INTERIM SITE MANAGEMENT PLAN

for

514 UNION STREET
Brooklyn, New York
NYSDEC BCP Site No. C224318

Prepared For:

Gowanus President Owner LLC
400 West 59th Street
New York, New York 10019

Prepared By:

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
360 West 31st Street, 8th Floor
New York, New York 10001

LANGAN

21 June 2023
Langan Project No. 170361307

CERTIFICATION STATEMENT

I, Jason J. Hayes, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Interim Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

SIGNATURE

6/22/2023

DATE

TABLE OF CONTENTS

1.0 Introdcution 1

2.0 OM&M 1

2.1 Routine System Operation 1

2.2 Routine System Inspection 2

2.3 Non-Routine Maintenance 2

2.4 Performance Monitoring 3

2.5 System Monitoring Devices and Alarms 4

2.6 System Performance Monitoring Schedule 4

2.7 DAR-1 Compliance 5

2.8 Criteria for System Termination 5

3.0 Contact List 5

4.0 Reporting 6

FIGURES

Figure 1 Site Location Map
Figure 2 Site Plan

APPENDICES

Appendix A Indoor Air Sample Results Technical Memorandum
Appendix B Record Drawings
Appendix C System Component Manuals
Appendix D Blank System Inspection Form

1.0 INTRODCUTION

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) prepared this Interim Site Management Plan (ISMP) on behalf of Gowanus Owner President LLC (the Volunteer) for the property at 514 Union Street, Brooklyn, New York (the site). The Volunteer was accepted into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) to investigate and remediate the site pursuant to the NYSDEC Brownfield Cleanup Agreement (BCA) executed on 21 October 2021 and amended on 1 February 2023. The site was assigned BCP Site No. C224318.

This ISMP was prepared to document operation maintenance and monitoring (OM&M) requirements associated with the soil vapor intrusion (SVI) mitigation system installed at the site in September 2022. The SVI mitigation system is comprised of four ventilation points that manifold to a roof-mounted blower. The SVI mitigation system installation, startup, and post-installation indoor air sampling are documented in the 9 March 2023 Construction Completion Report (CCR) No. 1. A second round of indoor air samples were collected on 17 March 2023 and is documented in the 28 March Indoor Air Sample Results Technical Memorandum. The Indoor Air Sample Results Technical Memorandum is included as Appendix A. Record drawings documenting the as built condition of the SVI mitigation system are included as Appendix B. A site location map is included as Figure 1 and a site plan is included as Figure 2.

Remediation at the site is in progress. This ISMP will govern the operation and maintenance of the SVI mitigation system until the remediation phase is complete. Following completion of the remediation phase and NYSDEC approval of a Final Engineering Report (FER) and a Site Management Plan (SMP), the ISMP will be superseded by the SMP. The SVI mitigation system will be operated until permission in writing is received from NYSDEC to terminate operation of the system and remove the equipment. This ISMP may only be modified with the approval of NYSDEC.

2.0 OM&M

2.1 Routine System Operation

The SVI mitigation system will operate continuously in accordance with appropriate design specifications and parameters, and the manufacturer's operation manual, which is included in Appendix C. The SVI mitigation system is equipped with a remote alarm to indicate if the system is not operating properly.

The system will be routinely inspected and adjusted so that the intended operation specifications are met. Any required maintenance, adjustments, or repairs to the system will be conducted as per manufacturer's recommendations and this ISMP.

2.2 Routine System Inspection

The Volunteer is responsible for performing semi-annual routine inspection and maintenance of the SVI mitigation system until NYSDEC approval of a FER and SMP, or until permission in writing is received from NYSDEC to alter the inspection frequency. Routine inspection/equipment maintenance may include, but is not limited to, lubricating motor bearings, replacing pressure gauges or sample ports, cleaning or replacing the blower inlet filter, collecting differential pressure readings from sample ports located at each riser pipe near the manifold connection, and testing the remote alarm system, as needed. A blank system inspection form is provided in Appendix D.

Routine equipment maintenance, repairs, and/or adjustments will be determined based on the life expectancy and warranty for the specific part as well as visual observations over time. The need for repairs and/or adjustments will depend upon operating parameters compared to the initial system parameters.

If technical difficulties or non-optimal operating conditions are encountered with the SVI mitigation system, the Volunteer will complete necessary modifications or repairs to the system to bring the system into compliance with appropriate design specifications and parameters (to be coordinated with the NYSDEC).

In addition to inspection of the SVI mitigation system, each inspection visit will include confirmation of current site uses. The inspection will confirm if the building continues to be occupied by the Royal Palms Shuffleboard Club. If the current site use changes between inspections, the Volunteer will notify NYSDEC and the New York State Department of Health (NYSDOH). If a change of use occurs, an assessment will be completed to determine if any additional measures (i.e., indoor air sampling) will need to be implemented for the proposed use. The assessment will be subject to review and approval by NYSDEC and NYSDOH.

2.3 Non-Routine Maintenance

Non-routine maintenance may also be required during the operation of the SVI mitigation system, including the following situations:

- The remote alarm system is triggered indicating that the SVI mitigation system is not operating properly
- The SVI mitigation system becomes damaged
- The SVI mitigation system is shut down for repairs or maintenance
- The building has undergone renovations that may reduce the effectiveness of the SVI mitigation system

Activities conducted during non-routine maintenance visits will vary. NYSDEC will be informed of SVI mitigation system failure, malfunction, or planned repairs, within 24 hours. Repairs or adjustments should be made to the system as appropriate and as per manufacturer guidelines within 10 days of the equipment failure or whenever possible (i.e., pending availability of parts). If necessary, the system will be redesigned and/or restarted. Differential pressure readings will be collected from the system sample ports following maintenance, repairs, or system shutdowns of any kind.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of the system that reduces or has the potential to reduce the effectiveness of the system in place at the site, verbal notice to the NYSDEC must be given the following day. In addition, an inspection of the system will be conducted by a qualified environmental professional within 5 days of the event to verify the effectiveness of the system in place at the site. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

In the event of a planned or unexpected shut down of the SVI mitigation system, additional indoor air samples may be collected to confirm the effectiveness of the system, if required by NYSDEC and NYSDOH.

2.4 Performance Monitoring

Performance monitoring will be conducted by the Remedial Engineer (RE) or environmental personnel under the supervision of the RE to determine whether the SVI mitigation system is operating as designed. A post-construction inspection of the SVI mitigation system was conducted on 18 October 2022 and serves as a baseline for future performance monitoring. Additionally, indoor air samples will be collected on an annual basis.

Unscheduled inspections may take place when a suspected failure of the SVI mitigation system has been reported, after severe storms, or after the occurrence of an emergency that is deemed likely to affect the operation of the system. Performance monitoring will include the same procedures listed for the system start-up inspection, including the collection of differential pressure readings from system sample ports to confirm that the system meets design criteria, with the exception of smoke testing. The design criteria is established at less than or equal to -0.01 inches of water column (IWC).

Four indoor air samples will be collected from the same locations as the Indoor Air Sample Results Technical Memorandum (Appendix A) on an annual basis. An outdoor ambient air sample will also be collected for quality assurance/quality control (QA/QC) purposes in accordance with the Quality Assurance Project Plan (QAPP) included as Appendix H of the July 2022 Interim Remedial Measures Work Plan (IRMWP). The air samples will be collected and analyzed for chlorinated volatile organic compounds (CVOCs) via United States Environmental Protection

Agency (USEPA) method TO-15. A NYSDOH Indoor Air Quality Questionnaire and Product Inventory Form will be completed during the sampling event to document potential indoor air sources of CVOCs, including methylene chloride.

The Category B data deliverable from the laboratory will be validated in accordance with the IRMWP QAPP and a Data Usability Summary Report (DUSR) will be prepared. The DUSR will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain-of-custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method. Following data validation, Electronic Data Deliverables (EDDs) will be uploaded to the NYSDEC's EQuIS environmental information management system.

2.5 System Monitoring Devices and Alarms

The SVI mitigation system is equipped with a remote alarm to indicate if the system is not operating properly. The remote alarm is connected to a cellular network and notifies Langan via email and text message if the system stops operating. In the event that the remote alarm is triggered, applicable maintenance and repairs will be conducted as specified in this ISMP and the SVI mitigation system will be restarted. Operational problems will be noted in the inspection form and communicated to the NYSDEC within 48 hours.

2.6 System Performance Monitoring Schedule

The Volunteer is responsible for performing semi-annual routine inspection, annual indoor air sampling, and maintenance of the SVI mitigation system until NYSDEC approval of a FER and SMP, or until permission in writing is received from NYSDEC to alter the inspection frequency. Unscheduled inspections may be necessary when a suspected failure of the SVI mitigation system has been reported or an emergency occurs that is deemed likely to affect the operation of the system.

A summary of the system performance monitoring schedule is included in the table below.

Year	Performance Monitoring Type	Month
2023	Indoor Air Sampling (completed)	March
	Routine System Inspection	June
	Routine System Inspection and Annual Indoor Air Sampling	December
2024	Routine System Inspection	June
	Routine System Inspection and Annual Indoor Air Sampling	December
2025	Routine System Inspection	June
	Routine System Inspection and Annual Indoor Air Sampling	December

Annual indoor air sampling will be conducted during the heating season, concurrently with the December semi-annual routine system inspection.

2.7 DAR-1 Compliance

To assess effluent air compliance with NYSDEC Policy DAR-1: Guidelines for the Control of Toxic Ambient Air Contaminants, indoor air concentrations from samples collected prior to mitigation were compared to DAR-1 Annual Guideline Concentration (AGC) and Short-term Guideline Concentration (SGC). Detected concentrations did not exceed the AGCs or SGCs, therefore, treatment of effluent air is not required.

2.8 Criteria for System Termination

The SVI mitigation system will not be discontinued unless prior written approval is granted by NYSDEC and NYSDOH. In the event that monitoring data indicates that the SVI mitigation system may no longer be required, a proposal to discontinue the SVI mitigation system will be submitted by the remedial party to NYSDEC and NYSDOH.

3.0 CONTACT LIST

The following contact list will be used, as needed, to coordinate ISMP activities:

Name	Project Role	Phone Number	Email Address
Steven Hirschberg (Volunteer/Owner)	Volunteer/Property Owner Representative	212-896-5565	shirschberg@brodsky.com
Jason Hayes (Langan)	Remediation Engineer	212-479-5427	jahayes@langan.com
Michael Burke (Langan)	Qualified Environmental Professional	212-479-5413	mburke@langan.com
Paul McMahon (Langan)	Project Manager	212-479-5400	pmcmahon@langan.com
Tony Moffa (Langan)	Corporate Health & Safety Manager	212-479-5400	tmoffa@langan.com
Sean Tuthill (AARCO)	Environmental Contractor	631-586-5900	stuthill@aarcoenvironmental.com
Martin Foody (Centrifugal)	Electrical Contractor	212-798-3150	martin.f@centrifugalgroup.com
Nick Shields (Royal Palms Shuffleboard Club)	Building Tenant	917-831-8250	nick@royalpalmsshuffle.com

4.0 REPORTING

Activities conducted to maintain compliance with the ISMP, such as routine and non-routine inspections, and indoor air sampling, will be documented in the BCP monthly progress reports until a FER and a SMP are issued. The monthly progress report will include a description of completed site activities, a system inspection form, any encountered system deficiencies and implemented or proposed corrective actions.

FIGURES

NOTES:

1. BASEMAP ADAPTED FROM UNITED STATES GEOLOGICAL SURVEY (USGS) 7.5-MINUTE SERIES TOPOGRAPHICAL MAPS, JERSEY CITY, NJ AND BROOKLYN, NY QUADRANGLES, DATED 2016.

1000 0 500 1000

SCALE: 1 INCH = 1000 FEET

LANGAN

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

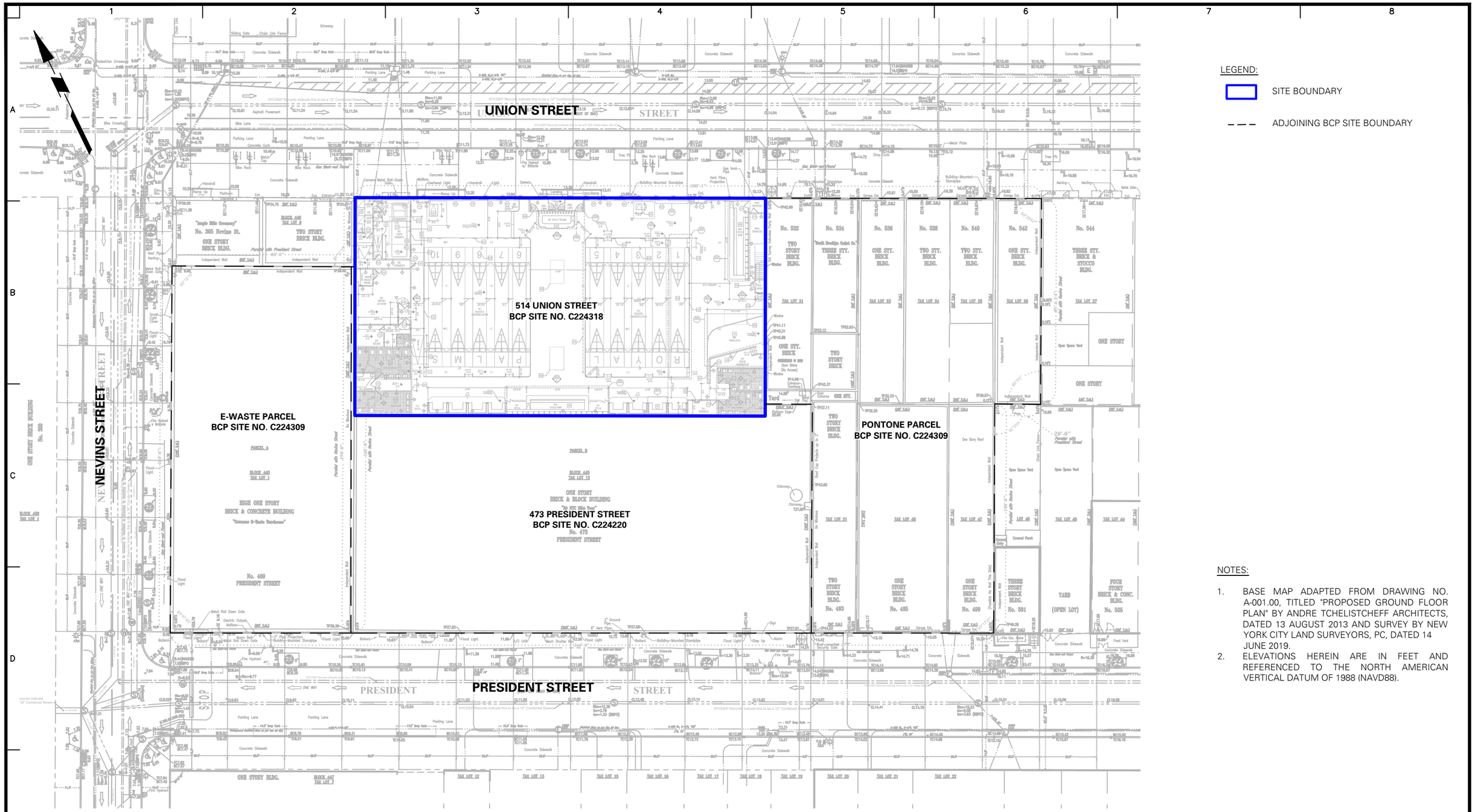
21 Penn Plaza, 360 West 31st Street, 8th Floor
New York, NY 10001

T: 212.479.5400 F: 212.479.5444 www.langan.com

Project	Figure Title	Project No.	Figure No.
514 UNION STREET BLOCK No. 440, LOT No. 12 BROOKLYN KINGS NEW YORK	SITE LOCATION MAP	170361305	1
		Date 11/08/2022	
		Drawn By AJ	
		Checked By VDP	Sheet 1 of 8

© 2021 Langan

Filename: \\langan.com\data\NYC\data3\170361301\Cadd Data - 170361301\SheetFiles\Environmental\514 Union Street\IRMWP No.2\Figure 1 - Site Location Map.dwg Date: 1/23/2023 Time: 10:47 User: acaelwaerts Style Table: Langan.stb Layout: ANSIA-BP



NOTES:

1. BASE MAP ADAPTED FROM DRAWING NO. A-001.00, TITLED "PROPOSED GROUND FLOOR PLAN" BY ANDRE TCHELISTCHEFF ARCHITECTS, DATED 13 AUGUST 2013 AND SURVEY BY NEW YORK CITY LAND SURVEYORS, PC, DATED 14 JUNE 2019.
2. ELEVATIONS HEREIN ARE IN FEET AND REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

40 0 20 40

SCALE: 1 INCH = 40 FEET

LANGAN
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor
New York, NY 10001
T: 212.479.5400 F: 212.479.5444 www.langan.com

Project
514 UNION STREET
BLOCK No. 440, LOT No. 12
BROOKLYN
KINGS NEW YORK

Figure Title
SITE PLAN

Project No.	170361305
Date	11/23/2022
Drawn By	AJ
Checked By	VDP
Figure No.	2
Sheet	2 of 8

© 2021 Langan

Filename: \\langan.com\data\NYC\data3\170361301\Cadd Data - 170361301\SheetFiles\Environmental\514 Union Street\IRMWP No.2\Figure 2 - Site Plan IRMWP No.2.dwg Date: 1/23/2023 Time: 10:48 User: acaelwaerts Style Table: Langan.stb Layout: ANSIB-BL

APPENDIX A

INDOOR AIR SAMPLE RESULTS TECHNICAL MEMORANDUM

LANGAN

Technical Memorandum

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor New York, NY 10001 T: 212.479.5400 F: 212.479.5444

To: NYSDEC and NYSDOH

From: Michael Burke, PG, CHMM

Info: Gowanus President Owner LLC/473 President LLC
David Yudelson – Sive, Paget & Riesel, PC
Toni Finger, Chuck Warren – Kramer Levin Naftalis & Frankel LLP
Paul McMahon, Vinicius De Paula – Langan

Date: 30 March 2023

Re: Indoor Air Sample Results
514 Union Street, Brooklyn, NY
Langan Project No.: 170361307

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) prepared this technical memorandum on behalf of Gowanus President Owner LLC (the Volunteer) to document results of indoor air samples collected at 514 Union Street, Brooklyn, New York (the site) on 17 March 2023. Indoor air samples were collected to confirm that the active soil vapor intrusion (SVI) mitigation system that was installed in September 2022 continues to operate as designed and is protective of human health. The Volunteer was accepted into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) to investigate and remediate the site pursuant to the NYSDEC Brownfield Cleanup Agreement (BCA) executed on 21 October 2021 and amended on 1 February 2023. The site was assigned BCP Site No. C224318.

The approximately 17,000-square-foot site, identified as Brooklyn Borough Tax Block 440, Lot 12, is improved with a one-story brick building occupied by the Royal Palms Shuffleboard Club. A site location map is presented as Figure 1.

As documented in the 9 March 2023 Construction Completion Report (CCR) No. 1, an active SVI mitigation system was installed at the site in September 2022 (i.e., prior to the heating season) and has been in continuous operation since 22 September 2022. As required by the October 2006 New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York and in compliance with the NYSDEC-approved July 2022 Interim Remedial Measures Work Plan (IRMWP), indoor air samples were collected in overnight between 20 and 21 November 2022 during the heating season and at least 30 days following start of system operation. The results of the November 2022 sampling event confirmed that SVI mitigation system is effectively mitigating SVI.

Indoor Air Sampling

Methodology

The 17 March 2023 indoor air sampling event was conducted in accordance with the NYSDOH October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York (including subsequent updates) and the NYSDEC approved July 2022 IRMWP. A photograph log documenting the sampling event is included as Appendix A.

Four indoor air samples (IA01 through IA04) were collected at the same locations that were previously approved by the NYSDEC and NYSDOH for the November 2022 sampling event. An ambient air sample (AA01) was collected on the Union Street sidewalk for quality assurance/quality control (QA/QC) purposes. Sample locations are shown on Figure 2.

The air samples were collected at a height of about 3 to 4 feet above grade surface using laboratory-provided, individually-certified, 6-liter Summa air canisters equipped with 8-hour sample interval flow controllers. The indoor air samples were sealed, labeled, and transported via courier service to the laboratory for chlorinate volatile organic compounds (CVOC) analysis via United States Environmental Protection Agency (USEPA) Method TO-15. The air samples were submitted to York Analytical Laboratories, Inc. of Stratford, Connecticut, an NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory. Sampling logs are included as Appendix B.

An NYSDOH Indoor Air Quality Questionnaire and Building Inventory form was completed during the sampling event to document site characteristics that may influence sample results, including background levels of volatile organic compounds (VOC) by screening with a ppbRAE 3000 photoionization detector (PID), the ventilation system, and the chemical inventory. The completed NYSDOH questionnaire is included as Appendix C.

Field Observations and Sample Results

The site was screened with a ppbRAE and detected levels of non-specific VOCs ranged between 0 and 2 parts per billion (ppb) in the main space, and up to 77 ppb in a utility closet located in the southwestern part of the site. The chemical inventory identified the storage of several cleaning products at the site. Chlorinated solvents were not identified as ingredients for the documented cleaning products.

Sample results, including results from the November 2022 sampling event, are shown on Figure 2 and Table 1. With the exception of methylene chloride, CVOCs (including trichloroethene [TCE] and tetrachloroethene [PCE]) were not detected in the indoor air samples. Methylene chloride was detected in the indoor air samples and the outdoor ambient air sample at concentrations ranging between 0.970 and 1.19 micrograms per cubic meter (µg/m^3), about one to two orders of magnitude below the NYSDOH Air Guideline Value (AGV)[1].

[1] Promulgated in the NYSDOH October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York and subsequent updates (2013, 2015, and 2017).

Data Validation

Langan validated the sample analytical data in accordance with the Quality Assurance Project Plan (QAPP) included in the NYSDEC approved July 2022 IRMWP. A Data Usability Summary Report (DUSR) was predated and is included as Appendix D. All data are considered usable, as qualified. Completeness, defined as the percentage of analytical results that are judged to be valid, is 100%. The ASP Category B laboratory analytical data report is included as Appendix E.

Conclusion

As documented in the 9 March 2023 CCR No. 1, the results of the November 2022 sampling event documented that SVI mitigation system is effectively mitigating SVI. The results of the March 2023 sampling event confirmed that SVI mitigation system is effectively mitigating SVI and operating as designed.

Enclosure(s): Figure 1 – Site Location Map
Figure 2 – Air Sample Analytical Results Map

Table 1 – Indoor Air and Ambient Air Sample Results

Appendix A – Photograph Log
Appendix B – Sampling Logs
Appendix C – NYSDOH Indoor Air Quality Questionnaire and Building Inventory
Appendix D – Data Usability Summary Report
Appendix E – ASP Category B Data Package

FIGURES

NOTES:

1. BASEMAP ADAPTED FROM UNITED STATES GEOLOGICAL SURVEY (USGS) 7.5-MINUTE SERIES TOPOGRAPHICAL MAPS, JERSEY CITY, NJ AND BROOKLYN, NY QUADRANGLES, DATED 2016.

1000 0 500 1000

SCALE: 1 INCH = 1000 FEET

LANGAN

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

21 Penn Plaza, 360 West 31st Street, 8th Floor
New York, NY 10001

T: 212.479.5400 F: 212.479.5444 www.langan.com

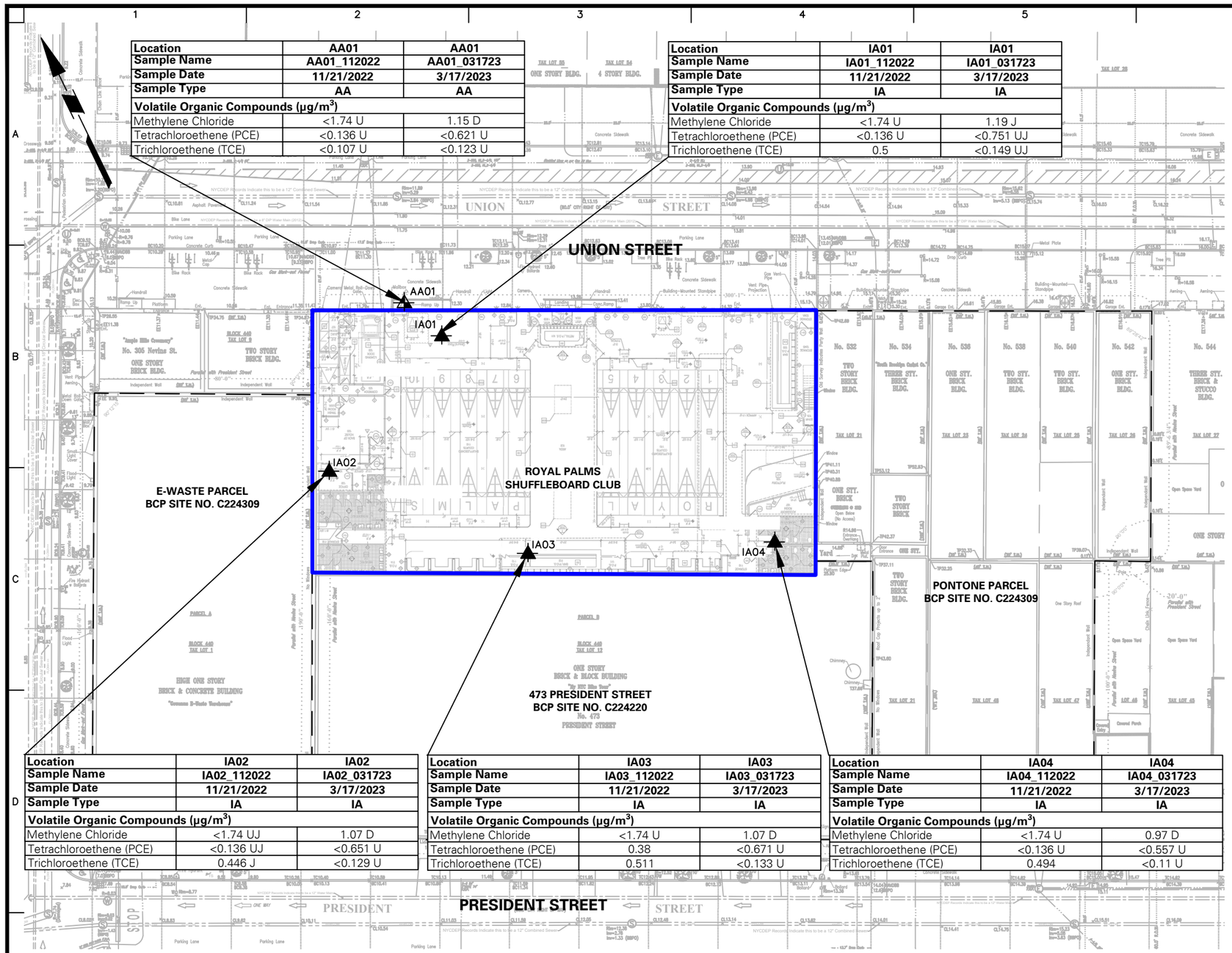
Project	Figure Title	Project No.	Figure No.
514 UNION STREET BLOCK No. 440, LOT No. 12 BROOKLYN KINGS NEW YORK	SITE LOCATION MAP	170361305	1
		Date 03/22/2023	
		Drawn By AC	
		Checked By PM	Sheet 1 of 2

© 2021 Langan

Filename: \\langan.com\data\NY\data3\170361301\Cadd Data - 170361301\SheetFiles\Environmental\514 Union Street\2023 Indoor Air Sample Results Tech Memo\Figure 1 - Site Location Map.dwg Date: 3/22/2023 Time: 11:02 User: acaelwaerts Style Table: Langan.stb Layout: ANSIA-BP

Location	AA01	AA01
Sample Name	AA01_112022	AA01_031723
Sample Date	11/21/2022	3/17/2023
Sample Type	AA	AA
Volatile Organic Compounds (µg/m³)		
Methylene Chloride	<1.74 U	1.15 D
Tetrachloroethene (PCE)	<0.136 U	<0.621 U
Trichloroethene (TCE)	<0.107 U	<0.123 U

Location	IA01	IA01
Sample Name	IA01_112022	IA01_031723
Sample Date	11/21/2022	3/17/2023
Sample Type	IA	IA
Volatile Organic Compounds (µg/m³)		
Methylene Chloride	<1.74 U	1.19 J
Tetrachloroethene (PCE)	<0.136 U	<0.751 UJ
Trichloroethene (TCE)	0.5	<0.149 UJ



Location	IA02	IA02
Sample Name	IA02_112022	IA02_031723
Sample Date	11/21/2022	3/17/2023
Sample Type	IA	IA
Volatile Organic Compounds (µg/m³)		
Methylene Chloride	<1.74 UJ	1.07 D
Tetrachloroethene (PCE)	<0.136 UJ	<0.651 U
Trichloroethene (TCE)	0.446 J	<0.129 U

Location	IA03	IA03
Sample Name	IA03_112022	IA03_031723
Sample Date	11/21/2022	3/17/2023
Sample Type	IA	IA
Volatile Organic Compounds (µg/m³)		
Methylene Chloride	<1.74 U	1.07 D
Tetrachloroethene (PCE)	0.38	<0.671 U
Trichloroethene (TCE)	0.511	<0.133 U

Location	IA04	IA04
Sample Name	IA04_112022	IA04_031723
Sample Date	11/21/2022	3/17/2023
Sample Type	IA	IA
Volatile Organic Compounds (µg/m³)		
Methylene Chloride	<1.74 U	0.97 D
Tetrachloroethene (PCE)	<0.136 U	<0.557 U
Trichloroethene (TCE)	0.494	<0.11 U

LEGEND:

- SITE BOUNDARY
- ADJOINING BCP SITE BOUNDARY
- IA01 — INDOOR AIR SAMPLE
- AA01 — AMBIENT AIR SAMPLE

NOTES:

1. BASE MAP ADAPTED FROM DRAWING NO. A-001.00, TITLED "PROPOSED GROUND FLOOR PLAN" BY ANDRE TCHELISTCHEFF ARCHITECTS, DATED 13 AUGUST 2013 AND SURVEY BY NEW YORK CITY LAND SURVEYORS, PC, DATED 14 JUNE 2019.
2. ALL LOCATIONS SHOWN WERE MEASURED FROM SURVEYED BUILDING EXTENTS AND ARE APPROXIMATE.
3. INDOOR AIR SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF HEALTH (NYSDOH) AIR GUIDELINE VALUES (AGVS) AS SET FORTH IN THE NYSDOH OCTOBER 2006 GUIDANCE FOR EVALUATING SOIL VAPOR INTRUSION IN THE STATE OF NEW YORK AND SUBSEQUENT UPDATES (2013, 2015, 2017).
4. ONLY DETECTED ANALYTES ARE SHOWN.
5. ANALYTICAL RESULTS FOR INDOOR AIR AND AMBIENT AIR SAMPLES COLLECTED DURING THE 2022 NOVEMBER INDOOR AIR SAMPLING EVENT IN ACCORDANCE WITH THE JULY 2022 INTERIM REMEDIAL MEASURES WORK PLAN (IRMWP) AND THE 17 MARCH INDOOR AIR SAMPLING EVENT ARE SHOWN.
6. ~ = REGULATORY LIMIT FOR THIS ANALYTE DOES NOT EXIST
7. µG/M³ = MICROGRAMS PER CUBIC METER
8. AA = AMBIENT AIR; IA = INDOOR AIR
9. D = THE CONCENTRATION REPORTED IS A RESULT OF A DILUTED SAMPLE
10. J = THE ANALYTE WAS POSITIVELY IDENTIFIED AND THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE
11. U = THE ANALYTE WAS ANALYZED FOR, BUT WAS NOT DETECTED AT A LEVEL GREATER THAN OR EQUAL TO THE LEVEL OF THE REPORTING LIMIT (RL) OR THE SAMPLE CONCENTRATION FOR RESULTS IMPACTED BY BLANK CONTAMINATION
12. 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

Analyte	NYSDOH AGVs
Volatile Organic Compounds (µg/m³)	
Methylene Chloride	60
Tetrachloroethene (PCE)	30
Trichloroethene (TCE)	2

40 0 20 40

SCALE: 1 INCH = 40 FEET

LANGAN
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor
New York, NY 10001
T: 212.479.5400 F: 212.479.5444 www.langan.com

Project: 514 UNION STREET
BLOCK No. 440, LOT No. 12
BROOKLYN
KINGS NEW YORK

Figure Title: AIR SAMPLE ANALYTICAL RESULTS MAP

Project No. 170361305
Date 3/22/2023
Drawn By AC
Checked By PM

Figure No. 2

Sheet 2 of 2

© 2021 Langan

TABLE 1 – INDOOR AIR AND AMBIENT AIR SAMPLE RESULTS

Table 1
Indoor Air Sample Results Technical Memorandum
Indoor Air and Ambient Air Sample Results

514 Union Street
Brooklyn, New York
BCP Site No.: C224318
Langan Project No.: 170361305

Analyte	CAS Number	NYSDOH AGVs	Location	AA01	AA01	IA01	IA01	IA02	IA02	IA03	IA03	IA04	IA04
			Sample Name	AA01_112022	AA01_031723	IA01_112022	IA01_031723	IA02_112022	IA02_031723	IA03_112022	IA03_031723	IA04_112022	IA04_031723
			Sample Date	11/21/2022	03/17/2023	11/21/2022	03/17/2023	11/21/2022	03/17/2023	11/21/2022	03/17/2023	11/21/2022	03/17/2023
			Sample Type	AA	AA	IA	IA	IA	IA	IA	IA	IA	IA
			Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	NS	ug/m3	<0.109 U	<0.5 U	<0.109 U	<0.605 UJ	<0.109 UJ	<0.524 U	<0.109 U	<0.54 U	<0.109 U	<0.448 U
1,1-Dichloroethane	75-34-3	NS	ug/m3	<0.081 U	<0.371 U	<0.081 U	<0.448 UJ	<0.081 UJ	<0.389 U	<0.081 U	<0.401 U	<0.081 U	<0.332 U
1,1-Dichloroethene	75-35-4	NS	ug/m3	<0.079 U	<0.182 U	<0.079 U	<0.22 UJ	<0.079 UJ	<0.19 U	<0.079 U	<0.196 U	<0.079 U	<0.163 U
1,2-Dichloroethane	107-06-2	NS	ug/m3	<0.081 U	<0.371 U	<0.081 U	<0.448 UJ	<0.081 UJ	<0.389 U	<0.081 U	<0.401 U	<0.081 U	<0.332 U
Cis-1,2-Dichloroethene	156-59-2	NS	ug/m3	<0.079 U	<0.182 U	<0.079 U	<0.22 UJ	<0.079 UJ	<0.19 U	<0.079 U	<0.196 U	<0.079 U	<0.163 U
Methylene Chloride	75-09-2	60	ug/m3	<1.74 U	1.15 D	<1.74 U	1.19 J	<1.74 UJ	1.07 D	<1.74 U	1.07 D	<1.74 U	0.97 D
Tetrachloroethene (PCE)	127-18-4	30	ug/m3	<0.136 U	<0.621 U	<0.136 U	<0.751 UJ	<0.136 UJ	<0.651 U	0.38	<0.671 U	<0.136 U	<0.557 U
Trans-1,2-Dichloroethene	156-60-5	NS	ug/m3	<0.079 U	<0.363 U	<0.079 U	<0.439 UJ	<0.079 UJ	<0.381 U	<0.079 U	<0.393 U	<0.079 U	<0.326 U
Trichloroethene (TCE)	79-01-6	2	ug/m3	<0.107 U	<0.123 U	0.5	<0.149 UJ	0.446 J	<0.129 U	0.511	<0.133 U	0.494	<0.11 U
Vinyl Chloride	75-01-4	NS	ug/m3	<0.051 U	<0.117 U	<0.051 U	<0.142 UJ	<0.051 UJ	<0.123 U	<0.051 U	<0.127 U	<0.051 U	<0.105 U
Total CVOCs	TOTAL CVOCs	NS	ug/m3	ND	1.15	0.5	1.19	0.446	1.07	0.891	1.07	0.494	0.97

Table 1
Indoor Air Sample Results Technical Memorandum
Indoor Air and Ambient Air Sample Results

514 Union Street
Brooklyn, New York
BCP Site No.: C224318
Langan Project No.: 170361305

Notes:

AA - Ambient Air
IA - Indoor Air
CAS - Chemical Abstract Service
NS - No standard
ug/m3 - microgram per cubic meter
NA - Not analyzed
RL - Reporting limit
<RL - Not detected
Indoor air sample analytical results are compared to the New York State Department of Health (NYSDOH) Air Guideline Values (AGVs) as set forth in the NYSDOH October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York and subsequent updates (2013, 2015, 2017).
Ambient air sample analytical results are shown for reference only.

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.

Exceedance Summary:

10 - Result exceeds NYSDOH AGVs

APPENDIX A

PHOTOGRAPH LOG

Photo 1: Indoor air sample IA04 being collected (facing east, 3/17/2023).

Photo 2: Indoor air sample IA02 being collected (facing north, 3/17/2023).

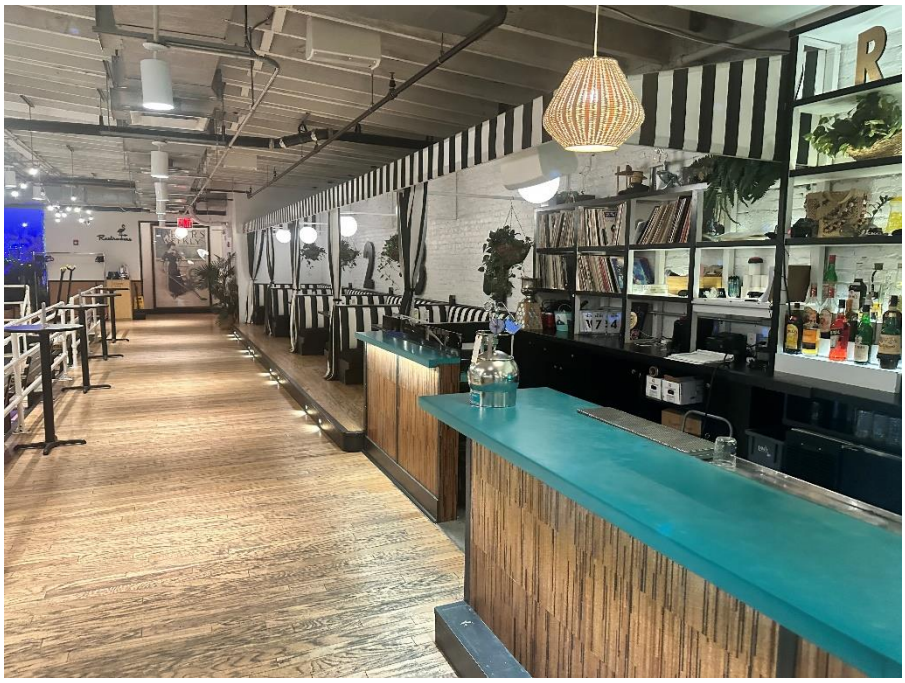


Photo 3: Indoor air sample IA03 being collected (facing southeast, 3/17/2023).

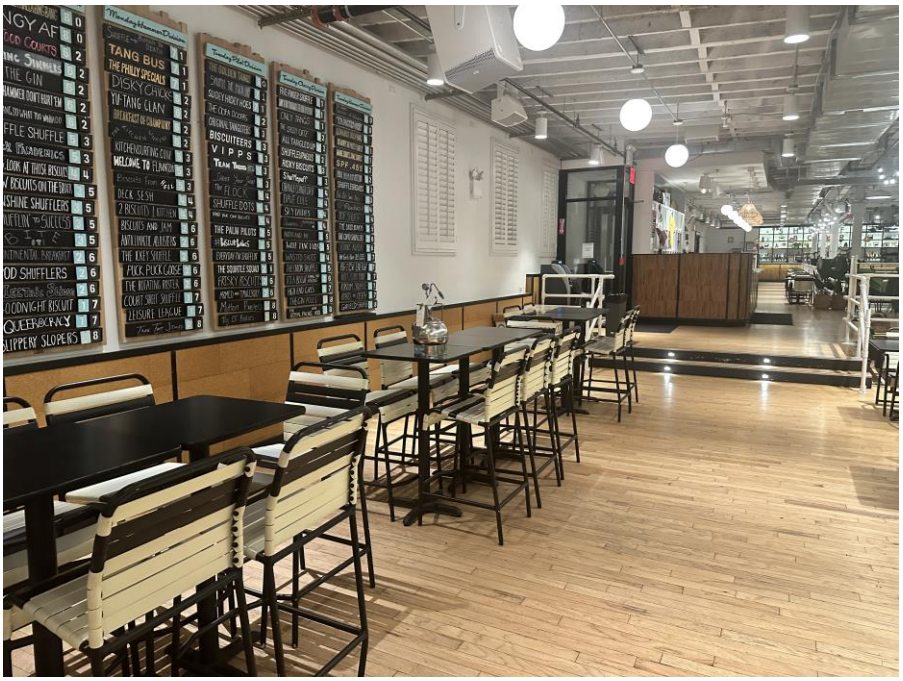


Photo 4: Indoor air sample IA01 being collected (facing east, 3/17/2023).

Photo 5: Outdoor ambient air sample AA01 being collected (facing east, 3/17/2023).

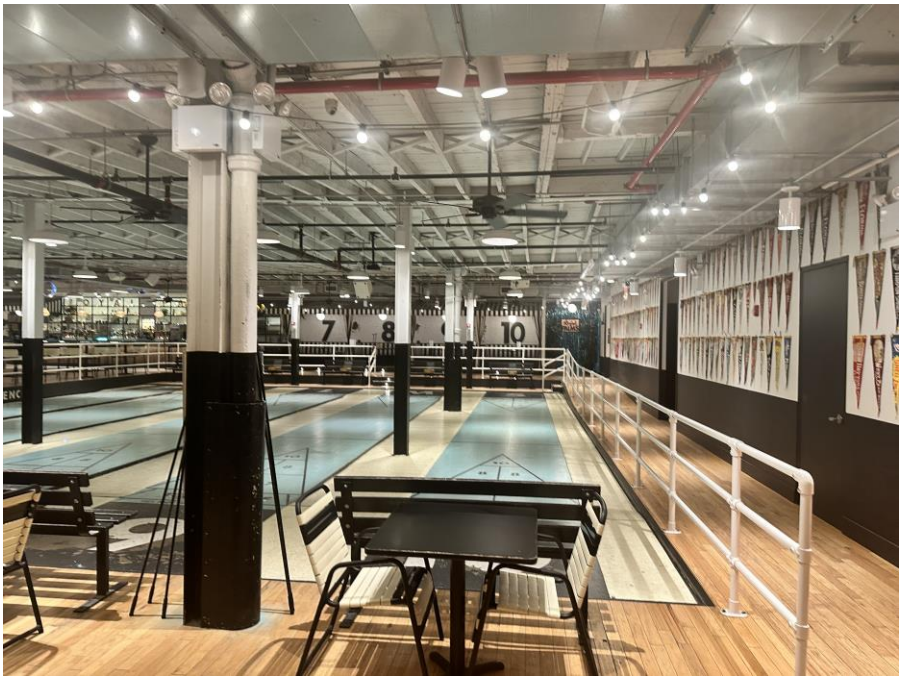


Photo 6: Shuffleboard courts (facing south, 3/17/2023).

Photo 7: Photoionization detector (PID) reading in a utility closet in the southwestern portion of the site (facing west, 3/17/2023).

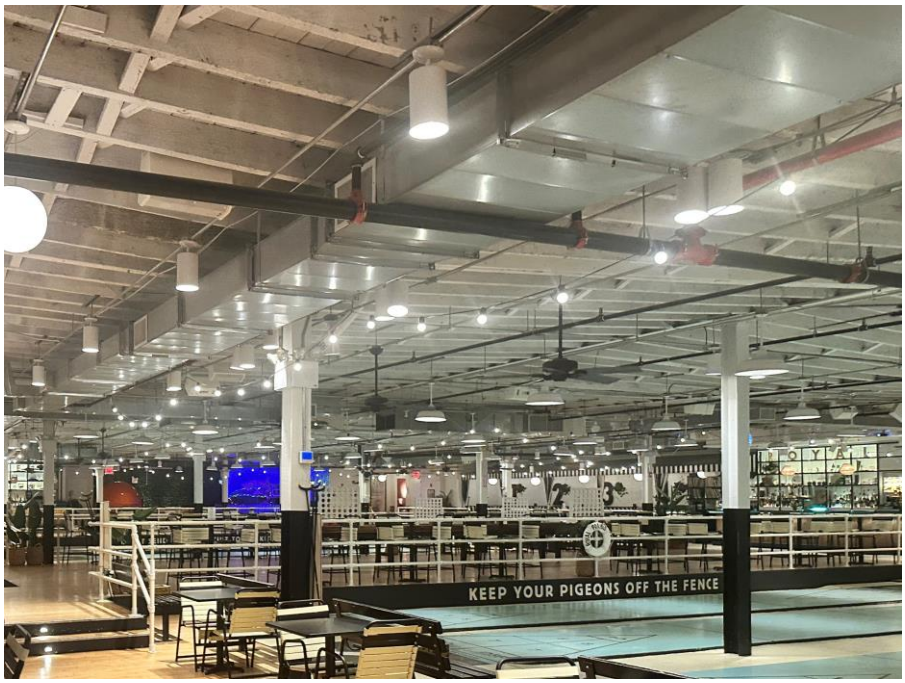


Photo 8: Overhead HVAC ductwork in the northern portion of the site (facing east, 3/17/2023).

APPENDIX B

SAMPLING LOGS

AIR SAMPLING LOG SHEET

Sample Number: IA01_031723

PROJECT: 514 Union Street	**PROJECT NO.:** 170361307
LOCATION: Brooklyn, New York	**SURFACE ELEVATION AND DATUM:** N/A
SAMPLER: TJ Malgieri	**SAMPLE DATE STARTED:** 3/17/2023 — **DATE FINISHED:** 3/17/2023
INSPECTOR: TJ Malgieri	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
POTENTIAL SAMPLE INTERFERENCES: None	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):**

Temp:	41° - 45° F
Wind:	S - SW 5-8 mph
Precipitation:	None
Pressure:	29.81 - 29.92 inHg

METHOD OF INSTALLATION AND SAMPLING:

Langan field screened the sample location with a ppbRAE 3000 photoionization detector prior to sampling. Sample consisted of 6L Summa canister fitted with an 8-hour flow control valve. The flow controller was zeroed and valve opened to initiate the 8-hour sample collection. The sample and flow controller were checked each hour during sampling to ensure proper operation.

SAMPLE DETAILS

HEIGHT ABOVE GROUND (FT):	4
PID BEFORE SAMPLE (PPB):	0.0
SAMPLE START TIME:	0:25
SAMPLE STOP TIME:	8:25
TOTAL SAMPLE TIME (MIN):	480
REGULATOR FLOW RATE (mL/MIN):	9.79
VOLUME OF SAMPLE (LITERS):	4.70
PID AFTER SAMPLE (PPB):	0.0
SAMPLE MOISTURE CONTENT:	None
CAN SERIAL NUMBER:	42992
REGULATOR SERIAL NUMBER:	17899
CAN START VACUUM PRESS. (" HG):	-30
CAN STOP VACUUM PRESS. (" HG):	-11

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

AIR SAMPLING LOG SHEET

Sample Number: IA02_031723

PROJECT: 514 Union Street	**PROJECT NO.:** 170361307		
LOCATION: Brooklyn, New York	**SURFACE ELEVATION AND DATUM:** N/A		
SAMPLER: TJ Malgieri	**SAMPLE DATE STARTED:** 3/17/2023	**DATE FINISHED:** 3/17/2023	
INSPECTOR: TJ Malgieri	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister		
POTENTIAL SAMPLE INTERFERENCES: None	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):**		
	Temp:	41° - 45° F	
	Wind:	S - SW 5-8 mph	
	Precipitation:	None	
	Pressure:	29.81 - 29.92 inHg	

METHOD OF INSTALLATION AND SAMPLING:

Langan field screened the sample location with a ppbRAE 3000 photoionization detector prior to sampling. Sample consisted of 6L Summa canister fitted with an 8-hour flow control valve. The flow controller was zeroed and valve opened to initiate the 8-hour sample collection. The sample and flow controller were checked each hour during sampling to ensure proper operation.

SAMPLE DETAILS		SAMPLE LOCATION SKETCH
HEIGHT ABOVE GROUND (FT):	3	See Sample Location Plan
PID BEFORE SAMPLE (PPB):	0.0	
SAMPLE START TIME:	0:24	
SAMPLE STOP TIME:	8:24	
TOTAL SAMPLE TIME (MIN):	480	
REGULATOR FLOW RATE (mL/MIN):	10.29	
VOLUME OF SAMPLE (LITERS):	4.94	
PID AFTER SAMPLE (PPB):	0.0	
SAMPLE MOISTURE CONTENT:	None	
CAN SERIAL NUMBER:	23991	
REGULATOR SERIAL NUMBER:	17904	
CAN START VACUUM PRESS. (" HG):	-30	
CAN STOP VACUUM PRESS. (" HG):	-8	

NOTES

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

AIR SAMPLING LOG SHEET

Sample Number: IA03_031723

PROJECT: 514 Union Street	**PROJECT NO.:** 170361307		
LOCATION: Brooklyn, New York	**SURFACE ELEVATION AND DATUM:** N/A		
SAMPLER: TJ Malgieri	**SAMPLE DATE STARTED:** 3/17/2023	**DATE FINISHED:** 3/17/2023	
INSPECTOR: TJ Malgieri	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister		
POTENTIAL SAMPLE INTERFERENCES: None	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):**		
	Temp:	41° - 45° F	
	Wind:	S - SW 5-8 mph	
	Precipitation:	None	
	Pressure:	29.81 - 29.92 inHg	

METHOD OF INSTALLATION AND SAMPLING:

Langan field screened the sample location with a ppbRAE 3000 photoionization detector prior to sampling. Sample consisted of 6L Summa canister fitted with an 8-hour flow control valve. The flow controller was zeroed and valve opened to initiate the 8-hour sample collection. The sample and flow controller were checked each hour during sampling to ensure proper operation.

SAMPLE DETAILS		SAMPLE LOCATION SKETCH
HEIGHT ABOVE GROUND (FT):	4	See Sample Location Plan
PID BEFORE SAMPLE (PPB):	0.0	
SAMPLE START TIME:	0:23	
SAMPLE STOP TIME:	8:23	
TOTAL SAMPLE TIME (MIN):	480	
REGULATOR FLOW RATE (mL/MIN):	10.6	
VOLUME OF SAMPLE (LITERS):	5.09	
PID AFTER SAMPLE (PPB):	0.0	
SAMPLE MOISTURE CONTENT:	None	
CAN SERIAL NUMBER:	19529	
REGULATOR SERIAL NUMBER:	17898	
CAN START VACUUM PRESS. (" HG):	-30	
CAN STOP VACUUM PRESS. (" HG):	-9	

NOTES

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

AIR SAMPLING LOG SHEET

Sample Number: IA04_031723

PROJECT: 514 Union Street	**PROJECT NO.:** 170361307		
LOCATION: Brooklyn, New York	**SURFACE ELEVATION AND DATUM:** N/A		
SAMPLER: TJ Malgieri	**SAMPLE DATE STARTED:** 3/17/2023	**DATE FINISHED:** 3/17/2023	
INSPECTOR: TJ Malgieri	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister		
POTENTIAL SAMPLE INTERFERENCES: None	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):**		
	Temp:	41° - 45° F	
	Wind:	S - SW 5-8 mph	
	Precipitation:	None	
	Pressure:	29.81 - 29.92 inHg	

METHOD OF INSTALLATION AND SAMPLING:

Langan field screened the sample location with a ppbRAE 3000 photoionization detector prior to sampling. Sample consisted of 6L Summa canister fitted with an 8-hour flow control valve. The flow controller was zeroed and valve opened to initiate the 8-hour sample collection. The sample and flow controller were checked each hour during sampling to ensure proper operation.

SAMPLE DETAILS

HEIGHT ABOVE GROUND (FT):	4
PID BEFORE SAMPLE (PPB):	0.0
SAMPLE START TIME:	0:22
SAMPLE STOP TIME:	7:52
TOTAL SAMPLE TIME (MIN):	450
REGULATOR FLOW RATE (mL/MIN):	11.14
VOLUME OF SAMPLE (LITERS):	5.35
PID AFTER SAMPLE (PPB):	0.0
SAMPLE MOISTURE CONTENT:	None
CAN SERIAL NUMBER:	28845
REGULATOR SERIAL NUMBER:	17903
CAN START VACUUM PRESS. (" HG):	-30
CAN STOP VACUUM PRESS. (" HG):	-5

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

AIR SAMPLING LOG SHEET

Sample Number: AA01_031723

PROJECT: 514 Union Street	**PROJECT NO.:** 170361307		
LOCATION: Brooklyn, New York	**SURFACE ELEVATION AND DATUM:** N/A		
SAMPLER: TJ Malgieri	**SAMPLE DATE STARTED:** 3/17/2023	**DATE FINISHED:** 3/17/2023	
INSPECTOR: TJ Malgieri	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister		
POTENTIAL SAMPLE INTERFERENCES: None	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):**		
	Temp:	41° - 45° F	
	Wind:	S - SW 5-8 mph	
	Precipitation:	None	
	Pressure:	29.81 - 29.92 inHg	

METHOD OF INSTALLATION AND SAMPLING:

Langan field screened the sample location with a ppbRAE 3000 photoionization detector prior to sampling. Sample consisted of 6L Summa canister fitted with an 8-hour flow control valve. The flow controller was zeroed and valve opened to initiate the 8-hour sample collection. The sample and flow controller were checked each hour during sampling to ensure proper operation.

SAMPLE DETAILS		SAMPLE LOCATION SKETCH
HEIGHT ABOVE GROUND (FT):	3	See Sample Location Plan
PID BEFORE SAMPLE (PPB):	0.0	
SAMPLE START TIME:	0:26	
SAMPLE STOP TIME:	8:26	
TOTAL SAMPLE TIME (MIN):	480	
REGULATOR FLOW RATE (mL/MIN):	10.5	
VOLUME OF SAMPLE (LITERS):	5.04	
PID AFTER SAMPLE (PPB):	0.0	
SAMPLE MOISTURE CONTENT:	None	
CAN SERIAL NUMBER:	43005	
REGULATOR SERIAL NUMBER:	17900	
CAN START VACUUM PRESS. (" HG):	-30	
CAN STOP VACUUM PRESS. (" HG):	-8	

NOTES

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

APPENDIX C

NYSDOH INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name TJ Malgieri Date/Time Prepared 03/17/2023 02:00

Preparer's Affiliation Langan Engineering Phone No. 212-479-5400

Purpose of Investigation Indoor Air Sampling

1. OCCUPANT:

Interviewed: (Y)/ N

Last Name: Shields First Name: Nick

Address: 514 Union Street, Brooklyn, New York

County: Kings

Home Phone: _____ Office Phone: 347-223-4410

Number of Occupants/persons at this location 5-500 Age of Occupants 21+

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / (N)

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	(Commercial/Multi-use)
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) Royal Palms Shuffleboard Club

Does it include residences (i.e., multi-use)? Y / N If yes, how many? _____

Other characteristics:

Number of floors 1 Building age 1919

Is the building insulated? Y / N How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

N/A

Airflow near source

20 Overhead Fans, Overhead exposed HVAC System (off)

Outdoor air infiltration

Front Doors, attached non-insulated garage doors

Infiltration into air ducts

Overhead exposed HVAC system

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	concrete	stone	brick
b. Basement type:	full	crawlspace	slab	other N/A
c. Basement floor:	concrete	dirt	stone	other N/A
d. Basement floor:	uncovered	covered	covered with N/A	
e. Concrete floor:	unsealed	sealed	sealed with woof flooring, and/or paint in parts	
f. Foundation walls:	poured	block	stone	other Brick
g. Foundation walls:	unsealed	sealed	sealed with Paint	
h. The basement is:	wet	damp	dry	moldy
i. The basement is:	finished	unfinished	partially finished	
j. Sump present?	Y / N			
k. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade: N/A (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

Bathroom floor drains, utility vaults

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other _____

The primary type of fuel used is:

Natural Gas	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: _____

Boiler/furnace located in: Basement Outdoors Main Floor Other_____

Air conditioning: Central Air Window units Open Windows None

Are there air distribution ducts present? (Y) / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

Visible cold air supply and return ductwork visible and connected to building ceiling. Duct joints appeared to be in good condition. Ductwork connects to roof-mounted HVAC unit (which was off).

7. OCCUPANCY

Is basement/lowest level occupied? (Full-time) Occasionally Seldom Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	None
1st Floor	Royal Palms Shuffleboard Club
2nd Floor	
3rd Floor	
4th Floor	

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? (Y) / N

b. Does the garage have a separate heating unit? Y / (N) / NA

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) (Y) / N / NA Please specify Food Truck (when operational)

d. Has the building ever had a fire? Y / (N) When?

e. Is a kerosene or unvented gas space heater present? Y / (N) Where?

f. Is there a workshop or hobby/craft area? Y / (N) Where & Type?

g. Is there smoking in the building? Y / (N) How frequently?

h. Have cleaning products been used recently? (Y) / N When & Type? Yes; glass cleaners.

i. Have cosmetic products been used recently? Y / (N) When & Type?

j. Has painting/staining been done in the last 6 months? Y / N Where & When? _____

k. Is there new carpet, drapes or other textiles? Y / N Where & When? _____

l. Have air fresheners been used recently? Y / N When & Type? _____

m. Is there a kitchen exhaust fan? Y / N If yes, where vented?_____

n. Is there a bathroom exhaust fan? Y / N If yes, where vented? Roof

o. Is there a clothes dryer? Y / N If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / N When & Type?_____

Are there odors in the building? Y / N
If yes, please describe: N/A

Do any of the building occupants use solvents at work? Y / N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? N/A

If yes, are their clothes washed at work? Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) No
Yes, use dry-cleaning infrequently (monthly or less) Unknown
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y / N Date of Installation: September 2022 SVI Mitigation System installed
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply: Public Water Drilled Well Driven Well Dug Well Other: _____

Sewage Disposal: Public Sewer Septic Tank Leach Field Dry Well Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: N/A

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement: No Basement

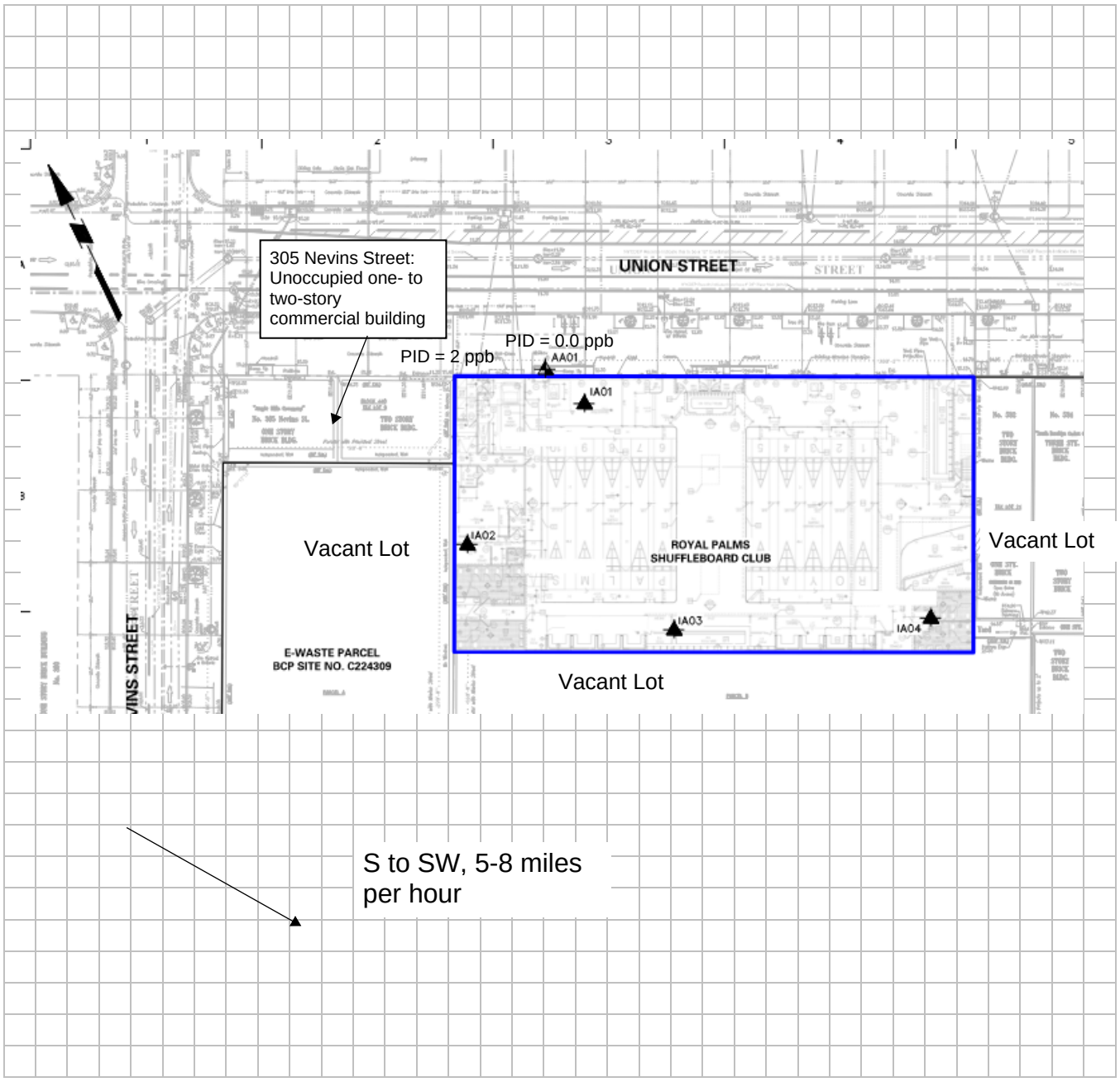
First Floor:

PID = photoionization detector
ppb = parts per billion

12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



PID = photoionization detector

ppb = parts per billion

13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: ppbRAE 3000

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N
Supply Closet	Keystone Lavender Multi-Surface Cleaner	(9)1-Gal	Good, opened U	poly(oxy-1,2-ethanediyl, alpha-undecyl-omega-hydroxy-dodecylbenzesulfonic acid, sodium salt	0.0 (ppb)	Y
Supply Closet	Sysco Germicidal Bleach	(7) 1-Gal	Good, opened U	Sodium hypochlorite, sodium hydroxide	0.0 (ppb)	Y
Supply Closet	Sysco Reliance Handsoap	(1) 1-Gal	Good, opened U	Chloroxylenol, potassium cocoate, hexylene glycol, sodium sulfate, tetrasodium EDTA, sodium lauryl sulfate, glycerin, citric acid, coco-glucoside, glyceryl oleate, fragrance, methylisothiazolinone	0.0 (ppb)	Y
Supply Closet	Clean Slate Lotion Hand Soap	(3) 1-Gal	Good, opened U	Unknown	0.0 (ppb)	Y
Supply Closet	Keystone Heavy Duty Degreaser	(4) 1-Gal	Good, opened U	Sodium dodecylbenzene sulfonate, sodium poly(oxyethylene) dodecyl ether sulfate, di-propyleneglycol	0.0 (ppb)	Y
Supply Closet	Sysco Reliance Glass Cleaner	(3) 1-Gal	Good, opened U	water, nonionic surfactant, aliphatic alocol, polycarobxylate salt, nonionic surfactant, colorant	0.0 (ppb)	Y
Supply Closet	Ecolab Glass Cleaner	(1) 2.5-Gal	Good, opened U	water, d-glucopyranose, oligomeric, decyl octyl glycosides, Polyol , Polycarobxylate salt, oxydipropanol, Organic acid, Coumarin , 1,6-Octadien-3-ol, 3,7-dimethyl-, 3-acetate, Colorant, Isothiazolinones Silicone, Cellulose ether	0.0 (ppb)	Y
Supply Closet	Xpress Detergent Disinfectant	(2) 1 Qt.	Good, opened U	n-Alkyl, dimenthyl benzyl ammonium chlorides, n-Alkyl dimenthyl, ethylbenzyl ammonium chlorides	0.0 (ppb)	Y
Supply Closet	Krud Cutter Caulk Remover	(1) 24 oz.	Good, opened U	Acetone, monoethanolamine, 1,3-dioxane benzyl alcohol	0.0 (ppb)	Y
Supply Closet	Dawn Professional Manual Pot & Pan Detergent	(10) 1.18 Qt	Good, opened U	water, sodium lauryl sulfate, sodium laureth sulfate, lauramine oxide, sodium chloride, phenoxyethanol, PEI-14 PEG-10/PPG-7 copolymer, methylisothiazolinone, fragrance, yellow 5	0.0 (ppb)	Y
Supply Closet	Pine Kleen	(2) 1-Gal	Good, opened U	Water, isopropyl alcohol, sodium metasilicate	0.0 (ppb)	Y
Supply Closet	Machine Detergent 3x	(4) 2.5-Gal	Good, opened U	Water, Sodium Hydroxide, Sodium Nitrilo-triacetate, monohydrate, polyacrylic acid, amino tris, dye	0.0 (ppb)	Y
Supply Closet	Fabuloso Lavender Multi-Surface Cleaner	(8) 1-Gal	Good, opened U	Water, sodium dodecyl benzene, sulfonate (linear), sodium sulfate	0.0 (ppb)	Y

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Gal = gallon
Qt. = quart
oz = ounces

APPENDIX D

DATA USABILITY SUMMARY REPORT

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

1 University Square Drive Princeton, NJ 08540 T: 609.282.8000
Mailing Address: 1 University Square Drive Princeton, NJ 08540

To: Vinicius De Paula, Langan Project Engineer

From: Joe Conboy, Langan Senior Staff Chemist

Date: March 21, 2023

Re: Data Usability Summary Report
For 514 Union Street
March 2023 Indoor and Ambient Air Samples
Langan Project No.: 170361301

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of air samples collected in March 2023 by Langan Engineering and Environmental Services at the 514 Union Street site. The samples were analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAP registration # 1854 and 12058) 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 the following guidelines, where applicable:

- 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),
- USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA 540- R-20-005, November 2020), and
- published analytical methodologies.

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.

Tier 1 data validation is based on completeness and compliance checks of sample-related QC results including: sample receipt documentation; analytical holding times; sample preservation; blank results (method, field, and trip); surrogate recoveries; MS/MSD recoveries and RPDs

values; field duplicate RPDs, laboratory duplicate RPDs, and LCS/LCSD recoveries and RPDs. All SDGs underwent Tier 1 validation review.

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 because certain criteria were not met when generating the data. 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; however, the reported reporting limit 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 considered invalid and are not technically usable for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified in Table 2 (attached).

The following acronyms may be used in the discussion of data-quality issues:

%D	Percent Difference	MB	Method Blank
CCV	Continuing Calibration Verification	MDL	Method Detection Limit
FB	Field Blank	MS	Matrix Spike
FD	Field Duplicate	MSD	Matrix Spike Duplicate
ICAL	Initial Calibration	RF	Response Factor
ICV	Initial Calibration Verification	RL	Reporting Limit
ISTD	Internal Standard	RPD	Relative Percent Difference
LCL	Lower Control Limit	RSD	Relative Standard Deviation
LCS	Laboratory Control Sample	TB	Trip Blank
LCSD	Laboratory Control Sample Duplicate	UCL	Upper Control Limit

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:

L23C0979

The sample IA01_031723 exhibited a laboratory-measured receipt pressure below -10 in. Hg (-10.54 in. Hg"). The associated results in sample IA01_031723 are qualified as J or UJ because of potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. No other deficiencies that were identified.

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
Senior Staff Chemist

Data Usability Summary Report
For 514 Union Street
March 2023 Indoor and Ambient Air Samples
Table 1: Sample Summary

SDG	Lab Sample ID	Client Sample ID	Sample Date	Validation Level	Analytical Parameters
23C0979	23C0979-01	IA01_031723	3/17/2023	Tier 1	VOCs by Method TO-15
23C0979	23C0979-02	IA02_031723	3/17/2023	Tier 1	VOCs by Method TO-15
23C0979	23C0979-03	IA03_031723	3/17/2023	Tier 1	VOCs by Method TO-15
23C0979	23C0979-04	IA04_031723	3/17/2023	Tier 1	VOCs by Method TO-15
23C0979	23C0979-05	AA01_031723	3/17/2023	Tier 1	VOCs by Method TO-15

Data Usability Summary Report
For 514 Union Street
March 2023 Indoor and Ambient Air Samples
Table 2: Validator-Applied Qualification

SDG	Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
23C0979	IA01_031723	TO15	107-06-2	1,2-Dichloroethane	UJ
23C0979	IA01_031723	TO15	127-18-4	Tetrachloroethylene (PCE)	UJ
23C0979	IA01_031723	TO15	156-59-2	Cis-1,2-Dichloroethylene	UJ
23C0979	IA01_031723	TO15	156-60-5	Trans-1,2-Dichloroethene	UJ
23C0979	IA01_031723	TO15	71-55-6	1,1,1-Trichloroethane (TCA)	UJ
23C0979	IA01_031723	TO15	75-01-4	Vinyl Chloride	UJ
23C0979	IA01_031723	TO15	75-09-2	Methylene Chloride	J
23C0979	IA01_031723	TO15	75-34-3	1,1-Dichloroethane	UJ
23C0979	IA01_031723	TO15	75-35-4	1,1-Dichloroethene	UJ
23C0979	IA01_031723	TO15	79-01-6	Trichloroethylene (TCE)	UJ

APPENDIX E

ASP CATEGORY B DATA PACKAGE

Table of Contents for York SDG 23C0823 & 23C0979

23C0823 & 23C0979 York QA Summary Report . . . 1
Introduction and Sample Cross Reference . . . 2
General Notes Relating to this Report . . . 3
Sample Results . . . 4
CAN 23991 / FC 17904 . . . 4
Volatile Organic Compounds in Air by GC/MS . . . 4
CAN 28845 / FC 17903 . . . 7
CAN 42992 / FC 17899 . . . 10
CAN 19529 / FC 17898 . . . 13
CAN 37794 / FC 17897 . . . 16
CAN 43005 / FC 17900 . . . 19
IA01_031723 . . . 22
IA02_031723 . . . 22
IA03_031723 . . . 23
IA04_031723 . . . 23
IA04_031723 . . . 24
AA01_031723 . . . 24
Case Narrative . . . 26
Quality Batch Summary . . . 33
QA/QC Summary Data . . . 34
Volatile Organic Compounds in Air by GC/MS EPA TO-15 . . . 34
Chains of Custody . . . 48
23C0823 & 23C0979 Data Package . . . 52
23C0823 Air Canister Data . . . 52
AIR QC Summary . . . 54
Duplicate Results - Batch: BC31064 . . . 55
Blank Spike Results - Batch: BC31064 . . . 64
Batch Summary - Batch: BC31064 . . . 67
Blank Results - Batch: BC31064 . . . 68
Mass Spec Tune - Seq: S3C1544 . . . 71
Sequence Summary - Seq: S3C1544 . . . 72
Internal Std. Summary Seq: S3C1544 . . . 73
Hold Time Summary . . . 75
Reporting Limits Summary . . . 76
AIR Sample Data . . . 78

Sample Results and Raw Data . . . 79
CAN 23991 / FC 17904 . . . 79
CAN 28845 / FC 17903 . . . 86
CAN 42992 / FC 17899 . . . 93
CAN 19529 / FC 17898 . . . 101
CAN 37794 / FC 17897 . . . 109
CAN 43005 / FC 17900 . . . 116
AIR Standards Data . . . 123
Initial Calibration - Cal: SB30018 . . . 124
Initial Calibration Raw Data - Cal: SB30018 . . . 133
Initial Calibration Check - Cal: SB30018 . . . 134
Continuing Calibration Check - Seq: S3C1544 . . . 139
AIR Raw QC Data . . . 145
Mass Spec Tune Raw Data - Seq: S3C1544 . . . 146
Blank Raw Data - Batch: BC31064 . . . 147
Blank Spike Raw Data - Batch: BC31064 . . . 159
Preparation Benchsheets - Batch: BC31064 . . . 163
23C0979 Air Data . . . 165
AIR QC Summary . . . 167
Duplicate Results - Batch: BC31240 . . . 168
Blank Spike Results - Batch: BC31240 . . . 185
Blank Spike Results - Batch: BC31255 . . . 188
Batch Summary - Batch: BC31240 . . . 191
Batch Summary - Batch: BC31255 . . . 192
Blank Results - Batch: BC31240 . . . 193
Blank Results - Batch: BC31255 . . . 196
Mass Spec Tune - Seq: S3B0635 . . . 199
Mass Spec Tune - Seq: S3B1020 . . . 200
Mass Spec Tune - Seq: S3C1903 . . . 201
Mass Spec Tune - Seq: S3C2020 . . . 202
Sequence Summary - Seq: S3B0635 . . . 203
Sequence Summary - Seq: S3B1020 . . . 204
Sequence Summary - Seq: S3C1903 . . . 205
Sequence Summary - Seq: S3C2020 . . . 206
Internal Std. Summary Seq: S3B0635 . . . 207
Internal Std. Summary Seq: S3B1020 . . . 209
Internal Std. Summary Seq: S3C1903 . . . 211
Internal Std. Summary Seq: S3C2020 . . . 212

Hold Time Summary....213
Reporting Limits Summary....214
AIR Sample Data....218
Sample Results and Raw Data....219
IA01_031723....219
IA02_031723....232
IA03_031723....246
IA04_031723....260
AA01_031723....274
AIR Standards Data....291
Initial Calibration - Cal: SB30007....292
Initial Calibration - Cal: SB30018....301
Initial Calibration Raw Data - Cal: SB30007....310
Initial Calibration Raw Data - Cal: SB30018....333
Initial Calibration Check - Cal: SB30007....356
Initial Calibration Check - Cal: SB30018....361
Continuing Calibration Check - Seq: S3C1903....366
Continuing Calibration Check - Seq: S3C2020....372
AIR Raw QC Data....378
Mass Spec Tune Raw Data - Seq: S3B0635....379
Mass Spec Tune Raw Data - Seq: S3B1020....380
Mass Spec Tune Raw Data - Seq: S3C1903....381
Mass Spec Tune Raw Data - Seq: S3C2020....382
Blank Raw Data - Batch: BC31240....383
Blank Raw Data - Batch: BC31255....394
Blank Spike Raw Data - Batch: BC31240....404
Blank Spike Raw Data - Batch: BC31255....408
Batch Canister Certification Prep Logs....412
Batch Canister Certification....415
Preparation Benchsheets - Batch: BC31240....426
Preparation Benchsheets - Batch: BC31255....428
Injection Logs....430
Media Request Form....432

Technical Report

prepared for:

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Vinicius DePaula

Report Date: 03/21/2023
Client Project ID: 170361307
York Project (SDG) No.: 23C0823

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 STRATFORD, CT 06615 132-02 89th AVENUE RICHMOND HILL, NY 11418
www.YORKLAB.com (203) 325-1371 FAX (203) 357-0166 ClientServices@yorklab.com

Report Date: 03/21/2023
Client Project ID: 170361307
York Project (SDG) No.: 23C0823

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Vinicius DePaula

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 March 15, 2023 and listed below. The project was identified as your project: **170361307**.

