-2	Methylene chloride	1.62		ug/m ³	1.05	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
142-82-5	n-Heptane	3.27		ug/m ³	0.617	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
110-54-3	n-Hexane	4.14		ug/m ³	0.531	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
95-47-6	o-Xylene	4.45		ug/m ³	0.654	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
179601-23-1	p- & m- Xylenes	13.0		ug/m ³	1.31	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
622-96-8	* p-Ethyltoluene	4.29	TO-LC S-H	ug/m ³	0.740	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
115-07-1	* Propylene	6.87		ug/m ³	0.259	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
100-42-5	Styrene	ND		ug/m ³	0.642	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
127-18-4	Tetrachloroethylene	0.613		ug/m ³	0.255	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
109-99-9	* Tetrahydrofuran	ND		ug/m ³	0.888	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
108-88-3	Toluene	20.8		ug/m ³	0.568	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m ³	0.597	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m ³	0.684	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
79-01-6	Trichloroethylene	ND		ug/m ³	0.202	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
75-69-4	Trichlorofluoromethane (Freon 11)	1.27		ug/m ³	0.846	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
108-05-4	Vinyl acetate	ND		ug/m ³	0.530	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
593-60-2	Vinyl bromide	ND		ug/m ³	0.659	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
75-01-4	Vinyl Chloride	ND		ug/m ³	0.385	1.506	EPA TO-15	03/05/2019 08:00	03/05/2019 19:43	AS
	Surrogate Recoveries	Result	Acceptance Range							
460-00-4	Surrogate: SURR: p-Bromofluorobenzene	89.3 %	72-118							

Sample Information

Client Sample ID: 868/DUP-1

York Sample ID: 19B1031-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:40 am

02/28/2019



Sample Information

Client Sample ID: 868/DUP-1

York Sample ID: 19B1031-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:40 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOO	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	1.03	1.5	EPA TO-15 Certifications:	03/05/2019 08:00	03/05/2019 20:48	AS
71-55-6	1,1,1-Trichloroethane	ND		ug/m ³	0.818	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	1.03	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m ³	1.15	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	0.818	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.607	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.595	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	1.11	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
95-63-6	1,2,4-Trimethylbenzene	4.57		ug/m ³	0.737	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
106-93-4	1,2-Dibromoethane	ND		ug/m ³	1.15	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	0.902	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.607	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.693	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	1.05	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
108-67-8	1,3,5-Trimethylbenzene	1.33		ug/m ³	0.737	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
106-99-0	1,3-Butadiene	ND		ug/m ³	0.996	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	0.902	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.693	1.5	EPA TO-15 Certifications:	03/05/2019 08:00	03/05/2019 20:48	AS
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	0.902	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
123-91-1	1,4-Dioxane	ND		ug/m ³	1.08	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
78-93-3	2-Butanone	1.68		ug/m ³	0.442	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
591-78-6	* 2-Hexanone	4.06	B	ug/m ³	1.84	1.5	EPA TO-15 Certifications:	03/05/2019 08:00	03/05/2019 20:48	AS
107-05-1	3-Chloropropene	ND		ug/m ³	2.35	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS
108-10-1	4-Methyl-2-pentanone	2.89		ug/m ³	0.614	1.5	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/05/2019 08:00	03/05/2019 20:48	AS



Sample Information

Client Sample ID: 868/DUP-1

York Sample ID: 19B1031-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:40 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-64-1	Acetone	4.92		ug/m ³	0.713	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
107-13-1	Acrylonitrile	ND		ug/m ³	0.326	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
71-43-2	Benzene	8.29		ug/m ³	0.479	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
100-44-7	Benzyl chloride	ND		ug/m ³	0.777	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-27-4	Bromodichloromethane	ND		ug/m ³	1.00	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-25-2	Bromoform	ND		ug/m ³	1.55	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
74-83-9	Bromomethane	ND		ug/m ³	0.582	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-15-0	Carbon disulfide	ND		ug/m ³	0.467	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
56-23-5	Carbon tetrachloride	0.472		ug/m ³	0.236	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
108-90-7	Chlorobenzene	ND		ug/m ³	0.691	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-00-3	Chloroethane	ND		ug/m ³	0.396	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
67-66-3	Chloroform	ND		ug/m ³	0.732	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
74-87-3	Chloromethane	1.27		ug/m ³	0.310	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m ³	0.595	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m ³	0.681	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
110-82-7	Cyclohexane	1.39		ug/m ³	0.516	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
124-48-1	Dibromochloromethane	ND		ug/m ³	1.28	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-71-8	Dichlorodifluoromethane	2.45		ug/m ³	0.742	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
141-78-6	* Ethyl acetate	ND		ug/m ³	1.08	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications:			
100-41-4	Ethyl Benzene	3.58		ug/m ³	0.651	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
87-68-3	Hexachlorobutadiene	ND		ug/m ³	1.60	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
67-63-0	Isopropanol	1.03		ug/m ³	0.737	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
80-62-6	Methyl Methacrylate	ND		ug/m ³	0.614	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m ³	0.541	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			



Sample Information

Client Sample ID: 868/DUP-1

York Sample ID: 19B1031-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:40 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-09-2	Methylene chloride	2.24		ug/m ³	1.04	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
142-82-5	n-Heptane	3.44		ug/m ³	0.615	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
110-54-3	n-Hexane	4.07		ug/m ³	0.529	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
95-47-6	o-Xylene	4.49		ug/m ³	0.651	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
179601-23-1	p- & m- Xylenes	13.2		ug/m ³	1.30	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
622-96-8	* p-Ethyltoluene	4.50	TO-LC S-H	ug/m ³	0.737	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
115-07-1	* Propylene	7.00		ug/m ³	0.258	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
100-42-5	Styrene	ND		ug/m ³	0.639	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
127-18-4	Tetrachloroethylene	0.610		ug/m ³	0.254	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
109-99-9	* Tetrahydrofuran	1.64		ug/m ³	0.885	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
108-88-3	Toluene	21.5		ug/m ³	0.565	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m ³	0.595	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m ³	0.681	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
79-01-6	Trichloroethylene	ND		ug/m ³	0.202	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
75-69-4	Trichlorofluoromethane (Freon 11)	1.35		ug/m ³	0.843	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
108-05-4	Vinyl acetate	ND		ug/m ³	0.528	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
593-60-2	Vinyl bromide	ND		ug/m ³	0.656	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
75-01-4	Vinyl Chloride	ND		ug/m ³	0.383	1.5	EPA TO-15	03/05/2019 08:00	03/05/2019 20:48	AS
	Surrogate Recoveries	Result		Acceptance Range						
460-00-4	Surrogate: SURR: p-Bromofluorobenzene	91.6 %		72-118						

Sample Information

Client Sample ID: 869/V5

York Sample ID: 19B1031-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:00 am

02/28/2019



Sample Information

Client Sample ID: 869/V5

York Sample ID: 19B1031-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:00 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOO	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	1.01	1.467	EPA TO-15 Certifications:	03/06/2019 08:00	03/06/2019 15:29	AS
71-55-6	1,1,1-Trichloroethane	ND		ug/m ³	0.800	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	1.01	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m ³	1.12	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	0.800	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.594	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.582	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	1.09	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
95-63-6	1,2,4-Trimethylbenzene	3.53		ug/m ³	0.721	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
106-93-4	1,2-Dibromoethane	ND		ug/m ³	1.13	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	0.882	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.594	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.678	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	1.03	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
108-67-8	1,3,5-Trimethylbenzene	1.08		ug/m ³	0.721	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
106-99-0	1,3-Butadiene	ND		ug/m ³	0.974	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	0.882	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.678	1.467	EPA TO-15 Certifications:	03/06/2019 08:00	03/06/2019 15:29	AS
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	0.882	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
123-91-1	1,4-Dioxane	ND		ug/m ³	1.06	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
78-93-3	2-Butanone	2.16		ug/m ³	0.433	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
591-78-6	* 2-Hexanone	4.39		ug/m ³	1.80	1.467	EPA TO-15 Certifications:	03/06/2019 08:00	03/06/2019 15:29	AS
107-05-1	3-Chloropropene	ND		ug/m ³	2.30	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS
108-10-1	4-Methyl-2-pentanone	2.88		ug/m ³	0.601	1.467	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/06/2019 08:00	03/06/2019 15:29	AS



Sample Information

Client Sample ID: 869/V5

York Sample ID: 19B1031-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:00 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-64-1	Acetone	6.66		ug/m ³	0.697	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
107-13-1	Acrylonitrile	ND		ug/m ³	0.318	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
71-43-2	Benzene	2.39		ug/m ³	0.469	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
100-44-7	Benzyl chloride	ND		ug/m ³	0.759	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
75-27-4	Bromodichloromethane	ND		ug/m ³	0.983	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
75-25-2	Bromoform	ND		ug/m ³	1.52	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
74-83-9	Bromomethane	ND		ug/m ³	0.570	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
75-15-0	Carbon disulfide	0.594		ug/m ³	0.457	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
56-23-5	Carbon tetrachloride	0.461		ug/m ³	0.231	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
108-90-7	Chlorobenzene	ND		ug/m ³	0.675	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
75-00-3	Chloroethane	ND		ug/m ³	0.387	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
67-66-3	Chloroform	1.22		ug/m ³	0.716	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
74-87-3	Chloromethane	0.757		ug/m ³	0.303	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
156-59-2	cis-1,2-Dichloroethylene	1.74		ug/m ³	0.582	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m ³	0.666	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
110-82-7	Cyclohexane	0.606		ug/m ³	0.505	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
124-48-1	Dibromochloromethane	ND		ug/m ³	1.25	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
75-71-8	Dichlorodifluoromethane	2.39		ug/m ³	0.725	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
141-78-6	* Ethyl acetate	1.80		ug/m ³	1.06	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications:				
100-41-4	Ethyl Benzene	2.99		ug/m ³	0.637	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
87-68-3	Hexachlorobutadiene	ND		ug/m ³	1.56	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
67-63-0	Isopropanol	1.30		ug/m ³	0.721	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
80-62-6	Methyl Methacrylate	ND		ug/m ³	0.601	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m ³	0.529	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
						Certifications: NELAC-NY12058,NJDEP-Queens				



Sample Information

Client Sample ID: 869/V5

York Sample ID: 19B1031-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Soil Vapor

February 27, 2019 9:00 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-09-2	Methylene chloride	1.27		ug/m ³	1.02	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
142-82-5	n-Heptane	1.26		ug/m ³	0.601	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
110-54-3	n-Hexane	1.24		ug/m ³	0.517	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
95-47-6	o-Xylene	3.69		ug/m ³	0.637	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
179601-23-1	p- & m- Xylenes	10.4		ug/m ³	1.27	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
622-96-8	* p-Ethyltoluene	3.68	TO-LC S-H	ug/m ³	0.721	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
115-07-1	* Propylene	ND		ug/m ³	0.252	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
100-42-5	Styrene	ND		ug/m ³	0.625	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
127-18-4	Tetrachloroethylene	2.49		ug/m ³	0.249	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
109-99-9	* Tetrahydrofuran	1.38		ug/m ³	0.865	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
108-88-3	Toluene	13.1		ug/m ³	0.553	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m ³	0.582	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m ³	0.666	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
79-01-6	Trichloroethylene	0.946		ug/m ³	0.197	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
75-69-4	Trichlorofluoromethane (Freon 11)	1.90		ug/m ³	0.824	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
108-05-4	Vinyl acetate	ND		ug/m ³	0.517	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
593-60-2	Vinyl bromide	ND		ug/m ³	0.642	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
75-01-4	Vinyl Chloride	ND		ug/m ³	0.375	1.467	EPA TO-15	03/06/2019 08:00	03/06/2019 15:29	AS
	Surrogate Recoveries	Result	Acceptance Range							
460-00-4	Surrogate: SURR: p-Bromofluorobenzene	91.1 %	72-118							

Sample Information

Client Sample ID: 870/Ambient-1

York Sample ID: 19B1031-05

York Project (SDG) No.

Client Project ID

Matrix

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Date Received

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100287503

Outdoor Ambient Ai

February 27, 2019 8:06 am

02/28/2019



Sample Information

Client Sample ID: 870/Ambient-1

York Sample ID: 19B1031-05

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Outdoor Ambient Air February 27, 2019 8:06 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOO	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	0.577	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications:			
71-55-6	1,1,1-Trichloroethane	ND		ug/m ³	0.458	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	0.577	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m ³	0.644	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	0.458	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.340	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.333	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	0.623	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m ³	0.413	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
106-93-4	1,2-Dibromoethane	ND		ug/m ³	0.645	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	0.505	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.340	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.388	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	0.587	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m ³	0.413	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
106-99-0	1,3-Butadiene	ND		ug/m ³	0.557	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	0.505	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.388	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications:			
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	0.505	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
123-91-1	1,4-Dioxane	ND		ug/m ³	0.605	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
78-93-3	2-Butanone	0.743		ug/m ³	0.248	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
591-78-6	* 2-Hexanone	2.27		ug/m ³	1.03	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications:			
107-05-1	3-Chloropropene	ND		ug/m ³	1.31	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
108-10-1	4-Methyl-2-pentanone	ND		ug/m ³	0.344	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			



Sample Information

Client Sample ID: 870/Ambient-1

York Sample ID: 19B1031-05

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Outdoor Ambient Air February 27, 2019 8:06 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-64-1	Acetone	4.09		ug/m ³	0.399	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
107-13-1	Acrylonitrile	ND		ug/m ³	0.182	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
71-43-2	Benzene	1.05		ug/m ³	0.268	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
100-44-7	Benzyl chloride	ND		ug/m ³	0.435	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-27-4	Bromodichloromethane	ND		ug/m ³	0.563	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-25-2	Bromoform	ND		ug/m ³	0.868	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
74-83-9	Bromomethane	ND		ug/m ³	0.326	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-15-0	Carbon disulfide	ND		ug/m ³	0.262	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
56-23-5	Carbon tetrachloride	0.476		ug/m ³	0.132	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
108-90-7	Chlorobenzene	ND		ug/m ³	0.387	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-00-3	Chloroethane	ND		ug/m ³	0.222	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
67-66-3	Chloroform	ND		ug/m ³	0.410	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
74-87-3	Chloromethane	1.34		ug/m ³	0.173	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m ³	0.333	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m ³	0.381	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
110-82-7	Cyclohexane	ND		ug/m ³	0.289	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
124-48-1	Dibromochloromethane	ND		ug/m ³	0.716	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-71-8	Dichlorodifluoromethane	1.74		ug/m ³	0.415	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
141-78-6	* Ethyl acetate	1.18		ug/m ³	0.605	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications:			
100-41-4	Ethyl Benzene	ND		ug/m ³	0.365	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
87-68-3	Hexachlorobutadiene	ND		ug/m ³	0.896	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
67-63-0	Isopropanol	0.867		ug/m ³	0.413	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
80-62-6	Methyl Methacrylate	0.894		ug/m ³	0.344	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m ³	0.303	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			



Sample Information

Client Sample ID: 870/Ambient-1

York Sample ID: 19B1031-05

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19B1031

100287503

Outdoor Ambient Air February 27, 2019 8:06 am

02/28/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-09-2	Methylene chloride	3.12		ug/m ³	0.584	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
142-82-5	n-Heptane	0.379		ug/m ³	0.344	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
110-54-3	n-Hexane	0.444		ug/m ³	0.296	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
95-47-6	o-Xylene	0.365		ug/m ³	0.365	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
179601-23-1	p- & m- Xylenes	1.02		ug/m ³	0.729	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
622-96-8	* p-Ethyltoluene	ND		ug/m ³	0.413	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications:			
115-07-1	* Propylene	ND		ug/m ³	0.145	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications:			
100-42-5	Styrene	ND		ug/m ³	0.358	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
127-18-4	Tetrachloroethylene	0.741		ug/m ³	0.142	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
109-99-9	* Tetrahydrofuran	ND		ug/m ³	0.495	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications:			
108-88-3	Toluene	1.77		ug/m ³	0.317	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m ³	0.333	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m ³	0.381	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
79-01-6	Trichloroethylene	0.135		ug/m ³	0.113	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-69-4	Trichlorofluoromethane (Freon 11)	1.27		ug/m ³	0.472	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
108-05-4	Vinyl acetate	ND		ug/m ³	0.296	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
593-60-2	Vinyl bromide	ND		ug/m ³	0.367	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m ³	0.215	0.84	EPA TO-15	03/06/2019 08:00	03/06/2019 16:43	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
	Surrogate Recoveries	Result		Acceptance Range						
460-00-4	Surrogate: SURRE: p-Bromofluorobenzene	91.4 %		72-118						



Case Narrative

Client: Langan Engineering & Environmental Services (NJ)
Client Project ID: 100287503
Prepared for: Jessica Friscia

Introduction

This Case Narrative applies only to the following samples submitted to our laboratory on **02/28/2019 14:30**:

<u>Sample Name</u>	<u>Matrix</u>
866/V2	Air
867/V3	Air
868/DUP-1	Air
869/V5	Air
870/Ambient-1	Air

<u>Sample Name</u>	<u>Analysis</u>	<u>Analyte</u>	<u>Qualifier</u>	<u>Description</u>
866/V2	VOA, TO15	n-Butylbenzene	TO-LCS-H	The result reported for this compound may be biased high due to its behavior in the analysis batch LCS where it recovered greater than 130% of the expected value.
866/V2	VOA, TO15	p-Ethyltoluene	TO-LCS-H	The result reported for this compound may be biased high due to its behavior in the analysis batch LCS where it recovered greater than 130% of the expected value.
867/V3	VOA, TO15	p-Ethyltoluene	TO-LCS-H	The result reported for this compound may be biased high due to its behavior in the analysis batch LCS where it recovered greater than 130% of the expected value.
868/DUP-1	VOA, TO15	p-Ethyltoluene	TO-LCS-H	The result reported for this compound may be biased high due to its behavior in the analysis batch LCS where it recovered greater than 130% of the expected value.
869/V5	VOA, TO15	p-Ethyltoluene	TO-LCS-H	The result reported for this compound may be biased high due to its behavior in the analysis batch LCS where it recovered greater than 130% of the expected value.

The 5 sample(s) were received intact. Chain-of-custody was maintained from receipt through analysis in the laboratory.

Methodology

All preparation and analyses were conducted according to EPA Compendium Method TO-15 guidance.

Sample and Analysis Qualifiers

No qualifiers were applicable unless otherwise noted below.

QC Sample Non-Conformances



Any QC sample Non-conformances (CCV, LCS, MS, DUP) are detailed in the data package.
No problems were encountered during analysis.

York Project/SDG no.: 19B1031 Statement

We certify that these data are in compliance with SOP requirements both technically and for completeness for other than the conditions stated above. Release of the data contained in the hard copy report and any electronic deliverables has been authorized by the Laboratory Manager as verified by the signature on this laboratory report.

Approved by: Ben Gulizia
Laboratory Director

Date: 03/12/2019

York Analytical Laboratories, Inc.

Formulae Used for Sample Calculations

VOLATILE ORGANICS

1. Volatiles in Air-ppbv

Cx (ppbv) = Compound concentration, ppbv (parts per billion by volume)

$$Cx = \frac{(Ax)(Cis)(DF)}{(Ais)(RRF)}$$

2. Volatiles in Air-ug/m³

Cx (ug/m³) = Compound concentration in ug/m³

$$Cx \text{ (ug/m}^3\text{)} = \frac{\text{(ppbv} \times \text{Molecular wt.)}}{(24.45)}$$

WHERE:

- Cx = concentration of analyte as ug/L or ug/kg
- Ax = Area of the characteristic ion for the compound to be measured, counts.
- Ais = Area of the characteristic ion for the specific internal standard, counts.
- IS = Concentration of the internal standard spiking mixture, ng
- RRF = Mean relative response factor from the initial calibration.
- DF = Dilution factor calculated as described in section 2. If no dilution is performed, DF = 1
- Cis = Concentration of the internal standard spiking mixture, ppbv



Case Narrative Non-Conformance Summary

Laboratory:	York Analytical Laboratories, Inc.	Client:	Langan Engineering & Environmental Services (
Project:	100287503	Lab Project No:	19B1031
Laboratory Sample ID(s):	19B1031-01 - 19B1031-05	Sampling Date(s):	02/27/2019 - 02/27/2019
Review Date(s):	03/12/2019 - 03/12/2019	Laboratory Reviewer(s):	JD

QC Sample Nonconformances

Batch ID: BC90266 **Affected Samples:** **See Batch Summary**

QC Sample ID	Analyte - CAS No.	Result	Type of QC Nonconformance	%REC	%REC Limits	Bias	RPD	RPD Limit	Bias	Notes
BC90266-BLK1	2-Hexanone - 591-78-6	1.11 ug/m ³	Blank		-					
BC90266-BS1	Bromoform - 75-25-2	13.2 ppbv	LCS	132	70-130	High Bias				
BC90266-BS1	Dichlorodifluoromethane - 75-71-8	13.0 ppbv	LCS	130	70-130	High Bias				
BC90266-BS1	p-Ethyltoluene - 622-96-8	13.2 ppbv	LCS	132	70-130	High Bias				
BC90266-BS1	Styrene - 100-42-5	13.0 ppbv	LCS	130	70-130	High Bias				

Batch ID: BC90329 **Affected Samples:** **See Batch Summary**

QC Sample ID	Analyte - CAS No.	Result	Type of QC Nonconformance	%REC	%REC Limits	Bias	RPD	RPD Limit	Bias	Notes
BC90329-BS1	Bromoform - 75-25-2	13.0 ppbv	LCS	130	70-130	High Bias				
BC90329-BS1	p-Ethyltoluene - 622-96-8	13.1 ppbv	LCS	131	70-130	High Bias				

Batch ID: Y9C0722 **Affected Samples:** **See Batch Summary**

QC Sample ID	Analyte - CAS No.	Result	Type of QC Nonconformance	%REC	%REC Limits	Bias	RPD	RPD Limit	Bias	Notes
Y9C0722-CCV1	Bromoform - 75-25-2	13.0 ppbv	Calibration Check	130	70-130	High Bias				

Batch ID: Y9C0724 **Affected Samples:** **See Batch Summary**

QC Sample ID	Analyte - CAS No.	Result	Type of QC Nonconformance	%REC	%REC Limits	Bias	RPD	RPD Limit	Bias	Notes
Y9C0724-CCV1	Bromoform - 75-25-2	13.3 ppbv	Calibration Check	133	70-130	High Bias				



Batch ID: BC90266

General Method: Volatile Organic Compounds in Air by GC/MS

YORK Sample ID Client Sample ID

19B1031-01	866/V2
19B1031-02	867/V3
19B1031-03	868/DUP-1
BC90266-BLK1	Blank
BC90266-BS1	LCS

Batch ID: BC90329

General Method: Volatile Organic Compounds in Air by GC/MS

YORK Sample ID Client Sample ID

19B1031-04	869/V5
19B1031-05	870/Ambient-1
BC90329-BLK1	Blank
BC90329-BS1	LCS
BC90329-DUP1	Duplicate

No Sample Nonconformances Found

Notes: Other nonconformances, if any, are detailed in the Data Quality Assessment worksheets.

For multiple surrogate analyses such as semi-volatiles, volatiles, etc, single surrogate excursions do not necessarily indicate a bias in the sample. Samples with multiple surrogate excursions may exhibit a bias in the results.

Definitions: LCS - Laboratory Control Sample
LCS dup - Laboratory Control Sample Duplicate
MS - Matrix Spike
MSD - Matrix Spike Duplicate
BS - Blank Spike also called LCS
BSD - Blank Spike Duplicate also called LCS dup
SRM - Standard Reference Material
DUP - Duplicate



QC DATA QUALIFIERS

LabID	Analysis	Analyte	Qualifier	Definition
BC90329-BS1	Volatile Organics, EPA TO15 Full List	p-Ethyltoluene	TO-LCS-H	The result reported for this compound may be biased high due to its behavior in the analysis batch LCS where it recovered greater than 130% of the expected value.
BC90266-BS1	Volatile Organics, EPA TO15 Full List	p-Ethyltoluene	TO-LCS-H	The result reported for this compound may be biased high due to its behavior in the analysis batch LCS where it recovered greater than 130% of the expected value.
BC90266-BS1	Volatile Organics, EPA TO15 Full List	Bromoform	TO-LCS-H	The result reported for this compound may be biased high due to its behavior in the analysis batch LCS where it recovered greater than 130% of the expected value.
BC90266-BS1	Volatile Organics, EPA TO15 Full List	2-Hexanone	B	Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants.



Analytical Batch Summary

Batch ID: BC90266 **Preparation Method:** EPA TO15 PREP **Prepared By:** AS

YORK Sample ID	Client Sample ID	Preparation Date
19B1031-01	866/V2	03/05/19
19B1031-02	867/V3	03/05/19
19B1031-03	868/DUP-1	03/05/19
BC90266-BLK1	Blank	03/05/19
BC90266-BS1	LCS	03/05/19

Batch ID: BC90329 **Preparation Method:** EPA TO15 PREP **Prepared By:** AS

YORK Sample ID	Client Sample ID	Preparation Date
19B1031-04	869/V5	03/06/19
19B1031-05	870/Ambient-1	03/06/19
BC90329-BLK1	Blank	03/06/19
BC90329-BS1	LCS	03/06/19
BC90329-DUP1	Duplicate	03/06/19



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BC90266 - EPA TO15 PREP

Blank (BC90266-BLK1)

Prepared & Analyzed: 03/05/2019

1,1,1,2-Tetrachloroethane	ND	0.687	ug/m ³								
1,1,1-Trichloroethane	ND	0.546	"								
1,1,2,2-Tetrachloroethane	ND	0.687	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.766	"								
1,1,2-Trichloroethane	ND	0.546	"								
1,1-Dichloroethane	ND	0.405	"								
1,1-Dichloroethylene	ND	0.396	"								
1,2,4-Trichlorobenzene	ND	0.742	"								
1,2,4-Trimethylbenzene	ND	0.492	"								
1,2-Dibromoethane	ND	0.768	"								
1,2-Dichlorobenzene	ND	0.601	"								
1,2-Dichloroethane	ND	0.405	"								
1,2-Dichloropropane	ND	0.462	"								
1,2-Dichlorotetrafluoroethane	ND	0.699	"								
1,3,5-Trimethylbenzene	ND	0.492	"								
1,3-Butadiene	ND	0.664	"								
1,3-Dichlorobenzene	ND	0.601	"								
1,3-Dichloropropane	ND	0.462	"								
1,4-Dichlorobenzene	ND	0.601	"								
1,4-Dioxane	ND	0.721	"								
2-Butanone	ND	0.295	"								
2-Hexanone	1.11	0.819	"								
3-Chloropropene	ND	1.57	"								
4-Methyl-2-pentanone	ND	0.410	"								
Acetone	ND	0.475	"								
Acrylonitrile	ND	0.217	"								
Benzene	ND	0.319	"								
Benzyl chloride	ND	0.518	"								
Bromodichloromethane	ND	0.670	"								
Bromoform	ND	1.03	"								
Bromomethane	ND	0.388	"								
Carbon disulfide	ND	0.311	"								
Carbon tetrachloride	ND	0.157	"								
Chlorobenzene	ND	0.460	"								
Chloroethane	ND	0.264	"								
Chloroform	ND	0.488	"								
Chloromethane	ND	0.207	"								
cis-1,2-Dichloroethylene	ND	0.396	"								
cis-1,3-Dichloropropylene	ND	0.454	"								
Cyclohexane	ND	0.344	"								
Dibromochloromethane	ND	0.852	"								
Dichlorodifluoromethane	ND	0.495	"								
Ethyl acetate	ND	0.721	"								
Ethyl Benzene	ND	0.434	"								
Hexachlorobutadiene	ND	1.07	"								
Isopropanol	ND	0.492	"								
Methyl Methacrylate	ND	0.409	"								
Methyl tert-butyl ether (MTBE)	ND	0.361	"								
Methylene chloride	ND	0.695	"								
n-Heptane	ND	0.410	"								



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting		Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	
		Limit	Units						RPD	Limit

Batch BC90266 - EPA TO15 PREP

Blank (BC90266-BLK1)

Prepared & Analyzed: 03/05/2019

n-Hexane	ND	0.352	ug/m ³							
o-Xylene	ND	0.434	"							
p- & m- Xylenes	ND	0.868	"							
p-Ethyltoluene	ND	0.492	"							
Propylene	ND	0.172	"							
Styrene	ND	0.426	"							
Tetrachloroethylene	ND	0.170	"							
Tetrahydrofuran	ND	0.590	"							
Toluene	ND	0.377	"							
trans-1,2-Dichloroethylene	ND	0.396	"							
trans-1,3-Dichloropropylene	ND	0.454	"							
Trichloroethylene	ND	0.134	"							
Trichlorofluoromethane (Freon 11)	ND	0.562	"							
Vinyl acetate	ND	0.352	"							
Vinyl bromide	ND	0.437	"							
Vinyl Chloride	ND	0.256	"							

Surrogate: SURR: p-Bromofluorobenzene 8.60 ppbv 10.0 86.0 72-118

LCS (BC90266-BS1)

Prepared & Analyzed: 03/05/2019

1,1,1,2-Tetrachloroethane	11.5		ppbv	10.0	115	70-130				
1,1,1-Trichloroethane	11.5		"	10.0	115	70-130				
1,1,1,2-Tetrachloroethane	12.1		"	10.0	121	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.3		"	10.0	103	70-130				
1,1,2-Trichloroethane	10.9		"	10.0	109	70-130				
1,1-Dichloroethane	10.8		"	10.0	108	70-130				
1,1-Dichloroethylene	9.99		"	10.0	99.9	70-130				
1,2,4-Trichlorobenzene	8.21		"	10.0	82.1	70-130				
1,2,4-Trimethylbenzene	12.5		"	10.0	125	70-130				
1,2-Dibromoethane	11.6		"	10.0	116	70-130				
1,2-Dichlorobenzene	12.6		"	10.0	126	70-130				
1,2-Dichloroethane	10.5		"	10.0	105	70-130				
1,2-Dichloropropane	10.9		"	10.0	109	70-130				
1,2-Dichlorotetrafluoroethane	10.5		"	10.0	105	70-130				
1,3,5-Trimethylbenzene	12.2		"	10.0	122	70-130				
1,3-Butadiene	11.4		"	10.0	114	70-130				
1,3-Dichlorobenzene	12.6		"	10.0	126	70-130				
1,3-Dichloropropane	11.0		"	10.0	110	70-130				
1,4-Dichlorobenzene	13.0		"	10.0	130	70-130				
1,4-Dioxane	10.6		"	10.0	106	70-130				
2-Butanone	10.8		"	10.0	108	70-130				
2-Hexanone	11.5		"	10.0	115	70-130				
3-Chloropropene	11.0		"	10.0	110	70-130				
4-Methyl-2-pentanone	11.1		"	10.0	111	70-130				
Acetone	10.0		"	10.0	100	70-130				
Acrylonitrile	10.8		"	10.0	108	70-130				
Benzene	10.6		"	10.0	106	70-130				
Benzyl chloride	10.4		"	10.0	104	70-130				
Bromodichloromethane	11.2		"	10.0	112	70-130				
Bromoform	13.2		"	10.0	132	70-130			High Bias	
Bromomethane	9.93		"	10.0	99.3	70-130				
Carbon disulfide	11.0		"	10.0	110	70-130				



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD	Flag
		Limit								Limit	
Batch BC90266 - EPA TO15 PREP											
LCS (BC90266-BS1)						Prepared & Analyzed: 03/05/2019					
Carbon tetrachloride	10.8		ppbv	10.0		108	70-130				
Chlorobenzene	11.6		"	10.0		116	70-130				
Chloroethane	10.1		"	10.0		101	70-130				
Chloroform	11.0		"	10.0		110	70-130				
Chloromethane	11.2		"	10.0		112	70-130				
cis-1,2-Dichloroethylene	9.74		"	10.0		97.4	70-130				
cis-1,3-Dichloropropylene	12.4		"	10.0		124	70-130				
Cyclohexane	11.4		"	10.0		114	70-130				
Dibromochloromethane	11.4		"	10.0		114	70-130				
Dichlorodifluoromethane	13.0		"	10.0		130	70-130				
Ethyl acetate	11.8		"	10.0		118	70-130				
Ethyl Benzene	11.8		"	10.0		118	70-130				
Hexachlorobutadiene	12.2		"	10.0		122	70-130				
Isopropanol	10.4		"	10.0		104	70-130				
Methyl Methacrylate	11.7		"	10.0		117	70-130				
Methyl tert-butyl ether (MTBE)	11.4		"	10.0		114	70-130				
Methylene chloride	10.2		"	10.0		102	70-130				
n-Heptane	10.9		"	10.0		109	70-130				
n-Hexane	11.2		"	10.0		112	70-130				
o-Xylene	12.6		"	10.0		126	70-130				
p- & m- Xylenes	24.1		"	20.0		120	70-130				
p-Ethyltoluene	13.2		"	10.0		132	70-130	High Bias			
Propylene	12.6		"	10.0		126	70-130				
Styrene	13.0		"	10.0		130	70-130				
Tetrachloroethylene	10.7		"	10.0		107	70-130				
Tetrahydrofuran	11.0		"	10.0		110	70-130				
Toluene	11.1		"	10.0		111	70-130				
trans-1,2-Dichloroethylene	11.2		"	10.0		112	70-130				
trans-1,3-Dichloropropylene	11.6		"	10.0		116	70-130				
Trichloroethylene	10.8		"	10.0		108	70-130				
Trichlorofluoromethane (Freon 11)	10.5		"	10.0		105	70-130				
Vinyl acetate	11.4		"	10.0		114	70-130				
Vinyl bromide	10.6		"	10.0		106	70-130				
Vinyl Chloride	10.9		"	10.0		109	70-130				
<i>Surrogate: SURR: p-Bromofluorobenzene</i>	<i>10.2</i>		<i>"</i>	<i>10.0</i>		<i>102</i>	<i>72-118</i>				



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting	Units	Spike	Source*	%REC	%REC	Limits	Flag	RPD	
		Limit								RPD	Limit

Batch BC90329 - EPA TO15 PREP

Blank (BC90329-BLK1)

Prepared & Analyzed: 03/06/2019

1,1,1,2-Tetrachloroethane	ND	0.687	ug/m ³
1,1,1-Trichloroethane	ND	0.546	"
1,1,2,2-Tetrachloroethane	ND	0.687	"
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.766	"
1,1,2-Trichloroethane	ND	0.546	"
1,1-Dichloroethane	ND	0.405	"
1,1-Dichloroethylene	ND	0.396	"
1,2,4-Trichlorobenzene	ND	0.742	"
1,2,4-Trimethylbenzene	ND	0.492	"
1,2-Dibromoethane	ND	0.768	"
1,2-Dichlorobenzene	ND	0.601	"
1,2-Dichloroethane	ND	0.405	"
1,2-Dichloropropane	ND	0.462	"
1,2-Dichlorotetrafluoroethane	ND	0.699	"
1,3,5-Trimethylbenzene	ND	0.492	"
1,3-Butadiene	ND	0.664	"
1,3-Dichlorobenzene	ND	0.601	"
1,3-Dichloropropane	ND	0.462	"
1,4-Dichlorobenzene	ND	0.601	"
1,4-Dioxane	ND	0.721	"
2-Butanone	ND	0.295	"
2-Hexanone	ND	0.819	"
3-Chloropropene	ND	1.57	"
4-Methyl-2-pentanone	ND	0.410	"
Acetone	ND	0.475	"
Acrylonitrile	ND	0.217	"
Benzene	ND	0.319	"
Benzyl chloride	ND	0.518	"
Bromodichloromethane	ND	0.670	"
Bromoform	ND	1.03	"
Bromomethane	ND	0.388	"
Carbon disulfide	ND	0.311	"
Carbon tetrachloride	ND	0.157	"
Chlorobenzene	ND	0.460	"
Chloroethane	ND	0.264	"
Chloroform	ND	0.488	"
Chloromethane	ND	0.207	"
cis-1,2-Dichloroethylene	ND	0.396	"
cis-1,3-Dichloropropylene	ND	0.454	"
Cyclohexane	ND	0.344	"
Dibromochloromethane	ND	0.852	"
Dichlorodifluoromethane	ND	0.495	"
Ethyl acetate	ND	0.721	"
Ethyl Benzene	ND	0.434	"
Hexachlorobutadiene	ND	1.07	"
Isopropanol	ND	0.492	"
Methyl Methacrylate	ND	0.409	"
Methyl tert-butyl ether (MTBE)	ND	0.361	"
Methylene chloride	ND	0.695	"
n-Heptane	ND	0.410	"
n-Hexane	ND	0.352	"



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BC90329 - EPA TO15 PREP

Blank (BC90329-BLK1)

Prepared & Analyzed: 03/06/2019

o-Xylene	ND	0.434	ug/m ³								
p- & m- Xylenes	ND	0.868	"								
p-Ethyltoluene	ND	0.492	"								
Propylene	ND	0.172	"								
Styrene	ND	0.426	"								
Tetrachloroethylene	ND	0.170	"								
Tetrahydrofuran	ND	0.590	"								
Toluene	ND	0.377	"								
trans-1,2-Dichloroethylene	ND	0.396	"								
trans-1,3-Dichloropropylene	ND	0.454	"								
Trichloroethylene	ND	0.134	"								
Trichlorofluoromethane (Freon 11)	ND	0.562	"								
Vinyl acetate	ND	0.352	"								
Vinyl bromide	ND	0.437	"								
Vinyl Chloride	ND	0.256	"								

Surrogate: SURR: p-Bromofluorobenzene 8.54 ppbv 10.0 85.4 72-118

LCS (BC90329-BS1)

Prepared & Analyzed: 03/06/2019

1,1,1,2-Tetrachloroethane	11.4		ppbv	10.0		114	70-130				
1,1,1-Trichloroethane	11.5		"	10.0		115	70-130				
1,1,2,2-Tetrachloroethane	11.9		"	10.0		119	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.5		"	10.0		105	70-130				
1,1,2-Trichloroethane	10.8		"	10.0		108	70-130				
1,1-Dichloroethane	11.0		"	10.0		110	70-130				
1,1-Dichloroethylene	10.3		"	10.0		103	70-130				
1,2,4-Trichlorobenzene	8.07		"	10.0		80.7	70-130				
1,2,4-Trimethylbenzene	12.2		"	10.0		122	70-130				
1,2-Dibromoethane	11.6		"	10.0		116	70-130				
1,2-Dichlorobenzene	12.4		"	10.0		124	70-130				
1,2-Dichloroethane	10.6		"	10.0		106	70-130				
1,2-Dichloropropane	10.7		"	10.0		107	70-130				
1,2-Dichlorotetrafluoroethane	11.0		"	10.0		110	70-130				
1,3,5-Trimethylbenzene	12.0		"	10.0		120	70-130				
1,3-Butadiene	10.9		"	10.0		109	70-130				
1,3-Dichlorobenzene	12.6		"	10.0		126	70-130				
1,3-Dichloropropane	11.0		"	10.0		110	70-130				
1,4-Dichlorobenzene	12.8		"	10.0		128	70-130				
1,4-Dioxane	10.5		"	10.0		105	70-130				
2-Butanone	10.9		"	10.0		109	70-130				
2-Hexanone	11.4		"	10.0		114	70-130				
3-Chloropropene	11.3		"	10.0		113	70-130				
4-Methyl-2-pentanone	11.1		"	10.0		111	70-130				
Acetone	10.0		"	10.0		100	70-130				
Acrylonitrile	10.8		"	10.0		108	70-130				
Benzene	10.6		"	10.0		106	70-130				
Benzyl chloride	10.2		"	10.0		102	70-130				
Bromodichloromethane	11.0		"	10.0		110	70-130				
Bromoform	13.0		"	10.0		130	70-130				
Bromomethane	10.4		"	10.0		104	70-130				
Carbon disulfide	11.4		"	10.0		114	70-130				
Carbon tetrachloride	10.7		"	10.0		107	70-130				



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting		Spike	Source*	%REC	%REC	Limits	Flag	RPD	
		Limit	Units							Level	Result

Batch BC90329 - EPA TO15 PREP

LCS (BC90329-BS1)

Prepared & Analyzed: 03/06/2019

Chlorobenzene	11.5		ppbv	10.0		115	70-130				
Chloroethane	10.6		"	10.0		106	70-130				
Chloroform	10.9		"	10.0		109	70-130				
Chloromethane	10.8		"	10.0		108	70-130				
cis-1,2-Dichloroethylene	9.89		"	10.0		98.9	70-130				
cis-1,3-Dichloropropylene	12.1		"	10.0		121	70-130				
Cyclohexane	11.4		"	10.0		114	70-130				
Dibromochloromethane	11.3		"	10.0		113	70-130				
Dichlorodifluoromethane	12.9		"	10.0		129	70-130				
Ethyl acetate	11.8		"	10.0		118	70-130				
Ethyl Benzene	11.6		"	10.0		116	70-130				
Hexachlorobutadiene	11.8		"	10.0		118	70-130				
Isopropanol	10.6		"	10.0		106	70-130				
Methyl Methacrylate	11.7		"	10.0		117	70-130				
Methyl tert-butyl ether (MTBE)	11.6		"	10.0		116	70-130				
Methylene chloride	10.1		"	10.0		101	70-130				
n-Heptane	10.9		"	10.0		109	70-130				
n-Hexane	11.3		"	10.0		113	70-130				
o-Xylene	12.4		"	10.0		124	70-130				
p- & m- Xylenes	23.8		"	20.0		119	70-130				
p-Ethyltoluene	13.1		"	10.0		131	70-130		High Bias		
Propylene	12.4		"	10.0		124	70-130				
Styrene	12.9		"	10.0		129	70-130				
Tetrachloroethylene	10.7		"	10.0		107	70-130				
Tetrahydrofuran	11.0		"	10.0		110	70-130				
Toluene	11.0		"	10.0		110	70-130				
trans-1,2-Dichloroethylene	11.4		"	10.0		114	70-130				
trans-1,3-Dichloropropylene	11.5		"	10.0		115	70-130				
Trichloroethylene	10.8		"	10.0		108	70-130				
Trichlorofluoromethane (Freon 11)	10.8		"	10.0		108	70-130				
Vinyl acetate	11.3		"	10.0		113	70-130				
Vinyl bromide	11.1		"	10.0		111	70-130				
Vinyl Chloride	10.4		"	10.0		104	70-130				
<i>Surrogate: SURR: p-Bromofluorobenzene</i>	<i>9.99</i>		<i>"</i>	<i>10.0</i>		<i>99.9</i>	<i>72-118</i>				



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting	Units	Spike	Source*	%REC	%REC	Flag	RPD	RPD	Flag
		Limit		Level	Result	Limits	Limit				
Batch BC90329 - EPA TO15 PREP											
Duplicate (BC90329-DUP1)	*Source sample: 19B1031-05 (870/Ambient-1)						Prepared & Analyzed: 03/06/2019				
1,1,1,2-Tetrachloroethane	ND	0.577	ug/m ³		ND						25
1,1,1-Trichloroethane	ND	0.458	"		ND						25
1,1,2,2-Tetrachloroethane	ND	0.577	"		ND						25
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.644	"		ND						25
1,1,2-Trichloroethane	ND	0.458	"		ND						25
1,1-Dichloroethane	ND	0.340	"		ND						25
1,1-Dichloroethylene	ND	0.333	"		ND						25
1,2,4-Trichlorobenzene	ND	0.623	"		ND						25
1,2,4-Trimethylbenzene	ND	0.413	"		ND						25
1,2-Dibromoethane	ND	0.645	"		ND						25
1,2-Dichlorobenzene	ND	0.505	"		ND						25
1,2-Dichloroethane	ND	0.340	"		ND						25
1,2-Dichloropropane	ND	0.388	"		ND						25
1,2-Dichlorotetrafluoroethane	ND	0.587	"		ND						25
1,3,5-Trimethylbenzene	ND	0.413	"		ND						25
1,3-Butadiene	ND	0.557	"		ND						25
1,3-Dichlorobenzene	ND	0.505	"		ND						25
1,3-Dichloropropane	ND	0.388	"		ND						25
1,4-Dichlorobenzene	ND	0.505	"		ND						25
1,4-Dioxane	ND	0.605	"		ND						25
2-Butanone	0.743	0.248	"		0.743				0.00		25
2-Hexanone	2.17	0.688	"		2.27				4.65		25
3-Chloropropene	ND	1.31	"		ND						25
4-Methyl-2-pentanone	ND	0.344	"		ND						25
Acetone	4.29	0.399	"		4.09				4.76		25
Acrylonitrile	ND	0.182	"		ND						25
Benzene	1.05	0.268	"		1.05				0.00		25
Benzyl chloride	ND	0.435	"		ND						25
Bromodichloromethane	ND	0.563	"		ND						25
Bromoform	ND	0.868	"		ND						25
Bromomethane	ND	0.326	"		ND						25
Carbon disulfide	ND	0.262	"		ND						25
Carbon tetrachloride	0.423	0.132	"		0.476				11.8		25
Chlorobenzene	ND	0.387	"		ND						25
Chloroethane	ND	0.222	"		ND						25
Chloroform	ND	0.410	"		ND						25
Chloromethane	1.44	0.173	"		1.34				7.50		25
cis-1,2-Dichloroethylene	ND	0.333	"		ND						25
cis-1,3-Dichloropropylene	ND	0.381	"		ND						25
Cyclohexane	ND	0.289	"		ND						25
Dibromochloromethane	ND	0.716	"		ND						25
Dichlorodifluoromethane	1.79	0.415	"		1.74				2.35		25
Ethyl acetate	1.09	0.605	"		1.18				8.00		25
Ethyl Benzene	ND	0.365	"		ND						25
Hexachlorobutadiene	ND	0.896	"		ND						25
Isopropanol	0.929	0.413	"		0.867				6.90		25
Methyl Methacrylate	0.860	0.344	"		0.894				3.92		25
Methyl tert-butyl ether (MTBE)	ND	0.303	"		ND						25
Methylene chloride	3.27	0.584	"		3.12				4.57		25
n-Heptane	0.379	0.344	"		0.379				0.00		25
n-Hexane	0.444	0.296	"		0.444				0.00		25



Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC90329 - EPA TO15 PREP											
Duplicate (BC90329-DUP1)	*Source sample: 19B1031-05 (870/Ambient-1)						Prepared & Analyzed: 03/06/2019				
o-Xylene	ND	0.365	ug/m ³		0.365						25
p- & m- Xylenes	1.02	0.729	"		1.02			0.00			25
p-Ethyltoluene	ND	0.413	"		ND						25
Propylene	ND	0.145	"		ND						25
Styrene	ND	0.358	"		ND						25
Tetrachloroethylene	0.798	0.142	"		0.741			7.41			25
Tetrahydrofuran	ND	0.495	"		ND						25
Toluene	1.74	0.317	"		1.77			1.80			25
trans-1,2-Dichloroethylene	ND	0.333	"		ND						25
trans-1,3-Dichloropropylene	ND	0.381	"		ND						25
Trichloroethylene	ND	0.113	"		0.135						25
Trichlorofluoromethane (Freon 11)	1.27	0.472	"		1.27			0.00			25
Vinyl acetate	ND	0.296	"		ND						25
Vinyl bromide	ND	0.367	"		ND						25
Vinyl Chloride	ND	0.215	"		ND						25
<i>Surrogate: SURR: p-Bromofluorobenzene</i>	<i>8.88</i>		<i>ppbv</i>	<i>10.0</i>		<i>88.8</i>	<i>72-118</i>				



Sample and Data Qualifiers Relating to This Work Order

- TO-LCS-H The result reported for this compound may be biased high due to its behavior in the analysis batch LCS where it recovered greater than 130% of the expected value.
- B Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants.

Definitions and Other Explanations

- * Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
- ND NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
- RL REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
- LOQ LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
- LOD LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
- MDL METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
- Reported to This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
- NR Not reported
- RPD Relative Percent Difference
- Wet The data has been reported on an as-received (wet weight) basis
- Low Bias Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
- High Bias High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
- Non-Dir. Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.



Laboratory Chain-of-Custody Record

York Project (SDG) No.: 19B1031

Samples Received: 02/28/2019 14:30 By: Arlene Schork Logged In: 02/28/2019 10:56 By: Paul Grace

- Sample Conditions:**
- | | |
|--|---|
| <input checked="" type="checkbox"/> Custody Seals | <input checked="" type="checkbox"/> Chain of Custody Form Received |
| <input checked="" type="checkbox"/> Containers Intact | <input checked="" type="checkbox"/> Appropriate Sample Volumes Received |
| <input checked="" type="checkbox"/> COC/Labels Agree | <input checked="" type="checkbox"/> Appropriate Sample Containers Submitted |
| <input checked="" type="checkbox"/> Preservation Confirmed | <input checked="" type="checkbox"/> Samples Submitted within Holding Times |
| <input checked="" type="checkbox"/> Cooler Temperature Confirmed | <input type="checkbox"/> Corrective Action Form Required |
| <input checked="" type="checkbox"/> COC Complete | |

Preparation Chain-of-Custody

Sample ID	Reason Prep	Prep Start Date	Prep End Date	Prep Analyst
19B1031-01	EPA TO15 PREP	03/05/2019 8:00	03/05/2019 8:00	Arlene Schork
19B1031-02	EPA TO15 PREP	03/05/2019 8:00	03/05/2019 8:00	Arlene Schork
19B1031-03	EPA TO15 PREP	03/05/2019 8:00	03/05/2019 8:00	Arlene Schork
19B1031-04	EPA TO15 PREP	03/06/2019 8:00	03/06/2019 8:00	Arlene Schork
19B1031-05	EPA TO15 PREP	03/06/2019 8:00	03/06/2019 8:00	Arlene Schork

Analysis Chain-of-Custody

Sample ID	Reason Analysis	Analysis Start Date	Analysis End Date	Analyst
19B1031-01	VOA, TO15 MASTER	03/05/2019 8:00	03/05/2019 18:38	Arlene Schork
19B1031-02	VOA, TO15 MASTER	03/05/2019 8:00	03/05/2019 19:43	Arlene Schork
19B1031-03	VOA, TO15 MASTER	03/05/2019 8:00	03/05/2019 20:48	Arlene Schork
19B1031-04	VOA, TO15 MASTER	03/06/2019 8:00	03/06/2019 15:29	Arlene Schork
19B1031-05	VOA, TO15 MASTER	03/06/2019 8:00	03/06/2019 16:43	Arlene Schork

Field Chain-of-Custody Record - AIR

NOTE: YORK'S Standard Terms & Conditions are listed on the back side of this document. This document serves as your #1020 authorization for YORK to proceed with the analyses requested below. Significant limits apply to YORK's Standard Terms & Conditions.

YOUR Information Company: LANGAN Address: 300 Cambridge Dr City: WATERBURY, CT State: CT Zip: 06703 Contact: JESS HARRIS		Report To: Company: SAME Address: SAME City: SAME State: CT Zip: 06703 Contact: JESS HARRIS		Invoice To: Company: SAME Address: SAME City: SAME State: CT Zip: 06703 Contact: JESS HARRIS		YOUR Project Number 100287503 YOUR Project Name 30.5 BIODIST		Turn-Around Time RUSH - Next Day RUSH - Two Day RUSH - Three Day RUSH - Four Day Standard (5-7 Day) <input checked="" type="checkbox"/>	
YOUR POB: Address: 300 Cambridge Dr City: WATERBURY, CT State: CT Zip: 06703 Contact: JESS HARRIS				Report / EDD Type (circle selection) Standard Excel EDD EODS (Standard) NYSDCC EODS NJDEP Reduced Delay NJDEP SRP HazSite				YORK Reg. Comp. Compared to the following Regulation(s), please file:	
Air Matrix Codes AI - Indoor Ambient Air AO - Outdoor Ambient Air AE - Water Collection Well AS - Soil Vapor/SUB/Slab		Samples From New York New Jersey Connecticut Pennsylvania Other		Summary Report CT RCP CT RCP DQA/DUE NJDEP Reduced Delay NJDEP SRP HazSite		Reporting Units: ug/m ³ ppbv _____ ppmv _____			
Please enter the following REQUIRED Field Data									
Certified Canisters: Batch _____ Individual _____		Air Matrix AS AS AS AS AO		Canister Vacuum after Sampling in Lp. 4.81 3.83 3.41 3.43 3.33		Flow Cont. ID 18301 28317 17357 78801 27056			
Sample Identification 2872061010 10940 10940 10940 10940 10940		Date/Time Sampled 7/17/11 7/17/11 7/17/11 7/17/11 7/17/11		Canister ID 18301 28317 17357 78801 27056		Analysis Requested VOCs by EPA TO-15			
Comments: FOR DATA 2 FOR FLOW CONTROLLER									
Scientist/Analyst: AK		Date/Time: 7/17/11 1710		Canister ID: 1710		Detection Limits Required > 1 ug/m ³ _____ MYSPEC V1 Levels <input checked="" type="checkbox"/> Routine Survey _____ Other _____			
Signature: AK		Signature: AK		Signature: AK		Signature: AK			
Date: 7-28-11		Date: 7-28-11		Date: 7-28-11		Date: 7-28-11			
Location: YORK		Location: YORK		Location: YORK		Location: YORK			
Signature: AK		Signature: AK		Signature: AK		Signature: AK			
Date: 7-28-11		Date: 7-28-11		Date: 7-28-11		Date: 7-28-11			
Signature: AK		Signature: AK		Signature: AK		Signature: AK			

York Analytical Laboratories, Inc.

SDG: 19B1031

CLASS: AIR

METHOD: EPA TO-15

DATA PACKAGE COVER PAGE

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Client Sample Id:

866/V2

867/V3

868/DUP-1

869/V5

870/Ambient-1

Lab Sample Id:

19B1031-01

19B1031-02

19B1031-03

19B1031-04

19B1031-05

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the project narrative. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the

Signature:



Name:

Benjamin Gulizia

Date:

3/12/2019

Title:

Laboratory Director

AIR QC Summary

FORM II

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Sequence: Y9C0724

Instrument: TO15_AIR2

Calibration: YB90001

Surrogate Compound	Spike Level ppbv	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
LCS (BC90329-BS1)			Lab File ID: TQ207191.D		Analyzed: 03/06/19 13:18			
SURR: p-Bromofluorobenzene	10.0	99.9	72 - 118	21.553	21.5554	-0.0024	+/-1.00	
Blank (BC90329-BLK1)			Lab File ID: TQ207192.D		Analyzed: 03/06/19 14:23			
SURR: p-Bromofluorobenzene	10.0	85.4	72 - 118	21.553	21.5554	-0.0024	+/-1.00	
869/V5 (19B1031-04)			Lab File ID: TQ207193.D		Analyzed: 03/06/19 15:29			
SURR: p-Bromofluorobenzene	10.0	91.1	72 - 118	21.553	21.5554	-0.0024	+/-1.00	
870/Ambient-1 (19B1031-05)			Lab File ID: TQ207194.D		Analyzed: 03/06/19 16:43			
SURR: p-Bromofluorobenzene	10.0	91.4	72 - 118	21.553	21.5554	-0.0024	+/-1.00	
Duplicate (BC90329-DUP1)			Lab File ID: TQ207195.D		Analyzed: 03/06/19 18:08			
SURR: p-Bromofluorobenzene	10.0	88.8	72 - 118	21.553	21.5554	-0.0024	+/-1.00	

DUPLICATES

870/Ambient-1

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Matrix: Air

Laboratory ID: BC90329-DUP1

Batch: BC90329

Lab Source ID: 19B1031-05

Preparation: EPA TO15 PREP

Initial/Final: 400 mL / 400 mL

Source Sample Name: 870/Ambient-1

% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/m ³)	C	DUPLICATE CONCENTRATION (ug/m ³)	C	RPD %	Q	METHOD
1,1,1,2-Tetrachloroethane	25	ND		ND				EPA TO-15
1,1,1-Trichloroethane	25	ND		ND				EPA TO-15
1,1,2,2-Tetrachloroethane	25	ND		ND				EPA TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane (F	25	ND		ND				EPA TO-15
1,1,2-Trichloroethane	25	ND		ND				EPA TO-15
1,1-Dichloroethane	25	ND		ND				EPA TO-15
1,1-Dichloroethylene	25	ND		ND				EPA TO-15
1,2,4-Trichlorobenzene	25	ND		ND				EPA TO-15
1,2,4-Trimethylbenzene	25	ND		ND				EPA TO-15
1,2-Dibromoethane	25	ND		ND				EPA TO-15
1,2-Dichlorobenzene	25	ND		ND				EPA TO-15
1,2-Dichloroethane	25	ND		ND				EPA TO-15
1,2-Dichloropropane	25	ND		ND				EPA TO-15
1,2-Dichlorotetrafluoroethane	25	ND		ND				EPA TO-15
1,3,5-Trimethylbenzene	25	ND		ND				EPA TO-15
1,3-Butadiene	25	ND		ND				EPA TO-15
1,3-Dichlorobenzene	25	ND		ND				EPA TO-15
1,3-Dichloropropane	25	ND		ND				EPA TO-15
1,4-Dichlorobenzene	25	ND		ND				EPA TO-15
1,4-Dioxane	25	ND		ND				EPA TO-15
2-Butanone	25	0.743		0.743		0.00		EPA TO-15
2-Hexanone	25	2.27		2.17		4.65		EPA TO-15
3-Chloropropene	25	ND		ND				EPA TO-15
4-Methyl-2-pentanone	25	ND		ND				EPA TO-15
Acetone	25	4.09		4.29		4.76		EPA TO-15
Acrylonitrile	25	ND		ND				EPA TO-15
Benzene	25	1.05		1.05		0.00		EPA TO-15
Benzyl chloride	25	ND		ND				EPA TO-15

DUPLICATES

870/Ambient-1

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Matrix: Air

Laboratory ID: BC90329-DUP1

Batch: BC90329

Lab Source ID: 19B1031-05

Preparation: EPA TO15 PREP

Initial/Final: 400 mL / 400 mL

Source Sample Name: 870/Ambient-1

% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ppbv)	C	DUPLICATE CONCENTRATION (ppbv)	C	RPD %	Q	METHOD
Bromochloromethane		10.0		10.0				EPA TO-15
Bromodichloromethane	25	ND		ND				EPA TO-15
Bromoform	25	ND		ND				EPA TO-15
Bromomethane	25	ND		ND				EPA TO-15
Carbon disulfide	25	ND		ND				EPA TO-15
Carbon tetrachloride	25	0.476		0.423		11.8		EPA TO-15
Chlorobenzene	25	ND		ND				EPA TO-15
Chloroethane	25	ND		ND				EPA TO-15
Chloroform	25	ND		ND				EPA TO-15
Chloromethane	25	1.34		1.44		7.50		EPA TO-15
cis-1,2-Dichloroethylene	25	ND		ND				EPA TO-15
cis-1,3-Dichloropropylene	25	ND		ND				EPA TO-15
Cyclohexane	25	ND		ND				EPA TO-15
Dibromochloromethane	25	ND		ND				EPA TO-15
Dichlorodifluoromethane	25	1.74		1.79		2.35		EPA TO-15
Ethyl acetate	25	1.18		1.09		8.00		EPA TO-15
Ethyl Benzene	25	ND		ND				EPA TO-15
Hexachlorobutadiene	25	ND		ND				EPA TO-15
Isopropanol	25	0.867		0.929		6.90		EPA TO-15
ISTD: 1,4-Difluorobenzene		10.0		10.0				EPA TO-15
ISTD: d5-Chlorobenzene		10.0		10.0				EPA TO-15
Methyl Methacrylate	25	0.894		0.860		3.92		EPA TO-15
Methyl tert-butyl ether (MTBE)	25	ND		ND				EPA TO-15
Methylene chloride	25	3.12		3.27		4.57		EPA TO-15
n-Heptane	25	0.379		0.379		0.00		EPA TO-15
n-Hexane	25	0.444		0.444		0.00		EPA TO-15
o-Xylene	25	0.365		ND				EPA TO-15
p- & m- Xylenes	25	1.02		1.02		0.00		EPA TO-15

DUPLICATES

870/Ambient-1

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Matrix: Air

Laboratory ID: BC90329-DUP1

Batch: BC90329

Lab Source ID: 19B1031-05

Preparation: EPA TO15 PREP

Initial/Final: 400 mL / 400 mL

Source Sample Name: 870/Ambient-1

% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/m ³)	C	DUPLICATE CONCENTRATION (ug/m ³)	C	RPD %	Q	METHOD
p-Ethyltoluene	25	ND		ND				EPA TO-15
Propylene	25	ND		ND				EPA TO-15
Styrene	25	ND		ND				EPA TO-15
SURR: p-Bromofluorobenzene		9.14		8.88				EPA TO-15
Tetrachloroethylene	25	0.741		0.798		7.41		EPA TO-15
Tetrahydrofuran	25	ND		ND				EPA TO-15
Toluene	25	1.77		1.74		1.80		EPA TO-15
trans-1,2-Dichloroethylene	25	ND		ND				EPA TO-15
trans-1,3-Dichloropropylene	25	ND		ND				EPA TO-15
Trichloroethylene	25	0.135		ND				EPA TO-15
Trichlorofluoromethane (Freon 11)	25	1.27		1.27		0.00		EPA TO-15
Vinyl acetate	25	ND		ND				EPA TO-15
Vinyl bromide	25	ND		ND				EPA TO-15
Vinyl Chloride	25	ND		ND				EPA TO-15

* Values outside of QC limits

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207195.D
 Acq On : 6 Mar 2019 6:08 pm
 Sample : BC90329-DUP1 Inst : TO15_AIR2
 Operator : AS
 Sample : BC90329-DUP1
 Misc : QBTO2030619A DUP 1031-05 1X
 ALS Vial : 10 Sample Multiplier: 0.84

Quant Time: Mar 07 15:55:14 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

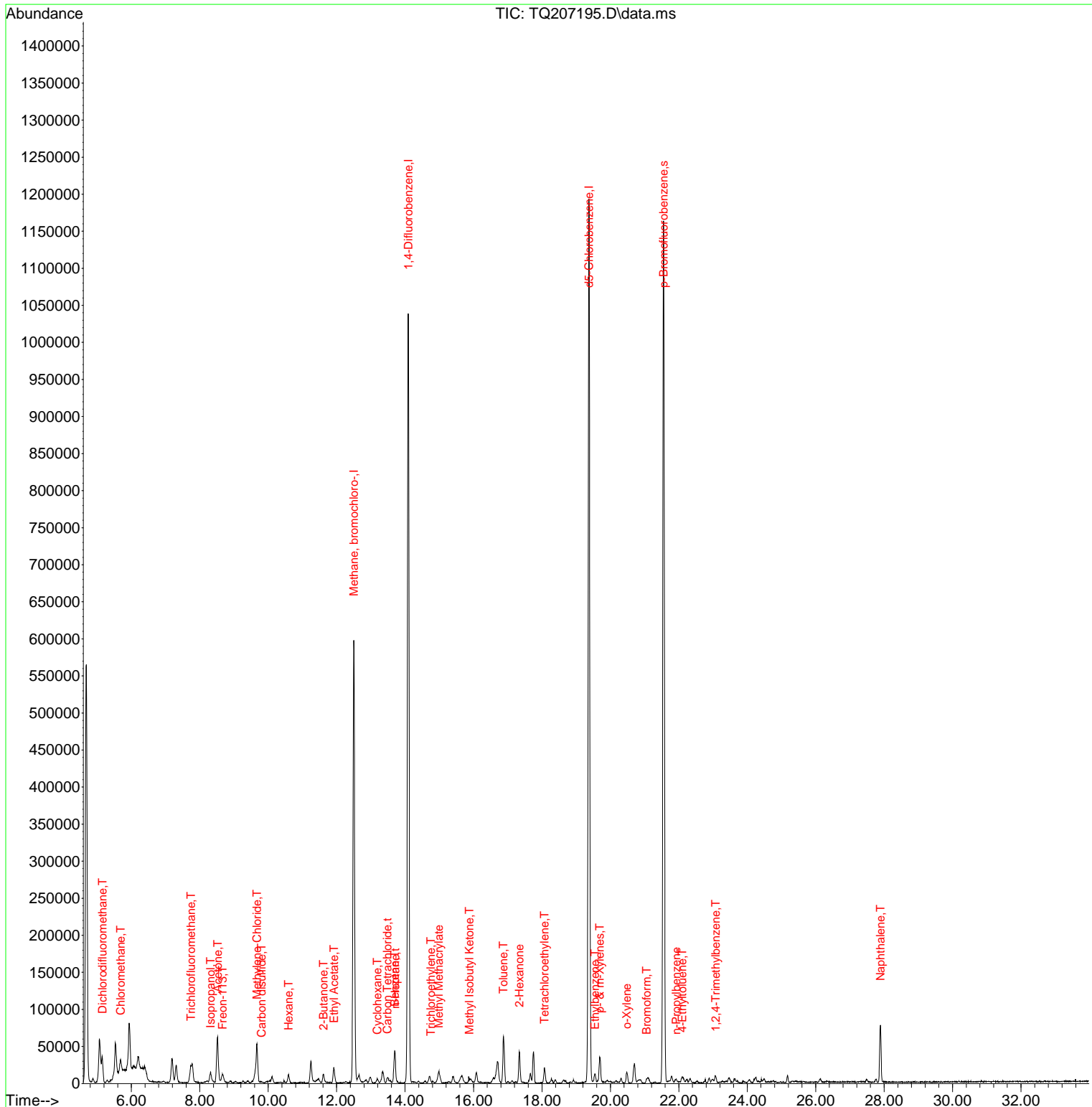
Internal Standards						
1) Methane, bromochloro-	12.500	49	465237	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.091	114	1392271	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.371	117	1184125	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	741822	8.88	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	88.80%	
Target Compounds						
						Qvalue
3) Dichlorodifluoromethane	5.154	85	44474	0.43	ppbv	98
5) Chloromethane	5.684	50	30134	0.83	ppbv	97
11) Trichlorofluoromethane	7.739	101	29079	0.27	ppbv	98
12) Isopropanol	8.312	45	29777	0.45	ppbv	100
14) Acetone	8.519	43	137434	2.15	ppbv	97
15) Freon-113	8.665	101	7139	0.08	ppbv #	70
18) Methylene Chloride	9.671	49	49629	1.12	ppbv	92
20) Carbon disulfide	9.805	76	3169	0.03	ppbv #	88
23) Hexane	10.598	57	8541	0.15	ppbv	94
26) 2-Butanone	11.616	43	24945	0.30	ppbv	97
27) Ethyl Acetate	11.915	43	31528	0.36	ppbv #	45
32) Cyclohexane	13.189	56	3672	0.07	ppbv #	80
33) Carbon Tetrachloride	13.481	117	7709m	0.08	ppbv	
35) Benzene	13.695	78	52318	0.39	ppbv #	50
36) n-Heptane	13.707	43	7235	0.11	ppbv #	95
38) Trichloroethylene	14.749	95	1245	0.02	ppbv #	78
40) Methyl Methacrylate	14.981	69	10256	0.25	ppbv #	40
43) Methyl Isobutyl Ketone	15.877	43	4148	0.05	ppbv #	90
45) Toluene	16.871	91	81399	0.55	ppbv	97
48) 2-Hexanone	17.340	43	47835	0.63	ppbv	99
50) Tetrachloroethylene	18.072	166	10176	0.14	ppbv	96
56) Ethylbenzene	19.547	91	14992	0.09	ppbv	98
57) p- & m-Xylenes	19.688	91	34822	0.28	ppbv	95
58) o-Xylene	20.474	91	12863	0.09	ppbv	99
60) Bromoform	21.053	173	2910	0.04	ppbv #	88
61) n-Propylbenzene	21.919	91	6139	0.03	ppbv	100
65) 4-Ethyltoluene	22.096	105	14204	0.08	ppbv #	81
68) 1,2,4-Trimethylbenzene	23.077	105	12223	0.08	ppbv #	89
78) Naphthalene	27.893	128	101049	0.68	ppbv	100

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

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207195.D
 Acq On : 6 Mar 2019 6:08 pm
 Sample : BC90329-DUP1
 Operator : AS
 Sample : BC90329-DUP1
 Misc : QBTO2030619A DUP 1031-05 1X
 ALS Vial : 10 Sample Multiplier: 0.84

Inst : TO15_AIR2

Quant Time: Mar 07 15:55:14 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration



FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Matrix: AirBatch: BC90266Laboratory ID: BC90266-BS1Preparation: EPA TO15 PREPInitial/Final: 400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	10.0	11.5	115	70 - 130
1,1,1-Trichloroethane	10.0	11.5	115	70 - 130
1,1,2,2-Tetrachloroethane	10.0	12.1	121	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.0	10.3	103	70 - 130
1,1,2-Trichloroethane	10.0	10.9	109	70 - 130
1,1-Dichloroethane	10.0	10.8	108	70 - 130
1,1-Dichloroethylene	10.0	9.99	99.9	70 - 130
1,2,4-Trichlorobenzene	10.0	8.21	82.1	70 - 130
1,2,4-Trimethylbenzene	10.0	12.5	125	70 - 130
1,2-Dibromoethane	10.0	11.6	116	70 - 130
1,2-Dichlorobenzene	10.0	12.6	126	70 - 130
1,2-Dichloroethane	10.0	10.5	105	70 - 130
1,2-Dichloropropane	10.0	10.9	109	70 - 130
1,2-Dichlorotetrafluoroethane	10.0	10.5	105	70 - 130
1,3,5-Trimethylbenzene	10.0	12.2	122	70 - 130
1,3-Butadiene	10.0	11.4	114	70 - 130
1,3-Dichlorobenzene	10.0	12.6	126	70 - 130
1,3-Dichloropropane	10.0	11.0	110	70 - 130
1,4-Dichlorobenzene	10.0	13.0	130	70 - 130
1,4-Dioxane	10.0	10.6	106	70 - 130
2-Butanone	10.0	10.8	108	70 - 130
2-Hexanone	10.0	11.5	115	70 - 130
3-Chloropropene	10.0	11.0	110	70 - 130
4-Methyl-2-pentanone	10.0	11.1	111	70 - 130
Acetone	10.0	10.0	100	70 - 130
Acrylonitrile	10.0	10.8	108	70 - 130
Benzene	10.0	10.6	106	70 - 130
Benzyl chloride	10.0	10.4	104	70 - 130
Bromodichloromethane	10.0	11.2	112	70 - 130
Bromoform	10.0	13.2	132 *	70 - 130

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Matrix: AirBatch: BC90266Laboratory ID: BC90266-BS1Preparation: EPA TO15 PREPInitial/Final: 400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
Bromomethane	10.0	9.93	99.3	70 - 130
Carbon disulfide	10.0	11.0	110	70 - 130
Carbon tetrachloride	10.0	10.8	108	70 - 130
Chlorobenzene	10.0	11.6	116	70 - 130
Chloroethane	10.0	10.1	101	70 - 130
Chloroform	10.0	11.0	110	70 - 130
Chloromethane	10.0	11.2	112	70 - 130
cis-1,2-Dichloroethylene	10.0	9.74	97.4	70 - 130
cis-1,3-Dichloropropylene	10.0	12.4	124	70 - 130
Cyclohexane	10.0	11.4	114	70 - 130
Dibromochloromethane	10.0	11.4	114	70 - 130
Dichlorodifluoromethane	10.0	13.0	130	70 - 130
Ethyl acetate	10.0	11.8	118	70 - 130
Ethyl Benzene	10.0	11.8	118	70 - 130
Hexachlorobutadiene	10.0	12.2	122	70 - 130
Isopropanol	10.0	10.4	104	70 - 130
Methyl Methacrylate	10.0	11.7	117	70 - 130
Methyl tert-butyl ether (MTBE)	10.0	11.4	114	70 - 130
Methylene chloride	10.0	10.2	102	70 - 130
n-Heptane	10.0	10.9	109	70 - 130
n-Hexane	10.0	11.2	112	70 - 130
o-Xylene	10.0	12.6	126	70 - 130
p- & m- Xylenes	20.0	24.1	120	70 - 130
p-Ethyltoluene	10.0	13.2	132 *	70 - 130
Propylene	10.0	12.6	126	70 - 130
Styrene	10.0	13.0	130	70 - 130
Tetrachloroethylene	10.0	10.7	107	70 - 130
Tetrahydrofuran	10.0	11.0	110	70 - 130
Toluene	10.0	11.1	111	70 - 130
trans-1,2-Dichloroethylene	10.0	11.2	112	70 - 130

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air
 Batch: BC90266 Laboratory ID: BC90266-BS1
 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropylene	10.0	11.6	116	70 - 130
Trichloroethylene	10.0	10.8	108	70 - 130
Trichlorofluoromethane (Freon 11)	10.0	10.5	105	70 - 130
Vinyl acetate	10.0	11.4	114	70 - 130
Vinyl bromide	10.0	10.6	106	70 - 130
Vinyl Chloride	10.0	10.9	109	70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Matrix: AirBatch: BC90329Laboratory ID: BC90329-BS1Preparation: EPA TO15 PREPInitial/Final: 400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	10.0	11.4	114	70 - 130
1,1,1-Trichloroethane	10.0	11.5	115	70 - 130
1,1,2,2-Tetrachloroethane	10.0	11.9	119	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.0	10.5	105	70 - 130
1,1,2-Trichloroethane	10.0	10.8	108	70 - 130
1,1-Dichloroethane	10.0	11.0	110	70 - 130
1,1-Dichloroethylene	10.0	10.3	103	70 - 130
1,2,4-Trichlorobenzene	10.0	8.07	80.7	70 - 130
1,2,4-Trimethylbenzene	10.0	12.2	122	70 - 130
1,2-Dibromoethane	10.0	11.6	116	70 - 130
1,2-Dichlorobenzene	10.0	12.4	124	70 - 130
1,2-Dichloroethane	10.0	10.6	106	70 - 130
1,2-Dichloropropane	10.0	10.7	107	70 - 130
1,2-Dichlorotetrafluoroethane	10.0	11.0	110	70 - 130
1,3,5-Trimethylbenzene	10.0	12.0	120	70 - 130
1,3-Butadiene	10.0	10.9	109	70 - 130
1,3-Dichlorobenzene	10.0	12.6	126	70 - 130
1,3-Dichloropropane	10.0	11.0	110	70 - 130
1,4-Dichlorobenzene	10.0	12.8	128	70 - 130
1,4-Dioxane	10.0	10.5	105	70 - 130
2-Butanone	10.0	10.9	109	70 - 130
2-Hexanone	10.0	11.4	114	70 - 130
3-Chloropropene	10.0	11.3	113	70 - 130
4-Methyl-2-pentanone	10.0	11.1	111	70 - 130
Acetone	10.0	10.0	100	70 - 130
Acrylonitrile	10.0	10.8	108	70 - 130
Benzene	10.0	10.6	106	70 - 130
Benzyl chloride	10.0	10.2	102	70 - 130
Bromodichloromethane	10.0	11.0	110	70 - 130
Bromoform	10.0	13.0	130	70 - 130

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Matrix: AirBatch: BC90329Laboratory ID: BC90329-BS1Preparation: EPA TO15 PREPInitial/Final: 400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
Bromomethane	10.0	10.4	104	70 - 130
Carbon disulfide	10.0	11.4	114	70 - 130
Carbon tetrachloride	10.0	10.7	107	70 - 130
Chlorobenzene	10.0	11.5	115	70 - 130
Chloroethane	10.0	10.6	106	70 - 130
Chloroform	10.0	10.9	109	70 - 130
Chloromethane	10.0	10.8	108	70 - 130
cis-1,2-Dichloroethylene	10.0	9.89	98.9	70 - 130
cis-1,3-Dichloropropylene	10.0	12.1	121	70 - 130
Cyclohexane	10.0	11.4	114	70 - 130
Dibromochloromethane	10.0	11.3	113	70 - 130
Dichlorodifluoromethane	10.0	12.9	129	70 - 130
Ethyl acetate	10.0	11.8	118	70 - 130
Ethyl Benzene	10.0	11.6	116	70 - 130
Hexachlorobutadiene	10.0	11.8	118	70 - 130
Isopropanol	10.0	10.6	106	70 - 130
Methyl Methacrylate	10.0	11.7	117	70 - 130
Methyl tert-butyl ether (MTBE)	10.0	11.6	116	70 - 130
Methylene chloride	10.0	10.1	101	70 - 130
n-Heptane	10.0	10.9	109	70 - 130
n-Hexane	10.0	11.3	113	70 - 130
o-Xylene	10.0	12.4	124	70 - 130
p- & m- Xylenes	20.0	23.8	119	70 - 130
p-Ethyltoluene	10.0	13.1	131 *	70 - 130
Propylene	10.0	12.4	124	70 - 130
Styrene	10.0	12.9	129	70 - 130
Tetrachloroethylene	10.0	10.7	107	70 - 130
Tetrahydrofuran	10.0	11.0	110	70 - 130
Toluene	10.0	11.0	110	70 - 130
trans-1,2-Dichloroethylene	10.0	11.4	114	70 - 130

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air
 Batch: BC90329 Laboratory ID: BC90329-BS1
 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropylene	10.0	11.5	115	70 - 130
Trichloroethylene	10.0	10.8	108	70 - 130
Trichlorofluoromethane (Freon 11)	10.0	10.8	108	70 - 130
Vinyl acetate	10.0	11.3	113	70 - 130
Vinyl bromide	10.0	11.1	111	70 - 130
Vinyl Chloride	10.0	10.4	104	70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

PREPARATION BATCH SUMMARY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
Batch: BC90266 Batch Matrix: Air Preparation: EPA TO15 PREP

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
866/V2	19B1031-01	TQ207185.D	03/05/19 08:00	
867/V3	19B1031-02	TQ207186.D	03/05/19 08:00	
868/DUP-1	19B1031-03	TQ207187.D	03/05/19 08:00	
Blank	BC90266-BLK1	TQ207183.D	03/05/19 08:00	
LCS	BC90266-BS1	TQ207182.D	03/05/19 08:00	

PREPARATION BATCH SUMMARY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
Batch: BC90329 Batch Matrix: Air Preparation: EPA TO15 PREP

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
869/V5	19B1031-04	TQ207193.D	03/06/19 08:00	
870/Ambient-1	19B1031-05	TQ207194.D	03/06/19 08:00	
Blank	BC90329-BLK1	TQ207192.D	03/06/19 08:00	
LCS	BC90329-BS1	TQ207191.D	03/06/19 08:00	
870/Ambient-1	BC90329-DUP1	TQ207195.D	03/06/19 08:00	

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air Laboratory ID: BC90266-BLK1 File ID: TQ207183.D
 Prepared: 03/05/19 08:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 03/05/19 16:28 Instrument: TO15 AIR2
 Batch: BC90266 Sequence: Y9C0722 Calibration: YB90001

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	0.687	U
71-55-6	1,1,1-Trichloroethane	0.546	U
79-34-5	1,1,2,2-Tetrachloroethane	0.687	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.766	U
79-00-5	1,1,2-Trichloroethane	0.546	U
75-34-3	1,1-Dichloroethane	0.405	U
75-35-4	1,1-Dichloroethylene	0.396	U
120-82-1	1,2,4-Trichlorobenzene	0.742	U
95-63-6	1,2,4-Trimethylbenzene	0.492	U
106-93-4	1,2-Dibromoethane	0.768	U
95-50-1	1,2-Dichlorobenzene	0.601	U
107-06-2	1,2-Dichloroethane	0.405	U
78-87-5	1,2-Dichloropropane	0.462	U
76-14-2	1,2-Dichlorotetrafluoroethane	0.699	U
108-67-8	1,3,5-Trimethylbenzene	0.492	U
106-99-0	1,3-Butadiene	0.664	U
541-73-1	1,3-Dichlorobenzene	0.601	U
142-28-9	1,3-Dichloropropane	0.462	U
106-46-7	1,4-Dichlorobenzene	0.601	U
123-91-1	1,4-Dioxane	0.721	U
78-93-3	2-Butanone	0.295	U
591-78-6	2-Hexanone	1.11	
107-05-1	3-Chloropropene	1.57	U
108-10-1	4-Methyl-2-pentanone	0.410	U
67-64-1	Acetone	0.475	U
107-13-1	Acrylonitrile	0.217	U
71-43-2	Benzene	0.319	U
100-44-7	Benzyl chloride	0.518	U
75-27-4	Bromodichloromethane	0.670	U
75-25-2	Bromoform	1.03	U

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air Laboratory ID: BC90266-BLK1 File ID: TQ207183.D
 Prepared: 03/05/19 08:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 03/05/19 16:28 Instrument: TO15_AIR2
 Batch: BC90266 Sequence: Y9C0722 Calibration: YB90001

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
74-83-9	Bromomethane	0.388	U
75-15-0	Carbon disulfide	0.311	U
56-23-5	Carbon tetrachloride	0.157	U
108-90-7	Chlorobenzene	0.460	U
75-00-3	Chloroethane	0.264	U
67-66-3	Chloroform	0.488	U
74-87-3	Chloromethane	0.207	U
156-59-2	cis-1,2-Dichloroethylene	0.396	U
10061-01-5	cis-1,3-Dichloropropylene	0.454	U
110-82-7	Cyclohexane	0.344	U
124-48-1	Dibromochloromethane	0.852	U
75-71-8	Dichlorodifluoromethane	0.495	U
141-78-6	Ethyl acetate	0.721	U
100-41-4	Ethyl Benzene	0.434	U
87-68-3	Hexachlorobutadiene	1.07	U
67-63-0	Isopropanol	0.492	U
80-62-6	Methyl Methacrylate	0.409	U
1634-04-4	Methyl tert-butyl ether (MTBE)	0.361	U
75-09-2	Methylene chloride	0.695	U
142-82-5	n-Heptane	0.410	U
110-54-3	n-Hexane	0.352	U
95-47-6	o-Xylene	0.434	U
179601-23-1	p- & m- Xylenes	0.868	U
622-96-8	p-Ethyltoluene	0.492	U
115-07-1	Propylene	0.172	U
100-42-5	Styrene	0.426	U
127-18-4	Tetrachloroethylene	0.170	U
109-99-9	Tetrahydrofuran	0.590	U
108-88-3	Toluene	0.377	U
156-60-5	trans-1,2-Dichloroethylene	0.396	U

FORM I

**METHOD BLANK DATA SHEET
EPA TO-15**

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air Laboratory ID: BC90266-BLK1 File ID: TQ207183.D
 Prepared: 03/05/19 08:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 03/05/19 16:28 Instrument: TO15_AIR2
 Batch: BC90266 Sequence: Y9C0722 Calibration: YB90001

CAS NO.	COMPOUND	CONC. (ug/m³)	Q
10061-02-6	trans-1,3-Dichloropropylene	0.454	U
79-01-6	Trichloroethylene	0.134	U
75-69-4	Trichlorofluoromethane (Freon 11)	0.562	U
108-05-4	Vinyl acetate	0.352	U
593-60-2	Vinyl bromide	0.437	U
75-01-4	Vinyl Chloride	0.256	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
SURR: p-Bromofluorobenzene	10.0	8.60	86.0	72 - 118	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	543445	12.5	434873	12.512	
ISTD: 1,4-Difluorobenzene	1639100	14.091	1403418	14.103	
ISTD: d5-Chlorobenzene	1366911	19.371	1188268	19.377	

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air Laboratory ID: BC90329-BLK1 File ID: TQ207192.D
 Prepared: 03/06/19 08:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 03/06/19 14:23 Instrument: TO15 AIR2
 Batch: BC90329 Sequence: Y9C0724 Calibration: YB90001

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	0.687	U
71-55-6	1,1,1-Trichloroethane	0.546	U
79-34-5	1,1,2,2-Tetrachloroethane	0.687	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.766	U
79-00-5	1,1,2-Trichloroethane	0.546	U
75-34-3	1,1-Dichloroethane	0.405	U
75-35-4	1,1-Dichloroethylene	0.396	U
120-82-1	1,2,4-Trichlorobenzene	0.742	U
95-63-6	1,2,4-Trimethylbenzene	0.492	U
106-93-4	1,2-Dibromoethane	0.768	U
95-50-1	1,2-Dichlorobenzene	0.601	U
107-06-2	1,2-Dichloroethane	0.405	U
78-87-5	1,2-Dichloropropane	0.462	U
76-14-2	1,2-Dichlorotetrafluoroethane	0.699	U
108-67-8	1,3,5-Trimethylbenzene	0.492	U
106-99-0	1,3-Butadiene	0.664	U
541-73-1	1,3-Dichlorobenzene	0.601	U
142-28-9	1,3-Dichloropropane	0.462	U
106-46-7	1,4-Dichlorobenzene	0.601	U
123-91-1	1,4-Dioxane	0.721	U
78-93-3	2-Butanone	0.295	U
591-78-6	2-Hexanone	0.819	U
107-05-1	3-Chloropropene	1.57	U
108-10-1	4-Methyl-2-pentanone	0.410	U
67-64-1	Acetone	0.475	U
107-13-1	Acrylonitrile	0.217	U
71-43-2	Benzene	0.319	U
100-44-7	Benzyl chloride	0.518	U
75-27-4	Bromodichloromethane	0.670	U
75-25-2	Bromoform	1.03	U

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air Laboratory ID: BC90329-BLK1 File ID: TQ207192.D
 Prepared: 03/06/19 08:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 03/06/19 14:23 Instrument: TO15_AIR2
 Batch: BC90329 Sequence: Y9C0724 Calibration: YB90001

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
74-83-9	Bromomethane	0.388	U
75-15-0	Carbon disulfide	0.311	U
56-23-5	Carbon tetrachloride	0.157	U
108-90-7	Chlorobenzene	0.460	U
75-00-3	Chloroethane	0.264	U
67-66-3	Chloroform	0.488	U
74-87-3	Chloromethane	0.207	U
156-59-2	cis-1,2-Dichloroethylene	0.396	U
10061-01-5	cis-1,3-Dichloropropylene	0.454	U
110-82-7	Cyclohexane	0.344	U
124-48-1	Dibromochloromethane	0.852	U
75-71-8	Dichlorodifluoromethane	0.495	U
141-78-6	Ethyl acetate	0.721	U
100-41-4	Ethyl Benzene	0.434	U
87-68-3	Hexachlorobutadiene	1.07	U
67-63-0	Isopropanol	0.492	U
80-62-6	Methyl Methacrylate	0.409	U
1634-04-4	Methyl tert-butyl ether (MTBE)	0.361	U
75-09-2	Methylene chloride	0.695	U
142-82-5	n-Heptane	0.410	U
110-54-3	n-Hexane	0.352	U
95-47-6	o-Xylene	0.434	U
179601-23-1	p- & m- Xylenes	0.868	U
622-96-8	p-Ethyltoluene	0.492	U
115-07-1	Propylene	0.172	U
100-42-5	Styrene	0.426	U
127-18-4	Tetrachloroethylene	0.170	U
109-99-9	Tetrahydrofuran	0.590	U
108-88-3	Toluene	0.377	U
156-60-5	trans-1,2-Dichloroethylene	0.396	U

FORM I

**METHOD BLANK DATA SHEET
EPA TO-15**

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air Laboratory ID: BC90329-BLK1 File ID: TQ207192.D
 Prepared: 03/06/19 08:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 03/06/19 14:23 Instrument: TO15_AIR2
 Batch: BC90329 Sequence: Y9C0724 Calibration: YB90001

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
10061-02-6	trans-1,3-Dichloropropylene	0.454	U
79-01-6	Trichloroethylene	0.134	U
75-69-4	Trichlorofluoromethane (Freon 11)	0.562	U
108-05-4	Vinyl acetate	0.352	U
593-60-2	Vinyl bromide	0.437	U
75-01-4	Vinyl Chloride	0.256	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
SURR: p-Bromofluorobenzene	10.0	8.54	85.4	72 - 118	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	522944	12.506	428278	12.5	
ISTD: 1,4-Difluorobenzene	1541957	14.097	1361515	14.097	
ISTD: d5-Chlorobenzene	1285112	19.371	1166408	19.377	

EPA TO-15Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Lab File ID: TQ206823.DInjection Date: 01/31/19Instrument ID: TO15_AIR2Injection Time: 07:34Sequence: Y9B0102Lab Sample ID: Y9B0102-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	16.5	PASS
75	30 - 66% of 95	51.2	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	7.21	PASS
173	Less than 2% of 174	0.808	PASS
174	50 - 120% of 95	81.7	PASS
175	4 - 9% of 174	7.84	PASS
176	93 - 101% of 174	100	PASS
177	5 - 9% of 176	6.77	PASS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Lab File ID: TQ207177.D Injection Date: 03/05/19
 Instrument ID: TO15_AIR2 Injection Time: 10:56
 Sequence: Y9C0722 Lab Sample ID: Y9C0722-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	17.3	PASS
75	30 - 66% of 95	52.3	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	7.03	PASS
173	Less than 2% of 174	0.837	PASS
174	50 - 120% of 95	79.7	PASS
175	4 - 9% of 174	7.77	PASS
176	93 - 101% of 174	100	PASS
177	5 - 9% of 176	6.9	PASS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Lab File ID: TQ207189.DInjection Date: 03/06/19Instrument ID: TO15_AIR2Injection Time: 11:15Sequence: Y9C0724Lab Sample ID: Y9C0724-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	17.6	PASS
75	30 - 66% of 95	52.8	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	7.2	PASS
173	Less than 2% of 174	0.965	PASS
174	50 - 120% of 95	79.6	PASS
175	4 - 9% of 174	7.81	PASS
176	93 - 101% of 174	99.8	PASS
177	5 - 9% of 176	6.86	PASS

FORM V**ANALYSIS BATCH (SEQUENCE) SUMMARY****EPA TO-15**Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Sequence: Y9B0102Instrument: TO15 AIR2Calibration: YB90001

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	Y9B0102-TUN1	TQ206823.D	01/31/19 07:34
Cal Standard	Y9B0102-CAL1	TQ206824.D	01/31/19 08:34
Cal Standard	Y9B0102-CAL2	TQ206825.D	01/31/19 09:35
Cal Standard	Y9B0102-CAL3	TQ206826.D	01/31/19 10:35
Cal Standard	Y9B0102-CAL4	TQ206827.D	01/31/19 11:37
Cal Standard	Y9B0102-CAL5	TQ206828.D	01/31/19 12:41
Cal Standard	Y9B0102-CAL6	TQ206829.D	01/31/19 13:42
Cal Standard	Y9B0102-CAL7	TQ206830.D	01/31/19 14:43
Cal Standard	Y9B0102-CAL8	TQ206831.D	01/31/19 15:46
Cal Standard	Y9B0102-CAL9	TQ206832.D	01/31/19 16:51
Cal Standard	Y9B0102-CALA	TQ206833.D	01/31/19 17:59
Secondary Cal Check	Y9B0102-SCV1	TQ206836.D	01/31/19 20:05

FORM V**ANALYSIS BATCH (SEQUENCE) SUMMARY
EPA TO-15**Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Sequence: Y9C0722Instrument: TO15 AIR2Calibration: YB90001

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	Y9C0722-TUN1	TQ207177.D	03/05/19 10:56
Calibration Check	Y9C0722-CCV1	TQ207178.D	03/05/19 11:58
LCS	BC90266-BS1	TQ207182.D	03/05/19 15:24
Blank	BC90266-BLK1	TQ207183.D	03/05/19 16:28
866/V2	19B1031-01	TQ207185.D	03/05/19 18:38
867/V3	19B1031-02	TQ207186.D	03/05/19 19:43
868/DUP-1	19B1031-03	TQ207187.D	03/05/19 20:48

FORM V**ANALYSIS BATCH (SEQUENCE) SUMMARY
EPA TO-15**Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Sequence: Y9C0724Instrument: TO15 AIR2Calibration: YB90001

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	Y9C0724-TUN1	TQ207189.D	03/06/19 11:15
Calibration Check	Y9C0724-CCV1	TQ207190.D	03/06/19 12:16
LCS	BC90329-BS1	TQ207191.D	03/06/19 13:18
Blank	BC90329-BLK1	TQ207192.D	03/06/19 14:23
869/V5	19B1031-04	TQ207193.D	03/06/19 15:29
870/Ambient-1	19B1031-05	TQ207194.D	03/06/19 16:43
870/Ambient-1	BC90329-DUP1	TQ207195.D	03/06/19 18:08

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Sequence: Y9B0102

Instrument: TO15 AIR2

Calibration: YB90001

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (Y9B0102-CAL1)		Lab File ID: TQ206824.D			Analyzed: 01/31/19 08:34				
Bromochloromethane	533954	12.506	422549	12.506	126	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	1617003	14.097	1328123	14.097	122	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	1397633	19.377	1142060	19.377	122	60 - 140	0.0000	+/-0.33	
Cal Standard (Y9B0102-CAL2)		Lab File ID: TQ206825.D			Analyzed: 01/31/19 09:35				
Bromochloromethane	515910	12.5	422549	12.506	122	60 - 140	-0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	1546590	14.091	1328123	14.097	116	60 - 140	-0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1352810	19.377	1142060	19.377	118	60 - 140	0.0000	+/-0.33	
Cal Standard (Y9B0102-CAL3)		Lab File ID: TQ206826.D			Analyzed: 01/31/19 10:35				
Bromochloromethane	494465	12.494	422549	12.506	117	60 - 140	-0.0120	+/-0.33	
ISTD: 1,4-Difluorobenzene	1489067	14.091	1328123	14.097	112	60 - 140	-0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1304179	19.376	1142060	19.377	114	60 - 140	-0.0010	+/-0.33	
Cal Standard (Y9B0102-CAL4)		Lab File ID: TQ206827.D			Analyzed: 01/31/19 11:37				
Bromochloromethane	475997	12.5	422549	12.506	113	60 - 140	-0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	1425053	14.091	1328123	14.097	107	60 - 140	-0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1268751	19.377	1142060	19.377	111	60 - 140	0.0000	+/-0.33	
Cal Standard (Y9B0102-CAL5)		Lab File ID: TQ206828.D			Analyzed: 01/31/19 12:41				
Bromochloromethane	449664	12.494	422549	12.506	106	60 - 140	-0.0120	+/-0.33	
ISTD: 1,4-Difluorobenzene	1369673	14.085	1328123	14.097	103	60 - 140	-0.0120	+/-0.33	
ISTD: d5-Chlorobenzene	1218351	19.377	1142060	19.377	107	60 - 140	0.0000	+/-0.33	
Cal Standard (Y9B0102-CAL6)		Lab File ID: TQ206829.D			Analyzed: 01/31/19 13:42				
Bromochloromethane	423820	12.5	422549	12.506	100	60 - 140	-0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	1304639	14.097	1328123	14.097	98	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	1174646	19.377	1142060	19.377	103	60 - 140	0.0000	+/-0.33	
Cal Standard (Y9B0102-CAL7)		Lab File ID: TQ206830.D			Analyzed: 01/31/19 14:43				
Bromochloromethane	422549	12.506	422549	12.506	100	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	1328123	14.097	1328123	14.097	100	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	1142060	19.377	1142060	19.377	100	60 - 140	0.0000	+/-0.33	
Cal Standard (Y9B0102-CAL8)		Lab File ID: TQ206831.D			Analyzed: 01/31/19 15:46				
Bromochloromethane	417064	12.506	422549	12.506	99	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	1353516	14.097	1328123	14.097	102	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	1205178	19.376	1142060	19.377	106	60 - 140	-0.0010	+/-0.33	
Cal Standard (Y9B0102-CAL9)		Lab File ID: TQ206832.D			Analyzed: 01/31/19 16:51				
Bromochloromethane	452257	12.512	422549	12.506	107	60 - 140	0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	1494858	14.103	1328123	14.097	113	60 - 140	0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1292106	19.383	1142060	19.377	113	60 - 140	0.0060	+/-0.33	

FORM VIII

**INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15**

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Sequence: Y9B0102

Instrument: TO15 AIR2

Calibration: YB90001

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (Y9B0102-CALA)		Lab File ID: TQ206833.D			Analyzed: 01/31/19 17:59				
Bromochloromethane	481492	12.518	422549	12.506	114	60 - 140	0.0120	+/-0.33	
ISTD: 1,4-Difluorobenzene	1629559	14.103	1328123	14.097	123	60 - 140	0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1453042	19.383	1142060	19.377	127	60 - 140	0.0060	+/-0.33	
Secondary Cal Check (Y9B0102-SCV1)		Lab File ID: TQ206836.D			Analyzed: 01/31/19 20:05				
Bromochloromethane	487396	12.506	422549	12.506	115	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	1579126	14.097	1328123	14.097	119	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	1387376	19.377	1142060	19.377	121	60 - 140	0.0000	+/-0.33	

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Sequence: Y9C0722 Instrument: TO15 AIR2
 Calibration: YB90001

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (Y9C0722-CCV1)			Lab File ID: TQ207178.D			Analyzed: 03/05/19 11:58			
Bromochloromethane	434873	12.512				60 - 140		+/-0.33	
ISTD: 1,4-Difluorobenzene	1403418	14.103				60 - 140		+/-0.33	
ISTD: d5-Chlorobenzene	1188268	19.377				60 - 140		+/-0.33	
LCS (BC90266-BS1)			Lab File ID: TQ207182.D			Analyzed: 03/05/19 15:24			
Bromochloromethane	451338	12.512	434873	12.512	104	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	1437374	14.097	1403418	14.103	102	60 - 140	-0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1204629	19.376	1188268	19.377	101	60 - 140	-0.0010	+/-0.33	
Blank (BC90266-BLK1)			Lab File ID: TQ207183.D			Analyzed: 03/05/19 16:28			
Bromochloromethane	543445	12.5	434873	12.512	125	60 - 140	-0.0120	+/-0.33	
ISTD: 1,4-Difluorobenzene	1639100	14.091	1403418	14.103	117	60 - 140	-0.0120	+/-0.33	
ISTD: d5-Chlorobenzene	1366911	19.371	1188268	19.377	115	60 - 140	-0.0060	+/-0.33	
866/V2 (19B1031-01)			Lab File ID: TQ207185.D			Analyzed: 03/05/19 18:38			
Bromochloromethane	465388	12.494	434873	12.512	107	60 - 140	-0.0180	+/-0.33	
ISTD: 1,4-Difluorobenzene	1377622	14.091	1403418	14.103	98	60 - 140	-0.0120	+/-0.33	
ISTD: d5-Chlorobenzene	1171264	19.37	1188268	19.377	99	60 - 140	-0.0070	+/-0.33	
867/V3 (19B1031-02)			Lab File ID: TQ207186.D			Analyzed: 03/05/19 19:43			
Bromochloromethane	461147	12.488	434873	12.512	106	60 - 140	-0.0240	+/-0.33	
ISTD: 1,4-Difluorobenzene	1359788	14.085	1403418	14.103	97	60 - 140	-0.0180	+/-0.33	
ISTD: d5-Chlorobenzene	1181014	19.37	1188268	19.377	99	60 - 140	-0.0070	+/-0.33	
868/DUP-1 (19B1031-03)			Lab File ID: TQ207187.D			Analyzed: 03/05/19 20:48			
Bromochloromethane	439420	12.488	434873	12.512	101	60 - 140	-0.0240	+/-0.33	
ISTD: 1,4-Difluorobenzene	1308561	14.085	1403418	14.103	93	60 - 140	-0.0180	+/-0.33	
ISTD: d5-Chlorobenzene	1141229	19.37	1188268	19.377	96	60 - 140	-0.0070	+/-0.33	

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Sequence: Y9C0724

Instrument: TO15 AIR2

Calibration: YB90001

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (Y9C0724-CCV1)			Lab File ID: TQ207190.D			Analyzed: 03/06/19 12:16			
Bromochloromethane	428278	12.5				60 - 140		+/-0.33	
ISTD: 1,4-Difluorobenzene	1361515	14.097				60 - 140		+/-0.33	
ISTD: d5-Chlorobenzene	1166408	19.377				60 - 140		+/-0.33	
LCS (BC90329-BS1)			Lab File ID: TQ207191.D			Analyzed: 03/06/19 13:18			
Bromochloromethane	449563	12.512	428278	12.5	105	60 - 140	0.0120	+/-0.33	
ISTD: 1,4-Difluorobenzene	1446528	14.103	1361515	14.097	106	60 - 140	0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1220855	19.377	1166408	19.377	105	60 - 140	0.0000	+/-0.33	
Blank (BC90329-BLK1)			Lab File ID: TQ207192.D			Analyzed: 03/06/19 14:23			
Bromochloromethane	522944	12.506	428278	12.5	122	60 - 140	0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	1541957	14.097	1361515	14.097	113	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	1285112	19.371	1166408	19.377	110	60 - 140	-0.0060	+/-0.33	
869/V5 (19B1031-04)			Lab File ID: TQ207193.D			Analyzed: 03/06/19 15:29			
Bromochloromethane	458194	12.488	428278	12.5	107	60 - 140	-0.0120	+/-0.33	
ISTD: 1,4-Difluorobenzene	1365685	14.085	1361515	14.097	100	60 - 140	-0.0120	+/-0.33	
ISTD: d5-Chlorobenzene	1204083	19.371	1166408	19.377	103	60 - 140	-0.0060	+/-0.33	
870/Ambient-1 (19B1031-05)			Lab File ID: TQ207194.D			Analyzed: 03/06/19 16:43			
Bromochloromethane	471286	12.494	428278	12.5	110	60 - 140	-0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	1358182	14.091	1361515	14.097	100	60 - 140	-0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1142530	19.371	1166408	19.377	98	60 - 140	-0.0060	+/-0.33	
Duplicate (BC90329-DUP1)			Lab File ID: TQ207195.D			Analyzed: 03/06/19 18:08			
Bromochloromethane	465237	12.5	428278	12.5	109	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	1392271	14.091	1361515	14.097	102	60 - 140	-0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	1184125	19.371	1166408	19.377	102	60 - 140	-0.0060	+/-0.33	

HOLDING TIME SUMMARY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
866/V2	02/27/19 09:46	02/28/19 14:30	03/05/19 08:00	5.93	30.00	03/05/19 18:38	6.37	30.00	
867/V3	02/27/19 09:40	02/28/19 14:30	03/05/19 08:00	5.93	30.00	03/05/19 19:43	6.42	30.00	
868/DUP-1	02/27/19 09:40	02/28/19 14:30	03/05/19 08:00	5.93	30.00	03/05/19 20:48	6.46	30.00	
869/V5	02/27/19 09:00	02/28/19 14:30	03/06/19 08:00	6.96	30.00	03/06/19 15:29	7.27	30.00	
870/Ambient-1	02/27/19 08:06	02/28/19 14:30	03/06/19 08:00	7.00	30.00	03/06/19 16:43	7.36	30.00	

METHOD DETECTION AND REPORTING LIMITS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Matrix: Air

Instrument: TO15_AIR2

Analyte	LOD	LOQ	Units
1,1,1,2-Tetrachloroethane	0.7	0.7	ug/m ³
1,1,1-Trichloroethane	0.55	0.55	ug/m ³
1,1,2,2-Tetrachloroethane	0.7	0.7	ug/m ³
1,1,2-Trichloro-1,2,2-trifluoroethane (Fr	0.78	0.78	ug/m ³
1,1,2-Trichloroethane	0.55	0.55	ug/m ³
1,1-Dichloroethane	0.41	0.41	ug/m ³
1,1-Dichloroethylene	0.4	0.4	ug/m ³
1,2,4-Trichlorobenzene	0.75	0.75	ug/m ³
1,2,4-Trimethylbenzene	0.5	0.5	ug/m ³
1,2-Dibromoethane	0.78	0.78	ug/m ³
1,2-Dichlorobenzene	0.61	0.61	ug/m ³
1,2-Dichloroethane	0.41	0.41	ug/m ³
1,2-Dichloropropane	0.47	0.47	ug/m ³
1,2-Dichlorotetrafluoroethane	0.71	0.71	ug/m ³
1,3,5-Trimethylbenzene	0.5	0.5	ug/m ³
1,3-Butadiene	0.68	0.68	ug/m ³
1,3-Dichlorobenzene	0.61	0.61	ug/m ³
1,3-Dichloropropane	0.47	0.47	ug/m ³
1,4-Dichlorobenzene	0.61	0.61	ug/m ³
1,4-Dioxane	0.73	0.73	ug/m ³
2-Butanone	0.3	0.3	ug/m ³
2-Hexanone	0.83	0.83	ug/m ³
3-Chloropropene	1.6	1.6	ug/m ³
4-Methyl-2-pentanone	0.42	0.42	ug/m ³
Acetone	0.48	0.48	ug/m ³
Acrylonitrile	0.22	0.22	ug/m ³
Benzene	0.32	0.32	ug/m ³
Benzyl chloride	0.53	0.53	ug/m ³
Bromodichloromethane	0.68	0.68	ug/m ³
Bromoform	1.1	1.1	ug/m ³
Bromomethane	0.39	0.39	ug/m ³
Carbon disulfide	0.32	0.32	ug/m ³
Carbon tetrachloride	0.16	0.16	ug/m ³
Chlorobenzene	0.47	0.47	ug/m ³
Chloroethane	0.27	0.27	ug/m ³
Chloroform	0.5	0.5	ug/m ³
Chloromethane	0.21	0.21	ug/m ³

METHOD DETECTION AND REPORTING LIMITS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Matrix: Air

Instrument: TO15_AIR2

Analyte	LOD	LOQ	Units
cis-1,2-Dichloroethylene	0.4	0.4	ug/m ³
cis-1,3-Dichloropropylene	0.46	0.46	ug/m ³
Cyclohexane	0.35	0.35	ug/m ³
Dibromochloromethane	0.87	0.87	ug/m ³
Dichlorodifluoromethane	0.5	0.5	ug/m ³
Ethyl acetate	0.73	0.73	ug/m ³
Ethyl Benzene	0.44	0.44	ug/m ³
Hexachlorobutadiene	1.1	1.1	ug/m ³
Isopropanol	0.5	0.5	ug/m ³
Methyl Methacrylate	0.42	0.42	ug/m ³
Methyl tert-butyl ether (MTBE)	0.37	0.37	ug/m ³
Methylene chloride	0.71	0.71	ug/m ³
n-Heptane	0.42	0.42	ug/m ³
n-Hexane	0.36	0.36	ug/m ³
o-Xylene	0.44	0.44	ug/m ³
p- & m- Xylenes	0.88	0.88	ug/m ³
p-Ethyltoluene	0.5	0.5	ug/m ³
Propylene	0.18	0.18	ug/m ³
Styrene	0.43	0.43	ug/m ³
Tetrachloroethylene	0.17	0.17	ug/m ³
Tetrahydrofuran	0.6	0.6	ug/m ³
Toluene	0.38	0.38	ug/m ³
trans-1,2-Dichloroethylene	0.4	0.4	ug/m ³
trans-1,3-Dichloropropylene	0.46	0.46	ug/m ³
Trichloroethylene	0.14	0.14	ug/m ³
Trichlorofluoromethane (Freon 11)	0.57	0.57	ug/m ³
Vinyl acetate	0.36	0.36	ug/m ³
Vinyl bromide	0.44	0.44	ug/m ³
Vinyl Chloride	0.26	0.26	ug/m ³

AIR Sample Data

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Soil Vapor Laboratory ID: 19B1031-01 File ID: TQ207185.D
 Sampled: 02/27/19 09:46 Prepared: 03/05/19 08:00 Analyzed: 03/05/19 18:38
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BC90266 Sequence: Y9C0722 Calibration: YB90001 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.53	1.05	U
71-55-6	1,1,1-Trichloroethane	1.53	0.834	U
79-34-5	1,1,2,2-Tetrachloroethane	1.53	1.05	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.53	1.17	U
79-00-5	1,1,2-Trichloroethane	1.53	0.834	U
75-34-3	1,1-Dichloroethane	1.53	0.619	U
75-35-4	1,1-Dichloroethylene	1.53	0.606	U
120-82-1	1,2,4-Trichlorobenzene	1.53	1.13	U
95-63-6	1,2,4-Trimethylbenzene	1.53	6.46	D
106-93-4	1,2-Dibromoethane	1.53	1.17	U
95-50-1	1,2-Dichlorobenzene	1.53	0.919	U
107-06-2	1,2-Dichloroethane	1.53	0.619	U
78-87-5	1,2-Dichloropropane	1.53	0.707	U
76-14-2	1,2-Dichlorotetrafluoroethane	1.53	1.07	U
108-67-8	1,3,5-Trimethylbenzene	1.53	1.95	D
106-99-0	1,3-Butadiene	1.53	1.01	U
541-73-1	1,3-Dichlorobenzene	1.53	0.919	U
142-28-9	1,3-Dichloropropane	1.53	0.707	U
106-46-7	1,4-Dichlorobenzene	1.53	0.919	U
123-91-1	1,4-Dioxane	1.53	1.10	U
78-93-3	2-Butanone	1.53	2.34	D
591-78-6	2-Hexanone	1.53	4.64	BD
107-05-1	3-Chloropropene	1.53	2.39	U
108-10-1	4-Methyl-2-pentanone	1.53	2.57	D
67-64-1	Acetone	1.53	6.28	D
107-13-1	Acrylonitrile	1.53	0.332	U
71-43-2	Benzene	1.53	2.78	D
100-44-7	Benzyl chloride	1.53	0.792	U
75-27-4	Bromodichloromethane	1.53	1.02	U
75-25-2	Bromoform	1.53	1.58	U
74-83-9	Bromomethane	1.53	0.594	U
75-15-0	Carbon disulfide	1.53	0.476	D
56-23-5	Carbon tetrachloride	1.53	0.481	D
108-90-7	Chlorobenzene	1.53	0.704	U
75-00-3	Chloroethane	1.53	0.403	U
67-66-3	Chloroform	1.53	0.747	U
74-87-3	Chloromethane	1.53	3.54	D
156-59-2	cis-1,2-Dichloroethylene	1.53	0.606	D
10061-01-5	cis-1,3-Dichloropropylene	1.53	0.694	U
110-82-7	Cyclohexane	1.53	0.526	U

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Soil Vapor Laboratory ID: 19B1031-01 File ID: TQ207185.D
 Sampled: 02/27/19 09:46 Prepared: 03/05/19 08:00 Analyzed: 03/05/19 18:38
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BC90266 Sequence: Y9C0722 Calibration: YB90001 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
124-48-1	Dibromochloromethane	1.53	1.30	U
75-71-8	Dichlorodifluoromethane	1.53	2.12	D
141-78-6	Ethyl acetate	1.53	1.10	U
100-41-4	Ethyl Benzene	1.53	3.59	D
87-68-3	Hexachlorobutadiene	1.53	1.63	U
67-63-0	Isopropanol	1.53	1.13	D
80-62-6	Methyl Methacrylate	1.53	0.626	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1.53	0.551	U
75-09-2	Methylene chloride	1.53	1.91	D
142-82-5	n-Heptane	1.53	1.32	D
110-54-3	n-Hexane	1.53	1.08	D
95-47-6	o-Xylene	1.53	5.05	D
179601-23-1	p- & m- Xylenes	1.53	14.3	D
622-96-8	p-Ethyltoluene	1.53	5.86	D
115-07-1	Propylene	1.53	0.263	U
100-42-5	Styrene	1.53	0.651	U
127-18-4	Tetrachloroethylene	1.53	2.18	D
109-99-9	Tetrahydrofuran	1.53	1.80	D
108-88-3	Toluene	1.53	12.4	D
156-60-5	trans-1,2-Dichloroethylene	1.53	0.606	U
10061-02-6	trans-1,3-Dichloropropylene	1.53	0.694	U
79-01-6	Trichloroethylene	1.53	0.904	D
75-69-4	Trichlorofluoromethane (Freon 11)	1.53	1.29	D
108-05-4	Vinyl acetate	1.53	0.538	U
593-60-2	Vinyl bromide	1.53	0.669	U
75-01-4	Vinyl Chloride	1.53	0.391	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
SURR: p-Bromofluorobenzene	10.0	9.09	90.9	72 - 118	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	465388	12.494	434873	12.512	
ISTD: 1,4-Difluorobenzene	1377622	14.091	1403418	14.103	
ISTD: d5-Chlorobenzene	1171264	19.37	1188268	19.377	

* Values outside of QC limits

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207185.D
 Acq On : 5 Mar 2019 6:38 pm
 Sample : 19B1031-01 Inst : TO15_AIR2
 Operator : AS
 Sample : 19B1031-01
 Misc : QBTO2030519A 1031-01 1X
 ALS Vial : 5 Sample Multiplier: 1.529

Quant Time: Mar 07 13:38:48 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

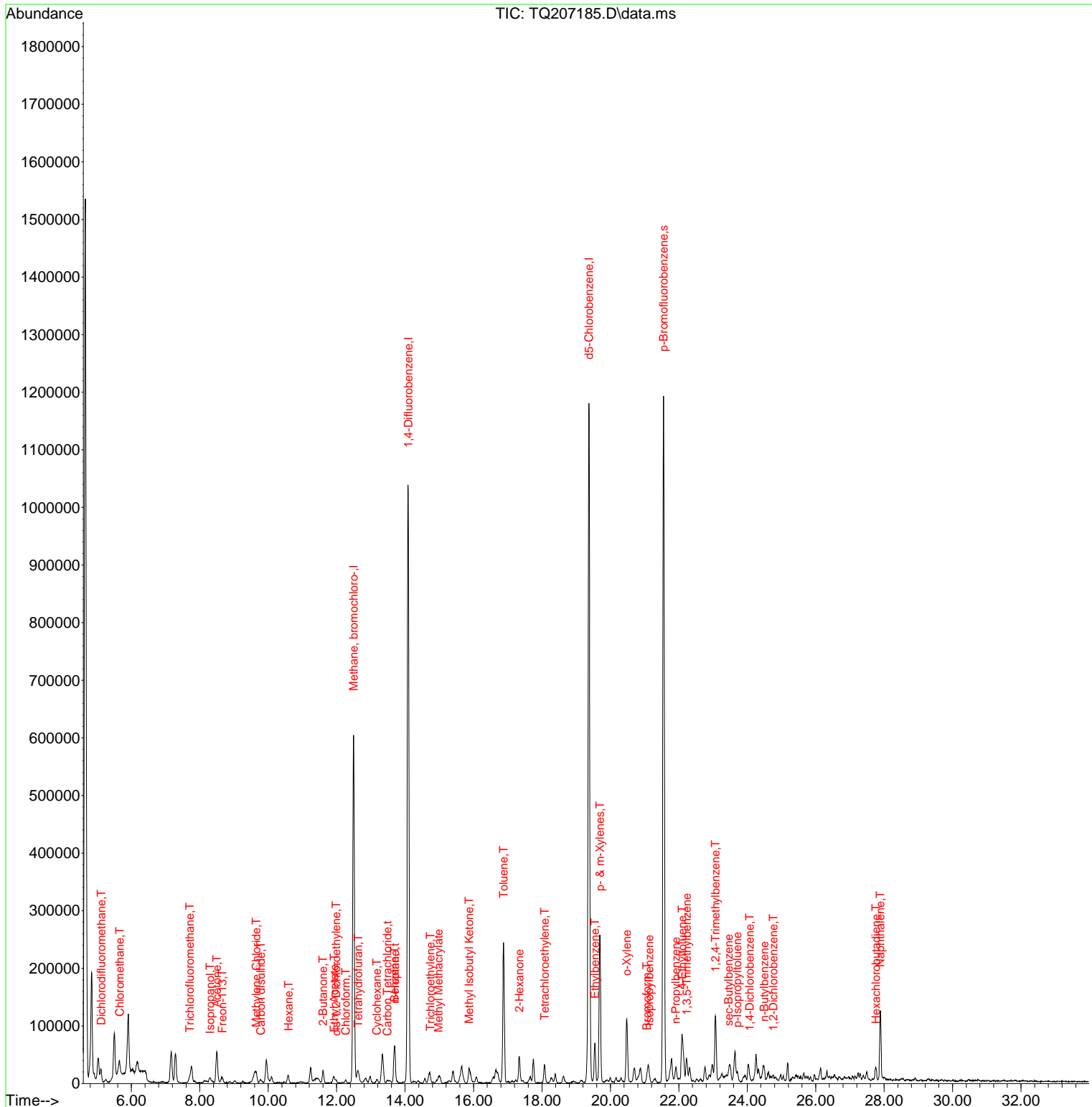
Internal Standards						
1) Methane, bromochloro-	12.494	49	465388	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.091	114	1377622	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.370	117	1171264	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	751320	9.09	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	90.90%	
Target Compounds						
						Qvalue
3) Dichlorodifluoromethane	5.117	85	29232	0.28	ppbv	98
5) Chloromethane	5.654	50	40795	1.12	ppbv	93
11) Trichlorofluoromethane	7.702	101	16295	0.15	ppbv #	98
12) Isopropanol	8.299	45	20029	0.30	ppbv	100
14) Acetone	8.495	43	110833	1.73	ppbv	100
15) Freon-113	8.653	101	4709m	0.06	ppbv	
18) Methylene Chloride	9.647	49	16001	0.36	ppbv	92
20) Carbon disulfide	9.781	76	10675	0.10	ppbv	98
23) Hexane	10.586	57	11487	0.20	ppbv	95
26) 2-Butanone	11.598	43	43065	0.52	ppbv	98
27) Ethyl Acetate	11.927	43	8203	0.09	ppbv #	35
28) cis-1,2-Dichloroethylene	11.988	61	5997	0.10	ppbv	89
29) Chloroform	12.262	83	7844	0.09	ppbv #	93
30) Tetrahydrofuran	12.628	42	17370m	0.40	ppbv	
32) Cyclohexane	13.170	56	5101	0.09	ppbv #	73
33) Carbon Tetrachloride	13.481	117	4520	0.05	ppbv	98
35) Benzene	13.689	78	76172	0.57	ppbv #	54
36) n-Heptane	13.701	43	13313	0.21	ppbv #	76
38) Trichloroethylene	14.737	95	6194	0.11	ppbv #	73
40) Methyl Methacrylate	14.975	69	2620	0.06	ppbv #	38
43) Methyl Isobutyl Ketone	15.871	43	35761	0.41	ppbv #	84
45) Toluene	16.877	91	313554	2.15	ppbv	98
48) 2-Hexanone	17.340	43	55372	0.74	ppbv #	95
50) Tetrachloroethylene	18.078	166	14895	0.21	ppbv	94
56) Ethylbenzene	19.547	91	89067	0.54	ppbv	97
57) p- & m-Xylenes	19.694	91	269356	2.16	ppbv	97
58) o-Xylene	20.474	91	108277	0.76	ppbv	99
60) Bromoform	21.065	173	3387	0.04	ppbv #	44
61) n-Propylbenzene	21.907	91	36258	0.16	ppbv	99
62) Isopropylbenzene	21.132	105	13912	0.08	ppbv	98
65) 4-Ethyltoluene	22.096	105	138789	0.78	ppbv	97
66) 1,3,5-Trimethylbenzene	22.230	105	39780	0.26	ppbv #	96
68) 1,2,4-Trimethylbenzene	23.071	105	133868	0.86	ppbv	97
69) sec-Butylbenzene	23.449	105	11082	0.05	ppbv #	95
70) p-Isopropyltoluene	23.705	119	18707	0.10	ppbv #	88
72) 1,4-Dichlorobenzene	24.071	146	4597	0.05	ppbv #	81
74) n-Butylbenzene	24.491	91	16874	0.10	ppbv #	88
75) 1,2-Dichlorobenzene	24.760	146	5342	0.05	ppbv #	86
77) Hexachlorobutadiene	27.759	225	5329	0.06	ppbv	93
78) Naphthalene	27.887	128	150361	1.02	ppbv	99