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.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
23C0823-01	CAN 23991 / FC 17904	Air	03/14/2023	03/15/2023
23C0823-02	CAN 28845 / FC 17903	Air	03/14/2023	03/15/2023
23C0823-03	CAN 42992 / FC 17899	Air	03/14/2023	03/15/2023
23C0823-04	CAN 19529 / FC 17898	Air	03/14/2023	03/15/2023
23C0823-05	CAN 37794 / FC 17897	Air	03/14/2023	03/15/2023
23C0823-06	CAN 43005 / FC 17900	Air	03/14/2023	03/15/2023
23C0979-01	IA01_031723	Indoor Ambient Air	03/17/2023	03/17/2023
23C0979-02	IA02_031723	Indoor Ambient Air	03/17/2023	03/17/2023
23C0979-03	IA03_031723	Indoor Ambient Air	03/17/2023	03/17/2023
23C0979-04	IA04_031723	Indoor Ambient Air	03/17/2023	03/17/2023
23C0979-05	AA01_031723	Air	03/17/2023	03/17/2023

General Notes for York Project (SDG) No.: 23C0823

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: Cassie L. Mosher

Cassie L. Mosher
Laboratory Manager

Date: 03/21/2023

Sample Information

Client Sample ID: CAN 23991 / FC 17904 **York Sample ID:** 23C0823-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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/m³	0.687	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:				
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.546	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	0.687	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	0.766	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	0.546	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.405	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.198	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
120-82-1	1,2,4-Trichlorobenzene	ND	TO-CCV	ug/m³	0.742	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
106-93-4	1,2-Dibromoethane	ND		ug/m³	0.768	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.405	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
78-87-5	1,2-Dichloropropane	ND		ug/m³	0.462	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	0.699	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
106-99-0	1,3-Butadiene	ND		ug/m³	0.664	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
142-28-9	* 1,3-Dichloropropane	ND		ug/m³	0.462	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:				
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
123-91-1	1,4-Dioxane	ND		ug/m³	0.721	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
78-93-3	2-Butanone	ND		ug/m³	0.295	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
591-78-6	* 2-Hexanone	ND		ug/m³	0.819	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:				
107-05-1	3-Chloropropene	ND		ug/m³	1.57	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 23991 / FC 17904 **York Sample ID:** 23C0823-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER **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	ND		ug/m³	0.410	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
67-64-1	Acetone	ND		ug/m³	0.475	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-13-1	Acrylonitrile	ND		ug/m³	0.217	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
71-43-2	Benzene	ND		ug/m³	0.319	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
100-44-7	Benzyl chloride	ND		ug/m³	0.518	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-27-4	Bromodichloromethane	ND		ug/m³	0.670	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-25-2	Bromoform	ND		ug/m³	1.03	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
74-83-9	Bromomethane	ND		ug/m³	0.388	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-15-0	Carbon disulfide	ND		ug/m³	0.311	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
56-23-5	Carbon tetrachloride	ND		ug/m³	0.157	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-90-7	Chlorobenzene	ND		ug/m³	0.460	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-00-3	Chloroethane	ND		ug/m³	0.264	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
67-66-3	Chloroform	ND		ug/m³	0.488	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
74-87-3	Chloromethane	ND		ug/m³	0.207	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.198	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	0.454	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
110-82-7	Cyclohexane	ND		ug/m³	0.344	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
124-48-1	Dibromochloromethane	ND		ug/m³	0.852	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-71-8	Dichlorodifluoromethane	ND		ug/m³	0.495	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
141-78-6	* Ethyl acetate	ND		ug/m³	0.721	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:				
100-41-4	Ethyl Benzene	ND		ug/m³	0.434	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
87-68-3	Hexachlorobutadiene	ND	CAL-E, TO-CCV, TO-LCS-L	ug/m³	1.07	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 23991 / FC 17904 **York Sample ID:** 23C0823-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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
67-63-0	Isopropanol	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
80-62-6	Methyl Methacrylate	ND		ug/m³	0.409	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m³	0.361	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-09-2	Methylene chloride	ND		ug/m³	0.695	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
142-82-5	n-Heptane	ND		ug/m³	0.410	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
110-54-3	n-Hexane	ND		ug/m³	0.352	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-47-6	o-Xylene	ND		ug/m³	0.434	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
179601-23-1	p- & m- Xylenes	ND		ug/m³	0.868	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
622-96-8	* p-Ethyltoluene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:				
115-07-1	* Propylene	ND		ug/m³	0.172	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:				
100-42-5	Styrene	ND		ug/m³	0.426	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
127-18-4	Tetrachloroethylene	ND		ug/m³	0.678	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
109-99-9	* Tetrahydrofuran	ND		ug/m³	0.590	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:				
108-88-3	Toluene	ND		ug/m³	0.377	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.396	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	0.454	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-01-6	Trichloroethylene	ND		ug/m³	0.134	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-69-4	Trichlorofluoromethane (Freon 11)	ND		ug/m³	0.562	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-05-4	Vinyl acetate	ND		ug/m³	0.352	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
593-60-2	Vinyl bromide	ND		ug/m³	0.437	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m³	0.128	1	EPA TO-15	03/14/2023 11:00	03/14/2023 16:32	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 28845 / FC 17903

York Sample ID: 23C0823-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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/m³	0.687	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:				
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.546	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	0.687	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	0.766	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	0.546	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.405	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.198	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
120-82-1	1,2,4-Trichlorobenzene	ND	TO-CCV	ug/m³	0.742	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
106-93-4	1,2-Dibromoethane	ND		ug/m³	0.768	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.405	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
78-87-5	1,2-Dichloropropane	ND		ug/m³	0.462	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	0.699	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
106-99-0	1,3-Butadiene	ND		ug/m³	0.664	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
142-28-9	* 1,3-Dichloropropane	ND		ug/m³	0.462	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:				
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
123-91-1	1,4-Dioxane	ND		ug/m³	0.721	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
78-93-3	2-Butanone	ND		ug/m³	0.295	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
591-78-6	* 2-Hexanone	ND		ug/m³	0.819	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:				
107-05-1	3-Chloropropene	ND		ug/m³	1.57	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-10-1	4-Methyl-2-pentanone	ND		ug/m³	0.410	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 28845 / FC 17903 **York Sample ID:** 23C0823-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER **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	ND		ug/m³	0.475	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-13-1	Acrylonitrile	ND		ug/m³	0.217	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
71-43-2	Benzene	ND		ug/m³	0.319	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
100-44-7	Benzyl chloride	ND		ug/m³	0.518	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-27-4	Bromodichloromethane	ND		ug/m³	0.670	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-25-2	Bromoform	ND		ug/m³	1.03	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
74-83-9	Bromomethane	ND		ug/m³	0.388	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-15-0	Carbon disulfide	ND		ug/m³	0.311	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
56-23-5	Carbon tetrachloride	ND		ug/m³	0.157	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-90-7	Chlorobenzene	ND		ug/m³	0.460	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-00-3	Chloroethane	ND		ug/m³	0.264	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
67-66-3	Chloroform	ND		ug/m³	0.488	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
74-87-3	Chloromethane	ND		ug/m³	0.207	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.198	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	0.454	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
110-82-7	Cyclohexane	ND		ug/m³	0.344	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
124-48-1	Dibromochloromethane	ND		ug/m³	0.852	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-71-8	Dichlorodifluoromethane	ND		ug/m³	0.495	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
141-78-6	* Ethyl acetate	ND		ug/m³	0.721	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:				
100-41-4	Ethyl Benzene	ND		ug/m³	0.434	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
87-68-3	Hexachlorobutadiene	ND	CAL-E, TO-CCV, TO-LCS-L	ug/m³	1.07	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
67-63-0	Isopropanol	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 28845 / FC 17903 **York Sample ID:** 23C0823-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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
80-62-6	Methyl Methacrylate	ND		ug/m³	0.409	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m³	0.361	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-09-2	Methylene chloride	ND		ug/m³	0.695	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
142-82-5	n-Heptane	ND		ug/m³	0.410	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
110-54-3	n-Hexane	ND		ug/m³	0.352	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-47-6	o-Xylene	ND		ug/m³	0.434	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
179601-23-1	p- & m- Xylenes	ND		ug/m³	0.868	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
622-96-8	* p-Ethyltoluene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:				
115-07-1	* Propylene	ND		ug/m³	0.172	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:				
100-42-5	Styrene	ND		ug/m³	0.426	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
127-18-4	Tetrachloroethylene	ND		ug/m³	0.678	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
109-99-9	* Tetrahydrofuran	ND		ug/m³	0.590	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:				
108-88-3	Toluene	ND		ug/m³	0.377	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.396	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	0.454	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-01-6	Trichloroethylene	ND		ug/m³	0.134	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-69-4	Trichlorofluoromethane (Freon 11)	ND		ug/m³	0.562	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-05-4	Vinyl acetate	ND		ug/m³	0.352	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
593-60-2	Vinyl bromide	ND		ug/m³	0.437	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m³	0.128	1	EPA TO-15	03/14/2023 11:00	03/14/2023 17:25	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 42992 / FC 17899

York Sample ID: 23C0823-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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/m³	0.687	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:				
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.546	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	0.687	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	0.766	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	0.546	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.405	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.198	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
120-82-1	1,2,4-Trichlorobenzene	ND	TO-CCV	ug/m³	0.742	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
106-93-4	1,2-Dibromoethane	ND		ug/m³	0.768	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.405	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
78-87-5	1,2-Dichloropropane	ND		ug/m³	0.462	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	0.699	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
106-99-0	1,3-Butadiene	ND		ug/m³	0.664	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
142-28-9	* 1,3-Dichloropropane	ND		ug/m³	0.462	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:				
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
123-91-1	1,4-Dioxane	ND		ug/m³	0.721	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
78-93-3	2-Butanone	ND		ug/m³	0.295	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
591-78-6	* 2-Hexanone	ND		ug/m³	0.819	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:				
107-05-1	3-Chloropropene	ND		ug/m³	1.57	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-10-1	4-Methyl-2-pentanone	ND		ug/m³	0.410	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 42992 / FC 17899

York Sample ID: 23C0823-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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	ND		ug/m³	0.475	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-13-1	Acrylonitrile	ND		ug/m³	0.217	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
71-43-2	Benzene	ND		ug/m³	0.319	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
100-44-7	Benzyl chloride	ND		ug/m³	0.518	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-27-4	Bromodichloromethane	ND		ug/m³	0.670	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-25-2	Bromoform	ND		ug/m³	1.03	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
74-83-9	Bromomethane	ND		ug/m³	0.388	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-15-0	Carbon disulfide	ND		ug/m³	0.311	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
56-23-5	Carbon tetrachloride	ND		ug/m³	0.157	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-90-7	Chlorobenzene	ND		ug/m³	0.460	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-00-3	Chloroethane	ND		ug/m³	0.264	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
67-66-3	Chloroform	ND		ug/m³	0.488	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
74-87-3	Chloromethane	ND		ug/m³	0.207	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.198	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	0.454	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
110-82-7	Cyclohexane	ND		ug/m³	0.344	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
124-48-1	Dibromochloromethane	ND		ug/m³	0.852	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-71-8	Dichlorodifluoromethane	ND		ug/m³	0.495	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
141-78-6	* Ethyl acetate	ND		ug/m³	0.721	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:				
100-41-4	Ethyl Benzene	ND		ug/m³	0.434	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
87-68-3	Hexachlorobutadiene	ND	CAL-E, TO-CCV, TO-LCS-L	ug/m³	1.07	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
67-63-0	Isopropanol	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 42992 / FC 17899 **York Sample ID:** 23C0823-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER **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
80-62-6	Methyl Methacrylate	ND		ug/m³	0.409	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m³	0.361	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-09-2	Methylene chloride	ND		ug/m³	0.695	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
142-82-5	n-Heptane	ND		ug/m³	0.410	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
110-54-3	n-Hexane	ND		ug/m³	0.352	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-47-6	o-Xylene	ND		ug/m³	0.434	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
179601-23-1	p- & m- Xylenes	ND		ug/m³	0.868	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
622-96-8	* p-Ethyltoluene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:				
115-07-1	* Propylene	ND		ug/m³	0.172	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:				
100-42-5	Styrene	ND		ug/m³	0.426	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
127-18-4	Tetrachloroethylene	ND		ug/m³	0.678	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
109-99-9	* Tetrahydrofuran	ND		ug/m³	0.590	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:				
108-88-3	Toluene	ND		ug/m³	0.377	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.396	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	0.454	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-01-6	Trichloroethylene	ND		ug/m³	0.134	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-69-4	Trichlorofluoromethane (Freon 11)	ND		ug/m³	0.562	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-05-4	Vinyl acetate	ND		ug/m³	0.352	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
593-60-2	Vinyl bromide	ND		ug/m³	0.437	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m³	0.128	1	EPA TO-15	03/14/2023 11:00	03/14/2023 18:18	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 19529 / FC 17898 **York Sample ID:** 23C0823-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER **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/m³	0.687	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:				
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.546	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	0.687	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	0.766	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	0.546	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.405	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.198	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
120-82-1	1,2,4-Trichlorobenzene	ND	TO-CCV	ug/m³	0.742	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
106-93-4	1,2-Dibromoethane	ND		ug/m³	0.768	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.405	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
78-87-5	1,2-Dichloropropane	ND		ug/m³	0.462	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	0.699	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
106-99-0	1,3-Butadiene	ND		ug/m³	0.664	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
142-28-9	* 1,3-Dichloropropane	ND		ug/m³	0.462	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:				
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
123-91-1	1,4-Dioxane	ND		ug/m³	0.721	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
78-93-3	2-Butanone	ND		ug/m³	0.295	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
591-78-6	* 2-Hexanone	ND		ug/m³	0.819	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:				
107-05-1	3-Chloropropene	ND		ug/m³	1.57	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-10-1	4-Methyl-2-pentanone	ND		ug/m³	0.410	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 19529 / FC 17898

York Sample ID: 23C0823-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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	ND		ug/m³	0.475	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-13-1	Acrylonitrile	ND		ug/m³	0.217	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
71-43-2	Benzene	ND		ug/m³	0.319	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
100-44-7	Benzyl chloride	ND		ug/m³	0.518	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-27-4	Bromodichloromethane	ND		ug/m³	0.670	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-25-2	Bromoform	ND		ug/m³	1.03	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
74-83-9	Bromomethane	ND		ug/m³	0.388	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-15-0	Carbon disulfide	ND		ug/m³	0.311	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
56-23-5	Carbon tetrachloride	ND		ug/m³	0.157	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-90-7	Chlorobenzene	ND		ug/m³	0.460	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-00-3	Chloroethane	ND		ug/m³	0.264	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
67-66-3	Chloroform	ND		ug/m³	0.488	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
74-87-3	Chloromethane	ND		ug/m³	0.207	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.198	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	0.454	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
110-82-7	Cyclohexane	ND		ug/m³	0.344	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
124-48-1	Dibromochloromethane	ND		ug/m³	0.852	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-71-8	Dichlorodifluoromethane	ND		ug/m³	0.495	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
141-78-6	* Ethyl acetate	ND		ug/m³	0.721	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:				
100-41-4	Ethyl Benzene	ND		ug/m³	0.434	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
87-68-3	Hexachlorobutadiene	ND	CAL-E, TO-CCV, TO-LCS-L	ug/m³	1.07	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
67-63-0	Isopropanol	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 19529 / FC 17898 **York Sample ID:** 23C0823-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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
80-62-6	Methyl Methacrylate	ND		ug/m³	0.409	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m³	0.361	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-09-2	Methylene chloride	ND		ug/m³	0.695	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
142-82-5	n-Heptane	ND		ug/m³	0.410	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
110-54-3	n-Hexane	ND		ug/m³	0.352	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-47-6	o-Xylene	ND		ug/m³	0.434	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
179601-23-1	p- & m- Xylenes	ND		ug/m³	0.868	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
622-96-8	* p-Ethyltoluene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:				
115-07-1	* Propylene	ND		ug/m³	0.172	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:				
100-42-5	Styrene	ND		ug/m³	0.426	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
127-18-4	Tetrachloroethylene	ND		ug/m³	0.678	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
109-99-9	* Tetrahydrofuran	ND		ug/m³	0.590	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:				
108-88-3	Toluene	ND		ug/m³	0.377	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.396	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	0.454	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-01-6	Trichloroethylene	ND		ug/m³	0.134	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-69-4	Trichlorofluoromethane (Freon 11)	ND		ug/m³	0.562	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-05-4	Vinyl acetate	ND		ug/m³	0.352	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
593-60-2	Vinyl bromide	ND		ug/m³	0.437	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m³	0.128	1	EPA TO-15	03/14/2023 11:00	03/14/2023 19:11	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 37794 / FC 17897

York Sample ID: 23C0823-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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/m³	0.687	1	EPA TO-15 Certifications:	03/14/2023 11:00	03/14/2023 20:04	VH
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.546	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	0.687	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	0.766	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	0.546	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.405	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.198	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
120-82-1	1,2,4-Trichlorobenzene	ND	TO-CCV	ug/m³	0.742	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m³	0.492	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
106-93-4	1,2-Dibromoethane	ND		ug/m³	0.768	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.405	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
78-87-5	1,2-Dichloropropane	ND		ug/m³	0.462	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	0.699	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m³	0.492	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
106-99-0	1,3-Butadiene	ND		ug/m³	0.664	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
142-28-9	* 1,3-Dichloropropane	ND		ug/m³	0.462	1	EPA TO-15 Certifications:	03/14/2023 11:00	03/14/2023 20:04	VH
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
123-91-1	1,4-Dioxane	ND		ug/m³	0.721	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
78-93-3	2-Butanone	ND		ug/m³	0.295	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
591-78-6	* 2-Hexanone	ND		ug/m³	0.819	1	EPA TO-15 Certifications:	03/14/2023 11:00	03/14/2023 20:04	VH
107-05-1	3-Chloropropene	ND		ug/m³	1.57	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH
108-10-1	4-Methyl-2-pentanone	ND		ug/m³	0.410	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	03/14/2023 11:00	03/14/2023 20:04	VH

Sample Information

Client Sample ID: CAN 37794 / FC 17897

York Sample ID: 23C0823-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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	ND		ug/m³	0.475	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-13-1	Acrylonitrile	ND		ug/m³	0.217	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
71-43-2	Benzene	ND		ug/m³	0.319	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
100-44-7	Benzyl chloride	ND		ug/m³	0.518	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-27-4	Bromodichloromethane	ND		ug/m³	0.670	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-25-2	Bromoform	ND		ug/m³	1.03	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
74-83-9	Bromomethane	ND		ug/m³	0.388	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-15-0	Carbon disulfide	ND		ug/m³	0.311	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
56-23-5	Carbon tetrachloride	ND		ug/m³	0.157	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-90-7	Chlorobenzene	ND		ug/m³	0.460	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-00-3	Chloroethane	ND		ug/m³	0.264	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
67-66-3	Chloroform	ND		ug/m³	0.488	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
74-87-3	Chloromethane	ND		ug/m³	0.207	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.198	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	0.454	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
110-82-7	Cyclohexane	ND		ug/m³	0.344	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
124-48-1	Dibromochloromethane	ND		ug/m³	0.852	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-71-8	Dichlorodifluoromethane	ND		ug/m³	0.495	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
141-78-6	* Ethyl acetate	ND		ug/m³	0.721	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:				
100-41-4	Ethyl Benzene	ND		ug/m³	0.434	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
87-68-3	Hexachlorobutadiene	ND	CAL-E, TO-CCV, TO-LCS-L	ug/m³	1.07	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
67-63-0	Isopropanol	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 37794 / FC 17897

York Sample ID: 23C0823-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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
80-62-6	Methyl Methacrylate	ND		ug/m³	0.409	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m³	0.361	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-09-2	Methylene chloride	ND		ug/m³	0.695	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
142-82-5	n-Heptane	ND		ug/m³	0.410	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
110-54-3	n-Hexane	ND		ug/m³	0.352	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-47-6	o-Xylene	ND		ug/m³	0.434	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
179601-23-1	p- & m- Xylenes	ND		ug/m³	0.868	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
622-96-8	* p-Ethyltoluene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:				
115-07-1	* Propylene	ND		ug/m³	0.172	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:				
100-42-5	Styrene	ND		ug/m³	0.426	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
127-18-4	Tetrachloroethylene	ND		ug/m³	0.678	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
109-99-9	* Tetrahydrofuran	ND		ug/m³	0.590	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:				
108-88-3	Toluene	ND		ug/m³	0.377	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.396	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	0.454	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-01-6	Trichloroethylene	ND		ug/m³	0.134	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-69-4	Trichlorofluoromethane (Freon 11)	ND		ug/m³	0.562	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-05-4	Vinyl acetate	ND		ug/m³	0.352	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
593-60-2	Vinyl bromide	ND		ug/m³	0.437	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m³	0.128	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:04	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 43005 / FC 17900 **York Sample ID:** 23C0823-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER **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/m³	0.687	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:				
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.546	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	0.687	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	0.766	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	0.546	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.405	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.198	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
120-82-1	1,2,4-Trichlorobenzene	ND	TO-CCV	ug/m³	0.742	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
106-93-4	1,2-Dibromoethane	ND		ug/m³	0.768	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.405	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
78-87-5	1,2-Dichloropropane	ND		ug/m³	0.462	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	0.699	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
106-99-0	1,3-Butadiene	ND		ug/m³	0.664	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
142-28-9	* 1,3-Dichloropropane	ND		ug/m³	0.462	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:				
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	0.601	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
123-91-1	1,4-Dioxane	ND		ug/m³	0.721	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
78-93-3	2-Butanone	ND		ug/m³	0.295	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
591-78-6	* 2-Hexanone	ND		ug/m³	0.819	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:				
107-05-1	3-Chloropropene	ND		ug/m³	1.57	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-10-1	4-Methyl-2-pentanone	ND		ug/m³	0.410	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 43005 / FC 17900 **York Sample ID:** 23C0823-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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	ND		ug/m³	0.475	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-13-1	Acrylonitrile	ND		ug/m³	0.217	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
71-43-2	Benzene	ND		ug/m³	0.319	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
100-44-7	Benzyl chloride	ND		ug/m³	0.518	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-27-4	Bromodichloromethane	ND		ug/m³	0.670	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-25-2	Bromoform	ND		ug/m³	1.03	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
74-83-9	Bromomethane	ND		ug/m³	0.388	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-15-0	Carbon disulfide	ND		ug/m³	0.311	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
56-23-5	Carbon tetrachloride	ND		ug/m³	0.157	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-90-7	Chlorobenzene	ND		ug/m³	0.460	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-00-3	Chloroethane	ND		ug/m³	0.264	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
67-66-3	Chloroform	ND		ug/m³	0.488	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
74-87-3	Chloromethane	ND		ug/m³	0.207	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.198	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	0.454	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
110-82-7	Cyclohexane	ND		ug/m³	0.344	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
124-48-1	Dibromochloromethane	ND		ug/m³	0.852	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-71-8	Dichlorodifluoromethane	ND		ug/m³	0.495	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
141-78-6	* Ethyl acetate	ND		ug/m³	0.721	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:				
100-41-4	Ethyl Benzene	ND		ug/m³	0.434	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
87-68-3	Hexachlorobutadiene	ND	CAL-E, TO-CCV, TO-LCS-L	ug/m³	1.07	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
67-63-0	Isopropanol	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: CAN 43005 / FC 17900 **York Sample ID:** 23C0823-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0823	170361307	Air	March 14, 2023 9:00 am	03/15/2023

VOA, TO15 MASTER

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
80-62-6	Methyl Methacrylate	ND		ug/m³	0.409	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m³	0.361	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-09-2	Methylene chloride	ND		ug/m³	0.695	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
142-82-5	n-Heptane	ND		ug/m³	0.410	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
110-54-3	n-Hexane	ND		ug/m³	0.352	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
95-47-6	o-Xylene	ND		ug/m³	0.434	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
179601-23-1	p- & m- Xylenes	ND		ug/m³	0.868	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
622-96-8	* p-Ethyltoluene	ND		ug/m³	0.492	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:				
115-07-1	* Propylene	ND		ug/m³	0.172	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:				
100-42-5	Styrene	ND		ug/m³	0.426	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
127-18-4	Tetrachloroethylene	ND		ug/m³	0.678	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
109-99-9	* Tetrahydrofuran	ND		ug/m³	0.590	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:				
108-88-3	Toluene	ND		ug/m³	0.377	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.396	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	0.454	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-01-6	Trichloroethylene	ND		ug/m³	0.134	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-69-4	Trichlorofluoromethane (Freon 11)	ND		ug/m³	0.562	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
108-05-4	Vinyl acetate	ND		ug/m³	0.352	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
593-60-2	Vinyl bromide	ND		ug/m³	0.437	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m³	0.128	1	EPA TO-15	03/14/2023 11:00	03/14/2023 20:57	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: **IA01_031723** **York Sample ID:** **23C0979-01**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0979	170361307	Indoor Ambient Air	March 17, 2023 8:25 am	03/17/2023

VOA, TO15 MASTER **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
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.605	1.108	EPA TO-15	03/17/2023 14:30	03/17/2023 20:39	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.448	1.108	EPA TO-15	03/17/2023 14:30	03/17/2023 20:39	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.220	1.108	EPA TO-15	03/17/2023 14:30	03/17/2023 20:39	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.448	1.108	EPA TO-15	03/17/2023 14:30	03/17/2023 20:39	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.220	1.108	EPA TO-15	03/17/2023 14:30	03/17/2023 20:39	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-09-2	**Methylene chloride**	**1.19**		ug/m³	0.770	1.108	EPA TO-15	03/17/2023 14:30	03/17/2023 20:39	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
127-18-4	Tetrachloroethylene	ND		ug/m³	0.751	1.108	EPA TO-15	03/17/2023 14:30	03/17/2023 20:39	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.439	1.108	EPA TO-15	03/17/2023 14:30	03/17/2023 20:39	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-01-6	Trichloroethylene	ND		ug/m³	0.149	1.108	EPA TO-15	03/17/2023 14:30	03/17/2023 20:39	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m³	0.142	1.108	EPA TO-15	03/17/2023 14:30	03/17/2023 20:39	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: **IA02_031723** **York Sample ID:** **23C0979-02**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0979	170361307	Indoor Ambient Air	March 17, 2023 8:24 am	03/17/2023

VOA, TO15 MASTER **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
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.524	0.96	EPA TO-15	03/17/2023 14:30	03/17/2023 21:49	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.389	0.96	EPA TO-15	03/17/2023 14:30	03/17/2023 21:49	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.190	0.96	EPA TO-15	03/17/2023 14:30	03/17/2023 21:49	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.389	0.96	EPA TO-15	03/17/2023 14:30	03/17/2023 21:49	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.190	0.96	EPA TO-15	03/17/2023 14:30	03/17/2023 21:49	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-09-2	**Methylene chloride**	**1.07**		ug/m³	0.667	0.96	EPA TO-15	03/17/2023 14:30	03/17/2023 21:49	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
127-18-4	Tetrachloroethylene	ND		ug/m³	0.651	0.96	EPA TO-15	03/17/2023 14:30	03/17/2023 21:49	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: **IA02_031723** **York Sample ID:** **23C0979-02**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0979	170361307	Indoor Ambient Air	March 17, 2023 8:24 am	03/17/2023

VOA, TO15 MASTER **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
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.381	0.96	EPA TO-15	03/17/2023 14:30	03/17/2023 21:49	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-01-6	Trichloroethylene	ND		ug/m³	0.129	0.96	EPA TO-15	03/17/2023 14:30	03/17/2023 21:49	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m³	0.123	0.96	EPA TO-15	03/17/2023 14:30	03/17/2023 21:49	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: **IA03_031723** **York Sample ID:** **23C0979-03**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0979	170361307	Indoor Ambient Air	March 17, 2023 8:23 am	03/17/2023

VOA, TO15 MASTER **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
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.540	0.99	EPA TO-15	03/17/2023 14:30	03/17/2023 22:58	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.401	0.99	EPA TO-15	03/17/2023 14:30	03/17/2023 22:58	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.196	0.99	EPA TO-15	03/17/2023 14:30	03/17/2023 22:58	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.401	0.99	EPA TO-15	03/17/2023 14:30	03/17/2023 22:58	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.196	0.99	EPA TO-15	03/17/2023 14:30	03/17/2023 22:58	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-09-2	**Methylene chloride**	**1.07**		ug/m³	0.688	0.99	EPA TO-15	03/17/2023 14:30	03/17/2023 22:58	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
127-18-4	Tetrachloroethylene	ND		ug/m³	0.671	0.99	EPA TO-15	03/17/2023 14:30	03/17/2023 22:58	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.393	0.99	EPA TO-15	03/17/2023 14:30	03/17/2023 22:58	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-01-6	Trichloroethylene	ND		ug/m³	0.133	0.99	EPA TO-15	03/17/2023 14:30	03/17/2023 22:58	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m³	0.127	0.99	EPA TO-15	03/17/2023 14:30	03/17/2023 22:58	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: **IA04_031723** **York Sample ID:** **23C0979-04**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0979	170361307	Indoor Ambient Air	March 17, 2023 7:52 am	03/17/2023

Sample Information

Client Sample ID: **IA04_031723** **York Sample ID:** **23C0979-04**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0979	170361307	Indoor Ambient Air	March 17, 2023 7:52 am	03/17/2023

VOA, TO15 MASTER **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
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.448	0.821	EPA TO-15	03/17/2023 14:30	03/18/2023 00:08	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.332	0.821	EPA TO-15	03/17/2023 14:30	03/18/2023 00:08	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.163	0.821	EPA TO-15	03/17/2023 14:30	03/18/2023 00:08	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.332	0.821	EPA TO-15	03/17/2023 14:30	03/18/2023 00:08	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.163	0.821	EPA TO-15	03/17/2023 14:30	03/18/2023 00:08	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-09-2	**Methylene chloride**	**0.970**		ug/m³	0.570	0.821	EPA TO-15	03/17/2023 14:30	03/18/2023 00:08	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
127-18-4	Tetrachloroethylene	ND		ug/m³	0.557	0.821	EPA TO-15	03/17/2023 14:30	03/18/2023 00:08	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.326	0.821	EPA TO-15	03/17/2023 14:30	03/18/2023 00:08	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-01-6	Trichloroethylene	ND		ug/m³	0.110	0.821	EPA TO-15	03/17/2023 14:30	03/18/2023 00:08	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m³	0.105	0.821	EPA TO-15	03/17/2023 14:30	03/18/2023 00:08	AC
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: **AA01_031723** **York Sample ID:** **23C0979-05**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0979	170361307	Air	March 17, 2023 8:26 am	03/17/2023

VOA, TO15 MASTER **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
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.500	0.916	EPA TO-15	03/18/2023 10:00	03/18/2023 18:43	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.371	0.916	EPA TO-15	03/18/2023 10:00	03/18/2023 18:43	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.182	0.916	EPA TO-15	03/18/2023 10:00	03/18/2023 18:43	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.371	0.916	EPA TO-15	03/18/2023 10:00	03/18/2023 18:43	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.182	0.916	EPA TO-15	03/18/2023 10:00	03/18/2023 18:43	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-09-2	**Methylene chloride**	**1.15**		ug/m³	0.636	0.916	EPA TO-15	03/18/2023 10:00	03/18/2023 18:43	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
127-18-4	Tetrachloroethylene	ND		ug/m³	0.621	0.916	EPA TO-15	03/18/2023 10:00	03/18/2023 18:43	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: **AA01_031723** **York Sample ID:** **23C0979-05**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23C0979	170361307	Air	March 17, 2023 8:26 am	03/17/2023

VOA, TO15 MASTER **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
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.363	0.916	EPA TO-15	03/18/2023 10:00	03/18/2023 18:43	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
79-01-6	Trichloroethylene	ND		ug/m³	0.123	0.916	EPA TO-15	03/18/2023 10:00	03/18/2023 18:43	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m³	0.117	0.916	EPA TO-15	03/18/2023 10:00	03/18/2023 18:43	VH
						Certifications:	NELAC-NY12058,NJDEP-Queens			

CASE NARRATIVE

York Project/SDG No.: 23C0823
Client: Langan Engineering & Environmental Services (NYC)
Client Project ID: 170361307
Prepared for: Vinicius DePaula

Introduction

This Case Narrative applies only to the following samples submitted to our laboratory on **03/15/2023 15:28** as detailed on the chain-of-custody form.

The 6 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

Laboratory ID	Sample Name	Matrix
23C0823-01	CAN 23991 / FC 17904	Air
23C0823-02	CAN 28845 / FC 17903	Air
23C0823-03	CAN 42992 / FC 17899	Air
23C0823-04	CAN 19529 / FC 17898	Air
23C0823-05	CAN 37794 / FC 17897	Air
23C0823-06	CAN 43005 / FC 17900	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.: 23C0823 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: *Krys Trafalski*
Technical Director

Date: 03/21/2023

York Analytical Laboratories, Inc.

Formulae Used for Sample Calculations

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

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

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

York Project/SDG No.: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Client Project ID: 170361307
Prepared for: Vinicius DePaula

Introduction

This Case Narrative applies only to the following samples submitted to our laboratory on **03/17/2023 14:10** 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

Laboratory ID	Sample Name	Matrix
23C0979-01	IA01_031723	Air
23C0979-02	IA02_031723	Air
23C0979-03	IA03_031723	Air
23C0979-04	IA04_031723	Air
23C0979-05	AA01_031723	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.: 23C0979 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: *Krys Trafalski*

Technical Director

Date: 03/21/2023

York Analytical Laboratories, Inc.

Formulae Used for Sample Calculations

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

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

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. - Stratford	Client:	
Project:		Lab Project No:	
Laboratory Sample ID(s):	-01 - -06	Sampling Date(s):	03/14/2023 - 03/17/2023
Review Date(s):	-	Laboratory Reviewer(s):	

QC Sample Nonconformances

Batch ID: BC31064 **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
BC31064-BS1	Hexachlorobutadiene - 87-68-3	5.67 ppbv	LCS	56.7	70-130	Low Bias				

Batch ID: BC31240 **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
BC31240-BLK1	Isopropanol - 67-63-0	0.639 ug/m³	Blank		-					
BC31240-BS1	1,2,4-Trichlorobenzene - 120-82-1	6.39 ppbv	LCS	63.9	70-130	Low Bias				

Batch ID: BC31255 **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
BC31255-BS1	Hexachlorobutadiene - 87-68-3	5.85 ppbv	LCS	58.5	70-130	Low Bias				

Batch ID: S3B1020 **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
S3B1020-SCV1	Hexachlorobutadiene - 87-68-3	5.25 ppbv	Secondary Cal Check	52.5	70-130	Low Bias				

Batch ID: S3C1544 **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
S3C1544-CCV1	1,2,4-Trichlorobenzene - 120-82-1	6.88 ppbv	Calibration Check	68.8	70-130	Low Bias				
S3C1544-CCV1	Hexachlorobutadiene - 87-68-3	5.52 ppbv	Calibration Check	55.2	70-130	Low Bias				

Batch ID: S3C1903 **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
S3C1903-CCV1	Hexachlorobutadiene - 87-68-3	6.94 ppbv	Calibration Check	69.4	70-130	Low Bias				

Batch ID: S3C2020 **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
S3C2020-CCV1	1,2,4-Trichlorobenzene - 120-82-1	3.54 ppbv	Calibration Check	35.4	70-130	Low Bias				

Batch ID: BC31064 **General Method:** Volatile Organic Compounds in Air by GC/MS

YORK Sample ID	Client Sample ID
23C0823-01	CAN 23991 / FC 17904
23C0823-02	CAN 28845 / FC 17903
23C0823-03	CAN 42992 / FC 17899
23C0823-04	CAN 19529 / FC 17898
23C0823-05	CAN 37794 / FC 17897
23C0823-06	CAN 43005 / FC 17900
BC31064-BLK1	Blank
BC31064-BS1	LCS
BC31064-DUP1	Duplicate

Batch ID: BC31240 **General Method:** Volatile Organic Compounds in Air by GC/MS

YORK Sample ID	Client Sample ID
23C0979-01	IA01_031723
23C0979-02	IA02_031723
23C0979-03	IA03_031723
23C0979-04	IA04_031723
BC31240-BLK1	Blank
BC31240-BS1	LCS
BC31240-DUP1	Duplicate

Batch ID: BC31255 **General Method:** Volatile Organic Compounds in Air by GC/MS

YORK Sample ID	Client Sample ID
23C0979-05	AA01_031723
BC31255-BLK1	Blank
BC31255-BS1	LCS

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
BC31240-BS1	Volatile Organics, TO-15 CVOCs	Isopropanol	B	Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants.
BC31240-BS1	Volatile Organics,TO-15 Full Can Certification	Isopropanol	B	Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants.
BC31240-DUP1	Volatile Organics, TO-15 CVOCs	Isopropanol	B	Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants.
BC31240-DUP1	Volatile Organics,TO-15 Full Can Certification	Isopropanol	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: BC31064 **Preparation Method:** EPA TO15 PREP **Prepared By:** VH

YORK Sample ID	Client Sample ID	Preparation Date
23C0823-01	CAN 23991 / FC 17904	03/14/23
23C0823-02	CAN 28845 / FC 17903	03/14/23
23C0823-03	CAN 42992 / FC 17899	03/14/23
23C0823-04	CAN 19529 / FC 17898	03/14/23
23C0823-05	CAN 37794 / FC 17897	03/14/23
23C0823-06	CAN 43005 / FC 17900	03/14/23
BC31064-BLK1	Blank	03/14/23
BC31064-BS1	LCS	03/14/23
BC31064-DUP1	Duplicate	03/14/23

Batch ID: BC31240 **Preparation Method:** EPA TO15 PREP **Prepared By:** AC

YORK Sample ID	Client Sample ID	Preparation Date
23C0979-01	IA01_031723	03/17/23
23C0979-02	IA02_031723	03/17/23
23C0979-03	IA03_031723	03/17/23
23C0979-04	IA04_031723	03/17/23
BC31240-BLK1	Blank	03/17/23
BC31240-BS1	LCS	03/17/23
BC31240-DUP1	Duplicate	03/17/23

Batch ID: BC31255 **Preparation Method:** EPA TO15 PREP **Prepared By:** AC

YORK Sample ID	Client Sample ID	Preparation Date
23C0979-05	AA01_031723	03/18/23
BC31255-BLK1	Blank	03/18/23
BC31255-BS1	LCS	03/18/23

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

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC31064 - EPA TO15 PREP											
Blank (BC31064-BLK1)								Prepared & Analyzed: 03/14/2023			
1,1,1,2-Tetrachloroethane	ND	0.687	ug/m³								
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. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC31064 - EPA TO15 PREP											
Blank (BC31064-BLK1)								Prepared & Analyzed: 03/14/2023			
n-Hexane	ND	0.352	ug/m³								
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	0.128	"								
LCS (BC31064-BS1)								Prepared & Analyzed: 03/14/2023			
1,1,1,2-Tetrachloroethane	9.49		ppbv	10.0		94.9	70-130				
1,1,1-Trichloroethane	11.2		"	10.0		112	70-130				
1,1,2,2-Tetrachloroethane	11.4		"	10.0		114	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11.1		"	10.0		111	70-130				
1,1,2-Trichloroethane	8.26		"	10.0		82.6	70-130				
1,1-Dichloroethane	10.7		"	10.0		107	70-130				
1,1-Dichloroethylene	11.8		"	10.0		118	70-130				
1,2,4-Trichlorobenzene	7.92		"	10.0		79.2	70-130				
1,2,4-Trimethylbenzene	8.74		"	10.0		87.4	70-130				
1,2-Dibromoethane	8.61		"	10.0		86.1	70-130				
1,2-Dichlorobenzene	8.46		"	10.0		84.6	70-130				
1,2-Dichloroethane	10.9		"	10.0		109	70-130				
1,2-Dichloropropane	7.91		"	10.0		79.1	70-130				
1,2-Dichlorotetrafluoroethane	10.1		"	10.0		101	70-130				
1,3,5-Trimethylbenzene	9.03		"	10.0		90.3	70-130				
1,3-Butadiene	10.2		"	10.0		102	70-130				
1,3-Dichlorobenzene	8.76		"	10.0		87.6	70-130				
1,3-Dichloropropane	8.60		"	10.0		86.0	70-130				
1,4-Dichlorobenzene	8.44		"	10.0		84.4	70-130				
1,4-Dioxane	9.67		"	10.0		96.7	70-130				
2-Butanone	11.4		"	10.0		114	70-130				
2-Hexanone	7.64		"	10.0		76.4	70-130				
3-Chloropropene	11.9		"	10.0		119	70-130				
4-Methyl-2-pentanone	8.11		"	10.0		81.1	70-130				
Acetone	9.16		"	10.0		91.6	70-130				
Acrylonitrile	12.2		"	10.0		122	70-130				
Benzene	8.62		"	10.0		86.2	70-130				
Benzyl chloride	8.34		"	10.0		83.4	70-130				
Bromodichloromethane	8.70		"	10.0		87.0	70-130				
Bromoform	8.93		"	10.0		89.3	70-130				
Bromomethane	9.44		"	10.0		94.4	70-130				
Carbon disulfide	11.2		"	10.0		112	70-130				
Carbon tetrachloride	9.93		"	10.0		99.3	70-130				

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

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC31064 - EPA TO15 PREP											
LCS (BC31064-BS1)							Prepared & Analyzed: 03/14/2023				
Chlorobenzene	10.7		ppbv	10.0		107	70-130				
Chloroethane	11.6		"	10.0		116	70-130				
Chloroform	11.1		"	10.0		111	70-130				
Chloromethane	9.54		"	10.0		95.4	70-130				
cis-1,2-Dichloroethylene	11.9		"	10.0		119	70-130				
cis-1,3-Dichloropropylene	9.06		"	10.0		90.6	70-130				
Cyclohexane	9.94		"	10.0		99.4	70-130				
Dibromochloromethane	8.64		"	10.0		86.4	70-130				
Dichlorodifluoromethane	11.7		"	10.0		117	70-130				
Ethyl acetate	11.6		"	10.0		116	70-130				
Ethyl Benzene	11.6		"	10.0		116	70-130				
Hexachlorobutadiene	5.67		"	10.0		56.7	70-130	Low Bias			
Isopropanol	10.8		"	10.0		108	70-130				
Methyl Methacrylate	7.70		"	10.0		77.0	70-130				
Methyl tert-butyl ether (MTBE)	11.8		"	10.0		118	70-130				
Methylene chloride	10.1		"	10.0		101	70-130				
n-Heptane	8.20		"	10.0		82.0	70-130				
n-Hexane	9.93		"	10.0		99.3	70-130				
o-Xylene	8.41		"	10.0		84.1	70-130				
p- & m- Xylenes	16.2		"	20.0		81.0	70-130				
p-Ethyltoluene	8.65		"	10.0		86.5	70-130				
Propylene	12.3		"	10.0		123	70-130				
Styrene	8.10		"	10.0		81.0	70-130				
Tetrachloroethylene	8.91		"	10.0		89.1	70-130				
Tetrahydrofuran	11.9		"	10.0		119	70-130				
Toluene	8.52		"	10.0		85.2	70-130				
trans-1,2-Dichloroethylene	11.3		"	10.0		113	70-130				
trans-1,3-Dichloropropylene	8.97		"	10.0		89.7	70-130				
Trichloroethylene	8.94		"	10.0		89.4	70-130				
Trichlorofluoromethane (Freon 11)	10.9		"	10.0		109	70-130				
Vinyl acetate	8.60		"	10.0		86.0	70-130				
Vinyl bromide	12.1		"	10.0		121	70-130				
Vinyl Chloride	8.47		"	10.0		84.7	70-130				

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

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC31064 - EPA TO15 PREP											
Duplicate (BC31064-DUP1)	*Source sample: 23C0823-01 (CAN 23991 / FC 17904)							Prepared & Analyzed: 03/14/2023			
1,1,1,2-Tetrachloroethane	ND	0.687	ug/m³		ND					25	
1,1,1-Trichloroethane	ND	0.546	"		ND					25	
1,1,2,2-Tetrachloroethane	ND	0.687	"		ND					25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.766	"		ND					25	
1,1,2-Trichloroethane	ND	0.546	"		ND					25	
1,1-Dichloroethane	ND	0.405	"		ND					25	
1,1-Dichloroethylene	ND	0.198	"		ND					25	
1,2,4-Trichlorobenzene	ND	0.742	"		ND					25	
1,2,4-Trimethylbenzene	ND	0.492	"		ND					25	
1,2-Dibromoethane	ND	0.768	"		ND					25	
1,2-Dichlorobenzene	ND	0.601	"		ND					25	
1,2-Dichloroethane	ND	0.405	"		ND					25	
1,2-Dichloropropane	ND	0.462	"		ND					25	
1,2-Dichlorotetrafluoroethane	ND	0.699	"		ND					25	
1,3,5-Trimethylbenzene	ND	0.492	"		ND					25	
1,3-Butadiene	ND	0.664	"		ND					25	
1,3-Dichlorobenzene	ND	0.601	"		ND					25	
1,3-Dichloropropane	ND	0.462	"		ND					25	
1,4-Dichlorobenzene	ND	0.601	"		ND					25	
1,4-Dioxane	ND	0.721	"		ND					25	
2-Butanone	ND	0.295	"		ND					25	
2-Hexanone	ND	0.819	"		ND					25	
3-Chloropropene	ND	1.57	"		ND					25	
4-Methyl-2-pentanone	ND	0.410	"		ND					25	
Acetone	ND	0.475	"		ND					25	
Acrylonitrile	ND	0.217	"		ND					25	
Benzene	ND	0.319	"		ND					25	
Benzyl chloride	ND	0.518	"		ND					25	
Bromodichloromethane	ND	0.670	"		ND					25	
Bromoform	ND	1.03	"		ND					25	
Bromomethane	ND	0.388	"		ND					25	
Carbon disulfide	ND	0.311	"		ND					25	
Carbon tetrachloride	ND	0.157	"		ND					25	
Chlorobenzene	ND	0.460	"		ND					25	
Chloroethane	ND	0.264	"		ND					25	
Chloroform	ND	0.488	"		ND					25	
Chloromethane	ND	0.207	"		ND					25	
cis-1,2-Dichloroethylene	ND	0.198	"		ND					25	
cis-1,3-Dichloropropylene	ND	0.454	"		ND					25	
Cyclohexane	ND	0.344	"		ND					25	
Dibromochloromethane	ND	0.852	"		ND					25	
Dichlorodifluoromethane	ND	0.495	"		ND					25	
Ethyl acetate	ND	0.721	"		ND					25	
Ethyl Benzene	ND	0.434	"		ND					25	
Hexachlorobutadiene	ND	1.07	"		ND					25	
Isopropanol	ND	0.492	"		ND					25	
Methyl Methacrylate	ND	0.409	"		ND					25	
Methyl tert-butyl ether (MTBE)	ND	0.361	"		ND					25	
Methylene chloride	0.556	0.695	"		0.556				0.00	25	
n-Heptane	ND	0.410	"		ND					25	
n-Hexane	ND	0.352	"		ND					25	

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

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC31064 - EPA TO15 PREP											
Duplicate (BC31064-DUP1)	*Source sample: 23C0823-01 (CAN 23991 / FC 17904)							Prepared & Analyzed: 03/14/2023			
o-Xylene	ND	0.434	ug/m³		ND					25	
p- & m- Xylenes	ND	0.868	"		ND					25	
p-Ethyltoluene	ND	0.492	"		ND					25	
Propylene	ND	0.172	"		ND					25	
Styrene	ND	0.426	"		ND					25	
Tetrachloroethylene	0.407	0.678	"		ND					25	
Tetrahydrofuran	ND	0.590	"		ND					25	
Toluene	ND	0.377	"		ND					25	
trans-1,2-Dichloroethylene	ND	0.396	"		ND					25	
trans-1,3-Dichloropropylene	ND	0.454	"		ND					25	
Trichloroethylene	ND	0.134	"		ND					25	
Trichlorofluoromethane (Freon 11)	ND	0.562	"		ND					25	
Vinyl acetate	ND	0.352	"		ND					25	
Vinyl bromide	ND	0.437	"		ND					25	
Vinyl Chloride	ND	0.128	"		ND					25	
Batch BC31240 - EPA TO15 PREP											
Blank (BC31240-BLK1)								Prepared & Analyzed: 03/17/2023			
1,1,1,2-Tetrachloroethane	ND	0.687	ug/m³								
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	"								

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

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC31240 - EPA TO15 PREP											
Blank (BC31240-BLK1)								Prepared & Analyzed: 03/17/2023			
Chlorobenzene	ND	0.460	ug/m³								
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	0.639	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	"								
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	0.128	"								

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

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC31240 - EPA TO15 PREP											
LCS (BC31240-BS1)							Prepared & Analyzed: 03/17/2023				
1,1,1,2-Tetrachloroethane	9.50		ppbv	10.0		95.0	70-130				
1,1,1-Trichloroethane	9.77		"	10.0		97.7	70-130				
1,1,2,2-Tetrachloroethane	9.07		"	10.0		90.7	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	9.03		"	10.0		90.3	70-130				
1,1,2-Trichloroethane	9.38		"	10.0		93.8	70-130				
1,1-Dichloroethane	8.88		"	10.0		88.8	70-130				
1,1-Dichloroethylene	8.12		"	10.0		81.2	70-130				
1,2,4-Trichlorobenzene	6.39		"	10.0		63.9	70-130	Low Bias			
1,2,4-Trimethylbenzene	8.74		"	10.0		87.4	70-130				
1,2-Dibromoethane	9.37		"	10.0		93.7	70-130				
1,2-Dichlorobenzene	8.83		"	10.0		88.3	70-130				
1,2-Dichloroethane	8.78		"	10.0		87.8	70-130				
1,2-Dichloropropane	8.91		"	10.0		89.1	70-130				
1,2-Dichlorotetrafluoroethane	7.54		"	10.0		75.4	70-130				
1,3,5-Trimethylbenzene	8.18		"	10.0		81.8	70-130				
1,3-Butadiene	8.23		"	10.0		82.3	70-130				
1,3-Dichlorobenzene	9.40		"	10.0		94.0	70-130				
1,3-Dichloropropane	9.11		"	10.0		91.1	70-130				
1,4-Dichlorobenzene	9.42		"	10.0		94.2	70-130				
1,4-Dioxane	9.06		"	10.0		90.6	70-130				
2-Butanone	8.76		"	10.0		87.6	70-130				
2-Hexanone	9.21		"	10.0		92.1	70-130				
3-Chloropropene	9.00		"	10.0		90.0	70-130				
4-Methyl-2-pentanone	8.77		"	10.0		87.7	70-130				
Acetone	7.83		"	10.0		78.3	70-130				
Acrylonitrile	8.68		"	10.0		86.8	70-130				
Benzene	9.09		"	10.0		90.9	70-130				
Benzyl chloride	7.85		"	10.0		78.5	70-130				
Bromodichloromethane	9.84		"	10.0		98.4	70-130				
Bromoform	9.37		"	10.0		93.7	70-130				
Bromomethane	8.00		"	10.0		80.0	70-130				
Carbon disulfide	9.06		"	10.0		90.6	70-130				
Carbon tetrachloride	10.1		"	10.0		101	70-130				
Chlorobenzene	8.54		"	10.0		85.4	70-130				
Chloroethane	8.17		"	10.0		81.7	70-130				
Chloroform	9.42		"	10.0		94.2	70-130				
Chloromethane	8.37		"	10.0		83.7	70-130				
cis-1,2-Dichloroethylene	7.87		"	10.0		78.7	70-130				
cis-1,3-Dichloropropylene	10.1		"	10.0		101	70-130				
Cyclohexane	9.41		"	10.0		94.1	70-130				
Dibromochloromethane	10.6		"	10.0		106	70-130				
Dichlorodifluoromethane	8.30		"	10.0		83.0	70-130				
Ethyl acetate	9.16		"	10.0		91.6	70-130				
Ethyl Benzene	8.84		"	10.0		88.4	70-130				
Hexachlorobutadiene	7.05		"	10.0		70.5	70-130				
Isopropanol	8.56		"	10.0		85.6	70-130				
Methyl Methacrylate	8.95		"	10.0		89.5	70-130				
Methyl tert-butyl ether (MTBE)	9.37		"	10.0		93.7	70-130				
Methylene chloride	9.47		"	10.0		94.7	70-130				
n-Heptane	9.46		"	10.0		94.6	70-130				
n-Hexane	9.53		"	10.0		95.3	70-130				

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

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC31240 - EPA TO15 PREP											
LCS (BC31240-BS1)							Prepared & Analyzed: 03/17/2023				
o-Xylene	9.08		ppbv	10.0		90.8	70-130				
p- & m- Xylenes	17.5		"	20.0		87.6	70-130				
p-Ethyltoluene	8.76		"	10.0		87.6	70-130				
Propylene	7.50		"	10.0		75.0	70-130				
Styrene	9.60		"	10.0		96.0	70-130				
Tetrachloroethylene	9.08		"	10.0		90.8	70-130				
Tetrahydrofuran	9.09		"	10.0		90.9	70-130				
Toluene	9.02		"	10.0		90.2	70-130				
trans-1,2-Dichloroethylene	8.54		"	10.0		85.4	70-130				
trans-1,3-Dichloropropylene	9.95		"	10.0		99.5	70-130				
Trichloroethylene	8.35		"	10.0		83.5	70-130				
Trichlorofluoromethane (Freon 11)	9.04		"	10.0		90.4	70-130				
Vinyl acetate	9.53		"	10.0		95.3	70-130				
Vinyl bromide	9.69		"	10.0		96.9	70-130				
Vinyl Chloride	7.25		"	10.0		72.5	70-130				
Duplicate (BC31240-DUP1)	*Source sample: 23C0979-04 (IA04_031723)						Prepared: 03/17/2023 Analyzed: 03/18/2023				
1,1,1,2-Tetrachloroethane	ND	0.564	ug/m³		ND					25	
1,1,1-Trichloroethane	ND	0.448	"		ND					25	
1,1,2,2-Tetrachloroethane	ND	0.564	"		ND					25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.629	"		ND					25	
1,1,2-Trichloroethane	ND	0.448	"		ND					25	
1,1-Dichloroethane	ND	0.332	"		ND					25	
1,1-Dichloroethylene	ND	0.163	"		ND					25	
1,2,4-Trichlorobenzene	ND	0.609	"		ND					25	
1,2,4-Trimethylbenzene	ND	0.404	"		ND					25	
1,2-Dibromoethane	ND	0.631	"		ND					25	
1,2-Dichlorobenzene	ND	0.494	"		ND					25	
1,2-Dichloroethane	ND	0.332	"		ND					25	
1,2-Dichloropropane	ND	0.379	"		ND					25	
1,2-Dichlorotetrafluoroethane	ND	0.574	"		ND					25	
1,3,5-Trimethylbenzene	ND	0.404	"		ND					25	
1,3-Butadiene	ND	0.545	"		ND					25	
1,3-Dichlorobenzene	ND	0.494	"		ND					25	
1,3-Dichloropropane	ND	0.379	"		ND					25	
1,4-Dichlorobenzene	ND	0.494	"		ND					25	
1,4-Dioxane	ND	0.592	"		ND					25	
2-Butanone	0.605	0.242	"		0.630				3.92	25	
2-Hexanone	ND	0.673	"		ND					25	
3-Chloropropene	ND	1.28	"		ND					25	
4-Methyl-2-pentanone	ND	0.336	"		ND					25	
Acetone	6.57	0.390	"		6.77				2.92	25	
Acrylonitrile	ND	0.178	"		ND					25	
Benzene	0.603	0.262	"		0.577				4.44	25	
Benzyl chloride	ND	0.425	"		ND					25	
Bromodichloromethane	ND	0.550	"		ND					25	
Bromoform	ND	0.849	"		ND					25	
Bromomethane	ND	0.319	"		ND					25	
Carbon disulfide	ND	0.256	"		ND					25	
Carbon tetrachloride	0.413	0.129	"		0.362				13.3	25	
Chlorobenzene	ND	0.378	"		ND					25	

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

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC31240 - EPA TO15 PREP											
Duplicate (BC31240-DUP1)	*Source sample: 23C0979-04 (IA04_031723)								Prepared: 03/17/2023 Analyzed: 03/18/2023		
Chloroethane	ND	0.217	ug/m³		ND					25	
Chloroform	ND	0.401	"		ND					25	
Chloromethane	1.10	0.170	"		1.15				4.51	25	
cis-1,2-Dichloroethylene	ND	0.163	"		ND					25	
cis-1,3-Dichloropropylene	ND	0.373	"		ND					25	
Cyclohexane	ND	0.283	"		ND					25	
Dibromochloromethane	ND	0.699	"		ND					25	
Dichlorodifluoromethane	1.95	0.406	"		2.15				9.90	25	
Ethyl acetate	0.680	0.592	"		0.769				12.2	25	
Ethyl Benzene	ND	0.357	"		ND					25	
Hexachlorobutadiene	ND	0.876	"		ND					25	
Isopropanol	9.93	0.404	"		9.55				3.94	25	
Methyl Methacrylate	ND	0.336	"		ND					25	
Methyl tert-butyl ether (MTBE)	ND	0.296	"		ND					25	
Methylene chloride	0.970	0.570	"		0.970				0.00	25	
n-Heptane	0.168	0.336	"		ND					25	
n-Hexane	0.260	0.289	"		0.260				0.00	25	
o-Xylene	0.178	0.356	"		0.178				0.00	25	
p- & m- Xylenes	0.535	0.713	"		ND					25	
p-Ethyltoluene	ND	0.404	"		ND					25	
Propylene	ND	0.141	"		ND					25	
Styrene	ND	0.350	"		ND					25	
Tetrachloroethylene	0.278	0.557	"		0.334				18.2	25	
Tetrahydrofuran	ND	0.484	"		ND					25	
Toluene	0.866	0.309	"		0.835				3.64	25	
trans-1,2-Dichloroethylene	ND	0.326	"		ND					25	
trans-1,3-Dichloropropylene	ND	0.373	"		ND					25	
Trichloroethylene	ND	0.110	"		ND					25	
Trichlorofluoromethane (Freon 11)	1.15	0.461	"		1.29				11.3	25	
Vinyl acetate	ND	0.289	"		ND					25	
Vinyl bromide	ND	0.359	"		ND					25	
Vinyl Chloride	ND	0.105	"		ND					25	

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

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC31255 - EPA TO15 PREP											
Blank (BC31255-BLK1)								Prepared & Analyzed: 03/18/2023			
1,1,1,2-Tetrachloroethane	ND	0.687	ug/m³								
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	"								
n-Hexane	ND	0.352	"								

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

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC31255 - EPA TO15 PREP											
Blank (BC31255-BLK1)								Prepared & Analyzed: 03/18/2023			
o-Xylene	ND	0.434	ug/m³								
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	0.128	"								
LCS (BC31255-BS1)								Prepared & Analyzed: 03/18/2023			
1,1,1,2-Tetrachloroethane	9.81		ppbv	10.0		98.1	70-130				
1,1,1-Trichloroethane	10.9		"	10.0		109	70-130				
1,1,2,2-Tetrachloroethane	11.1		"	10.0		111	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.5		"	10.0		105	70-130				
1,1,2-Trichloroethane	8.61		"	10.0		86.1	70-130				
1,1-Dichloroethane	10.3		"	10.0		103	70-130				
1,1-Dichloroethylene	11.4		"	10.0		114	70-130				
1,2,4-Trichlorobenzene	8.06		"	10.0		80.6	70-130				
1,2,4-Trimethylbenzene	8.37		"	10.0		83.7	70-130				
1,2-Dibromoethane	8.85		"	10.0		88.5	70-130				
1,2-Dichlorobenzene	8.12		"	10.0		81.2	70-130				
1,2-Dichloroethane	11.0		"	10.0		110	70-130				
1,2-Dichloropropane	8.50		"	10.0		85.0	70-130				
1,2-Dichlorotetrafluoroethane	9.54		"	10.0		95.4	70-130				
1,3,5-Trimethylbenzene	8.50		"	10.0		85.0	70-130				
1,3-Butadiene	10.7		"	10.0		107	70-130				
1,3-Dichlorobenzene	8.48		"	10.0		84.8	70-130				
1,3-Dichloropropane	8.99		"	10.0		89.9	70-130				
1,4-Dichlorobenzene	8.28		"	10.0		82.8	70-130				
1,4-Dioxane	10.6		"	10.0		106	70-130				
2-Butanone	10.3		"	10.0		103	70-130				
2-Hexanone	7.83		"	10.0		78.3	70-130				
3-Chloropropene	11.6		"	10.0		116	70-130				
4-Methyl-2-pentanone	8.21		"	10.0		82.1	70-130				
Acetone	8.87		"	10.0		88.7	70-130				
Acrylonitrile	12.3		"	10.0		123	70-130				
Benzene	7.83		"	10.0		78.3	70-130				
Benzyl chloride	8.96		"	10.0		89.6	70-130				
Bromodichloromethane	9.20		"	10.0		92.0	70-130				
Bromoform	9.21		"	10.0		92.1	70-130				
Bromomethane	9.83		"	10.0		98.3	70-130				
Carbon disulfide	10.3		"	10.0		103	70-130				
Carbon tetrachloride	9.75		"	10.0		97.5	70-130				
Chlorobenzene	10.4		"	10.0		104	70-130				

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

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC31255 - EPA TO15 PREP											
LCS (BC31255-BS1)							Prepared & Analyzed: 03/18/2023				
Chloroethane	12.7		ppbv	10.0		127	70-130				
Chloroform	10.4		"	10.0		104	70-130				
Chloromethane	10.3		"	10.0		103	70-130				
cis-1,2-Dichloroethylene	11.5		"	10.0		115	70-130				
cis-1,3-Dichloropropylene	9.53		"	10.0		95.3	70-130				
Cyclohexane	9.42		"	10.0		94.2	70-130				
Dibromochloromethane	8.96		"	10.0		89.6	70-130				
Dichlorodifluoromethane	11.1		"	10.0		111	70-130				
Ethyl acetate	10.5		"	10.0		105	70-130				
Ethyl Benzene	10.8		"	10.0		108	70-130				
Hexachlorobutadiene	5.85		"	10.0		58.5	70-130	Low Bias			
Isopropanol	10.2		"	10.0		102	70-130				
Methyl Methacrylate	8.33		"	10.0		83.3	70-130				
Methyl tert-butyl ether (MTBE)	11.5		"	10.0		115	70-130				
Methylene chloride	9.84		"	10.0		98.4	70-130				
n-Heptane	7.65		"	10.0		76.5	70-130				
n-Hexane	9.44		"	10.0		94.4	70-130				
o-Xylene	8.09		"	10.0		80.9	70-130				
p- & m- Xylenes	14.6		"	20.0		72.9	70-130				
p-Ethyltoluene	8.05		"	10.0		80.5	70-130				
Propylene	12.5		"	10.0		125	70-130				
Styrene	7.81		"	10.0		78.1	70-130				
Tetrachloroethylene	9.41		"	10.0		94.1	70-130				
Tetrahydrofuran	11.1		"	10.0		111	70-130				
Toluene	8.32		"	10.0		83.2	70-130				
trans-1,2-Dichloroethylene	11.1		"	10.0		111	70-130				
trans-1,3-Dichloropropylene	9.74		"	10.0		97.4	70-130				
Trichloroethylene	9.47		"	10.0		94.7	70-130				
Trichlorofluoromethane (Freon 11)	10.7		"	10.0		107	70-130				
Vinyl acetate	8.29		"	10.0		82.9	70-130				
Vinyl bromide	12.0		"	10.0		120	70-130				
Vinyl Chloride	8.75		"	10.0		87.5	70-130				

Sample and Data Qualifiers Relating to This Work Order

TO-LCS-L	The result reported for this compound may be biased low due to its behavior in the analysis batch LCS where it recovered less 70% of the expected value.
TO-CCV	The value reported is ESTIMATED for this compound due to its behavior during continuing calibration verification (>30% Difference from initial calibration).
CAL-E	The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration (average Rf>20%)
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.: 23C0979

Samples Received: 03/15/2023 15:28 **By:** Kristina M. Blocker **Logged In:** 03/15/2023 15:28 **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
23C0823-01	EPA TO15 PREP	03/14/2023 11:00	03/14/2023 11:00	Veresia Hiralall
23C0823-02	EPA TO15 PREP	03/14/2023 11:00	03/14/2023 11:00	Veresia Hiralall
23C0823-03	EPA TO15 PREP	03/14/2023 11:00	03/14/2023 11:00	Veresia Hiralall
23C0823-04	EPA TO15 PREP	03/14/2023 11:00	03/14/2023 11:00	Veresia Hiralall
23C0823-05	EPA TO15 PREP	03/14/2023 11:00	03/14/2023 11:00	Veresia Hiralall
23C0823-06	EPA TO15 PREP	03/14/2023 11:00	03/14/2023 11:00	Veresia Hiralall

Preparation Chain-of-Custody

Sample ID	Reason Prep	Prep Start Date	Prep End Date	Prep Analyst
23C0979-01	EPA TO15 PREP	03/17/2023 14:30	03/17/2023 14:30	Adanny Camacho
23C0979-02	EPA TO15 PREP	03/17/2023 14:30	03/17/2023 14:30	Adanny Camacho
23C0979-03	EPA TO15 PREP	03/17/2023 14:30	03/17/2023 14:30	Adanny Camacho
23C0979-04	EPA TO15 PREP	03/17/2023 14:30	03/17/2023 14:30	Adanny Camacho
23C0979-05	EPA TO15 PREP	03/18/2023 10:00	03/18/2023 10:00	Adanny Camacho

Analysis Chain-of-Custody

Sample ID	Reason Analysis	Analysis Start Date	Analysis End Date	Analyst
23C0823-01	VOA, TO15 MASTER	03/14/2023 11:00	03/14/2023 16:32	Veresia Hiralall
23C0823-02	VOA, TO15 MASTER	03/14/2023 11:00	03/14/2023 17:25	Veresia Hiralall
23C0823-03	VOA, TO15 MASTER	03/14/2023 11:00	03/14/2023 18:18	Veresia Hiralall
23C0823-04	VOA, TO15 MASTER	03/14/2023 11:00	03/14/2023 19:11	Veresia Hiralall

Analysis Chain-of-Custody

Sample ID	Reason Analysis	Analysis Start Date	Analysis End Date	Analyst
23C0823-05	VOA, TO15 MASTER	03/14/2023 11:00	03/14/2023 20:04	Veresia Hiralall
23C0823-06	VOA, TO15 MASTER	03/14/2023 11:00	03/14/2023 20:57	Veresia Hiralall

Analysis Chain-of-Custody

Sample ID	Reason Analysis	Analysis Start Date	Analysis End Date	Analyst
23C0979-01	VOA, TO15 MASTER	03/17/2023 14:30	03/17/2023 20:39	Adanny Camacho
23C0979-02	VOA, TO15 MASTER	03/17/2023 14:30	03/17/2023 21:49	Adanny Camacho
23C0979-03	VOA, TO15 MASTER	03/17/2023 14:30	03/17/2023 22:58	Adanny Camacho
23C0979-04	VOA, TO15 MASTER	03/17/2023 14:30	03/18/2023 0:08	Adanny Camacho
23C0979-05	VOA, TO15 MASTER	03/18/2023 10:00	03/18/2023 18:43	Veresia Hiralall

York Analytical Laboratories, Inc.
120 Research Drive, Stratford, CT 06615
132-02 89th Ave Queens, NY 11418
clientservices@yorklab.com
www.yorklab.com

YORK ANALYTICAL LABORATORIES INC

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 written authorization for YORK to proceed with the analyses requested below. Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 2310979

Page 1 of 1

YOUR Information	Report To:	Invoice To:
Company: Langan Engineering	Company: Langan Engineering	Company: Langan Engineering
Address: 360 West 31st Street 8th Fl New York, NY 10001	Address: 360 West 31st Street 8th Fl New York, NY, 10001	Address: 360 West 31st Street 8th Fl New York, NY 10001
Phone.: 212-479-5400	Phone.: 212-479-5400	Phone.: 212-479-5400
Contact: Vinny DePaula	Contact: Vinny DePaula	Contact: Vinny DePaula
E-mail: VDePaula@Langan.com	E-mail: VDepaula@Langan.com	E-mail: VDepaula@Langan.com

YOUR Project Number: 170361301

YOUR Project Name: 514 Union Street

YOUR PO#:

Turn-Around Time

RUSH - Next Day	X
RUSH - Two Day	
RUSH - Three Day	
RUSH - Four Day	
Standard (5-7 Day)	

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below) TJ Malgieri

Air Matrix Codes

- AI - Indoor Ambient Air
- AO - Outdoor Amb. Air
- AE - Vapor Extraction Well/ Process Gas/Effluent
- AS - Soil Vapor/Sub-Slab

Samples From

New York	X
New Jersey	
Connecticut	
Pennsylvania	
Other	

Report / EDD Type (circle selections)

Summary Report	CT RCP	Standard Excel EDD
QA Report	CT RCP DQA/DUE	EQuIS (Standard)
NY ASP A Package	NJDEP Reduced Deliv.	NYSDEC EQuIS
NY ASP B Package	NJDKQP	NJDEP SRP HazSite
Other:		

YORK Reg. Comp.

Compared to the following Regulation(s): (please fill in)

Certified Canisters: Batch ___ Individual X

Please enter the following REQUIRED Field Data

Reporting Units: ug/m^3 ___ ppbv ___ ppmv ___

Sample Identification	Date/Time Sampled	Air Matrix	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Canister ID	Flow Cont. ID	Analysis Requested
IA01-031723	03/17/23 08:25	IA	-30	-11	42992	17899	CVOCs
IA02-031723	03/17/23 08:24	IA	-30	-8	23991	17904	↓
IA03-031723	03/17/23 08:23	IA	-30	-9	19529	17898	SEE EMAIL
IA04-031723	03/17/23 07:52	IA	-30	-5	28845	17903	
AA01-031723	03/17/23 08:26	AA	-30	-8	43055	17900	

Comments: Please cc Datamanagement@Langan.com

Detection Limits Required

≤ 1 ug/m^3 ___ NYSDEC V1 Limits ___
Routine Survey ___ Other ___

Sampling Media

6 Liter Canister	X
Tedlar Bag	

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
Langan	3/17/23 09:35	[signature]	3/17/23 9:33	[signature]	
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Date/Time
				[signature] 14AR	03/17/23 1410

York Analytical Laboratories, Inc.
120 Research Drive, Stratford, CT 06615
132-02 89th Ave Queens, NY 11418
clientservices@yorklab.com
www.yorklab.com

YORK ANALYTICAL LABORATORIES INC

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 written authorization for YORK to proceed with the analyses requested below. Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 2310979

Page 1 of 1

YOUR Information	Report To:	Invoice To:
Company: Langan Engineering	Company: Langan Engineering	Company: Langan Engineering
Address: 360 West 31st Street 8th Fl New York, NY 10001	Address: 360 West 31st Street 8th Fl New York, NY, 10001	Address: 360 West 31st Street 8th Fl New York, NY 10001
Phone.: 212-479-5400	Phone.: 212-479-5400	Phone.: 212-479-5400
Contact: Vinny DePaula	Contact: Vinny DePaula	Contact: Vinny DePaula
E-mail: VDePaula@Langan.com	E-mail: VDepaula@Langan.com	E-mail: VDepaula@Langan.com

YOUR Project Number: 170361307

YOUR Project Name: 514 Union Street

YOUR PO#:

Turn-Around Time

RUSH - Next Day	X
RUSH - Two Day	
RUSH - Three Day	
RUSH - Four Day	
Standard (5-7 Day)	

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

TJ Malgieri

Samples Collected by: (print your name above and sign below)

Air Matrix Codes

- AI - Indoor Ambient Air
- AO - Outdoor Amb. Air
- AE - Vapor Extraction Well/ Process Gas/Effluent
- AS - Soil Vapor/Sub-Slab

Samples From

New York	X
New Jersey	
Connecticut	
Pennsylvania	
Other	

Report / EDD Type (circle selections)

Summary Report	CT RCP	Standard Excel EDD
QA Report	CT RCP DQA/DUE	EQuIS (Standard)
NY ASP A Package	NJDEP Reduced Deliv.	NYSDEC EQuIS
NY ASP B Package	NJDKQP	NJDEP SRP HazSite
Other:		

YORK Reg. Comp.

Compared to the following Regulation(s): (please fill in)

Certified Canisters: Batch ___ Individual X

Please enter the following REQUIRED Field Data

Reporting Units: ug/m^3 ___ ppbv ___ ppmv ___

Sample Identification	Date/Time Sampled	Air Matrix	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Canister ID	Flow Cont. ID	Analysis Requested
IA01-031723	03/17/23 08:25	IA	-30	-11	42992	17899	CVOCs
IA02-031723	03/17/23 08:24	IA	-30	-8	23991	17904	↓
IA03-031723	03/17/23 08:23	IA	-30	-9	19529	17898	SEE EMAIL
IA04-031723	03/17/23 07:52	IA	-30	-5	28845	17903	
AA01-031723	03/17/23 08:26	AA	-30	-8	43055	17900	

Comments: Please cc Datamanagement@Langan.com

Detection Limits Required

≤ 1 ug/m^3 ___ NYSDEC V1 Limits ___
Routine Survey ___ Other ___

Sampling Media

6 Liter Canister	X
Tedlar Bag	

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
Langan	3/17/23 09:33	[signature]	3/17/23 9:33	[signature]	
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Date/Time
				[signature] 14AR	03/17/23 1410

York Analytical Laboratories, Inc. - Stratford

SDG: 23C0823

CLASS: AIR

METHOD: EPA TO-15

DATA PACKAGE COVER PAGE

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307

Client Sample Id:	Lab Sample Id:
CAN 23991 / FC 17904	23C0823-01
CAN 28845 / FC 17903	23C0823-02
CAN 42992 / FC 17899	23C0823-03
CAN 19529 / FC 17898	23C0823-04
CAN 37794 / FC 17897	23C0823-05
CAN 43005 / FC 17900	23C0823-06

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: Cassie L. Mosher

Date: 3/21/2023 Title: Laboratory Manager

DUPLICATES

CAN 23991 / FC 17904

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0823
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Matrix: Air
Laboratory ID: BC31064-DUP1
Batch: BC31064
Lab Source ID: 23C0823-01
Preparation: EPA TO15 PREP
Initial/Final: 400 mL / 400 mL
Source Sample Name: CAN 23991 / FC 17904
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/m³)	C	DUPLICATE CONCENTRATION (ug/m³)	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	ND		ND				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	ND		ND				EPA TO-15
Acrylonitrile	25	ND		ND				EPA TO-15
Benzene	25	ND		ND				EPA TO-15
Benzyl chloride	25	ND		ND				EPA TO-15

DUPLICATES

CAN 23991 / FC 17904

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0823
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Matrix: Air
Laboratory ID: BC31064-DUP1
Batch: BC31064
Lab Source ID: 23C0823-01
Preparation: EPA TO15 PREP
Initial/Final: 400 mL / 400 mL
Source Sample Name: CAN 23991 / FC 17904
% 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	ND		ND				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	ND		ND				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	ND		ND				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	ND		ND				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	ND		ND				EPA TO-15
Methyl tert-butyl ether (MTBE)	25	ND		ND				EPA TO-15
Methylene chloride	25	ND		ND				EPA TO-15
n-Heptane	25	ND		ND				EPA TO-15
n-Hexane	25	ND		ND				EPA TO-15
o-Xylene	25	ND		ND				EPA TO-15
p- & m- Xylenes	25	ND		ND				EPA TO-15

DUPLICATES

CAN 23991 / FC 17904

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0823
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Matrix: Air
Laboratory ID: BC31064-DUP1
Batch: BC31064
Lab Source ID: 23C0823-01
Preparation: EPA TO15 PREP
Initial/Final: 400 mL / 400 mL
Source Sample Name: CAN 23991 / FC 17904
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/m³)	C	DUPLICATE CONCENTRATION (ug/m³)	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	ND		ND				EPA TO-15
Tetrahydrofuran	25	ND		ND				EPA TO-15
Toluene	25	ND		ND				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	ND		ND				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

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297960.D
Acq On : 14 Mar 2023 3:39 pm
Operator : VH
Sample : BC31064-DUP1
Misc : QBTO1031423A 23C0823-01 1X/400ML SN:23991
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 16:33:29 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

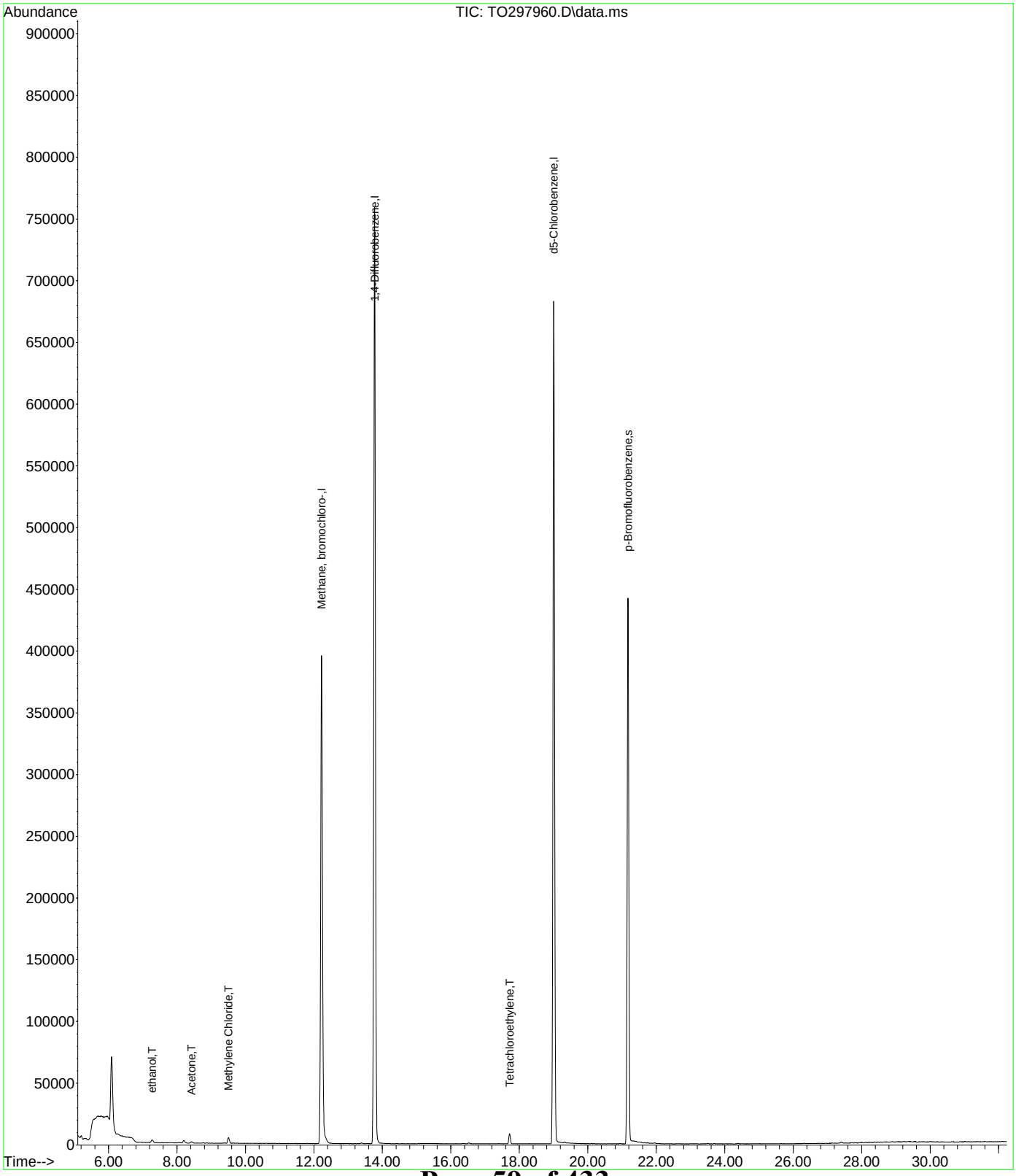
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.220	49	320726	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	1086558	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.007	117	716207	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	245614	7.42	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 74.20%			
Target Compounds						Qvalue
10) ethanol	7.270	45	2150	0.25	ppbv #	75
15) Acetone	8.424	43	2940	0.06	ppbv	90
19) Methylene Chloride	9.504	49	5303	0.16	ppbv	95
51) Tetrachloroethylene	17.716	166	4216	0.06	ppbv	98

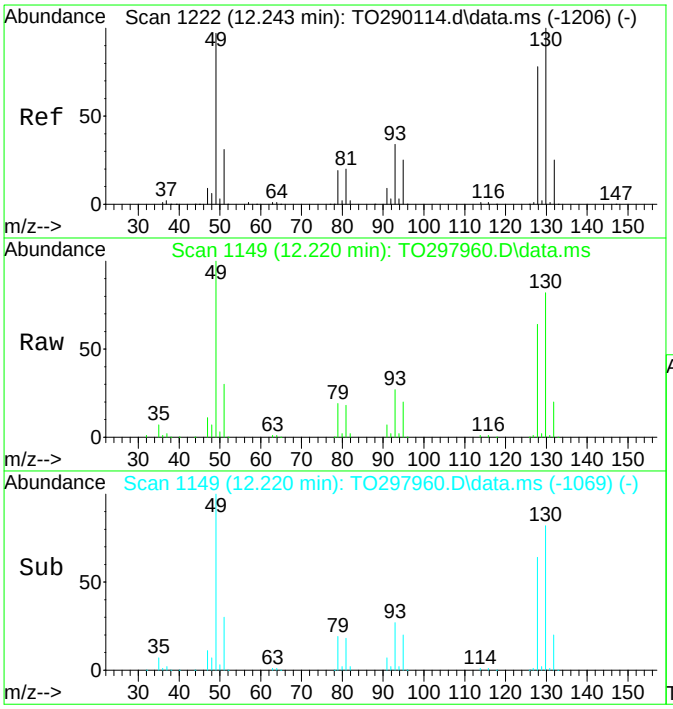
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297960.D
Acq On : 14 Mar 2023 3:39 pm
Operator : VH
Sample : BC31064-DUP1
Misc : QBTO1031423A 23C0823-01 1X/400ML SN:23991
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 16:33:29 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

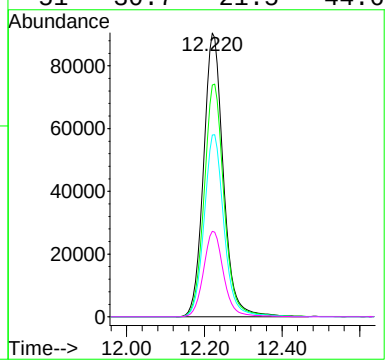


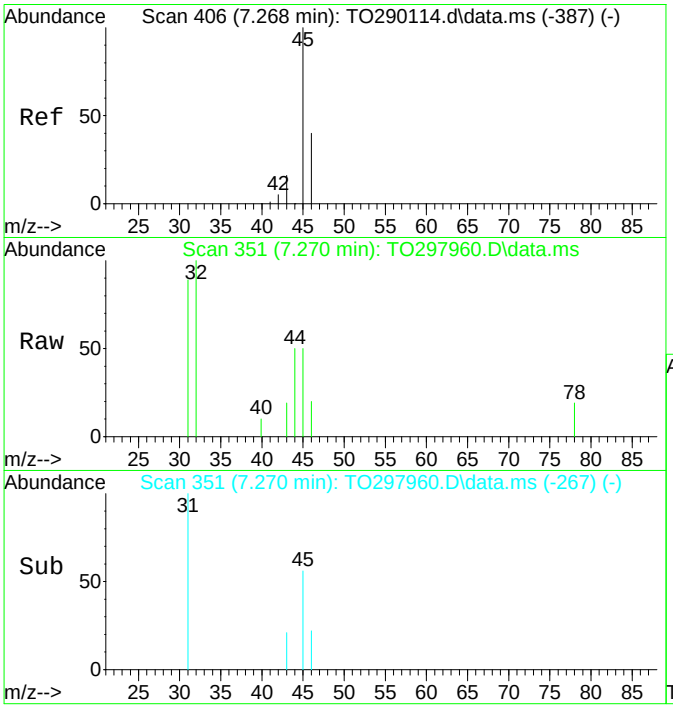


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.220 min Scan# 1149
Delta R.T. -0.004 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion: 49 Resp: 320726

Ion	Ratio	Lower	Upper
49	100		
130	82.5	44.5	92.3
128	64.2	34.7	72.1
51	30.7	21.5	44.6

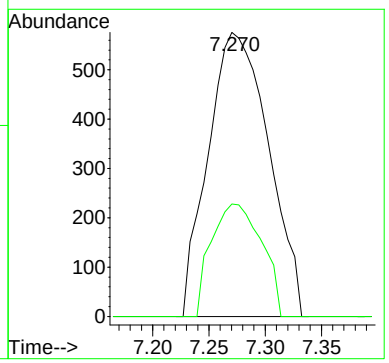


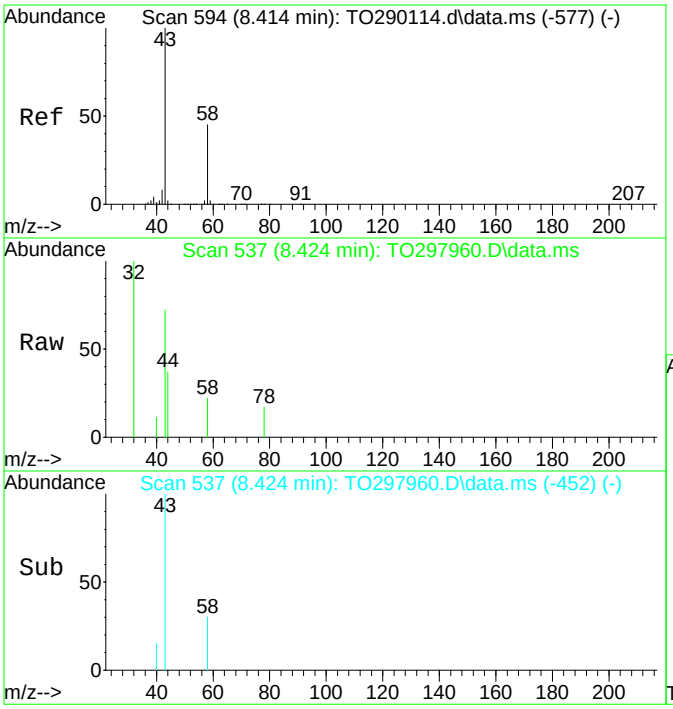


#10
ethanol
Concen: 0.25 ppbv
RT: 7.270 min Scan# 351
Delta R.T. 0.021 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion: 45 Resp: 2150

Ion	Ratio	Lower	Upper
45	100		
46	33.0	40.0	60.0#

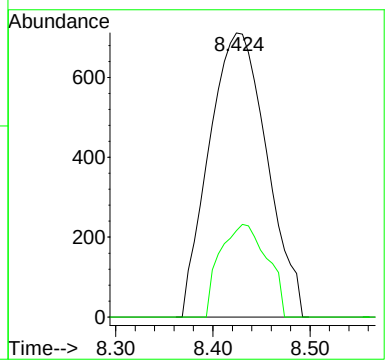


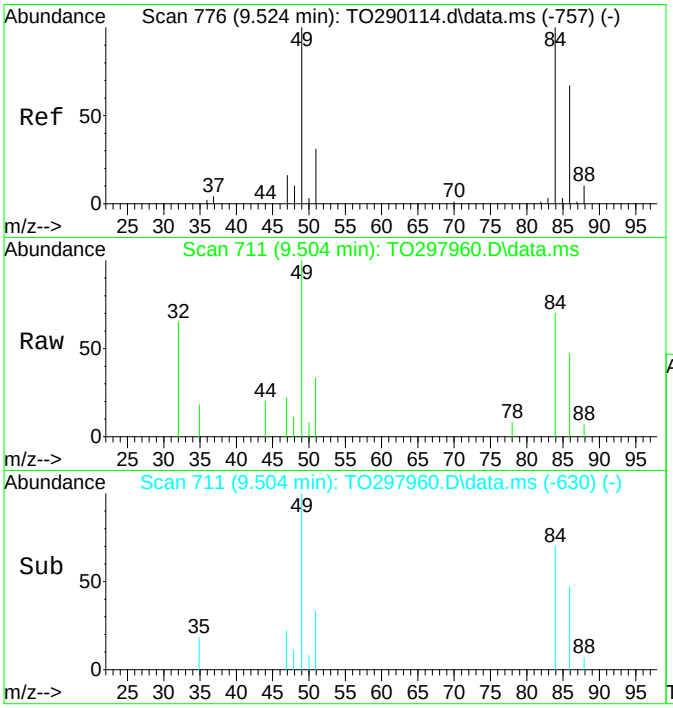


#15
Acetone
Concen: 0.06 ppbv
RT: 8.424 min Scan# 537
Delta R.T. 0.027 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion: 43 Resp: 2940

Ion	Ratio	Lower	Upper
43	100		
58	26.5	20.7	42.9

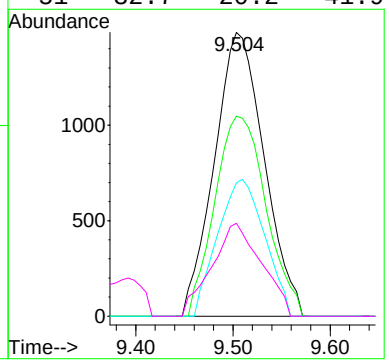


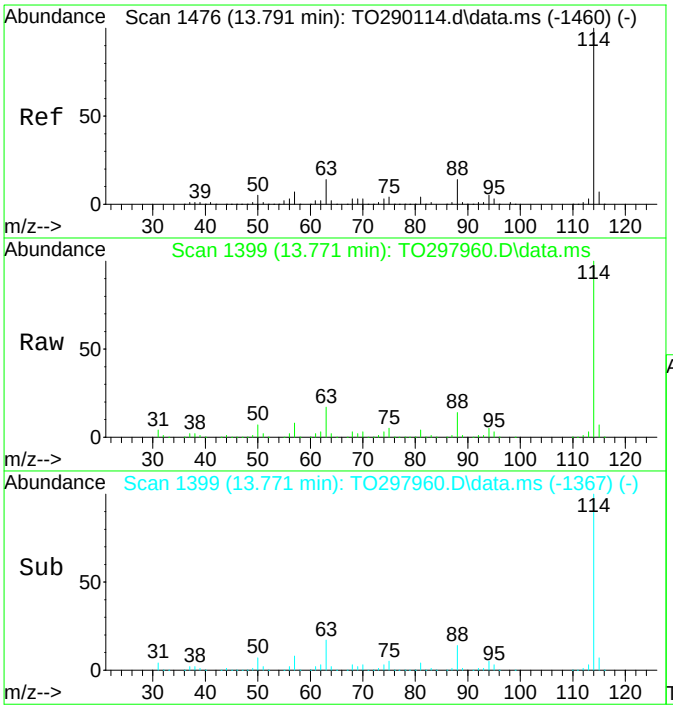


#19
Methylene Chloride
Concen: 0.16 ppbv
RT: 9.504 min Scan# 711
Delta R.T. 0.003 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion: 49 Resp: 5303

Ion	Ratio	Lower	Upper
49	100		
84	72.5	50.1	104.0
86	45.5	32.2	66.8
51	32.7	20.2	41.9

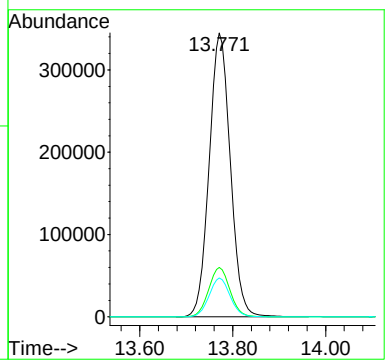


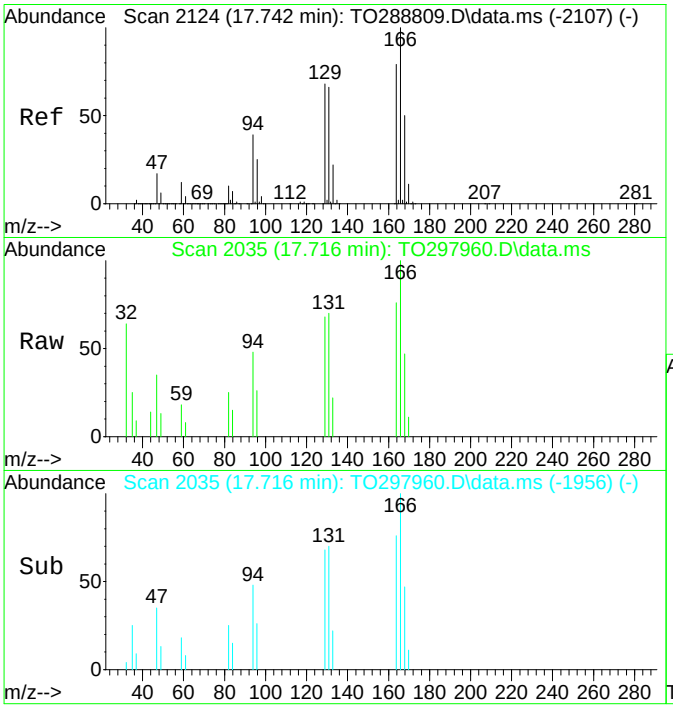


#38
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.771 min Scan# 1399
Delta R.T. -0.004 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion:114 Resp: 1086558

Ion	Ratio	Lower	Upper
114	100		
63	17.6	14.0	29.2
88	13.6	11.2	23.2

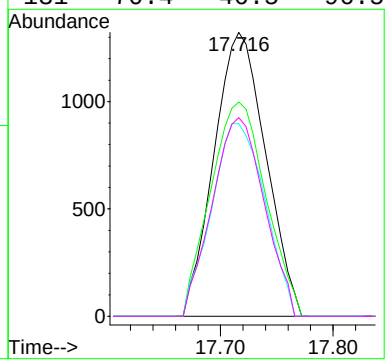


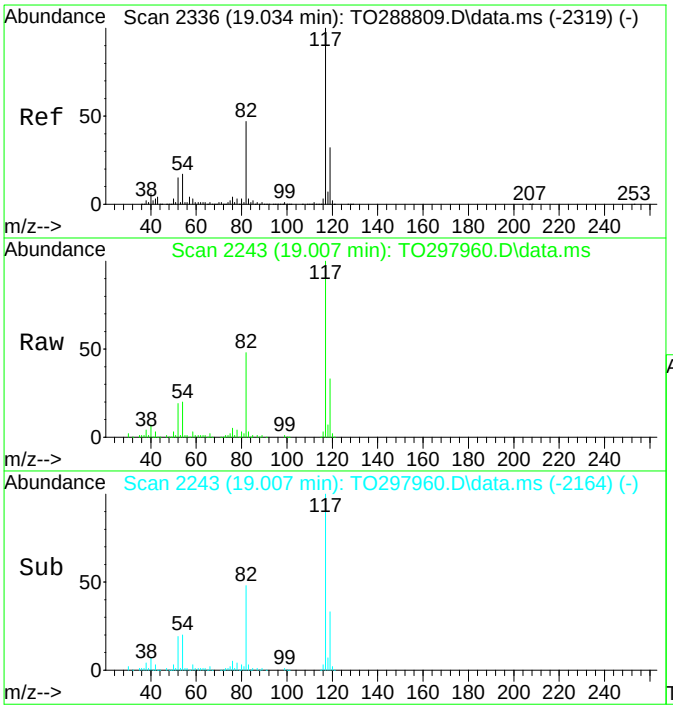


#51
Tetrachloroethylene
Concen: 0.06 ppbv
RT: 17.716 min Scan# 2035
Delta R.T. -0.010 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion:166 Resp: 4216

Ion	Ratio	Lower	Upper
166	100		
164	81.0	51.4	106.8
129	70.2	47.0	97.6
131	70.4	46.5	96.5

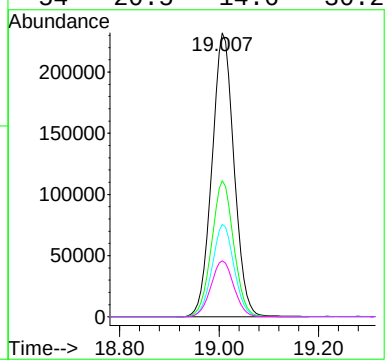


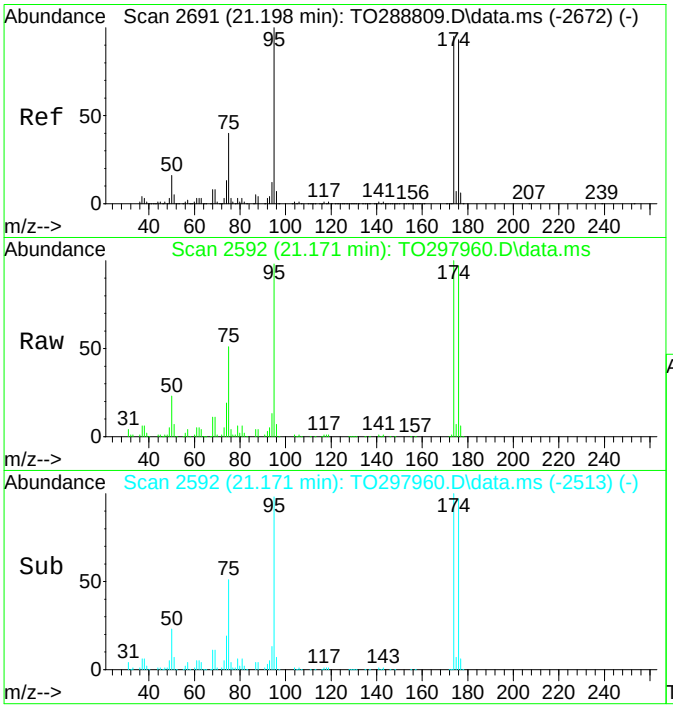


#54
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.007 min Scan# 2243
Delta R.T. -0.010 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion:117 Resp: 716207

Ion	Ratio	Lower	Upper
117	100		
82	48.0	38.7	80.5
119	32.5	20.3	42.3
54	20.5	14.6	30.2

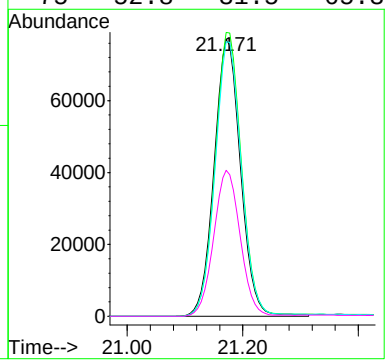




#65
p-Bromofluorobenzene
Concen: 7.42 ppbv
RT: 21.171 min Scan# 2592
Delta R.T. -0.010 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion: 95 Resp: 245614

Ion	Ratio	Lower	Upper
95	100		
174	102.3	50.0	103.8
176	98.5	48.2	100.2
75	52.8	31.5	65.3



FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Matrix:	Air		
Batch:	BC31064	Laboratory ID:	BC31064-BS1
Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	10.0	9.49	94.9	70 - 130
1,1,1-Trichloroethane	10.0	11.2	112	70 - 130
1,1,2,2-Tetrachloroethane	10.0	11.4	114	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.0	11.1	111	70 - 130
1,1,2-Trichloroethane	10.0	8.26	82.6	70 - 130
1,1-Dichloroethane	10.0	10.7	107	70 - 130
1,1-Dichloroethylene	10.0	11.8	118	70 - 130
1,2,4-Trichlorobenzene	10.0	7.92	79.2	70 - 130
1,2,4-Trimethylbenzene	10.0	8.74	87.4	70 - 130
1,2-Dibromoethane	10.0	8.61	86.1	70 - 130
1,2-Dichlorobenzene	10.0	8.46	84.6	70 - 130
1,2-Dichloroethane	10.0	10.9	109	70 - 130
1,2-Dichloropropane	10.0	7.91	79.1	70 - 130
1,2-Dichlorotetrafluoroethane	10.0	10.1	101	70 - 130
1,3,5-Trimethylbenzene	10.0	9.03	90.3	70 - 130
1,3-Butadiene	10.0	10.2	102	70 - 130
1,3-Dichlorobenzene	10.0	8.76	87.6	70 - 130
1,3-Dichloropropane	10.0	8.60	86.0	70 - 130
1,4-Dichlorobenzene	10.0	8.44	84.4	70 - 130
1,4-Dioxane	10.0	9.67	96.7	70 - 130
2-Butanone	10.0	11.4	114	70 - 130
2-Hexanone	10.0	7.64	76.4	70 - 130
3-Chloropropene	10.0	11.9	119	70 - 130
4-Methyl-2-pentanone	10.0	8.11	81.1	70 - 130
Acetone	10.0	9.16	91.6	70 - 130
Acrylonitrile	10.0	12.2	122	70 - 130
Benzene	10.0	8.62	86.2	70 - 130
Benzyl chloride	10.0	8.34	83.4	70 - 130
Bromodichloromethane	10.0	8.70	87.0	70 - 130
Bromoform	10.0	8.93	89.3	70 - 130

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Matrix:	Air		
Batch:	BC31064	Laboratory ID:	BC31064-BS1
Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
Bromomethane	10.0	9.44	94.4	70 - 130
Carbon disulfide	10.0	11.2	112	70 - 130
Carbon tetrachloride	10.0	9.93	99.3	70 - 130
Chlorobenzene	10.0	10.7	107	70 - 130
Chloroethane	10.0	11.6	116	70 - 130
Chloroform	10.0	11.1	111	70 - 130
Chloromethane	10.0	9.54	95.4	70 - 130
cis-1,2-Dichloroethylene	10.0	11.9	119	70 - 130
cis-1,3-Dichloropropylene	10.0	9.06	90.6	70 - 130
Cyclohexane	10.0	9.94	99.4	70 - 130
Dibromochloromethane	10.0	8.64	86.4	70 - 130
Dichlorodifluoromethane	10.0	11.7	117	70 - 130
Ethyl acetate	10.0	11.6	116	70 - 130
Ethyl Benzene	10.0	11.6	116	70 - 130
Hexachlorobutadiene	10.0	5.67	56.7 *	70 - 130
Isopropanol	10.0	10.8	108	70 - 130
Methyl Methacrylate	10.0	7.70	77.0	70 - 130
Methyl tert-butyl ether (MTBE)	10.0	11.8	118	70 - 130
Methylene chloride	10.0	10.1	101	70 - 130
n-Heptane	10.0	8.20	82.0	70 - 130
n-Hexane	10.0	9.93	99.3	70 - 130
o-Xylene	10.0	8.41	84.1	70 - 130
p- & m- Xylenes	20.0	16.2	81.0	70 - 130
p-Ethyltoluene	10.0	8.65	86.5	70 - 130
Propylene	10.0	12.3	123	70 - 130
Styrene	10.0	8.10	81.0	70 - 130
Tetrachloroethylene	10.0	8.91	89.1	70 - 130
Tetrahydrofuran	10.0	11.9	119	70 - 130
Toluene	10.0	8.52	85.2	70 - 130
trans-1,2-Dichloroethylene	10.0	11.3	113	70 - 130

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Matrix:	Air		
Batch:	BC31064	Laboratory ID:	BC31064-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	8.97	89.7	70 - 130
Trichloroethylene	10.0	8.94	89.4	70 - 130
Trichlorofluoromethane (Freon 11)	10.0	10.9	109	70 - 130
Vinyl acetate	10.0	8.60	86.0	70 - 130
Vinyl bromide	10.0	12.1	121	70 - 130
Vinyl Chloride	10.0	8.47	84.7	70 - 130

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

* Values outside of QC limits

FORM IV

PREPARATION BATCH SUMMARY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford SDG: 23C0823

Client: Langan Engineering & Environmental Services (NYC) Project: 170361307

Batch: BC31064 Batch Matrix: Air Preparation: EPA TO15 PREP

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
CAN 23991 / FC 17904	23C0823-01	TO297961.D	03/14/23 11:00	
CAN 28845 / FC 17903	23C0823-02	TO297962.D	03/14/23 11:00	
CAN 42992 / FC 17899	23C0823-03	TO297963.D	03/14/23 11:00	
CAN 19529 / FC 17898	23C0823-04	TO297964.D	03/14/23 11:00	
CAN 37794 / FC 17897	23C0823-05	TO297965.D	03/14/23 11:00	
CAN 43005 / FC 17900	23C0823-06	TO297966.D	03/14/23 11:00	
Blank	BC31064-BLK1	TO297959.D	03/14/23 11:00	
LCS	BC31064-BS1	TO297958.D	03/14/23 11:00	
CAN 23991 / FC 17904	BC31064-DUP1	TO297960.D	03/14/23 11:00	

FORM I

METHOD BLANK DATA SHEET

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31064-BLK1	File ID:	TO297959.D
Prepared:	03/14/23 11:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/14/23 14:17	Instrument:	5975C		
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018

CAS NO.	COMPOUND	CONC. (ug/m³)	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. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31064-BLK1	File ID:	TO297959.D
Prepared:	03/14/23 11:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/14/23 14:17	Instrument:	5975C		
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018

CAS NO.	COMPOUND	CONC. (ug/m³)	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. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31064-BLK1	File ID:	TO297959.D
Prepared:	03/14/23 11:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/14/23 14:17	Instrument:	5975C		
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018

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	0.128	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	346955	12.22	311361	12.22	
ISTD: 1,4-Difluorobenzene	1159167	13.771	1038593	13.771	
ISTD: d5-Chlorobenzene	779035	19.007	967186	19.007	

FORM V MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Lab File ID:	TO297956.D	Injection Date:	03/14/23
Instrument ID:	5975C	Injection Time:	11:47
Sequence:	S3C1544	Lab Sample ID:	S3C1544-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	22.3	PASS
75	30 - 66% of 95	51.5	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.96	PASS
173	Less than 2% of 174	0.629	PASS
174	50 - 120% of 95	96.9	PASS
175	4 - 9% of 174	7.42	PASS
176	93 - 101% of 174	97.2	PASS
177	5 - 9% of 176	6.76	PASS

FORM V

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Sequence:	S3C1544	Instrument:	5975C
		Calibration:	SB30018

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	S3C1544-TUN1	TO297956.D	03/14/23 11:47
Calibration Check	S3C1544-CCV1	TO297957.D	03/14/23 12:36
LCS	BC31064-BS1	TO297958.D	03/14/23 13:24
Blank	BC31064-BLK1	TO297959.D	03/14/23 14:17
CAN 23991 / FC 17904	BC31064-DUP1	TO297960.D	03/14/23 15:39
CAN 23991 / FC 17904	23C0823-01	TO297961.D	03/14/23 16:32
CAN 28845 / FC 17903	23C0823-02	TO297962.D	03/14/23 17:25
CAN 42992 / FC 17899	23C0823-03	TO297963.D	03/14/23 18:18
CAN 19529 / FC 17898	23C0823-04	TO297964.D	03/14/23 19:11
CAN 37794 / FC 17897	23C0823-05	TO297965.D	03/14/23 20:04
CAN 43005 / FC 17900	23C0823-06	TO297966.D	03/14/23 20:57

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0823
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Sequence: S3C1544
Instrument: 5975C
Calibration: SB30018

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S3C1544-CCV1)			Lab File ID: TO297957.D			Analyzed: 03/14/23 12:36			
Bromochloromethane	311361	12.22				60 - 140		+/-0.33	
ISTD: 1,4-Difluorobenzene	1038593	13.771				60 - 140		+/-0.33	
ISTD: d5-Chlorobenzene	967186	19.007				60 - 140		+/-0.33	
LCS (BC31064-BS1)			Lab File ID: TO297958.D			Analyzed: 03/14/23 13:24			
Bromochloromethane	329756	12.22	311361	12.22	106	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	1124144	13.771	1038593	13.771	108	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	1030958	19.006	967186	19.007	107	60 - 140	-0.0010	+/-0.33	
Blank (BC31064-BLK1)			Lab File ID: TO297959.D			Analyzed: 03/14/23 14:17			
Bromochloromethane	346955	12.22	311361	12.22	111	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	1159167	13.771	1038593	13.771	112	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	779035	19.007	967186	19.007	81	60 - 140	0.0000	+/-0.33	
Duplicate (BC31064-DUP1)			Lab File ID: TO297960.D			Analyzed: 03/14/23 15:39			
Bromochloromethane	320726	12.22	311361	12.22	103	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	1086558	13.771	1038593	13.771	105	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	716207	19.007	967186	19.007	74	60 - 140	0.0000	+/-0.33	
CAN 23991 / FC 17904 (23C0823-01)			Lab File ID: TO297961.D			Analyzed: 03/14/23 16:32			
Bromochloromethane	288818	12.22	311361	12.22	93	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	968108	13.771	1038593	13.771	93	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	654123	19.006	967186	19.007	68	60 - 140	-0.0010	+/-0.33	
CAN 28845 / FC 17903 (23C0823-02)			Lab File ID: TO297962.D			Analyzed: 03/14/23 17:25			
Bromochloromethane	275709	12.22	311361	12.22	89	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	879918	13.771	1038593	13.771	85	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	640861	19.007	967186	19.007	66	60 - 140	0.0000	+/-0.33	
CAN 42992 / FC 17899 (23C0823-03)			Lab File ID: TO297963.D			Analyzed: 03/14/23 18:18			
Bromochloromethane	270521	12.22	311361	12.22	87	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	872518	13.771	1038593	13.771	84	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	622531	19.007	967186	19.007	64	60 - 140	0.0000	+/-0.33	
CAN 19529 / FC 17898 (23C0823-04)			Lab File ID: TO297964.D			Analyzed: 03/14/23 19:11			
Bromochloromethane	263574	12.226	311361	12.22	85	60 - 140	0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	834803	13.771	1038593	13.771	80	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	589556	19.006	967186	19.007	61	60 - 140	-0.0010	+/-0.33	
CAN 37794 / FC 17897 (23C0823-05)			Lab File ID: TO297965.D			Analyzed: 03/14/23 20:04			
Bromochloromethane	259852	12.227	311361	12.22	83	60 - 140	0.0070	+/-0.33	
ISTD: 1,4-Difluorobenzene	825074	13.771	1038593	13.771	79	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	609005	19.006	967186	19.007	63	60 - 140	-0.0010	+/-0.33	

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Sequence:	S3C1544	Instrument:	5975C
		Calibration:	SB30018

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
CAN 43005 / FC 17900 (23C0823-06)			Lab File ID: TO297966.D			Analyzed: 03/14/23 20:57			
Bromochloromethane	273673	12.226	311361	12.22	88	60 - 140	0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	888989	13.771	1038593	13.771	86	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	630768	19.006	967186	19.007	65	60 - 140	-0.0010	+/-0.33	

HOLDING TIME SUMMARY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford SDG: 23C0823

Client: Langan Engineering & Environmental Services (NYC) Project: 170361307

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
CAN 23991 / FC 17904	03/14/23 09:00	03/15/23 15:28	03/14/23 11:00	0.08	30.00	03/14/23 16:32	0.31	30.00	
CAN 28845 / FC 17903	03/14/23 09:00	03/15/23 15:28	03/14/23 11:00	0.08	30.00	03/14/23 17:25	0.35	30.00	
CAN 42992 / FC 17899	03/14/23 09:00	03/15/23 15:28	03/14/23 11:00	0.08	30.00	03/14/23 18:18	0.39	30.00	
CAN 19529 / FC 17898	03/14/23 09:00	03/15/23 15:28	03/14/23 11:00	0.08	30.00	03/14/23 19:11	0.42	30.00	
CAN 37794 / FC 17897	03/14/23 09:00	03/15/23 15:28	03/14/23 11:00	0.08	30.00	03/14/23 20:04	0.46	30.00	
CAN 43005 / FC 17900	03/14/23 09:00	03/15/23 15:28	03/14/23 11:00	0.08	30.00	03/14/23 20:57	0.50	30.00	

METHOD DETECTION AND REPORTING LIMITS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford **SDG:** 23C0823

Client: Langan Engineering & Environmental Services (NYC) **Project:** 170361307

Matrix: Air **Instrument:** 5975C

Analyte	LOD	LOQ	Units
1,1,1,2-Tetrachloroethane	0.41	0.7	ug/m³
1,1,1-Trichloroethane	0.47	0.55	ug/m³
1,1,2,2-Tetrachloroethane	0.34	0.7	ug/m³
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.75	0.78	ug/m³
1,1,2-Trichloroethane	0.24	0.55	ug/m³
1,1-Dichloroethane	0.34	0.41	ug/m³
1,1-Dichloroethylene	0.1	0.2	ug/m³
1,2,4-Trichlorobenzene	0.6	0.75	ug/m³
1,2,4-Trimethylbenzene	0.3	0.5	ug/m³
1,2-Dibromoethane	0.31	0.78	ug/m³
1,2-Dichlorobenzene	0.4	0.61	ug/m³
1,2-Dichloroethane	0.26	0.41	ug/m³
1,2-Dichloropropane	0.24	0.47	ug/m³
1,2-Dichlorotetrafluoroethane	0.7	0.71	ug/m³
1,3,5-Trimethylbenzene	0.27	0.5	ug/m³
1,3-Butadiene	0.086	0.68	ug/m³
1,3-Dichlorobenzene	0.41	0.61	ug/m³
1,3-Dichloropropane	0.15	0.47	ug/m³
1,4-Dichlorobenzene	0.37	0.61	ug/m³
1,4-Dioxane	0.3	0.73	ug/m³
2-Butanone	0.18	0.3	ug/m³
2-Hexanone	0.17	0.83	ug/m³
3-Chloropropene	0.24	1.6	ug/m³
4-Methyl-2-pentanone	0.35	0.42	ug/m³
Acetone	0.24	0.48	ug/m³
Acrylonitrile	0.17	0.22	ug/m³
Benzene	0.32	0.32	ug/m³
Benzyl chloride	0.28	0.53	ug/m³
Bromodichloromethane	0.23	0.68	ug/m³
Bromoform	0.52	1.1	ug/m³
Bromomethane	0.39	0.39	ug/m³
Carbon disulfide	0.3	0.32	ug/m³
Carbon tetrachloride	0.16	0.16	ug/m³
Chlorobenzene	0.26	0.47	ug/m³
Chloroethane	0.17	0.27	ug/m³
Chloroform	0.46	0.5	ug/m³

METHOD DETECTION AND REPORTING LIMITS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford **SDG:** 23C0823

Client: Langan Engineering & Environmental Services (NYC) **Project:** 170361307

Matrix: Air **Instrument:** 5975C

Analyte	LOD	LOQ	Units
Chloromethane	0.1	0.21	ug/m³
cis-1,2-Dichloroethylene	0.1	0.2	ug/m³
cis-1,3-Dichloropropylene	0.19	0.46	ug/m³
Cyclohexane	0.3	0.35	ug/m³
Dibromochloromethane	0.42	0.87	ug/m³
Dichlorodifluoromethane	0.45	0.5	ug/m³
Ethyl acetate	0.25	0.73	ug/m³
Ethyl Benzene	0.3	0.44	ug/m³
Hexachlorobutadiene	0.92	1.1	ug/m³
Isopropanol	0.24	0.5	ug/m³
Methyl Methacrylate	0.13	0.42	ug/m³
Methyl tert-butyl ether (MTBE)	0.36	0.37	ug/m³
Methylene chloride	0.25	0.71	ug/m³
n-Heptane	0.18	0.42	ug/m³
n-Hexane	0.29	0.36	ug/m³
o-Xylene	0.11	0.44	ug/m³
p- & m- Xylenes	0.63	0.88	ug/m³
p-Ethyltoluene	0.38	0.5	ug/m³
Propylene	0.074	0.18	ug/m³
Styrene	0.26	0.43	ug/m³
Tetrachloroethylene	0.34	0.69	ug/m³
Tetrahydrofuran	0.16	0.6	ug/m³
Toluene	0.23	0.38	ug/m³
trans-1,2-Dichloroethylene	0.32	0.4	ug/m³
trans-1,3-Dichloropropylene	0.42	0.46	ug/m³
Trichloroethylene	0.14	0.14	ug/m³
Trichlorofluoromethane (Freon 11)	0.43	0.57	ug/m³
Vinyl acetate	0.22	0.36	ug/m³
Vinyl bromide	0.43	0.44	ug/m³
Vinyl Chloride	0.11	0.13	ug/m³

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

CAN 23991 / FC 17904

Laboratory:	York Analytical Laboratories, Inc. - Stratford		SDG:	23C0823	
Client:	Langan Engineering & Environmental Services (NYC)		Project:	170361307	
Matrix:	Air	Laboratory ID:	23C0823-01	File ID:	TO297961.D
Sampled:	03/14/23 09:00	Prepared:	03/14/23 11:00	Analyzed:	03/14/23 16:32
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018	Instrument:	5975C

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	0.687	U
71-55-6	1,1,1-Trichloroethane	1	0.546	U
79-34-5	1,1,2,2-Tetrachloroethane	1	0.687	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1	0.766	U
79-00-5	1,1,2-Trichloroethane	1	0.546	U
75-34-3	1,1-Dichloroethane	1	0.405	U
75-35-4	1,1-Dichloroethylene	1	0.198	U
120-82-1	1,2,4-Trichlorobenzene	1	0.742	U
95-63-6	1,2,4-Trimethylbenzene	1	0.492	U
106-93-4	1,2-Dibromoethane	1	0.768	U
95-50-1	1,2-Dichlorobenzene	1	0.601	U
107-06-2	1,2-Dichloroethane	1	0.405	U
78-87-5	1,2-Dichloropropane	1	0.462	U
76-14-2	1,2-Dichlorotetrafluoroethane	1	0.699	U
108-67-8	1,3,5-Trimethylbenzene	1	0.492	U
106-99-0	1,3-Butadiene	1	0.664	U
541-73-1	1,3-Dichlorobenzene	1	0.601	U
142-28-9	1,3-Dichloropropane	1	0.462	U
106-46-7	1,4-Dichlorobenzene	1	0.601	U
123-91-1	1,4-Dioxane	1	0.721	U
78-93-3	2-Butanone	1	0.295	U
591-78-6	2-Hexanone	1	0.819	U
107-05-1	3-Chloropropene	1	1.57	U
108-10-1	4-Methyl-2-pentanone	1	0.410	U
67-64-1	Acetone	1	0.475	U
107-13-1	Acrylonitrile	1	0.217	U
71-43-2	Benzene	1	0.319	U
100-44-7	Benzyl chloride	1	0.518	U
75-27-4	Bromodichloromethane	1	0.670	U
75-25-2	Bromoform	1	1.03	U
74-83-9	Bromomethane	1	0.388	U
75-15-0	Carbon disulfide	1	0.311	U
56-23-5	Carbon tetrachloride	1	0.157	U
108-90-7	Chlorobenzene	1	0.460	U
75-00-3	Chloroethane	1	0.264	U
67-66-3	Chloroform	1	0.488	U
74-87-3	Chloromethane	1	0.207	U
156-59-2	cis-1,2-Dichloroethylene	1	0.198	U
10061-01-5	cis-1,3-Dichloropropylene	1	0.454	U
110-82-7	Cyclohexane	1	0.344	U

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

CAN 23991 / FC 17904

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	23C0823-01	File ID:	TO297961.D
Sampled:	03/14/23 09:00	Prepared:	03/14/23 11:00	Analyzed:	03/14/23 16:32
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018
Instrument:	5975C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
124-48-1	Dibromochloromethane	1	0.852	U
75-71-8	Dichlorodifluoromethane	1	0.495	U
141-78-6	Ethyl acetate	1	0.721	U
100-41-4	Ethyl Benzene	1	0.434	U
87-68-3	Hexachlorobutadiene	1	1.07	U
67-63-0	Isopropanol	1	0.492	U
80-62-6	Methyl Methacrylate	1	0.409	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.361	U
75-09-2	Methylene chloride	1	0.695	U
142-82-5	n-Heptane	1	0.410	U
110-54-3	n-Hexane	1	0.352	U
95-47-6	o-Xylene	1	0.434	U
179601-23-1	p- & m- Xylenes	1	0.868	U
622-96-8	p-Ethyltoluene	1	0.492	U
115-07-1	Propylene	1	0.172	U
100-42-5	Styrene	1	0.426	U
127-18-4	Tetrachloroethylene	1	0.678	U
109-99-9	Tetrahydrofuran	1	0.590	U
108-88-3	Toluene	1	0.377	U
156-60-5	trans-1,2-Dichloroethylene	1	0.396	U
10061-02-6	trans-1,3-Dichloropropylene	1	0.454	U
79-01-6	Trichloroethylene	1	0.134	U
75-69-4	Trichlorofluoromethane (Freon 11)	1	0.562	U
108-05-4	Vinyl acetate	1	0.352	U
593-60-2	Vinyl bromide	1	0.437	U
75-01-4	Vinyl Chloride	1	0.128	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	288818	12.22	311361	12.22	
ISTD: 1,4-Difluorobenzene	968108	13.771	1038593	13.771	
ISTD: d5-Chlorobenzene	654123	19.006	967186	19.007	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297961.D
Acq On : 14 Mar 2023 4:32 pm
Operator : VH
Sample : 23C0823-01
Misc : QBTO1031123A 1X/400ML SN:23991
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 15 15:54:33 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

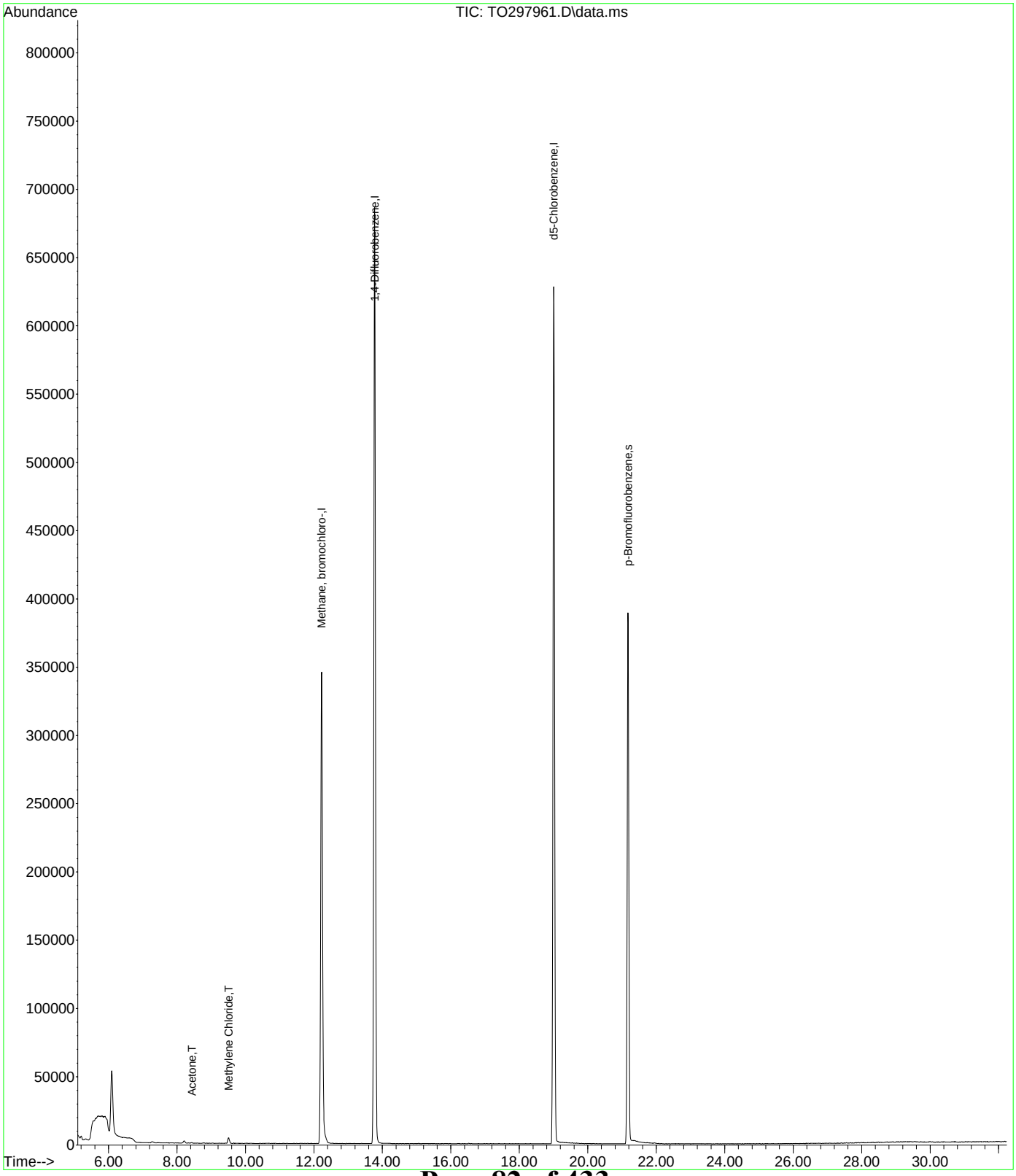
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Methane, bromochloro-	12.220	49	288818	10.00 ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	968108	10.00 ppbv	0.00
54) d5-Chlorobenzene	19.006	117	654123	10.00 ppbv	-0.01
System Monitoring Compounds					
65) p-Bromofluorobenzene	21.171	95	214746	7.10 ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 71.00%		
Target Compounds					Qvalue
15) Acetone	8.436	43	863	0.02 ppbv #	43
19) Methylene Chloride	9.510	49	4835	0.16 ppbv	91

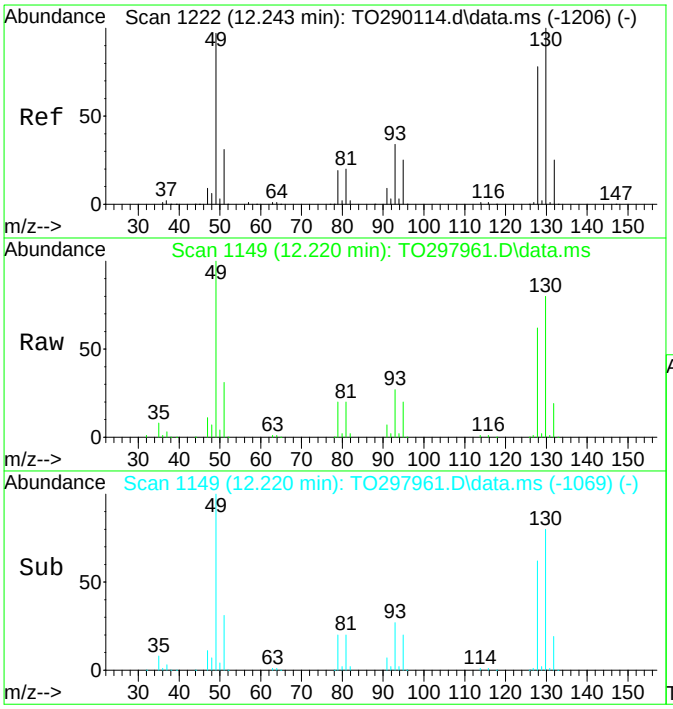
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297961.D
Acq On : 14 Mar 2023 4:32 pm
Operator : VH
Sample : 23C0823-01
Misc : QBTO1031123A 1X/400ML SN:23991
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 15 15:54:33 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

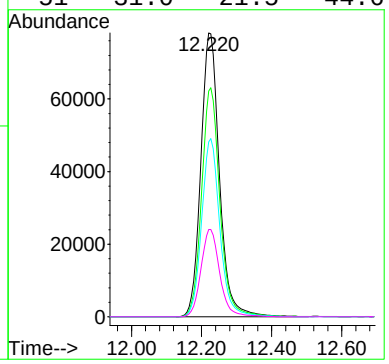


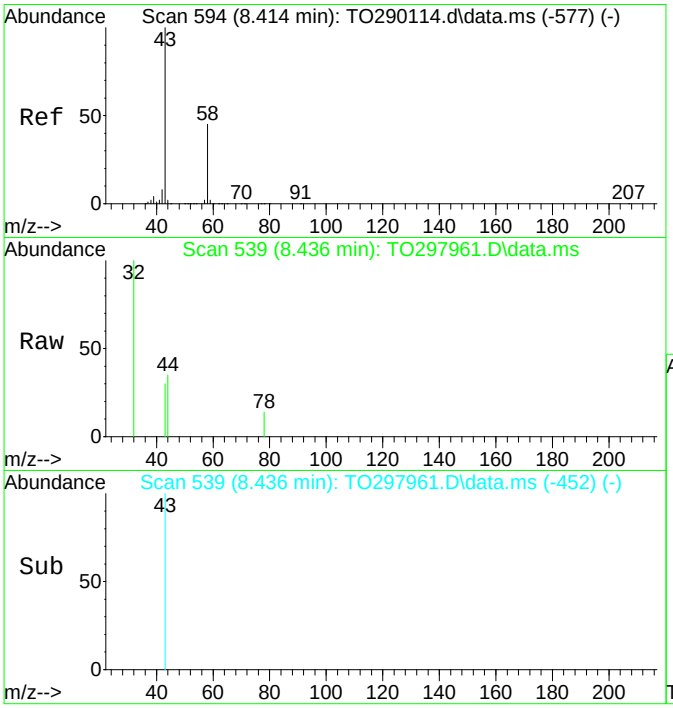


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.220 min Scan# 1149
Delta R.T. -0.004 min
Lab File: TO297961.D
Acq: 14 Mar 2023 4:32 pm

Tgt Ion: 49 Resp: 288818

Ion	Ratio	Lower	Upper
49	100		
130	79.4	44.5	92.3
128	61.6	34.7	72.1
51	31.0	21.5	44.6

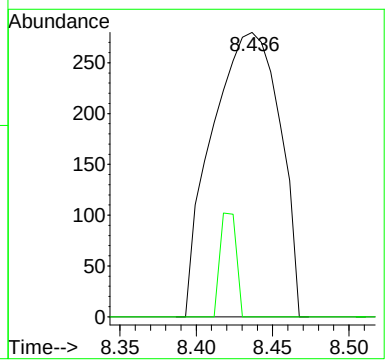


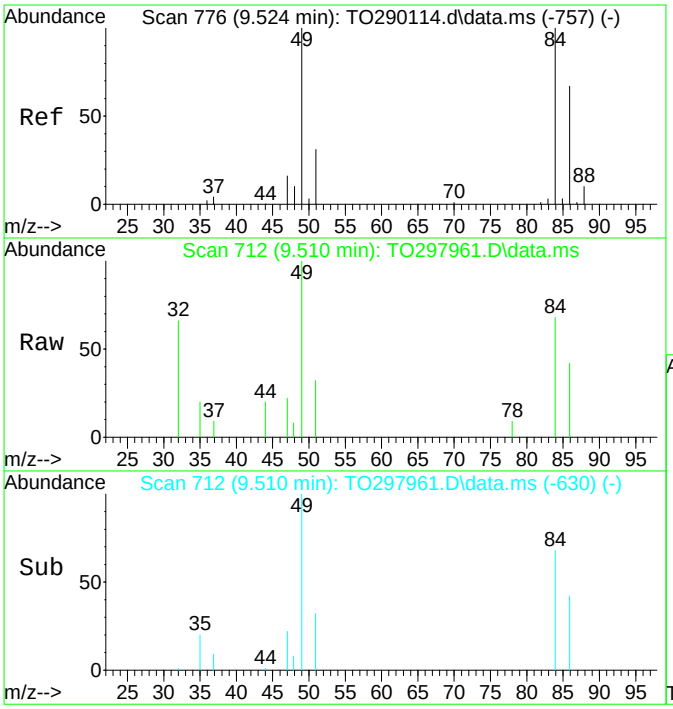


#15
Acetone
Concen: 0.02 ppbv
RT: 8.436 min Scan# 539
Delta R.T. 0.039 min
Lab File: TO297961.D
Acq: 14 Mar 2023 4:32 pm

Tgt Ion: 43 Resp: 863

Ion	Ratio	Lower	Upper
43	100		
58	0.0	20.7	42.9#

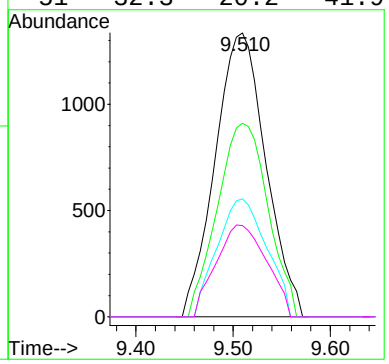


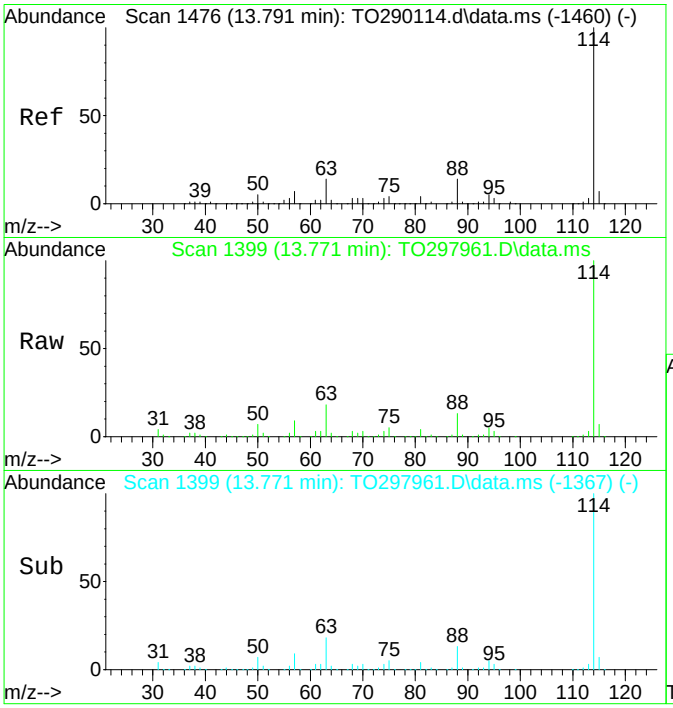


#19
Methylene Chloride
Concen: 0.16 ppbv
RT: 9.510 min Scan# 712
Delta R.T. 0.009 min
Lab File: TO297961.D
Acq: 14 Mar 2023 4:32 pm

Tgt Ion: 49 Resp: 4835

Ion	Ratio	Lower	Upper
49	100		
84	68.2	50.1	104.0
86	40.7	32.2	66.8
51	32.3	20.2	41.9

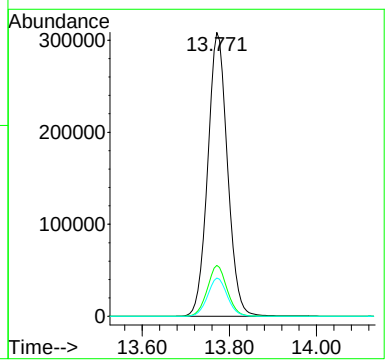


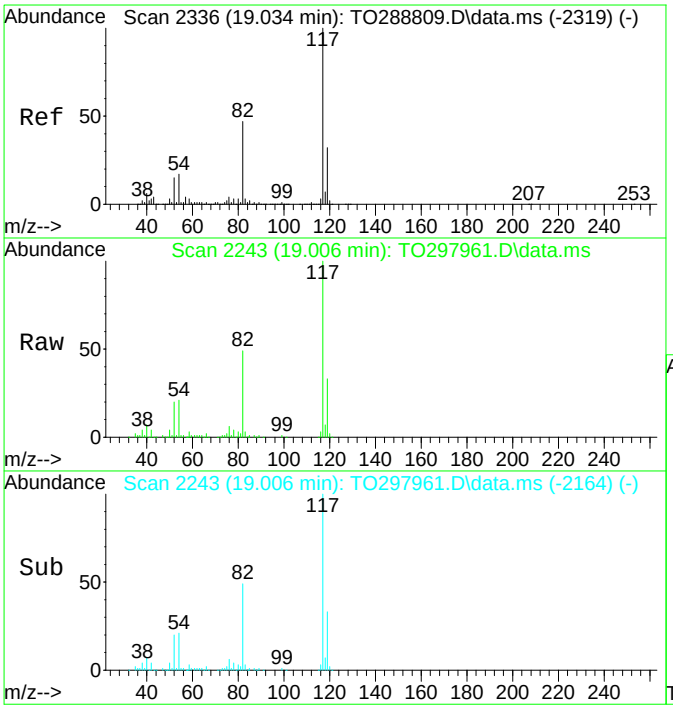


#38
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.771 min Scan# 1399
Delta R.T. -0.004 min
Lab File: TO297961.D
Acq: 14 Mar 2023 4:32 pm

Tgt Ion:114 Resp: 968108

Ion	Ratio	Lower	Upper
114	100		
63	18.0	14.0	29.2
88	13.5	11.2	23.2

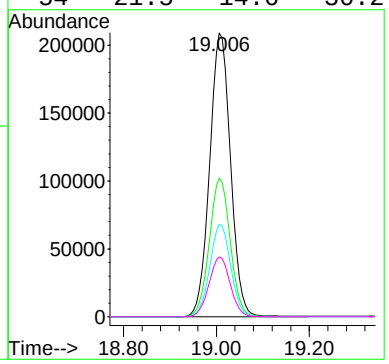


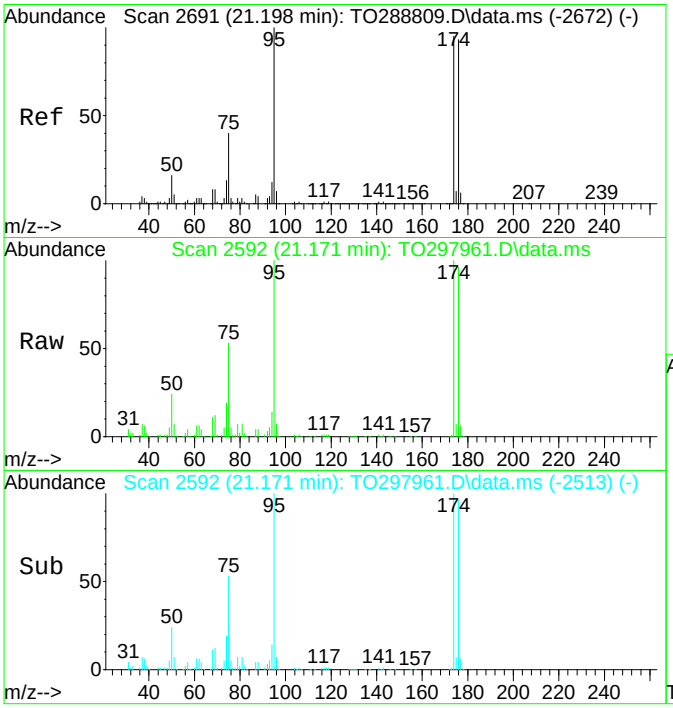


#54
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.006 min Scan# 2243
Delta R.T. -0.011 min
Lab File: TO297961.D
Acq: 14 Mar 2023 4:32 pm

Tgt Ion:117 Resp: 654123

Ion	Ratio	Lower	Upper
117	100		
82	49.0	38.7	80.5
119	32.5	20.3	42.3
54	21.5	14.6	30.2

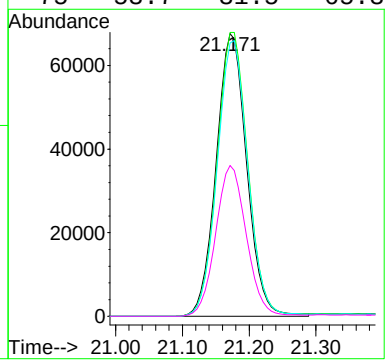




#65
p-Bromofluorobenzene
Concen: 7.10 ppbv
RT: 21.171 min Scan# 2592
Delta R.T. -0.010 min
Lab File: TO297961.D
Acq: 14 Mar 2023 4:32 pm

Tgt Ion: 95 Resp: 214746

Ion	Ratio	Lower	Upper
95	100		
174	100.8	50.0	103.8
176	98.1	48.2	100.2
75	53.7	31.5	65.3



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

CAN 28845 / FC 17903

Laboratory:	York Analytical Laboratories, Inc. - Stratford		SDG:	23C0823	
Client:	Langan Engineering & Environmental Services (NYC)		Project:	170361307	
Matrix:	Air	Laboratory ID:	23C0823-02	File ID:	TO297962.D
Sampled:	03/14/23 09:00	Prepared:	03/14/23 11:00	Analyzed:	03/14/23 17:25
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018	Instrument:	5975C

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	0.687	U
71-55-6	1,1,1-Trichloroethane	1	0.546	U
79-34-5	1,1,2,2-Tetrachloroethane	1	0.687	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1	0.766	U
79-00-5	1,1,2-Trichloroethane	1	0.546	U
75-34-3	1,1-Dichloroethane	1	0.405	U
75-35-4	1,1-Dichloroethylene	1	0.198	U
120-82-1	1,2,4-Trichlorobenzene	1	0.742	U
95-63-6	1,2,4-Trimethylbenzene	1	0.492	U
106-93-4	1,2-Dibromoethane	1	0.768	U
95-50-1	1,2-Dichlorobenzene	1	0.601	U
107-06-2	1,2-Dichloroethane	1	0.405	U
78-87-5	1,2-Dichloropropane	1	0.462	U
76-14-2	1,2-Dichlorotetrafluoroethane	1	0.699	U
108-67-8	1,3,5-Trimethylbenzene	1	0.492	U
106-99-0	1,3-Butadiene	1	0.664	U
541-73-1	1,3-Dichlorobenzene	1	0.601	U
142-28-9	1,3-Dichloropropane	1	0.462	U
106-46-7	1,4-Dichlorobenzene	1	0.601	U
123-91-1	1,4-Dioxane	1	0.721	U
78-93-3	2-Butanone	1	0.295	U
591-78-6	2-Hexanone	1	0.819	U
107-05-1	3-Chloropropene	1	1.57	U
108-10-1	4-Methyl-2-pentanone	1	0.410	U
67-64-1	Acetone	1	0.475	U
107-13-1	Acrylonitrile	1	0.217	U
71-43-2	Benzene	1	0.319	U
100-44-7	Benzyl chloride	1	0.518	U
75-27-4	Bromodichloromethane	1	0.670	U
75-25-2	Bromoform	1	1.03	U
74-83-9	Bromomethane	1	0.388	U
75-15-0	Carbon disulfide	1	0.311	U
56-23-5	Carbon tetrachloride	1	0.157	U
108-90-7	Chlorobenzene	1	0.460	U
75-00-3	Chloroethane	1	0.264	U
67-66-3	Chloroform	1	0.488	U
74-87-3	Chloromethane	1	0.207	U
156-59-2	cis-1,2-Dichloroethylene	1	0.198	U
10061-01-5	cis-1,3-Dichloropropylene	1	0.454	U
110-82-7	Cyclohexane	1	0.344	U

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

CAN 28845 / FC 17903

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	23C0823-02	File ID:	TO297962.D
Sampled:	03/14/23 09:00	Prepared:	03/14/23 11:00	Analyzed:	03/14/23 17:25
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018
Instrument:	5975C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
124-48-1	Dibromochloromethane	1	0.852	U
75-71-8	Dichlorodifluoromethane	1	0.495	U
141-78-6	Ethyl acetate	1	0.721	U
100-41-4	Ethyl Benzene	1	0.434	U
87-68-3	Hexachlorobutadiene	1	1.07	U
67-63-0	Isopropanol	1	0.492	U
80-62-6	Methyl Methacrylate	1	0.409	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.361	U
75-09-2	Methylene chloride	1	0.695	U
142-82-5	n-Heptane	1	0.410	U
110-54-3	n-Hexane	1	0.352	U
95-47-6	o-Xylene	1	0.434	U
179601-23-1	p- & m- Xylenes	1	0.868	U
622-96-8	p-Ethyltoluene	1	0.492	U
115-07-1	Propylene	1	0.172	U
100-42-5	Styrene	1	0.426	U
127-18-4	Tetrachloroethylene	1	0.678	U
109-99-9	Tetrahydrofuran	1	0.590	U
108-88-3	Toluene	1	0.377	U
156-60-5	trans-1,2-Dichloroethylene	1	0.396	U
10061-02-6	trans-1,3-Dichloropropylene	1	0.454	U
79-01-6	Trichloroethylene	1	0.134	U
75-69-4	Trichlorofluoromethane (Freon 11)	1	0.562	U
108-05-4	Vinyl acetate	1	0.352	U
593-60-2	Vinyl bromide	1	0.437	U
75-01-4	Vinyl Chloride	1	0.128	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	275709	12.22	311361	12.22	
ISTD: 1,4-Difluorobenzene	879918	13.771	1038593	13.771	
ISTD: d5-Chlorobenzene	640861	19.007	967186	19.007	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297962.D
Acq On : 14 Mar 2023 5:25 pm
Operator : VH
Sample : 23C0823-02
Misc : QBTO1031423A 1X/400ML SN:28845
ALS Vial : 1 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 15 15:56:06 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

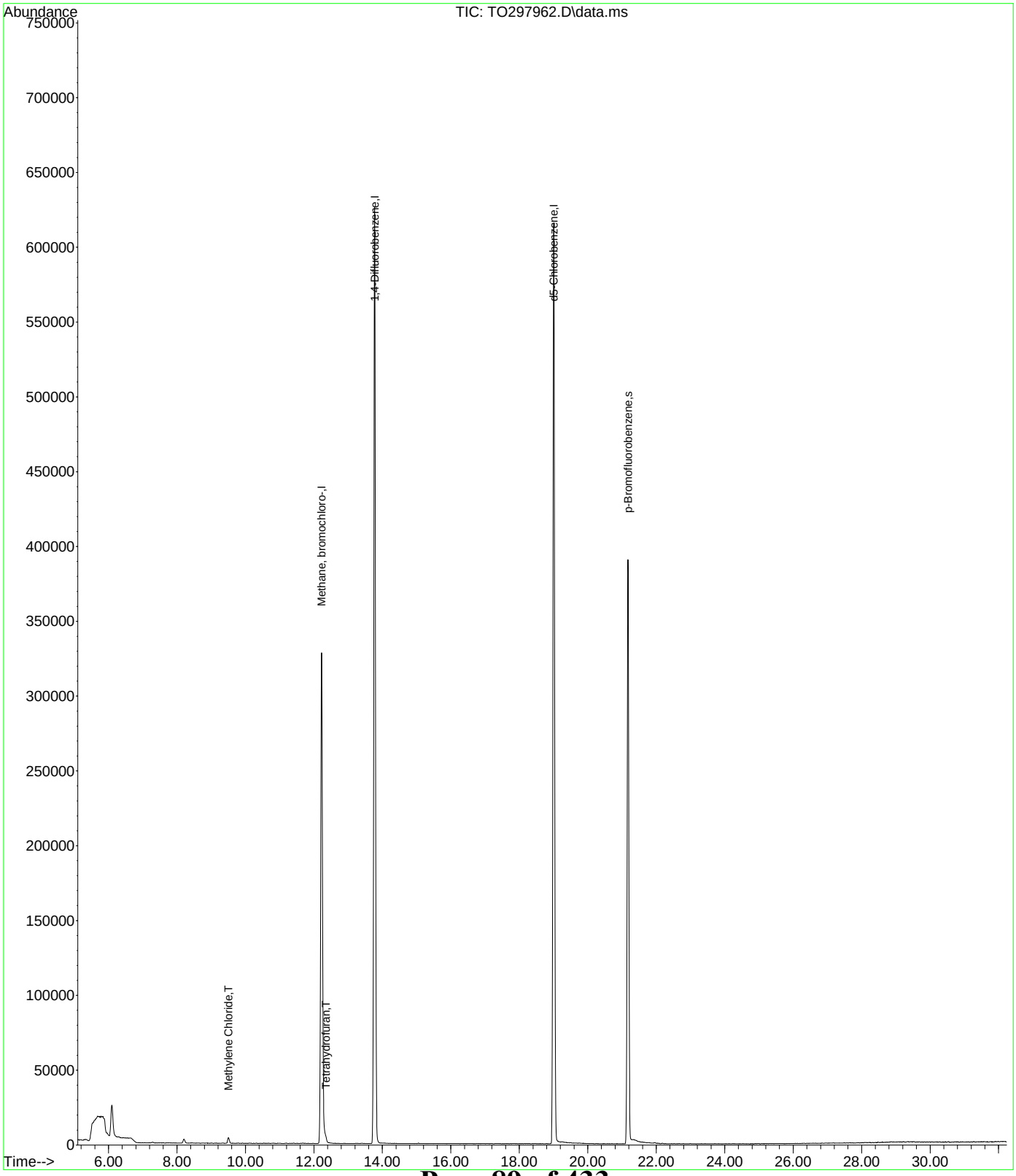
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.220	49	275709	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	879918	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.007	117	640861	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	219368	7.40	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 74.00%			
Target Compounds						Qvalue
19) Methylene Chloride	9.504	49	4545	0.16	ppbv	89
31) Tetrahydrofuran	12.351	42	1753	0.07	ppbv #	71

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

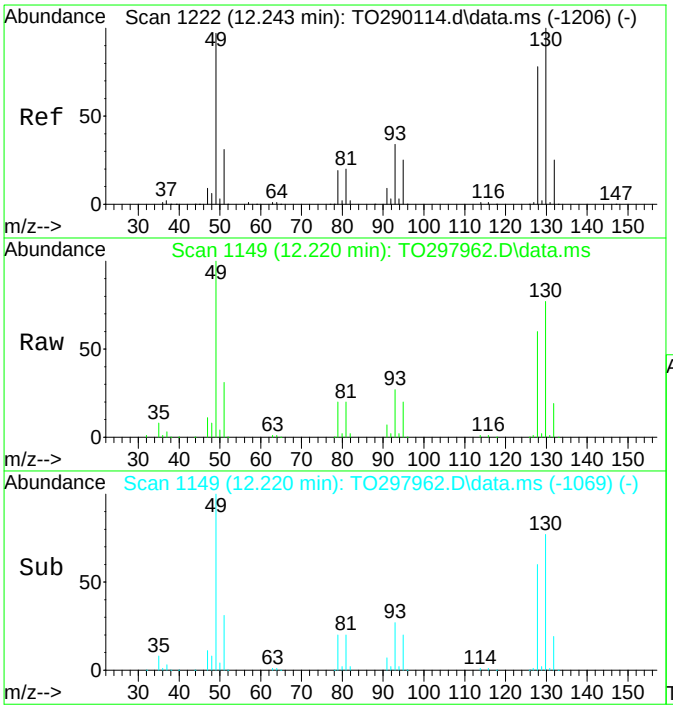
Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297962.D
Acq On : 14 Mar 2023 5:25 pm
Operator : VH
Sample : 23C0823-02
Misc : QBTO1031423A 1X/400ML SN:28845
ALS Vial : 1 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 15 15:56:06 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration



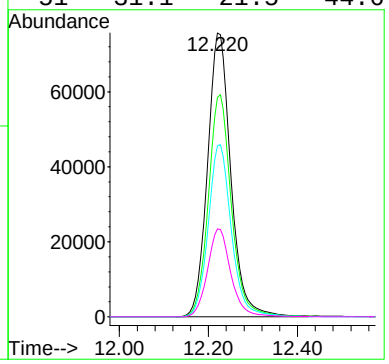
AIR160.M Wed Mar 15 17:30:51 2023 Page: 2

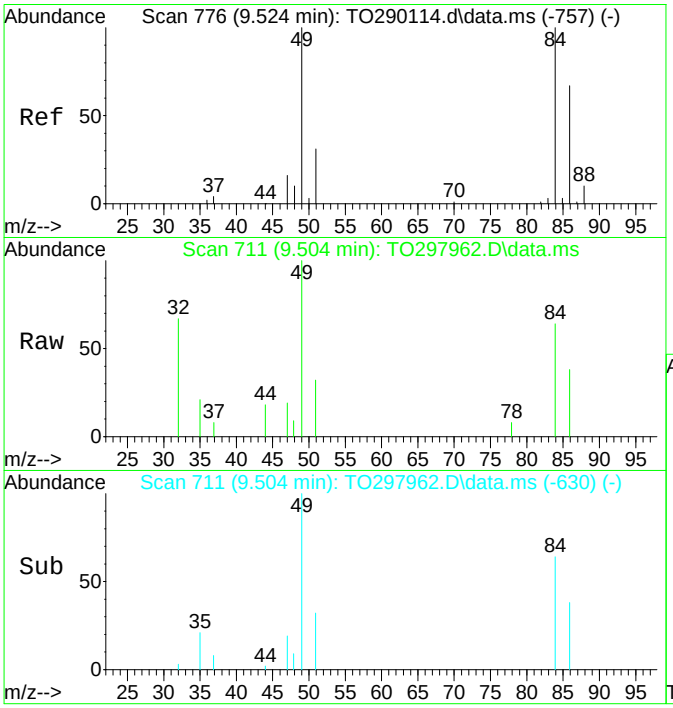


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.220 min Scan# 1149
Delta R.T. -0.004 min
Lab File: TO297962.D
Acq: 14 Mar 2023 5:25 pm

Tgt Ion: 49 Resp: 275709

Ion	Ratio	Lower	Upper
49	100		
130	77.4	44.5	92.3
128	60.3	34.7	72.1
51	31.1	21.5	44.6

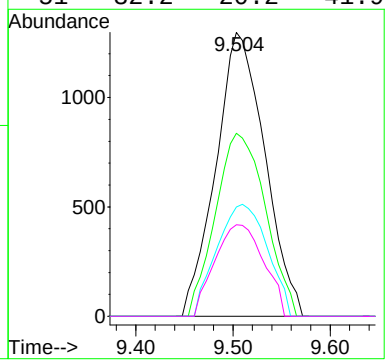


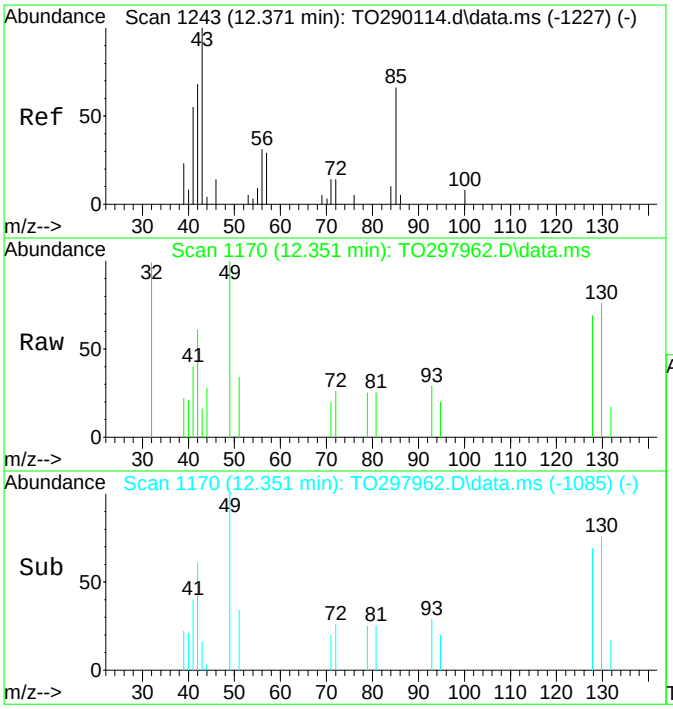


#19
Methylene Chloride
Concen: 0.16 ppbv
RT: 9.504 min Scan# 711
Delta R.T. 0.003 min
Lab File: TO297962.D
Acq: 14 Mar 2023 5:25 pm

Tgt Ion: 49 Resp: 4545

Ion	Ratio	Lower	Upper
49	100		
84	65.8	50.1	104.0
86	40.8	32.2	66.8
51	32.2	20.2	41.9

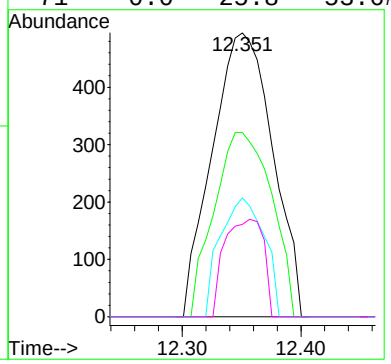


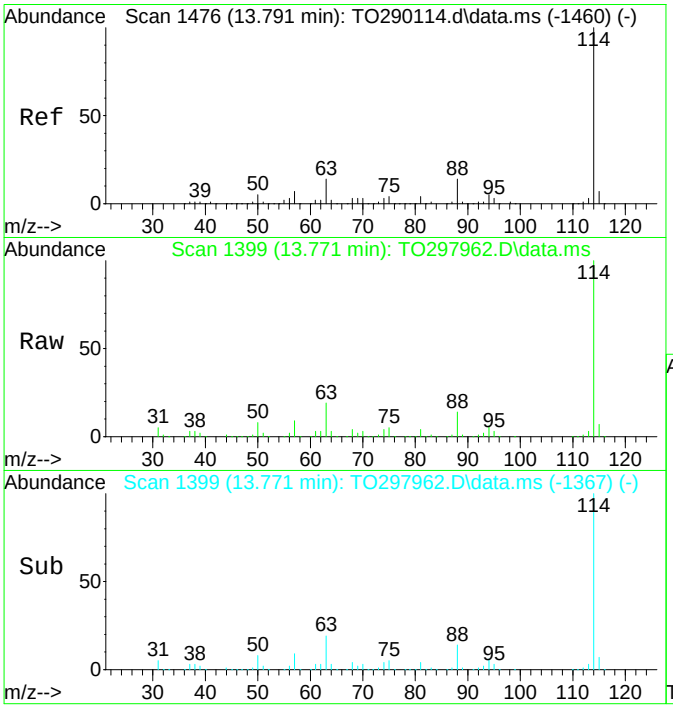


#31
Tetrahydrofuran
Concen: 0.07 ppbv
RT: 12.351 min Scan# 1170
Delta R.T. 0.027 min
Lab File: TO297962.D
Acq: 14 Mar 2023 5:25 pm

Tgt Ion: 42 Resp: 1753

Ion	Ratio	Lower	Upper
42	100		
41	61.6	34.5	71.7
72	30.4	27.4	56.8
71	0.0	25.8	53.6#

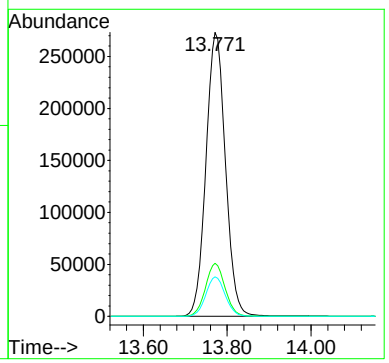


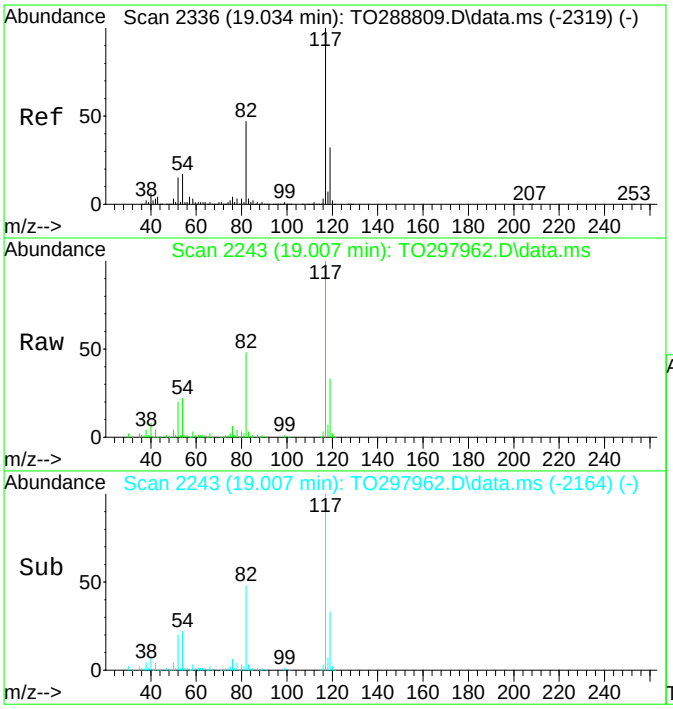


#38
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.771 min Scan# 1399
Delta R.T. -0.004 min
Lab File: TO297962.D
Acq: 14 Mar 2023 5:25 pm

Tgt Ion:114 Resp: 879918

Ion	Ratio	Lower	Upper
114	100		
63	18.8	14.0	29.2
88	13.9	11.2	23.2

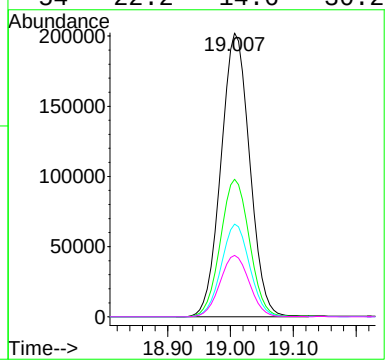


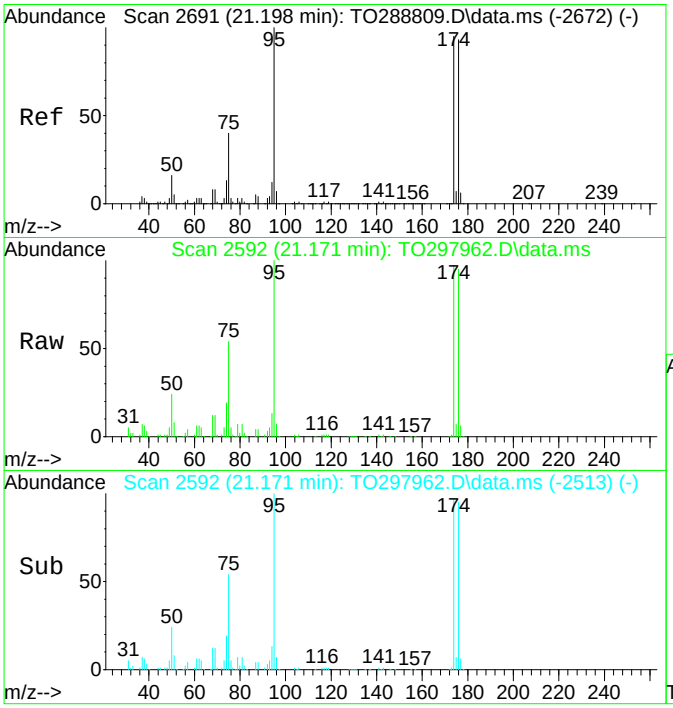


#54
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.007 min Scan# 2243
Delta R.T. -0.010 min
Lab File: TO297962.D
Acq: 14 Mar 2023 5:25 pm

Tgt Ion:117 Resp: 640861

Ion	Ratio	Lower	Upper
117	100		
82	49.2	38.7	80.5
119	32.4	20.3	42.3
54	22.2	14.6	30.2

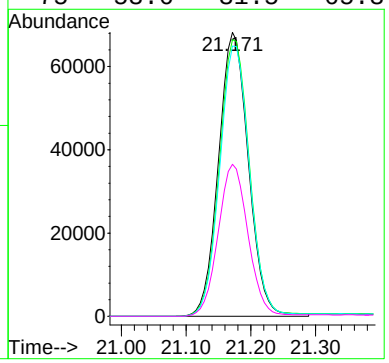




#65
p-Bromofluorobenzene
Concen: 7.40 ppbv
RT: 21.171 min Scan# 2592
Delta R.T. -0.010 min
Lab File: TO297962.D
Acq: 14 Mar 2023 5:25 pm

Tgt Ion: 95 Resp: 219368

Ion	Ratio	Lower	Upper
95	100		
174	98.6	50.0	103.8
176	95.1	48.2	100.2
75	53.6	31.5	65.3



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

CAN 42992 / FC 17899

Laboratory:	York Analytical Laboratories, Inc. - Stratford		SDG:	23C0823	
Client:	Langan Engineering & Environmental Services (NYC)		Project:	170361307	
Matrix:	Air	Laboratory ID:	23C0823-03	File ID:	TO297963.D
Sampled:	03/14/23 09:00	Prepared:	03/14/23 11:00	Analyzed:	03/14/23 18:18
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018	Instrument:	5975C

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	0.687	U
71-55-6	1,1,1-Trichloroethane	1	0.546	U
79-34-5	1,1,2,2-Tetrachloroethane	1	0.687	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1	0.766	U
79-00-5	1,1,2-Trichloroethane	1	0.546	U
75-34-3	1,1-Dichloroethane	1	0.405	U
75-35-4	1,1-Dichloroethylene	1	0.198	U
120-82-1	1,2,4-Trichlorobenzene	1	0.742	U
95-63-6	1,2,4-Trimethylbenzene	1	0.492	U
106-93-4	1,2-Dibromoethane	1	0.768	U
95-50-1	1,2-Dichlorobenzene	1	0.601	U
107-06-2	1,2-Dichloroethane	1	0.405	U
78-87-5	1,2-Dichloropropane	1	0.462	U
76-14-2	1,2-Dichlorotetrafluoroethane	1	0.699	U
108-67-8	1,3,5-Trimethylbenzene	1	0.492	U
106-99-0	1,3-Butadiene	1	0.664	U
541-73-1	1,3-Dichlorobenzene	1	0.601	U
142-28-9	1,3-Dichloropropane	1	0.462	U
106-46-7	1,4-Dichlorobenzene	1	0.601	U
123-91-1	1,4-Dioxane	1	0.721	U
78-93-3	2-Butanone	1	0.295	U
591-78-6	2-Hexanone	1	0.819	U
107-05-1	3-Chloropropene	1	1.57	U
108-10-1	4-Methyl-2-pentanone	1	0.410	U
67-64-1	Acetone	1	0.475	U
107-13-1	Acrylonitrile	1	0.217	U
71-43-2	Benzene	1	0.319	U
100-44-7	Benzyl chloride	1	0.518	U
75-27-4	Bromodichloromethane	1	0.670	U
75-25-2	Bromoform	1	1.03	U
74-83-9	Bromomethane	1	0.388	U
75-15-0	Carbon disulfide	1	0.311	U
56-23-5	Carbon tetrachloride	1	0.157	U
108-90-7	Chlorobenzene	1	0.460	U
75-00-3	Chloroethane	1	0.264	U
67-66-3	Chloroform	1	0.488	U
74-87-3	Chloromethane	1	0.207	U
156-59-2	cis-1,2-Dichloroethylene	1	0.198	U
10061-01-5	cis-1,3-Dichloropropylene	1	0.454	U
110-82-7	Cyclohexane	1	0.344	U

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

CAN 42992 / FC 17899

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	23C0823-03	File ID:	TO297963.D
Sampled:	03/14/23 09:00	Prepared:	03/14/23 11:00	Analyzed:	03/14/23 18:18
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018
Instrument:	5975C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
124-48-1	Dibromochloromethane	1	0.852	U
75-71-8	Dichlorodifluoromethane	1	0.495	U
141-78-6	Ethyl acetate	1	0.721	U
100-41-4	Ethyl Benzene	1	0.434	U
87-68-3	Hexachlorobutadiene	1	1.07	U
67-63-0	Isopropanol	1	0.492	U
80-62-6	Methyl Methacrylate	1	0.409	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.361	U
75-09-2	Methylene chloride	1	0.695	U
142-82-5	n-Heptane	1	0.410	U
110-54-3	n-Hexane	1	0.352	U
95-47-6	o-Xylene	1	0.434	U
179601-23-1	p- & m- Xylenes	1	0.868	U
622-96-8	p-Ethyltoluene	1	0.492	U
115-07-1	Propylene	1	0.172	U
100-42-5	Styrene	1	0.426	U
127-18-4	Tetrachloroethylene	1	0.678	U
109-99-9	Tetrahydrofuran	1	0.590	U
108-88-3	Toluene	1	0.377	U
156-60-5	trans-1,2-Dichloroethylene	1	0.396	U
10061-02-6	trans-1,3-Dichloropropylene	1	0.454	U
79-01-6	Trichloroethylene	1	0.134	U
75-69-4	Trichlorofluoromethane (Freon 11)	1	0.562	U
108-05-4	Vinyl acetate	1	0.352	U
593-60-2	Vinyl bromide	1	0.437	U
75-01-4	Vinyl Chloride	1	0.128	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	270521	12.22	311361	12.22	
ISTD: 1,4-Difluorobenzene	872518	13.771	1038593	13.771	
ISTD: d5-Chlorobenzene	622531	19.007	967186	19.007	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297963.D
Acq On : 14 Mar 2023 6:18 pm
Operator : VH
Sample : 23C0823-03
Misc : QBTO1031423A 1X/400ML SN:42992
ALS Vial : 2 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 15 15:57:40 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

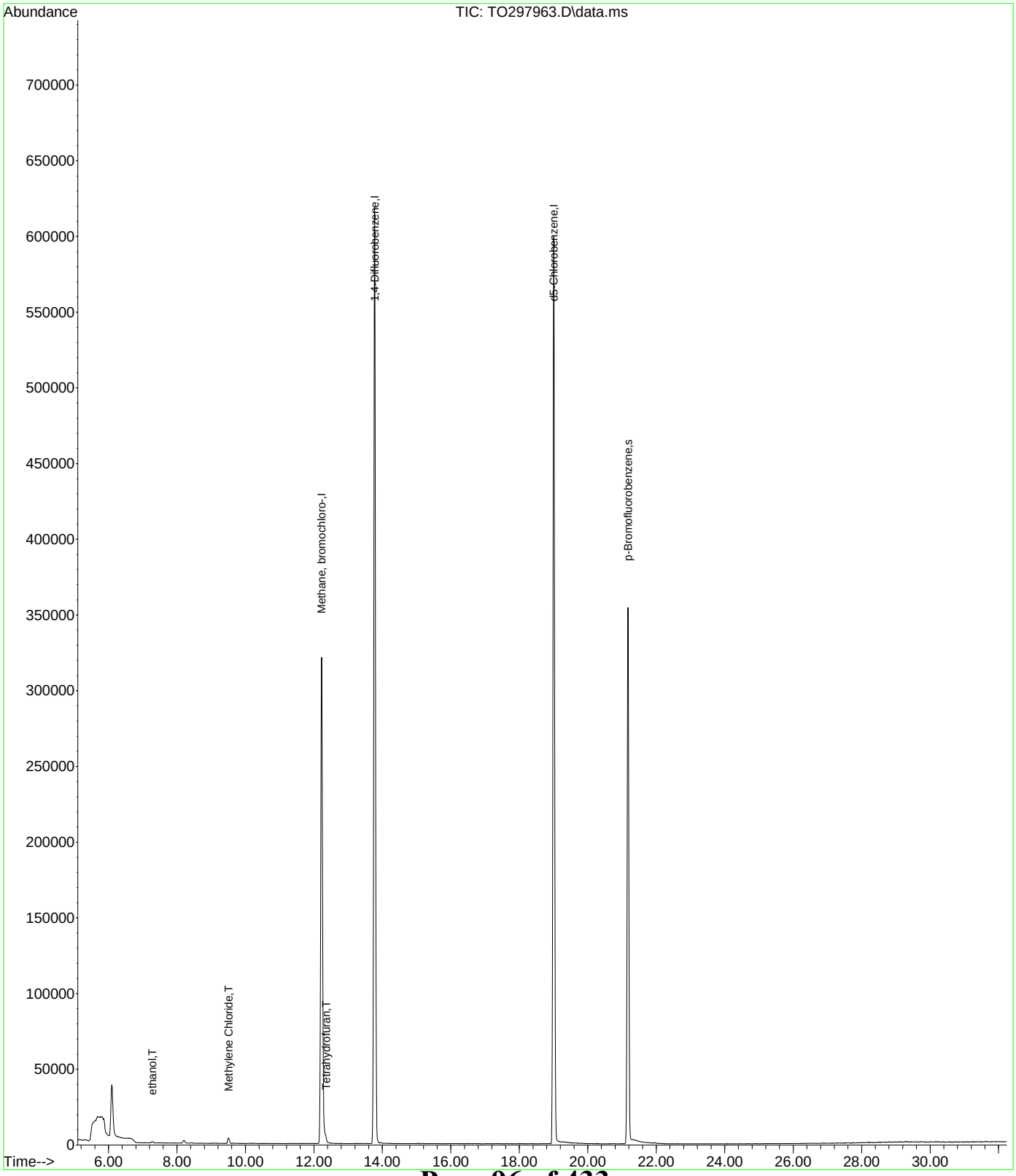
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Methane, bromochloro-	12.220	49	270521	10.00 ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	872518	10.00 ppbv	0.00
54) d5-Chlorobenzene	19.007	117	622531	10.00 ppbv	-0.01
System Monitoring Compounds					
65) p-Bromofluorobenzene	21.171	95	198936	6.91 ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 69.10%#		
Target Compounds					Qvalue
10) ethanol	7.277	45	883	0.12 ppbv #	27
19) Methylene Chloride	9.510	49	4438	0.16 ppbv	93
31) Tetrahydrofuran	12.357	42	1827	0.08 ppbv #	73

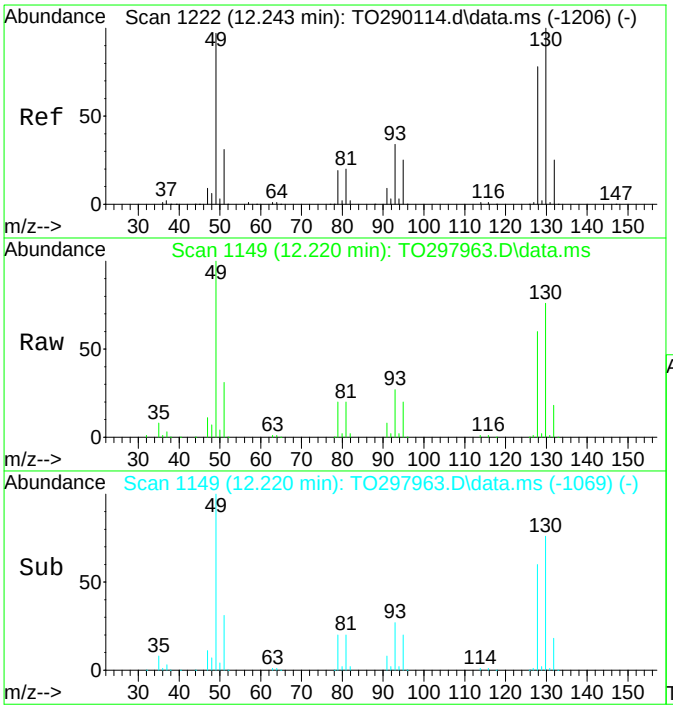
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297963.D
Acq On : 14 Mar 2023 6:18 pm
Operator : VH
Sample : 23C0823-03
Misc : QBTO1031423A 1X/400ML SN:42992
ALS Vial : 2 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 15 15:57:40 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

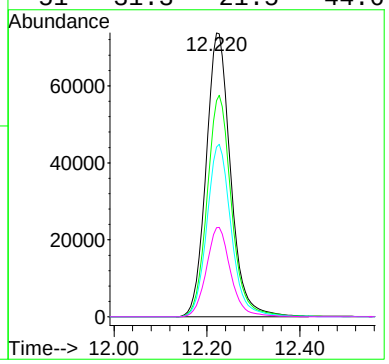


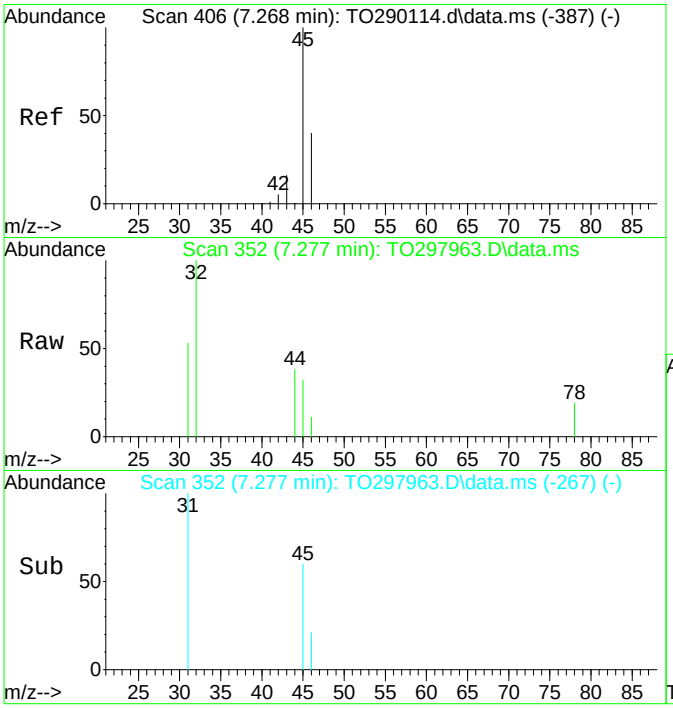


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.220 min Scan# 1149
Delta R.T. -0.004 min
Lab File: TO297963.D
Acq: 14 Mar 2023 6:18 pm

Tgt Ion: 49 Resp: 270521

Ion	Ratio	Lower	Upper
49	100		
130	77.4	44.5	92.3
128	60.4	34.7	72.1
51	31.3	21.5	44.6

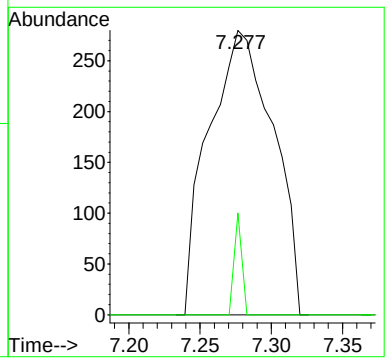


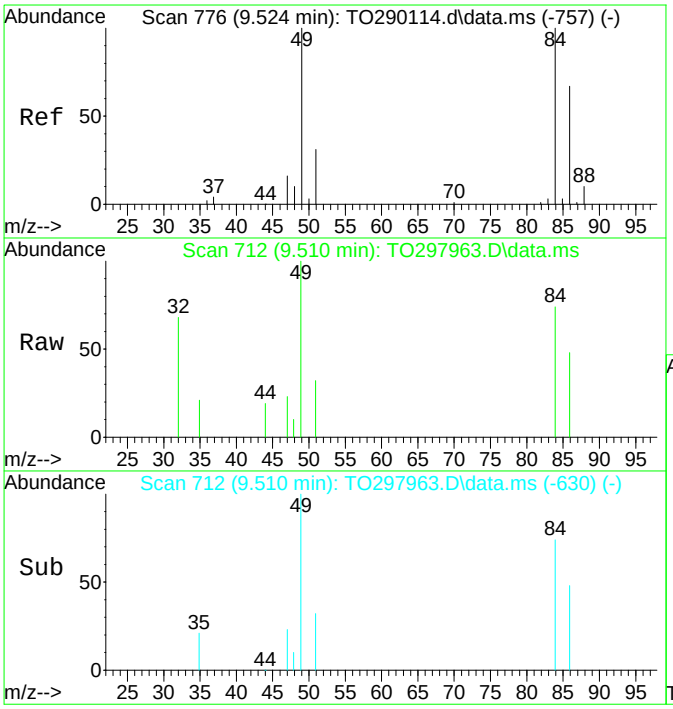


#10
ethanol
Concen: 0.12 ppbv
RT: 7.277 min Scan# 352
Delta R.T. 0.028 min
Lab File: TO297963.D
Acq: 14 Mar 2023 6:18 pm

Tgt Ion: 45 Resp: 883

Ion	Ratio	Lower	Upper
45	100		
46	0.0	40.0	60.0#

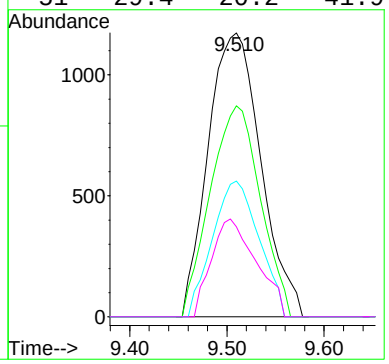


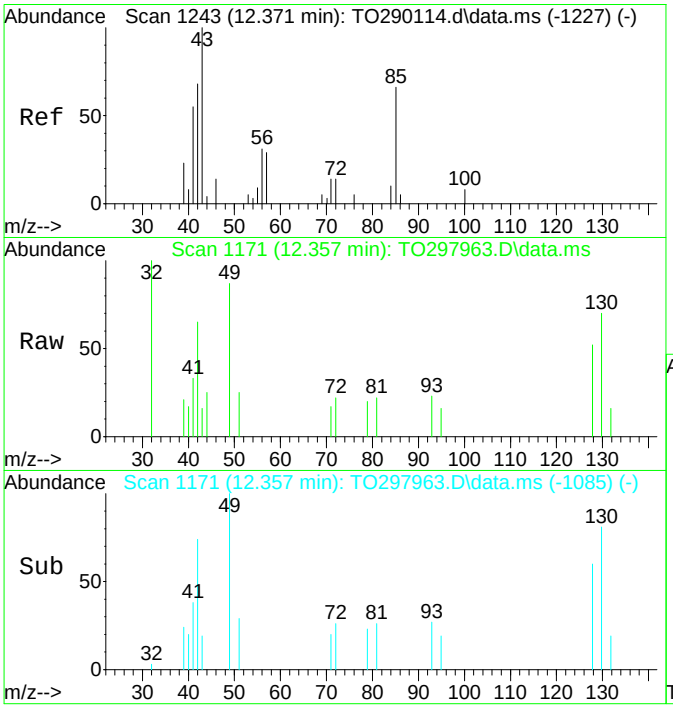


#19
Methylene Chloride
Concen: 0.16 ppbv
RT: 9.510 min Scan# 712
Delta R.T. 0.009 min
Lab File: TO297963.D
Acq: 14 Mar 2023 6:18 pm

Tgt Ion: 49 Resp: 4438

Ion	Ratio	Lower	Upper
49	100		
84	70.7	50.1	104.0
86	42.2	32.2	66.8
51	29.4	20.2	41.9

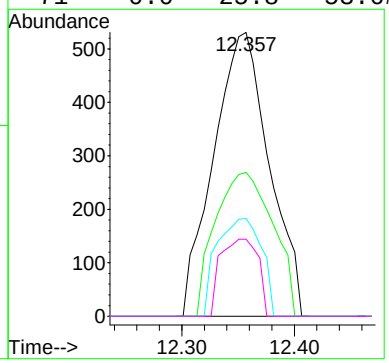


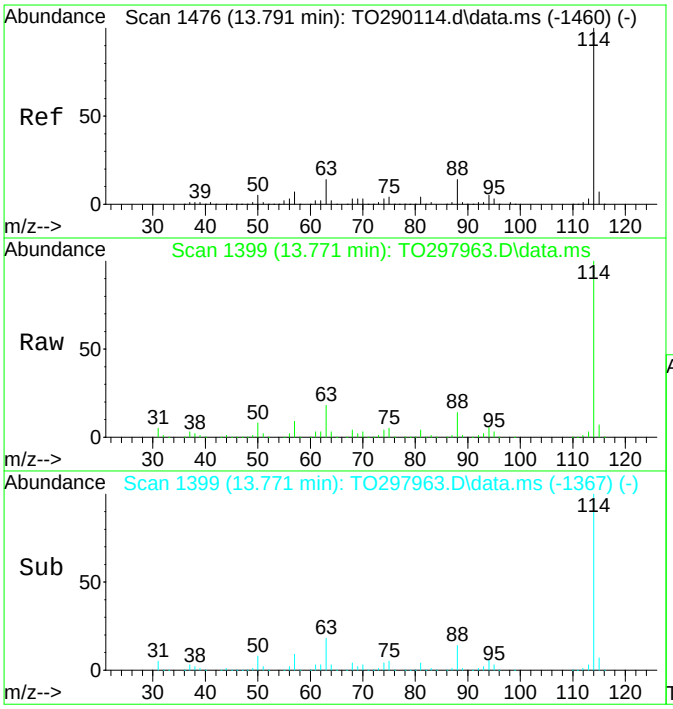


#31
Tetrahydrofuran
Concen: 0.08 ppbv
RT: 12.357 min Scan# 1171
Delta R.T. 0.033 min
Lab File: TO297963.D
Acq: 14 Mar 2023 6:18 pm

Tgt Ion: 42 Resp: 1827

Ion	Ratio	Lower	Upper
42	100		
41	52.4	34.5	71.7
72	27.5	27.4	56.8
71	0.0	25.8	53.6#

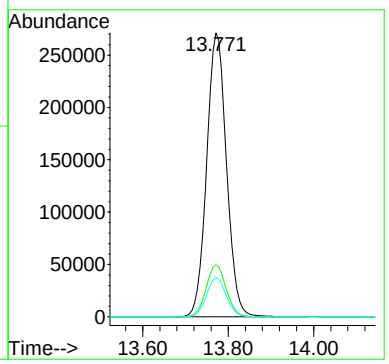


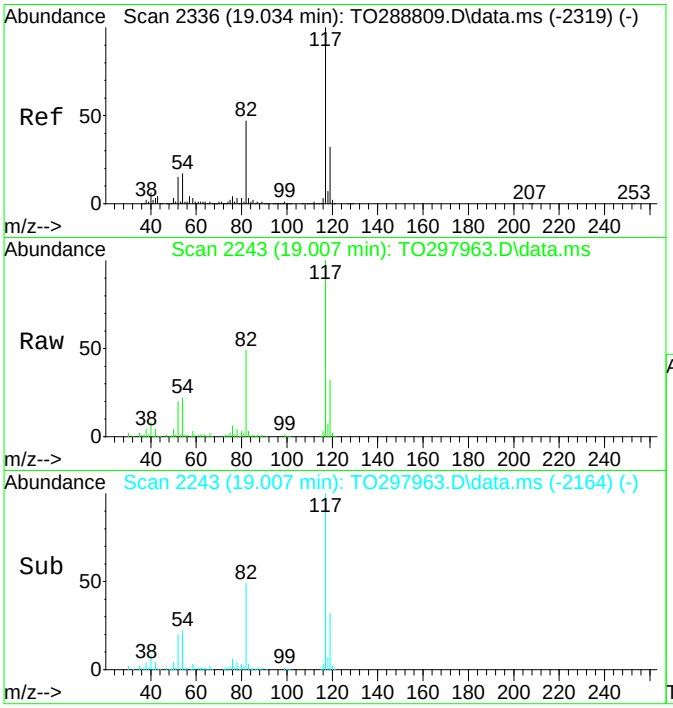


#38
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.771 min Scan# 1399
Delta R.T. -0.004 min
Lab File: TO297963.D
Acq: 14 Mar 2023 6:18 pm

Tgt Ion:114 Resp: 872518

Ion	Ratio	Lower	Upper
114	100		
63	18.6	14.0	29.2
88	13.7	11.2	23.2

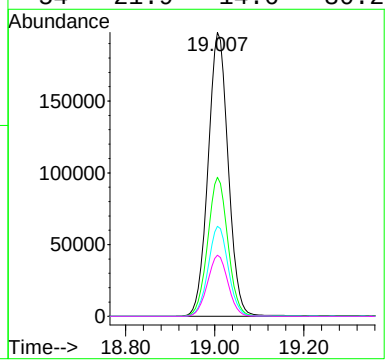


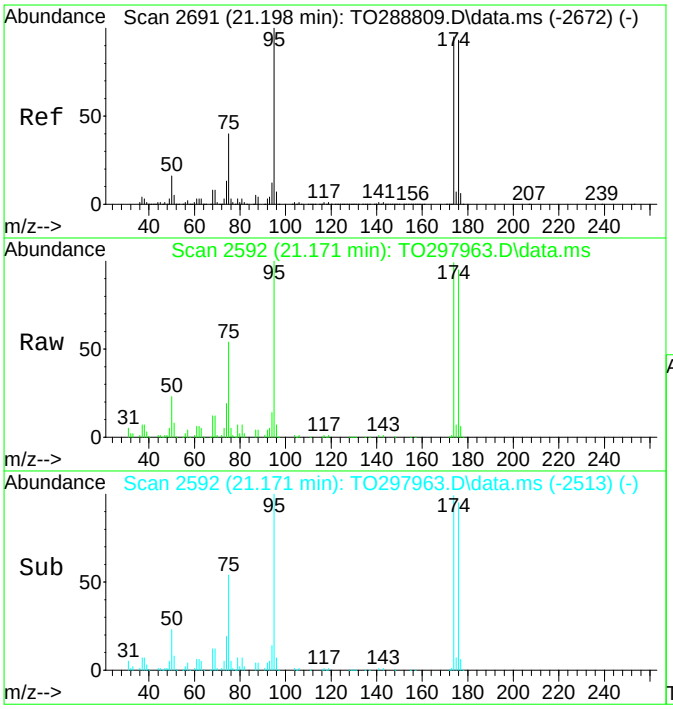


#54
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.007 min Scan# 2243
Delta R.T. -0.010 min
Lab File: TO297963.D
Acq: 14 Mar 2023 6:18 pm

Tgt Ion:117 Resp: 622531

Ion	Ratio	Lower	Upper
117	100		
82	49.0	38.7	80.5
119	31.9	20.3	42.3
54	21.9	14.6	30.2

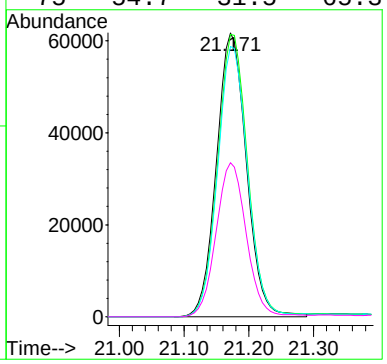




#65
p-Bromofluorobenzene
Concen: 6.91 ppbv
RT: 21.171 min Scan# 2592
Delta R.T. -0.010 min
Lab File: TO297963.D
Acq: 14 Mar 2023 6:18 pm

Tgt Ion: 95 Resp: 198936

Ion	Ratio	Lower	Upper
95	100		
174	99.9	50.0	103.8
176	95.1	48.2	100.2
75	54.7	31.5	65.3



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

CAN 19529 / FC 17898

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	23C0823-04	File ID:	TO297964.D
Sampled:	03/14/23 09:00	Prepared:	03/14/23 11:00	Analyzed:	03/14/23 19:11
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018
Instrument:	5975C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	0.687	U
71-55-6	1,1,1-Trichloroethane	1	0.546	U
79-34-5	1,1,2,2-Tetrachloroethane	1	0.687	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1	0.766	U
79-00-5	1,1,2-Trichloroethane	1	0.546	U
75-34-3	1,1-Dichloroethane	1	0.405	U
75-35-4	1,1-Dichloroethylene	1	0.198	U
120-82-1	1,2,4-Trichlorobenzene	1	0.742	U
95-63-6	1,2,4-Trimethylbenzene	1	0.492	U
106-93-4	1,2-Dibromoethane	1	0.768	U
95-50-1	1,2-Dichlorobenzene	1	0.601	U
107-06-2	1,2-Dichloroethane	1	0.405	U
78-87-5	1,2-Dichloropropane	1	0.462	U
76-14-2	1,2-Dichlorotetrafluoroethane	1	0.699	U
108-67-8	1,3,5-Trimethylbenzene	1	0.492	U
106-99-0	1,3-Butadiene	1	0.664	U
541-73-1	1,3-Dichlorobenzene	1	0.601	U
142-28-9	1,3-Dichloropropane	1	0.462	U
106-46-7	1,4-Dichlorobenzene	1	0.601	U
123-91-1	1,4-Dioxane	1	0.721	U
78-93-3	2-Butanone	1	0.295	U
591-78-6	2-Hexanone	1	0.819	U
107-05-1	3-Chloropropene	1	1.57	U
108-10-1	4-Methyl-2-pentanone	1	0.410	U
67-64-1	Acetone	1	0.475	U
107-13-1	Acrylonitrile	1	0.217	U
71-43-2	Benzene	1	0.319	U
100-44-7	Benzyl chloride	1	0.518	U
75-27-4	Bromodichloromethane	1	0.670	U
75-25-2	Bromoform	1	1.03	U
74-83-9	Bromomethane	1	0.388	U
75-15-0	Carbon disulfide	1	0.311	U
56-23-5	Carbon tetrachloride	1	0.157	U
108-90-7	Chlorobenzene	1	0.460	U
75-00-3	Chloroethane	1	0.264	U
67-66-3	Chloroform	1	0.488	U
74-87-3	Chloromethane	1	0.207	U
156-59-2	cis-1,2-Dichloroethylene	1	0.198	U
10061-01-5	cis-1,3-Dichloropropylene	1	0.454	U
110-82-7	Cyclohexane	1	0.344	U

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

CAN 19529 / FC 17898

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	23C0823-04	File ID:	TO297964.D
Sampled:	03/14/23 09:00	Prepared:	03/14/23 11:00	Analyzed:	03/14/23 19:11
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018
Instrument:	5975C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
124-48-1	Dibromochloromethane	1	0.852	U
75-71-8	Dichlorodifluoromethane	1	0.495	U
141-78-6	Ethyl acetate	1	0.721	U
100-41-4	Ethyl Benzene	1	0.434	U
87-68-3	Hexachlorobutadiene	1	1.07	U
67-63-0	Isopropanol	1	0.492	U
80-62-6	Methyl Methacrylate	1	0.409	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.361	U
75-09-2	Methylene chloride	1	0.695	U
142-82-5	n-Heptane	1	0.410	U
110-54-3	n-Hexane	1	0.352	U
95-47-6	o-Xylene	1	0.434	U
179601-23-1	p- & m- Xylenes	1	0.868	U
622-96-8	p-Ethyltoluene	1	0.492	U
115-07-1	Propylene	1	0.172	U
100-42-5	Styrene	1	0.426	U
127-18-4	Tetrachloroethylene	1	0.678	U
109-99-9	Tetrahydrofuran	1	0.590	U
108-88-3	Toluene	1	0.377	U
156-60-5	trans-1,2-Dichloroethylene	1	0.396	U
10061-02-6	trans-1,3-Dichloropropylene	1	0.454	U
79-01-6	Trichloroethylene	1	0.134	U
75-69-4	Trichlorofluoromethane (Freon 11)	1	0.562	U
108-05-4	Vinyl acetate	1	0.352	U
593-60-2	Vinyl bromide	1	0.437	U
75-01-4	Vinyl Chloride	1	0.128	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	263574	12.226	311361	12.22	
ISTD: 1,4-Difluorobenzene	834803	13.771	1038593	13.771	
ISTD: d5-Chlorobenzene	589556	19.006	967186	19.007	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297964.D
Acq On : 14 Mar 2023 7:11 pm
Operator : VH
Sample : 23C0823-04
Misc : QBTO1031423A 1X/400ML SN:19529
ALS Vial : 3 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 15 15:59:05 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

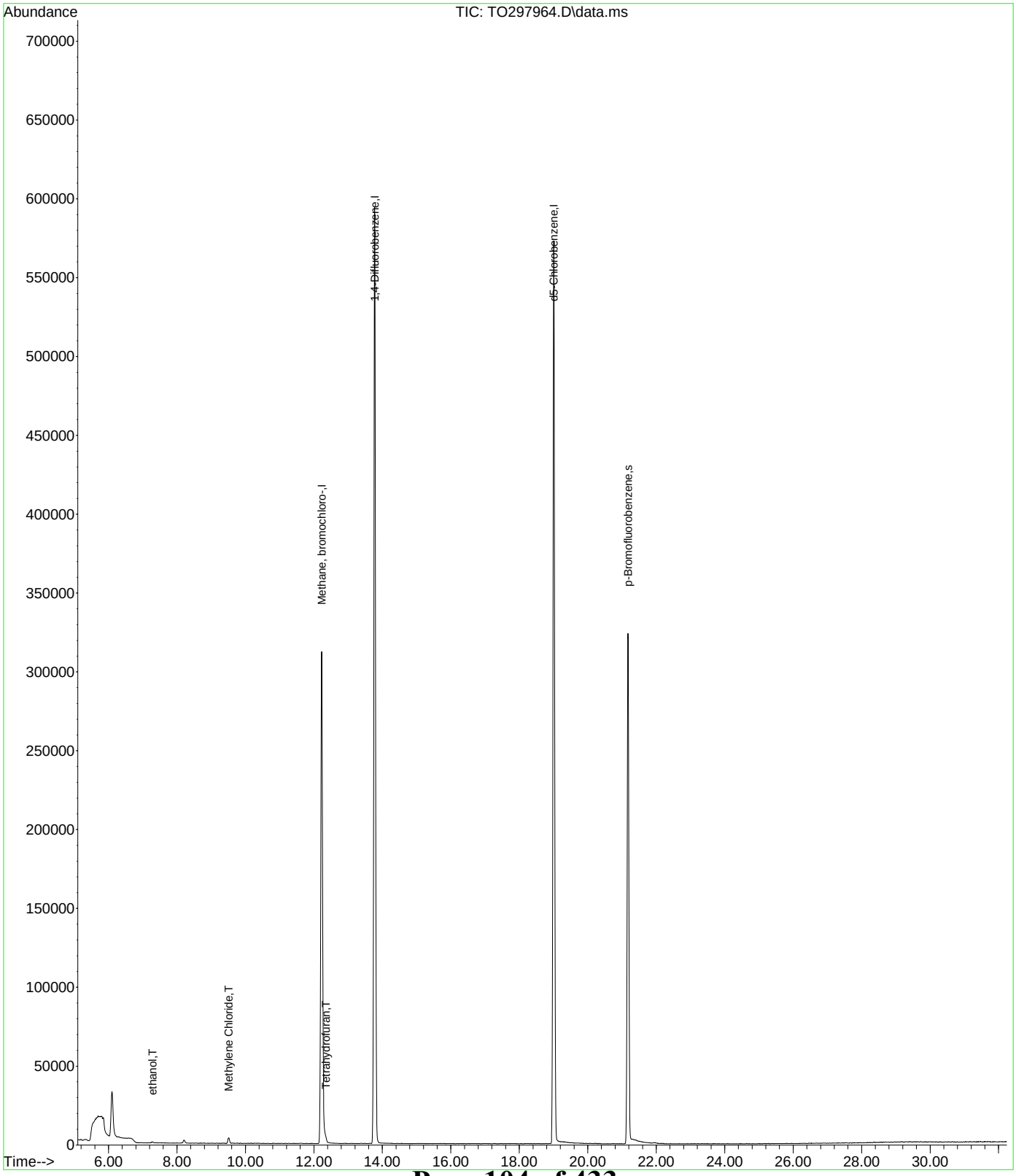
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Methane, bromochloro-	12.226	49	263574	10.00 ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	834803	10.00 ppbv	0.00
54) d5-Chlorobenzene	19.006	117	589556	10.00 ppbv	-0.01
System Monitoring Compounds					
65) p-Bromofluorobenzene	21.171	95	184301	6.76 ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 67.60%#		
Target Compounds					Qvalue
10) ethanol	7.283	45	503	0.07 ppbv #	27
19) Methylene Chloride	9.509	49	4163	0.16 ppbv	96
31) Tetrahydrofuran	12.350	42	1364	0.06 ppbv #	54

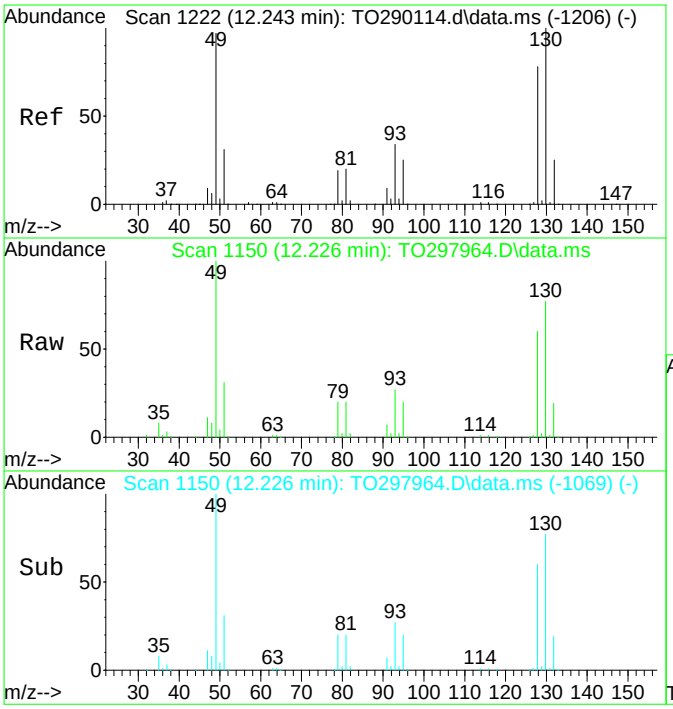
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297964.D
Acq On : 14 Mar 2023 7:11 pm
Operator : VH
Sample : 23C0823-04
Misc : QBTO1031423A 1X/400ML SN:19529
ALS Vial : 3 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 15 15:59:05 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

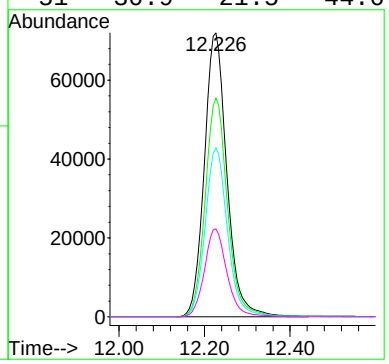


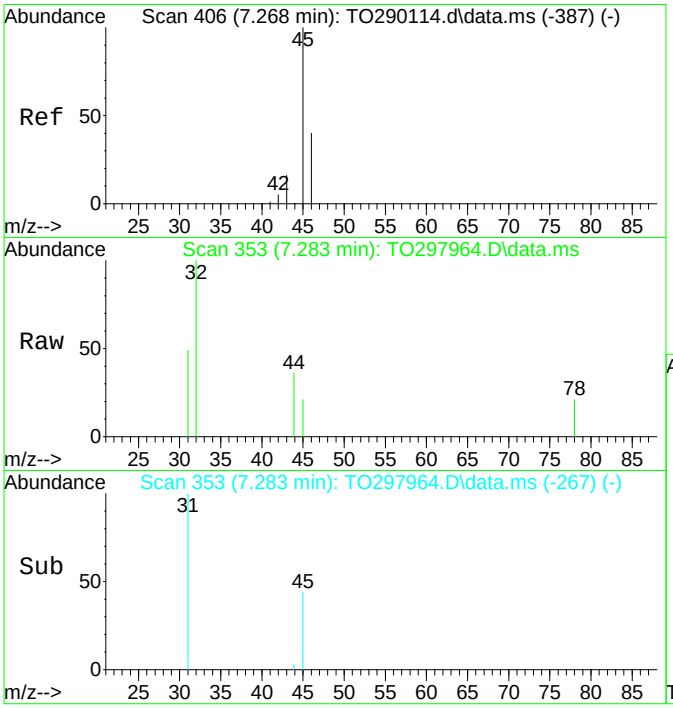


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.226 min Scan# 1150
Delta R.T. 0.002 min
Lab File: TO297964.D
Acq: 14 Mar 2023 7:11 pm

Tgt Ion: 49 Resp: 263574

Ion	Ratio	Lower	Upper
49	100		
130	76.4	44.5	92.3
128	59.2	34.7	72.1
51	30.9	21.5	44.6

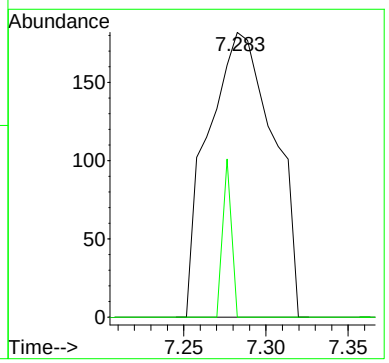


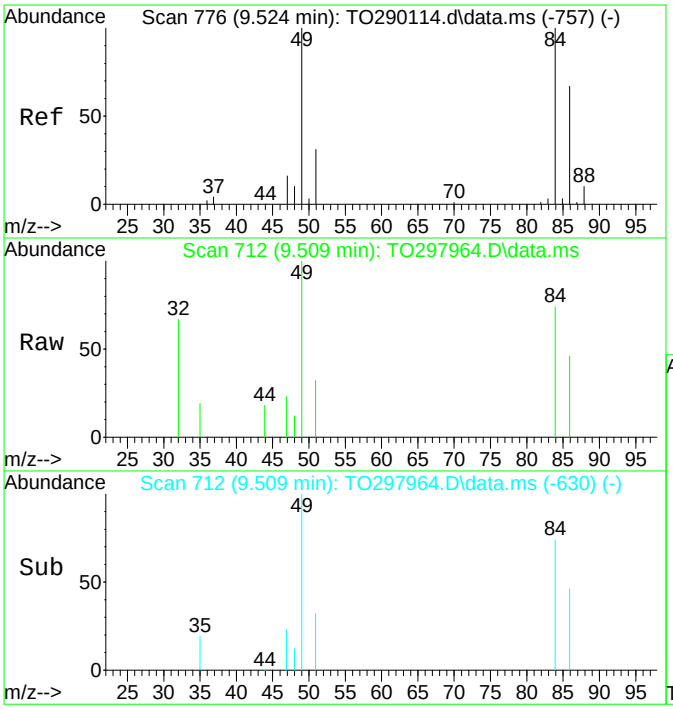


#10
ethanol
Concen: 0.07 ppbv
RT: 7.283 min Scan# 353
Delta R.T. 0.034 min
Lab File: TO297964.D
Acq: 14 Mar 2023 7:11 pm

Tgt Ion: 45 Resp: 503

Ion	Ratio	Lower	Upper
45	100		
46	0.0	40.0	60.0#

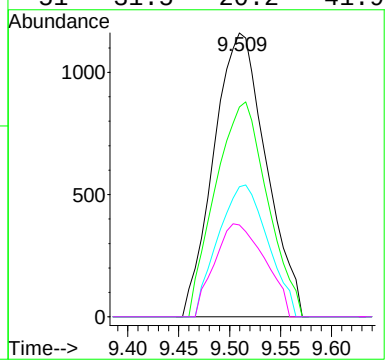


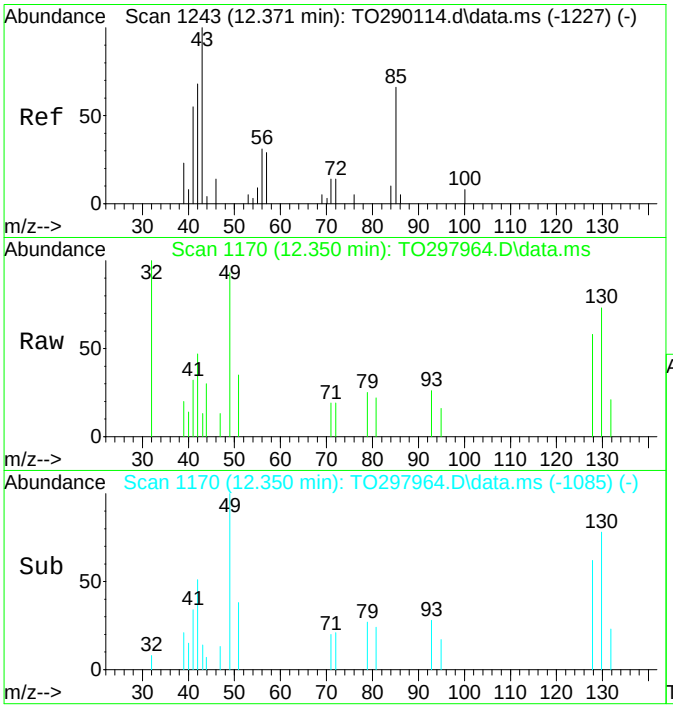


#19
Methylene Chloride
Concen: 0.16 ppbv
RT: 9.509 min Scan# 712
Delta R.T. 0.008 min
Lab File: TO297964.D
Acq: 14 Mar 2023 7:11 pm

Tgt Ion: 49 Resp: 4163

Ion	Ratio	Lower	Upper
49	100		
84	75.3	50.1	104.0
86	44.2	32.2	66.8
51	31.5	20.2	41.9

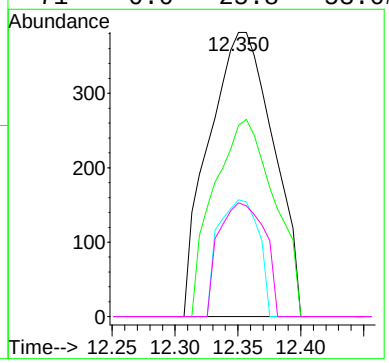


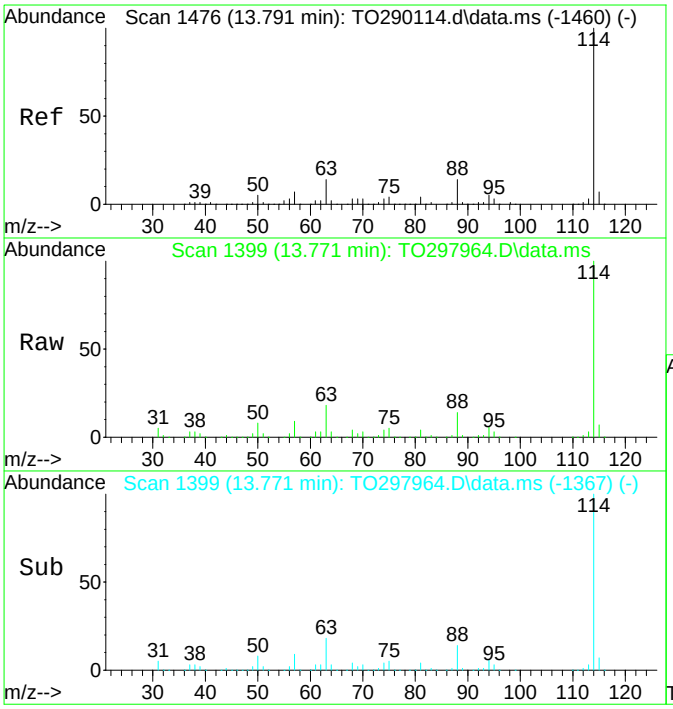


#31
Tetrahydrofuran
Concen: 0.06 ppbv
RT: 12.350 min Scan# 1170
Delta R.T. 0.026 min
Lab File: TO297964.D
Acq: 14 Mar 2023 7:11 pm

Tgt Ion: 42 Resp: 1364

Ion	Ratio	Lower	Upper
42	100		
41	65.0	34.5	71.7
72	0.0	27.4	56.8#
71	0.0	25.8	53.6#

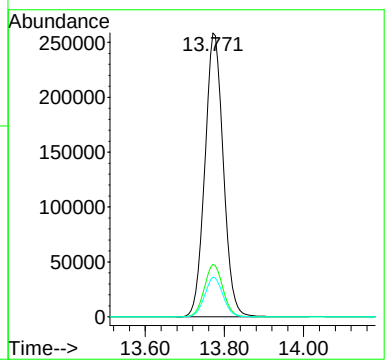


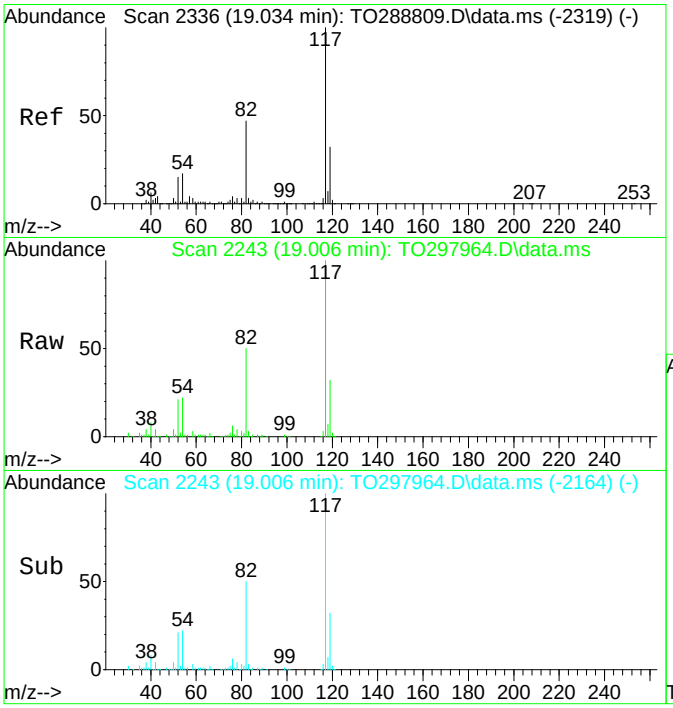


#38
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.771 min Scan# 1399
Delta R.T. -0.004 min
Lab File: TO297964.D
Acq: 14 Mar 2023 7:11 pm

Tgt Ion:114 Resp: 834803

Ion	Ratio	Lower	Upper
114	100		
63	18.6	14.0	29.2
88	13.9	11.2	23.2

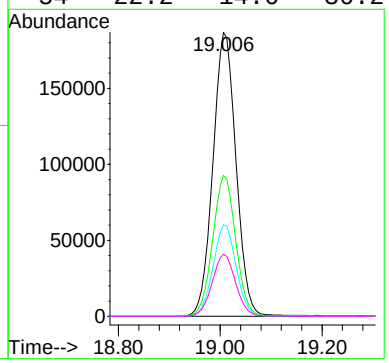


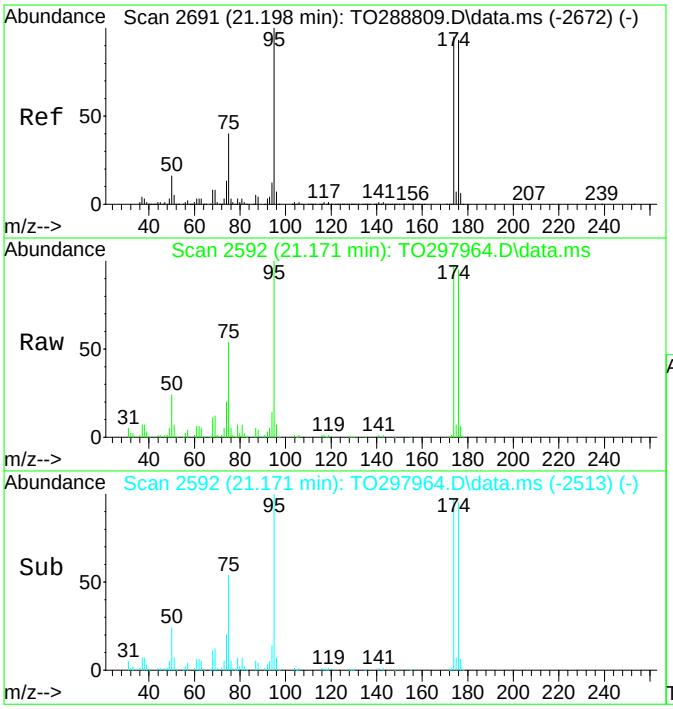


#54
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.006 min Scan# 2243
Delta R.T. -0.011 min
Lab File: TO297964.D
Acq: 14 Mar 2023 7:11 pm

Tgt Ion:117 Resp: 589556

Ion	Ratio	Lower	Upper
117	100		
82	49.4	38.7	80.5
119	32.2	20.3	42.3
54	22.2	14.6	30.2

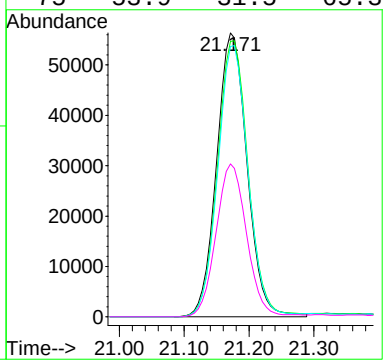




#65
p-Bromofluorobenzene
Concen: 6.76 ppbv
RT: 21.171 min Scan# 2592
Delta R.T. -0.010 min
Lab File: TO297964.D
Acq: 14 Mar 2023 7:11 pm

Tgt Ion: 95 Resp: 184301

Ion	Ratio	Lower	Upper
95	100		
174	98.2	50.0	103.8
176	95.0	48.2	100.2
75	53.9	31.5	65.3



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

CAN 37794 / FC 17897

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	23C0823-05	File ID:	TO297965.D
Sampled:	03/14/23 09:00	Prepared:	03/14/23 11:00	Analyzed:	03/14/23 20:04
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018	Instrument:	5975C

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	0.687	U
71-55-6	1,1,1-Trichloroethane	1	0.546	U
79-34-5	1,1,2,2-Tetrachloroethane	1	0.687	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1	0.766	U
79-00-5	1,1,2-Trichloroethane	1	0.546	U
75-34-3	1,1-Dichloroethane	1	0.405	U
75-35-4	1,1-Dichloroethylene	1	0.198	U
120-82-1	1,2,4-Trichlorobenzene	1	0.742	U
95-63-6	1,2,4-Trimethylbenzene	1	0.492	U
106-93-4	1,2-Dibromoethane	1	0.768	U
95-50-1	1,2-Dichlorobenzene	1	0.601	U
107-06-2	1,2-Dichloroethane	1	0.405	U
78-87-5	1,2-Dichloropropane	1	0.462	U
76-14-2	1,2-Dichlorotetrafluoroethane	1	0.699	U
108-67-8	1,3,5-Trimethylbenzene	1	0.492	U
106-99-0	1,3-Butadiene	1	0.664	U
541-73-1	1,3-Dichlorobenzene	1	0.601	U
142-28-9	1,3-Dichloropropane	1	0.462	U
106-46-7	1,4-Dichlorobenzene	1	0.601	U
123-91-1	1,4-Dioxane	1	0.721	U
78-93-3	2-Butanone	1	0.295	U
591-78-6	2-Hexanone	1	0.819	U
107-05-1	3-Chloropropene	1	1.57	U
108-10-1	4-Methyl-2-pentanone	1	0.410	U
67-64-1	Acetone	1	0.475	U
107-13-1	Acrylonitrile	1	0.217	U
71-43-2	Benzene	1	0.319	U
100-44-7	Benzyl chloride	1	0.518	U
75-27-4	Bromodichloromethane	1	0.670	U
75-25-2	Bromoform	1	1.03	U
74-83-9	Bromomethane	1	0.388	U
75-15-0	Carbon disulfide	1	0.311	U
56-23-5	Carbon tetrachloride	1	0.157	U
108-90-7	Chlorobenzene	1	0.460	U
75-00-3	Chloroethane	1	0.264	U
67-66-3	Chloroform	1	0.488	U
74-87-3	Chloromethane	1	0.207	U
156-59-2	cis-1,2-Dichloroethylene	1	0.198	U
10061-01-5	cis-1,3-Dichloropropylene	1	0.454	U
110-82-7	Cyclohexane	1	0.344	U

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

CAN 37794 / FC 17897

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	23C0823-05	File ID:	TO297965.D
Sampled:	03/14/23 09:00	Prepared:	03/14/23 11:00	Analyzed:	03/14/23 20:04
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018
Instrument:	5975C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
124-48-1	Dibromochloromethane	1	0.852	U
75-71-8	Dichlorodifluoromethane	1	0.495	U
141-78-6	Ethyl acetate	1	0.721	U
100-41-4	Ethyl Benzene	1	0.434	U
87-68-3	Hexachlorobutadiene	1	1.07	U
67-63-0	Isopropanol	1	0.492	U
80-62-6	Methyl Methacrylate	1	0.409	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.361	U
75-09-2	Methylene chloride	1	0.695	U
142-82-5	n-Heptane	1	0.410	U
110-54-3	n-Hexane	1	0.352	U
95-47-6	o-Xylene	1	0.434	U
179601-23-1	p- & m- Xylenes	1	0.868	U
622-96-8	p-Ethyltoluene	1	0.492	U
115-07-1	Propylene	1	0.172	U
100-42-5	Styrene	1	0.426	U
127-18-4	Tetrachloroethylene	1	0.678	U
109-99-9	Tetrahydrofuran	1	0.590	U
108-88-3	Toluene	1	0.377	U
156-60-5	trans-1,2-Dichloroethylene	1	0.396	U
10061-02-6	trans-1,3-Dichloropropylene	1	0.454	U
79-01-6	Trichloroethylene	1	0.134	U
75-69-4	Trichlorofluoromethane (Freon 11)	1	0.562	U
108-05-4	Vinyl acetate	1	0.352	U
593-60-2	Vinyl bromide	1	0.437	U
75-01-4	Vinyl Chloride	1	0.128	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	259852	12.227	311361	12.22	
ISTD: 1,4-Difluorobenzene	825074	13.771	1038593	13.771	
ISTD: d5-Chlorobenzene	609005	19.006	967186	19.007	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297965.D
Acq On : 14 Mar 2023 8:04 pm
Operator : VH
Sample : 23C0823-05
Misc : QBTO1031423A 1X/400ML SN:37794
ALS Vial : 4 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 15 16:00:15 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

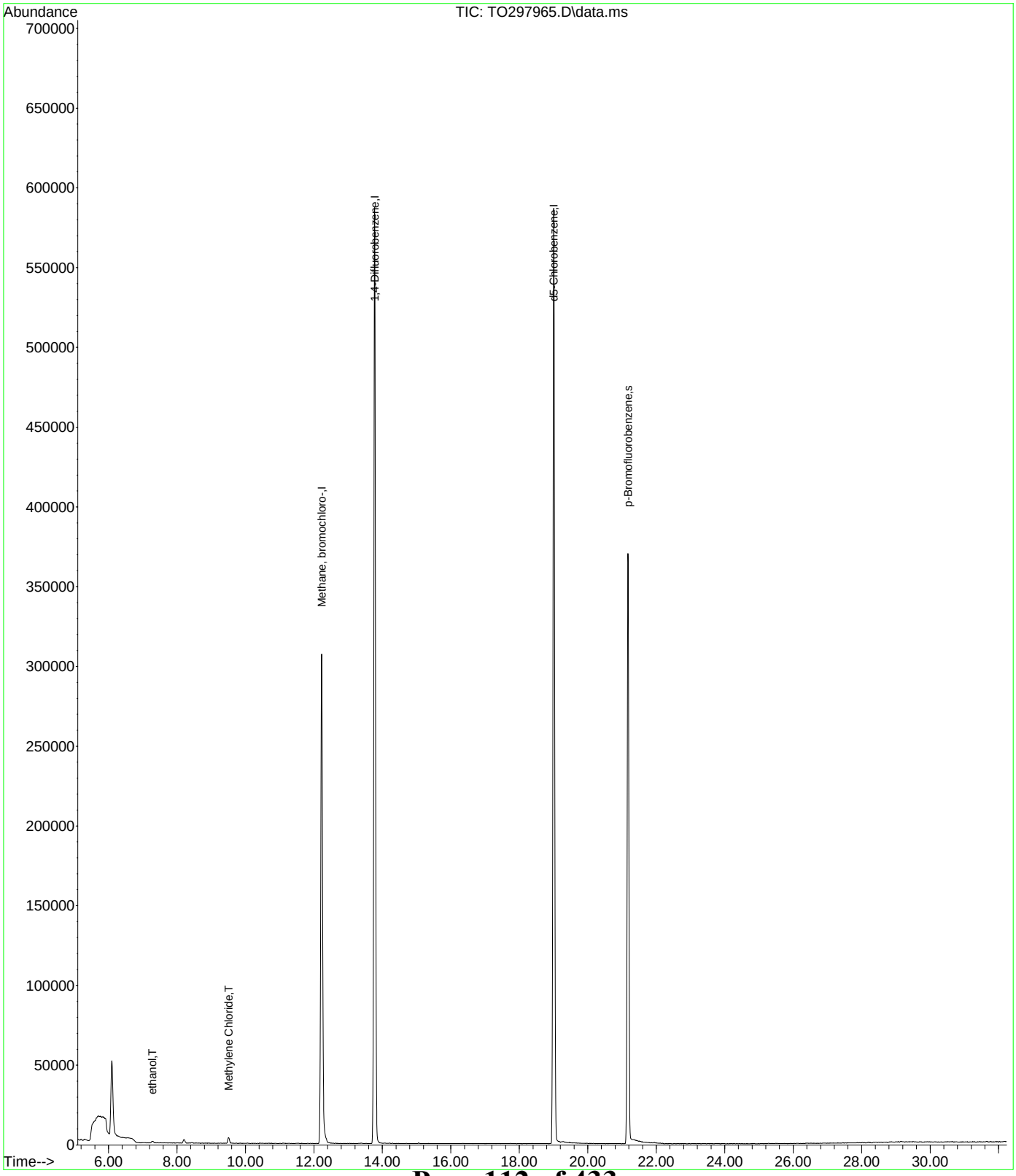
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.227	49	259852	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	825074	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.006	117	609005	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	206796	7.34	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 73.40%			
Target Compounds						Qvalue
10) ethanol	7.276	45	939	0.14	ppbv #	27
19) Methylene Chloride	9.510	49	4397	0.17	ppbv	89

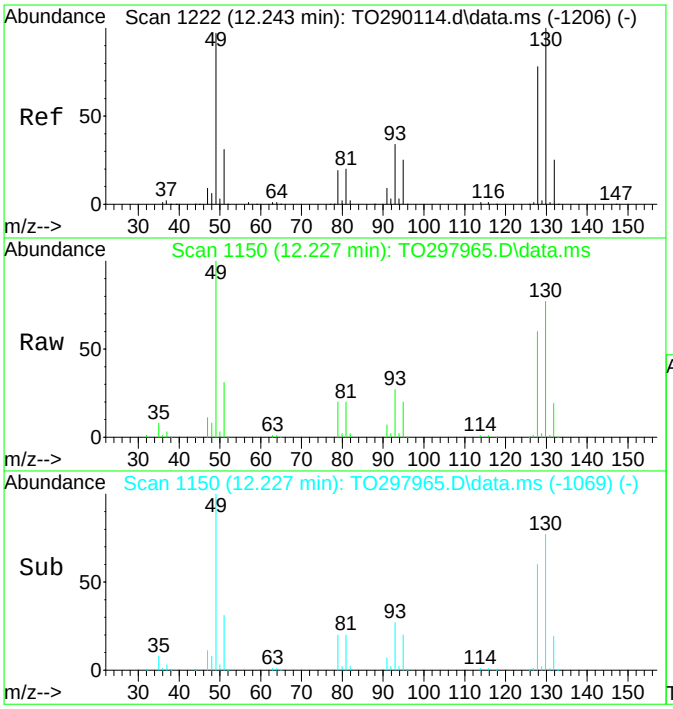
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297965.D
Acq On : 14 Mar 2023 8:04 pm
Operator : VH
Sample : 23C0823-05
Misc : QBTO1031423A 1X/400ML SN:37794
ALS Vial : 4 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 15 16:00:15 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

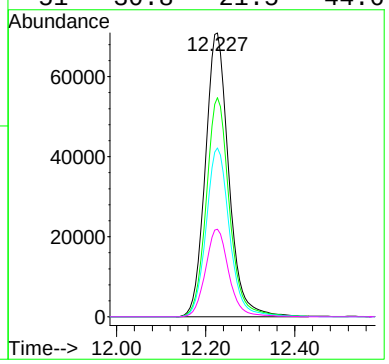


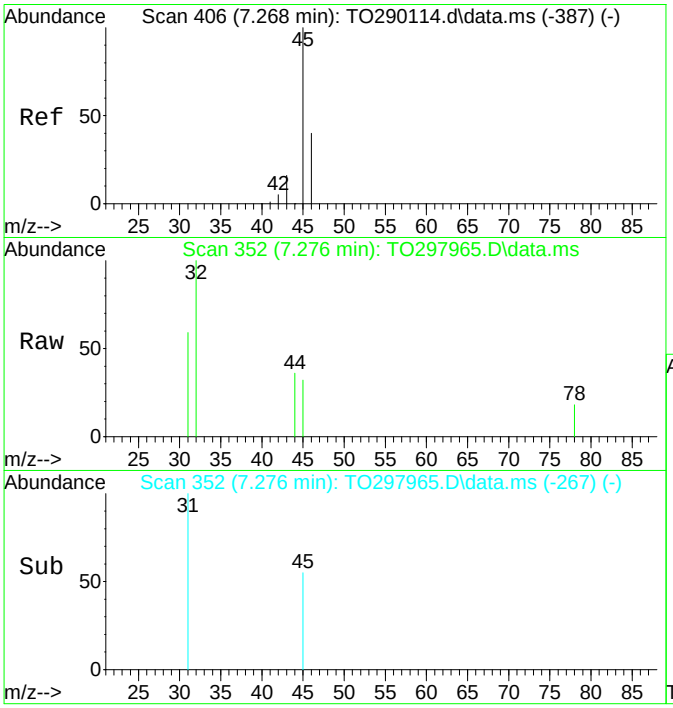


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.227 min Scan# 1150
Delta R.T. 0.002 min
Lab File: TO297965.D
Acq: 14 Mar 2023 8:04 pm

Tgt Ion: 49 Resp: 259852

Ion	Ratio	Lower	Upper
49	100		
130	76.3	44.5	92.3
128	59.6	34.7	72.1
51	30.8	21.5	44.6

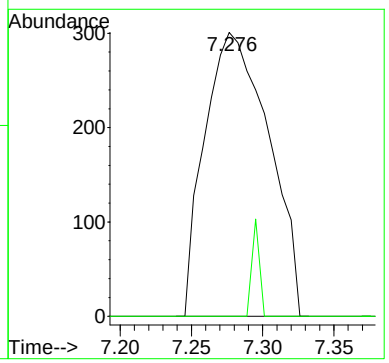


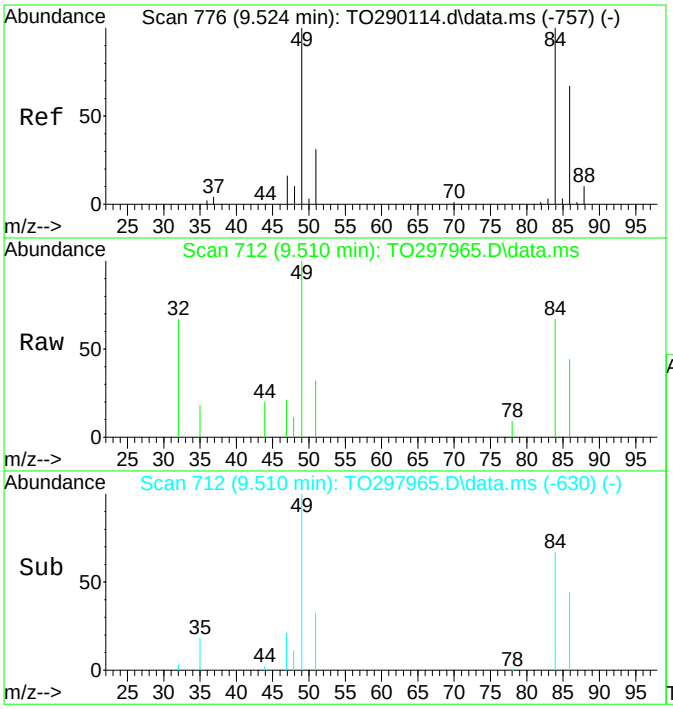


#10
ethanol
Concen: 0.14 ppbv
RT: 7.276 min Scan# 352
Delta R.T. 0.027 min
Lab File: TO297965.D
Acq: 14 Mar 2023 8:04 pm

Tgt Ion: 45 Resp: 939

Ion	Ratio	Lower	Upper
45	100		
46	0.0	40.0	60.0#

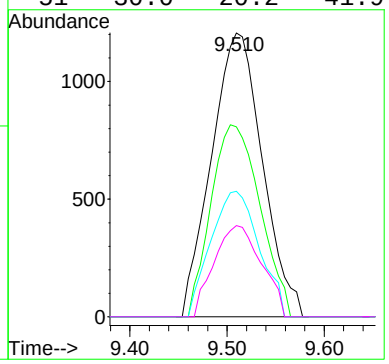


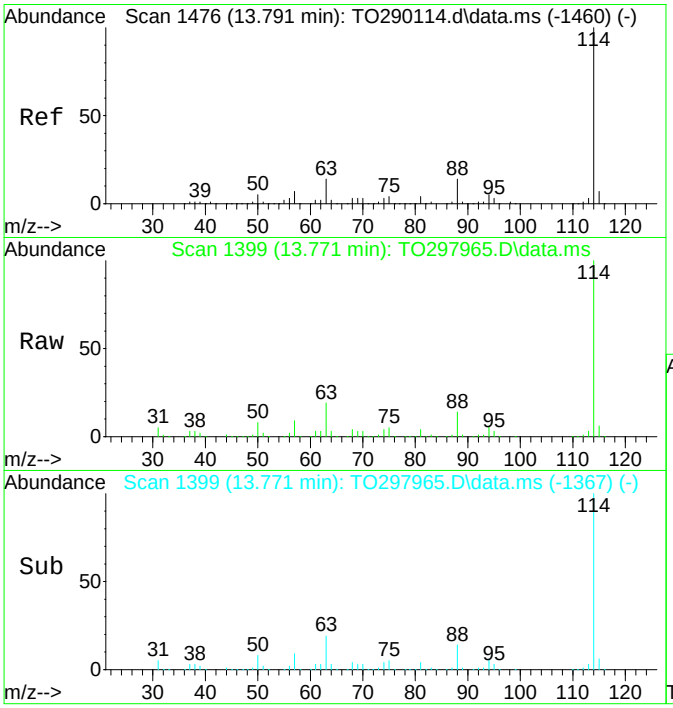


#19
Methylene Chloride
Concen: 0.17 ppbv
RT: 9.510 min Scan# 712
Delta R.T. 0.009 min
Lab File: TO297965.D
Acq: 14 Mar 2023 8:04 pm

Tgt Ion: 49 Resp: 4397

Ion	Ratio	Lower	Upper
49	100		
84	65.2	50.1	104.0
86	42.0	32.2	66.8
51	30.0	20.2	41.9

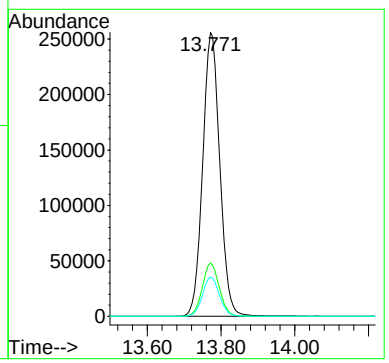


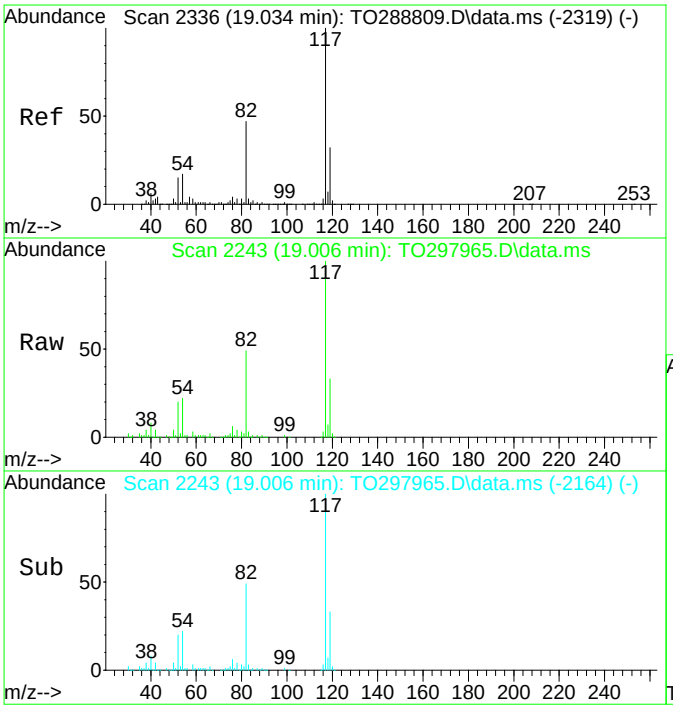


#38
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.771 min Scan# 1399
Delta R.T. -0.004 min
Lab File: TO297965.D
Acq: 14 Mar 2023 8:04 pm

Tgt Ion:114 Resp: 825074

Ion	Ratio	Lower	Upper
114	100		
63	18.7	14.0	29.2
88	13.8	11.2	23.2

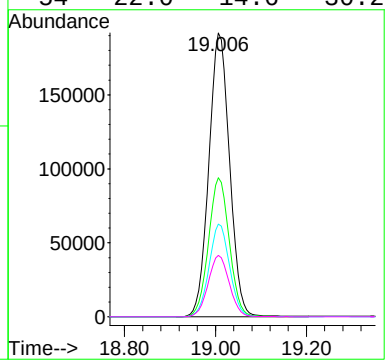


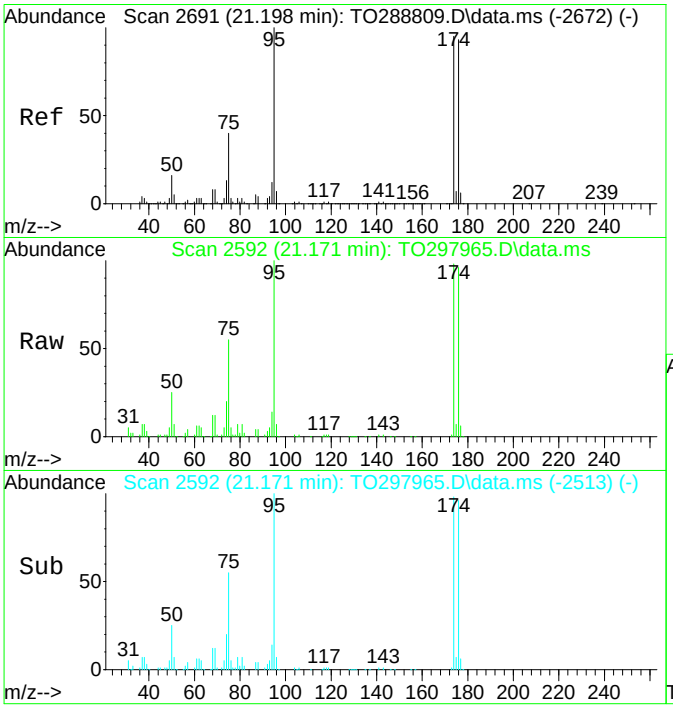


#54
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.006 min Scan# 2243
Delta R.T. -0.011 min
Lab File: TO297965.D
Acq: 14 Mar 2023 8:04 pm

Tgt Ion:117 Resp: 609005

Ion	Ratio	Lower	Upper
117	100		
82	49.0	38.7	80.5
119	32.3	20.3	42.3
54	22.0	14.6	30.2

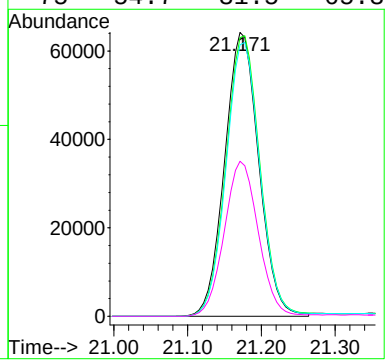




#65
p-Bromofluorobenzene
Concen: 7.34 ppbv
RT: 21.171 min Scan# 2592
Delta R.T. -0.010 min
Lab File: TO297965.D
Acq: 14 Mar 2023 8:04 pm

Tgt Ion: 95 Resp: 206796

Ion	Ratio	Lower	Upper
95	100		
174	99.5	50.0	103.8
176	95.9	48.2	100.2
75	54.7	31.5	65.3



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

CAN 43005 / FC 17900

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	23C0823-06	File ID:	TO297966.D
Sampled:	03/14/23 09:00	Prepared:	03/14/23 11:00	Analyzed:	03/14/23 20:57
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018
Instrument:	5975C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	0.687	U
71-55-6	1,1,1-Trichloroethane	1	0.546	U
79-34-5	1,1,2,2-Tetrachloroethane	1	0.687	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1	0.766	U
79-00-5	1,1,2-Trichloroethane	1	0.546	U
75-34-3	1,1-Dichloroethane	1	0.405	U
75-35-4	1,1-Dichloroethylene	1	0.198	U
120-82-1	1,2,4-Trichlorobenzene	1	0.742	U
95-63-6	1,2,4-Trimethylbenzene	1	0.492	U
106-93-4	1,2-Dibromoethane	1	0.768	U
95-50-1	1,2-Dichlorobenzene	1	0.601	U
107-06-2	1,2-Dichloroethane	1	0.405	U
78-87-5	1,2-Dichloropropane	1	0.462	U
76-14-2	1,2-Dichlorotetrafluoroethane	1	0.699	U
108-67-8	1,3,5-Trimethylbenzene	1	0.492	U
106-99-0	1,3-Butadiene	1	0.664	U
541-73-1	1,3-Dichlorobenzene	1	0.601	U
142-28-9	1,3-Dichloropropane	1	0.462	U
106-46-7	1,4-Dichlorobenzene	1	0.601	U
123-91-1	1,4-Dioxane	1	0.721	U
78-93-3	2-Butanone	1	0.295	U
591-78-6	2-Hexanone	1	0.819	U
107-05-1	3-Chloropropene	1	1.57	U
108-10-1	4-Methyl-2-pentanone	1	0.410	U
67-64-1	Acetone	1	0.475	U
107-13-1	Acrylonitrile	1	0.217	U
71-43-2	Benzene	1	0.319	U
100-44-7	Benzyl chloride	1	0.518	U
75-27-4	Bromodichloromethane	1	0.670	U
75-25-2	Bromoform	1	1.03	U
74-83-9	Bromomethane	1	0.388	U
75-15-0	Carbon disulfide	1	0.311	U
56-23-5	Carbon tetrachloride	1	0.157	U
108-90-7	Chlorobenzene	1	0.460	U
75-00-3	Chloroethane	1	0.264	U
67-66-3	Chloroform	1	0.488	U
74-87-3	Chloromethane	1	0.207	U
156-59-2	cis-1,2-Dichloroethylene	1	0.198	U
10061-01-5	cis-1,3-Dichloropropylene	1	0.454	U
110-82-7	Cyclohexane	1	0.344	U

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

CAN 43005 / FC 17900

Laboratory:	York Analytical Laboratories, Inc. - Stratford		SDG:	23C0823	
Client:	Langan Engineering & Environmental Services (NYC)		Project:	170361307	
Matrix:	Air	Laboratory ID:	23C0823-06	File ID:	TO297966.D
Sampled:	03/14/23 09:00	Prepared:	03/14/23 11:00	Analyzed:	03/14/23 20:57
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018
Instrument:	5975C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
124-48-1	Dibromochloromethane	1	0.852	U
75-71-8	Dichlorodifluoromethane	1	0.495	U
141-78-6	Ethyl acetate	1	0.721	U
100-41-4	Ethyl Benzene	1	0.434	U
87-68-3	Hexachlorobutadiene	1	1.07	U
67-63-0	Isopropanol	1	0.492	U
80-62-6	Methyl Methacrylate	1	0.409	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.361	U
75-09-2	Methylene chloride	1	0.695	U
142-82-5	n-Heptane	1	0.410	U
110-54-3	n-Hexane	1	0.352	U
95-47-6	o-Xylene	1	0.434	U
179601-23-1	p- & m- Xylenes	1	0.868	U
622-96-8	p-Ethyltoluene	1	0.492	U
115-07-1	Propylene	1	0.172	U
100-42-5	Styrene	1	0.426	U
127-18-4	Tetrachloroethylene	1	0.678	U
109-99-9	Tetrahydrofuran	1	0.590	U
108-88-3	Toluene	1	0.377	U
156-60-5	trans-1,2-Dichloroethylene	1	0.396	U
10061-02-6	trans-1,3-Dichloropropylene	1	0.454	U
79-01-6	Trichloroethylene	1	0.134	U
75-69-4	Trichlorofluoromethane (Freon 11)	1	0.562	U
108-05-4	Vinyl acetate	1	0.352	U
593-60-2	Vinyl bromide	1	0.437	U
75-01-4	Vinyl Chloride	1	0.128	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	273673	12.226	311361	12.22	
ISTD: 1,4-Difluorobenzene	888989	13.771	1038593	13.771	
ISTD: d5-Chlorobenzene	630768	19.006	967186	19.007	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297966.D
Acq On : 14 Mar 2023 8:57 pm
Operator : VH
Sample : 23C0823-06
Misc : QBTO1031423A 1X/400ML SN:43005
ALS Vial : 5 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 15 16:01:13 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

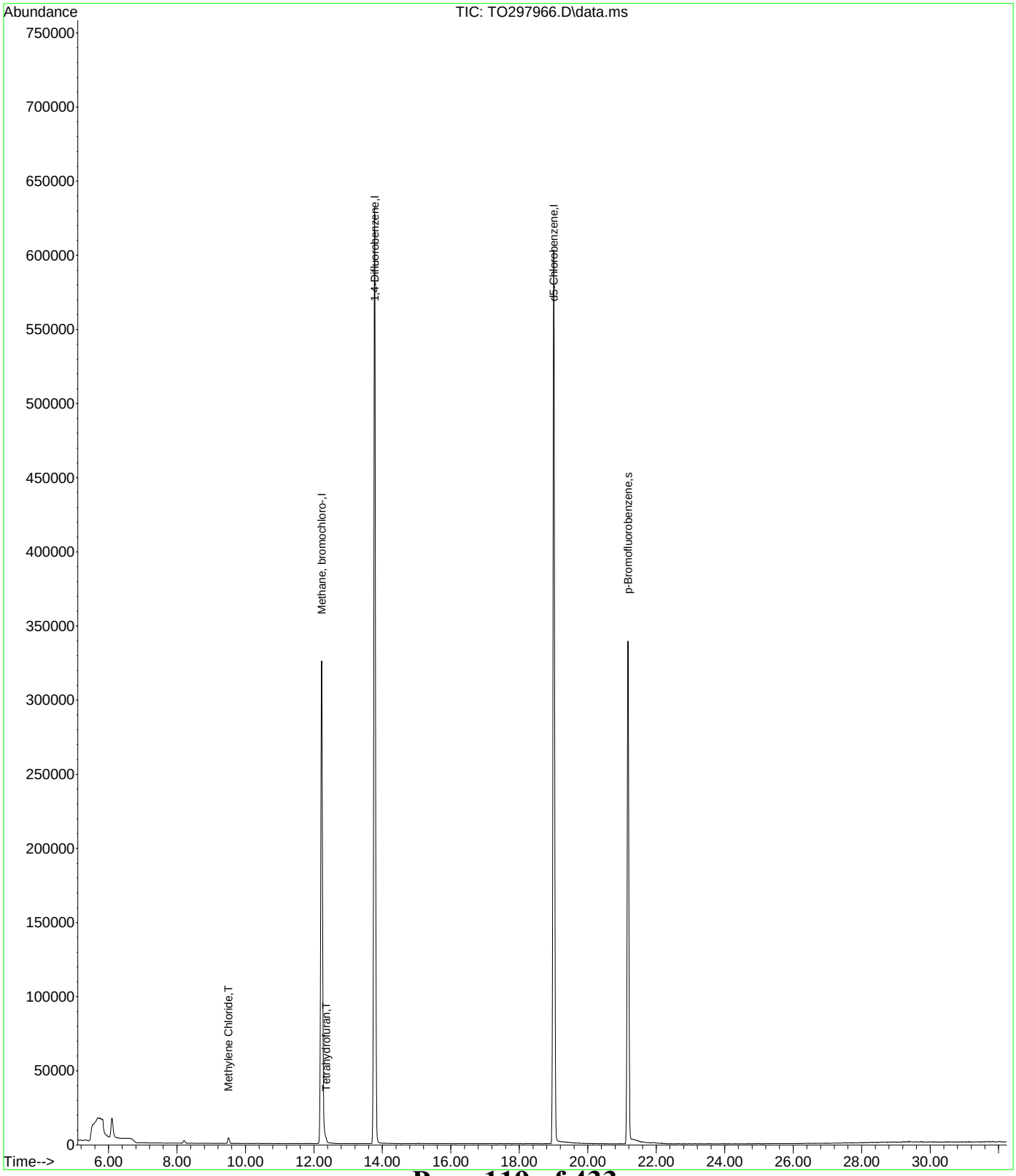
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.226	49	273673	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	888989	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.006	117	630768	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	190977	6.55	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 65.50%#			
Target Compounds						Qvalue
19) Methylene Chloride	9.503	49	4228	0.15	ppbv	98
31) Tetrahydrofuran	12.357	42	1547	0.07	ppbv #	60

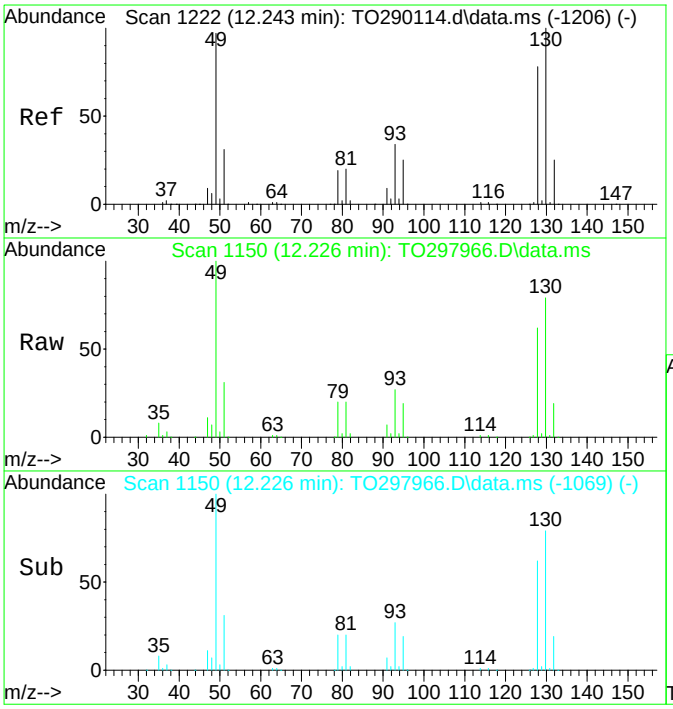
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297966.D
Acq On : 14 Mar 2023 8:57 pm
Operator : VH
Sample : 23C0823-06
Misc : QBTO1031423A 1X/400ML SN:43005
ALS Vial : 5 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 15 16:01:13 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

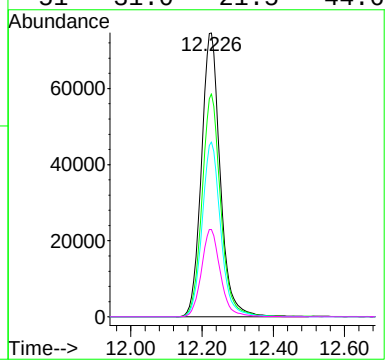


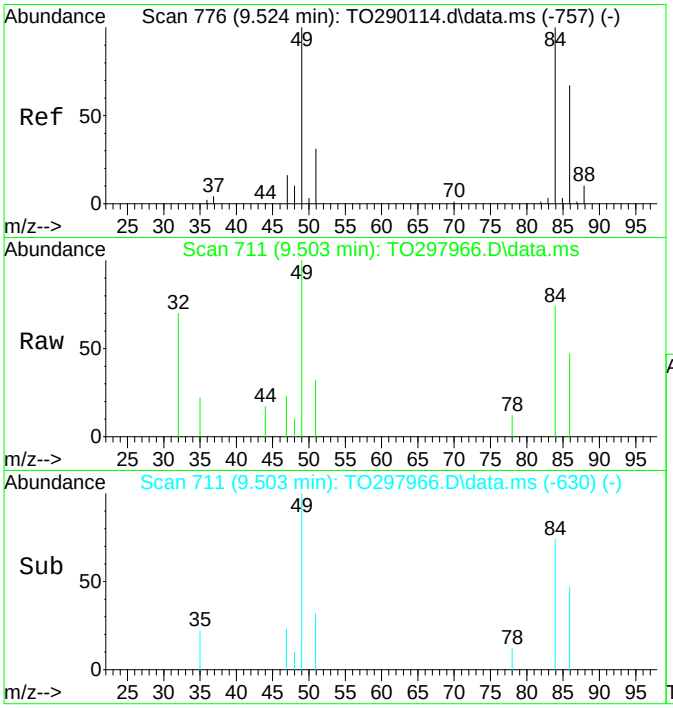


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.226 min Scan# 1150
Delta R.T. 0.002 min
Lab File: TO297966.D
Acq: 14 Mar 2023 8:57 pm

Tgt Ion: 49 Resp: 273673

Ion	Ratio	Lower	Upper
49	100		
130	77.8	44.5	92.3
128	60.8	34.7	72.1
51	31.0	21.5	44.6

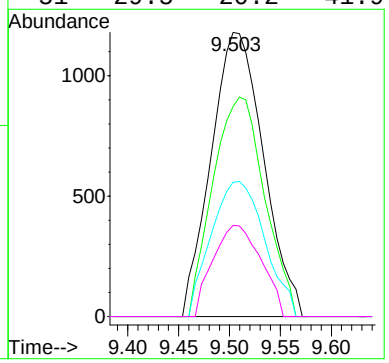


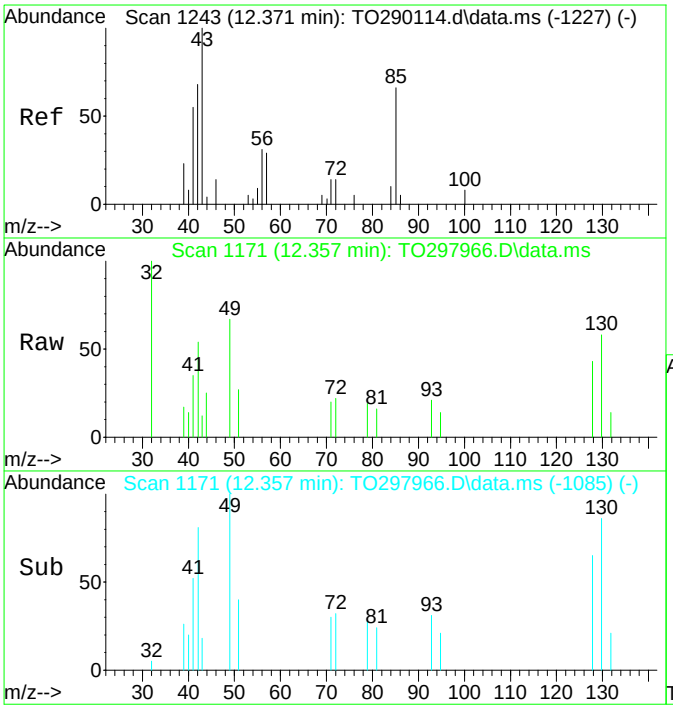


#19
Methylene Chloride
Concen: 0.15 ppbv
RT: 9.503 min Scan# 711
Delta R.T. 0.002 min
Lab File: TO297966.D
Acq: 14 Mar 2023 8:57 pm

Tgt Ion: 49 Resp: 4228

Ion	Ratio	Lower	Upper
49	100		
84	76.0	50.1	104.0
86	48.4	32.2	66.8
51	29.5	20.2	41.9

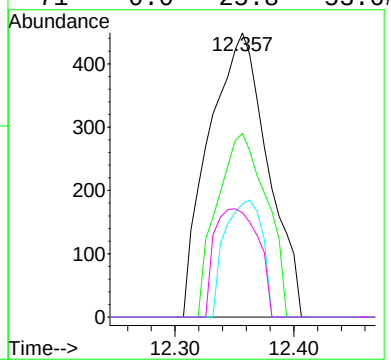


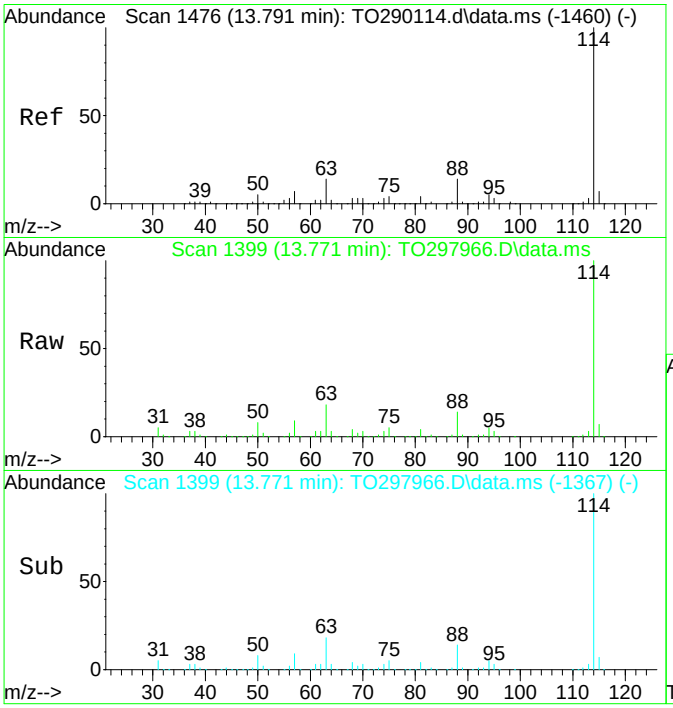


#31
Tetrahydrofuran
Concen: 0.07 ppbv
RT: 12.357 min Scan# 1171
Delta R.T. 0.033 min
Lab File: TO297966.D
Acq: 14 Mar 2023 8:57 pm

Tgt Ion: 42 Resp: 1547

Ion	Ratio	Lower	Upper
42	100		
41	54.3	34.5	71.7
72	0.0	27.4	56.8#
71	0.0	25.8	53.6#

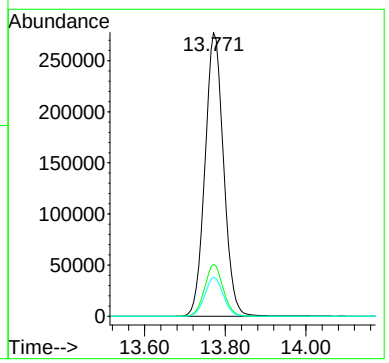


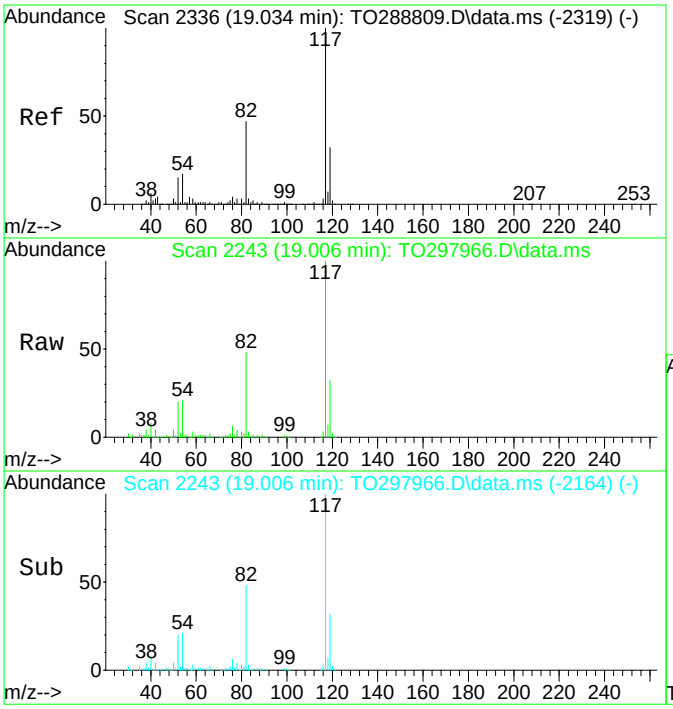


#38
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.771 min Scan# 1399
Delta R.T. -0.004 min
Lab File: TO297966.D
Acq: 14 Mar 2023 8:57 pm

Tgt Ion:114 Resp: 888989

Ion	Ratio	Lower	Upper
114	100		
63	18.3	14.0	29.2
88	13.7	11.2	23.2

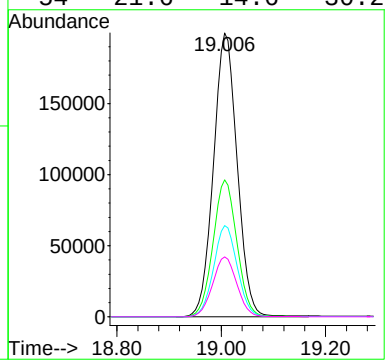


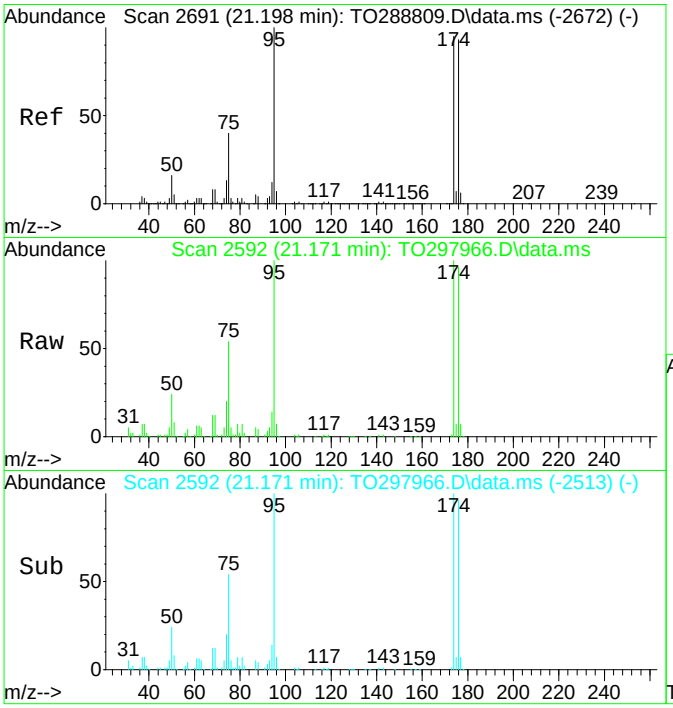


#54
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.006 min Scan# 2243
Delta R.T. -0.011 min
Lab File: TO297966.D
Acq: 14 Mar 2023 8:57 pm

Tgt Ion:117 Resp: 630768

Ion	Ratio	Lower	Upper
117	100		
82	48.6	38.7	80.5
119	32.3	20.3	42.3
54	21.6	14.6	30.2

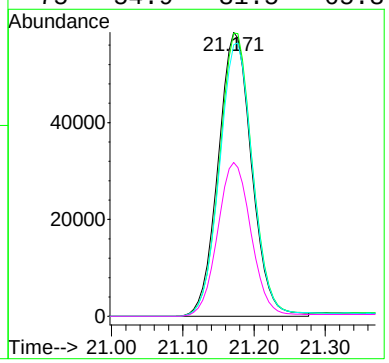




#65
p-Bromofluorobenzene
Concen: 6.55 ppbv
RT: 21.171 min Scan# 2592
Delta R.T. -0.010 min
Lab File: TO297966.D
Acq: 14 Mar 2023 8:57 pm

Tgt Ion: 95 Resp: 190977

Ion	Ratio	Lower	Upper
95	100		
174	99.3	50.0	103.8
176	96.7	48.2	100.2
75	54.9	31.5	65.3



FORM VI

INITIAL CALIBRATION DATA

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford

SDG: 23C0823

Client: Langan Engineering & Environmental Services (NYC)

Project: 170361307

Calibration: SB30018

Instrument: 5975C

Calibration Date: 02/09/23 15:26

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	0.3592037	0.2	0.3689578	0.5	0.3780721	3	0.543748
1,1,1-Trichloroethane	0.025		0.05		0.1	1.464435	0.2	1.313721	0.5	1.286854	3	1.887819
1,1,2,2-Tetrachloroethane	0.025		0.05		0.1	0.6014716	0.2	0.5663103	0.5	0.5964363	3	0.7766995
1,1,2-Trichloro-1,2,2-trifluoro ethane (Freon 113)	0.025		0.05		0.1	1.415763	0.2	1.386309	0.5	1.358606	3	1.899436
1,1,2-Trichloroethane	0.025		0.05		0.1	0.2396975	0.2	0.2234647	0.5	0.2161027	3	0.3317743
1,1-Dichloroethane	0.025		0.05		0.1	1.149446	0.2	1.100552	0.5	1.054881	3	1.46522
1,1-Dichloroethylene	0.025	1.253602	0.05	0.9445427	0.1	0.9535354	0.2	0.8490291	0.5	0.8604214	3	1.216845
1,2,4-Trichlorobenzene	0.025		0.05		0.1	0.1910237	0.2	9.548256E-02	0.5	0.125178	3	6.077812E-02
1,2,4-Trimethylbenzene	0.025		0.05		0.1	0.528001	0.2	0.4982872	0.5	0.7326873	3	1.117718
1,2-Dibromoethane	0.025		0.05		0.1	0.3007752	0.2	0.2956099	0.5	0.3133777	3	0.460672
1,2-Dichlorobenzene	0.025		0.05		0.1	0.475275	0.2	0.4066898	0.5	0.4740475	3	0.6433222
1,2-Dichloroethane	0.025		0.05		0.1	0.8353766	0.2	0.7981539	0.5	0.8213691	3	1.129103
1,2-Dichloropropane	0.025		0.05		0.1	0.1810187	0.2	0.1813881	0.5	0.1906488	3	0.2753705
1,2-Dichlorotetrafluoroethane	0.025		0.05		0.1	4.142905	0.2	3.78299	0.5	3.699404	3	4.748395
1,3,5-Trimethylbenzene	0.025		0.05		0.1	0.5931985	0.2	0.5935064	0.5	0.7370942	3	1.18838
1,3-Butadiene	0.025		0.05		0.1	0.5911001	0.2	0.6369699	0.5	0.5859853	3	0.8089651
1,3-Dichlorobenzene	0.025		0.05		0.1	0.4400831	0.2	0.3957587	0.5	0.4549416	3	0.6401201
1,3-Dichloropropane	0.025		0.05		0.1	0.2564893	0.2	0.2644674	0.5	0.2822531	3	0.4079567
1,4-Dichlorobenzene	0.025		0.05		0.1	0.4363787	0.2	0.3251016	0.5	0.3982657	3	0.550197
1,4-Dioxane	0.025		0.05		0.1	9.604508E-02	0.2	0.0847389	0.5	0.1021356	3	0.1156725
2-Butanone	0.025		0.05		0.1	1.311991	0.2	1.22354	0.5	1.264051	3	1.460154
2-Hexanone	0.025		0.05		0.1	0.2856442	0.2	0.2590491	0.5	0.32231	3	0.3123701
3-Chloropropene	0.025		0.05		0.1	0.6853823	0.2	0.5830834	0.5	0.5829761	3	0.8287052
4-Methyl-2-pentanone	0.025		0.05		0.1	0.3859333	0.2	0.3495479	0.5	0.3948346	3	0.5369084
Acetone	0.025		0.05		0.1	1.934009	0.2	1.675553	0.5	1.625084	3	1.155092
Acrolein	0.025		0.05		0.1	0.2142776	0.2	0.2237874	0.5	0.2176631	3	0.2921291
Acrylonitrile	0.025		0.05		0.1	0.3728431	0.2	0.3729262	0.5	0.3962071	3	0.5176171
Benzene	0.025		0.05		0.1	1.946253	0.2	1.722783	0.5	1.732478	3	2.563168
Benzyl chloride	0.025		0.05		0.1		0.2	3.898322E-02	0.5	5.115339E-02	3	0.0772698
Bromodichloromethane	0.025		0.05		0.1	0.3863024	0.2	0.3671693	0.5	0.3990769	3	0.5890432
Bromoform	0.025		0.05		0.1	0.3350015	0.2	0.326682	0.5	0.3808613	3	0.6329165

FORM VI

INITIAL CALIBRATION DATA

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford

SDG: 23C0823

Client: Langan Engineering & Environmental Services (NYC)

Project: 170361307

Calibration: SB30018

Instrument: 5975C

Calibration Date: 02/09/23 15:26

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	3.548744	0.2	1.603281	0.5	1.557144	3	0.8511123
Carbon disulfide	0.025		0.05		0.1	1.623918	0.2	1.643538	0.5	1.58757	3	2.250406
Carbon tetrachloride	0.025		0.05	1.347026	0.1	1.291788	0.2	1.23717	0.5	1.284848	3	1.93655
Chlorobenzene	0.025		0.05		0.1	0.7426094	0.2	0.7248114	0.5	0.6999982	3	0.9136787
Chloroethane	0.025		0.05		0.1	0.3639659	0.2	0.3193567	0.5	0.3553493	3	0.3764458
Chloroform	0.025		0.05		0.1	1.396478	0.2	1.328777	0.5	1.353925	3	1.854097
Chloromethane	0.025		0.05		0.1	0.9927176	0.2	0.873278	0.5	0.7491491	3	0.8908938
cis-1,2-Dichloroethylene	0.025	0.9099978	0.05	0.7766909	0.1	0.8001739	0.2	0.735075	0.5	0.7110329	3	1.002416
cis-1,3-Dichloropropylene	0.025		0.05		0.1	0.2149712	0.2	0.1995952	0.5	0.2220292	3	0.3561729
Cyclohexane	0.025		0.05		0.1	0.7132384	0.2	0.6311058	0.5	0.6723819	3	1.114273
Dibromochloromethane	0.025		0.05		0.1	0.3624064	0.2	0.3480836	0.5	0.3697004	3	0.6007903
Dichlorodifluoromethane	0.025		0.05		0.1	2.069616	0.2	1.921053	0.5	1.835592	3	2.408182
Ethanol	0.025		0.05		0.1	1.106897	0.2	0.9258966	0.5	0.95297	3	0.2179335
Ethyl acetate	0.025		0.05		0.1	1.351173	0.2	1.299298	0.5	1.326909	3	1.705639
Ethyl Benzene	0.025		0.05		0.1	0.9820373	0.2	0.9477796	0.5	0.9674239	3	1.403481
Hexachlorobutadiene	0.025		0.05		0.1	0.5841844	0.2	0.4739886	0.5	0.4517899	3	0.4128752
Isopropanol	0.025		0.05		0.1	3.139473	0.2	2.345488	0.5	1.921989	3	1.287649
Isopropylbenzene	0.025		0.05		0.1	0.7895318	0.2	0.7275112	0.5	0.9613156	3	1.56447
Methyl Methacrylate	0.025		0.05		0.1	0.1209559	0.2	0.1065094	0.5	0.1347524	3	0.226661
Methyl tert-butyl ether (MTBE)	0.025		0.05		0.1	1.380254	0.2	1.241766	0.5	1.30531	3	1.894147
Methylene chloride	0.025		0.05		0.1	2.183183	0.2	1.478867	0.5	0.9892138	3	1.02152
Naphthalene	0.025		0.05		0.1		0.2	0.166403	0.5	0.3169614	3	7.926038E-02
n-Butylbenzene	0.025		0.05		0.1	0.6283903	0.2	0.5274588	0.5	0.7428398	3	0.9799677
n-Decane	0.025		0.05		0.1		0.2		0.5		3	
n-Heptane	0.025		0.05		0.1	0.8228261	0.2	0.7721616	0.5	0.8669747	3	1.442869
n-Hexane	0.025		0.05		0.1	0.7224217	0.2	0.7044865	0.5	0.6943153	3	1.090884
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	1.025502	0.2	1.013564	0.5	1.255629	3	1.781011
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. - Stratford

SDG: 23C0823

Client: Langan Engineering & Environmental Services (NYC)

Project: 170361307

Calibration: SB30018

Instrument: 5975C

Calibration Date: 02/09/23 15:26

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	0.5938159	0.2	0.5518892	0.5	0.6541163	3	1.068496
p- & m- Xylenes	0.05		0.1		0.2	0.6570377	0.4	0.6599491	1	0.7663247	6	1.109072
p-Ethyltoluene	0.025		0.05		0.1	0.704701	0.2	0.6598174	0.5	0.8618817	3	1.361357
p-Isopropyltoluene	0.025		0.05		0.1	0.7088993	0.2	0.5836947	0.5	0.8384247	3	1.350792
Propylene	0.025		0.05		0.1	0.3703942	0.2	0.3424961	0.5	0.3324128	3	0.4096882
sec-Butylbenzene	0.025		0.05		0.1	1.001424	0.2	0.8760031	0.5	1.175831	3	1.804804
Styrene	0.025		0.05		0.1	0.3161091	0.2	0.2954033	0.5	0.3963412	3	0.7193274
tert-Butylbenzene	0.025		0.05		0.1	0.7143325	0.2	0.6347285	0.5	0.7508448	3	1.337045
Tetrachloroethylene	0.025		0.05		0.1	0.3636981	0.2	0.3426165	0.5	0.3370622	3	0.5033409
Tetrahydrofuran	0.025		0.05		0.1	0.6428329	0.2	0.6017852	0.5	0.6358037	3	0.839931
Toluene	0.025		0.05		0.1	0.7045151	0.2	0.6621935	0.5	0.7016676	3	0.8931184
trans-1,2-Dichloroethylene	0.025		0.05		0.1	0.8038472	0.2	0.7319052	0.5	0.7580428	3	1.05464
trans-1,3-Dichloropropylene	0.025		0.05		0.1	0.1794502	0.2	0.1760675	0.5	0.1935054	3	0.3179079
Trichloroethylene	0.025	0.3372033	0.05	0.2677291	0.1	0.2512303	0.2	0.2362536	0.5	0.2346496	3	0.3313322
Trichlorofluoromethane (Freon 11)	0.025		0.05		0.1	2.000435	0.2	1.88777	0.5	1.798412	3	2.427196
Vinyl acetate	0.025		0.05		0.1	1.280768	0.2	1.215774	0.5	1.269066	3	1.865435
Vinyl bromide	0.025		0.05		0.1	0.645894	0.2	0.5700873	0.5	0.5580335	3	0.7838464
Vinyl Chloride	0.025	1.596098	0.05	1.938418	0.1	0.927516	0.2	1.117035	0.5	0.9036866	3	1.135676

FORM VI INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0823
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30018
Instrument: 5975C
Calibration Date: 02/09/23 15:26

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	0.6134882	20	0.704317	30	0.7474822	50	0.8280252				
1,1,1-Trichloroethane	10	2.079642	20	2.22912	30	2.28408	50	2.532971				
1,1,2,2-Tetrachloroethane	10	0.9413634	20	1.058695	30	1.070383	50	0.9920325				
1,1,2-Trichloro-1,2,2-trifluoro ethane (Freon 113)	10	2.071299	20	2.287385	30	2.358123	50	2.672696				
1,1,2-Trichloroethane	10	0.4418835	20	0.5789634	30	0.5757117	50	0.6113389				
1,1-Dichloroethane	10	1.606488	20	1.655664	30	1.785866	50	1.892347				
1,1-Dichloroethylene	10	1.371696	20	1.397843	30	1.452879	50	1.524237				
1,2,4-Trichlorobenzene	10	0.3144305	20	0.711331	30	0.9193672	50	1.185585				
1,2,4-Trimethylbenzene	10	1.595572	20	1.752664	30	1.772492	50	1.785864				
1,2-Dibromoethane	10	0.6164466	20	0.7898483	30	0.8243931	50	0.916638				
1,2-Dichlorobenzene	10	1.058579	20	1.273996	30	1.329924	50	1.385188				
1,2-Dichloroethane	10	1.242054	20	1.280043	30	1.29026	50	1.336653				
1,2-Dichloropropane	10	0.342818	20	0.4337295	30	0.4260601	50	0.4051879				
1,2-Dichlorotetrafluoroethane	10	5.240604	20	4.755244	30	3.971428	50	3.382255				
1,3,5-Trimethylbenzene	10	1.561518	20	1.651404	30	1.680033	50	1.688711				
1,3-Butadiene	10	0.8702203	20	0.8272404	30	0.6543509	50	0.5797827				
1,3-Dichlorobenzene	10	1.062745	20	1.268114	30	1.331877	50	1.395622				
1,3-Dichloropropane	10	0.5059393	20	0.5939857	30	0.6193857	50	0.6423233				
1,4-Dichlorobenzene	10	1.013379	20	1.267826	30	1.358967	50	1.428262				
1,4-Dioxane	10	0.1750808	20	0.2072812	30	0.2207399	50	0.2386488				
2-Butanone	10	1.768255	20	1.830255	30	1.958408	50	2.02519				
2-Hexanone	10	0.7110441	20	0.9614694	30	0.8695387	50	0.7529132				
3-Chloropropene	10	0.9710491	20	0.9932423	30	1.084905	50	1.152757				
4-Methyl-2-pentanone	10	0.7274269	20	0.8372693	30	0.8517022	50	0.8149448				
Acetone	10	1.310692	20	1.298676	30	1.339514	50	1.339868				
Acrolein	10	0.331451	20	0.32653	30	0.3500813	50	0.3695387				
Acrylonitrile	10	0.601378	20	0.5991728	30	0.6598584	50	0.6985308				
Benzene	10	3.099861	20	3.844485	30	3.724589	50	3.776207				
Benzyl chloride	10	0.2346346	20	0.3356266	30	0.347771	50	0.37004				
Bromodichloromethane	10	0.7120016	20	0.828395	30	0.8197985	50	0.8533956				
Bromoform	10	0.8376285	20	1.00109	30	1.107956	50	1.214885				