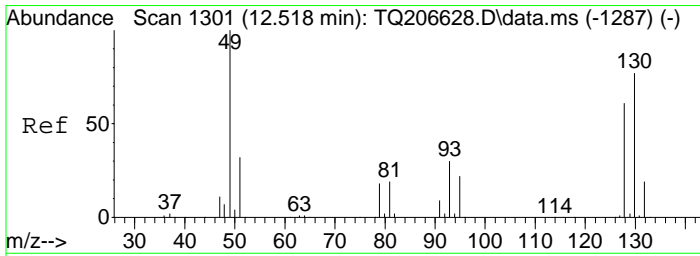
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207185.D
 Acq On : 5 Mar 2019 6:38 pm
 Sample : 19B1031-01
 Operator : AS
 Sample : 19B1031-01
 Misc : QBTO2030519A 1031-01 1X
 ALS Vial : 5 Sample Multiplier: 1.529

Inst : TO15_AIR2

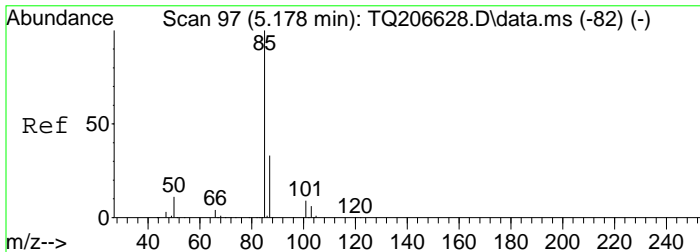
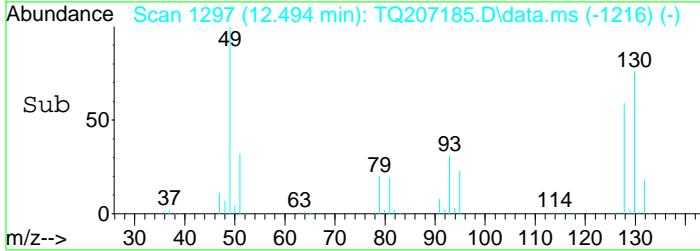
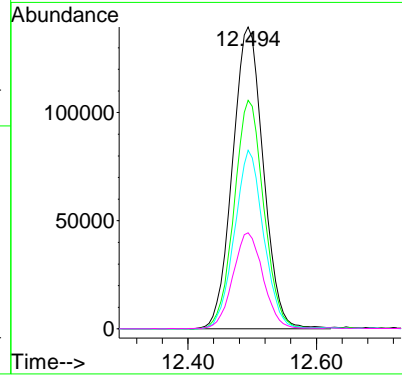
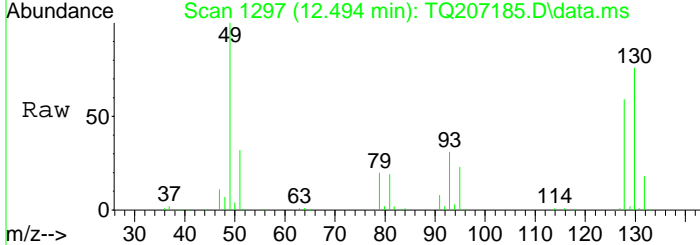
Quant Time: Mar 07 13:38:48 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration





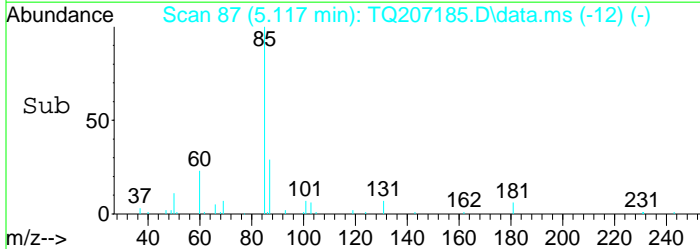
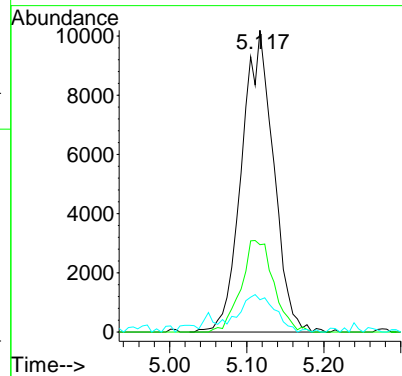
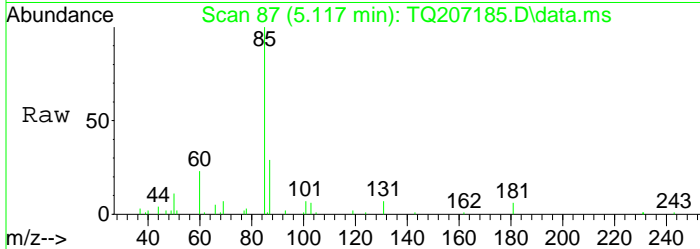
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.494 min Scan# 1297
 Delta R.T. -0.006 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

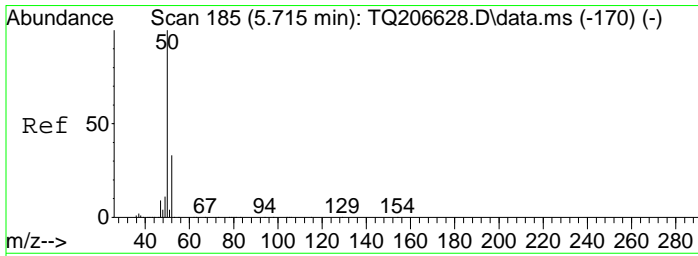
Tgt Ion	Resp	Lower	Upper
49	100		
130	73.1	48.1	99.9
128	55.9	38.3	79.5
51	31.3	20.3	42.3



#3
 Dichlorodifluoromethane
 Concen: 0.28 ppbv
 RT: 5.117 min Scan# 87
 Delta R.T. -0.040 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

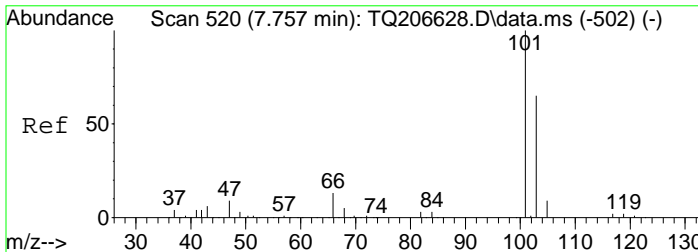
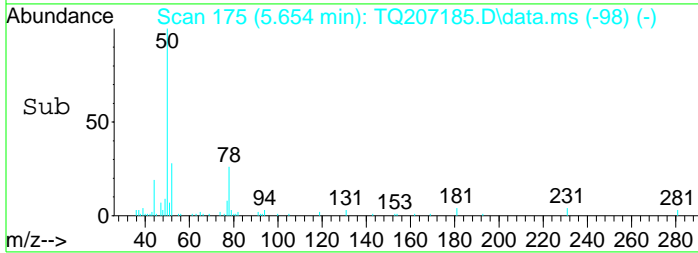
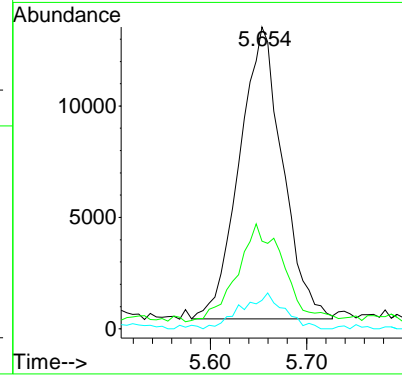
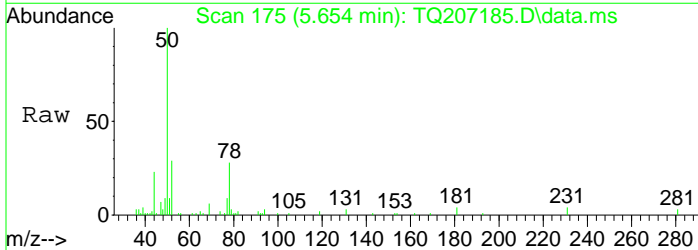
Tgt Ion	Resp	Lower	Upper
85	100		
87	31.3	20.9	43.5
50	12.4	7.2	15.0





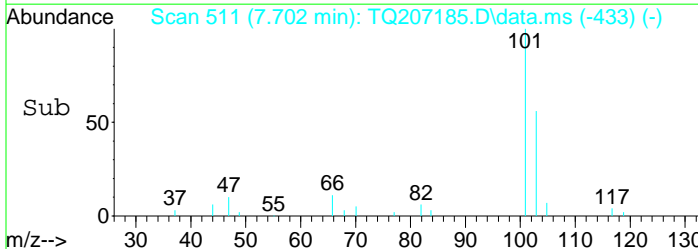
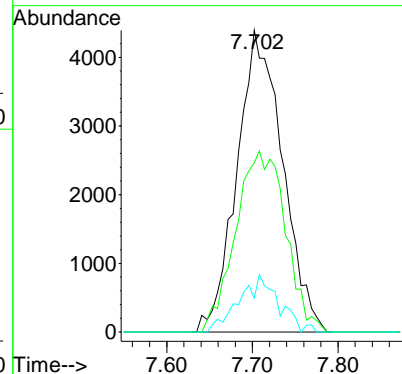
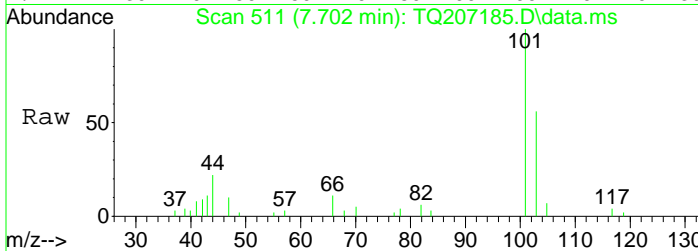
#5
 Chloromethane
 Concen: 1.12 ppbv
 RT: 5.654 min Scan# 175
 Delta R.T. -0.028 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

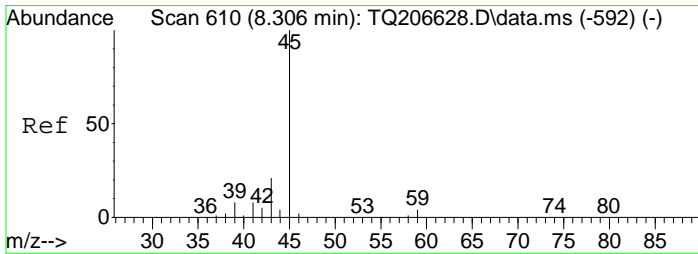
Tgt Ion	Resp	Lower	Upper
50	100		
52	27.2	0.0	65.2
49	9.8	0.0	19.6



#11
 Trichlorofluoromethane
 Concen: 0.15 ppbv
 RT: 7.702 min Scan# 511
 Delta R.T. -0.025 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

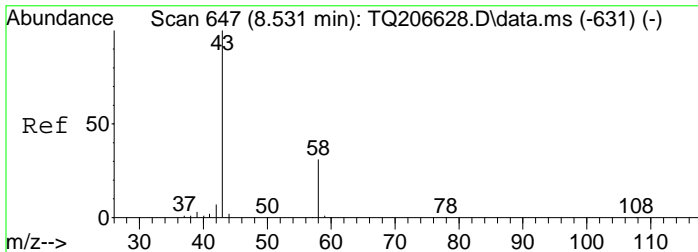
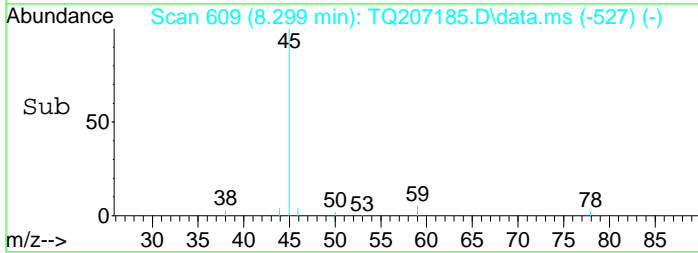
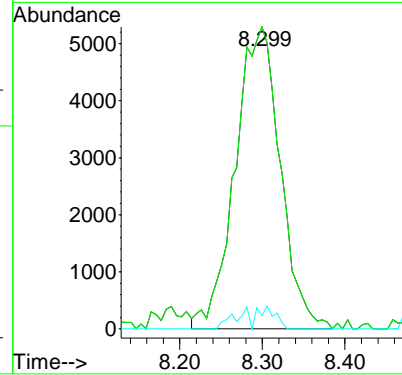
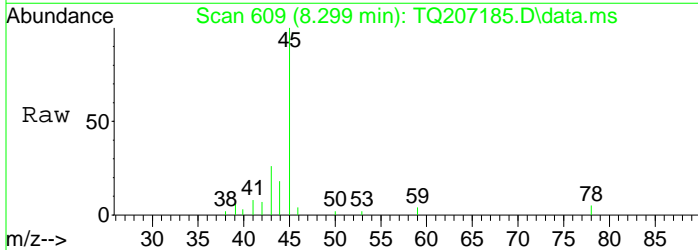
Tgt Ion	Resp	Lower	Upper
101	100		
103	65.4	42.3	87.8
66	16.5	7.8	16.2#





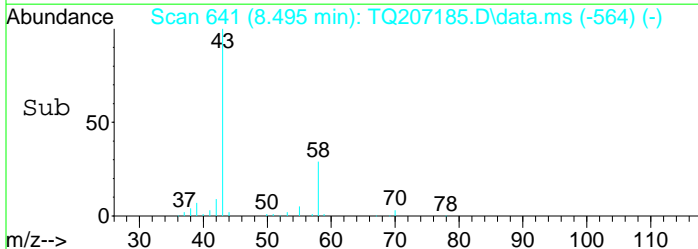
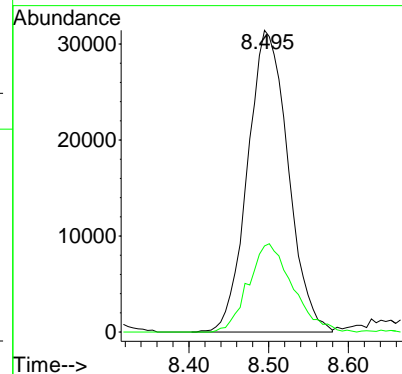
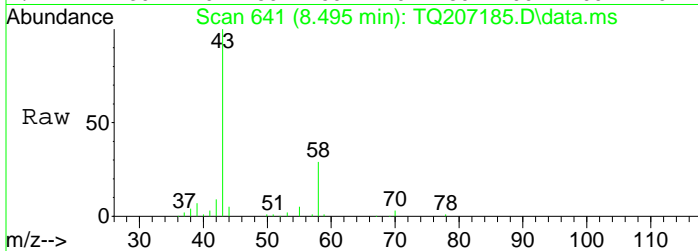
#12
 Isopropanol
 Concen: 0.30 ppbv
 RT: 8.299 min Scan# 609
 Delta R.T. -0.001 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

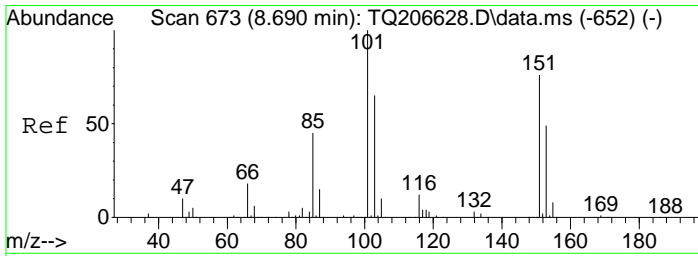
Tgt Ion	Resp	Lower	Upper
45	100		
45	100.0	65.0	135.0
59	2.9	0.0	10.0



#14
 Acetone
 Concen: 1.73 ppbv
 RT: 8.495 min Scan# 641
 Delta R.T. -0.032 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

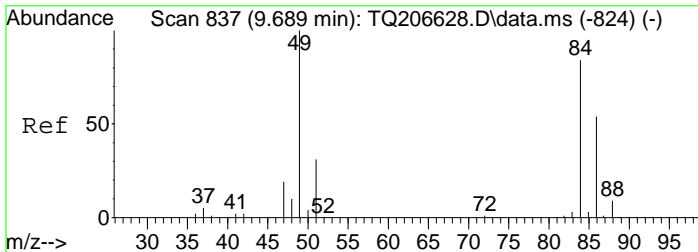
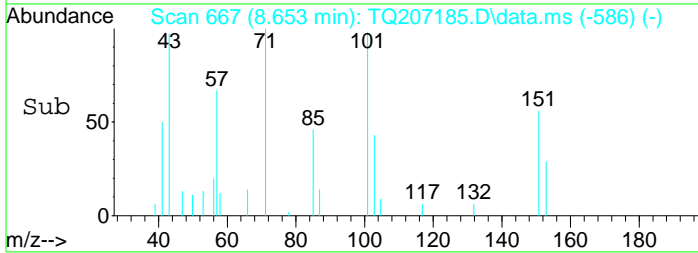
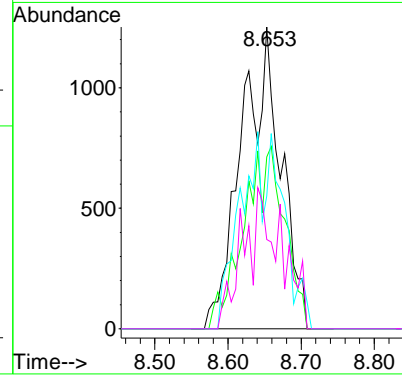
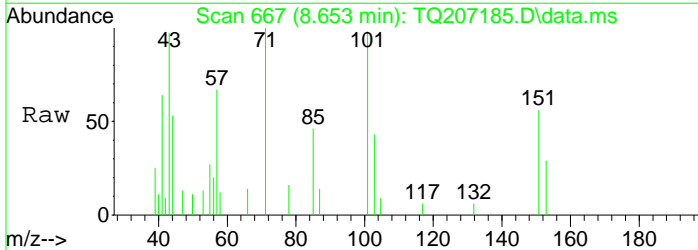
Tgt Ion	Resp	Lower	Upper
43	100		
43	100		
58	31.9	20.9	43.3





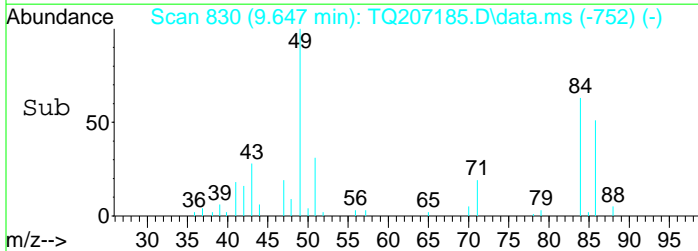
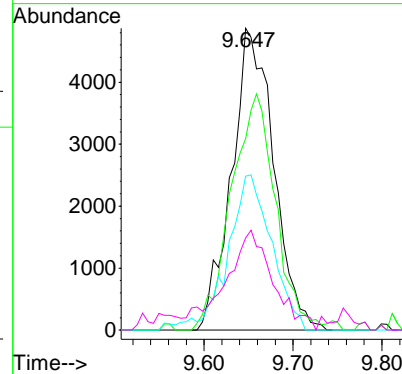
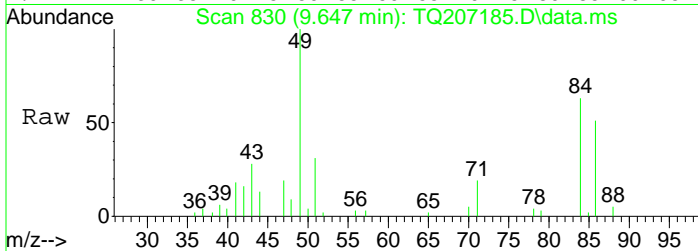
#15
 Freon-113
 Concen: 0.06 ppbv m
 RT: 8.653 min Scan# 667
 Delta R.T. -0.007 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

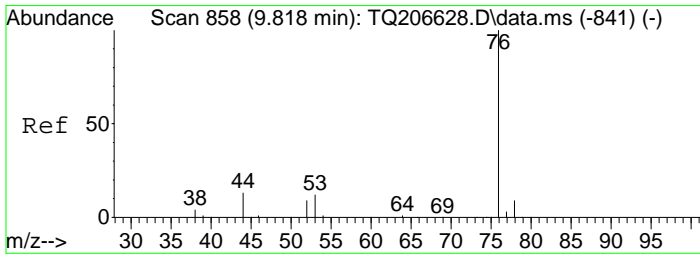
Tgt Ion	Resp	Lower	Upper
101	4709		
151	30.6	50.5	104.9#
103	31.6	42.0	87.2#
153	0.0	32.4	67.4#



#18
 Methylene Chloride
 Concen: 0.36 ppbv
 RT: 9.647 min Scan# 830
 Delta R.T. -0.025 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

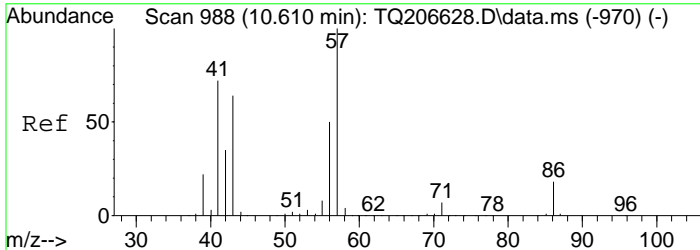
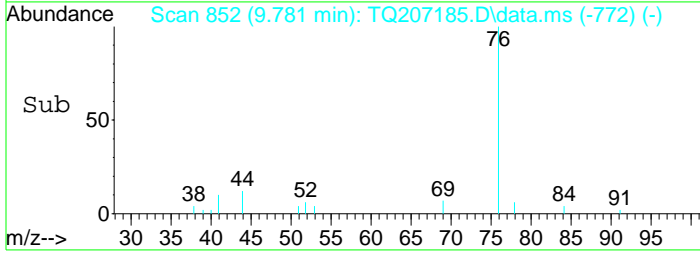
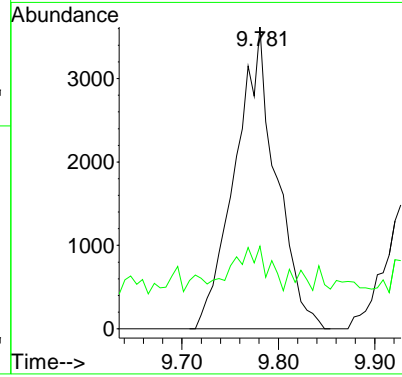
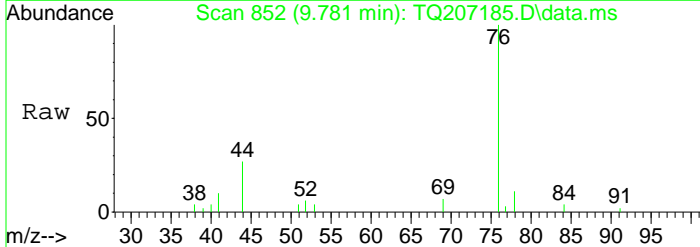
Tgt Ion	Resp	Lower	Upper
49	16001		
84	82.1	49.9	103.5
86	53.7	31.8	66.0
51	37.8	20.2	41.9





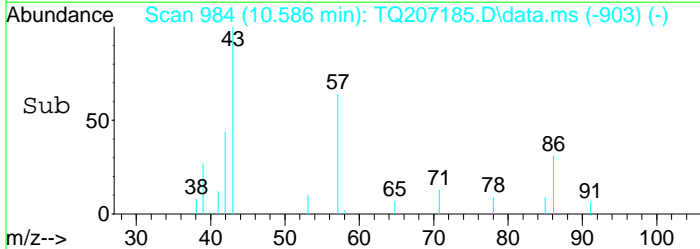
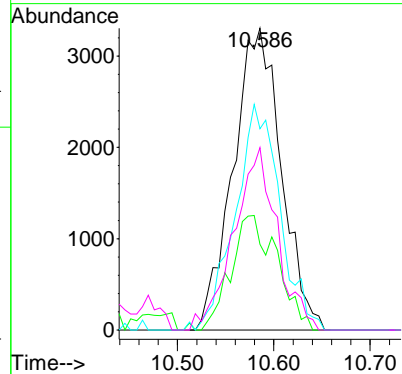
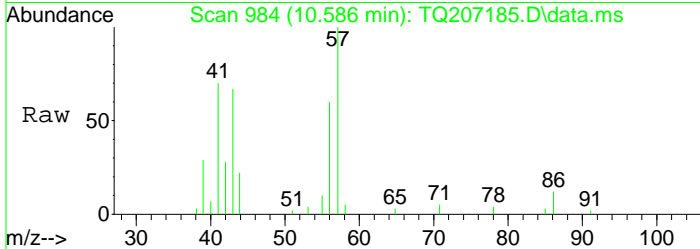
#20
 Carbon disulfide
 Concen: 0.10 ppbv
 RT: 9.781 min Scan# 852
 Delta R.T. -0.012 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

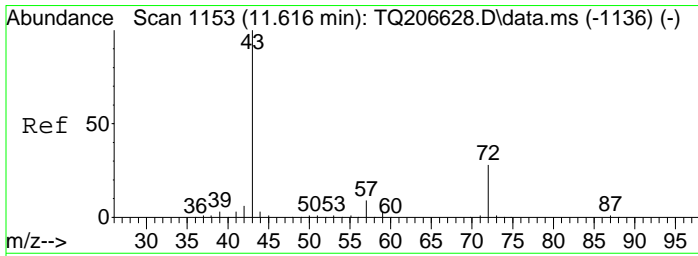
Tgt Ion	Resp	Lower	Upper
76	10675		
44	12.1	8.3	17.3



#23
 Hexane
 Concen: 0.20 ppbv
 RT: 10.586 min Scan# 984
 Delta R.T. -0.008 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

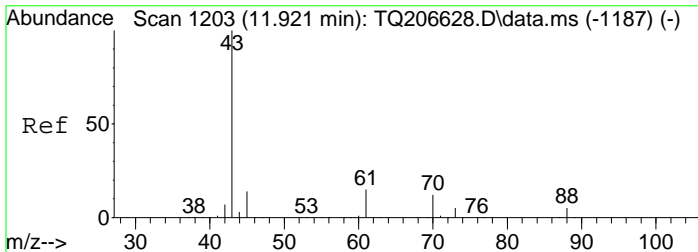
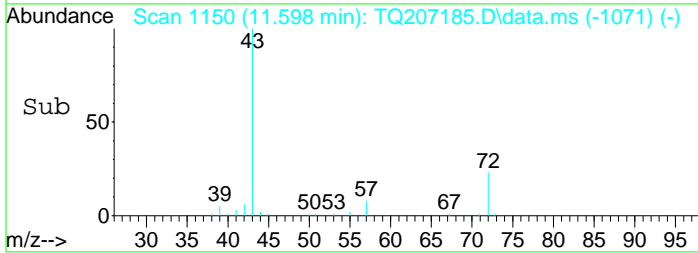
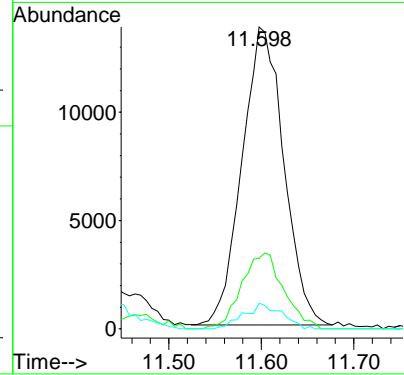
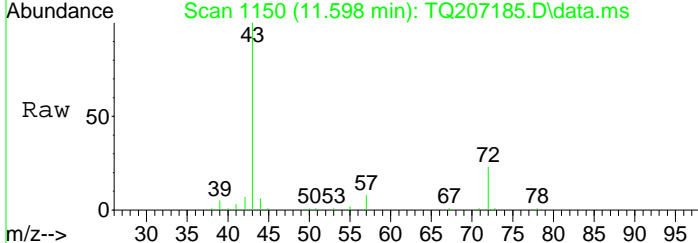
Tgt Ion	Resp	Lower	Upper
57	11487		
42	36.3	21.6	45.0
43	69.6	42.0	87.2
56	54.0	33.3	69.1





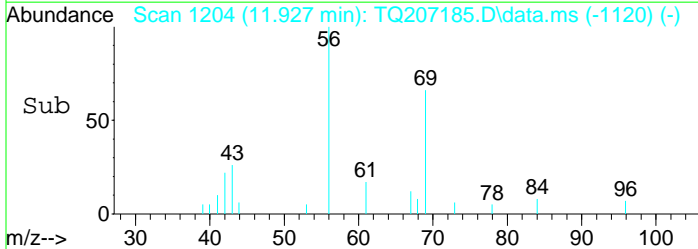
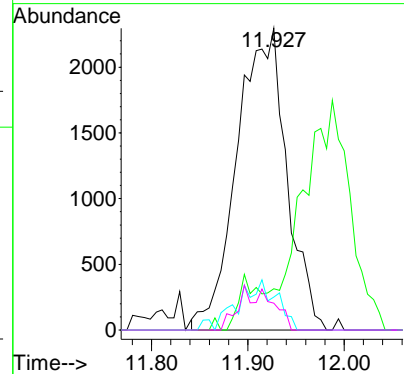
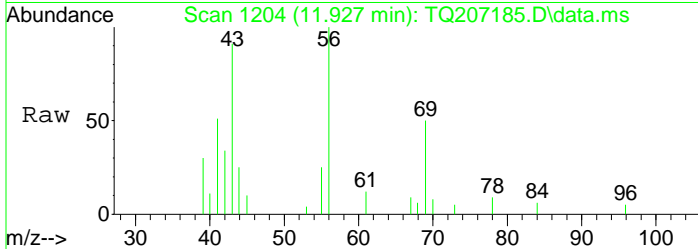
#26
 2-Butanone
 Concen: 0.52 ppbv
 RT: 11.598 min Scan# 1150
 Delta R.T. -0.019 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

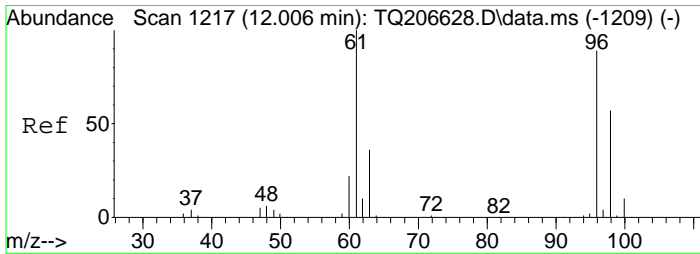
Tgt Ion	Resp	Lower	Upper
43	100		
72	25.7	16.1	33.5
57	7.8	4.9	10.3



#27
 Ethyl Acetate
 Concen: 0.09 ppbv
 RT: 11.927 min Scan# 1204
 Delta R.T. 0.013 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

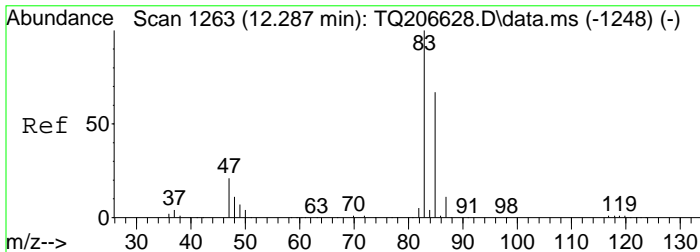
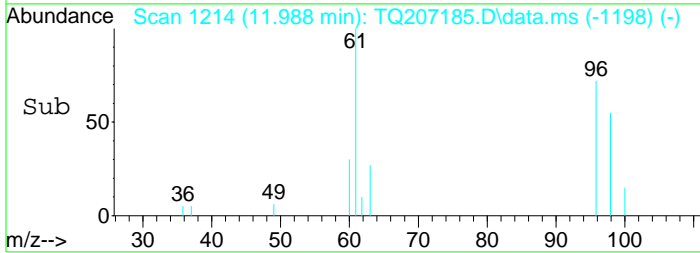
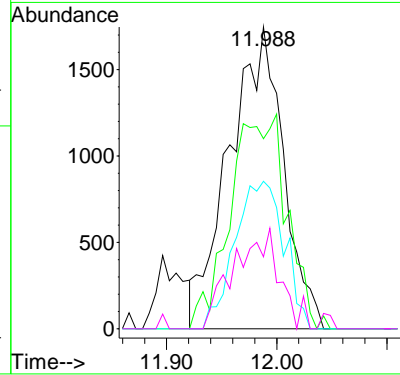
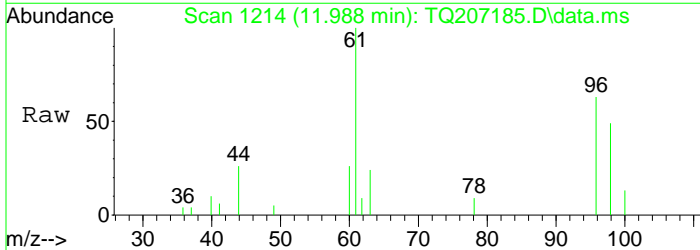
Tgt Ion	Resp	Lower	Upper
43	100		
61	7.1	51.4	106.8#
45	13.3	9.4	19.6
70	0.0	7.5	15.5#





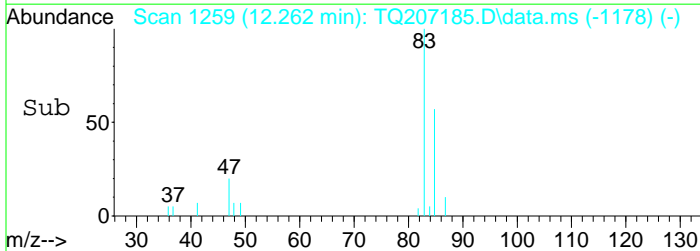
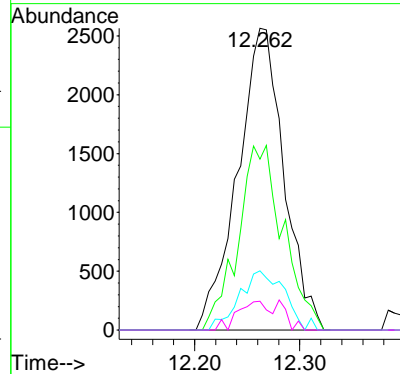
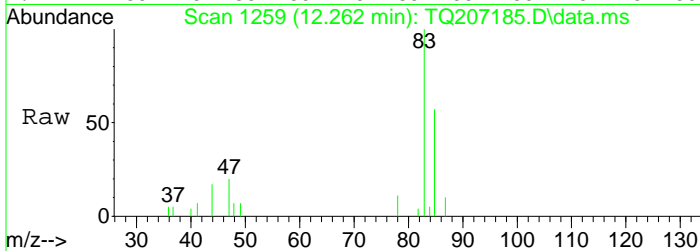
#28
 cis-1,2-Dichloroethylene
 Concen: 0.10 ppbv
 RT: 11.988 min Scan# 1214
 Delta R.T. -0.000 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

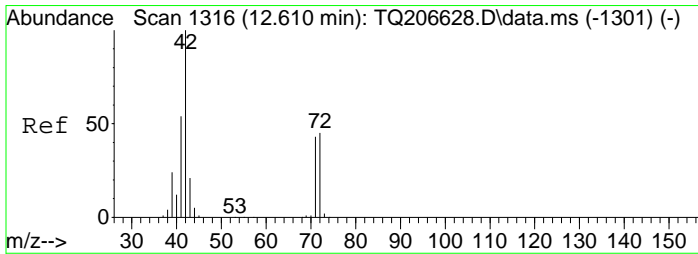
Tgt Ion	Resp	Lower	Upper
61	100		
96	74.0	39.8	82.8
98	44.6	25.5	52.9
63	28.1	17.3	35.9



#29
 Chloroform
 Concen: 0.09 ppbv
 RT: 12.262 min Scan# 1259
 Delta R.T. -0.006 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

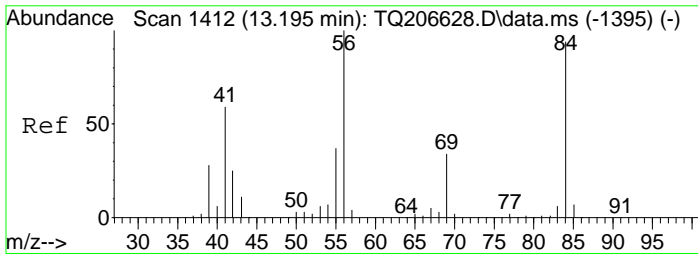
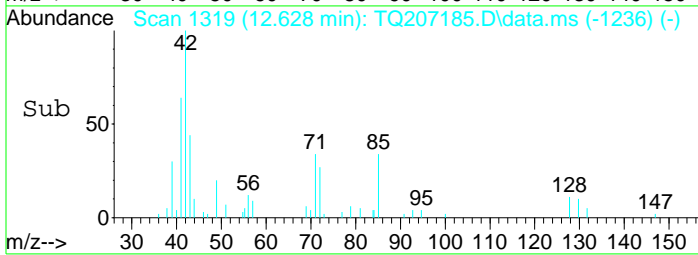
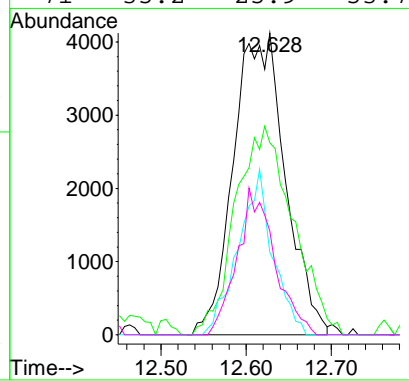
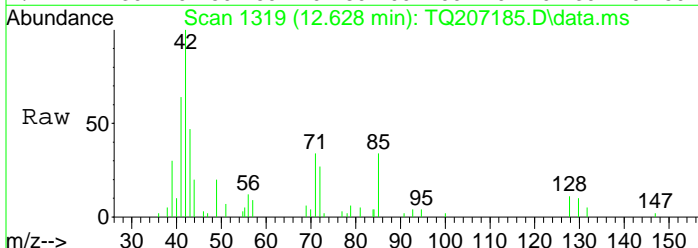
Tgt Ion	Resp	Lower	Upper
83	100		
85	59.7	41.7	86.7
47	19.2	15.1	31.5
87	6.6	6.7	13.9#





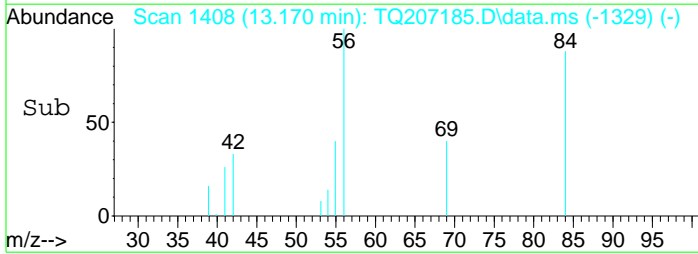
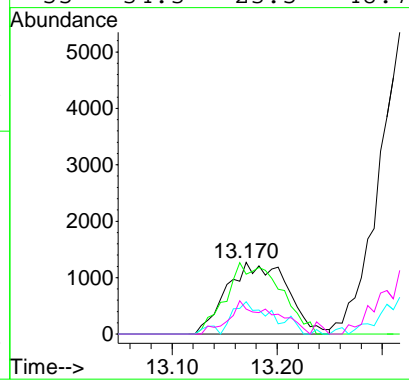
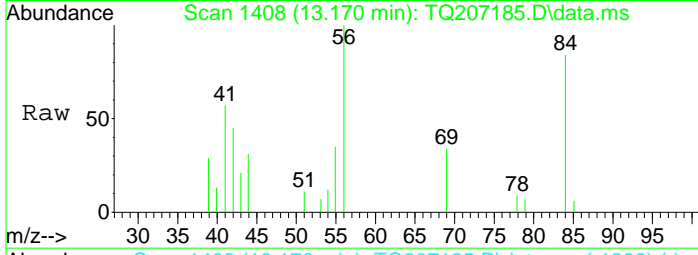
#30
 Tetrahydrofuran
 Concen: 0.40 ppbv m
 RT: 12.628 min Scan# 1319
 Delta R.T. 0.006 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

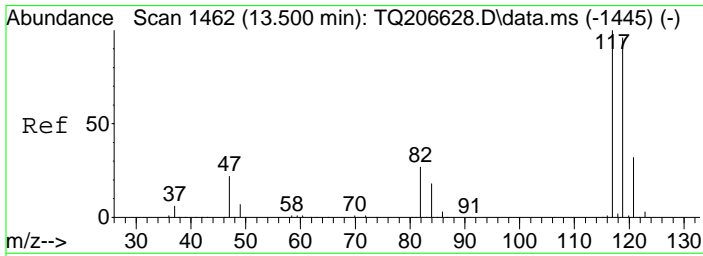
Tgt Ion	Resp	Lower	Upper
42	100		
41	76.8	35.2	73.0#
72	36.5	27.2	56.6
71	35.2	25.9	53.7



#32
 Cyclohexane
 Concen: 0.09 ppbv
 RT: 13.170 min Scan# 1408
 Delta R.T. -0.016 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

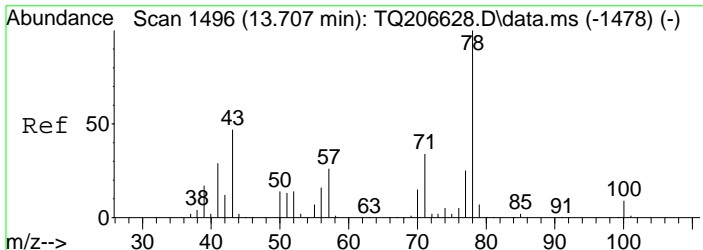
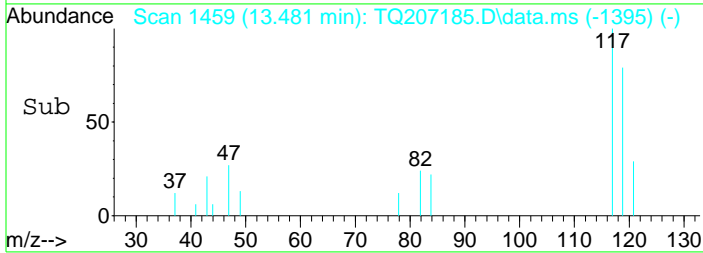
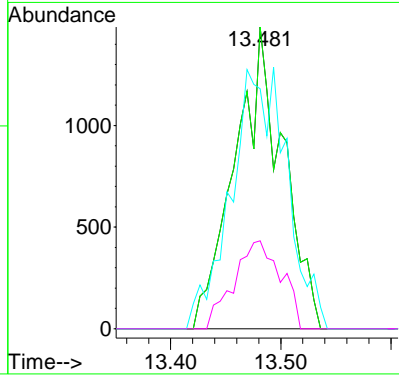
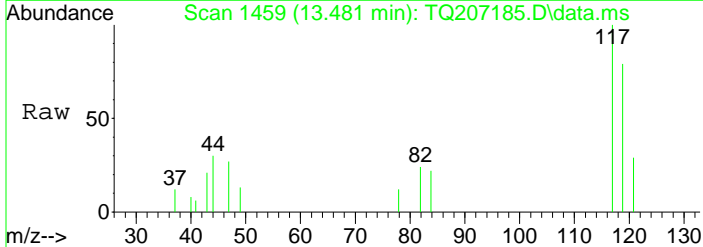
Tgt Ion	Resp	Lower	Upper
56	100		
84	45.0	54.1	112.3#
42	29.5	15.3	31.7
55	34.3	23.5	48.7





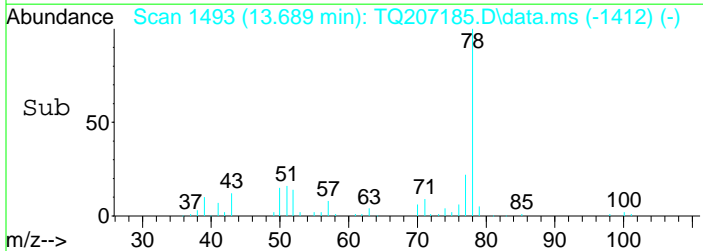
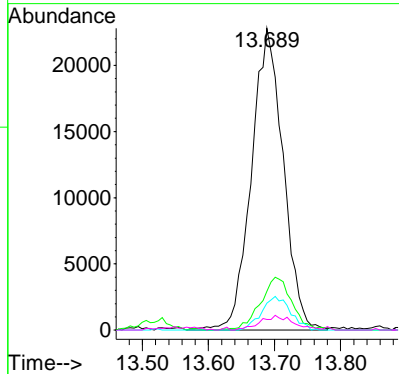
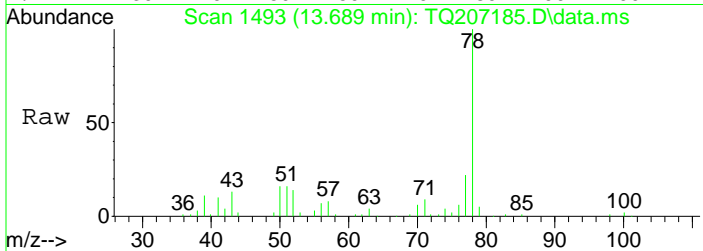
#33
 Carbon Tetrachloride
 Concen: 0.05 ppbv
 RT: 13.481 min Scan# 1459
 Delta R.T. -0.007 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

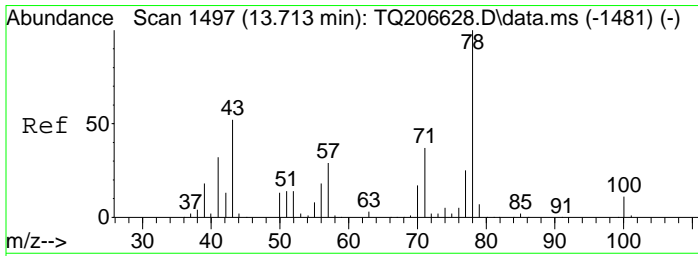
Tgt Ion	Resp	Lower	Upper
117	4520		
117	100	80.0	120.0
119	100.2	76.9	115.3
121	28.6	21.7	40.3



#35
 Benzene
 Concen: 0.57 ppbv
 RT: 13.689 min Scan# 1493
 Delta R.T. -0.007 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

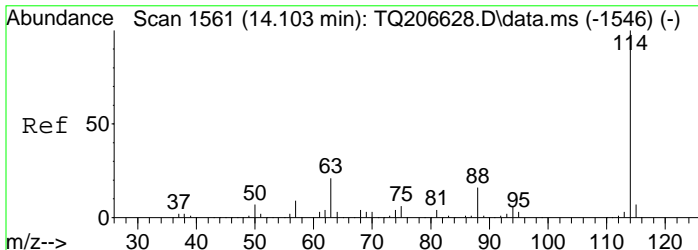
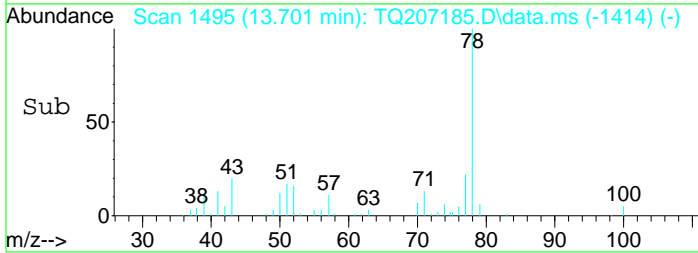
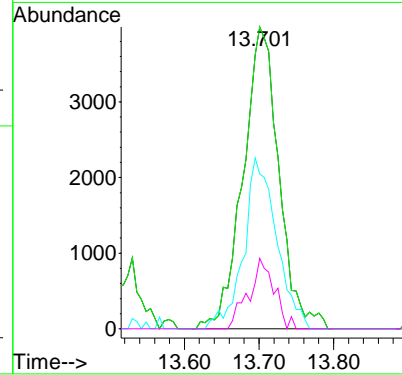
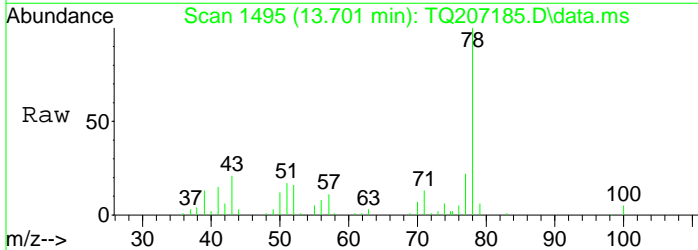
Tgt Ion	Resp	Lower	Upper
78	76172		
78	100		
43	17.5	37.5	77.9#
71	10.1	22.0	45.8#
42	5.0	8.8	18.4#





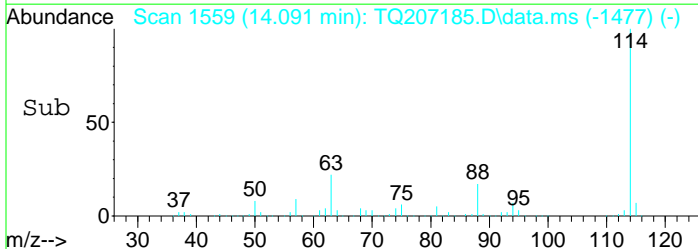
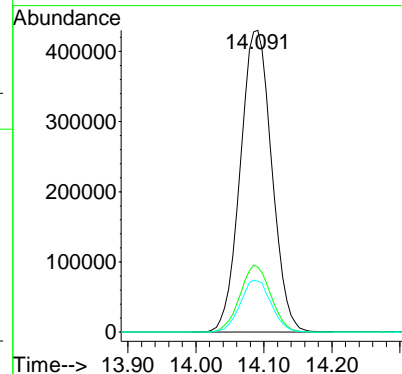
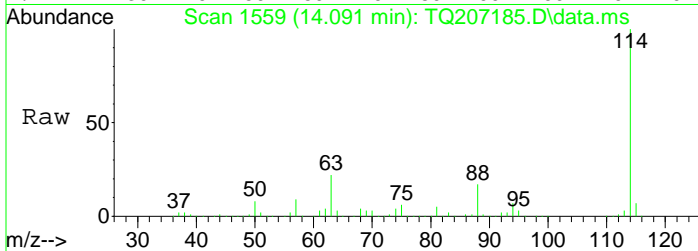
#36
 n-Heptane
 Concen: 0.21 ppbv
 RT: 13.701 min Scan# 1495
 Delta R.T. -0.008 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

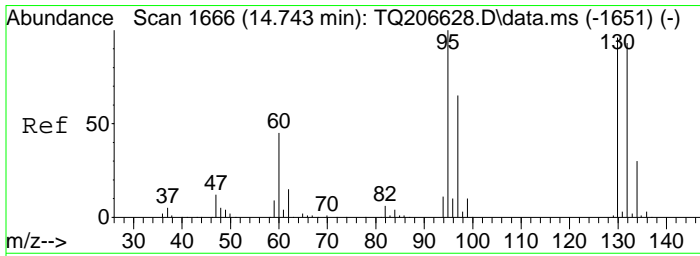
Tgt Ion	Resp	Lower	Upper
43	100		
43	100.0	80.0	120.0
57	0.0	42.6	64.0#
100	16.7	13.3	19.9



#37
 1,4-Difluorobenzene
 Concen: 10.00 ppbv
 RT: 14.091 min Scan# 1559
 Delta R.T. -0.001 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

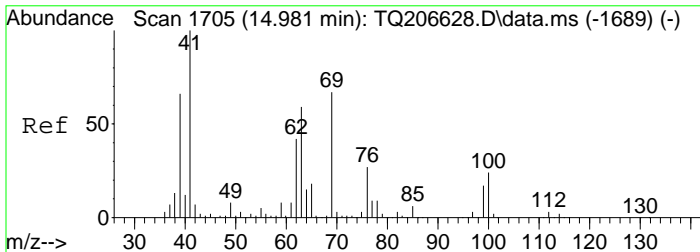
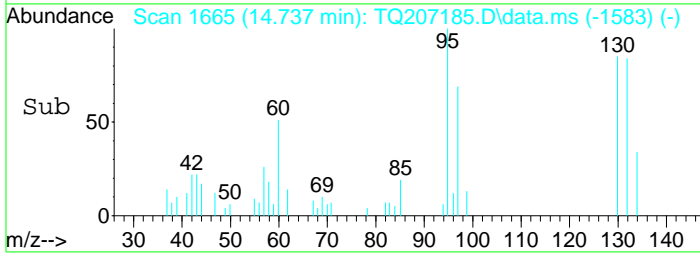
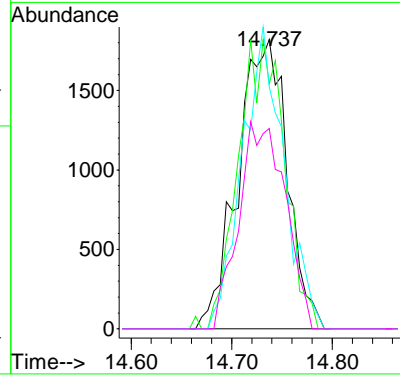
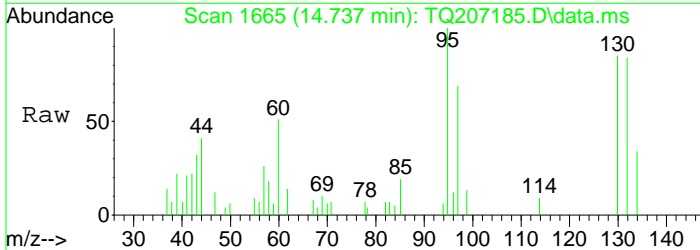
Tgt Ion	Resp	Lower	Upper
114	100		
63	21.8	12.9	26.9
88	16.9	10.7	22.3





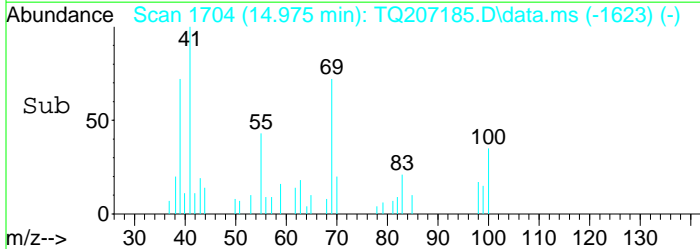
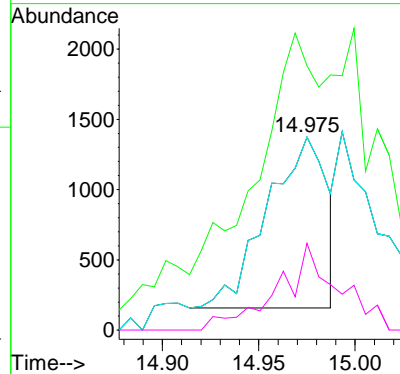
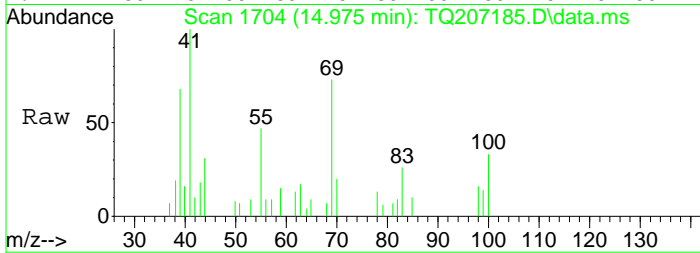
#38
 Trichloroethylene
 Concen: 0.11 ppbv
 RT: 14.737 min Scan# 1665
 Delta R.T. 0.003 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

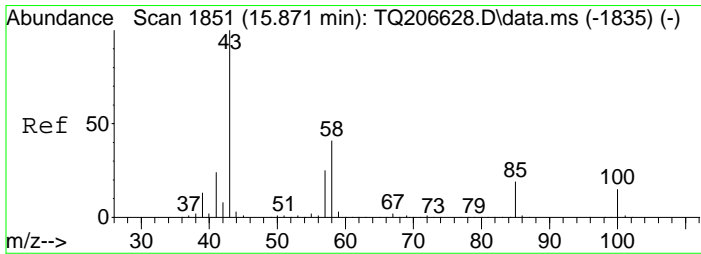
Tgt Ion	Resp	Lower	Upper
95	6194		
130	43.6	66.0	137.0#
132	87.8	63.3	131.5
97	67.7	41.9	87.1



#40
 Methyl Methacrylate
 Concen: 0.06 ppbv
 RT: 14.975 min Scan# 1704
 Delta R.T. -0.004 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

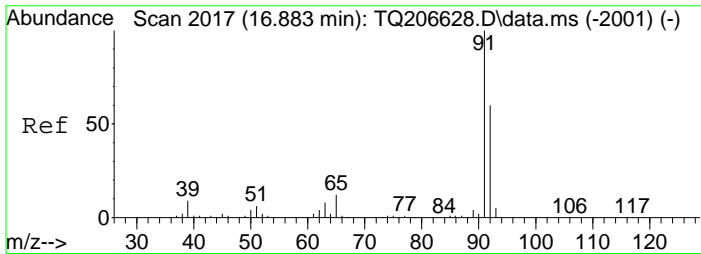
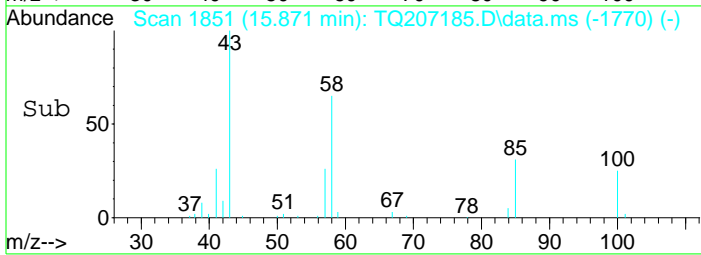
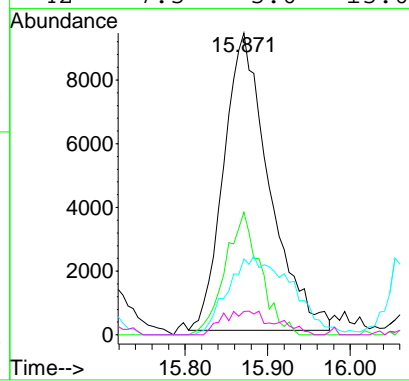
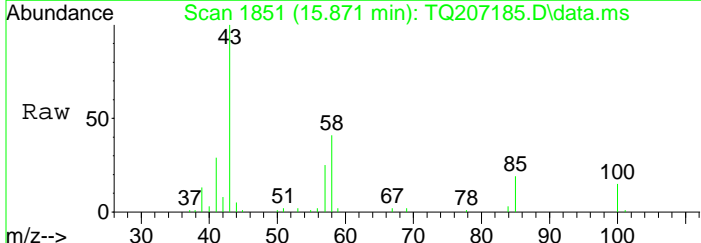
Tgt Ion	Resp	Lower	Upper
69	2620		
41	0.0	70.0	210.0#
69	100.0	50.0	150.0
100	51.2	17.5	52.5





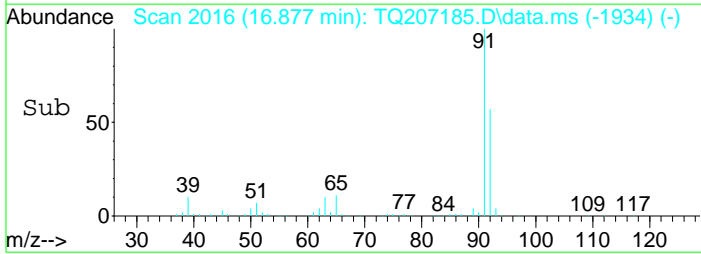
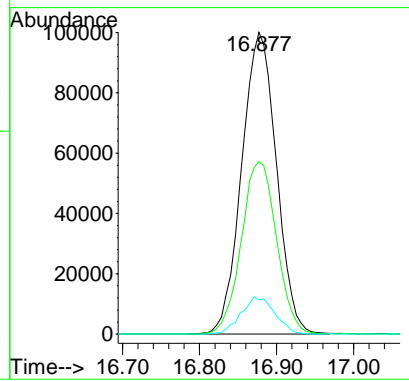
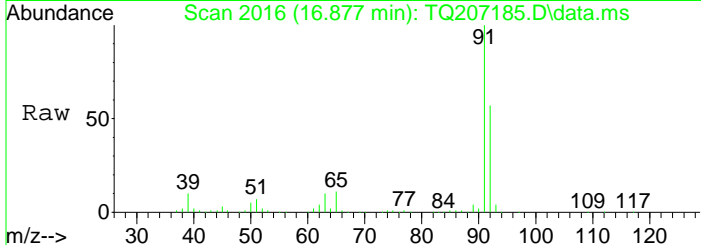
#43
 Methyl Isobutyl Ketone
 Concen: 0.41 ppbv
 RT: 15.871 min Scan# 1851
 Delta R.T. -0.005 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

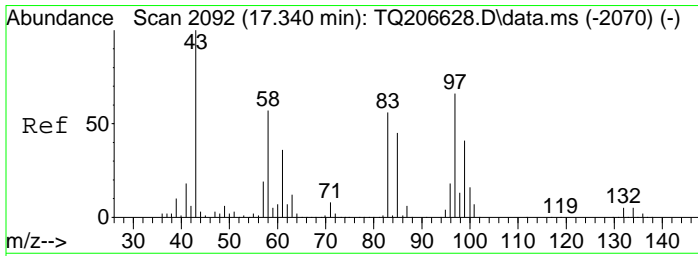
Tgt Ion	Resp	Lower	Upper
43	35761		
58	31.8	25.1	52.1
57	37.1	15.5	32.3#
42	7.5	5.0	15.0



#45
 Toluene
 Concen: 2.15 ppbv
 RT: 16.877 min Scan# 2016
 Delta R.T. 0.000 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

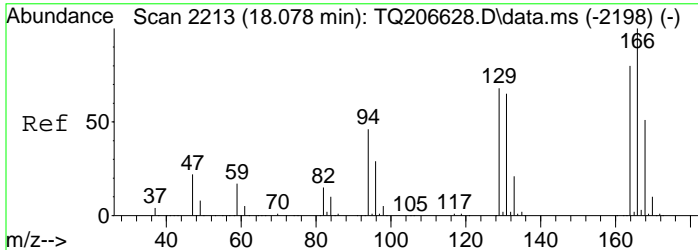
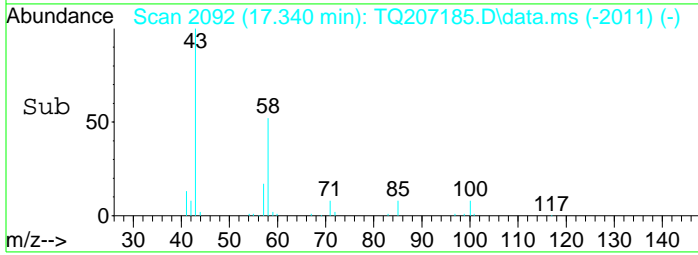
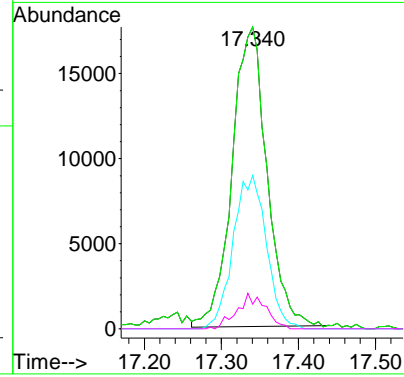
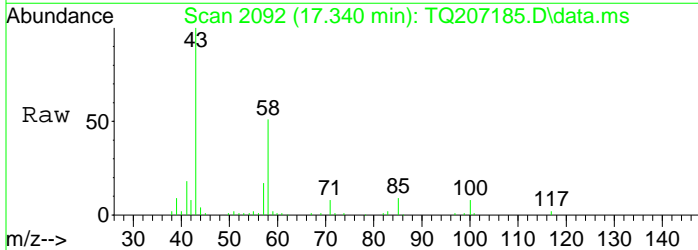
Tgt Ion	Resp	Lower	Upper
91	313554		
92	58.0	38.7	80.3
65	12.0	7.5	15.5





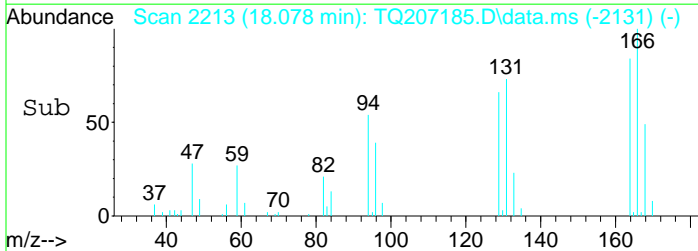
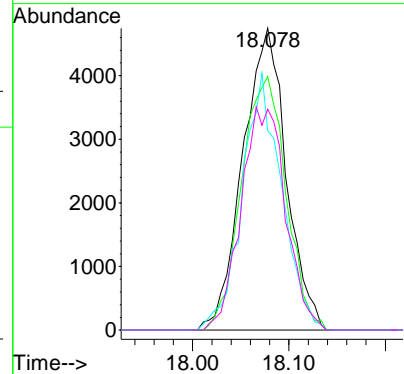
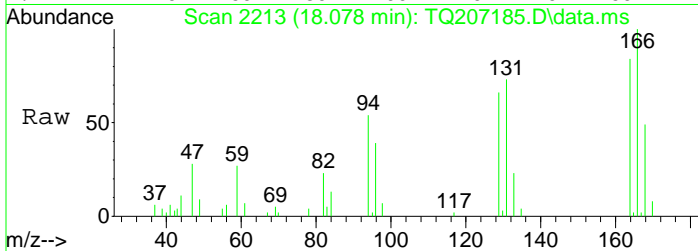
#48
 2-Hexanone
 Concen: 0.74 ppbv
 RT: 17.340 min Scan# 2092
 Delta R.T. -0.004 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

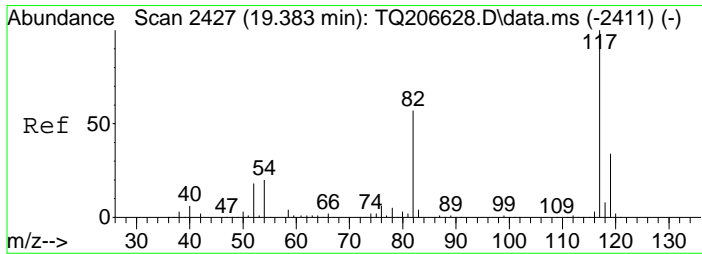
Tgt Ion	Resp	Lower	Upper
43	100		
43	100.0	80.0	120.0
58	48.8	44.2	66.4
100	0.0	0.0	24.4



#50
 Tetrachloroethylene
 Concen: 0.21 ppbv
 RT: 18.078 min Scan# 2213
 Delta R.T. 0.001 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

Tgt Ion	Resp	Lower	Upper
166	100		
164	86.0	51.0	106.0
129	76.9	48.1	99.9
131	75.6	46.3	96.3

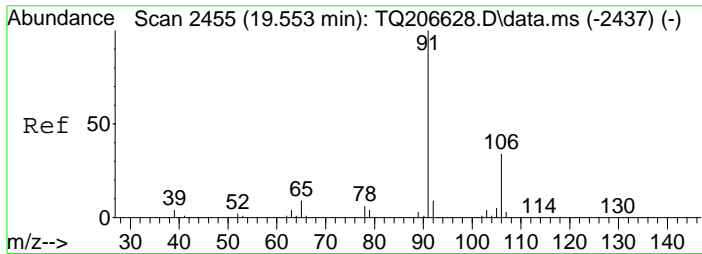
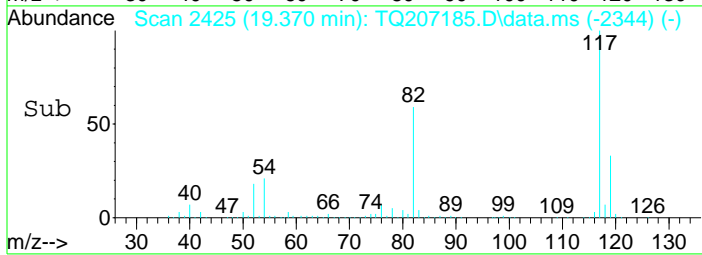
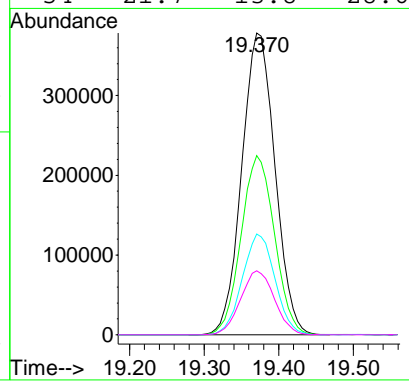
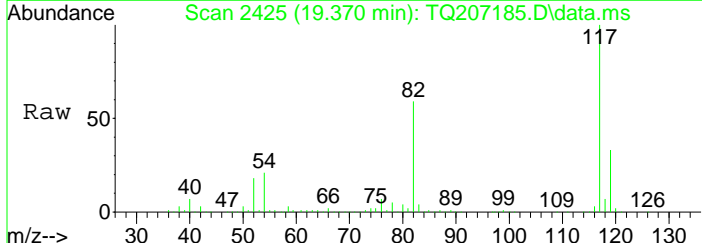




#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 19.370 min Scan# 2425
 Delta R.T. -0.006 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

Tgt Ion: 117 Resp: 1171264

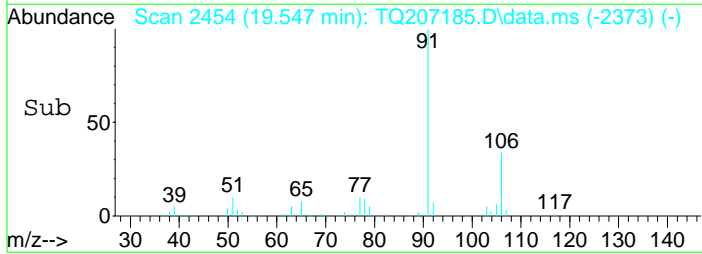
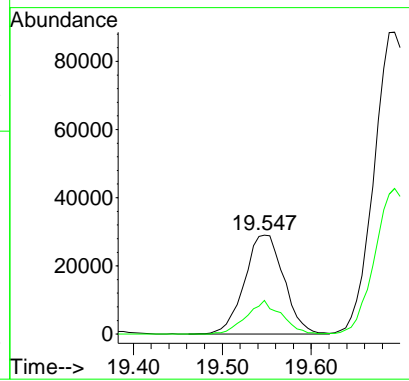
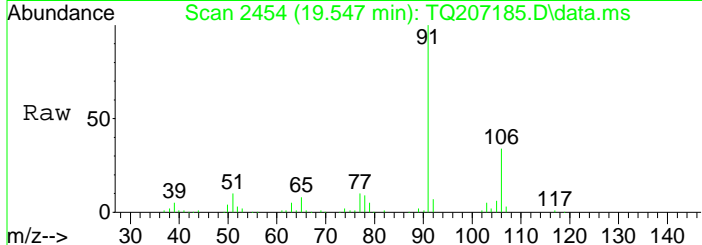
Ion	Ratio	Lower	Upper
117	100		
82	59.8	37.1	77.1
119	32.9	22.1	45.9
54	21.7	13.8	28.6

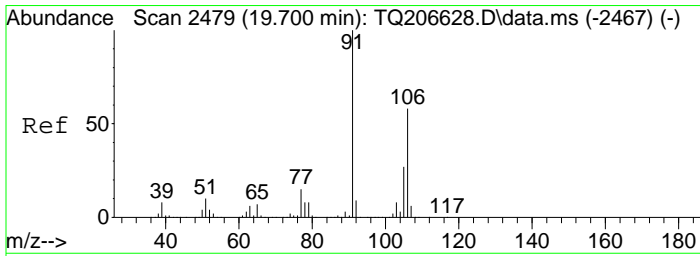


#56
 Ethylbenzene
 Concen: 0.54 ppbv
 RT: 19.547 min Scan# 2454
 Delta R.T. -0.006 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

Tgt Ion: 91 Resp: 89067

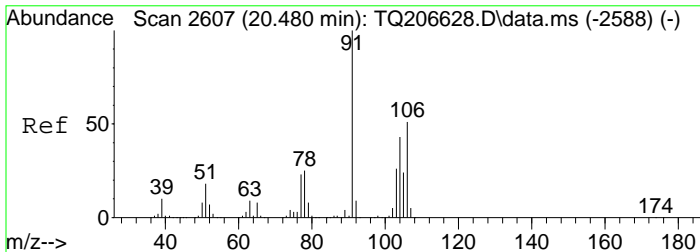
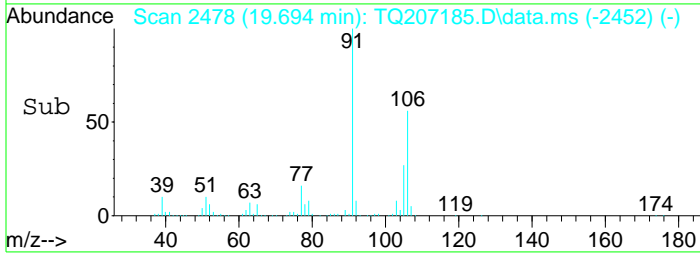
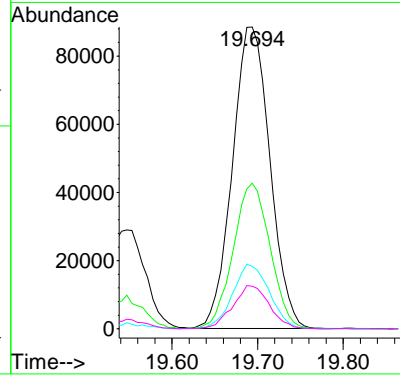
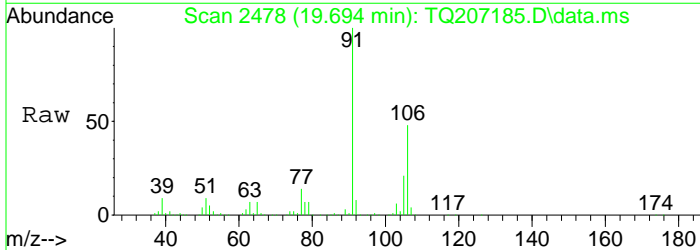
Ion	Ratio	Lower	Upper
91	100		
106	30.1	20.5	42.7





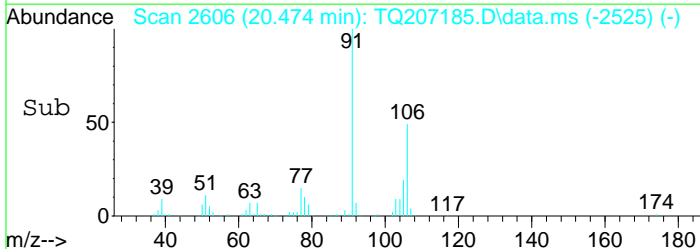
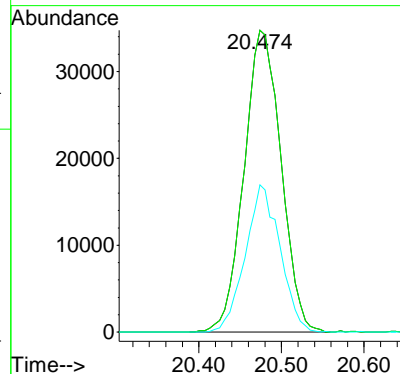
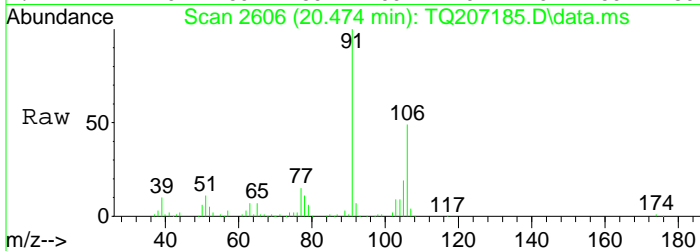
#57
 p- & m-Xylenes
 Concen: 2.16 ppbv
 RT: 19.694 min Scan# 2478
 Delta R.T. -0.000 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

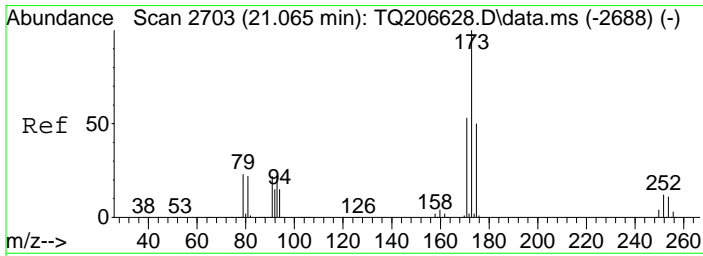
Tgt Ion	Resp	Lower	Upper
91	100		
106	47.5	32.6	67.8
105	21.0	14.5	30.1
77	14.1	8.5	17.7



#58
 o-Xylene
 Concen: 0.76 ppbv
 RT: 20.474 min Scan# 2606
 Delta R.T. -0.006 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

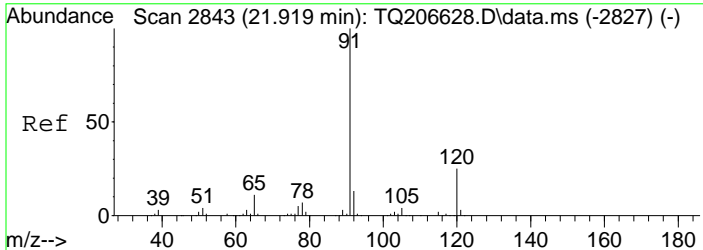
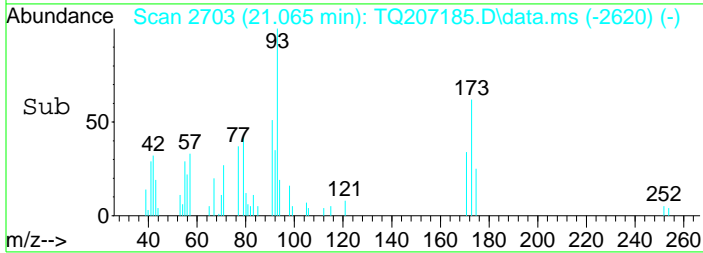
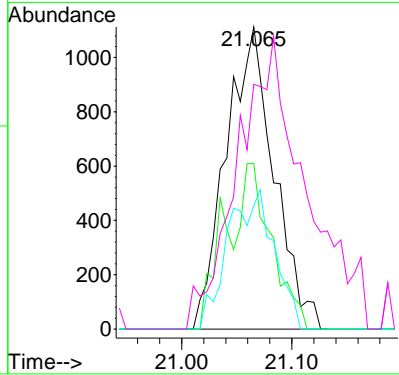
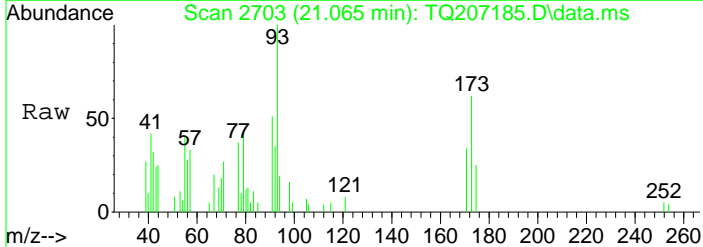
Tgt Ion	Resp	Lower	Upper
91	100		
91	100.0	80.0	120.0
106	45.7	38.2	57.2





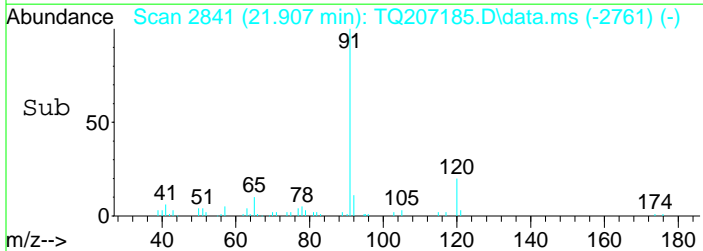
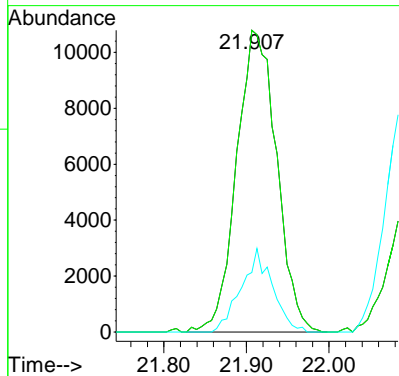
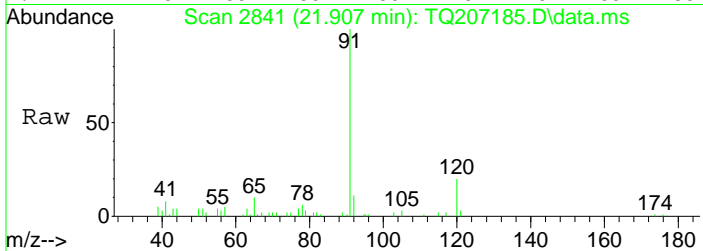
#60
 Bromoform
 Concen: 0.04 ppbv
 RT: 21.065 min Scan# 2703
 Delta R.T. 0.005 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

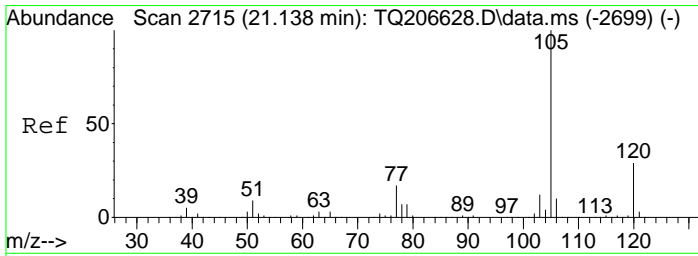
Tgt Ion	Resp	Lower	Upper
173	100		
171	35.0	33.7	69.9
175	44.4	31.8	66.0
91	137.1	14.6	30.2#



#61
 n-Propylbenzene
 Concen: 0.16 ppbv
 RT: 21.907 min Scan# 2841
 Delta R.T. -0.011 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

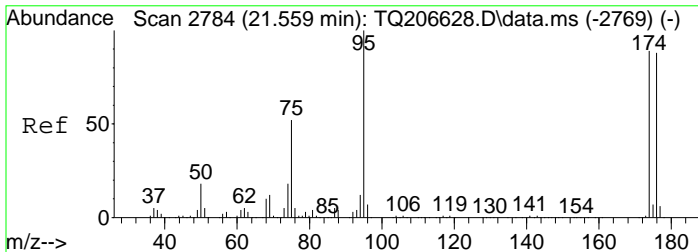
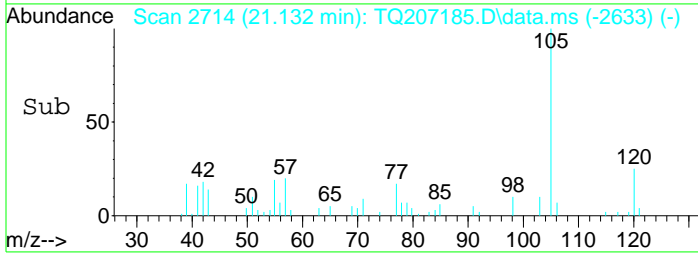
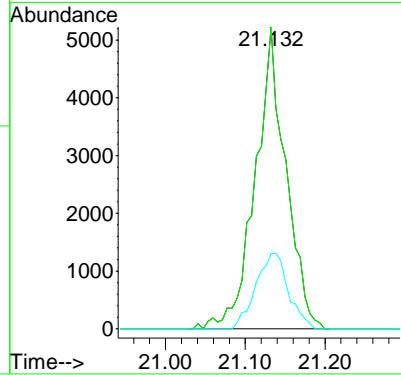
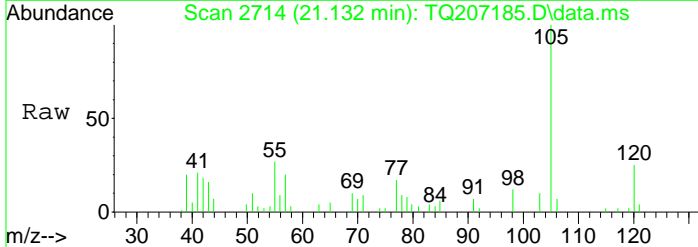
Tgt Ion	Resp	Lower	Upper
91	100		
91	100.0	80.0	120.0
120	21.5	10.0	30.0





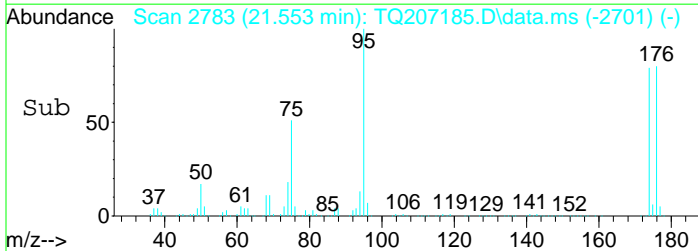
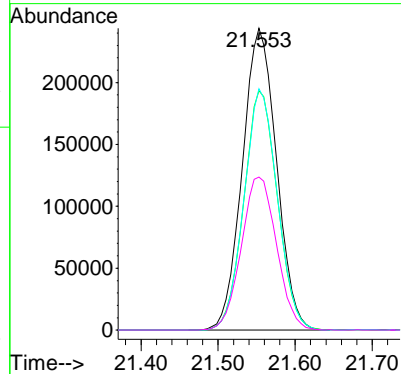
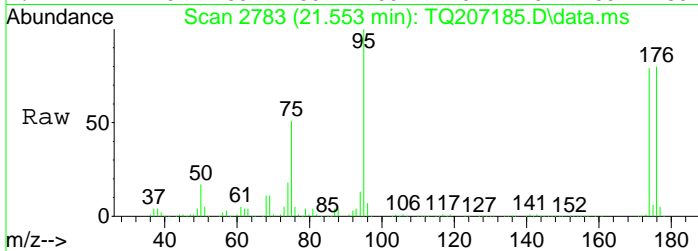
#62
 Isopropylbenzene
 Concen: 0.08 ppbv
 RT: 21.132 min Scan# 2714
 Delta R.T. -0.005 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

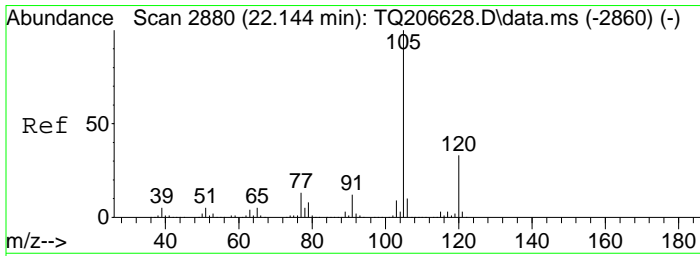
Tgt Ion	Resp	Lower	Upper
105	13912		
105	100		
105	100.0	80.0	120.0
120	26.7	10.0	30.0



#64
 p-Bromofluorobenzene
 Concen: 9.09 ppbv
 RT: 21.553 min Scan# 2783
 Delta R.T. 0.000 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

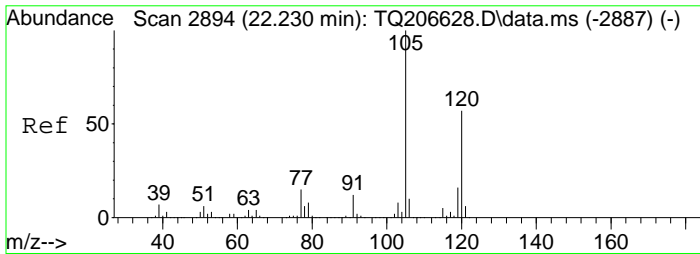
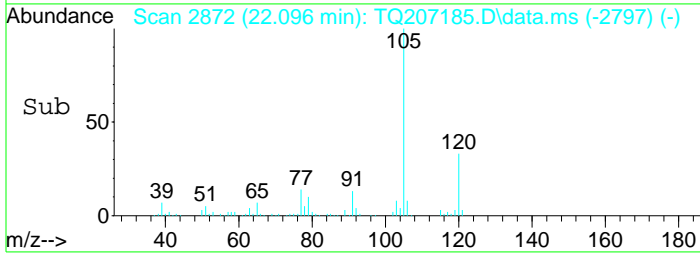
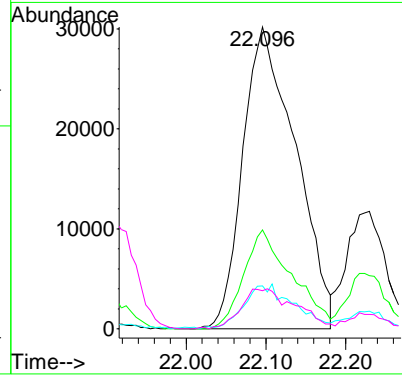
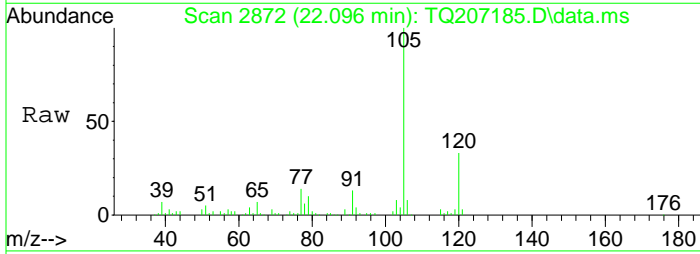
Tgt Ion	Resp	Lower	Upper
95	751320		
95	100		
174	78.2	53.2	110.6
176	78.2	51.6	107.2
75	52.4	30.7	63.7





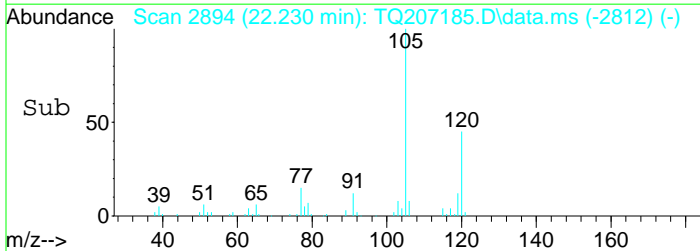
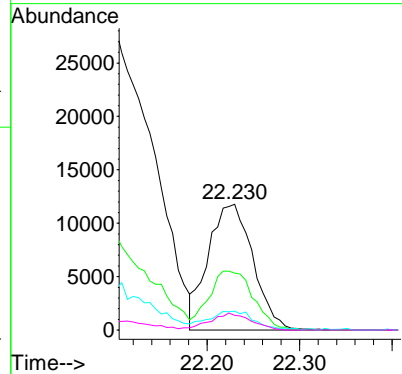
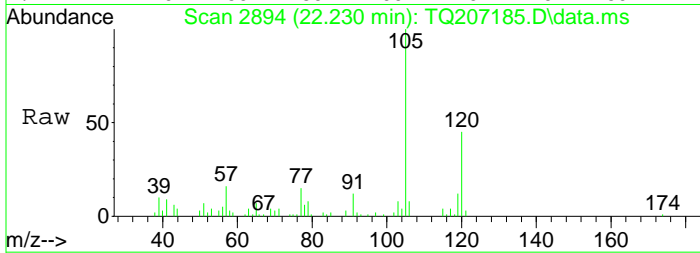
#65
 4-Ethyltoluene
 Concen: 0.78 ppbv
 RT: 22.096 min Scan# 2872
 Delta R.T. -0.043 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

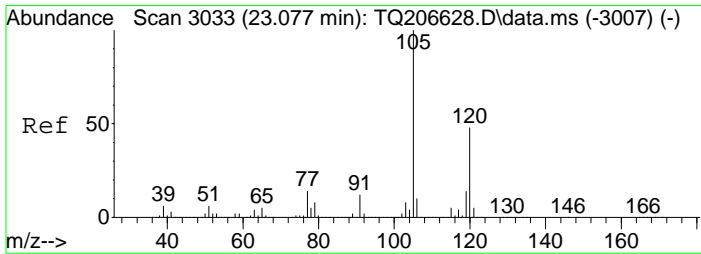
Tgt Ion	Resp	Lower	Upper
105	138789		
120	29.9	19.6	40.8
77	13.9	7.3	15.3
91	13.7	7.1	14.7



#66
 1,3,5-Trimethylbenzene
 Concen: 0.26 ppbv
 RT: 22.230 min Scan# 2894
 Delta R.T. 0.001 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

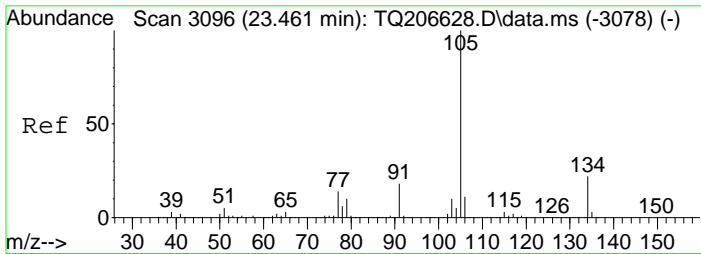
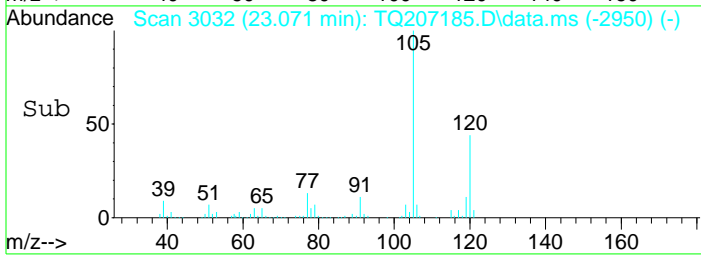
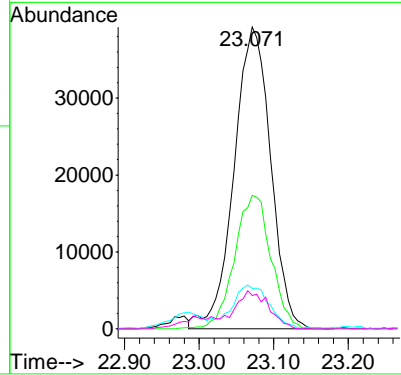
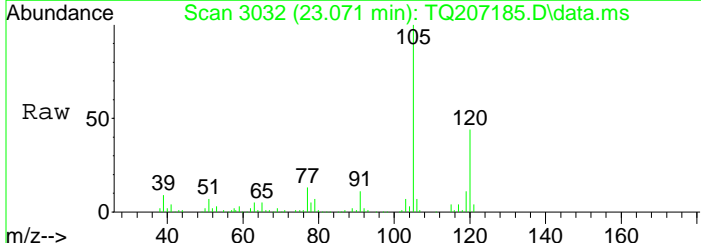
Tgt Ion	Resp	Lower	Upper
105	39780		
120	46.7	39.2	58.8
77	15.7	10.1	15.1#
119	12.4	6.1	18.3





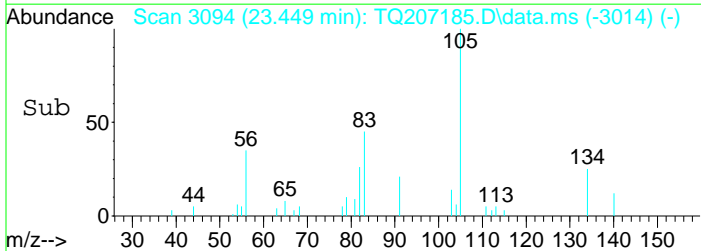
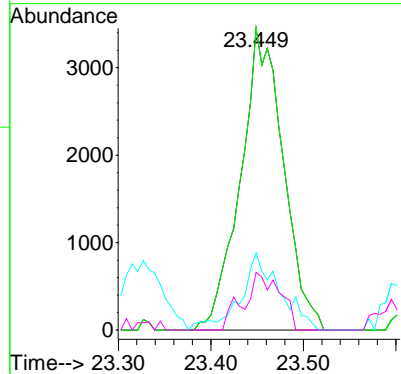
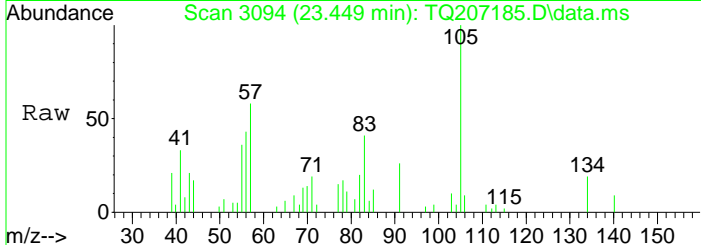
#68
 1,2,4-Trimethylbenzene
 Concen: 0.86 ppbv
 RT: 23.071 min Scan# 3032
 Delta R.T. 0.000 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

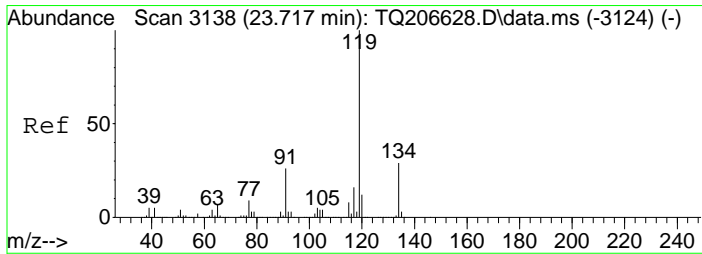
Tgt Ion	Resp	Lower	Upper
105	133868		
120	44.1	30.2	62.6
77	14.1	8.1	16.9
119	11.3	7.8	16.2



#69
 sec-Butylbenzene
 Concen: 0.05 ppbv
 RT: 23.449 min Scan# 3094
 Delta R.T. -0.011 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

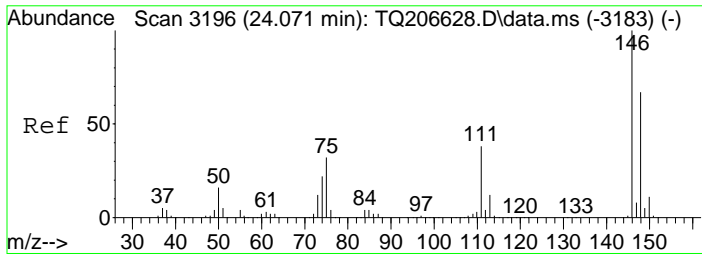
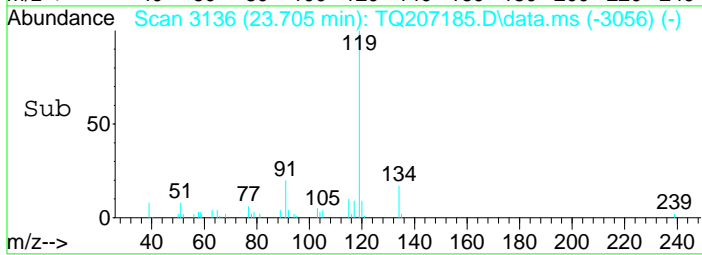
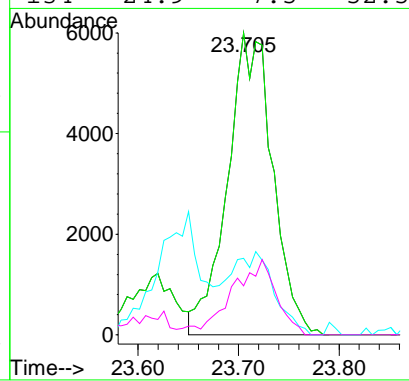
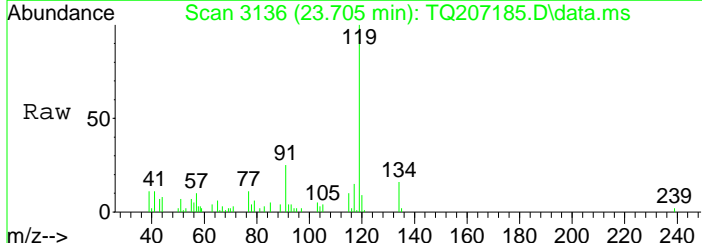
Tgt Ion	Resp	Lower	Upper
105	11082		
105	100.0	80.0	120.0
91	0.0	7.5	22.5#
134	12.5	7.5	22.5





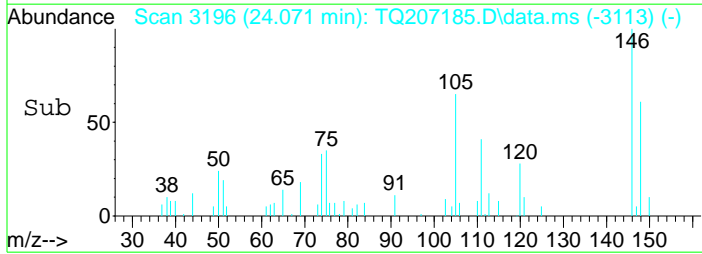
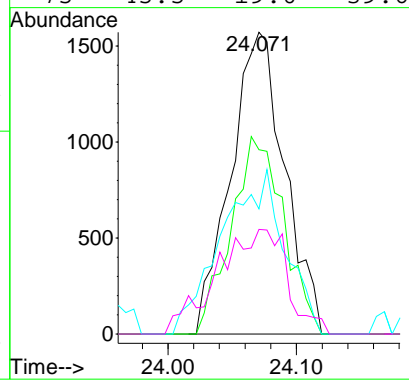
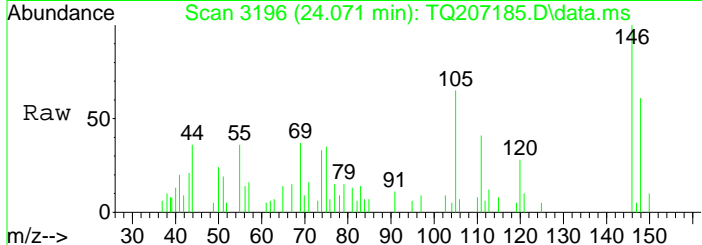
#70
 p-Isopropyltoluene
 Concen: 0.10 ppbv
 RT: 23.705 min Scan# 3136
 Delta R.T. -0.012 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

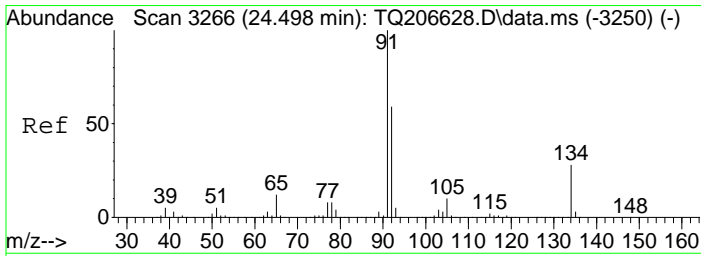
Tgt Ion	Resp	Lower	Upper
119	18707		
119	100		
119	100.0	80.0	120.0
91	0.0	7.5	52.5#
134	24.9	7.5	52.5



#72
 1,4-Dichlorobenzene
 Concen: 0.05 ppbv
 RT: 24.071 min Scan# 3196
 Delta R.T. 0.004 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

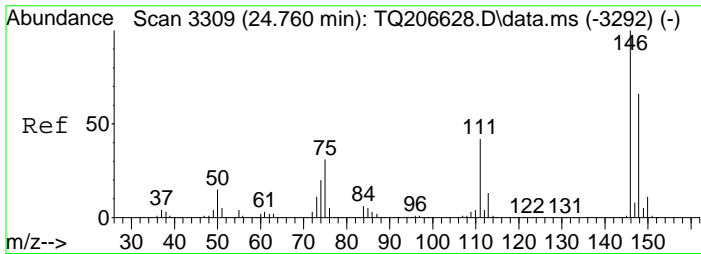
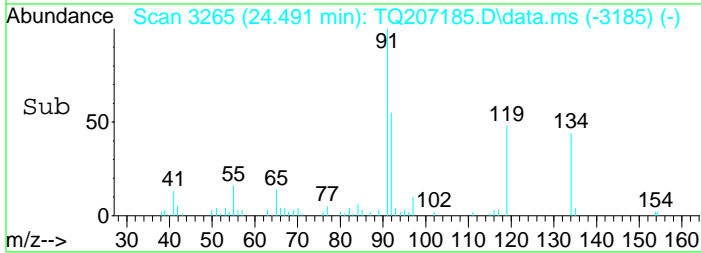
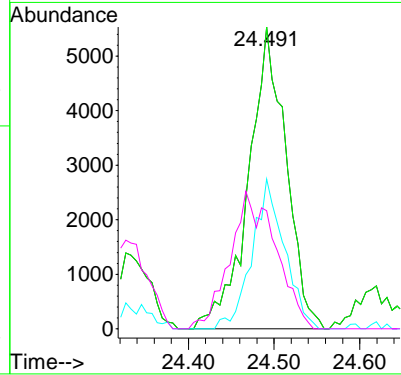
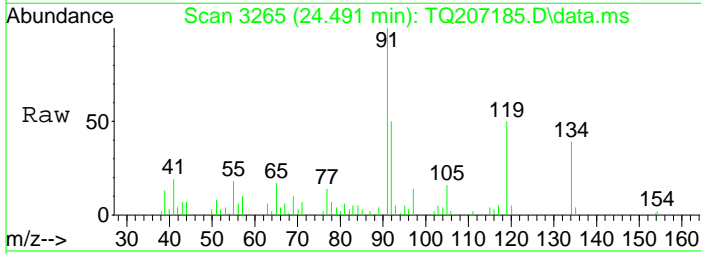
Tgt Ion	Resp	Lower	Upper
146	4597		
146	100		
148	63.4	41.6	86.4
111	63.4	24.8	51.6#
75	45.5	19.0	39.6#





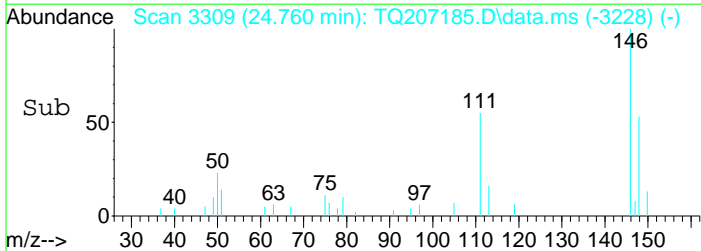
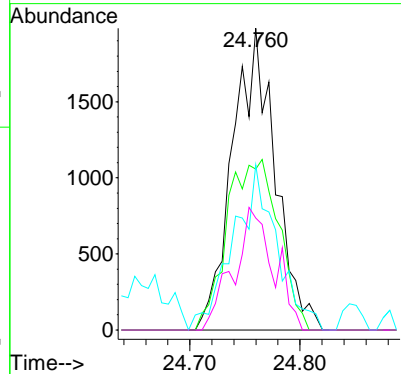
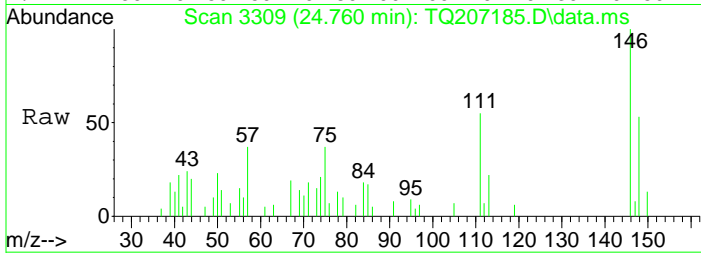
#74
 n-Butylbenzene
 Concen: 0.10 ppbv
 RT: 24.491 min Scan# 3265
 Delta R.T. -0.010 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

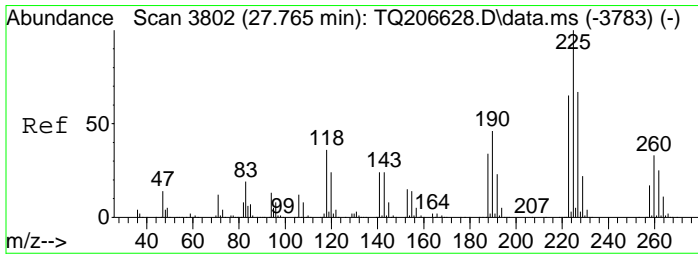
Tgt Ion	Resp	Lower	Upper
91	16874		
91	100		
91	100.0	80.0	120.0
92	42.8	44.0	66.0#
134	0.0	12.5	37.5#



#75
 1,2-Dichlorobenzene
 Concen: 0.05 ppbv
 RT: 24.760 min Scan# 3309
 Delta R.T. -0.005 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

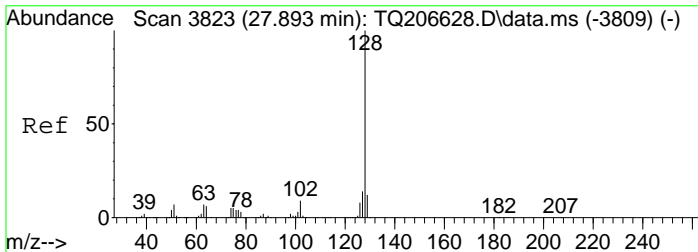
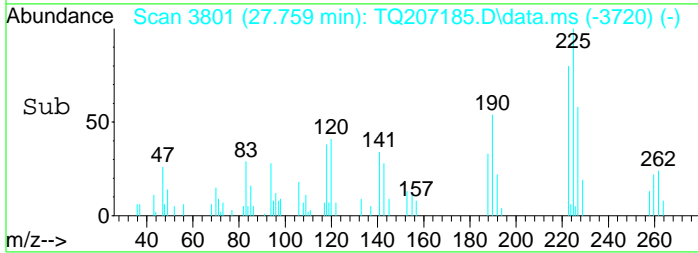
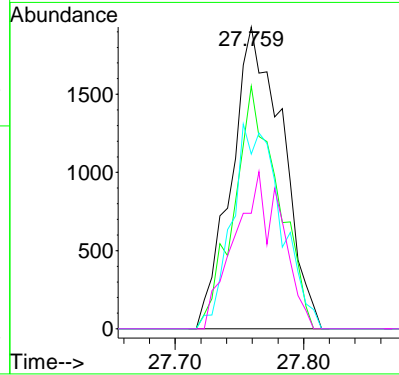
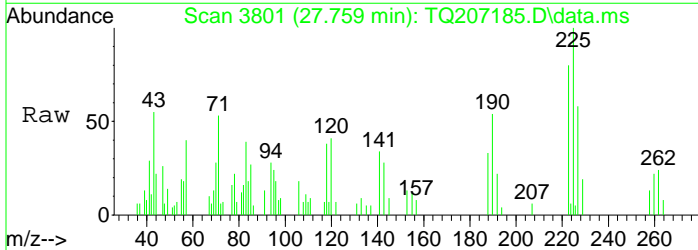
Tgt Ion	Resp	Lower	Upper
146	5342		
146	100		
148	69.0	41.5	86.3
111	56.0	26.8	55.8#
75	38.2	19.0	39.4





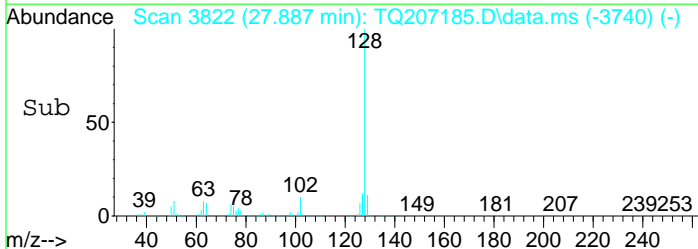
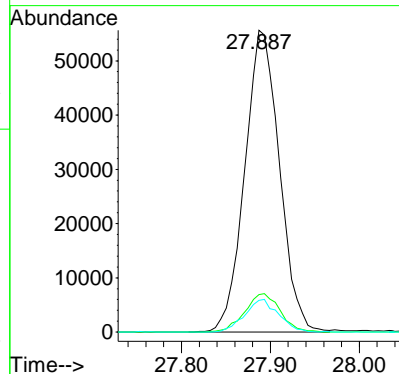
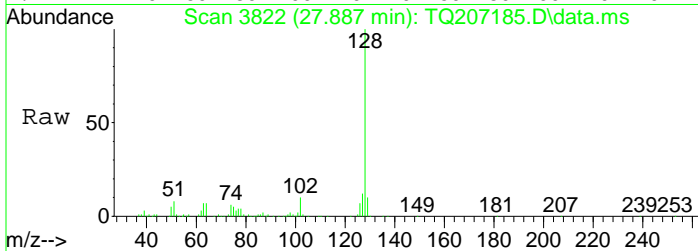
#77
 Hexachlorobutadiene
 Concen: 0.06 ppbv
 RT: 27.759 min Scan# 3801
 Delta R.T. -0.007 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

Tgt Ion	Resp	Lower	Upper
225	5329		
223	69.8	40.8	84.8
227	64.9	41.3	85.7
118	48.0	26.7	55.5



#78
 Naphthalene
 Concen: 1.02 ppbv
 RT: 27.887 min Scan# 3822
 Delta R.T. -0.002 min
 Lab File: TQ207185.D
 Acq: 5 Mar 2019 6:38 pm

Tgt Ion	Resp	Lower	Upper
128	150361		
127	13.0	8.1	16.9
129	10.5	7.1	14.7



Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Soil Vapor Laboratory ID: 19B1031-02 File ID: TQ207186.D
 Sampled: 02/27/19 09:40 Prepared: 03/05/19 08:00 Analyzed: 03/05/19 19:43
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BC90266 Sequence: Y9C0722 Calibration: YB90001 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.51	1.03	U
71-55-6	1,1,1-Trichloroethane	1.51	0.822	U
79-34-5	1,1,2,2-Tetrachloroethane	1.51	1.03	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.51	1.15	U
79-00-5	1,1,2-Trichloroethane	1.51	0.822	U
75-34-3	1,1-Dichloroethane	1.51	0.610	U
75-35-4	1,1-Dichloroethylene	1.51	0.597	U
120-82-1	1,2,4-Trichlorobenzene	1.51	1.12	U
95-63-6	1,2,4-Trimethylbenzene	1.51	4.44	D
106-93-4	1,2-Dibromoethane	1.51	1.16	U
95-50-1	1,2-Dichlorobenzene	1.51	0.905	U
107-06-2	1,2-Dichloroethane	1.51	0.609	U
78-87-5	1,2-Dichloropropane	1.51	0.696	U
76-14-2	1,2-Dichlorotetrafluoroethane	1.51	1.05	U
108-67-8	1,3,5-Trimethylbenzene	1.51	1.33	D
106-99-0	1,3-Butadiene	1.51	1.00	U
541-73-1	1,3-Dichlorobenzene	1.51	0.905	U
142-28-9	1,3-Dichloropropane	1.51	0.696	U
106-46-7	1,4-Dichlorobenzene	1.51	0.905	U
123-91-1	1,4-Dioxane	1.51	1.09	U
78-93-3	2-Butanone	1.51	1.51	D
591-78-6	2-Hexanone	1.51	4.01	BD
107-05-1	3-Chloropropene	1.51	2.36	U
108-10-1	4-Methyl-2-pentanone	1.51	2.90	D
67-64-1	Acetone	1.51	4.97	D
107-13-1	Acrylonitrile	1.51	0.327	U
71-43-2	Benzene	1.51	7.94	D
100-44-7	Benzyl chloride	1.51	0.780	U
75-27-4	Bromodichloromethane	1.51	1.01	U
75-25-2	Bromoform	1.51	1.56	U
74-83-9	Bromomethane	1.51	0.585	U
75-15-0	Carbon disulfide	1.51	0.469	U
56-23-5	Carbon tetrachloride	1.51	0.474	D
108-90-7	Chlorobenzene	1.51	0.693	U
75-00-3	Chloroethane	1.51	0.397	U
67-66-3	Chloroform	1.51	0.735	U
74-87-3	Chloromethane	1.51	1.31	D
156-59-2	cis-1,2-Dichloroethylene	1.51	0.597	U
10061-01-5	cis-1,3-Dichloropropylene	1.51	0.684	U
110-82-7	Cyclohexane	1.51	1.45	D

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Soil Vapor Laboratory ID: 19B1031-02 File ID: TQ207186.D
 Sampled: 02/27/19 09:40 Prepared: 03/05/19 08:00 Analyzed: 03/05/19 19:43
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BC90266 Sequence: Y9C0722 Calibration: YB90001 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
124-48-1	Dibromochloromethane	1.51	1.28	U
75-71-8	Dichlorodifluoromethane	1.51	2.23	D
141-78-6	Ethyl acetate	1.51	1.09	U
100-41-4	Ethyl Benzene	1.51	3.60	D
87-68-3	Hexachlorobutadiene	1.51	1.61	U
67-63-0	Isopropanol	1.51	1.04	D
80-62-6	Methyl Methacrylate	1.51	0.617	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1.51	0.543	U
75-09-2	Methylene chloride	1.51	1.62	D
142-82-5	n-Heptane	1.51	3.27	D
110-54-3	n-Hexane	1.51	4.14	D
95-47-6	o-Xylene	1.51	4.45	D
179601-23-1	p- & m- Xylenes	1.51	13.0	D
622-96-8	p-Ethyltoluene	1.51	4.29	D
115-07-1	Propylene	1.51	6.87	D
100-42-5	Styrene	1.51	0.642	U
127-18-4	Tetrachloroethylene	1.51	0.613	D
109-99-9	Tetrahydrofuran	1.51	0.888	U
108-88-3	Toluene	1.51	20.8	D
156-60-5	trans-1,2-Dichloroethylene	1.51	0.597	U
10061-02-6	trans-1,3-Dichloropropylene	1.51	0.684	U
79-01-6	Trichloroethylene	1.51	0.202	U
75-69-4	Trichlorofluoromethane (Freon 11)	1.51	1.27	D
108-05-4	Vinyl acetate	1.51	0.530	U
593-60-2	Vinyl bromide	1.51	0.659	U
75-01-4	Vinyl Chloride	1.51	0.385	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
SURR: p-Bromofluorobenzene	10.0	8.93	89.3	72 - 118	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	461147	12.488	434873	12.512	
ISTD: 1,4-Difluorobenzene	1359788	14.085	1403418	14.103	
ISTD: d5-Chlorobenzene	1181014	19.37	1188268	19.377	

* Values outside of QC limits

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207186.D
 Acq On : 5 Mar 2019 7:43 pm
 Sample : 19B1031-02 Inst : TO15_AIR2
 Operator : AS
 Sample : 19B1031-02
 Misc : QBTO2030519A 1031-02 1X
 ALS Vial : 6 Sample Multiplier: 1.506

Quant Time: Mar 07 13:50:35 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

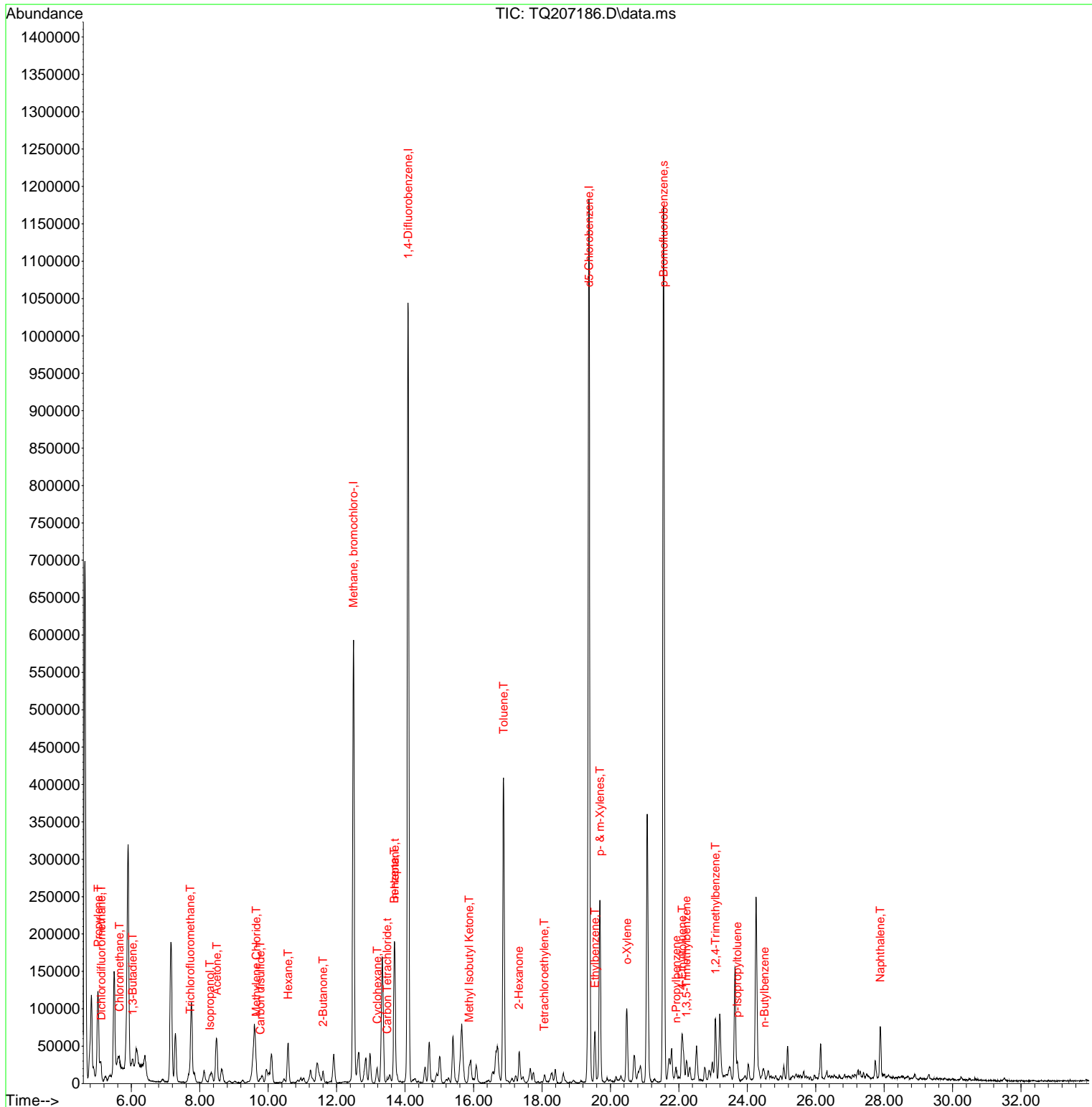
Internal Standards						
1) Methane, bromochloro-	12.488	49	461147	10.00	ppbv	-0.01
37) 1,4-Difluorobenzene	14.085	114	1359788	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.370	117	1181014	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	744047	8.93	ppbv	0.00
Spiked Amount	10.000	Range	70 - 130	Recovery	=	89.30%
Target Compounds						
						Qvalue
2) Propylene	5.026	42	55935	2.65	ppbv	87
3) Dichlorodifluoromethane	5.117	85	30452	0.30	ppbv #	92
5) Chloromethane	5.647	50	15159	0.42	ppbv	95
7) 1,3-Butadiene	6.032	54	8318	0.27	ppbv	94
11) Trichlorofluoromethane	7.714	101	16164	0.15	ppbv	98
12) Isopropanol	8.293	45	18527	0.28	ppbv	100
14) Acetone	8.494	43	88175	1.39	ppbv	99
18) Methylene Chloride	9.647	49	13473	0.31	ppbv #	82
20) Carbon disulfide	9.769	76	6466	0.06	ppbv #	83
23) Hexane	10.573	57	44586	0.78	ppbv	97
26) 2-Butanone	11.604	43	27754	0.34	ppbv	97
32) Cyclohexane	13.183	56	15602	0.28	ppbv	93
33) Carbon Tetrachloride	13.475	117	4327	0.05	ppbv	98
35) Benzene	13.682	78	219821	1.65	ppbv #	52
36) n-Heptane	13.695	43	33564	0.53	ppbv	98
43) Methyl Isobutyl Ketone	15.871	43	39782	0.47	ppbv #	65
45) Toluene	16.877	91	526750	3.66	ppbv	99
48) 2-Hexanone	17.328	43	47922	0.65	ppbv	99
50) Tetrachloroethylene	18.066	166	4288	0.06	ppbv	95
56) Ethylbenzene	19.547	91	90796	0.55	ppbv	98
57) p- & m-Xylenes	19.693	91	250542	1.99	ppbv	96
58) o-Xylene	20.480	91	98141	0.68	ppbv	98
61) n-Propylbenzene	21.919	91	25429	0.11	ppbv	100
65) 4-Ethyltoluene	22.095	105	102888	0.58	ppbv	96
66) 1,3,5-Trimethylbenzene	22.217	105	27904	0.18	ppbv	94
68) 1,2,4-Trimethylbenzene	23.071	105	94530	0.60	ppbv	95
70) p-Isopropyltoluene	23.705	119	26777	0.14	ppbv #	88
74) n-Butylbenzene	24.497	91	9060	0.05	ppbv #	70
78) Naphthalene	27.887	128	83461	0.56	ppbv	98

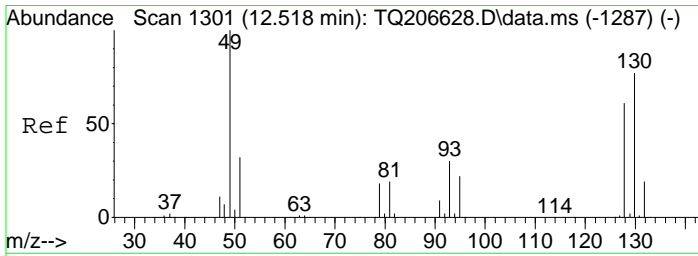
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207186.D
 Acq On : 5 Mar 2019 7:43 pm
 Sample : 19B1031-02
 Operator : AS
 Sample : 19B1031-02
 Misc : QBTO2030519A 1031-02 1X
 ALS Vial : 6 Sample Multiplier: 1.506

Inst : TO15_AIR2

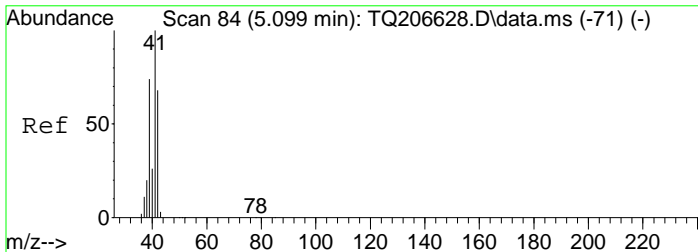
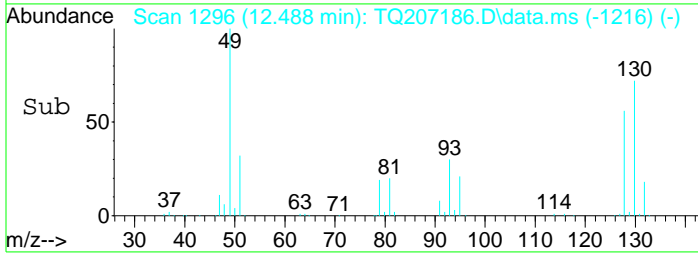
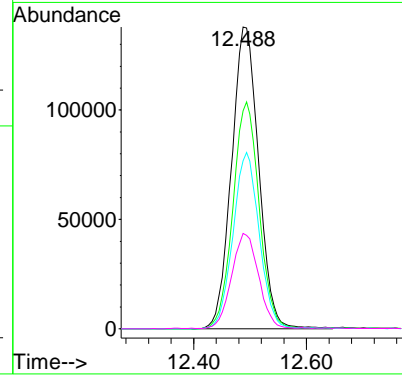
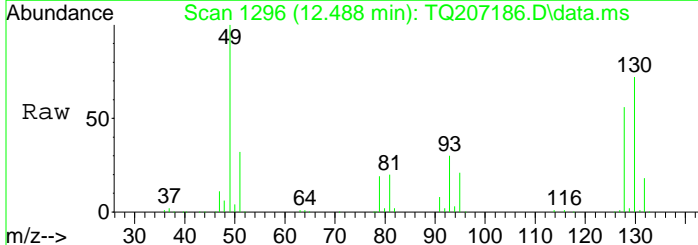
Quant Time: Mar 07 13:50:35 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration





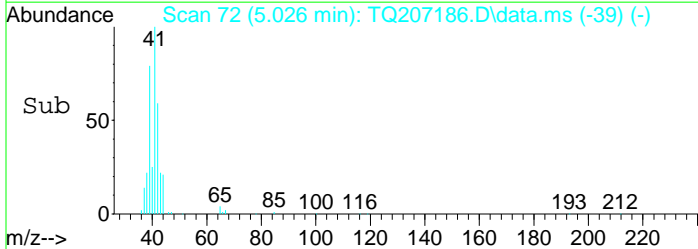
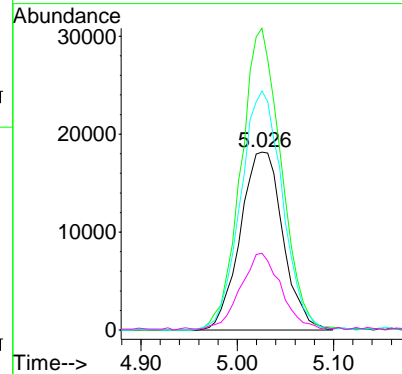
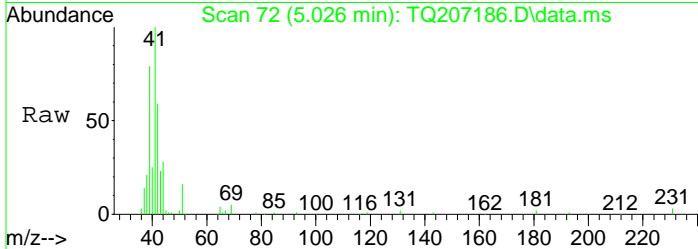
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.488 min Scan# 1296
 Delta R.T. -0.012 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

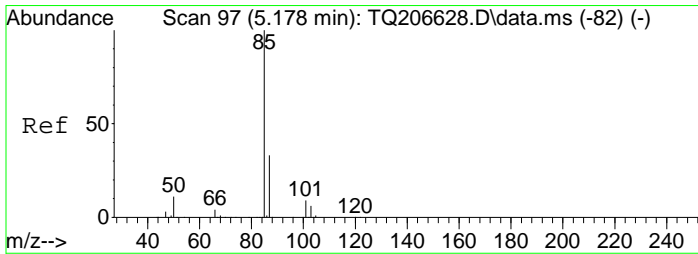
Tgt Ion	Resp	Lower	Upper
49	100		
130	72.6	48.1	99.9
128	56.3	38.3	79.5
51	31.2	20.3	42.3



#2
 Propylene
 Concen: 2.65 ppbv
 RT: 5.026 min Scan# 72
 Delta R.T. -0.049 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

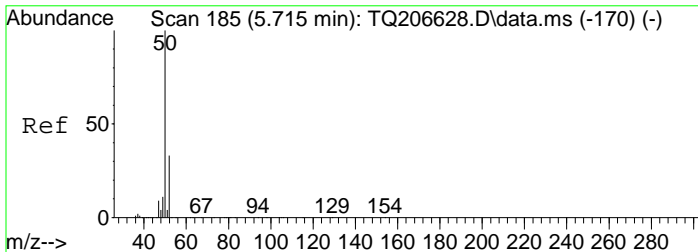
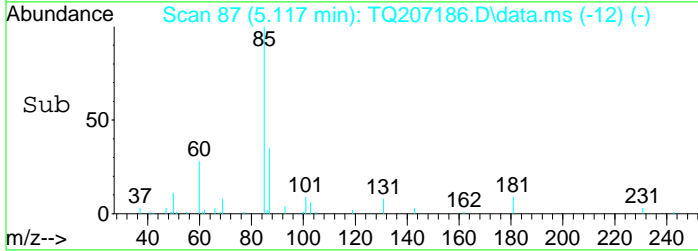
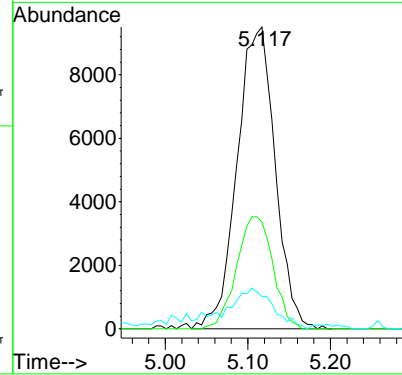
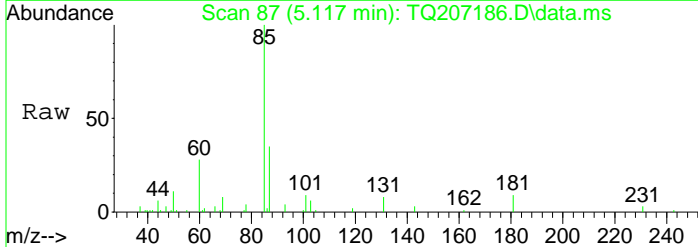
Tgt Ion	Resp	Lower	Upper
42	100		
41	160.1	90.7	211.7
39	132.4	54.1	162.3
40	40.5	18.7	56.1





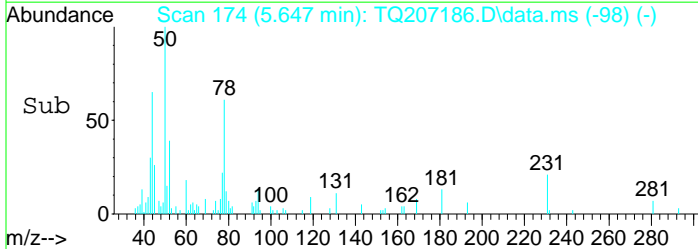
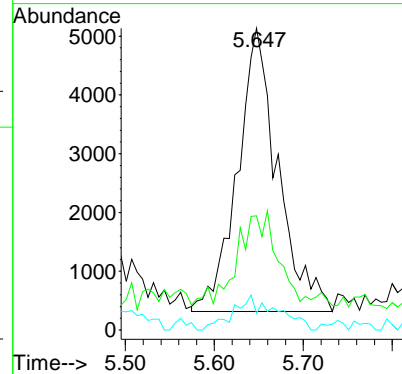
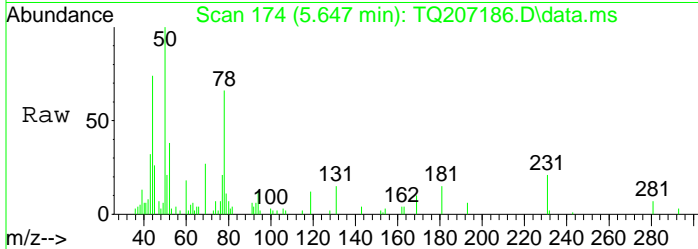
#3
 Dichlorodifluoromethane
 Concen: 0.30 ppbv
 RT: 5.117 min Scan# 87
 Delta R.T. -0.040 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

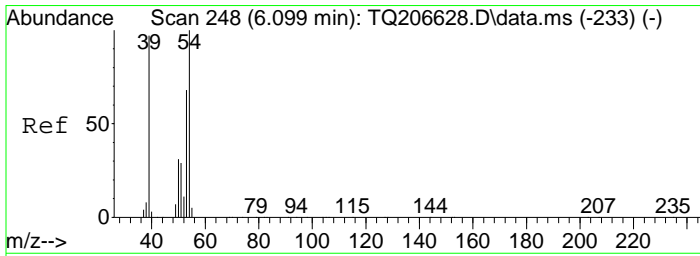
Tgt Ion	Resp	Lower	Upper
85	30452		
87	100	20.9	43.5
50	16.7	7.2	15.0#



#5
 Chloromethane
 Concen: 0.42 ppbv
 RT: 5.647 min Scan# 174
 Delta R.T. -0.034 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

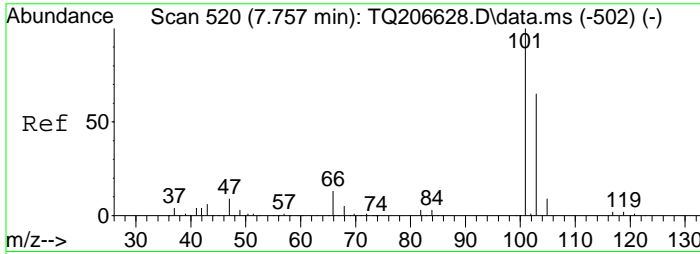
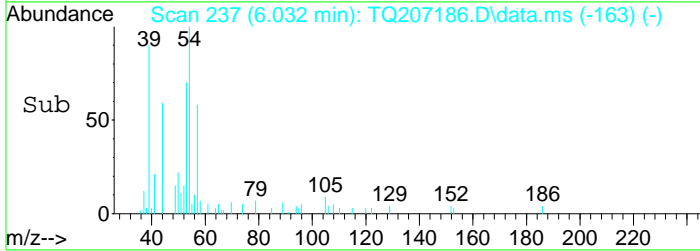
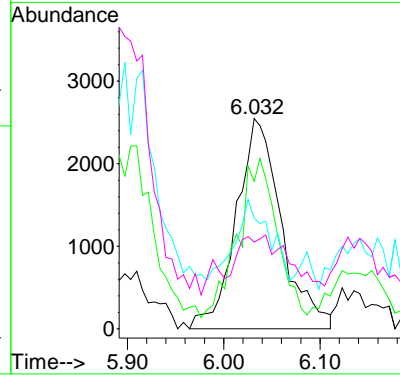
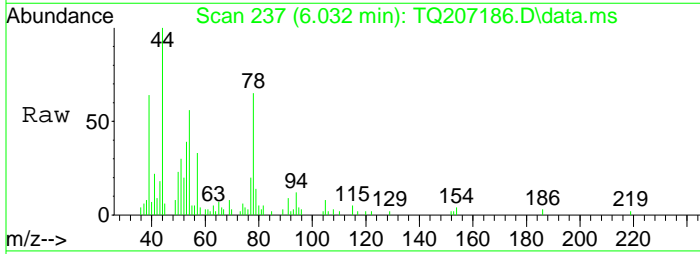
Tgt Ion	Resp	Lower	Upper
50	15159		
52	100	0.0	65.2
49	3.8	0.0	19.6





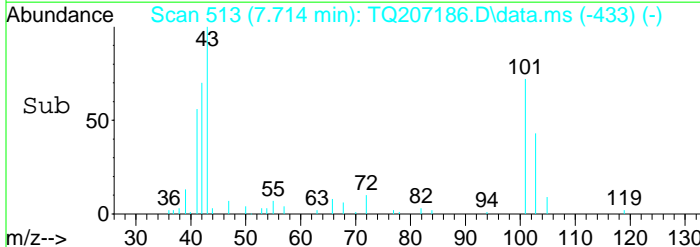
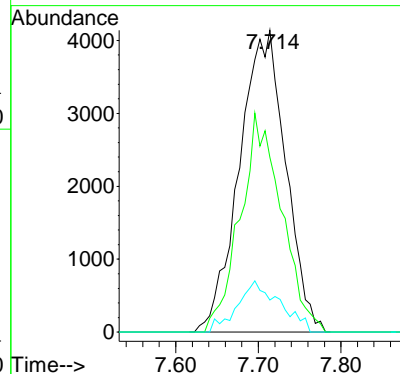
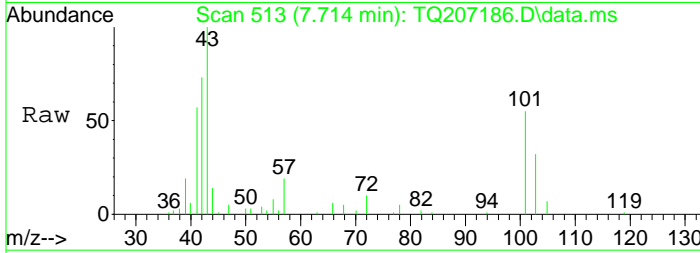
#7
 1,3-Butadiene
 Concen: 0.27 ppbv
 RT: 6.032 min Scan# 237
 Delta R.T. -0.049 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

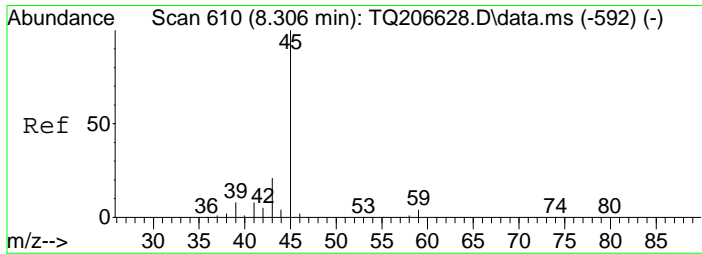
Tgt Ion	Resp	Lower	Upper
54	100		
53	64.9	44.6	92.6
51	28.3	19.2	40.0
50	24.7	20.7	43.1



#11
 Trichlorofluoromethane
 Concen: 0.15 ppbv
 RT: 7.714 min Scan# 513
 Delta R.T. -0.012 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

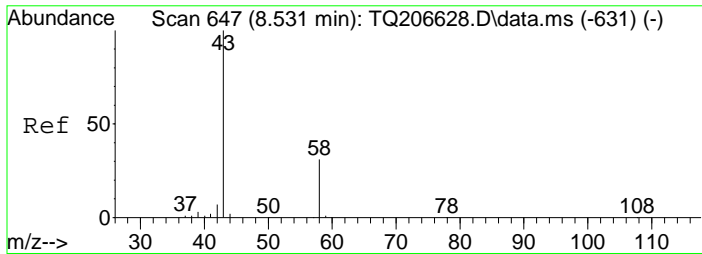
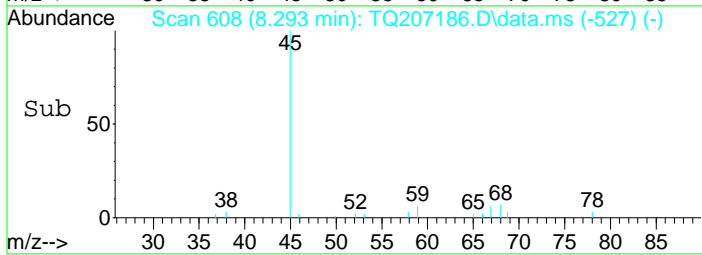
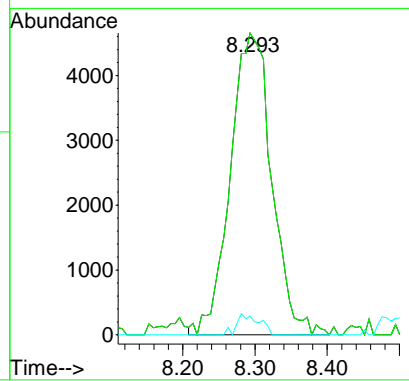
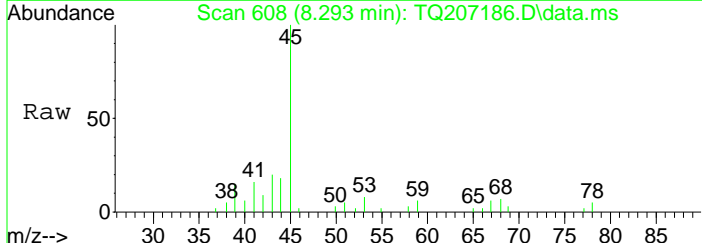
Tgt Ion	Resp	Lower	Upper
101	100		
103	64.8	42.3	87.8
66	15.5	7.8	16.2





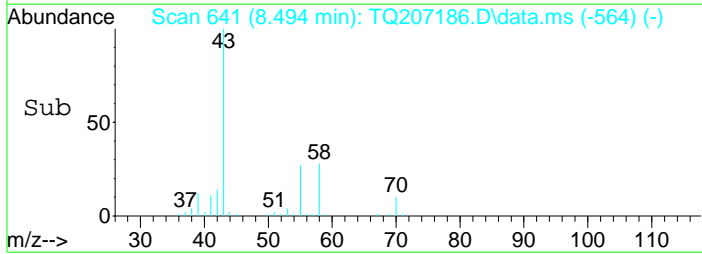
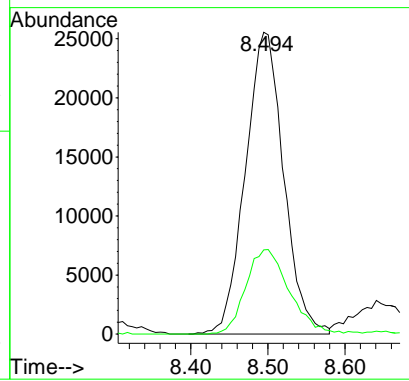
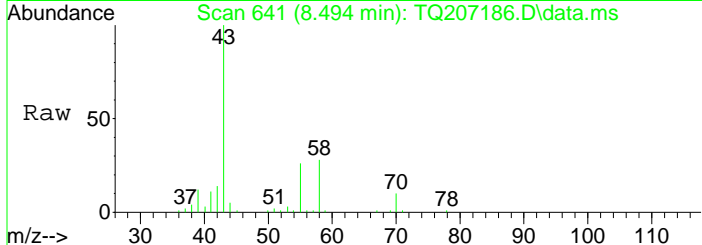
#12
 Isopropanol
 Concen: 0.28 ppbv
 RT: 8.293 min Scan# 608
 Delta R.T. -0.008 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

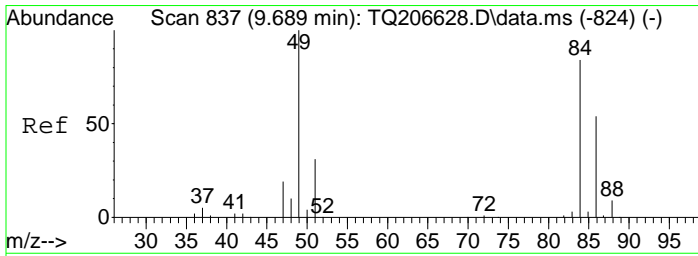
Tgt Ion	Resp	Lower	Upper
45	18527		
45	100		
45	100.0	65.0	135.0
59	3.7	0.0	10.0



#14
 Acetone
 Concen: 1.39 ppbv
 RT: 8.494 min Scan# 641
 Delta R.T. -0.032 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

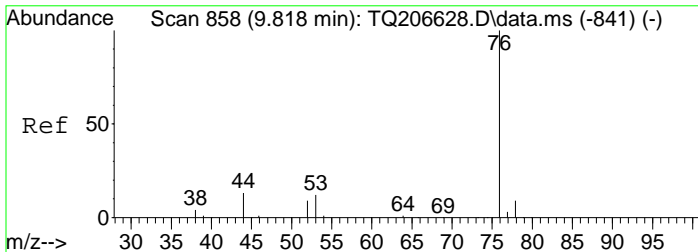
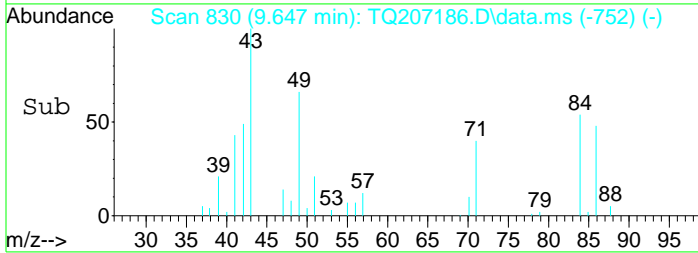
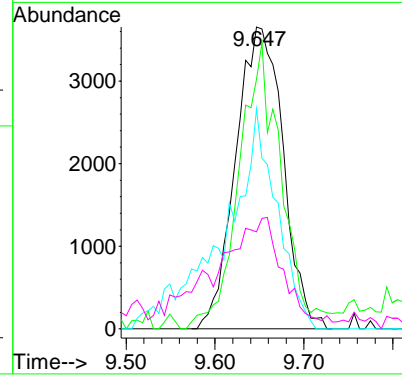
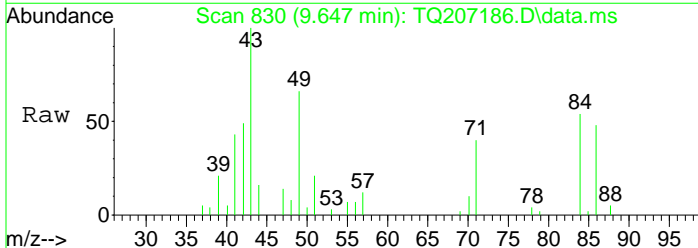
Tgt Ion	Resp	Lower	Upper
43	88175		
43	100		
58	31.7	20.9	43.3





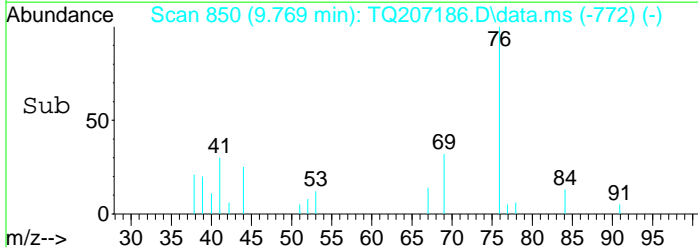
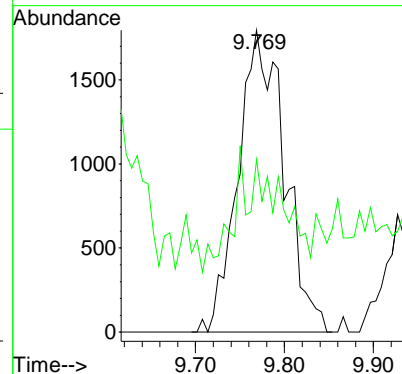
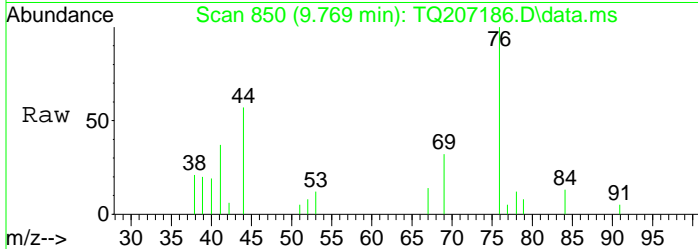
#18
 Methylene Chloride
 Concen: 0.31 ppbv
 RT: 9.647 min Scan# 830
 Delta R.T. -0.025 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

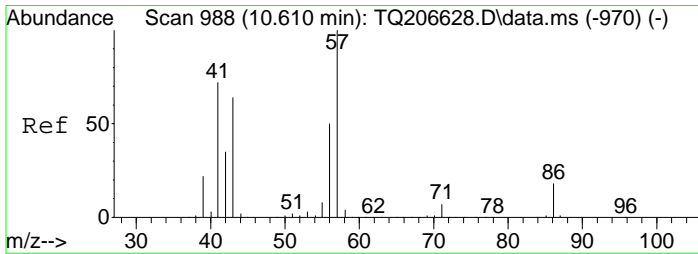
Tgt Ion	Resp	Lower	Upper
49	100		
84	84.7	49.9	103.5
86	75.6	31.8	66.0#
51	35.1	20.2	41.9



#20
 Carbon disulfide
 Concen: 0.06 ppbv
 RT: 9.769 min Scan# 850
 Delta R.T. -0.025 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

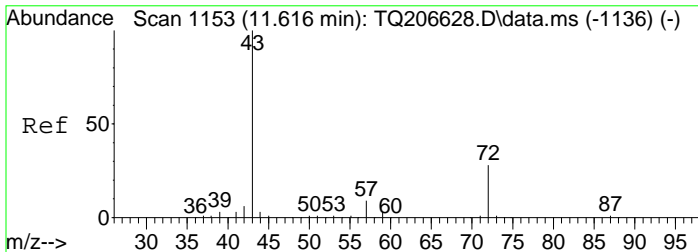
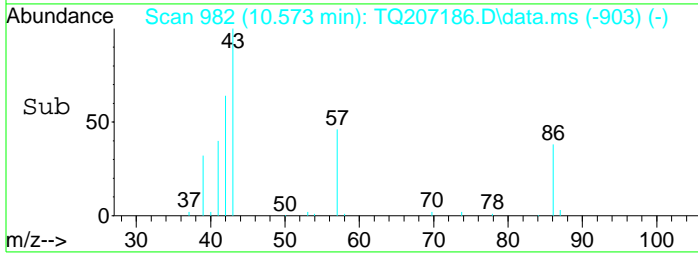
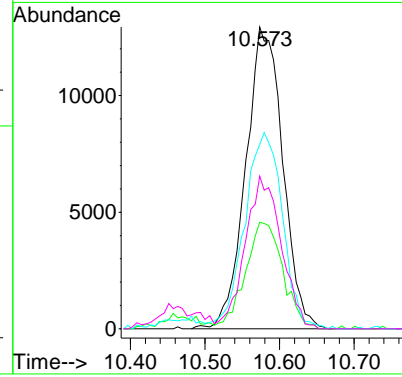
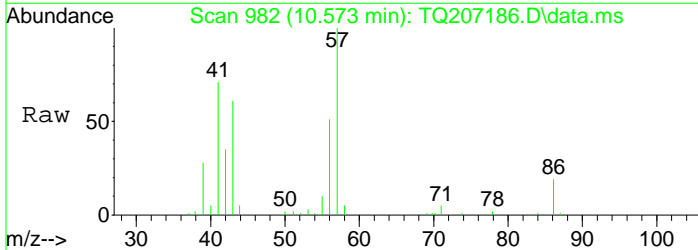
Tgt Ion	Resp	Lower	Upper
76	100		
44	19.7	8.3	17.3#





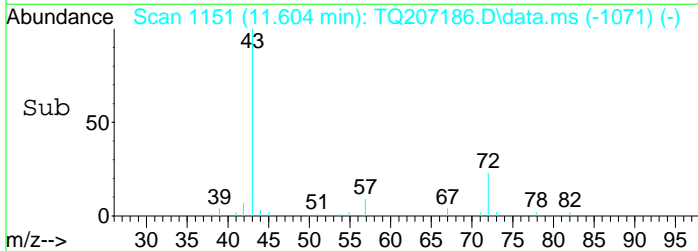
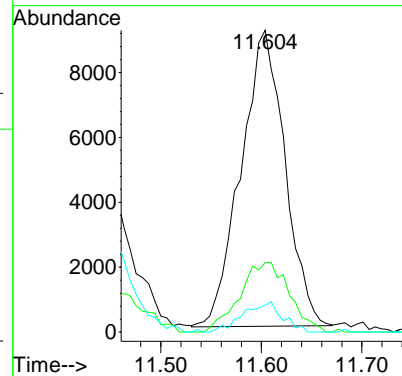
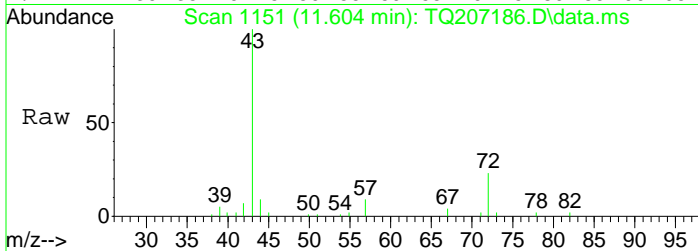
#23
Hexane
Concen: 0.78 ppbv
RT: 10.573 min Scan# 982
Delta R.T. -0.021 min
Lab File: TQ207186.D
Acq: 5 Mar 2019 7:43 pm

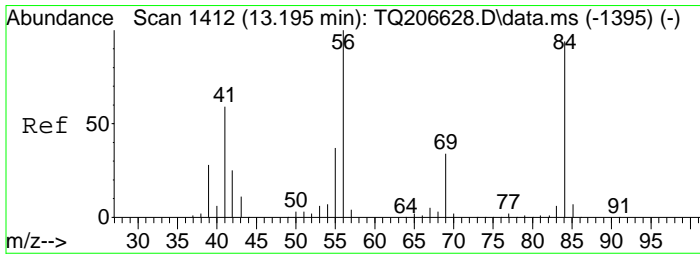
Tgt Ion	Resp	Lower	Upper
57	100		
42	35.8	21.6	45.0
43	67.0	42.0	87.2
56	49.4	33.3	69.1



#26
2-Butanone
Concen: 0.34 ppbv
RT: 11.604 min Scan# 1151
Delta R.T. -0.013 min
Lab File: TQ207186.D
Acq: 5 Mar 2019 7:43 pm

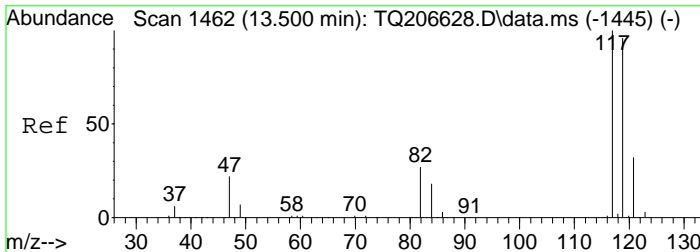
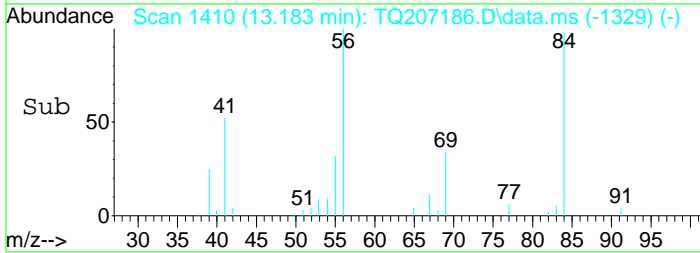
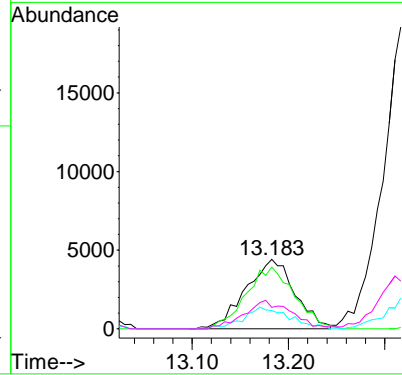
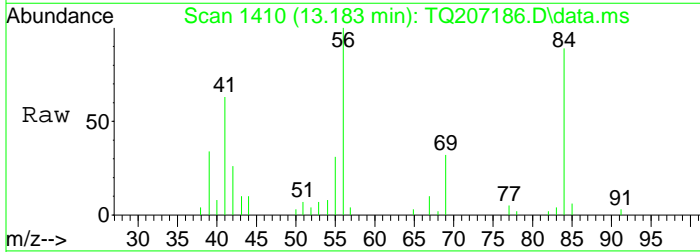
Tgt Ion	Resp	Lower	Upper
43	100		
72	26.4	16.1	33.5
57	9.0	4.9	10.3





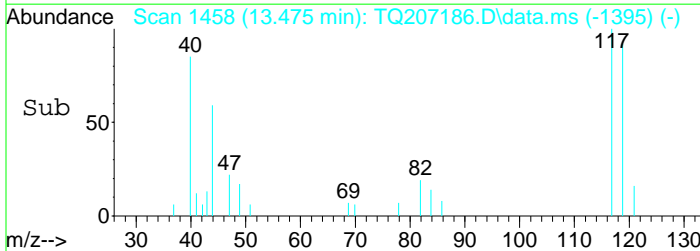
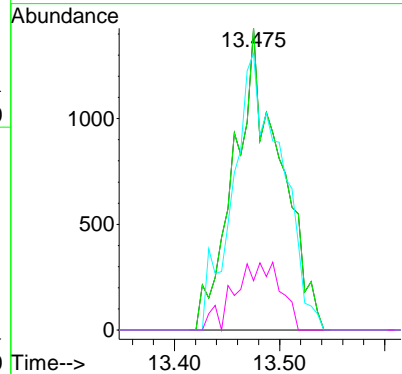
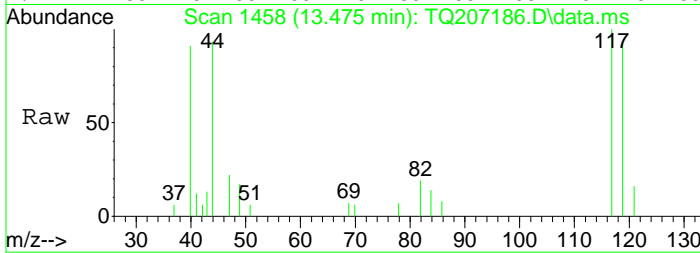
#32
 Cyclohexane
 Concen: 0.28 ppbv
 RT: 13.183 min Scan# 1410
 Delta R.T. -0.004 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

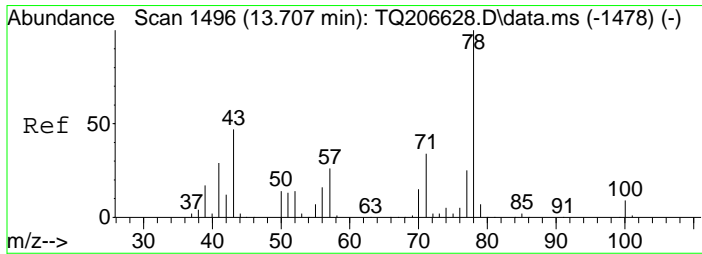
Tgt Ion	Resp	Lower	Upper
56	15602		
84	87.9	54.1	112.3
42	29.5	15.3	31.7
55	39.7	23.5	48.7



#33
 Carbon Tetrachloride
 Concen: 0.05 ppbv
 RT: 13.475 min Scan# 1458
 Delta R.T. -0.013 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

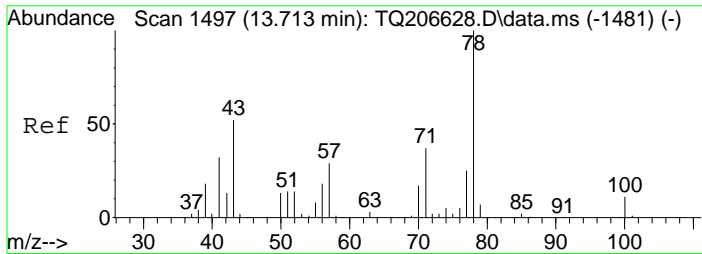
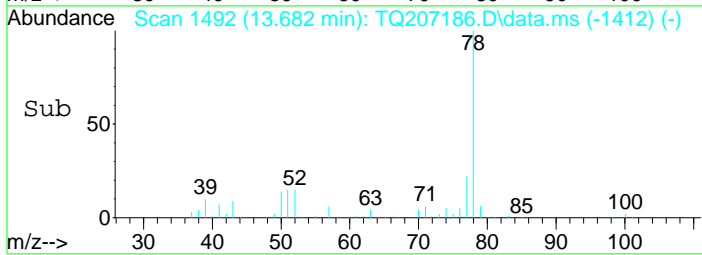
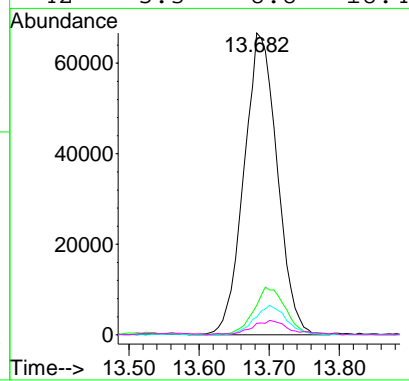
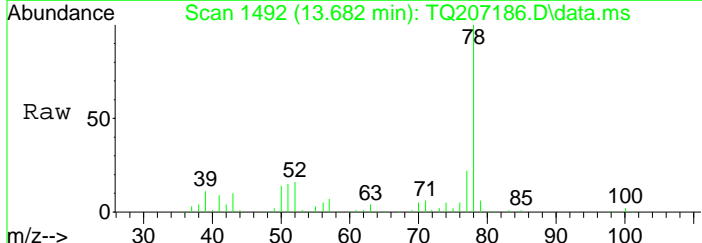
Tgt Ion	Resp	Lower	Upper
117	4327		
117	100.0	80.0	120.0
119	96.4	76.9	115.3
121	22.6	21.7	40.3





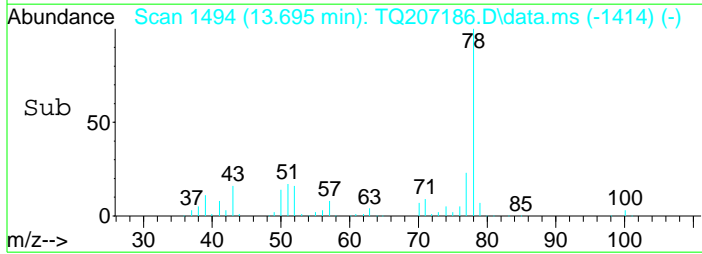
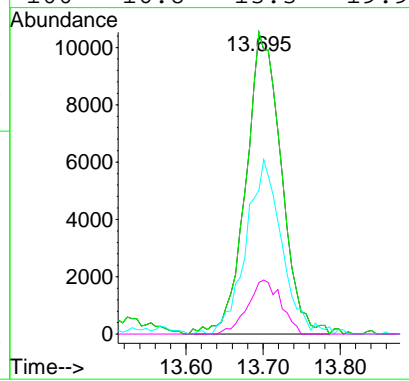
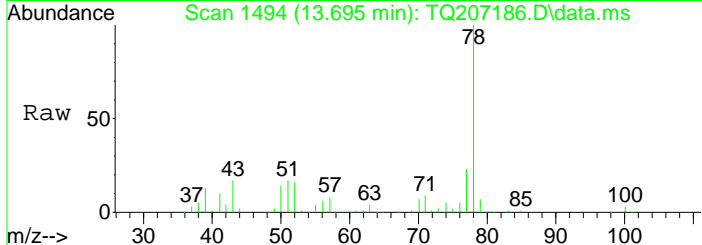
#35
Benzene
Concen: 1.65 ppbv
RT: 13.682 min Scan# 1492
Delta R.T. -0.013 min
Lab File: TQ207186.D
Acq: 5 Mar 2019 7:43 pm

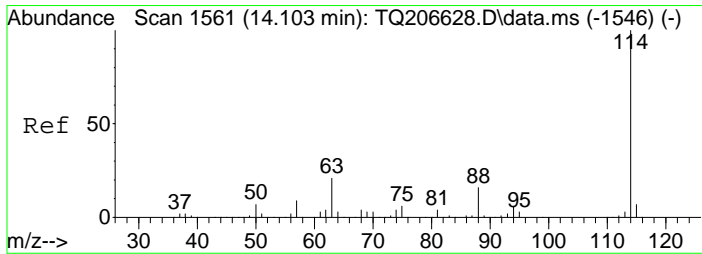
Tgt Ion	Resp	Lower	Upper
78	219821		
43	15.3	37.5	77.9#
71	9.3	22.0	45.8#
42	5.3	8.8	18.4#



#36
n-Heptane
Concen: 0.53 ppbv
RT: 13.695 min Scan# 1494
Delta R.T. -0.014 min
Lab File: TQ207186.D
Acq: 5 Mar 2019 7:43 pm

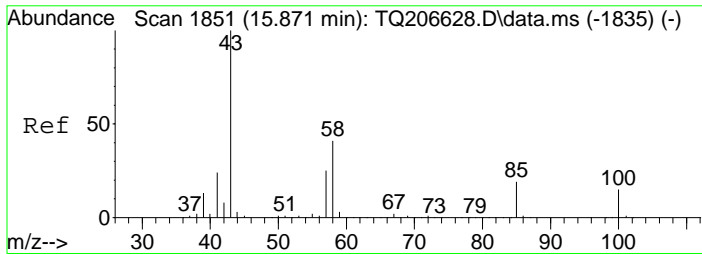
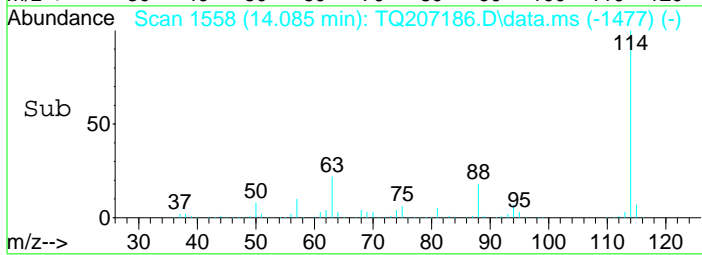
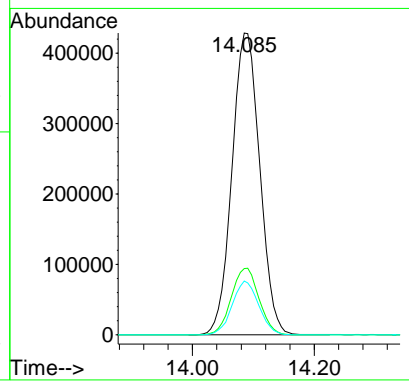
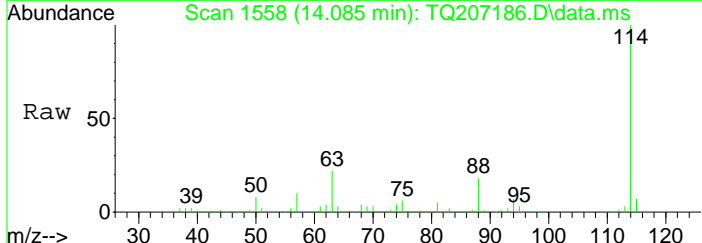
Tgt Ion	Resp	Lower	Upper
43	33564		
43	100.0	80.0	120.0
57	58.2	42.6	64.0
100	16.8	13.3	19.9





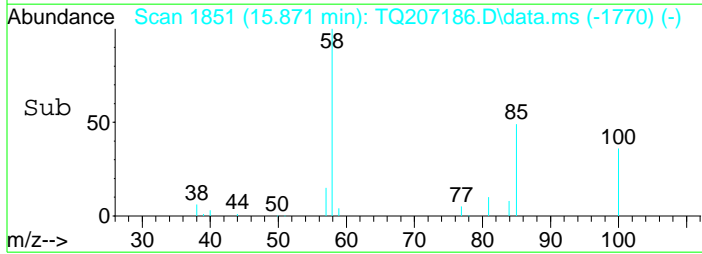
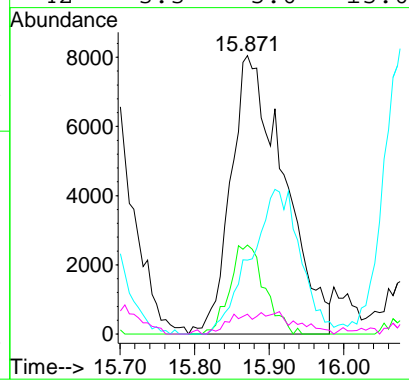
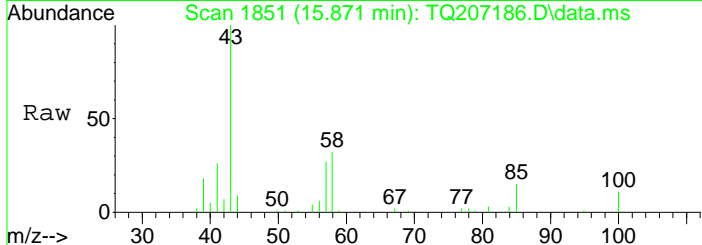
#37
 1,4-Difluorobenzene
 Concen: 10.00 ppbv
 RT: 14.085 min Scan# 1558
 Delta R.T. -0.007 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

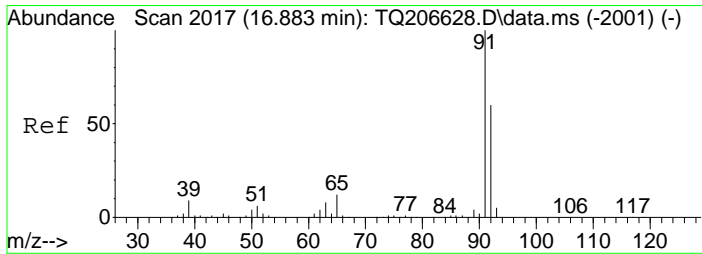
Tgt Ion	Resp	Lower	Upper
114	100		
63	22.0	12.9	26.9
88	17.0	10.7	22.3



#43
 Methyl Isobutyl Ketone
 Concen: 0.47 ppbv
 RT: 15.871 min Scan# 1851
 Delta R.T. -0.005 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

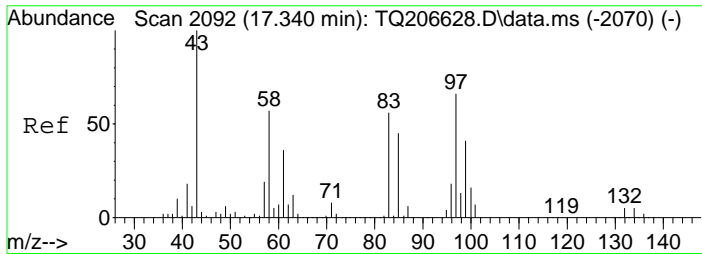
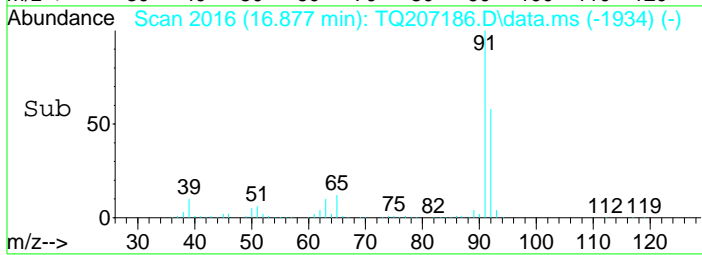
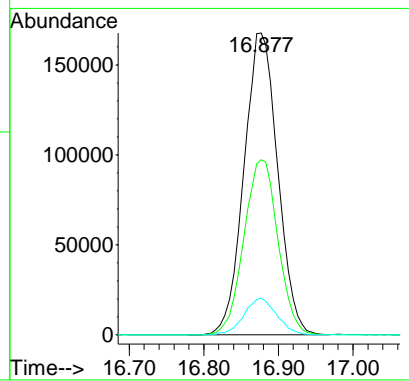
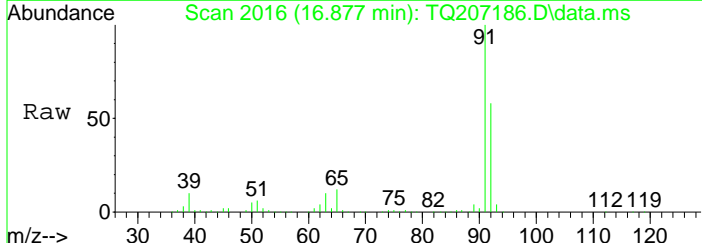
Tgt Ion	Resp	Lower	Upper
43	100		
58	21.2	25.1	52.1#
57	49.0	15.5	32.3#
42	3.3	5.0	15.0#





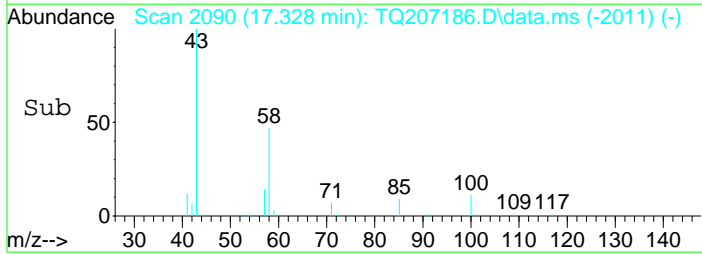
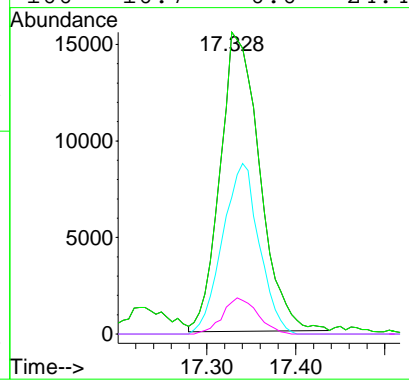
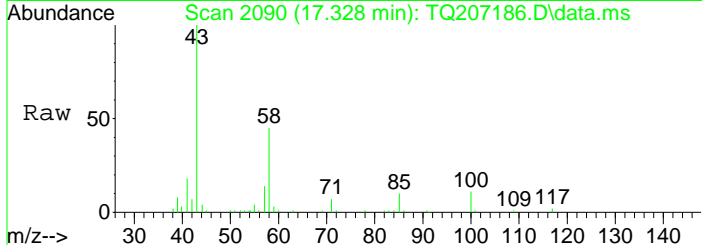
#45
 Toluene
 Concen: 3.66 ppbv
 RT: 16.877 min Scan# 2016
 Delta R.T. 0.000 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

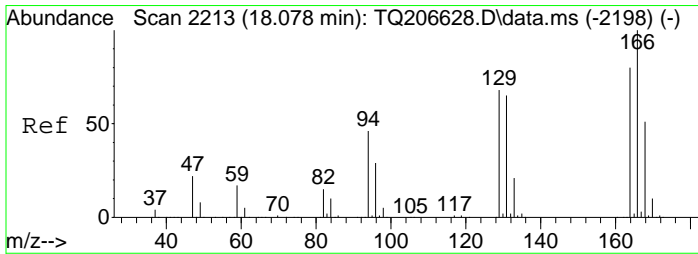
Tgt Ion	Resp	Lower	Upper
91	100		
92	58.5	38.7	80.3
65	11.9	7.5	15.5



#48
 2-Hexanone
 Concen: 0.65 ppbv
 RT: 17.328 min Scan# 2090
 Delta R.T. -0.016 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

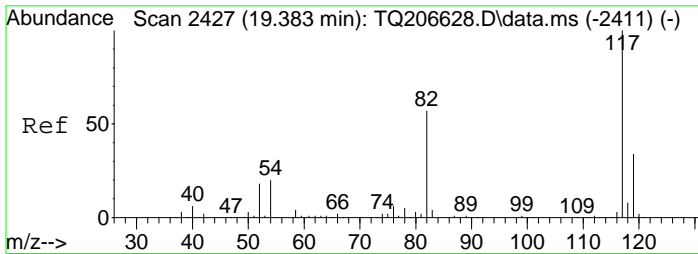
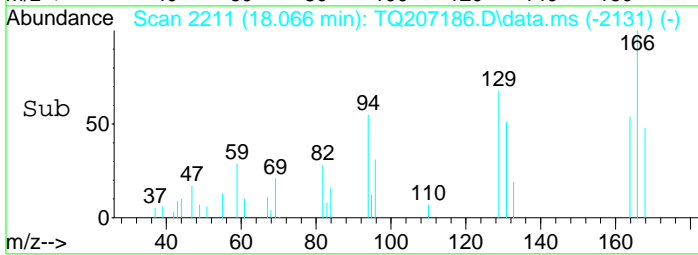
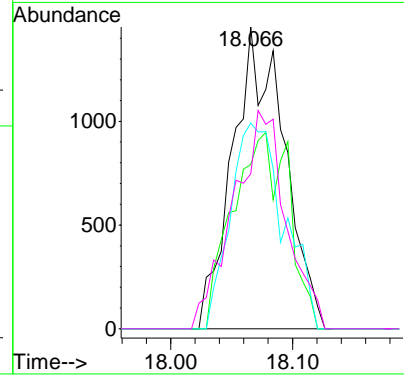
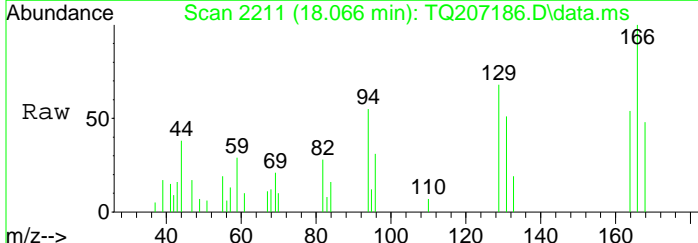
Tgt Ion	Resp	Lower	Upper
43	100		
43	100.0	80.0	120.0
58	52.8	44.2	66.4
100	10.7	0.0	24.4





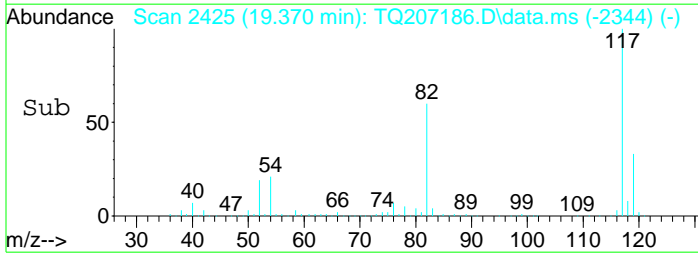
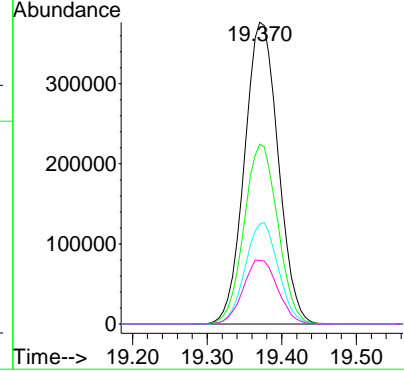
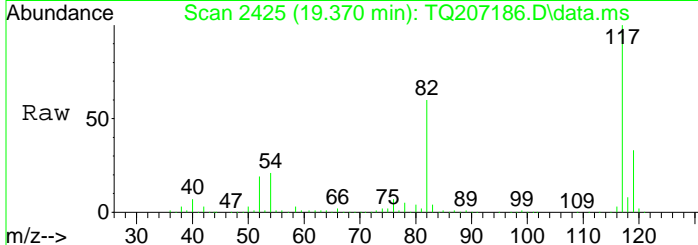
#50
 Tetrachloroethylene
 Concen: 0.06 ppbv
 RT: 18.066 min Scan# 2211
 Delta R.T. -0.011 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

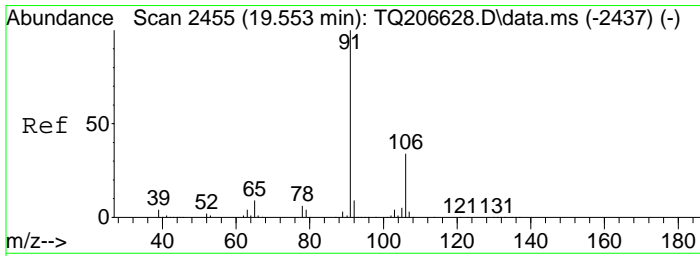
Tgt Ion	Resp	Ion Ratio	Lower	Upper
166	4288	100		
164		70.7	51.0	106.0
129		70.7	48.1	99.9
131		74.0	46.3	96.3



#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 19.370 min Scan# 2425
 Delta R.T. -0.006 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

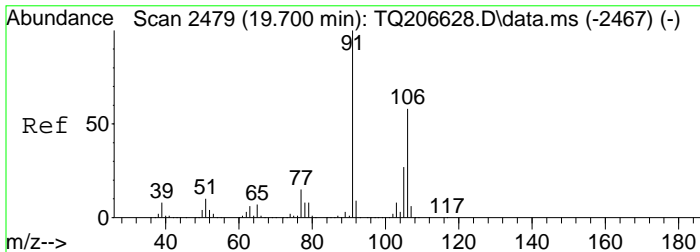
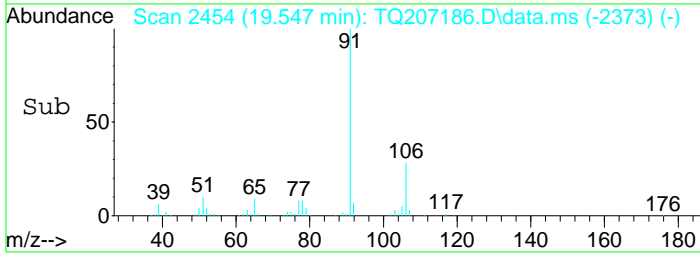
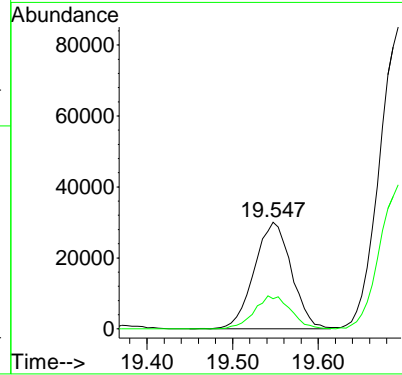
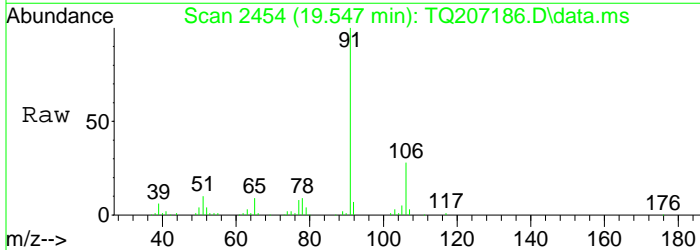
Tgt Ion	Resp	Ion Ratio	Lower	Upper
117	1181014	100		
82		59.7	37.1	77.1
119		33.1	22.1	45.9
54		21.8	13.8	28.6





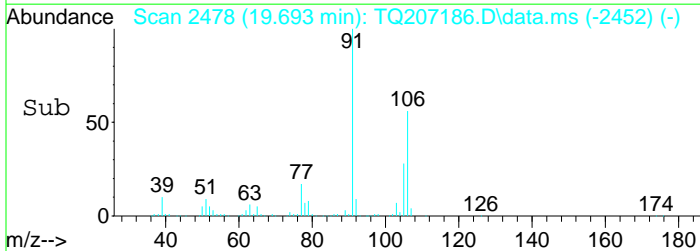
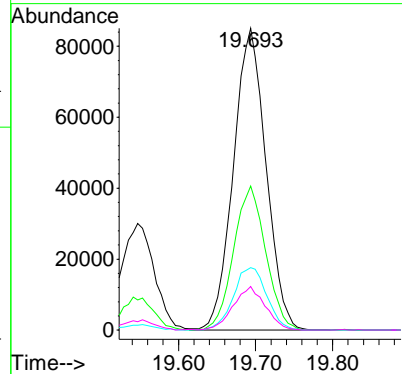
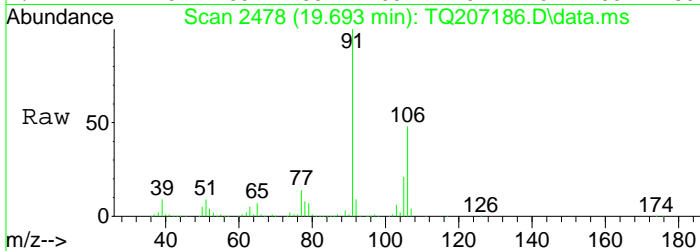
#56
 Ethylbenzene
 Concen: 0.55 ppbv
 RT: 19.547 min Scan# 2454
 Delta R.T. -0.006 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

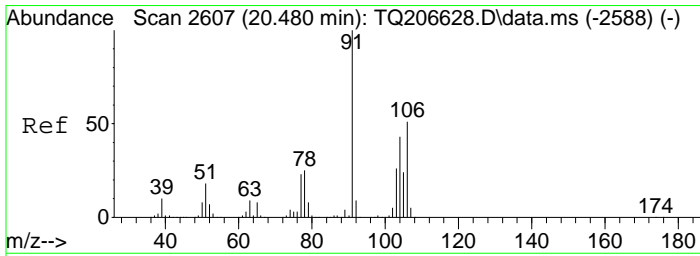
Tgt Ion	91	106	Resp	90796	Lower	Upper
91	100					
106	30.2		20.5		42.7	



#57
 p- & m-Xylenes
 Concen: 1.99 ppbv
 RT: 19.693 min Scan# 2478
 Delta R.T. -0.000 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

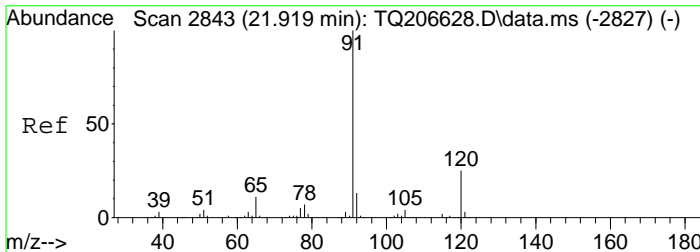
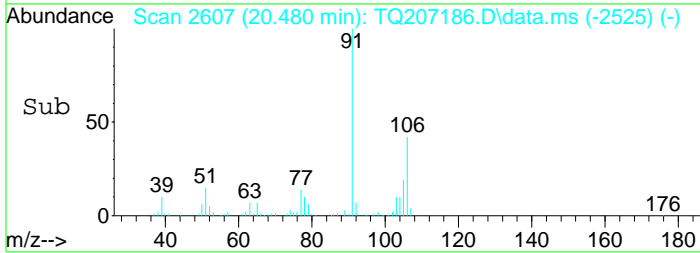
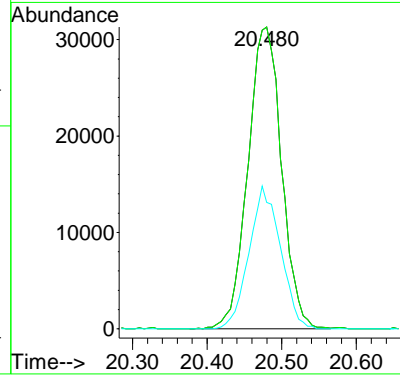
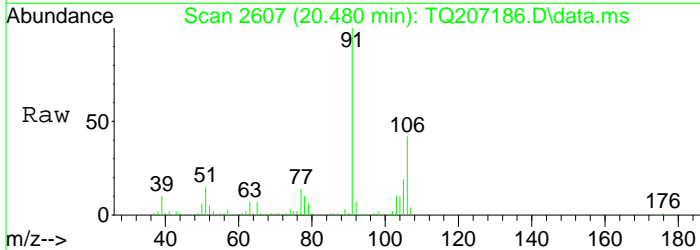
Tgt Ion	91	106	105	77	Resp	250542	Lower	Upper
91	100							
106	46.9				32.6		67.8	
105	21.2				14.5		30.1	
77	14.2				8.5		17.7	





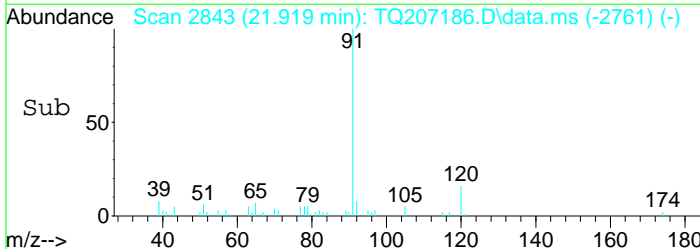
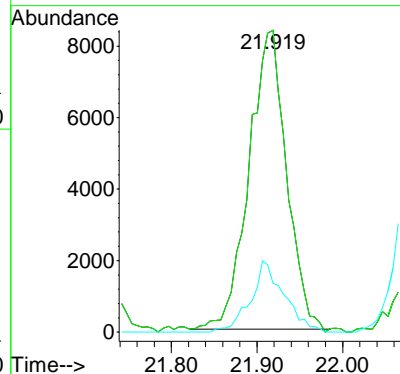
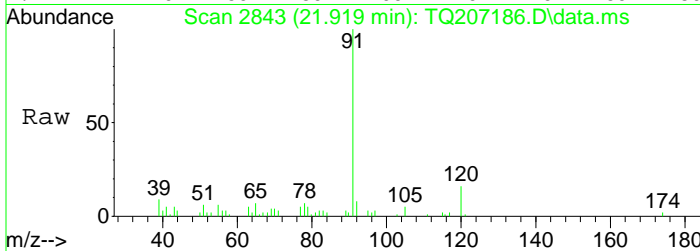
#58
 o-Xylene
 Concen: 0.68 ppbv
 RT: 20.480 min Scan# 2607
 Delta R.T. -0.000 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

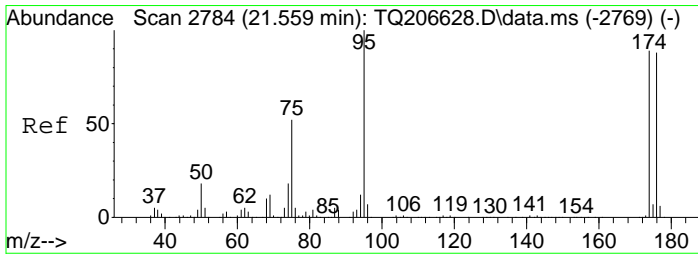
Tgt Ion	91	Resp	98141
Ion Ratio	100	Lower	Upper
91	100.0	80.0	120.0
106	44.2	38.2	57.2



#61
 n-Propylbenzene
 Concen: 0.11 ppbv
 RT: 21.919 min Scan# 2843
 Delta R.T. 0.001 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

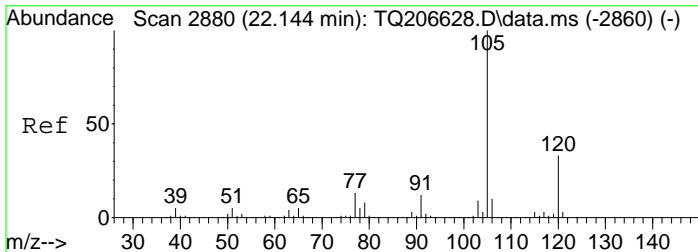
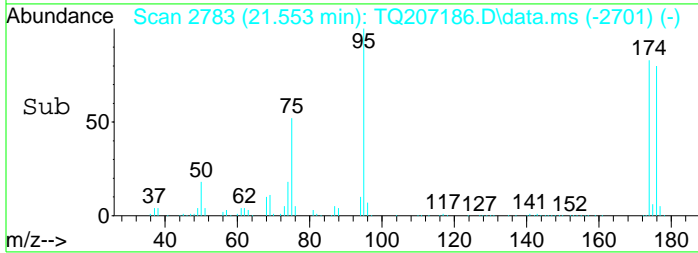
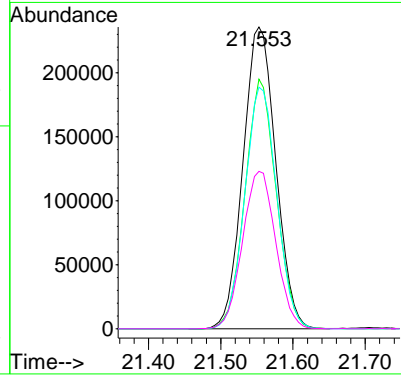
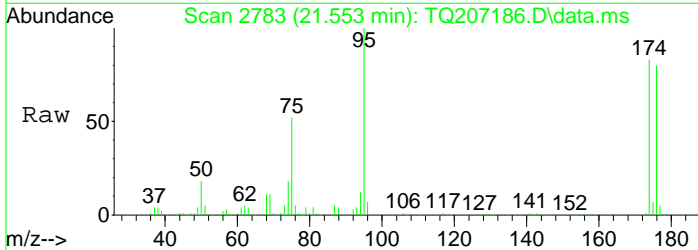
Tgt Ion	91	Resp	25429
Ion Ratio	100	Lower	Upper
91	100.0	80.0	120.0
120	21.2	10.0	30.0





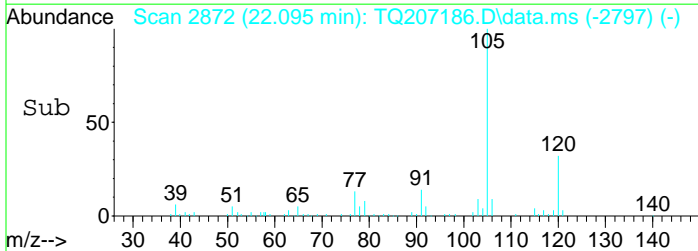
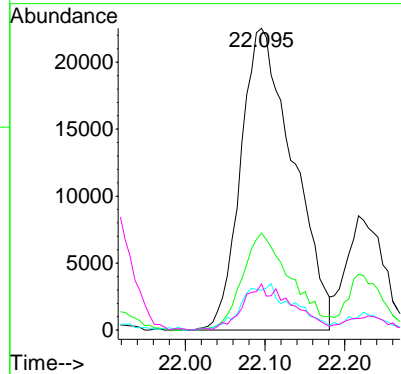
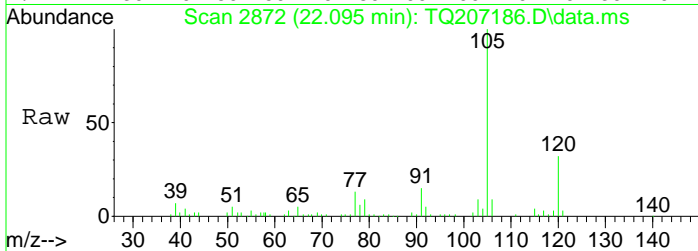
#64
 p-Bromofluorobenzene
 Concen: 8.93 ppbv
 RT: 21.553 min Scan# 2783
 Delta R.T. -0.000 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

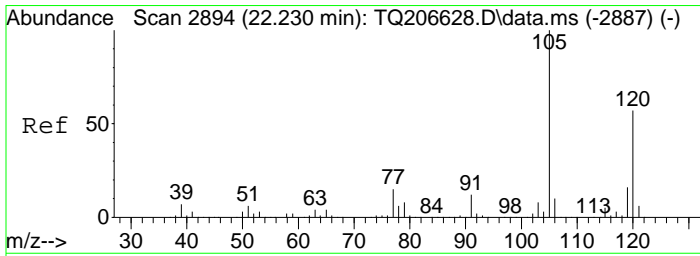
Tgt Ion	Resp	Lower	Upper
95	100		
174	78.6	53.2	110.6
176	78.0	51.6	107.2
75	52.8	30.7	63.7



#65
 4-Ethyltoluene
 Concen: 0.58 ppbv
 RT: 22.095 min Scan# 2872
 Delta R.T. -0.043 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

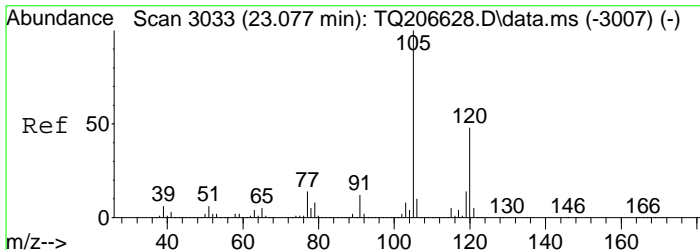
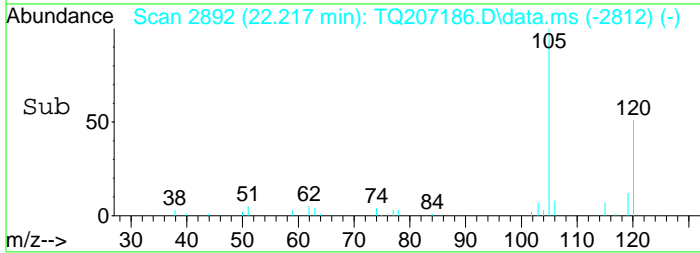
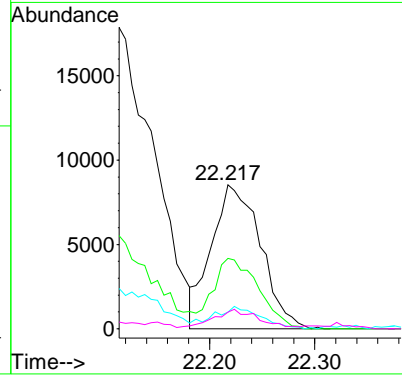
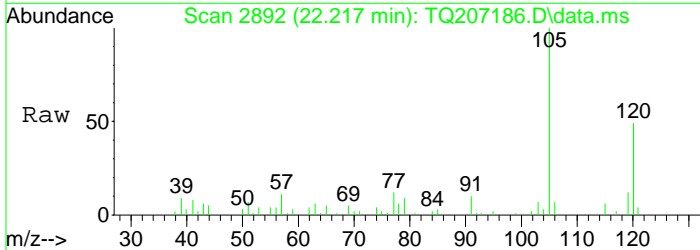
Tgt Ion	Resp	Lower	Upper
105	100		
120	30.4	19.6	40.8
77	15.1	7.3	15.3
91	7.9	7.1	14.7





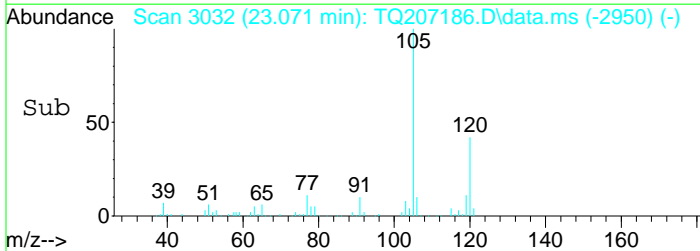
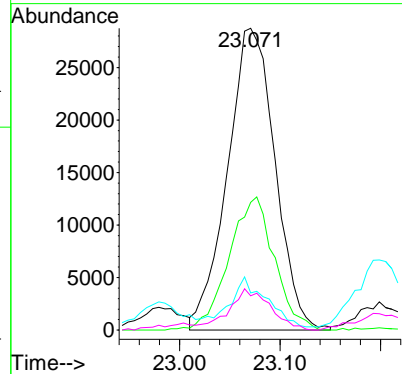
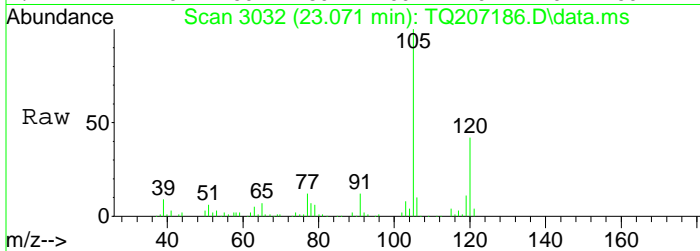
#66
 1,3,5-Trimethylbenzene
 Concen: 0.18 ppbv
 RT: 22.217 min Scan# 2892
 Delta R.T. -0.012 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

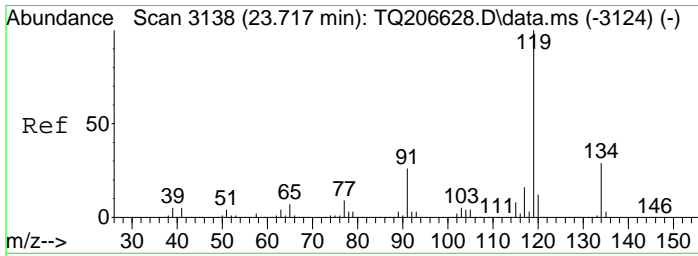
Tgt Ion	Resp	Lower	Upper
105	100		
120	44.9	39.2	58.8
77	14.8	10.1	15.1
119	10.6	6.1	18.3



#68
 1,2,4-Trimethylbenzene
 Concen: 0.60 ppbv
 RT: 23.071 min Scan# 3032
 Delta R.T. -0.000 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

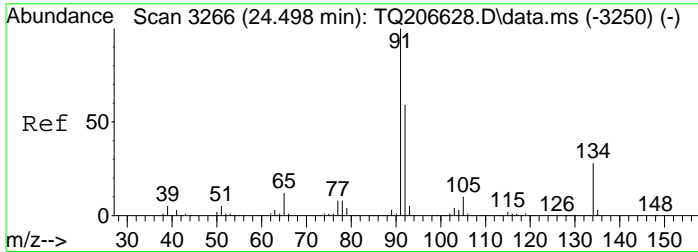
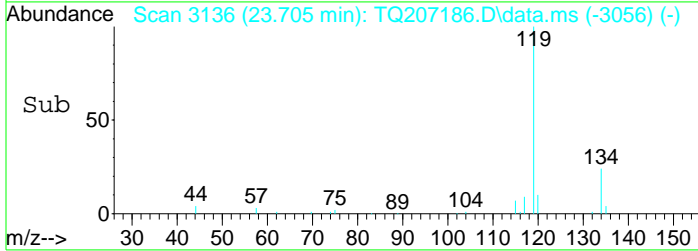
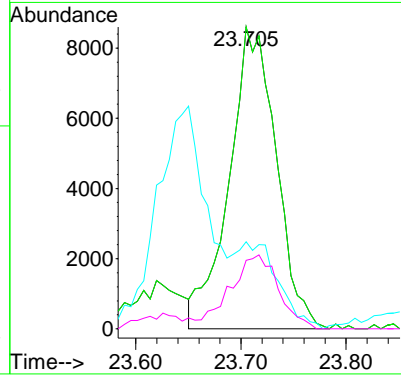
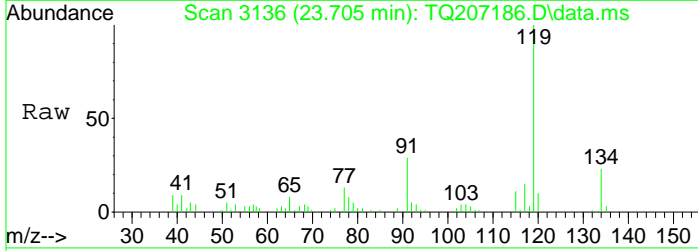
Tgt Ion	Resp	Lower	Upper
105	100		
120	42.1	30.2	62.6
77	14.3	8.1	16.9
119	11.9	7.8	16.2





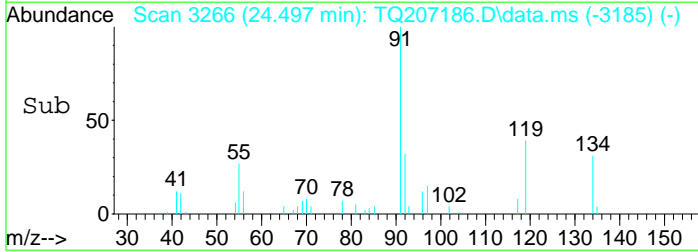
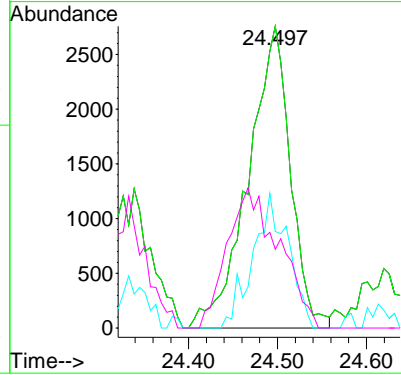
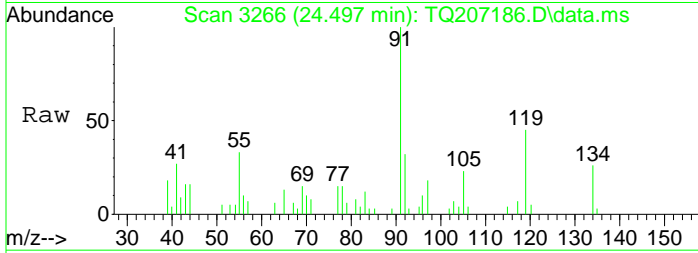
#70
 p-Isopropyltoluene
 Concen: 0.14 ppbv
 RT: 23.705 min Scan# 3136
 Delta R.T. -0.013 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

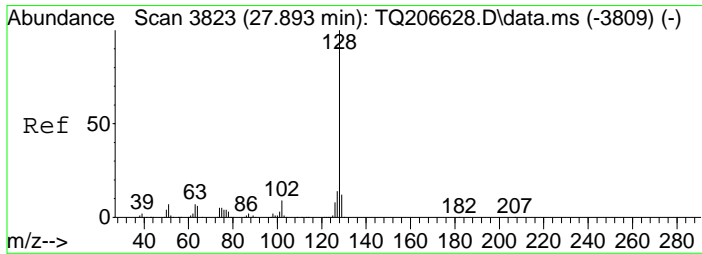
Tgt Ion	Resp	Lower	Upper
119	26777		
119	100		
119	100.0	80.0	120.0
91	0.0	7.5	52.5#
134	25.2	7.5	52.5



#74
 n-Butylbenzene
 Concen: 0.05 ppbv
 RT: 24.497 min Scan# 3266
 Delta R.T. -0.004 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

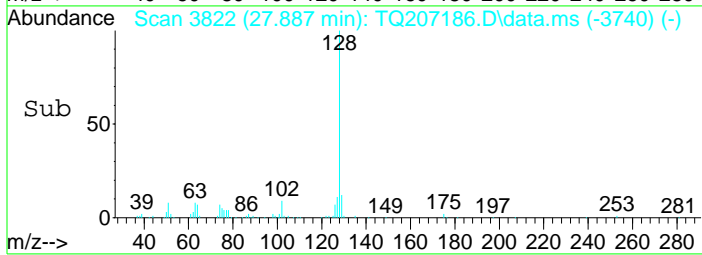
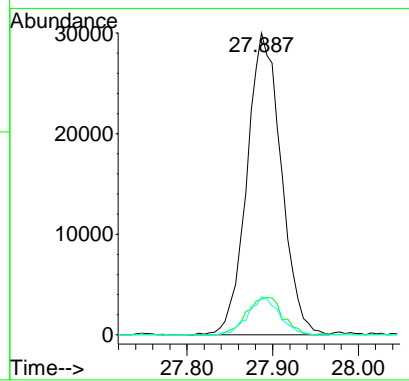
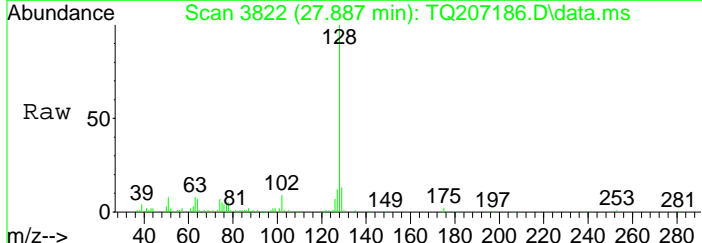
Tgt Ion	Resp	Lower	Upper
91	9060		
91	100		
91	100.0	80.0	120.0
92	0.0	44.0	66.0#
134	0.0	12.5	37.5#





#78
 Naphthalene
 Concen: 0.56 ppbv
 RT: 27.887 min Scan# 3822
 Delta R.T. -0.002 min
 Lab File: TQ207186.D
 Acq: 5 Mar 2019 7:43 pm

Tgt Ion	Resp	Lower	Upper
128	100		
127	13.1	8.1	16.9
129	11.6	7.1	14.7



Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Soil Vapor Laboratory ID: 19B1031-03 File ID: TQ207187.D
 Sampled: 02/27/19 09:40 Prepared: 03/05/19 08:00 Analyzed: 03/05/19 20:48
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BC90266 Sequence: Y9C0722 Calibration: YB90001 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.5	1.03	U
71-55-6	1,1,1-Trichloroethane	1.5	0.818	U
79-34-5	1,1,2,2-Tetrachloroethane	1.5	1.03	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.5	1.15	U
79-00-5	1,1,2-Trichloroethane	1.5	0.818	U
75-34-3	1,1-Dichloroethane	1.5	0.607	U
75-35-4	1,1-Dichloroethylene	1.5	0.595	U
120-82-1	1,2,4-Trichlorobenzene	1.5	1.11	U
95-63-6	1,2,4-Trimethylbenzene	1.5	4.57	D
106-93-4	1,2-Dibromoethane	1.5	1.15	U
95-50-1	1,2-Dichlorobenzene	1.5	0.902	U
107-06-2	1,2-Dichloroethane	1.5	0.607	U
78-87-5	1,2-Dichloropropane	1.5	0.693	U
76-14-2	1,2-Dichlorotetrafluoroethane	1.5	1.05	U
108-67-8	1,3,5-Trimethylbenzene	1.5	1.33	D
106-99-0	1,3-Butadiene	1.5	0.996	U
541-73-1	1,3-Dichlorobenzene	1.5	0.902	U
142-28-9	1,3-Dichloropropane	1.5	0.693	U
106-46-7	1,4-Dichlorobenzene	1.5	0.902	U
123-91-1	1,4-Dioxane	1.5	1.08	U
78-93-3	2-Butanone	1.5	1.68	D
591-78-6	2-Hexanone	1.5	4.06	BD
107-05-1	3-Chloropropene	1.5	2.35	U
108-10-1	4-Methyl-2-pentanone	1.5	2.89	D
67-64-1	Acetone	1.5	4.92	D
107-13-1	Acrylonitrile	1.5	0.326	U
71-43-2	Benzene	1.5	8.29	D
100-44-7	Benzyl chloride	1.5	0.777	U
75-27-4	Bromodichloromethane	1.5	1.00	U
75-25-2	Bromoform	1.5	1.55	U
74-83-9	Bromomethane	1.5	0.582	U
75-15-0	Carbon disulfide	1.5	0.467	U
56-23-5	Carbon tetrachloride	1.5	0.472	D
108-90-7	Chlorobenzene	1.5	0.691	U
75-00-3	Chloroethane	1.5	0.396	U
67-66-3	Chloroform	1.5	0.732	U
74-87-3	Chloromethane	1.5	1.27	D
156-59-2	cis-1,2-Dichloroethylene	1.5	0.595	U
10061-01-5	cis-1,3-Dichloropropylene	1.5	0.681	U
110-82-7	Cyclohexane	1.5	1.39	D

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Soil Vapor Laboratory ID: 19B1031-03 File ID: TQ207187.D
 Sampled: 02/27/19 09:40 Prepared: 03/05/19 08:00 Analyzed: 03/05/19 20:48
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BC90266 Sequence: Y9C0722 Calibration: YB90001 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
124-48-1	Dibromochloromethane	1.5	1.28	U
75-71-8	Dichlorodifluoromethane	1.5	2.45	D
141-78-6	Ethyl acetate	1.5	1.08	U
100-41-4	Ethyl Benzene	1.5	3.58	D
87-68-3	Hexachlorobutadiene	1.5	1.60	U
67-63-0	Isopropanol	1.5	1.03	D
80-62-6	Methyl Methacrylate	1.5	0.614	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1.5	0.541	U
75-09-2	Methylene chloride	1.5	2.24	D
142-82-5	n-Heptane	1.5	3.44	D
110-54-3	n-Hexane	1.5	4.07	D
95-47-6	o-Xylene	1.5	4.49	D
179601-23-1	p- & m- Xylenes	1.5	13.2	D
622-96-8	p-Ethyltoluene	1.5	4.50	D
115-07-1	Propylene	1.5	7.00	D
100-42-5	Styrene	1.5	0.639	U
127-18-4	Tetrachloroethylene	1.5	0.610	D
109-99-9	Tetrahydrofuran	1.5	1.64	D
108-88-3	Toluene	1.5	21.5	D
156-60-5	trans-1,2-Dichloroethylene	1.5	0.595	U
10061-02-6	trans-1,3-Dichloropropylene	1.5	0.681	U
79-01-6	Trichloroethylene	1.5	0.202	U
75-69-4	Trichlorofluoromethane (Freon 11)	1.5	1.35	D
108-05-4	Vinyl acetate	1.5	0.528	U
593-60-2	Vinyl bromide	1.5	0.656	U
75-01-4	Vinyl Chloride	1.5	0.383	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
SURR: p-Bromofluorobenzene	10.0	9.16	91.6	72 - 118	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	439420	12.488	434873	12.512	
ISTD: 1,4-Difluorobenzene	1308561	14.085	1403418	14.103	
ISTD: d5-Chlorobenzene	1141229	19.37	1188268	19.377	

* Values outside of QC limits

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207187.D
 Acq On : 5 Mar 2019 8:48 pm
 Sample : 19B1031-03
 Operator : AS
 Sample : 19B1031-03
 Misc : QBTO2030519A 1031-03 1X
 ALS Vial : 7 Sample Multiplier: 1.5

Inst : TO15_AIR2

Quant Time: Mar 07 14:00:39 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

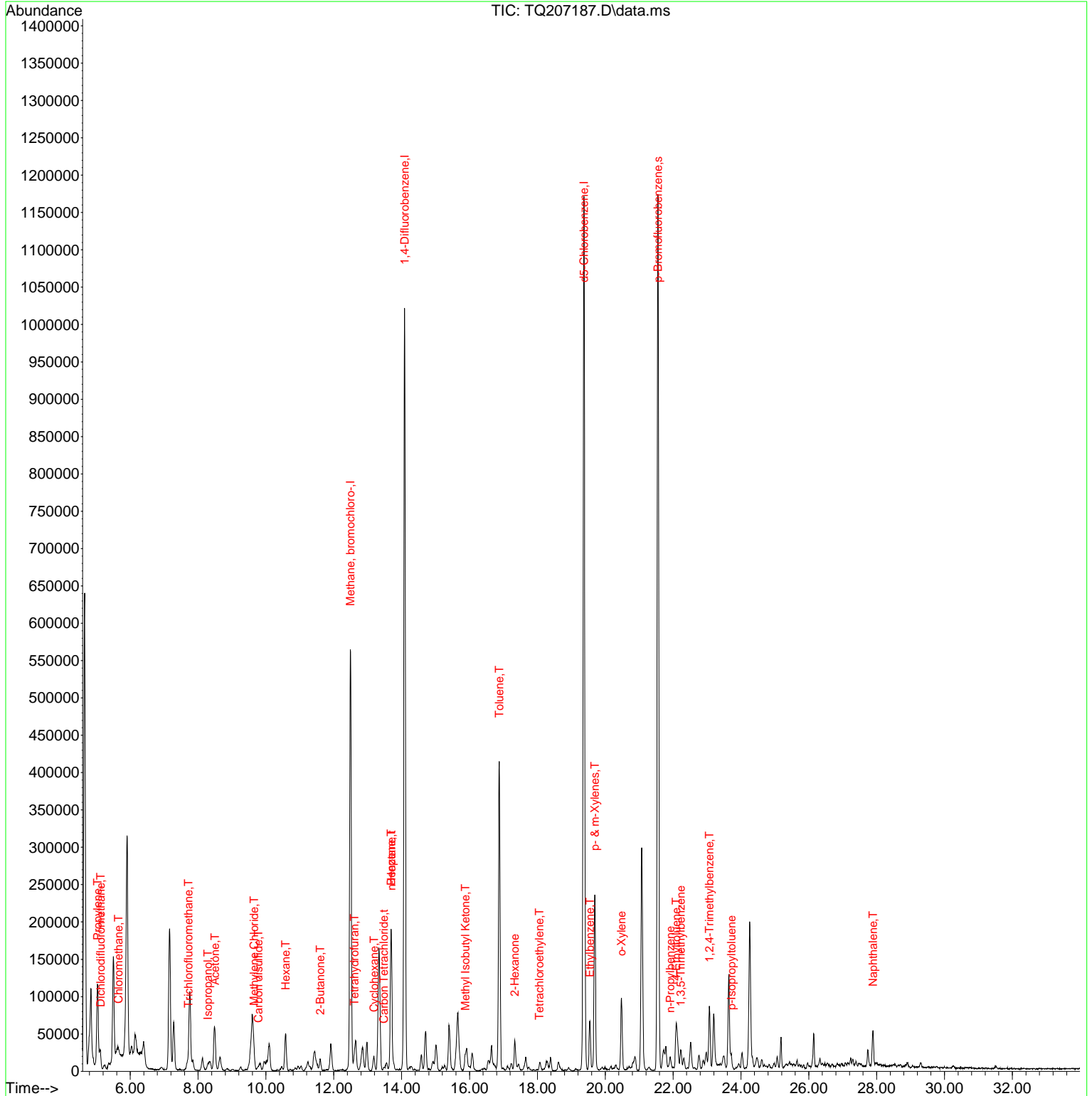
Internal Standards						
1) Methane, bromochloro-	12.488	49	439420	10.00	ppbv	-0.01
37) 1,4-Difluorobenzene	14.085	114	1308561	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.370	117	1141229	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	737331	9.16	ppbv	0.00
Spiked Amount	10.000	Range	70 - 130	Recovery	=	91.60%
Target Compounds						
						Qvalue
2) Propylene	5.032	42	54564	2.71	ppbv	86
3) Dichlorodifluoromethane	5.123	85	32184	0.33	ppbv	96
5) Chloromethane	5.648	50	13972	0.41	ppbv	97
11) Trichlorofluoromethane	7.708	101	15860	0.16	ppbv #	95
12) Isopropanol	8.287	45	17716	0.28	ppbv #	99
14) Acetone	8.495	43	83032	1.38	ppbv	100
18) Methylene Chloride	9.653	49	17980	0.43	ppbv #	82
20) Carbon disulfide	9.775	76	7296	0.07	ppbv	96
23) Hexane	10.573	57	42448	0.77	ppbv	96
26) 2-Butanone	11.598	43	30102	0.38	ppbv #	60
30) Tetrahydrofuran	12.610	42	15033m	0.37	ppbv	
32) Cyclohexane	13.183	56	14402	0.27	ppbv	94
33) Carbon Tetrachloride	13.475	117	4116	0.05	ppbv #	92
35) Benzene	13.689	78	220747	1.73	ppbv #	52
36) n-Heptane	13.695	43	33378	0.56	ppbv	99
43) Methyl Isobutyl Ketone	15.877	43	38856	0.47	ppbv #	68
45) Toluene	16.877	91	527737	3.81	ppbv	99
48) 2-Hexanone	17.334	43	46858	0.66	ppbv	97
50) Tetrachloroethylene	18.060	166	4101	0.06	ppbv #	24
56) Ethylbenzene	19.547	91	87289	0.55	ppbv	97
57) p- & m-Xylenes	19.694	91	245495	2.02	ppbv	97
58) o-Xylene	20.474	91	96061	0.69	ppbv	98
61) n-Propylbenzene	21.913	91	25649	0.12	ppbv	100
65) 4-Ethyltoluene	22.089	105	105905	0.61	ppbv	95
66) 1,3,5-Trimethylbenzene	22.224	105	26208	0.18	ppbv #	96
68) 1,2,4-Trimethylbenzene	23.071	105	94268	0.62	ppbv	97
70) p-Isopropyltoluene	23.717	119	20882	0.12	ppbv #	79
78) Naphthalene	27.893	128	59761	0.42	ppbv	100

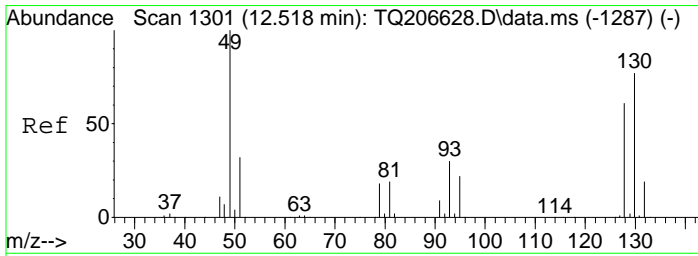
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207187.D
 Acq On : 5 Mar 2019 8:48 pm
 Sample : 19B1031-03
 Operator : AS
 Sample : 19B1031-03
 Misc : QBTO2030519A 1031-03 1X
 ALS Vial : 7 Sample Multiplier: 1.5

Inst : TO15_AIR2

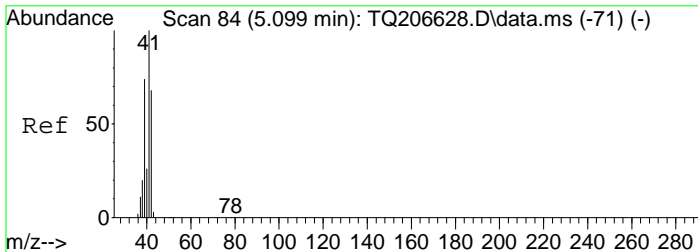
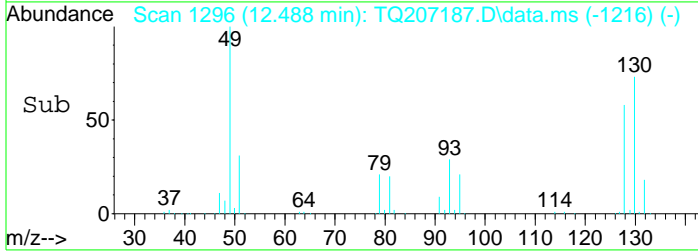
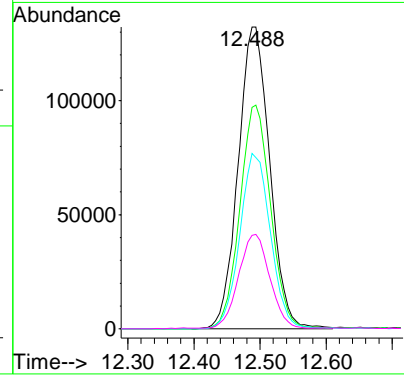
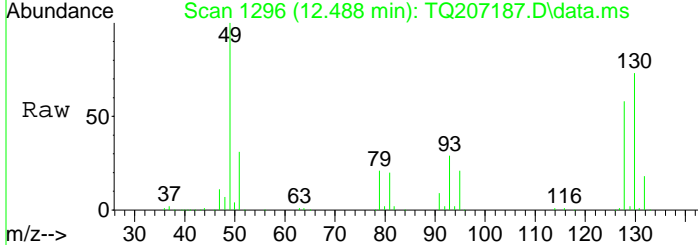
Quant Time: Mar 07 14:00:39 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration





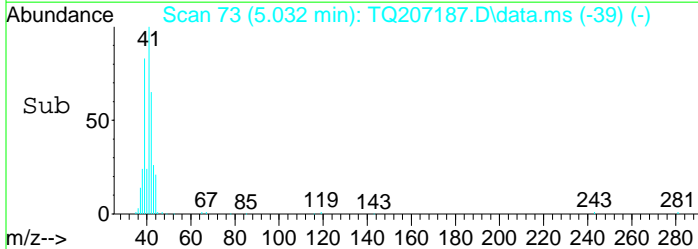
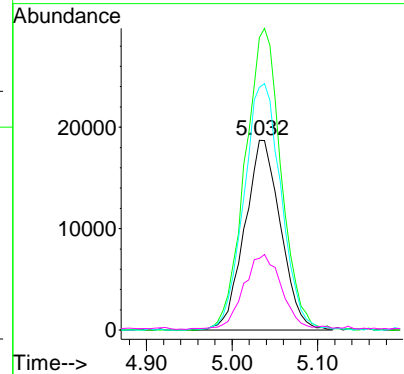
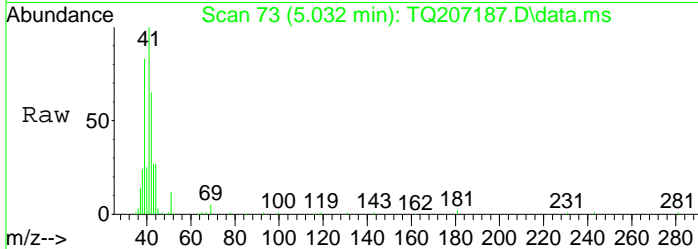
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.488 min Scan# 1296
 Delta R.T. -0.012 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

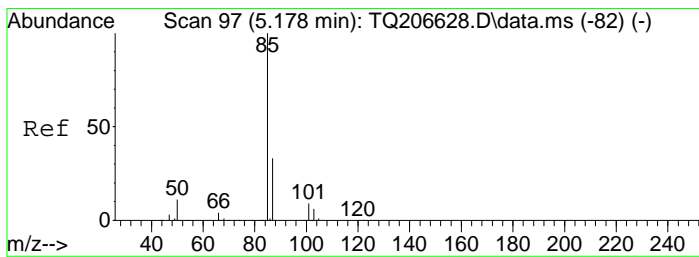
Tgt Ion	Resp	Lower	Upper
49	439420		
130	72.2	48.1	99.9
128	56.5	38.3	79.5
51	30.5	20.3	42.3



#2
 Propylene
 Concen: 2.71 ppbv
 RT: 5.032 min Scan# 73
 Delta R.T. -0.043 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

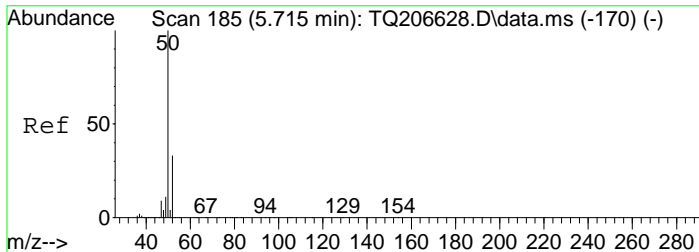
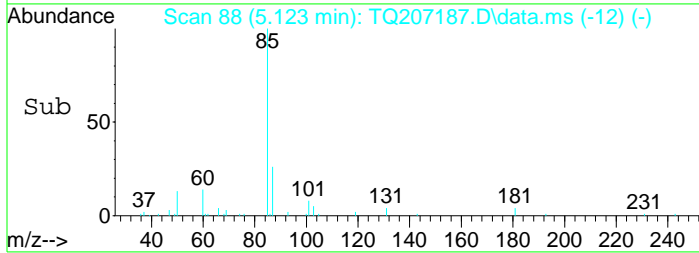
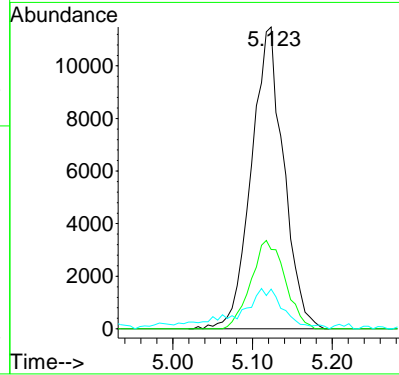
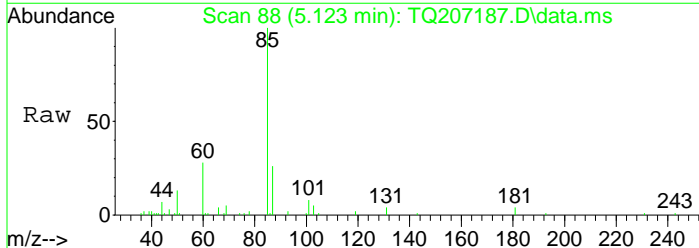
Tgt Ion	Resp	Lower	Upper
42	54564		
41	159.6	90.7	211.7
39	135.4	54.1	162.3
40	41.3	18.7	56.1





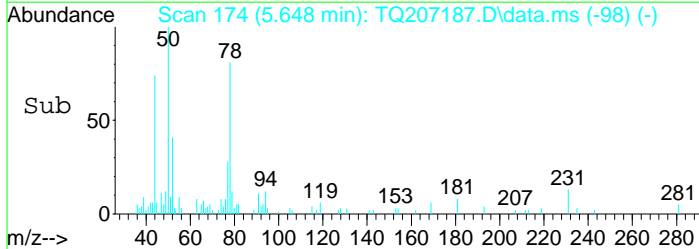
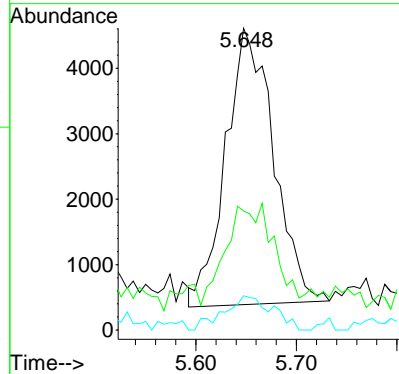
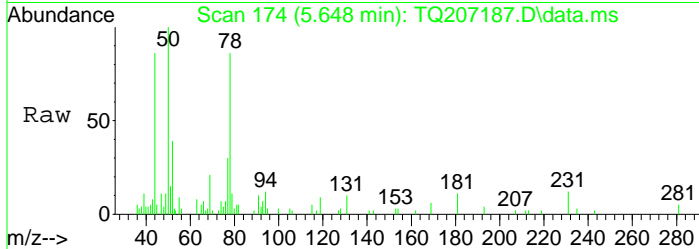
#3
 Dichlorodifluoromethane
 Concen: 0.33 ppbv
 RT: 5.123 min Scan# 88
 Delta R.T. -0.034 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

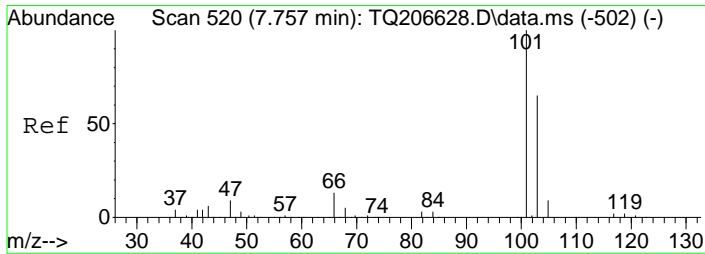
Tgt Ion	Resp	Lower	Upper
85	100		
87	31.0	20.9	43.5
50	14.9	7.2	15.0



#5
 Chloromethane
 Concen: 0.41 ppbv
 RT: 5.648 min Scan# 174
 Delta R.T. -0.034 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

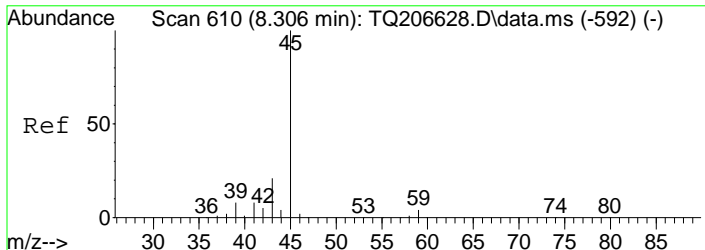
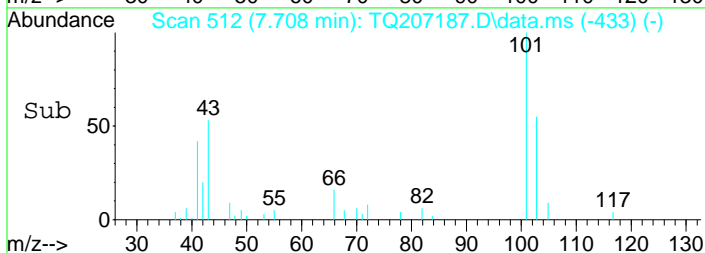
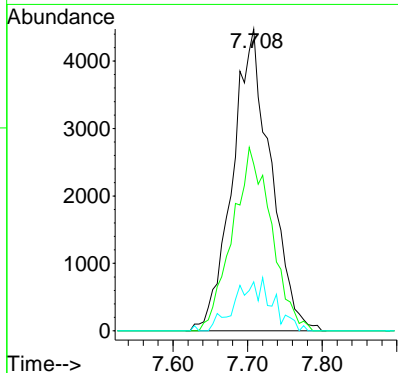
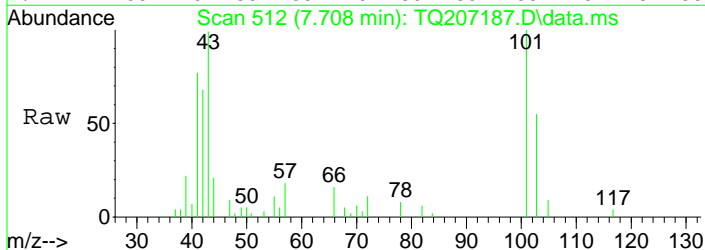
Tgt Ion	Resp	Lower	Upper
50	100		
52	31.6	0.0	65.2
49	12.6	0.0	19.6





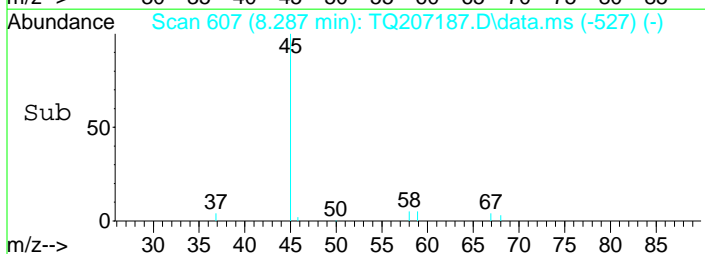
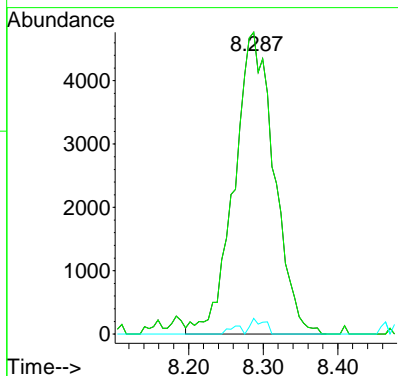
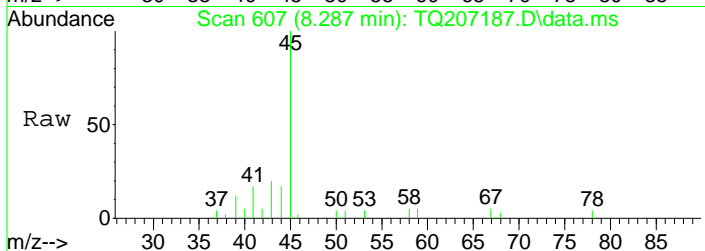
#11
 Trichlorofluoromethane
 Concen: 0.16 ppbv
 RT: 7.708 min Scan# 512
 Delta R.T. -0.018 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

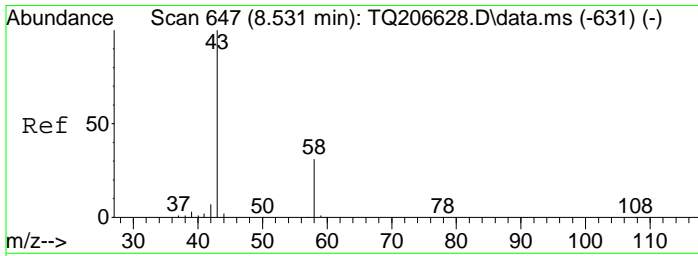
Tgt Ion	Resp	Lower	Upper
101	15860		
103	62.1	42.3	87.8
66	16.8	7.8	16.2#



#12
 Isopropanol
 Concen: 0.28 ppbv
 RT: 8.287 min Scan# 607
 Delta R.T. -0.014 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

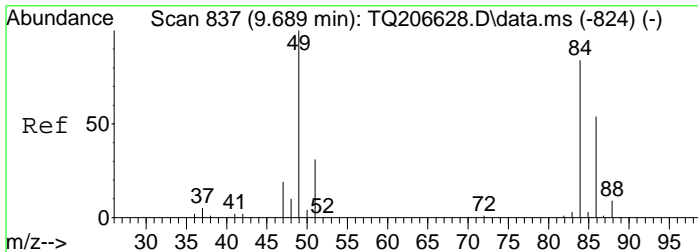
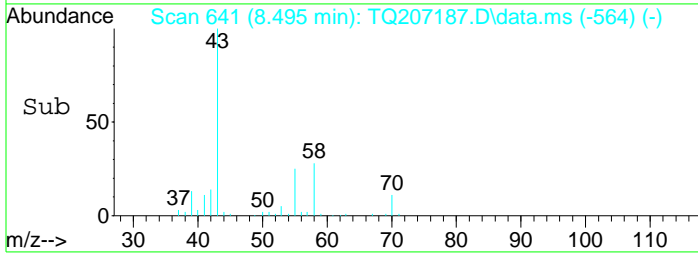
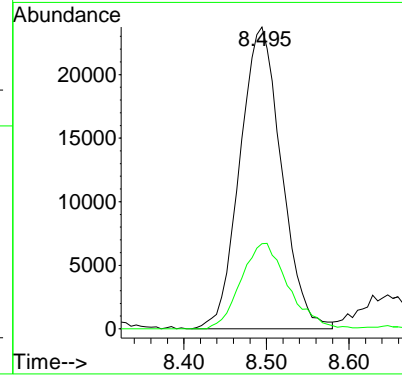
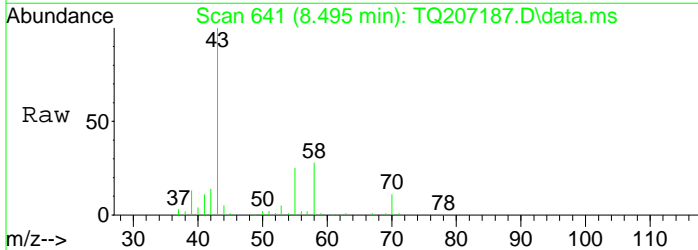
Tgt Ion	Resp	Lower	Upper
45	17716		
45	100.0	65.0	135.0
59	0.0	0.0	10.0