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford SDG: 23C0823

Client: Langan Engineering & Environmental Services (NYC) Project: 170361307

Calibration: SB30018 Instrument: 5975C

Calibration Date: 02/09/23 15:26

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	1.461713	20	1.443803	30	1.224248	50					
Carbon disulfide	10	2.455071	20	2.442514	30	2.687999	50	2.906711				
Carbon tetrachloride	10	2.216226	20	2.463284	30	2.552844	50	3.035719				
Chlorobenzene	10	0.9982427	20	1.147252	30	1.196036	50	1.224124				
Chloroethane	10	0.4570885	20	0.4420944	30	0.4590402	50	0.4740099				
Chloroform	10	2.042225	20	2.158588	30	2.250659	50	2.417328				
Chloromethane	10	1.006701	20	0.936181	30	0.7492749	50	0.668096				
cis-1,2-Dichloroethylene	10	1.1609	20	1.227023	30	1.321473	50	1.405476				
cis-1,3-Dichloropropylene	10	0.4583386	20	0.5192881	30	0.5633531	50	0.5955327				
Cyclohexane	10	1.277798	20	1.385802	30	1.524352	50	1.62502				
Dibromochloromethane	10	0.7955555	20	1.021908	30	1.051501	50	1.230806				
Dichlorodifluoromethane	10	2.844861	20	3.068751	30	2.900443	50	2.938496				
Ethanol	10	0.278876	20	0.2701715	30	0.2811751	50	0.287386				
Ethyl acetate	10	2.073789	20	2.202357	30	2.338136	50	2.39087				
Ethyl Benzene	10	1.57065	20	1.774858	30	1.772729	50	1.663073				
Hexachlorobutadiene	10	0.8287583	20	1.338692	30	1.564809	50	1.390768				
Isopropanol	10	1.541796	20	1.558944	30	1.651269	50	1.716495				
Isopropylbenzene	10	1.898604	20	2.089003	30	2.098013	50	2.021918				
Methyl Methacrylate	10	0.3263586	20	0.4249716	30	0.4217654	50	0.4113971				
Methyl tert-butyl ether (MTBE)	10	2.18555	20	2.292591	30	2.470528	50	2.663469				
Methylene chloride	10	1.048567	20	1.027392	30	1.095411	50	1.118359				
Naphthalene	10	0.6914011	20	1.553159	30	1.828047	50	2.02908				
n-Butylbenzene	10	1.769902	20	2.18156	30	2.163682	50	1.935261				
n-Decane	10		20		30		50					
n-Heptane	10	1.881366	20	2.334087	30	2.146508	50	1.964765				
n-Hexane	10	1.258981	20	1.377302	30	1.488199	50	1.581211				
n-Nonane	10		20		30		50					
n-octane	10		20		30		50					
n-pentane	10		20		30		50					
n-Propylbenzene	10	2.221134	20	2.43286	30	2.428343	50	2.214704				
n-undecane	10		20		30		50					

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford SDG: 23C0823

Client: Langan Engineering & Environmental Services (NYC) Project: 170361307

Calibration: SB30018 Instrument: 5975C

Calibration Date: 02/09/23 15:26

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	1.410756	20	1.538361	30	1.550406	50	1.409819				
p- & m- Xylenes	20	1.493741	40	1.572727	60	1.539789	100	1.262892				
p-Ethyltoluene	10	1.814949	20	2.084855	30	2.108811	50	2.035661				
p-Isopropyltoluene	10	2.123099	20	2.364443	30	2.488969	50	2.32862				
Propylene	10	0.4952466	20	0.5183587	30	0.5360688	50	0.5246478				
sec-Butylbenzene	10	2.576406	20	2.790349	30	2.779914	50	2.541266				
Styrene	10	1.115743	20	1.291832	30	1.337345	50	1.252247				
tert-Butylbenzene	10	1.792664	20	1.960026	30	2.028726	50	2.092532				
Tetrachloroethylene	10	0.6482898	20	0.8460609	30	0.8927991	50	1.08975				
Tetrahydrofuran	10	0.9886786	20	1.006147	30	1.094414	50	1.128312				
Toluene	10	1.072049	20	1.327413	30	1.343152	50	1.423578				
trans-1,2-Dichloroethylene	10	1.209185	20	1.263318	30	1.367869	50	1.457433				
trans-1,3-Dichloropropylene	10	0.4175298	20	0.4872572	30	0.5128425	50	0.5416714				
Trichloroethylene	10	0.4055	20	0.4874196	30	0.5036832	50	0.5553312				
Trichlorofluoromethane (Freon 11)	10	2.668088	20	2.875772	30	2.757164	50	3.054381				
Vinyl acetate	10	2.243793	20	2.497223	30	2.737671	50	2.865672				
Vinyl bromide	10	0.8820927	20	0.8934509	30	0.9673541	50	1.071587				
Vinyl Chloride	10	1.22898	20	1.173545	30	0.9280952	50	0.8136619				

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0823
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30018
Instrument: 5975C
Calibration Date: 02/09/23 15:26

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,1,1,2-Tetrachloroethane	0.5679118	32.62832	19.124	1.814462E-02		0.9998113	0.99	
1,1,1-Trichloroethane	1.88483	25.33712	12.729	3.358103E-02			30	
1,1,2,2-Tetrachloroethane	0.8254239	26.21371	20.93263	1.593841E-02			30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.931202	26.03835	8.545	5.002134E-02			30	
1,1,2-Trichloroethane	0.4023671	42.49058	16.97725	0.0093742		0.9983165	0.99	
1,1-Dichloroethane	1.463808	22.24976	10.744	1.613346E-02			30	
1,1-Dichloroethylene	1.182463	21.87709	8.7745	5.582412E-02			30	
1,2,4-Trichlorobenzene	0.450397	95.60095	27.1255	3.174914E-02		0.9971271	0.99	
1,2,4-Trimethylbenzene	1.222911	46.85064	22.6765	2.509121E-02		0.9992843	0.99	
1,2-Dibromoethane	0.5647201	45.42937	18.28175	2.189936E-02		0.9990897	0.99	
1,2-Dichlorobenzene	0.8808777	48.03752	24.38425	1.949391E-02		0.9986445	0.99	
1,2-Dichloroethane	1.091627	21.45167	13.25675	2.004608E-02			30	
1,2-Dichloropropane	0.3045277	36.67135	14.633	1.652544E-02		0.9973047	0.99	
1,2-Dichlorotetrafluoroethane	4.215403	15.10676	5.602	1.229547E-02			30	
1,3,5-Trimethylbenzene	1.211731	41.29969	21.84025	2.248195E-02		0.9995852	0.99	
1,3-Butadiene	0.6943268	17.39814	6.17225	1.497752E-02			30	
1,3-Dichlorobenzene	0.8736577	49.70458	23.50237	8.786833E-03		0.9987538	0.99	
1,3-Dichloropropane	0.4466001	37.00864	17.40075	9.728599E-03		0.9991713	0.99	
1,4-Dichlorobenzene	0.8472971	55.27094	23.6885	1.682563E-02		0.9981662	0.99	
1,4-Dioxane	0.1550428	40.21201	14.96438	6.852251E-02		0.9992273	0.99	
2-Butanone	1.605231	20.35645	11.34787	9.339091E-02			30	
2-Hexanone	0.5592923	52.37606	16.98738	0.0606424		0.9940145	0.99	
3-Chloropropene	0.8602626	26.03995	9.35525	1.620967E-02			30	
4-Methyl-2-pentanone	0.6123209	35.75343	15.52875	0.067238		0.998339	0.99	
Acetone	1.459811	17.72442	8.404	0.1306927			30	
Acrolein	0.2906823	21.88941	8.2955	0.1075137			30	
Acrylonitrile	0.5273167	25.08819	9.59175	0.103936			30	
Benzene	2.801228	33.2528	13.3865	5.252933E-03		0.9984487	0.99	
Benzyl chloride	0.2079255	71.61796	23.83414	4.619463E-03		0.9962667	0.99	
Bromodichloromethane	0.6193978	34.2256	14.993	1.496715E-02		0.9993134	0.99	
Bromoform	0.7296276	49.49904	20.68337	2.124702E-02		0.9992479	0.99	
Bromomethane	1.670006	51.91917	6.952286	9.668786E-02		0.9946113	0.99	

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0823
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30018
Instrument: 5975C
Calibration Date: 02/09/23 15:26

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Carbon disulfide	2.199716	23.56304	9.64375	2.541917E-02			30	
Carbon tetrachloride	1.929495	34.86459	13.188	1.413336E-02		0.9997715	0.99	
Chlorobenzene	0.955844	22.85887	19.0795	1.064394E-02			30	
Chloroethane	0.4059188	14.44435	7.122875	7.975285E-02			30	
Chloroform	1.85026	23.6293	11.997	2.229023E-02			30	
Chloromethane	0.8582864	14.43323	5.82725	7.599228E-02			30	
cis-1,2-Dichloroethylene	1.005026	25.6162	11.727	4.098107E-02			30	
cis-1,3-Dichloropropylene	0.3911601	42.10937	15.87475	8.551144E-03		0.9993211	0.99	
Cyclohexane	1.117996	35.76124	12.89625	1.887354E-02		0.9995798	0.99	
Dibromochloromethane	0.7225939	48.80897	17.90938	1.869637E-02		0.9992972	0.99	
Dichlorodifluoromethane	2.498374	20.1003	5.346375	4.070055E-02			30	
Ethanol	0.5401632	70.5422	7.2595	0.1154342		0.9989992	0.99	
Ethyl acetate	1.836021	25.62991	11.64425	7.243901E-02			30	
Ethyl Benzene	1.385254	26.4869	19.18	1.330794E-02			30	
Hexachlorobutadiene	0.8807332	54.22884	27.393	1.988581E-02		0.9864156	0.99	*
Isopropanol	1.895388	31.21437	8.18375	0.1830071		0.9998121	0.99	
Isopropylbenzene	1.518796	39.57423	20.75825	1.282842E-02		0.9991552	0.99	
Methyl Methacrylate	0.2716714	51.9275	14.6435	3.163053E-02		0.9970402	0.99	
Methyl tert-butyl ether (MTBE)	1.929202	29.02179	9.908	0.1334182			30	
Methylene chloride	1.245314	32.89409	9.504	2.627446E-02		0.9997639	0.99	
Naphthalene	0.9520446	87.23956	27.52143	0.0412689		0.9919905	0.99	
n-Butylbenzene	1.366133	52.29818	24.12175	1.552221E-02		0.9955364	0.99	
n-Decane							30	
n-Heptane	1.528945	41.81157	13.3975	1.635777E-02		0.996748	0.99	
n-Hexane	1.114725	32.98459	10.378	9.747037E-03		0.9996587	0.99	
n-Nonane							30	
n-octane							30	
n-pentane							30	
n-Propylbenzene	1.796593	34.30909	21.52725	1.740294E-02		0.9985213	0.99	
n-undecane							30	
o-Xylene	1.097207	39.93537	20.10913	1.189213E-02		0.9982891	0.99	
p- & m- Xylenes	1.132692	34.85683	19.3275	1.472818E-02		0.9972675	0.99	

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Calibration:	SB30018	Instrument:	5975C
		Calibration Date:	02/09/23 15:26

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
p-Ethyltoluene	1.454004	43.85898	21.75112	1.674701E-02		0.9985519	0.99	
p-Isopropyltoluene	1.598368	50.98184	23.33075	1.585434E-02		0.9975952	0.99	
Propylene	0.4411641	19.61581	5.27675	6.168698E-02			30	
sec-Butylbenzene	1.94325	42.65853	23.066	2.044526E-02		0.9984025	0.99	
Styrene	0.8405435	54.70295	20.1245	8.966005E-03		0.9974073	0.99	
tert-Butylbenzene	1.413862	44.91042	22.60175	2.144217E-02		0.9995083	0.99	
Tetrachloroethylene	0.6279522	45.94898	17.71687	0.0165038		0.9995003	0.99	
Tetrahydrofuran	0.867238	24.99612	12.3305	0.099741			30	
Toluene	1.015961	31.3337	16.53125	1.786222E-02		0.9990214	0.99	
trans-1,2-Dichloroethylene	1.08078	26.5724	10.1005	0.0256283			30	
trans-1,3-Dichloropropylene	0.353279	44.29718	16.68163	1.960388E-02		0.9992871	0.99	
Trichloroethylene	0.3610332	33.26443	14.41	1.822042E-02		0.9995612	0.99	
Trichlorofluoromethane (Freon 11)	2.433652	19.82609	7.69275	2.776429E-02			30	
Vinyl acetate	1.996925	34.30398	10.69287	5.366061E-02		0.9992837	0.99	
Vinyl bromide	0.7965432	23.8465	7.576375	4.335981E-02			30	
Vinyl Chloride	1.176271	29.6445	6.095	7.003539E-02			30	

Empty PDFFilePatÜ marker encountered

SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0823
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30018
Laboratory ID: S3B1020-SCV1
Sequence: S3B1020
Standard ID: S23B027

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
1,1,1,2-Tetrachloroethane	10.0	9.26	-7.4	30.00
1,1,1-Trichloroethane	10.0	10.4	4.5	30.00
1,1,2,2-Tetrachloroethane	10.0	11.1	11.3	30.00
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.0	10.1	0.6	30.00
1,1,2-Trichloroethane	10.0	7.97	-20.3	30.00
1,1-Dichloroethane	10.0	10.2	1.7	30.00
1,1-Dichloroethylene	10.0	11.0	9.9	30.00
1,2,4-Trichlorobenzene	10.0	8.15	-18.5	30.00
1,2,4-Trimethylbenzene	10.0	8.41	-15.9	30.00
1,2-Dibromoethane	10.0	8.46	-15.4	30.00
1,2-Dichlorobenzene	10.0	7.97	-20.3	30.00
1,2-Dichloroethane	10.0	10.6	5.7	30.00
1,2-Dichloropropane	10.0	7.81	-21.9	30.00
1,2-Dichlorotetrafluoroethane	10.0	8.30	-17.0	30.00
1,3,5-Trimethylbenzene	10.0	8.71	-12.9	30.00
1,3-Butadiene	10.0	8.66	-13.4	30.00
1,3-Dichlorobenzene	10.0	8.30	-17.0	30.00
1,3-Dichloropropane	10.0	8.51	-14.9	30.00
1,4-Dichlorobenzene	10.0	8.12	-18.8	30.00
1,4-Dioxane	10.0	9.89	-1.1	30.00
2-Butanone	10.0	11.0	10.4	30.00
2-Hexanone	10.0	7.83	-21.7	30.00
3-Chloropropene	10.0	11.6	16.3	30.00
4-Methyl-2-pentanone	10.0	8.32	-16.8	30.00
Acetone	10.0	8.75	-12.5	30.00
Acrylonitrile	10.0	11.9	18.6	30.00
Benzene	10.0	8.02	-19.8	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0823
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30018
Laboratory ID: S3B1020-SCV1
Sequence: S3B1020
Standard ID: S23B027

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
Benzyl chloride	10.0	8.14	-18.6	30.00
Bromodichloromethane	10.0	8.52	-14.8	30.00
Bromoform	10.0	8.36	-16.4	30.00
Bromomethane	10.0	8.25	-17.5	30.00
Carbon disulfide	10.0	10.4	3.5	30.00
Carbon tetrachloride	10.0	9.57	-4.3	30.00
Chlorobenzene	10.0	10.5	5.2	30.00
Chloroethane	10.0	10.8	8.4	30.00
Chloroform	10.0	10.4	4.2	30.00
Chloromethane	10.0	8.00	-20.0	30.00
cis-1,2-Dichloroethylene	10.0	11.4	13.5	30.00
cis-1,3-Dichloropropylene	10.0	9.18	-8.2	30.00
Cyclohexane	10.0	9.50	-5.0	30.00
Dibromochloromethane	10.0	8.29	-17.1	30.00
Dichlorodifluoromethane	10.0	10.5	5.0	30.00
Ethyl acetate	10.0	11.1	11.4	30.00
Ethyl Benzene	10.0	11.3	13.1	30.00
Hexachlorobutadiene	10.0	5.25	-47.5 *	30.00
Isopropanol	10.0	10.4	4.0	30.00
Methyl Methacrylate	10.0	7.68	-23.2	30.00
Methyl tert-butyl ether (MTBE)	10.0	11.3	13.4	30.00
Methylene chloride	10.0	9.51	-4.9	30.00
n-Heptane	10.0	7.73	-22.7	30.00
n-Hexane	10.0	9.41	-5.9	30.00
o-Xylene	10.0	8.24	-17.6	30.00
p- & m- Xylenes	20.0	15.7	-21.4	30.00
p-Ethyltoluene	10.0	8.29	-17.1	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0823
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30018
Laboratory ID: S3B1020-SCV1
Sequence: S3B1020
Standard ID: S23B027

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
Propylene	10.0	11.0	10.5	30.00
Styrene	10.0	7.92	-20.8	30.00
Tetrachloroethylene	10.0	8.58	-14.2	30.00
Tetrahydrofuran	10.0	11.3	13.2	30.00
Toluene	10.0	8.35	-16.5	30.00
trans-1,2-Dichloroethylene	10.0	10.9	8.6	30.00
trans-1,3-Dichloropropylene	10.0	9.10	-9.0	30.00
Trichloroethylene	10.0	8.79	-12.1	30.00
Trichlorofluoromethane (Freon 11)	10.0	9.95	-0.5	30.00
Vinyl acetate	10.0	9.03	-9.7	30.00
Vinyl bromide	10.0	11.0	10.0	30.00
Vinyl Chloride	10.0	7.20	-28.0	30.00

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL VPH\
Data File : TO297466.D
Acq On : 10 Feb 2023 3:01 am
Operator : VH
Sample : SEQ-SCV1
Misc : QBTO1020923A ICV
ALS Vial : 44 Sample Multiplier: 1
InstName : 5975C

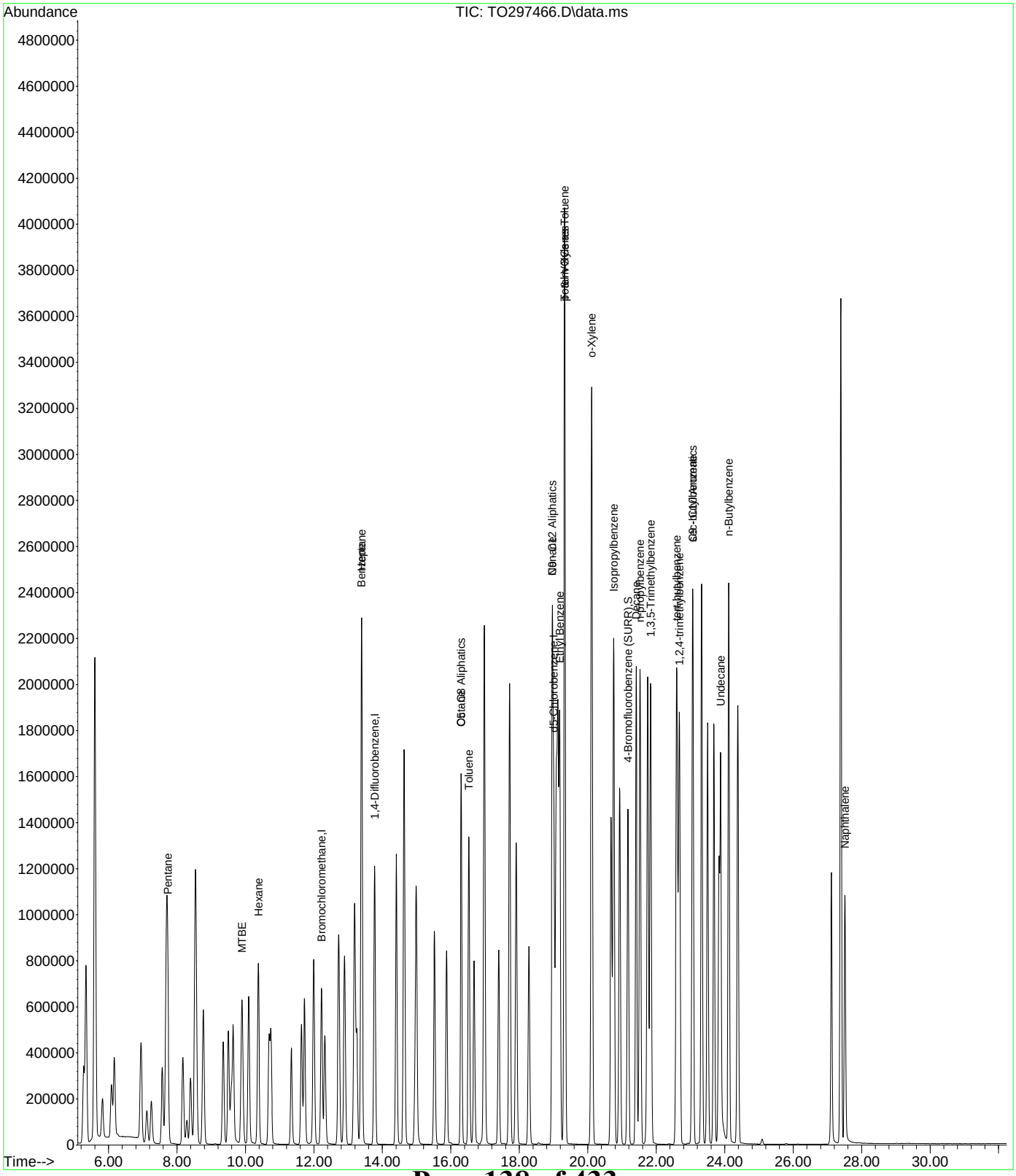
Quant Time: Mar 09 17:29:43 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Thu Mar 09 17:26:22 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	12.220	130	435647	10.00	ppbv	#-0.02
7) 1,4-Difluorobenzene	13.771	114	1728874	10.00	ppbv	#-0.02
12) d5-Chlorobenzene	19.007	117	1561527	10.00	ppbv	#-0.03
System Monitoring Compounds						
18) 4-Bromofluorobenzene (...	21.171	95	835385	11.09	ppbv	-0.03
Spiked Amount 10.000 Range 70 - 120 Recovery = 110.90%						
Target Compounds						Qvalue
2) Pentane	7.729	43	811559	9.37	ppbv #	56
3) MTBE	9.900	73	1167915	9.46	ppbv	98
4) Hexane	10.378	41	526146	9.14	ppbv	83
5) Benzene	13.387	78	1547025	8.47	ppbv	100
6) Heptane	13.393	43	947071	9.01	ppbv	93
8) Octane	16.302	43	1259173	8.85	ppbv	89
9) C5 - C8 Aliphatics	16.302	43	9418659m	37.45	ppbv	
10) Toluene	16.525	91	1768701	8.44	ppbv	100
11) Total VOCs as Toluene	19.323	TIC	318491493m	8.75	ppbv	
13) Nonane	18.963	43	1402491	10.43	ppbv	92
14) Ethyl Benzene	19.180	91	2445773	9.57	ppbv	98
15) p- & m-Xylenes	19.323	91	4179290	9.58	ppbv #	96
16) o-Xylene	20.111	91	2041747	9.37	ppbv	96
17) C9 - C12 Aliphatics	18.963	43	3867672m	28.59	ppbv	
19) Decane	21.413	43	1301567	9.52	ppbv	92
20) Undecane	23.882	43	1025672m	7.70	ppbv	
21) n-propylbenzene	21.525	91	3235315	9.35	ppbv	99
22) Isopropylbenzene	20.756	105	2805529	9.29	ppbv	99
23) 1,3,5-Trimethylbenzene	21.835	105	2213030	9.11	ppbv	98
24) tert-butylbenzene	22.598	119	2509335	8.72	ppbv #	66
25) 1,2,4-trimethylbenzene	22.673	105	2237738	8.93	ppbv	98
26) sec-butylbenzene	23.063	105	3448460	8.84	ppbv	100
27) n-Butylbenzene	24.118	91	2460035	8.71	ppbv	96
28) C9 - C10 Aromatics	23.063	105	8322791m	71.54	ppbv	
29) Naphthalene	27.511	128	1591545	9.67	ppbv	100

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

Data Path : D:\020923-ICAL VPH\
Data File : TO297466.D
Acq On : 10 Feb 2023 3:01 am
Operator : VH
Sample : SEQ-SCV1
Misc : QBTO1020923A ICV
ALS Vial : 44 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 09 17:29:43 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Thu Mar 09 17:26:22 2023
Response via : Initial Calibration



FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC	Project:	170361307
Instrument ID:	5975C	Calibration:	SB30018
Lab File ID:	TO297957.D	Calibration Date:	02/09/23 15:26
Sequence:	S3C1544	Injection Date:	03/14/23
Lab Sample ID:	S3C1544-CCV1	Injection Time:	12:36

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
1,1,1,2-Tetrachloroethane	A	10.0	8.98	0.5679118	0.5824019		-10.2	30	
1,1,1-Trichloroethane	A	10.0	10.4	1.88483	1.960621		4.0	30	
1,1,2,2-Tetrachloroethane	A	10.0	10.9	0.8254239	0.9023662		9.3	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	A	10.0	10.6	1.931202	2.045224		5.9	30	
1,1,2-Trichloroethane	A	10.0	7.77	0.4023671	0.4071614		-22.3	30	
1,1-Dichloroethane	A	10.0	10.7	1.463808	1.572095		7.4	30	
1,1-Dichloroethylene	A	10.0	11.5	1.182463	1.361818		15.2	30	
1,2,4-Trichlorobenzene	A	10.0	6.88	0.450397	0.3350545		-31.2	30	*
1,2,4-Trimethylbenzene	A	10.0	8.41	1.222911	1.433515		-15.9	30	
1,2-Dibromoethane	A	10.0	8.22	0.5647201	0.5772743		-17.8	30	
1,2-Dichlorobenzene	A	10.0	8.03	0.8808777	0.9608586		-19.7	30	
1,2-Dichloroethane	A	10.0	10.6	1.091627	1.155437		5.8	30	
1,2-Dichloropropane	A	10.0	7.62	0.3045277	0.3222119		-23.8	30	
1,2-Dichlorotetrafluoroethane	A	10.0	9.70	4.215403	4.087988		-3.0	30	
1,3,5-Trimethylbenzene	A	10.0	8.66	1.211731	1.407047		-13.4	30	
1,3-Butadiene	A	10.0	10.1	0.6943268	0.6988929		0.7	30	
1,3-Dichlorobenzene	A	10.0	8.23	0.8736577	0.9797402		-17.7	30	
1,3-Dichloropropane	A	10.0	8.28	0.4466001	0.467597		-17.2	30	
1,4-Dichlorobenzene	A	10.0	7.99	0.8472971	0.9417413		-20.1	30	
1,4-Dioxane	A	10.0	8.64	0.1550428	0.1656972		-13.6	30	
2-Butanone	A	10.0	11.0	1.605231	1.772419		10.4	30	
2-Hexanone	Q	10.0	7.38	0.5592923	0.6618088		-26.2	30	
3-Chloropropene	A	10.0	11.3	0.8602626	0.9740526		13.2	30	
4-Methyl-2-pentanone	A	10.0	7.89	0.6123209	0.6570187		-21.1	30	
Acetone	A	10.0	9.03	1.459811	1.318242		-9.7	30	
Acrylonitrile	A	10.0	11.8	0.5273167	0.6203956		17.7	30	
Benzene	A	10.0	8.26	2.801228	2.985168		-17.4	30	
Benzyl chloride	A	10.0	7.91	0.2079255	0.2365181		-20.9	30	
Bromodichloromethane	A	10.0	8.28	0.6193978	0.6450063		-17.2	30	

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC	Project:	170361307
Instrument ID:	5975C	Calibration:	SB30018
Lab File ID:	TO297957.D	Calibration Date:	02/09/23 15:26
Sequence:	S3C1544	Injection Date:	03/14/23
Lab Sample ID:	S3C1544-CCV1	Injection Time:	12:36

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Bromoform	A	10.0	8.50	0.7296276	0.7844861		-15.0	30	
Bromomethane	A	10.0	9.38	1.670006	1.306638		-6.2	30	
Carbon disulfide	A	10.0	11.1	2.199716	2.439117		10.9	30	
Carbon tetrachloride	A	10.0	9.44	1.929495	2.046875		-5.6	30	
Chlorobenzene	A	10.0	10.3	0.955844	0.9820221		2.7	30	
Chloroethane	A	10.0	11.4	0.4059188	0.4609184		13.5	30	
Chloroform	A	10.0	10.6	1.85026	1.954313		5.6	30	
Chloromethane	A	10.0	9.40	0.8582864	0.8072173		-6.0	30	
cis-1,2-Dichloroethylene	A	10.0	11.4	1.005026	1.145709		14.0	30	
cis-1,3-Dichloropropylene	A	10.0	8.46	0.3911601	0.4186077		-15.4	30	
Cyclohexane	A	10.0	9.44	1.117996	1.26266		-5.6	30	
Dibromochloromethane	A	10.0	8.33	0.7225939	0.726194		-16.7	30	
Dichlorodifluoromethane	A	10.0	11.3	2.498374	2.818362		12.8	30	
Ethyl acetate	A	10.0	11.2	1.836021	2.063322		12.4	30	
Ethyl Benzene	A	10.0	11.1	1.385254	1.534716		10.8	30	
Hexachlorobutadiene	A	10.0	5.52	0.8807332	0.7512598		-44.8	30	*
Isopropanol	A	10.0	10.5	1.895388	1.619239		5.0	30	
Methyl Methacrylate	A	10.0	7.64	0.2716714	0.3105066		-23.6	30	
Methyl tert-butyl ether (MTBE)	A	10.0	11.3	1.929202	2.176865		12.8	30	
Methylene chloride	A	10.0	9.89	1.245314	1.024438		-1.1	30	
n-Heptane	A	10.0	7.94	1.528945	1.819114		-20.6	30	
n-Hexane	A	10.0	9.57	1.114725	1.268714		-4.3	30	
o-Xylene	A	10.0	8.09	1.097207	1.283061		-19.1	30	
p- & m- Xylenes	A	20.0	15.5	1.132692	1.321933		-22.4	30	
p-Ethyltoluene	A	10.0	8.30	1.454004	1.711894		-17.0	30	
Propylene	A	10.0	11.9	0.4411641	0.5242018		18.8	30	
Styrene	A	10.0	7.82	0.8405435	1.019511		-21.8	30	
Tetrachloroethylene	A	10.0	8.51	0.6279522	0.5940932		-14.9	30	
Tetrahydrofuran	A	10.0	11.3	0.867238	0.9813464		13.2	30	

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC	Project:	170361307
Instrument ID:	5975C	Calibration:	SB30018
Lab File ID:	TO297957.D	Calibration Date:	02/09/23 15:26
Sequence:	S3C1544	Injection Date:	03/14/23
Lab Sample ID:	S3C1544-CCV1	Injection Time:	12:36

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Toluene	A	10.0	8.29	1.015961	1.014643		-17.1	30
trans-1,2-Dichloroethylene	A	10.0	11.1	1.08078	1.198824		10.9	30
trans-1,3-Dichloropropylene	A	10.0	8.34	0.353279	0.3824848		-16.6	30
Trichloroethylene	A	10.0	8.54	0.3610332	0.3777187		-14.6	30
Trichlorofluoromethane (Freon 11)	A	10.0	10.5	2.433652	2.549305		4.8	30
Vinyl acetate	A	10.0	8.75	1.996925	2.112891		-12.5	30
Vinyl bromide	A	10.0	11.3	0.7965432	0.8979352		12.7	30
Vinyl Chloride	A	10.0	8.51	1.176271	1.000864		-14.9	30

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

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297957.D
Acq On : 14 Mar 2023 12:36 pm
Operator : VH
Sample : SEQ-CCV1
Misc : QBTO1031423A CCV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 13:08:35 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.220	49	311361	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	1038593	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.007	117	967186	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	507341	11.34	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 113.40%			
Target Compounds						Qvalue
2) Propylene	5.279	42	163216	11.88	ppbv	94
3) Dichlorodifluoromethane	5.347	85	877528	11.28	ppbv	99
4) 1,2-Dichlorotetrafluor...	5.602	85	1272840	9.70	ppbv #	65
5) Chloromethane	5.825	50	251336	9.40	ppbv	100
6) Vinyl Chloride	6.092	62	311630	8.51	ppbv	100
7) 1,3-Butadiene	6.172	54	217608	10.07	ppbv	97
8) Bromomethane	6.948	94	406836	9.38	ppbv	99
9) Chloroethane	7.122	64	143512	11.35	ppbv	97
10) ethanol	7.258	45	102359	12.10	ppbv #	82
11) Vinyl Bromide	7.574	106	279582	11.27	ppbv	99
12) Trichlorofluoromethane	7.692	101	793754	10.48	ppbv	100
13) Isopropanol	8.176	45	504168	10.50	ppbv	100
14) Acrolein	8.288	56	105537	11.66	ppbv #	100
15) Acetone	8.399	43	410449	9.03	ppbv	94
16) Freon-113	8.542	101	636803	10.59	ppbv	96
17) 1,1-Dichloroethylene	8.772	61	424017	11.52	ppbv	96
18) 3-Chloropropene	9.355	41	303282	11.32	ppbv #	89
19) Methylene Chloride	9.504	49	318970	9.89	ppbv	97
20) Acrylonitrile	9.584	53	193167	11.77	ppbv #	100
21) Carbon disulfide	9.640	76	759446	11.09	ppbv	90
22) Methyl-tert-Butyl Ethe...	9.900	73	677791	11.28	ppbv	95
23) trans-1,2-Dichloroethy...	10.099	61	373267	11.09	ppbv	91
24) Hexane	10.378	57	395028	9.57	ppbv	97
25) Vinyl Acetate	10.688	43	657872	8.75	ppbv	100
26) 1,1-Dichloroethane	10.744	63	489489	10.74	ppbv #	99
27) 2-Butanone	11.340	43	551862	11.04	ppbv	94
28) Ethyl Acetate	11.637	43	642438	11.24	ppbv	95
29) cis-1,2-Dichloroethylene	11.724	61	356729	11.40	ppbv	93
30) Chloroform	11.997	83	608497	10.56	ppbv	98
31) Tetrahydrofuran	12.320	42	305553	11.32	ppbv	94
32) 1,1,1-Trichlorethane	12.723	97	610461	10.40	ppbv	99
33) Cyclohexane	12.897	56	393143	9.44	ppbv	98
34) Carbon Tetrachloride	13.188	117	637317	9.44	ppbv	100
35) 1,2-Dichloroethane	13.250	62	359758	10.58	ppbv	100
36) Benzene	13.387	78	929465	8.26	ppbv #	100
37) n-Heptane	13.393	43	566401	7.94	ppbv	99
39) Trichloroethylene	14.404	95	392296	8.54	ppbv	89
40) 1,2-Dichloropropane	14.633	63	334647	7.62	ppbv #	97
41) Methyl Methacrylate	14.640	69	322490	7.64	ppbv #	78
42) 1,4-Dioxane	14.956	88	172092	8.64	ppbv #	100
43) Bromodichloromethane	14.993	83	669899	8.28	ppbv	98
44) Methyl Isobutyl Ketone	15.520	43	682375	7.89	ppbv	93
45) cis-1,3-Dichloropropene	15.874	75	434763	8.46	ppbv	95
46) Toluene	16.525	91	1053801	8.29	ppbv	97
47) trans-1,3-Dichloropropene	16.680	75	397246	8.34	ppbv	95
48) 1,1,2-Trichlorethane	16.972	97	422875	7.77	ppbv	96
49) 2-Hexanone	16.978	43	687350	7.38	ppbv	98
50) 1,3-Dichloropropane	17.394	76	485643	8.28	ppbv #	100
51) Tetrachloroethylene	17.716	166	617021	8.51	ppbv	97
52) Dibromchloromethane	17.909	129	754220	8.33	ppbv	98
53) 1,2-Dibromoethane	18.281	107	599553	8.22	ppbv	99
55) Chlorobenzene	19.075	112	949798	10.27	ppbv #	100

Data Path : D:\031423A\
Data File : TO297957.D
Acq On : 14 Mar 2023 12:36 pm
Operator : VH
Sample : SEQ-CCV1
Misc : QBTO1031423A CCV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 13:08:35 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

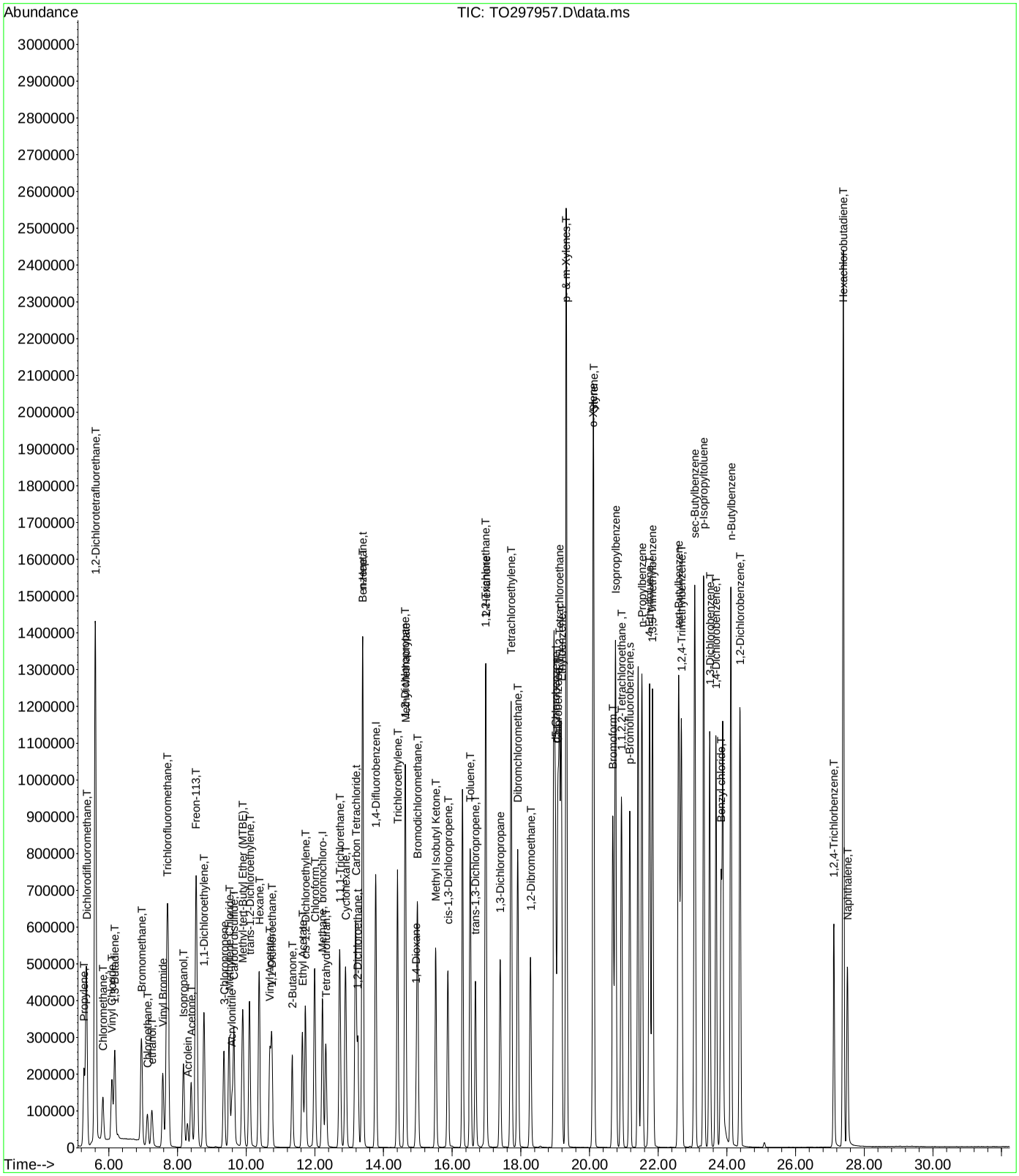
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56)	1,1,1,2-Tetrachloroethane	19.124	131	563291	8.98	ppbv		95
57)	Ethylbenzene	19.180	91	1484356	11.08	ppbv		98
58)	p- & m-Xylenes	19.323	91	2557110	15.52	ppbv		94
59)	o-Xylene	20.104	91	1240959	8.09	ppbv		98
60)	Styrene	20.123	104	986057	7.82	ppbv	#	74
61)	Bromoform	20.681	173	758744	8.50	ppbv		99
62)	n-Propylbenzene	21.525	91	2007174	8.31	ppbv		99
63)	Isopropylbenzene	20.756	105	1727237	8.57	ppbv		99
64)	1,1,2,2-Tetrachloroeth...	20.930	83	872756	10.93	ppbv		100
66)	4-Ethyltoluene	21.748	105	1655720	8.30	ppbv		94
67)	1,3,5-Trimethylbenzene	21.835	105	1360876	8.66	ppbv		95
68)	tert-Butylbenzene	22.598	119	1551065	8.48	ppbv	#	62
69)	1,2,4-Trimethylbenzene	22.673	105	1386476	8.41	ppbv	#	95
70)	sec-Butylbenzene	23.063	105	2190108	7.91	ppbv	#	100
71)	p-Isopropyltoluene	23.324	119	1783278	7.64	ppbv	#	100
72)	1,3-Dichlorobenzene	23.498	146	947591	8.23	ppbv		94
73)	1,4-Dichlorobenzene	23.684	146	910839	7.99	ppbv		94
74)	Benzyl chloride	23.833	126	228757	7.91	ppbv	#	1
75)	n-Butylbenzene	24.118	91	1549923	7.26	ppbv	#	90
76)	1,2-Dichlorobenzene	24.385	146	929329	8.03	ppbv		94
77)	1,2,4-Trichlorbenzene	27.120	180	324060	6.88	ppbv		96
78)	Hexachlorobutadiene	27.393	225	726608	5.52	ppbv		98
79)	Naphthalene	27.511	128	743375	6.13	ppbv		99

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

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297957.D
Acq On : 14 Mar 2023 12:36 pm
Operator : VH
Sample : SEQ-CCV1
Misc : QBTO1031423A CCV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

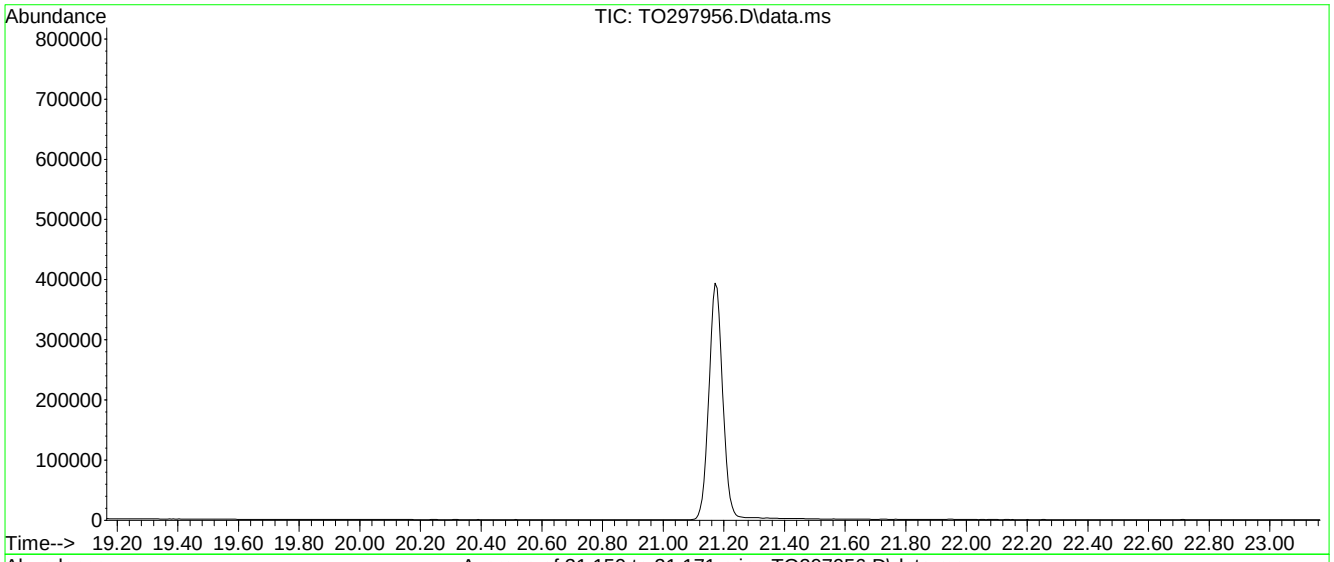
Quant Time: Mar 14 13:08:35 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

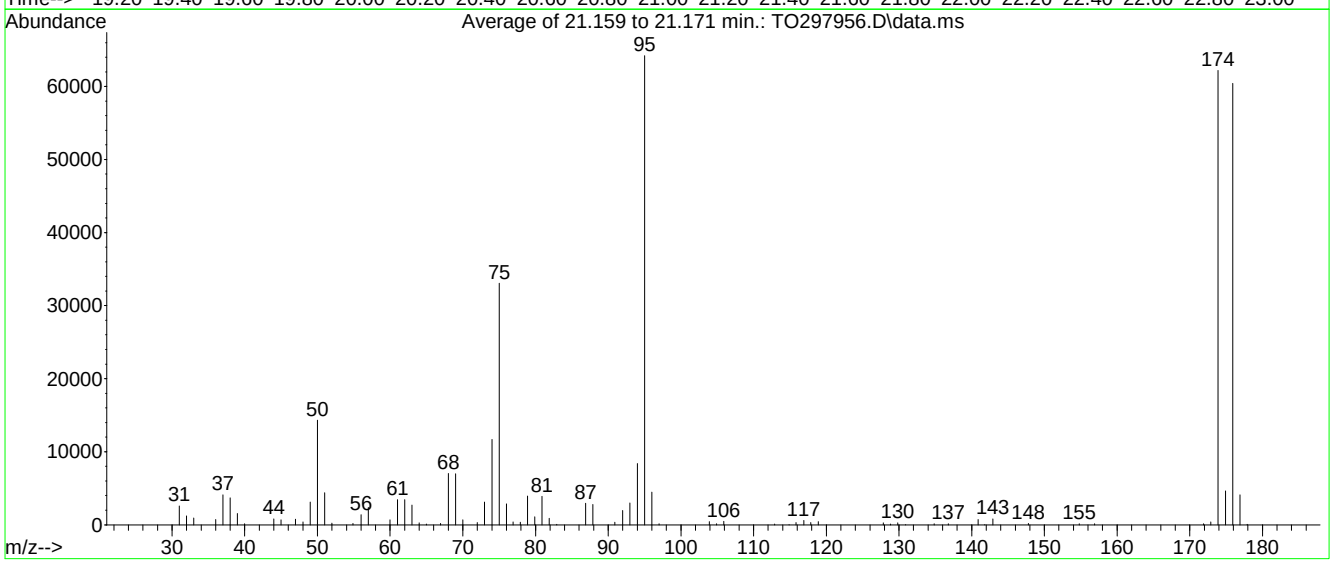


Data Path : D:\031423A\
Data File : TO297956.D
Acq On : 14 Mar 2023 11:47 am
Operator : VH
Sample : SEQ-TUN1
Misc : QBTO1031423A TUNE
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Integration File: rteint.p

Method : C:\msdchem\1\methods\AIR160.M
Title : TO15 VOC Analysis
Last Update : Fri Feb 10 06:43:41 2023





Spectrum Information: Average of 21.159 to 21.171 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	22.3	14338	PASS
75	95	30	66	51.5	33080	PASS
95	95	100	100	100.0	64197	PASS
96	95	5	9	7.0	4471	PASS
173	174	0.00	2	0.6	391	PASS
174	95	50	120	96.9	62189	PASS
175	174	4	9	7.4	4617	PASS
176	174	93	101	97.2	60429	PASS
177	176	5	9	6.8	4087	PASS

METHOD BLANK RAW DATA

SDG: 23C0823
CLASS: AIR
METHOD: EPA TO-15

FORM I

METHOD BLANK DATA SHEET

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31064-BLK1	File ID:	TO297959.D
Prepared:	03/14/23 11:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/14/23 14:17	Instrument:	5975C		
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018

CAS NO.	COMPOUND	CONC. (ug/m³)	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. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31064-BLK1	File ID:	TO297959.D
Prepared:	03/14/23 11:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/14/23 14:17	Instrument:	5975C		
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018

CAS NO.	COMPOUND	CONC. (ug/m³)	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. - Stratford			SDG:	23C0823
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31064-BLK1	File ID:	TO297959.D
Prepared:	03/14/23 11:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/14/23 14:17	Instrument:	5975C		
Batch:	BC31064	Sequence:	S3C1544	Calibration:	SB30018

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	0.128	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	346955	12.22	311361	12.22	
ISTD: 1,4-Difluorobenzene	1159167	13.771	1038593	13.771	
ISTD: d5-Chlorobenzene	779035	19.007	967186	19.007	

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297959.D
Acq On : 14 Mar 2023 2:17 pm
Operator : VH
Sample : BC31064-BLK1
Misc : QBTO1031423A BLK
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 15:10:47 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

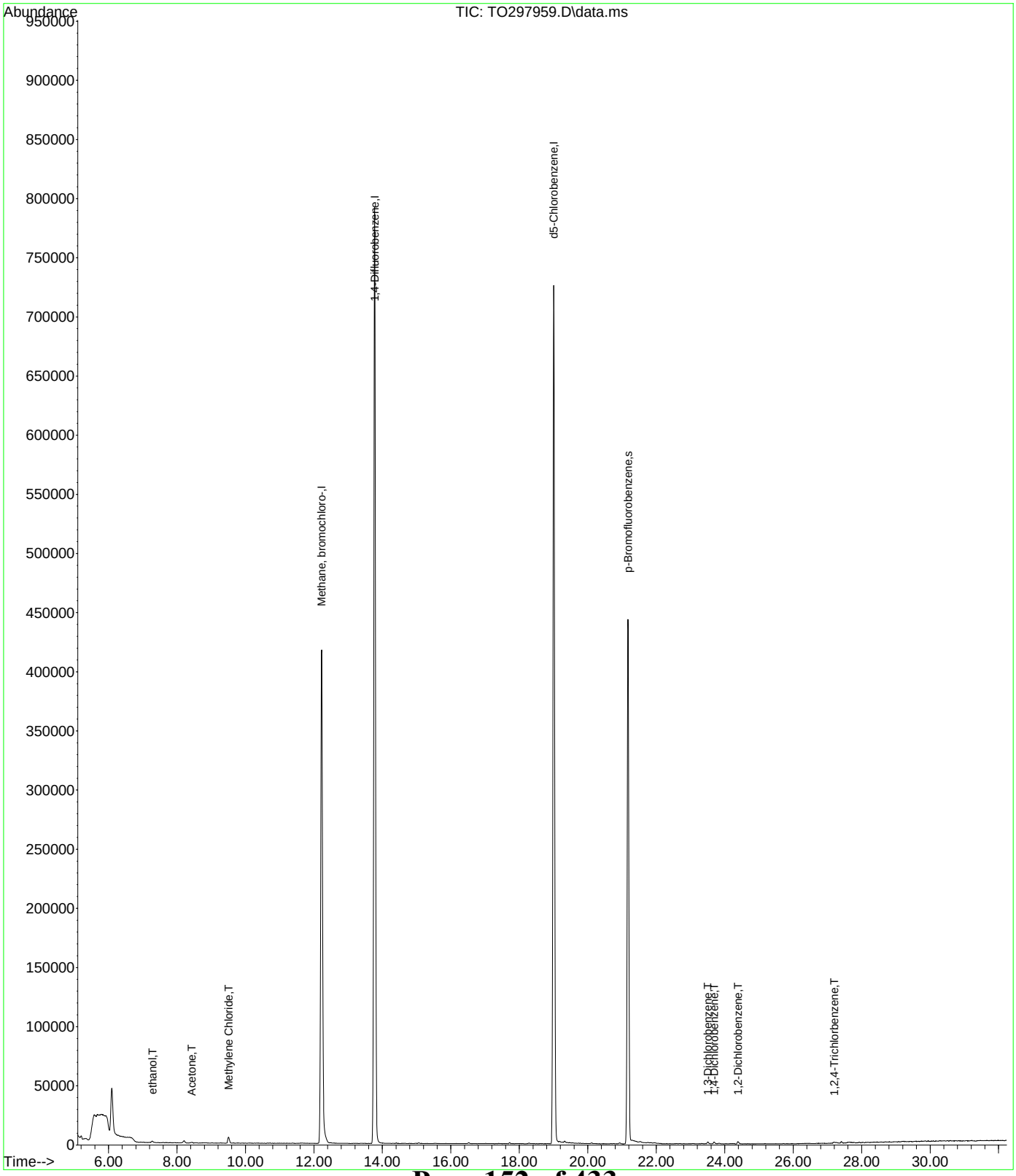
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.220	49	346955	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	1159167	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.007	117	779035	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	251084	6.97	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 69.70%#			
Target Compounds						Qvalue
10) ethanol	7.283	45	1194	0.13	ppbv #	27
15) Acetone	8.430	43	1751	0.03	ppbv #	43
19) Methylene Chloride	9.510	49	5990	0.17	ppbv	93
72) 1,3-Dichlorobenzene	23.510	146	1964	0.02	ppbv #	76
73) 1,4-Dichlorobenzene	23.690	146	1946	0.02	ppbv #	76
76) 1,2-Dichlorobenzene	24.385	146	2491	0.03	ppbv #	86
77) 1,2,4-Trichlorbenzene	27.201	180	1709	0.06	ppbv #	59

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

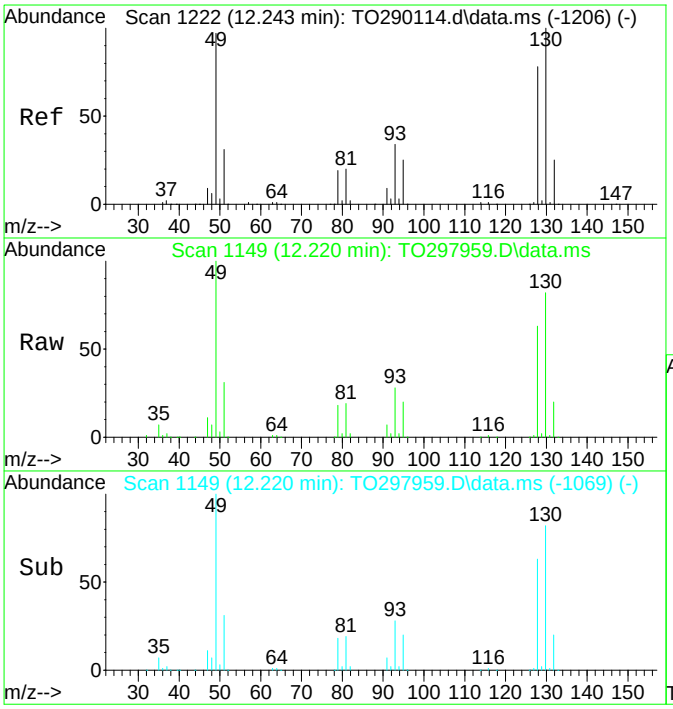
Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297959.D
Acq On : 14 Mar 2023 2:17 pm
Operator : VH
Sample : BC31064-BLK1
Misc : QBTO1031423A BLK
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 15:10:47 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration



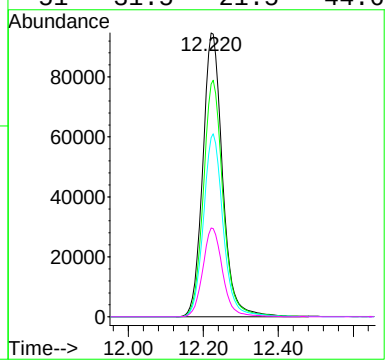
AIR160.M Wed Mar 15 17:30:44 2023 Page: 2

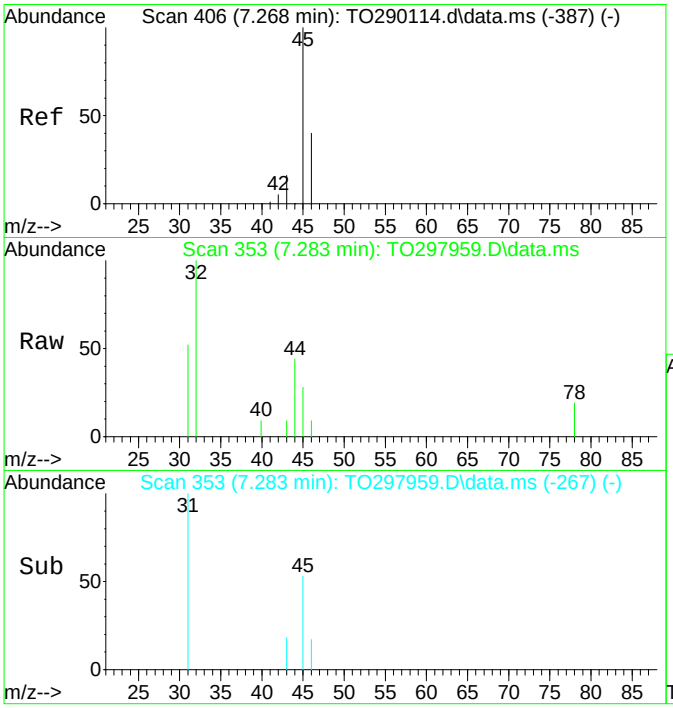


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.220 min Scan# 1149
Delta R.T. -0.004 min
Lab File: TO297959.D
Acq: 14 Mar 2023 2:17 pm

Tgt Ion: 49 Resp: 346955

Ion	Ratio	Lower	Upper
49	100		
130	83.2	44.5	92.3
128	64.1	34.7	72.1
51	31.5	21.5	44.6

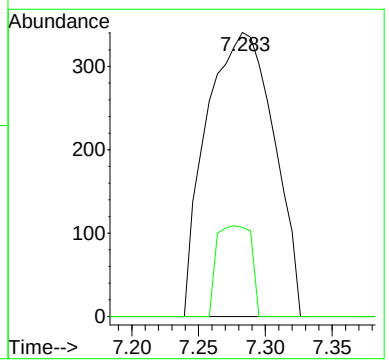


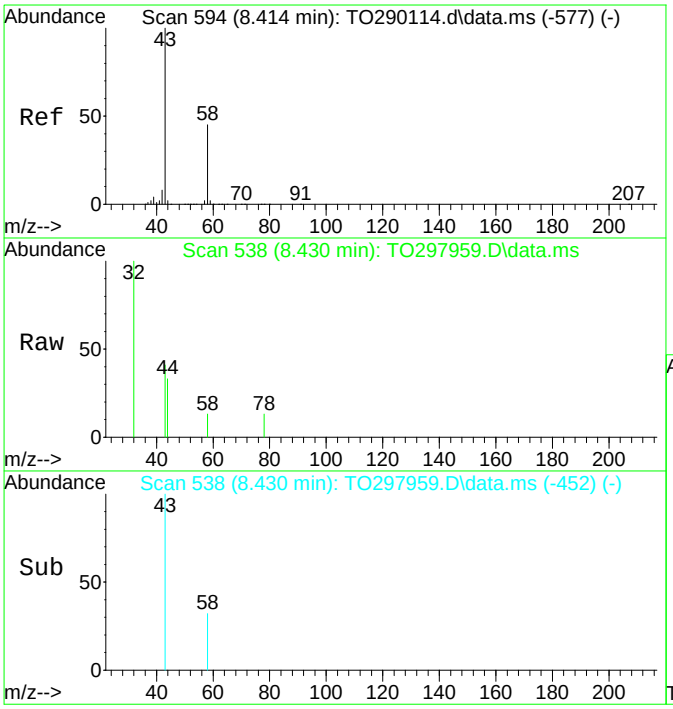


#10
ethanol
Concen: 0.13 ppbv
RT: 7.283 min Scan# 353
Delta R.T. 0.034 min
Lab File: TO297959.D
Acq: 14 Mar 2023 2:17 pm

Tgt Ion: 45 Resp: 1194

Ion	Ratio	Lower	Upper
45	100		
46	0.0	40.0	60.0#

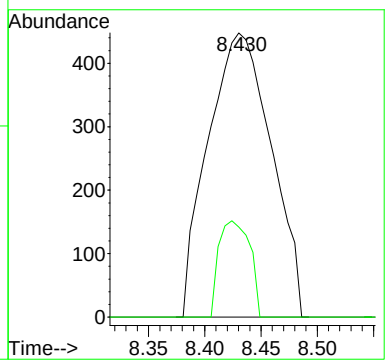


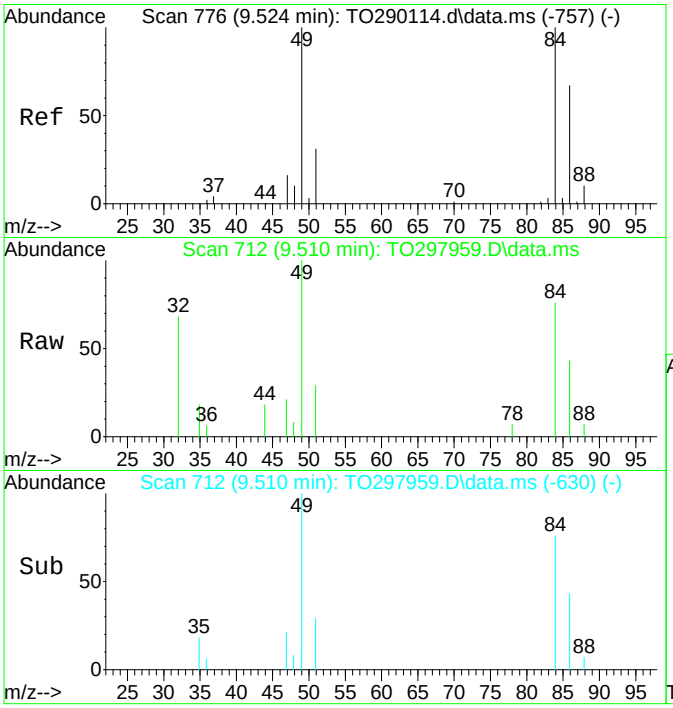


#15
Acetone
Concen: 0.03 ppbv
RT: 8.430 min Scan# 538
Delta R.T. 0.033 min
Lab File: TO297959.D
Acq: 14 Mar 2023 2:17 pm

Tgt Ion: 43 Resp: 1751

Ion	Ratio	Lower	Upper
43	100		
58	0.0	20.7	42.9#

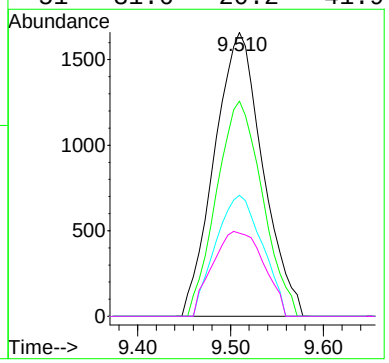


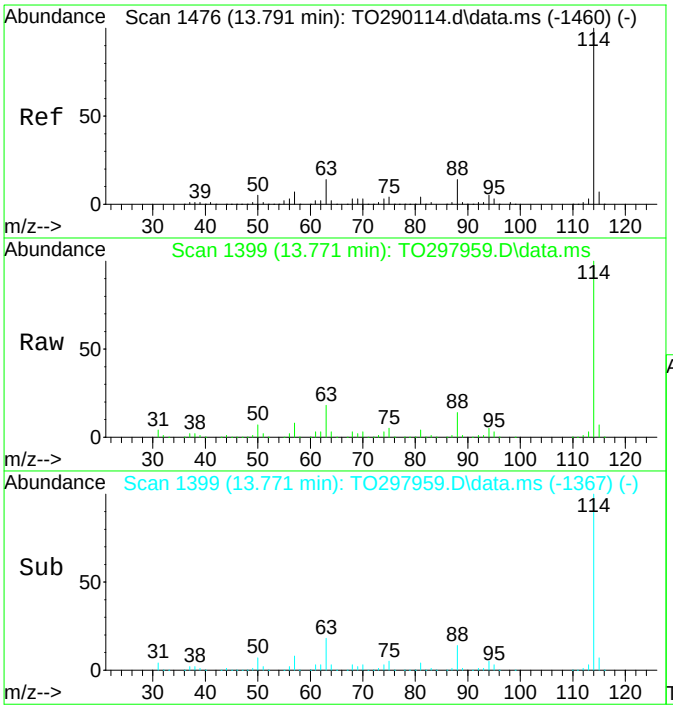


#19
Methylene Chloride
Concen: 0.17 ppbv
RT: 9.510 min Scan# 712
Delta R.T. 0.009 min
Lab File: TO297959.D
Acq: 14 Mar 2023 2:17 pm

Tgt Ion: 49 Resp: 5990

Ion	Ratio	Lower	Upper
49	100		
84	72.2	50.1	104.0
86	41.0	32.2	66.8
51	31.6	20.2	41.9

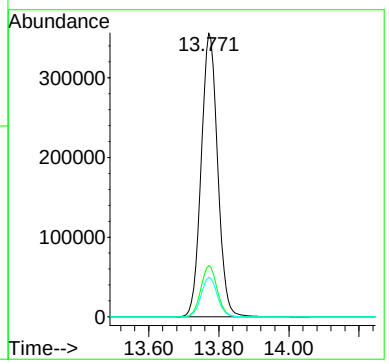


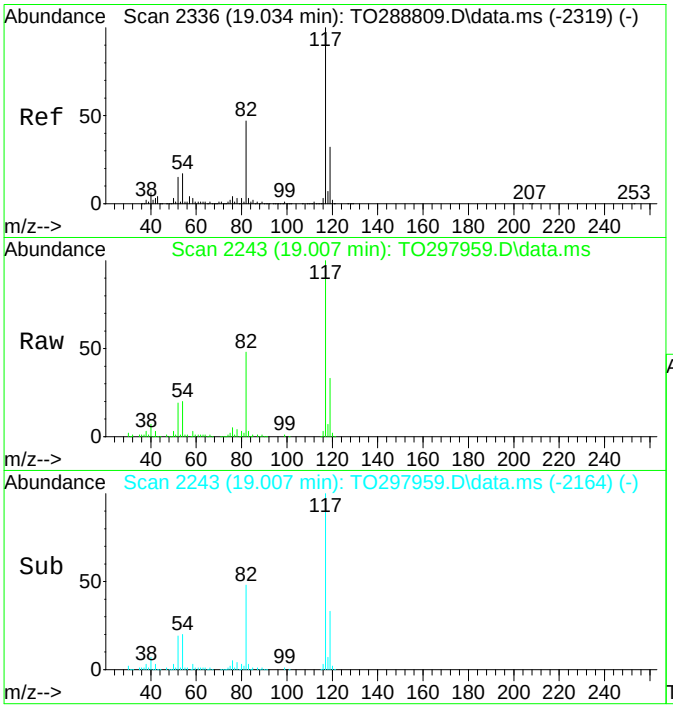


#38
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.771 min Scan# 1399
Delta R.T. -0.004 min
Lab File: TO297959.D
Acq: 14 Mar 2023 2:17 pm

Tgt Ion:114 Resp: 1159167

Ion	Ratio	Lower	Upper
114	100		
63	17.9	14.0	29.2
88	13.8	11.2	23.2

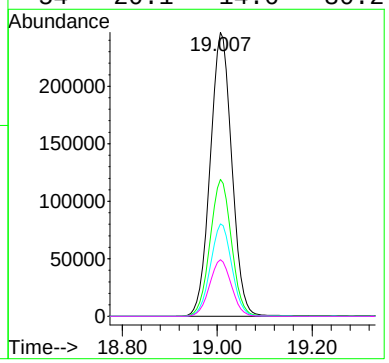


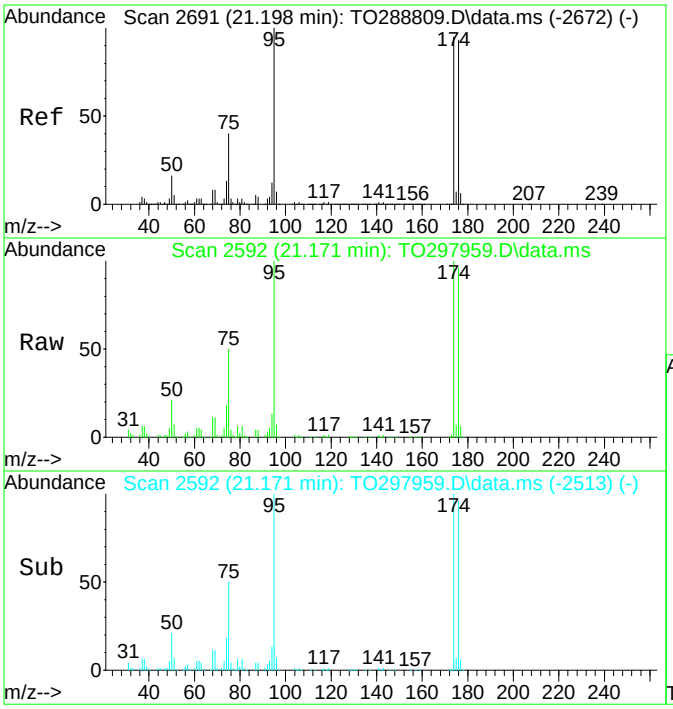


#54
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.007 min Scan# 2243
Delta R.T. -0.010 min
Lab File: TO297959.D
Acq: 14 Mar 2023 2:17 pm

Tgt Ion:117 Resp: 779035

Ion	Ratio	Lower	Upper
117	100		
82	48.0	38.7	80.5
119	32.3	20.3	42.3
54	20.1	14.6	30.2

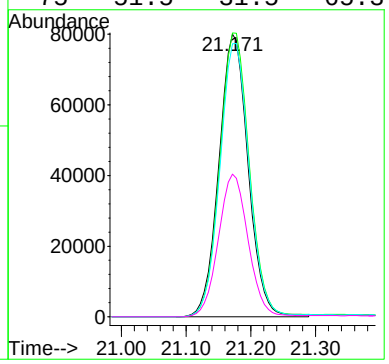


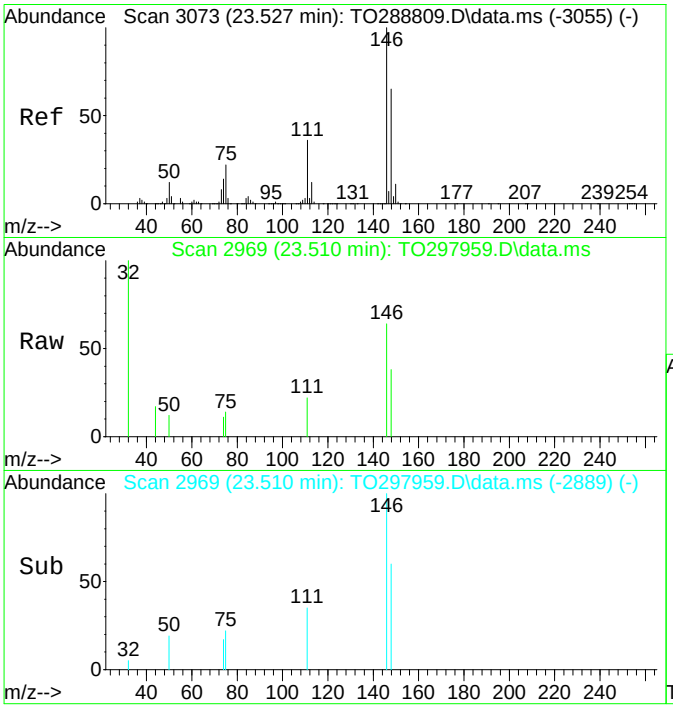


#65
p-Bromofluorobenzene
Concen: 6.97 ppbv
RT: 21.171 min Scan# 2592
Delta R.T. -0.010 min
Lab File: TO297959.D
Acq: 14 Mar 2023 2:17 pm

Tgt Ion: 95 Resp: 251084

Ion	Ratio	Lower	Upper
95	100		
174	102.1	50.0	103.8
176	97.3	48.2	100.2
75	51.5	31.5	65.3

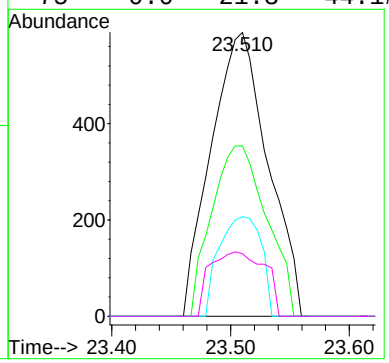


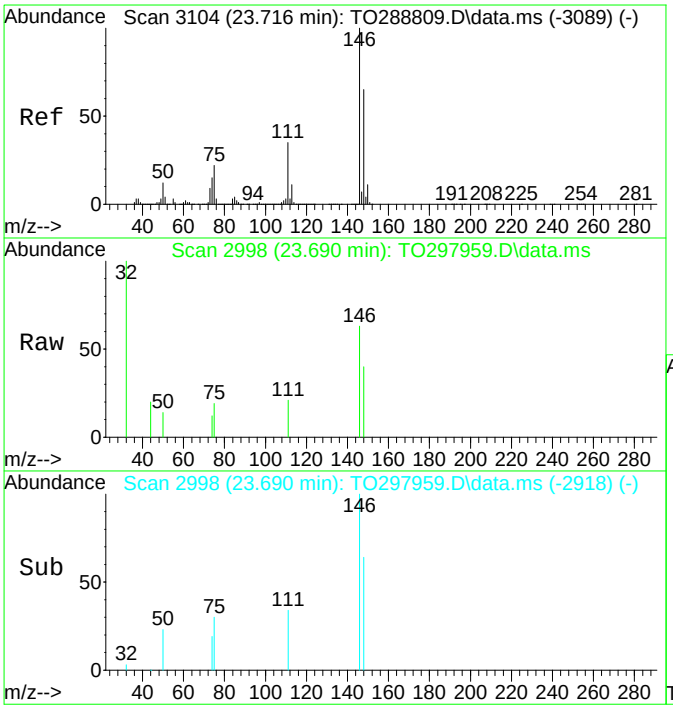


#72
1,3-Dichlorobenzene
Concen: 0.02 ppbv
RT: 23.510 min Scan# 2969
Delta R.T. -0.004 min
Lab File: TO297959.D
Acq: 14 Mar 2023 2:17 pm

Tgt Ion:146 Resp: 1964

Ion	Ratio	Lower	Upper
146	100		
148	58.0	41.5	86.3
111	25.9	26.5	55.1#
75	0.0	21.3	44.1#

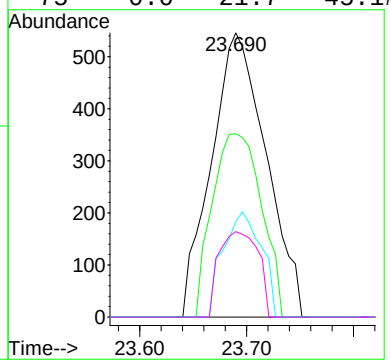


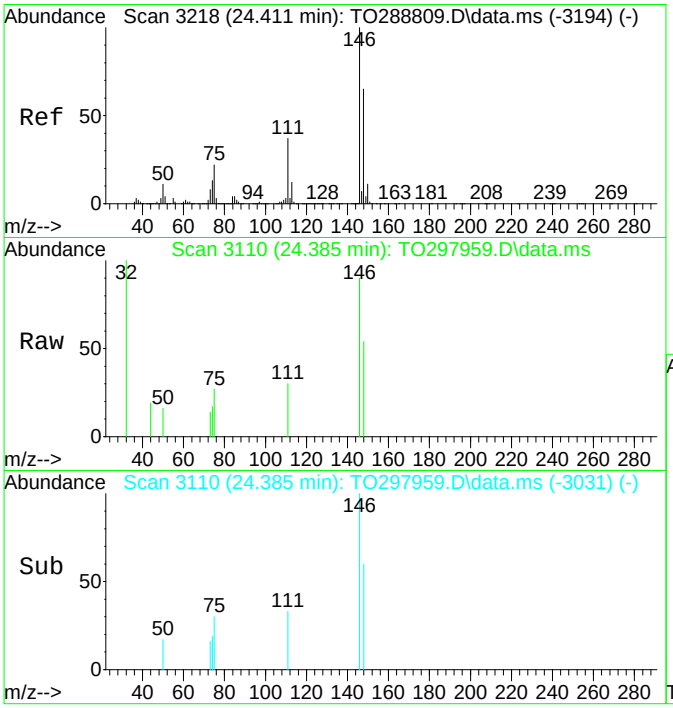


#73
1,4-Dichlorobenzene
Concen: 0.02 ppbv
RT: 23.690 min Scan# 2998
Delta R.T. -0.004 min
Lab File: TO297959.D
Acq: 14 Mar 2023 2:17 pm

Tgt Ion:146 Resp: 1946

Ion	Ratio	Lower	Upper
146	100		
148	57.9	41.3	85.7
111	25.8	25.4	52.8
75	0.0	21.7	45.1#

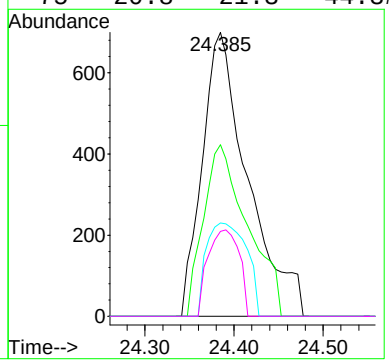


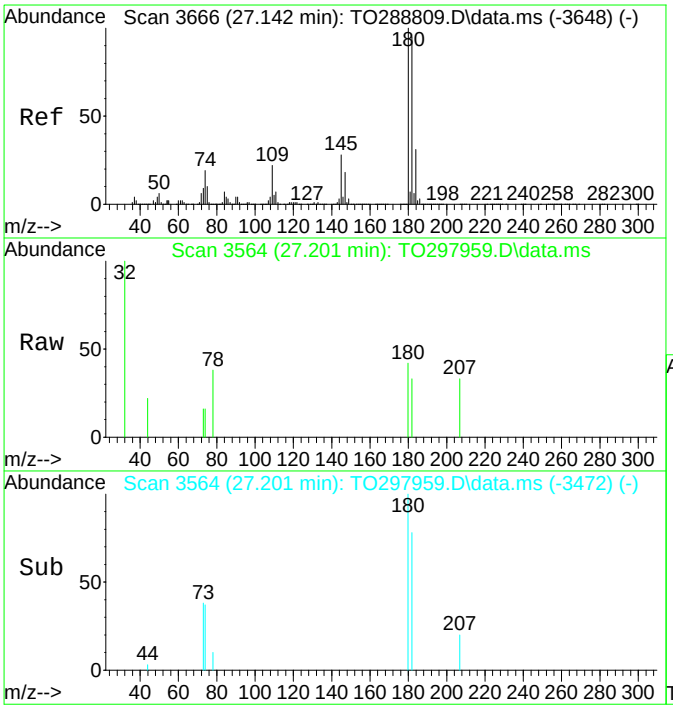


#76
1,2-Dichlorobenzene
Concen: 0.03 ppbv
RT: 24.385 min Scan# 3110
Delta R.T. -0.010 min
Lab File: TO297959.D
Acq: 14 Mar 2023 2:17 pm

Tgt Ion:146 Resp: 2491

Ion	Ratio	Lower	Upper
146	100		
148	58.5	41.3	85.9
111	28.7	27.4	56.8
75	20.8	21.3	44.3#

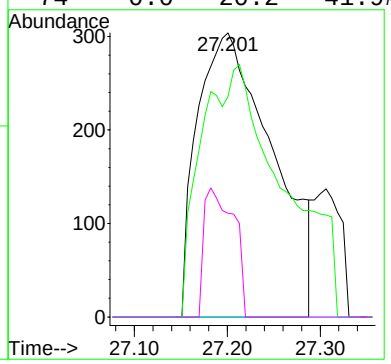




#77
1,2,4-Trichlorbenzene
Concen: 0.06 ppbv
RT: 27.201 min Scan# 3564
Delta R.T. 0.071 min
Lab File: TO297959.D
Acq: 14 Mar 2023 2:17 pm

Tgt Ion:180 Resp: 1709

Ion	Ratio	Lower	Upper
180	100		
182	67.6	64.4	133.8
145	0.0	20.3	42.3#
74	0.0	20.2	41.9#



LCS RAW DATA

SDG: 23C0823
CLASS: AIR
METHOD: EPA TO-15

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297958.D
Acq On : 14 Mar 2023 1:24 pm
Operator : VH
Sample : BC31064-BS1
Misc : QBTO1031423A LCS
ALS Vial : 44 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 14:43:55 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.220	49	329756	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	1124144	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.006	117	1030958	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	533815	11.20	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 112.00%			
Target Compounds						Qvalue
2) Propylene	5.279	42	178889	12.30	ppbv	95
3) Dichlorodifluoromethane	5.347	85	964790	11.71	ppbv	99
4) 1,2-Dichlorotetrafluor...	5.602	85	1410056	10.14	ppbv #	64
5) Chloromethane	5.825	50	270136	9.54	ppbv	100
6) Vinyl Chloride	6.092	62	328618	8.47	ppbv	99
7) 1,3-Butadiene	6.172	54	232353	10.15	ppbv	98
8) Bromomethane	6.948	94	433688	9.44	ppbv	99
9) Chloroethane	7.121	64	155893	11.65	ppbv	97
10) ethanol	7.258	45	119536	13.32	ppbv #	83
11) Vinyl Bromide	7.574	106	317519	12.09	ppbv	99
12) Trichlorofluoromethane	7.692	101	874867	10.90	ppbv	99
13) Isopropanol	8.176	45	547311	10.75	ppbv	100
14) Acrolein	8.287	56	115681	12.07	ppbv #	100
15) Acetone	8.399	43	440835	9.16	ppbv	94
16) Freon-113	8.542	101	706825	11.10	ppbv	96
17) 1,1-Dichloroethylene	8.771	61	458223	11.75	ppbv	95
18) 3-Chloropropene	9.354	41	337589	11.90	ppbv #	90
19) Methylene Chloride	9.503	49	345326	10.10	ppbv	99
20) Acrylonitrile	9.584	53	211766	12.18	ppbv #	100
21) Carbon disulfide	9.640	76	815302	11.24	ppbv	92
22) Methyl-tert-Butyl Ethe...	9.900	73	752976	11.84	ppbv	96
23) trans-1,2-Dichloroethy...	10.099	61	402693	11.30	ppbv	90
24) Hexane	10.378	57	434992	9.93	ppbv	97
25) Vinyl Acetate	10.688	43	684664	8.60	ppbv	100
26) 1,1-Dichloroethane	10.744	63	518361	10.74	ppbv #	99
27) 2-Butanone	11.339	43	600802	11.35	ppbv	94
28) Ethyl Acetate	11.637	43	701381	11.58	ppbv	96
29) cis-1,2-Dichloroethylene	11.724	61	393313	11.87	ppbv	92
30) Chloroform	11.997	83	678356	11.12	ppbv	98
31) Tetrahydrofuran	12.319	42	339582	11.87	ppbv	95
32) 1,1,1-Trichlorethane	12.723	97	694552	11.17	ppbv	100
33) Cyclohexane	12.896	56	439678	9.94	ppbv	98
34) Carbon Tetrachloride	13.188	117	713595	9.93	ppbv	100
35) 1,2-Dichloroethane	13.256	62	392885	10.91	ppbv	100
36) Benzene	13.386	78	1027664	8.62	ppbv #	100
37) n-Heptane	13.393	43	619442	8.20	ppbv	99
39) Trichloroethylene	14.404	95	445660	8.94	ppbv	88
40) 1,2-Dichloropropane	14.633	63	376113	7.91	ppbv #	98
41) Methyl Methacrylate	14.639	69	351509	7.70	ppbv #	78
42) 1,4-Dioxane	14.956	88	209883	9.67	ppbv #	100
43) Bromodichloromethane	14.993	83	762626	8.70	ppbv	98
44) Methyl Isobutyl Ketone	15.520	43	759618	8.11	ppbv	94
45) cis-1,3-Dichloropropene	15.874	75	505530	9.06	ppbv	96
46) Toluene	16.525	91	1174111	8.52	ppbv	97
47) trans-1,3-Dichloropropene	16.680	75	463516	8.97	ppbv	95
48) 1,1,2-Trichlorethane	16.972	97	487766	8.26	ppbv	96
49) 2-Hexanone	16.978	43	771330	7.64	ppbv	98
50) 1,3-Dichloropropane	17.394	76	546671	8.60	ppbv #	100
51) Tetrachloroethylene	17.716	166	703323	8.91	ppbv	97
52) Dibromchloromethane	17.908	129	848752	8.64	ppbv	99
53) 1,2-Dibromoethane	18.281	107	681809	8.61	ppbv	99
55) Chlorobenzene	19.075	112	1058290	10.74	ppbv #	100

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297958.D
Acq On : 14 Mar 2023 1:24 pm
Operator : VH
Sample : BC31064-BS1
Misc : QBTO1031423A LCS
ALS Vial : 44 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 14:43:55 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