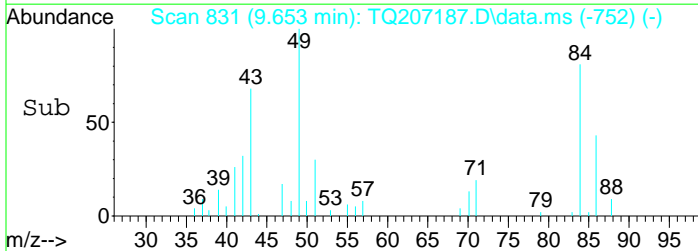
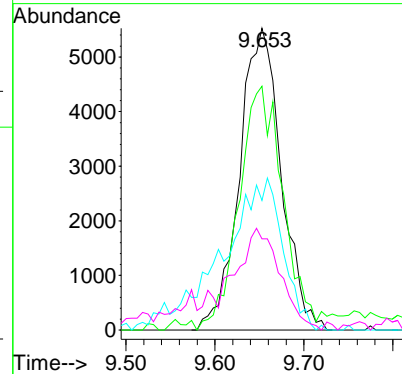
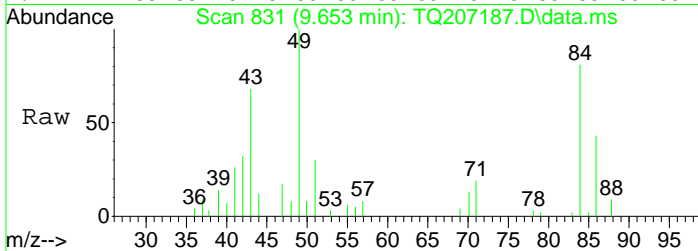
#14
 Acetone
 Concen: 1.38 ppbv
 RT: 8.495 min Scan# 641
 Delta R.T. -0.032 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

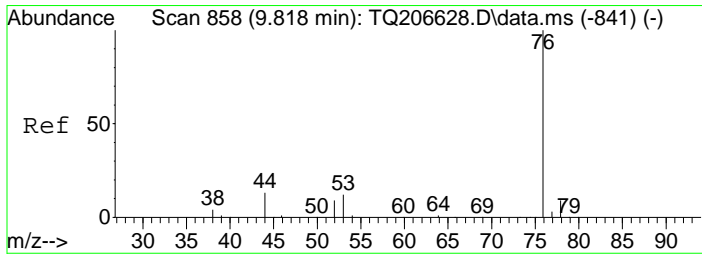
Tgt Ion	Resp	Lower	Upper
43	100		
58	32.2	20.9	43.3



#18
 Methylene Chloride
 Concen: 0.43 ppbv
 RT: 9.653 min Scan# 831
 Delta R.T. -0.019 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

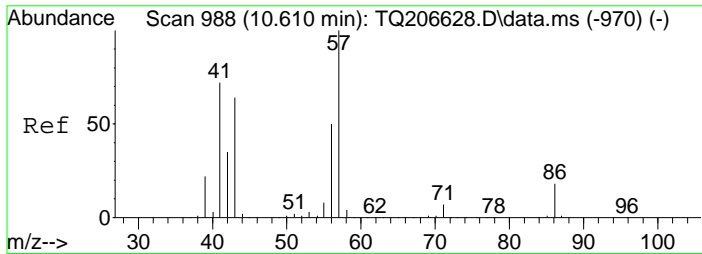
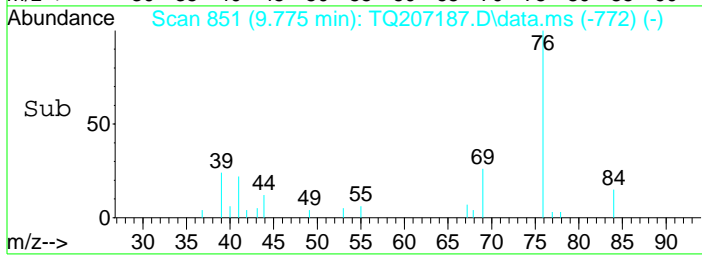
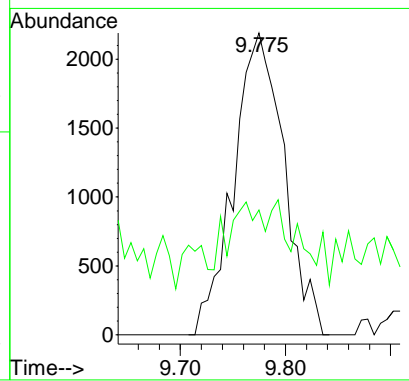
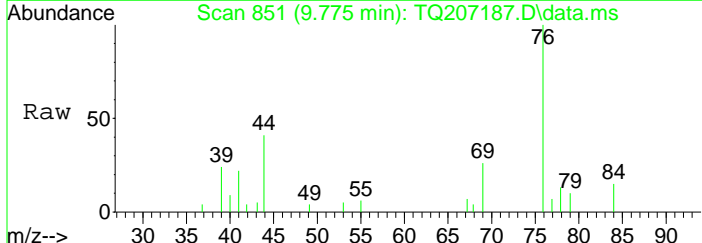
Tgt Ion	Resp	Lower	Upper
49	100		
84	84.8	49.9	103.5
86	70.7	31.8	66.0#
51	39.7	20.2	41.9





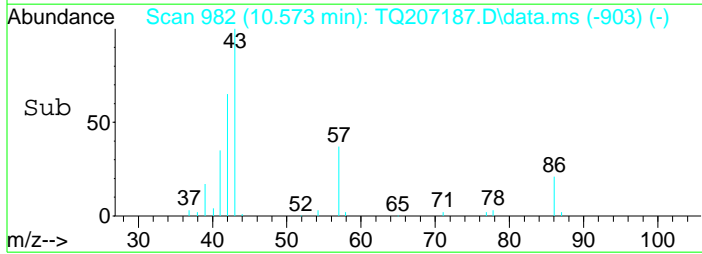
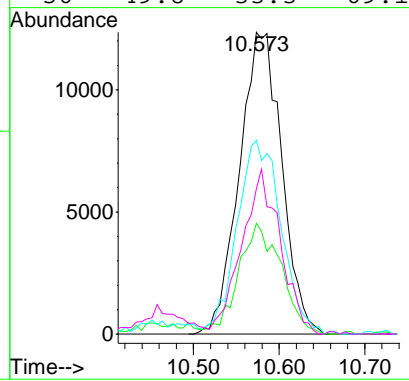
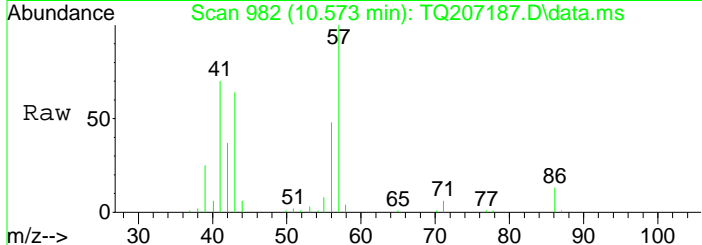
#20
 Carbon disulfide
 Concen: 0.07 ppbv
 RT: 9.775 min Scan# 851
 Delta R.T. -0.018 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

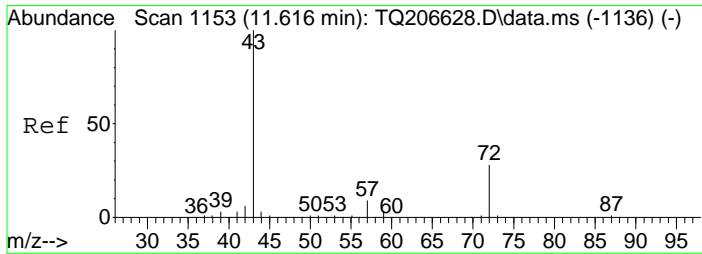
Tgt Ion	Resp	Lower	Upper
76	100		
44	14.2	8.3	17.3



#23
 Hexane
 Concen: 0.77 ppbv
 RT: 10.573 min Scan# 982
 Delta R.T. -0.020 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

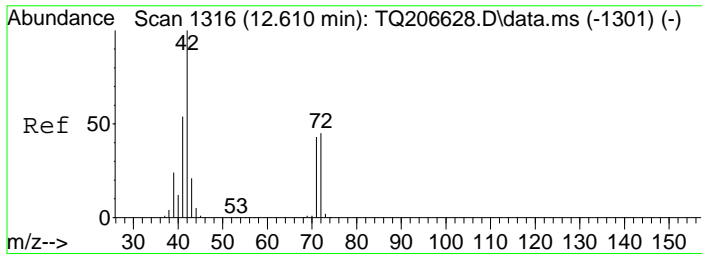
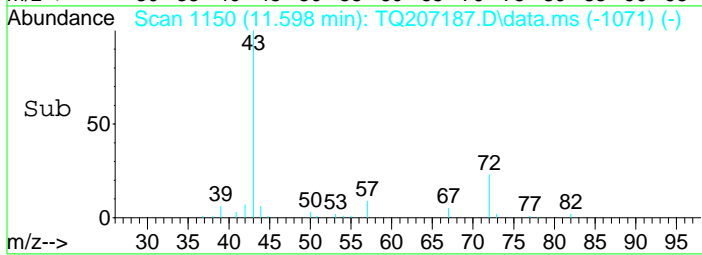
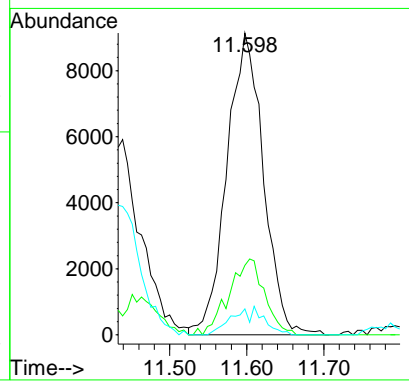
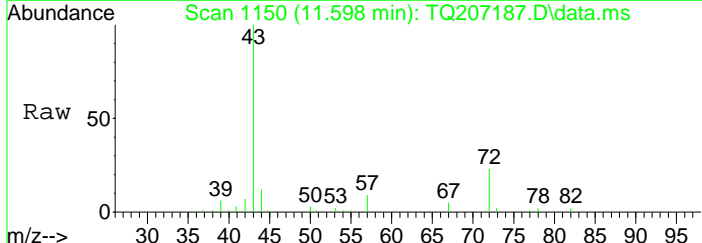
Tgt Ion	Resp	Lower	Upper
57	100		
42	37.1	21.6	45.0
43	67.2	42.0	87.2
56	49.8	33.3	69.1





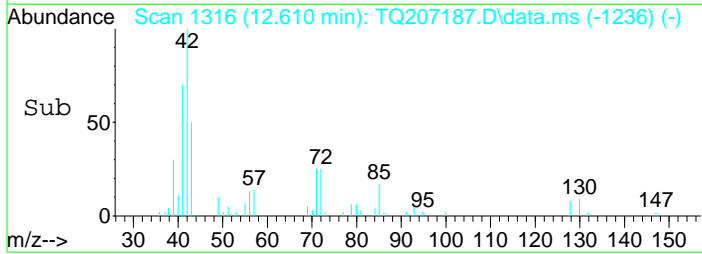
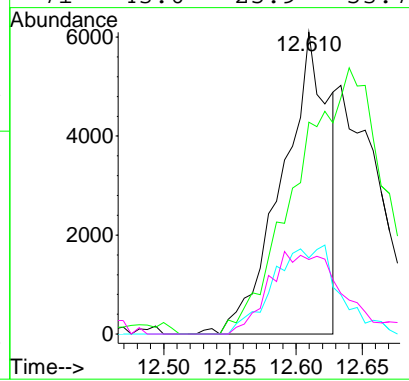
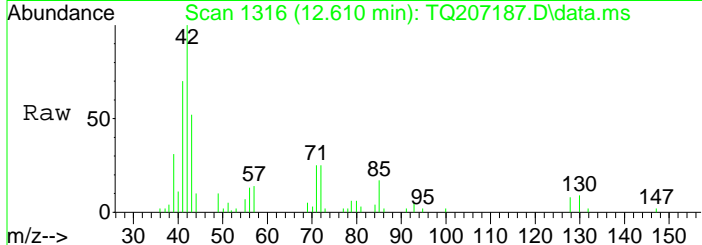
#26
 2-Butanone
 Concen: 0.38 ppbv
 RT: 11.598 min Scan# 1150
 Delta R.T. -0.019 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

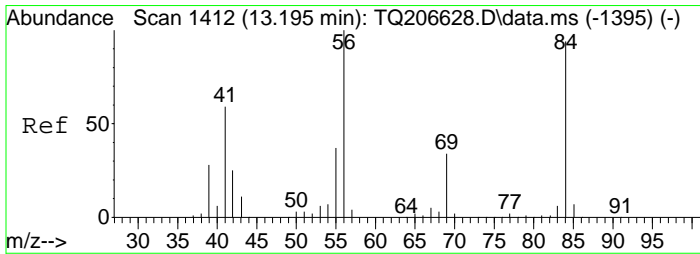
Tgt Ion	Resp	Lower	Upper
43	100		
72	0.0	16.1	33.5#
57	4.7	4.9	10.3#



#30
 Tetrahydrofuran
 Concen: 0.37 ppbv m
 RT: 12.610 min Scan# 1316
 Delta R.T. -0.012 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

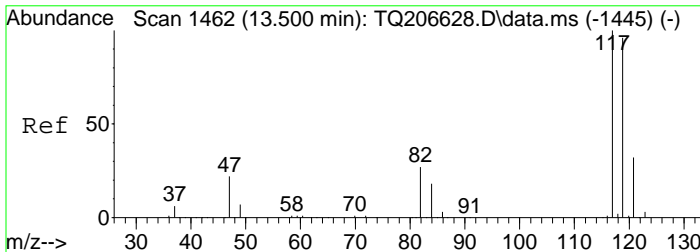
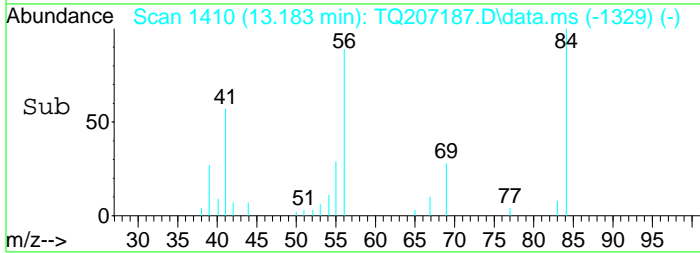
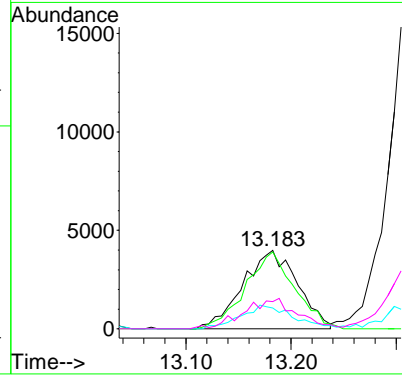
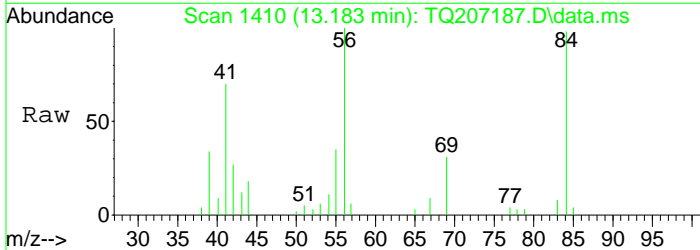
Tgt Ion	Resp	Lower	Upper
42	100		
41	163.0	35.2	73.0#
72	41.2	27.2	56.6
71	43.0	25.9	53.7





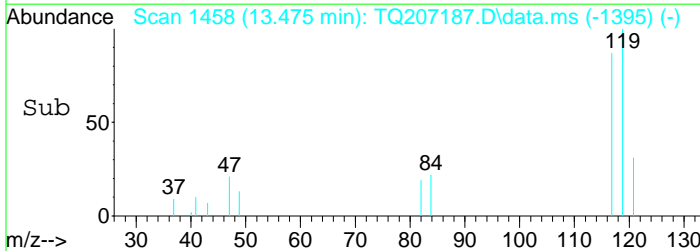
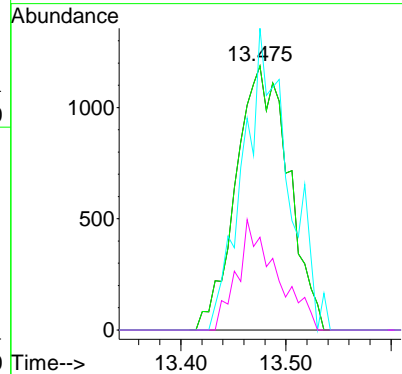
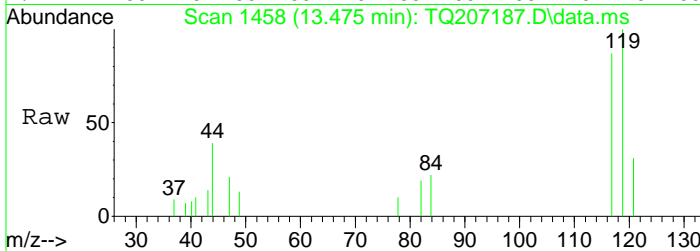
#32
 Cyclohexane
 Concen: 0.27 ppbv
 RT: 13.183 min Scan# 1410
 Delta R.T. -0.004 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

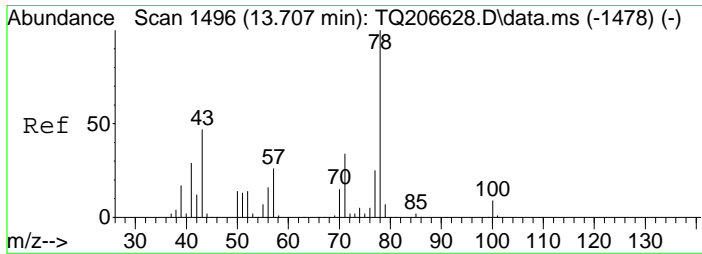
Tgt Ion	Resp	Lower	Upper
56	14402		
84	88.7	54.1	112.3
42	28.9	15.3	31.7
55	37.9	23.5	48.7



#33
 Carbon Tetrachloride
 Concen: 0.05 ppbv
 RT: 13.475 min Scan# 1458
 Delta R.T. -0.013 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

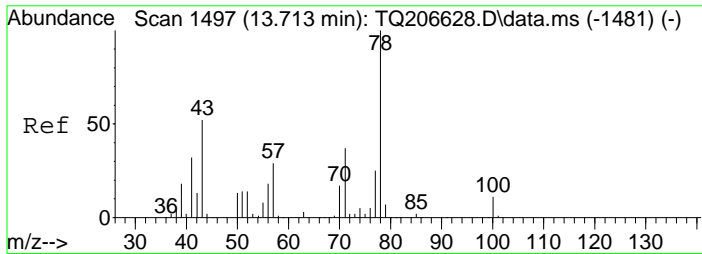
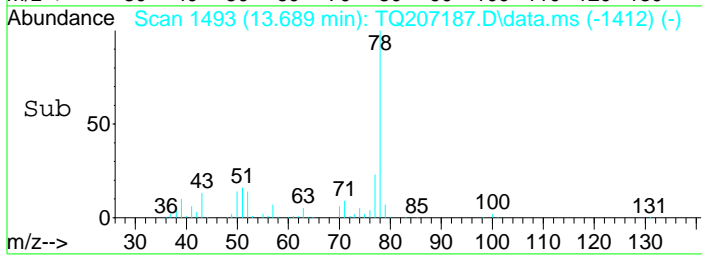
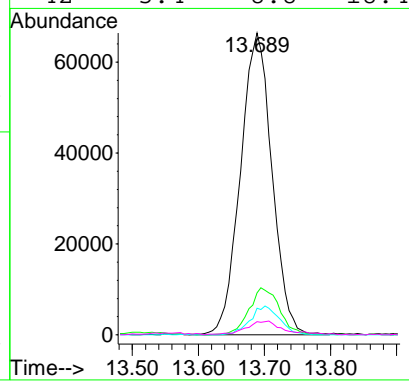
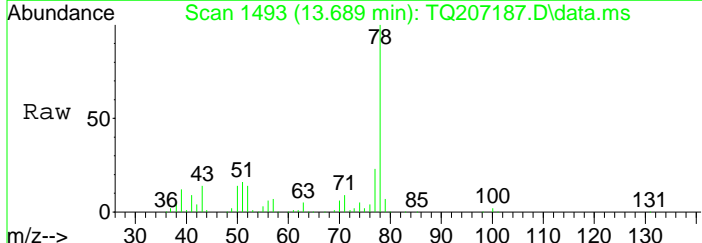
Tgt Ion	Resp	Lower	Upper
117	4116		
117	100		
117	100.0	80.0	120.0
119	97.4	76.9	115.3
121	0.0	21.7	40.3#





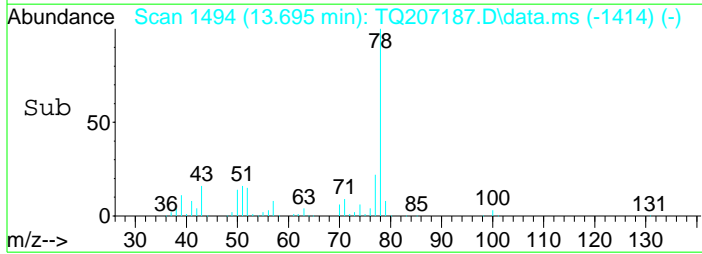
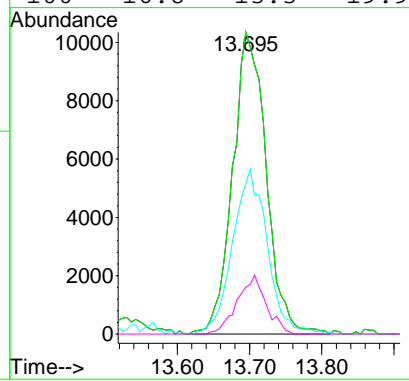
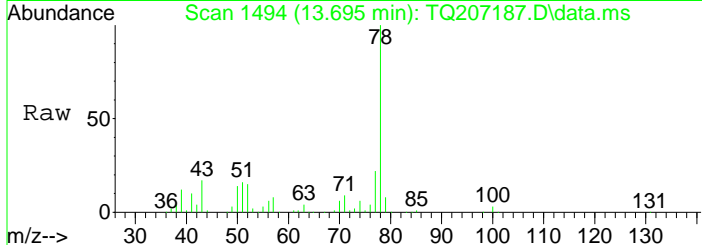
#35
Benzene
Concen: 1.73 ppbv
RT: 13.689 min Scan# 1493
Delta R.T. -0.007 min
Lab File: TQ207187.D
Acq: 5 Mar 2019 8:48 pm

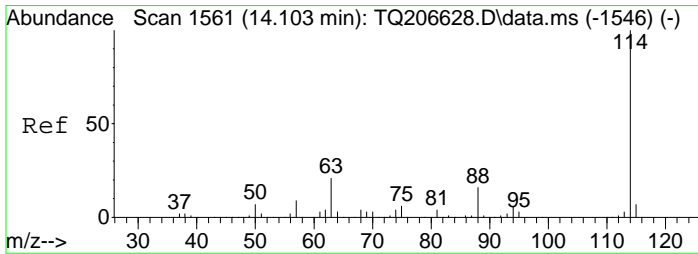
Tgt Ion	Resp	Lower	Upper
78	220747		
78	100		
43	15.1	37.5	77.9#
71	8.9	22.0	45.8#
42	5.4	8.8	18.4#



#36
n-Heptane
Concen: 0.56 ppbv
RT: 13.695 min Scan# 1494
Delta R.T. -0.014 min
Lab File: TQ207187.D
Acq: 5 Mar 2019 8:48 pm

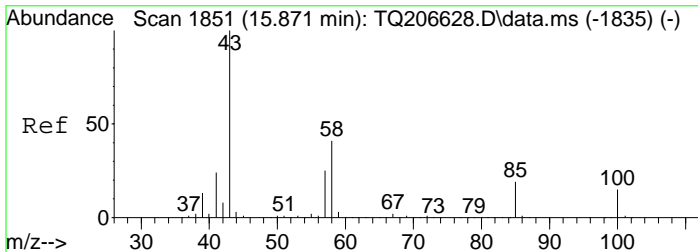
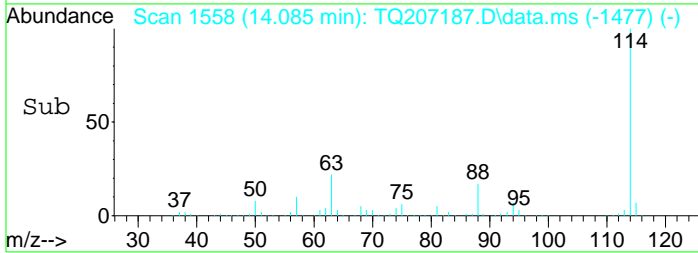
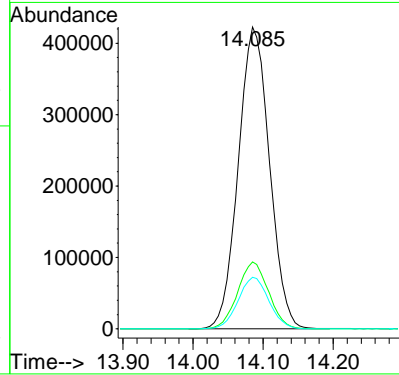
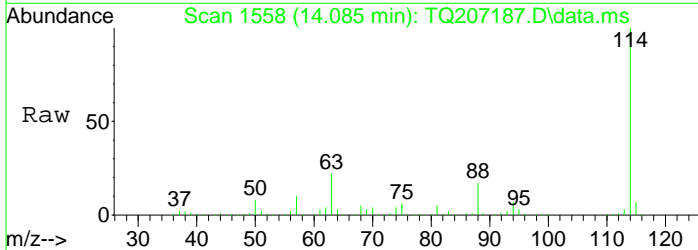
Tgt Ion	Resp	Lower	Upper
43	33378		
43	100		
43	100.0	80.0	120.0
57	56.5	42.6	64.0
100	16.8	13.3	19.9





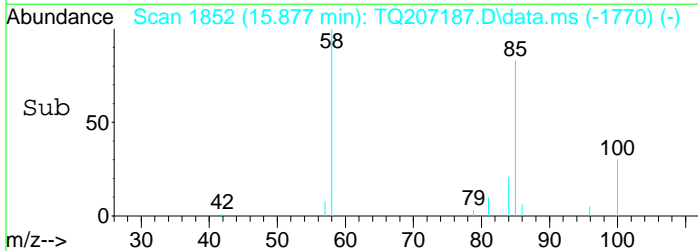
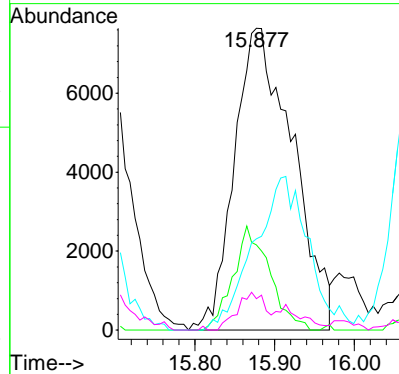
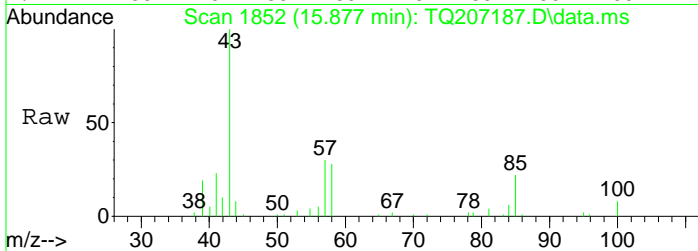
#37
 1,4-Difluorobenzene
 Concen: 10.00 ppbv
 RT: 14.085 min Scan# 1558
 Delta R.T. -0.007 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

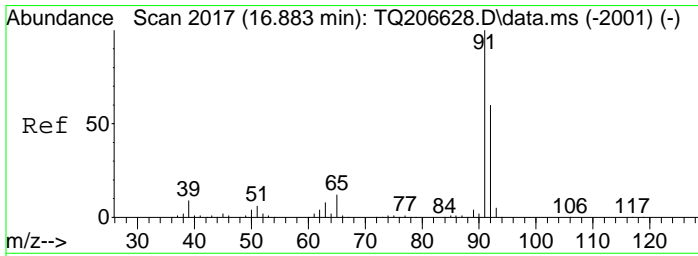
Tgt Ion	Resp	Lower	Upper
114	1308561		
63	22.0	12.9	26.9
88	16.9	10.7	22.3



#43
 Methyl Isobutyl Ketone
 Concen: 0.47 ppbv
 RT: 15.877 min Scan# 1852
 Delta R.T. 0.001 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

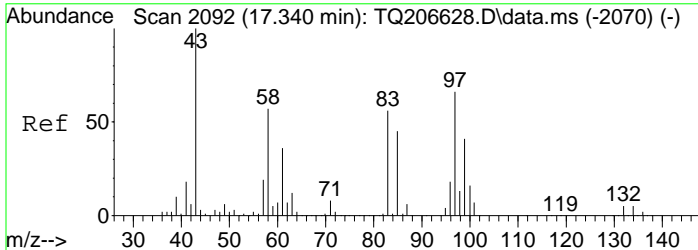
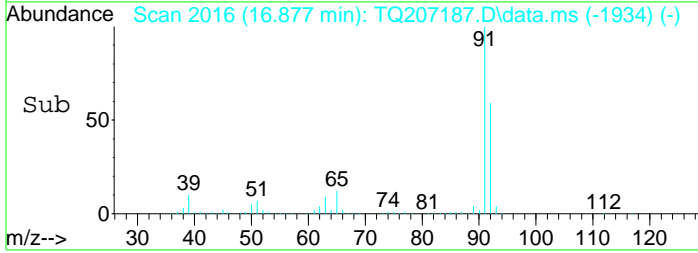
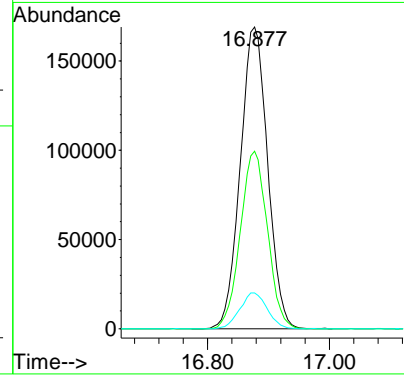
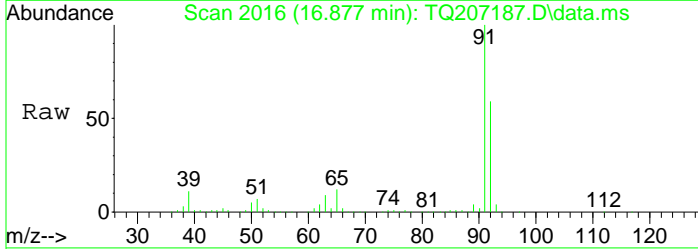
Tgt Ion	Resp	Lower	Upper
43	38856		
58	21.5	25.1	52.1#
57	0.0	15.5	32.3#
42	6.0	5.0	15.0





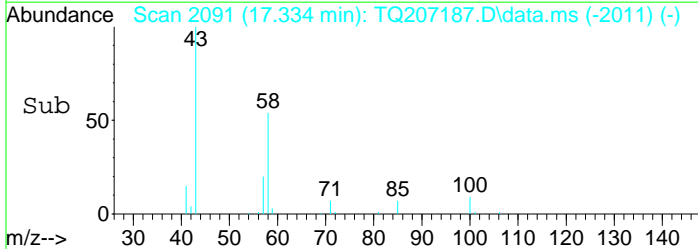
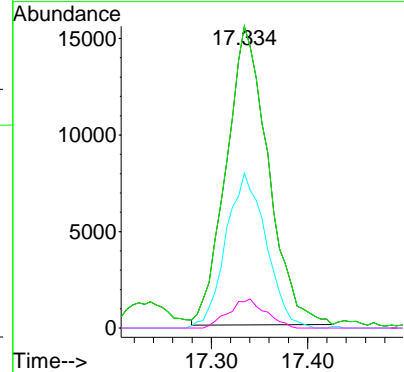
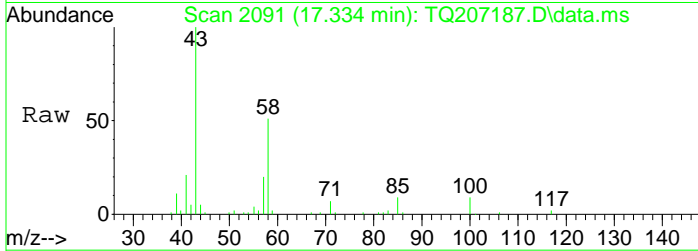
#45
 Toluene
 Concen: 3.81 ppbv
 RT: 16.877 min Scan# 2016
 Delta R.T. 0.000 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

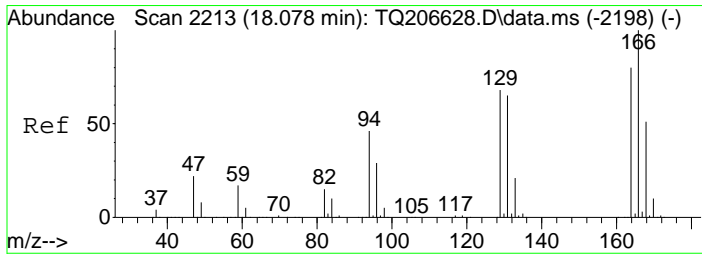
Tgt Ion	Resp	Lower	Upper
91	100		
92	58.4	38.7	80.3
65	12.0	7.5	15.5



#48
 2-Hexanone
 Concen: 0.66 ppbv
 RT: 17.334 min Scan# 2091
 Delta R.T. -0.010 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

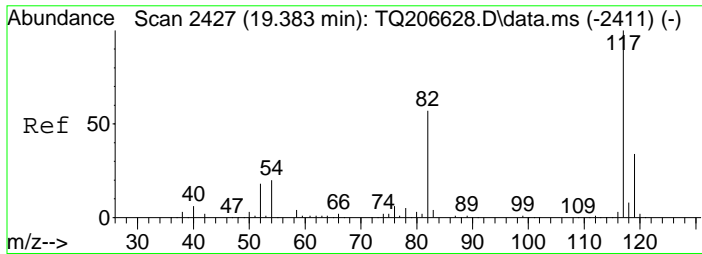
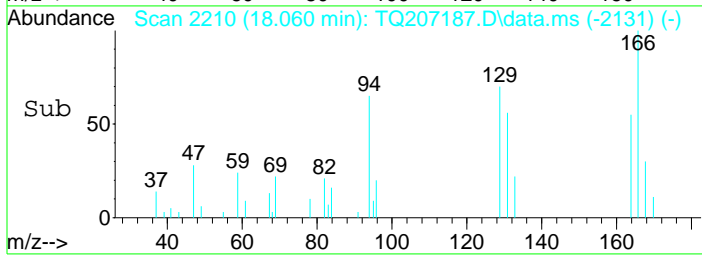
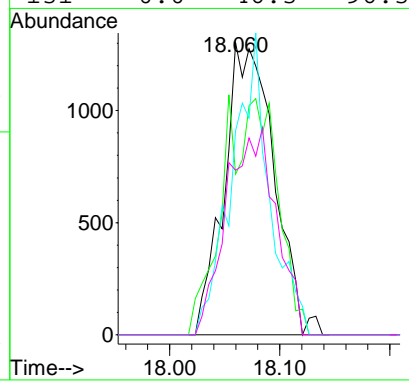
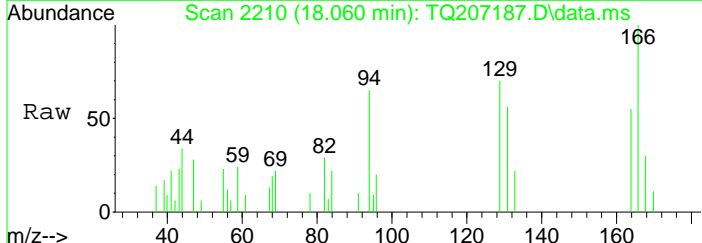
Tgt Ion	Resp	Lower	Upper
43	100		
43	100.0	80.0	120.0
58	49.7	44.2	66.4
100	8.6	0.0	24.4





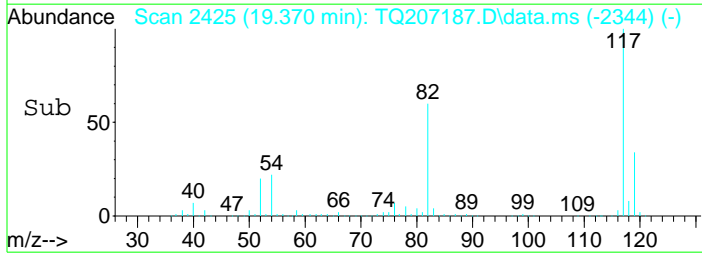
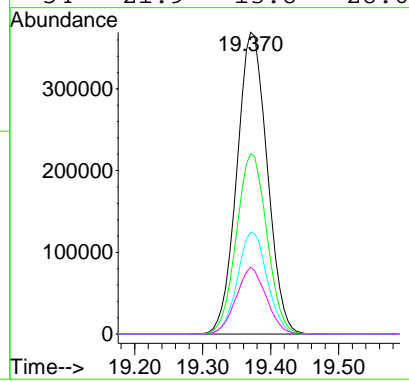
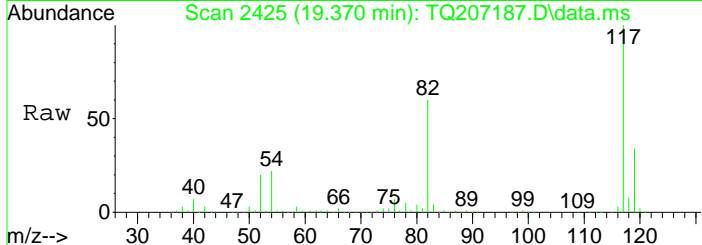
#50
 Tetrachloroethylene
 Concen: 0.06 ppbv
 RT: 18.060 min Scan# 2210
 Delta R.T. -0.017 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

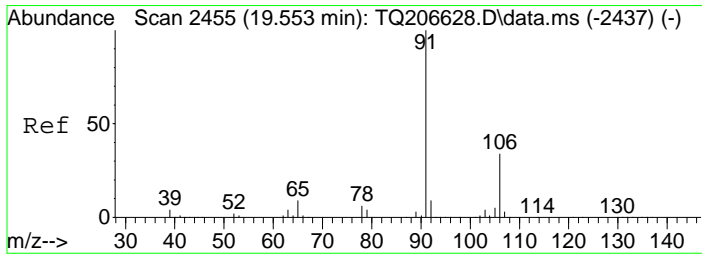
Tgt Ion	Resp	Ion Ratio	Lower	Upper
166	4101	100		
164		30.0	51.0	106.0#
129		0.0	48.1	99.9#
131		0.0	46.3	96.3#



#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 19.370 min Scan# 2425
 Delta R.T. -0.006 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

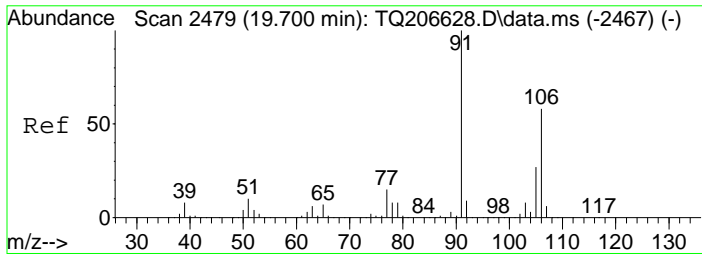
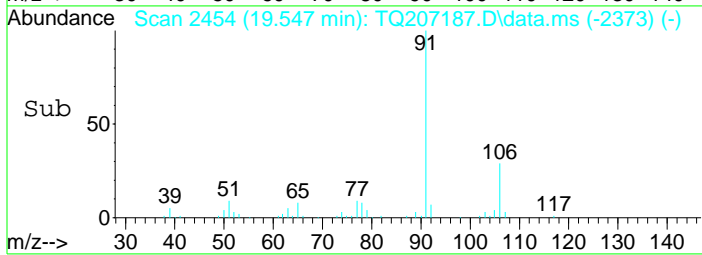
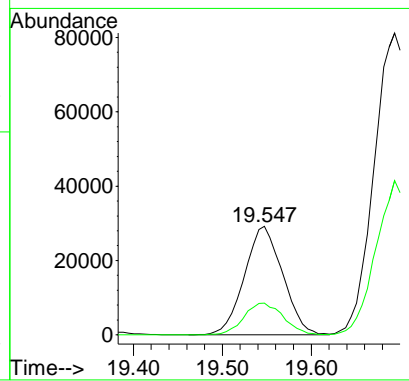
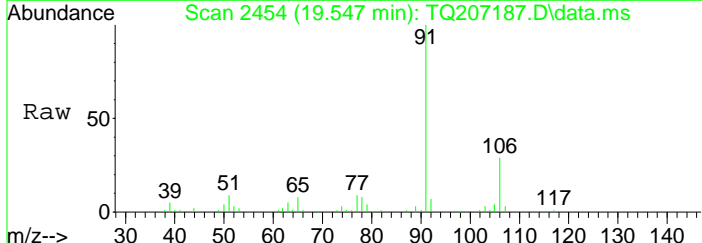
Tgt Ion	Resp	Ion Ratio	Lower	Upper
117	1141229	100		
82		60.1	37.1	77.1
119		33.1	22.1	45.9
54		21.9	13.8	28.6





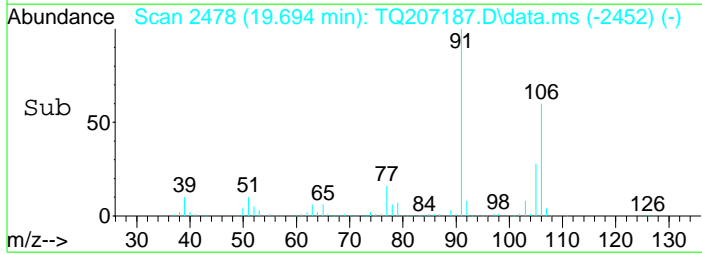
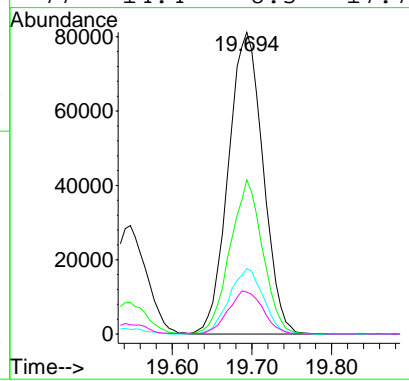
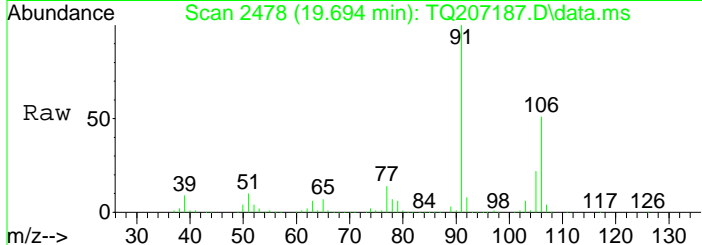
#56
 Ethylbenzene
 Concen: 0.55 ppbv
 RT: 19.547 min Scan# 2454
 Delta R.T. -0.006 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

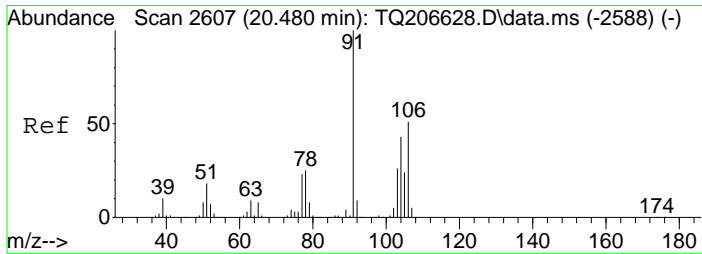
Tgt Ion	Resp	Lower	Upper
91	100		
106	30.2	20.5	42.7



#57
 p- & m-Xylenes
 Concen: 2.02 ppbv
 RT: 19.694 min Scan# 2478
 Delta R.T. -0.000 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

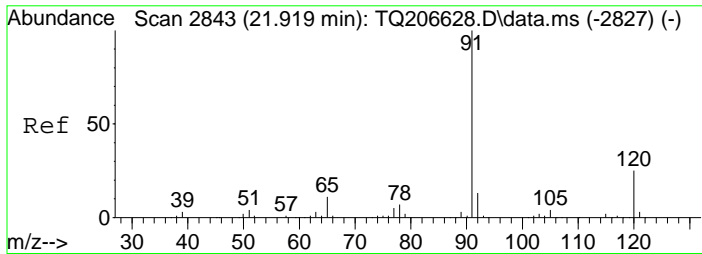
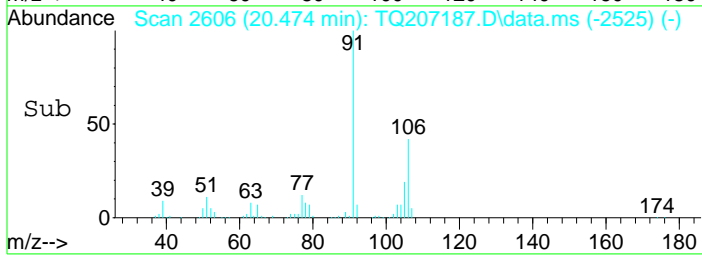
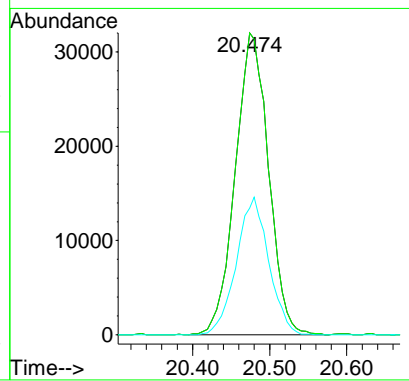
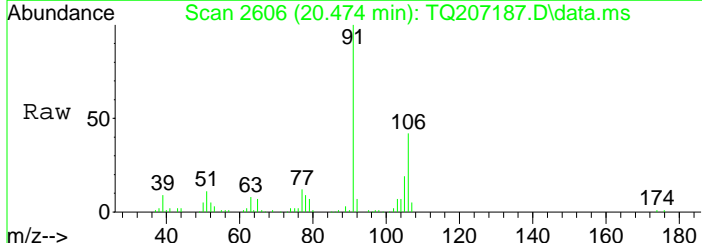
Tgt Ion	Resp	Lower	Upper
91	100		
106	48.1	32.6	67.8
105	21.3	14.5	30.1
77	14.4	8.5	17.7





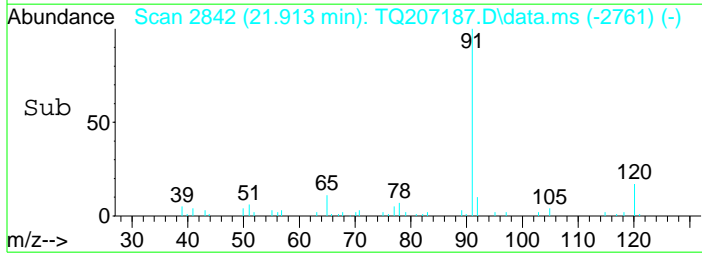
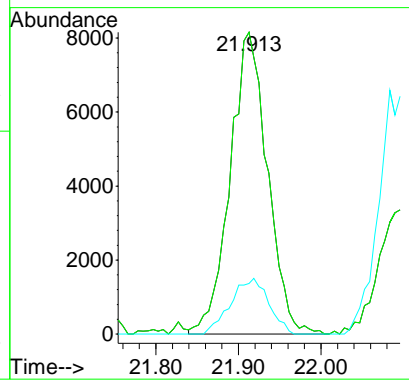
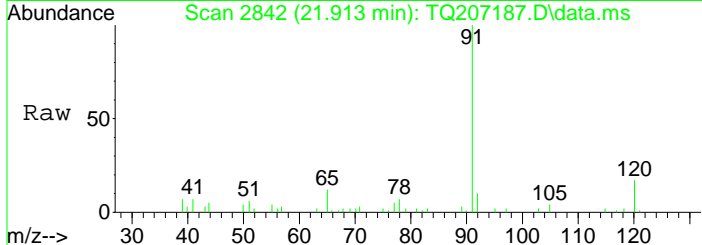
#58
 o-Xylene
 Concen: 0.69 ppbv
 RT: 20.474 min Scan# 2606
 Delta R.T. -0.006 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

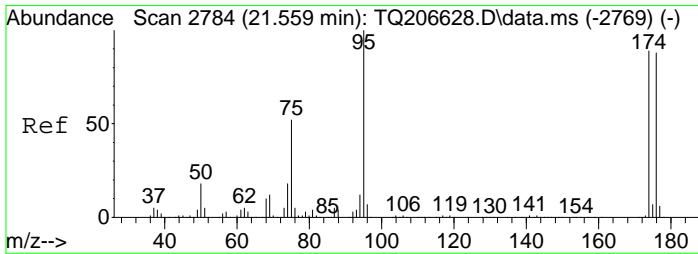
Tgt Ion	Resp	Lower	Upper
91	100		
91	100.0	80.0	120.0
106	44.5	38.2	57.2



#61
 n-Propylbenzene
 Concen: 0.12 ppbv
 RT: 21.913 min Scan# 2842
 Delta R.T. -0.005 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

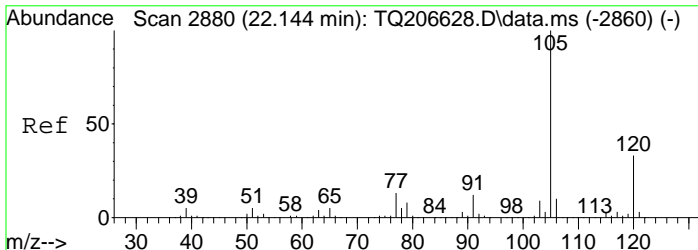
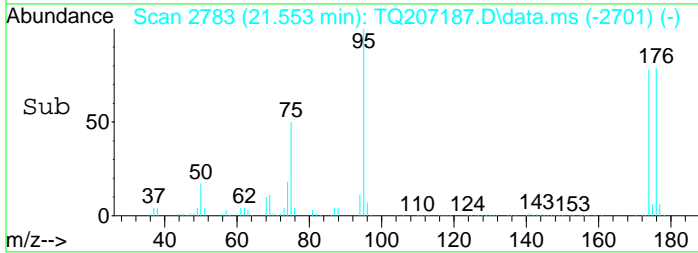
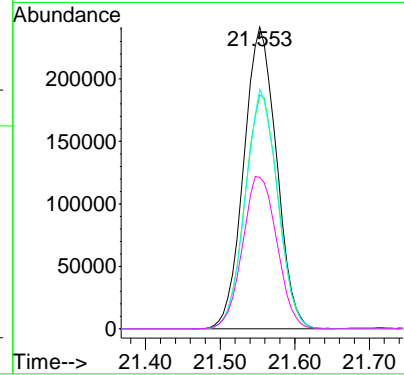
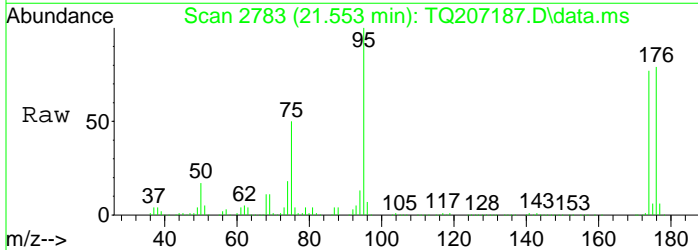
Tgt Ion	Resp	Lower	Upper
91	100		
91	100.0	80.0	120.0
120	18.8	10.0	30.0





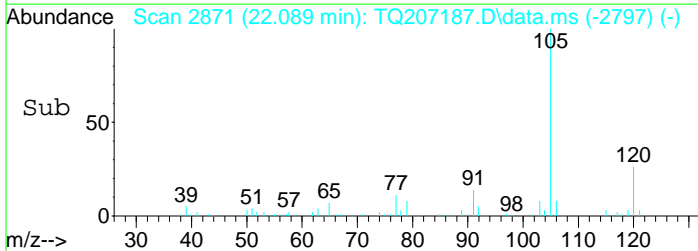
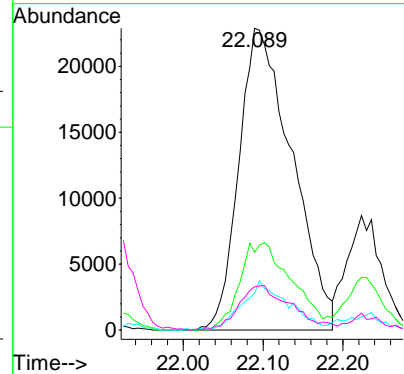
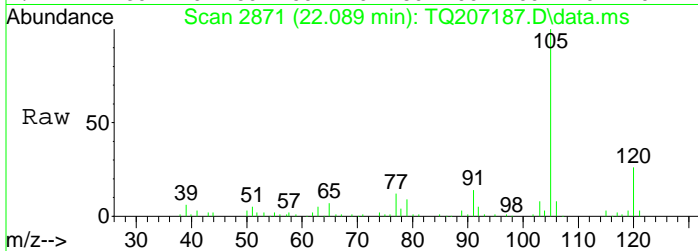
#64
 p-Bromofluorobenzene
 Concen: 9.16 ppbv
 RT: 21.553 min Scan# 2783
 Delta R.T. -0.000 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

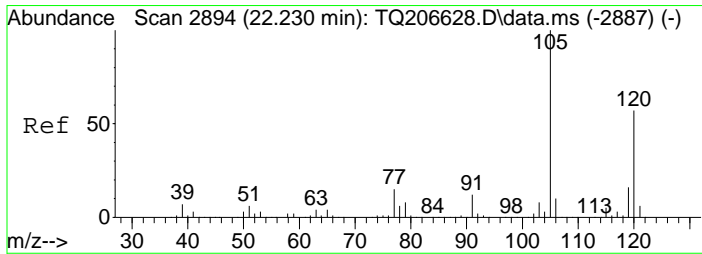
Tgt Ion	Resp	Lower	Upper
95	737331		
174	78.4	53.2	110.6
176	78.0	51.6	107.2
75	53.0	30.7	63.7



#65
 4-Ethyltoluene
 Concen: 0.61 ppbv
 RT: 22.089 min Scan# 2871
 Delta R.T. -0.049 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

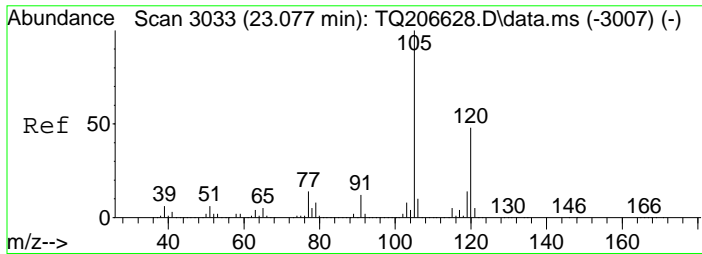
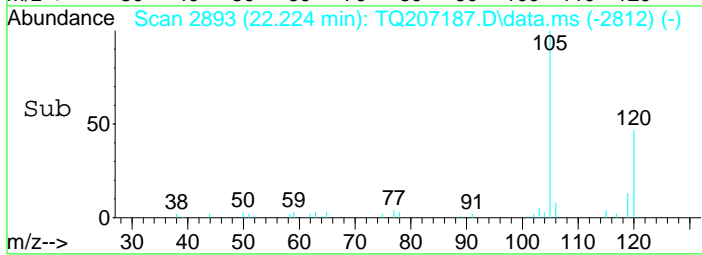
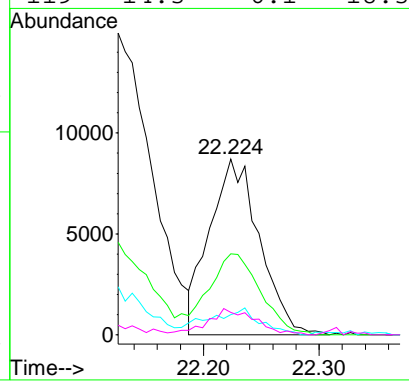
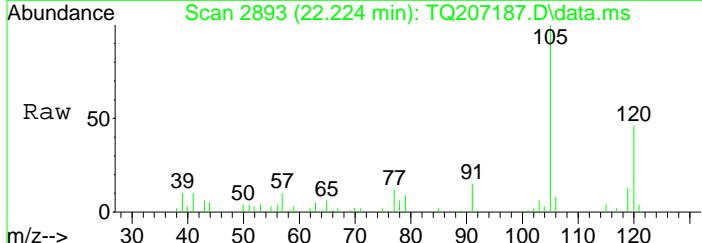
Tgt Ion	Resp	Lower	Upper
105	105905		
120	29.0	19.6	40.8
77	13.8	7.3	15.3
91	14.6	7.1	14.7





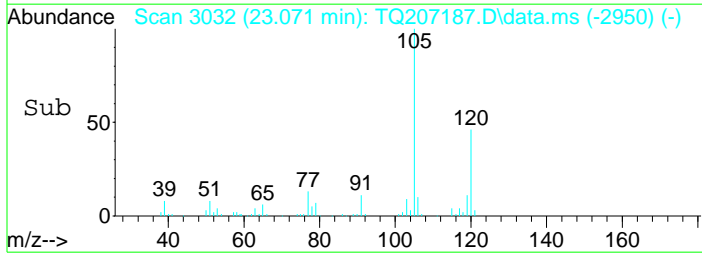
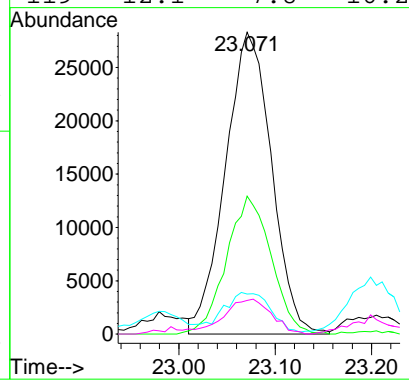
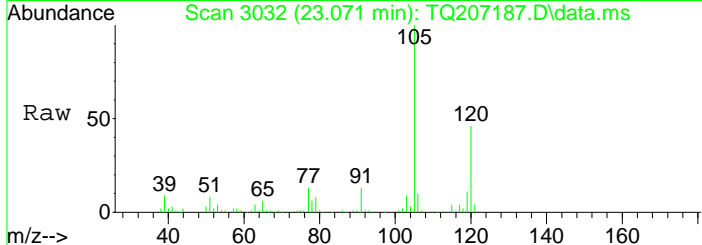
#66
 1,3,5-Trimethylbenzene
 Concen: 0.18 ppbv
 RT: 22.224 min Scan# 2893
 Delta R.T. -0.006 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

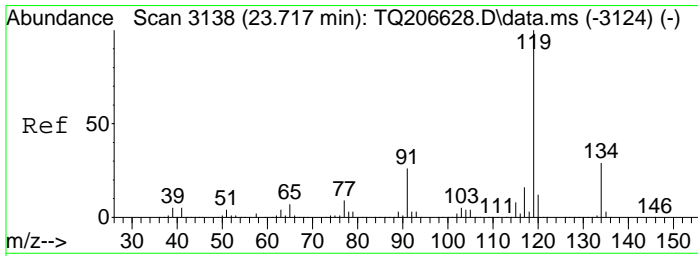
Tgt Ion	Resp	Lower	Upper
105	100		
120	46.9	39.2	58.8
77	16.0	10.1	15.1#
119	14.3	6.1	18.3



#68
 1,2,4-Trimethylbenzene
 Concen: 0.62 ppbv
 RT: 23.071 min Scan# 3032
 Delta R.T. 0.000 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

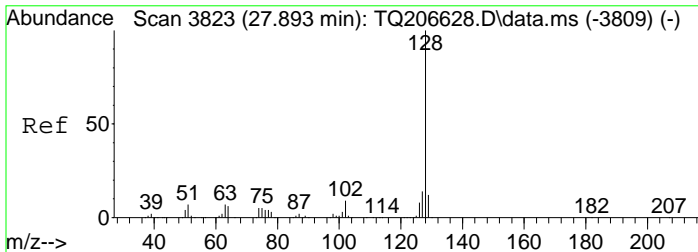
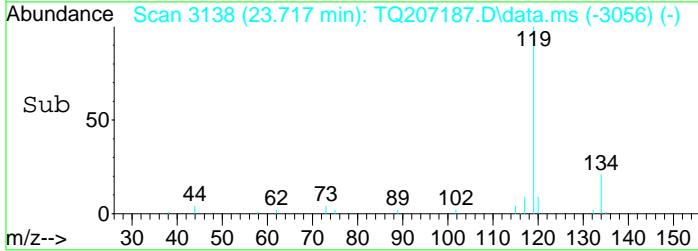
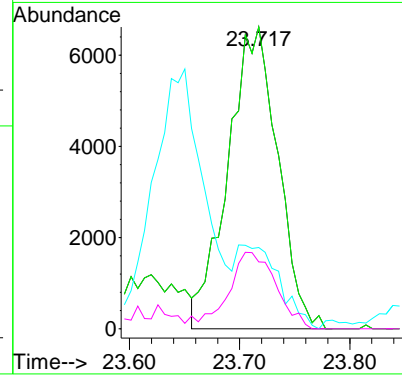
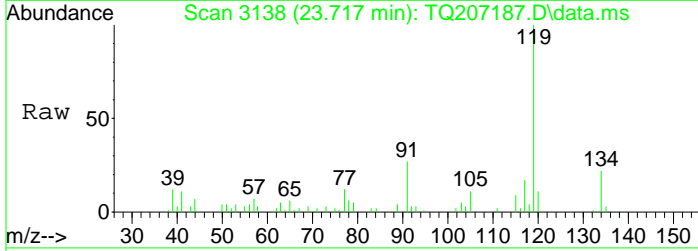
Tgt Ion	Resp	Lower	Upper
105	100		
120	44.2	30.2	62.6
77	14.4	8.1	16.9
119	12.1	7.8	16.2





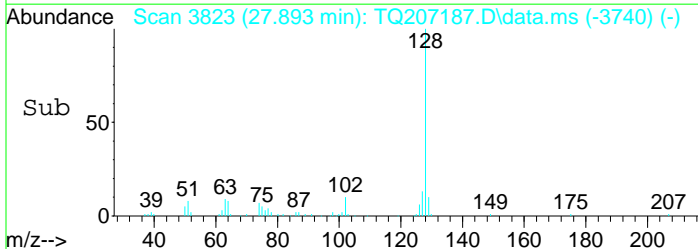
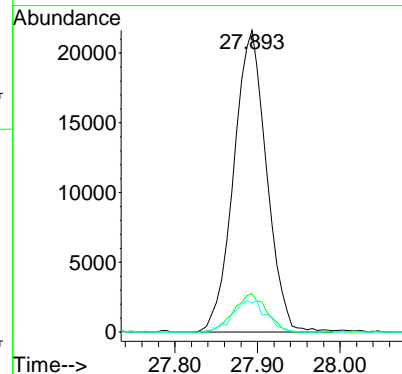
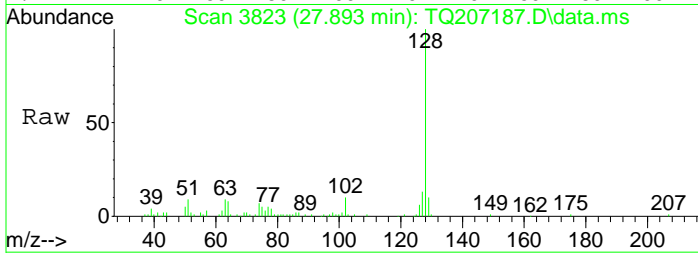
#70
 p-Isopropyltoluene
 Concen: 0.12 ppbv
 RT: 23.717 min Scan# 3138
 Delta R.T. -0.000 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

Tgt Ion	Resp	Lower	Upper
119	20882		
119	100		
119	100.0	80.0	120.0
91	0.0	7.5	52.5#
134	0.0	7.5	52.5#



#78
 Naphthalene
 Concen: 0.42 ppbv
 RT: 27.893 min Scan# 3823
 Delta R.T. 0.004 min
 Lab File: TQ207187.D
 Acq: 5 Mar 2019 8:48 pm

Tgt Ion	Resp	Lower	Upper
128	59761		
128	100		
127	12.7	8.1	16.9
129	10.7	7.1	14.7



Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Soil Vapor Laboratory ID: 19B1031-04 File ID: TQ207193.D
 Sampled: 02/27/19 09:00 Prepared: 03/06/19 08:00 Analyzed: 03/06/19 15:29
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BC90329 Sequence: Y9C0724 Calibration: YB90001 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.47	1.01	U
71-55-6	1,1,1-Trichloroethane	1.47	0.800	U
79-34-5	1,1,2,2-Tetrachloroethane	1.47	1.01	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.47	1.12	U
79-00-5	1,1,2-Trichloroethane	1.47	0.800	U
75-34-3	1,1-Dichloroethane	1.47	0.594	U
75-35-4	1,1-Dichloroethylene	1.47	0.582	U
120-82-1	1,2,4-Trichlorobenzene	1.47	1.09	U
95-63-6	1,2,4-Trimethylbenzene	1.47	3.53	D
106-93-4	1,2-Dibromoethane	1.47	1.13	U
95-50-1	1,2-Dichlorobenzene	1.47	0.882	U
107-06-2	1,2-Dichloroethane	1.47	0.594	U
78-87-5	1,2-Dichloropropane	1.47	0.678	U
76-14-2	1,2-Dichlorotetrafluoroethane	1.47	1.03	U
108-67-8	1,3,5-Trimethylbenzene	1.47	1.08	D
106-99-0	1,3-Butadiene	1.47	0.974	U
541-73-1	1,3-Dichlorobenzene	1.47	0.882	U
142-28-9	1,3-Dichloropropane	1.47	0.678	U
106-46-7	1,4-Dichlorobenzene	1.47	0.882	U
123-91-1	1,4-Dioxane	1.47	1.06	U
78-93-3	2-Butanone	1.47	2.16	D
591-78-6	2-Hexanone	1.47	4.39	D
107-05-1	3-Chloropropene	1.47	2.30	U
108-10-1	4-Methyl-2-pentanone	1.47	2.88	D
67-64-1	Acetone	1.47	6.66	D
107-13-1	Acrylonitrile	1.47	0.318	U
71-43-2	Benzene	1.47	2.39	D
100-44-7	Benzyl chloride	1.47	0.759	U
75-27-4	Bromodichloromethane	1.47	0.983	U
75-25-2	Bromoform	1.47	1.52	U
74-83-9	Bromomethane	1.47	0.570	U
75-15-0	Carbon disulfide	1.47	0.594	D
56-23-5	Carbon tetrachloride	1.47	0.461	D
108-90-7	Chlorobenzene	1.47	0.675	U
75-00-3	Chloroethane	1.47	0.387	U
67-66-3	Chloroform	1.47	1.22	D
74-87-3	Chloromethane	1.47	0.757	D
156-59-2	cis-1,2-Dichloroethylene	1.47	1.74	D
10061-01-5	cis-1,3-Dichloropropylene	1.47	0.666	U
110-82-7	Cyclohexane	1.47	0.606	D

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Soil Vapor Laboratory ID: 19B1031-04 File ID: TQ207193.D
 Sampled: 02/27/19 09:00 Prepared: 03/06/19 08:00 Analyzed: 03/06/19 15:29
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BC90329 Sequence: Y9C0724 Calibration: YB90001 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
124-48-1	Dibromochloromethane	1.47	1.25	U
75-71-8	Dichlorodifluoromethane	1.47	2.39	D
141-78-6	Ethyl acetate	1.47	1.80	D
100-41-4	Ethyl Benzene	1.47	2.99	D
87-68-3	Hexachlorobutadiene	1.47	1.56	U
67-63-0	Isopropanol	1.47	1.30	D
80-62-6	Methyl Methacrylate	1.47	0.601	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1.47	0.529	U
75-09-2	Methylene chloride	1.47	1.27	D
142-82-5	n-Heptane	1.47	1.26	D
110-54-3	n-Hexane	1.47	1.24	D
95-47-6	o-Xylene	1.47	3.69	D
179601-23-1	p- & m- Xylenes	1.47	10.4	D
622-96-8	p-Ethyltoluene	1.47	3.68	D
115-07-1	Propylene	1.47	0.252	U
100-42-5	Styrene	1.47	0.625	U
127-18-4	Tetrachloroethylene	1.47	2.49	D
109-99-9	Tetrahydrofuran	1.47	1.38	D
108-88-3	Toluene	1.47	13.1	D
156-60-5	trans-1,2-Dichloroethylene	1.47	0.582	U
10061-02-6	trans-1,3-Dichloropropylene	1.47	0.666	U
79-01-6	Trichloroethylene	1.47	0.946	D
75-69-4	Trichlorofluoromethane (Freon 11)	1.47	1.90	D
108-05-4	Vinyl acetate	1.47	0.517	U
593-60-2	Vinyl bromide	1.47	0.642	U
75-01-4	Vinyl Chloride	1.47	0.375	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
SURR: p-Bromofluorobenzene	10.0	9.11	91.1	72 - 118	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	458194	12.488	428278	12.5	
ISTD: 1,4-Difluorobenzene	1365685	14.085	1361515	14.097	
ISTD: d5-Chlorobenzene	1204083	19.371	1166408	19.377	

* Values outside of QC limits

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207193.D
 Acq On : 6 Mar 2019 3:29 pm
 Sample : 19B1031-04 Inst : TO15_AIR2
 Operator : AS
 Sample : 19B1031-04
 Misc : QBTO2030619A 1031-04 1X
 ALS Vial : 9 Sample Multiplier: 1.467

Quant Time: Mar 07 15:33:27 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

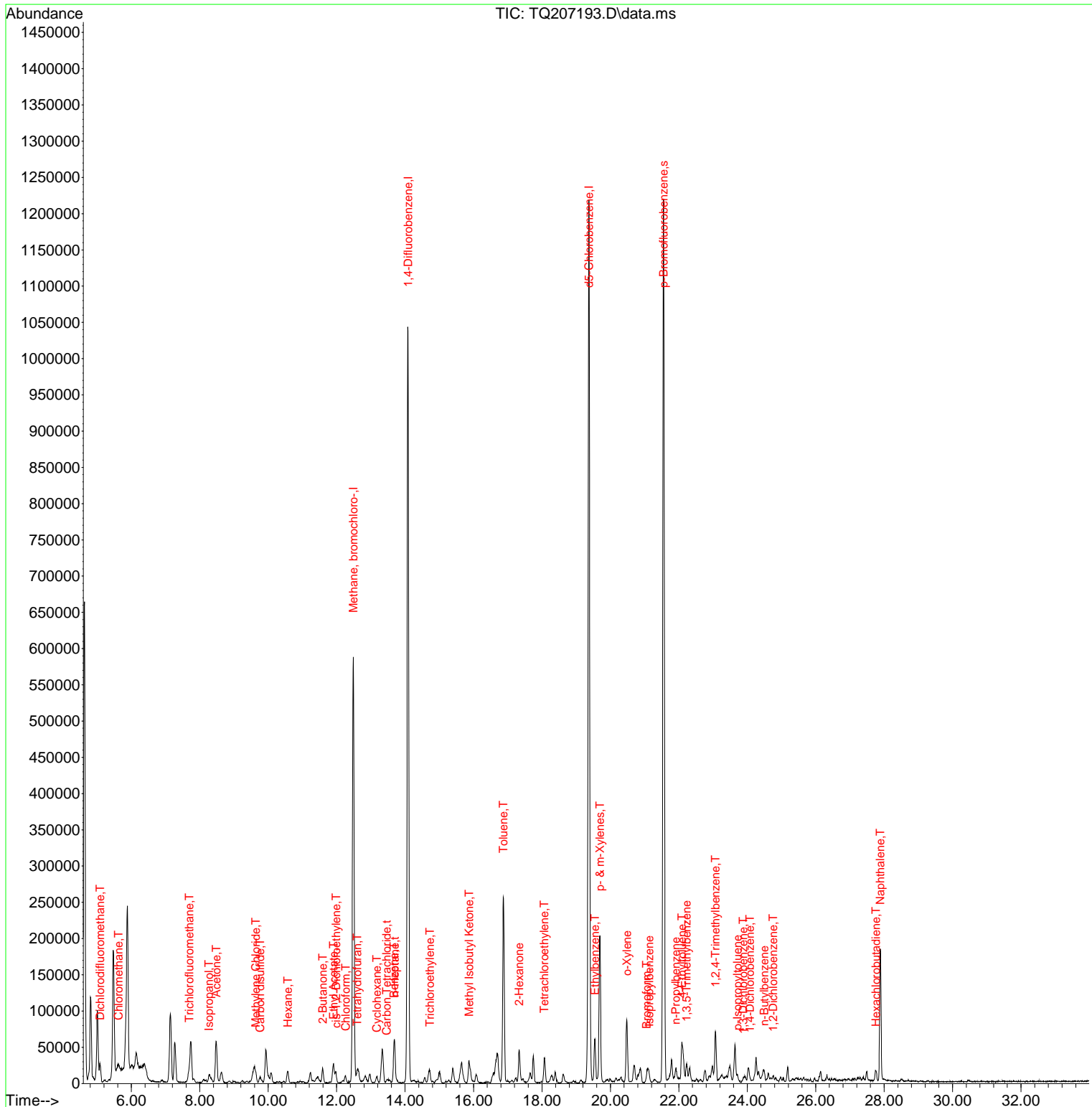
Internal Standards						
1) Methane, bromochloro-	12.488	49	458194	10.00	ppbv	-0.01
37) 1,4-Difluorobenzene	14.085	114	1365685	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.371	117	1204083	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	773791	9.11	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	91.10%	
Target Compounds						
						Qvalue
3) Dichlorodifluoromethane	5.087	85	33473	0.33	ppbv	97
5) Chloromethane	5.623	50	9131	0.25	ppbv	95
11) Trichlorofluoromethane	7.690	101	23829	0.23	ppbv #	96
12) Isopropanol	8.269	45	23829m	0.36	ppbv	
14) Acetone	8.482	43	119914	1.91	ppbv	100
18) Methylene Chloride	9.635	49	10781	0.25	ppbv #	83
20) Carbon disulfide	9.763	76	14308	0.13	ppbv #	84
23) Hexane	10.567	57	13516	0.24	ppbv	90
26) 2-Butanone	11.585	43	41282	0.50	ppbv	97
27) Ethyl Acetate	11.902	43	28781	0.34	ppbv #	42
28) cis-1,2-Dichloroethylene	11.982	61	17095	0.30	ppbv	95
29) Chloroform	12.256	83	14525	0.17	ppbv	98
30) Tetrahydrofuran	12.597	42	13679	0.32	ppbv #	75
32) Cyclohexane	13.171	56	6678	0.12	ppbv	92
33) Carbon Tetrachloride	13.463	117	4588	0.05	ppbv	97
35) Benzene	13.677	78	67757	0.51	ppbv #	56
36) n-Heptane	13.695	43	12907	0.21	ppbv #	76
38) Trichloroethylene	14.719	95	6515	0.12	ppbv	85
43) Methyl Isobutyl Ketone	15.871	43	40944	0.48	ppbv #	85
45) Toluene	16.871	91	343517	2.37	ppbv	98
48) 2-Hexanone	17.334	43	53765	0.73	ppbv	98
50) Tetrachloroethylene	18.066	166	17929	0.25	ppbv	93
56) Ethylbenzene	19.547	91	79069	0.47	ppbv	98
57) p- & m-Xylenes	19.694	91	209642	1.64	ppbv	98
58) o-Xylene	20.480	91	85529	0.58	ppbv	99
60) Bromoform	21.059	173	3262	0.04	ppbv #	48
61) n-Propylbenzene	21.907	91	26429	0.12	ppbv	99
62) Isopropylbenzene	21.126	105	10921	0.06	ppbv	98
65) 4-Ethyltoluene	22.089	105	93932	0.51	ppbv	97
66) 1,3,5-Trimethylbenzene	22.224	105	23295	0.15	ppbv #	95
68) 1,2,4-Trimethylbenzene	23.071	105	78176	0.49	ppbv	96
70) p-Isopropyltoluene	23.711	119	9499	0.05	ppbv #	79
71) 1,3-Dichlorobenzene	23.882	146	3457	0.03	ppbv	89
72) 1,4-Dichlorobenzene	24.077	146	4243	0.04	ppbv	90
74) n-Butylbenzene	24.491	91	10664	0.06	ppbv #	87
75) 1,2-Dichlorobenzene	24.754	146	4176	0.04	ppbv	90
77) Hexachlorobutadiene	27.759	225	4296m	0.05	ppbv	
78) Naphthalene	27.887	128	231850	1.53	ppbv	99

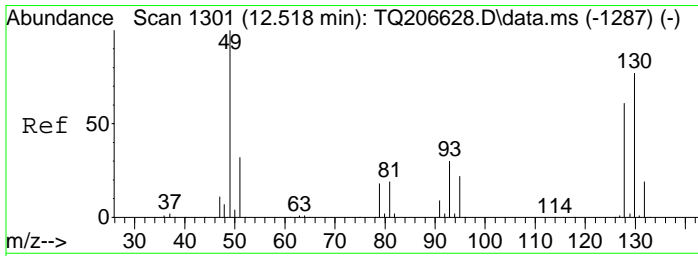
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207193.D
 Acq On : 6 Mar 2019 3:29 pm
 Sample : 19B1031-04
 Operator : AS
 Sample : 19B1031-04
 Misc : QBTO2030619A 1031-04 1X
 ALS Vial : 9 Sample Multiplier: 1.467

Inst : TO15_AIR2

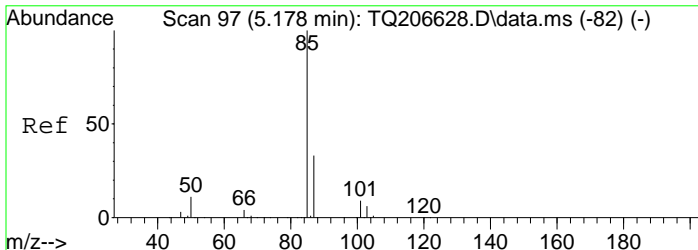
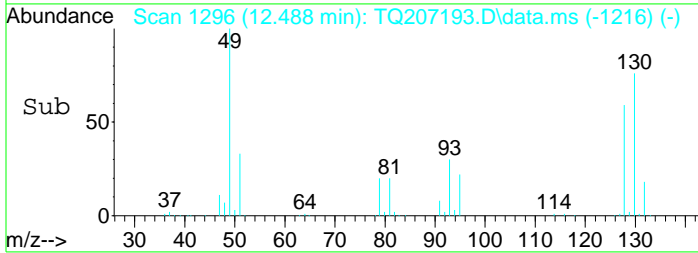
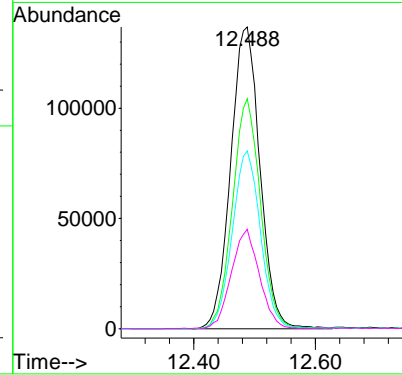
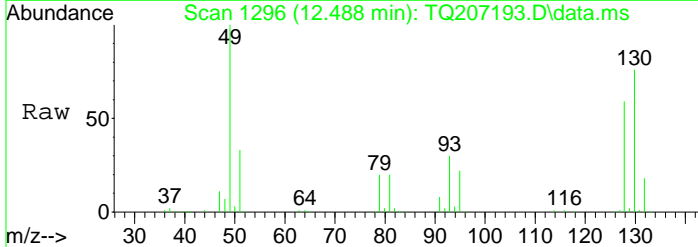
Quant Time: Mar 07 15:33:27 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration





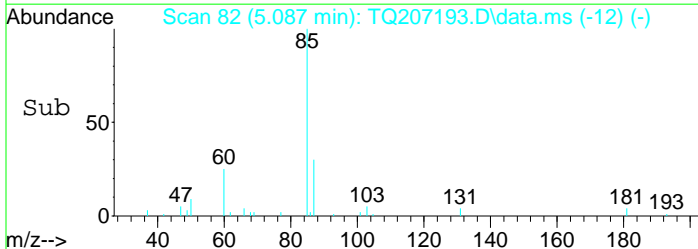
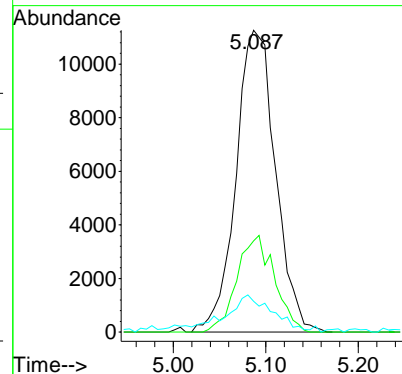
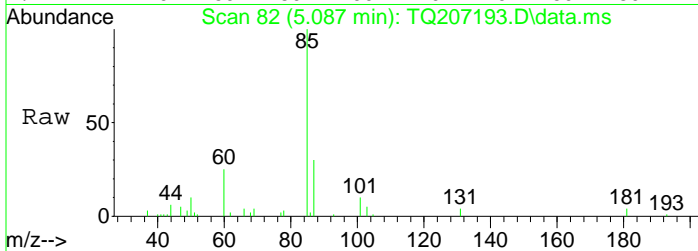
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.488 min Scan# 1296
 Delta R.T. -0.012 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

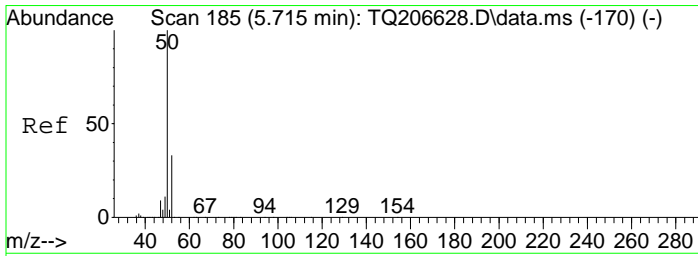
Tgt Ion	Resp	Lower	Upper
49	100		
130	73.2	48.1	99.9
128	56.8	38.3	79.5
51	31.8	20.3	42.3



#3
 Dichlorodifluoromethane
 Concen: 0.33 ppbv
 RT: 5.087 min Scan# 82
 Delta R.T. -0.071 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

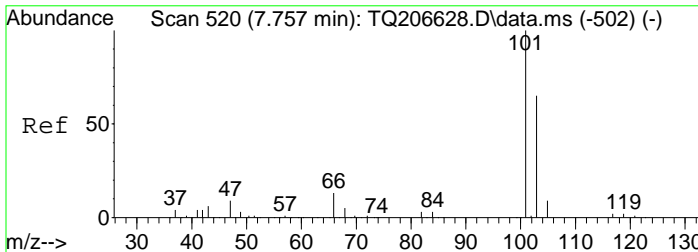
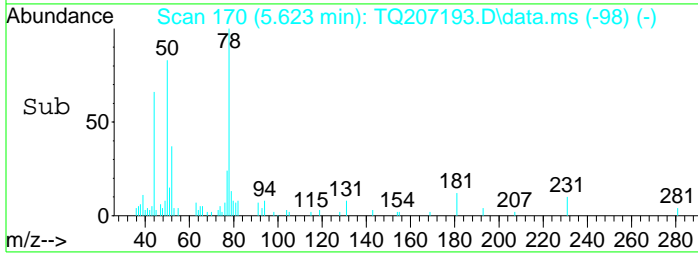
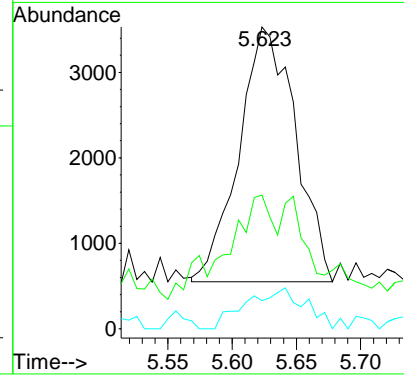
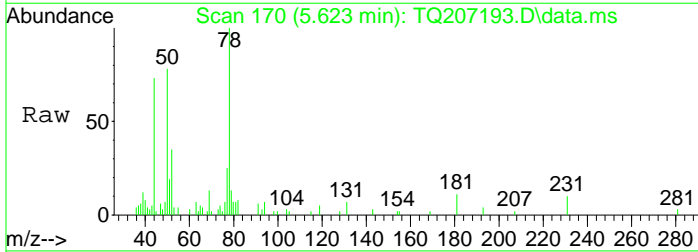
Tgt Ion	Resp	Lower	Upper
85	100		
87	30.4	20.9	43.5
50	12.3	7.2	15.0





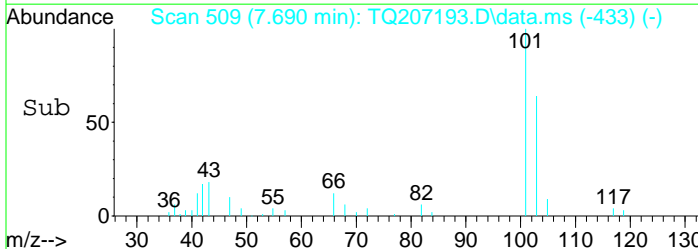
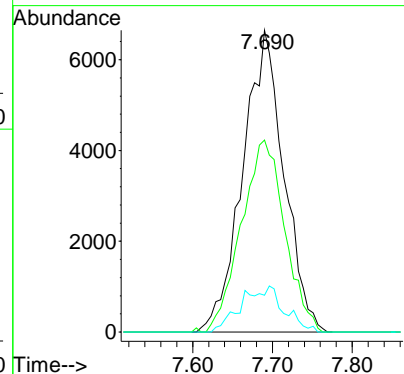
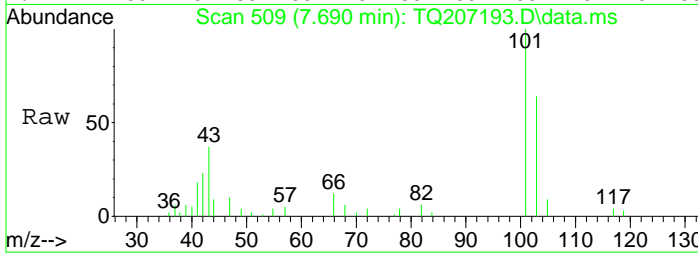
#5
 Chloromethane
 Concen: 0.25 ppbv
 RT: 5.623 min Scan# 170
 Delta R.T. -0.058 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

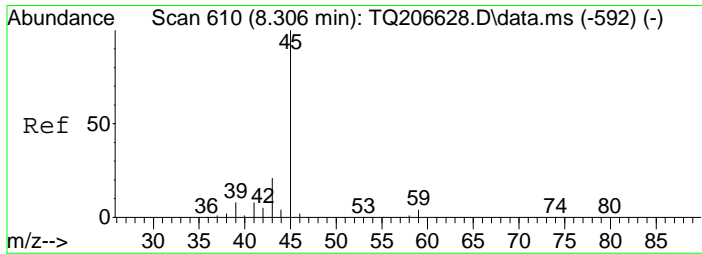
Tgt Ion	Resp	Lower	Upper
50	100		
52	29.6	0.0	65.2
49	11.1	0.0	19.6



#11
 Trichlorofluoromethane
 Concen: 0.23 ppbv
 RT: 7.690 min Scan# 509
 Delta R.T. -0.037 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

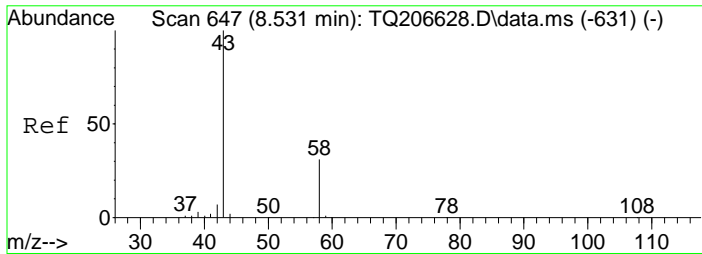
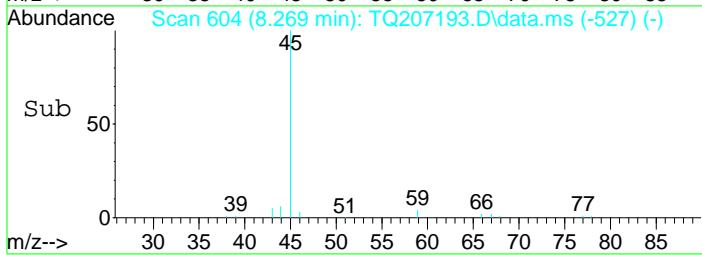
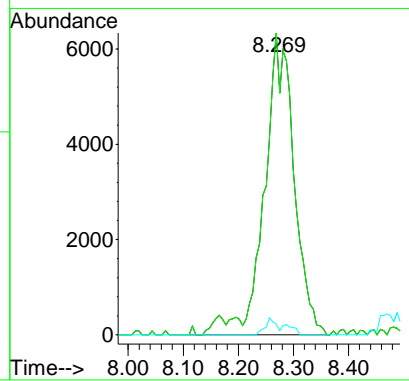
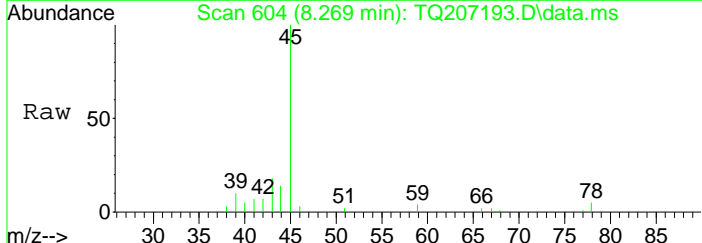
Tgt Ion	Resp	Lower	Upper
101	100		
103	67.1	42.3	87.8
66	6.7	7.8	16.2#





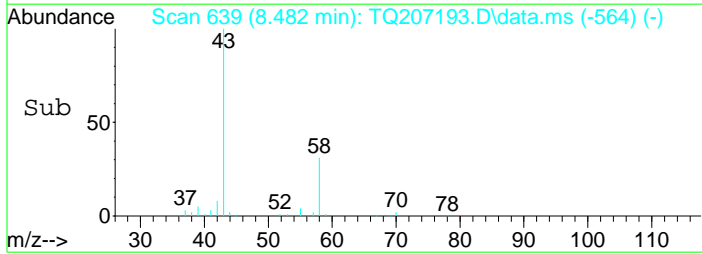
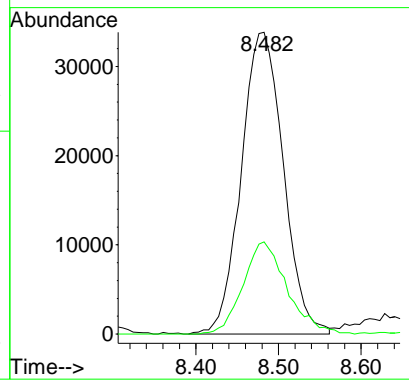
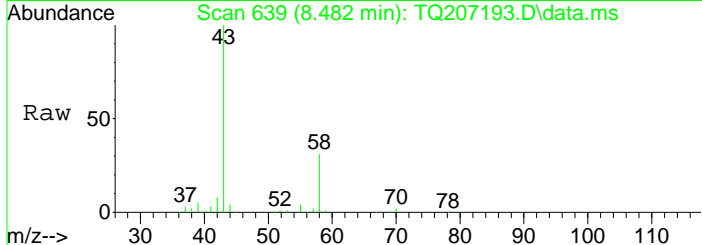
#12
 Isopropanol
 Concen: 0.36 ppbv m
 RT: 8.269 min Scan# 604
 Delta R.T. -0.032 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

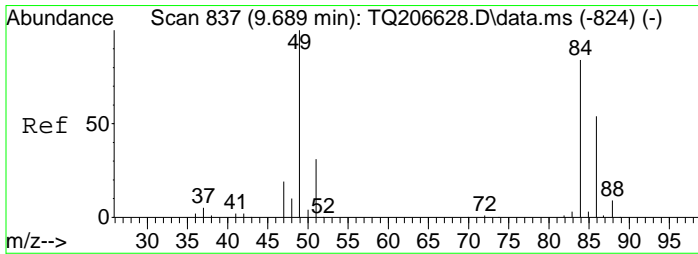
Tgt Ion	Resp	Lower	Upper
45	100		
45	46.5	65.0	135.0#
59	0.0	0.0	10.0



#14
 Acetone
 Concen: 1.91 ppbv
 RT: 8.482 min Scan# 639
 Delta R.T. -0.044 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

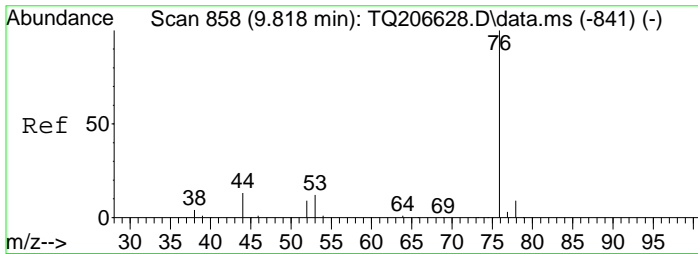
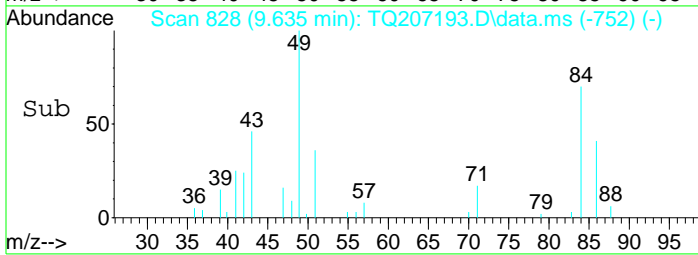
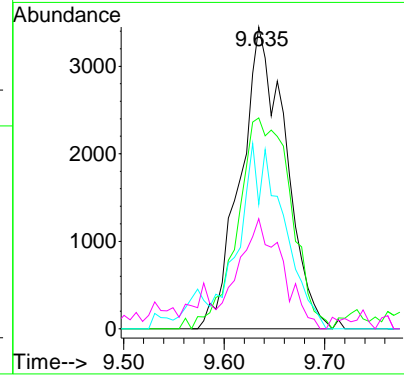
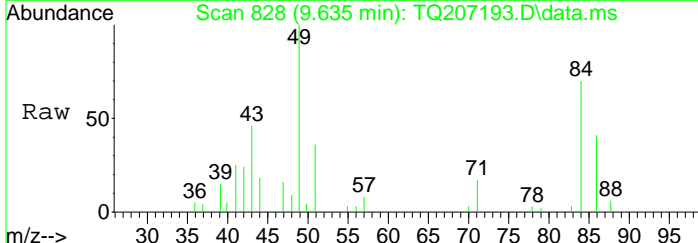
Tgt Ion	Resp	Lower	Upper
43	100		
43	119914		
58	31.9	20.9	43.3





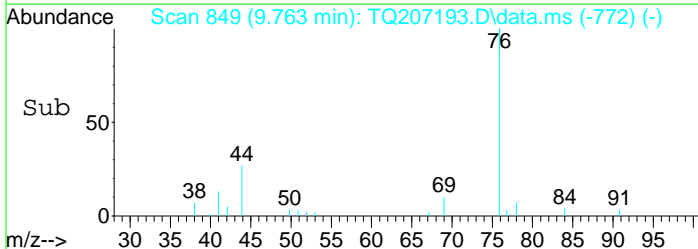
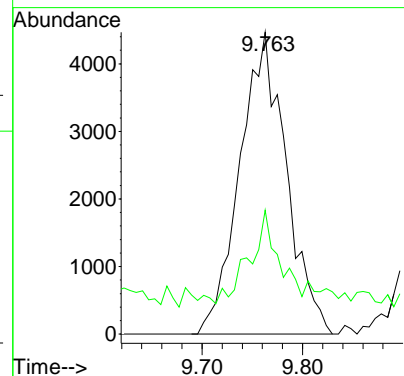
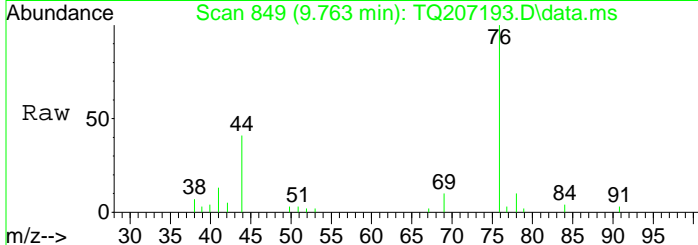
#18
 Methylene Chloride
 Concen: 0.25 ppbv
 RT: 9.635 min Scan# 828
 Delta R.T. -0.037 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

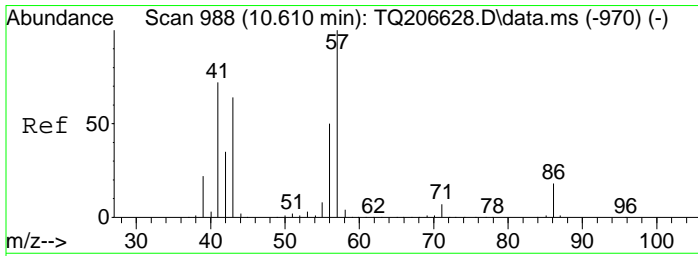
Tgt Ion	Resp	Lower	Upper
49	10781		
84	82.1	49.9	103.5
86	21.5	31.8	66.0#
51	35.1	20.2	41.9



#20
 Carbon disulfide
 Concen: 0.13 ppbv
 RT: 9.763 min Scan# 849
 Delta R.T. -0.030 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

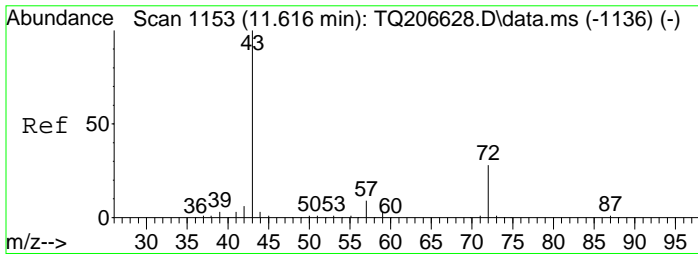
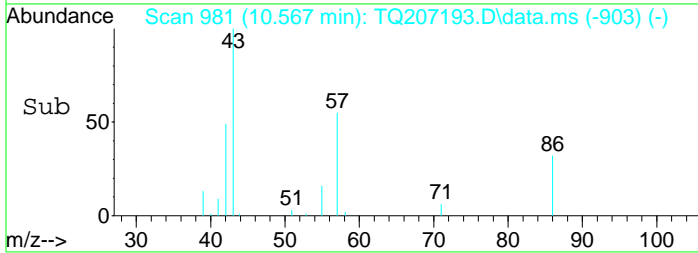
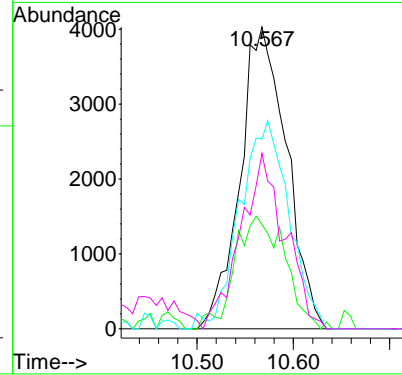
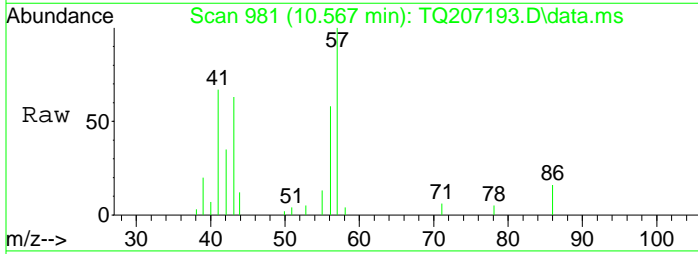
Tgt Ion	Resp	Lower	Upper
76	14308		
44	19.3	8.3	17.3#





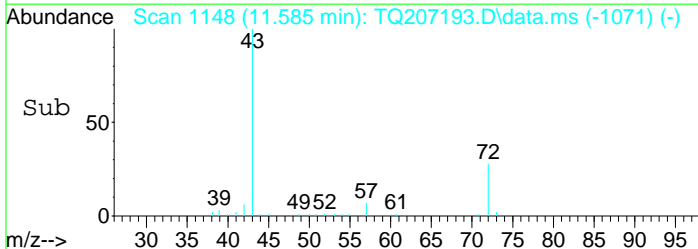
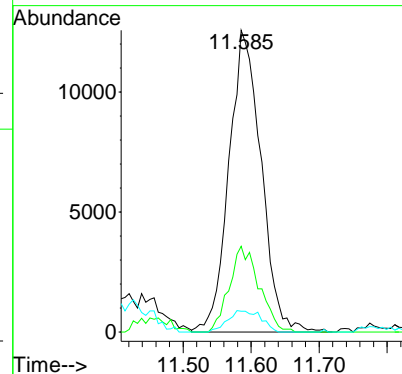
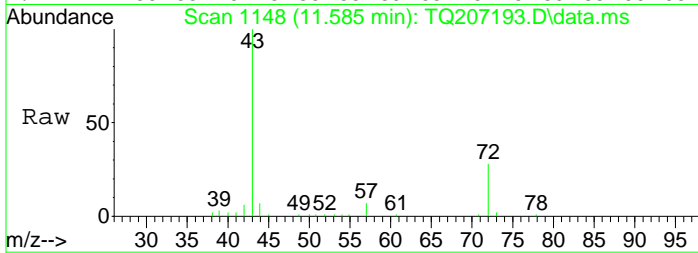
#23
Hexane
Concen: 0.24 ppbv
RT: 10.567 min Scan# 981
Delta R.T. -0.026 min
Lab File: TQ207193.D
Acq: 6 Mar 2019 3:29 pm

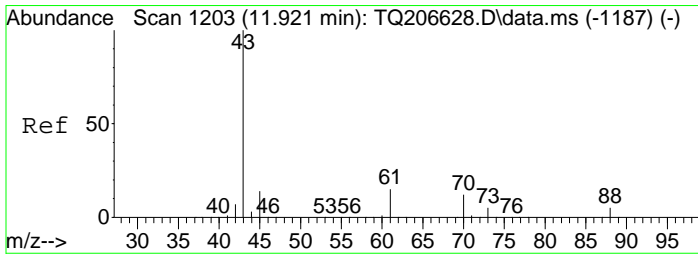
Tgt Ion	Resp	Lower	Upper
57	100		
42	40.4	21.6	45.0
43	73.1	42.0	87.2
56	55.3	33.3	69.1



#26
2-Butanone
Concen: 0.50 ppbv
RT: 11.585 min Scan# 1148
Delta R.T. -0.031 min
Lab File: TQ207193.D
Acq: 6 Mar 2019 3:29 pm

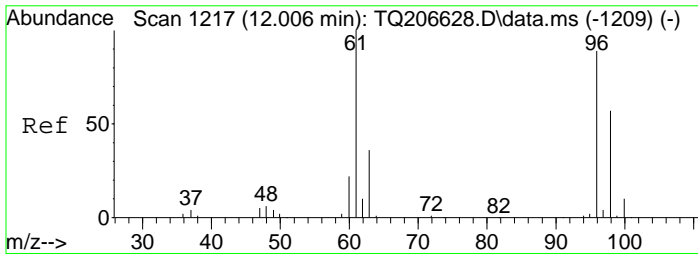
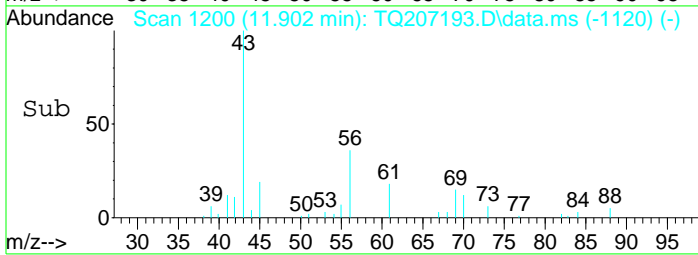
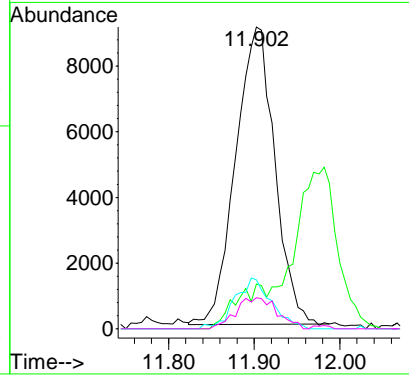
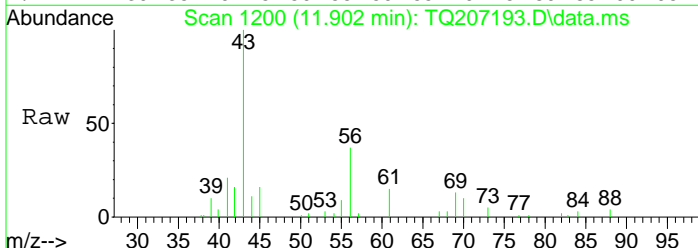
Tgt Ion	Resp	Lower	Upper
43	100		
72	26.4	16.1	33.5
57	7.3	4.9	10.3





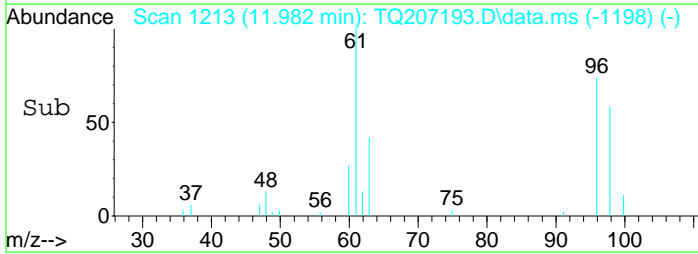
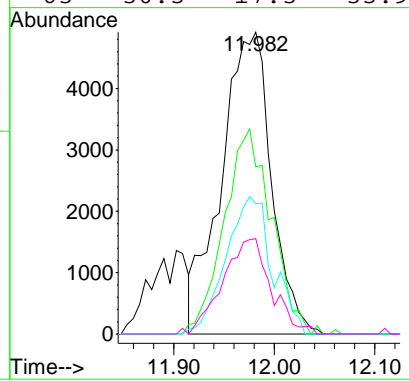
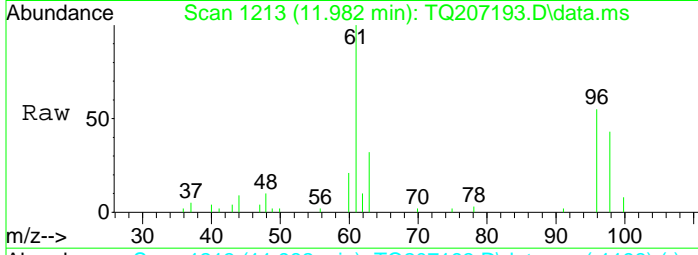
#27
 Ethyl Acetate
 Concen: 0.34 ppbv
 RT: 11.902 min Scan# 1200
 Delta R.T. -0.011 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

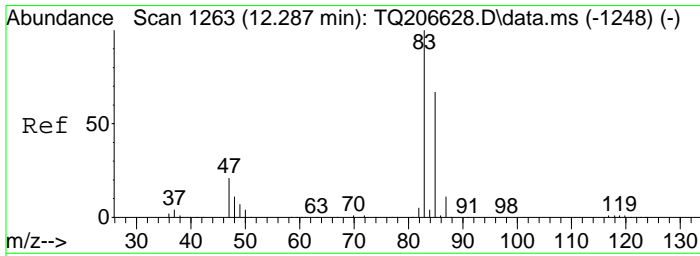
Tgt Ion	Resp	Lower	Upper
43	28781		
61	11.7	51.4	106.8#
45	16.0	9.4	19.6
70	11.1	7.5	15.5



#28
 cis-1,2-Dichloroethylene
 Concen: 0.30 ppbv
 RT: 11.982 min Scan# 1213
 Delta R.T. -0.007 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

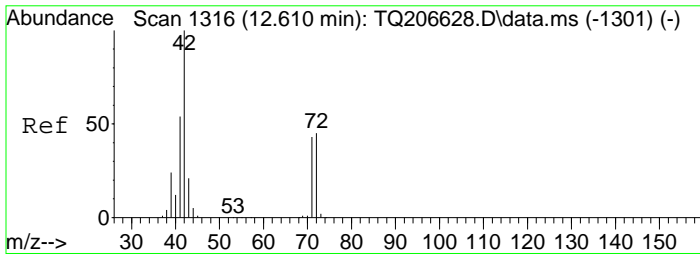
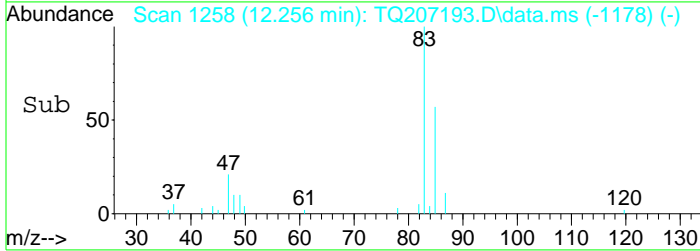
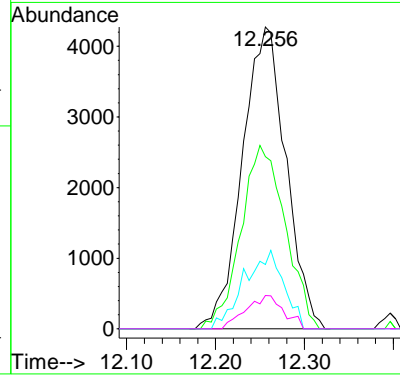
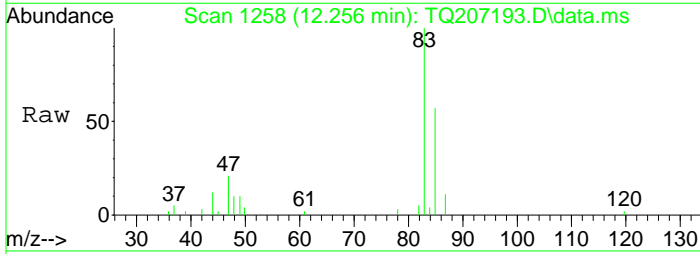
Tgt Ion	Resp	Lower	Upper
61	17095		
96	64.1	39.8	82.8
98	42.2	25.5	52.9
63	30.5	17.3	35.9





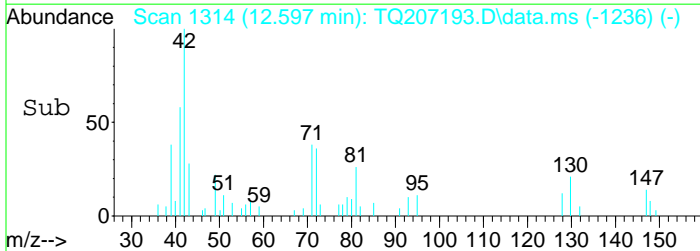
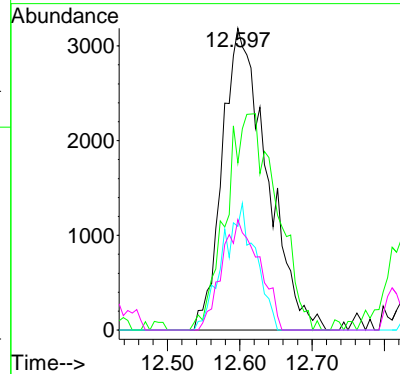
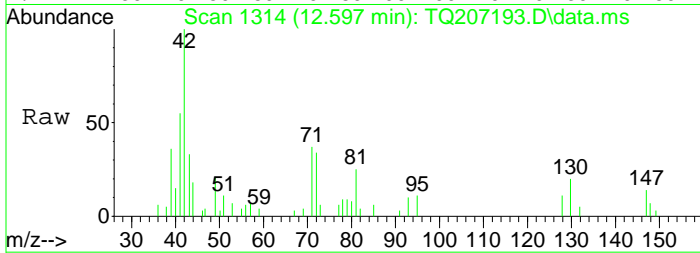
#29
 Chloroform
 Concen: 0.17 ppbv
 RT: 12.256 min Scan# 1258
 Delta R.T. -0.012 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

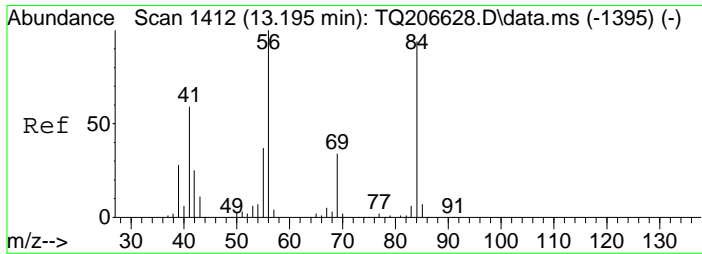
Tgt Ion	83	85	47	87
Resp:	14525			
Ion Ratio	100	61.7	23.5	9.5
Lower		41.7	15.1	6.7
Upper		86.7	31.5	13.9



#30
 Tetrahydrofuran
 Concen: 0.32 ppbv
 RT: 12.597 min Scan# 1314
 Delta R.T. -0.024 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

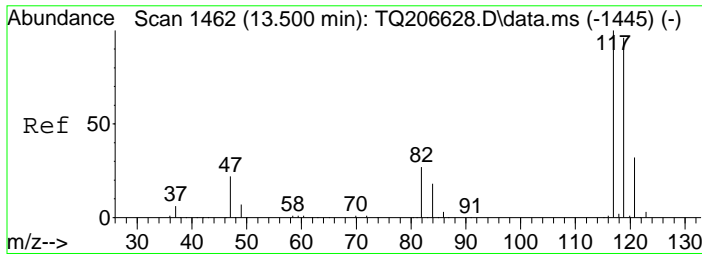
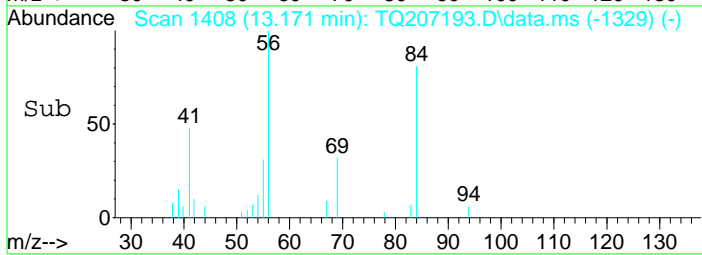
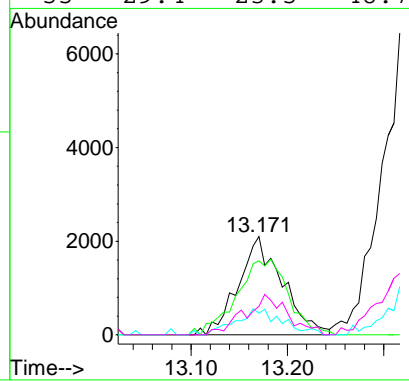
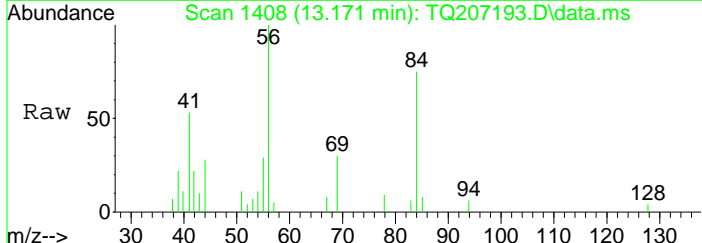
Tgt Ion	42	41	72	71
Resp:	13679			
Ion Ratio	100	82.1	31.1	30.7
Lower		35.2	27.2	25.9
Upper		73.0#	56.6	53.7





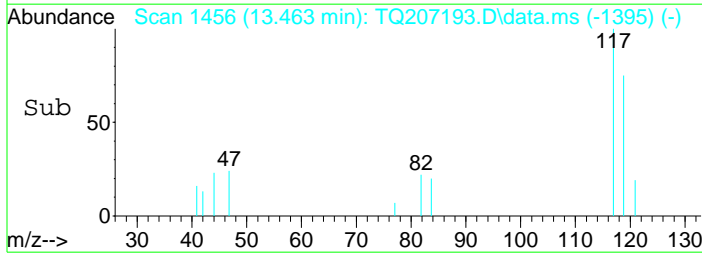
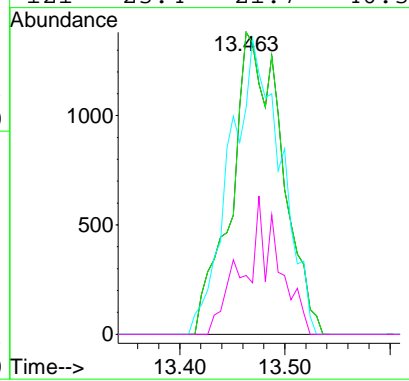
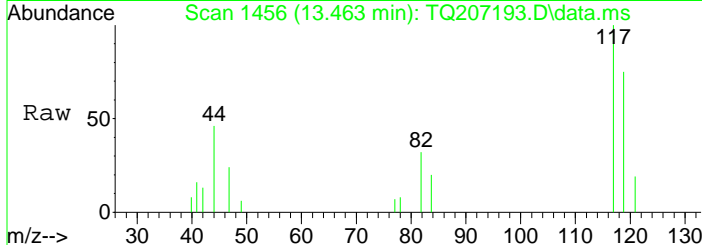
#32
 Cyclohexane
 Concen: 0.12 ppbv
 RT: 13.171 min Scan# 1408
 Delta R.T. -0.016 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

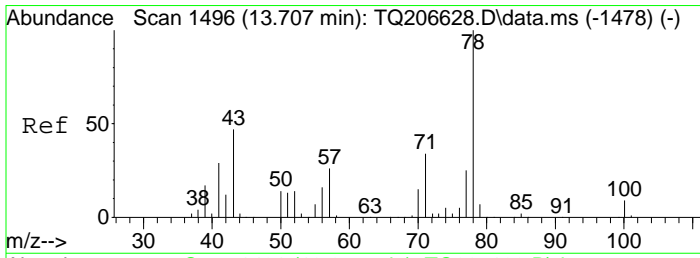
Tgt Ion	Resp	Lower	Upper
56	6678		
84	89.6	54.1	112.3
42	27.7	15.3	31.7
55	29.4	23.5	48.7



#33
 Carbon Tetrachloride
 Concen: 0.05 ppbv
 RT: 13.463 min Scan# 1456
 Delta R.T. -0.025 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