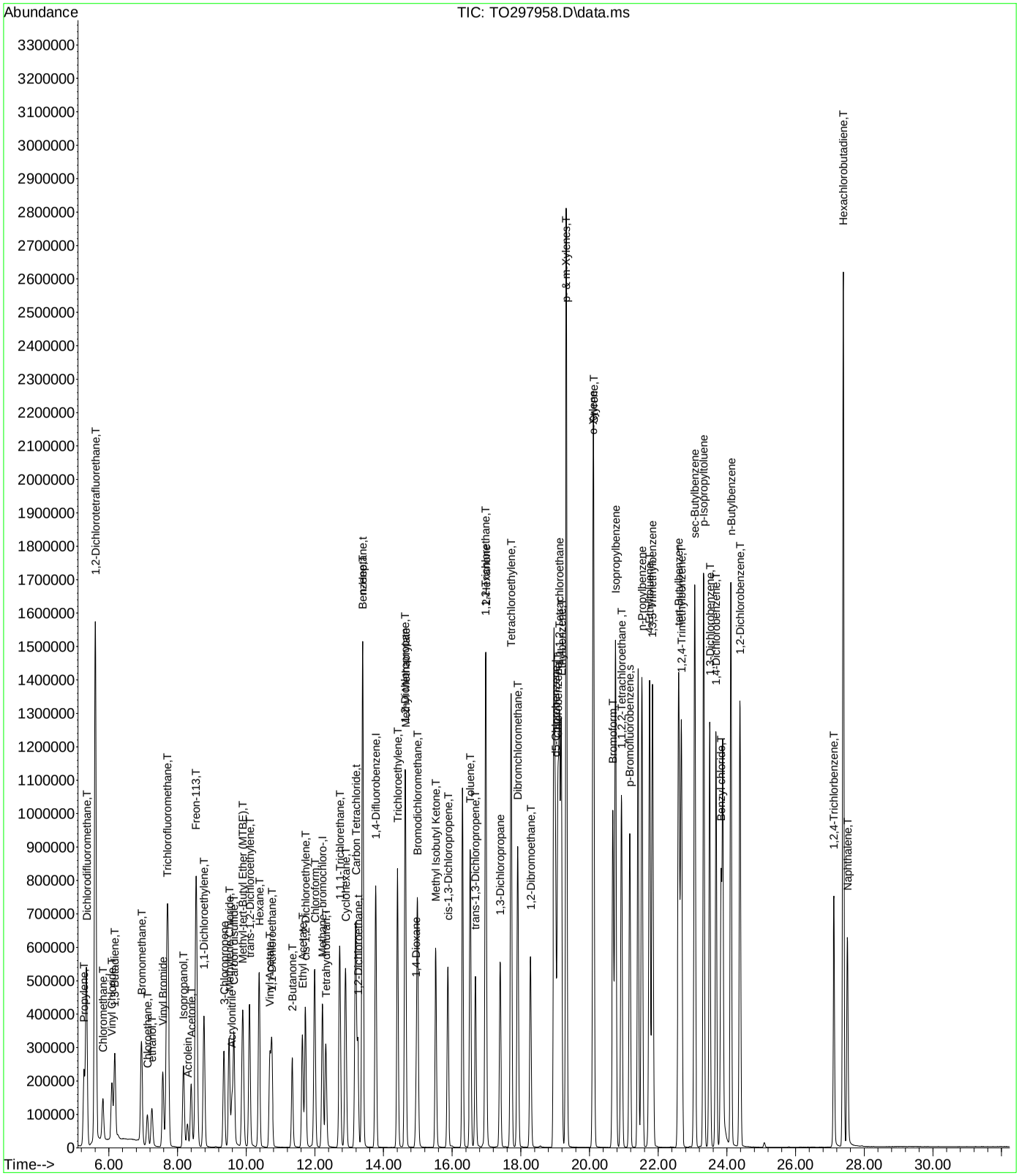
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56)	1,1,1,2-Tetrachloroethane	19.124	131	636774	9.49	ppbv		96
57)	Ethylbenzene	19.180	91	1655822	11.59	ppbv		98
58)	p- & m-Xylenes	19.323	91	2838358	16.19	ppbv		94
59)	o-Xylene	20.104	91	1375053	8.41	ppbv		98
60)	Styrene	20.123	104	1087539	8.10	ppbv	#	74
61)	Bromoform	20.681	173	853005	8.93	ppbv		99
62)	n-Propylbenzene	21.525	91	2208407	8.58	ppbv		99
63)	Isopropylbenzene	20.756	105	1921221	8.94	ppbv		99
64)	1,1,2,2-Tetrachloroeth...	20.929	83	972432	11.43	ppbv		99
66)	4-Ethyltoluene	21.748	105	1839218	8.65	ppbv		94
67)	1,3,5-Trimethylbenzene	21.835	105	1513117	9.03	ppbv		95
68)	tert-Butylbenzene	22.598	119	1749708	8.96	ppbv	#	62
69)	1,2,4-Trimethylbenzene	22.672	105	1536078	8.74	ppbv	#	94
70)	sec-Butylbenzene	23.063	105	2409561	8.17	ppbv	#	100
71)	p-Isopropyltoluene	23.324	119	1988716	7.99	ppbv	#	100
72)	1,3-Dichlorobenzene	23.497	146	1077811	8.76	ppbv		94
73)	1,4-Dichlorobenzene	23.683	146	1028436	8.44	ppbv		94
74)	Benzyl chloride	23.832	126	257938	8.34	ppbv	#	1
75)	n-Butylbenzene	24.118	91	1714419	7.54	ppbv	#	90
76)	1,2-Dichlorobenzene	24.378	146	1044613	8.46	ppbv		94
77)	1,2,4-Trichlorbenzene	27.120	180	411435	7.92	ppbv		94
78)	Hexachlorobutadiene	27.393	225	795475	5.67	ppbv		98
79)	Naphthalene	27.511	128	944302	7.19	ppbv		99

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

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297958.D
Acq On : 14 Mar 2023 1:24 pm
Operator : VH
Sample : BC31064-BS1
Misc : QBTO1031423A LCS
ALS Vial : 44 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 14:43:55 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration



BENCHSHEETS

SDG: 23C0823

CLASS: AIR

METHOD: EPA TO-15

PREPARATION BENCH SHEET-AIR : BC31064

Preparation Date: 03/14/2023 11:00

York Analytical Laboratories, Inc. - Stratford

Printed: 3/21/2023 10:32:11AM

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
23C0823-01 A	VOA, TO15 MASTER	NA	NA			
23C0823-02 A	VOA, TO15 MASTER	NA	NA			
23C0823-03 A	VOA, TO15 MASTER	NA	NA			
23C0823-04 A	VOA, TO15 MASTER	NA	NA			
23C0823-05 A	VOA, TO15 MASTER	NA	NA			
23C0823-06 A	VOA, TO15 MASTER	NA	NA			
23C0980-01 A	VOA, TO15 MASTER	NA	NA			
23C0980-02 A	VOA, TO15 MASTER	NA	NA			
23C0980-03 A	VOA, TO15 MASTER	NA	NA			
BC31064-BLK1	QC	NA	NA			
BC31064-BS1	QC	NA	NA		S23C014	
BC31064-DUP1	QC	NA	NA		23C0823-01	

Preparations Performed by VH

Date: 03/14/2023 11:00

York Analytical Laboratories, Inc. - Stratford

SDG: 23C0979

CLASS: AIR

METHOD: EPA TO-15

DATA PACKAGE COVER PAGE

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford

SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC)

Project: 170361307

Client Sample Id:	Lab Sample Id:
IA01_031723	23C0979-01
IA02_031723	23C0979-02
IA03_031723	23C0979-03
IA04_031723	23C0979-04
AA01_031723	23C0979-05

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: Cassie L. Mosher

Name: Cassie L. Mosher

Date: 3/21/2023

Title: Laboratory Manager

DUPLICATES

IA04_031723

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Matrix: Air
Laboratory ID: BC31240-DUP1
Batch: BC31240
Lab Source ID: 23C0979-04
Preparation: EPA TO15 PREP
Initial/Final: 400 mL / 400 mL
Source Sample Name: IA04_031723
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/m³)	C	DUPLICATE CONCENTRATION (ug/m³)	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	0.630		0.605		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	6.77		6.57		2.92		EPA TO-15
Acrylonitrile	25	ND		ND				EPA TO-15
Benzene	25	0.577		0.603		4.44		EPA TO-15
Benzyl chloride	25	ND		ND				EPA TO-15

DUPLICATES

IA04_031723

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Matrix: Air
Laboratory ID: BC31240-DUP1
Batch: BC31240
Lab Source ID: 23C0979-04
Preparation: EPA TO15 PREP
Initial/Final: 400 mL / 400 mL
Source Sample Name: IA04_031723
% 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	0.362		0.413		13.3		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	1.15		1.10		4.51		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	2.15		1.95		9.90		EPA TO-15
Ethyl acetate	25	0.769		0.680		12.2		EPA TO-15
Ethyl Benzene	25	ND		ND				EPA TO-15
Hexachlorobutadiene	25	ND		ND				EPA TO-15
Isopropanol	25	9.55		9.93		3.94		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	ND		ND				EPA TO-15
Methyl tert-butyl ether (MTBE)	25	ND		ND				EPA TO-15
Methylene chloride	25	0.970		0.970		0.00		EPA TO-15
n-Heptane	25	ND		ND				EPA TO-15
n-Hexane	25	ND		ND				EPA TO-15
o-Xylene	25	ND		ND				EPA TO-15
p- & m- Xylenes	25	ND		ND				EPA TO-15

DUPLICATES

IA04_031723

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Matrix: Air
Laboratory ID: BC31240-DUP1
Batch: BC31240
Lab Source ID: 23C0979-04
Preparation: EPA TO15 PREP
Initial/Final: 400 mL / 400 mL
Source Sample Name: IA04_031723
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/m³)	C	DUPLICATE CONCENTRATION (ug/m³)	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	ND		ND				EPA TO-15
Tetrahydrofuran	25	ND		ND				EPA TO-15
Toluene	25	0.835		0.866		3.64		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	1.29		1.15		11.3		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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031823\
Data File : TQ224364.D
Acq On : 18 Mar 2023 8:57 pm
Operator : VH
Sample : BC31240-DUP1
Misc : QBTO2031823A 23C0979-04 0.533X/750ML
ALS Vial : 14 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Mar 20 16:33:49 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

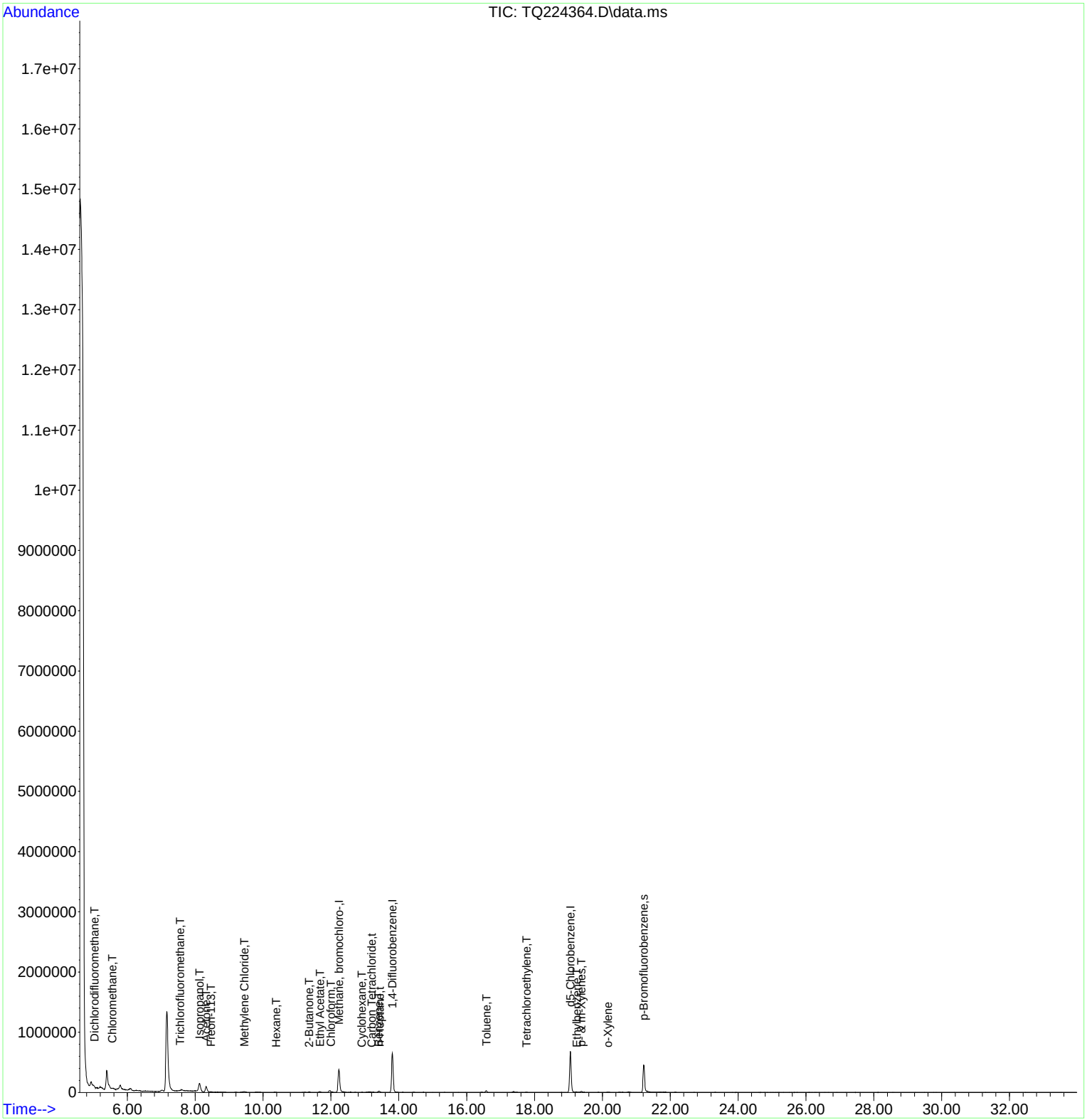
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.232	49	432251	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	13.811	114	943151	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.060	117	708513	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.218	95	310949	8.47	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 84.70%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	5.026	85	34177	0.48	ppbv #	92
5) Chloromethane	5.550	50	25436	0.65	ppbv	98
11) Trichlorofluoromethane	7.550	101	15549	0.25	ppbv	99
12) Isopropanol	8.123	45	390129	4.92	ppbv	100
14) Acetone	8.318	43	230490	3.37	ppbv	98
15) Freon-113	8.464	101	4411	0.07	ppbv	90
18) Methylene Chloride	9.446	49	15901	0.34	ppbv	79
23) Hexane	10.378	57	4743	0.09	ppbv #	77
26) 2-Butanone	11.354	43	21941	0.25	ppbv	92
27) Ethyl Acetate	11.677	43	21942	0.23	ppbv #	40
29) Chloroform	12.000	83	2824	0.05	ppbv #	79
32) Cyclohexane	12.902	56	1941	0.03	ppbv #	84
33) Carbon Tetrachloride	13.201	117	2862	0.08	ppbv #	58
35) Benzene	13.402	78	23122	0.23	ppbv #	52
36) n-Heptane	13.433	43	3938	0.05	ppbv #	73
45) Toluene	16.578	91	33541	0.28	ppbv	99
50) Tetrachloroethylene	17.761	166	2618	0.05	ppbv	83
56) Ethylbenzene	19.243	91	6115	0.05	ppbv	97
57) p- & m-Xylenes	19.377	91	14117	0.15	ppbv	96
58) o-Xylene	20.163	91	4711	0.05	ppbv	98

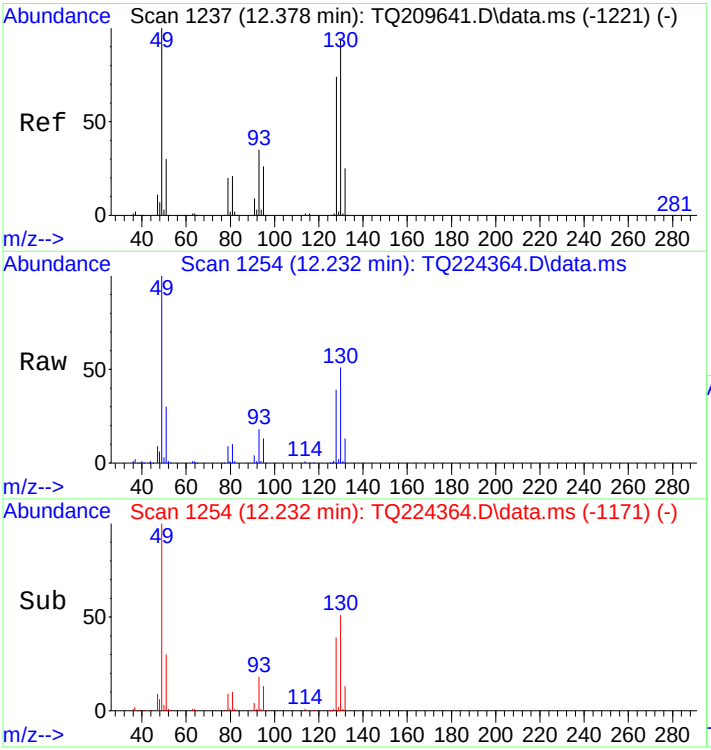
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031823\
Data File : TQ224364.D
Acq On : 18 Mar 2023 8:57 pm
Operator : VH
Sample : BC31240-DUP1
Misc : QBTO2031823A 23C0979-04 0.533X/750ML
ALS Vial : 14 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Mar 20 16:33:49 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

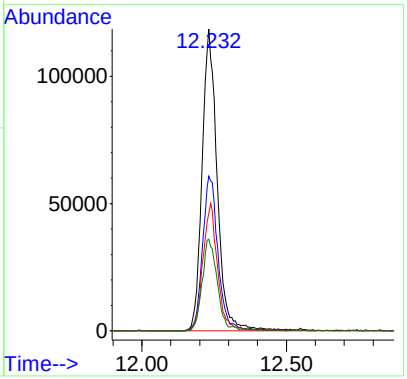


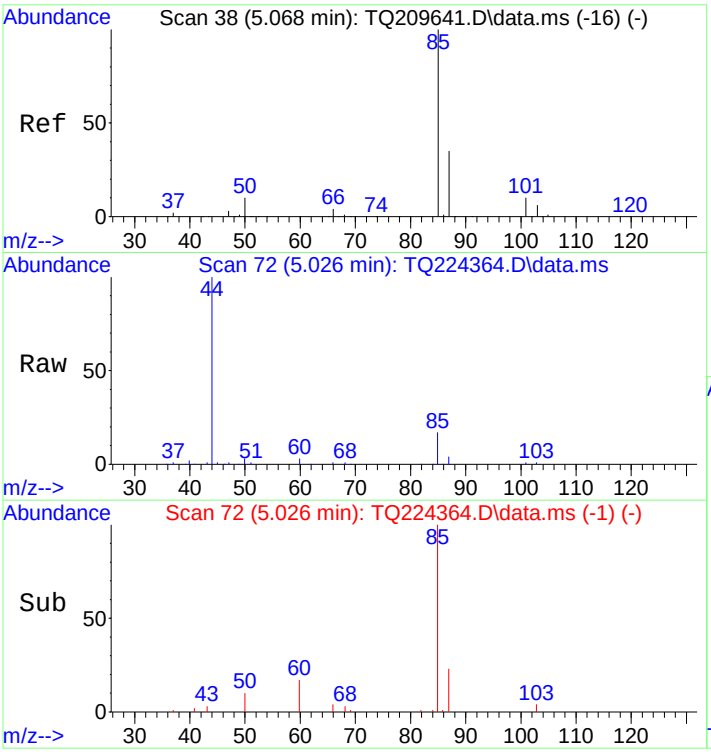


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.232 min Scan# 1254
Delta R.T. 0.007 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 49 Resp: 432251

Ion	Ratio	Lower	Upper
49	100		
130	52.3	48.1	99.9
128	40.9	38.3	79.5
51	30.6	20.3	42.3

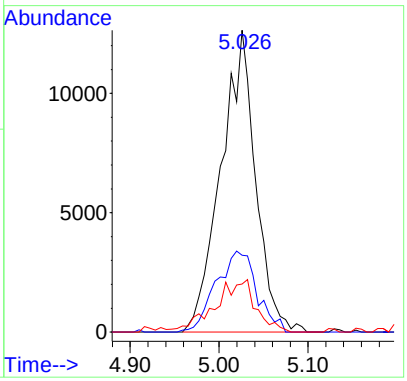


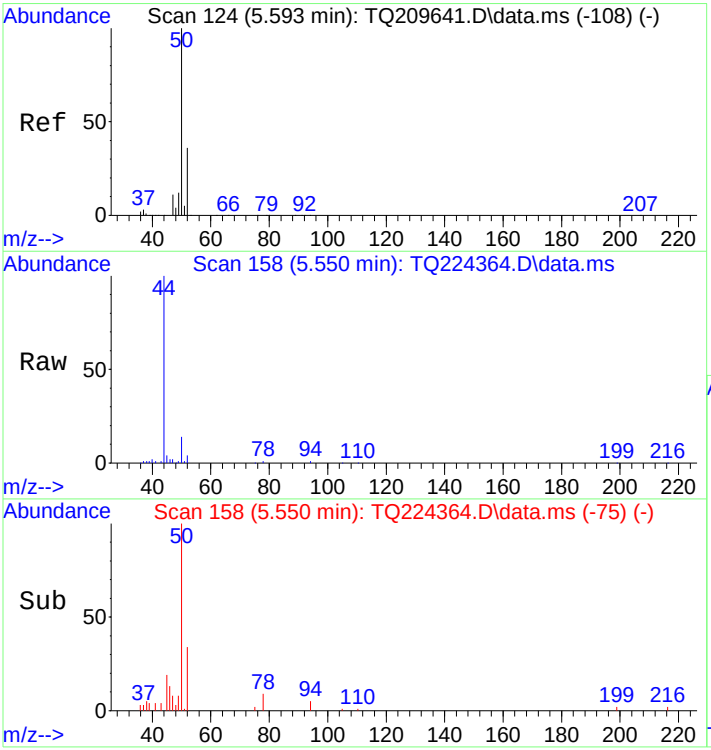


#3
Dichlorodifluoromethane
Concen: 0.48 ppbv
RT: 5.026 min Scan# 72
Delta R.T. -0.006 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 85 Resp: 34177

Ion	Ratio	Lower	Upper
85	100		
87	31.6	20.9	43.5
50	21.3	7.2	15.0#

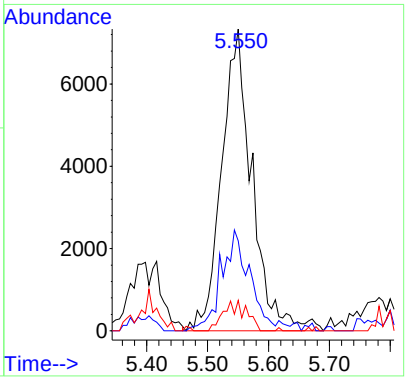


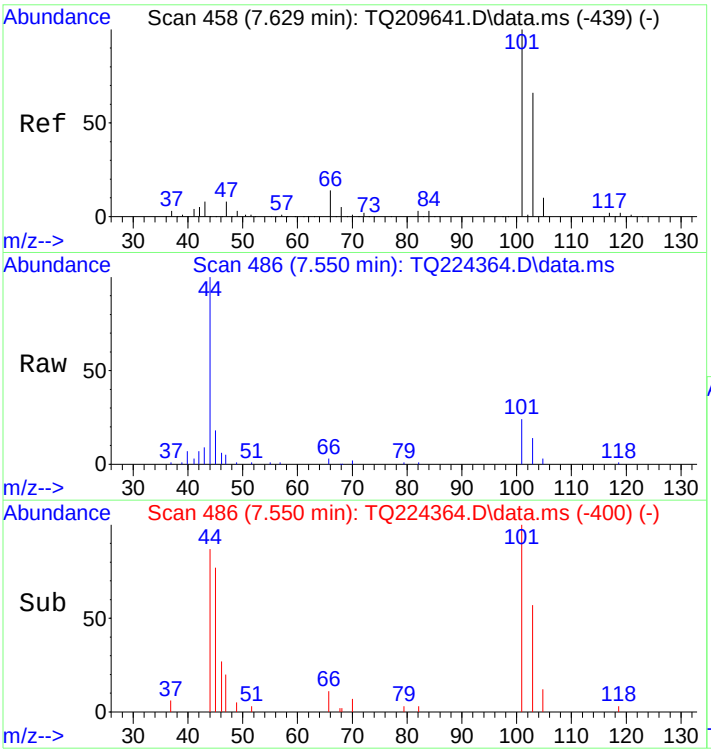


#5
Chloromethane
Concen: 0.65 ppbv
RT: 5.550 min Scan# 158
Delta R.T. 0.006 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 50 Resp: 25436

Ion	Ratio	Lower	Upper
50	100		
52	33.0	0.0	65.2
49	7.5	0.0	19.6

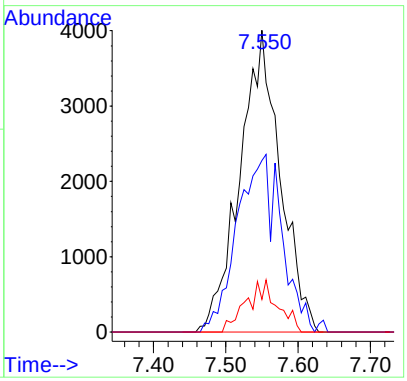


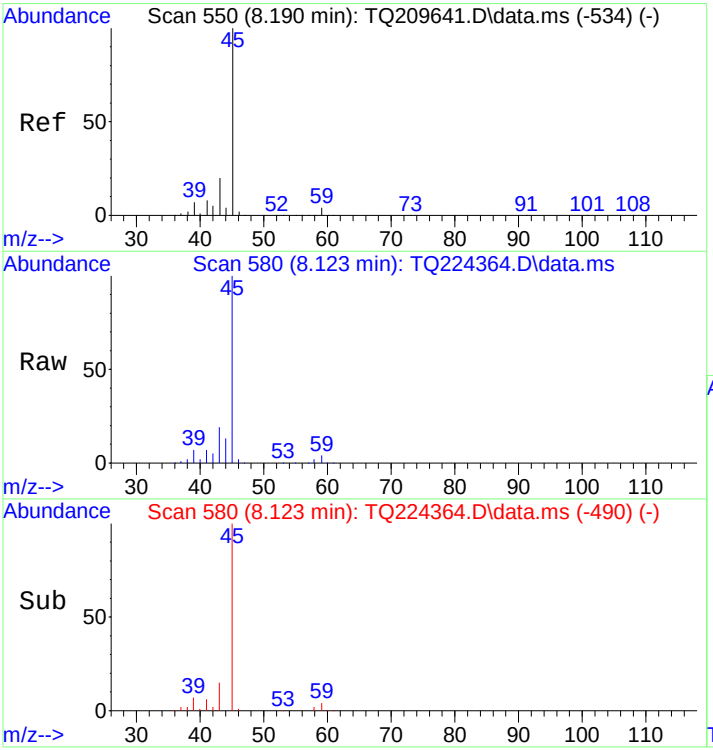


#11
Trichlorofluoromethane
Concen: 0.25 ppbv
RT: 7.550 min Scan# 486
Delta R.T. 0.025 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion:101 Resp: 15549

Ion	Ratio	Lower	Upper
101	100		
103	64.9	42.3	87.8
66	13.3	7.8	16.2

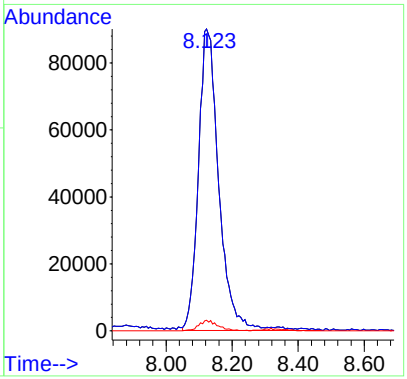


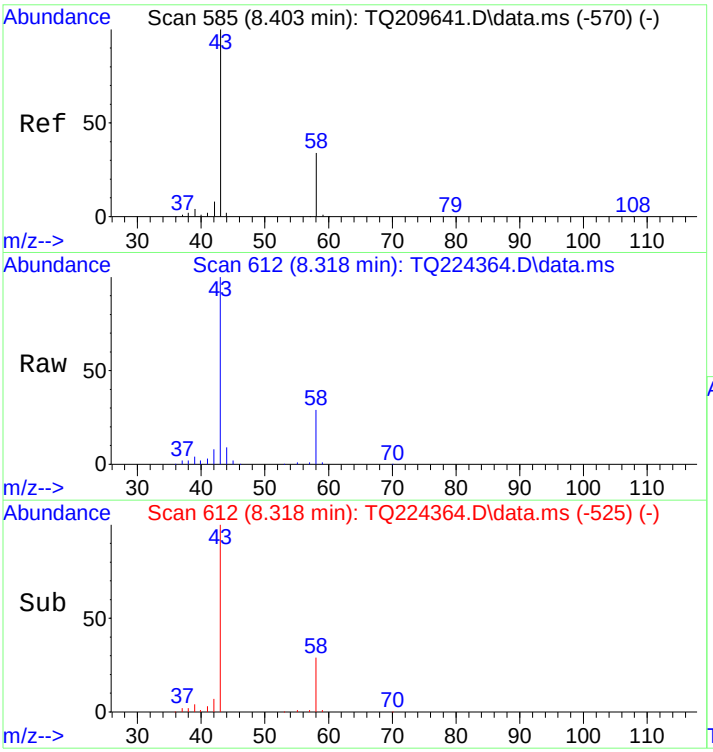


#12
Isopropanol
Concen: 4.92 ppbv
RT: 8.123 min Scan# 580
Delta R.T. 0.049 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 45 Resp: 390129

Ion	Ratio	Lower	Upper
45	100		
45	100.0	65.0	135.0
59	3.2	0.0	10.0

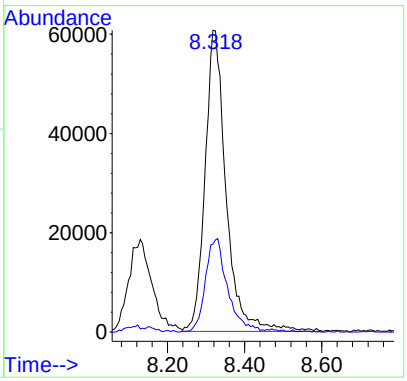


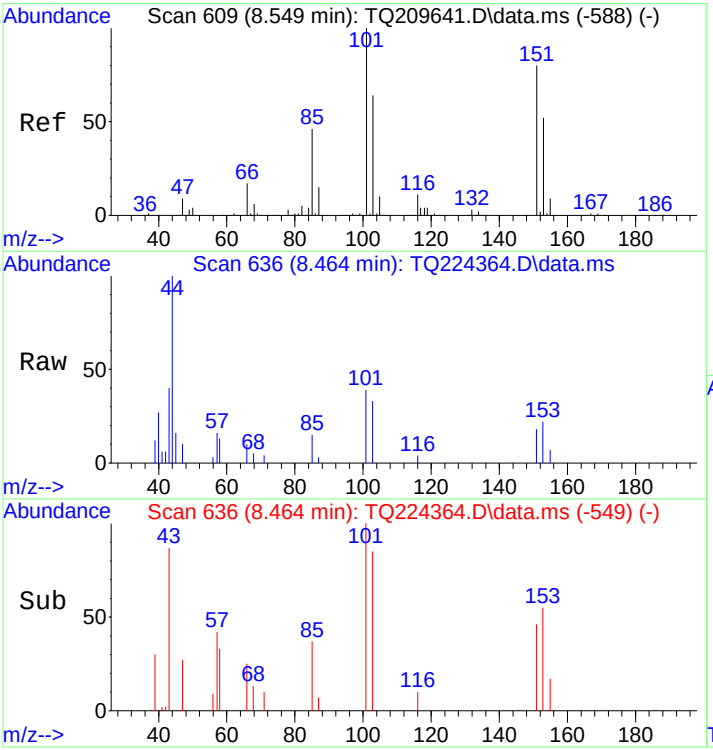


#14
Acetone
Concen: 3.37 ppbv
RT: 8.318 min Scan# 612
Delta R.T. 0.031 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 43 Resp: 230490

Ion	Ratio	Lower	Upper
43	100		
58	33.2	20.9	43.3

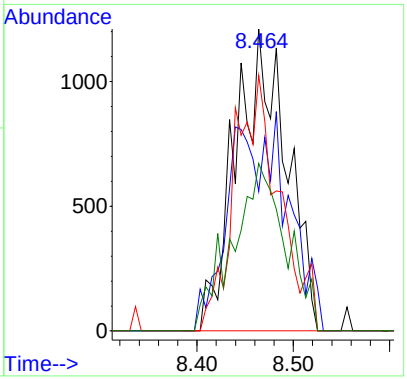


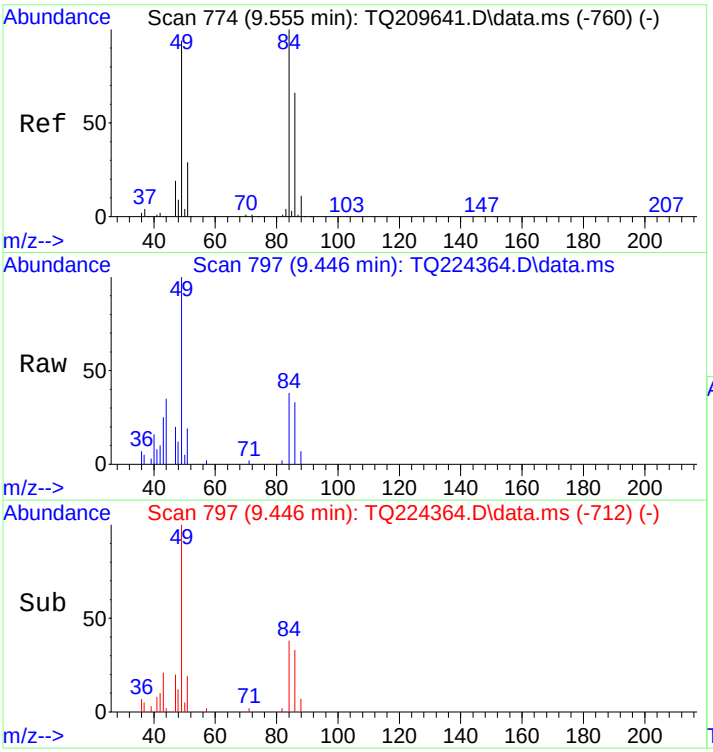


#15
Freon-113
Concen: 0.07 ppbv
RT: 8.464 min Scan# 636
Delta R.T. 0.030 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion:101 Resp: 4411

Ion	Ratio	Lower	Upper
101	100		
151	82.5	50.5	104.9
103	75.4	42.0	87.2
153	58.6	32.4	67.4

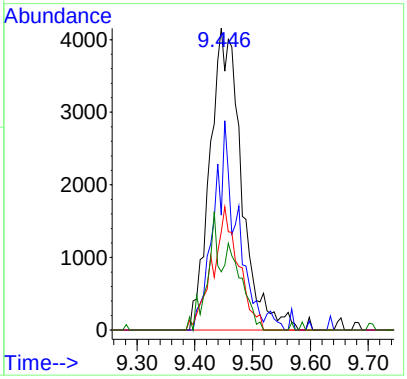


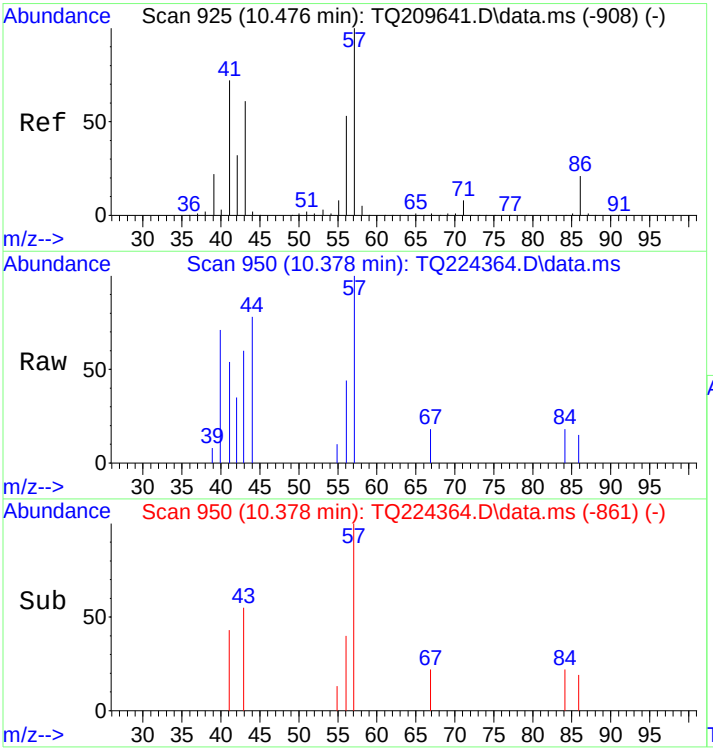


#18
Methylene Chloride
Concen: 0.34 ppbv
RT: 9.446 min Scan# 797
Delta R.T. 0.019 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 49 Resp: 15901

Ion	Ratio	Lower	Upper
49	100		
84	52.0	49.9	103.5
86	33.4	31.8	66.0
51	30.2	20.2	41.9

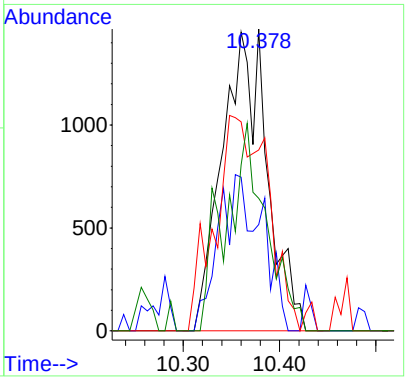


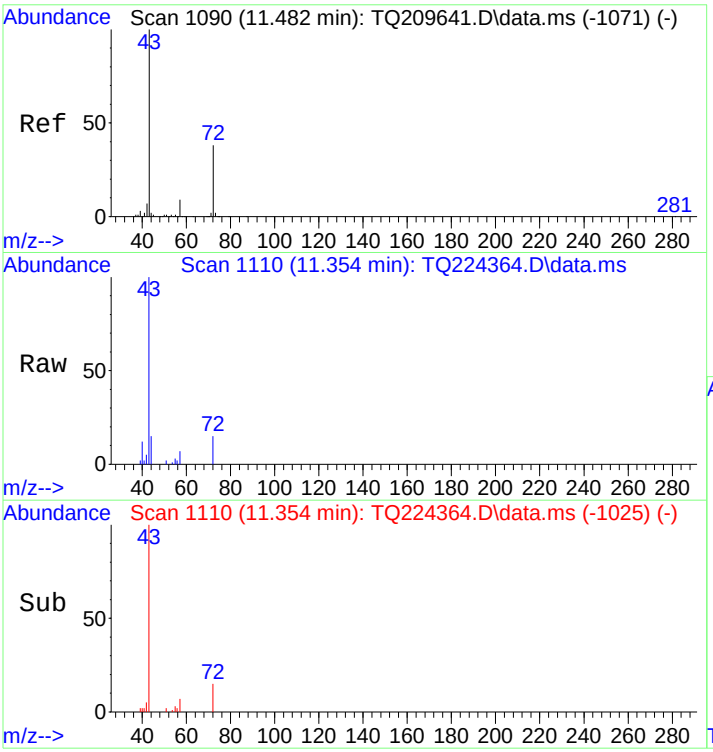


#23
Hexane
Concen: 0.09 ppbv
RT: 10.378 min Scan# 950
Delta R.T. 0.042 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 57 Resp: 4743

Ion	Ratio	Lower	Upper
57	100		
42	50.3	21.6	45.0#
43	83.7	42.0	87.2
56	62.8	33.3	69.1

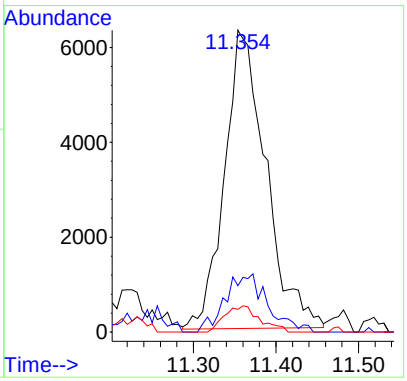


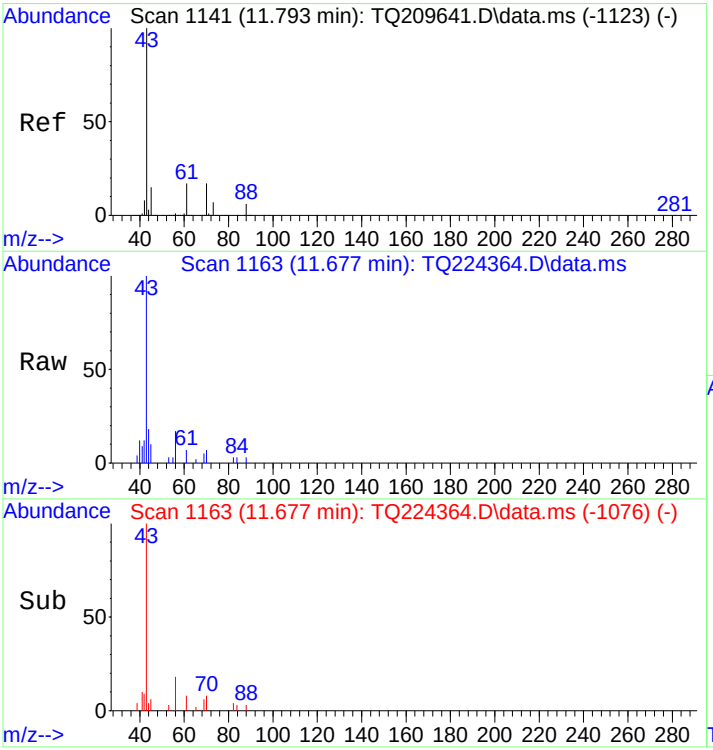


#26
2-Butanone
Concen: 0.25 ppbv
RT: 11.354 min Scan# 1110
Delta R.T. 0.019 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 43 Resp: 21941

Ion	Ratio	Lower	Upper
43	100		
72	19.9	16.1	33.5
57	7.5	4.9	10.3

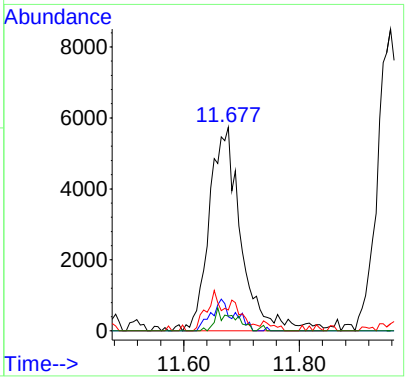


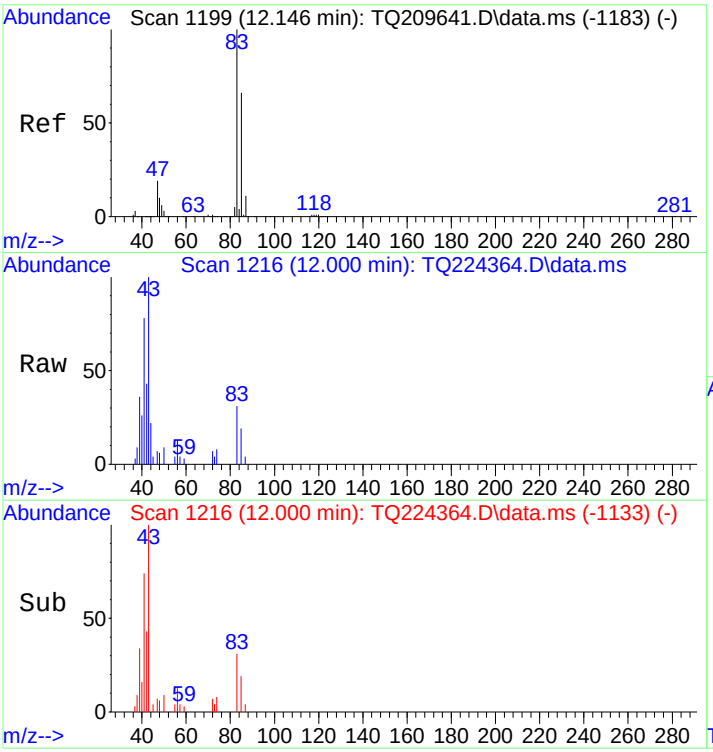


#27
Ethyl Acetate
Concen: 0.23 ppbv
RT: 11.677 min Scan# 1163
Delta R.T. 0.031 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 43 Resp: 21942

Ion	Ratio	Lower	Upper
43	100		
61	11.1	51.4	106.8#
45	16.1	9.4	19.6
70	7.0	7.5	15.5#

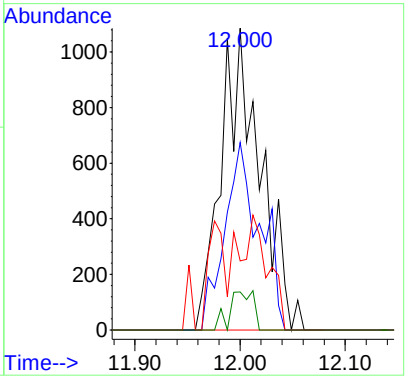


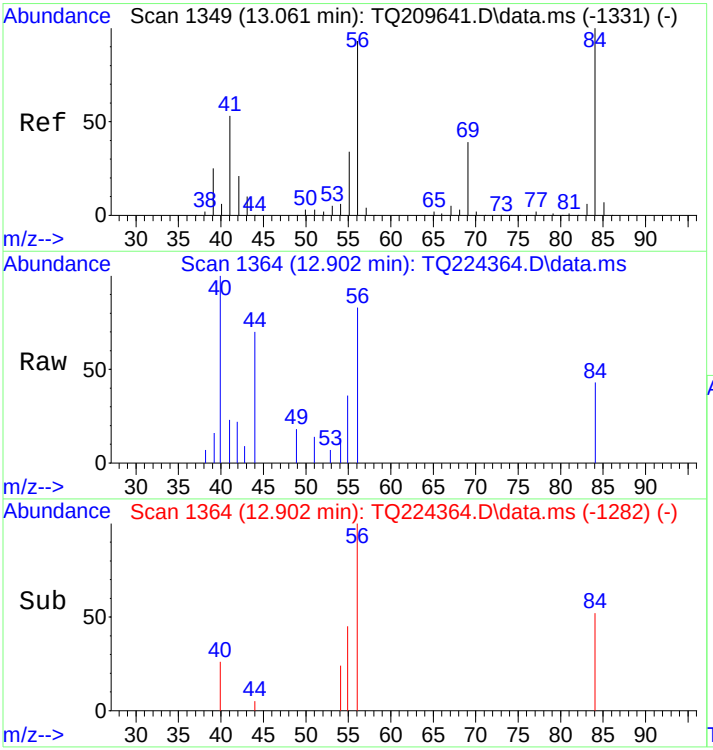


#29
Chloroform
Concen: 0.05 ppbv
RT: 12.000 min Scan# 1216
Delta R.T. 0.006 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 83 Resp: 2824

Ion	Ratio	Lower	Upper
83	100		
85	55.8	41.7	86.7
47	46.5	15.1	31.5#
87	0.0	6.7	13.9#

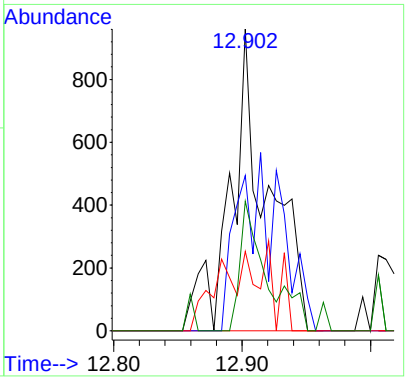


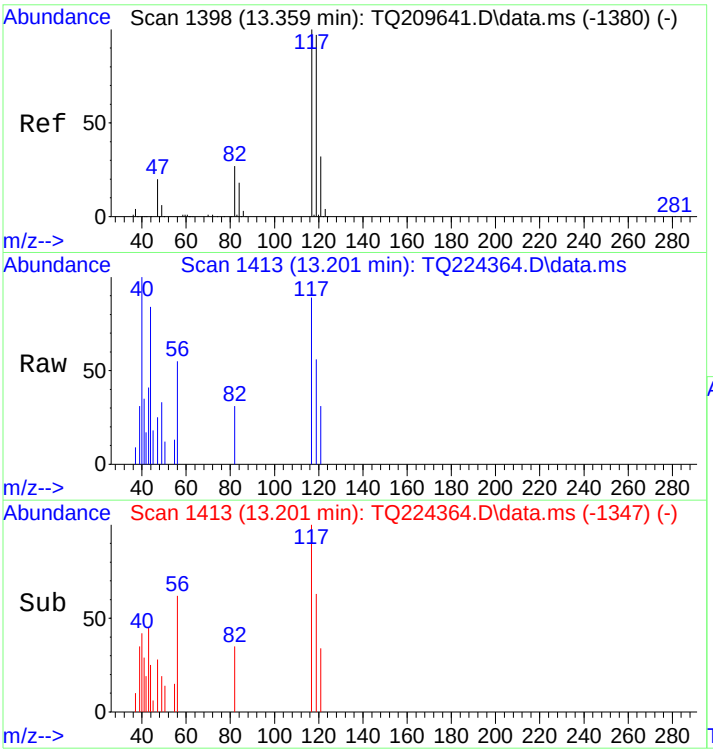


#32
Cyclohexane
Concen: 0.03 ppbv
RT: 12.902 min Scan# 1364
Delta R.T. 0.000 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 56 Resp: 1941

Ion	Ratio	Lower	Upper
56	100		
84	66.5	54.1	112.3
42	36.0	15.3	31.7#
55	33.0	23.5	48.7

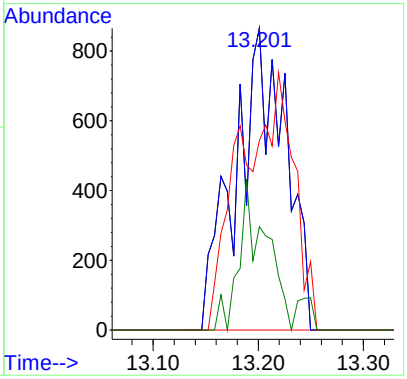


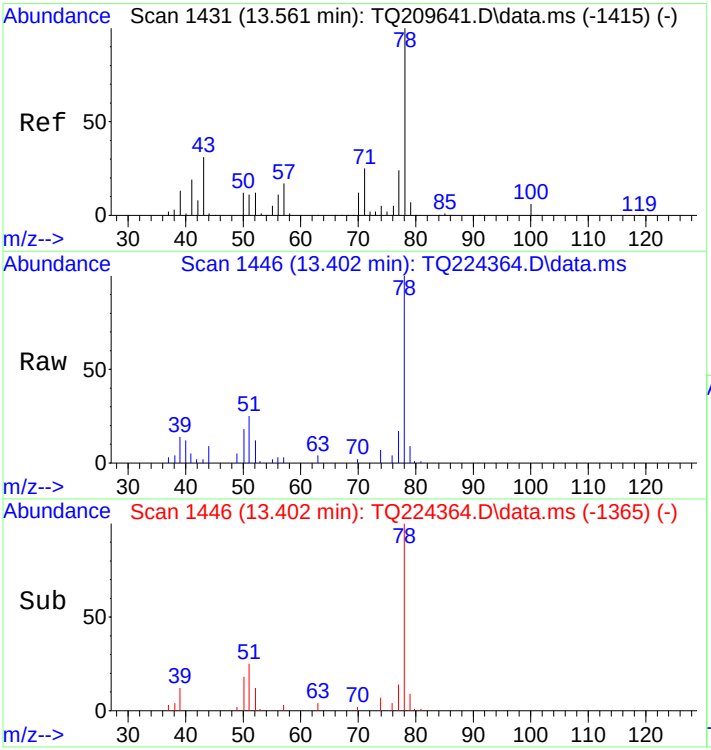


#33
Carbon Tetrachloride
Concen: 0.08 ppbv
RT: 13.201 min Scan# 1413
Delta R.T. 0.000 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion:117 Resp: 2862

Ion	Ratio	Lower	Upper
117	100		
117	100.0	80.0	120.0
119	0.0	76.9	115.3#
121	30.7	21.7	40.3

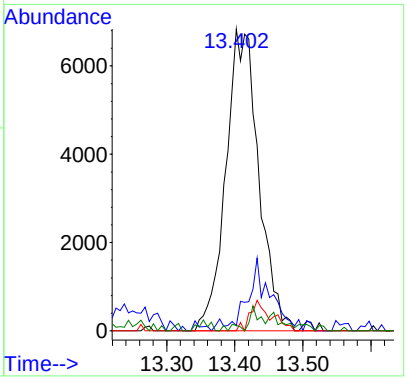


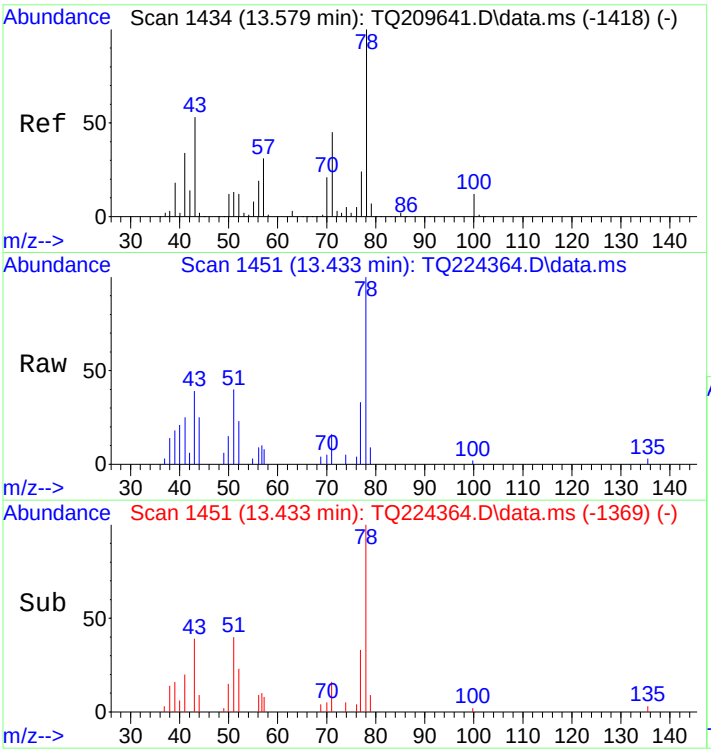


#35
Benzene
Concen: 0.23 ppbv
RT: 13.402 min Scan# 1446
Delta R.T. -0.006 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 78 Resp: 23122

Ion	Ratio	Lower	Upper
78	100		
43	17.0	37.5	77.9#
71	6.3	22.0	45.8#
42	6.6	8.8	18.4#

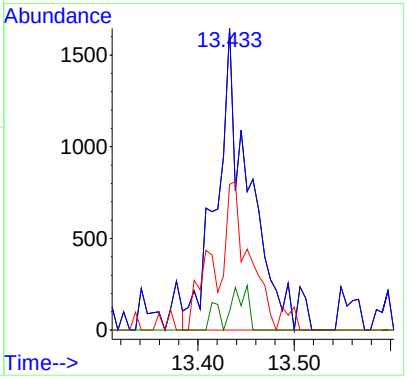


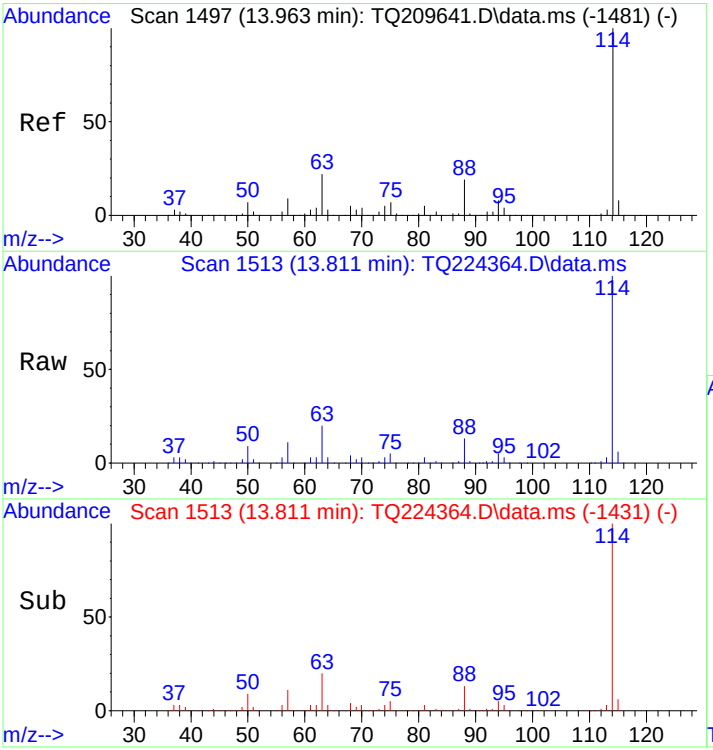


#36
n-Heptane
Concen: 0.05 ppbv
RT: 13.433 min Scan# 1451
Delta R.T. -0.000 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 43 Resp: 3938

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

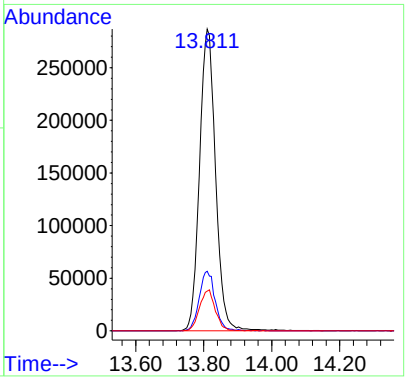


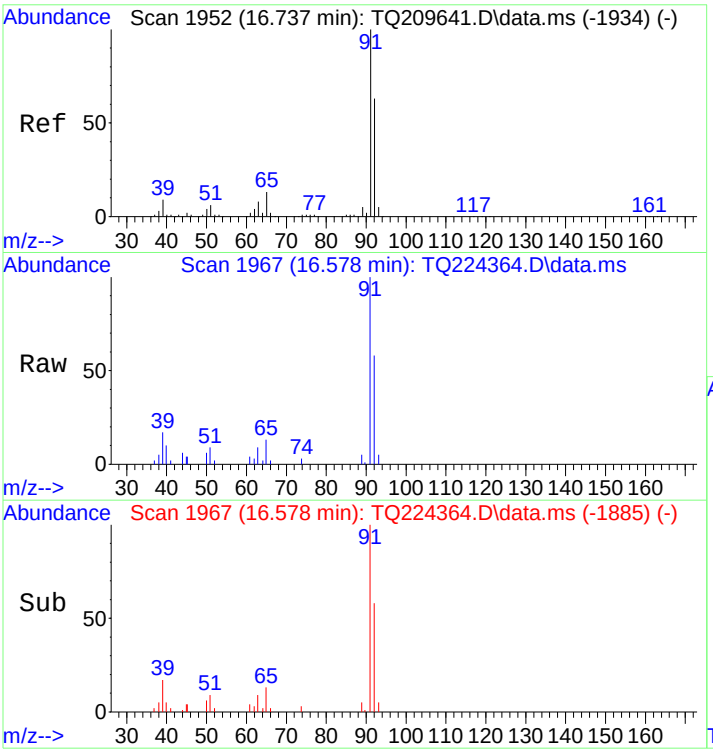


#37
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.811 min Scan# 1513
Delta R.T. -0.000 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion:114 Resp: 943151

Ion	Ratio	Lower	Upper
114	100		
63	19.7	12.9	26.9
88	13.4	10.7	22.3

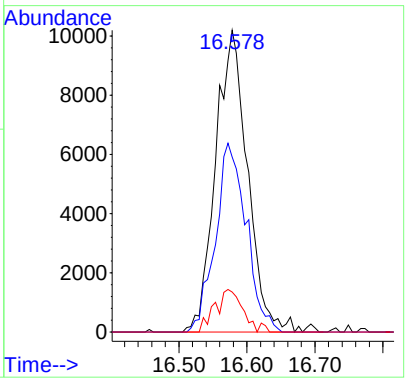


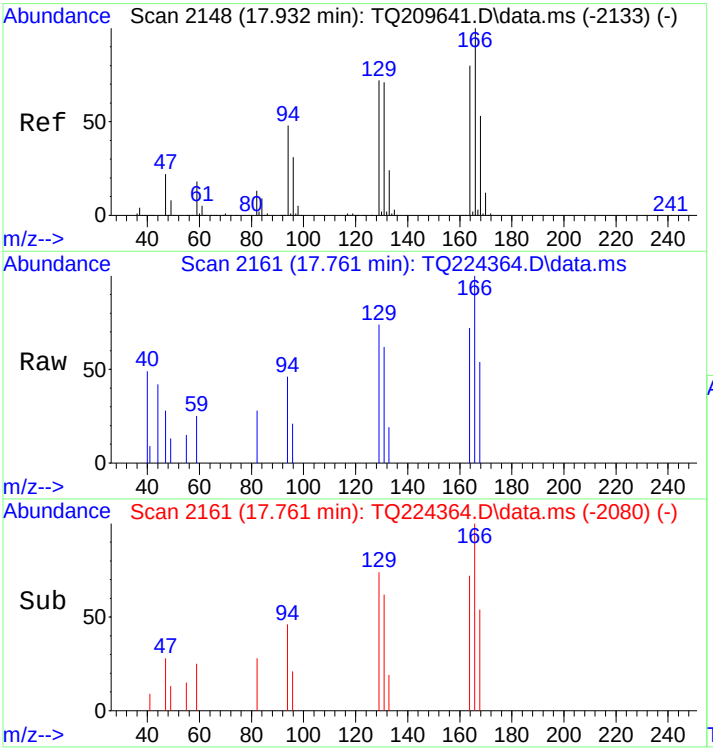


#45
Toluene
Concen: 0.28 ppbv
RT: 16.578 min Scan# 1967
Delta R.T. 0.000 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 91 Resp: 33541

Ion	Ratio	Lower	Upper
91	100		
92	59.9	38.7	80.3
65	12.4	7.5	15.5

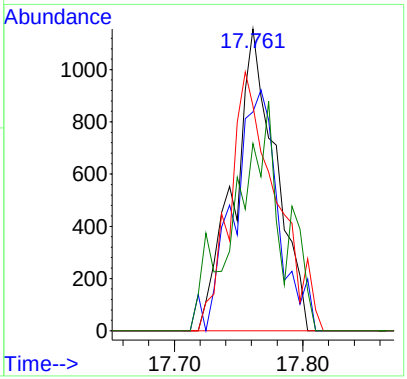


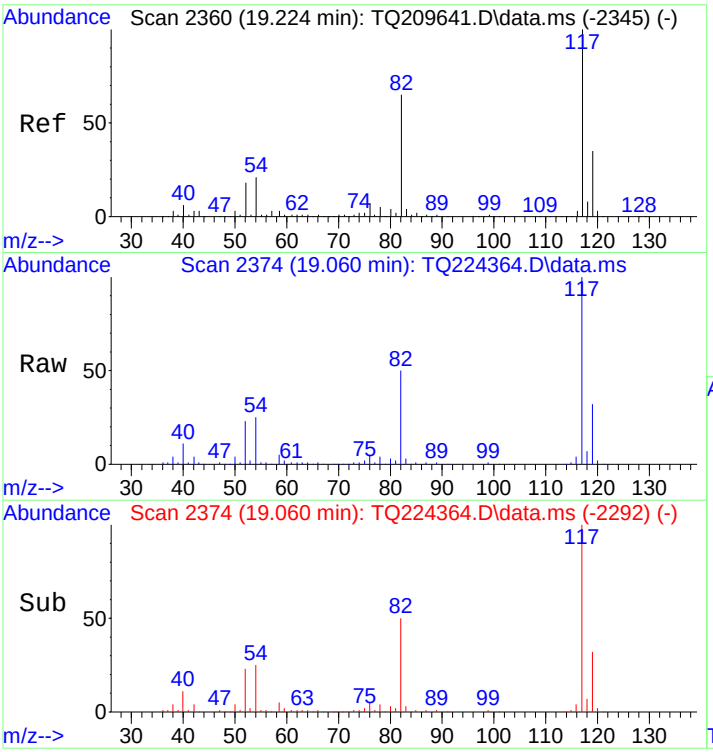


#50
Tetrachloroethylene
Concen: 0.05 ppbv
RT: 17.761 min Scan# 2161
Delta R.T. -0.006 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion:166 Resp: 2618

Ion	Ratio	Lower	Upper
166	100		
164	86.1	51.0	106.0
129	95.0	48.1	99.9
131	85.6	46.3	96.3

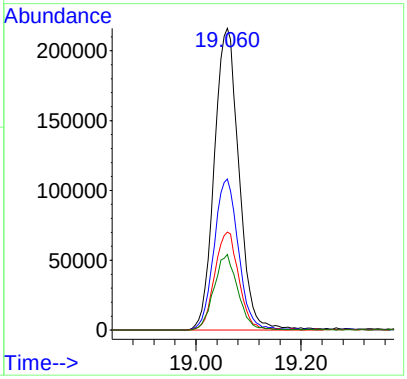


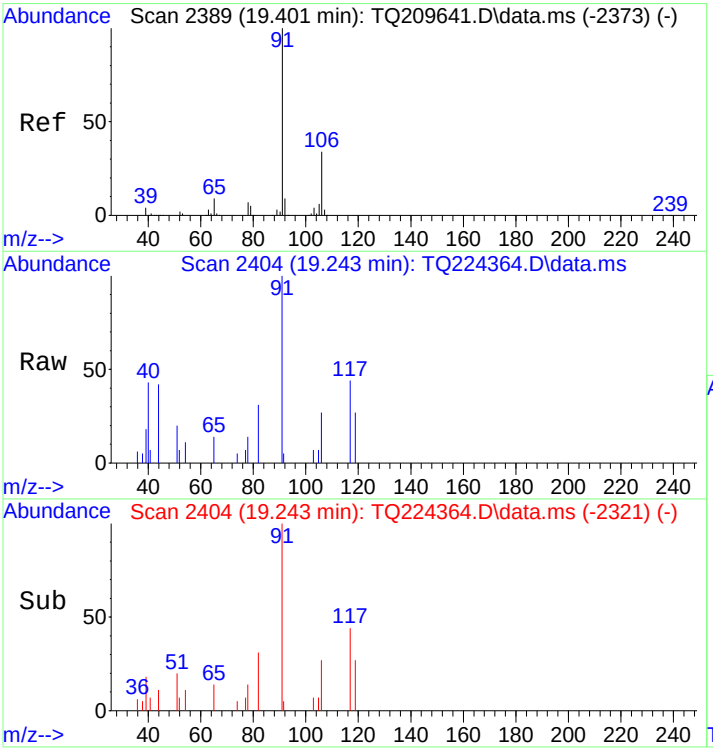


#53
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.060 min Scan# 2374
Delta R.T. -0.000 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion:117 Resp: 708513

Ion	Ratio	Lower	Upper
117	100		
82	49.8	37.1	77.1
119	31.9	22.1	45.9
54	24.5	13.8	28.6

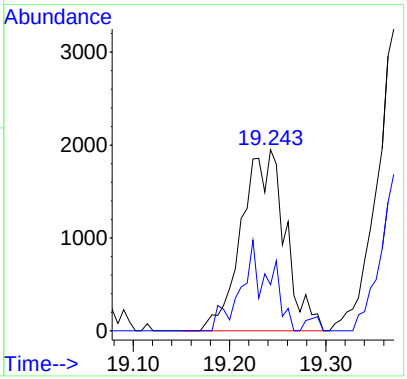


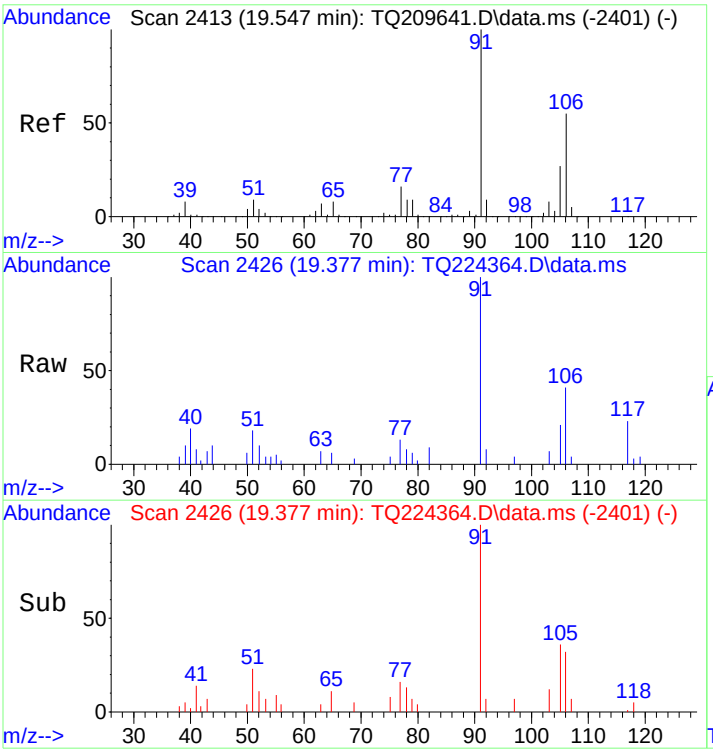


#56
Ethylbenzene
Concen: 0.05 ppbv
RT: 19.243 min Scan# 2404
Delta R.T. 0.007 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 91 Resp: 6115

Ion	Ratio	Lower	Upper
91	100		
106	33.2	20.5	42.7

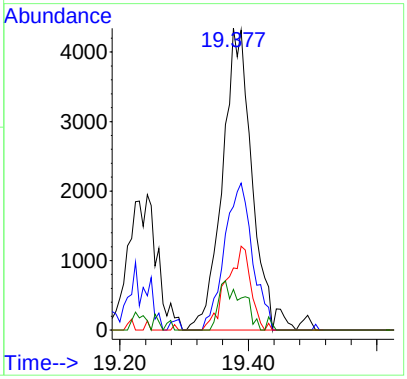


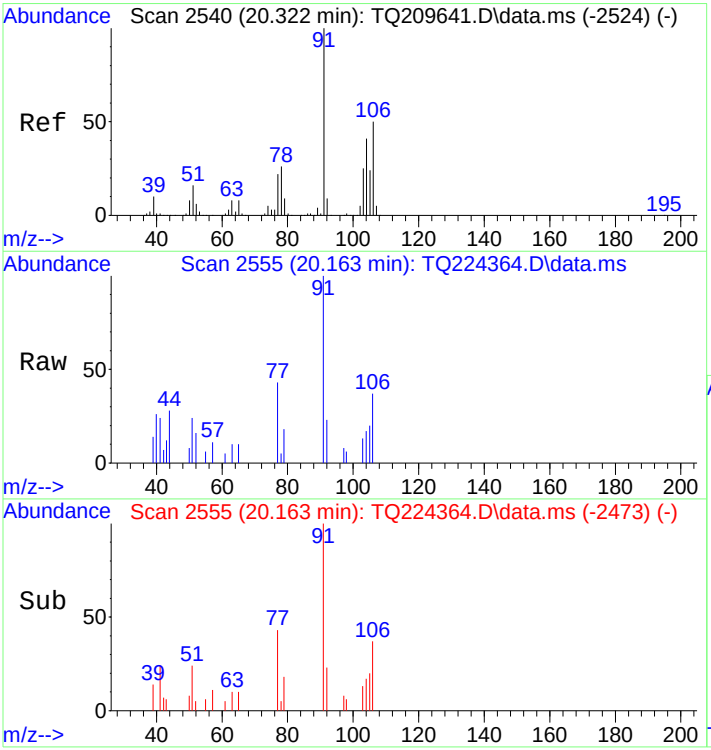


#57
p- & m-Xylenes
Concen: 0.15 ppbv
RT: 19.377 min Scan# 2426
Delta R.T. -0.006 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 91 Resp: 14117

Ion	Ratio	Lower	Upper
91	100		
106	45.3	32.6	67.8
105	22.3	14.5	30.1
77	12.9	8.5	17.7

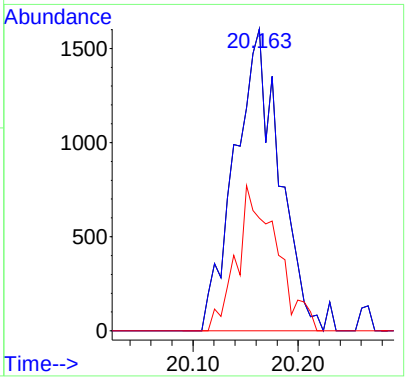


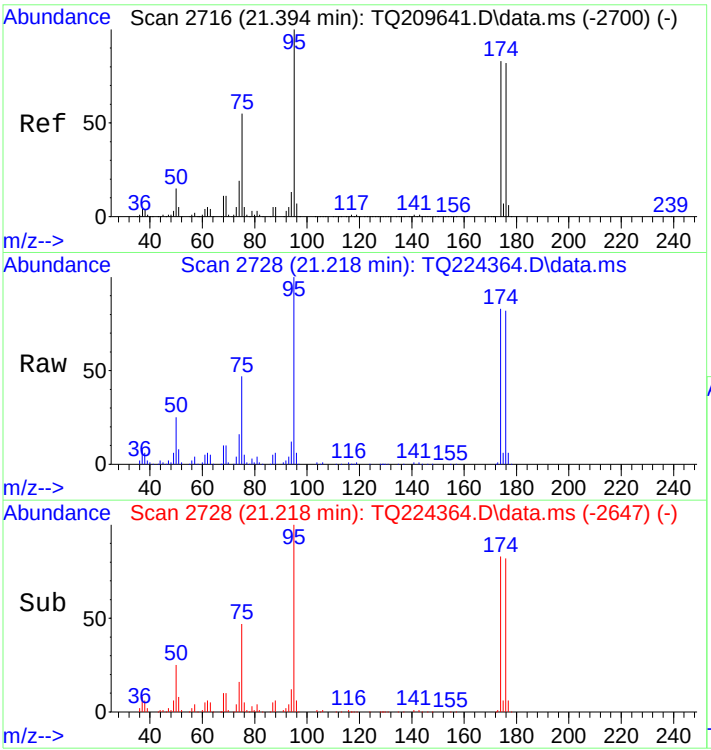


#58
o-Xylene
Concen: 0.05 ppbv
RT: 20.163 min Scan# 2555
Delta R.T. 0.000 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 91 Resp: 4711

Ion	Ratio	Lower	Upper
91	100		
91	100.0	80.0	120.0
106	43.2	38.2	57.2

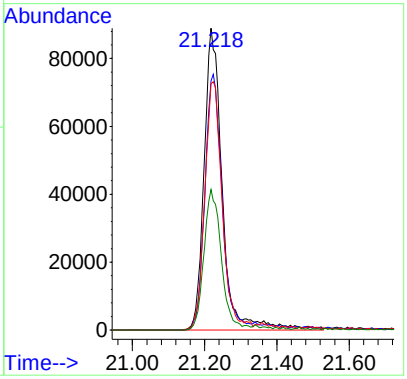




#64
p-Bromofluorobenzene
Concen: 8.47 ppbv
RT: 21.218 min Scan# 2728
Delta R.T. -0.006 min
Lab File: TQ224364.D
Acq: 18 Mar 2023 8:57 pm

Tgt Ion: 95 Resp: 310949

Ion	Ratio	Lower	Upper
95	100		
174	84.4	53.2	110.6
176	78.5	51.6	107.2
75	46.4	30.7	63.7



FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Matrix:	Air		
Batch:	BC31240	Laboratory ID:	BC31240-BS1
Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	10.0	9.50	95.0	70 - 130
1,1,1-Trichloroethane	10.0	9.77	97.7	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.07	90.7	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.0	9.03	90.3	70 - 130
1,1,2-Trichloroethane	10.0	9.38	93.8	70 - 130
1,1-Dichloroethane	10.0	8.88	88.8	70 - 130
1,1-Dichloroethylene	10.0	8.12	81.2	70 - 130
1,2,4-Trichlorobenzene	10.0	6.39	63.9 *	70 - 130
1,2,4-Trimethylbenzene	10.0	8.74	87.4	70 - 130
1,2-Dibromoethane	10.0	9.37	93.7	70 - 130
1,2-Dichlorobenzene	10.0	8.83	88.3	70 - 130
1,2-Dichloroethane	10.0	8.78	87.8	70 - 130
1,2-Dichloropropane	10.0	8.91	89.1	70 - 130
1,2-Dichlorotetrafluoroethane	10.0	7.54	75.4	70 - 130
1,3,5-Trimethylbenzene	10.0	8.18	81.8	70 - 130
1,3-Butadiene	10.0	8.23	82.3	70 - 130
1,3-Dichlorobenzene	10.0	9.40	94.0	70 - 130
1,3-Dichloropropane	10.0	9.11	91.1	70 - 130
1,4-Dichlorobenzene	10.0	9.42	94.2	70 - 130
1,4-Dioxane	10.0	9.06	90.6	70 - 130
2-Butanone	10.0	8.76	87.6	70 - 130
2-Hexanone	10.0	9.21	92.1	70 - 130
3-Chloropropene	10.0	9.00	90.0	70 - 130
4-Methyl-2-pentanone	10.0	8.77	87.7	70 - 130
Acetone	10.0	7.83	78.3	70 - 130
Acrylonitrile	10.0	8.68	86.8	70 - 130
Benzene	10.0	9.09	90.9	70 - 130
Benzyl chloride	10.0	7.85	78.5	70 - 130
Bromodichloromethane	10.0	9.84	98.4	70 - 130
Bromoform	10.0	9.37	93.7	70 - 130

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Matrix:	Air		
Batch:	BC31240	Laboratory ID:	BC31240-BS1
Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
Bromomethane	10.0	8.00	80.0	70 - 130
Carbon disulfide	10.0	9.06	90.6	70 - 130
Carbon tetrachloride	10.0	10.1	101	70 - 130
Chlorobenzene	10.0	8.54	85.4	70 - 130
Chloroethane	10.0	8.17	81.7	70 - 130
Chloroform	10.0	9.42	94.2	70 - 130
Chloromethane	10.0	8.37	83.7	70 - 130
cis-1,2-Dichloroethylene	10.0	7.87	78.7	70 - 130
cis-1,3-Dichloropropylene	10.0	10.1	101	70 - 130
Cyclohexane	10.0	9.41	94.1	70 - 130
Dibromochloromethane	10.0	10.6	106	70 - 130
Dichlorodifluoromethane	10.0	8.30	83.0	70 - 130
Ethyl acetate	10.0	9.16	91.6	70 - 130
Ethyl Benzene	10.0	8.84	88.4	70 - 130
Hexachlorobutadiene	10.0	7.05	70.5	70 - 130
Isopropanol	10.0	8.56	85.6	70 - 130
Methyl Methacrylate	10.0	8.95	89.5	70 - 130
Methyl tert-butyl ether (MTBE)	10.0	9.37	93.7	70 - 130
Methylene chloride	10.0	9.47	94.7	70 - 130
n-Heptane	10.0	9.46	94.6	70 - 130
n-Hexane	10.0	9.53	95.3	70 - 130
o-Xylene	10.0	9.08	90.8	70 - 130
p- & m- Xylenes	20.0	17.5	87.6	70 - 130
p-Ethyltoluene	10.0	8.76	87.6	70 - 130
Propylene	10.0	7.50	75.0	70 - 130
Styrene	10.0	9.60	96.0	70 - 130
Tetrachloroethylene	10.0	9.08	90.8	70 - 130
Tetrahydrofuran	10.0	9.09	90.9	70 - 130
Toluene	10.0	9.02	90.2	70 - 130
trans-1,2-Dichloroethylene	10.0	8.54	85.4	70 - 130

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Matrix:	Air		
Batch:	BC31240	Laboratory ID:	BC31240-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	9.95	99.5	70 - 130
Trichloroethylene	10.0	8.35	83.5	70 - 130
Trichlorofluoromethane (Freon 11)	10.0	9.04	90.4	70 - 130
Vinyl acetate	10.0	9.53	95.3	70 - 130
Vinyl bromide	10.0	9.69	96.9	70 - 130
Vinyl Chloride	10.0	7.25	72.5	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. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Matrix:	Air		
Batch:	BC31255	Laboratory ID:	BC31255-BS1
Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	10.0	9.81	98.1	70 - 130
1,1,1-Trichloroethane	10.0	10.9	109	70 - 130
1,1,2,2-Tetrachloroethane	10.0	11.1	111	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	8.61	86.1	70 - 130
1,1-Dichloroethane	10.0	10.3	103	70 - 130
1,1-Dichloroethylene	10.0	11.4	114	70 - 130
1,2,4-Trichlorobenzene	10.0	8.06	80.6	70 - 130
1,2,4-Trimethylbenzene	10.0	8.37	83.7	70 - 130
1,2-Dibromoethane	10.0	8.85	88.5	70 - 130
1,2-Dichlorobenzene	10.0	8.12	81.2	70 - 130
1,2-Dichloroethane	10.0	11.0	110	70 - 130
1,2-Dichloropropane	10.0	8.50	85.0	70 - 130
1,2-Dichlorotetrafluoroethane	10.0	9.54	95.4	70 - 130
1,3,5-Trimethylbenzene	10.0	8.50	85.0	70 - 130
1,3-Butadiene	10.0	10.7	107	70 - 130
1,3-Dichlorobenzene	10.0	8.48	84.8	70 - 130
1,3-Dichloropropane	10.0	8.99	89.9	70 - 130
1,4-Dichlorobenzene	10.0	8.28	82.8	70 - 130
1,4-Dioxane	10.0	10.6	106	70 - 130
2-Butanone	10.0	10.3	103	70 - 130
2-Hexanone	10.0	7.83	78.3	70 - 130
3-Chloropropene	10.0	11.6	116	70 - 130
4-Methyl-2-pentanone	10.0	8.21	82.1	70 - 130
Acetone	10.0	8.87	88.7	70 - 130
Acrylonitrile	10.0	12.3	123	70 - 130
Benzene	10.0	7.83	78.3	70 - 130
Benzyl chloride	10.0	8.96	89.6	70 - 130
Bromodichloromethane	10.0	9.20	92.0	70 - 130
Bromoform	10.0	9.21	92.1	70 - 130

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Matrix:	Air		
Batch:	BC31255	Laboratory ID:	BC31255-BS1
Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
Bromomethane	10.0	9.83	98.3	70 - 130
Carbon disulfide	10.0	10.3	103	70 - 130
Carbon tetrachloride	10.0	9.75	97.5	70 - 130
Chlorobenzene	10.0	10.4	104	70 - 130
Chloroethane	10.0	12.7	127	70 - 130
Chloroform	10.0	10.4	104	70 - 130
Chloromethane	10.0	10.3	103	70 - 130
cis-1,2-Dichloroethylene	10.0	11.5	115	70 - 130
cis-1,3-Dichloropropylene	10.0	9.53	95.3	70 - 130
Cyclohexane	10.0	9.42	94.2	70 - 130
Dibromochloromethane	10.0	8.96	89.6	70 - 130
Dichlorodifluoromethane	10.0	11.1	111	70 - 130
Ethyl acetate	10.0	10.5	105	70 - 130
Ethyl Benzene	10.0	10.8	108	70 - 130
Hexachlorobutadiene	10.0	5.85	58.5 *	70 - 130
Isopropanol	10.0	10.2	102	70 - 130
Methyl Methacrylate	10.0	8.33	83.3	70 - 130
Methyl tert-butyl ether (MTBE)	10.0	11.5	115	70 - 130
Methylene chloride	10.0	9.84	98.4	70 - 130
n-Heptane	10.0	7.65	76.5	70 - 130
n-Hexane	10.0	9.44	94.4	70 - 130
o-Xylene	10.0	8.09	80.9	70 - 130
p- & m- Xylenes	20.0	14.6	72.9	70 - 130
p-Ethyltoluene	10.0	8.05	80.5	70 - 130
Propylene	10.0	12.5	125	70 - 130
Styrene	10.0	7.81	78.1	70 - 130
Tetrachloroethylene	10.0	9.41	94.1	70 - 130
Tetrahydrofuran	10.0	11.1	111	70 - 130
Toluene	10.0	8.32	83.2	70 - 130
trans-1,2-Dichloroethylene	10.0	11.1	111	70 - 130

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Matrix:	Air		
Batch:	BC31255	Laboratory ID:	BC31255-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	9.74	97.4	70 - 130
Trichloroethylene	10.0	9.47	94.7	70 - 130
Trichlorofluoromethane (Freon 11)	10.0	10.7	107	70 - 130
Vinyl acetate	10.0	8.29	82.9	70 - 130
Vinyl bromide	10.0	12.0	120	70 - 130
Vinyl Chloride	10.0	8.75	87.5	70 - 130

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

* Values outside of QC limits

FORM IV

PREPARATION BATCH SUMMARY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC) Project: 170361307

Batch: BC31240 Batch Matrix: Air Preparation: EPA TO15 PREP

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
IA01_031723	23C0979-01	TQ224343.D	03/17/23 14:30	From BC31063 by AC on 03/17/2023
IA02_031723	23C0979-02	TQ224344.D	03/17/23 14:30	From BC31063 by AC on 03/17/2023
IA03_031723	23C0979-03	TQ224345.D	03/17/23 14:30	From BC31063 by AC on 03/17/2023
IA04_031723	23C0979-04	TQ224346.D	03/17/23 14:30	From BC31063 by AC on 03/17/2023
Blank	BC31240-BLK1	TQ224342.D	03/17/23 12:00	
LCS	BC31240-BS1	TQ224340.D	03/17/23 12:00	
IA04_031723	BC31240-DUP1	TQ224364.D	03/17/23 14:30	

FORM IV

PREPARATION BATCH SUMMARY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC) Project: 170361307

Batch: BC31255 Batch Matrix: Air Preparation: EPA TO15 PREP

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
AA01_031723	23C0979-05	TO298052.D	03/18/23 10:00	From BC31258 by VH on 03/20/2023
Blank	BC31255-BLK1	TO298048.D	03/18/23 10:00	
LCS	BC31255-BS1	TO298046.D	03/18/23 10:00	

FORM I

METHOD BLANK DATA SHEET

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31240-BLK1	File ID:	TQ224342.D
Prepared:	03/17/23 12:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/17/23 18:42	Instrument:	TO15_AIR2		
Batch:	BC31240	Sequence:	S3C2020	Calibration:	SB30007

CAS NO.	COMPOUND	CONC. (ug/m³)	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. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31240-BLK1	File ID:	TQ224342.D
Prepared:	03/17/23 12:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/17/23 18:42	Instrument:	TO15_AIR2		
Batch:	BC31240	Sequence:	S3C2020	Calibration:	SB30007

CAS NO.	COMPOUND	CONC. (ug/m³)	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	0.639	
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. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31240-BLK1	File ID:	TQ224342.D
Prepared:	03/17/23 12:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/17/23 18:42	Instrument:	TO15_AIR2		
Batch:	BC31240	Sequence:	S3C2020	Calibration:	SB30007

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	0.128	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	389895	12.238	338417	12.225	
ISTD: 1,4-Difluorobenzene	862934	13.817	764565	13.804	
ISTD: d5-Chlorobenzene	543455	19.06	676354	19.053	

FORM I

METHOD BLANK DATA SHEET

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31255-BLK1	File ID:	TO298048.D
Prepared:	03/18/23 10:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/18/23 13:55	Instrument:	5975C		
Batch:	BC31255	Sequence:	S3C1903	Calibration:	SB30018

CAS NO.	COMPOUND	CONC. (ug/m³)	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. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31255-BLK1	File ID:	TO298048.D
Prepared:	03/18/23 10:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/18/23 13:55	Instrument:	5975C		
Batch:	BC31255	Sequence:	S3C1903	Calibration:	SB30018

CAS NO.	COMPOUND	CONC. (ug/m³)	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. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31255-BLK1	File ID:	TO298048.D
Prepared:	03/18/23 10:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/18/23 13:55	Instrument:	5975C		
Batch:	BC31255	Sequence:	S3C1903	Calibration:	SB30018

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	0.128	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	284359	12.22	214720	12.22	
ISTD: 1,4-Difluorobenzene	872152	13.771	644908	13.771	
ISTD: d5-Chlorobenzene	605202	19.006	640123	19.006	

FORM V MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Lab File ID:	TQ223684.D	Injection Date:	01/27/23
Instrument ID:	TO15_AIR2	Injection Time:	13:11
Sequence:	S3B0635	Lab Sample ID:	S3B0635-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	23.8	PASS
75	30 - 66% of 95	42.5	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.77	PASS
173	Less than 2% of 174	0.671	PASS
174	50 - 120% of 95	78.7	PASS
175	4 - 9% of 174	6.74	PASS
176	93 - 101% of 174	95.4	PASS
177	5 - 9% of 176	6.62	PASS

FORM V MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Lab File ID:	TO297452.D	Injection Date:	02/09/23
Instrument ID:	5975C	Injection Time:	15:26
Sequence:	S3B1020	Lab Sample ID:	S3B1020-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	22.2	PASS
75	30 - 66% of 95	52.4	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.98	PASS
173	Less than 2% of 174	0.603	PASS
174	50 - 120% of 95	98.4	PASS
175	4 - 9% of 174	7.31	PASS
176	93 - 101% of 174	96.9	PASS
177	5 - 9% of 176	6.56	PASS

FORM V MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Lab File ID:	TO298044.D	Injection Date:	03/18/23
Instrument ID:	5975C	Injection Time:	10:02
Sequence:	S3C1903	Lab Sample ID:	S3C1903-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	27.8	PASS
75	30 - 66% of 95	58.4	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	8.58	PASS
173	Less than 2% of 174	0.723	PASS
174	50 - 120% of 95	97.1	PASS
175	4 - 9% of 174	8.8	PASS
176	93 - 101% of 174	96.5	PASS
177	5 - 9% of 176	8.35	PASS

FORM V MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Lab File ID:	TQ224338.D	Injection Date:	03/17/23
Instrument ID:	TO15_AIR2	Injection Time:	14:17
Sequence:	S3C2020	Lab Sample ID:	S3C2020-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	27.6	PASS
75	30 - 66% of 95	49.1	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.19	PASS
173	Less than 2% of 174	0.587	PASS
174	50 - 120% of 95	86.7	PASS
175	4 - 9% of 174	7.28	PASS
176	93 - 101% of 174	98.5	PASS
177	5 - 9% of 176	6.57	PASS

FORM V

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Sequence:	S3B0635	Instrument:	TO15_AIR2
		Calibration:	SB30007

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	S3B0635-TUN1	TQ223684.D	01/27/23 13:11
Cal Standard	S3B0635-CAL1	TQ223685.D	01/27/23 14:07
Cal Standard	S3B0635-CAL2	TQ223686.D	01/27/23 15:03
Cal Standard	S3B0635-CAL3	TQ223687.D	01/27/23 16:00
Cal Standard	S3B0635-CAL4	TQ223688.D	01/27/23 16:59
Cal Standard	S3B0635-CAL5	TQ223689.D	01/27/23 18:02
Cal Standard	S3B0635-CAL6	TQ223690.D	01/27/23 18:58
Cal Standard	S3B0635-CAL7	TQ223691.D	01/27/23 19:56
Cal Standard	S3B0635-CAL8	TQ223692.D	01/27/23 20:57
Cal Standard	S3B0635-CAL9	TQ223693.D	01/27/23 22:00
Cal Standard	S3B0635-CALA	TQ223694.D	01/27/23 23:24
Secondary Cal Check	S3B0635-SCV1	TQ223697.D	01/28/23 02:22

FORM V

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Sequence:	S3B1020	Instrument:	5975C
		Calibration:	SB30018

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	S3B1020-TUN1	TO297452.D	02/09/23 15:26
Cal Standard	S3B1020-CAL1	TO297454.D	02/09/23 17:01
Cal Standard	S3B1020-CAL2	TO297455.D	02/09/23 17:47
Cal Standard	S3B1020-CAL3	TO297456.D	02/09/23 18:35
Cal Standard	S3B1020-CAL4	TO297457.D	02/09/23 19:23
Cal Standard	S3B1020-CAL5	TO297458.D	02/09/23 20:16
Cal Standard	S3B1020-CAL6	TO297459.D	02/09/23 21:03
Cal Standard	S3B1020-CAL7	TO297460.D	02/09/23 21:51
Cal Standard	S3B1020-CAL8	TO297461.D	02/09/23 22:42
Cal Standard	S3B1020-CAL9	TO297462.D	02/09/23 23:35
Cal Standard	S3B1020-CALA	TO297463.D	02/10/23 00:32
Secondary Cal Check	S3B1020-SCV1	TO297466.D	02/10/23 03:01

FORM V

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Sequence:	S3C1903	Instrument:	5975C
		Calibration:	SB30018

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	S3C1903-TUN1	TO298044.D	03/18/23 10:02
Calibration Check	S3C1903-CCV1	TO298045.D	03/18/23 10:51
LCS	BC31255-BS1	TO298046.D	03/18/23 11:39
Blank	BC31255-BLK1	TO298048.D	03/18/23 13:55
AA01_031723	23C0979-05	TO298052.D	03/18/23 18:43

FORM V

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Sequence:	S3C2020	Instrument:	TO15_AIR2
		Calibration:	SB30007

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	S3C2020-TUN1	TQ224338.D	03/17/23 14:17
Calibration Check	S3C2020-CCV1	TQ224339.D	03/17/23 15:44
LCS	BC31240-BS1	TQ224340.D	03/17/23 16:38
Blank	BC31240-BLK1	TQ224342.D	03/17/23 18:42
IA01_031723	23C0979-01	TQ224343.D	03/17/23 20:39
IA02_031723	23C0979-02	TQ224344.D	03/17/23 21:49
IA03_031723	23C0979-03	TQ224345.D	03/17/23 22:58
IA04_031723	23C0979-04	TQ224346.D	03/18/23 00:08
IA04_031723	BC31240-DUP1	TQ224364.D	03/18/23 20:57

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Sequence:	S3B0635	Instrument:	TO15_AIR2
		Calibration:	SB30007

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (S3B0635-CAL1)			Lab File ID: TQ223685.D			Analyzed: 01/27/23 14:07			
Bromochloromethane	695968	12.226	445886	12.207	156	60 - 140	0.0190	+/-0.33	*
ISTD: 1,4-Difluorobenzene	1489520	13.804	949918	13.798	157	60 - 140	0.0060	+/-0.33	*
ISTD: d5-Chlorobenzene	1013729	19.06	873015	19.053	116	60 - 140	0.0070	+/-0.33	
Cal Standard (S3B0635-CAL2)			Lab File ID: TQ223686.D			Analyzed: 01/27/23 15:03			
Bromochloromethane	639307	12.219	445886	12.207	143	60 - 140	0.0120	+/-0.33	*
ISTD: 1,4-Difluorobenzene	1399063	13.804	949918	13.798	147	60 - 140	0.0060	+/-0.33	*
ISTD: d5-Chlorobenzene	963324	19.06	873015	19.053	110	60 - 140	0.0070	+/-0.33	
Cal Standard (S3B0635-CAL3)			Lab File ID: TQ223687.D			Analyzed: 01/27/23 16:00			
Bromochloromethane	575995	12.213	445886	12.207	129	60 - 140	0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	1223933	13.798	949918	13.798	129	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	858273	19.059	873015	19.053	98	60 - 140	0.0060	+/-0.33	
Cal Standard (S3B0635-CAL4)			Lab File ID: TQ223688.D			Analyzed: 01/27/23 16:59			
Bromochloromethane	495882	12.213	445886	12.207	111	60 - 140	0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	1047331	13.798	949918	13.798	110	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	770552	19.059	873015	19.053	88	60 - 140	0.0060	+/-0.33	
Cal Standard (S3B0635-CAL5)			Lab File ID: TQ223689.D			Analyzed: 01/27/23 18:02			
Bromochloromethane	450829	12.207	445886	12.207	101	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	946540	13.792	949918	13.798	100	60 - 140	-0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	739890	19.054	873015	19.053	85	60 - 140	0.0010	+/-0.33	
Cal Standard (S3B0635-CAL6)			Lab File ID: TQ223690.D			Analyzed: 01/27/23 18:58			
Bromochloromethane	420619	12.213	445886	12.207	94	60 - 140	0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	883596	13.798	949918	13.798	93	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	705722	19.06	873015	19.053	81	60 - 140	0.0070	+/-0.33	
Cal Standard (S3B0635-CAL7)			Lab File ID: TQ223691.D			Analyzed: 01/27/23 19:56			
Bromochloromethane	445886	12.207	445886	12.207	100	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	949918	13.798	949918	13.798	100	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	873015	19.053	873015	19.053	100	60 - 140	0.0000	+/-0.33	
Cal Standard (S3B0635-CAL8)			Lab File ID: TQ223692.D			Analyzed: 01/27/23 20:57			
Bromochloromethane	526311	12.213	445886	12.207	118	60 - 140	0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	1131650	13.798	949918	13.798	119	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	1080052	19.053	873015	19.053	124	60 - 140	0.0000	+/-0.33	
Cal Standard (S3B0635-CAL9)			Lab File ID: TQ223693.D			Analyzed: 01/27/23 22:00			
Bromochloromethane	644905	12.213	445886	12.207	145	60 - 140	0.0060	+/-0.33	*
ISTD: 1,4-Difluorobenzene	1396585	13.804	949918	13.798	147	60 - 140	0.0060	+/-0.33	*
ISTD: d5-Chlorobenzene	1325378	19.06	873015	19.053	152	60 - 140	0.0070	+/-0.33	*

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Sequence:	S3B0635	Instrument:	TO15_AIR2
		Calibration:	SB30007

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (S3B0635-CALA)			Lab File ID: TQ223694.D			Analyzed: 01/27/23 23:24			
Bromochloromethane	796097	12.213	445886	12.207	179	60 - 140	0.0060	+/-0.33	*
ISTD: 1,4-Difluorobenzene	1718783	13.798	949918	13.798	181	60 - 140	0.0000	+/-0.33	*
ISTD: d5-Chlorobenzene	1581887	19.06	873015	19.053	181	60 - 140	0.0070	+/-0.33	*
Secondary Cal Check (S3B0635-SCV1)			Lab File ID: TQ223697.D			Analyzed: 01/28/23 02:22			
Bromochloromethane	830877	12.213	445886	12.207	186	60 - 140	0.0060	+/-0.33	*
ISTD: 1,4-Difluorobenzene	1878560	13.798	949918	13.798	198	60 - 140	0.0000	+/-0.33	*
ISTD: d5-Chlorobenzene	1523575	19.053	873015	19.053	175	60 - 140	0.0000	+/-0.33	*

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Sequence: S3B1020
Instrument: 5975C
Calibration: SB30018

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (S3B1020-CAL1)			Lab File ID: TO297454.D			Analyzed: 02/09/23 17:01			
Bromochloromethane	360880	12.227	290423	12.22	124	60 - 140	0.0070	+/-0.33	
ISTD: 1,4-Difluorobenzene	1180297	13.777	938915	13.771	126	60 - 140	0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	862575	19.013	907641	19.006	95	60 - 140	0.0070	+/-0.33	
Cal Standard (S3B1020-CAL2)			Lab File ID: TO297455.D			Analyzed: 02/09/23 17:47			
Bromochloromethane	332436	12.226	290423	12.22	114	60 - 140	0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	1069738	13.777	938915	13.771	114	60 - 140	0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	795534	19.006	907641	19.006	88	60 - 140	0.0000	+/-0.33	
Cal Standard (S3B1020-CAL3)			Lab File ID: TO297456.D			Analyzed: 02/09/23 18:35			
Bromochloromethane	326679	12.227	290423	12.22	112	60 - 140	0.0070	+/-0.33	
ISTD: 1,4-Difluorobenzene	1083866	13.777	938915	13.771	115	60 - 140	0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	809847	19.006	907641	19.006	89	60 - 140	0.0000	+/-0.33	
Cal Standard (S3B1020-CAL4)			Lab File ID: TO297457.D			Analyzed: 02/09/23 19:23			
Bromochloromethane	315478	12.226	290423	12.22	109	60 - 140	0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	1024323	13.771	938915	13.771	109	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	759301	19.006	907641	19.006	84	60 - 140	0.0000	+/-0.33	
Cal Standard (S3B1020-CAL5)			Lab File ID: TO297458.D			Analyzed: 02/09/23 20:16			
Bromochloromethane	299086	12.22	290423	12.22	103	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	938165	13.771	938915	13.771	100	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	717059	19.006	907641	19.006	79	60 - 140	0.0000	+/-0.33	
Cal Standard (S3B1020-CAL6)			Lab File ID: TO297459.D			Analyzed: 02/09/23 21:03			
Bromochloromethane	298715	12.22	290423	12.22	103	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	987760	13.771	938915	13.771	105	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	817180	19.007	907641	19.006	90	60 - 140	0.0010	+/-0.33	
Cal Standard (S3B1020-CAL7)			Lab File ID: TO297460.D			Analyzed: 02/09/23 21:51			
Bromochloromethane	290423	12.22	290423	12.22	100	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	938915	13.771	938915	13.771	100	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	907641	19.006	907641	19.006	100	60 - 140	0.0000	+/-0.33	
Cal Standard (S3B1020-CAL8)			Lab File ID: TO297461.D			Analyzed: 02/09/23 22:42			
Bromochloromethane	332213	12.22	290423	12.22	114	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	1053501	13.771	938915	13.771	112	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	1191044	19	907641	19.006	131	60 - 140	-0.0060	+/-0.33	
Cal Standard (S3B1020-CAL9)			Lab File ID: TO297462.D			Analyzed: 02/09/23 23:35			
Bromochloromethane	443874	12.22	290423	12.22	153	60 - 140	0.0000	+/-0.33	*
ISTD: 1,4-Difluorobenzene	1428135	13.771	938915	13.771	152	60 - 140	0.0000	+/-0.33	*
ISTD: d5-Chlorobenzene	1587542	19.006	907641	19.006	175	60 - 140	0.0000	+/-0.33	*

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Sequence:	S3B1020	Instrument:	5975C
		Calibration:	SB30018

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (S3B1020-CALA)			Lab File ID: TO297463.D			Analyzed: 02/10/23 00:32			
Bromochloromethane	550232	12.22	290423	12.22	189	60 - 140	0.0000	+/-0.33	*
ISTD: 1,4-Difluorobenzene	1845282	13.771	938915	13.771	197	60 - 140	0.0000	+/-0.33	*
ISTD: d5-Chlorobenzene	2247368	19	907641	19.006	248	60 - 140	-0.0060	+/-0.33	*
Secondary Cal Check (S3B1020-SCV1)			Lab File ID: TO297466.D			Analyzed: 02/10/23 03:01			
Bromochloromethane	533745	12.22	290423	12.22	184	60 - 140	0.0000	+/-0.33	*
ISTD: 1,4-Difluorobenzene	1728874	13.771	938915	13.771	184	60 - 140	0.0000	+/-0.33	*
ISTD: d5-Chlorobenzene	1561527	19.007	907641	19.006	172	60 - 140	0.0010	+/-0.33	*

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Sequence:	S3C1903	Instrument:	5975C
		Calibration:	SB30018

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S3C1903-CCV1)			Lab File ID: TO298045.D			Analyzed: 03/18/23 10:51			
Bromochloromethane	214720	12.22				60 - 140		+/-0.33	
ISTD: 1,4-Difluorobenzene	644908	13.771				60 - 140		+/-0.33	
ISTD: d5-Chlorobenzene	640123	19.006				60 - 140		+/-0.33	
LCS (BC31255-BS1)			Lab File ID: TO298046.D			Analyzed: 03/18/23 11:39			
Bromochloromethane	244539	12.22	214720	12.22	114	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	758789	13.771	644908	13.771	118	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	719068	19.006	640123	19.006	112	60 - 140	0.0000	+/-0.33	
Blank (BC31255-BLK1)			Lab File ID: TO298048.D			Analyzed: 03/18/23 13:55			
Bromochloromethane	284359	12.22	214720	12.22	132	60 - 140	0.0000	+/-0.33	
ISTD: 1,4-Difluorobenzene	872152	13.771	644908	13.771	135	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	605202	19.006	640123	19.006	95	60 - 140	0.0000	+/-0.33	
AA01_031723 (23C0979-05)			Lab File ID: TO298052.D			Analyzed: 03/18/23 18:43			
Bromochloromethane	205418	12.227	214720	12.22	96	60 - 140	0.0070	+/-0.33	
ISTD: 1,4-Difluorobenzene	582399	13.777	644908	13.771	90	60 - 140	0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	473592	19.007	640123	19.006	74	60 - 140	0.0010	+/-0.33	

FORM VIII

INTERNAL STANDARD AREA AND RT SUMMARY
EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Sequence:	S3C2020	Instrument:	TO15_AIR2
		Calibration:	SB30007

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S3C2020-CCV1)			Lab File ID: TQ224339.D			Analyzed: 03/17/23 15:44			
Bromochloromethane	338417	12.225				60 - 140		+/-0.33	
ISTD: 1,4-Difluorobenzene	764565	13.804				60 - 140		+/-0.33	
ISTD: d5-Chlorobenzene	676354	19.053				60 - 140		+/-0.33	
LCS (BC31240-BS1)			Lab File ID: TQ224340.D			Analyzed: 03/17/23 16:38			
Bromochloromethane	427532	12.226	338417	12.225	126	60 - 140	0.0010	+/-0.33	
ISTD: 1,4-Difluorobenzene	975270	13.811	764565	13.804	128	60 - 140	0.0070	+/-0.33	
ISTD: d5-Chlorobenzene	845176	19.06	676354	19.053	125	60 - 140	0.0070	+/-0.33	
Blank (BC31240-BLK1)			Lab File ID: TQ224342.D			Analyzed: 03/17/23 18:42			
Bromochloromethane	389895	12.238	338417	12.225	115	60 - 140	0.0130	+/-0.33	
ISTD: 1,4-Difluorobenzene	862934	13.817	764565	13.804	113	60 - 140	0.0130	+/-0.33	
ISTD: d5-Chlorobenzene	543455	19.06	676354	19.053	80	60 - 140	0.0070	+/-0.33	
IA01_031723 (23C0979-01)			Lab File ID: TQ224343.D			Analyzed: 03/17/23 20:39			
Bromochloromethane	329248	12.219	338417	12.225	97	60 - 140	-0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	707612	13.798	764565	13.804	93	60 - 140	-0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	544368	19.053	676354	19.053	80	60 - 140	0.0000	+/-0.33	
IA02_031723 (23C0979-02)			Lab File ID: TQ224344.D			Analyzed: 03/17/23 21:49			
Bromochloromethane	290686	12.219	338417	12.225	86	60 - 140	-0.0060	+/-0.33	
ISTD: 1,4-Difluorobenzene	645132	13.798	764565	13.804	84	60 - 140	-0.0060	+/-0.33	
ISTD: d5-Chlorobenzene	490804	19.054	676354	19.053	73	60 - 140	0.0010	+/-0.33	
IA03_031723 (23C0979-03)			Lab File ID: TQ224345.D			Analyzed: 03/17/23 22:58			
Bromochloromethane	255986	12.22	338417	12.225	76	60 - 140	-0.0050	+/-0.33	
ISTD: 1,4-Difluorobenzene	573740	13.805	764565	13.804	75	60 - 140	0.0010	+/-0.33	
ISTD: d5-Chlorobenzene	447528	19.054	676354	19.053	66	60 - 140	0.0010	+/-0.33	
IA04_031723 (23C0979-04)			Lab File ID: TQ224346.D			Analyzed: 03/18/23 00:08			
Bromochloromethane	227328	12.226	338417	12.225	67	60 - 140	0.0010	+/-0.33	
ISTD: 1,4-Difluorobenzene	507983	13.804	764565	13.804	66	60 - 140	0.0000	+/-0.33	
ISTD: d5-Chlorobenzene	408472	19.053	676354	19.053	60	60 - 140	0.0000	+/-0.33	
Duplicate (BC31240-DUP1)			Lab File ID: TQ224364.D			Analyzed: 03/18/23 20:57			
Bromochloromethane	432251	12.232	338417	12.225	128	60 - 140	0.0070	+/-0.33	
ISTD: 1,4-Difluorobenzene	943151	13.811	764565	13.804	123	60 - 140	0.0070	+/-0.33	
ISTD: d5-Chlorobenzene	708513	19.06	676354	19.053	105	60 - 140	0.0070	+/-0.33	

HOLDING TIME SUMMARY

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC) Project: 170361307

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
IA01_031723	03/17/23 08:25	03/17/23 14:10	03/17/23 14:30	0.25	30.00	03/17/23 20:39	0.51	30.00	
IA02_031723	03/17/23 08:24	03/17/23 14:10	03/17/23 14:30	0.25	30.00	03/17/23 21:49	0.56	30.00	
IA03_031723	03/17/23 08:23	03/17/23 14:10	03/17/23 14:30	0.25	30.00	03/17/23 22:58	0.61	30.00	
IA04_031723	03/17/23 07:52	03/17/23 14:10	03/17/23 14:30	0.28	30.00	03/18/23 00:08	0.68	30.00	
AA01_031723	03/17/23 08:26	03/17/23 14:10	03/18/23 10:00	1.07	30.00	03/18/23 18:43	1.43	30.00	

METHOD DETECTION AND REPORTING LIMITS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford **SDG:** 23C0979

Client: Langan Engineering & Environmental Services (NYC) **Project:** 170361307

Matrix: Air **Instrument:** 5975C

Analyte	LOD	LOQ	Units
1,1,1,2-Tetrachloroethane	0.41	0.7	ug/m³
1,1,1-Trichloroethane	0.47	0.55	ug/m³
1,1,2,2-Tetrachloroethane	0.34	0.7	ug/m³
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.75	0.78	ug/m³
1,1,2-Trichloroethane	0.24	0.55	ug/m³
1,1-Dichloroethane	0.34	0.41	ug/m³
1,1-Dichloroethylene	0.1	0.2	ug/m³
1,2,4-Trichlorobenzene	0.6	0.75	ug/m³
1,2,4-Trimethylbenzene	0.3	0.5	ug/m³
1,2-Dibromoethane	0.31	0.78	ug/m³
1,2-Dichlorobenzene	0.4	0.61	ug/m³
1,2-Dichloroethane	0.26	0.41	ug/m³
1,2-Dichloropropane	0.24	0.47	ug/m³
1,2-Dichlorotetrafluoroethane	0.7	0.71	ug/m³
1,3,5-Trimethylbenzene	0.27	0.5	ug/m³
1,3-Butadiene	0.086	0.68	ug/m³
1,3-Dichlorobenzene	0.41	0.61	ug/m³
1,3-Dichloropropane	0.15	0.47	ug/m³
1,4-Dichlorobenzene	0.37	0.61	ug/m³
1,4-Dioxane	0.3	0.73	ug/m³
2-Butanone	0.18	0.3	ug/m³
2-Hexanone	0.17	0.83	ug/m³
3-Chloropropene	0.24	1.6	ug/m³
4-Methyl-2-pentanone	0.35	0.42	ug/m³
Acetone	0.24	0.48	ug/m³
Acrylonitrile	0.17	0.22	ug/m³
Benzene	0.32	0.32	ug/m³
Benzyl chloride	0.28	0.53	ug/m³
Bromodichloromethane	0.23	0.68	ug/m³
Bromoform	0.52	1.1	ug/m³
Bromomethane	0.39	0.39	ug/m³
Carbon disulfide	0.3	0.32	ug/m³
Carbon tetrachloride	0.16	0.16	ug/m³
Chlorobenzene	0.26	0.47	ug/m³
Chloroethane	0.17	0.27	ug/m³
Chloroform	0.46	0.5	ug/m³

METHOD DETECTION AND REPORTING LIMITS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford **SDG:** 23C0979

Client: Langan Engineering & Environmental Services (NYC) **Project:** 170361307

Matrix: Air **Instrument:** 5975C

Analyte	LOD	LOQ	Units
Chloromethane	0.1	0.21	ug/m³
cis-1,2-Dichloroethylene	0.1	0.2	ug/m³
cis-1,3-Dichloropropylene	0.19	0.46	ug/m³
Cyclohexane	0.3	0.35	ug/m³
Dibromochloromethane	0.42	0.87	ug/m³
Dichlorodifluoromethane	0.45	0.5	ug/m³
Ethyl acetate	0.25	0.73	ug/m³
Ethyl Benzene	0.3	0.44	ug/m³
Hexachlorobutadiene	0.92	1.1	ug/m³
Isopropanol	0.24	0.5	ug/m³
Methyl Methacrylate	0.13	0.42	ug/m³
Methyl tert-butyl ether (MTBE)	0.36	0.37	ug/m³
Methylene chloride	0.25	0.71	ug/m³
n-Heptane	0.18	0.42	ug/m³
n-Hexane	0.29	0.36	ug/m³
o-Xylene	0.11	0.44	ug/m³
p- & m- Xylenes	0.63	0.88	ug/m³
p-Ethyltoluene	0.38	0.5	ug/m³
Propylene	0.074	0.18	ug/m³
Styrene	0.26	0.43	ug/m³
Tetrachloroethylene	0.34	0.69	ug/m³
Tetrahydrofuran	0.16	0.6	ug/m³
Toluene	0.23	0.38	ug/m³
trans-1,2-Dichloroethylene	0.32	0.4	ug/m³
trans-1,3-Dichloropropylene	0.42	0.46	ug/m³
Trichloroethylene	0.14	0.14	ug/m³
Trichlorofluoromethane (Freon 11)	0.43	0.57	ug/m³
Vinyl acetate	0.22	0.36	ug/m³
Vinyl bromide	0.43	0.44	ug/m³
Vinyl Chloride	0.11	0.13	ug/m³

METHOD DETECTION AND REPORTING LIMITS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford **SDG:** 23C0979

Client: Langan Engineering & Environmental Services (NYC) **Project:** 170361307

Matrix: Air **Instrument:** TO15_AIR2

Analyte	LOD	LOQ	Units
1,1,1,2-Tetrachloroethane	0.41	0.7	ug/m³
1,1,1-Trichloroethane	0.47	0.55	ug/m³
1,1,2,2-Tetrachloroethane	0.34	0.7	ug/m³
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.75	0.78	ug/m³
1,1,2-Trichloroethane	0.24	0.55	ug/m³
1,1-Dichloroethane	0.34	0.41	ug/m³
1,1-Dichloroethylene	0.1	0.2	ug/m³
1,2,4-Trichlorobenzene	0.6	0.75	ug/m³
1,2,4-Trimethylbenzene	0.3	0.5	ug/m³
1,2-Dibromoethane	0.31	0.78	ug/m³
1,2-Dichlorobenzene	0.4	0.61	ug/m³
1,2-Dichloroethane	0.26	0.41	ug/m³
1,2-Dichloropropane	0.24	0.47	ug/m³
1,2-Dichlorotetrafluoroethane	0.7	0.71	ug/m³
1,3,5-Trimethylbenzene	0.27	0.5	ug/m³
1,3-Butadiene	0.086	0.68	ug/m³
1,3-Dichlorobenzene	0.41	0.61	ug/m³
1,3-Dichloropropane	0.15	0.47	ug/m³
1,4-Dichlorobenzene	0.37	0.61	ug/m³
1,4-Dioxane	0.3	0.73	ug/m³
2-Butanone	0.18	0.3	ug/m³
2-Hexanone	0.17	0.83	ug/m³
3-Chloropropene	0.24	1.6	ug/m³
4-Methyl-2-pentanone	0.35	0.42	ug/m³
Acetone	0.24	0.48	ug/m³
Acrylonitrile	0.17	0.22	ug/m³
Benzene	0.32	0.32	ug/m³
Benzyl chloride	0.28	0.53	ug/m³
Bromodichloromethane	0.23	0.68	ug/m³
Bromoform	0.52	1.1	ug/m³
Bromomethane	0.39	0.39	ug/m³
Carbon disulfide	0.3	0.32	ug/m³
Carbon tetrachloride	0.16	0.16	ug/m³
Chlorobenzene	0.26	0.47	ug/m³
Chloroethane	0.17	0.27	ug/m³
Chloroform	0.46	0.5	ug/m³

METHOD DETECTION AND REPORTING LIMITS

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford **SDG:** 23C0979

Client: Langan Engineering & Environmental Services (NYC) **Project:** 170361307

Matrix: Air **Instrument:** TO15_AIR2

Analyte	LOD	LOQ	Units
Chloromethane	0.1	0.21	ug/m³
cis-1,2-Dichloroethylene	0.1	0.2	ug/m³
cis-1,3-Dichloropropylene	0.19	0.46	ug/m³
Cyclohexane	0.3	0.35	ug/m³
Dibromochloromethane	0.42	0.87	ug/m³
Dichlorodifluoromethane	0.45	0.5	ug/m³
Ethyl acetate	0.25	0.73	ug/m³
Ethyl Benzene	0.3	0.44	ug/m³
Hexachlorobutadiene	0.92	1.1	ug/m³
Isopropanol	0.24	0.5	ug/m³
Methyl Methacrylate	0.13	0.42	ug/m³
Methyl tert-butyl ether (MTBE)	0.36	0.37	ug/m³
Methylene chloride	0.25	0.71	ug/m³
n-Heptane	0.18	0.42	ug/m³
n-Hexane	0.29	0.36	ug/m³
o-Xylene	0.11	0.44	ug/m³
p- & m- Xylenes	0.63	0.88	ug/m³
p-Ethyltoluene	0.38	0.5	ug/m³
Propylene	0.074	0.18	ug/m³
Styrene	0.26	0.43	ug/m³
Tetrachloroethylene	0.34	0.69	ug/m³
Tetrahydrofuran	0.16	0.6	ug/m³
Toluene	0.23	0.38	ug/m³
trans-1,2-Dichloroethylene	0.32	0.4	ug/m³
trans-1,3-Dichloropropylene	0.42	0.46	ug/m³
Trichloroethylene	0.14	0.14	ug/m³
Trichlorofluoromethane (Freon 11)	0.43	0.57	ug/m³
Vinyl acetate	0.22	0.36	ug/m³
Vinyl bromide	0.43	0.44	ug/m³
Vinyl Chloride	0.11	0.13	ug/m³

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

IA01_031723

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Indoor Ambient Air	Laboratory ID:	23C0979-01	File ID:	TQ224343.D
Sampled:	03/17/23 08:25	Prepared:	03/17/23 14:30	Analyzed:	03/17/23 20:39
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL

Batch: BC31240 Sequence: S3C2020 Calibration: SB30007 Instrument: TO15_AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
71-55-6	1,1,1-Trichloroethane	1.11	0.605	U
75-34-3	1,1-Dichloroethane	1.11	0.448	U
75-35-4	1,1-Dichloroethylene	1.11	0.220	U
107-06-2	1,2-Dichloroethane	1.11	0.448	U
156-59-2	cis-1,2-Dichloroethylene	1.11	0.220	U
75-09-2	Methylene chloride	1.11	1.19	D
127-18-4	Tetrachloroethylene	1.11	0.751	U
156-60-5	trans-1,2-Dichloroethylene	1.11	0.439	U
79-01-6	Trichloroethylene	1.11	0.149	U
75-01-4	Vinyl Chloride	1.11	0.142	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	329248	12.219	338417	12.225	
ISTD: 1,4-Difluorobenzene	707612	13.798	764565	13.804	
ISTD: d5-Chlorobenzene	544368	19.053	676354	19.053	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224343.D
Acq On : 17 Mar 2023 8:39 pm
Operator : AC
Sample : 23C0979-01
Misc : QBTO2031723A 0.533X/750ML
ALS Vial : 9 Sample Multiplier: 1.108
InstName : TO15_AIR2

Quant Time: Mar 20 12:04:28 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

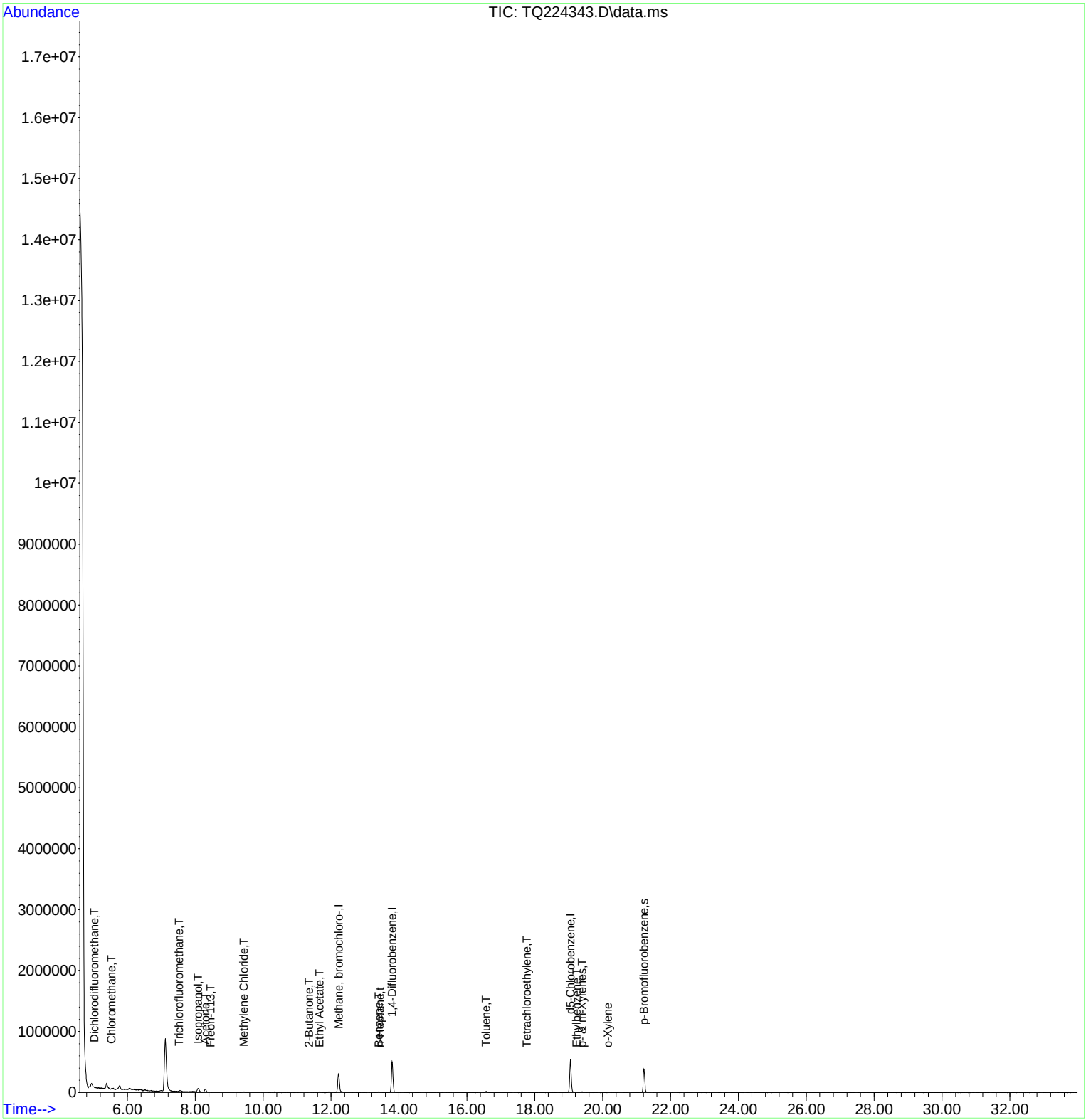
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.219	49	329248	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	13.798	114	707612	10.00	ppbv	-0.01
53) d5-Chlorobenzene	19.053	117	544368	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.218	95	230217	8.17	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 81.70%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	5.020	85	22263	0.41	ppbv #	95
5) Chloromethane	5.526	50	15464m	0.52	ppbv	
11) Trichlorofluoromethane	7.513	101	9465	0.20	ppbv	96
12) Isopropanol	8.080	45	142913	2.37	ppbv	100
14) Acetone	8.293	43	124255	2.39	ppbv	100
15) Freon-113	8.452	101	2684	0.06	ppbv	87
18) Methylene Chloride	9.427	49	10931	0.31	ppbv	85
26) 2-Butanone	11.348	43	13945	0.21	ppbv	87
27) Ethyl Acetate	11.652	43	14191	0.20	ppbv #	40
35) Benzene	13.402	78	14527	0.19	ppbv #	47
36) n-Heptane	13.433	43	1694	0.03	ppbv #	73
45) Toluene	16.560	91	19099	0.22	ppbv	99
50) Tetrachloroethylene	17.761	166	1769	0.05	ppbv	91
56) Ethylbenzene	19.230	91	4054	0.04	ppbv	94
57) p- & m-Xylenes	19.389	91	6512	0.09	ppbv #	83
58) o-Xylene	20.157	91	2503	0.04	ppbv	97

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

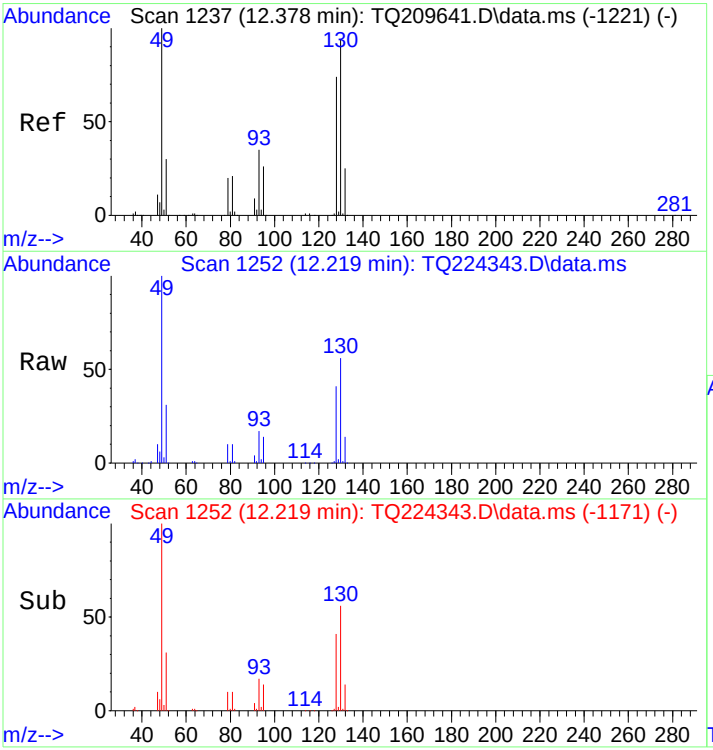
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224343.D
Acq On : 17 Mar 2023 8:39 pm
Operator : AC
Sample : 23C0979-01
Misc : QBTO2031723A 0.533X/750ML
ALS Vial : 9 Sample Multiplier: 1.108
InstName : TO15_AIR2

Quant Time: Mar 20 12:04:28 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration



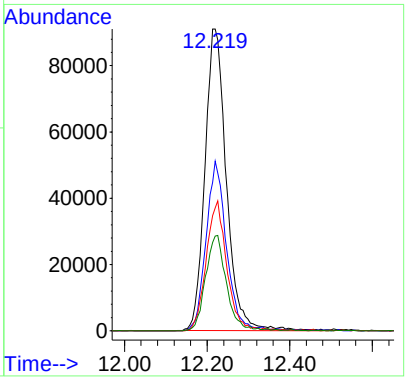
AIR-2-0070.M Mon Mar 20 13:38:23 2023 Page: 2

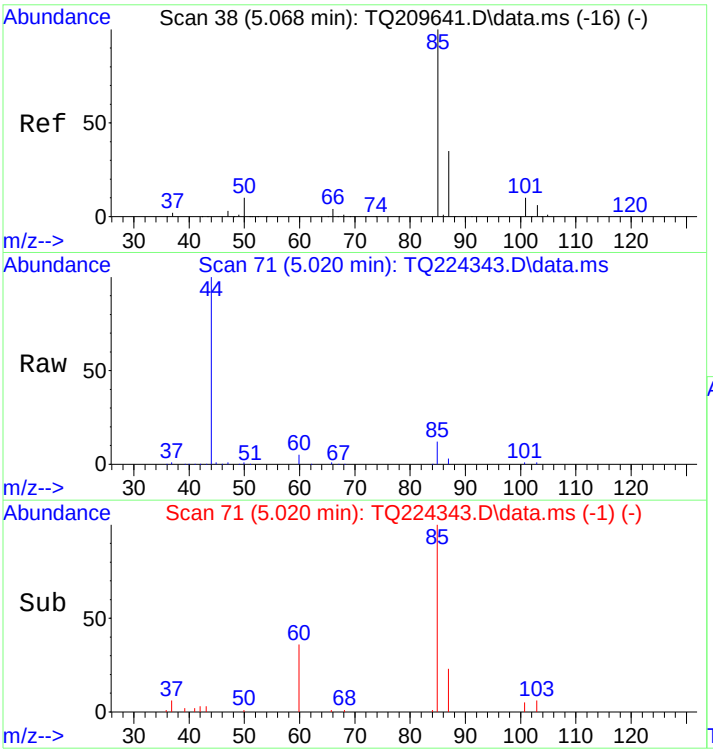


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.219 min Scan# 1252
Delta R.T. -0.006 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 49 Resp: 329248

Ion	Ratio	Lower	Upper
49	100		
130	53.8	48.1	99.9
128	41.5	38.3	79.5
51	31.0	20.3	42.3

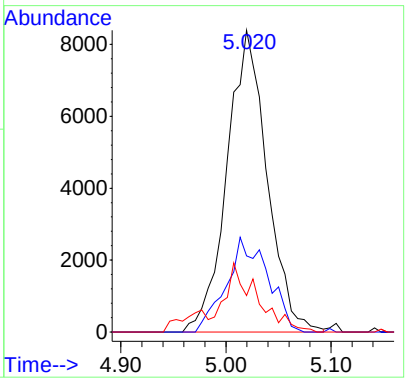


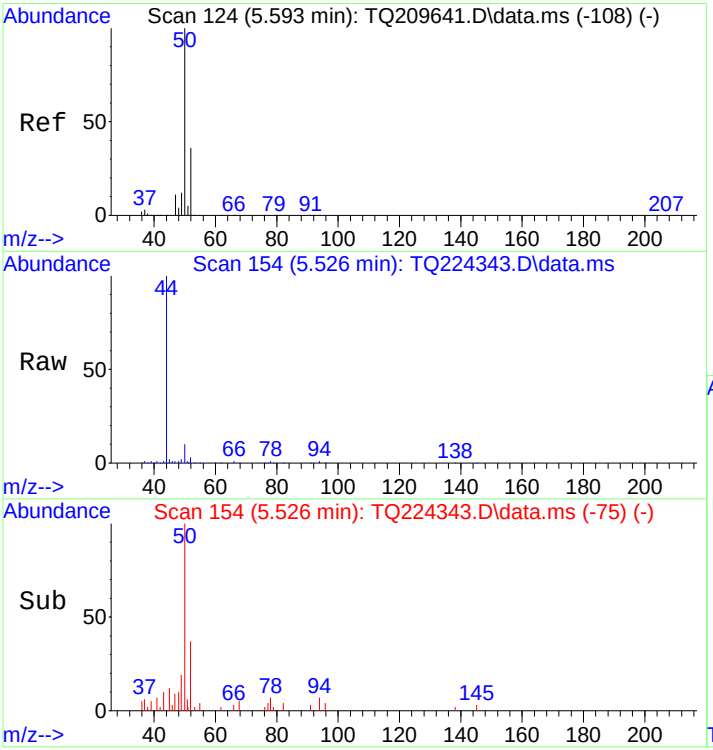


#3
Dichlorodifluoromethane
Concen: 0.41 ppbv
RT: 5.020 min Scan# 71
Delta R.T. -0.012 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 85 Resp: 22263

Ion	Ratio	Lower	Upper
85	100		
87	32.5	20.9	43.5
50	18.5	7.2	15.0#

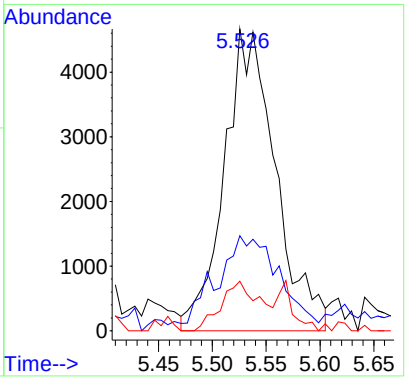


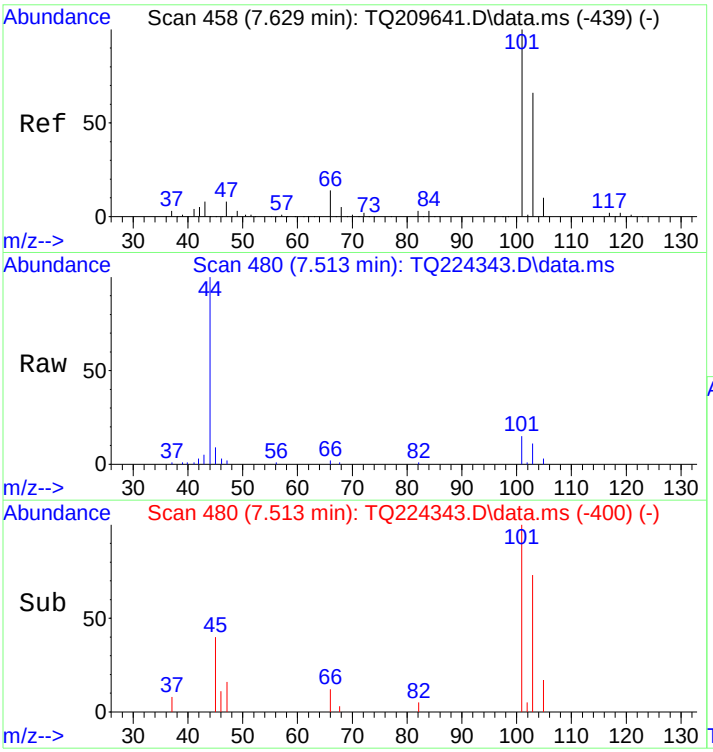


#5
Chloromethane
Concen: 0.52 ppbv m
RT: 5.526 min Scan# 154
Delta R.T. -0.018 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 50 Resp: 15464

Ion	Ratio	Lower	Upper
50	100		
52	49.8	0.0	65.2
49	18.3	0.0	19.6

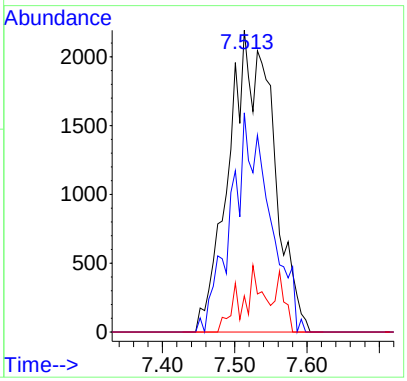


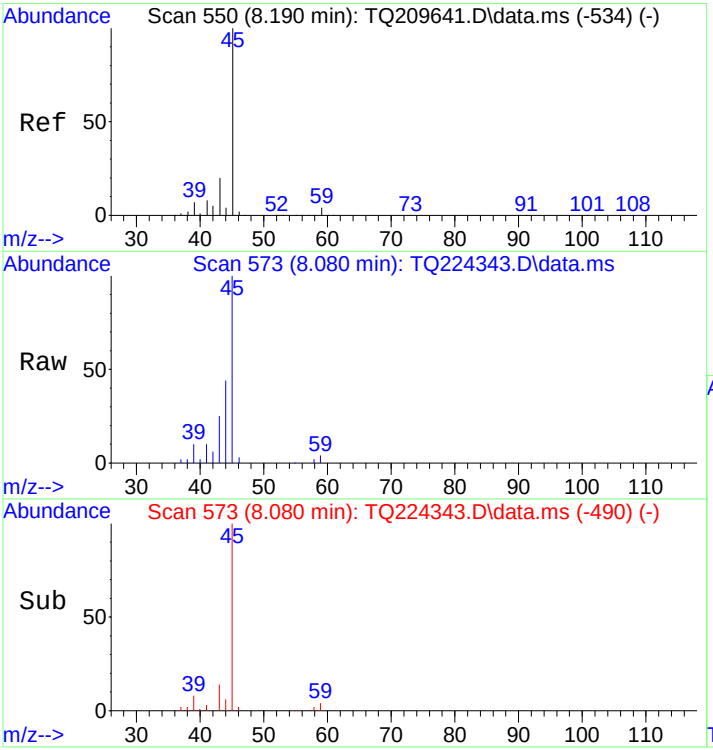


#11
Trichlorofluoromethane
Concen: 0.20 ppbv
RT: 7.513 min Scan# 480
Delta R.T. -0.012 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion:101 Resp: 9465

Ion	Ratio	Lower	Upper
101	100		
103	62.6	42.3	87.8
66	14.5	7.8	16.2

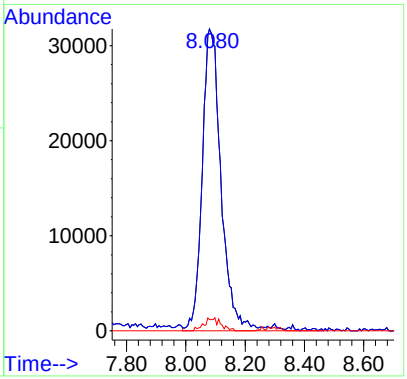


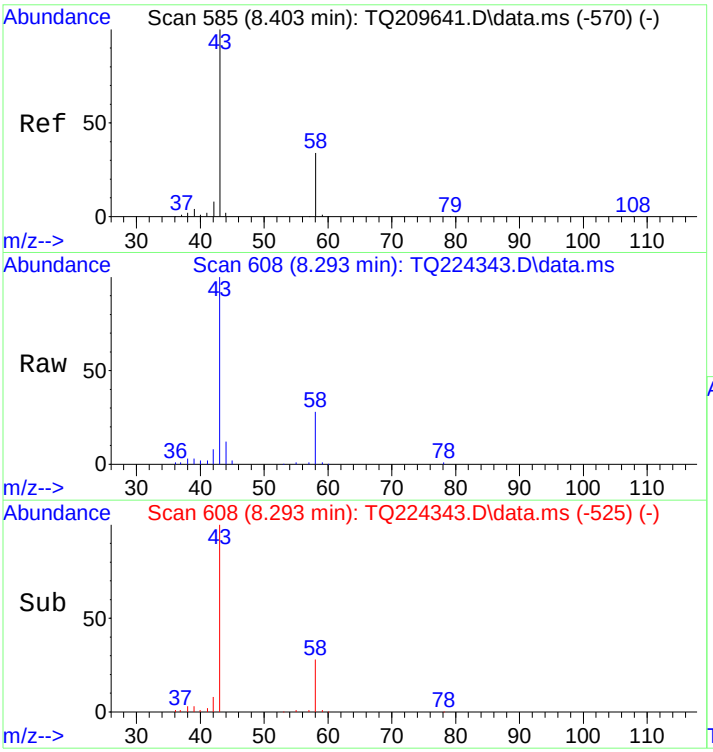


#12
Isopropanol
Concen: 2.37 ppbv
RT: 8.080 min Scan# 573
Delta R.T. 0.006 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 45 Resp: 142913

Ion	Ratio	Lower	Upper
45	100		
45	100.0	65.0	135.0
59	3.7	0.0	10.0

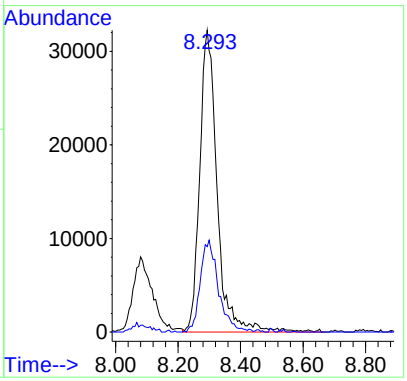


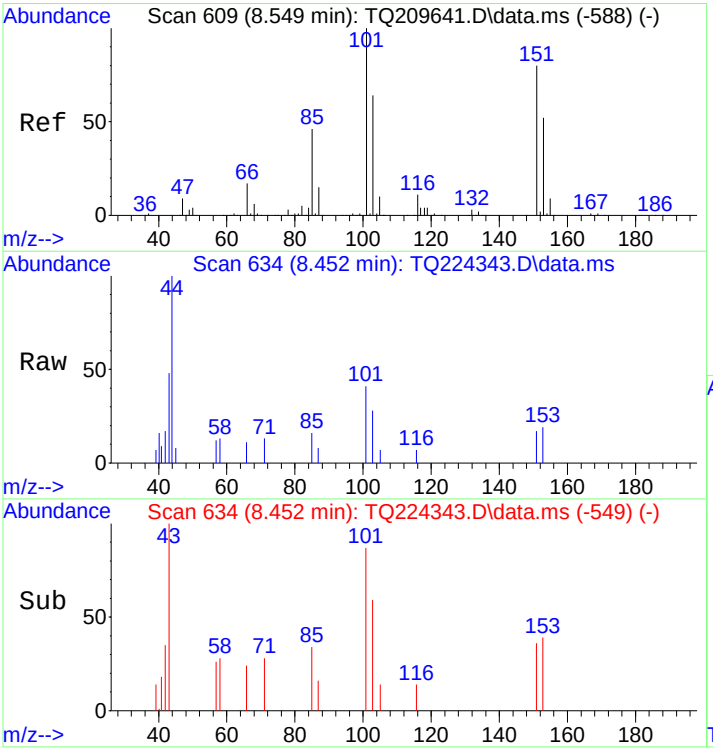


#14
Acetone
Concen: 2.39 ppbv
RT: 8.293 min Scan# 608
Delta R.T. 0.006 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 43 Resp: 124255

Ion	Ratio	Lower	Upper
43	100		
58	32.1	20.9	43.3

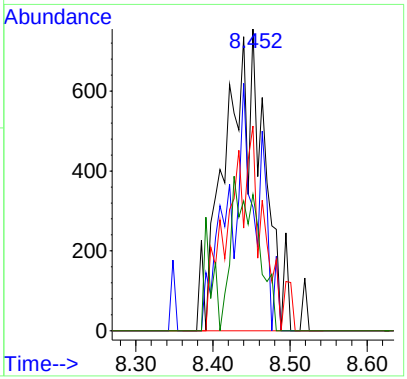


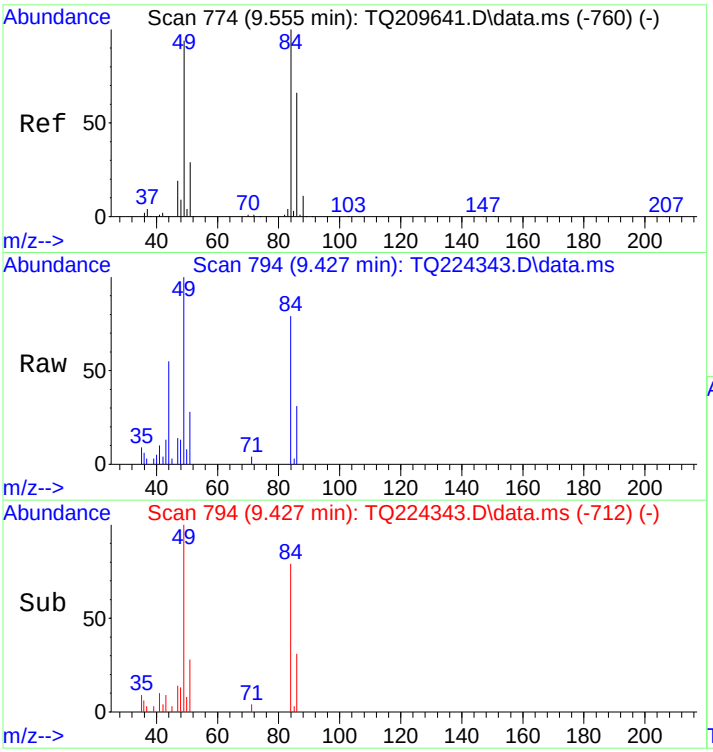


#15
Freon-113
Concen: 0.06 ppbv
RT: 8.452 min Scan# 634
Delta R.T. 0.018 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion:101 Resp: 2684

Ion	Ratio	Lower	Upper
101	100		
151	60.1	50.5	104.9
103	59.8	42.0	87.2
153	41.8	32.4	67.4

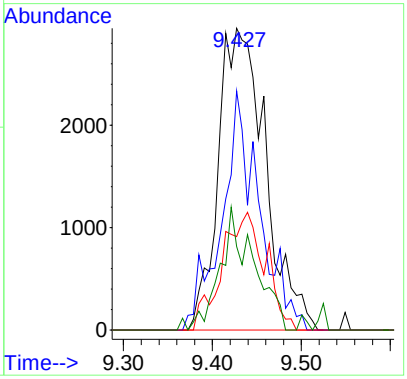


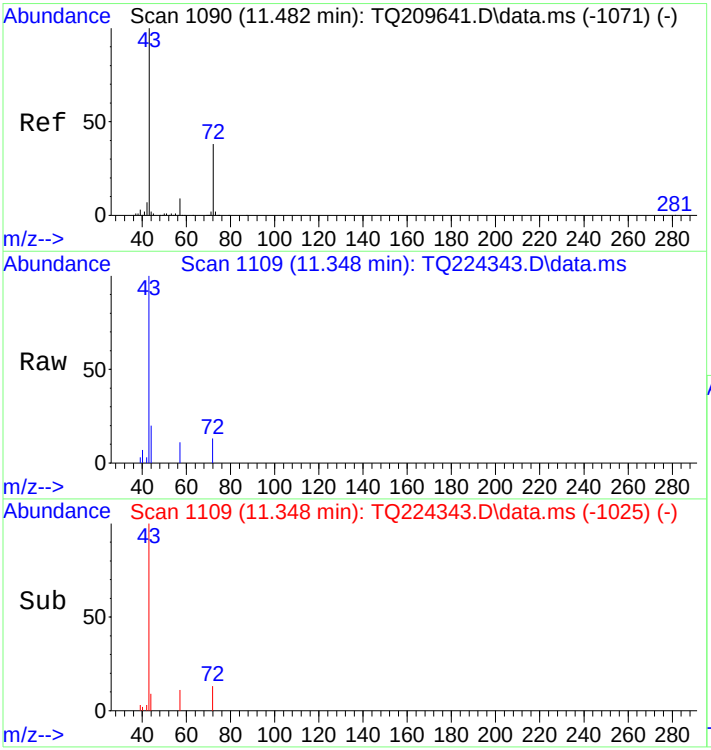


#18
Methylene Chloride
Concen: 0.31 ppbv
RT: 9.427 min Scan# 794
Delta R.T. 0.000 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 49 Resp: 10931

Ion	Ratio	Lower	Upper
49	100		
84	62.6	49.9	103.5
86	35.5	31.8	66.0
51	29.3	20.2	41.9

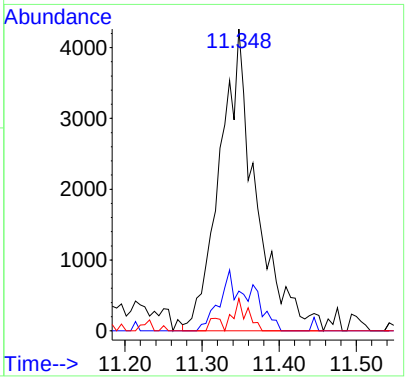


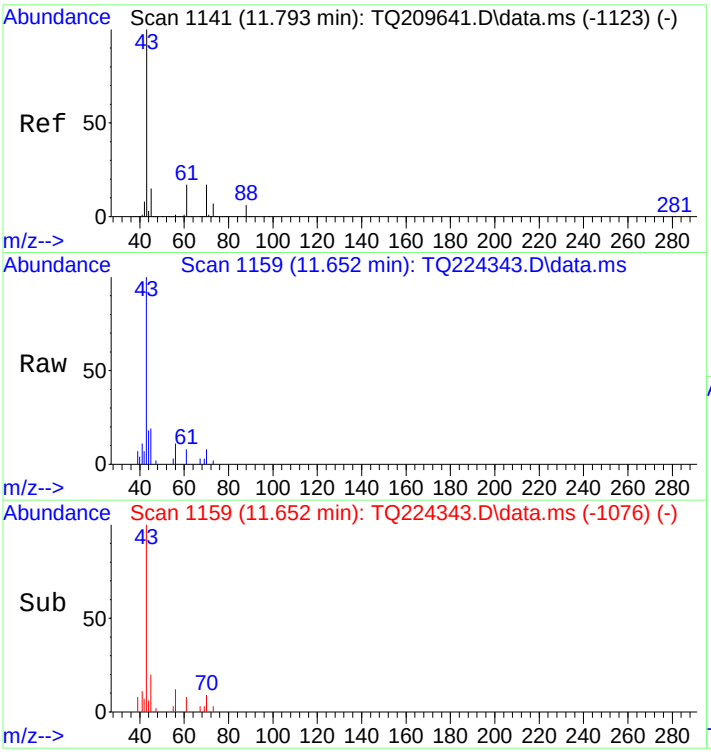


#26
2-Butanone
Concen: 0.21 ppbv
RT: 11.348 min Scan# 1109
Delta R.T. 0.013 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 43 Resp: 13945

Ion	Ratio	Lower	Upper
43	100		
72	17.2	16.1	33.5
57	5.5	4.9	10.3

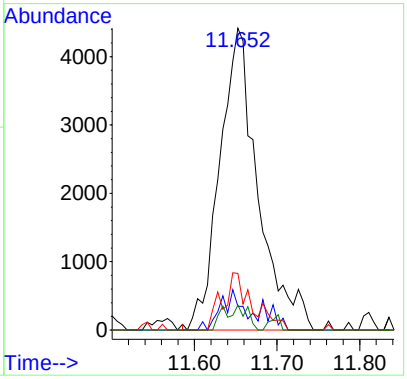


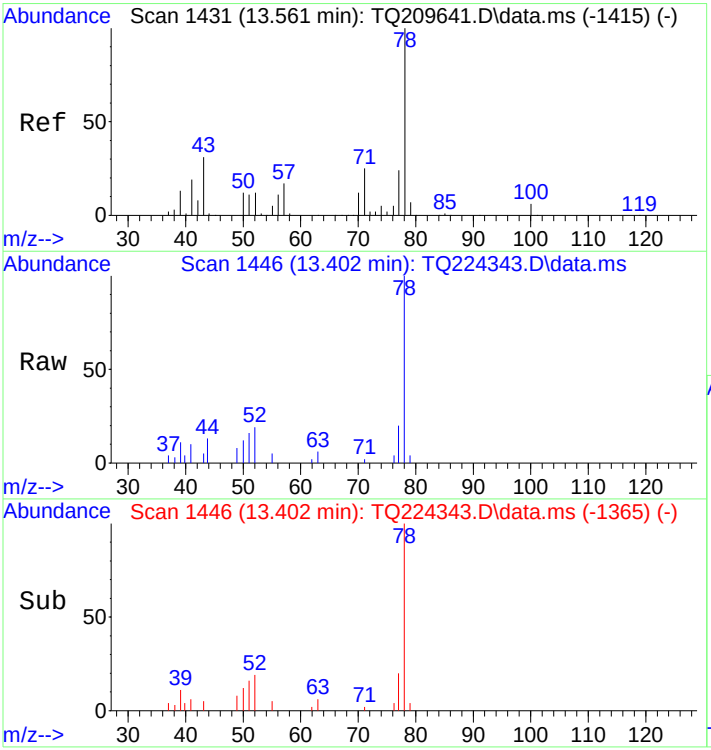


#27
Ethyl Acetate
Concen: 0.20 ppbv
RT: 11.652 min Scan# 1159
Delta R.T. 0.006 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 43 Resp: 14191

Ion	Ratio	Lower	Upper
43	100		
61	11.1	51.4	106.8#
45	14.6	9.4	19.6
70	6.3	7.5	15.5#

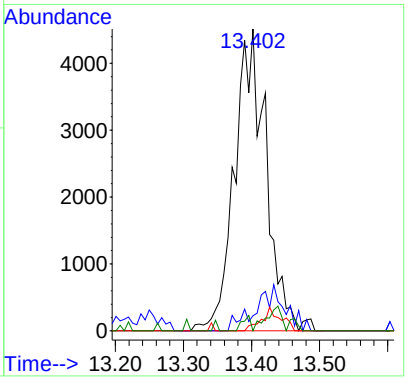


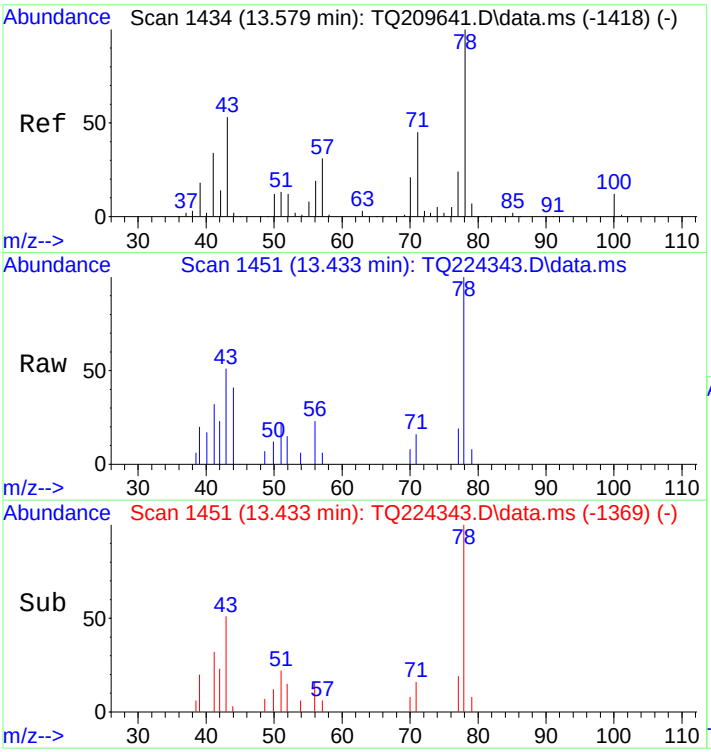


#35
Benzene
Concen: 0.19 ppbv
RT: 13.402 min Scan# 1446
Delta R.T. -0.006 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 78 Resp: 14527

Ion	Ratio	Lower	Upper
78	100		
43	11.7	37.5	77.9#
71	4.7	22.0	45.8#
42	6.2	8.8	18.4#

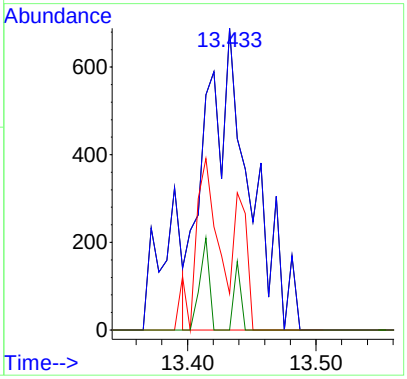


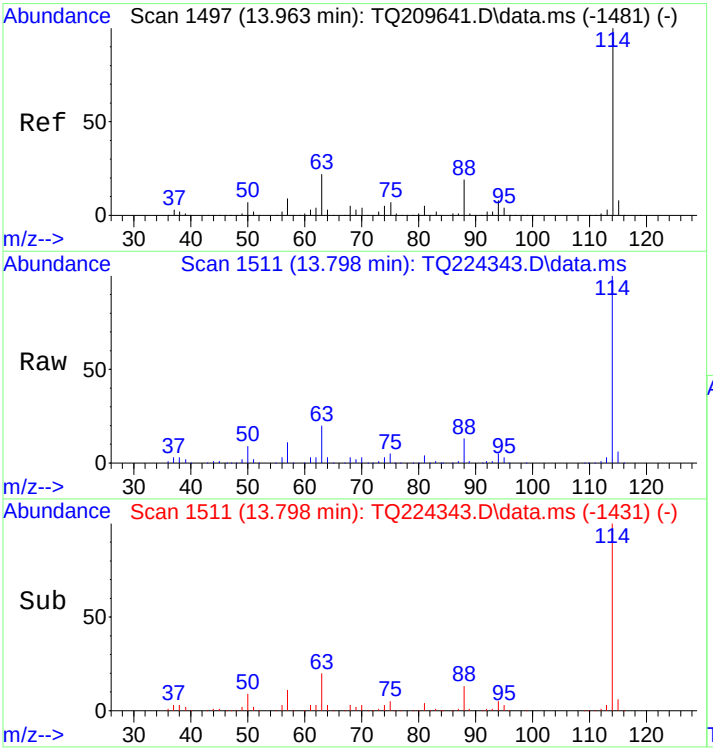


#36
n-Heptane
Concen: 0.03 ppbv
RT: 13.433 min Scan# 1451
Delta R.T. -0.000 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 43 Resp: 1694

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

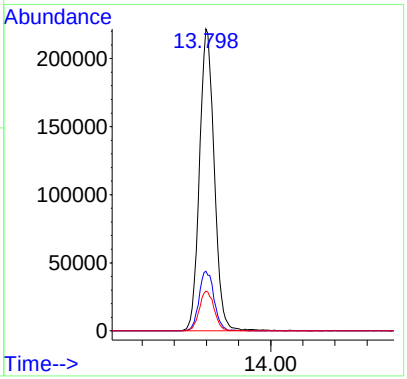


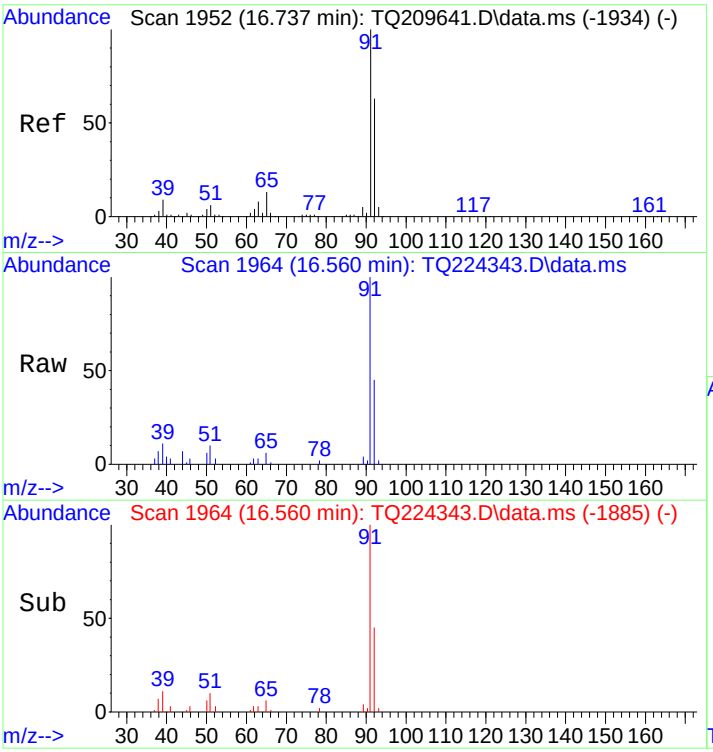


#37
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.798 min Scan# 1511
Delta R.T. -0.013 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion:114 Resp: 707612

Ion	Ratio	Lower	Upper
114	100		
63	20.1	12.9	26.9
88	13.3	10.7	22.3

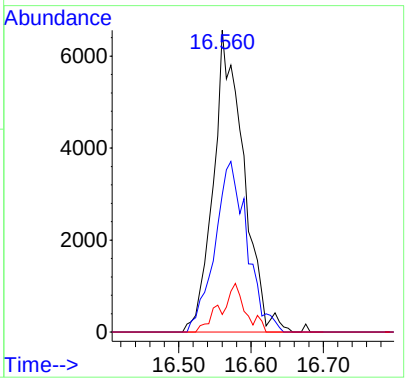


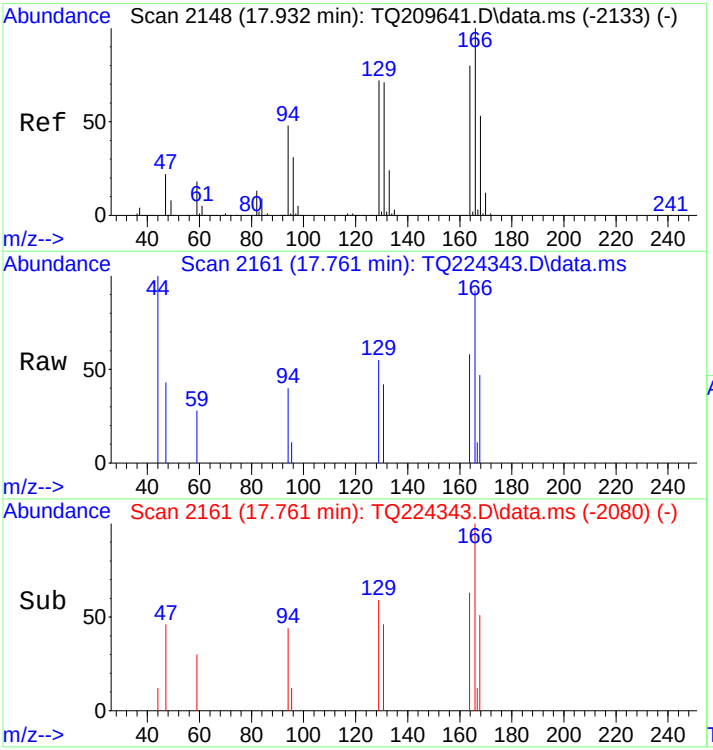


#45
Toluene
Concen: 0.22 ppbv
RT: 16.560 min Scan# 1964
Delta R.T. -0.018 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 91 Resp: 19099

Ion	Ratio	Lower	Upper
91	100		
92	60.2	38.7	80.3
65	13.1	7.5	15.5

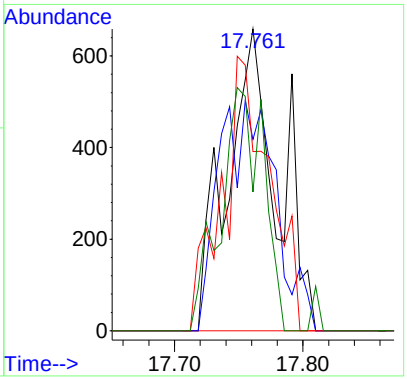


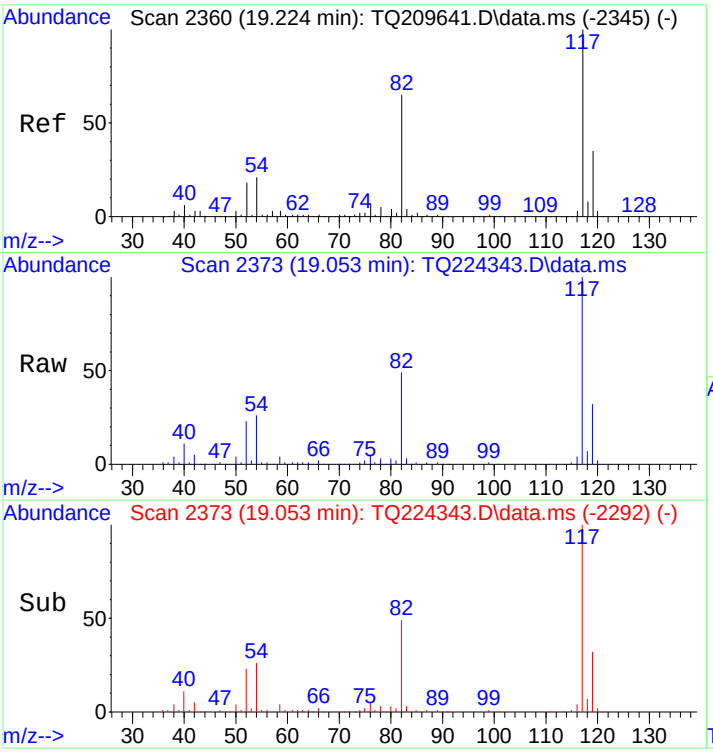


#50
Tetrachloroethylene
Concen: 0.05 ppbv
RT: 17.761 min Scan# 2161
Delta R.T. -0.006 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion:166 Resp: 1769

Ion	Ratio	Lower	Upper
166	100		
164	87.2	51.0	106.0
129	85.8	48.1	99.9
131	69.5	46.3	96.3

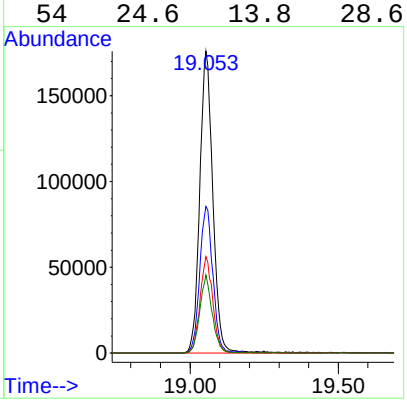


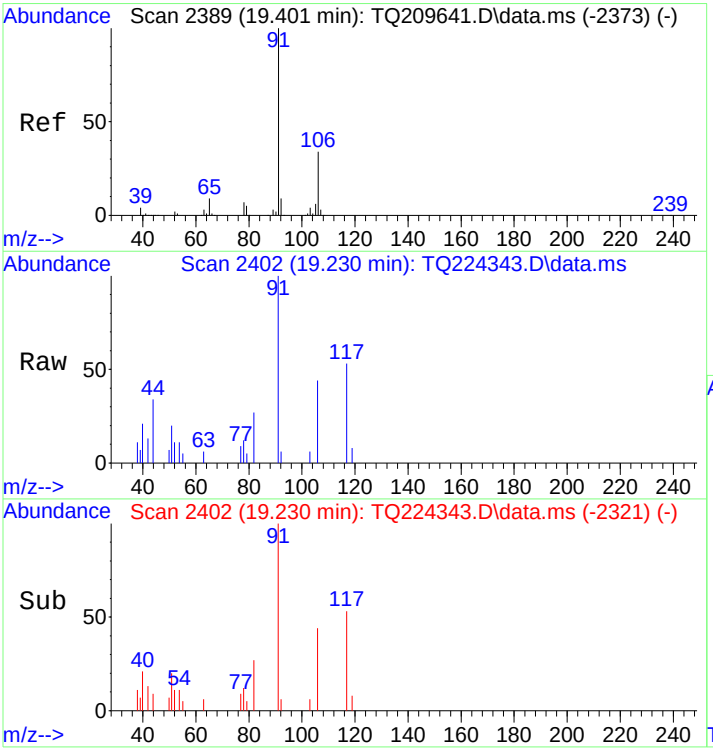


#53
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.053 min Scan# 2373
Delta R.T. -0.007 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion:117 Resp: 544368

Ion	Ratio	Lower	Upper
117	100		
82	49.3	37.1	77.1
119	30.7	22.1	45.9
54	24.6	13.8	28.6

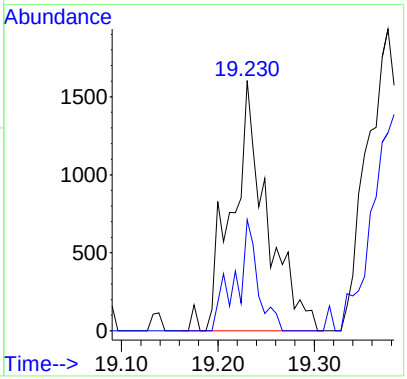


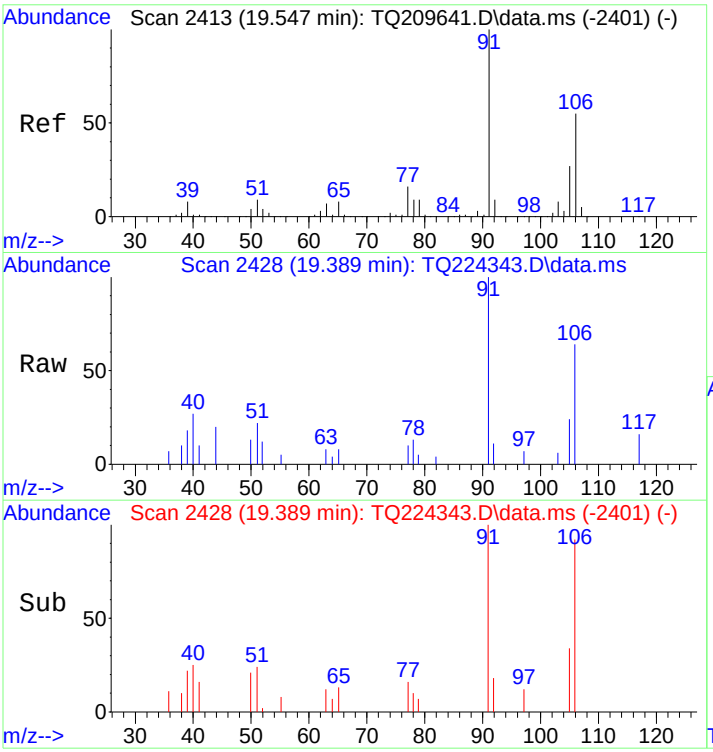


#56
Ethylbenzene
Concen: 0.04 ppbv
RT: 19.230 min Scan# 2402
Delta R.T. -0.006 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 91 Resp: 4054

Ion	Ratio	Lower	Upper
91	100		
106	28.2	20.5	42.7

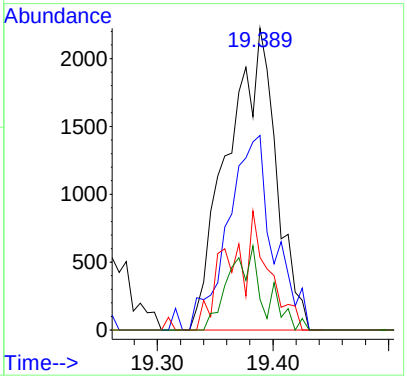


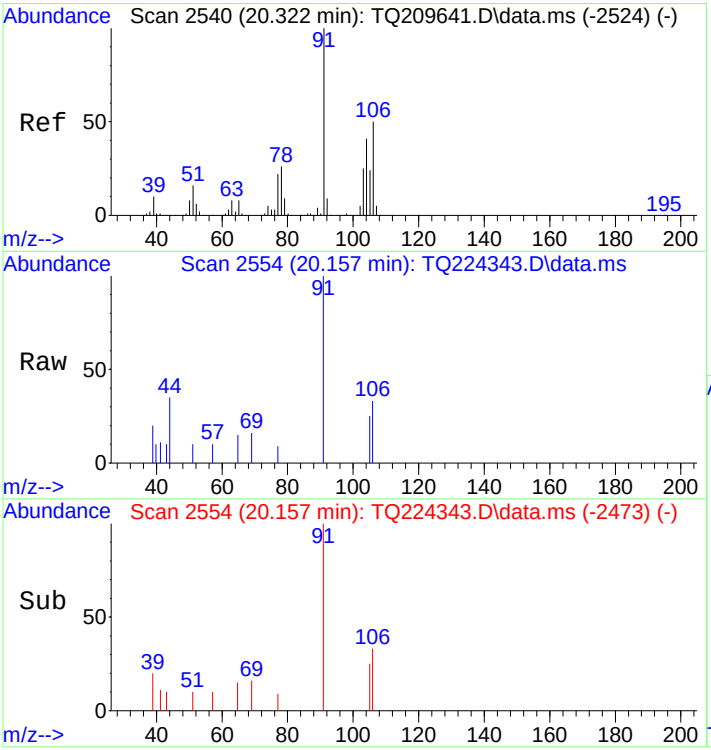


#57
p- & m-Xylenes
Concen: 0.09 ppbv
RT: 19.389 min Scan# 2428
Delta R.T. 0.006 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 91 Resp: 6512

Ion	Ratio	Lower	Upper
91	100		
106	61.2	32.6	67.8
105	31.4	14.5	30.1#
77	20.0	8.5	17.7#

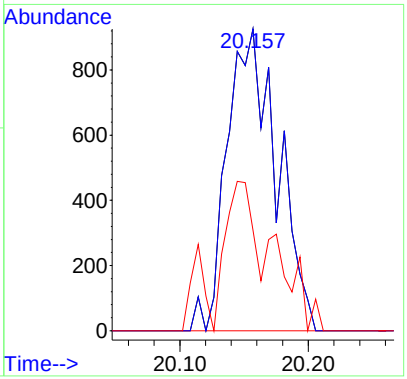


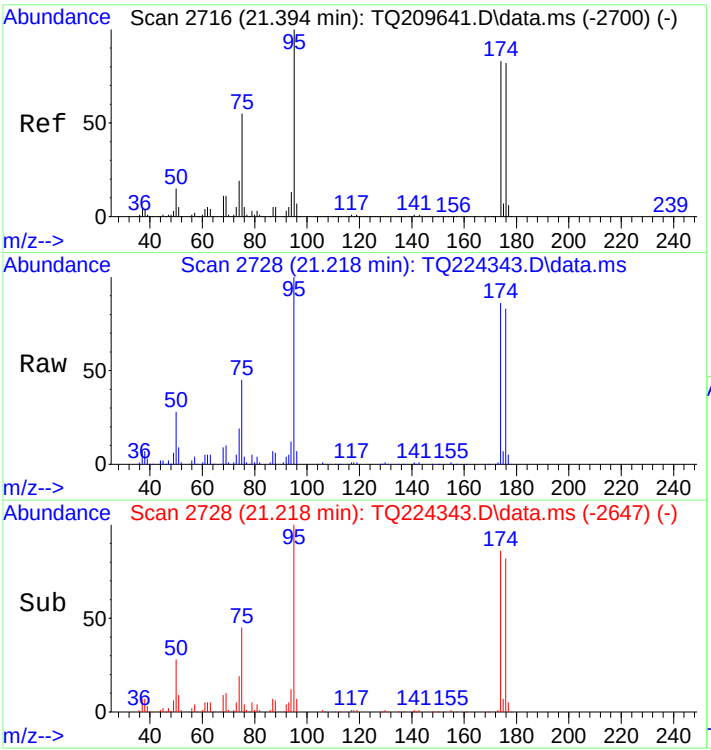


#58
o-Xylene
Concen: 0.04 ppbv
RT: 20.157 min Scan# 2554
Delta R.T. -0.006 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 91 Resp: 2503

Ion	Ratio	Lower	Upper
91	100		
91	100.0	80.0	120.0
106	53.7	38.2	57.2

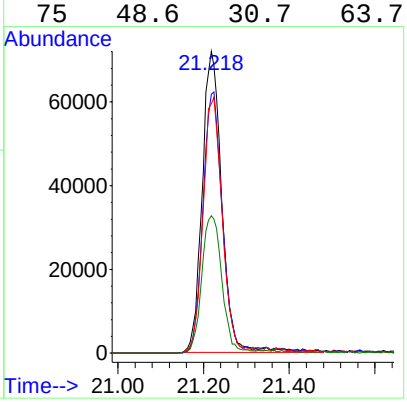




#64
p-Bromofluorobenzene
Concen: 8.17 ppbv
RT: 21.218 min Scan# 2728
Delta R.T. -0.006 min
Lab File: TQ224343.D
Acq: 17 Mar 2023 8:39 pm

Tgt Ion: 95 Resp: 230217

Ion	Ratio	Lower	Upper
95	100		
174	88.5	53.2	110.6
176	86.5	51.6	107.2
75	48.6	30.7	63.7



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

IA02_031723

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Indoor Ambient Air	Laboratory ID:	23C0979-02	File ID:	TQ224344.D
Sampled:	03/17/23 08:24	Prepared:	03/17/23 14:30	Analyzed:	03/17/23 21:49
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL

Batch: BC31240 Sequence: S3C2020 Calibration: SB30007 Instrument: TO15_AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
71-55-6	1,1,1-Trichloroethane	0.96	0.524	U
75-34-3	1,1-Dichloroethane	0.96	0.389	U
75-35-4	1,1-Dichloroethylene	0.96	0.190	U
107-06-2	1,2-Dichloroethane	0.96	0.389	U
156-59-2	cis-1,2-Dichloroethylene	0.96	0.190	U
75-09-2	Methylene chloride	0.96	1.07	D
127-18-4	Tetrachloroethylene	0.96	0.651	U
156-60-5	trans-1,2-Dichloroethylene	0.96	0.381	U
79-01-6	Trichloroethylene	0.96	0.129	U
75-01-4	Vinyl Chloride	0.96	0.123	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	290686	12.219	338417	12.225	
ISTD: 1,4-Difluorobenzene	645132	13.798	764565	13.804	
ISTD: d5-Chlorobenzene	490804	19.054	676354	19.053	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224344.D
Acq On : 17 Mar 2023 9:49 pm
Operator : AC
Sample : 23C0979-02
Misc : QBTO2031723A 0.533X/750ML
ALS Vial : 10 Sample Multiplier: 0.96
InstName : TO15_AIR2