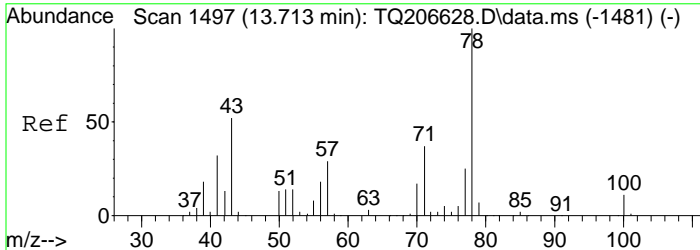
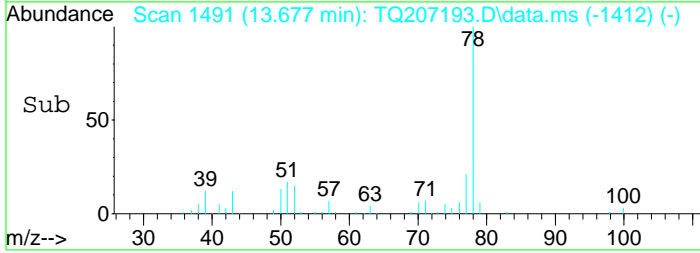
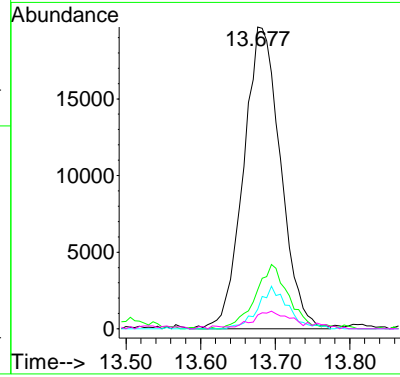
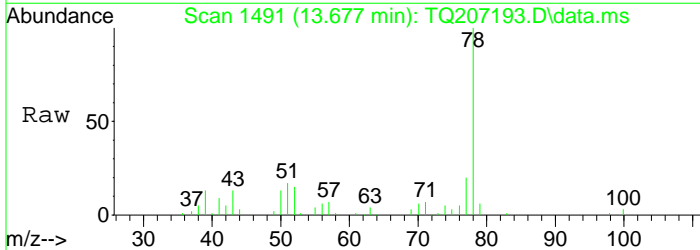
Tgt Ion	Resp	Lower	Upper
117	4588		
117	100.0	80.0	120.0
119	99.8	76.9	115.3
121	23.4	21.7	40.3





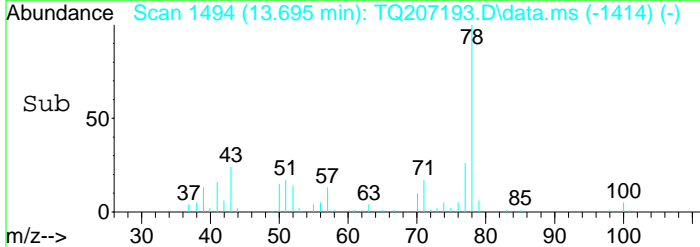
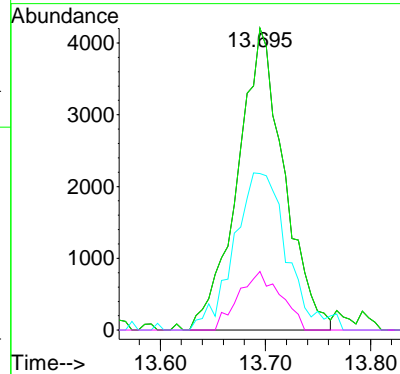
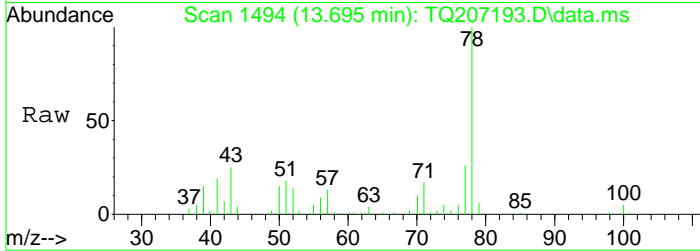
#35
Benzene
Concen: 0.51 ppbv
RT: 13.677 min Scan# 1491
Delta R.T. -0.019 min
Lab File: TQ207193.D
Acq: 6 Mar 2019 3:29 pm

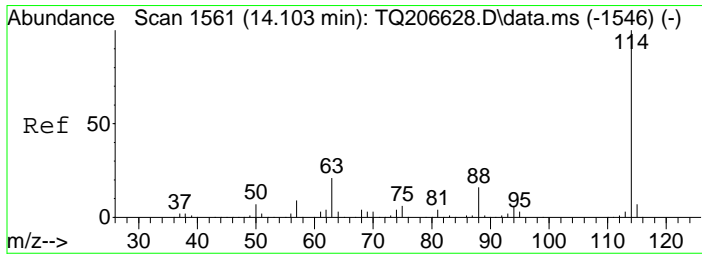
Tgt Ion	Resp	Lower	Upper
78	100		
43	19.0	37.5	77.9#
71	11.5	22.0	45.8#
42	4.6	8.8	18.4#



#36
n-Heptane
Concen: 0.21 ppbv
RT: 13.695 min Scan# 1494
Delta R.T. -0.014 min
Lab File: TQ207193.D
Acq: 6 Mar 2019 3:29 pm

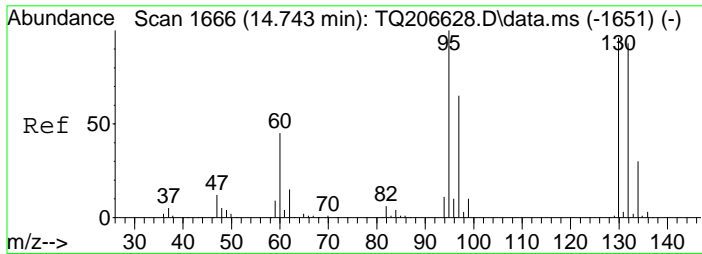
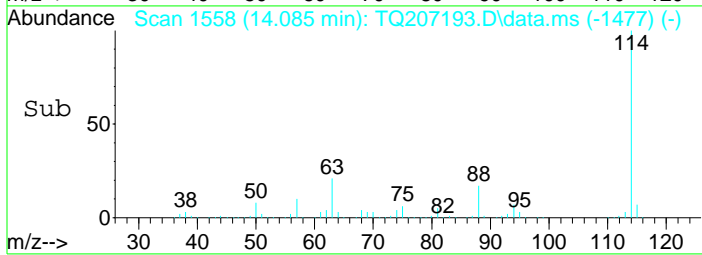
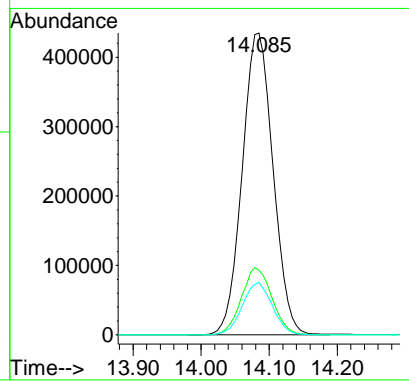
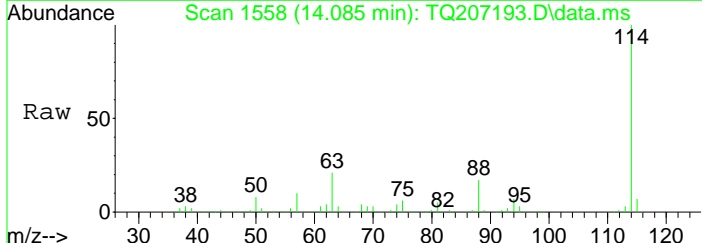
Tgt Ion	Resp	Lower	Upper
43	100		
43	100.0	80.0	120.0
57	0.0	42.6	64.0#
100	17.7	13.3	19.9





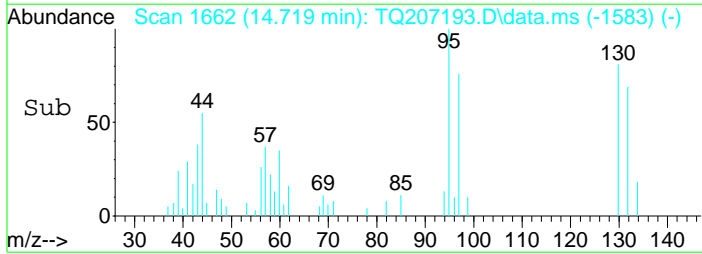
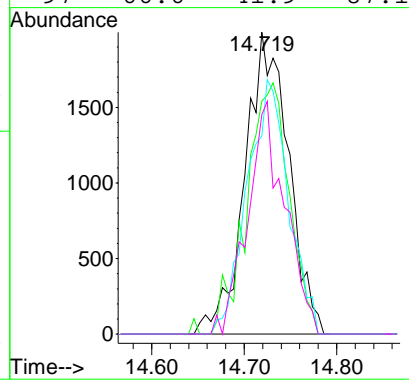
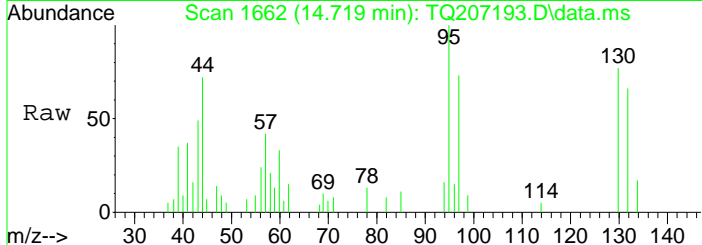
#37
 1,4-Difluorobenzene
 Concen: 10.00 ppbv
 RT: 14.085 min Scan# 1558
 Delta R.T. -0.007 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

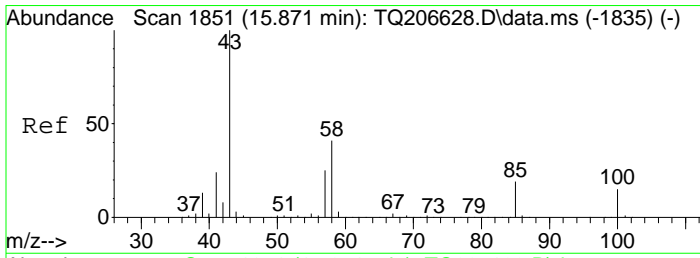
Tgt Ion	Resp	Lower	Upper
114	100		
63	22.1	12.9	26.9
88	16.9	10.7	22.3



#38
 Trichloroethylene
 Concen: 0.12 ppbv
 RT: 14.719 min Scan# 1662
 Delta R.T. -0.016 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

Tgt Ion	Resp	Lower	Upper
95	100		
130	81.6	66.0	137.0
132	79.9	63.3	131.5
97	66.6	41.9	87.1

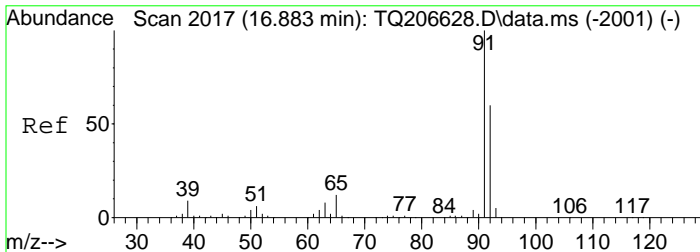
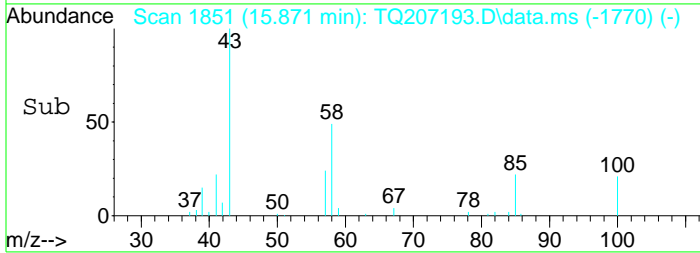
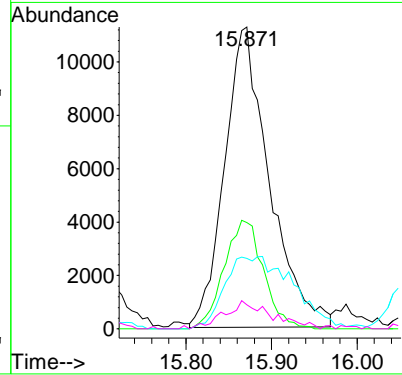
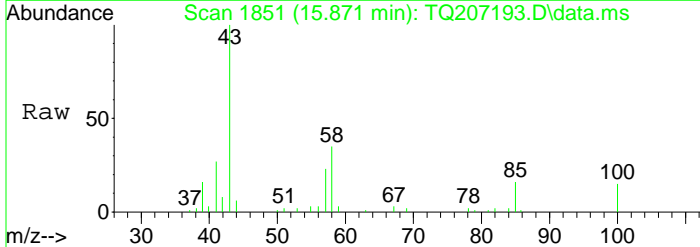




#43
 Methyl Isobutyl Ketone
 Concen: 0.48 ppbv
 RT: 15.871 min Scan# 1851
 Delta R.T. -0.005 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

Tgt Ion: 43 Resp: 40944

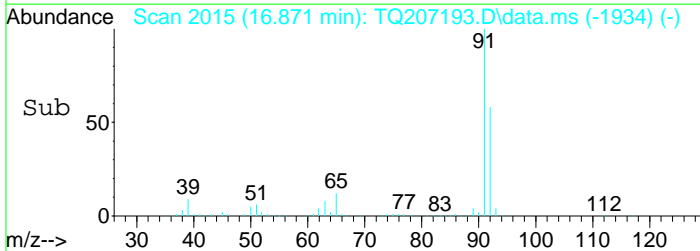
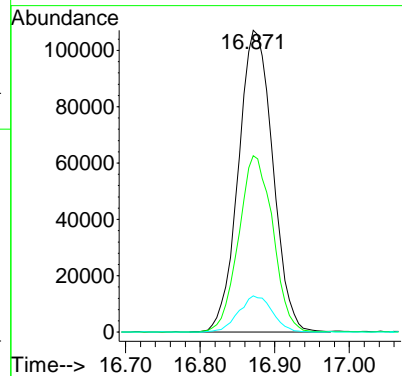
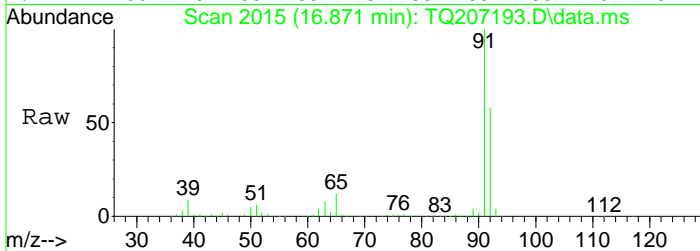
Ion	Ratio	Lower	Upper
43	100		
58	31.8	25.1	52.1
57	36.9	15.5	32.3#
42	9.9	5.0	15.0

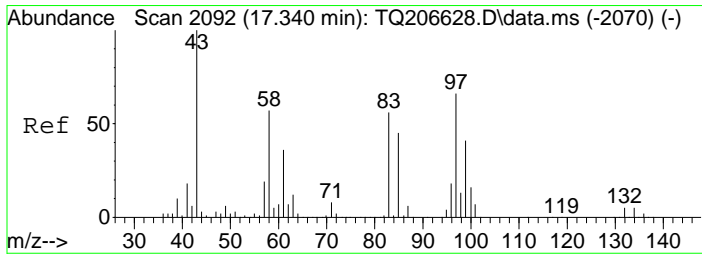


#45
 Toluene
 Concen: 2.37 ppbv
 RT: 16.871 min Scan# 2015
 Delta R.T. -0.006 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

Tgt Ion: 91 Resp: 343517

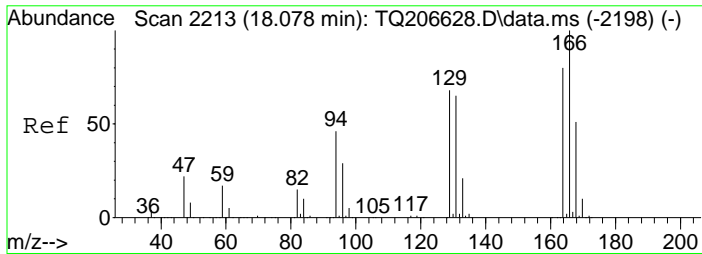
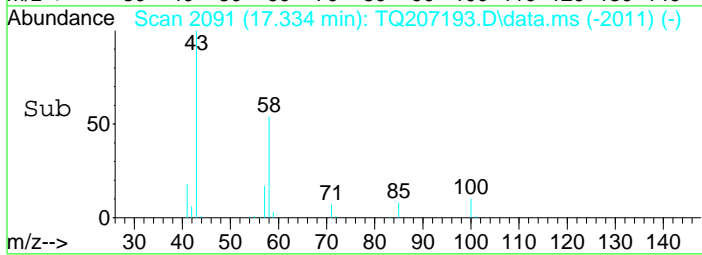
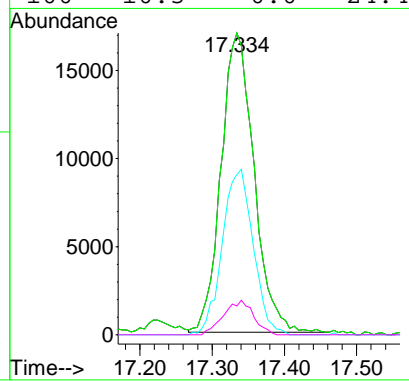
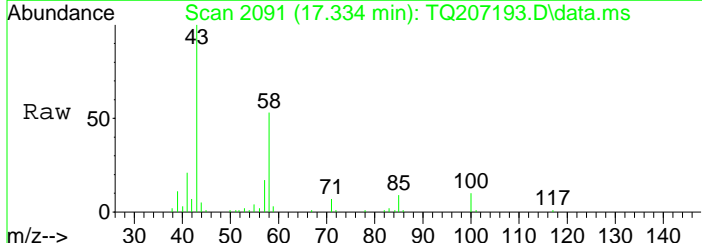
Ion	Ratio	Lower	Upper
91	100		
92	58.0	38.7	80.3
65	11.7	7.5	15.5





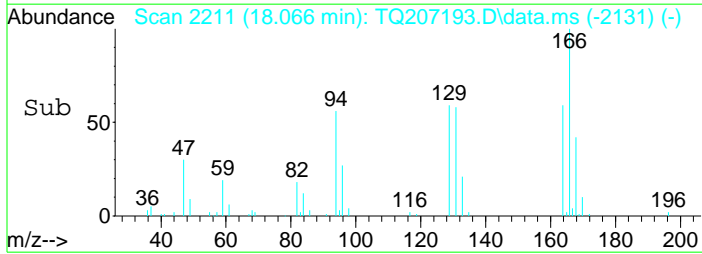
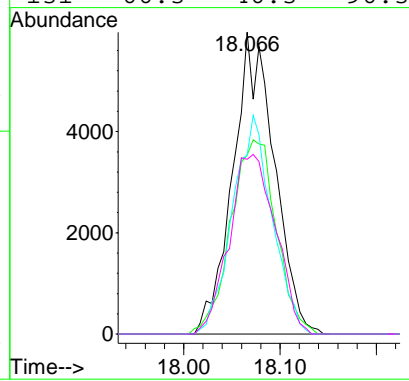
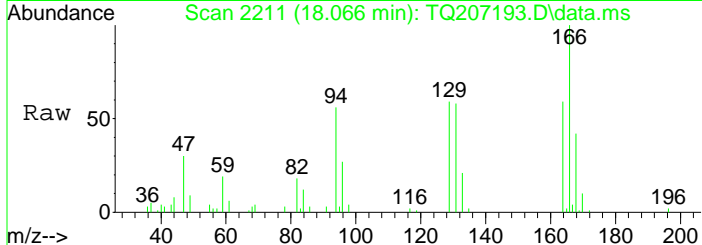
#48
 2-Hexanone
 Concen: 0.73 ppbv
 RT: 17.334 min Scan# 2091
 Delta R.T. -0.010 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

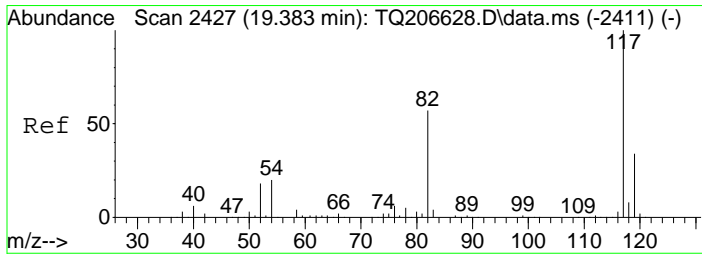
Tgt Ion	Resp	Ion Ratio	Lower	Upper
43	53765	100		
43		100.0	80.0	120.0
58		51.8	44.2	66.4
100		10.5	0.0	24.4



#50
 Tetrachloroethylene
 Concen: 0.25 ppbv
 RT: 18.066 min Scan# 2211
 Delta R.T. -0.011 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

Tgt Ion	Resp	Ion Ratio	Lower	Upper
166	17929	100		
164		70.2	51.0	106.0
129		68.7	48.1	99.9
131		66.3	46.3	96.3

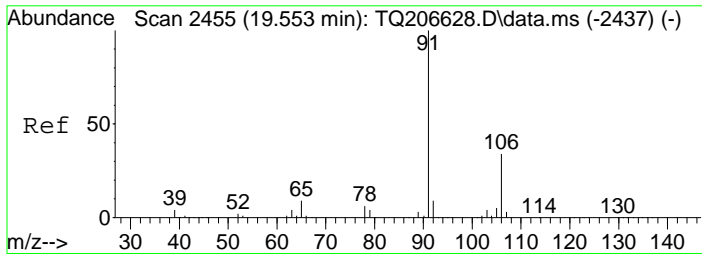
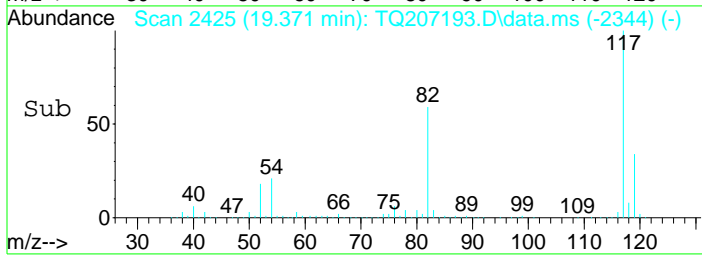
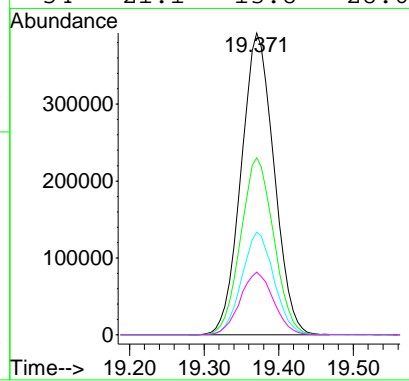
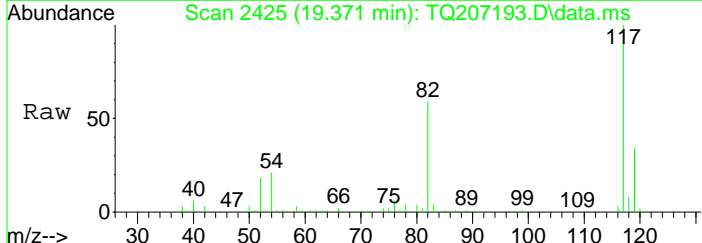




#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 19.371 min Scan# 2425
 Delta R.T. -0.006 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

Tgt Ion: 117 Resp: 1204083

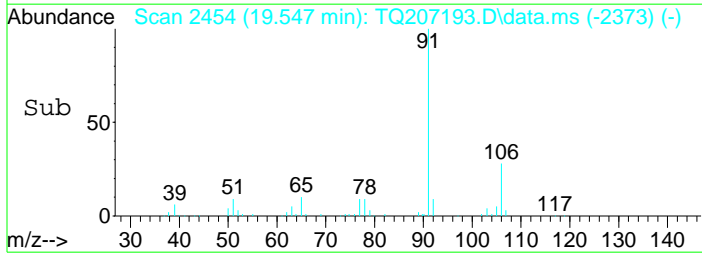
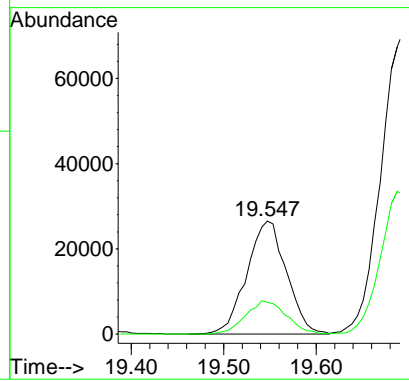
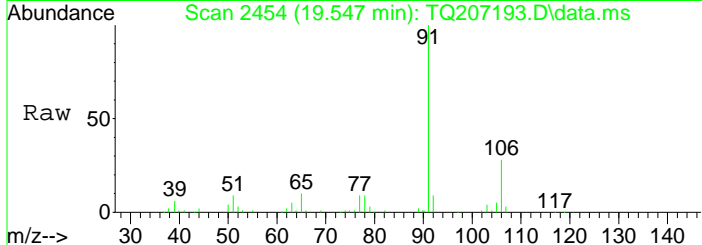
Ion	Ratio	Lower	Upper
117	100		
82	59.0	37.1	77.1
119	33.3	22.1	45.9
54	21.1	13.8	28.6

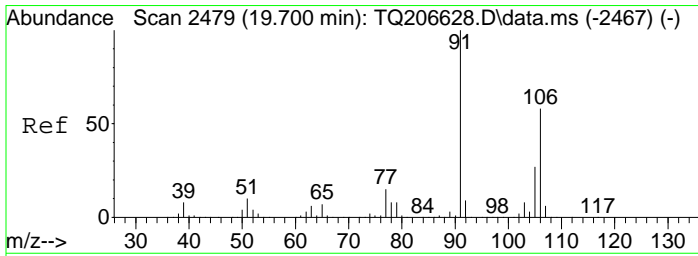


#56
 Ethylbenzene
 Concen: 0.47 ppbv
 RT: 19.547 min Scan# 2454
 Delta R.T. -0.006 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

Tgt Ion: 91 Resp: 79069

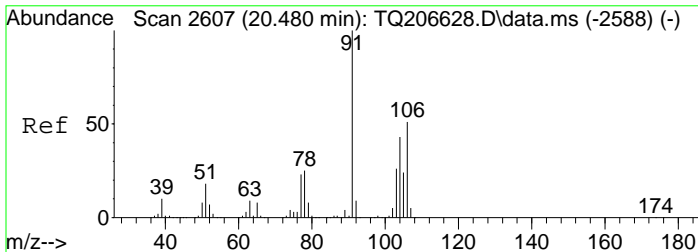
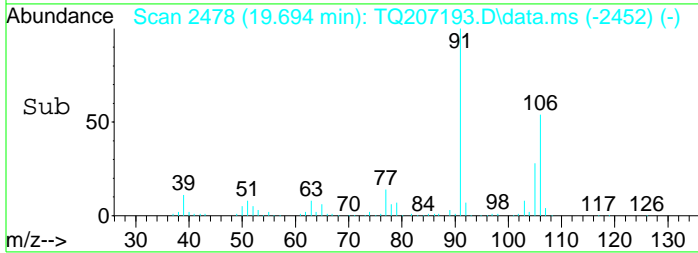
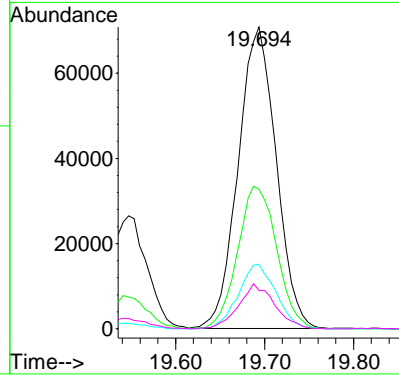
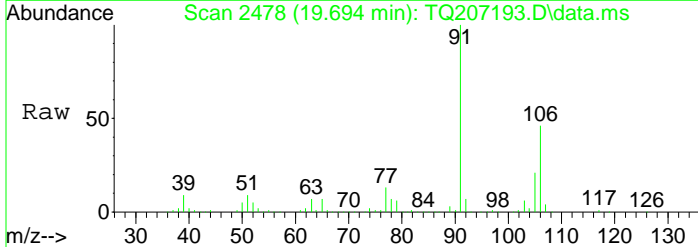
Ion	Ratio	Lower	Upper
91	100		
106	30.3	20.5	42.7





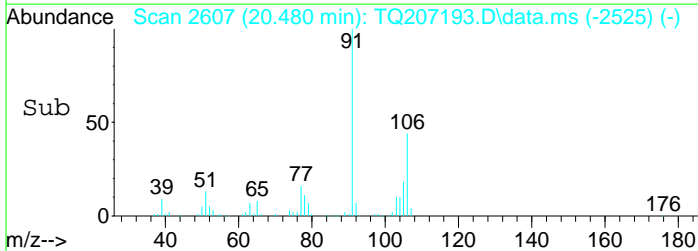
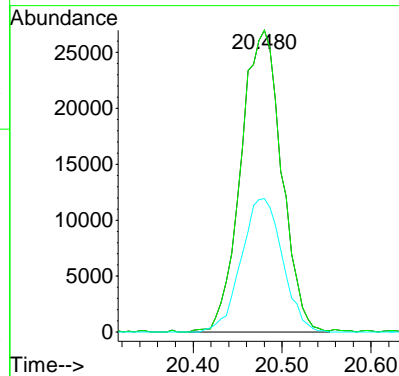
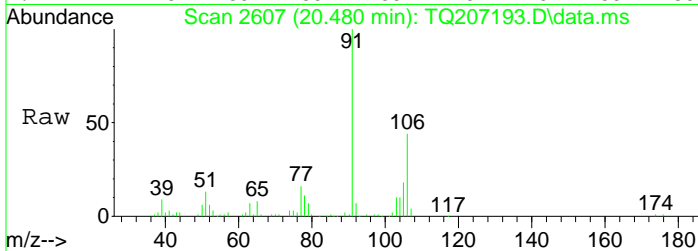
#57
 p- & m-Xylenes
 Concen: 1.64 ppbv
 RT: 19.694 min Scan# 2478
 Delta R.T. -0.000 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

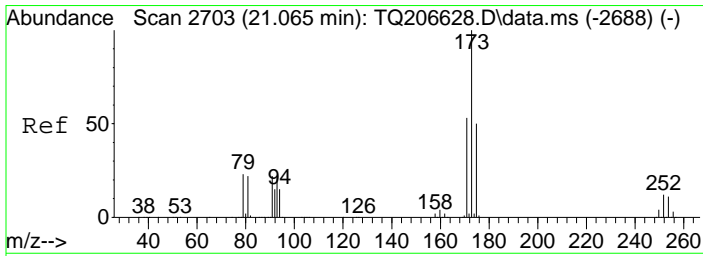
Tgt Ion	91	Resp	209642
Ion Ratio	Lower	Upper	
91	100		
106	48.6	32.6	67.8
105	21.2	14.5	30.1
77	14.2	8.5	17.7



#58
 o-Xylene
 Concen: 0.58 ppbv
 RT: 20.480 min Scan# 2607
 Delta R.T. 0.000 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

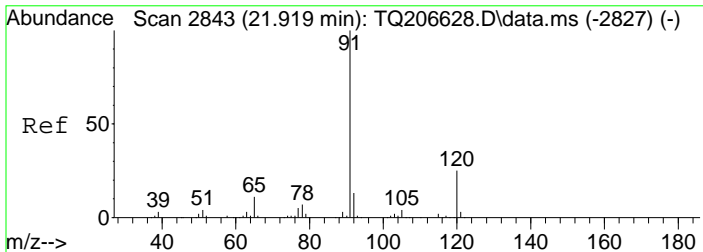
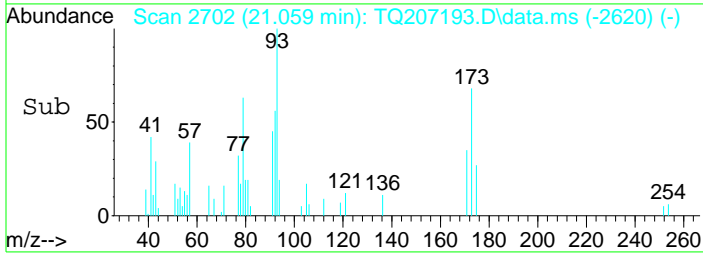
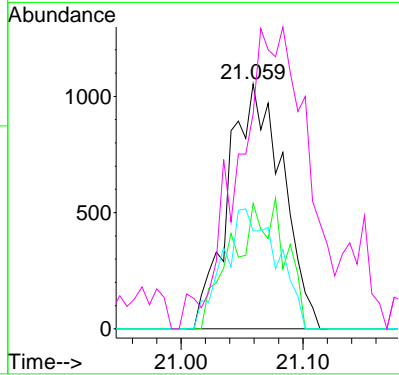
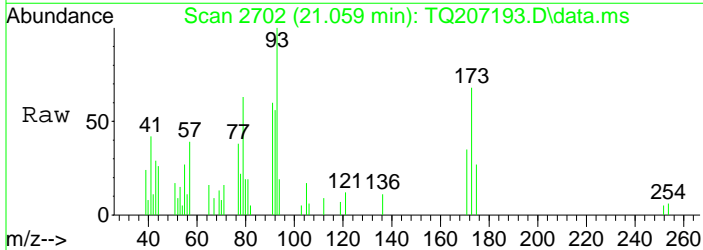
Tgt Ion	91	Resp	85529
Ion Ratio	Lower	Upper	
91	100		
91	100.0	80.0	120.0
106	44.8	38.2	57.2





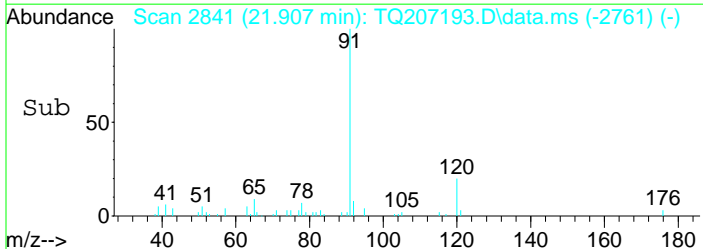
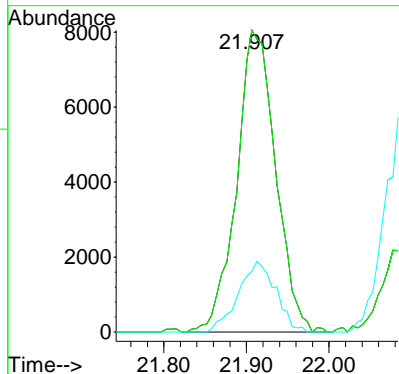
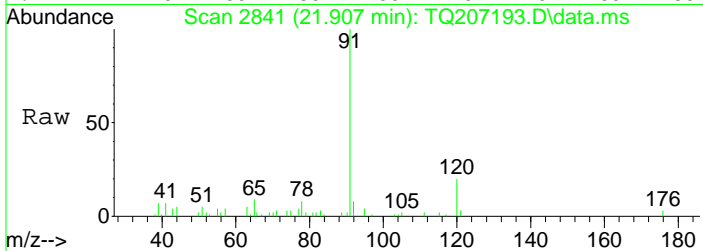
#60
 Bromoform
 Concen: 0.04 ppbv
 RT: 21.059 min Scan# 2702
 Delta R.T. -0.001 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

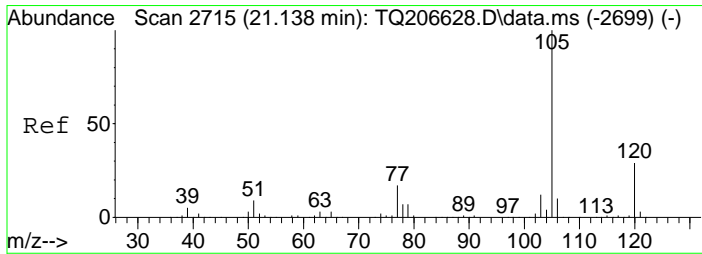
Tgt Ion	Resp	Lower	Upper
173	100		
171	49.8	33.7	69.9
175	48.7	31.8	66.0
91	157.3	14.6	30.2#



#61
 n-Propylbenzene
 Concen: 0.12 ppbv
 RT: 21.907 min Scan# 2841
 Delta R.T. -0.011 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

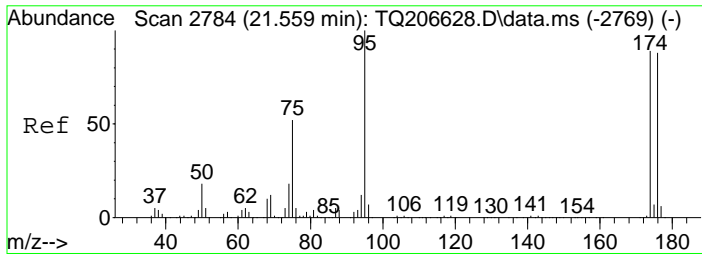
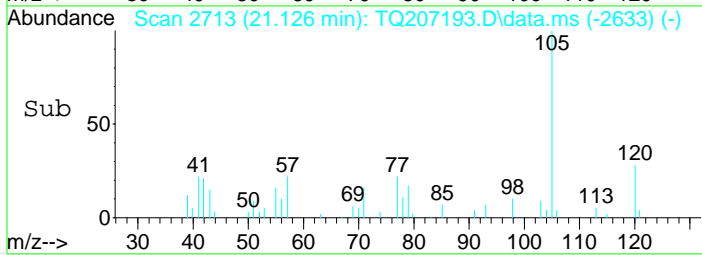
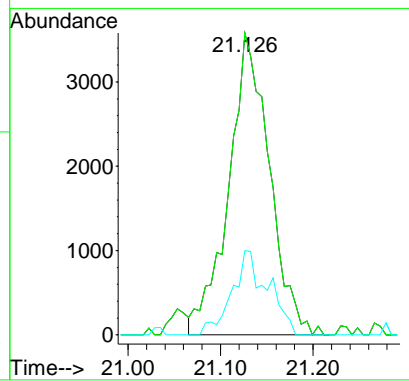
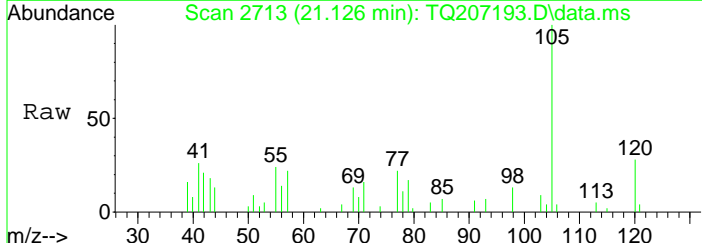
Tgt Ion	Resp	Lower	Upper
91	100		
91	100.0	80.0	120.0
120	22.5	10.0	30.0





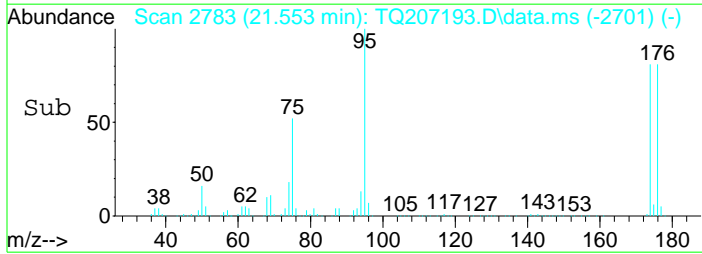
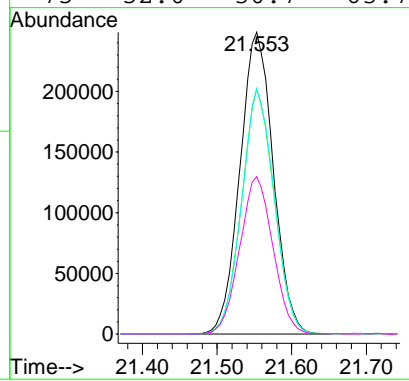
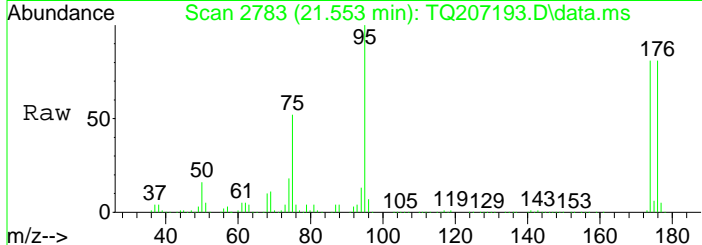
#62
 Isopropylbenzene
 Concen: 0.06 ppbv
 RT: 21.126 min Scan# 2713
 Delta R.T. -0.011 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

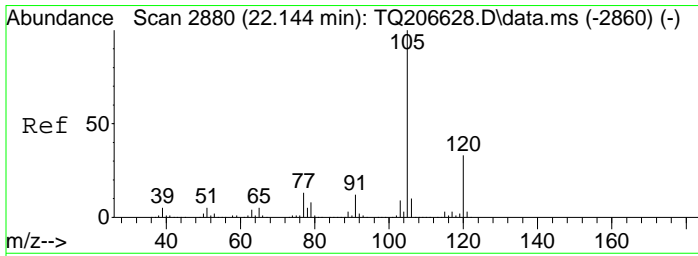
Tgt Ion	Resp	Lower	Upper
105	10921		
105	100		
105	100.0	80.0	120.0
120	24.6	10.0	30.0



#64
 p-Bromofluorobenzene
 Concen: 9.11 ppbv
 RT: 21.553 min Scan# 2783
 Delta R.T. 0.000 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

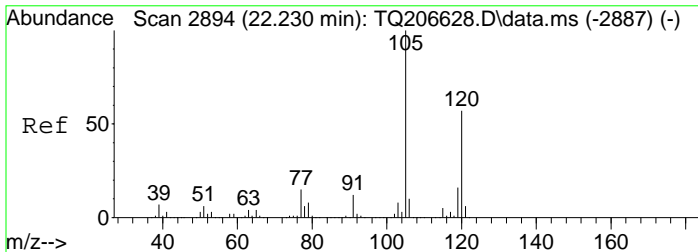
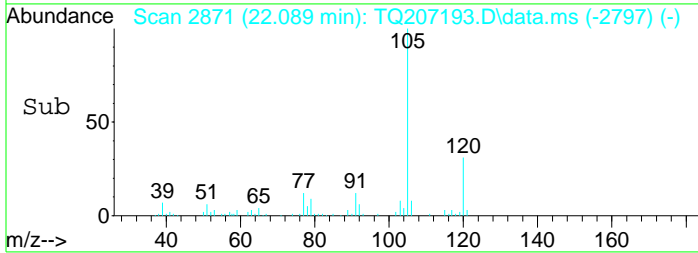
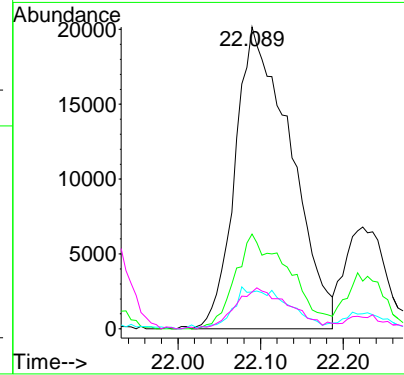
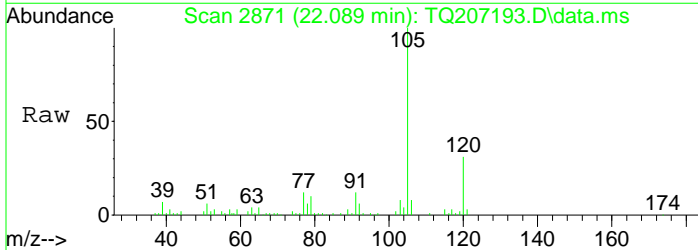
Tgt Ion	Resp	Lower	Upper
95	773791		
95	100		
174	79.3	53.2	110.6
176	79.4	51.6	107.2
75	52.0	30.7	63.7





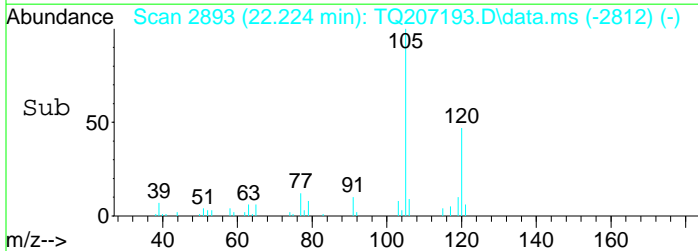
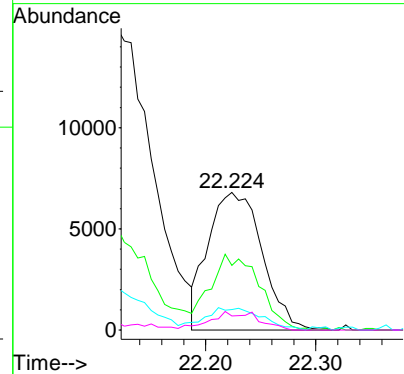
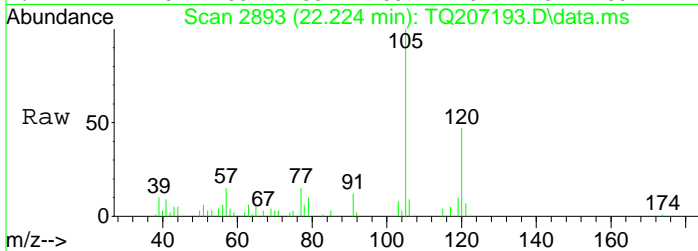
#65
 4-Ethyltoluene
 Concen: 0.51 ppbv
 RT: 22.089 min Scan# 2871
 Delta R.T. -0.049 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

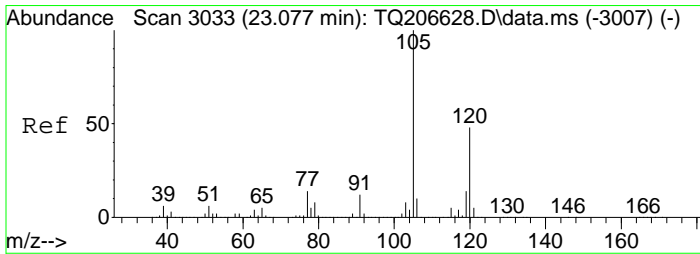
Tgt Ion	Resp	Lower	Upper
105	93932		
120	30.7	19.6	40.8
77	12.3	7.3	15.3
91	13.5	7.1	14.7



#66
 1,3,5-Trimethylbenzene
 Concen: 0.15 ppbv
 RT: 22.224 min Scan# 2893
 Delta R.T. -0.006 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

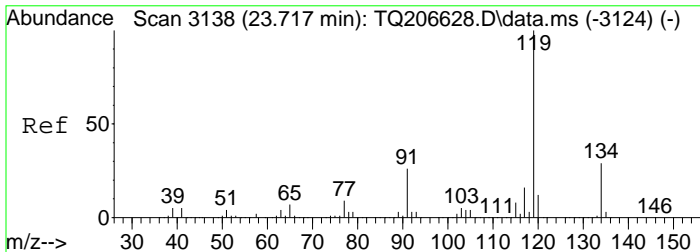
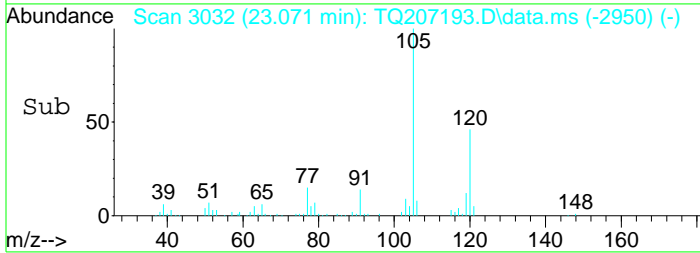
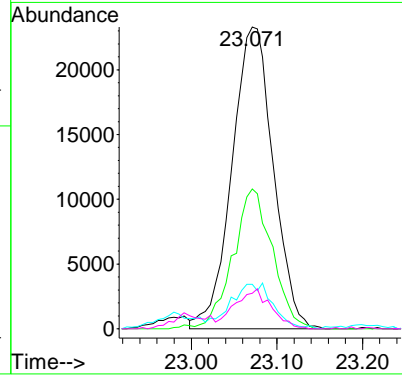
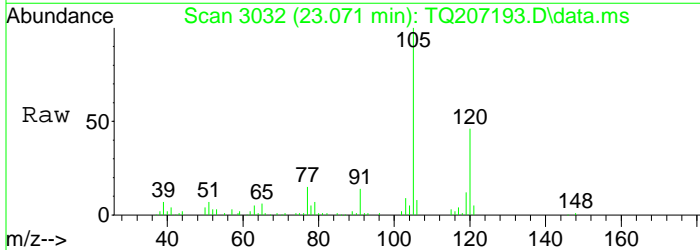
Tgt Ion	Resp	Lower	Upper
105	23295		
120	49.7	39.2	58.8
77	16.5	10.1	15.1#
119	6.0	6.1	18.3#





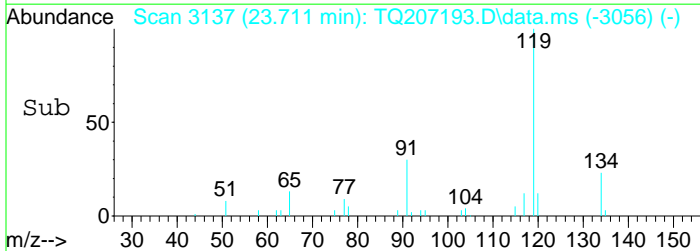
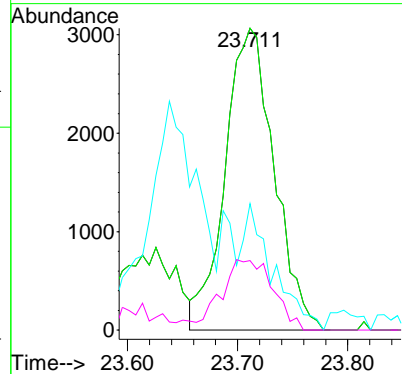
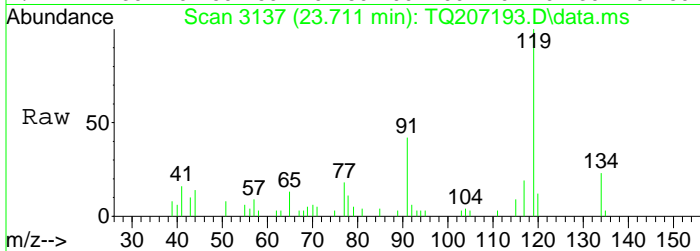
#68
 1,2,4-Trimethylbenzene
 Concen: 0.49 ppbv
 RT: 23.071 min Scan# 3032
 Delta R.T. 0.000 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

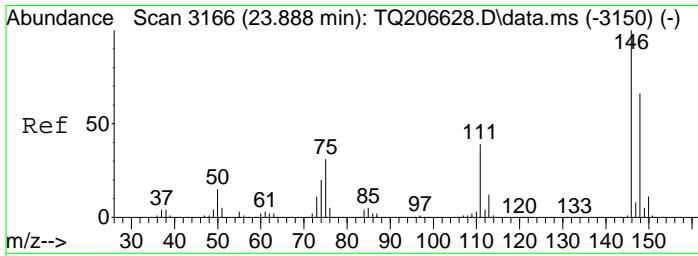
Tgt Ion	Resp	Lower	Upper
105	78176		
120	44.4	30.2	62.6
77	15.5	8.1	16.9
119	11.6	7.8	16.2



#70
 p-Isopropyltoluene
 Concen: 0.05 ppbv
 RT: 23.711 min Scan# 3137
 Delta R.T. -0.006 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

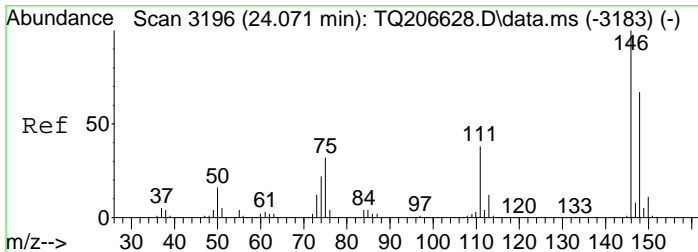
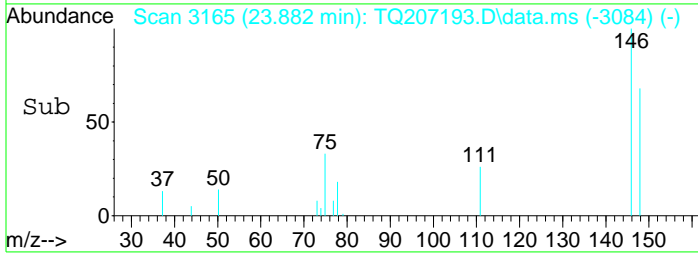
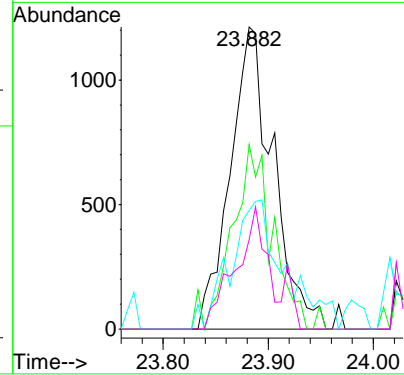
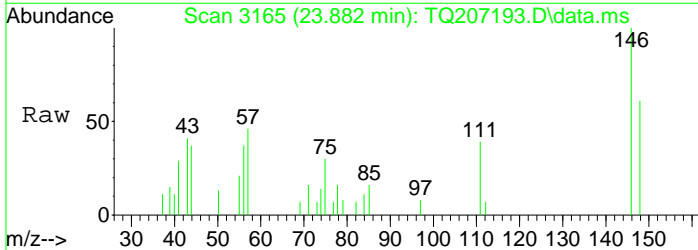
Tgt Ion	Resp	Lower	Upper
119	9499		
119	100.0	80.0	120.0
91	0.0	7.5	52.5#
134	0.0	7.5	52.5#





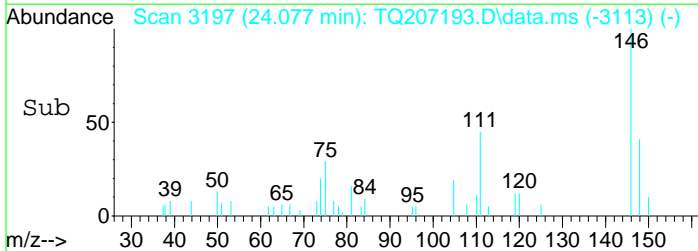
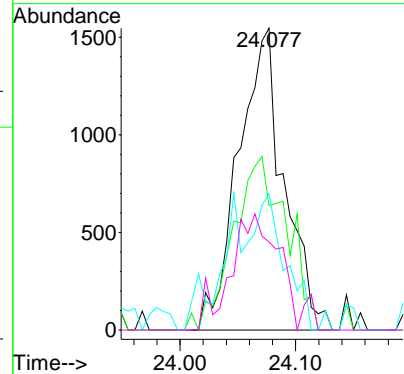
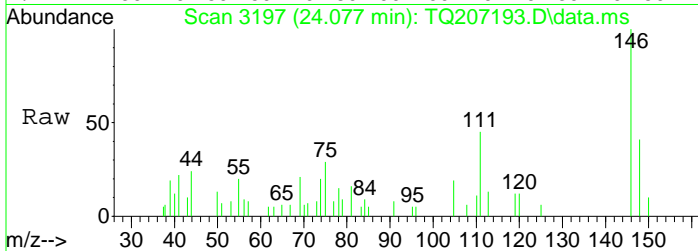
#71
 1,3-Dichlorobenzene
 Concen: 0.03 ppbv
 RT: 23.882 min Scan# 3165
 Delta R.T. -0.007 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

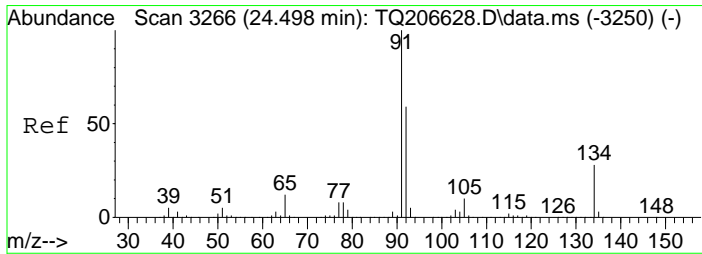
Tgt Ion	Resp	Lower	Upper
146	3457		
148	55.4	41.7	86.5
111	49.8	25.7	53.5
75	29.8	18.7	38.7



#72
 1,4-Dichlorobenzene
 Concen: 0.04 ppbv
 RT: 24.077 min Scan# 3197
 Delta R.T. 0.010 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

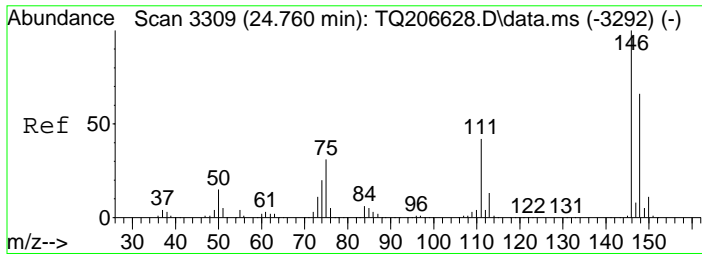
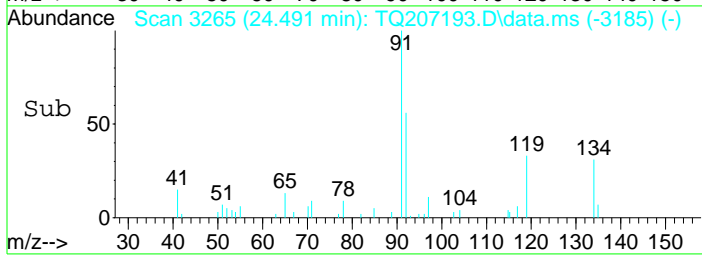
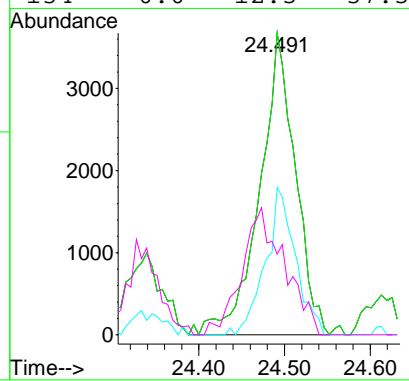
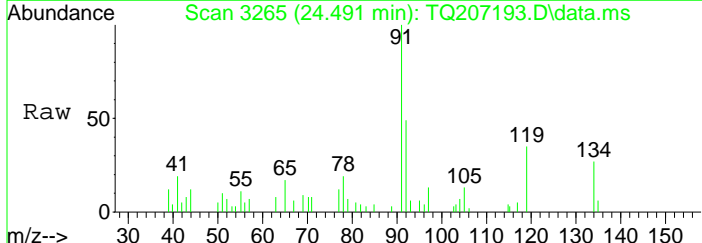
Tgt Ion	Resp	Lower	Upper
146	4243		
148	67.3	41.6	86.4
111	29.5	24.8	51.6
75	37.3	19.0	39.6





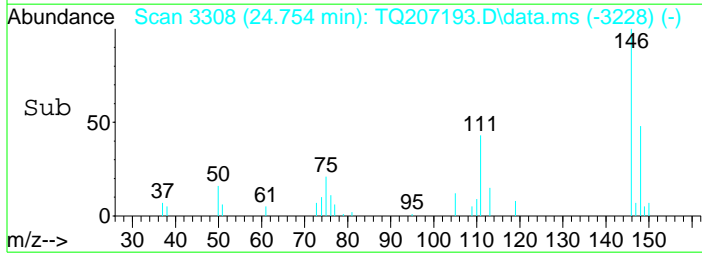
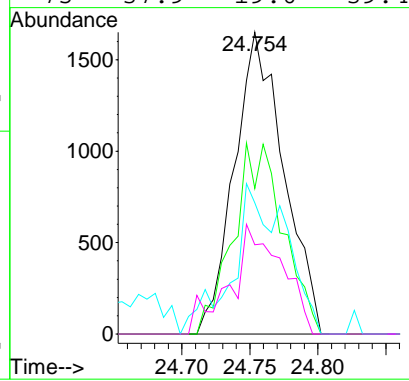
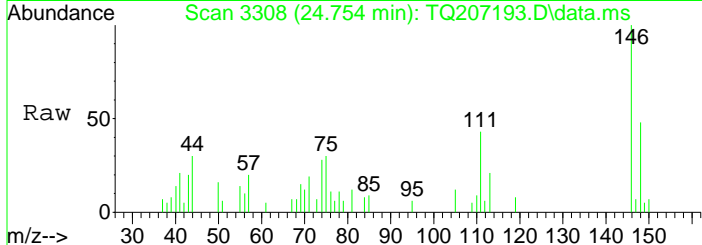
#74
 n-Butylbenzene
 Concen: 0.06 ppbv
 RT: 24.491 min Scan# 3265
 Delta R.T. -0.010 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

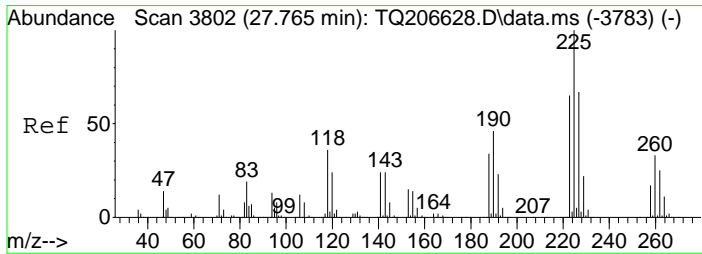
Tgt Ion	Resp	Lower	Upper
91	10664		
91	100		
91	100.0	80.0	120.0
92	41.0	44.0	66.0#
134	0.0	12.5	37.5#



#75
 1,2-Dichlorobenzene
 Concen: 0.04 ppbv
 RT: 24.754 min Scan# 3308
 Delta R.T. -0.011 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

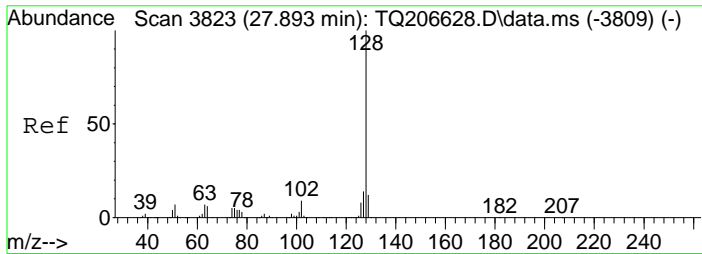
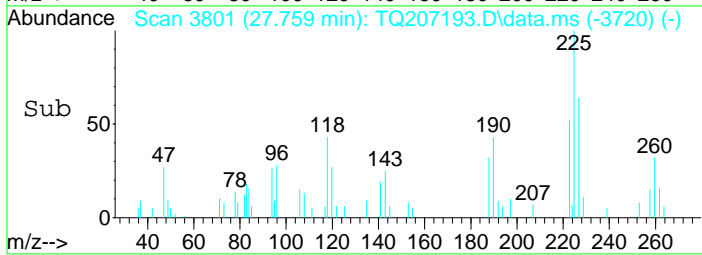
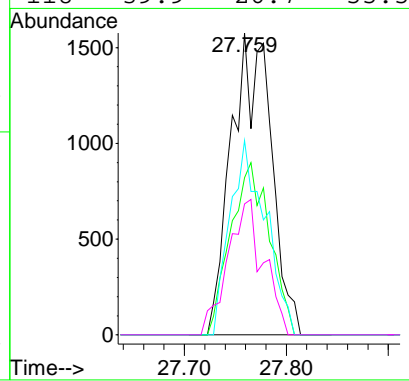
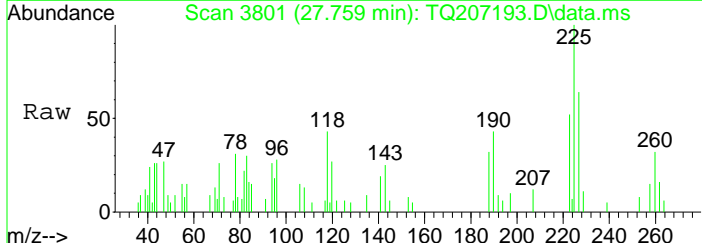
Tgt Ion	Resp	Lower	Upper
146	4176		
146	100		
148	63.5	41.5	86.3
111	53.4	26.8	55.8
75	37.9	19.0	39.4





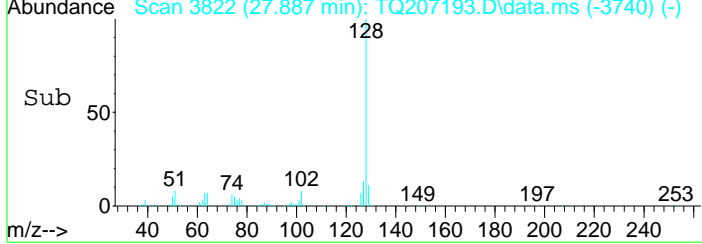
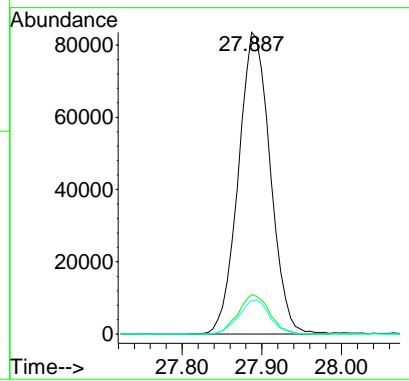
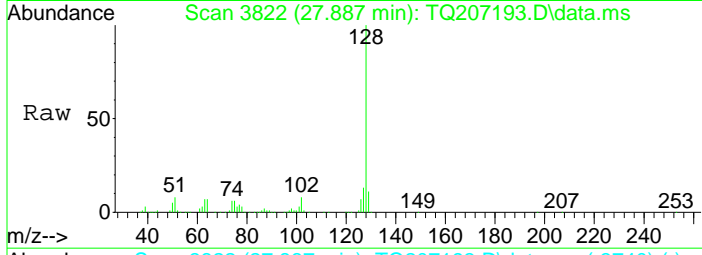
#77
 Hexachlorobutadiene
 Concen: 0.05 ppbv m
 RT: 27.759 min Scan# 3801
 Delta R.T. -0.007 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

Tgt Ion	Resp	Lower	Upper
225	4296		
223	55.5	40.8	84.8
227	57.1	41.3	85.7
118	39.9	26.7	55.5



#78
 Naphthalene
 Concen: 1.53 ppbv
 RT: 27.887 min Scan# 3822
 Delta R.T. -0.002 min
 Lab File: TQ207193.D
 Acq: 6 Mar 2019 3:29 pm

Tgt Ion	Resp	Lower	Upper
128	231850		
127	12.9	8.1	16.9
129	11.0	7.1	14.7



Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Outdoor Ambient Air Laboratory ID: 19B1031-05 File ID: TQ207194.D
 Sampled: 02/27/19 08:06 Prepared: 03/06/19 08:00 Analyzed: 03/06/19 16:43
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BC90329 Sequence: Y9C0724 Calibration: YB90001 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	0.84	0.577	U
71-55-6	1,1,1-Trichloroethane	0.84	0.458	U
79-34-5	1,1,2,2-Tetrachloroethane	0.84	0.577	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.84	0.644	U
79-00-5	1,1,2-Trichloroethane	0.84	0.458	U
75-34-3	1,1-Dichloroethane	0.84	0.340	U
75-35-4	1,1-Dichloroethylene	0.84	0.333	U
120-82-1	1,2,4-Trichlorobenzene	0.84	0.623	U
95-63-6	1,2,4-Trimethylbenzene	0.84	0.413	U
106-93-4	1,2-Dibromoethane	0.84	0.645	U
95-50-1	1,2-Dichlorobenzene	0.84	0.505	U
107-06-2	1,2-Dichloroethane	0.84	0.340	U
78-87-5	1,2-Dichloropropane	0.84	0.388	U
76-14-2	1,2-Dichlorotetrafluoroethane	0.84	0.587	U
108-67-8	1,3,5-Trimethylbenzene	0.84	0.413	U
106-99-0	1,3-Butadiene	0.84	0.557	U
541-73-1	1,3-Dichlorobenzene	0.84	0.505	U
142-28-9	1,3-Dichloropropane	0.84	0.388	U
106-46-7	1,4-Dichlorobenzene	0.84	0.505	U
123-91-1	1,4-Dioxane	0.84	0.605	U
78-93-3	2-Butanone	0.84	0.743	D
591-78-6	2-Hexanone	0.84	2.27	D
107-05-1	3-Chloropropene	0.84	1.31	U
108-10-1	4-Methyl-2-pentanone	0.84	0.344	U
67-64-1	Acetone	0.84	4.09	D
107-13-1	Acrylonitrile	0.84	0.182	U
71-43-2	Benzene	0.84	1.05	D
100-44-7	Benzyl chloride	0.84	0.435	U
75-27-4	Bromodichloromethane	0.84	0.563	U
75-25-2	Bromoform	0.84	0.868	U
74-83-9	Bromomethane	0.84	0.326	U
75-15-0	Carbon disulfide	0.84	0.262	U
56-23-5	Carbon tetrachloride	0.84	0.476	D
108-90-7	Chlorobenzene	0.84	0.387	U
75-00-3	Chloroethane	0.84	0.222	U
67-66-3	Chloroform	0.84	0.410	U
74-87-3	Chloromethane	0.84	1.34	D
156-59-2	cis-1,2-Dichloroethylene	0.84	0.333	U
10061-01-5	cis-1,3-Dichloropropylene	0.84	0.381	U
110-82-7	Cyclohexane	0.84	0.289	U

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Outdoor Ambient Air Laboratory ID: 19B1031-05 File ID: TQ207194.D
 Sampled: 02/27/19 08:06 Prepared: 03/06/19 08:00 Analyzed: 03/06/19 16:43
 Solids: Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Batch: BC90329 Sequence: Y9C0724 Calibration: YB90001 Instrument: TO15 AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m ³)	Q
124-48-1	Dibromochloromethane	0.84	0.716	U
75-71-8	Dichlorodifluoromethane	0.84	1.74	D
141-78-6	Ethyl acetate	0.84	1.18	D
100-41-4	Ethyl Benzene	0.84	0.365	U
87-68-3	Hexachlorobutadiene	0.84	0.896	U
67-63-0	Isopropanol	0.84	0.867	D
80-62-6	Methyl Methacrylate	0.84	0.894	D
1634-04-4	Methyl tert-butyl ether (MTBE)	0.84	0.303	U
75-09-2	Methylene chloride	0.84	3.12	D
142-82-5	n-Heptane	0.84	0.379	D
110-54-3	n-Hexane	0.84	0.444	D
95-47-6	o-Xylene	0.84	0.365	D
179601-23-1	p- & m- Xylenes	0.84	1.02	D
622-96-8	p-Ethyltoluene	0.84	0.413	U
115-07-1	Propylene	0.84	0.145	U
100-42-5	Styrene	0.84	0.358	U
127-18-4	Tetrachloroethylene	0.84	0.741	D
109-99-9	Tetrahydrofuran	0.84	0.495	U
108-88-3	Toluene	0.84	1.77	D
156-60-5	trans-1,2-Dichloroethylene	0.84	0.333	U
10061-02-6	trans-1,3-Dichloropropylene	0.84	0.381	U
79-01-6	Trichloroethylene	0.84	0.135	D
75-69-4	Trichlorofluoromethane (Freon 11)	0.84	1.27	D
108-05-4	Vinyl acetate	0.84	0.296	U
593-60-2	Vinyl bromide	0.84	0.367	U
75-01-4	Vinyl Chloride	0.84	0.215	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
SURR: p-Bromofluorobenzene	10.0	9.14	91.4	72 - 118	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	471286	12.494	428278	12.5	
ISTD: 1,4-Difluorobenzene	1358182	14.091	1361515	14.097	
ISTD: d5-Chlorobenzene	1142530	19.371	1166408	19.377	

* Values outside of QC limits

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207194.D
 Acq On : 6 Mar 2019 4:43 pm
 Sample : 19B1031-05 Inst : TO15_AIR2
 Operator : AS
 Sample : 19B1031-05
 Misc : QBTO2030619A 1031-05 1X
 ALS Vial : 9 Sample Multiplier: 0.84

Quant Time: Mar 07 15:54:28 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

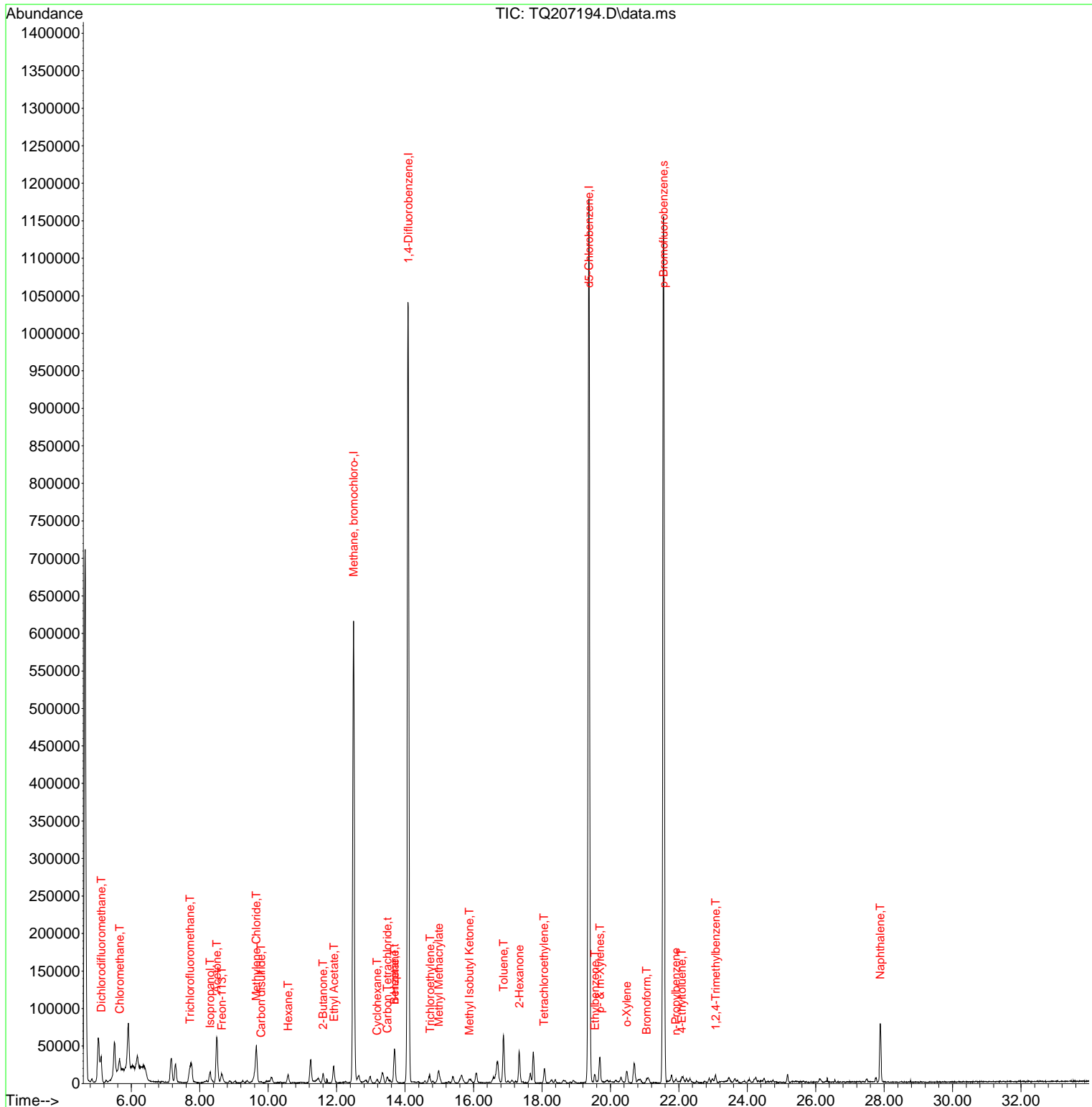
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.494	49	471286	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.091	114	1358182	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.371	117	1142530	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	736795	9.14	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	91.40%	
Target Compounds						
						Qvalue
3) Dichlorodifluoromethane	5.117	85	43911	0.42	ppbv	98
5) Chloromethane	5.654	50	28335	0.77	ppbv	97
11) Trichlorofluoromethane	7.708	101	28727	0.27	ppbv	98
12) Isopropanol	8.300	45	28364	0.42	ppbv	100
14) Acetone	8.495	43	132631	2.05	ppbv	98
15) Freon-113	8.641	101	6886	0.08	ppbv	95
18) Methylene Chloride	9.653	49	48196	1.07	ppbv	95
20) Carbon disulfide	9.787	76	2660	0.02	ppbv #	81
23) Hexane	10.574	57	8537	0.15	ppbv	95
26) 2-Butanone	11.604	43	24948	0.30	ppbv	99
27) Ethyl Acetate	11.915	43	33877	0.39	ppbv #	44
32) Cyclohexane	13.177	56	2948	0.05	ppbv #	63
33) Carbon Tetrachloride	13.482	117	8119	0.09	ppbv #	91
35) Benzene	13.689	78	53161	0.39	ppbv #	50
36) n-Heptane	13.689	43	7250	0.11	ppbv	97
38) Trichloroethylene	14.731	95	1651	0.03	ppbv	94
40) Methyl Methacrylate	14.981	69	10535	0.26	ppbv	98
43) Methyl Isobutyl Ketone	15.877	43	5878	0.07	ppbv #	80
45) Toluene	16.877	91	80279	0.56	ppbv	97
48) 2-Hexanone	17.341	43	48606	0.66	ppbv #	74
50) Tetrachloroethylene	18.060	166	9211	0.13	ppbv	97
56) Ethylbenzene	19.547	91	14226	0.09	ppbv	98
57) p- & m-Xylenes	19.694	91	33730	0.28	ppbv	96
58) o-Xylene	20.474	91	13381	0.10	ppbv	97
60) Bromoform	21.053	173	3003	0.04	ppbv #	71
61) n-Propylbenzene	21.907	91	5905	0.03	ppbv	97
65) 4-Ethyltoluene	22.084	105	13960m	0.08	ppbv	
68) 1,2,4-Trimethylbenzene	23.077	105	11347	0.07	ppbv #	96
78) Naphthalene	27.887	128	99827	0.69	ppbv	98

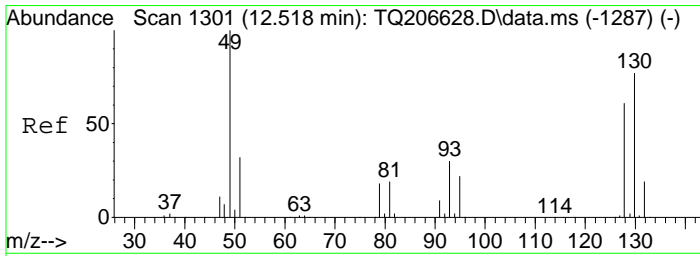
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207194.D
 Acq On : 6 Mar 2019 4:43 pm
 Sample : 19B1031-05
 Operator : AS
 Sample : 19B1031-05
 Misc : QBTO2030619A 1031-05 1X
 ALS Vial : 9 Sample Multiplier: 0.84

Inst : TO15_AIR2

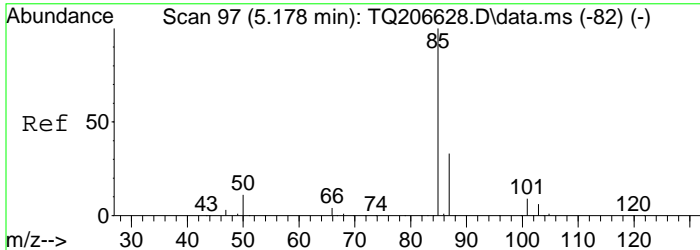
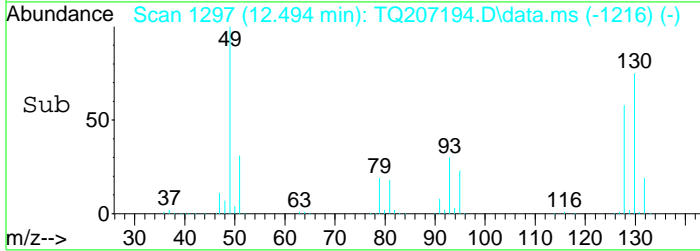
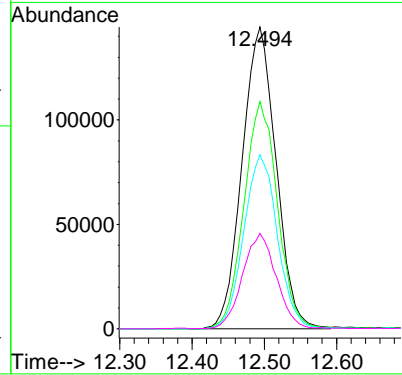
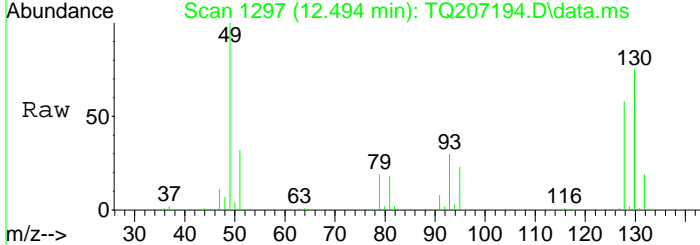
Quant Time: Mar 07 15:54:28 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration





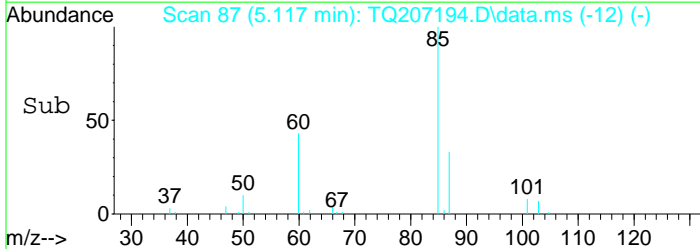
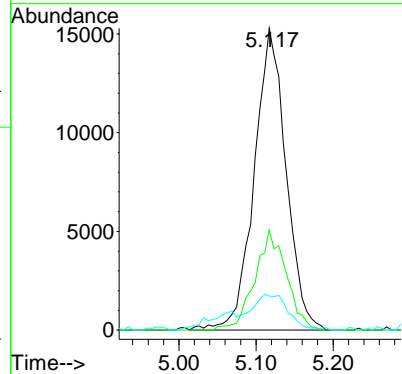
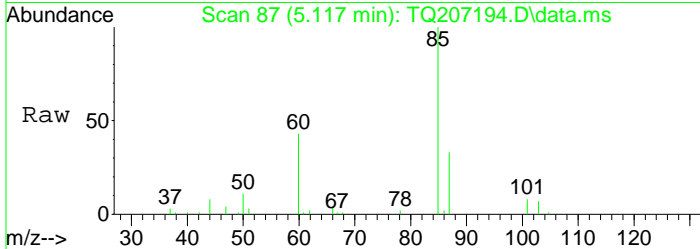
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.494 min Scan# 1297
 Delta R.T. -0.006 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

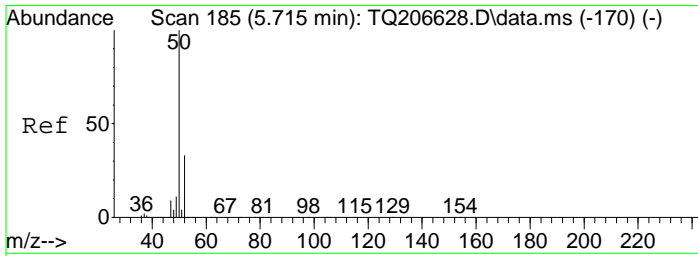
Tgt Ion	Resp	Ion Ratio	Lower	Upper
49	471286	100		
130		74.6	48.1	99.9
128		57.4	38.3	79.5
51		31.4	20.3	42.3



#3
 Dichlorodifluoromethane
 Concen: 0.42 ppbv
 RT: 5.117 min Scan# 87
 Delta R.T. -0.040 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

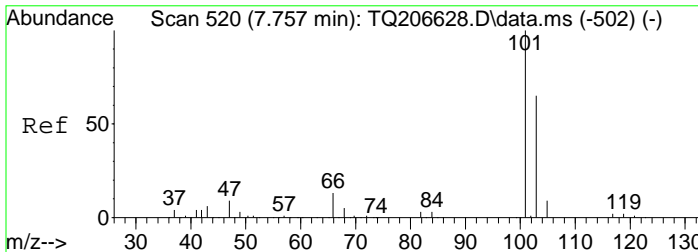
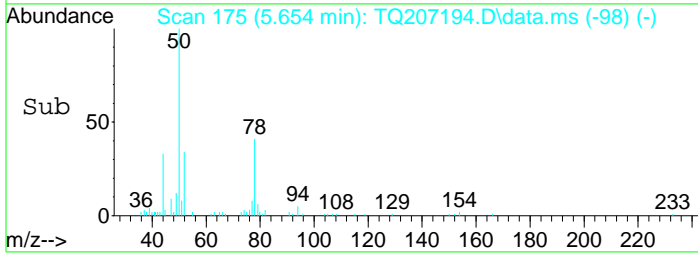
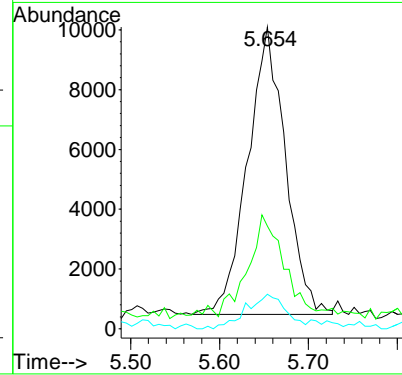
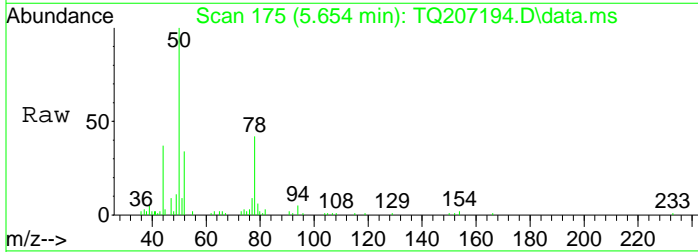
Tgt Ion	Resp	Ion Ratio	Lower	Upper
85	43911	100		
87		32.8	20.9	43.5
50		13.3	7.2	15.0





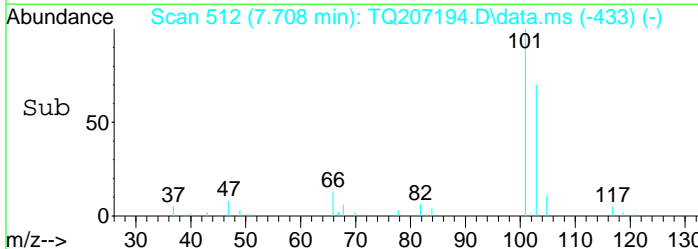
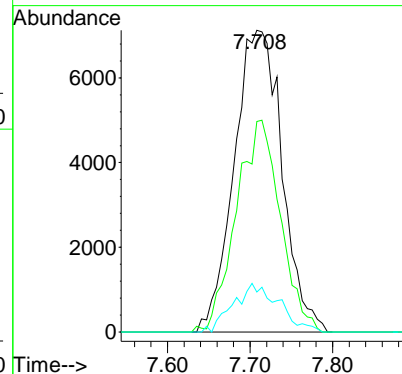
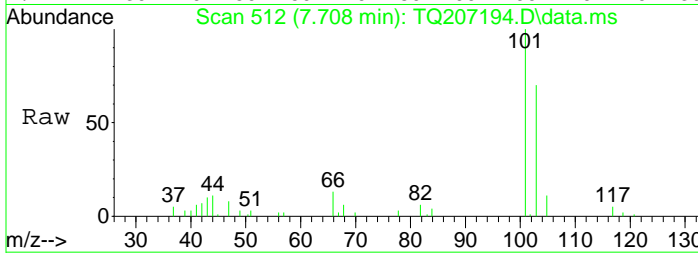
#5
 Chloromethane
 Concen: 0.77 ppbv
 RT: 5.654 min Scan# 175
 Delta R.T. -0.028 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

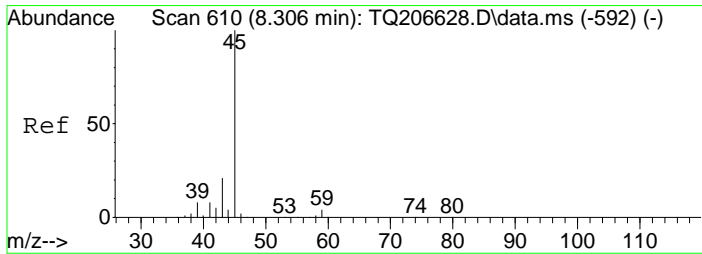
Tgt Ion	Resp	Lower	Upper
50	100		
52	30.9	0.0	65.2
49	11.1	0.0	19.6



#11
 Trichlorofluoromethane
 Concen: 0.27 ppbv
 RT: 7.708 min Scan# 512
 Delta R.T. -0.018 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

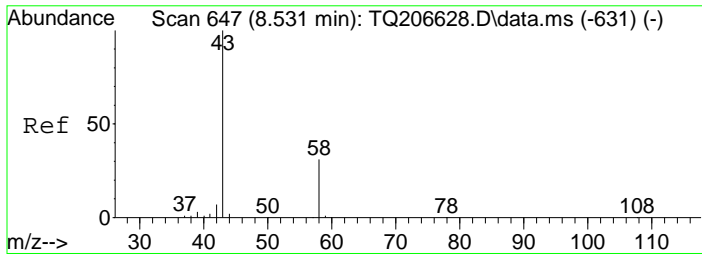
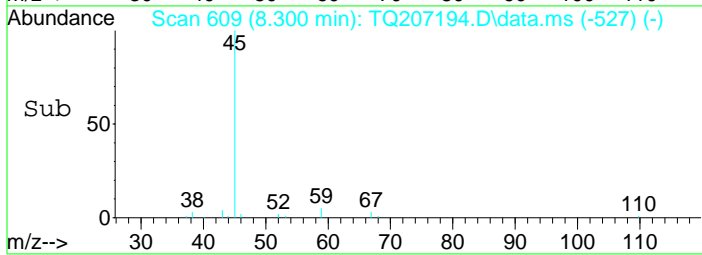
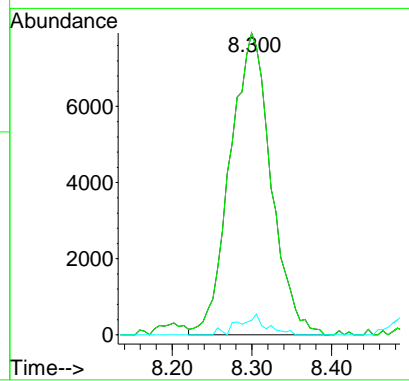
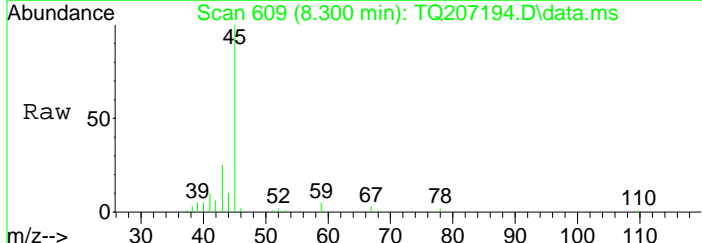
Tgt Ion	Resp	Lower	Upper
101	100		
103	64.6	42.3	87.8
66	15.4	7.8	16.2





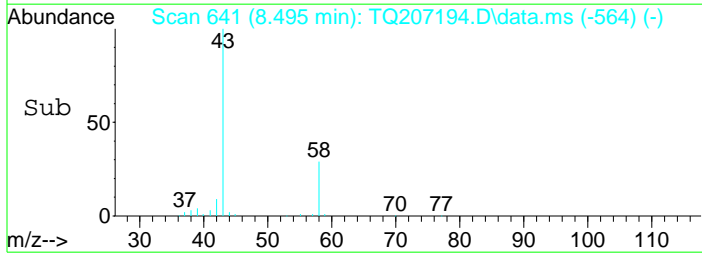
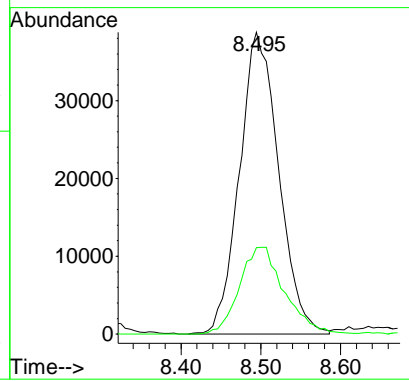
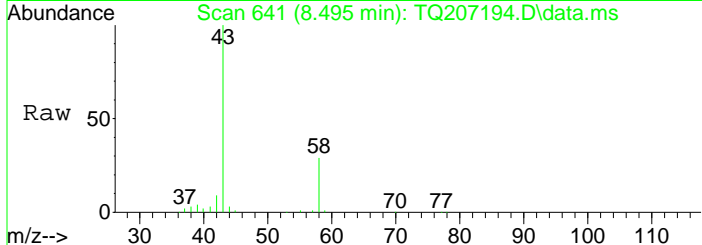
#12
 Isopropanol
 Concen: 0.42 ppbv
 RT: 8.300 min Scan# 609
 Delta R.T. -0.001 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

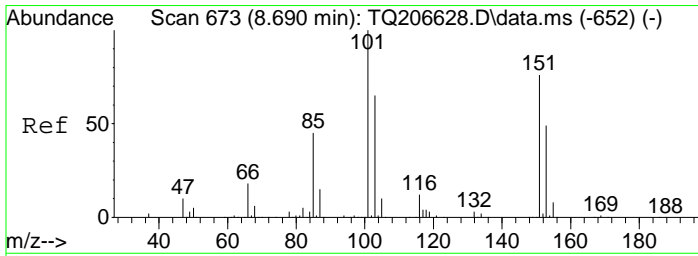
Tgt Ion	Resp	Lower	Upper
45	100		
45	100.0	65.0	135.0
59	3.0	0.0	10.0



#14
 Acetone
 Concen: 2.05 ppbv
 RT: 8.495 min Scan# 641
 Delta R.T. -0.031 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

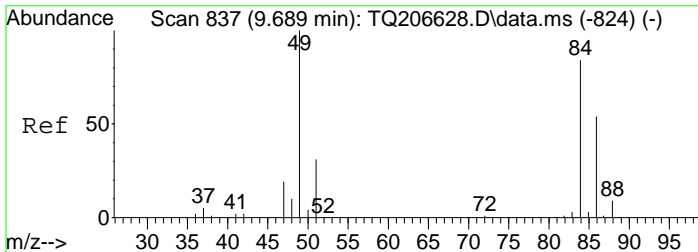
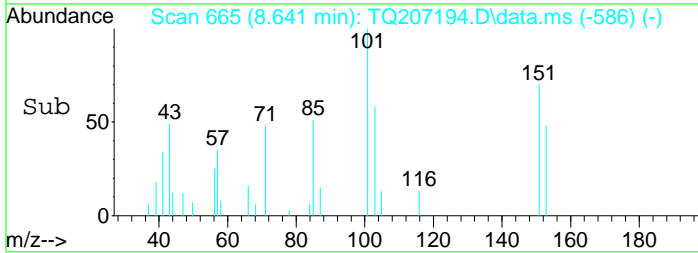
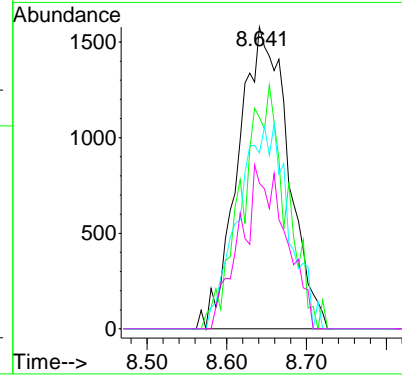
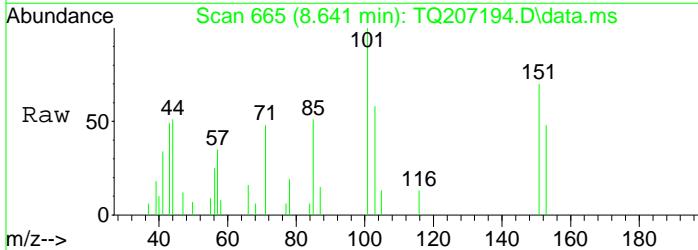
Tgt Ion	Resp	Lower	Upper
43	100		
43	100.0	65.0	135.0
58	32.9	20.9	43.3





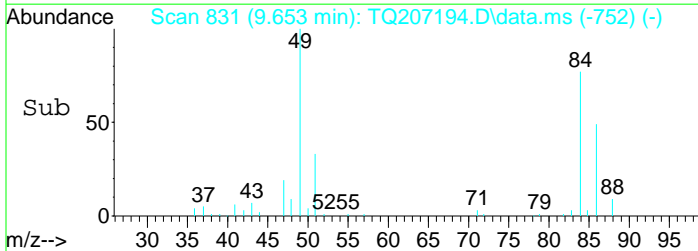
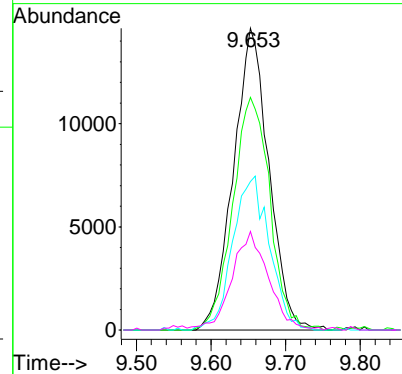
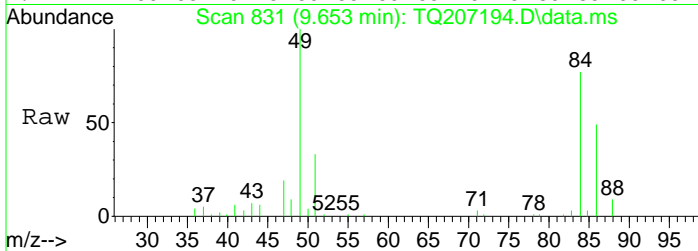
#15
 Freon-113
 Concen: 0.08 ppbv
 RT: 8.641 min Scan# 665
 Delta R.T. -0.019 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

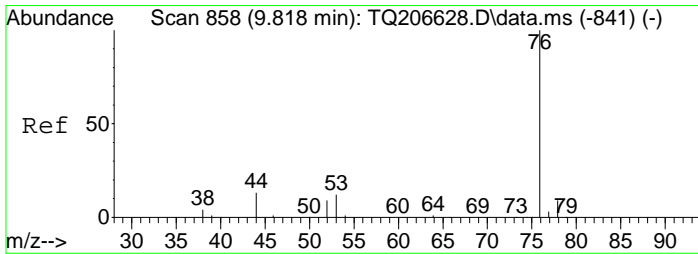
Tgt Ion	Resp	Lower	Upper
101	6886		
151	71.6	50.5	104.9
103	68.2	42.0	87.2
153	49.0	32.4	67.4



#18
 Methylene Chloride
 Concen: 1.07 ppbv
 RT: 9.653 min Scan# 831
 Delta R.T. -0.019 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

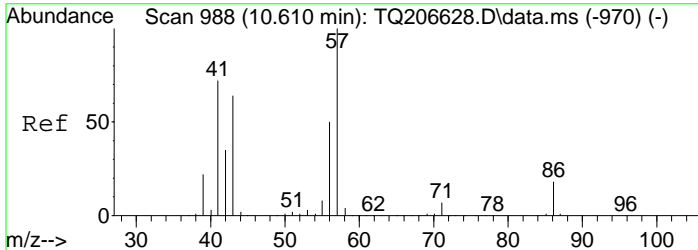
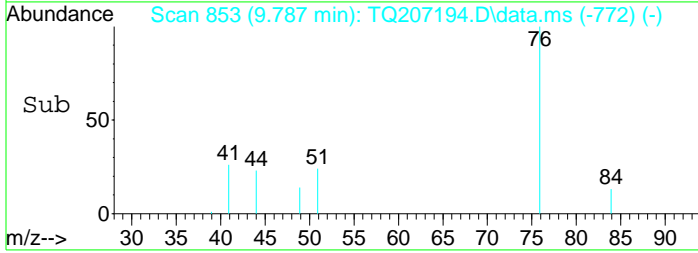
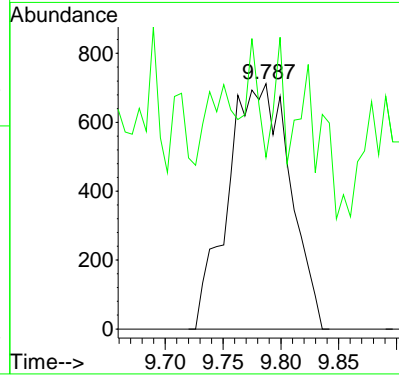
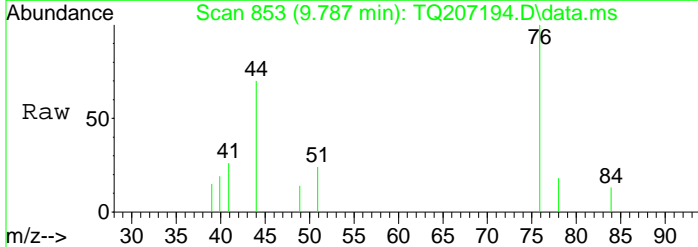
Tgt Ion	Resp	Lower	Upper
49	48196		
84	80.9	49.9	103.5
86	52.9	31.8	66.0
51	33.7	20.2	41.9





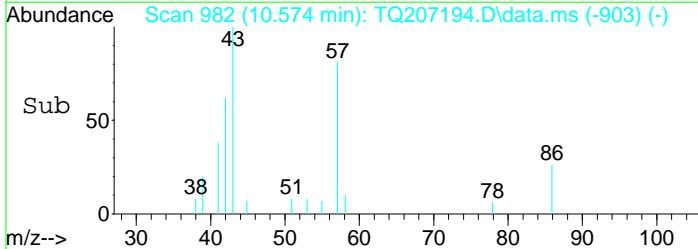
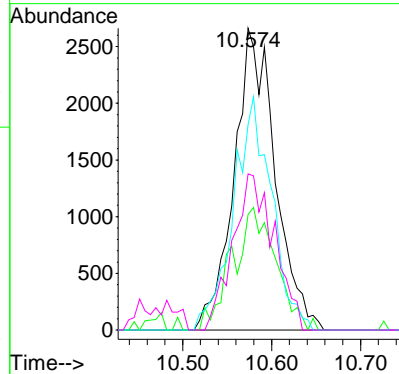
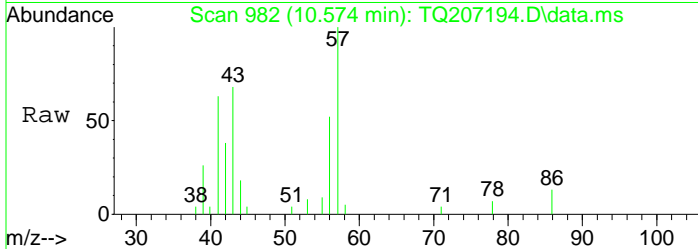
#20
 Carbon disulfide
 Concen: 0.02 ppbv
 RT: 9.787 min Scan# 853
 Delta R.T. -0.006 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

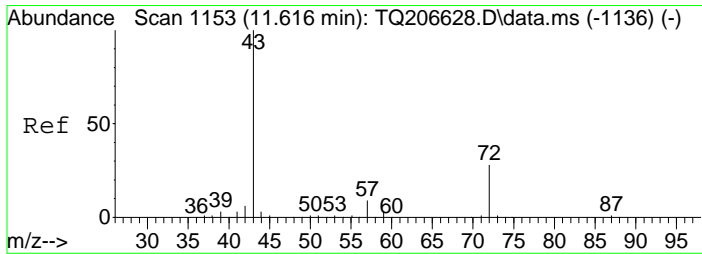
Tgt Ion: 76 Resp: 2660
 Ion Ratio Lower Upper
 76 100
 44 20.3 8.3 17.3#



#23
 Hexane
 Concen: 0.15 ppbv
 RT: 10.574 min Scan# 982
 Delta R.T. -0.020 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

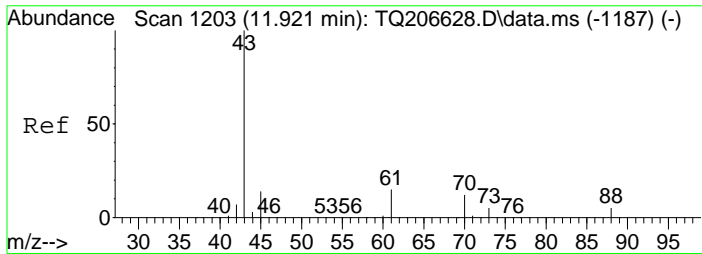
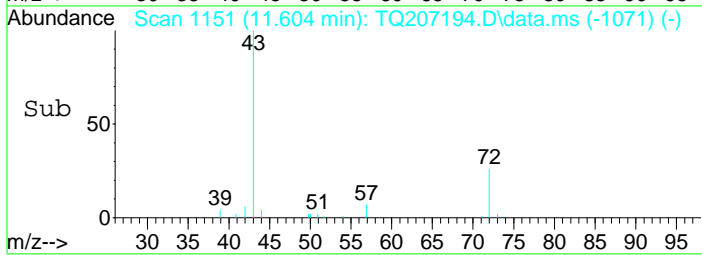
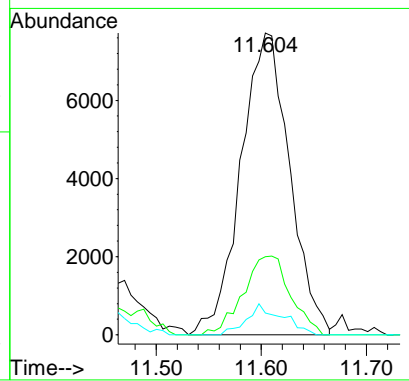
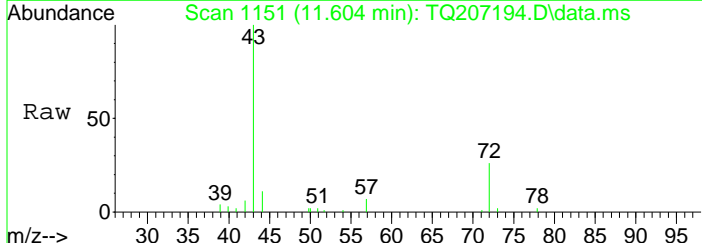
Tgt Ion: 57 Resp: 8537
 Ion Ratio Lower Upper
 57 100
 42 31.8 21.6 45.0
 43 72.3 42.0 87.2
 56 52.1 33.3 69.1





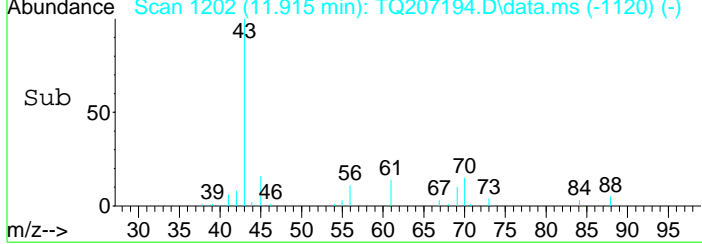
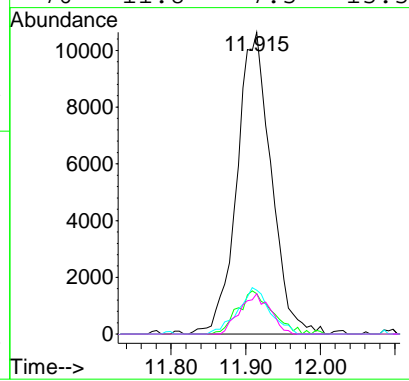
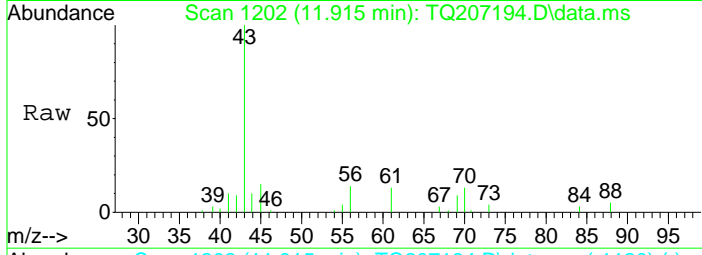
#26
 2-Butanone
 Concen: 0.30 ppbv
 RT: 11.604 min Scan# 1151
 Delta R.T. -0.013 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

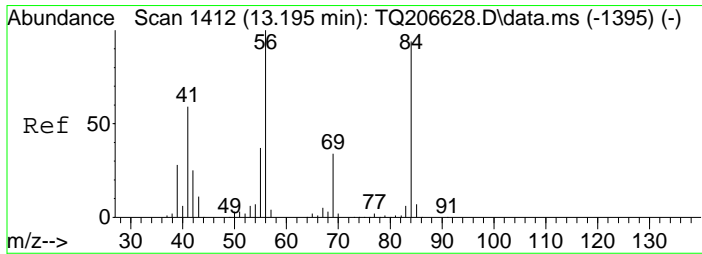
Tgt Ion	Resp	Lower	Upper
43	100		
72	25.2	16.1	33.5
57	7.5	4.9	10.3



#27
 Ethyl Acetate
 Concen: 0.39 ppbv
 RT: 11.915 min Scan# 1202
 Delta R.T. 0.001 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

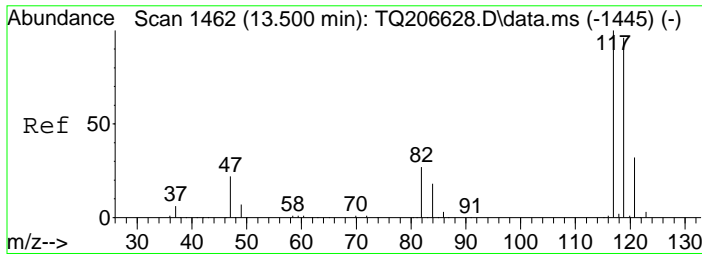
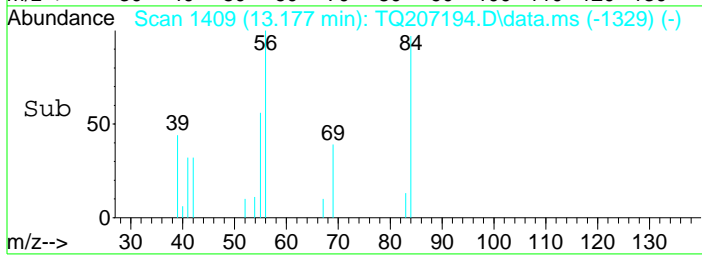
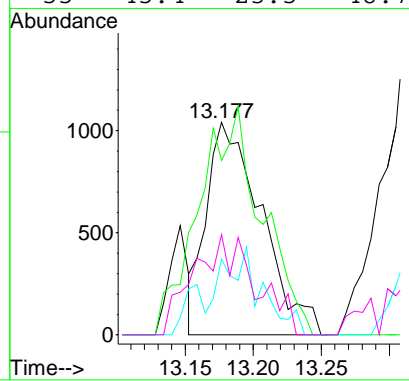
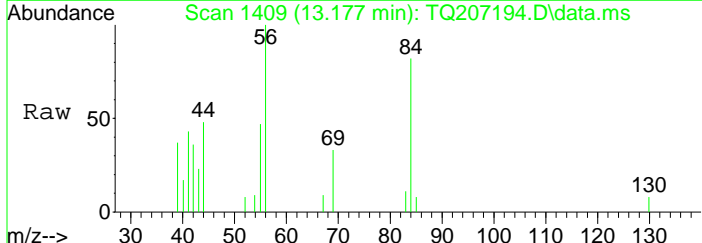
Tgt Ion	Resp	Lower	Upper
43	100		
61	14.4	51.4	106.8#
45	14.4	9.4	19.6
70	11.8	7.5	15.5





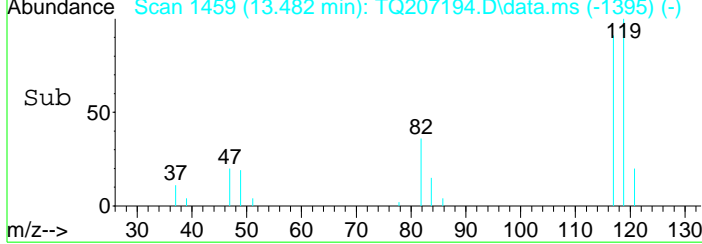
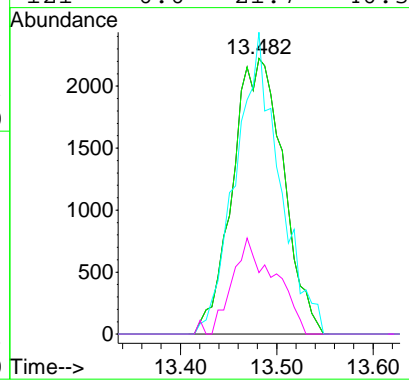
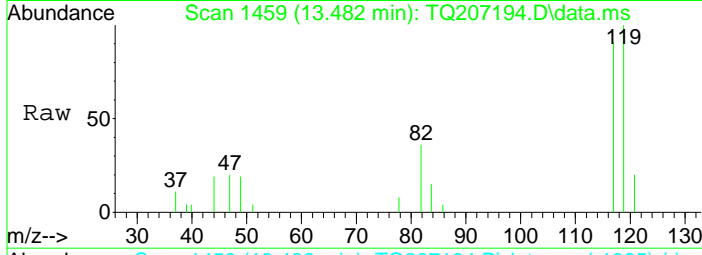
#32
 Cyclohexane
 Concen: 0.05 ppbv
 RT: 13.177 min Scan# 1409
 Delta R.T. -0.010 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

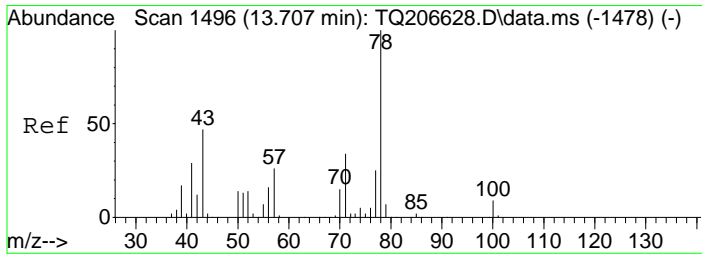
Tgt Ion	Resp	Lower	Upper
56	100		
84	122.6	54.1	112.3#
42	0.0	15.3	31.7#
55	45.4	23.5	48.7



#33
 Carbon Tetrachloride
 Concen: 0.09 ppbv
 RT: 13.482 min Scan# 1459
 Delta R.T. -0.007 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

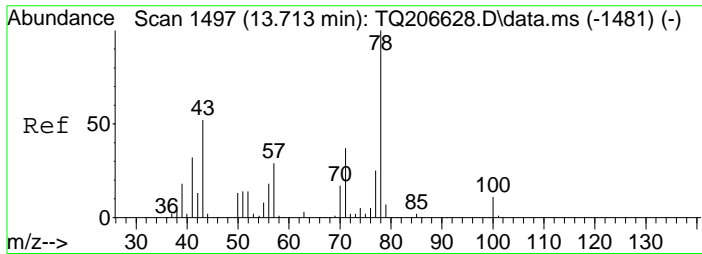
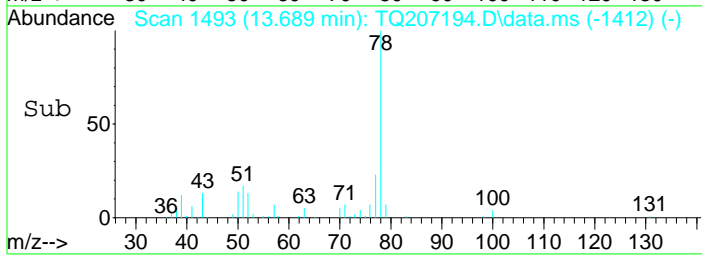
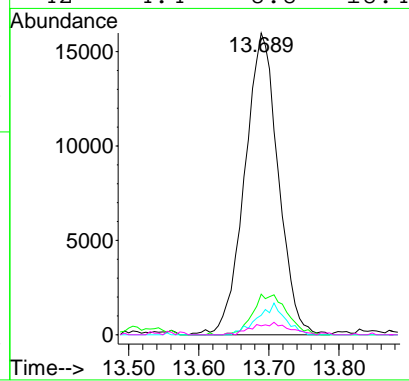
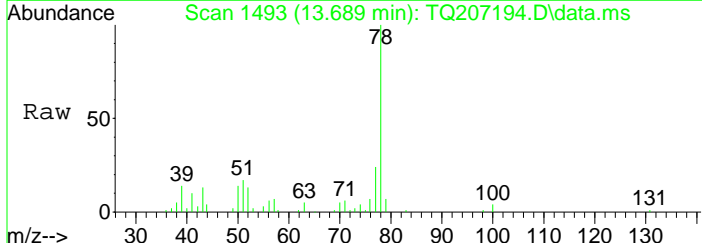
Tgt Ion	Resp	Lower	Upper
117	100		
117	100.0	80.0	120.0
119	94.1	76.9	115.3
121	0.0	21.7	40.3#





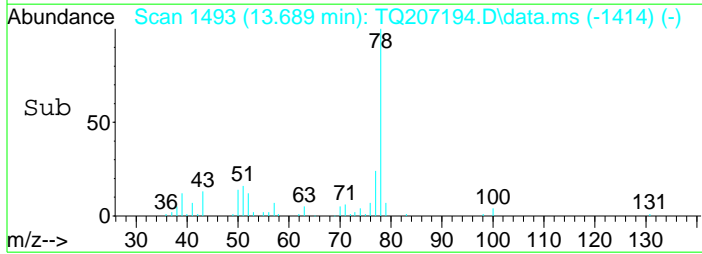
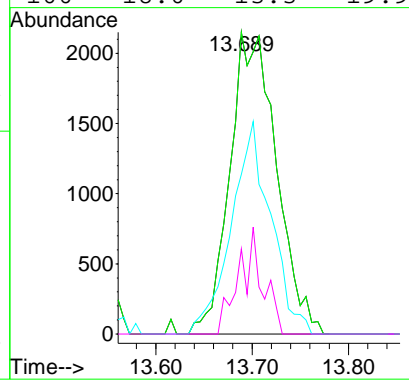
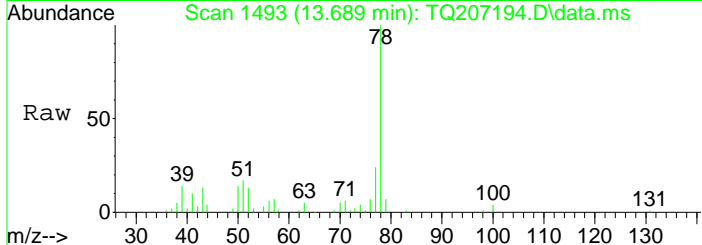
#35
Benzene
Concen: 0.39 ppbv
RT: 13.689 min Scan# 1493
Delta R.T. -0.007 min
Lab File: TQ207194.D
Acq: 6 Mar 2019 4:43 pm

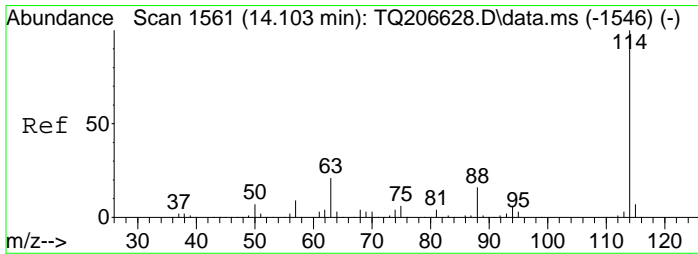
Tgt Ion	Resp	Lower	Upper
78	53161		
78	100		
43	13.6	37.5	77.9#
71	8.5	22.0	45.8#
42	4.4	8.8	18.4#



#36
n-Heptane
Concen: 0.11 ppbv
RT: 13.689 min Scan# 1493
Delta R.T. -0.020 min
Lab File: TQ207194.D
Acq: 6 Mar 2019 4:43 pm

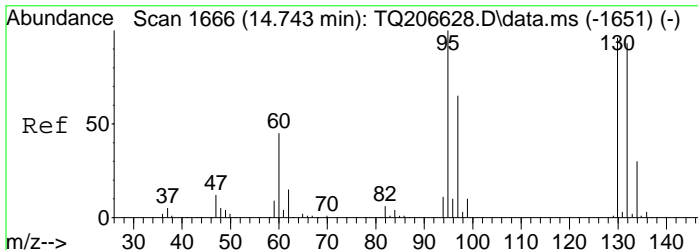
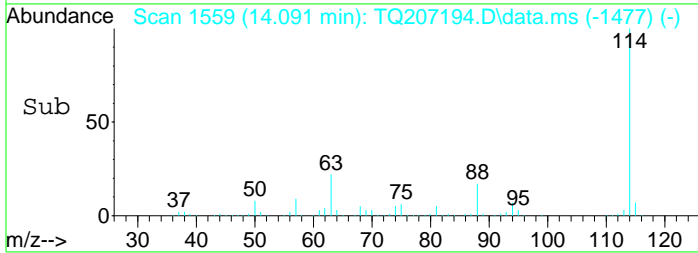
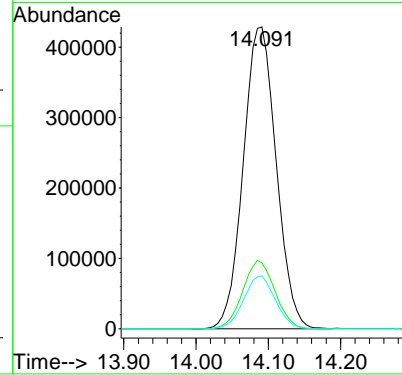
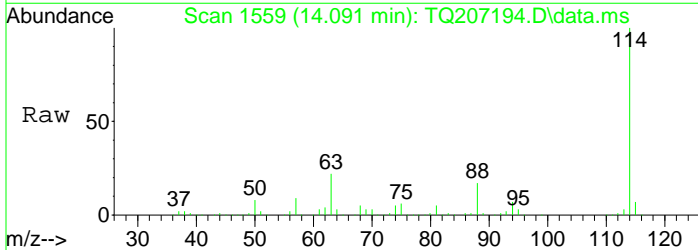
Tgt Ion	Resp	Lower	Upper
43	7250		
43	100		
43	100.0	80.0	120.0
57	59.5	42.6	64.0
100	18.0	13.3	19.9





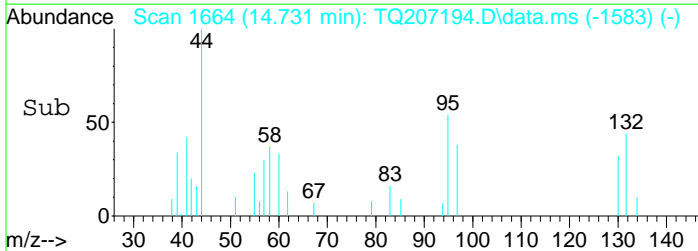
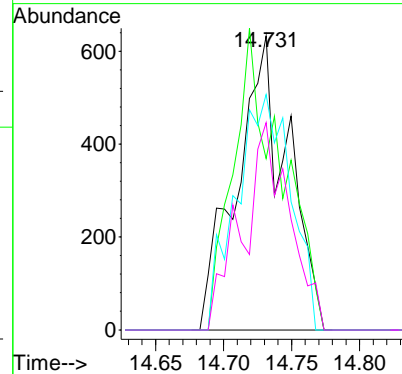
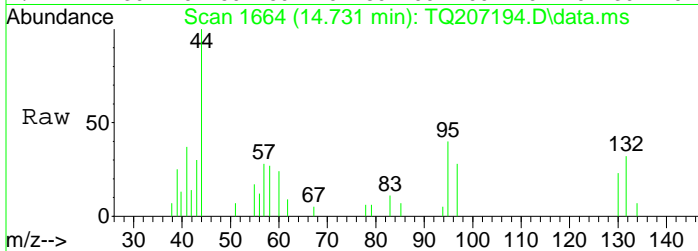
#37
 1,4-Difluorobenzene
 Concen: 10.00 ppbv
 RT: 14.091 min Scan# 1559
 Delta R.T. -0.001 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

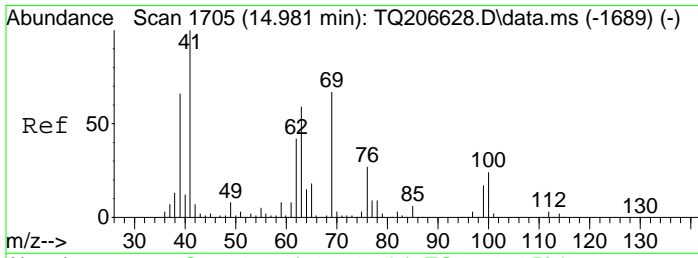
Tgt Ion	Resp	Lower	Upper
114	100		
63	22.2	12.9	26.9
88	17.0	10.7	22.3



#38
 Trichloroethylene
 Concen: 0.03 ppbv
 RT: 14.731 min Scan# 1664
 Delta R.T. -0.003 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

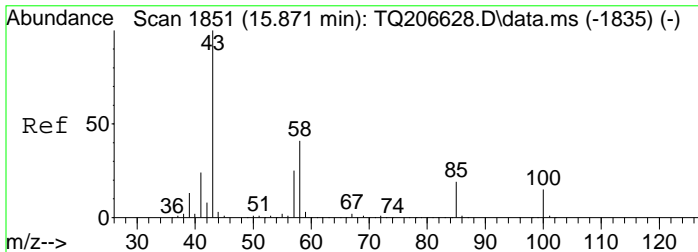
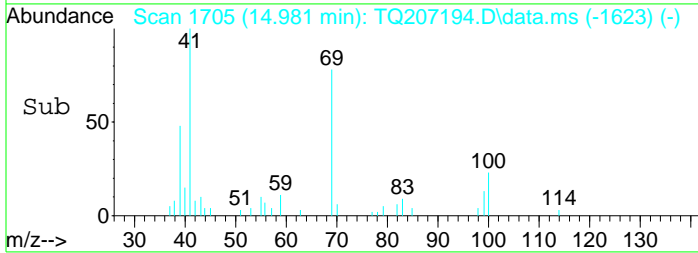
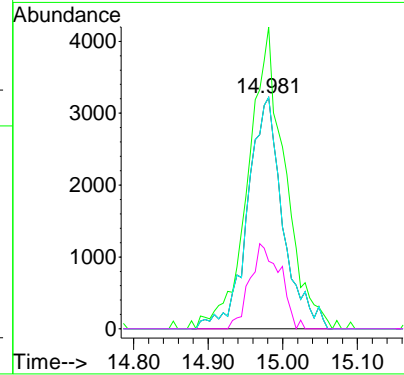
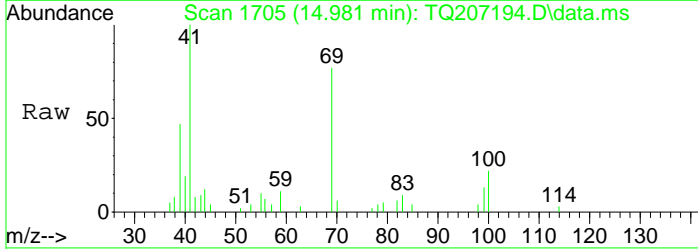
Tgt Ion	Resp	Lower	Upper
95	100		
130	96.7	66.0	137.0
132	85.6	63.3	131.5
97	64.7	41.9	87.1





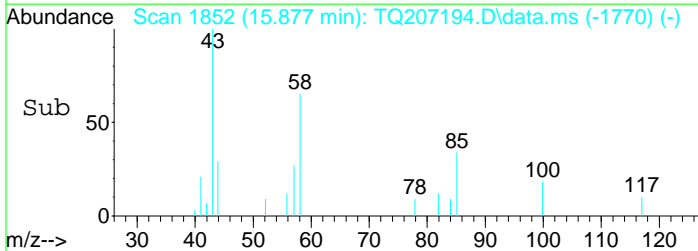
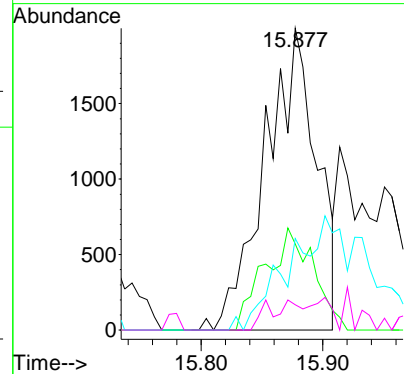
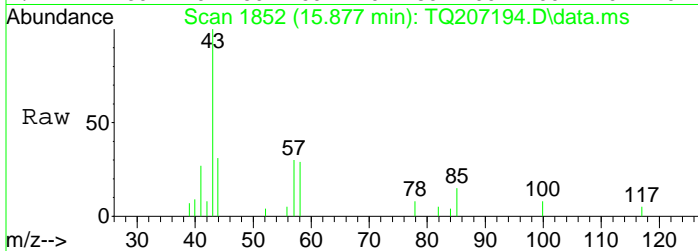
#40
 Methyl Methacrylate
 Concen: 0.26 ppbv
 RT: 14.981 min Scan# 1705
 Delta R.T. 0.002 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

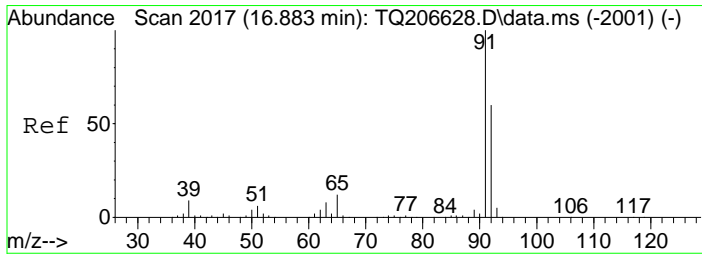
Tgt Ion	Resp	Lower	Upper
69	10535		
69	100		
41	136.8	70.0	210.0
69	100.0	50.0	150.0
100	31.8	17.5	52.5



#43
 Methyl Isobutyl Ketone
 Concen: 0.07 ppbv
 RT: 15.877 min Scan# 1852
 Delta R.T. 0.001 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

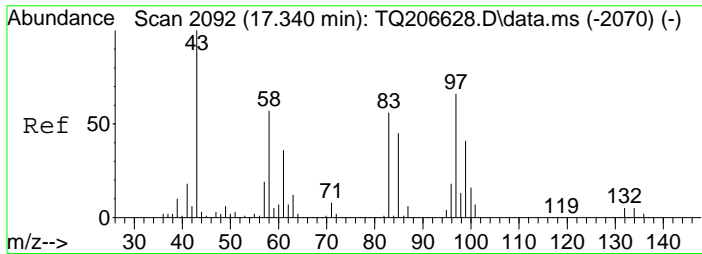
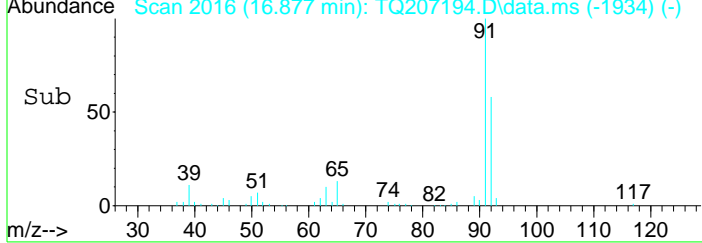
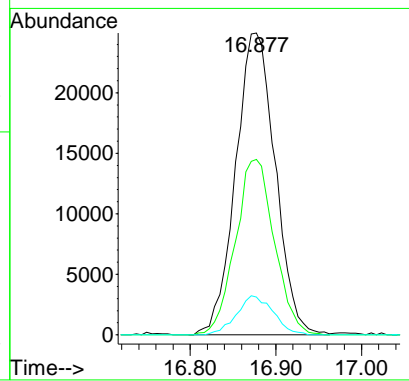
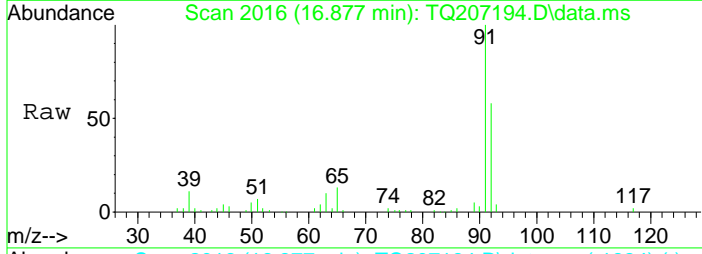
Tgt Ion	Resp	Lower	Upper
43	5878		
43	100		
58	31.9	25.1	52.1
57	39.2	15.5	32.3#
42	0.0	5.0	15.0#





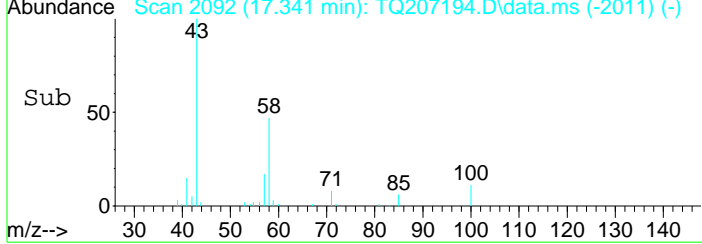
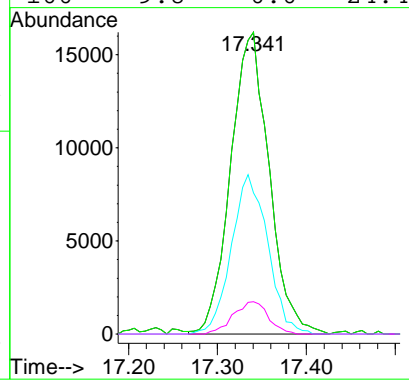
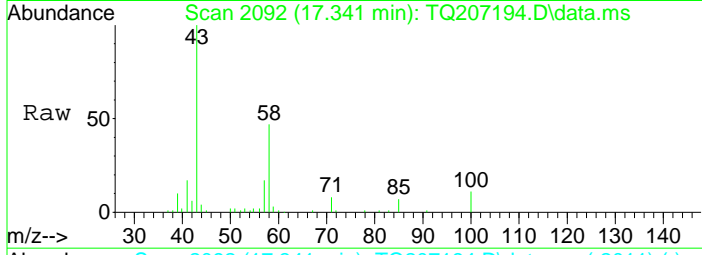
#45
 Toluene
 Concen: 0.56 ppbv
 RT: 16.877 min Scan# 2016
 Delta R.T. 0.000 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

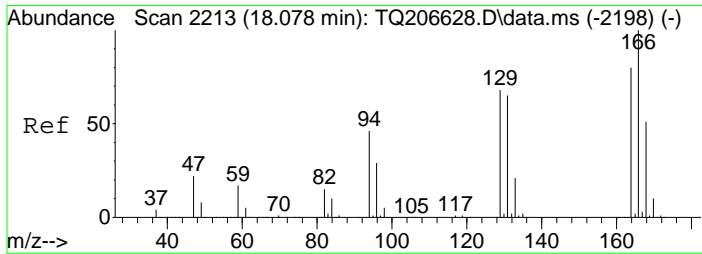
Tgt Ion	Resp	Lower	Upper
91	100		
92	57.0	38.7	80.3
65	12.0	7.5	15.5



#48
 2-Hexanone
 Concen: 0.66 ppbv
 RT: 17.341 min Scan# 2092
 Delta R.T. -0.004 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

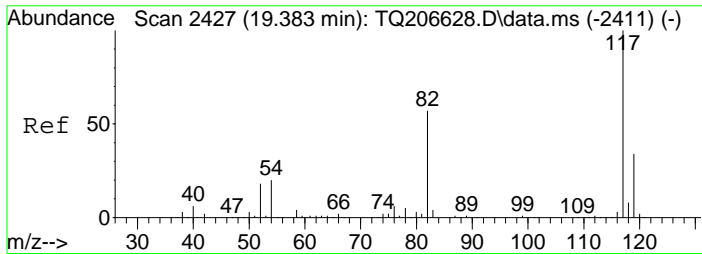
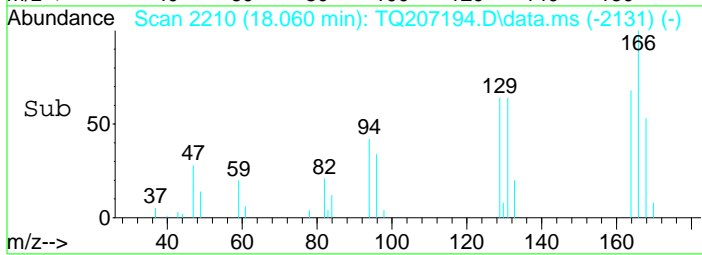
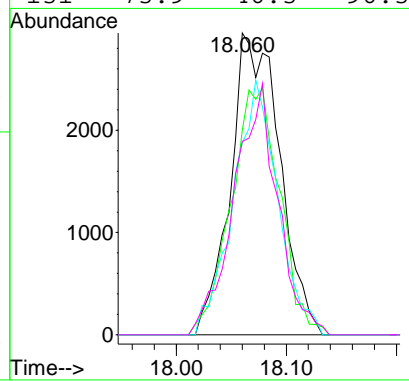
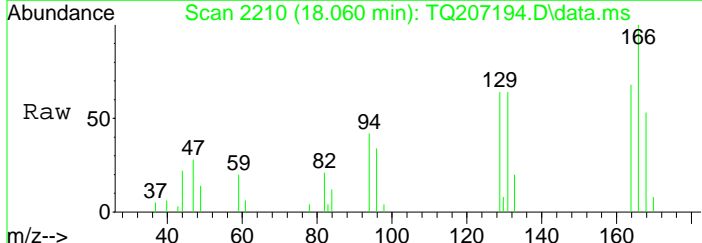
Tgt Ion	Resp	Lower	Upper
43	100		
43	100.0	80.0	120.0
58	0.0	44.2	66.4#
100	9.8	0.0	24.4





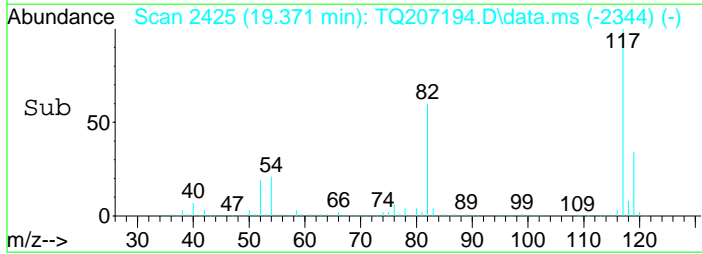
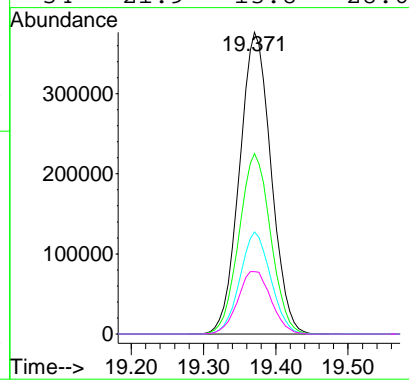
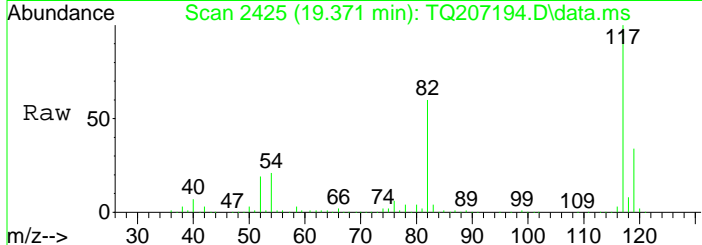
#50
 Tetrachloroethylene
 Concen: 0.13 ppbv
 RT: 18.060 min Scan# 2210
 Delta R.T. -0.017 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

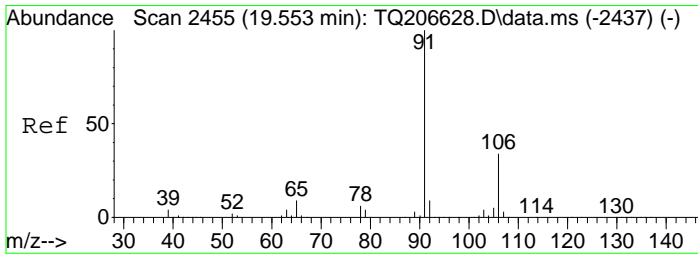
Tgt Ion	Resp	Lower	Upper
166	9211		
166	100		
164	80.9	51.0	106.0
129	76.2	48.1	99.9
131	73.9	46.3	96.3



#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 19.371 min Scan# 2425
 Delta R.T. -0.006 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

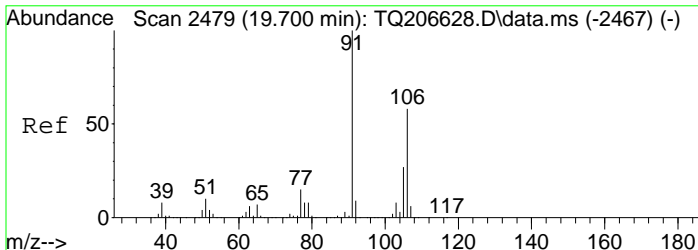
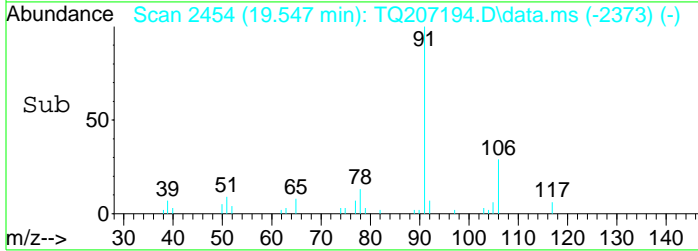
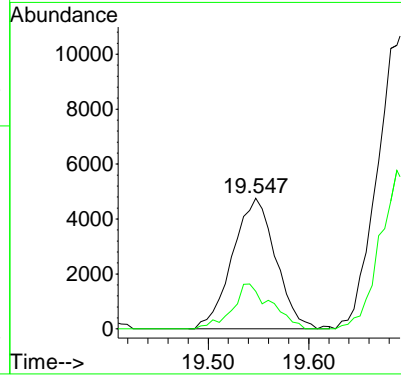
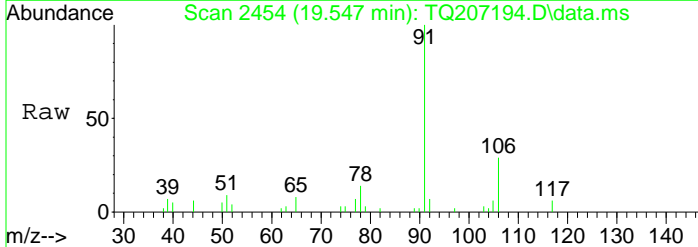
Tgt Ion	Resp	Lower	Upper
117	1142530		
117	100		
82	60.1	37.1	77.1
119	33.0	22.1	45.9
54	21.9	13.8	28.6





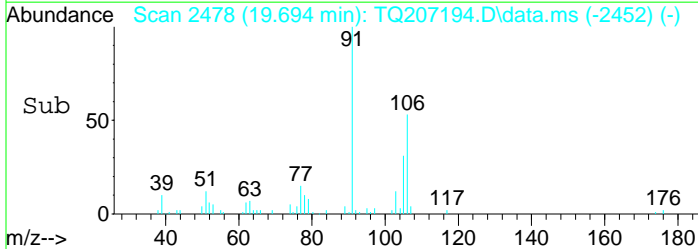
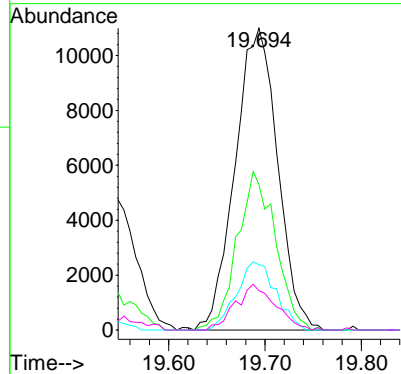
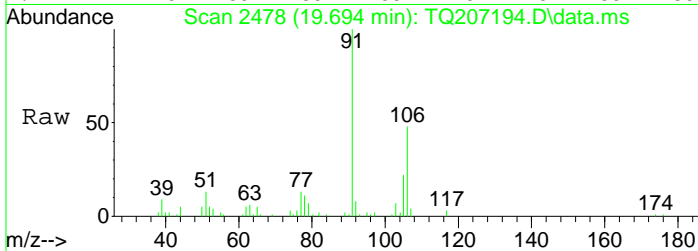
#56
 Ethylbenzene
 Concen: 0.09 ppbv
 RT: 19.547 min Scan# 2454
 Delta R.T. -0.005 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

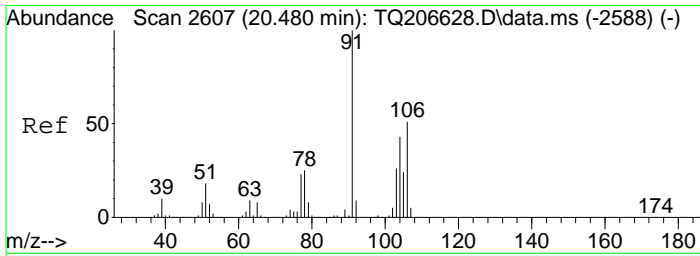
Tgt Ion: 91 Resp: 14226
 Ion Ratio Lower Upper
 91 100
 106 30.7 20.5 42.7



#57
 p- & m-Xylenes
 Concen: 0.28 ppbv
 RT: 19.694 min Scan# 2478
 Delta R.T. -0.000 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

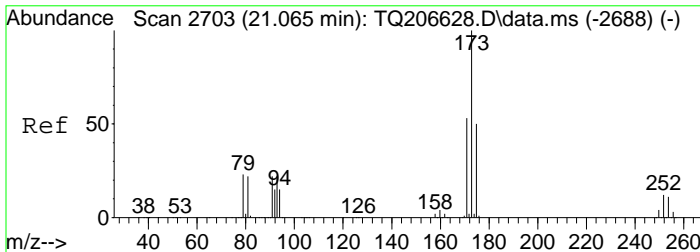
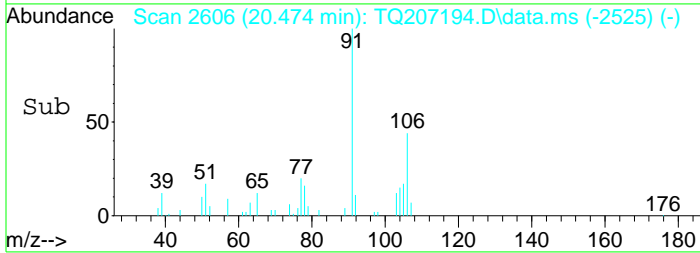
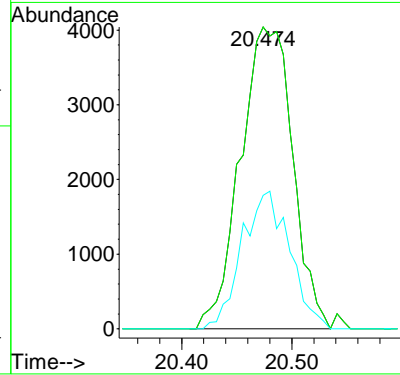
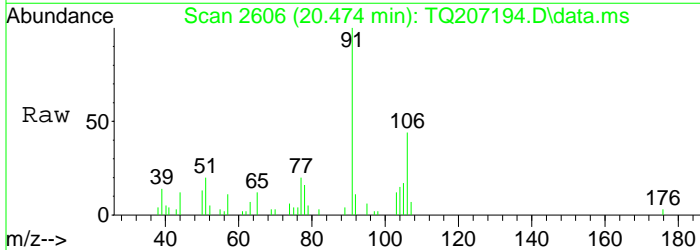
Tgt Ion: 91 Resp: 33730
 Ion Ratio Lower Upper
 91 100
 106 47.3 32.6 67.8
 105 20.8 14.5 30.1
 77 14.2 8.5 17.7





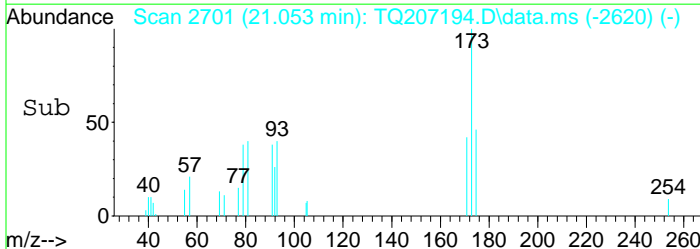
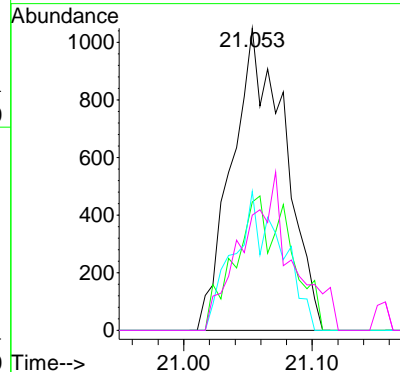
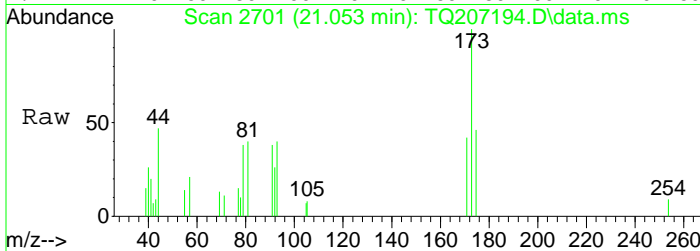
#58
 o-Xylene
 Concen: 0.10 ppbv
 RT: 20.474 min Scan# 2606
 Delta R.T. -0.006 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

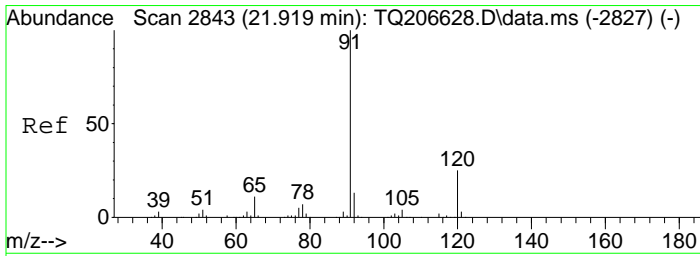
Tgt Ion	Resp	Lower	Upper
91	100		
91	100.0	80.0	120.0
106	41.7	38.2	57.2



#60
 Bromoform
 Concen: 0.04 ppbv
 RT: 21.053 min Scan# 2701
 Delta R.T. -0.007 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

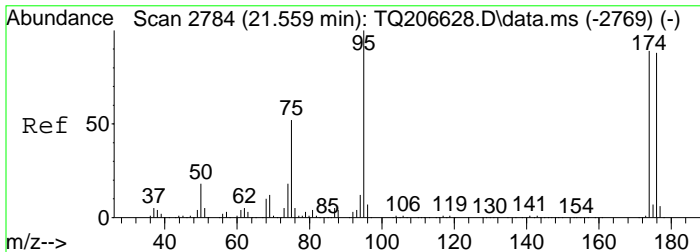
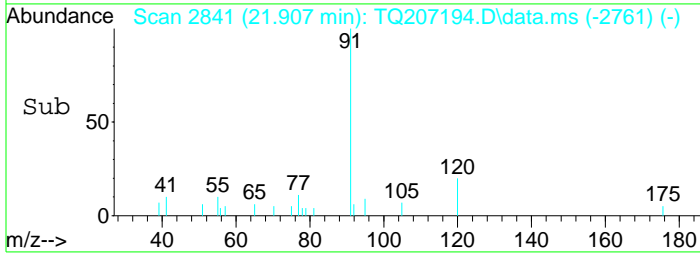
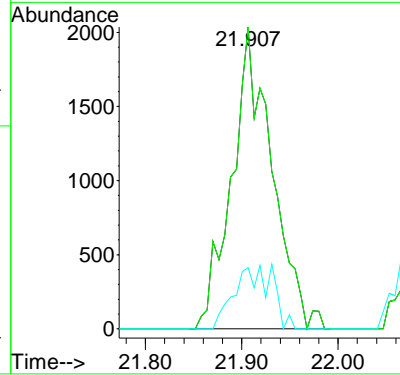
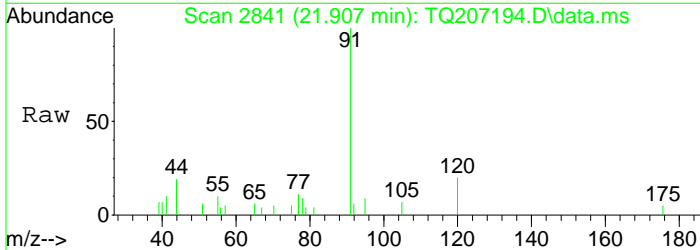
Tgt Ion	Resp	Lower	Upper
173	100		
171	27.2	33.7	69.9#
175	40.8	31.8	66.0
91	48.8	14.6	30.2#





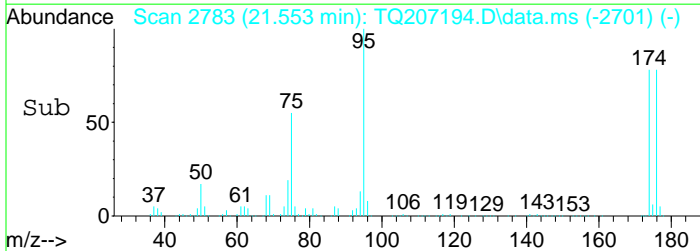
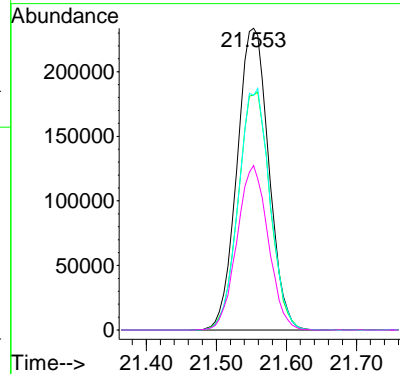
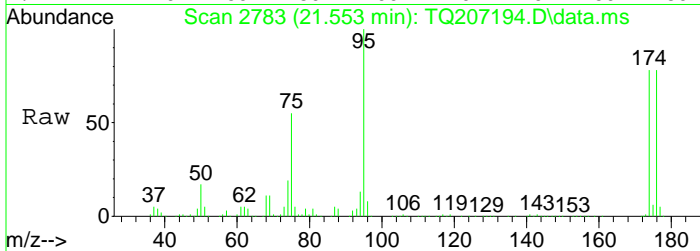
#61
 n-Propylbenzene
 Concen: 0.03 ppbv
 RT: 21.907 min Scan# 2841
 Delta R.T. -0.011 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

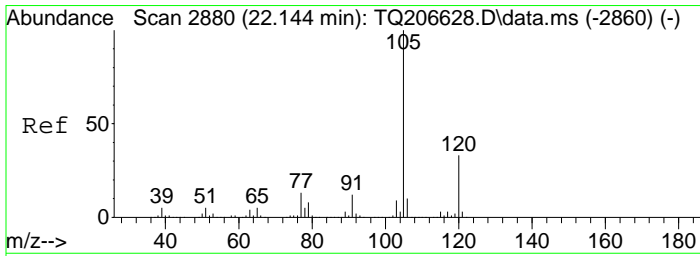
Tgt Ion	Resp	Lower	Upper
91	100		
91	100.0	80.0	120.0
120	11.1	10.0	30.0



#64
 p-Bromofluorobenzene
 Concen: 9.14 ppbv
 RT: 21.553 min Scan# 2783
 Delta R.T. 0.000 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

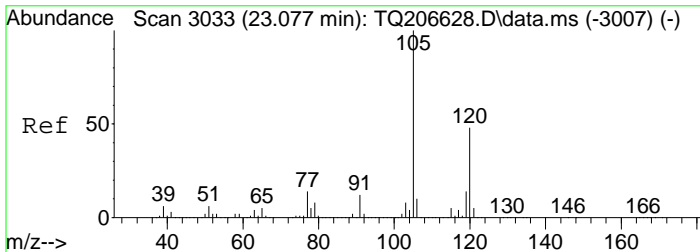
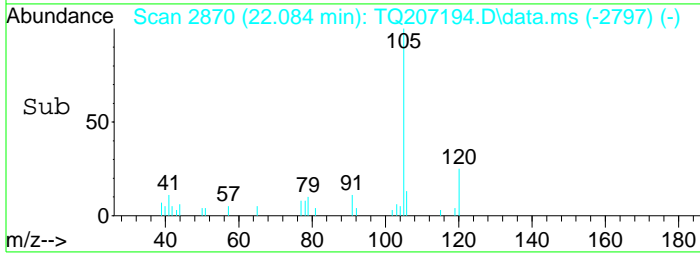
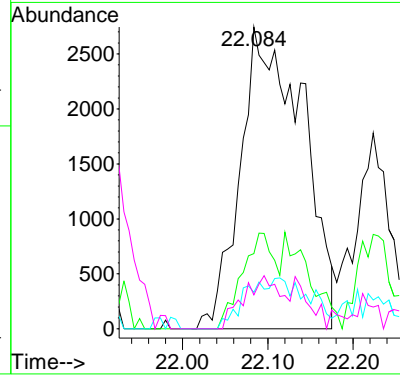
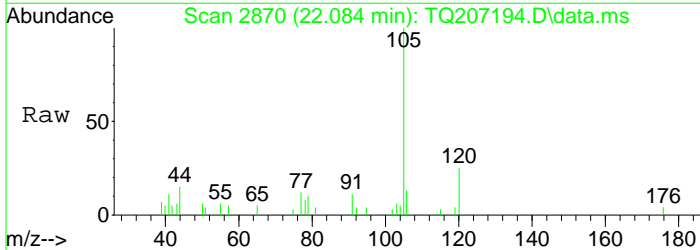
Tgt Ion	Resp	Lower	Upper
95	100		
174	79.0	53.2	110.6
176	79.3	51.6	107.2
75	53.6	30.7	63.7





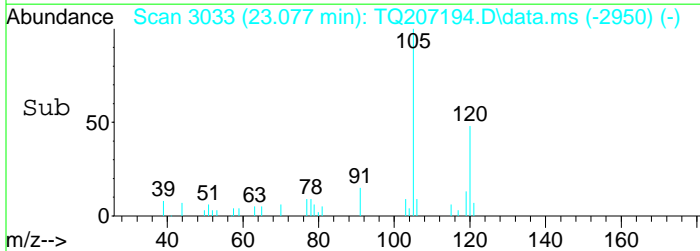
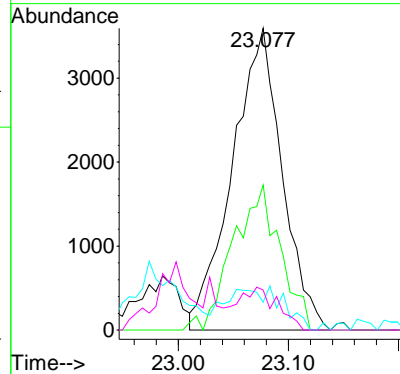
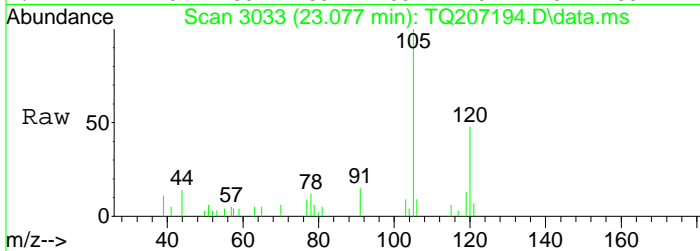
#65
 4-Ethyltoluene
 Concen: 0.08 ppbv m
 RT: 22.084 min Scan# 2870
 Delta R.T. -0.055 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

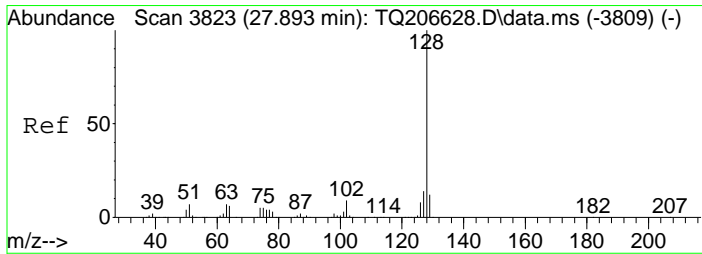
Tgt Ion	Resp	Lower	Upper
105	13960		
120	16.9	19.6	40.8#
77	4.1	7.3	15.3#
91	10.8	7.1	14.7



#68
 1,2,4-Trimethylbenzene
 Concen: 0.07 ppbv
 RT: 23.077 min Scan# 3033
 Delta R.T. 0.006 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

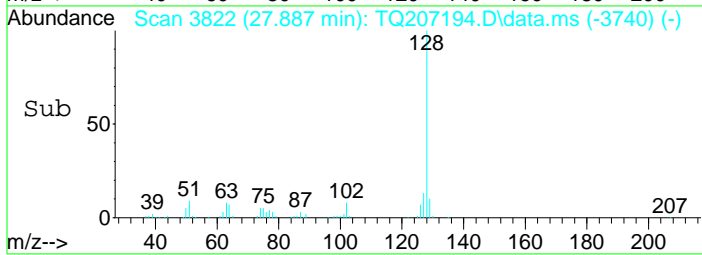
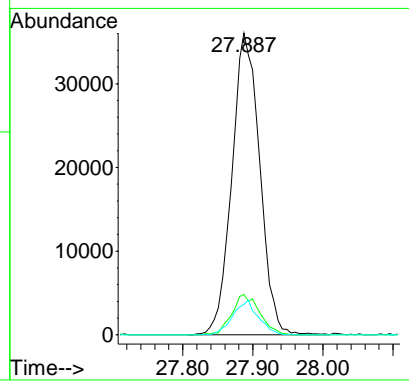
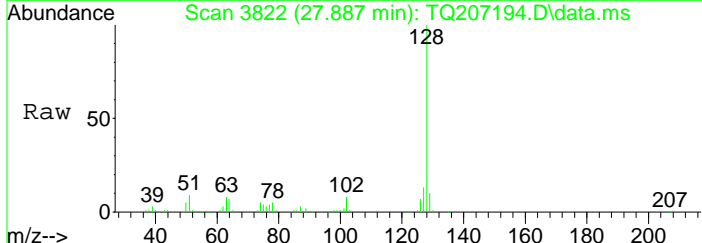
Tgt Ion	Resp	Lower	Upper
105	11347		
120	45.3	30.2	62.6
77	5.8	8.1	16.9#
119	11.4	7.8	16.2





#78
 Naphthalene
 Concen: 0.69 ppbv
 RT: 27.887 min Scan# 3822
 Delta R.T. -0.002 min
 Lab File: TQ207194.D
 Acq: 6 Mar 2019 4:43 pm

Tgt Ion	Resp	Ion Ratio	Lower	Upper
128	99827	100		
127		13.4	8.1	16.9
129		10.5	7.1	14.7



AIR Standards Data

FORM VI

INITIAL CALIBRATION DATA

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Calibration: YB90001

Instrument: TO15 AIR2

Calibration Date: 01/31/19 23:37

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,1,1,2-Tetrachloroethane	0.025		0.05		0.1	0.4359064	0.2	0.4328667	0.5	0.4309431	3	0.4983998
1,1,1-Trichloroethane	0.025		0.05		0.1	2.01713	0.2	1.774486	0.5	1.800767	3	2.036879
1,1,2,2-Tetrachloroethane	0.025		0.05		0.1	0.8495766	0.2	0.8414181	0.5	0.8636099	3	1.010849
1,1,2-Trichloro-1,2,2-trifluoroethane	0.025		0.05		0.1	1.899427	0.2	1.868709	0.5	1.807705	3	1.954674
1,1,2-Trichloroethane	0.025		0.05		0.1	0.3964899	0.2	0.383705	0.5	0.3816969	3	0.4144109
1,1-Dichloroethane	0.025		0.05		0.1	1.625191	0.2	1.602846	0.5	1.605288	3	1.737373
1,1-Dichloroethylene	0.025	1.892298	0.05	1.633618	0.1	1.373201	0.2	1.309252	0.5	1.223491	3	1.359429
1,2,4-Trichlorobenzene	0.025		0.05		0.1	0.2303365	0.2	0.18932	0.5	0.21383	3	0.4007676
1,2,4-Trimethylbenzene	0.025		0.05		0.1	1.151759	0.2	1.157201	0.5	1.306028	3	1.612823
1,2-Dibromoethane	0.025		0.05		0.1	0.5035368	0.2	0.4944728	0.5	0.5164444	3	0.6148189
1,2-Dichlorobenzene	0.025		0.05		0.1	0.6685432	0.2	0.6680192	0.5	0.7133412	3	0.9343836
1,2-Dichloroethane	0.025		0.05		0.1	1.278554	0.2	1.270596	0.5	1.247776	3	1.248604
1,2-Dichloropropane	0.025		0.05		0.1	0.3168427	0.2	0.311813	0.5	0.3020575	3	0.3498311
1,2-Dichlorotetrafluoroethane	0.025		0.05		0.1	3.677915	0.2	3.515778	0.5	3.357974	3	3.791161
1,3,5-Trimethylbenzene	0.025		0.05		0.1	1.204359	0.2	1.185378	0.5	1.275659	3	1.503247
1,3-Butadiene	0.025		0.05		0.1	0.8453581	0.2	0.8568331	0.5	0.7129323	3	0.7762808
1,3-Dichlorobenzene	0.025		0.05		0.1	0.646307	0.2	0.6575758	0.5	0.7396555	3	0.9482006
1,3-Dichloropropane	0.025		0.05		0.1	0.5863403	0.2	0.5374888	0.5	0.5219786	3	0.6107309
1,4-Dichlorobenzene	0.025		0.05		0.1	0.559049	0.2	0.6141079	0.5	0.6520617	3	0.9062418
1,4-Dioxane	0.025		0.05		0.1	0.1844108	0.2	0.185151	0.5	0.178466	3	0.2345144
2-Butanone	0.025		0.05		0.1	1.846238	0.2	1.798226	0.5	1.786045	3	1.934076
2-Hexanone	0.025		0.05		0.1	0.5132744	0.2	0.497806	0.5	0.5436042	3	0.6684659
3-Chloropropene	0.025		0.05		0.1	1.110493	0.2	0.9924432	0.5	0.921488	3	1.069762
4-Methyl-2-pentanone	0.025		0.05		0.1	0.6199855	0.2	0.5813468	0.5	0.6187316	3	0.7568249
Acetone	0.025		0.05		0.1	1.726917	0.2	1.616397	0.5	1.518556	3	1.358902
Acrolein	0.025		0.05		0.1	0.2712022	0.2	0.2736362	0.5	0.2653092	3	0.3011656
Acrylonitrile	0.025		0.05		0.1	0.6198619	0.2	0.575949	0.5	0.5840361	3	0.6621994
Benzene	0.025		0.05		0.1	3.182025	0.2	2.997393	0.5	2.846392	3	3.102968
Benzyl chloride	0.025		0.05		0.1	0.4658103	0.2	0.4656548	0.5	0.6263056	3	1.132313
Bromodichloromethane	0.025		0.05		0.1	0.6456392	0.2	0.6319414	0.5	0.6226742	3	0.721745
Bromoform	0.025		0.05		0.1	0.4593695	0.2	0.4881178	0.5	0.5311277	3	0.7339658

FORM VI

INITIAL CALIBRATION DATA

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Calibration: YB90001

Instrument: TO15 AIR2

Calibration Date: 01/31/19 23:37

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Bromomethane	0.025		0.05		0.1	0.883379	0.2	0.7012649	0.5	0.766261	3	0.8377063
Carbon disulfide	0.025		0.05		0.1	2.536277	0.2	2.473125	0.5	2.35736	3	2.506426
Carbon tetrachloride	0.025	2.255625	0.05	2.11975	0.1	1.978098	0.2	1.928689	0.5	1.825719	3	2.018152
Chlorobenzene	0.025		0.05		0.1	0.8797105	0.2	0.8601767	0.5	0.8431725	3	0.9461489
Chloroethane	0.025		0.05		0.1	0.5017544	0.2	0.4617676	0.5	0.4191129	3	0.458528
Chloroform	0.025		0.05		0.1	1.924707	0.2	1.961567	0.5	1.969115	3	2.078186
Chloromethane	0.025		0.05		0.1	0.9640723	0.2	0.8110345	0.5	0.9039638	3	0.915829
cis-1,2-Dichloroethylene	0.025	1.656322	0.05	1.375434	0.1	1.357629	0.2	1.147801	0.5	1.233454	3	1.256941
cis-1,3-Dichloropropylene	0.025		0.05		0.1	0.4902399	0.2	0.4602636	0.5	0.4631324	3	0.5715374
Cyclohexane	0.025		0.05		0.1	1.122425	0.2	1.172907	0.5	1.161489	3	1.352123
Dibromochloromethane	0.025		0.05		0.1	0.543629	0.2	0.5105424	0.5	0.5299513	3	0.6525202
Dichlorodifluoromethane	0.025		0.05		0.1	2.427068	0.2	2.368187	0.5	2.135194	3	2.493425
Ethanol	0.025		0.05		0.1		0.2		0.5		3	
Ethyl acetate	0.025		0.05		0.1	1.955447	0.2	1.818499	0.5	1.8307	3	2.07423
Ethyl Benzene	0.025		0.05		0.1	1.494043	0.2	1.412649	0.5	1.461352	3	1.632251
Hexachlorobutadiene	0.025		0.05		0.1	0.7312647	0.2	0.6228172	0.5	0.6008777	3	0.7760806
Isopropanol	0.025		0.05		0.1	1.599911	0.2	1.509043	0.5	1.295768	3	1.479527
Isopropylbenzene	0.025		0.05		0.1	1.511142	0.2	1.523546	0.5	1.614133	3	1.957242
Methyl Methacrylate	0.025		0.05		0.1	0.2488807	0.2	0.2247285	0.5	0.25977	3	0.3407584
Methyl tert-butyl ether (MTBE)	0.025		0.05		0.1	2.475403	0.2	2.285834	0.5	2.398369	3	2.670654
Methylene chloride	0.025		0.05		0.1	1.227589	0.2	1.05736	0.5	0.9748612	3	0.9833105
Naphthalene	0.025		0.05		0.1	1.294531	0.2	0.966147	0.5	0.9293053	3	1.125471
n-Butylbenzene	0.025		0.05		0.1	1.235413	0.2	1.232472	0.5	1.372724	3	1.9217
n-Decane	0.025		0.05		0.1		0.2		0.5		3	
n-Heptane	0.025		0.05		0.1	1.389785	0.2	1.396542	0.5	1.403492	3	1.570808
n-Hexane	0.025		0.05		0.1	1.295744	0.2	1.159461	0.5	1.15375	3	1.348198
n-Nonane	0.025		0.05		0.1		0.2		0.5		3	
n-octane	0.025		0.05		0.1		0.2		0.5		3	
n-pentane	0.025		0.05		0.1		0.2		0.5		3	
n-Propylbenzene	0.025		0.05		0.1	1.803357	0.2	1.846816	0.5	1.989082	3	2.34799
n-undecane	0.025		0.05		0.1		0.2		0.5		3	

FORM VI

INITIAL CALIBRATION DATA

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Calibration: YB90001Instrument: TO15 AIR2Calibration Date: 01/31/19 23:37

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
o-Xylene	0.025		0.05		0.1	1.155593	0.2	1.108176	0.5	1.141789	3	1.465202
p- & m- Xylenes	0.05		0.1		0.2	1.155861	0.4	1.135447	1	1.140968	6	1.318807
p-Ethyltoluene	0.025		0.05		0.1	1.23457	0.2	1.278107	0.5	1.492361	3	1.878174
p-Isopropyltoluene	0.025		0.05		0.1	1.397814	0.2	1.36059	0.5	1.492115	3	1.97094
Propylene	0.025		0.05		0.1	0.419241	0.2	0.4562004	0.5	0.4067481	3	0.4549888
sec-Butylbenzene	0.025		0.05		0.1	1.858871	0.2	1.844531	0.5	2.012359	3	2.502978
Styrene	0.025		0.05		0.1	0.6506009	0.2	0.6866201	0.5	0.772536	3	1.012279
SURR: p-Bromofluorobenzene	10	0.6229203	10	0.6568387	10	0.6602261	10	0.6618344	10	0.6706105	10	0.7166883
tert-Butylbenzene	0.025		0.05		0.1	1.313623	0.2	1.19125	0.5	1.380899	3	1.807864
Tetrachloroethylene	0.025		0.05		0.1	0.510924	0.2	0.5009638	0.5	0.4737627	3	0.5415444
Tetrahydrofuran	0.025		0.05		0.1	0.8874238	0.2	0.8950687	0.5	0.9234451	3	1.014912
Toluene	0.025		0.05		0.1	1.119426	0.2	1.069153	0.5	1.094436	3	1.224587
trans-1,2-Dichloroethylene	0.025		0.05		0.1	1.220107	0.2	1.162822	0.5	1.115633	3	1.235973
trans-1,3-Dichloropropylene	0.025		0.05		0.1	0.3817155	0.2	0.4201598	0.5	0.4291535	3	0.5235599
Trichloroethylene	0.025	0.546443	0.05	0.4113566	0.1	0.37547	0.2	0.3635654	0.5	0.3602758	3	0.412694
Trichlorofluoromethane (Freon 11)	0.025		0.05		0.1	2.503109	0.2	2.37428	0.5	2.257686	3	2.480322
Vinyl acetate	0.025		0.05		0.1	2.178516	0.2	1.920075	0.5	2.025957	3	2.443168
Vinyl bromide	0.025		0.05		0.1	0.7414074	0.2	0.7151306	0.5	0.7342371	3	0.8248313
Vinyl Chloride	0.025	1.379894	0.05	1.29635	0.1	1.294733	0.2	1.336668	0.5	1.203832	3	1.180855

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Calibration: YB90001Instrument: TO15 AIR2Calibration Date: 01/31/19 23:37

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,1,1,2-Tetrachloroethane	10	0.5004544	20	0.5409724	30	0.5447205	50	0.5030021				
1,1,1-Trichloroethane	10	1.96345	20	1.974617	30	1.91306	50	1.800603				
1,1,2,2-Tetrachloroethane	10	0.9501191	20	0.9284185	30	0.8677379	50	0.7205858				
1,1,2-Trichloro-1,2,2-trifluoroethane	10	1.794971	20	1.805711	30	1.758648	50	1.693513				
1,1,2-Trichloroethane	10	0.4019093	20	0.4166094	30	0.3994123	50	0.3623521				
1,1-Dichloroethane	10	1.600638	20	1.553733	30	1.486685	50	1.401909				
1,1-Dichloroethylene	10	1.279655	20	1.247173	30	1.207084	50	1.151838				
1,2,4-Trichlorobenzene	10	0.71386	20	0.851495	30	0.8729217	50	0.7289297				
1,2,4-Trimethylbenzene	10	1.533447	20	1.461077	30	1.331359	50	1.043845				
1,2-Dibromoethane	10	0.5934955	20	0.6177271	30	0.5825661	50	0.5416502				
1,2-Dichlorobenzene	10	1.00466	20	1.026787	30	0.9700719	50	0.7863229				
1,2-Dichloroethane	10	1.117397	20	1.096578	30	1.056212	50	1.016069				
1,2-Dichloropropane	10	0.332348	20	0.3293555	30	0.313005	50	0.2824483				
1,2-Dichlorotetrafluoroethane	10	2.996476	20	2.733227	30	2.550403	50	2.026385				
1,3,5-Trimethylbenzene	10	1.450962	20	1.389388	30	1.274207	50	0.97066				
1,3-Butadiene	10	0.6239063	20	0.5798307	30	0.5300688	50	0.4865514				
1,3-Dichlorobenzene	10	1.001636	20	1.034143	30	0.984889	50	0.8096055				
1,3-Dichloropropane	10	0.5716451	20	0.5694875	30	0.5339265	50	0.494035				
1,4-Dichlorobenzene	10	0.9826165	20	1.02957	30	0.9815616	50	0.8035297				
1,4-Dioxane	10	0.224736	20	0.2436506	30	0.2412987	50	0.2384045				
2-Butanone	10	1.83343	20	1.806333	30	1.723897	50	1.580627				
2-Hexanone	10	0.5962031	20	0.589863	30	0.5121494	50	0.4085907				
3-Chloropropene	10	1.054469	20	1.049779	30	1.015188	50	0.9701187				
4-Methyl-2-pentanone	10	0.6653668	20	0.6655788	30	0.5949145	50	0.5243838				
Acetone	10	1.267285	20	1.226101	30	1.169658	50	1.104182				
Acrolein	10	0.2940393	20	0.2988858	30	0.2929477	50	0.2951372				
Acrylonitrile	10	0.6258185	20	0.613883	30	0.5969585	50	0.5858598				
Benzene	10	2.929355	20	2.934417	30	2.781957	50	2.394159				
Benzyl chloride	10	1.335415	20	1.355677	30	1.247169	50	0.9436623				
Bromodichloromethane	10	0.6703965	20	0.6493495	30	0.6096653	50	0.5438287				
Bromoform	10	0.8026242	20	0.8822224	30	0.8662383	50	0.7448233				

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Calibration: YB90001Instrument: TO15_AIR2Calibration Date: 01/31/19 23:37

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Bromomethane	10	0.8064106	20	0.8223426	30	0.6315966	50	0.8347366				
Carbon disulfide	10	2.33385	20	2.269356	30	2.144757	50	1.975998				
Carbon tetrachloride	10	1.925907	20	1.980298	30	1.953591	50	1.864509				
Chlorobenzene	10	0.9404593	20	0.9572271	30	0.9215044	50	0.7950207				
Chloroethane	10	0.426599	20	0.4286117	30	0.3252104	50	0.4300724				
Chloroform	10	1.928872	20	1.925505	30	1.839153	50	1.71341				
Chloromethane	10	0.7382031	20	0.6973594	30	0.6401707	50	0.5897631				
cis-1,2-Dichloroethylene	10	1.172475	20	1.14044	30	1.084493	50	1.049576				
cis-1,3-Dichloropropylene	10	0.5577631	20	0.5483282	30	0.5183507	50	0.4719503				
Cyclohexane	10	1.276093	20	1.25284	30	1.203435	50	1.1489				
Dibromochloromethane	10	0.6332245	20	0.6616664	30	0.6362022	50	0.5850092				
Dichlorodifluoromethane	10	2.344819	20	2.250908	30	2.062955	50	1.581377				
Ethanol	10		20		30		50					
Ethyl acetate	10	1.9348	20	1.891659	30	1.777934	50	1.625143				
Ethyl Benzene	10	1.492169	20	1.434291	30	1.287731	50	1.00723				
Hexachlorobutadiene	10	0.9335289	20	0.9945058	30	0.9217195	50	0.6943836				
Isopropanol	10	1.421464	20	1.434173	30	1.393253	50	1.300395				
Isopropylbenzene	10	1.758344	20	1.646856	30	1.458534	50	1.12271				
Methyl Methacrylate	10	0.3344299	20	0.3432933	30	0.3295285	50	0.3035384				
Methyl tert-butyl ether (MTBE)	10	2.519391	20	2.506376	30	2.41303	50	2.236361				
Methylene chloride	10	0.905424	20	0.8684542	30	0.8259662	50	0.7853705				
Naphthalene	10	1.571104	20	1.602493	30	1.478833	50	1.121259				
n-Butylbenzene	10	1.953353	20	1.758443	30	1.502287	50	1.063101				
n-Decane	10		20		30		50					
n-Heptane	10	1.419551	20	1.382965	30	1.278153	50	1.081265				
n-Hexane	10	1.295438	20	1.290182	30	1.238547	50	1.193999				
n-Nonane	10		20		30		50					
n-octane	10		20		30		50					
n-pentane	10		20		30		50					
n-Propylbenzene	10	2.150931	20	1.967751	30	1.699431	50	1.257481				
n-undecane	10		20		30		50					

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Calibration: YB90001

Instrument: TO15_AIR2

Calibration Date: 01/31/19 23:37

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
o-Xylene	10	1.397726	20	1.354921	30	1.20497	50	0.9164317				
p- & m- Xylenes	20	1.183269	40	1.067913	60	0.8843223	100	0.6219984				
p-Ethyltoluene	10	1.811013	20	1.71019	30	1.516596	50	1.199342				
p-Isopropyltoluene	10	1.947692	20	1.802897	30	1.580585	50	1.156846				
Propylene	10	0.4467979	20	0.4864385	30	0.5051604	50	0.4885261				
sec-Butylbenzene	10	2.389283	20	2.137288	30	1.839269	50	1.322679				
Styrene	10	1.026481	20	1.055465	30	0.978922	50	0.7797766				
SURR: p-Bromofluorobenzene	10	0.7317129	10	0.7562875	10	0.7561748	10	0.7400399				
tert-Butylbenzene	10	1.788562	20	1.735925	30	1.622348	50	1.313934				
Tetrachloroethylene	10	0.528762	20	0.5548967	30	0.5456271	50	0.508676				
Tetrahydrofuran	10	0.9593112	20	0.9657031	30	0.924139	50	0.8819278				
Toluene	10	1.125513	20	1.069618	30	0.9625171	50	0.8087762				
trans-1,2-Dichloroethylene	10	1.156398	20	1.142085	30	1.10626	50	1.054419				
trans-1,3-Dichloropropylene	10	0.4999883	20	0.4954374	30	0.4683736	50	0.431296				
Trichloroethylene	10	0.4101721	20	0.4083819	30	0.396334	50	0.3696634				
Trichlorofluoromethane (Freon 11)	10	2.267616	20	2.226957	30	2.13467	50	1.992005				
Vinyl acetate	10	2.34937	20	2.30631	30	2.178219	50	1.971129				
Vinyl bromide	10	0.8173466	20	0.843536	30	0.8600154	50	0.8562265				
Vinyl Chloride	10	0.9918447	20	0.9310921	30	0.8517686	50	0.7690441				

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Calibration: YB90001Instrument: TO15_AIR2Calibration Date: 01/31/19 23:37

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,1,1,2-Tetrachloroethane	0.4859082	9.679644	19.49688	0.0141775			30	
1,1,1-Trichloroethane	1.910124	5.486503	13.02175	0.0384154			30	
1,1,2,2-Tetrachloroethane	0.8790394	9.863302	21.312	0.0191222			30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.82292	4.51863	8.656	0.1223888			30	
1,1,2-Trichloroethane	0.3945732	4.576097	17.33475	2.280693E-02			30	
1,1-Dichloroethane	1.576708	6.316127	10.972	0.1036512			30	
1,1-Dichloroethylene	1.367704	16.61752	8.8878	0.1350936			30	
1,2,4-Trichlorobenzene	0.5251826	56.51551	27.491	2.046838E-02		0.9951498	0.99	
1,2,4-Trimethylbenzene	1.324692	15.1631	23.0755	2.279719E-02			30	
1,2-Dibromoethane	0.558089	8.998788	18.6495	1.998651E-02			30	
1,2-Dichlorobenzene	0.8465161	18.158	24.76213	1.582035E-02			30	
1,2-Dichloroethane	1.166473	9.097602	13.56675	4.933669E-02			30	
1,2-Dichloropropane	0.3172126	6.444922	14.96512	0.0473874			30	
1,2-Dichlorotetrafluoroethane	3.081165	19.96241	5.4495	0.3020747			30	
1,3,5-Trimethylbenzene	1.281732	13.23467	22.22913	0.0185304			30	
1,3-Butadiene	0.6764702	21.05088	6.0635	0.3098562			30	
1,3-Dichlorobenzene	0.8527515	18.64755	23.89025	2.687746E-02			30	
1,3-Dichloropropane	0.5532041	6.868793	17.761	1.156382E-02			30	
1,4-Dichlorobenzene	0.8160923	22.81839	24.07237	2.101254E-02			30	
1,4-Dioxane	0.216329	13.17133	15.29125	2.591542E-02			30	
2-Butanone	1.788609	5.761961	11.60837	0.0750372			30	
2-Hexanone	0.5412446	14.42811	17.3385	1.448398E-02			30	
3-Chloropropene	1.022968	5.916846	9.509625	0.1518652			30	
4-Methyl-2-pentanone	0.6283916	11.01884	15.87025	0.0302557			30	
Acetone	1.3735	16.33229	8.511375	0.1658496			30	
Acrolein	0.2865404	4.917873	8.388625	0.1804288			30	
Acrylonitrile	0.6080708	4.669697	9.76875	0.1360988			30	
Benzene	2.896083	8.303759	13.69712	3.785945E-02			30	
Benzyl chloride	0.9465009	40.1005	24.217	2.437313E-02		0.9986548	0.99	
Bromodichloromethane	0.636905	8.002196	15.33325	3.027406E-02			30	
Bromoform	0.6885611	24.84143	21.06275	1.576919E-02			30	
Bromomethane	0.7854622	10.50698	6.9195	0.2063641			30	

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Calibration: YB90001Instrument: TO15_AIR2Calibration Date: 01/31/19 23:37

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Carbon disulfide	2.324644	8.258641	9.79	0.1081113			30	
Carbon tetrachloride	1.985034	6.285406	13.49	0.035174			30	
Chlorobenzene	0.8929275	6.468323	19.44825	8.747905E-03			30	
Chloroethane	0.4314571	11.77508	7.1085	0.1959487			30	
Chloroform	1.917564	5.521175	12.2725	6.235196E-02			30	
Chloromethane	0.7825495	17.60958	5.672625	0.2666793			30	
cis-1,2-Dichloroethylene	1.247457	14.35725	11.9915	7.296344E-02			30	
cis-1,3-Dichloropropylene	0.5101957	8.801507	16.22488	0.0245809			30	
Cyclohexane	1.211277	6.361629	13.188	0.0567251			30	
Dibromochloromethane	0.5940931	10.06095	18.27675	2.867469E-02			30	
Dichlorodifluoromethane	2.207992	13.20058	5.141625	0.3700622			30	
Ethanol							30	
Ethyl acetate	1.863551	7.198641	11.914	3.473903E-02			30	
Ethyl Benzene	1.402715	13.28793	19.55237	1.374447E-02			30	
Hexachlorobutadiene	0.7843973	19.03324	27.7665	1.724712E-02			30	
Isopropanol	1.429192	7.185411	8.290125	0.1179901			30	
Isopropylbenzene	1.574063	15.39895	21.13675	1.779182E-02			30	
Methyl Methacrylate	0.298116	15.77152	14.97875	3.156682E-02			30	
Methyl tert-butyl ether (MTBE)	2.438177	5.649891	10.10012	0.116046			30	
Methylene chloride	0.953542	14.90161	9.668	0.1099885			30	
Naphthalene	1.261143	21.11157	27.89225	1.593579E-02			30	
n-Butylbenzene	1.504937	22.44413	24.49825	1.183511E-02			30	
n-Decane							30	
n-Heptane	1.36532	10.2388	13.70775	5.139311E-02			30	
n-Hexane	1.246915	5.756658	10.591	7.433927E-02			30	
n-Nonane							30	
n-octane							30	
n-pentane							30	
n-Propylbenzene	1.882855	17.25737	21.91588	1.600462E-02			30	
n-undecane							30	
o-Xylene	1.218101	14.71947	20.48	1.490594E-02			30	
p- & m- Xylenes	1.063573	20.29928	19.69525	3.295817E-03			30	

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.SDG: 19B1031Client: Langan Engineering & Environmental Services (NJ)Project: 100287503Calibration: YB90001Instrument: TO15_AIR2Calibration Date: 01/31/19 23:37

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
p-Ethyltoluene	1.515044	17.50827	22.14025	1.101221E-02			30	
p-Isopropyltoluene	1.588685	18.50855	23.71775	1.196926E-02			30	
Propylene	0.4580127	7.487092	5.057625	0.401483			30	
sec-Butylbenzene	1.988407	18.53821	23.458	5.754596E-03			30	
Styrene	0.8703351	18.94919	20.4995	1.108437E-02			30	
SURR: p-Bromofluorobenzene	0.6973333	6.901713	21.5554	2.289616E-02			30	
tert-Butylbenzene	1.519301	16.20988	23.00475	1.889948E-02			30	
Tetrachloroethylene	0.5206446	5.196036	18.07725	2.209238E-02			30	
Tetrahydrofuran	0.9314913	4.927511	12.61125	9.270303E-02			30	
Toluene	1.059253	11.77437	16.88075	2.939102E-02			30	
trans-1,2-Dichloroethylene	1.149212	5.179286	10.29225	7.352113E-02			30	
trans-1,3-Dichloropropylene	0.4562105	10.59074	17.03875	1.890739E-02			30	
Trichloroethylene	0.4054356	13.27093	14.7346	0.0360504			30	
Trichlorofluoromethane (Freon 11)	2.279581	7.531252	7.725	0.1746207			30	
Vinyl acetate	2.171593	8.672046	10.92925	6.444753E-02			30	
Vinyl bromide	0.7990914	7.408074	7.591375	0.1639675			30	
Vinyl Chloride	1.123608	19.54266	5.9731	0.3486325			30	

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206824.D
 Acq On : 31 Jan 2019 8:34 am
 Sample : SEQ-CAL1
 Operator : AS
 Sample : SEQ-CAL1
 Misc : QBTO2013119A 0.025
 ALS Vial : 2 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:27:21 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

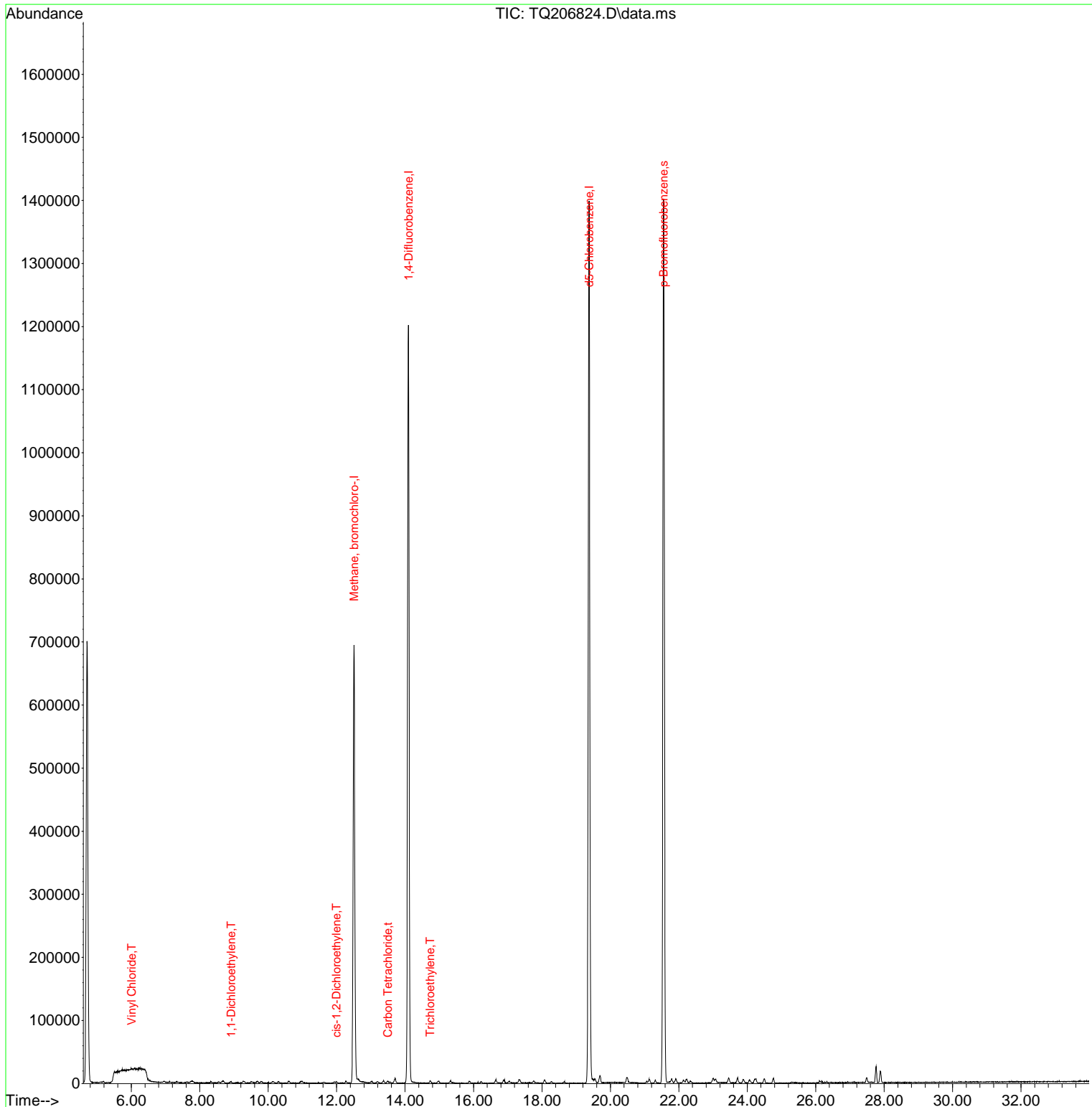
Internal Standards						
1) Methane, bromochloro-	12.506	49	533954	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.097	114	1617003	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.377	117	1397633	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	870614	8.83	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	88.30%	
Target Compounds						
						Qvalue
6) Vinyl Chloride	6.007	62	1842m	0.03	ppbv	
16) 1,1-Dichloroethylene	8.909	61	2526m	0.04	ppbv	
28) cis-1,2-Dichloroethylene	11.994	61	2211m	0.04	ppbv	
33) Carbon Tetrachloride	13.494	117	3011m	0.03	ppbv	
38) Trichloroethylene	14.731	95	2209	0.04	ppbv	94

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

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206824.D
 Acq On : 31 Jan 2019 8:34 am
 Sample : SEQ-CAL1
 Operator : AS
 Sample : SEQ-CAL1
 Misc : QBTO2013119A 0.025
 ALS Vial : 2 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:27:21 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206825.D
 Acq On : 31 Jan 2019 9:35 am
 Sample : SEQ-CAL2
 Operator : AS
 Sample : SEQ-CAL2
 Misc : QBTO2013119A 0.050 ppbv
 ALS Vial : 2 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:28:50 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

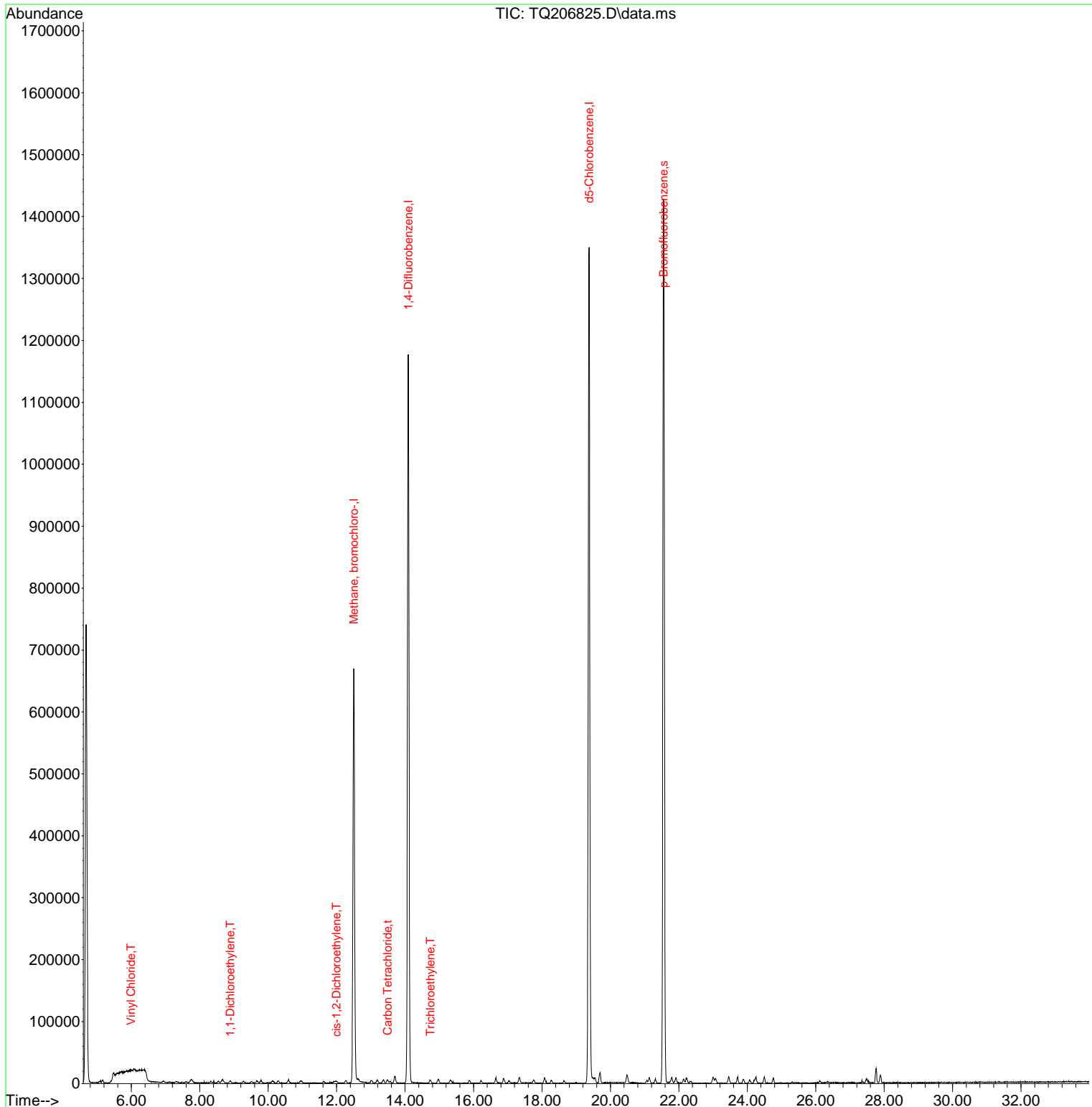
Internal Standards						
1) Methane, bromochloro-	12.500	49	515910	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.091	114	1546590	10.00	ppbv	-0.01
53) d5-Chlorobenzene	19.377	117	1352810	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	888578	9.31	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	93.10%	
Target Compounds						
						Qvalue
6) Vinyl Chloride	5.983	62	3344m	0.06	ppbv	
16) 1,1-Dichloroethylene	8.885	61	4214	0.07	ppbv	94
28) cis-1,2-Dichloroethylene	11.994	61	3548m	0.06	ppbv	
33) Carbon Tetrachloride	13.487	117	5468	0.06	ppbv #	81
38) Trichloroethylene	14.737	95	3181	0.06	ppbv	97

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

Data Path : C:\msdchem\1\data\013119\
Data File : TQ206825.D
Acq On : 31 Jan 2019 9:35 am
Sample : SEQ-CAL2
Operator : AS
Sample : SEQ-CAL2
Misc : QBTO2013119A 0.050 ppbv
ALS Vial : 2 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:28:50 2019
Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
Quant Title : TO15 VOC Analysis
DataAcq Meth: AIRACQ.M
QLast Update : Thu Jan 31 07:27:01 2019
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206826.D
 Acq On : 31 Jan 2019 10:35 am
 Sample : SEQ-CAL3
 Operator : AS
 Sample : SEQ-CAL3
 Misc : QBTO2013119A 0.10 ppbv
 ALS Vial : 3 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:30:14 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.494	49	494465	10.00	ppbv	-0.01
37) 1,4-Difluorobenzene	14.091	114	1489067	10.00	ppbv	-0.01
53) d5-Chlorobenzene	19.376	117	1304179	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	861053	9.36	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	93.60%	
Target Compounds						
						Qvalue
2) Propylene	5.044	42	2073	0.10	ppbv	# 1
3) Dichlorodifluoromethane	5.141	85	12001	0.12	ppbv	99
4) 1,2-Dichlorotetrafluor...	5.440	85	18186	0.15	ppbv	90
5) Chloromethane	5.660	50	4767m	0.11	ppbv	
6) Vinyl Chloride	5.952	62	6402m	0.11	ppbv	
7) 1,3-Butadiene	6.056	54	4180	0.11	ppbv	94
8) Bromomethane	6.909	94	4368	0.11	ppbv	# 84
9) Chloroethane	7.098	64	2481m	0.12	ppbv	
10) Vinyl Bromide	7.580	106	3666	0.10	ppbv	97
11) Trichlorofluoromethane	7.708	101	12377	0.12	ppbv	# 71
12) Isopropanol	8.293	45	7911	0.12	ppbv	# 99
13) Acrolein	8.397	56	1341m	0.10	ppbv	
14) Acetone	8.525	43	8539	0.14	ppbv	# 70
15) Freon-113	8.647	101	9392	0.11	ppbv	# 89
16) 1,1-Dichloroethylene	8.878	61	6790	0.12	ppbv	# 38
17) 3-Chloropropene	9.494	41	5491	0.12	ppbv	# 80
18) Methylene Chloride	9.659	49	6070	0.14	ppbv	96
19) Acrylonitrile	9.775	53	3065m	0.11	ppbv	
20) Carbon disulfide	9.775	76	12541	0.12	ppbv	98
21) Methyl-tert-Butyl Ethe...	10.110	73	12240m	0.11	ppbv	
22) trans-1,2-Dichloroethy...	10.281	61	6033	0.11	ppbv	# 86
23) Hexane	10.585	57	6407	0.11	ppbv	94
24) Vinyl Acetate	10.915	43	10772	0.11	ppbv	100
25) 1,1-Dichloroethane	10.951	63	8036	0.11	ppbv	# 91
26) 2-Butanone	11.610	43	9129	0.11	ppbv	97
27) Ethyl Acetate	11.908	43	9669	0.11	ppbv	# 40
28) cis-1,2-Dichloroethylene	11.982	61	6713	0.12	ppbv	90
29) Chloroform	12.268	83	9517	0.11	ppbv	# 90
30) Tetrahydrofuran	12.634	42	4388	0.10	ppbv	87
31) 1,1,1-Trichloroethane	13.018	97	9974	0.11	ppbv	# 93
32) Cyclohexane	13.182	56	5550	0.10	ppbv	# 44
33) Carbon Tetrachloride	13.487	117	9781	0.11	ppbv	99
34) 1,2-Dichloroethane	13.560	62	6322	0.12	ppbv	# 98
35) Benzene	13.701	78	15734	0.12	ppbv	87
36) n-Heptane	13.695	43	6872	0.11	ppbv	# 98
38) Trichloroethylene	14.725	95	5591	0.11	ppbv	94
39) 1,2-Dichloropropane	14.950	63	4718	0.11	ppbv	# 75
40) Methyl Methacrylate	14.975	69	3706	0.09	ppbv	# 40
41) 1,4-Dioxane	15.298	88	2746	0.09	ppbv	# 100
42) Bromodichloromethane	15.328	83	9614	0.11	ppbv	98
43) Methyl Isobutyl Ketone	15.877	43	9232	0.11	ppbv	# 94
44) cis-1,3-Dichloropropene	16.225	75	7300	0.10	ppbv	# 88
45) Toluene	16.871	91	16669	0.11	ppbv	97
46) trans-1,3-Dichloropropene	17.035	75	5684	0.09	ppbv	# 89
47) 1,1,2-Trichloroethane	17.328	97	5904	0.11	ppbv	95
48) 2-Hexanone	17.340	43	7643	0.10	ppbv	95

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206826.D
 Acq On : 31 Jan 2019 10:35 am
 Sample : SEQ-CAL3
 Operator : AS
 Sample : SEQ-CAL3
 Misc : QBTO2013119A 0.10 ppbv
 ALS Vial : 3 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:30:14 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration

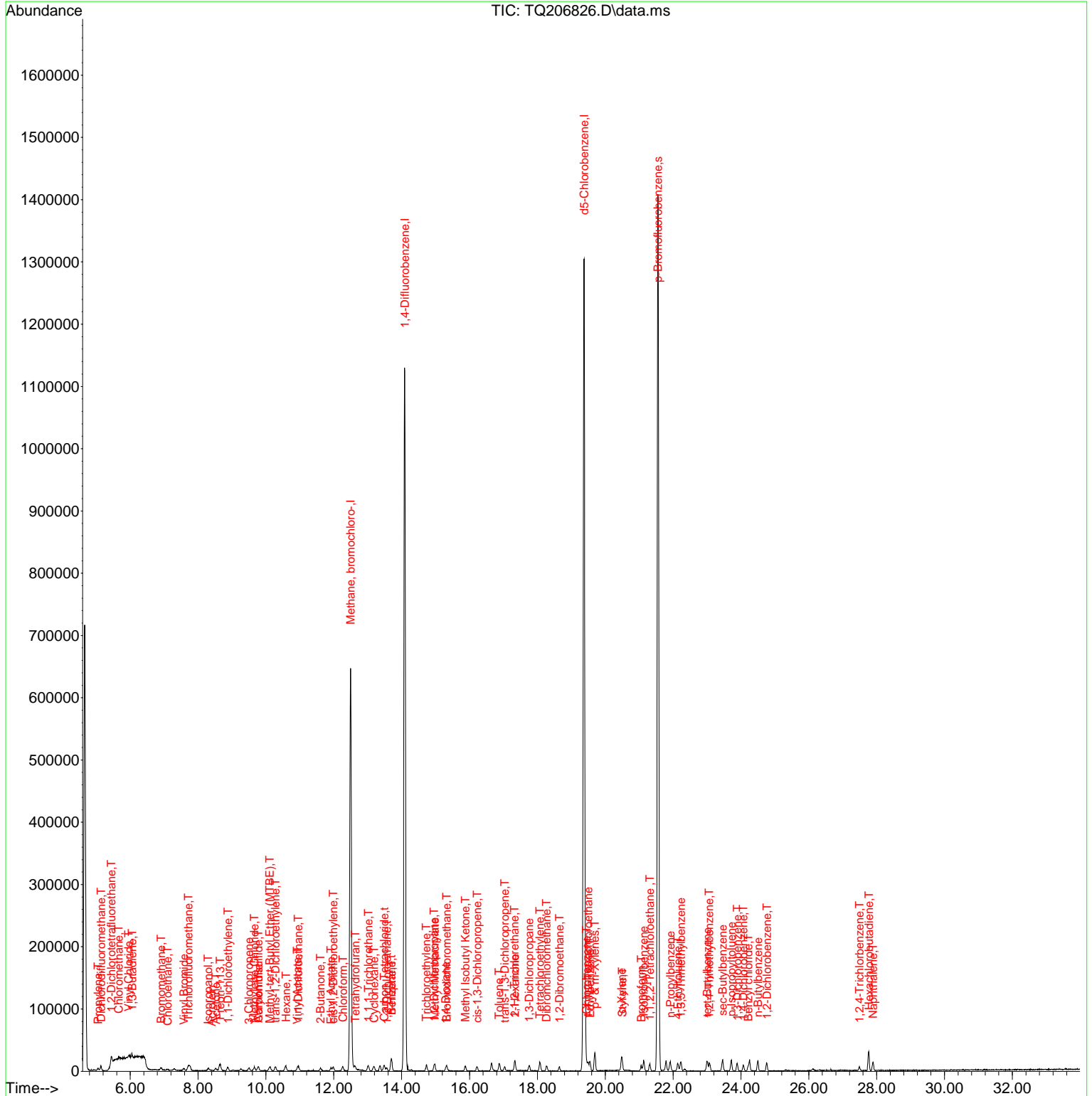
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.755	76	8731	0.11	ppbv #	70
50) Tetrachloroethylene	18.072	166	7608	0.11	ppbv	96
51) Dibromchloromethane	18.267	129	8095	0.10	ppbv #	97
52) 1,2-Dibromoethane	18.651	107	7498	0.10	ppbv	96
54) Chlorobenzene	19.443	112	11473	0.10	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.498	131	5685m	0.09	ppbv	
56) Ethylbenzene	19.553	91	19485	0.11	ppbv	93
57) p- & m-Xylenes	19.693	91	30149	0.23	ppbv	96
58) o-Xylene	20.480	91	15071	0.10	ppbv	99
59) Styrene	20.504	104	8485m	0.08	ppbv	
60) Bromoform	21.065	173	5991m	0.07	ppbv	
61) n-Propylbenzene	21.919	91	23519	0.10	ppbv	99
62) Isopropylbenzene	21.132	105	19708	0.10	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	21.309	83	11080	0.10	ppbv #	95
65) 4-Ethyltoluene	22.138	105	16101	0.09	ppbv	97
66) 1,3,5-Trimethylbenzene	22.230	105	15707	0.10	ppbv #	97
67) tert-Butylbenzene	23.004	119	17132	0.09	ppbv	91
68) 1,2,4-Trimethylbenzene	23.065	105	15021	0.09	ppbv #	90
69) sec-Butylbenzene	23.461	105	24243	0.10	ppbv #	95
70) p-Isopropyltoluene	23.717	119	18230	0.10	ppbv	98
71) 1,3-Dichlorobenzene	23.894	146	8429	0.08	ppbv	95
72) 1,4-Dichlorobenzene	24.071	146	7291	0.07	ppbv	97
73) Benzyl chloride	24.217	91	6075m	0.05	ppbv	
74) n-Butylbenzene	24.497	91	16112	0.09	ppbv	99
75) 1,2-Dichlorobenzene	24.766	146	8719	0.08	ppbv	96
76) 1,2,4-Trichlorobenzene	27.491	180	3004	0.05	ppbv #	89
77) Hexachlorobutadiene	27.771	225	9537	0.10	ppbv	98
78) Naphthalene	27.893	128	16883	0.11	ppbv	98

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

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206826.D
 Acq On : 31 Jan 2019 10:35 am
 Sample : SEQ-CAL3
 Operator : AS
 Sample : SEQ-CAL3
 Misc : QBTO2013119A 0.10 ppbv
 ALS Vial : 3 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:30:14 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206827.D
 Acq On : 31 Jan 2019 11:37 am
 Sample : SEQ-CAL4
 Operator : AS
 Sample : SEQ-CAL4
 Misc : QBTO2013119A 0.20 ppbv
 ALS Vial : 4 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:31:47 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.500	49	475997	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.091	114	1425053	10.00	ppbv	-0.01
53) d5-Chlorobenzene	19.377	117	1268751	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	839703	9.38	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	93.80%	
Target Compounds						
						Qvalue
2) Propylene	5.087	42	4343	0.22	ppbv	93
3) Dichlorodifluoromethane	5.166	85	22545	0.23	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.471	85	33470	0.28	ppbv #	91
5) Chloromethane	5.690	50	7721m	0.18	ppbv	
6) Vinyl Chloride	5.989	62	12725m	0.23	ppbv	
7) 1,3-Butadiene	6.093	54	8157	0.23	ppbv #	76
8) Bromomethane	6.934	94	6676	0.18	ppbv #	91
9) Chloroethane	7.117	64	4396	0.22	ppbv #	66
10) Vinyl Bromide	7.598	106	6808	0.19	ppbv	99
11) Trichlorofluoromethane	7.733	101	22603	0.22	ppbv	99
12) Isopropanol	8.306	45	14366	0.23	ppbv #	99
13) Acrolein	8.415	56	2605	0.20	ppbv #	86
14) Acetone	8.531	43	15388	0.26	ppbv	99
15) Freon-113	8.665	101	17790	0.22	ppbv	97
16) 1,1-Dichloroethylene	8.891	61	12464	0.22	ppbv	94
17) 3-Chloropropene	9.513	41	9448	0.21	ppbv #	91
18) Methylene Chloride	9.677	49	10066	0.24	ppbv	96
19) Acrylonitrile	9.775	53	5483	0.20	ppbv #	59
20) Carbon disulfide	9.799	76	23544	0.23	ppbv #	85
21) Methyl-tert-Butyl Ethe...	10.122	73	21761	0.21	ppbv #	90
22) trans-1,2-Dichloroethy...	10.293	61	11070	0.22	ppbv	94
23) Hexane	10.598	57	11038	0.20	ppbv	92
24) Vinyl Acetate	10.933	43	18279	0.19	ppbv #	99
25) 1,1-Dichloroethane	10.970	63	15259	0.22	ppbv #	83
26) 2-Butanone	11.622	43	17119	0.22	ppbv	97
27) Ethyl Acetate	11.915	43	17312	0.21	ppbv #	44
28) cis-1,2-Dichloroethylene	11.988	61	10927	0.21	ppbv	84
29) Chloroform	12.268	83	18674	0.22	ppbv	98
30) Tetrahydrofuran	12.622	42	8521	0.21	ppbv	95
31) 1,1,1-Trichloroethane	13.024	97	16893	0.20	ppbv #	97
32) Cyclohexane	13.189	56	11166	0.21	ppbv	90
33) Carbon Tetrachloride	13.487	117	18361	0.21	ppbv #	91
34) 1,2-Dichloroethane	13.561	62	12096	0.24	ppbv	99
35) Benzene	13.695	78	28535	0.22	ppbv	88
36) n-Heptane	13.713	43	13295	0.22	ppbv #	75
38) Trichloroethylene	14.737	95	10362	0.21	ppbv	95
39) 1,2-Dichloropropane	14.969	63	8887	0.21	ppbv	88
40) Methyl Methacrylate	14.981	69	6405	0.16	ppbv #	41
41) 1,4-Dioxane	15.292	88	5277	0.18	ppbv #	100
42) Bromodichloromethane	15.335	83	18011	0.21	ppbv	98
43) Methyl Isobutyl Ketone	15.877	43	16569	0.20	ppbv #	96
44) cis-1,3-Dichloropropene	16.225	75	13118	0.20	ppbv	98
45) Toluene	16.877	91	30472	0.22	ppbv	98
46) trans-1,3-Dichloropropene	17.036	75	11975	0.20	ppbv	98
47) 1,1,2-Trichloroethane	17.334	97	10936	0.21	ppbv	97
48) 2-Hexanone	17.346	43	14188	0.19	ppbv	98

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206827.D
 Acq On : 31 Jan 2019 11:37 am
 Sample : SEQ-CAL4
 Operator : AS
 Sample : SEQ-CAL4
 Misc : QBTO2013119A 0.20 ppbv
 ALS Vial : 4 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:31:47 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration

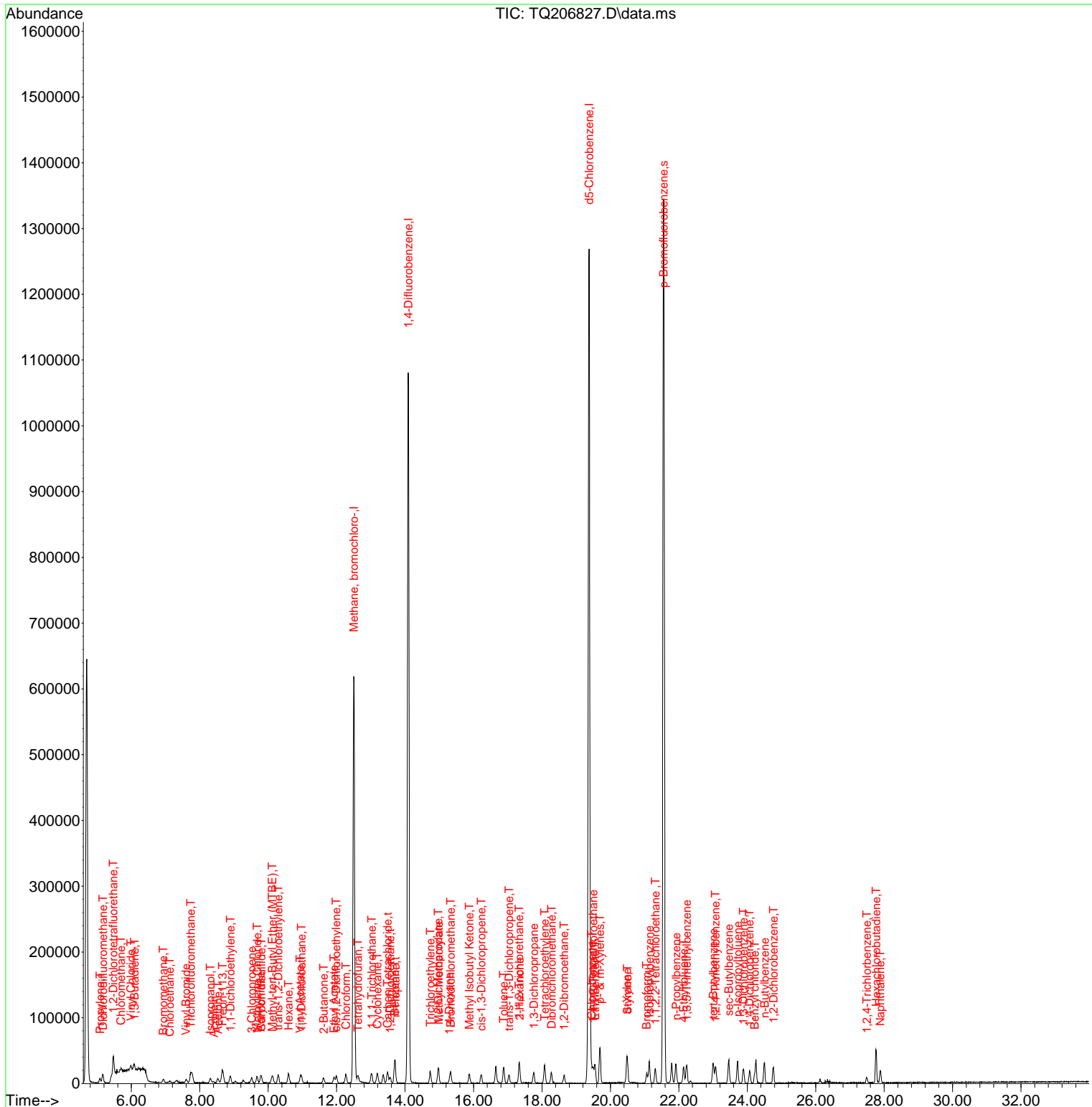
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.761	76	15319	0.21	ppbv	96
50) Tetrachloroethylene	18.078	166	14278	0.21	ppbv	96
51) Dibromchloromethane	18.279	129	14551	0.19	ppbv #	97
52) 1,2-Dibromoethane	18.645	107	14093	0.19	ppbv	98
54) Chlorobenzene	19.450	112	21827	0.20	ppbv #	99
55) 1,1,1,2-Tetrachloroethane	19.499	131	10984	0.19	ppbv	94
56) Ethylbenzene	19.553	91	35846	0.21	ppbv	99
57) p- & m-Xylenes	19.694	91	57624	0.46	ppbv	96
58) o-Xylene	20.480	91	28120	0.20	ppbv	99
59) Styrene	20.498	104	17423	0.17	ppbv #	100
60) Bromoform	21.059	173	12386	0.15	ppbv	99
61) n-Propylbenzene	21.919	91	46863	0.21	ppbv	99
62) Isopropylbenzene	21.138	105	38660	0.21	ppbv	98
63) 1,1,2,2-Tetrachloroeth...	21.309	83	21351	0.20	ppbv	98
65) 4-Ethyltoluene	22.138	105	32432	0.18	ppbv	96
66) 1,3,5-Trimethylbenzene	22.230	105	30079	0.20	ppbv #	98
67) tert-Butylbenzene	23.010	119	30228	0.17	ppbv #	72
68) 1,2,4-Trimethylbenzene	23.071	105	29364	0.19	ppbv #	91
69) sec-Butylbenzene	23.461	105	46805	0.20	ppbv #	95
70) p-Isopropyltoluene	23.717	119	34525	0.19	ppbv #	89
71) 1,3-Dichlorobenzene	23.888	146	16686	0.16	ppbv	97
72) 1,4-Dichlorobenzene	24.065	146	15583	0.16	ppbv	93
73) Benzyl chloride	24.217	91	11816m	0.10	ppbv	
74) n-Butylbenzene	24.504	91	31274	0.17	ppbv	97
75) 1,2-Dichlorobenzene	24.766	146	16951	0.17	ppbv	98
76) 1,2,4-Trichlorobenzene	27.491	180	4804m	0.08	ppbv	
77) Hexachlorobutadiene	27.765	225	15804	0.17	ppbv	98
78) Naphthalene	27.887	128	24516	0.16	ppbv	100

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

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206827.D
 Acq On : 31 Jan 2019 11:37 am
 Sample : SEQ-CAL4
 Operator : AS
 Sample : SEQ-CAL4
 Misc : QBTO2013119A 0.20 ppbv
 ALS Vial : 4 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:31:47 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206828.D
 Acq On : 31 Jan 2019 12:41 pm
 Sample : SEQ-CAL5
 Operator : AS
 Sample : SEQ-CAL5
 Misc : QBTO2013119A 0.50ppbv
 ALS Vial : 5 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 18:53:50 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.494	49	449664	10.00	ppbv	-0.01
37) 1,4-Difluorobenzene	14.085	114	1369673	10.00	ppbv	-0.02
53) d5-Chlorobenzene	19.377	117	1218351	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	817039	9.51	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	95.10%	
Target Compounds						
						Qvalue
2) Propylene	5.056	42	9145	0.48	ppbv	91
3) Dichlorodifluoromethane	5.136	85	48006	0.53	ppbv	99
4) 1,2-Dichlorotetrafluor...	5.440	85	75498	0.67	ppbv	92
5) Chloromethane	5.666	50	20324	0.51	ppbv	87
6) Vinyl Chloride	5.952	62	27066m	0.52	ppbv	
7) 1,3-Butadiene	6.044	54	16029	0.48	ppbv #	84
8) Bromomethane	6.910	94	17228	0.49	ppbv	98
9) Chloroethane	7.099	64	9423	0.51	ppbv #	91
10) Vinyl Bromide	7.580	106	16508	0.48	ppbv	97
11) Trichlorofluoromethane	7.714	101	50760	0.53	ppbv	99
12) Isopropanol	8.287	45	29133	0.49	ppbv #	99
13) Acrolein	8.367	56	5965	0.49	ppbv #	86
14) Acetone	8.501	43	34142	0.60	ppbv	98
15) Freon-113	8.647	101	40643	0.52	ppbv	97
16) 1,1-Dichloroethylene	8.873	61	27508	0.52	ppbv	97
17) 3-Chloropropene	9.488	41	20718	0.49	ppbv #	94
18) Methylene Chloride	9.653	49	21918	0.54	ppbv	96
19) Acrylonitrile	9.744	53	13131	0.50	ppbv	93
20) Carbon disulfide	9.781	76	53001	0.55	ppbv	90
21) Methyl-tert-Butyl Ethe...	10.092	73	53923	0.54	ppbv #	97
22) trans-1,2-Dichloroethy...	10.287	61	25083	0.52	ppbv	98
23) Hexane	10.580	57	25940	0.50	ppbv	87
24) Vinyl Acetate	10.927	43	45550	0.51	ppbv	100
25) 1,1-Dichloroethane	10.964	63	36092	0.54	ppbv #	87
26) 2-Butanone	11.598	43	40156	0.55	ppbv	100
27) Ethyl Acetate	11.915	43	41160	0.53	ppbv #	43
28) cis-1,2-Dichloroethylene	11.976	61	27732	0.56	ppbv	90
29) Chloroform	12.262	83	44272	0.54	ppbv	98
30) Tetrahydrofuran	12.610	42	20762	0.53	ppbv	97
31) 1,1,1-Trichloroethane	13.012	97	40487	0.51	ppbv	98
32) Cyclohexane	13.177	56	26114	0.51	ppbv	93
33) Carbon Tetrachloride	13.488	117	41048	0.51	ppbv	99
34) 1,2-Dichloroethane	13.561	62	28054	0.58	ppbv	99
35) Benzene	13.689	78	63996	0.53	ppbv	91
36) n-Heptane	13.701	43	31555	0.55	ppbv	99
38) Trichloroethylene	14.731	95	24673	0.52	ppbv	93
39) 1,2-Dichloropropane	14.957	63	20686	0.50	ppbv #	49
40) Methyl Methacrylate	14.975	69	17790	0.47	ppbv #	41
41) 1,4-Dioxane	15.292	88	12222	0.44	ppbv #	100
42) Bromodichloromethane	15.329	83	42643	0.52	ppbv	97
43) Methyl Isobutyl Ketone	15.871	43	42373	0.52	ppbv	98
44) cis-1,3-Dichloropropene	16.219	75	31717	0.49	ppbv	98
45) Toluene	16.883	91	74951	0.56	ppbv	97
46) trans-1,3-Dichloropropene	17.042	75	29390	0.50	ppbv	97
47) 1,1,2-Trichloroethane	17.328	97	26140	0.53	ppbv	99
48) 2-Hexanone	17.340	43	37228	0.52	ppbv #	96

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206828.D
 Acq On : 31 Jan 2019 12:41 pm
 Sample : SEQ-CAL5
 Operator : AS
 Sample : SEQ-CAL5
 Misc : QBTO2013119A 0.50ppbv
 ALS Vial : 5 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 18:53:50 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration

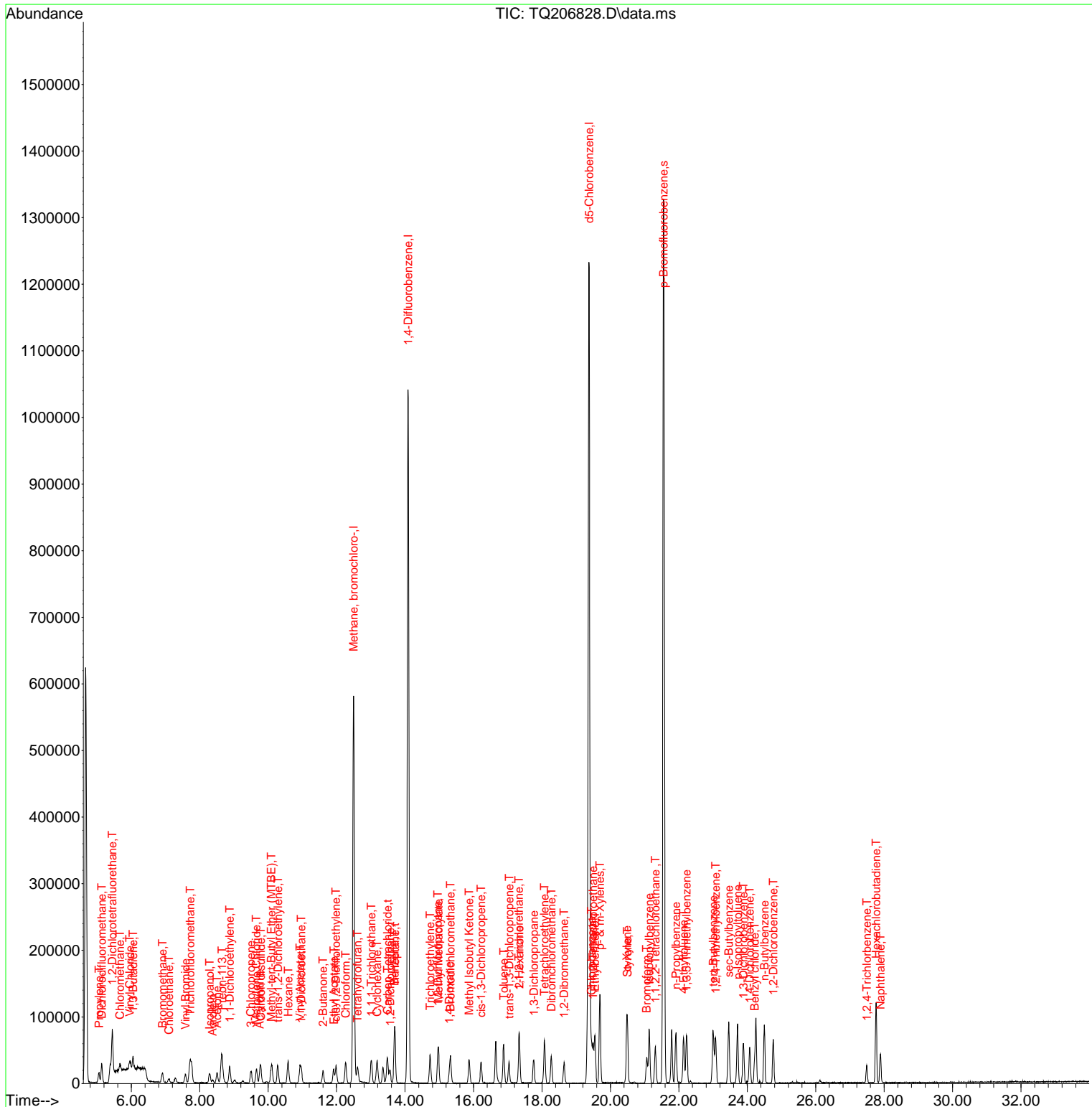
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.761	76	35747	0.51	ppbv #	72
50) Tetrachloroethylene	18.072	166	32445	0.49	ppbv	99
51) Dibromchloromethane	18.273	129	36293	0.48	ppbv #	97
52) 1,2-Dibromoethane	18.645	107	35368	0.50	ppbv	99
54) Chlorobenzene	19.444	112	51364	0.50	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.492	131	26252	0.47	ppbv	93
56) Ethylbenzene	19.547	91	89022	0.56	ppbv	96
57) p- & m-Xylenes	19.694	91	139010	1.16	ppbv	98
58) o-Xylene	20.480	91	69555	0.50	ppbv	100
59) Styrene	20.498	104	47061	0.48	ppbv #	100
60) Bromoform	21.059	173	32355	0.40	ppbv	97
61) n-Propylbenzene	21.913	91	121170	0.57	ppbv	100
62) Isopropylbenzene	21.132	105	98329	0.56	ppbv	98
63) 1,1,2,2-Tetrachloroeth...	21.309	83	52609	0.51	ppbv	98
65) 4-Ethyltoluene	22.138	105	90911	0.53	ppbv	96
66) 1,3,5-Trimethylbenzene	22.224	105	77710	0.53	ppbv	98
67) tert-Butylbenzene	23.004	119	84121	0.49	ppbv #	78
68) 1,2,4-Trimethylbenzene	23.077	105	79560	0.53	ppbv #	93
69) sec-Butylbenzene	23.455	105	122588	0.55	ppbv #	95
70) p-Isopropyltoluene	23.717	119	90896	0.51	ppbv #	88
71) 1,3-Dichlorobenzene	23.888	146	45058	0.46	ppbv	96
72) 1,4-Dichlorobenzene	24.071	146	39722	0.42	ppbv	96
73) Benzyl chloride	24.217	91	38153	0.35	ppbv	98
74) n-Butylbenzene	24.498	91	83623	0.48	ppbv	98
75) 1,2-Dichlorobenzene	24.760	146	43455	0.44	ppbv	96
76) 1,2,4-Trichlorobenzene	27.491	180	13026	0.21	ppbv	95
77) Hexachlorobutadiene	27.765	225	36604	0.41	ppbv	97
78) Naphthalene	27.893	128	56611	0.39	ppbv	98

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

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206828.D
 Acq On : 31 Jan 2019 12:41 pm
 Sample : SEQ-CAL5
 Operator : AS
 Sample : SEQ-CAL5
 Misc : QBTO2013119A 0.50ppbv
 ALS Vial : 5 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 18:53:50 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206829.D
 Acq On : 31 Jan 2019 1:42 pm
 Sample : SEQ-CAL6
 Operator : AS
 Sample : SEQ-CAL6
 Misc : QBTO2013119A 3.0 ppbv
 ALS Vial : 6 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 14:16:15 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.500	49	423820	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.097	114	1304639	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.377	117	1174646	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	841855	10.16	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	101.60%	
Target Compounds						
						Qvalue
2) Propylene	5.081	42	57850	3.23	ppbv	98
3) Dichlorodifluoromethane	5.160	85	317029	3.69	ppbv	100
4) 1,2-Dichlorotetrafluor...	5.465	85	482031	4.53	ppbv	94
5) Chloromethane	5.684	50	116444	3.10	ppbv	98
6) Vinyl Chloride	5.983	62	150141	3.07	ppbv	94
7) 1,3-Butadiene	6.074	54	98701	3.16	ppbv	98
8) Bromomethane	6.928	94	106511	3.22	ppbv	100
9) Chloroethane	7.117	64	58300	3.32	ppbv	99
10) Vinyl Bromide	7.598	106	104874	3.26	ppbv	99
11) Trichlorofluoromethane	7.733	101	315363	3.49	ppbv	99
12) Isopropanol	8.287	45	188116	3.38	ppbv	100
13) Acrolein	8.385	56	38292	3.33	ppbv #	84
14) Acetone	8.513	43	172779	3.24	ppbv	98
15) Freon-113	8.665	101	248529	3.39	ppbv	96
16) 1,1-Dichloroethylene	8.891	61	172846	3.46	ppbv	98
17) 3-Chloropropene	9.519	41	136016	3.42	ppbv	94
18) Methylene Chloride	9.671	49	125024	3.28	ppbv	94
19) Acrylonitrile	9.769	53	84196	3.43	ppbv	97
20) Carbon disulfide	9.793	76	318682	3.49	ppbv	96
21) Methyl-tert-Butyl Ethe...	10.098	73	339563	3.60	ppbv	97
22) trans-1,2-Dichloroethy...	10.293	61	157149	3.46	ppbv	97
23) Hexane	10.592	57	171418	3.49	ppbv	98
24) Vinyl Acetate	10.927	43	310639	3.66	ppbv	100
25) 1,1-Dichloroethane	10.976	63	220900	3.51	ppbv	97
26) 2-Butanone	11.610	43	245910	3.56	ppbv	97
27) Ethyl Acetate	11.915	43	263730	3.62	ppbv #	43
28) cis-1,2-Dichloroethylene	11.994	61	159815	3.44	ppbv	82
29) Chloroform	12.274	83	264233	3.45	ppbv	100
30) Tetrahydrofuran	12.610	42	129042	3.52	ppbv	95
31) 1,1,1-Trichloroethane	13.024	97	258981	3.46	ppbv	99
32) Cyclohexane	13.189	56	171917	3.57	ppbv	91
33) Carbon Tetrachloride	13.488	117	256600	3.36	ppbv	100
34) 1,2-Dichloroethane	13.567	62	158755	3.50	ppbv	100
35) Benzene	13.695	78	394530	3.46	ppbv	94
36) n-Heptane	13.707	43	199722	3.69	ppbv	99
38) Trichloroethylene	14.737	95	161525	3.54	ppbv	93
39) 1,2-Dichloropropane	14.969	63	136921	3.50	ppbv	95
40) Methyl Methacrylate	14.981	69	133370	3.68	ppbv #	41
41) 1,4-Dioxane	15.286	88	91787	3.45	ppbv #	100
42) Bromodichloromethane	15.329	83	282485	3.63	ppbv	99
43) Methyl Isobutyl Ketone	15.865	43	296215	3.85	ppbv	99
44) cis-1,3-Dichloropropene	16.225	75	223695	3.66	ppbv	99
45) Toluene	16.883	91	479293	3.75	ppbv	100
46) trans-1,3-Dichloropropene	17.036	75	204917	3.68	ppbv	98
47) 1,1,2-Trichloroethane	17.340	97	162197	3.42	ppbv	99
48) 2-Hexanone	17.340	43	261632	3.87	ppbv #	75

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206829.D
 Acq On : 31 Jan 2019 1:42 pm
 Sample : SEQ-CAL6
 Operator : AS
 Sample : SEQ-CAL6
 Misc : QBTO2013119A 3.0 ppbv
 ALS Vial : 6 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 14:16:15 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 07:27:01 2019
 Response via : Initial Calibration

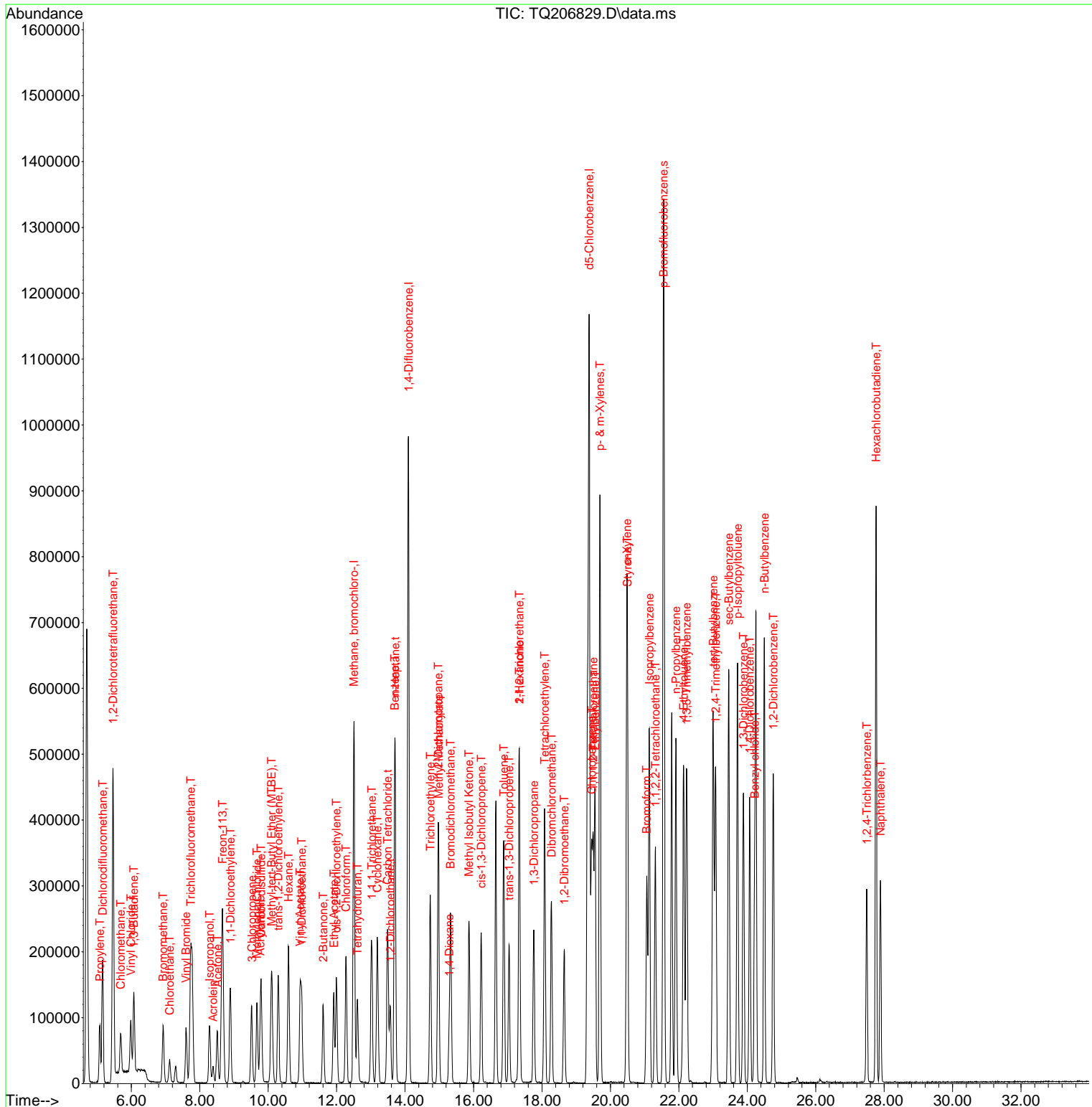
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.761	76	239035	3.57	ppbv #	72
50) Tetrachloroethylene	18.078	166	211956	3.38	ppbv	97
51) Dibromchloromethane	18.279	129	255391	3.55	ppbv #	98
52) 1,2-Dibromoethane	18.651	107	240635	3.57	ppbv	100
54) Chlorobenzene	19.450	112	333417	3.34	ppbv #	86
55) 1,1,1,2-Tetrachloroethane	19.499	131	175633	3.25	ppbv	93
56) Ethylbenzene	19.553	91	575195	3.73	ppbv	99
57) p- & m-Xylenes	19.694	91	929479	8.02	ppbv	99
58) o-Xylene	20.480	91	516328	3.88	ppbv	99
59) Styrene	20.498	104	356721	3.74	ppbv #	100
60) Bromoform	21.059	173	258645	3.35	ppbv	99
61) n-Propylbenzene	21.913	91	827417	4.02	ppbv	99
62) Isopropylbenzene	21.139	105	689720	4.08	ppbv	98
63) 1,1,2,2-Tetrachloroeth...	21.309	83	356217	3.61	ppbv	98
65) 4-Ethyltoluene	22.138	105	661857	4.01	ppbv	98
66) 1,3,5-Trimethylbenzene	22.224	105	529735	3.78	ppbv	99
67) tert-Butylbenzene	23.004	119	637080	3.89	ppbv #	78
68) 1,2,4-Trimethylbenzene	23.077	105	568349	3.93	ppbv #	93
69) sec-Butylbenzene	23.455	105	882034	4.07	ppbv	99
70) p-Isopropyltoluene	23.717	119	694547	4.03	ppbv #	79
71) 1,3-Dichlorobenzene	23.888	146	334140	3.54	ppbv	97
72) 1,4-Dichlorobenzene	24.071	146	319354	3.52	ppbv	97
73) Benzyl chloride	24.217	91	399020	3.79	ppbv	98
74) n-Butylbenzene	24.498	91	677195	4.06	ppbv	100
75) 1,2-Dichlorobenzene	24.760	146	329271	3.48	ppbv	98
76) 1,2,4-Trichlorobenzene	27.491	180	141228	2.42	ppbv	97
77) Hexachlorobutadiene	27.765	225	273486	3.14	ppbv	100
78) Naphthalene	27.893	128	396609	2.87	ppbv	99

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

Data Path : C:\msdchem\1\data\013119\
Data File : TQ206829.D
Acq On : 31 Jan 2019 1:42 pm
Sample : SEQ-CAL6
Operator : AS
Sample : SEQ-CAL6
Misc : QBTO2013119A 3.0 ppbv
ALS Vial : 6 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 14:16:15 2019
Quant Method : C:\msdchem\1\methods\AIR-2-0019.M
Quant Title : TO15 VOC Analysis
DataAcq Meth: AIRACQ.M
QLast Update : Thu Jan 31 07:27:01 2019
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206830.D
 Acq On : 31 Jan 2019 2:43 pm
 Sample : SEQ-CAL7
 Operator : AS
 Sample : SEQ-CAL7
 Misc : QBTO2013119A 10 ppbv
 ALS Vial : 7 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 19:50:04 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 19:50:01 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.506	49	422549	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.097	114	1328123	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.377	117	1142060	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.559	95	835660	10.37	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	103.70%	
Target Compounds						
						Qvalue
2) Propylene	5.050	42	188794	9.76	ppbv	97
3) Dichlorodifluoromethane	5.136	85	990801	10.62	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.447	85	1266158	9.73	ppbv	94
5) Chloromethane	5.672	50	311927	8.62	ppbv	99
6) Vinyl Chloride	5.965	62	419103	8.81	ppbv	97
7) 1,3-Butadiene	6.056	54	263631	9.22	ppbv	99
8) Bromomethane	6.916	94	340748	10.27	ppbv	100
9) Chloroethane	7.105	64	180259	9.89	ppbv	99
10) Vinyl Bromide	7.592	106	345369	10.23	ppbv	99
11) Trichlorofluoromethane	7.727	101	958179	9.95	ppbv	99
12) Isopropanol	8.281	45	600638	9.95	ppbv	100
13) Acrolein	8.385	56	124246	10.26	ppbv #	86
14) Acetone	8.501	43	535490	9.23	ppbv	99
15) Freon-113	8.653	101	758463	9.85	ppbv	98
16) 1,1-Dichloroethylene	8.885	61	540717	9.36	ppbv	97
17) 3-Chloropropene	9.513	41	445565	10.31	ppbv	92
18) Methylene Chloride	9.665	49	382586	9.50	ppbv	92
19) Acrylonitrile	9.769	53	264439	10.29	ppbv	97
20) Carbon disulfide	9.787	76	986166	10.04	ppbv	98
21) Methyl-tert-Butyl Ethe...	10.092	73	1064566	10.33	ppbv	96
22) trans-1,2-Dichloroethy...	10.293	61	488635	10.06	ppbv	94
23) Hexane	10.592	57	547386	10.39	ppbv	99
24) Vinyl Acetate	10.933	43	992724	10.82	ppbv #	100
25) 1,1-Dichloroethane	10.976	63	676348	10.15	ppbv	98
26) 2-Butanone	11.604	43	774714	10.25	ppbv	95
27) Ethyl Acetate	11.915	43	817548	10.38	ppbv #	44
28) cis-1,2-Dichloroethylene	11.994	61	495428	9.40	ppbv	79
29) Chloroform	12.274	83	815043	10.06	ppbv	98
30) Tetrahydrofuran	12.604	42	405356	10.30	ppbv	93
31) 1,1,1-Trichloroethane	13.024	97	829654	10.28	ppbv	100
32) Cyclohexane	13.189	56	539212	10.54	ppbv	91
33) Carbon Tetrachloride	13.488	117	813790	9.70	ppbv	100
34) 1,2-Dichloroethane	13.567	62	472155	9.58	ppbv	100
35) Benzene	13.695	78	1237796	10.11	ppbv	92
36) n-Heptane	13.707	43	599830	10.40	ppbv #	98
38) Trichloroethylene	14.731	95	544759	10.12	ppbv	94
39) 1,2-Dichloropropane	14.969	63	441399	10.48	ppbv	93
40) Methyl Methacrylate	14.975	69	444164	11.22	ppbv #	41
41) 1,4-Dioxane	15.286	88	298477	10.39	ppbv #	100
42) Bromodichloromethane	15.335	83	890369	10.53	ppbv	97
43) Methyl Isobutyl Ketone	15.865	43	883689	10.59	ppbv	97
44) cis-1,3-Dichloropropene	16.225	75	740778	10.93	ppbv	98
45) Toluene	16.883	91	1494820	10.63	ppbv	99
46) trans-1,3-Dichloropropene	17.042	75	664046	10.96	ppbv	98
47) 1,1,2-Trichloroethane	17.334	97	533785	10.19	ppbv	98
48) 2-Hexanone	17.334	43	791831	11.02	ppbv	99

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206830.D
 Acq On : 31 Jan 2019 2:43 pm
 Sample : SEQ-CAL7
 Operator : AS
 Sample : SEQ-CAL7
 Misc : QBTO2013119A 10 ppbv
 ALS Vial : 7 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 19:50:04 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 19:50:01 2019
 Response via : Initial Calibration

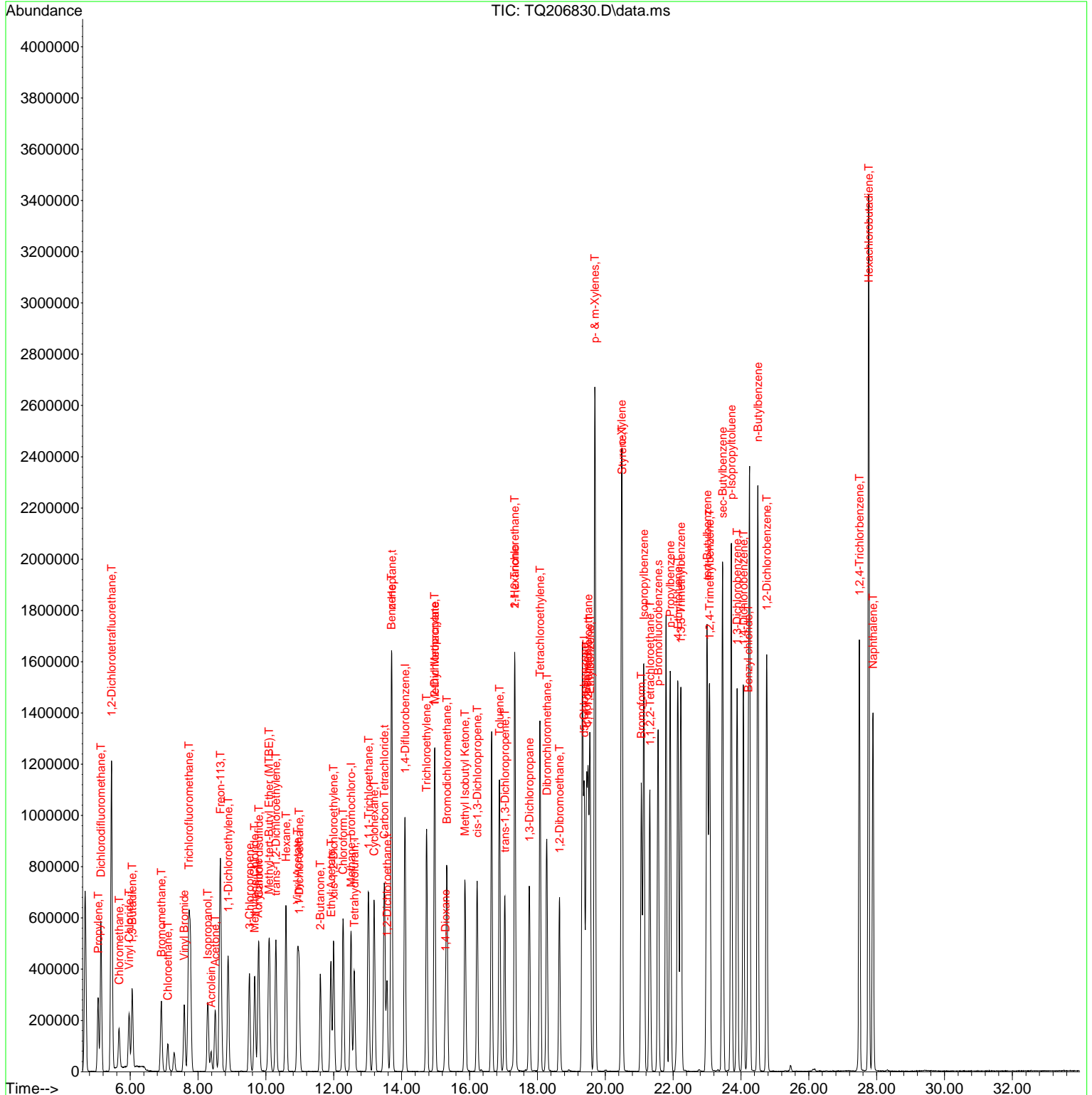
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.761	76	759215	10.33	ppbv #	72
50) Tetrachloroethylene	18.078	166	702261	10.16	ppbv	97
51) Dibromchloromethane	18.279	129	841000	10.66	ppbv	98
52) 1,2-Dibromoethane	18.651	107	788235	10.63	ppbv	99
54) Chlorobenzene	19.450	112	1074061	10.53	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.499	131	571549	10.30	ppbv	93
56) Ethylbenzene	19.554	91	1704147	10.64	ppbv	98
57) p- & m-Xylenes	19.694	91	2702729	22.25	ppbv	95
58) o-Xylene	20.480	91	1596287	11.47	ppbv	99
59) Styrene	20.498	104	1172303	11.79	ppbv #	100
60) Bromoform	21.065	173	916645	11.66	ppbv	98
61) n-Propylbenzene	21.913	91	2456492	11.42	ppbv	99
62) Isopropylbenzene	21.139	105	2008134	11.17	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	21.315	83	1085093	10.81	ppbv	98
65) 4-Ethyltoluene	22.144	105	2068286	11.95	ppbv	98
66) 1,3,5-Trimethylbenzene	22.230	105	1657086	11.32	ppbv	96
67) tert-Butylbenzene	23.004	119	2042645	11.77	ppbv	90
68) 1,2,4-Trimethylbenzene	23.077	105	1751289	11.58	ppbv #	92
69) sec-Butylbenzene	23.455	105	2728704	12.02	ppbv #	94
70) p-Isopropyltoluene	23.717	119	2224381	12.26	ppbv #	89
71) 1,3-Dichlorobenzene	23.888	146	1143928	11.75	ppbv	97
72) 1,4-Dichlorobenzene	24.077	146	1122207	12.04	ppbv	97
73) Benzyl chloride	24.217	91	1525124	9.15	ppbv	98
74) n-Butylbenzene	24.498	91	2230846	12.98	ppbv	98
75) 1,2-Dichlorobenzene	24.760	146	1147382	11.87	ppbv	97
76) 1,2,4-Trichlorobenzene	27.491	180	815271	8.60	ppbv	98
77) Hexachlorobutadiene	27.765	225	1066146	11.90	ppbv	97
78) Naphthalene	27.893	128	1794295	12.46	ppbv	97

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

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206830.D
 Acq On : 31 Jan 2019 2:43 pm
 Sample : SEQ-CAL7
 Operator : AS
 Sample : SEQ-CAL7
 Misc : QBTO2013119A 10 ppbv
 ALS Vial : 7 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 19:50:04 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 19:50:01 2019
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206831.D
 Acq On : 31 Jan 2019 3:46 pm
 Sample : SEQ-CAL8
 Operator : AS
 Sample : SEQ-CAL8
 Misc : QBTO2013119A 20.0 ppbv
 ALS Vial : 8 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 16:29:58 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 15:21:50 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.506	49	417064	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.097	114	1353516	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.376	117	1205178	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.559	95	911461	11.07	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	110.70%	
Target Compounds						
						Qvalue
2) Propylene	5.025	42	405752	22.27	ppbv	97
3) Dichlorodifluoromethane	5.105	85	1877545	19.13	ppbv	96
4) 1,2-Dichlorotetrafluor...	5.422	85	2279861	15.76	ppbv	96
5) Chloromethane	5.647	50	581687	14.15	ppbv	97
6) Vinyl Chloride	5.940	62	776650	13.26	ppbv	97
7) 1,3-Butadiene	6.037	54	483653	15.20	ppbv	100
8) Bromomethane	6.897	94	685939	20.58	ppbv	99
9) Chloroethane	7.086	64	357517	18.90	ppbv	99
10) Vinyl Bromide	7.574	106	703617	22.01	ppbv	100
11) Trichlorofluoromethane	7.708	101	1857567	18.74	ppbv	98
12) Isopropanol	8.275	45	1196284	19.63	ppbv	100
13) Acrolein	8.372	56	249309	21.27	ppbv #	57
14) Acetone	8.488	43	1022725	16.37	ppbv	100
15) Freon-113	8.641	101	1506194	19.36	ppbv	99
16) 1,1-Dichloroethylene	8.872	61	1040302	17.34	ppbv	94
17) 3-Chloropropene	9.500	41	875650	20.39	ppbv	91
18) Methylene Chloride	9.659	49	724402	16.87	ppbv	89
19) Acrylonitrile	9.756	53	512057	20.01	ppbv #	97
20) Carbon disulfide	9.781	76	1892933	18.59	ppbv	99
21) Methyl-tert-Butyl Ethe...	10.085	73	2090638	20.30	ppbv	97
22) trans-1,2-Dichloroethy...	10.287	61	952645	19.39	ppbv	91
23) Hexane	10.585	57	1076177	20.63	ppbv	99
24) Vinyl Acetate	10.927	43	1923758	21.13	ppbv #	99
25) 1,1-Dichloroethane	10.969	63	1296012	19.01	ppbv	97
26) 2-Butanone	11.597	43	1506713	19.64	ppbv	93
27) Ethyl Acetate	11.908	43	1577886	19.68	ppbv #	45
28) cis-1,2-Dichloroethylene	11.987	61	951273	17.35	ppbv #	75
29) Chloroform	12.268	83	1606118	19.52	ppbv	97
30) Tetrahydrofuran	12.597	42	805520	20.63	ppbv	92
31) 1,1,1-Trichlorethane	13.018	97	1647083	20.58	ppbv	98
32) Cyclohexane	13.182	56	1045029	20.59	ppbv	89
33) Carbon Tetrachloride	13.487	117	1651822	19.73	ppbv	100
34) 1,2-Dichloroethane	13.566	62	914686	17.79	ppbv	99
35) Benzene	13.694	78	2447679	19.49	ppbv	91
36) n-Heptane	13.707	43	1153570	19.26	ppbv #	96
38) Trichloroethylene	14.737	95	1105503	19.85	ppbv	96
39) 1,2-Dichloropropane	14.969	63	891576	20.42	ppbv	91
40) Methyl Methacrylate	14.975	69	929306	24.37	ppbv #	41
41) 1,4-Dioxane	15.292	88	659570	24.19	ppbv #	100
42) Bromodichloromethane	15.334	83	1757810	19.72	ppbv	96
43) Methyl Isobutyl Ketone	15.865	43	1801743	20.53	ppbv	94
44) cis-1,3-Dichloropropene	16.224	75	1484342	21.56	ppbv	97
45) Toluene	16.883	91	2895491	18.99	ppbv	96
46) trans-1,3-Dichloropropene	17.035	75	1341165	21.97	ppbv	97
47) 1,1,2-Trichlorethane	17.334	97	1127775	21.06	ppbv	96
48) 2-Hexanone	17.334	43	1596778	20.92	ppbv	96

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206831.D
 Acq On : 31 Jan 2019 3:46 pm
 Sample : SEQ-CAL8
 Operator : AS
 Sample : SEQ-CAL8
 Misc : QBTO2013119A 20.0 ppbv
 ALS Vial : 8 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 16:29:58 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 15:21:50 2019
 Response via : Initial Calibration

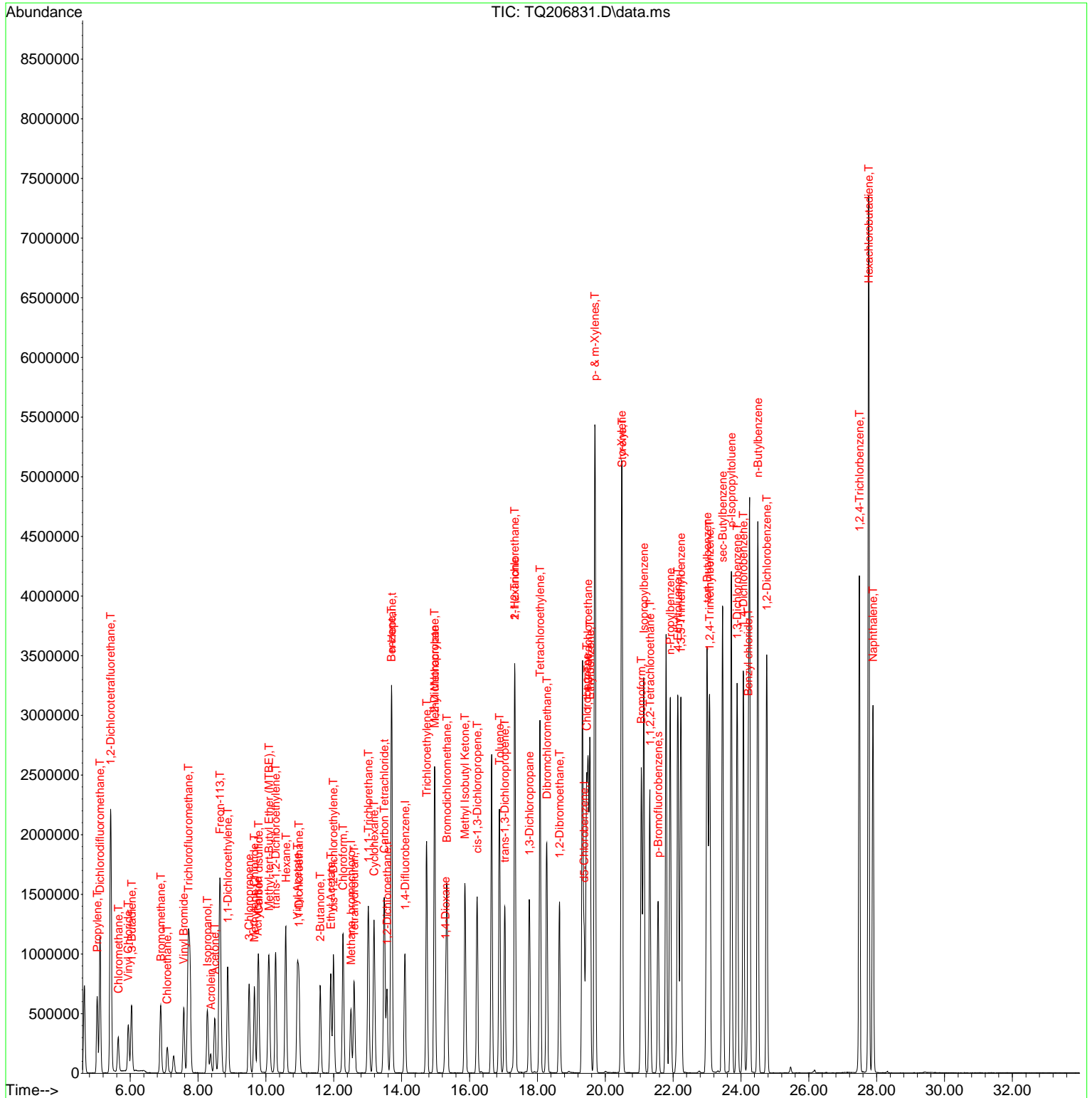
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.761	76	1541621	20.14	ppbv #	71
50) Tetrachloroethylene	18.078	166	1502123	21.71	ppbv	97
51) Dibromchloromethane	18.279	129	1791152	23.06	ppbv	97
52) 1,2-Dibromoethane	18.651	107	1672207	22.69	ppbv	98
54) Chlorobenzene	19.449	112	2307258	21.42	ppbv #	99
55) 1,1,1,2-Tetrachloroethane	19.492	131	1303936	23.54	ppbv	93
56) Ethylbenzene	19.553	91	3457153	19.14	ppbv	92
57) p- & m-Xylenes	19.693	91	5148103	35.99	ppbv	85
58) o-Xylene	20.480	91	3265841	21.61	ppbv	97
59) Styrene	20.498	104	2544046	25.44	ppbv #	100
60) Bromoform	21.065	173	2126470	29.26	ppbv	96
61) n-Propylbenzene	21.912	91	4742980	19.41	ppbv	97
62) Isopropylbenzene	21.138	105	3969510	19.69	ppbv #	96
63) 1,1,2,2-Tetrachloroeth...	21.315	83	2237819	20.56	ppbv	96
65) 4-Ethyltoluene	22.138	105	4122167	22.23	ppbv	92
66) 1,3,5-Trimethylbenzene	22.229	105	3348920	20.99	ppbv	93
67) tert-Butylbenzene	23.004	119	4184198	23.20	ppbv #	79
68) 1,2,4-Trimethylbenzene	23.077	105	3521716	21.61	ppbv #	88
69) sec-Butylbenzene	23.455	105	5151626	20.15	ppbv #	96
70) p-Isopropyltoluene	23.717	119	4345623	22.07	ppbv #	89
71) 1,3-Dichlorobenzene	23.888	146	2492653	25.90	ppbv	95
72) 1,4-Dichlorobenzene	24.070	146	2481630	27.72	ppbv	95
73) Benzyl chloride	24.217	91	3267665	33.68	ppbv	94
74) n-Butylbenzene	24.497	91	4238474	22.79	ppbv	95
75) 1,2-Dichlorobenzene	24.759	146	2474923	25.74	ppbv	95
76) 1,2,4-Trichlorobenzene	27.491	180	2052406	48.74	ppbv	98
77) Hexachlorobutadiene	27.765	225	2397113	27.14	ppbv	93
78) Naphthalene	27.893	128	3862579	27.22	ppbv	92

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

Data Path : C:\msdchem\1\data\013119\
Data File : TQ206831.D
Acq On : 31 Jan 2019 3:46 pm
Sample : SEQ-CAL8
Operator : AS
Sample : SEQ-CAL8
Misc : QBTO2013119A 20.0 ppbv
ALS Vial : 8 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 16:29:58 2019
Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
Quant Title : TO15 VOC Analysis
DataAcq Meth: AIRACQ.M
QLast Update : Thu Jan 31 15:21:50 2019
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206832.D
 Acq On : 31 Jan 2019 4:51 pm
 Sample : SEQ-CAL9
 Operator : AS
 Sample : SEQ-CAL9
 Misc : QBTO2013119A 30.0 ppbv
 ALS Vial : 9 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 17:35:54 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 16:30:47 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.512	49	452257	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.103	114	1494858	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.383	117	1292106	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.559	95	977058	10.90	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	109.00%	
Target Compounds						
						Qvalue
2) Propylene	5.050	42	685387	34.05	ppbv	97
3) Dichlorodifluoromethane	5.135	85	2798958	26.49	ppbv	94
4) 1,2-Dichlorotetrafluor...	5.446	85	3460313	22.87	ppbv	96
5) Chloromethane	5.672	50	868565	20.49	ppbv	97
6) Vinyl Chloride	5.971	62	1155655	19.00	ppbv	96
7) 1,3-Butadiene	6.068	54	719182	21.71	ppbv	99
8) Bromomethane	6.922	94	856932	23.60	ppbv	100
9) Chloroethane	7.117	64	441236	21.71	ppbv	98
10) Vinyl Bromide	7.598	106	1166844	33.10	ppbv	100
11) Trichlorofluoromethane	7.732	101	2896259	27.23	ppbv	96
12) Isopropanol	8.293	45	1890325	28.69	ppbv	100
13) Acrolein	8.391	56	397463	30.94	ppbv #	56
14) Acetone	8.513	43	1586958	24.16	ppbv	98
15) Freon-113	8.659	101	2386083	28.44	ppbv	97
16) 1,1-Dichloroethylene	8.891	61	1637737	25.60	ppbv	91
17) 3-Chloropropene	9.519	41	1377377	29.48	ppbv	90
18) Methylene Chloride	9.677	49	1120647	24.71	ppbv	86
19) Acrylonitrile	9.775	53	809936	29.19	ppbv #	59
20) Carbon disulfide	9.799	76	2909944	26.67	ppbv	99
21) Methyl-tert-Butyl Ethe...	10.098	73	3273929	29.24	ppbv	98
22) trans-1,2-Dichloroethy...	10.299	61	1500941	28.31	ppbv	89
23) Hexane	10.592	57	1680424	29.56	ppbv	98
24) Vinyl Acetate	10.933	43	2955344	29.65	ppbv #	99
25) 1,1-Dichloroethane	10.982	63	2017091	27.52	ppbv	98
26) 2-Butanone	11.610	43	2338933	28.20	ppbv	90
27) Ethyl Acetate	11.915	43	2412249	27.82	ppbv #	46
28) cis-1,2-Dichloroethylene	12.000	61	1471408	25.17	ppbv #	71
29) Chloroform	12.280	83	2495310	28.08	ppbv	95
30) Tetrahydrofuran	12.603	42	1253845	29.46	ppbv	90
31) 1,1,1-Trichloroethane	13.024	97	2595584	29.77	ppbv	97
32) Cyclohexane	13.195	56	1632786	29.52	ppbv	87
33) Carbon Tetrachloride	13.494	117	2650576	29.24	ppbv	99
34) 1,2-Dichloroethane	13.573	62	1433038	26.19	ppbv	99
35) Benzene	13.701	78	3774478	27.83	ppbv	89
36) n-Heptane	13.713	43	1734161	26.87	ppbv #	94
38) Trichloroethylene	14.737	95	1777389	28.93	ppbv	98
39) 1,2-Dichloropropane	14.969	63	1403694	29.01	ppbv	90
40) Methyl Methacrylate	14.981	69	1477795	33.86	ppbv #	91
41) 1,4-Dioxane	15.292	88	1082122	34.72	ppbv #	100
42) Bromodichloromethane	15.335	83	2734089	27.84	ppbv	95
43) Methyl Isobutyl Ketone	15.871	43	2667938	27.40	ppbv	92
44) cis-1,3-Dichloropropene	16.225	75	2324582	30.18	ppbv	95
45) Toluene	16.883	91	4316479	25.85	ppbv	92
46) trans-1,3-Dichloropropene	17.042	75	2100456	30.66	ppbv	96
47) 1,1,2-Trichloroethane	17.340	97	1791194	30.02	ppbv	94
48) 2-Hexanone	17.334	43	2296772	27.04	ppbv	95

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206832.D
 Acq On : 31 Jan 2019 4:51 pm
 Sample : SEQ-CAL9
 Operator : AS
 Sample : SEQ-CAL9
 Misc : QBTO2013119A 30.0 ppbv
 ALS Vial : 9 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 17:35:54 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 16:30:47 2019
 Response via : Initial Calibration

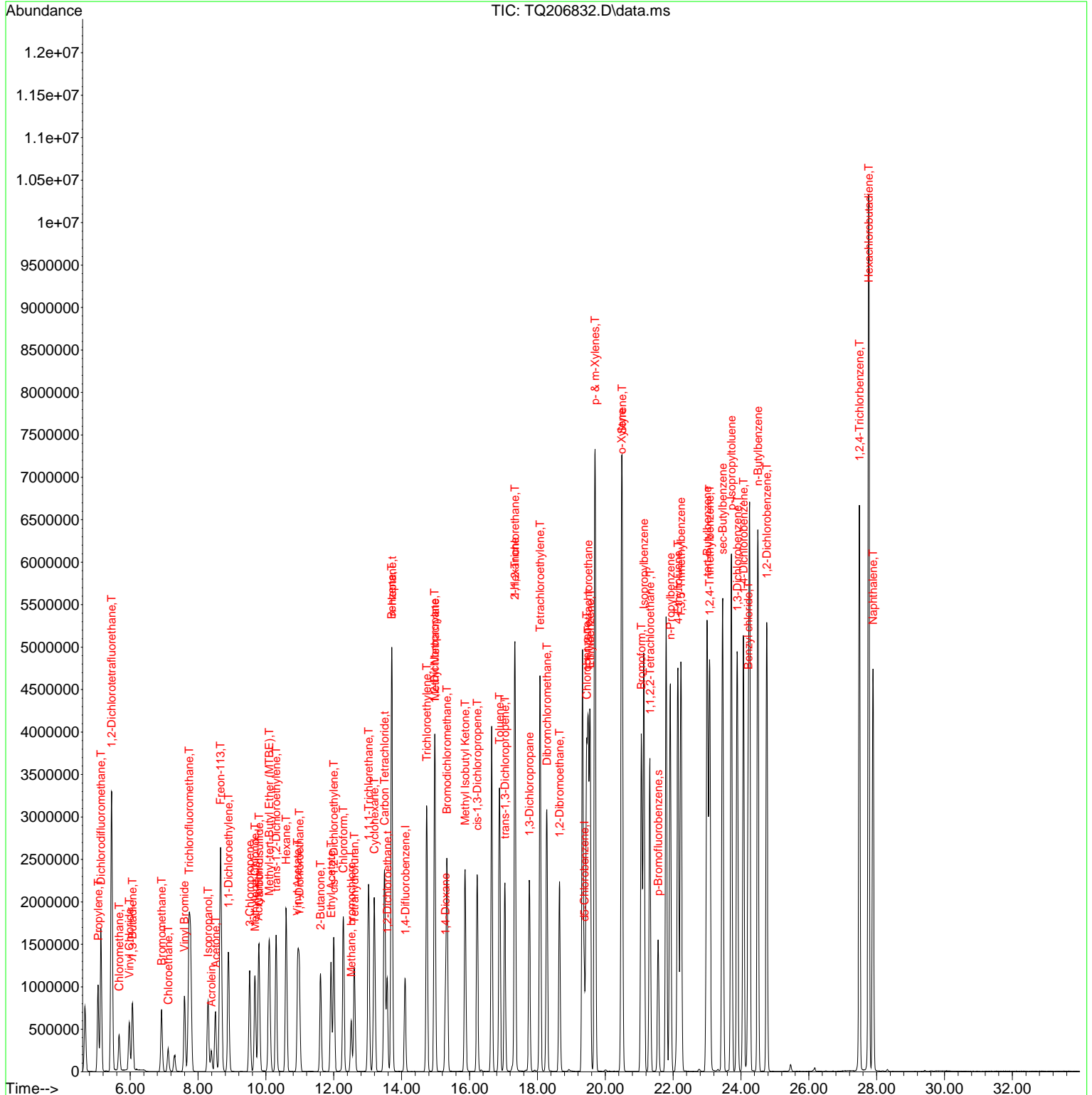
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.761	76	2394433	28.29	ppbv #	71
50) Tetrachloroethylene	18.078	166	2446905	31.57	ppbv	97
51) Dibromchloromethane	18.279	129	2853096	32.43	ppbv	96
52) 1,2-Dibromoethane	18.651	107	2612561	31.39	ppbv	97
54) Chlorobenzene	19.450	112	3572044	30.56	ppbv #	98
55) 1,1,1,2-Tetrachloroethane	19.498	131	2111510	34.53	ppbv	94
56) Ethylbenzene	19.553	91	4991653	25.97	ppbv	84
57) p- & m-Xylenes	19.700	91	6855829	45.46	ppbv #	76
58) o-Xylene	20.480	91	4670848	28.45	ppbv #	95
59) Styrene	20.498	104	3794613	33.86	ppbv #	100
60) Bromoform	21.065	173	3357815	40.01	ppbv	94
61) n-Propylbenzene	21.919	91	6587534	25.27	ppbv #	96
62) Isopropylbenzene	21.138	105	5653740	26.22	ppbv #	94
63) 1,1,2,2-Tetrachloroeth...	21.315	83	3363628	28.69	ppbv	93
65) 4-Ethyltoluene	22.144	105	5878810	29.03	ppbv	87
66) 1,3,5-Trimethylbenzene	22.230	105	4939231	28.64	ppbv #	88
67) tert-Butylbenzene	23.004	119	6288736	31.68	ppbv #	79
68) 1,2,4-Trimethylbenzene	23.077	105	5160771	29.15	ppbv #	85
69) sec-Butylbenzene	23.461	105	7129592	25.98	ppbv #	92
70) p-Isopropyltoluene	23.717	119	6126851	28.53	ppbv #	87
71) 1,3-Dichlorobenzene	23.894	146	3817743	35.26	ppbv	92
72) 1,4-Dichlorobenzene	24.077	146	3804845	37.25	ppbv	92
73) Benzyl chloride	24.217	91	4834425	41.72	ppbv	88
74) n-Butylbenzene	24.497	91	5823342	28.54	ppbv #	91
75) 1,2-Dichlorobenzene	24.760	146	3760307	34.81	ppbv	92
76) 1,2,4-Trichlorobenzene	27.491	180	3383722	60.47	ppbv	98
77) Hexachlorobutadiene	27.765	225	3572878	35.61	ppbv	91
78) Naphthalene	27.893	128	5732426	35.54	ppbv #	85

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

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206832.D
 Acq On : 31 Jan 2019 4:51 pm
 Sample : SEQ-CAL9
 Operator : AS
 Sample : SEQ-CAL9
 Misc : QBTO2013119A 30.0 ppbv
 ALS Vial : 9 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 17:35:54 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 16:30:47 2019
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206833.D
 Acq On : 31 Jan 2019 5:59 pm
 Sample : SEQ-CALA
 Operator : AS
 Sample : SEQ-CALA
 Misc : QBTO2013119A 50.0 ppbv
 ALS Vial : 10 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 18:46:02 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 17:36:19 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.518	49	481492	10.00	ppbv	0.01
37) 1,4-Difluorobenzene	14.103	114	1629559	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.383	117	1453042	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.559	95	1075309	10.55	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	105.50%	
Target Compounds						
						Qvalue
2) Propylene	5.068	42	1176107	53.84	ppbv	97
3) Dichlorodifluoromethane	5.154	85	3807103	34.42	ppbv	91
4) 1,2-Dichlorotetrafluor...	5.465	85	4878442	31.35	ppbv	89
5) Chloromethane	5.690	50	1419831	32.95	ppbv	96
6) Vinyl Chloride	5.989	62	1851443	29.80	ppbv	95
7) 1,3-Butadiene	6.080	54	1171353	34.58	ppbv	100
8) Bromomethane	6.940	94	2009595	53.62	ppbv	98
9) Chloroethane	7.129	64	1035382	49.82	ppbv	98
10) Vinyl Bromide	7.611	106	2061331	54.13	ppbv	99
11) Trichlorofluoromethane	7.745	101	4795673	42.92	ppbv	93
12) Isopropanol	8.299	45	3130650	44.92	ppbv	100
13) Acrolein	8.397	56	710531	51.72	ppbv #	56
14) Acetone	8.519	43	2658274	39.10	ppbv	95
15) Freon-113	8.671	101	4077066	45.98	ppbv	92
16) 1,1-Dichloroethylene	8.903	61	2773004	41.38	ppbv	87
17) 3-Chloropropene	9.531	41	2335522	47.07	ppbv	90
18) Methylene Chloride	9.683	49	1890748	40.17	ppbv	83
19) Acrylonitrile	9.787	53	1410434	47.92	ppbv #	97
20) Carbon disulfide	9.805	76	4757137	41.61	ppbv	98
21) Methyl-tert-Butyl Ethe...	10.104	73	5383949	45.33	ppbv	100
22) trans-1,2-Dichloroethy...	10.305	61	2538472	45.34	ppbv	84
23) Hexane	10.604	57	2874506	47.59	ppbv	98
24) Vinyl Acetate	10.939	43	4745414	44.79	ppbv #	98
25) 1,1-Dichloroethane	10.988	63	3375039	43.76	ppbv	96
26) 2-Butanone	11.616	43	3805297	43.46	ppbv #	85
27) Ethyl Acetate	11.921	43	3912466	42.82	ppbv #	45
28) cis-1,2-Dichloroethylene	12.006	61	2526812	41.34	ppbv #	68
29) Chloroform	12.286	83	4124967	44.01	ppbv	93
30) Tetrahydrofuran	12.610	42	2123206	46.98	ppbv	87
31) 1,1,1-Trichlorethane	13.030	97	4334879	46.75	ppbv	95
32) Cyclohexane	13.201	56	2765931	47.08	ppbv	84
33) Carbon Tetrachloride	13.500	117	4488732	46.65	ppbv	98
34) 1,2-Dichloroethane	13.579	62	2446146	42.77	ppbv #	98
35) Benzene	13.707	78	5763841	40.34	ppbv	86
36) n-Heptane	13.719	43	2603103	38.45	ppbv #	91
38) Trichloroethylene	14.743	95	3011942	45.15	ppbv	97
39) 1,2-Dichloropropane	14.969	63	2301331	43.83	ppbv	89
40) Methyl Methacrylate	14.987	69	2473169	51.04	ppbv	91
41) 1,4-Dioxane	15.292	88	1942471	55.92	ppbv #	100
42) Bromodichloromethane	15.341	83	4431005	41.82	ppbv	92
43) Methyl Isobutyl Ketone	15.871	43	4272572	40.76	ppbv	86
44) cis-1,3-Dichloropropene	16.231	75	3845354	45.76	ppbv	91
45) Toluene	16.883	91	6589743	36.93	ppbv	85
46) trans-1,3-Dichloropropene	17.042	75	3514111	46.90	ppbv	92
47) 1,1,2-Trichlorethane	17.340	97	2952371	45.39	ppbv	92
48) 2-Hexanone	17.340	43	3329113	36.47	ppbv #	91

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206833.D
 Acq On : 31 Jan 2019 5:59 pm
 Sample : SEQ-CALA
 Operator : AS
 Sample : SEQ-CALA
 Misc : QBTO2013119A 50.0 ppbv
 ALS Vial : 10 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 18:46:02 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 17:36:19 2019
 Response via : Initial Calibration

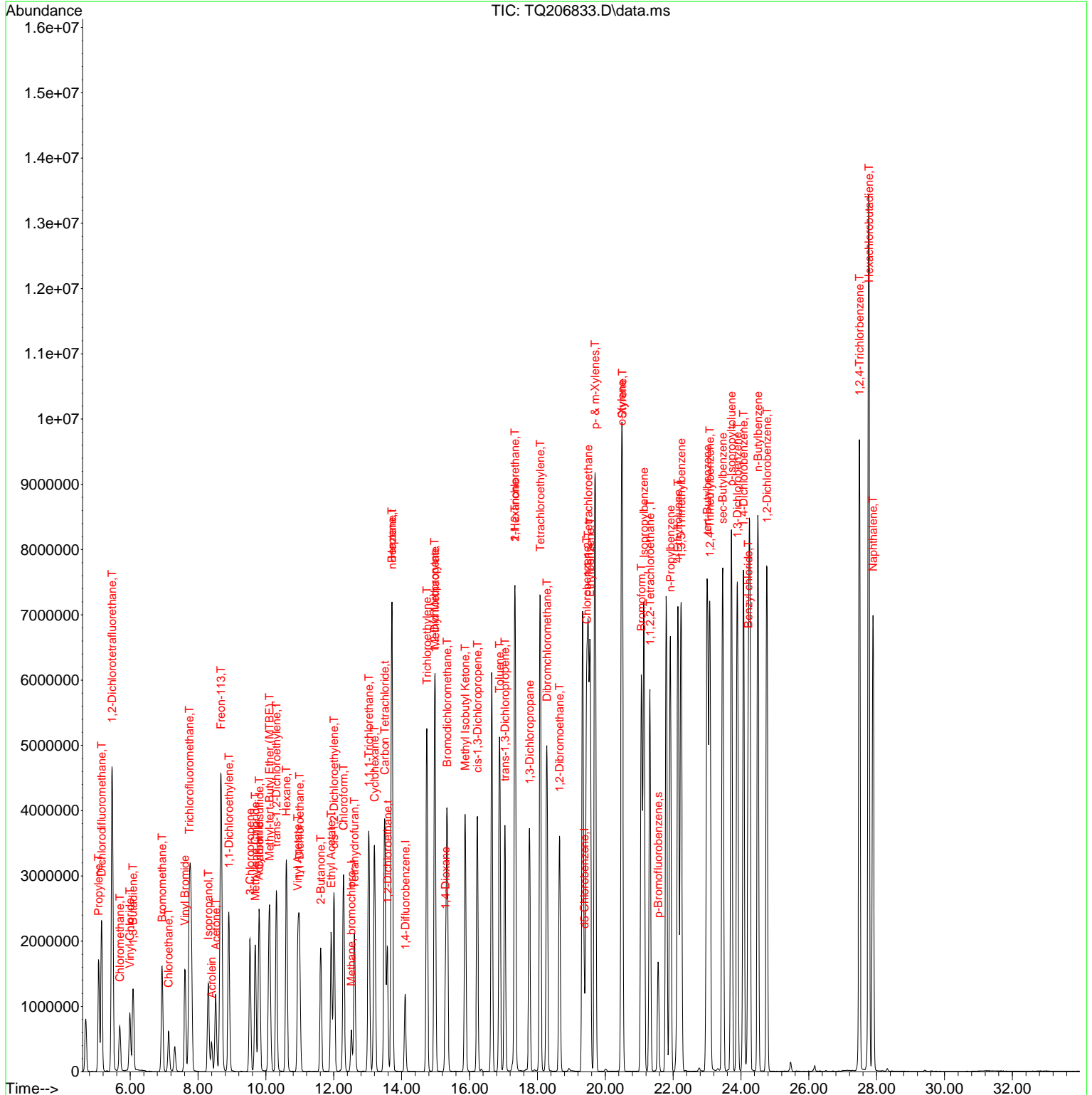
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.767	76	4025296	43.98	ppbv #	70
50) Tetrachloroethylene	18.084	166	4144588	48.69	ppbv	97
51) Dibromchloromethane	18.279	129	4766535	49.13	ppbv	94
52) 1,2-Dibromoethane	18.651	107	4413255	48.32	ppbv	95
54) Chlorobenzene	19.450	112	5775992	43.83	ppbv #	96
55) 1,1,1,2-Tetrachloroethane	19.498	131	3654416	52.02	ppbv	95
56) Ethylbenzene	19.553	91	7317737	34.51	ppbv #	71
57) p- & m-Xylenes	19.700	91	9037898	55.21	ppbv #	67
58) o-Xylene	20.480	91	6658069	36.33	ppbv #	91
59) Styrene	20.504	104	5665241	44.14	ppbv #	100
60) Bromoform	21.065	173	5411298	54.72	ppbv	89
61) n-Propylbenzene	21.919	91	9135863	31.88	ppbv #	93
62) Isopropylbenzene	21.138	105	8156727	34.26	ppbv #	92
63) 1,1,2,2-Tetrachloroeth...	21.315	83	5235207	39.96	ppbv #	89
65) 4-Ethyltoluene	22.144	105	8713470	38.44	ppbv #	79
66) 1,3,5-Trimethylbenzene	22.236	105	7052049	36.60	ppbv #	76
67) tert-Butylbenzene	23.004	119	9546004	42.42	ppbv #	78
68) 1,2,4-Trimethylbenzene	23.083	105	7583750	38.24	ppbv #	77
69) sec-Butylbenzene	23.461	105	9609539	31.74	ppbv #	90
70) p-Isopropyltoluene	23.723	119	8404727	35.05	ppbv #	85
71) 1,3-Dichlorobenzene	23.894	146	5881954	47.13	ppbv	88
72) 1,4-Dichlorobenzene	24.077	146	5837812	49.12	ppbv	88
73) Benzyl chloride	24.217	91	6855905	49.83	ppbv #	78
74) n-Butylbenzene	24.497	91	7723655	33.90	ppbv #	87
75) 1,2-Dichlorobenzene	24.766	146	5712801	45.98	ppbv	88
76) 1,2,4-Trichlorobenzene	27.491	180	5295827	73.49	ppbv	96
77) Hexachlorobutadiene	27.771	225	5044843	43.55	ppbv	89
78) Naphthalene	27.893	128	8146185	43.76	ppbv #	74

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

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206833.D
 Acq On : 31 Jan 2019 5:59 pm
 Sample : SEQ-CALA
 Operator : AS
 Sample : SEQ-CALA
 Misc : QBTO2013119A 50.0 ppbv
 ALS Vial : 10 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Jan 31 18:46:02 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Thu Jan 31 17:36:19 2019
 Response via : Initial Calibration



SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Calibration: YB90001

Laboratory ID: Y9B0102-SCV1

Sequence: Y9B0102

Standard ID: Y19B001

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
1,1,1,2-Tetrachloroethane	10.0	10.6	6.1	30.00
1,1,1-Trichloroethane	10.0	11.0	10.5	30.00
1,1,2,2-Tetrachloroethane	10.0	10.7	7.1	30.00
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.0	10.4	3.5	30.00
1,1,2-Trichloroethane	10.0	10.3	2.7	30.00
1,1-Dichloroethane	10.0	10.5	4.7	30.00
1,1-Dichloroethylene	10.0	9.76	-2.4	30.00
1,2,4-Trichlorobenzene	10.0	7.87	-21.3	30.00
1,2,4-Trimethylbenzene	10.0	11.1	10.8	30.00
1,2-Dibromoethane	10.0	11.1	11.1	30.00
1,2-Dichlorobenzene	10.0	11.4	14.1	30.00
1,2-Dichloroethane	10.0	10.1	1.2	30.00
1,2-Dichloropropane	10.0	10.2	1.8	30.00
1,2-Dichlorotetrafluoroethane	10.0	9.94	-0.6	30.00
1,3,5-Trimethylbenzene	10.0	10.9	9.1	30.00
1,3-Butadiene	10.0	8.51	-14.9	30.00
1,3-Dichlorobenzene	10.0	11.5	15.3	30.00
1,3-Dichloropropane	10.0	10.4	4.3	30.00
1,4-Dichlorobenzene	10.0	11.8	17.7	30.00
1,4-Dioxane	10.0	10.2	2.1	30.00
2-Butanone	10.0	10.4	3.6	30.00
2-Hexanone	10.0	10.6	5.9	30.00
3-Chloropropene	10.0	10.7	7.1	30.00
4-Methyl-2-pentanone	10.0	10.6	5.5	30.00
Acetone	10.0	9.53	-4.7	30.00
Acrylonitrile	10.0	10.6	5.8	30.00
Benzene	10.0	10.1	0.9	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Calibration: YB90001

Laboratory ID: Y9B0102-SCV1

Sequence: Y9B0102

Standard ID: Y19B001

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
Benzyl chloride	10.0	9.19	-8.1	30.00
Bromodichloromethane	10.0	10.5	5.2	30.00
Bromoform	10.0	12.1	20.9	30.00
Bromomethane	10.0	10.6	6.5	30.00
Carbon disulfide	10.0	10.8	8.0	30.00
Carbon tetrachloride	10.0	10.5	5.1	30.00
Chlorobenzene	10.0	10.6	5.6	30.00
Chloroethane	10.0	10.5	4.8	30.00
Chloroform	10.0	10.6	5.6	30.00
Chloromethane	10.0	8.63	-13.7	30.00
cis-1,2-Dichloroethylene	10.0	9.37	-6.3	30.00
cis-1,3-Dichloropropylene	10.0	11.6	15.9	30.00
Cyclohexane	10.0	10.8	8.5	30.00
Dibromochloromethane	10.0	10.9	9.1	30.00
Dichlorodifluoromethane	10.0	11.2	12.0	30.00
Ethyl acetate	10.0	11.2	11.5	30.00
Ethyl Benzene	10.0	10.6	6.2	30.00
Hexachlorobutadiene	10.0	11.3	12.9	30.00
Isopropanol	10.0	10.2	2.5	30.00
Methyl Methacrylate	10.0	11.1	11.0	30.00
Methyl tert-butyl ether (MTBE)	10.0	11.0	10.2	30.00
Methylene chloride	10.0	9.83	-1.7	30.00
n-Heptane	10.0	10.6	5.8	30.00
n-Hexane	10.0	10.8	8.3	30.00
o-Xylene	10.0	11.3	12.9	30.00
p- & m- Xylenes	20.0	21.7	8.3	30.00
p-Ethyltoluene	10.0	11.8	17.5	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc.

SDG: 19B1031

Client: Langan Engineering & Environmental Services (NJ)

Project: 100287503

Calibration: YB90001

Laboratory ID: Y9B0102-SCV1

Sequence: Y9B0102

Standard ID: Y19B001

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
Propylene	10.0	10.3	2.7	30.00
Styrene	10.0	11.8	18.3	30.00
Tetrachloroethylene	10.0	10.5	4.7	30.00
Tetrahydrofuran	10.0	10.4	4.2	30.00
Toluene	10.0	10.5	4.9	30.00
trans-1,2-Dichloroethylene	10.0	10.8	8.5	30.00
trans-1,3-Dichloropropylene	10.0	11.0	9.9	30.00
Trichloroethylene	10.0	10.4	3.7	30.00
Trichlorofluoromethane (Freon 11)	10.0	10.5	5.4	30.00
Vinyl acetate	10.0	11.2	11.7	30.00
Vinyl bromide	10.0	11.0	10.4	30.00
Vinyl Chloride	10.0	8.24	-17.6	30.00

* Values outside of QC limits

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206836.D
 Acq On : 31 Jan 2019 8:05 pm
 Sample : SEQ-SCV1
 Operator : AS
 Sample : SEQ-SCV1
 Misc : QBTO2013119A 10 ppbv SCV
 ALS Vial : 13 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:38:33 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.506	49	487396	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.097	114	1579126	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.377	117	1387376	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.559	95	1035456	10.58	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	105.80%	
Target Compounds						
						Qvalue
2) Propylene	5.056	42	229295	10.27	ppbv	97
3) Dichlorodifluoromethane	5.142	85	1205677	11.20	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.446	85	1492765	9.94	ppbv	97
5) Chloromethane	5.672	50	329282	8.63	ppbv	100
6) Vinyl Chloride	5.965	62	451445	8.24	ppbv	97
7) 1,3-Butadiene	6.062	54	280479	8.51	ppbv	99
8) Bromomethane	6.916	94	407896	10.65	ppbv	99
9) Chloroethane	7.105	64	220452	10.48	ppbv	99
10) Vinyl Bromide	7.592	106	430136	11.04	ppbv	100
11) Trichlorofluoromethane	7.726	101	1171534	10.54	ppbv	99
12) Isopropanol	8.287	45	713782	10.25	ppbv	100
13) Acrolein	8.379	56	159514	11.42	ppbv #	56
14) Acetone	8.507	43	638092	9.53	ppbv	99
15) Freon-113	8.653	101	919170	10.35	ppbv	99
16) 1,1-Dichloroethylene	8.885	61	650555	9.76	ppbv	96
17) 3-Chloropropene	9.513	41	533950	10.71	ppbv	92
18) Methylene Chloride	9.665	49	456644	9.83	ppbv	90
19) Acrylonitrile	9.769	53	313699	10.58	ppbv	97
20) Carbon disulfide	9.793	76	1224033	10.80	ppbv	99
21) Methyl-tert-Butyl Ethe...	10.092	73	1309921	11.02	ppbv	97
22) trans-1,2-Dichloroethy...	10.293	61	607660	10.85	ppbv	93
23) Hexane	10.592	57	658207	10.83	ppbv	99
24) Vinyl Acetate	10.933	43	1182022	11.17	ppbv #	100
25) 1,1-Dichloroethane	10.976	63	804225	10.47	ppbv	98
26) 2-Butanone	11.604	43	902989	10.36	ppbv	94
27) Ethyl Acetate	11.915	43	1012971	11.15	ppbv #	45
28) cis-1,2-Dichloroethylene	11.994	61	569745	9.37	ppbv #	76
29) Chloroform	12.274	83	987159	10.56	ppbv	98
30) Tetrahydrofuran	12.604	42	472982	10.42	ppbv	93
31) 1,1,1-Trichloroethane	13.018	97	1028875	11.05	ppbv	99
32) Cyclohexane	13.189	56	640283	10.85	ppbv	90
33) Carbon Tetrachloride	13.487	117	1017081	10.51	ppbv	100
34) 1,2-Dichloroethane	13.567	62	575430	10.12	ppbv	100
35) Benzene	13.701	78	1423669	10.09	ppbv	93
36) n-Heptane	13.707	43	703960	10.58	ppbv #	98
38) Trichloroethylene	14.737	95	663622	10.37	ppbv	95
39) 1,2-Dichloropropane	14.969	63	510072	10.18	ppbv	92
40) Methyl Methacrylate	14.975	69	522582	11.10	ppbv #	41
41) 1,4-Dioxane	15.292	88	348709	10.21	ppbv #	100
42) Bromodichloromethane	15.335	83	1057724	10.52	ppbv	97
43) Methyl Isobutyl Ketone	15.865	43	1047151	10.55	ppbv	96
44) cis-1,3-Dichloropropene	16.225	75	933425	11.59	ppbv	98
45) Toluene	16.883	91	1754619	10.49	ppbv	98
46) trans-1,3-Dichloropropene	17.036	75	792049	10.99	ppbv	98
47) 1,1,2-Trichloroethane	17.334	97	639766	10.27	ppbv	97
48) 2-Hexanone	17.334	43	904916	10.59	ppbv	98

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206836.D
 Acq On : 31 Jan 2019 8:05 pm
 Sample : SEQ-SCV1
 Operator : AS
 Sample : SEQ-SCV1
 Misc : QBTO2013119A 10 ppbv SCV
 ALS Vial : 13 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:38:33 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

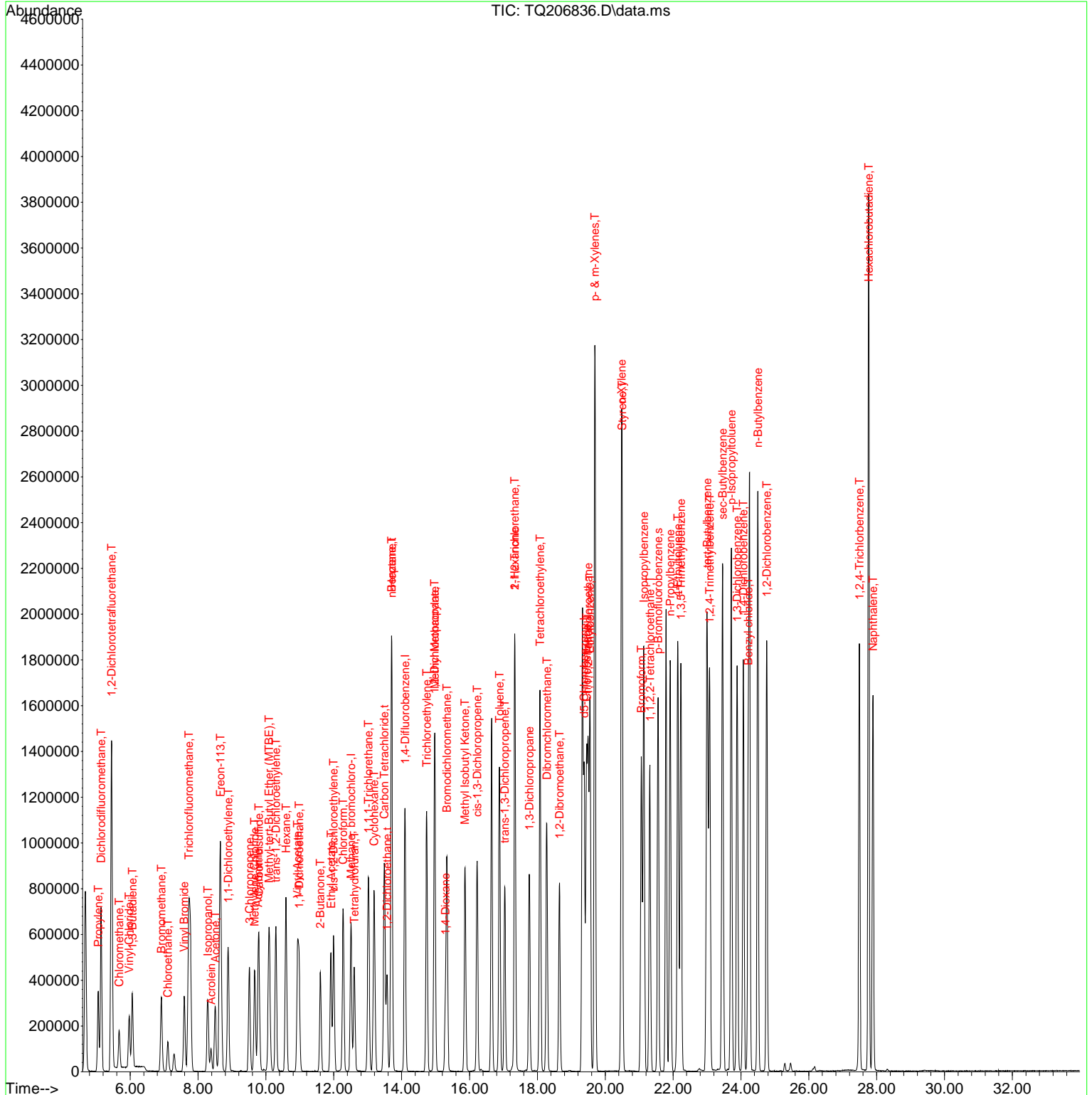
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.761	76	910838	10.43	ppbv #	72
50) Tetrachloroethylene	18.078	166	860891	10.47	ppbv	97
51) Dibromchloromethane	18.279	129	1023586	10.91	ppbv	98
52) 1,2-Dibromoethane	18.651	107	978731	11.11	ppbv	99
54) Chlorobenzene	19.450	112	1308425	10.56	ppbv #	99
55) 1,1,1,2-Tetrachloroethane	19.499	131	715267	10.61	ppbv	92
56) Ethylbenzene	19.547	91	2067006	10.62	ppbv	97
57) p- & m-Xylenes	19.694	91	3195476	21.66	ppbv	93
58) o-Xylene	20.480	91	1907674	11.29	ppbv	99
59) Styrene	20.498	104	1428804	11.83	ppbv #	100
60) Bromoform	21.065	173	1155045	12.09	ppbv	99
61) n-Propylbenzene	21.913	91	2838632	10.87	ppbv	98
62) Isopropylbenzene	21.138	105	2334891	10.69	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	21.315	83	1306159	10.71	ppbv	97
65) 4-Ethyltoluene	22.138	105	2470634	11.75	ppbv	97
66) 1,3,5-Trimethylbenzene	22.230	105	1940499	10.91	ppbv	96
67) tert-Butylbenzene	23.004	119	2365223	11.22	ppbv #	79
68) 1,2,4-Trimethylbenzene	23.077	105	2036495	11.08	ppbv #	92
69) sec-Butylbenzene	23.455	105	3068032	11.12	ppbv	98
70) p-Isopropyltoluene	23.717	119	2447798	11.11	ppbv #	89
71) 1,3-Dichlorobenzene	23.888	146	1364012	11.53	ppbv	97
72) 1,4-Dichlorobenzene	24.071	146	1332626	11.77	ppbv	97
73) Benzyl chloride	24.217	91	1858912	9.19	ppbv	97
74) n-Butylbenzene	24.498	91	2445150	11.71	ppbv	98
75) 1,2-Dichlorobenzene	24.760	146	1339796	11.41	ppbv	97
76) 1,2,4-Trichlorobenzene	27.491	180	923246	7.87	ppbv	98
77) Hexachlorobutadiene	27.765	225	1228212	11.29	ppbv	97
78) Naphthalene	27.893	128	2140619	12.23	ppbv	96

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

Data Path : C:\msdchem\1\data\013119\
Data File : TQ206836.D
Acq On : 31 Jan 2019 8:05 pm
Sample : SEQ-SCV1
Operator : AS
Sample : SEQ-SCV1
Misc : QBTO2013119A 10 ppbv SCV
ALS Vial : 13 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Feb 01 08:38:33 2019
Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
Quant Title : TO15 VOC Analysis
DataAcq Meth: AIRACQ.M
QLast Update : Fri Feb 01 08:33:23 2019
Response via : Initial Calibration



FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Instrument ID: TO15_AIR2 Calibration: YB90001
 Lab File ID: TO207178.D Calibration Date: 01/31/19 23:37
 Sequence: Y9C0722 Injection Date: 03/05/19
 Lab Sample ID: Y9C0722-CCV1 Injection Time: 11:58

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,1,1,2-Tetrachloroethane	A	10.0	11.3	0.4859082	0.5492052		13.0	30
1,1,1-Trichloroethane	A	10.0	11.4	1.910124	2.168086		13.5	30
1,1,2,2-Tetrachloroethane	A	10.0	11.7	0.8790394	1.024846		16.6	30
1,1,2-Trichloro-1,2,2-trifluoroethane	A	10.0	10.4	1.82292	1.900617		4.3	30
1,1,2-Trichloroethane	A	10.0	10.5	0.3945732	0.4159645		5.4	30
1,1-Dichloroethane	A	10.0	10.8	1.576708	1.70224		8.0	30
1,1-Dichloroethylene	A	10.0	9.99	1.367704	1.366231		-0.1	30
1,2,4-Trichlorobenzene	Q	10.0	8.20	0.5251826	0.6968344		-18.0	30
1,2,4-Trimethylbenzene	A	10.0	12.0	1.324692	1.592648		20.2	30
1,2-Dibromoethane	A	10.0	11.4	0.558089	0.6350888		13.8	30
1,2-Dichlorobenzene	A	10.0	12.2	0.8465161	1.034924		22.3	30
1,2-Dichloroethane	A	10.0	10.4	1.166473	1.207037		3.5	30
1,2-Dichloropropane	A	10.0	10.8	0.3172126	0.3432199		8.2	30
1,2-Dichlorotetrafluoroethane	A	10.0	10.3	3.081165	3.172053		2.9	30
1,3,5-Trimethylbenzene	A	10.0	11.5	1.281732	1.47373		15.0	30
1,3-Butadiene	A	10.0	11.2	0.6764702	0.7563817		11.8	30
1,3-Dichlorobenzene	A	10.0	12.3	0.8527515	1.046162		22.7	30
1,3-Dichloropropane	A	10.0	10.9	0.5532041	0.6017651		8.8	30
1,4-Dichlorobenzene	A	10.0	12.6	0.8160923	1.024214		25.5	30
1,4-Dioxane	A	10.0	11.4	0.216329	0.2457308		13.6	30
2-Butanone	A	10.0	10.9	1.788609	1.948594		8.9	30
2-Hexanone	A	10.0	12.1	0.5412446	0.6553614		21.1	30
3-Chloropropene	A	10.0	11.1	1.022968	1.13474		10.9	30
4-Methyl-2-pentanone	A	10.0	11.3	0.6283916	0.7127805		13.4	30
Acetone	A	10.0	9.89	1.3735	1.357962		-1.1	30
Acrylonitrile	A	10.0	10.8	0.6080708	0.6538806		7.5	30
Benzene	A	10.0	10.7	2.896083	3.093947		6.8	30
Benzyl chloride	Q	10.0	9.44	0.9465009	1.375393		-5.6	30
Bromodichloromethane	A	10.0	11.0	0.636905	0.7040611		10.5	30

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Instrument ID: TO15_AIR2 Calibration: YB90001
 Lab File ID: TO207178.D Calibration Date: 01/31/19 23:37
 Sequence: Y9C0722 Injection Date: 03/05/19
 Lab Sample ID: Y9C0722-CCV1 Injection Time: 11:58

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Bromoform	A	10.0	13.0	0.6885611	0.8957247		30.1	30 *
Bromomethane	A	10.0	10.1	0.7854622	0.7905779		0.7	30
Carbon disulfide	A	10.0	10.6	2.324644	2.461611		5.9	30
Carbon tetrachloride	A	10.0	10.8	1.985034	2.13452		7.5	30
Chlorobenzene	A	10.0	11.2	0.8929275	1.004677		12.5	30
Chloroethane	A	10.0	10.0	0.4314571	0.4329287		0.3	30
Chloroform	A	10.0	10.9	1.917564	2.098426		9.4	30
Chloromethane	A	10.0	11.0	0.7825495	0.8609571		10.0	30
cis-1,2-Dichloroethylene	A	10.0	10.0	1.247457	1.251358		0.3	30
cis-1,3-Dichloropropylene	A	10.0	11.4	0.5101957	0.5836073		14.4	30
Cyclohexane	A	10.0	11.4	1.211277	1.385982		14.4	30
Dibromochloromethane	A	10.0	11.5	0.5940931	0.6827638		14.9	30
Dichlorodifluoromethane	A	10.0	12.4	2.207992	2.739009		24.0	30
Ethyl acetate	A	10.0	11.0	1.863551	2.052054		10.1	30
Ethyl Benzene	A	10.0	11.5	1.402715	1.613621		15.0	30
Hexachlorobutadiene	A	10.0	11.8	0.7843973	0.9237807		17.8	30
Isopropanol	A	10.0	10.7	1.429192	1.52648		6.8	30
Methyl Methacrylate	A	10.0	11.6	0.298116	0.3444854		15.6	30
Methyl tert-butyl ether (MTBE)	A	10.0	11.3	2.438177	2.759454		13.2	30
Methylene chloride	A	10.0	10.0	0.953542	0.9534324		-0.01	30
n-Heptane	A	10.0	10.8	1.36532	1.474893		8.0	30
n-Hexane	A	10.0	11.1	1.246915	1.384466		11.0	30
o-Xylene	A	10.0	12.2	1.218101	1.492775		22.5	30
p- & m- Xylenes	A	20.0	23.4	1.063573	1.246588		17.2	30
p-Ethyltoluene	A	10.0	12.6	1.515044	1.903012		25.6	30
Propylene	A	10.0	11.9	0.4580127	0.5460928		19.2	30
Styrene	A	10.0	12.5	0.8703351	1.08788		25.0	30
Tetrachloroethylene	A	10.0	10.5	0.5206446	0.5458694		4.8	30
Tetrahydrofuran	A	10.0	11.2	0.9314913	1.038156		11.5	30

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Instrument ID: TO15_AIR2 Calibration: YB90001
 Lab File ID: TO207178.D Calibration Date: 01/31/19 23:37
 Sequence: Y9C0722 Injection Date: 03/05/19
 Lab Sample ID: Y9C0722-CCV1 Injection Time: 11:58

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Toluene	A	10.0	11.1	1.059253	1.171568		10.6	30
trans-1,2-Dichloroethylene	A	10.0	10.8	1.149212	1.245492		8.4	30
trans-1,3-Dichloropropylene	A	10.0	11.4	0.4562105	0.5209973		14.2	30
Trichloroethylene	A	10.0	10.7	0.4054356	0.4340111		7.0	30
Trichlorofluoromethane (Freon 11)	A	10.0	10.5	2.279581	2.397284		5.2	30
Vinyl acetate	A	10.0	11.4	2.171593	2.465759		13.5	30
Vinyl bromide	A	10.0	10.5	0.7990914	0.837364		4.8	30
Vinyl Chloride	A	10.0	10.4	1.123608	1.16838		4.0	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207178.D
 Acq On : 5 Mar 2019 11:58 am
 Sample : SEQ-CCV1
 Operator : AS
 Sample : SEQ-CCV1
 Misc : QBTO2030519A CCV
 ALS Vial : 3 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 05 13:23:31 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.512	49	434873	10.00	ppbv	0.01
37) 1,4-Difluorobenzene	14.103	114	1403418	10.00	ppbv	0.01
53) d5-Chlorobenzene	19.377	117	1188268	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	837013	9.98	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	99.80%	
Target Compounds						
						Qvalue
2) Propylene	5.074	42	237481	11.92	ppbv	97
3) Dichlorodifluoromethane	5.160	85	1191121	12.40	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.471	85	1379440	10.29	ppbv	93
5) Chloromethane	5.696	50	374407	11.00	ppbv	97
6) Vinyl Chloride	5.989	62	508097	10.40	ppbv	97
7) 1,3-Butadiene	6.087	54	328930	11.18	ppbv	99
8) Bromomethane	6.940	94	343801	10.07	ppbv	99
9) Chloroethane	7.135	64	188269	10.03	ppbv	100
10) Vinyl Bromide	7.611	106	364147	10.48	ppbv	99
11) Trichlorofluoromethane	7.745	101	1042514	10.52	ppbv	99
12) Isopropanol	8.306	45	663825	10.68	ppbv	100
13) Acrolein	8.397	56	136732	10.97	ppbv #	86
14) Acetone	8.519	43	590541	9.89	ppbv	99
15) Freon-113	8.671	101	826527	10.43	ppbv	97
16) 1,1-Dichloroethylene	8.903	61	594137	9.99	ppbv	98
17) 3-Chloropropene	9.525	41	493468	11.09	ppbv	92
18) Methylene Chloride	9.677	49	414622	10.00	ppbv	91
19) Acrylonitrile	9.781	53	284355	10.75	ppbv	97
20) Carbon disulfide	9.805	76	1070488	10.59	ppbv	99
21) Methyl-tert-Butyl Ethe...	10.104	73	1200012	11.32	ppbv	97
22) trans-1,2-Dichloroethy...	10.305	61	541631	10.84	ppbv	94
23) Hexane	10.604	57	602067	11.10	ppbv	99
24) Vinyl Acetate	10.939	43	1072292	11.35	ppbv #	98
25) 1,1-Dichloroethane	10.982	63	740258	10.80	ppbv	99
26) 2-Butanone	11.610	43	847391	10.89	ppbv	94
27) Ethyl Acetate	11.921	43	892383	11.01	ppbv #	45
28) cis-1,2-Dichloroethylene	12.000	61	544182	10.03	ppbv	77
29) Chloroform	12.280	83	912549	10.94	ppbv	97
30) Tetrahydrofuran	12.610	42	451466	11.15	ppbv	93
31) 1,1,1-Trichloroethane	13.030	97	942842	11.35	ppbv	99
32) Cyclohexane	13.195	56	602726	11.44	ppbv	91
33) Carbon Tetrachloride	13.494	117	928245	10.75	ppbv	100
34) 1,2-Dichloroethane	13.573	62	524908	10.35	ppbv	99
35) Benzene	13.701	78	1345474	10.68	ppbv	92
36) n-Heptane	13.713	43	641391	10.80	ppbv #	97
38) Trichloroethylene	14.737	95	609099	10.70	ppbv	93
39) 1,2-Dichloropropane	14.969	63	481681	10.82	ppbv	92
40) Methyl Methacrylate	14.981	69	483457	11.56	ppbv #	85
41) 1,4-Dioxane	15.292	88	344863	11.36	ppbv #	100
42) Bromodichloromethane	15.335	83	988092	11.05	ppbv	97
43) Methyl Isobutyl Ketone	15.871	43	1000329	11.34	ppbv	96
44) cis-1,3-Dichloropropene	16.225	75	819045	11.44	ppbv	98
45) Toluene	16.883	91	1644199	11.06	ppbv	99
46) trans-1,3-Dichloropropene	17.042	75	731177	11.42	ppbv	98
47) 1,1,2-Trichloroethane	17.334	97	583772	10.54	ppbv	98
48) 2-Hexanone	17.334	43	919746	12.11	ppbv	98

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207178.D
 Acq On : 5 Mar 2019 11:58 am
 Sample : SEQ-CCV1
 Operator : AS
 Sample : SEQ-CCV1
 Misc : QBTO2030519A CCV
 ALS Vial : 3 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 05 13:23:31 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

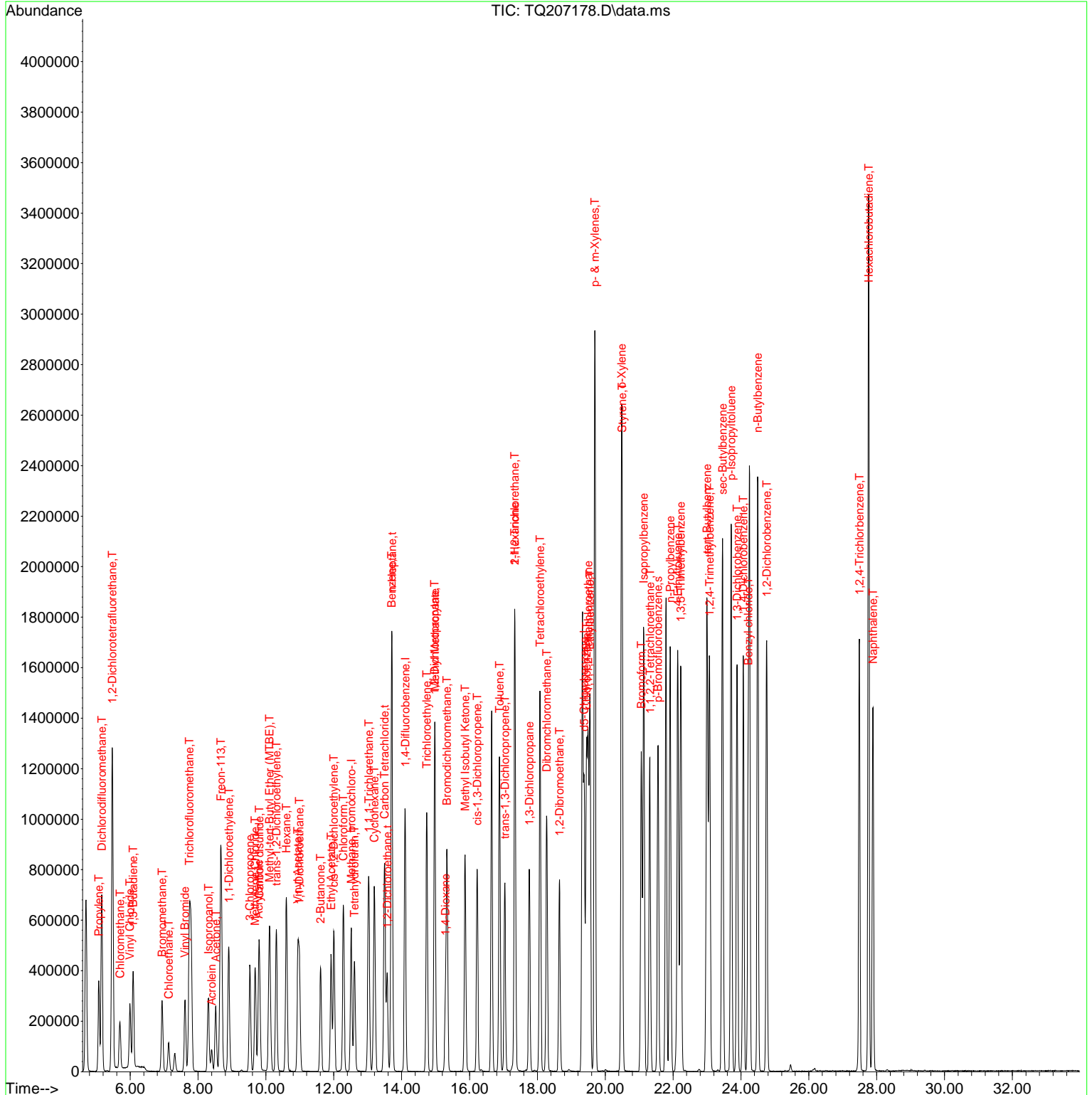
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.761	76	844528	10.88	ppbv #	72
50) Tetrachloroethylene	18.078	166	766083	10.48	ppbv	98
51) Dibromchloromethane	18.273	129	958203	11.49	ppbv	98
52) 1,2-Dibromoethane	18.651	107	891295	11.38	ppbv	98
54) Chlorobenzene	19.444	112	1193826	11.25	ppbv #	99
55) 1,1,1,2-Tetrachloroethane	19.499	131	652603	11.30	ppbv	93
56) Ethylbenzene	19.547	91	1917414	11.50	ppbv	97
57) p- & m-Xylenes	19.694	91	2962562	23.44	ppbv	94
58) o-Xylene	20.480	91	1773817	12.25	ppbv	99
59) Styrene	20.498	104	1292693	12.50	ppbv #	100
60) Bromoform	21.065	173	1064361	13.01	ppbv	98
61) n-Propylbenzene	21.913	91	2675792	11.96	ppbv	99
62) Isopropylbenzene	21.132	105	2210398	11.82	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	21.315	83	1217792	11.66	ppbv	97
65) 4-Ethyltoluene	22.138	105	2261288	12.56	ppbv	98
66) 1,3,5-Trimethylbenzene	22.224	105	1751186	11.50	ppbv	96
67) tert-Butylbenzene	22.998	119	2202289	12.20	ppbv #	79
68) 1,2,4-Trimethylbenzene	23.077	105	1892493	12.02	ppbv #	93
69) sec-Butylbenzene	23.455	105	2903942	12.29	ppbv #	94
70) p-Isopropyltoluene	23.711	119	2362151	12.51	ppbv #	89
71) 1,3-Dichlorobenzene	23.888	146	1243121	12.27	ppbv	97
72) 1,4-Dichlorobenzene	24.071	146	1217041	12.55	ppbv	97
73) Benzyl chloride	24.217	91	1634335	9.44	ppbv	98
74) n-Butylbenzene	24.491	91	2338948	13.08	ppbv	98
75) 1,2-Dichlorobenzene	24.760	146	1229767	12.23	ppbv	97
76) 1,2,4-Trichlorobenzene	27.491	180	828026	8.20	ppbv	98
77) Hexachlorobutadiene	27.765	225	1097699	11.78	ppbv	97
78) Naphthalene	27.893	128	1884511	12.58	ppbv	97

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

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207178.D
 Acq On : 5 Mar 2019 11:58 am
 Sample : SEQ-CCV1
 Operator : AS
 Sample : SEQ-CCV1
 Misc : QBTO2030519A CCV
 ALS Vial : 3 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 05 13:23:31 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration



FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Instrument ID: TO15_AIR2 Calibration: YB90001
 Lab File ID: TO207190.D Calibration Date: 01/31/19 23:37
 Sequence: Y9C0724 Injection Date: 03/06/19
 Lab Sample ID: Y9C0724-CCV1 Injection Time: 12:16

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,1,1,2-Tetrachloroethane	A	10.0	11.6	0.4859082	0.564366		16.1	30
1,1,1-Trichloroethane	A	10.0	11.4	1.910124	2.186323		14.5	30
1,1,2,2-Tetrachloroethane	A	10.0	11.9	0.8790394	1.048553		19.3	30
1,1,2-Trichloro-1,2,2-trifluoroethane	A	10.0	10.5	1.82292	1.912545		4.9	30
1,1,2-Trichloroethane	A	10.0	10.9	0.3945732	0.4312248		9.3	30
1,1-Dichloroethane	A	10.0	11.0	1.576708	1.734847		10.0	30
1,1-Dichloroethylene	A	10.0	10.2	1.367704	1.392572		1.8	30
1,2,4-Trichlorobenzene	Q	10.0	8.29	0.5251826	0.7047363		-17.1	30
1,2,4-Trimethylbenzene	A	10.0	12.3	1.324692	1.624152		22.6	30
1,2-Dibromoethane	A	10.0	11.8	0.558089	0.6603702		18.3	30
1,2-Dichlorobenzene	A	10.0	12.4	0.8465161	1.05351		24.5	30
1,2-Dichloroethane	A	10.0	10.6	1.166473	1.230936		5.5	30
1,2-Dichloropropane	A	10.0	11.2	0.3172126	0.354555		11.8	30
1,2-Dichlorotetrafluoroethane	A	10.0	10.7	3.081165	3.287222		6.7	30
1,3,5-Trimethylbenzene	A	10.0	12.2	1.281732	1.570251		22.5	30
1,3-Butadiene	A	10.0	10.4	0.6764702	0.705948		4.4	30
1,3-Dichlorobenzene	A	10.0	12.5	0.8527515	1.064232		24.8	30
1,3-Dichloropropane	A	10.0	11.3	0.5532041	0.6244823		12.9	30
1,4-Dichlorobenzene	A	10.0	12.8	0.8160923	1.047592		28.4	30
1,4-Dioxane	A	10.0	11.6	0.216329	0.2501419		15.6	30
2-Butanone	A	10.0	11.1	1.788609	1.979644		10.7	30
2-Hexanone	A	10.0	12.4	0.5412446	0.6736679		24.5	30
3-Chloropropene	A	10.0	11.2	1.022968	1.142573		11.7	30
4-Methyl-2-pentanone	A	10.0	11.7	0.6283916	0.7362343		17.2	30
Acetone	A	10.0	9.92	1.3735	1.363084		-0.8	30
Acrylonitrile	A	10.0	10.8	0.6080708	0.6578484		8.2	30
Benzene	A	10.0	10.8	2.896083	3.132503		8.2	30
Benzyl chloride	Q	10.0	9.69	0.9465009	1.410252		-3.1	30
Bromodichloromethane	A	10.0	11.4	0.636905	0.7251158		13.8	30

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Instrument ID: TO15_AIR2 Calibration: YB90001
 Lab File ID: TO207190.D Calibration Date: 01/31/19 23:37
 Sequence: Y9C0724 Injection Date: 03/06/19
 Lab Sample ID: Y9C0724-CCV1 Injection Time: 12:16

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Bromoform	A	10.0	13.3	0.6885611	0.9153658		32.9	30 *
Bromomethane	A	10.0	10.1	0.7854622	0.7907971		0.7	30
Carbon disulfide	A	10.0	10.9	2.324644	2.526023		8.7	30
Carbon tetrachloride	A	10.0	10.8	1.985034	2.148994		8.3	30
Chlorobenzene	A	10.0	11.6	0.8929275	1.032083		15.6	30
Chloroethane	A	10.0	9.88	0.4314571	0.4263726		-1.2	30
Chloroform	A	10.0	11.1	1.917564	2.130752		11.1	30
Chloromethane	A	10.0	10.1	0.7825495	0.7891767		0.8	30
cis-1,2-Dichloroethylene	A	10.0	10.2	1.247457	1.271907		2.0	30
cis-1,3-Dichloropropylene	A	10.0	11.9	0.5101957	0.6052941		18.6	30
Cyclohexane	A	10.0	11.5	1.211277	1.395213		15.2	30
Dibromochloromethane	A	10.0	11.8	0.5940931	0.7011733		18.0	30
Dichlorodifluoromethane	A	10.0	12.5	2.207992	2.763656		25.2	30
Ethyl acetate	A	10.0	11.2	1.863551	2.083647		11.8	30
Ethyl Benzene	A	10.0	11.8	1.402715	1.647637		17.5	30
Hexachlorobutadiene	A	10.0	12.1	0.7843973	0.9456254		20.6	30
Isopropanol	A	10.0	10.7	1.429192	1.53299		7.3	30
Methyl Methacrylate	A	10.0	12.0	0.298116	0.3580805		20.1	30
Methyl tert-butyl ether (MTBE)	A	10.0	11.6	2.438177	2.83704		16.4	30
Methylene chloride	A	10.0	10.2	0.953542	0.9774796		2.5	30
n-Heptane	A	10.0	10.9	1.36532	1.487389		8.9	30
n-Hexane	A	10.0	11.3	1.246915	1.406965		12.8	30
o-Xylene	A	10.0	12.6	1.218101	1.530177		25.6	30
p- & m- Xylenes	A	20.0	23.9	1.063573	1.273219		19.7	30
p-Ethyltoluene	A	10.0	12.6	1.515044	1.909484		26.0	30
Propylene	A	10.0	12.0	0.4580127	0.5475135		19.5	30
Styrene	A	10.0	12.8	0.8703351	1.11299		27.9	30
Tetrachloroethylene	A	10.0	10.9	0.5206446	0.5664264		8.8	30
Tetrahydrofuran	A	10.0	11.3	0.9314913	1.052307		13.0	30

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory:	<u>York Analytical Laboratories, Inc.</u>	SDG:	<u>19B1031</u>
Client:	<u>Langan Engineering & Environmental Services (NJ)</u>	Project:	<u>100287503</u>
Instrument ID:	<u>TO15_AIR2</u>	Calibration:	<u>YB90001</u>
Lab File ID:	<u>TO207190.D</u>	Calibration Date:	<u>01/31/19 23:37</u>
Sequence:	<u>Y9C0724</u>	Injection Date:	<u>03/06/19</u>
Lab Sample ID:	<u>Y9C0724-CCV1</u>	Injection Time:	<u>12:16</u>

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Toluene	A	10.0	11.4	1.059253	1.212148		14.4	30
trans-1,2-Dichloroethylene	A	10.0	11.1	1.149212	1.275734		11.0	30
trans-1,3-Dichloropropylene	A	10.0	11.9	0.4562105	0.5434586		19.1	30
Trichloroethylene	A	10.0	11.0	0.4054356	0.444543		9.6	30
Trichlorofluoromethane (Freon 11)	A	10.0	10.6	2.279581	2.40388		5.5	30
Vinyl acetate	A	10.0	11.4	2.171593	2.47192		13.8	30
Vinyl bromide	A	10.0	10.3	0.7990914	0.8231779		3.0	30
Vinyl Chloride	A	10.0	9.66	1.123608	1.084879		-3.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207190.D
 Acq On : 6 Mar 2019 12:16 pm
 Sample : SEQ-CCV1
 Operator : AS
 Sample : SEQ-CCV1
 Misc : QBTO2030619A CCV
 ALS Vial : 3 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 06 20:20:05 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.500	49	428278	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.097	114	1361515	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.377	117	1166408	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	833808	10.13	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	101.30%	
Target Compounds						
						Qvalue
2) Propylene	5.044	42	234488	11.95	ppbv	97
3) Dichlorodifluoromethane	5.130	85	1183613	12.52	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.440	85	1407845	10.67	ppbv	94
5) Chloromethane	5.666	50	337987	10.08	ppbv	99
6) Vinyl Chloride	5.965	62	464630	9.66	ppbv	97
7) 1,3-Butadiene	6.056	54	302342	10.44	ppbv	99
8) Bromomethane	6.916	94	338681	10.07	ppbv	99
9) Chloroethane	7.105	64	182606	9.88	ppbv	99
10) Vinyl Bromide	7.592	106	352549	10.30	ppbv	100
11) Trichlorofluoromethane	7.727	101	1029529	10.55	ppbv	99
12) Isopropanol	8.281	45	656546	10.73	ppbv	100
13) Acrolein	8.385	56	133448	10.87	ppbv #	56
14) Acetone	8.501	43	583779	9.92	ppbv	98
15) Freon-113	8.653	101	819101	10.49	ppbv	97
16) 1,1-Dichloroethylene	8.879	61	596408	10.18	ppbv	97
17) 3-Chloropropene	9.507	41	489339	11.17	ppbv	93
18) Methylene Chloride	9.665	49	418633	10.25	ppbv	91
19) Acrylonitrile	9.763	53	281742	10.82	ppbv #	59
20) Carbon disulfide	9.787	76	1081840	10.87	ppbv	99
21) Methyl-tert-Butyl Ethe...	10.092	73	1215042	11.64	ppbv	97
22) trans-1,2-Dichloroethy...	10.287	61	546369	11.10	ppbv	95
23) Hexane	10.592	57	602572	11.28	ppbv	99
24) Vinyl Acetate	10.927	43	1058669	11.38	ppbv #	100
25) 1,1-Dichloroethane	10.976	63	742997	11.00	ppbv	98
26) 2-Butanone	11.598	43	847838	11.07	ppbv	95
27) Ethyl Acetate	11.915	43	892380	11.18	ppbv #	44
28) cis-1,2-Dichloroethylene	11.994	61	544730	10.20	ppbv	78
29) Chloroform	12.274	83	912554	11.11	ppbv	98
30) Tetrahydrofuran	12.598	42	450680	11.30	ppbv	93
31) 1,1,1-Trichloroethane	13.024	97	936354	11.45	ppbv	99
32) Cyclohexane	13.189	56	597539	11.52	ppbv	91
33) Carbon Tetrachloride	13.488	117	920367	10.83	ppbv	100
34) 1,2-Dichloroethane	13.567	62	527183	10.55	ppbv	99
35) Benzene	13.695	78	1341582	10.82	ppbv	92
36) n-Heptane	13.707	43	637016	10.89	ppbv #	97
38) Trichloroethylene	14.737	95	605252	10.96	ppbv	93
39) 1,2-Dichloropropane	14.969	63	482732	11.18	ppbv	92
40) Methyl Methacrylate	14.975	69	487532	12.01	ppbv #	41
41) 1,4-Dioxane	15.286	88	340572	11.56	ppbv #	100
42) Bromodichloromethane	15.329	83	987256	11.38	ppbv	98
43) Methyl Isobutyl Ketone	15.865	43	1002394	11.72	ppbv	96
44) cis-1,3-Dichloropropene	16.225	75	824117	11.86	ppbv	98
45) Toluene	16.877	91	1650358	11.44	ppbv	99
46) trans-1,3-Dichloropropene	17.036	75	739927	11.91	ppbv	98
47) 1,1,2-Trichloroethane	17.334	97	587119	10.93	ppbv	98
48) 2-Hexanone	17.334	43	917209	12.45	ppbv #	96

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207190.D
 Acq On : 6 Mar 2019 12:16 pm
 Sample : SEQ-CCV1
 Operator : AS
 Sample : SEQ-CCV1
 Misc : QBTO2030619A CCV
 ALS Vial : 3 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 06 20:20:05 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

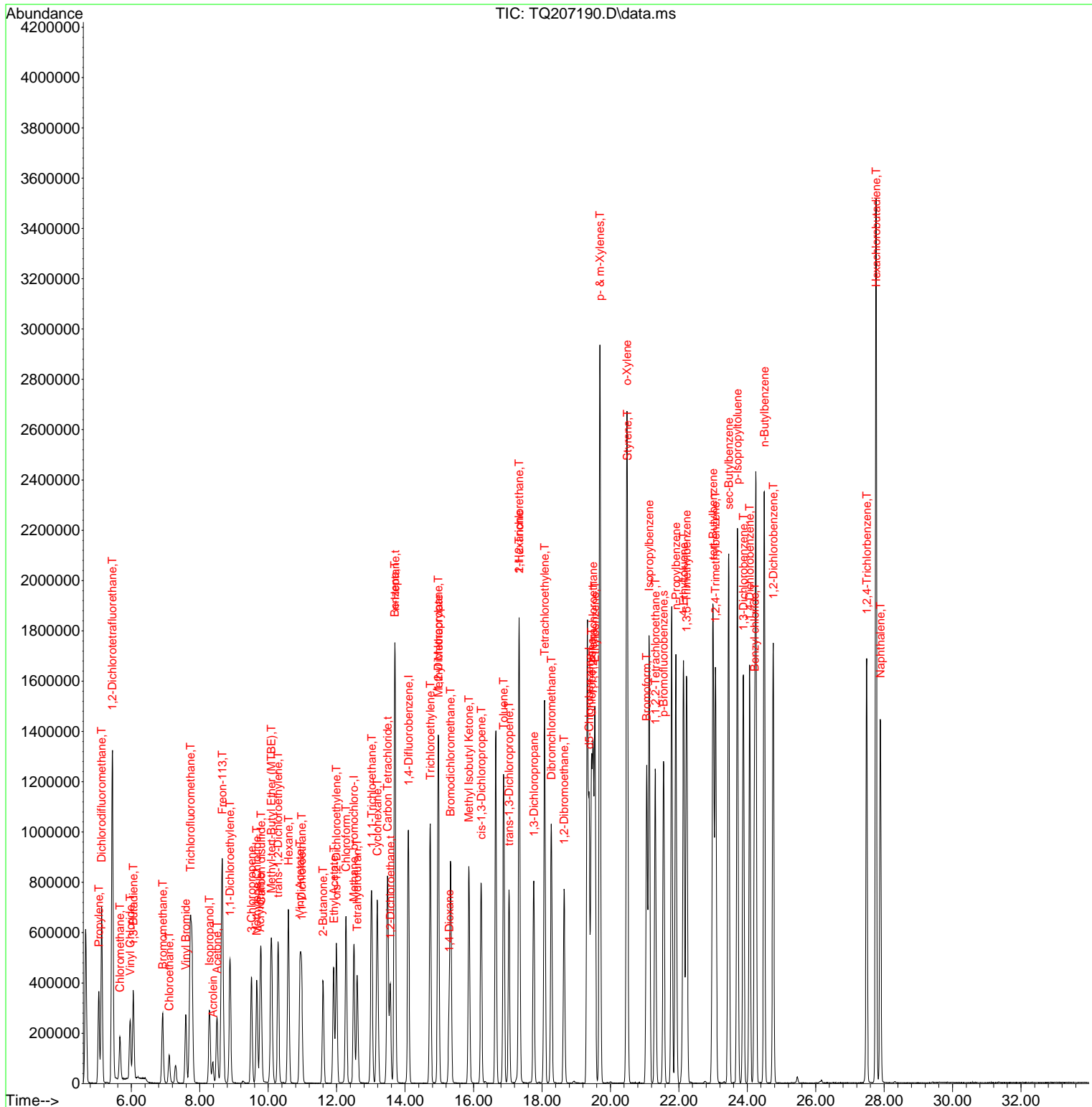
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.761	76	850242	11.29	ppbv #	72
50) Tetrachloroethylene	18.078	166	771198	10.88	ppbv	98
51) Dibromchloromethane	18.273	129	954658	11.80	ppbv	98
52) 1,2-Dibromoethane	18.645	107	899104	11.83	ppbv	99
54) Chlorobenzene	19.444	112	1203830	11.56	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.493	131	658281	11.61	ppbv	93
56) Ethylbenzene	19.547	91	1921817	11.75	ppbv	97
57) p- & m-Xylenes	19.694	91	2970186	23.94	ppbv	94
58) o-Xylene	20.480	91	1784811	12.56	ppbv	99
59) Styrene	20.498	104	1298201	12.79	ppbv #	100
60) Bromoform	21.059	173	1067690	13.29	ppbv	98
61) n-Propylbenzene	21.913	91	2694734	12.27	ppbv	99
62) Isopropylbenzene	21.132	105	2226935	12.13	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	21.309	83	1223041	11.93	ppbv	97
65) 4-Ethyltoluene	22.138	105	2227237	12.60	ppbv	97
66) 1,3,5-Trimethylbenzene	22.224	105	1831553	12.25	ppbv	98
67) tert-Butylbenzene	22.998	119	2210255	12.47	ppbv #	79
68) 1,2,4-Trimethylbenzene	23.071	105	1894424	12.26	ppbv #	93
69) sec-Butylbenzene	23.455	105	2913214	12.56	ppbv #	94
70) p-Isopropyltoluene	23.711	119	2360697	12.74	ppbv #	89
71) 1,3-Dichlorobenzene	23.888	146	1241329	12.48	ppbv	96
72) 1,4-Dichlorobenzene	24.071	146	1221920	12.84	ppbv	96
73) Benzyl chloride	24.217	91	1644929	9.69	ppbv	98
74) n-Butylbenzene	24.498	91	2339217	13.33	ppbv #	76
75) 1,2-Dichlorobenzene	24.760	146	1228822	12.45	ppbv	96
76) 1,2,4-Trichlorobenzene	27.491	180	822010	8.29	ppbv	98
77) Hexachlorobutadiene	27.765	225	1102985	12.06	ppbv	97
78) Naphthalene	27.893	128	1862331	12.66	ppbv	97

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

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207190.D
 Acq On : 6 Mar 2019 12:16 pm
 Sample : SEQ-CCV1
 Operator : AS
 Sample : SEQ-CCV1
 Misc : QBTO2030619A CCV
 ALS Vial : 3 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 06 20:20:05 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

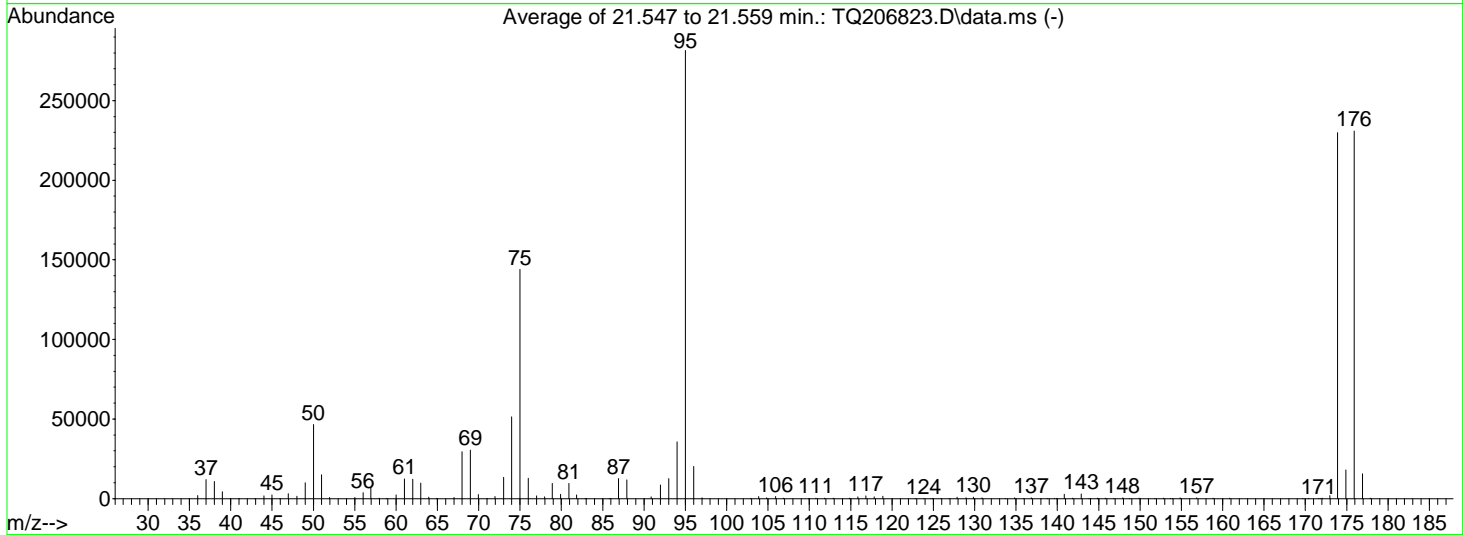
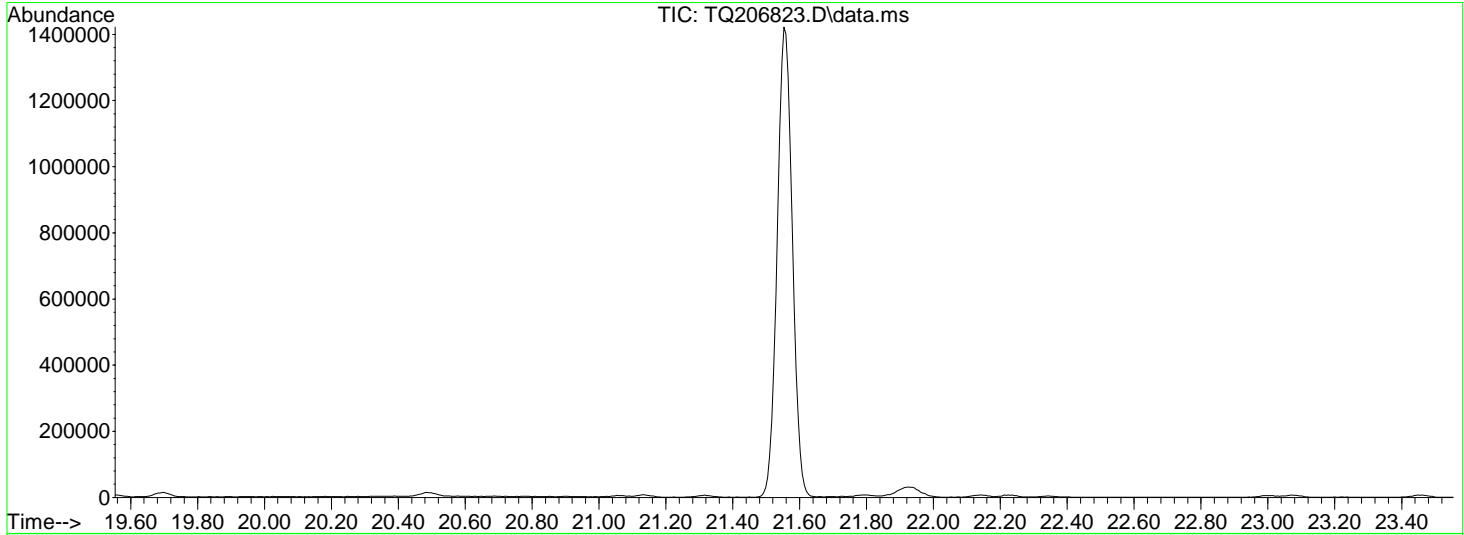


AIR Raw QC Data

Data Path : C:\msdchem\1\data\013119\
 Data File : TQ206823.D
 Acq On : 31 Jan 2019 7:34 am
 Operator : AS
 Sample : SEQ-TUN1
 InstName : TO15_AIR2
 Misc : QBTO2013119A TUNE
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\AIR-2-0020.M
 Title : TO15 VOC Analysis
 Last Update : Fri Feb 01 08:33:23 2019



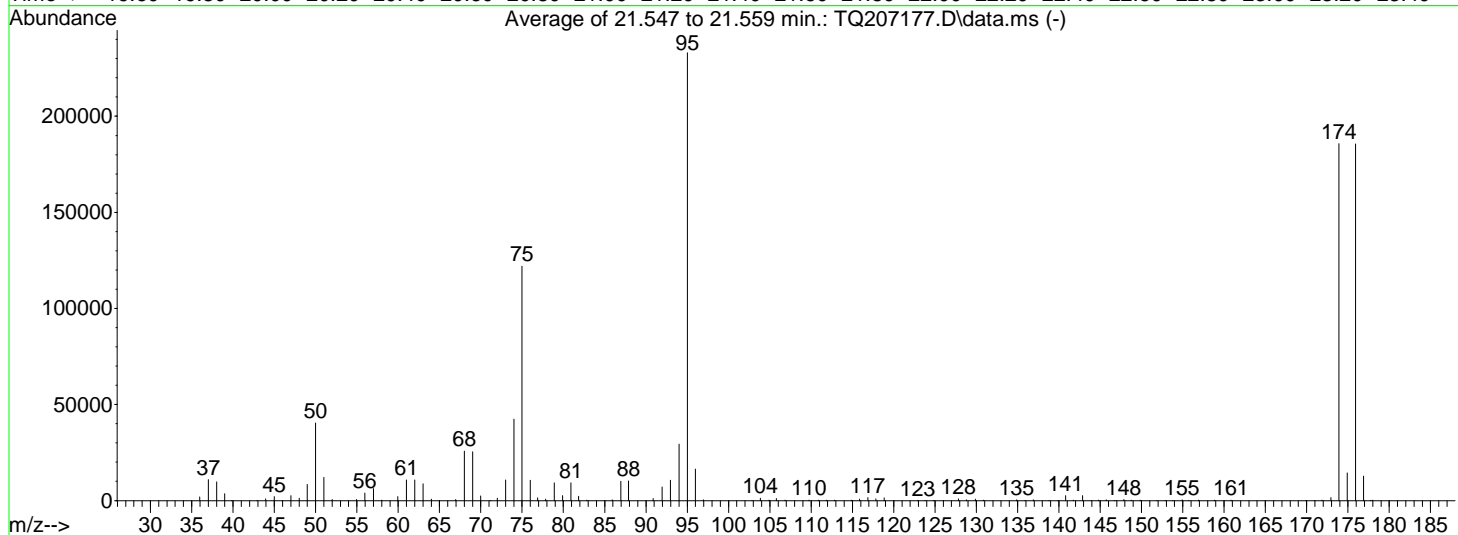
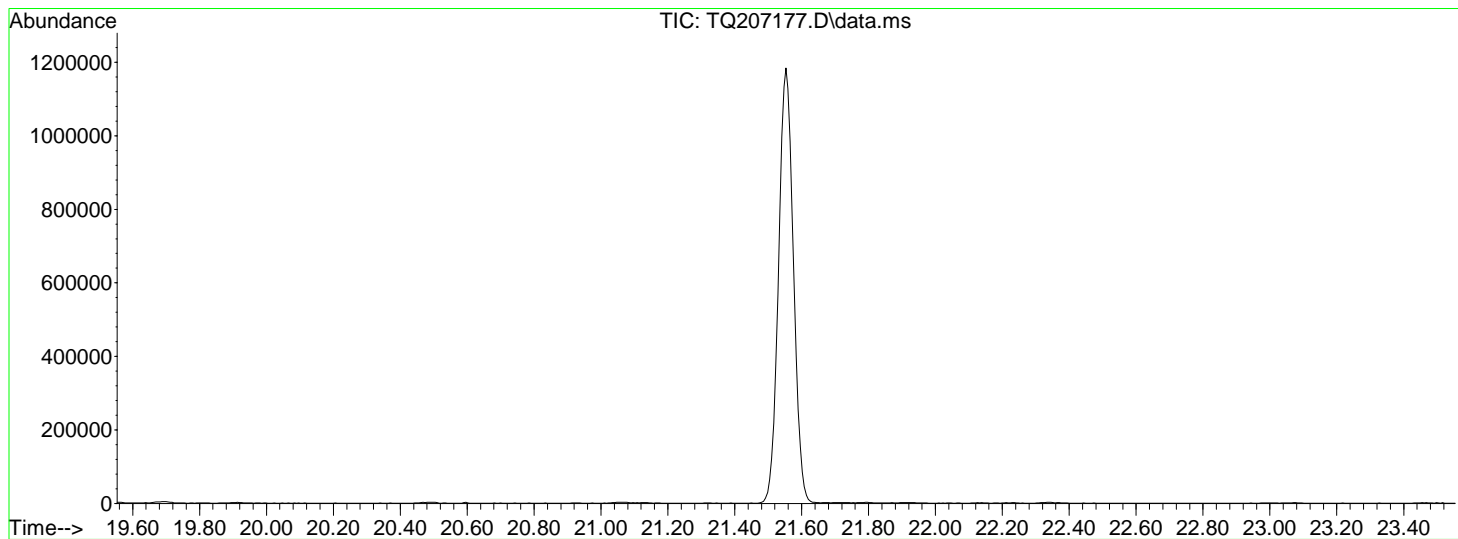
AutoFind: Scans 2782, 2783, 2784; Background Corrected with Scan 2767

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	16.5	46517	PASS
75	95	30	66	51.2	143979	PASS
95	95	100	100	100.0	281429	PASS
96	95	5	9	7.2	20285	PASS
173	174	0.00	2	0.8	1858	PASS
174	95	50	120	81.7	229888	PASS
175	174	4	9	7.8	18027	PASS
176	174	93	101	100.4	230805	PASS
177	176	5	9	6.8	15622	PASS

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207177.D
 Acq On : 5 Mar 2019 10:56 am
 Operator : AS
 Sample : SEQ-TUN1
 InstName : TO15_AIR2
 Misc : QBTO2030519A TUNE
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\AIR-2-0020.M
 Title : TO15 VOC Analysis
 Last Update : Fri Feb 01 08:33:23 2019



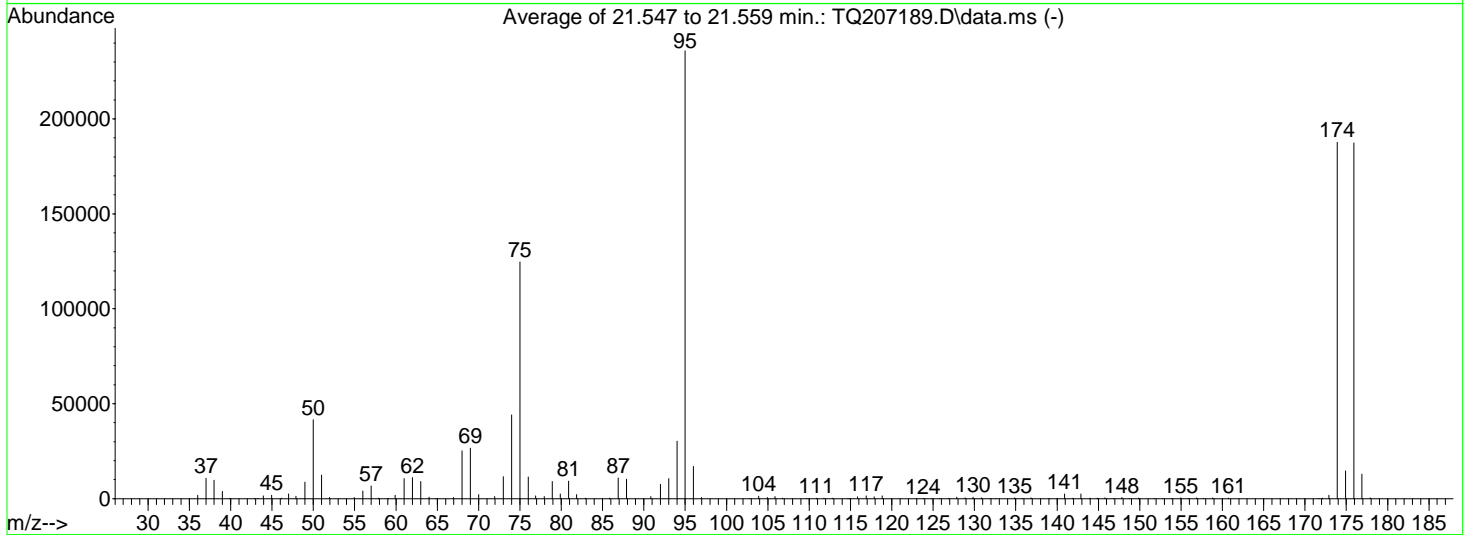
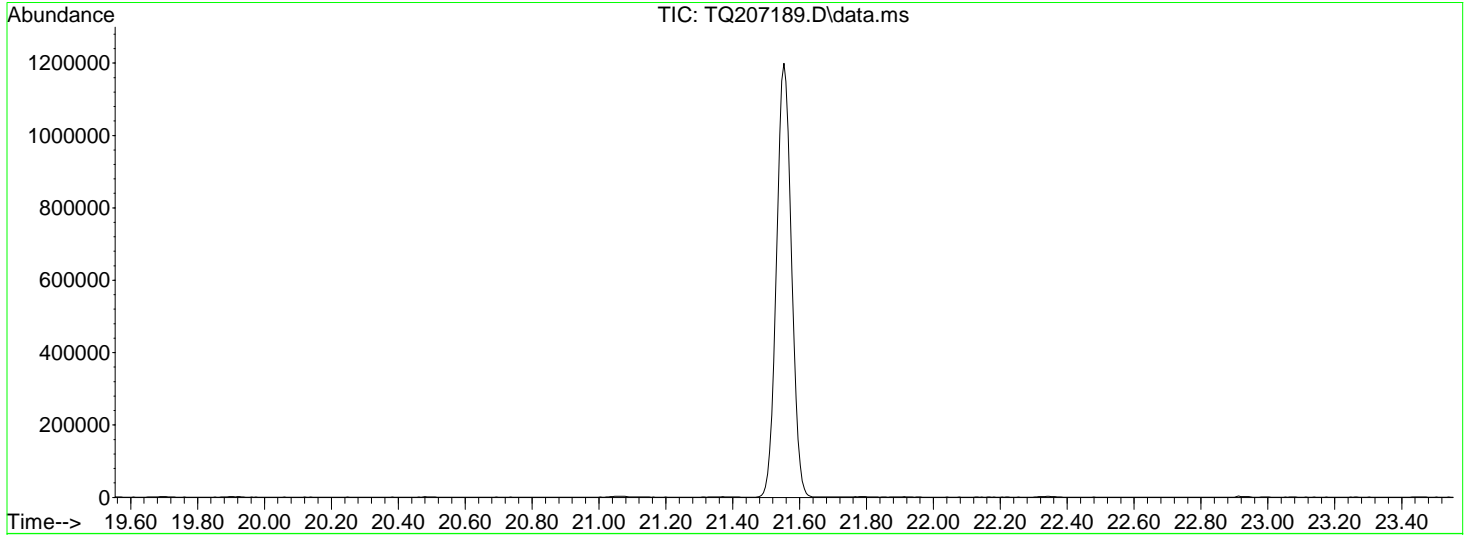
AutoFind: Scans 2782, 2783, 2784; Background Corrected with Scan 2766

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	17.3	40443	PASS
75	95	30	66	52.3	121923	PASS
95	95	100	100	100.0	233131	PASS
96	95	5	9	7.0	16382	PASS
173	174	0.00	2	0.8	1555	PASS
174	95	50	120	79.7	185707	PASS
175	174	4	9	7.8	14423	PASS
176	174	93	101	100.0	185621	PASS
177	176	5	9	6.9	12802	PASS

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207189.D
 Acq On : 6 Mar 2019 11:15 am
 Operator : AS
 Sample : SEQ-TUN1
 InstName : TO15_AIR2
 Misc : QBTO2030619A TUNE
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\AIR-2-0020.M
 Title : TO15 VOC Analysis
 Last Update : Fri Feb 01 08:33:23 2019



Spectrum Information: Average of 21.547 to 21.559 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	17.6	41587	PASS
75	95	30	66	52.8	124621	PASS
95	95	100	100	100.0	235989	PASS
96	95	5	9	7.2	16989	PASS
173	174	0.00	2	1.0	1812	PASS
174	95	50	120	79.6	187755	PASS
175	174	4	9	7.8	14657	PASS
176	174	93	101	99.8	187328	PASS
177	176	5	9	6.9	12849	PASS

METHOD BLANK RAW DATA

SDG: 19B1031
CLASS: AIR
METHOD: EPA TO-15

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air Laboratory ID: BC90266-BLK1 File ID: TQ207183.D
 Prepared: 03/05/19 08:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 03/05/19 16:28 Instrument: TO15_AIR2
 Batch: BC90266 Sequence: Y9C0722 Calibration: YB90001

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	0.687	U
71-55-6	1,1,1-Trichloroethane	0.546	U
79-34-5	1,1,2,2-Tetrachloroethane	0.687	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.766	U
79-00-5	1,1,2-Trichloroethane	0.546	U
75-34-3	1,1-Dichloroethane	0.405	U
75-35-4	1,1-Dichloroethylene	0.396	U
120-82-1	1,2,4-Trichlorobenzene	0.742	U
95-63-6	1,2,4-Trimethylbenzene	0.492	U
106-93-4	1,2-Dibromoethane	0.768	U
95-50-1	1,2-Dichlorobenzene	0.601	U
107-06-2	1,2-Dichloroethane	0.405	U
78-87-5	1,2-Dichloropropane	0.462	U
76-14-2	1,2-Dichlorotetrafluoroethane	0.699	U
108-67-8	1,3,5-Trimethylbenzene	0.492	U
106-99-0	1,3-Butadiene	0.664	U
541-73-1	1,3-Dichlorobenzene	0.601	U
142-28-9	1,3-Dichloropropane	0.462	U
106-46-7	1,4-Dichlorobenzene	0.601	U
123-91-1	1,4-Dioxane	0.721	U
78-93-3	2-Butanone	0.295	U
591-78-6	2-Hexanone	1.11	
107-05-1	3-Chloropropene	1.57	U
108-10-1	4-Methyl-2-pentanone	0.410	U
67-64-1	Acetone	0.475	U
107-13-1	Acrylonitrile	0.217	U
71-43-2	Benzene	0.319	U
100-44-7	Benzyl chloride	0.518	U
75-27-4	Bromodichloromethane	0.670	U
75-25-2	Bromoform	1.03	U

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air Laboratory ID: BC90266-BLK1 File ID: TQ207183.D
 Prepared: 03/05/19 08:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 03/05/19 16:28 Instrument: TO15_AIR2
 Batch: BC90266 Sequence: Y9C0722 Calibration: YB90001

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
74-83-9	Bromomethane	0.388	U
75-15-0	Carbon disulfide	0.311	U
56-23-5	Carbon tetrachloride	0.157	U
108-90-7	Chlorobenzene	0.460	U
75-00-3	Chloroethane	0.264	U
67-66-3	Chloroform	0.488	U
74-87-3	Chloromethane	0.207	U
156-59-2	cis-1,2-Dichloroethylene	0.396	U
10061-01-5	cis-1,3-Dichloropropylene	0.454	U
110-82-7	Cyclohexane	0.344	U
124-48-1	Dibromochloromethane	0.852	U
75-71-8	Dichlorodifluoromethane	0.495	U
141-78-6	Ethyl acetate	0.721	U
100-41-4	Ethyl Benzene	0.434	U
87-68-3	Hexachlorobutadiene	1.07	U
67-63-0	Isopropanol	0.492	U
80-62-6	Methyl Methacrylate	0.409	U
1634-04-4	Methyl tert-butyl ether (MTBE)	0.361	U
75-09-2	Methylene chloride	0.695	U
142-82-5	n-Heptane	0.410	U
110-54-3	n-Hexane	0.352	U
95-47-6	o-Xylene	0.434	U
179601-23-1	p- & m- Xylenes	0.868	U
622-96-8	p-Ethyltoluene	0.492	U
115-07-1	Propylene	0.172	U
100-42-5	Styrene	0.426	U
127-18-4	Tetrachloroethylene	0.170	U
109-99-9	Tetrahydrofuran	0.590	U
108-88-3	Toluene	0.377	U
156-60-5	trans-1,2-Dichloroethylene	0.396	U

FORM I

**METHOD BLANK DATA SHEET
EPA TO-15**

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air Laboratory ID: BC90266-BLK1 File ID: TQ207183.D
 Prepared: 03/05/19 08:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 03/05/19 16:28 Instrument: TO15_AIR2
 Batch: BC90266 Sequence: Y9C0722 Calibration: YB90001

CAS NO.	COMPOUND	CONC. (ug/m³)	Q
10061-02-6	trans-1,3-Dichloropropylene	0.454	U
79-01-6	Trichloroethylene	0.134	U
75-69-4	Trichlorofluoromethane (Freon 11)	0.562	U
108-05-4	Vinyl acetate	0.352	U
593-60-2	Vinyl bromide	0.437	U
75-01-4	Vinyl Chloride	0.256	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
SURR: p-Bromofluorobenzene	10.0	8.60	86.0	72 - 118	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	543445	12.5	434873	12.512	
ISTD: 1,4-Difluorobenzene	1639100	14.091	1403418	14.103	
ISTD: d5-Chlorobenzene	1366911	19.371	1188268	19.377	

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207183.D
 Acq On : 5 Mar 2019 4:28 pm
 Sample : BC90266-BLK1
 Operator : AS
 Sample : BC90266-BLK1
 Misc : QBTO2030519A BLK
 ALS Vial : 1 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 07 12:21:07 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

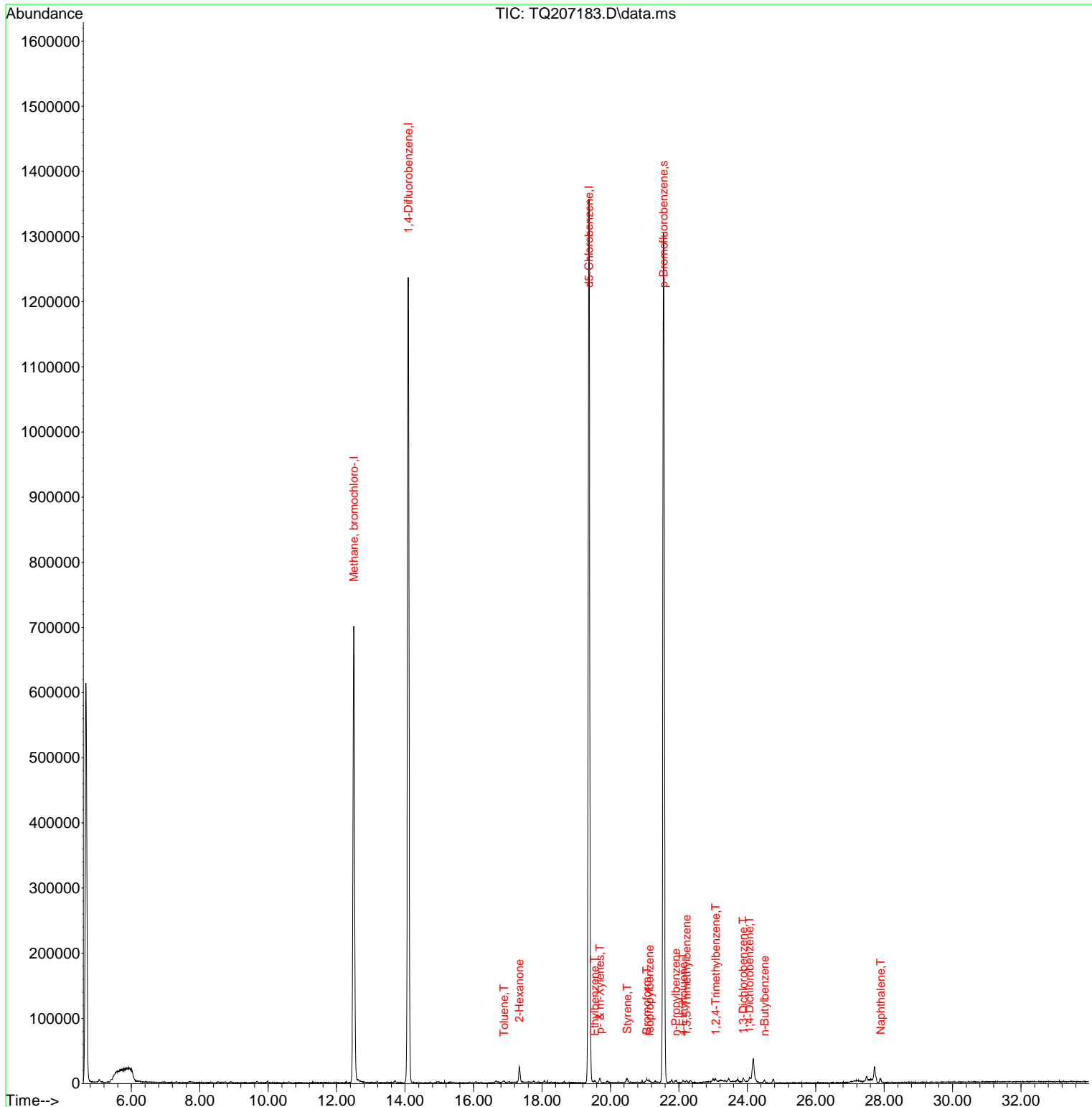
Internal Standards						
1) Methane, bromochloro-	12.500	49	543445	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.091	114	1639100	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.371	117	1366911	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	828985	8.60	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	86.00%	
Target Compounds						
						Qvalue
45) Toluene	16.889	91	4731	0.03	ppbv	# 74
48) 2-Hexanone	17.340	43	23554	0.27	ppbv	98
56) Ethylbenzene	19.541	91	4392	0.02	ppbv	84
57) p- & m-Xylenes	19.694	91	7735	0.05	ppbv	92
59) Styrene	20.486	104	2609	0.02	ppbv	# 100
60) Bromoform	21.065	173	3990	0.04	ppbv	# 89
61) n-Propylbenzene	21.907	91	6312	0.02	ppbv	# 93
62) Isopropylbenzene	21.138	105	4624	0.02	ppbv	98
65) 4-Ethyltoluene	22.126	105	4237	0.02	ppbv	# 62
66) 1,3,5-Trimethylbenzene	22.224	105	3606	0.02	ppbv	# 87
68) 1,2,4-Trimethylbenzene	23.077	105	4252	0.02	ppbv	# 71
71) 1,3-Dichlorobenzene	23.882	146	4289	0.04	ppbv	90
72) 1,4-Dichlorobenzene	24.065	146	3977	0.04	ppbv	88
74) n-Butylbenzene	24.498	91	4321	0.02	ppbv	97
78) Naphthalene	27.899	128	7681	0.04	ppbv	94

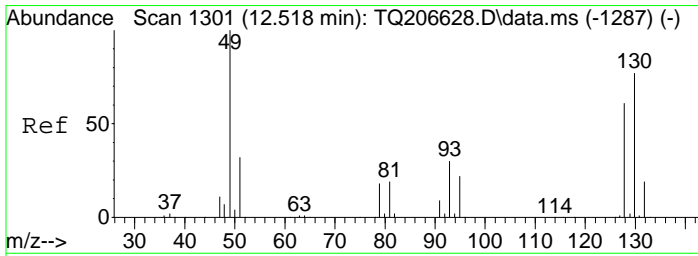
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207183.D
 Acq On : 5 Mar 2019 4:28 pm
 Sample : BC90266-BLK1
 Operator : AS
 Sample : BC90266-BLK1
 Misc : QBTO2030519A BLK
 ALS Vial : 1 Sample Multiplier: 1

Inst : TO15_AIR2

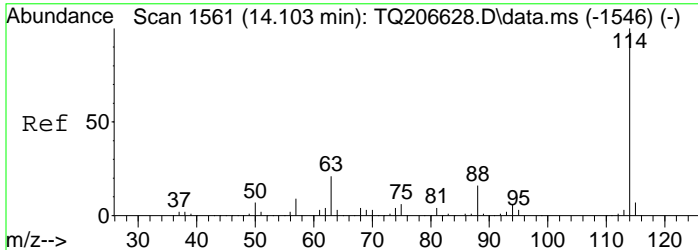
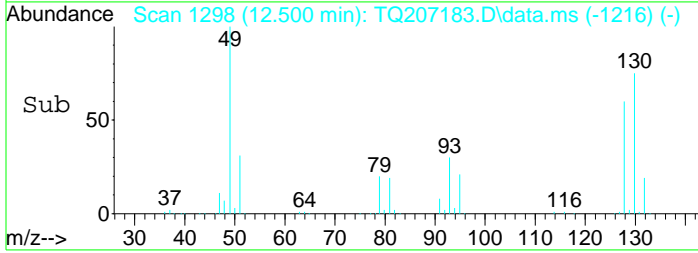
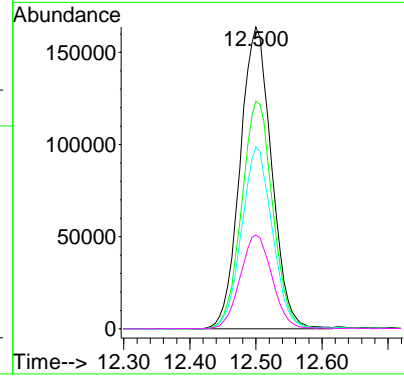
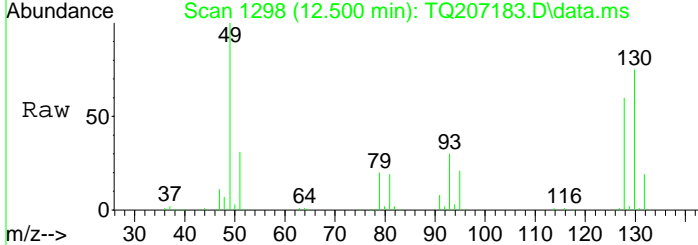
Quant Time: Mar 07 12:21:07 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration





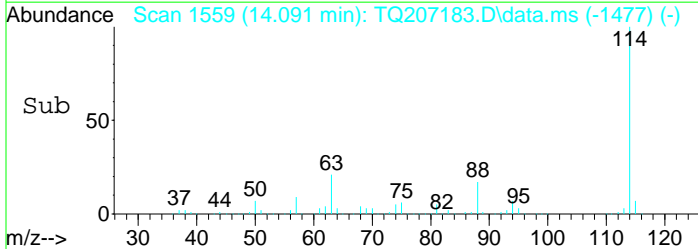
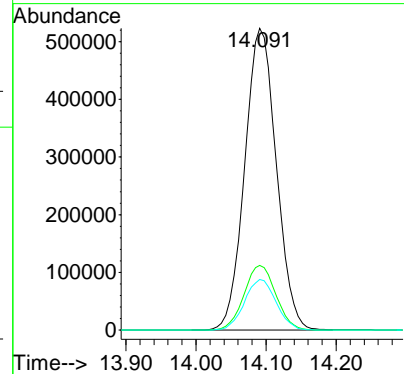
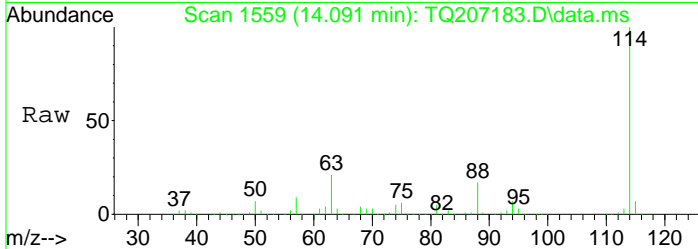
#1
 Methane, bromochloro-
 Concen: 10.00 ppbv
 RT: 12.500 min Scan# 1298
 Delta R.T. -0.000 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

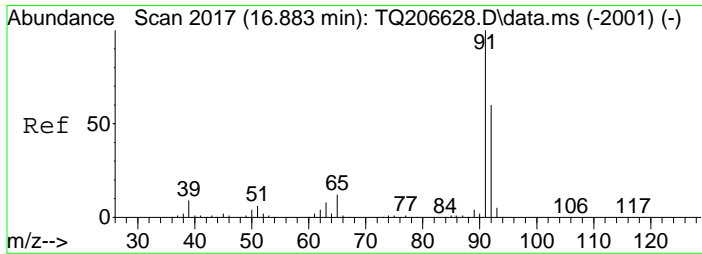
Tgt Ion	Resp	Lower	Upper
49	100		
130	74.2	48.1	99.9
128	58.4	38.3	79.5
51	31.4	20.3	42.3



#37
 1,4-Difluorobenzene
 Concen: 10.00 ppbv
 RT: 14.091 min Scan# 1559
 Delta R.T. -0.001 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

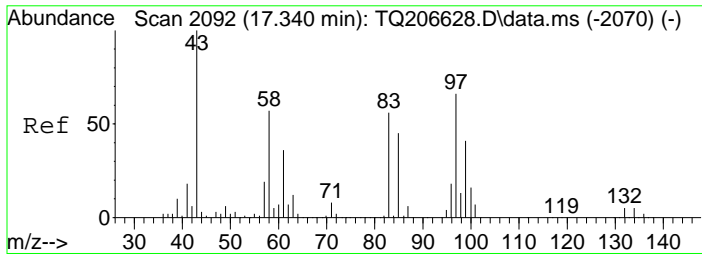
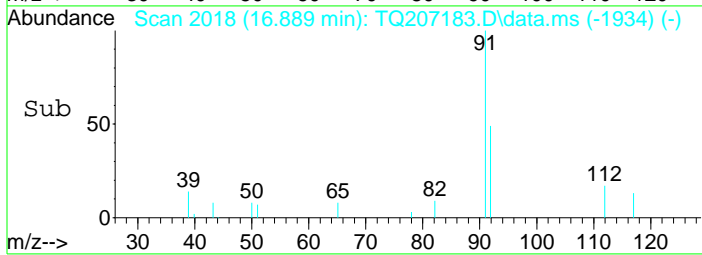
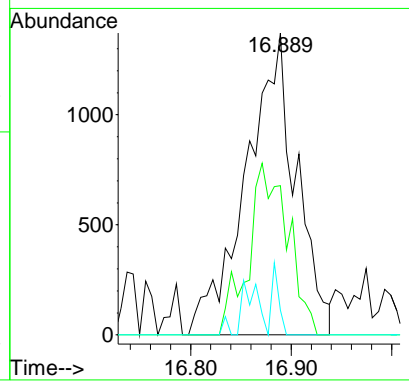
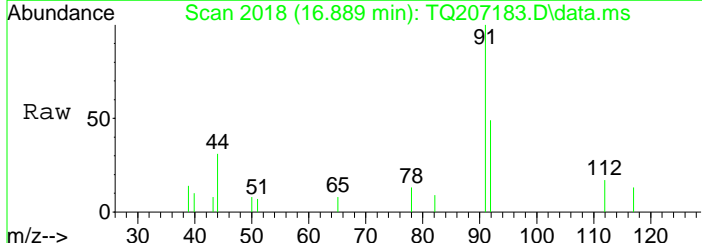
Tgt Ion	Resp	Lower	Upper
114	100		
63	21.6	12.9	26.9
88	16.8	10.7	22.3





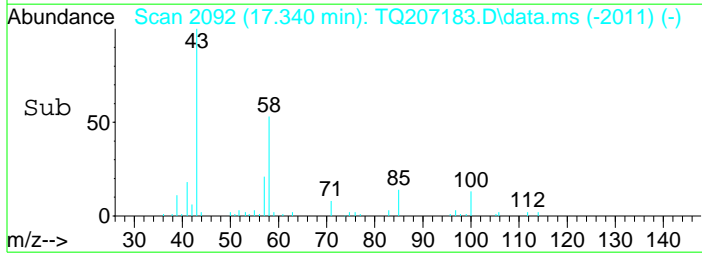
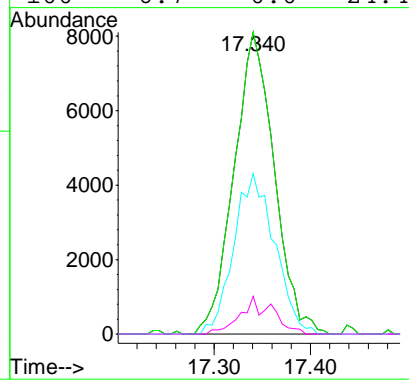
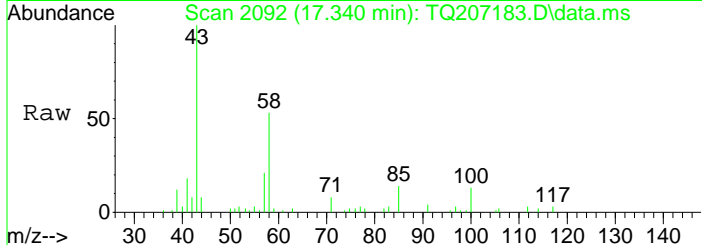
#45
 Toluene
 Concen: 0.03 ppbv
 RT: 16.889 min Scan# 2018
 Delta R.T. 0.012 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

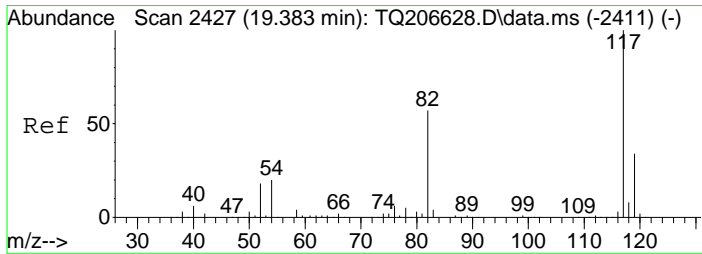
Tgt Ion	Resp	Lower	Upper
91	4731		
92	40.5	38.7	80.3
65	0.0	7.5	15.5#



#48
 2-Hexanone
 Concen: 0.27 ppbv
 RT: 17.340 min Scan# 2092
 Delta R.T. -0.004 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

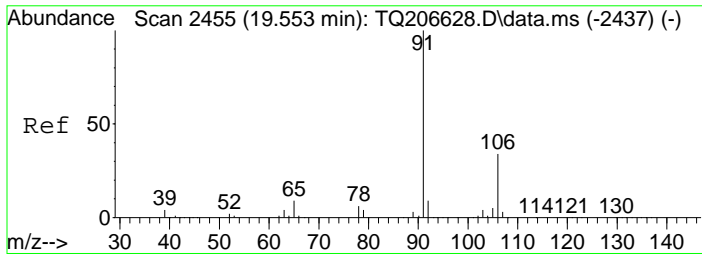
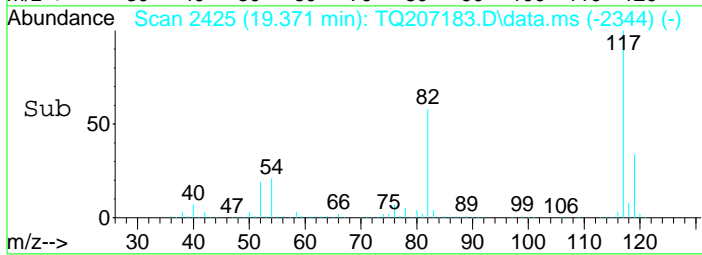
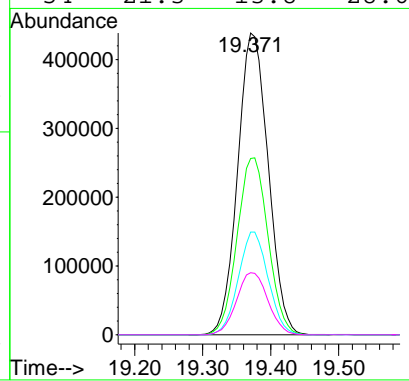
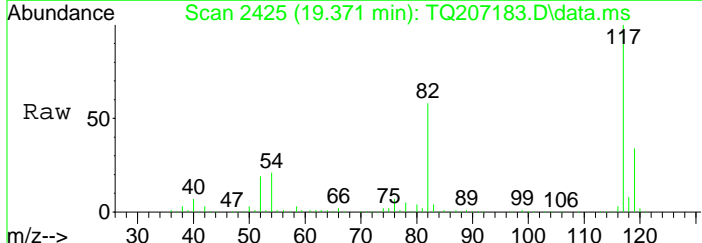
Tgt Ion	Resp	Lower	Upper
43	23554		
43	100.0	80.0	120.0
58	54.0	44.2	66.4
100	6.7	0.0	24.4





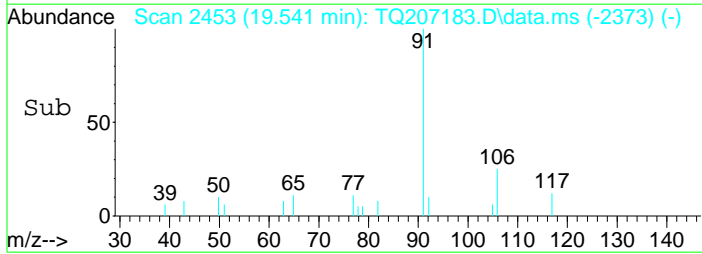
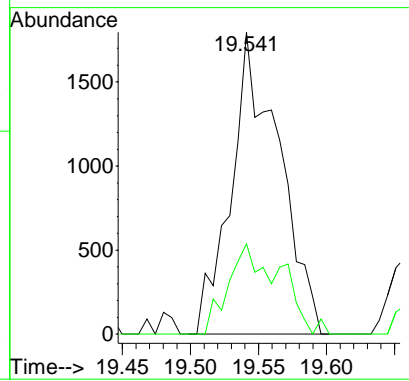
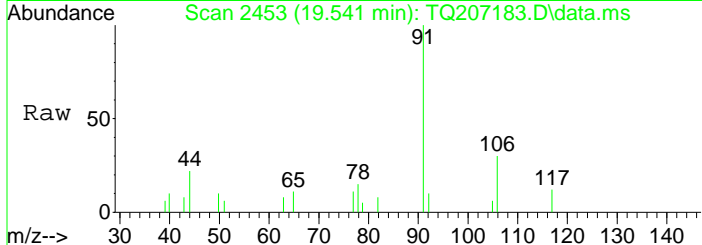
#53
 d5-Chlorobenzene
 Concen: 10.00 ppbv
 RT: 19.371 min Scan# 2425
 Delta R.T. -0.006 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

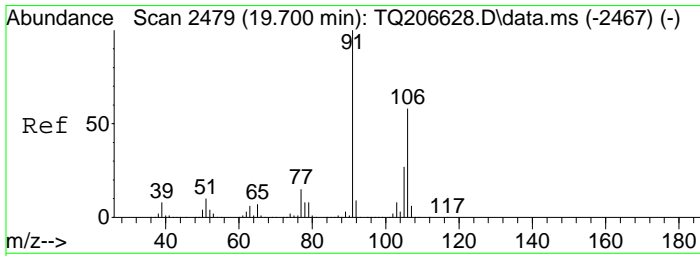
Tgt Ion	Resp	Lower	Upper
117	1366911		
82	59.5	37.1	77.1
119	33.2	22.1	45.9
54	21.3	13.8	28.6



#56
 Ethylbenzene
 Concen: 0.02 ppbv
 RT: 19.541 min Scan# 2453
 Delta R.T. -0.012 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

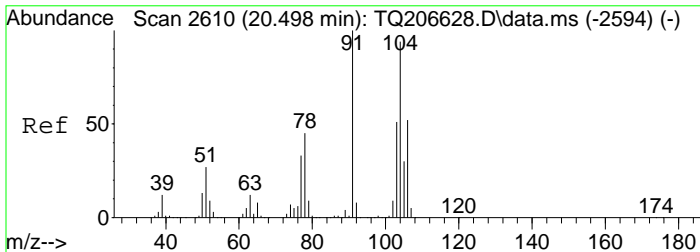
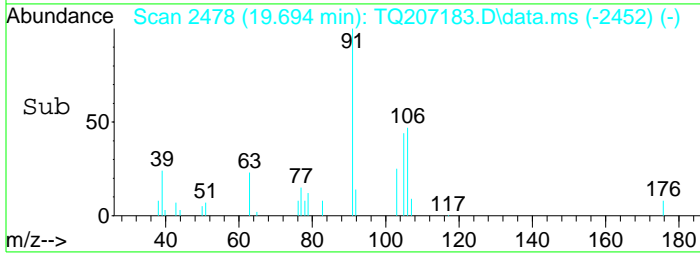
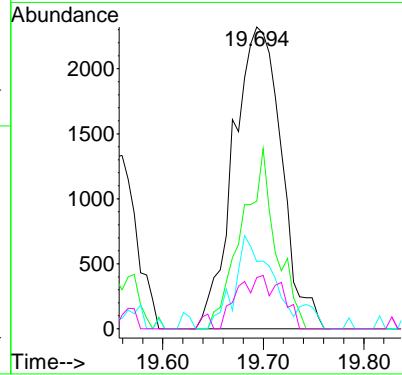
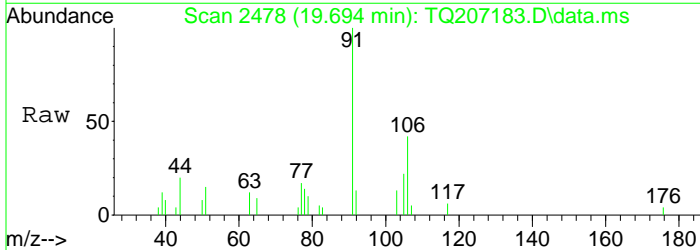
Tgt Ion	Resp	Lower	Upper
91	4392		
106	22.6	20.5	42.7





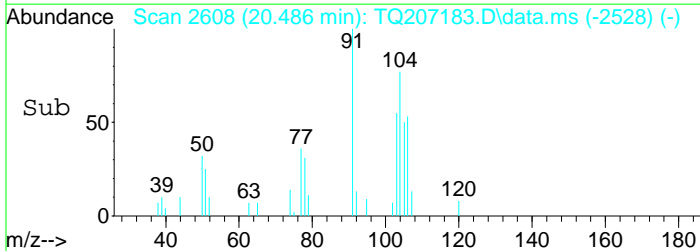
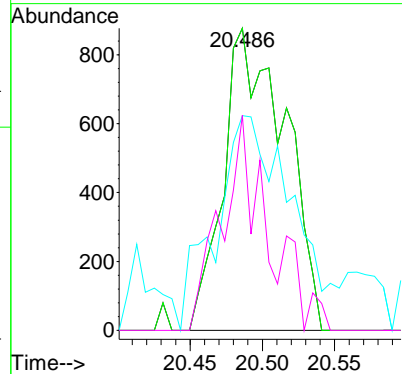
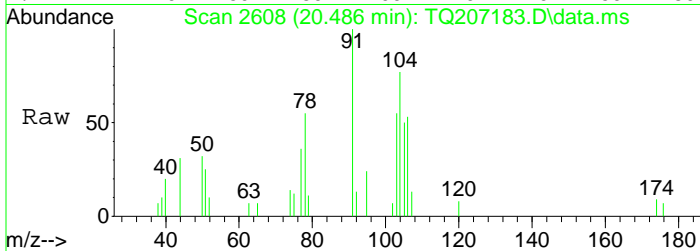
#57
 p- & m-Xylenes
 Concen: 0.05 ppbv
 RT: 19.694 min Scan# 2478
 Delta R.T. -0.000 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

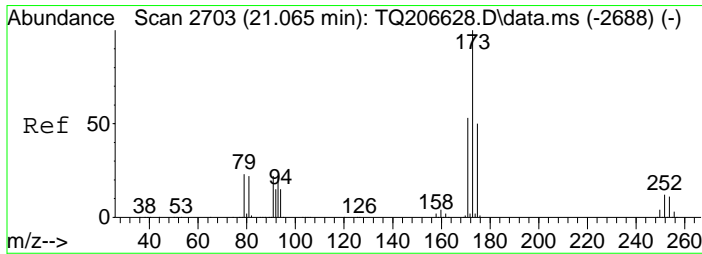
Tgt Ion	Resp	Lower	Upper
91	100		
106	42.5	32.6	67.8
105	23.1	14.5	30.1
77	16.3	8.5	17.7



#59
 Styrene
 Concen: 0.02 ppbv
 RT: 20.486 min Scan# 2608
 Delta R.T. -0.013 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

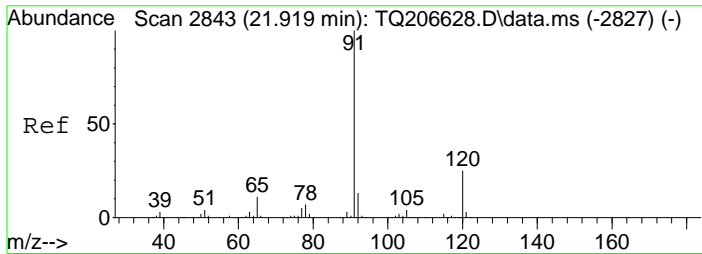
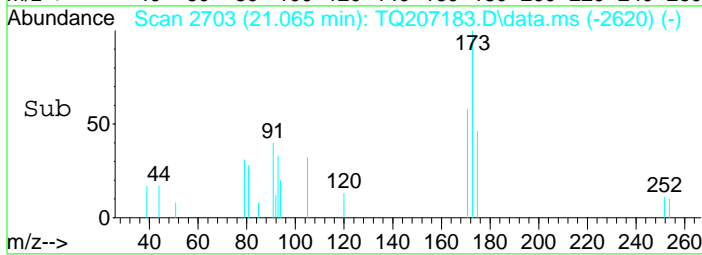
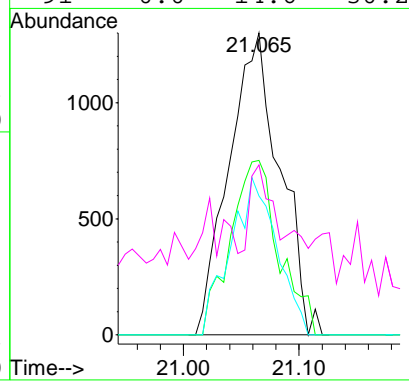
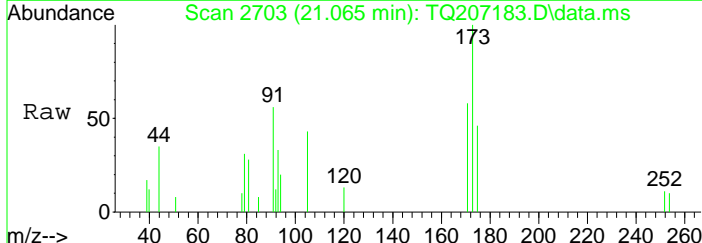
Tgt Ion	Resp	Lower	Upper
104	100		
104	100.0	65.0	135.0
78	0.0	0.0	0.0
103	0.0	0.0	0.0





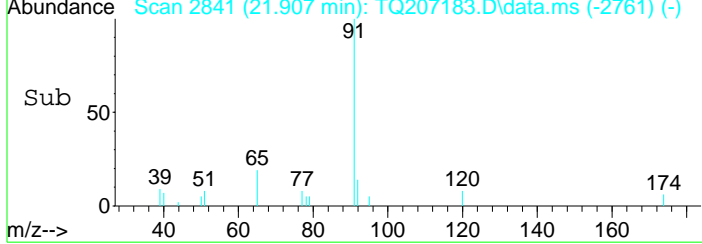
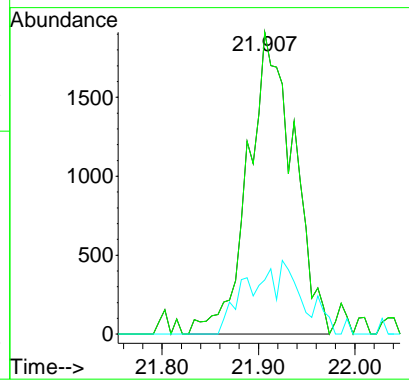
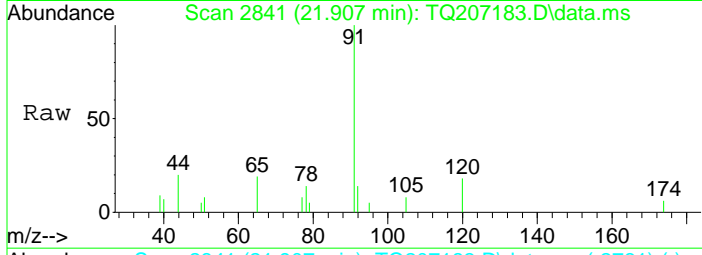
#60
 Bromoform
 Concen: 0.04 ppbv
 RT: 21.065 min Scan# 2703
 Delta R.T. 0.005 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

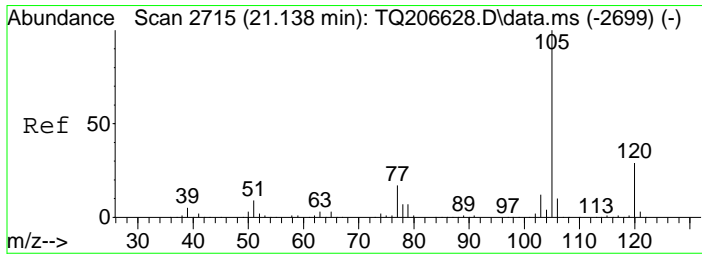
Tgt Ion	Resp	Lower	Upper
173	100		
171	55.2	33.7	69.9
175	47.4	31.8	66.0
91	0.0	14.6	30.2#



#61
 n-Propylbenzene
 Concen: 0.02 ppbv
 RT: 21.907 min Scan# 2841
 Delta R.T. -0.011 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

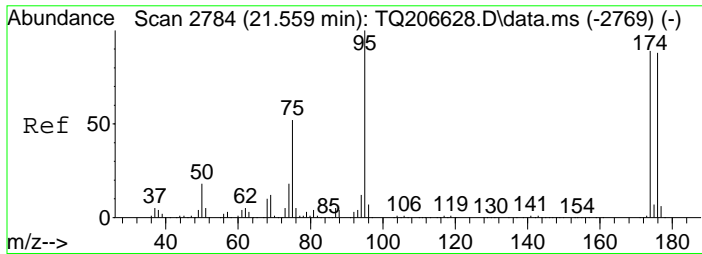
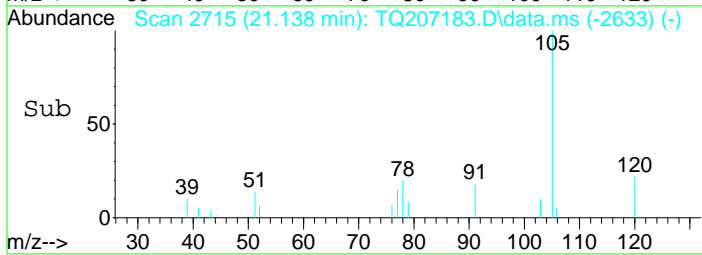
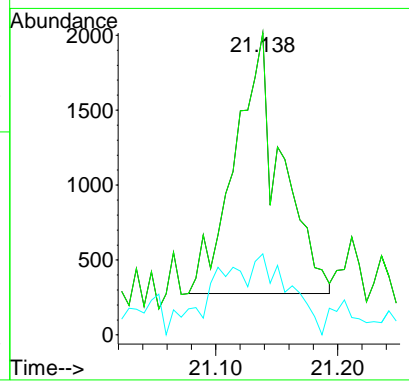
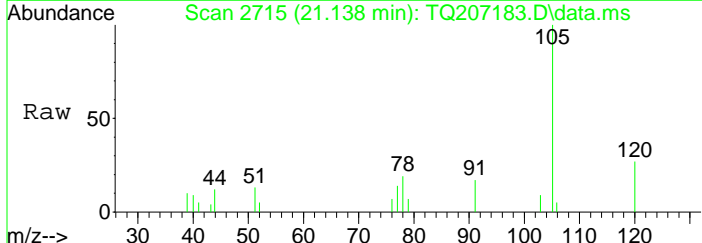
Tgt Ion	Resp	Lower	Upper
91	100		
91	100.0	80.0	120.0
120	0.0	10.0	30.0#





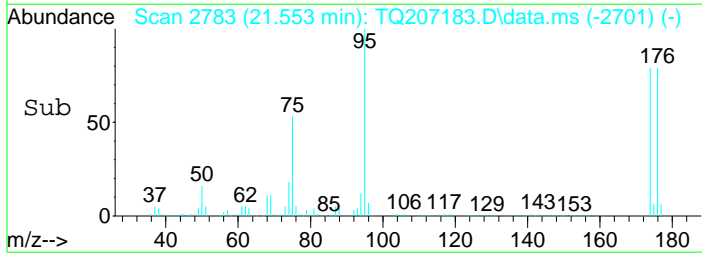
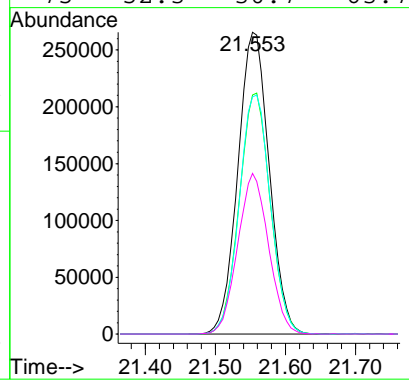
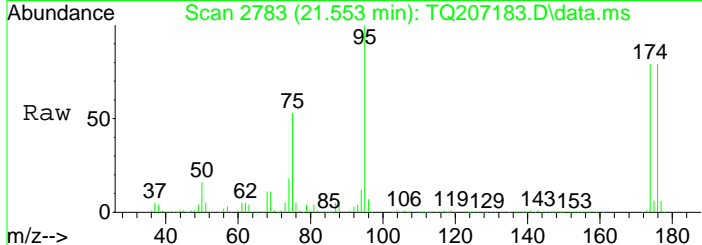
#62
 Isopropylbenzene
 Concen: 0.02 ppbv
 RT: 21.138 min Scan# 2715
 Delta R.T. 0.001 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

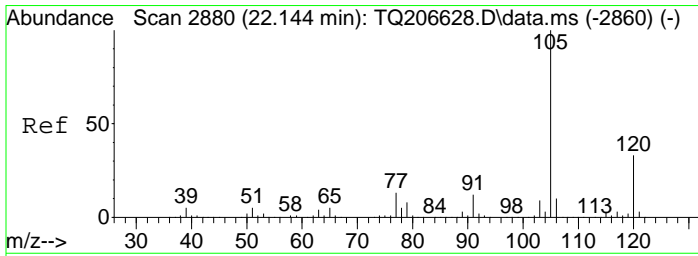
Tgt Ion	Resp	Lower	Upper
105	4624		
105	100		
105	100.0	80.0	120.0
120	24.2	10.0	30.0



#64
 p-Bromofluorobenzene
 Concen: 8.60 ppbv
 RT: 21.553 min Scan# 2783
 Delta R.T. 0.000 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

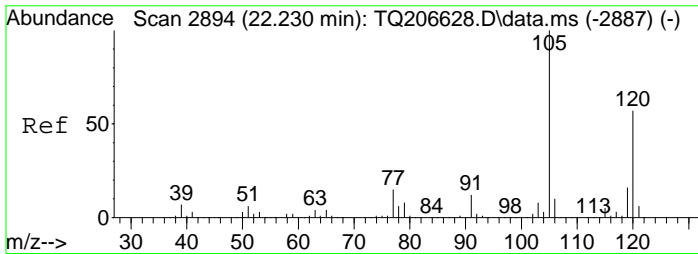
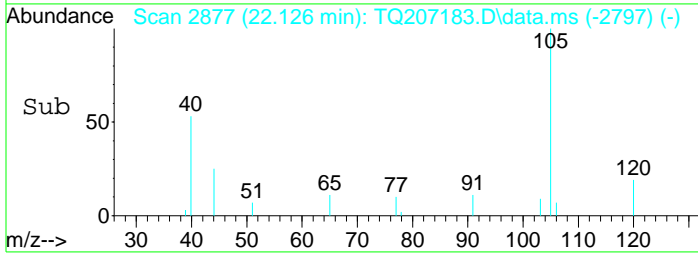
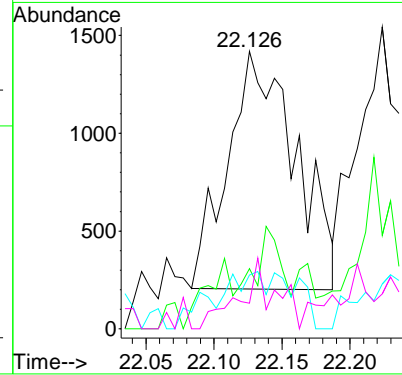
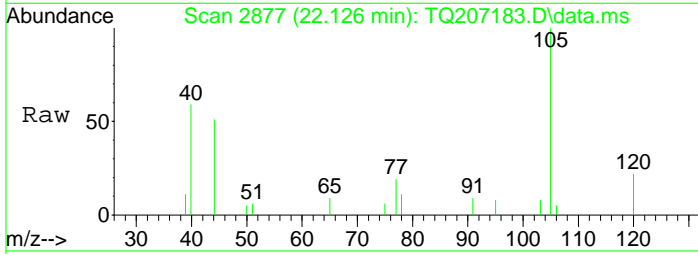
Tgt Ion	Resp	Lower	Upper
95	828985		
95	100		
174	79.0	53.2	110.6
176	78.9	51.6	107.2
75	52.3	30.7	63.7





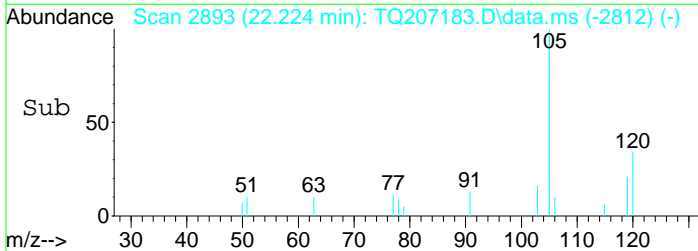
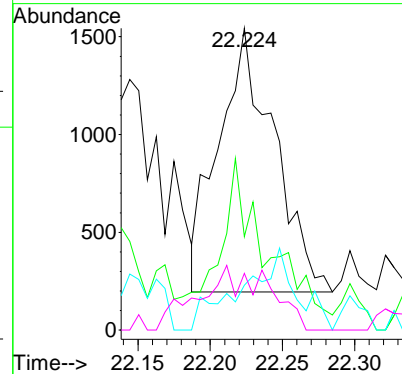
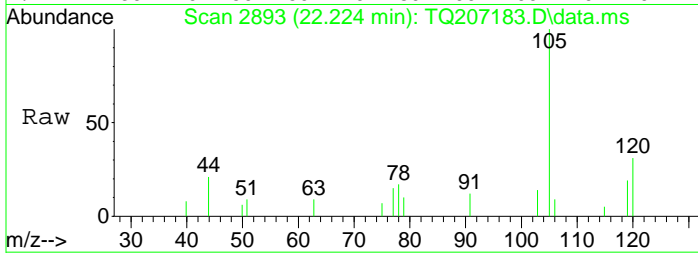
#65
 4-Ethyltoluene
 Concen: 0.02 ppbv
 RT: 22.126 min Scan# 2877
 Delta R.T. -0.012 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

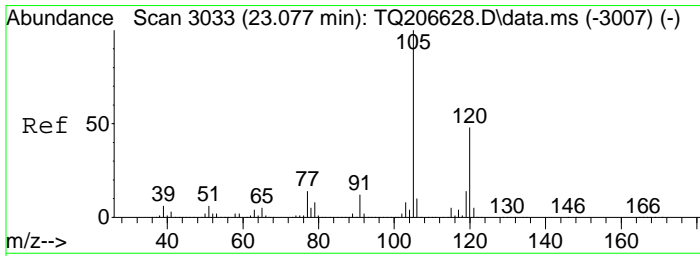
Tgt Ion	Resp	Lower	Upper
105	4237		
120	0.0	19.6	40.8#
77	17.7	7.3	15.3#
91	15.3	7.1	14.7#



#66
 1,3,5-Trimethylbenzene
 Concen: 0.02 ppbv
 RT: 22.224 min Scan# 2893
 Delta R.T. -0.005 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

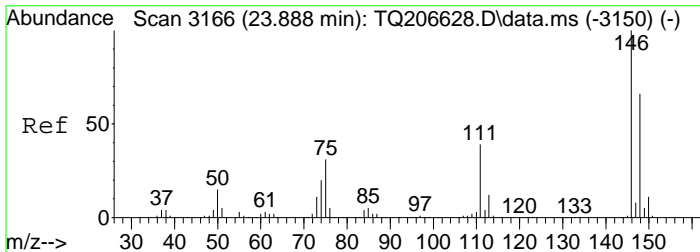
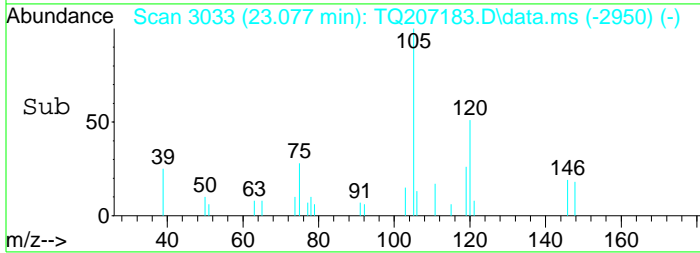
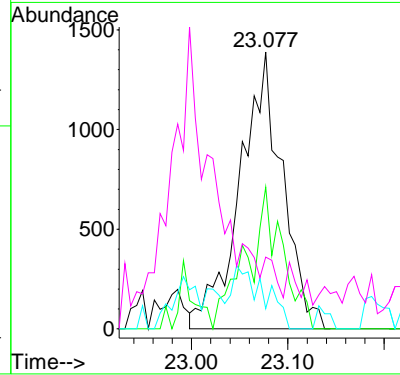
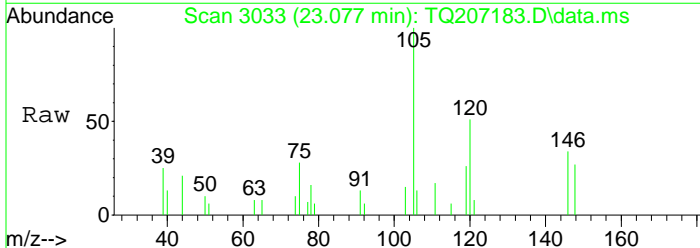
Tgt Ion	Resp	Lower	Upper
105	3606		
120	45.6	39.2	58.8
77	30.4	10.1	15.1#
119	16.3	6.1	18.3





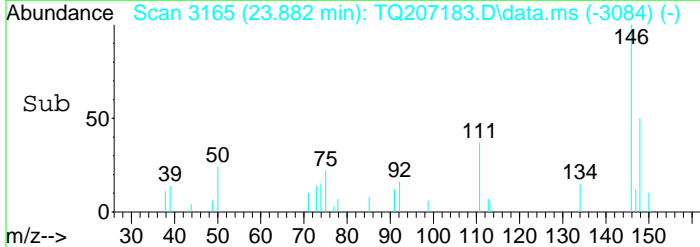
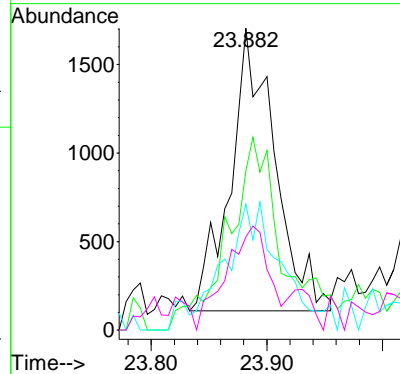
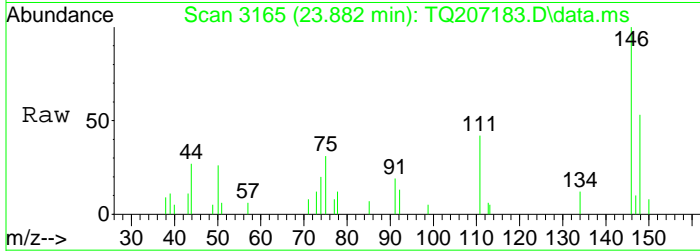
#68
 1,2,4-Trimethylbenzene
 Concen: 0.02 ppbv
 RT: 23.077 min Scan# 3033
 Delta R.T. 0.006 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

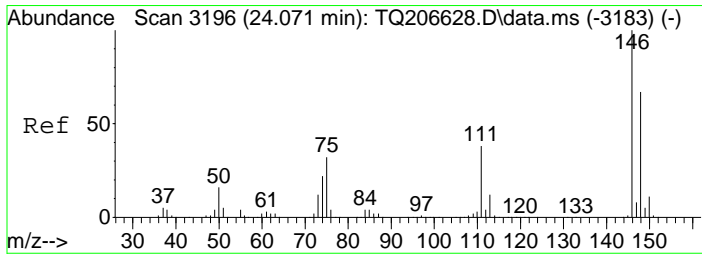
Tgt Ion	Resp	Lower	Upper
105	4252		
120	28.0	30.2	62.6#
77	0.0	8.1	16.9#
119	0.0	7.8	16.2#



#71
 1,3-Dichlorobenzene
 Concen: 0.04 ppbv
 RT: 23.882 min Scan# 3165
 Delta R.T. -0.007 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

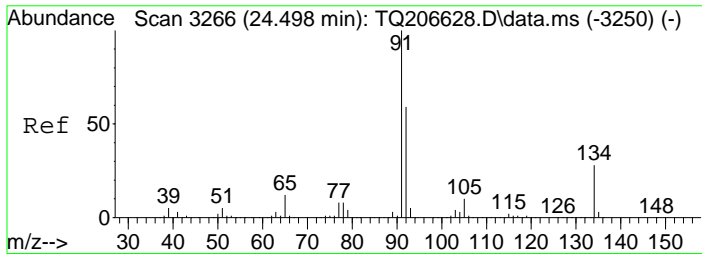
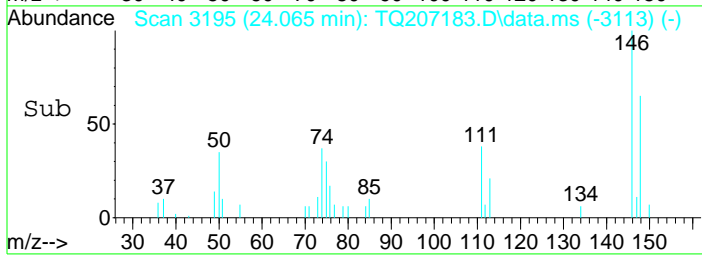
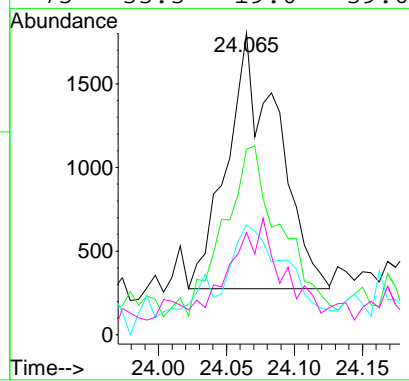
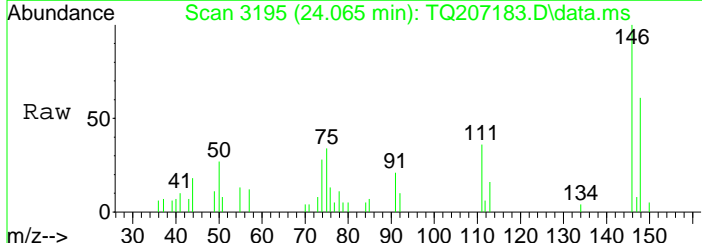
Tgt Ion	Resp	Lower	Upper
146	4289		
148	74.4	41.7	86.5
111	41.4	25.7	53.5
75	35.3	18.7	38.7





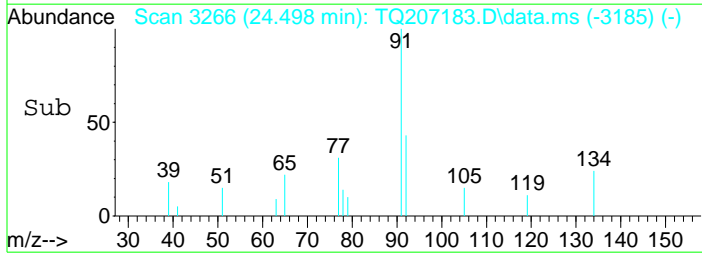
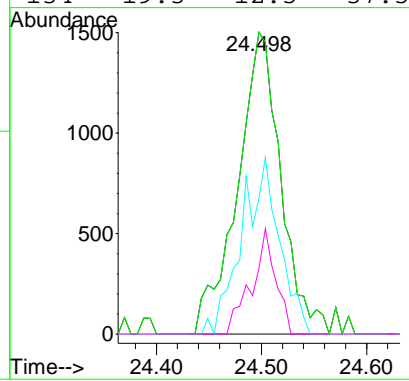
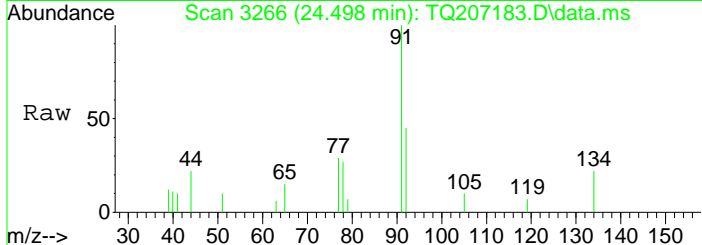
#72
 1,4-Dichlorobenzene
 Concen: 0.04 ppbv
 RT: 24.065 min Scan# 3195
 Delta R.T. -0.002 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

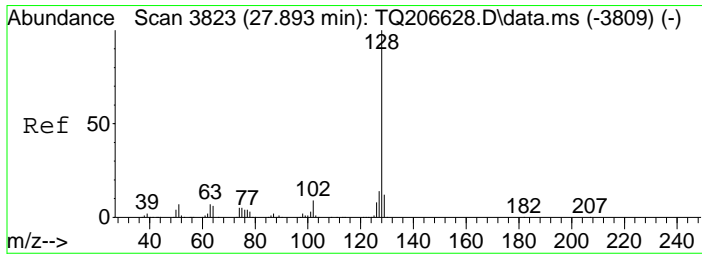
Tgt Ion	Resp	Ion Ratio	Lower	Upper
146	3977	100		
148		76.4	41.6	86.4
111		32.4	24.8	51.6
75		33.3	19.0	39.6



#74
 n-Butylbenzene
 Concen: 0.02 ppbv
 RT: 24.498 min Scan# 3266
 Delta R.T. -0.004 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

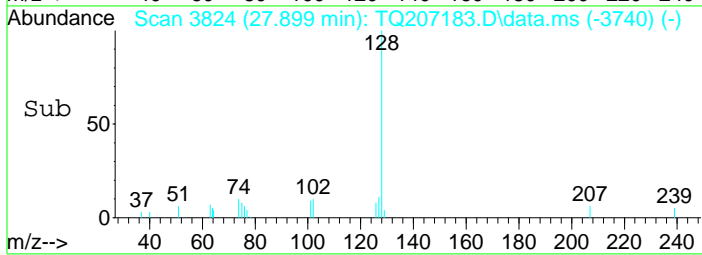
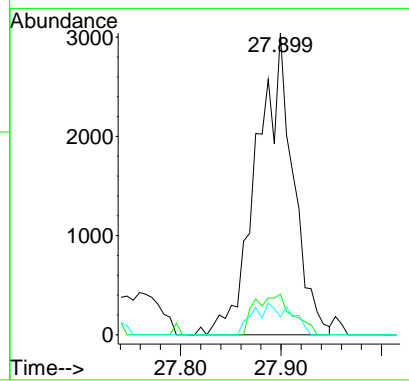
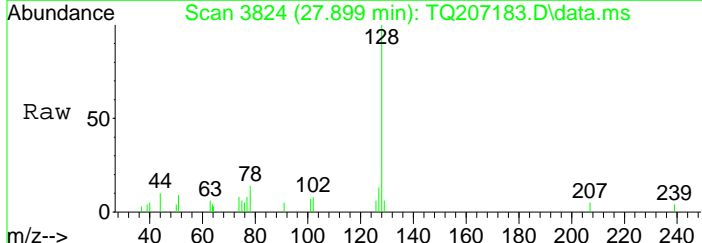
Tgt Ion	Resp	Ion Ratio	Lower	Upper
91	4321	100		
91		100.0	80.0	120.0
92		51.0	44.0	66.0
134		19.3	12.5	37.5





#78
 Naphthalene
 Concen: 0.04 ppbv
 RT: 27.899 min Scan# 3824
 Delta R.T. 0.010 min
 Lab File: TQ207183.D
 Acq: 5 Mar 2019 4:28 pm

Tgt Ion	Resp	Lower	Upper
128	100		
127	13.9	8.1	16.9
129	7.3	7.1	14.7



METHOD BLANK RAW DATA

SDG: 19B1031
CLASS: AIR
METHOD: EPA TO-15

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air Laboratory ID: BC90329-BLK1 File ID: TQ207192.D
 Prepared: 03/06/19 08:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 03/06/19 14:23 Instrument: TO15_AIR2
 Batch: BC90329 Sequence: Y9C0724 Calibration: YB90001

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	0.687	U
71-55-6	1,1,1-Trichloroethane	0.546	U
79-34-5	1,1,2,2-Tetrachloroethane	0.687	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.766	U
79-00-5	1,1,2-Trichloroethane	0.546	U
75-34-3	1,1-Dichloroethane	0.405	U
75-35-4	1,1-Dichloroethylene	0.396	U
120-82-1	1,2,4-Trichlorobenzene	0.742	U
95-63-6	1,2,4-Trimethylbenzene	0.492	U
106-93-4	1,2-Dibromoethane	0.768	U
95-50-1	1,2-Dichlorobenzene	0.601	U
107-06-2	1,2-Dichloroethane	0.405	U
78-87-5	1,2-Dichloropropane	0.462	U
76-14-2	1,2-Dichlorotetrafluoroethane	0.699	U
108-67-8	1,3,5-Trimethylbenzene	0.492	U
106-99-0	1,3-Butadiene	0.664	U
541-73-1	1,3-Dichlorobenzene	0.601	U
142-28-9	1,3-Dichloropropane	0.462	U
106-46-7	1,4-Dichlorobenzene	0.601	U
123-91-1	1,4-Dioxane	0.721	U
78-93-3	2-Butanone	0.295	U
591-78-6	2-Hexanone	0.819	U
107-05-1	3-Chloropropene	1.57	U
108-10-1	4-Methyl-2-pentanone	0.410	U
67-64-1	Acetone	0.475	U
107-13-1	Acrylonitrile	0.217	U
71-43-2	Benzene	0.319	U
100-44-7	Benzyl chloride	0.518	U
75-27-4	Bromodichloromethane	0.670	U
75-25-2	Bromoform	1.03	U

FORM I

METHOD BLANK DATA SHEET
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air Laboratory ID: BC90329-BLK1 File ID: TQ207192.D
 Prepared: 03/06/19 08:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 03/06/19 14:23 Instrument: TO15_AIR2
 Batch: BC90329 Sequence: Y9C0724 Calibration: YB90001

CAS NO.	COMPOUND	CONC. (ug/m ³)	Q
74-83-9	Bromomethane	0.388	U
75-15-0	Carbon disulfide	0.311	U
56-23-5	Carbon tetrachloride	0.157	U
108-90-7	Chlorobenzene	0.460	U
75-00-3	Chloroethane	0.264	U
67-66-3	Chloroform	0.488	U
74-87-3	Chloromethane	0.207	U
156-59-2	cis-1,2-Dichloroethylene	0.396	U
10061-01-5	cis-1,3-Dichloropropylene	0.454	U
110-82-7	Cyclohexane	0.344	U
124-48-1	Dibromochloromethane	0.852	U
75-71-8	Dichlorodifluoromethane	0.495	U
141-78-6	Ethyl acetate	0.721	U
100-41-4	Ethyl Benzene	0.434	U
87-68-3	Hexachlorobutadiene	1.07	U
67-63-0	Isopropanol	0.492	U
80-62-6	Methyl Methacrylate	0.409	U
1634-04-4	Methyl tert-butyl ether (MTBE)	0.361	U
75-09-2	Methylene chloride	0.695	U
142-82-5	n-Heptane	0.410	U
110-54-3	n-Hexane	0.352	U
95-47-6	o-Xylene	0.434	U
179601-23-1	p- & m- Xylenes	0.868	U
622-96-8	p-Ethyltoluene	0.492	U
115-07-1	Propylene	0.172	U
100-42-5	Styrene	0.426	U
127-18-4	Tetrachloroethylene	0.170	U
109-99-9	Tetrahydrofuran	0.590	U
108-88-3	Toluene	0.377	U
156-60-5	trans-1,2-Dichloroethylene	0.396	U

FORM I

**METHOD BLANK DATA SHEET
EPA TO-15**

Laboratory: York Analytical Laboratories, Inc. SDG: 19B1031
 Client: Langan Engineering & Environmental Services (NJ) Project: 100287503
 Matrix: Air Laboratory ID: BC90329-BLK1 File ID: TQ207192.D
 Prepared: 03/06/19 08:00 Preparation: EPA TO15 PREP Initial/Final: 400 mL / 400 mL
 Analyzed: 03/06/19 14:23 Instrument: TO15_AIR2
 Batch: BC90329 Sequence: Y9C0724 Calibration: YB90001

CAS NO.	COMPOUND	CONC. (ug/m³)	Q
10061-02-6	trans-1,3-Dichloropropylene	0.454	U
79-01-6	Trichloroethylene	0.134	U
75-69-4	Trichlorofluoromethane (Freon 11)	0.562	U
108-05-4	Vinyl acetate	0.352	U
593-60-2	Vinyl bromide	0.437	U
75-01-4	Vinyl Chloride	0.256	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
SURR: p-Bromofluorobenzene	10.0	8.54	85.4	72 - 118	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	522944	12.506	428278	12.5	
ISTD: 1,4-Difluorobenzene	1541957	14.097	1361515	14.097	
ISTD: d5-Chlorobenzene	1285112	19.371	1166408	19.377	

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207192.D
 Acq On : 6 Mar 2019 2:23 pm
 Sample : BC90329-BLK1
 Operator : AS
 Sample : BC90329-BLK1
 Misc : QBTO2030619A BLK
 ALS Vial : 1 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 07 15:21:09 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

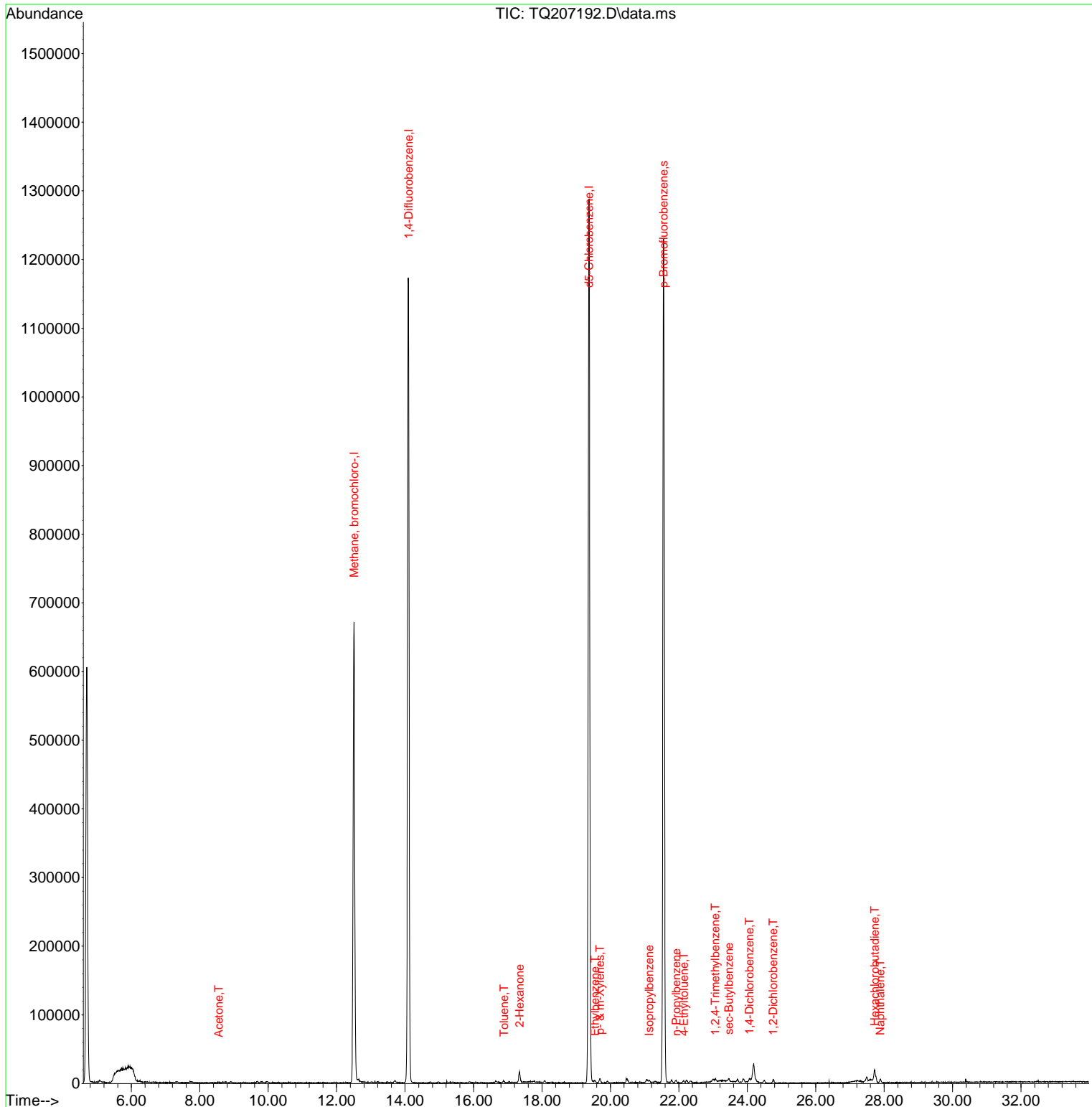
Internal Standards						
1) Methane, bromochloro-	12.506	49	522944	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.097	114	1541957	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.371	117	1285112	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	774312	8.54	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	85.40%	
Target Compounds						
						Qvalue
14) Acetone	8.550	43	2152	0.03	ppbv	97
45) Toluene	16.889	91	3658	0.02	ppbv #	89
48) 2-Hexanone	17.347	43	15586	0.19	ppbv	98
56) Ethylbenzene	19.547	91	4306	0.02	ppbv	98
57) p- & m-Xylenes	19.694	91	7078	0.05	ppbv #	78
61) n-Propylbenzene	21.919	91	5542m	0.02	ppbv	
62) Isopropylbenzene	21.132	105	4846	0.02	ppbv	99
65) 4-Ethyltoluene	22.144	105	3928	0.02	ppbv #	82
68) 1,2,4-Trimethylbenzene	23.065	105	3829	0.02	ppbv #	53
69) sec-Butylbenzene	23.455	105	5242	0.02	ppbv #	93
72) 1,4-Dichlorobenzene	24.059	146	4005	0.04	ppbv #	41
75) 1,2-Dichlorobenzene	24.754	146	3311	0.03	ppbv	87
77) Hexachlorobutadiene	27.723	225	8397	0.08	ppbv #	61
78) Naphthalene	27.887	128	6349	0.04	ppbv	97

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

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207192.D
 Acq On : 6 Mar 2019 2:23 pm
 Sample : BC90329-BLK1
 Operator : AS
 Sample : BC90329-BLK1
 Misc : QBTO2030619A BLK
 ALS Vial : 1 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 07 15:21:09 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration



LCS RAW DATA

SDG: 19B1031
CLASS: AIR
METHOD: EPA TO-15

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207182.D
 Acq On : 5 Mar 2019 3:24 pm
 Sample : BC90266-BS1
 Operator : AS
 Sample : BC90266-BS1
 Misc : QBTO2030519A LCS
 ALS Vial : 4 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 05 15:58:29 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.512	49	451338	10.00	ppbv	0.01
37) 1,4-Difluorobenzene	14.097	114	1437374	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.376	117	1204629	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.559	95	867167	10.20	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	102.00%	
Target Compounds						
						Qvalue
2) Propylene	5.068	42	261131	12.63	ppbv	97
3) Dichlorodifluoromethane	5.154	85	1297298	13.02	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.465	85	1464644	10.53	ppbv	93
5) Chloromethane	5.690	50	395857	11.21	ppbv	97
6) Vinyl Chloride	5.989	62	551786	10.88	ppbv	96
7) 1,3-Butadiene	6.086	54	349703	11.45	ppbv	98
8) Bromomethane	6.934	94	351936	9.93	ppbv	100
9) Chloroethane	7.135	64	196795	10.11	ppbv	100
10) Vinyl Bromide	7.610	106	383040	10.62	ppbv	100
11) Trichlorofluoromethane	7.745	101	1078570	10.48	ppbv	99
12) Isopropanol	8.293	45	671037	10.40	ppbv	100
13) Acrolein	8.391	56	143795	11.12	ppbv #	56
14) Acetone	8.513	43	619757	10.00	ppbv	99
15) Freon-113	8.671	101	850300	10.33	ppbv	97
16) 1,1-Dichloroethylene	8.903	61	616966	9.99	ppbv	98
17) 3-Chloropropene	9.525	41	509702	11.04	ppbv	93
18) Methylene Chloride	9.677	49	438381	10.19	ppbv	92
19) Acrylonitrile	9.781	53	296021	10.79	ppbv	97
20) Carbon disulfide	9.805	76	1156345	11.02	ppbv	98
21) Methyl-tert-Butyl Ethe...	10.104	73	1256249	11.42	ppbv	97
22) trans-1,2-Dichloroethy...	10.305	61	582644	11.23	ppbv	94
23) Hexane	10.598	57	633280	11.25	ppbv	99
24) Vinyl Acetate	10.939	43	1115612	11.38	ppbv #	100
25) 1,1-Dichloroethane	10.988	63	771996	10.85	ppbv	99
26) 2-Butanone	11.610	43	873804	10.82	ppbv	94
27) Ethyl Acetate	11.914	43	990665	11.78	ppbv #	45
28) cis-1,2-Dichloroethylene	12.000	61	548511	9.74	ppbv #	77
29) Chloroform	12.280	83	948944	10.96	ppbv	97
30) Tetrahydrofuran	12.609	42	461213	10.97	ppbv	93
31) 1,1,1-Trichloroethane	13.024	97	988678	11.47	ppbv	99
32) Cyclohexane	13.195	56	623564	11.41	ppbv	92
33) Carbon Tetrachloride	13.493	117	970062	10.83	ppbv	100
34) 1,2-Dichloroethane	13.567	62	552410	10.49	ppbv	99
35) Benzene	13.701	78	1379337	10.55	ppbv	92
36) n-Heptane	13.707	43	670946	10.89	ppbv #	97
38) Trichloroethylene	14.737	95	632192	10.85	ppbv	94
39) 1,2-Dichloropropane	14.969	63	497371	10.91	ppbv	92
40) Methyl Methacrylate	14.981	69	503077	11.74	ppbv #	41
41) 1,4-Dioxane	15.292	88	328426	10.56	ppbv #	100
42) Bromodichloromethane	15.335	83	1022011	11.16	ppbv	97
43) Methyl Isobutyl Ketone	15.871	43	1004299	11.12	ppbv	96
44) cis-1,3-Dichloropropene	16.225	75	905632	12.35	ppbv	98
45) Toluene	16.883	91	1695528	11.14	ppbv	98
46) trans-1,3-Dichloropropene	17.042	75	760096	11.59	ppbv	98
47) 1,1,2-Trichloroethane	17.334	97	619229	10.92	ppbv	97
48) 2-Hexanone	17.334	43	895407	11.51	ppbv	98

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207182.D
 Acq On : 5 Mar 2019 3:24 pm
 Sample : BC90266-BS1
 Operator : AS
 Sample : BC90266-BS1
 Misc : QBTO2030519A LCS
 ALS Vial : 4 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 05 15:58:29 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

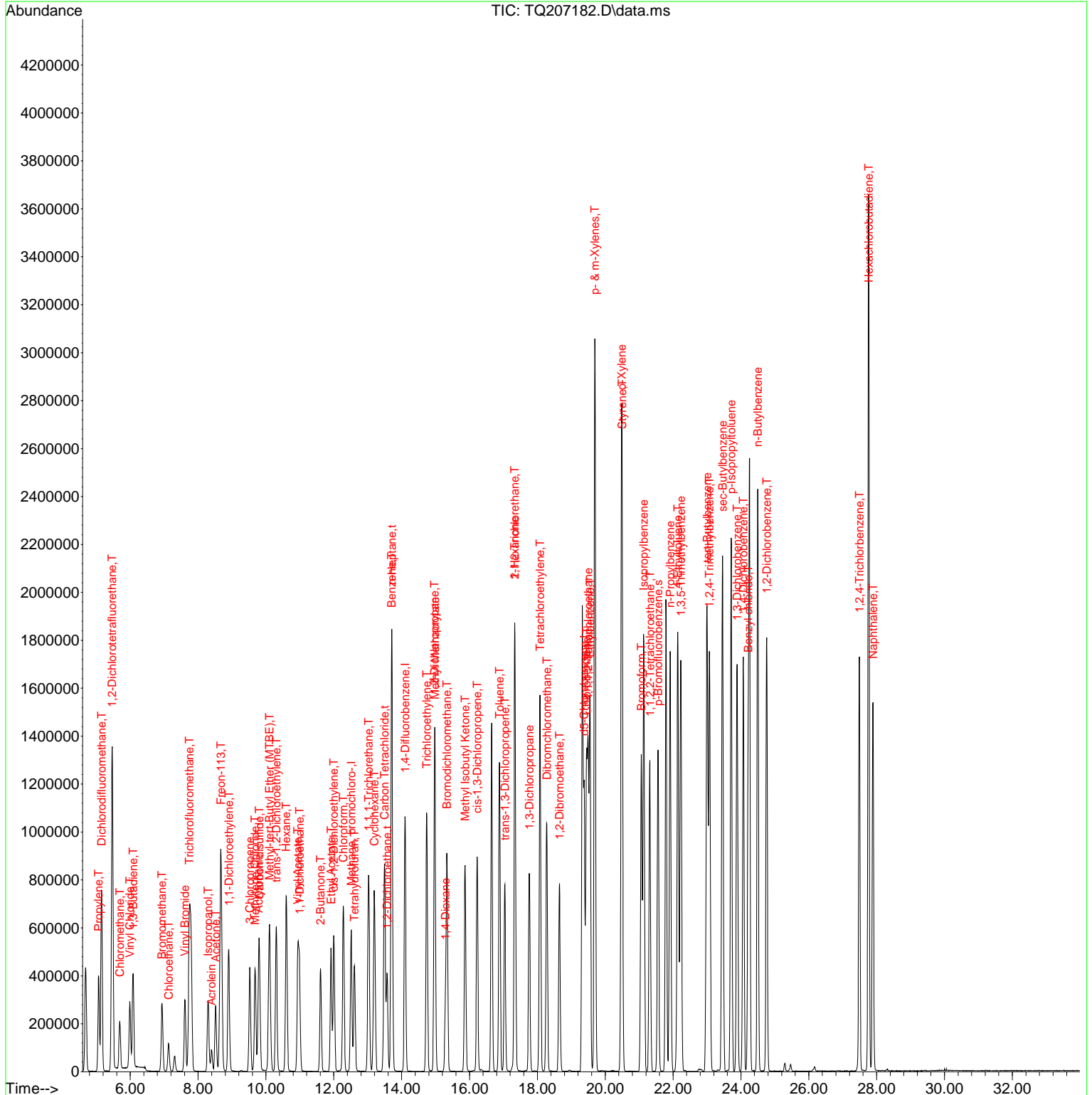
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.761	76	875860	11.01	ppbv #	72
50) Tetrachloroethylene	18.078	166	798346	10.67	ppbv	98
51) Dibromchloromethane	18.279	129	972155	11.38	ppbv	98
52) 1,2-Dibromoethane	18.651	107	934626	11.65	ppbv	99
54) Chlorobenzene	19.444	112	1248035	11.60	ppbv #	99
55) 1,1,1,2-Tetrachloroethane	19.498	131	673406	11.50	ppbv	93
56) Ethylbenzene	19.553	91	1987476	11.76	ppbv	97
57) p- & m-Xylenes	19.693	91	3083639	24.07	ppbv	94
58) o-Xylene	20.480	91	1855147	12.64	ppbv	99
59) Styrene	20.498	104	1365469	13.02	ppbv #	100
60) Bromoform	21.065	173	1096579	13.22	ppbv	98
61) n-Propylbenzene	21.913	91	2776353	12.24	ppbv	99
62) Isopropylbenzene	21.132	105	2275186	12.00	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	21.315	83	1276588	12.06	ppbv	98
65) 4-Ethyltoluene	22.138	105	2412673	13.22	ppbv	97
66) 1,3,5-Trimethylbenzene	22.230	105	1877095	12.16	ppbv	96
67) tert-Butylbenzene	23.004	119	2287487	12.50	ppbv #	79
68) 1,2,4-Trimethylbenzene	23.071	105	1987810	12.46	ppbv #	93
69) sec-Butylbenzene	23.455	105	2999083	12.52	ppbv #	94
70) p-Isopropyltoluene	23.711	119	2384255	12.46	ppbv #	89
71) 1,3-Dichlorobenzene	23.888	146	1299049	12.65	ppbv	96
72) 1,4-Dichlorobenzene	24.071	146	1274476	12.96	ppbv	96
73) Benzyl chloride	24.217	91	1810690	10.36	ppbv	98
74) n-Butylbenzene	24.491	91	2408616	13.29	ppbv	98
75) 1,2-Dichlorobenzene	24.760	146	1285903	12.61	ppbv	97
76) 1,2,4-Trichlorobenzene	27.491	180	840544	8.21	ppbv	98
77) Hexachlorobutadiene	27.765	225	1155731	12.23	ppbv	98
78) Naphthalene	27.893	128	1990891	13.10	ppbv	97

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

Data Path : C:\msdchem\1\data\030519\
 Data File : TQ207182.D
 Acq On : 5 Mar 2019 3:24 pm
 Sample : BC90266-BS1
 Operator : AS
 Sample : BC90266-BS1
 Misc : QBTO2030519A LCS
 ALS Vial : 4 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 05 15:58:29 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration



LCS RAW DATA

SDG: 19B1031
CLASS: AIR
METHOD: EPA TO-15

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207191.D
 Acq On : 6 Mar 2019 1:18 pm
 Sample : BC90329-BS1
 Operator : AS
 Sample : BC90329-BS1
 Misc : QBTO2030619A LCS
 ALS Vial : 4 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 06 20:20:34 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.512	49	449563	10.00	ppbv	0.01
37) 1,4-Difluorobenzene	14.103	114	1446528	10.00	ppbv	0.01
53) d5-Chlorobenzene	19.377	117	1220855	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	860675	9.99	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	99.90%	
Target Compounds						
						Qvalue
2) Propylene	5.081	42	256442	12.45	ppbv	98
3) Dichlorodifluoromethane	5.166	85	1279480	12.89	ppbv	98
4) 1,2-Dichlorotetrafluor...	5.471	85	1516334	10.95	ppbv	95
5) Chloromethane	5.696	50	379122	10.78	ppbv	97
6) Vinyl Chloride	5.995	62	526625	10.43	ppbv	96
7) 1,3-Butadiene	6.087	54	331191	10.89	ppbv	98
8) Bromomethane	6.946	94	366742	10.39	ppbv	99
9) Chloroethane	7.135	64	205471	10.59	ppbv	100
10) Vinyl Bromide	7.617	106	398324	11.09	ppbv	99
11) Trichlorofluoromethane	7.751	101	1102470	10.76	ppbv	99
12) Isopropanol	8.306	45	677709	10.55	ppbv	100
13) Acrolein	8.403	56	147171	11.42	ppbv #	85
14) Acetone	8.525	43	617392	10.00	ppbv	100
15) Freon-113	8.677	101	860599	10.50	ppbv	97
16) 1,1-Dichloroethylene	8.909	61	633223	10.30	ppbv	98
17) 3-Chloropropene	9.531	41	517949	11.26	ppbv	92
18) Methylene Chloride	9.683	49	434877	10.14	ppbv	91
19) Acrylonitrile	9.787	53	296303	10.84	ppbv #	96
20) Carbon disulfide	9.811	76	1193994	11.42	ppbv	98
21) Methyl-tert-Butyl Ethe...	10.110	73	1266995	11.56	ppbv	97
22) trans-1,2-Dichloroethy...	10.305	61	589613	11.41	ppbv	94
23) Hexane	10.604	57	634533	11.32	ppbv	99
24) Vinyl Acetate	10.939	43	1106254	11.33	ppbv #	100
25) 1,1-Dichloroethane	10.988	63	780014	11.00	ppbv	98
26) 2-Butanone	11.616	43	875199	10.88	ppbv	94
27) Ethyl Acetate	11.921	43	990941	11.83	ppbv #	45
28) cis-1,2-Dichloroethylene	12.006	61	554514	9.89	ppbv	78
29) Chloroform	12.287	83	940675	10.91	ppbv	98
30) Tetrahydrofuran	12.610	42	458897	10.96	ppbv	93
31) 1,1,1-Trichloroethane	13.024	97	984790	11.47	ppbv	99
32) Cyclohexane	13.195	56	621513	11.41	ppbv	90
33) Carbon Tetrachloride	13.500	117	955389	10.71	ppbv #	92
34) 1,2-Dichloroethane	13.573	62	556286	10.61	ppbv	100
35) Benzene	13.701	78	1377623	10.58	ppbv	92
36) n-Heptane	13.713	43	667484	10.87	ppbv #	97
38) Trichloroethylene	14.743	95	633824	10.81	ppbv	93
39) 1,2-Dichloropropane	14.969	63	492509	10.73	ppbv	92
40) Methyl Methacrylate	14.981	69	505643	11.73	ppbv #	85
41) 1,4-Dioxane	15.292	88	327591	10.47	ppbv #	100
42) Bromodichloromethane	15.335	83	1014670	11.01	ppbv	97
43) Methyl Isobutyl Ketone	15.871	43	1005851	11.07	ppbv	97
44) cis-1,3-Dichloropropene	16.225	75	893893	12.11	ppbv	98
45) Toluene	16.883	91	1689569	11.03	ppbv	98
46) trans-1,3-Dichloropropene	17.042	75	757784	11.48	ppbv	98
47) 1,1,2-Trichloroethane	17.334	97	616184	10.80	ppbv	97
48) 2-Hexanone	17.334	43	896255	11.45	ppbv	98

Data Path : C:\msdchem\1\data\030619\
 Data File : TQ207191.D
 Acq On : 6 Mar 2019 1:18 pm
 Sample : BC90329-BS1
 Operator : AS
 Sample : BC90329-BS1
 Misc : QBTO2030619A LCS
 ALS Vial : 4 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 06 20:20:34 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

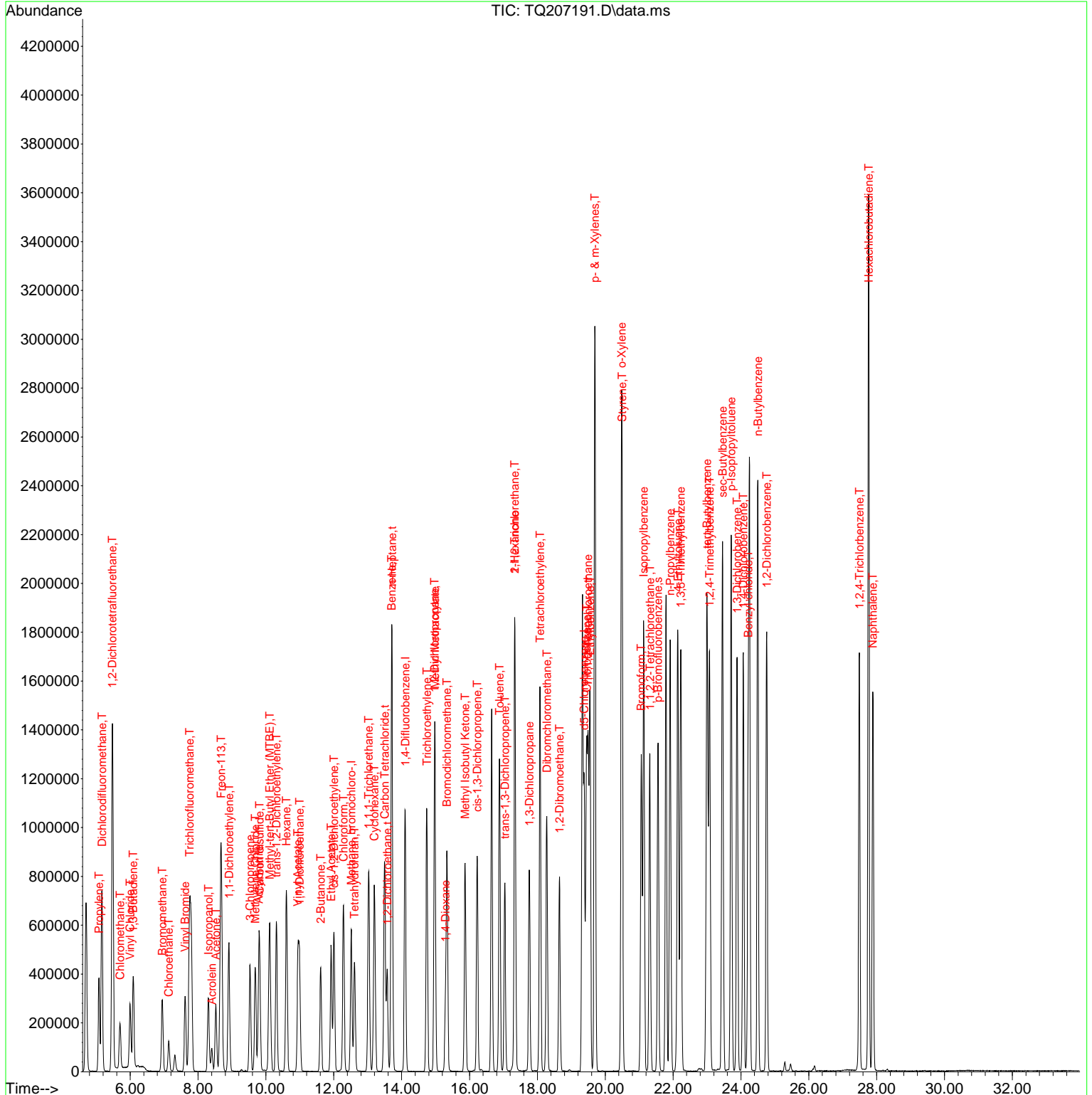
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	17.761	76	876245	10.95	ppbv #	72
50) Tetrachloroethylene	18.078	166	804790	10.69	ppbv	98
51) Dibromchloromethane	18.279	129	972227	11.31	ppbv	97
52) 1,2-Dibromoethane	18.651	107	937069	11.61	ppbv	99
54) Chlorobenzene	19.450	112	1249918	11.47	ppbv #	86
55) 1,1,1,2-Tetrachloroethane	19.492	131	673106	11.35	ppbv	93
56) Ethylbenzene	19.553	91	1993358	11.64	ppbv	97
57) p- & m-Xylenes	19.694	91	3087574	23.78	ppbv	94
58) o-Xylene	20.480	91	1848382	12.43	ppbv	99
59) Styrene	20.498	104	1375341	12.94	ppbv #	100
60) Bromoform	21.059	173	1096585	13.04	ppbv	98
61) n-Propylbenzene	21.913	91	2776766	12.08	ppbv	98
62) Isopropylbenzene	21.132	105	2262990	11.78	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	21.315	83	1275650	11.89	ppbv	97
65) 4-Ethyltoluene	22.144	105	2424891	13.11	ppbv	97
66) 1,3,5-Trimethylbenzene	22.224	105	1876017	11.99	ppbv	96
67) tert-Butylbenzene	22.998	119	2278799	12.29	ppbv #	79
68) 1,2,4-Trimethylbenzene	23.077	105	1979265	12.24	ppbv #	93
69) sec-Butylbenzene	23.455	105	2969692	12.23	ppbv #	94
70) p-Isopropyltoluene	23.711	119	2374856	12.24	ppbv #	89
71) 1,3-Dichlorobenzene	23.888	146	1307579	12.56	ppbv	97
72) 1,4-Dichlorobenzene	24.071	146	1278346	12.83	ppbv	96
73) Benzyl chloride	24.217	91	1812643	10.23	ppbv	98
74) n-Butylbenzene	24.498	91	2379777	12.95	ppbv	98
75) 1,2-Dichlorobenzene	24.760	146	1276712	12.35	ppbv	96
76) 1,2,4-Trichlorobenzene	27.491	180	835681	8.07	ppbv	98
77) Hexachlorobutadiene	27.765	225	1129392	11.79	ppbv	97
78) Naphthalene	27.887	128	2002610	13.01	ppbv	97

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

Data Path : C:\msdchem\1\data\030619\
Data File : TQ207191.D
Acq On : 6 Mar 2019 1:18 pm
Sample : BC90329-BS1
Operator : AS
Sample : BC90329-BS1
Misc : QBTO2030619A LCS
ALS Vial : 4 Sample Multiplier: 1

Inst : TO15_AIR2

Quant Time: Mar 06 20:20:34 2019
Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
Quant Title : TO15 VOC Analysis
DataAcq Meth: AIRACQ.M
QLast Update : Fri Feb 01 08:33:23 2019
Response via : Initial Calibration



Batch Canister Certification Prep Logs

SUMMA Canister Cleaning/Preparation Log

Date of Cleaning	Analyst Initials	Canister Number	Lot Number	Temperature of Cleaning Oven (60°C)	Canister Cleaning System (1 or 2)	Number of cleaning cycles (4 or 6) *	Leak check Date (>24 hours)	Analyst Initials	GC/MS file name and date for canister certification
2/16/19 (cont)	KC	16974 28851	085021619A (cont)	60°C	2	6	2/20/19	KC	
		Y1127							
		23976							
	W/P	23201	085021619B	60°C	2	6	2/20/19	W/P	T0278312.D
	W/P	16955							
		23999							
		Y83							
		18293							
		28312							
2/18/19	KC	28845 23972 28798	085021619A	60°C	2	6	2/20/19	W/P	T0307059.D
2/19/19	KC	15609 Y79	085021619A	60°C	2	6	2/20/19	KC	T0318342.D
		28317							
		16152							
		23200							
		17351							
		24058							
		20949							

* 6 or more cleaning cycles are required for canisters that contain high concentration of VOAs

SUMMA Canister Cleaning/Preparation Log

Date of Cleaning	Analyst Initials	Canister Number	Lot Number	Temperature of Cleaning Oven (60°C)	Canister Cleaning System (1 or 2)	Number of cleaning cycles (4 or 6) *	Leak check Date (>24 hours)	Analyst Initials	GC/MS file name and date for canister certification
2/19/19	KC	28857	085021719B	60°C	2	6	30/19	KC	T02070719.D
		23155							
		28314							
		28801							
		23178							
		23196							
		20944							
		18295							
2/20/19	KC	28304	085022019A	60°C	2	6	-30/19	KC	T021840519.D
		18298							
		28802							
		18317	18249 PP						
		18304							
		16956							
		23976							
		22078							
2-21-19	PP	11346	08502219A	60°C	2	6	-30/19	PP	T021840419.D
		28318							
		20155							
		23947							

* 6 or more cleaning cycles are required for canisters that contain high concentration of VOAs

SUMMA Canister Cleaning/Preparation Log

Date of Cleaning	Analyst Initials	Canister Number	Lot Number	Temperature of Cleaning Oven (60°C)	Canister Cleaning System (1 or 2)	Number of cleaning cycles (4 or 6) *	Leak check Date (>24 hours)	Analyst Initials	GC/MS file name and date for canister certification
2-24-14	PP	28344	QBS02219A	60°C	2	4	3-2-14	PP	1027840-1A-D
		14143							
		28303							
		24253							
2-22-19	KC	18298	QBS02219A	60°C	2	6	3-2-19	KC	
		22084							
		18302							
		24254							
		20742							
		19527							
		24113							
		18308							
2-23-19	PP	18301	QBS02219A	60°C	2	6	3-2-19	PP	1020714-K-N
		28352							
		28315							
		772							
		28856							
		23147							
		17352							
		22076							

* 6 or more cleaning cycles are required for canisters that contain high concentration of VOAs

Batch Canister Certification

Data Path : D:\022019\
 Data File : TO278342.D
 Acq On : 20 Feb 2019 9:41 pm
 Operator : PP
 Sample : QBS021919A
 Misc : QBT01022019A Batch Cert. Can # 15609
 ALS Vial : 11 Sample Multiplier: 1
 InstName : 5975C

Quant Time: Mar 12 17:06:33 2019
 Quant Method : C:\msdchem\1\methods\AIR98.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Tue Jan 29 13:04:07 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

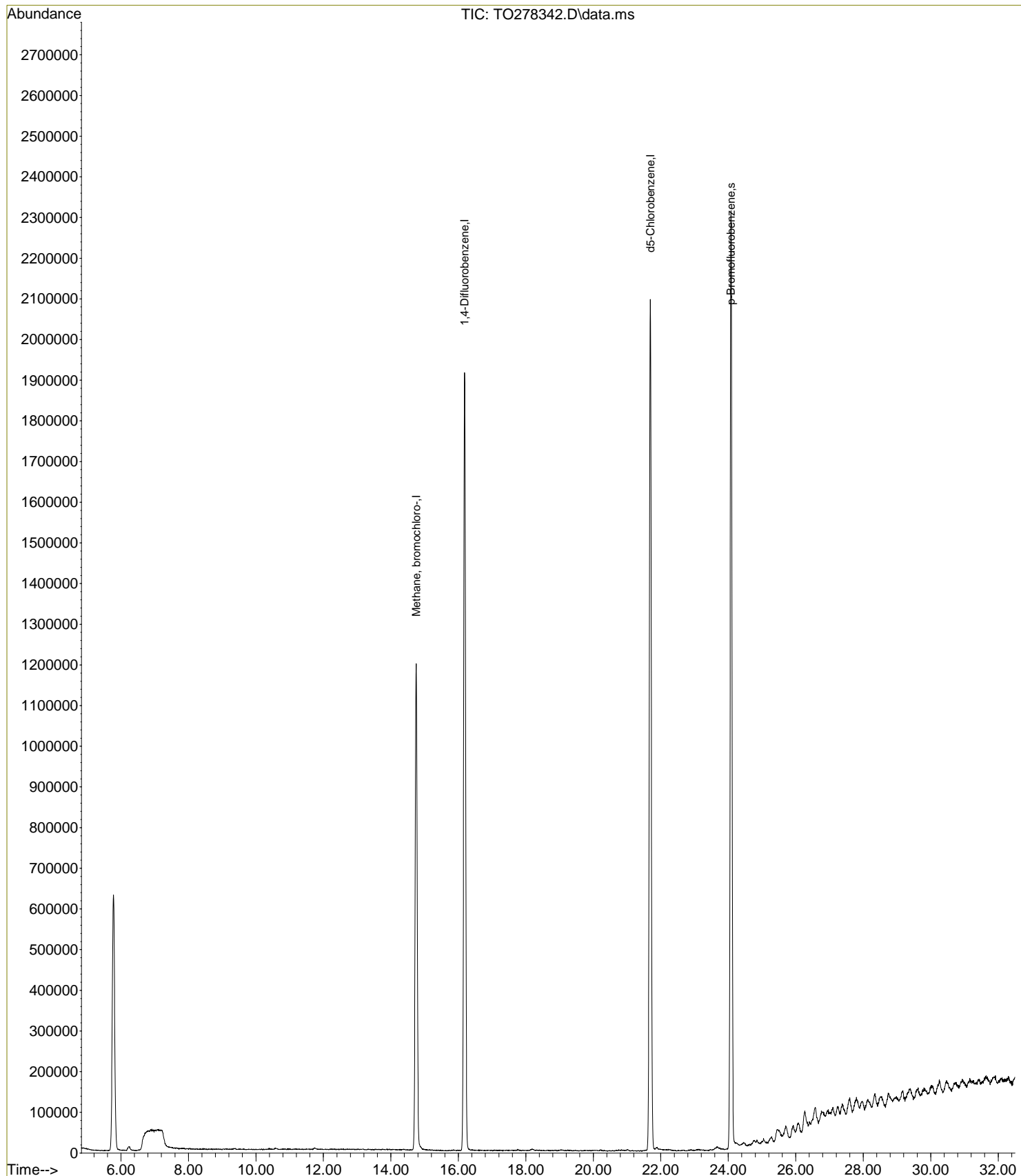
Internal Standards						
1) Methane, bromochloro-	14.751	49	1307681	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	16.184	114	3075146	10.00	ppbv	-0.01
53) d5-Chlorobenzene	21.689	117	2662685	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	24.079	95	1712428	9.12	ppbv	-0.02
Spiked Amount	10.000	Range	70 - 130	Recovery	=	91.20%

Target Compounds Qvalue

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

Data Path : D:\022019\
Data File : TO278342.D
Acq On : 20 Feb 2019 9:41 pm
Operator : PP
Sample : QBS021919A
Misc : QBTO1022019A Batch Cert. Can # 15609
ALS Vial : 11 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 12 17:06:33 2019
Quant Method : C:\msdchem\1\methods\AIR98.M
Quant Title : TO15 VOC Analysis
QLast Update : Tue Jan 29 13:04:07 2019
Response via : Initial Calibration



Data Path : D:\022019\
 Data File : TO278342.D
 Acq On : 20 Feb 2019 9:41 pm
 Operator : PP
 Sample : QBS021919A
 Misc : QBT01022019A Batch Cert. Can # 15609
 ALS Vial : 11 Sample Multiplier: 1
 InstName : 5975C

Quant Time: Mar 12 17:06:33 2019
 Quant Method : C:\msdchem\1\methods\AIR98.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Tue Jan 29 13:04:07 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

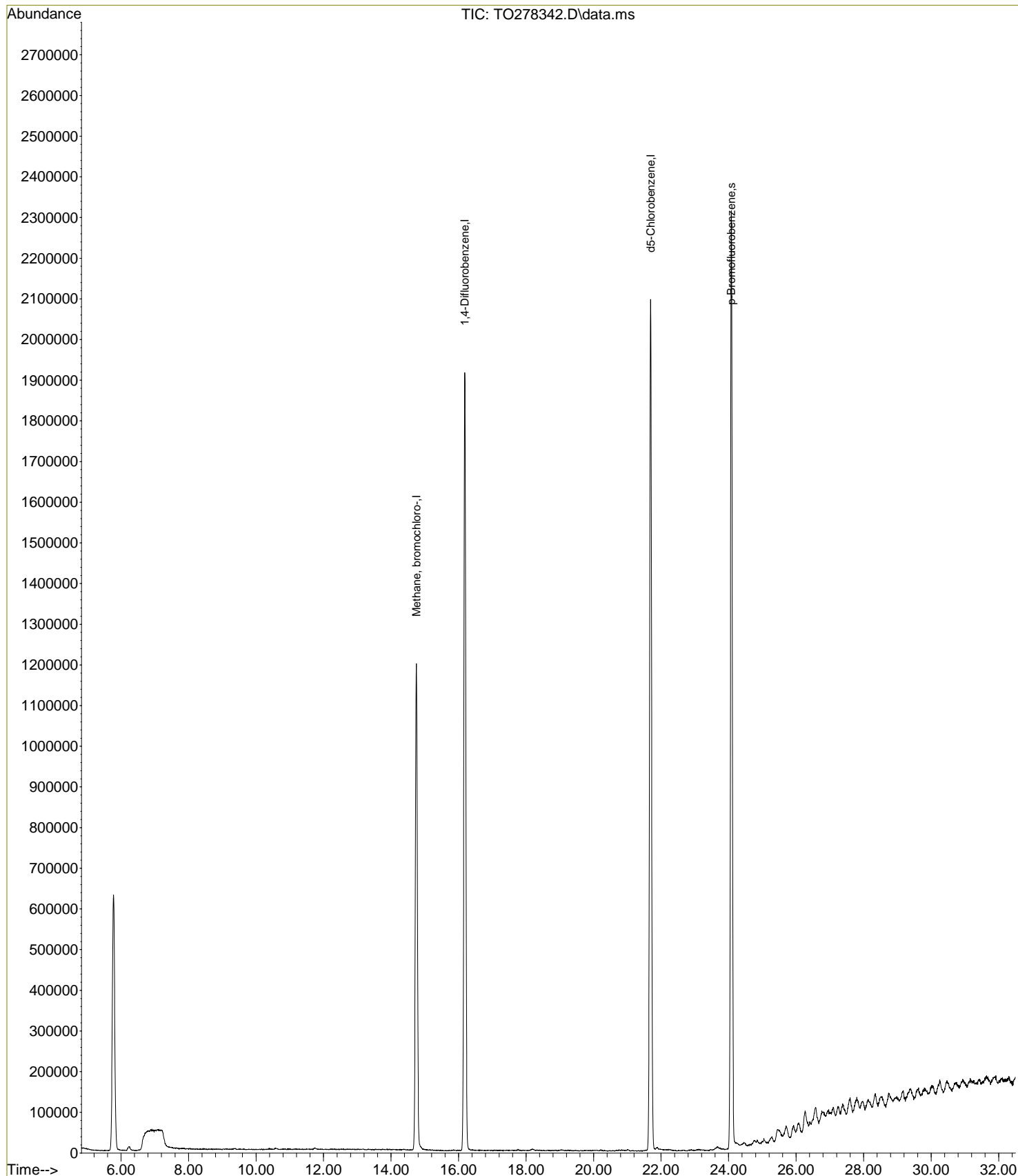
Internal Standards						
1) Methane, bromochloro-	14.751	49	1307681	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	16.184	114	3075146	10.00	ppbv	-0.01
53) d5-Chlorobenzene	21.689	117	2662685	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	24.079	95	1712428	9.12	ppbv	-0.02
Spiked Amount	10.000	Range	70 - 130	Recovery	=	91.20%

Target Compounds Qvalue

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

Data Path : D:\022019\
 Data File : TO278342.D
 Acq On : 20 Feb 2019 9:41 pm
 Operator : PP
 Sample : QBS021919A
 Misc : QBT01022019A Batch Cert. Can # 15609
 ALS Vial : 11 Sample Multiplier: 1
 InstName : 5975C

Quant Time: Mar 12 17:06:33 2019
 Quant Method : C:\msdchem\1\methods\AIR98.M
 Quant Title : TO15 VOC Analysis
 QLast Update : Tue Jan 29 13:04:07 2019
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\022819\
 Data File : TQ207148.D
 Acq On : 28 Feb 2019 8:00 pm
 Sample : QBS022319A Inst : TO15_AIR2
 Operator : AS
 Sample : QBS022319A
 Misc : QBT02022819A Batch Cert Can # 18301
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 01 12:20:24 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration

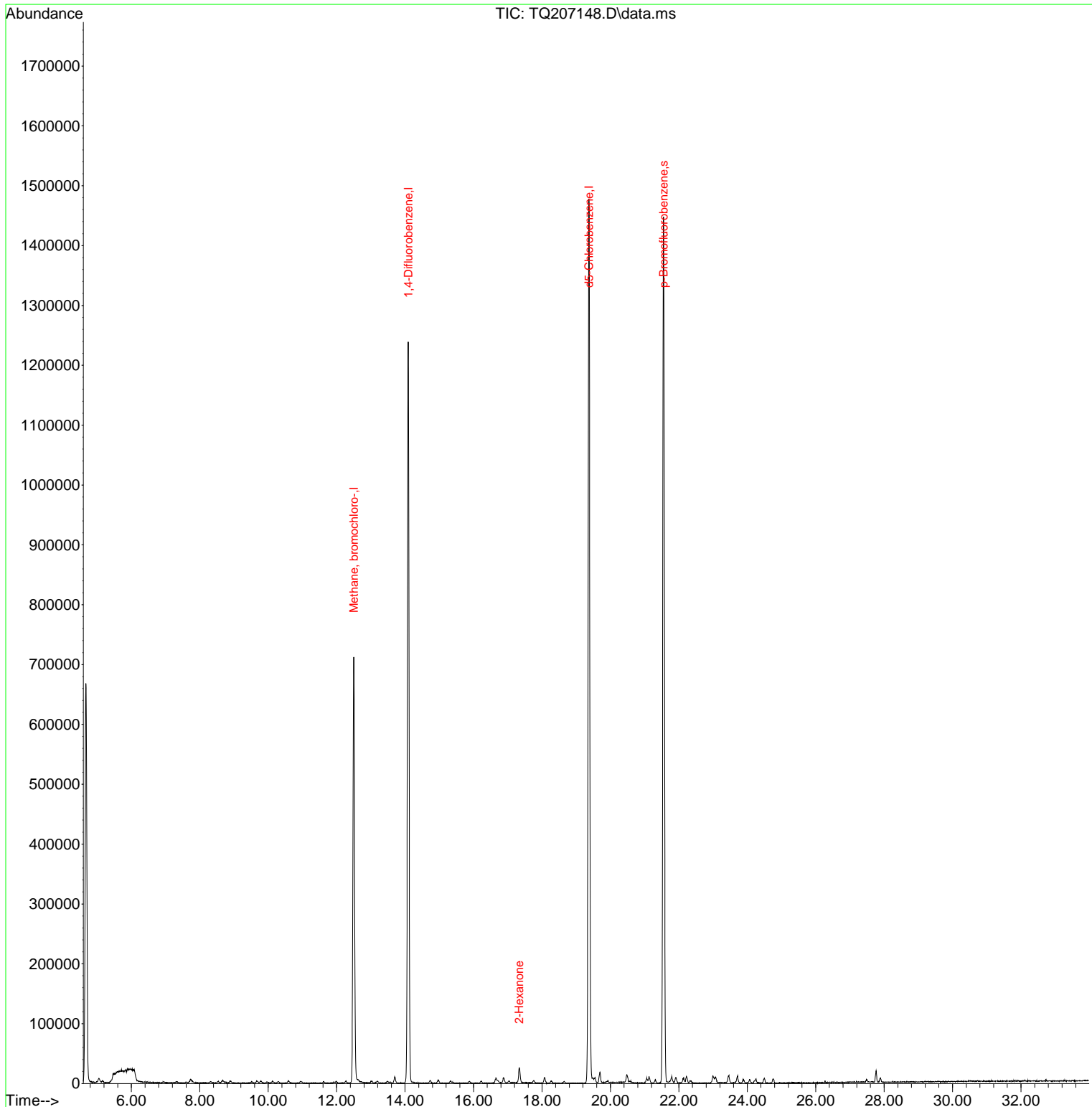
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Methane, bromochloro-	12.500	49	540109	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	14.091	114	1695748	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.370	117	1656824	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.553	95	957737	8.19	ppbv	0.00
Spiked Amount	10.000	Range 70 - 130	Recovery	=	81.90%	
Target Compounds						
48) 2-Hexanone	17.334	43	22347	0.24	ppbv	Qvalue 98

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

Data Path : C:\msdchem\1\data\022819\
 Data File : TQ207148.D
 Acq On : 28 Feb 2019 8:00 pm
 Sample : QBS022319A Inst : TO15_AIR2
 Operator : AS
 Sample : QBS022319A
 Misc : QBTO2022819A Batch Cert Can # 18301
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 01 12:20:24 2019
 Quant Method : C:\msdchem\1\methods\AIR-2-0020.M
 Quant Title : TO15 VOC Analysis
 DataAcq Meth: AIRACQ.M
 QLast Update : Fri Feb 01 08:33:23 2019
 Response via : Initial Calibration



BENCHSHEETS

SDG: 19B1031
CLASS: AIR
METHOD: EPA TO-15

PREPARATION BENCH SHEET-AIR : BC90266

Preparation Date: 03/05/2019 08:00

York Analytical Laboratories, Inc.

Printed: 3/8/2019 9:21:43AM

Matrix: Air

Preparation: EPA TO15 PREP

Surrogate used: Y19B008 100 ul

Lab Number	Analysis	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	Comments
19B1031-01 A	VOA, TO15 MASTER	400	400				
19B1031-02 A	VOA, TO15 MASTER	400	400				
19B1031-03 A	VOA, TO15 MASTER	400	400				
BC90266-BLK1	QC	400	400				
BC90266-BS1	QC	400	400	Y19B001		400	

Preparations Performed by AS

Date: 03/05/2019 08:00

BENCHSHEETS

SDG: 19B1031
CLASS: AIR
METHOD: EPA TO-15

PREPARATION BENCH SHEET-AIR : BC90329

Preparation Date: 03/06/2019 08:00

York Analytical Laboratories, Inc.

Printed: 3/8/2019 9:21:25AM

Matrix: Air

Preparation: EPA TO15 PREP

Surrogate used: Y19B008 100 ul

Lab Number	Analysis	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	Comments
19B1031-04 A	VOA, TO15 MASTER	400	400				
19B1031-05 A	VOA, TO15 MASTER	400	400				
19B1031-05 A	Volatile Organics, EPA TO15 Full List	400	400				Added for BatchQC in: BC9
19B1031-05 A	Volatile Organics, TO15 Tent. Identified Cmpds	400	400				Added for BatchQC in: BC9
19C0009-01 A	Volatile Organics, EPA TO15 Full List	400	400				
19C0009-01 A	Volatile Organics, TO15 Tent. Identified Cmpds	400	400				
19C0009-02 A	Volatile Organics, EPA TO15 Full List	400	400				
19C0009-02 A	Volatile Organics, TO15 Tent. Identified Cmpds	400	400				
19C0009-03 A	Volatile Organics, EPA TO15 Full List	400	400				
19C0009-03 A	Volatile Organics, TO15 Tent. Identified Cmpds	400	400				
19C0009-04 A	Volatile Organics, TO15 Tent. Identified Cmpds	400	400				
19C0009-04 A	Volatile Organics, EPA TO15 Full List	400	400				
19C0009-05 A	Volatile Organics, TO15 Tent. Identified Cmpds	400	400				
19C0009-05 A	Volatile Organics, EPA TO15 Full List	400	400				
19C0009-06 A	Volatile Organics, EPA TO15 Full List	400	400				
19C0009-06 A	Volatile Organics, TO15 Tent. Identified Cmpds	400	400				
19C0056-01 A	Volatile Organics, EPA TO15 Full List	400	400				
19C0056-02 A	Volatile Organics, EPA TO15 Full List	400	400				
19C0056-03 A	Volatile Organics, EPA TO15 Full List	400	400				
19C0056-04 A	Volatile Organics, EPA TO15 Full List	400	400				
19C0057-01 A	Volatile Organics, EPA TO15 Full List	400	400				
BC90329-BLK1	QC	400	400				
BC90329-BS1	QC	400	400	Y19B001		400	
BC90329-DUP1	QC	400	400		19B1031-05		

Preparations Performed by AS

Date: 03/06/2019 08:00

Injection Logs

TO14A/TO15 Summa Canister Injection Log

Batch ID	Sample ID	First Canister Press./Vac. In Field Reported by Client	Canister Pressure/Vacuum Before Analysis (psig or in. Hg vac)	Add'l Press. for Analytic Final Pressure (psig)	Presorption Dil. Factor	ALS Inlet No.	Sample Vol. Used (ml)	Total Dilution Factor	COMMENTS	ISTD Vol. (ml)	Date	Analyt	
BC90266	MUNG 0:30 19B1051-01	---	-3.7	5	1.529	5	400	1.529		40	3/15/19	K1/K5	
	-02	---	-3.3	5	1.506	6	400	1.506		40			
	-03	---	-3.2	5	1.500	7	400	1.500		40			
	-04	---	-2.6	5	1.467	8	400	1.467		40	due stopped here		
	-05	---	-4.5	5	1.526	9	750	6.840	DUP	40			
	19C0009-01	6	-3.7	5	1.529	10	750	0.815		40			
	-02	8	-5.2	5	1.621	11	750	0.805	dup	40			
	-03	9	-5.6	5	1.648	12	750	0.879	sequence	40			
	-04	10	-5.1	5	1.614	13	750	0.861		40			
	-05	10	-5.3	5	1.628	14	750	0.868		40			
	-06	10	-8.2	5	1.844	15	750	0.983		40			
	19C0057-01	-10	-10.1	5	2.020	16	40	20.20		40			
										40			
										40			
										40			
										40			
										40			
									40				
									40				

TO14A/TO15 Summa Canister Injection Log

Batch ID	Sample ID	Final Canister Press/Vac. in field Reported by Client	Canister Pressure/Vacuum Before Analysis (psig or in. Hg vac)	Add'l Pressure for Analysis Final pressure (psig)	Pressurization (H Factor)	ALS Inlet No.	Sample Vol. Used (ml)	Total Dilution Factor	COMMENTS	ISTD Vol. (ml)	Date	Analyst
BC90329	TUNE											
	19B1031-04	-	-2.6	5	1.467	8	400	1.467		40	3/6/17	AS
	19B1031-05	-	-4.5	5	1.576	9	750	0.840	DUP	40		
	19C0009-01	6	-3.7	5	1.529	10	750	0.815		40		
	19C0009-02	8	-5.2	5	1.621	11	750	0.825		40		
	19C0009-03	9	-5.6	5	1.648	12	750	0.879		40		
	19C0009-04	10	-5.1	5	1.614	13	750	0.861		40		
	19C0009-05	10	-5.3	5	1.628	14	750	0.840		40		
	19C0057-01	-10	-10.1	5	2.020	16	40	20.20		40		
	19C0056-01	-10	-10.9	5	2.105	5	750	1.123		40		
	19C0056-02	-11	-11.3	5	2.150	6	750	1.147		40		
	19C0056-03	-10	-7.8	5	1.811	7	750	0.966		40		
	19C0056-04	-11	-10.8	5	2.094	8	750	1.117	4.15.	40		
	19C0056-05	-10	-7.8	5	1.811	8	750	0.966	3.15.	40		
	19C0056-06	-10	-10.4	5	2.051	9	750	1.094	not done	40		
19C0056-07	10	-8.2	5	1.844	15	750	0.983		40			
										40		
										40		
										40		
										40		
										40		
										40		

Media Request Form



Air Sampling Media Request e-Form

Date of Request: 2/25/2019; REV1 - 2/26/19

Date Media Needed to Log-In: 2/26/2019

Order Completed on: 2/26/19

Requested By: Lidya

Completed By: KC

Order No.: 1059101

Client: Langan-NJ

Date of Request: 2/25/2019

Date to Client:

2/27/2019

Client Project ID: Bond St Brooklyn

Client Contact Person: Alyson Kritzer

Delivery Method (x): XX

York Courier

Client Pickup

Address for Drop Off:

365 Bond Street Brooklyn

Special Instructions/Additional Info:

Site DO 7:30 AM:

2 different flow controller rates requested (2 & 6)

Type of Samples Expected (x): Ambient Air 6 SV Other

Type of Media Needed	Quantity	Digital Gauge (x)	Indiv. Cert. (x)	Comments
Summa Canisters- 6 Liter	(6) KC			
Summa Canisters- 3 Liter				
Tedlar Bag, 1 L				
Flow controller, grab				
Flow controller, 1 hour				
Flow controller, 2 hour	(5) KC			
Flow controller, 4 hour				
Flow controller, 6 hour	(1) KC			Rev to 6 Hr 2/26
Flow controller, 8 hour				
Flow controller, 12 hour				
Flow controller, 24 hour				

Assets Provided under this Request

Summa Canister IDs	Indiv. Cert (x)	Flow Cont. ID
28852		Y24 (208)
24113		Y41 (250)
28317		Y23 (207)
17352		3350
18301		Y47 (208)
28801		7416

KC

KC

ATTACHMENT C

Data Usability Summary Report

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Jessica Friscia, Langan Project Engineer
From: Emily Strake, Langan Senior Project Chemist
Date: March 15, 2019
Re: Data Usability Summary Report
For 365 Bond Street
Soil Vapor Samples Collected in February 2019
Langan Project No.: 100287503

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of air samples collected in February 2019 by Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. ("Langan") at the 365 Bond Street site ("the Site"). The samples were analyzed by York Analytical Laboratories (NYSDOH NELAC registration # 12058) for volatile organic compounds (VOCs) by the methods specified below.

- VOCs by USEPA Method TO-15

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

<i>SDG</i>	<i>Lab Sample ID</i>	<i>Client Sample ID</i>	<i>Sample Date</i>	<i>Analytical Parameters</i>
19B1031	19B1031-01	866/V2	2/27/2019	VOCs
19B1031	19B1031-02	867/V3	2/27/2019	VOCs
19B1031	19B1031-03	868/DUP-1	2/27/2019	VOCs
19B1031	19B1031-04	869/V5	2/27/2019	VOCs
19B1031	19B1031-05	870/Ambient-1	2/27/2019	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-31, "Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15" (September 2016, Revision 6), and the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017) and the specifics of the methods employed.

Technical Memorandum

Data Usability Summary Report
For 365 Bond Street
Air Samples Collected February 2019
Langan Project No.: 100287501
March 15, 2019 - Page 2 of 4

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, target compound identification and quantification, chromatograms, overall system performance, and field duplicate sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

- R** – The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
- J** – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ** – The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.
- U** – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.
- NJ** – The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

Technical Memorandum

Data Usability Summary Report
 For 365 Bond Street
 Air Samples Collected February 2019
 Langan Project No.: 100287501
 March 15, 2019 - Page 3 of 4

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

<i>Client Sample ID</i>	<i>Analysis</i>	<i>CAS #</i>	<i>Analyte</i>	<i>Validator Qualifier</i>
866/V2	TO15	591-78-6	2-Hexanone	U (4.64)
866/V2	TO15	622-96-8	4-Ethyltoluene	J
866/V2	TO-15	75-25-2	Bromoform	UJ
866/V2	TO-15	75-71-8	Dichlorodifluoromethane	J
867/V3	TO-15	591-78-6	2-Hexanone	U (4.01)
867/V3	TO-15	622-96-8	4-Ethyltoluene	J
867/V3	TO-15	75-25-2	Bromoform	UJ
867/V3	TO-15	75-71-8	Dichlorodifluoromethane	J
868/DUP-1	TO-15	591-78-6	2-Hexanone	U (4.06)
868/DUP-1	TO-15	622-96-8	4-Ethyltoluene	J
868/DUP-1	TO-15	75-25-2	Bromoform	UJ
868/DUP-1	TO-15	75-71-8	Dichlorodifluoromethane	J
869/V5	TO-15	622-96-8	4-Ethyltoluene	J
869/V5	TO-15	75-25-2	Bromoform	UJ
870/Ambient-1	TO-15	75-25-2	Bromoform	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by USEPA Method TO-15:

The method blank for batch BC90266 exhibited a detection of 2-hexanone (1.11 ug/m³). The associated results in samples 866/V2, 867/V3, and 868/DUP-1 are qualified as "U" at the sample concentration based on potential blank contamination.

The lab control sample (LCS) for batch BC90266 exhibited percent recoveries above the upper control limit (UCL) for dichlorodifluoromethane (130%) and p-ethyltoluene (132%). The associated results in samples 866/V2, 867/V3, and 868/DUP-1 are qualified as "J" based on potential high bias.

The LCS for batch BC90329 exhibited a percent recovery above the UCL for p-ethyltoluene (131%). The associated result in sample 869/V5 is qualified as "J" based on potential high bias.

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For 365 Bond Street
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The continuing calibration verification (CCV) analyzed on 3/5/2019 at 11:58 exhibited a percent difference (%D) above the control limit for bromoform (30.1%). The associated results in samples 866/V2, 867/V3, and 868/DUP-1 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 3/6/2019 at 12:16 exhibited a %D above the control limit for bromoform (32.9%). The associated results in samples 869/V5 and 870/Ambient-1 are qualified as "UJ" based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by USEPA Method TO-15:

The LCS for batch BC90266 exhibited a percent recovery above the UCL for bromoform (132%) and styrene (130%). The associated results are non-detections. No qualification is necessary.

The LCS for batch BC90329 exhibited a percent recovery above the UCL for bromoform (130%). The associated results are non-detections. No qualification is necessary.

COMMENTS:

Field duplicate and parent sample pairs were collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than $\pm 1X$ the RL. For results greater than 5X the RL, analytes meet the precision criteria if the RPD is less than or equal to 30% for air.

- 867 V3_20190227 and 868 DUP-1_20190227: All analytes met the precision criteria.

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:



Emily Strake, CEP
Senior Project Chemist