Quant Time: Mar 20 12:12:11 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

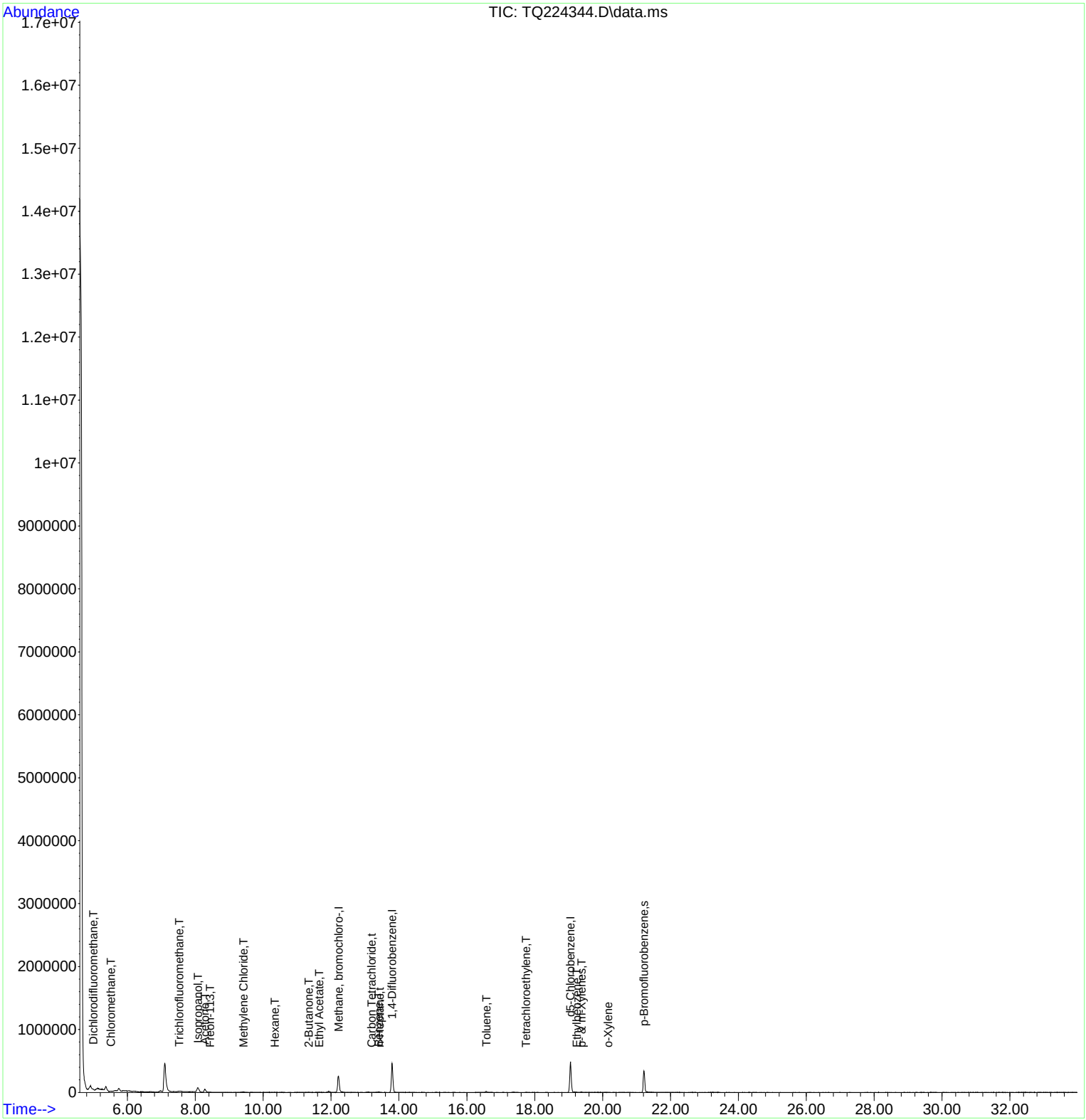
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.219	49	290686	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	13.798	114	645132	10.00	ppbv	-0.01
53) d5-Chlorobenzene	19.054	117	490804	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.218	95	211829	8.33	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 83.30%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	4.995	85	21232	0.44	ppbv #	90
5) Chloromethane	5.507	50	14621	0.56	ppbv	91
11) Trichlorofluoromethane	7.519	101	8608	0.21	ppbv	93
12) Isopropanol	8.080	45	169642	3.18	ppbv	100
14) Acetone	8.281	43	117014	2.55	ppbv	100
15) Freon-113	8.434	101	3103	0.08	ppbv	96
18) Methylene Chloride	9.421	49	10143	0.32	ppbv	82
23) Hexane	10.342	57	2772	0.08	ppbv #	73
26) 2-Butanone	11.342	43	12018	0.20	ppbv	86
27) Ethyl Acetate	11.646	43	8426	0.13	ppbv #	38
33) Carbon Tetrachloride	13.195	117	1500	0.06	ppbv #	51
35) Benzene	13.402	78	13069	0.19	ppbv #	51
36) n-Heptane	13.427	43	2046	0.04	ppbv #	88
45) Toluene	16.572	91	21450	0.27	ppbv	98
50) Tetrachloroethylene	17.743	166	1607	0.05	ppbv	83
56) Ethylbenzene	19.236	91	3281	0.04	ppbv	93
57) p- & m-Xylenes	19.377	91	6590	0.10	ppbv	94
58) o-Xylene	20.163	91	2365	0.04	ppbv	96

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

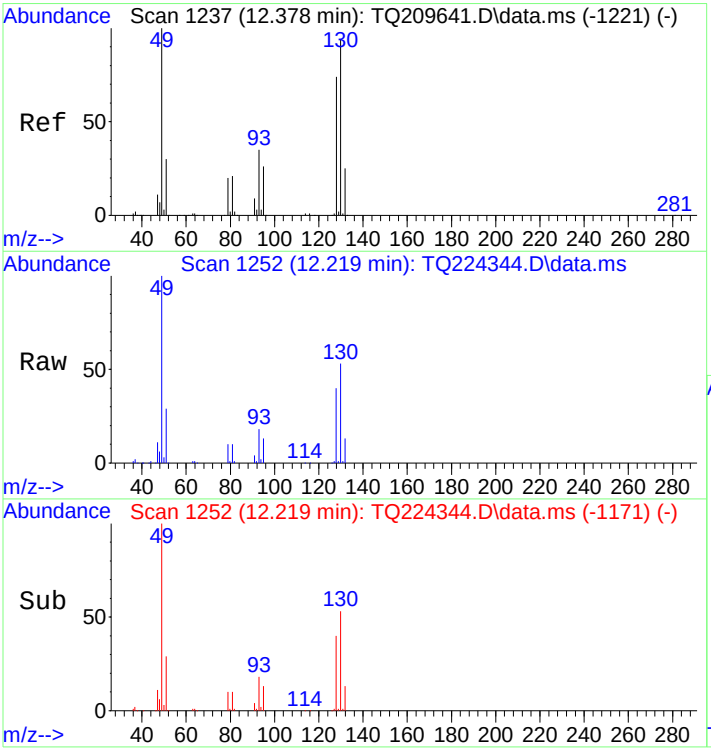
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224344.D
Acq On : 17 Mar 2023 9:49 pm
Operator : AC
Sample : 23C0979-02
Misc : QBTO2031723A 0.533X/750ML
ALS Vial : 10 Sample Multiplier: 0.96
InstName : TO15_AIR2

Quant Time: Mar 20 12:12:11 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration



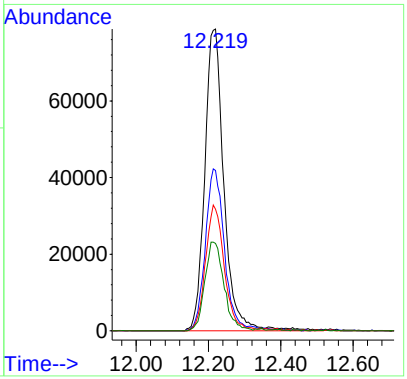
AIR-2-0070.M Mon Mar 20 13:38:26 2023 Page: 2

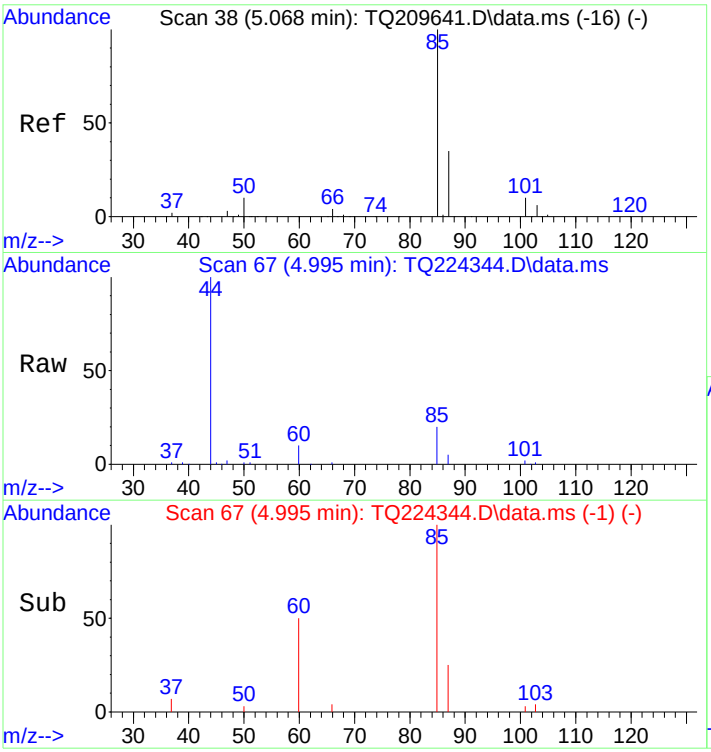


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.219 min Scan# 1252
Delta R.T. -0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 49 Resp: 290686

Ion	Ratio	Lower	Upper
49	100		
130	54.0	48.1	99.9
128	41.4	38.3	79.5
51	29.3	20.3	42.3

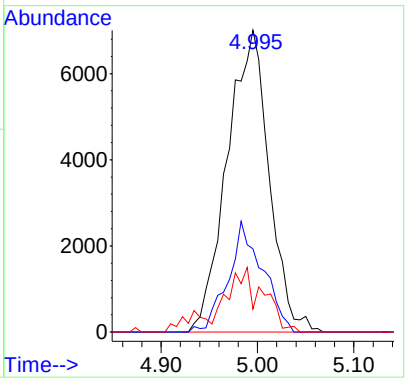


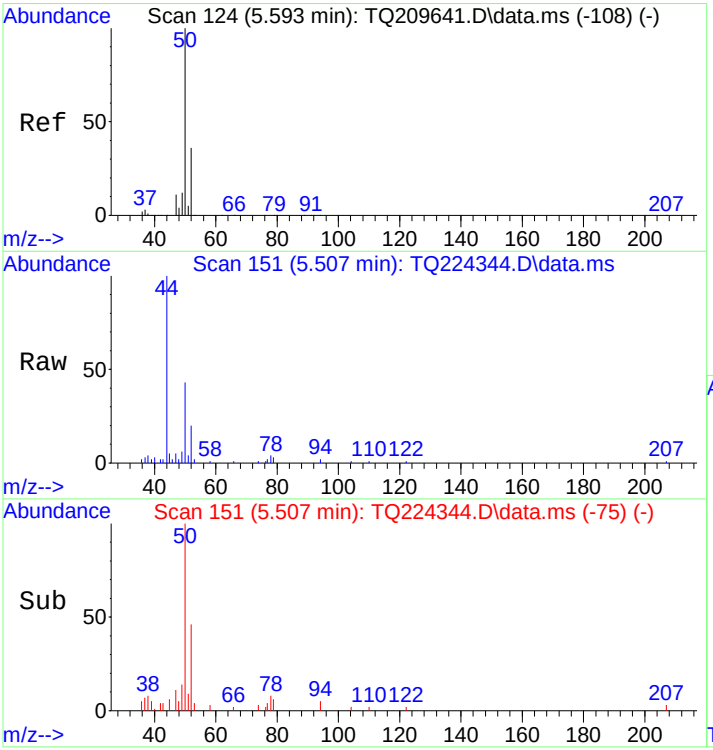


#3
Dichlorodifluoromethane
Concen: 0.44 ppbv
RT: 4.995 min Scan# 67
Delta R.T. -0.037 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 85 Resp: 21232

Ion	Ratio	Lower	Upper
85	100		
87	30.2	20.9	43.5
50	21.9	7.2	15.0#

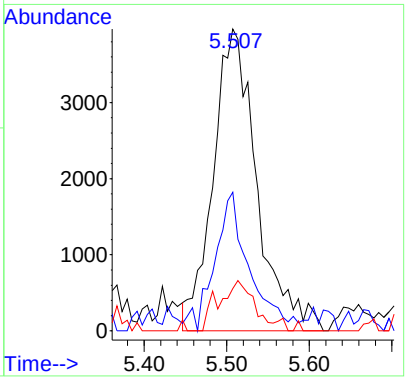


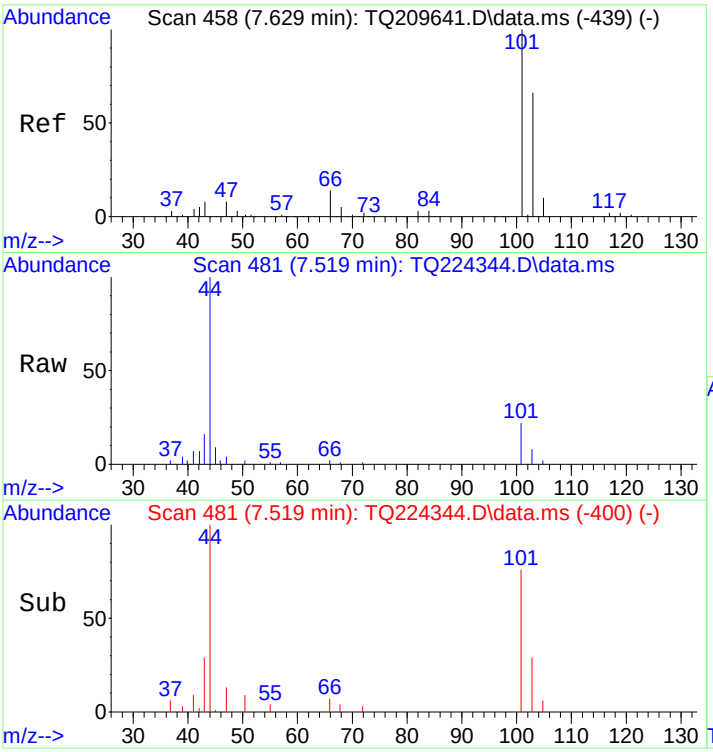


#5
Chloromethane
Concen: 0.56 ppbv
RT: 5.507 min Scan# 151
Delta R.T. -0.037 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 50 Resp: 14621

Ion	Ratio	Lower	Upper
50	100		
52	37.1	0.0	65.2
49	14.3	0.0	19.6

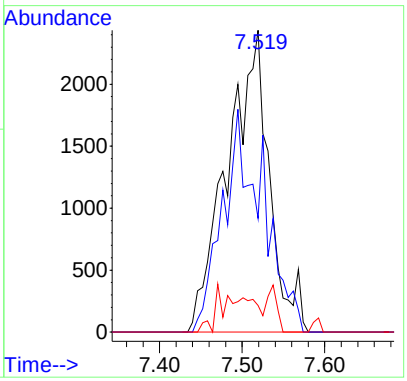


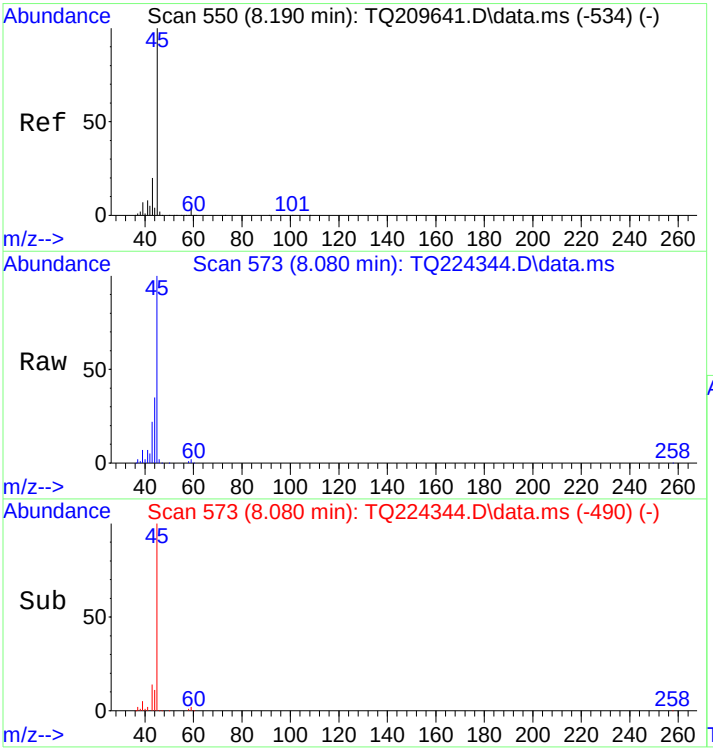


#11
Trichlorofluoromethane
Concen: 0.21 ppbv
RT: 7.519 min Scan# 481
Delta R.T. -0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion:101 Resp: 8608

Ion	Ratio	Lower	Upper
101	100		
103	70.4	42.3	87.8
66	14.6	7.8	16.2

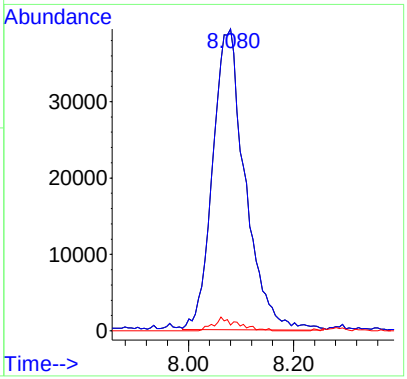


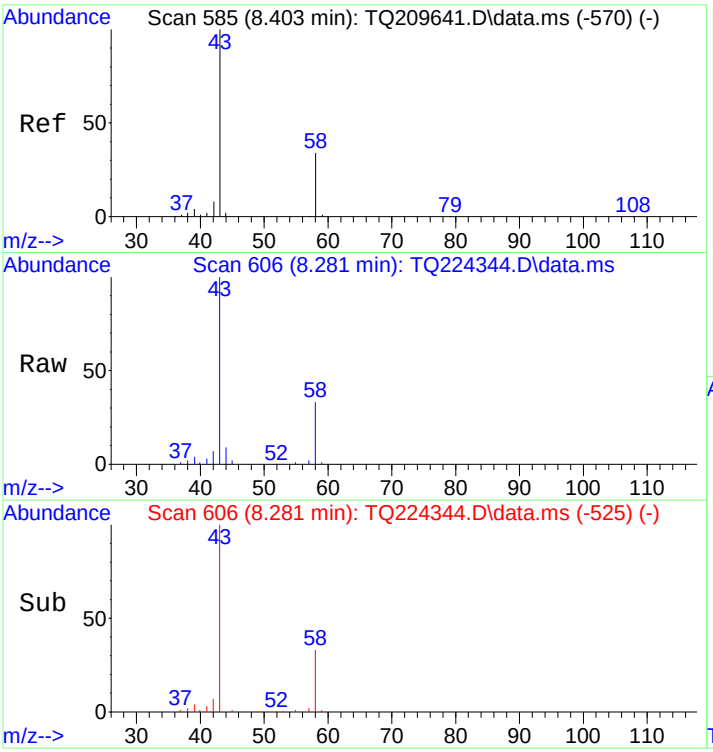


#12
Isopropanol
Concen: 3.18 ppbv
RT: 8.080 min Scan# 573
Delta R.T. 0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 45 Resp: 169642

Ion	Ratio	Lower	Upper
45	100		
45	100.0	65.0	135.0
59	3.4	0.0	10.0

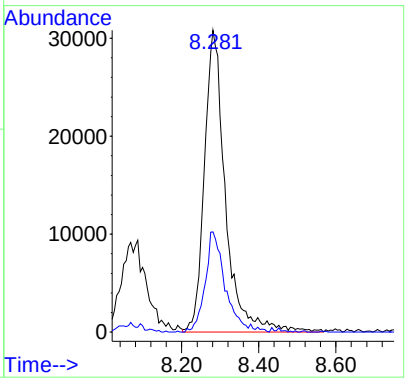


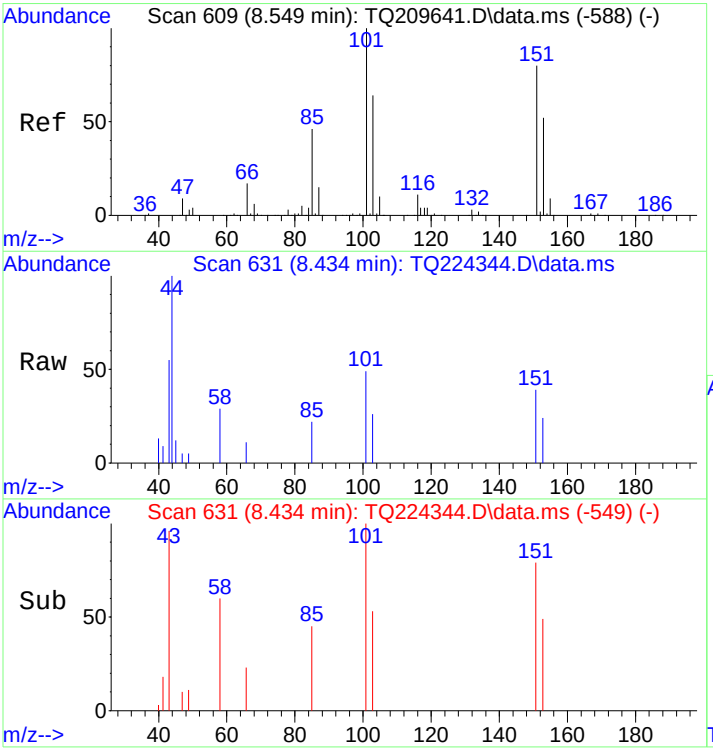


#14
Acetone
Concen: 2.55 ppbv
RT: 8.281 min Scan# 606
Delta R.T. -0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 43 Resp: 117014

Ion	Ratio	Lower	Upper
43	100		
58	32.3	20.9	43.3

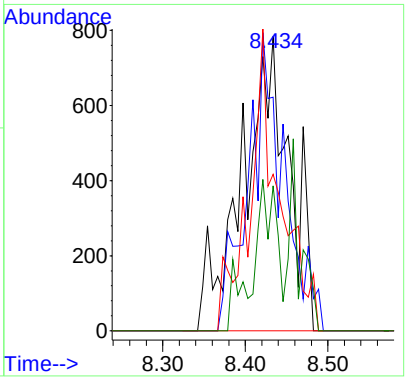


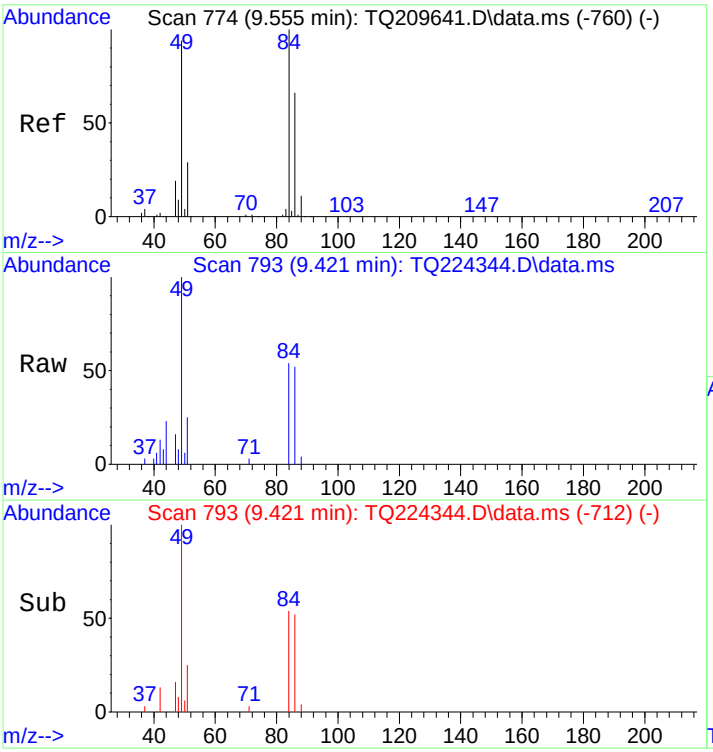


#15
Freon-113
Concen: 0.08 ppbv
RT: 8.434 min Scan# 631
Delta R.T. -0.000 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion:101 Resp: 3103

Ion	Ratio	Lower	Upper
101	100		
151	77.3	50.5	104.9
103	65.3	42.0	87.2
153	41.8	32.4	67.4

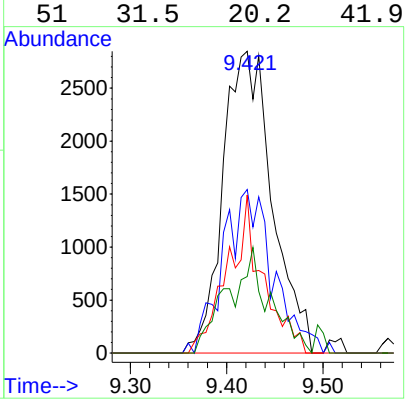


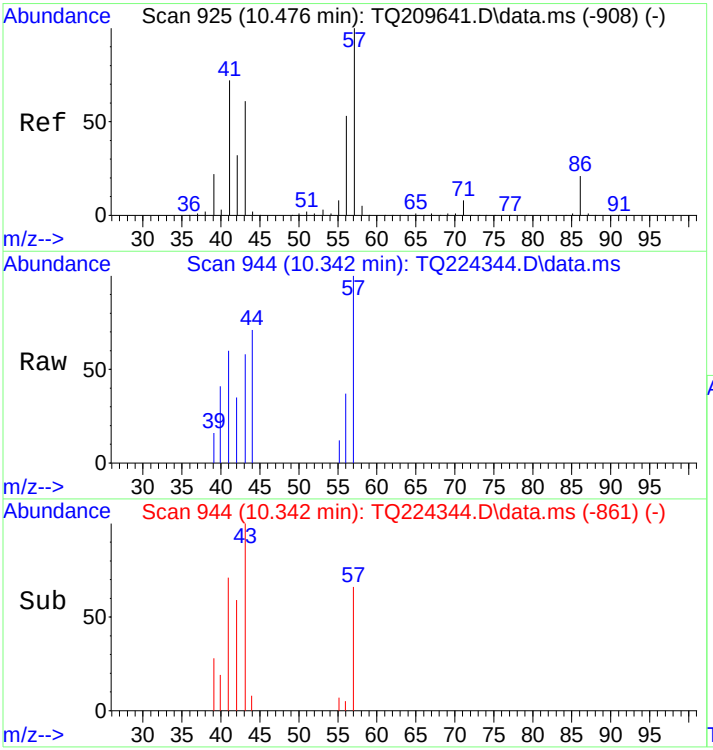


#18
Methylene Chloride
Concen: 0.32 ppbv
RT: 9.421 min Scan# 793
Delta R.T. -0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 49 Resp: 10143

Ion	Ratio	Lower	Upper
49	100		
84	55.5	49.9	103.5
86	37.3	31.8	66.0
51	31.5	20.2	41.9

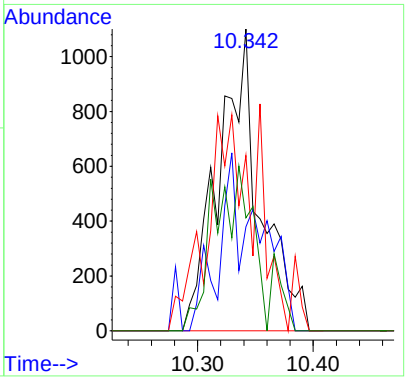


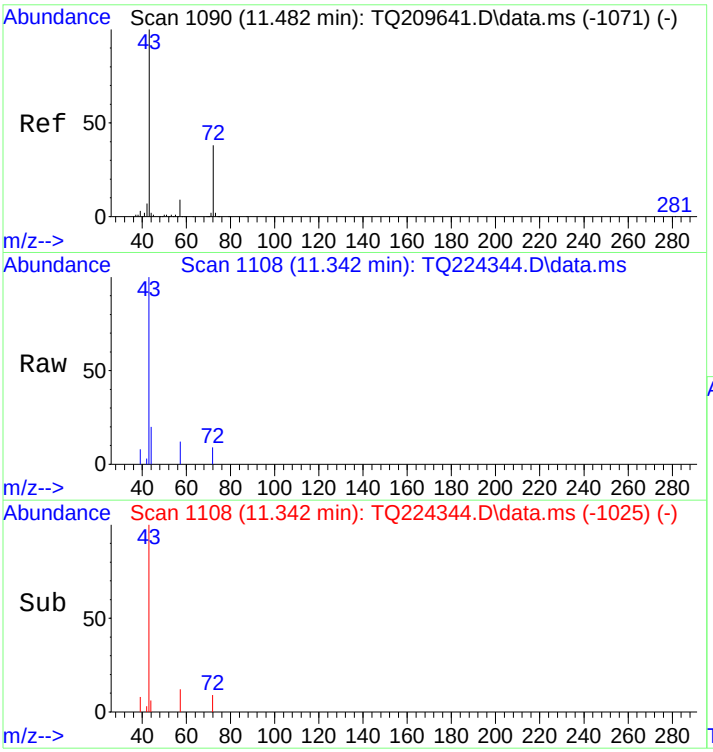


#23
Hexane
Concen: 0.08 ppbv
RT: 10.342 min Scan# 944
Delta R.T. 0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 57 Resp: 2772

Ion	Ratio	Lower	Upper
57	100		
42	60.8	21.6	45.0#
43	88.4	42.0	87.2#
56	57.0	33.3	69.1

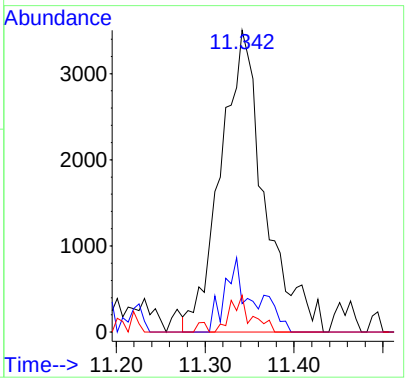


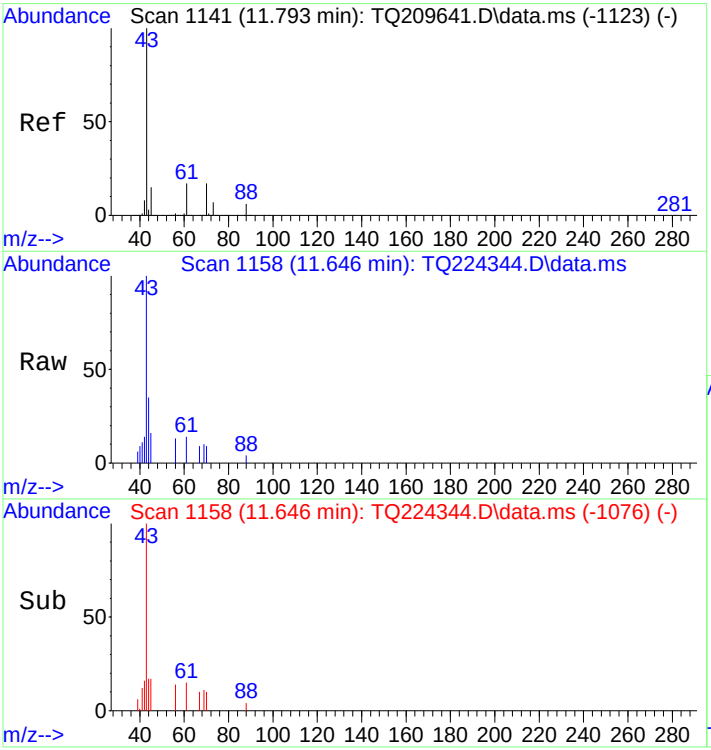


#26
2-Butanone
Concen: 0.20 ppbv
RT: 11.342 min Scan# 1108
Delta R.T. 0.007 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 43 Resp: 12018

Ion	Ratio	Lower	Upper
43	100		
72	16.2	16.1	33.5
57	5.7	4.9	10.3

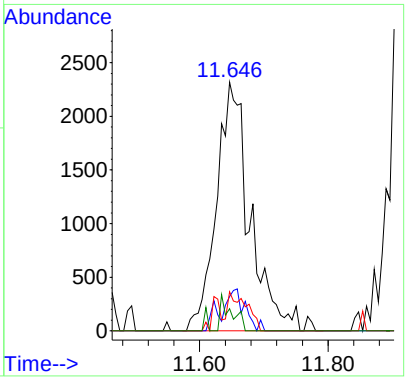


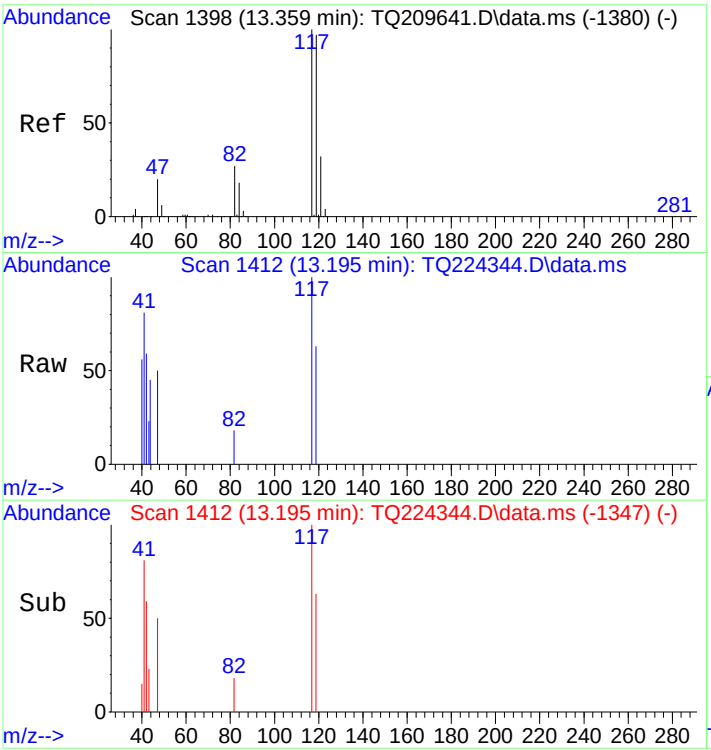


#27
Ethyl Acetate
Concen: 0.13 ppbv
RT: 11.646 min Scan# 1158
Delta R.T. 0.000 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 43 Resp: 8426

Ion	Ratio	Lower	Upper
43	100		
61	12.0	51.4	106.8#
45	12.4	9.4	19.6
70	0.0	7.5	15.5#

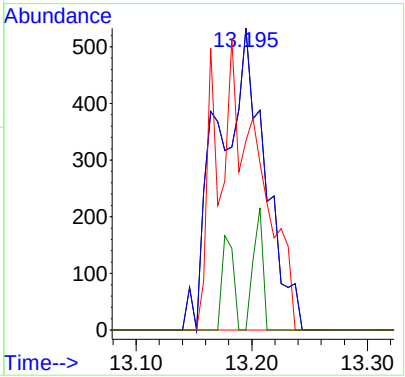


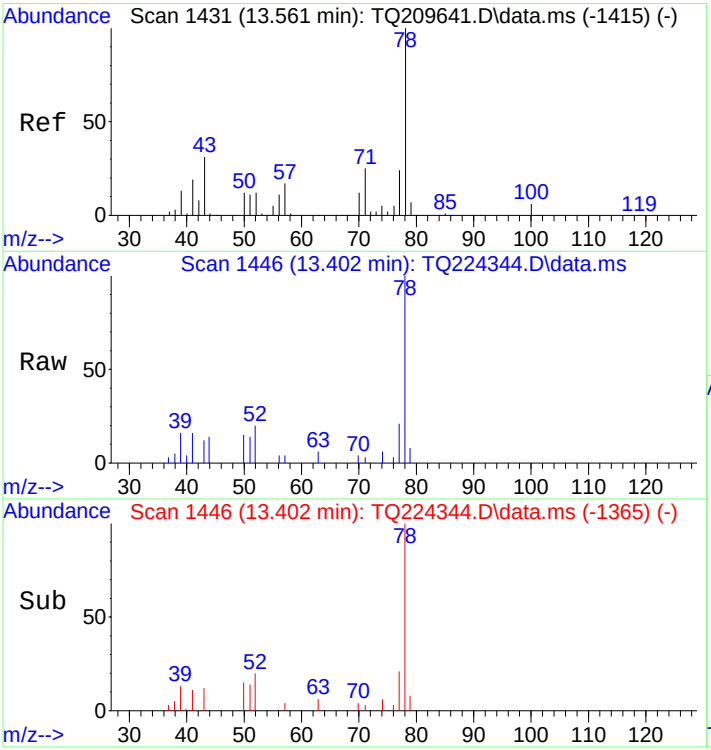


#33
Carbon Tetrachloride
Concen: 0.06 ppbv
RT: 13.195 min Scan# 1412
Delta R.T. -0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion:117 Resp: 1500

Ion	Ratio	Lower	Upper
117	100		
117	100.0	80.0	120.0
119	0.0	76.9	115.3#
121	0.0	21.7	40.3#

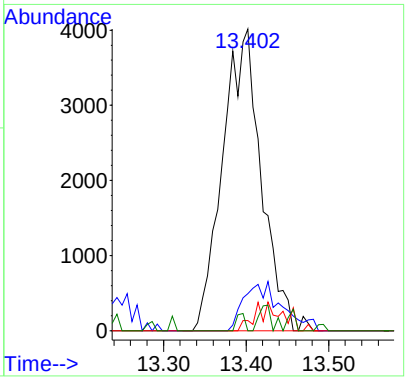


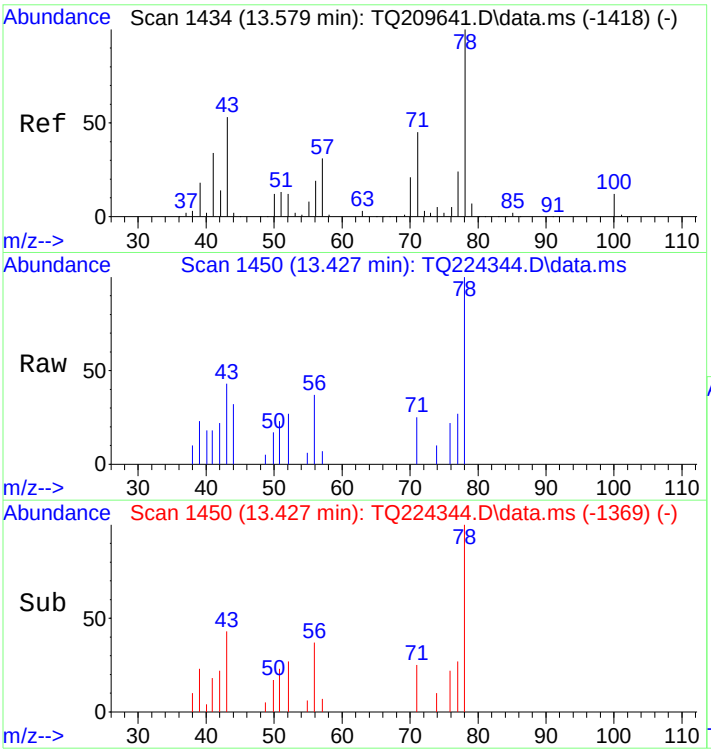


#35
Benzene
Concen: 0.19 ppbv
RT: 13.402 min Scan# 1446
Delta R.T. -0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 78 Resp: 13069

Ion	Ratio	Lower	Upper
78	100		
43	15.7	37.5	77.9#
71	6.7	22.0	45.8#
42	4.1	8.8	18.4#

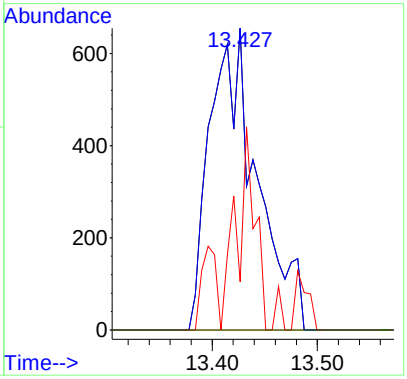


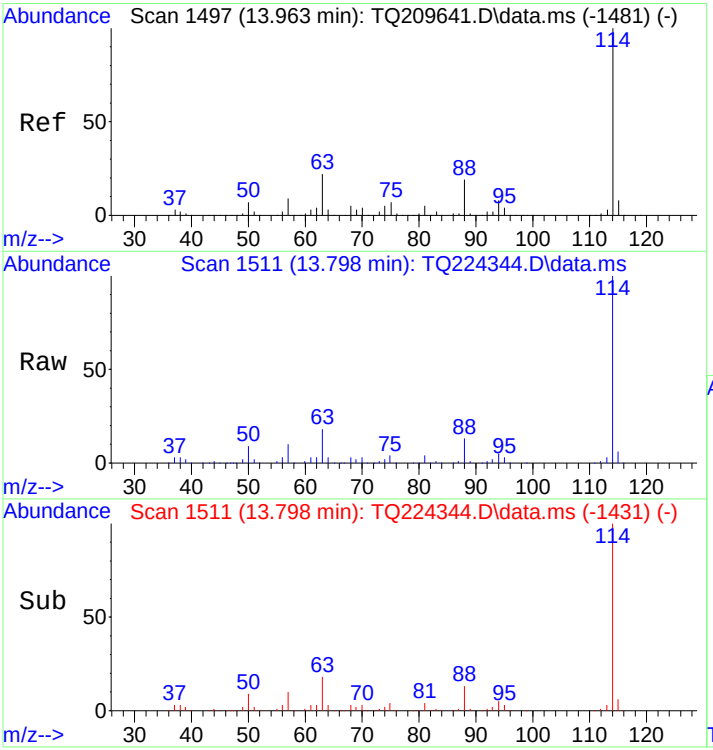


#36
n-Heptane
Concen: 0.04 ppbv
RT: 13.427 min Scan# 1450
Delta R.T. -0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 43 Resp: 2046

Ion	Ratio	Lower	Upper
43	100		
43	100.0	80.0	120.0
57	34.7	42.6	64.0#
100	0.0	13.3	19.9#

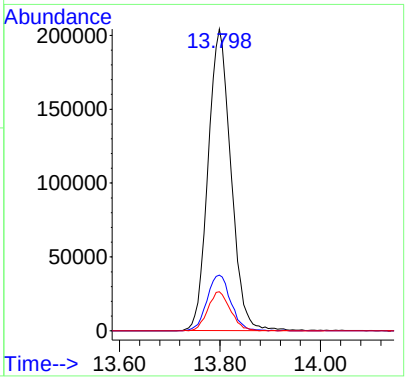


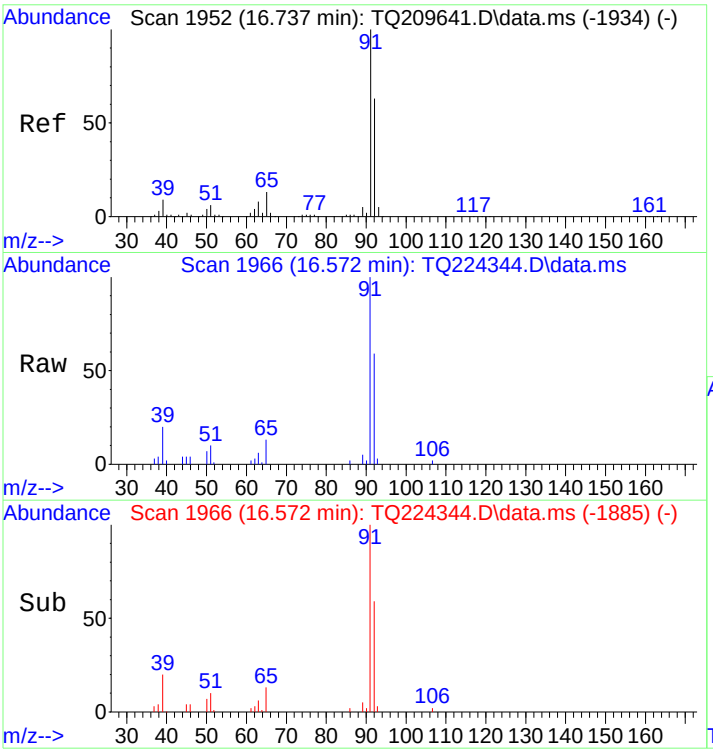


#37
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.798 min Scan# 1511
Delta R.T. -0.013 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion:114 Resp: 645132

Ion	Ratio	Lower	Upper
114	100		
63	19.2	12.9	26.9
88	12.9	10.7	22.3

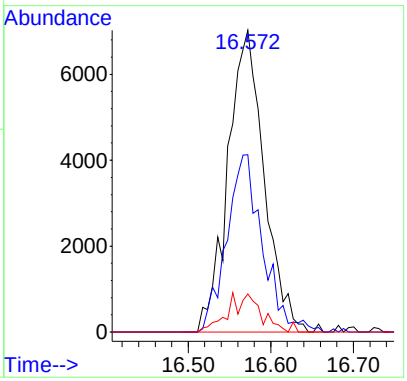


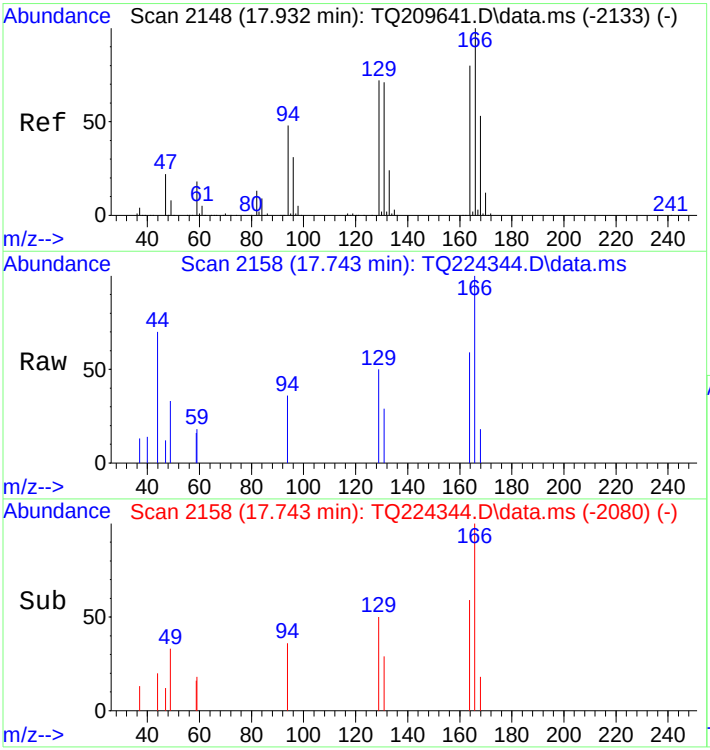


#45
Toluene
Concen: 0.27 ppbv
RT: 16.572 min Scan# 1966
Delta R.T. -0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 91 Resp: 21450

Ion	Ratio	Lower	Upper
91	100		
92	58.1	38.7	80.3
65	11.8	7.5	15.5

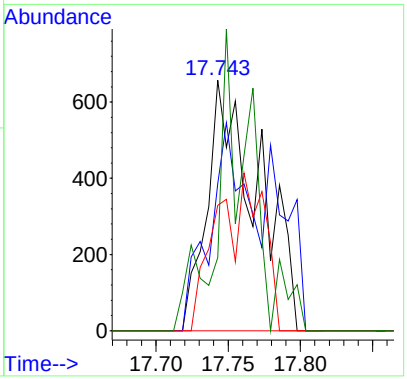


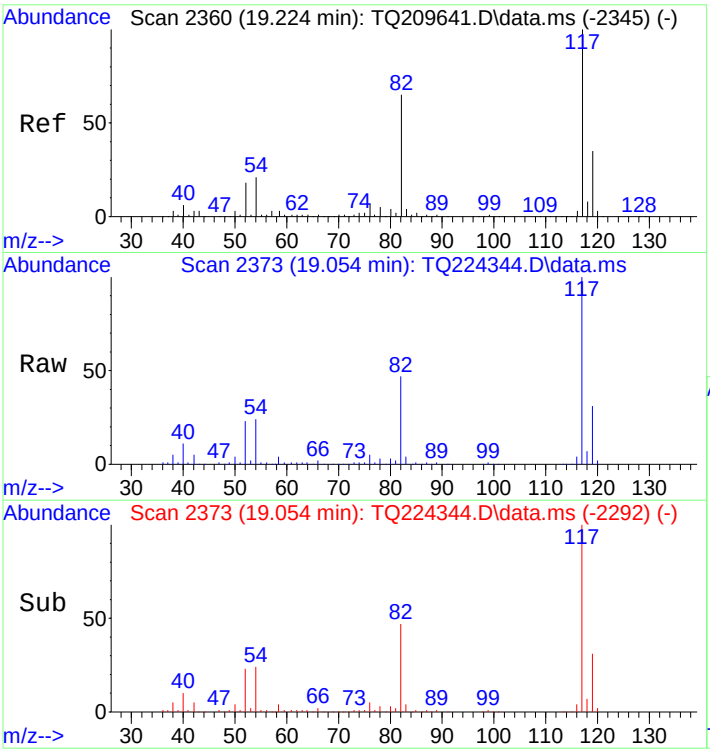


#50
Tetrachloroethylene
Concen: 0.05 ppbv
RT: 17.743 min Scan# 2158
Delta R.T. -0.024 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion:166 Resp: 1607

Ion	Ratio	Lower	Upper
166	100		
164	96.3	51.0	106.0
129	57.9	48.1	99.9
131	81.5	46.3	96.3

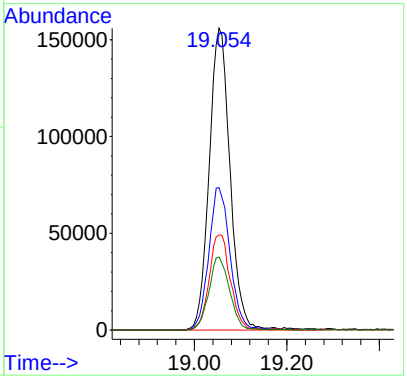


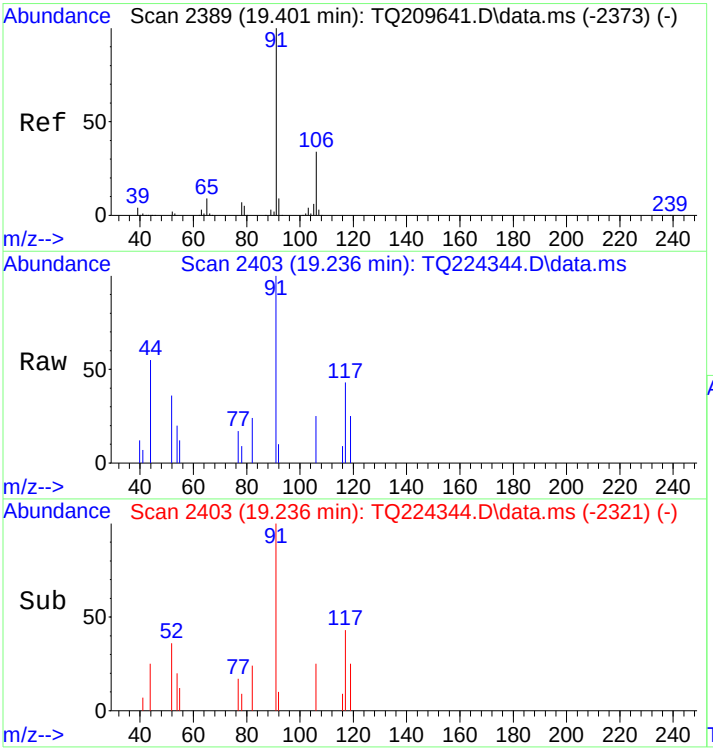


#53
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.054 min Scan# 2373
Delta R.T. -0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion:117 Resp: 490804

Ion	Ratio	Lower	Upper
117	100		
82	48.1	37.1	77.1
119	32.3	22.1	45.9
54	24.0	13.8	28.6

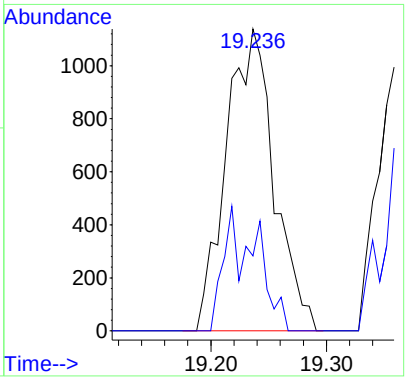


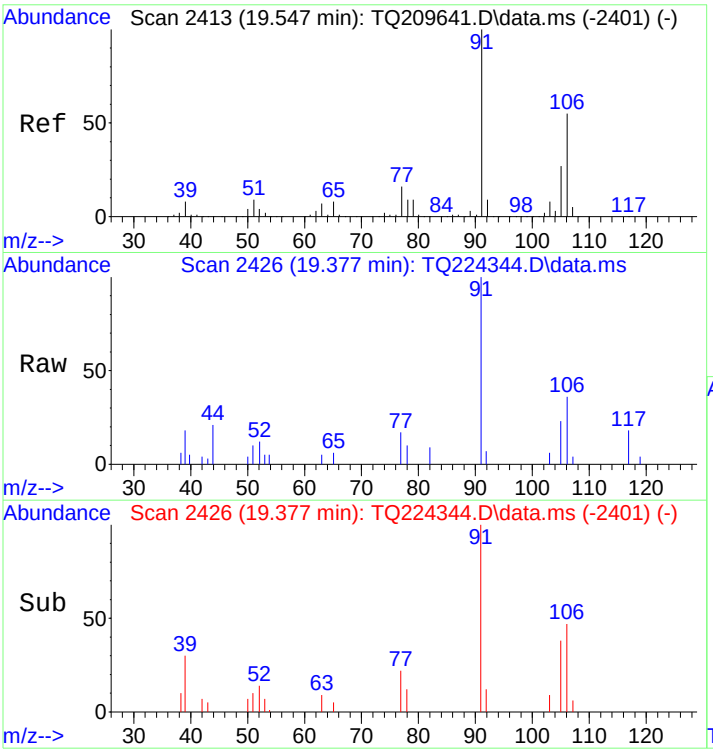


#56
Ethylbenzene
Concen: 0.04 ppbv
RT: 19.236 min Scan# 2403
Delta R.T. 0.000 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 91 Resp: 3281

Ion	Ratio	Lower	Upper
91	100		
106	27.9	20.5	42.7

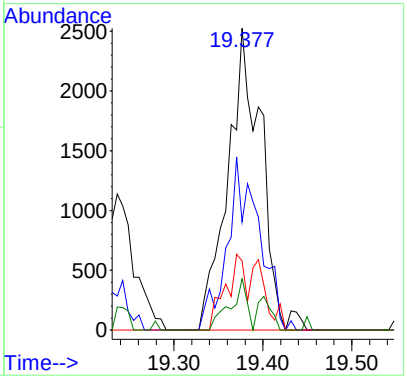


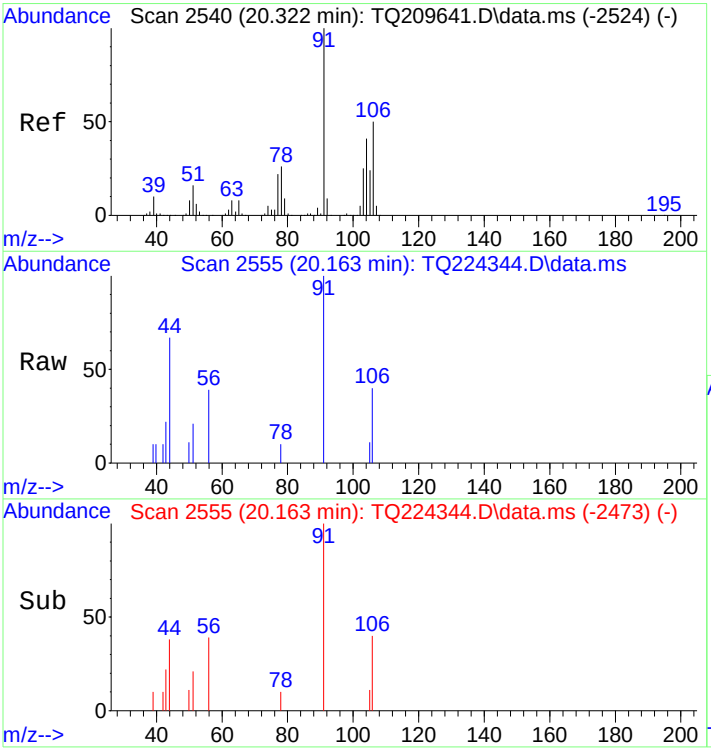


#57
p- & m-Xylenes
Concen: 0.10 ppbv
RT: 19.377 min Scan# 2426
Delta R.T. -0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 91 Resp: 6590

Ion	Ratio	Lower	Upper
91	100		
106	54.7	32.6	67.8
105	25.5	14.5	30.1
77	12.9	8.5	17.7

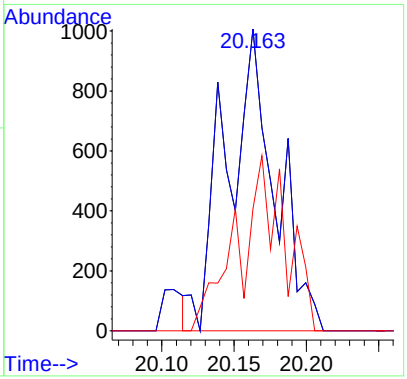


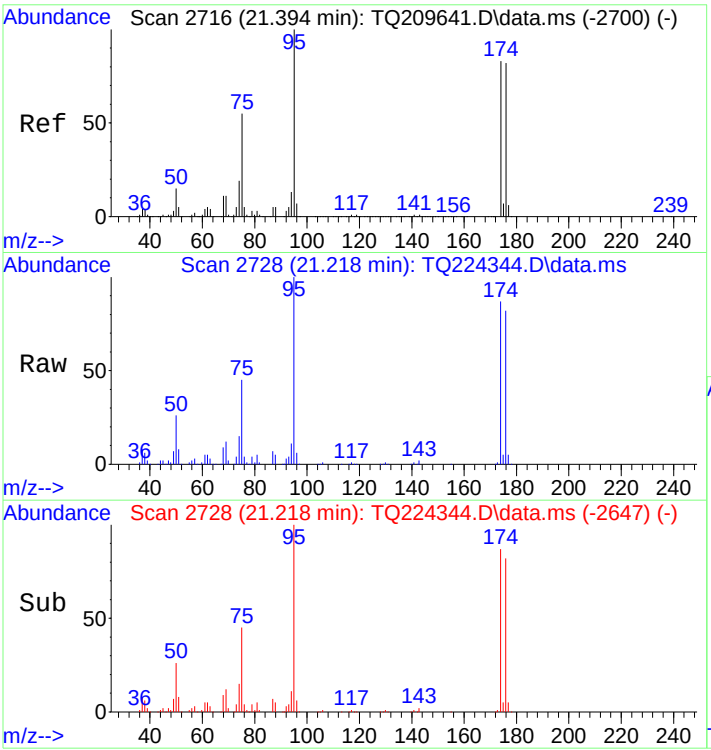


#58
o-Xylene
Concen: 0.04 ppbv
RT: 20.163 min Scan# 2555
Delta R.T. 0.000 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 91 Resp: 2365

Ion	Ratio	Lower	Upper
91	100		
91	100.0	80.0	120.0
106	55.7	38.2	57.2

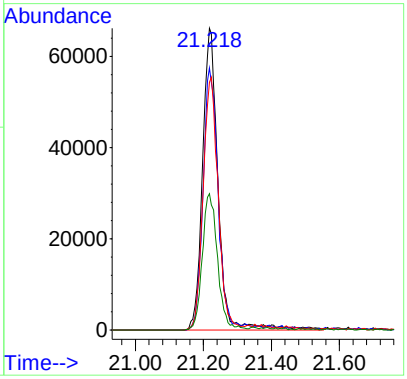




#64
p-Bromofluorobenzene
Concen: 8.33 ppbv
RT: 21.218 min Scan# 2728
Delta R.T. -0.006 min
Lab File: TQ224344.D
Acq: 17 Mar 2023 9:49 pm

Tgt Ion: 95 Resp: 211829

Ion	Ratio	Lower	Upper
95	100		
174	88.5	53.2	110.6
176	82.3	51.6	107.2
75	45.6	30.7	63.7



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

IA03_031723

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Indoor Ambient Air	Laboratory ID:	23C0979-03	File ID:	TQ224345.D
Sampled:	03/17/23 08:23	Prepared:	03/17/23 14:30	Analyzed:	03/17/23 22:58
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL

Batch: BC31240 Sequence: S3C2020 Calibration: SB30007 Instrument: TO15_AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
71-55-6	1,1,1-Trichloroethane	0.99	0.540	U
75-34-3	1,1-Dichloroethane	0.99	0.401	U
75-35-4	1,1-Dichloroethylene	0.99	0.196	U
107-06-2	1,2-Dichloroethane	0.99	0.401	U
156-59-2	cis-1,2-Dichloroethylene	0.99	0.196	U
75-09-2	Methylene chloride	0.99	1.07	D
127-18-4	Tetrachloroethylene	0.99	0.671	U
156-60-5	trans-1,2-Dichloroethylene	0.99	0.393	U
79-01-6	Trichloroethylene	0.99	0.133	U
75-01-4	Vinyl Chloride	0.99	0.127	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	255986	12.22	338417	12.225	
ISTD: 1,4-Difluorobenzene	573740	13.805	764565	13.804	
ISTD: d5-Chlorobenzene	447528	19.054	676354	19.053	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224345.D
Acq On : 17 Mar 2023 10:58 pm
Operator : AC
Sample : 23C0979-03
Misc : QBTO2031723A 0.533X/750ML
ALS Vial : 11 Sample Multiplier: 0.99
InstName : TO15_AIR2

Quant Time: Mar 20 12:27:41 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

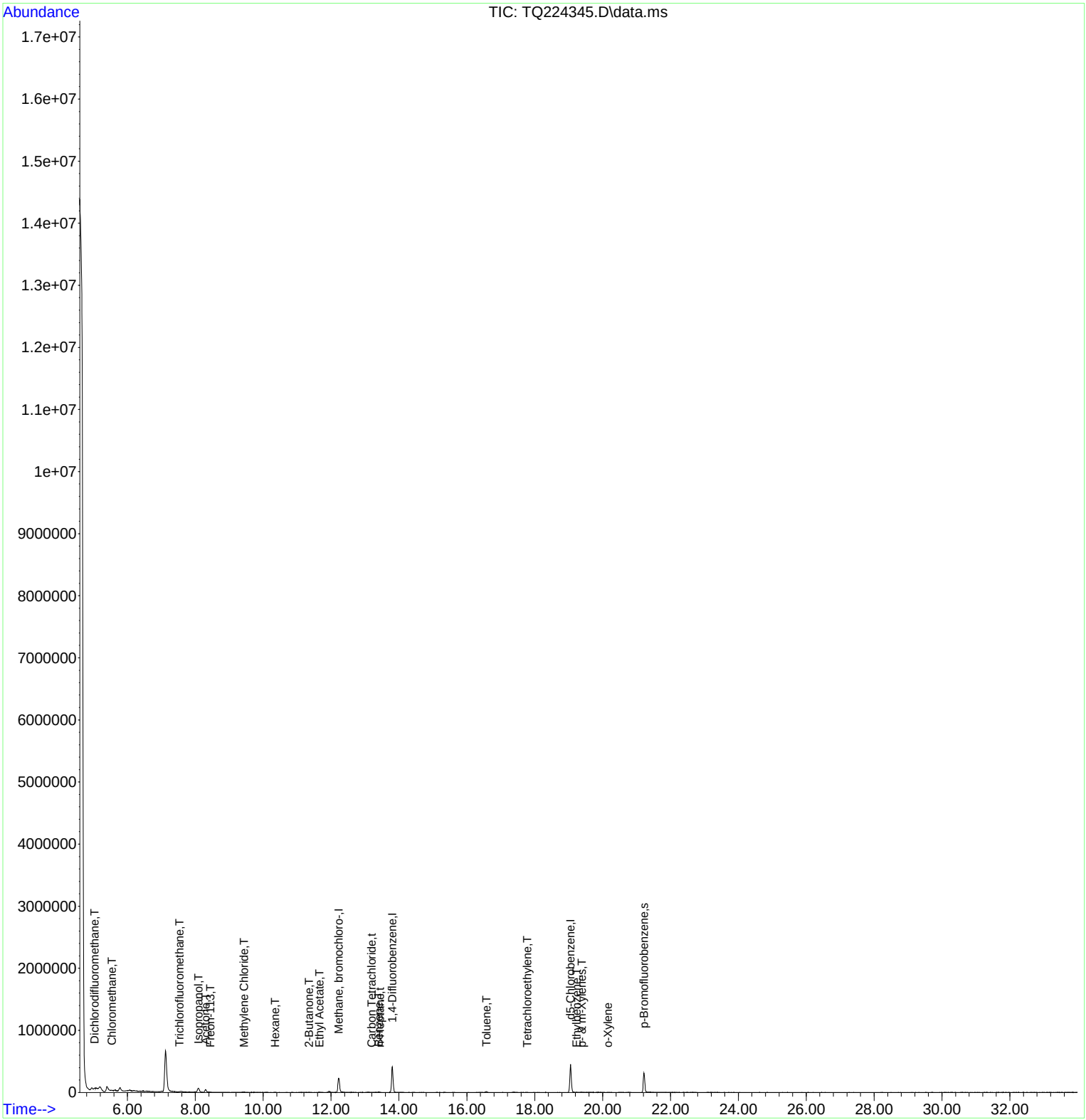
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.220	49	255986	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	13.805	114	573740	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.054	117	447528	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.218	95	190004	8.20	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 82.00%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	5.026	85	17469	0.41	ppbv #	90
5) Chloromethane	5.538	50	12916	0.56	ppbv	89
11) Trichlorofluoromethane	7.531	101	7628	0.21	ppbv #	94
12) Isopropanol	8.092	45	157602	3.35	ppbv	100
14) Acetone	8.300	43	101485	2.51	ppbv	100
15) Freon-113	8.440	101	2656	0.07	ppbv	90
18) Methylene Chloride	9.433	49	8506	0.31	ppbv	80
23) Hexane	10.348	57	2175	0.07	ppbv #	78
26) 2-Butanone	11.348	43	10748	0.20	ppbv #	80
27) Ethyl Acetate	11.653	43	10680	0.19	ppbv #	39
33) Carbon Tetrachloride	13.195	117	1377	0.07	ppbv #	88
35) Benzene	13.402	78	11603	0.19	ppbv #	50
36) n-Heptane	13.433	43	1551	0.04	ppbv #	73
45) Toluene	16.572	91	17131	0.24	ppbv	100
50) Tetrachloroethylene	17.773	166	1307	0.04	ppbv	92
56) Ethylbenzene	19.230	91	2458	0.03	ppbv	92
57) p- & m-Xylenes	19.383	91	5331	0.09	ppbv	86
58) o-Xylene	20.151	91	1828	0.03	ppbv	99

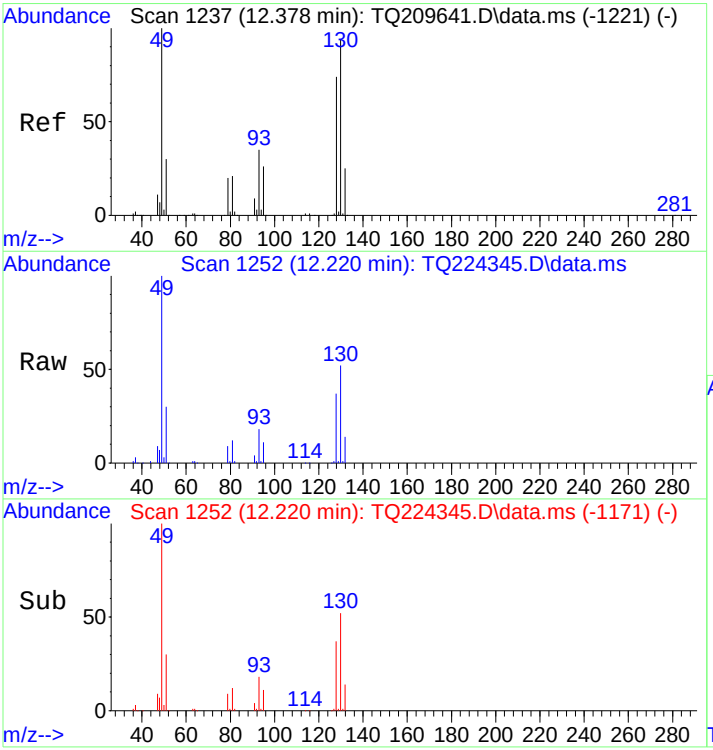
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224345.D
Acq On : 17 Mar 2023 10:58 pm
Operator : AC
Sample : 23C0979-03
Misc : QBTO2031723A 0.533X/750ML
ALS Vial : 11 Sample Multiplier: 0.99
InstName : TO15_AIR2

Quant Time: Mar 20 12:27:41 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

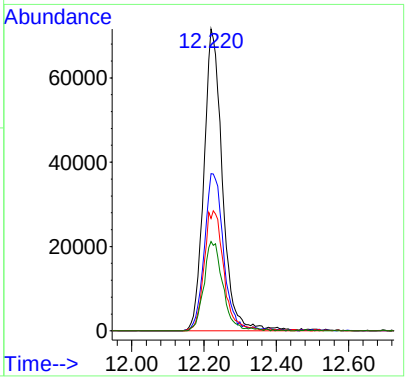


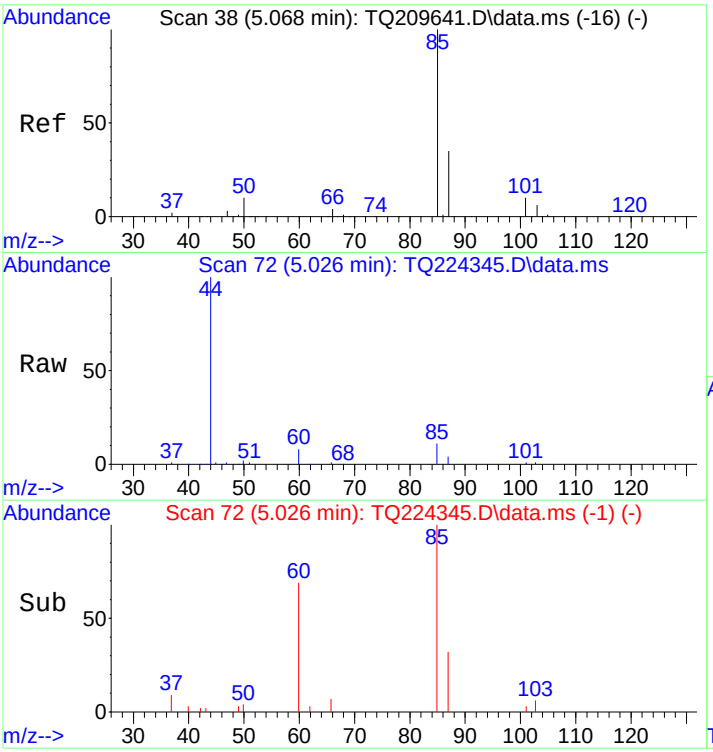


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.220 min Scan# 1252
Delta R.T. -0.005 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 49 Resp: 255986

Ion	Ratio	Lower	Upper
49	100		
130	54.2	48.1	99.9
128	42.5	38.3	79.5
51	30.4	20.3	42.3

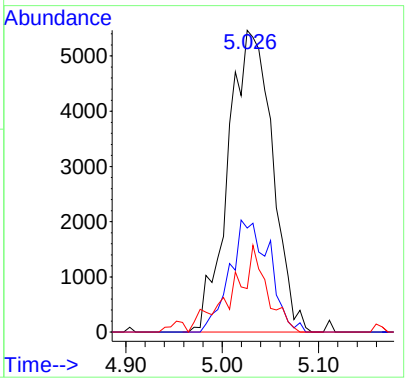


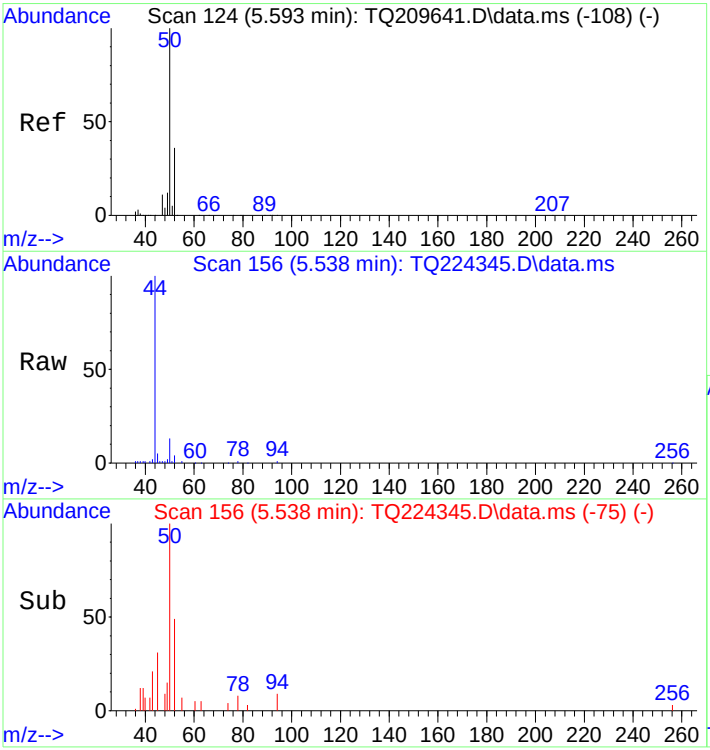


#3
Dichlorodifluoromethane
Concen: 0.41 ppbv
RT: 5.026 min Scan# 72
Delta R.T. -0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 85 Resp: 17469

Ion	Ratio	Lower	Upper
85	100		
87	33.2	20.9	43.5
50	23.6	7.2	15.0#

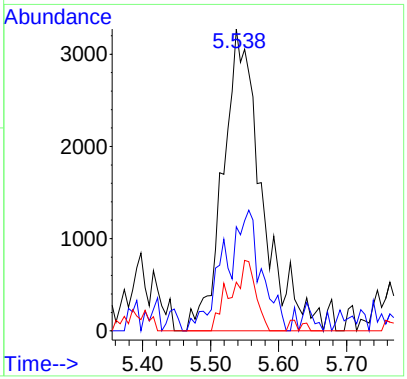


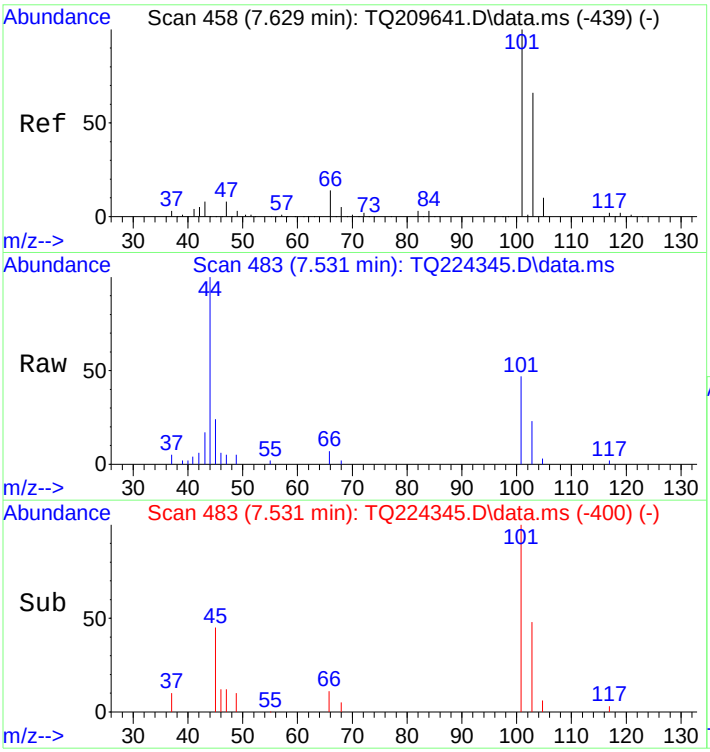


#5
Chloromethane
Concen: 0.56 ppbv
RT: 5.538 min Scan# 156
Delta R.T. -0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 50 Resp: 12916

Ion	Ratio	Lower	Upper
50	100		
52	37.9	0.0	65.2
49	15.1	0.0	19.6

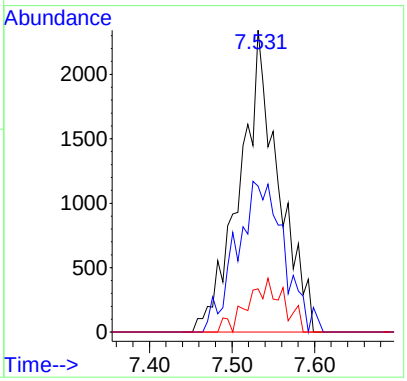


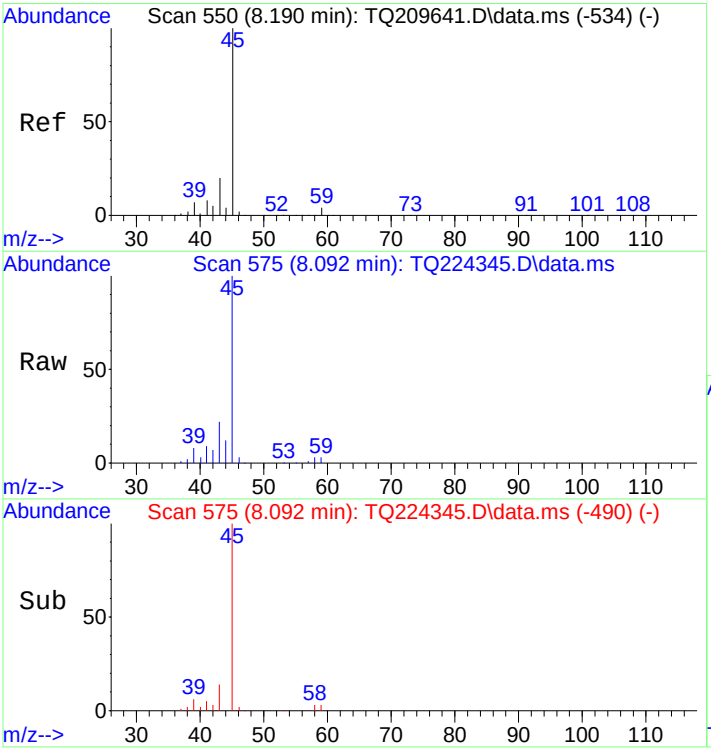


#11
Trichlorofluoromethane
Concen: 0.21 ppbv
RT: 7.531 min Scan# 483
Delta R.T. 0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion:101 Resp: 7628

Ion	Ratio	Lower	Upper
101	100		
103	61.2	42.3	87.8
66	16.3	7.8	16.2#

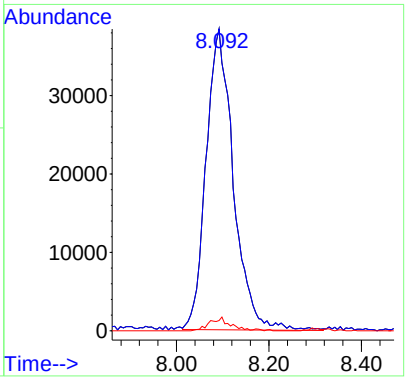


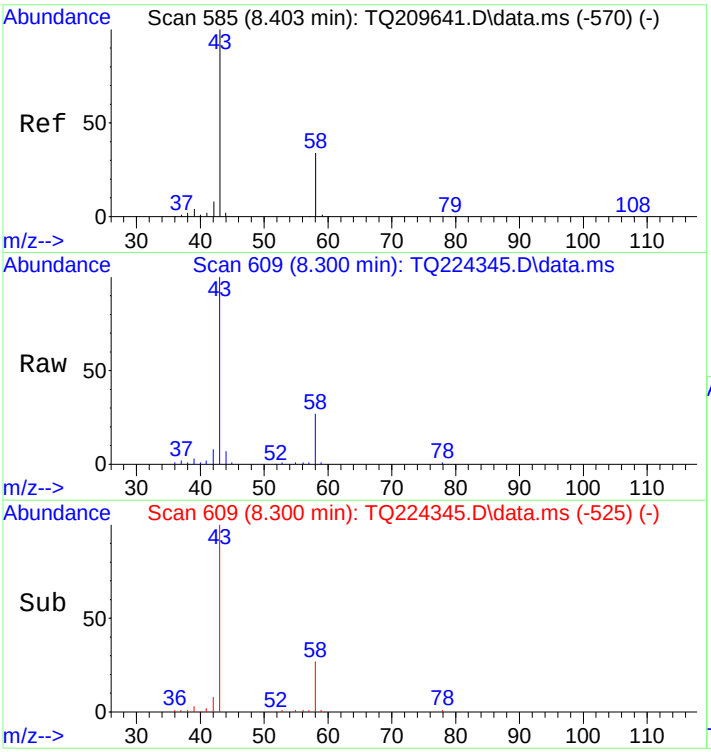


#12
Isopropanol
Concen: 3.35 ppbv
RT: 8.092 min Scan# 575
Delta R.T. 0.018 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 45 Resp: 157602

Ion	Ratio	Lower	Upper
45	100		
45	100.0	65.0	135.0
59	3.3	0.0	10.0

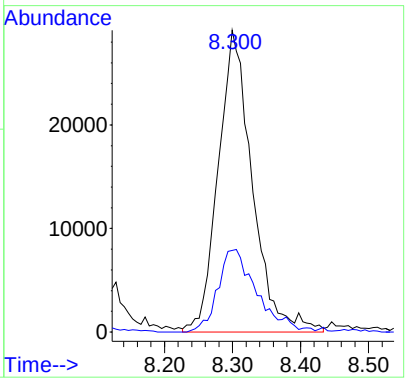


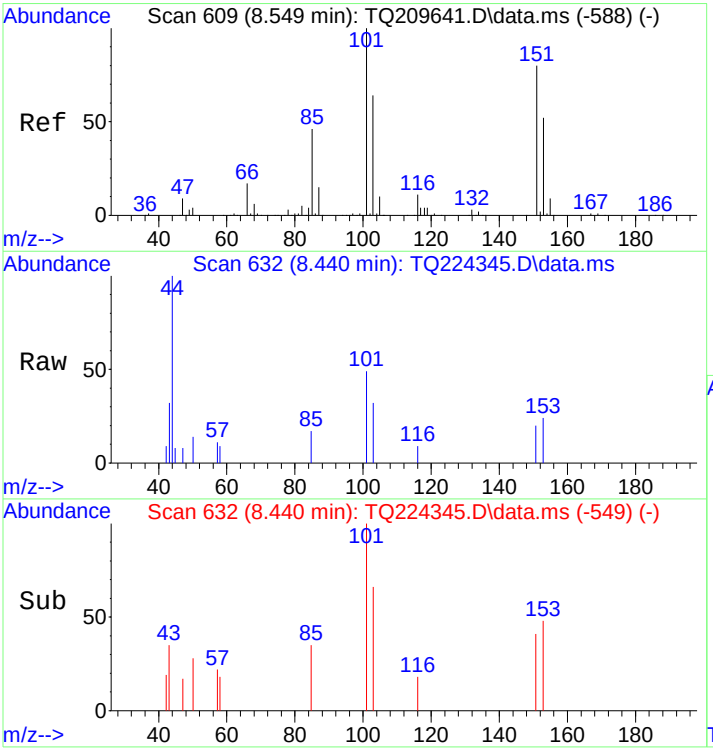


#14
Acetone
Concen: 2.51 ppbv
RT: 8.300 min Scan# 609
Delta R.T. 0.013 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 43 Resp: 101485

Ion	Ratio	Lower	Upper
43	100		
58	31.8	20.9	43.3

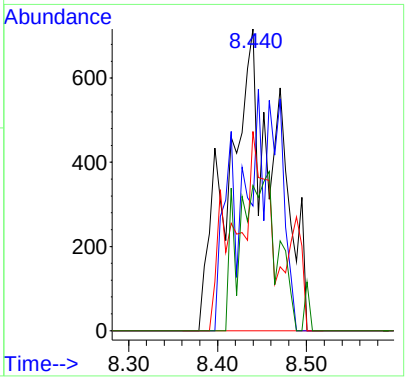


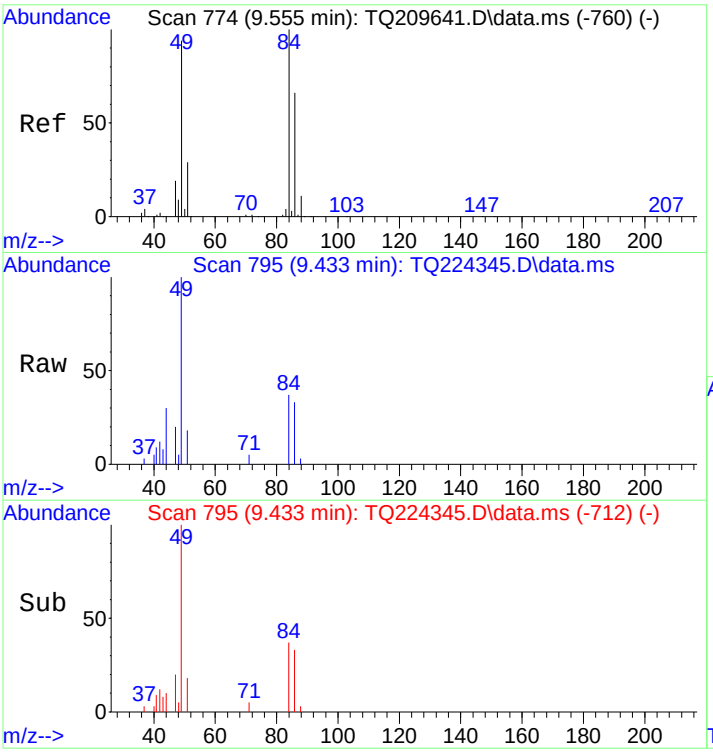


#15
Freon-113
Concen: 0.07 ppbv
RT: 8.440 min Scan# 632
Delta R.T. 0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion:101 Resp: 2656

Ion	Ratio	Lower	Upper
101	100		
151	67.6	50.5	104.9
103	57.9	42.0	87.2
153	42.8	32.4	67.4

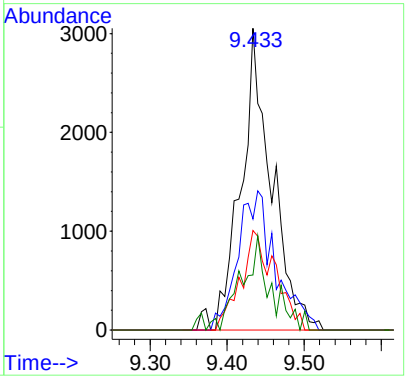


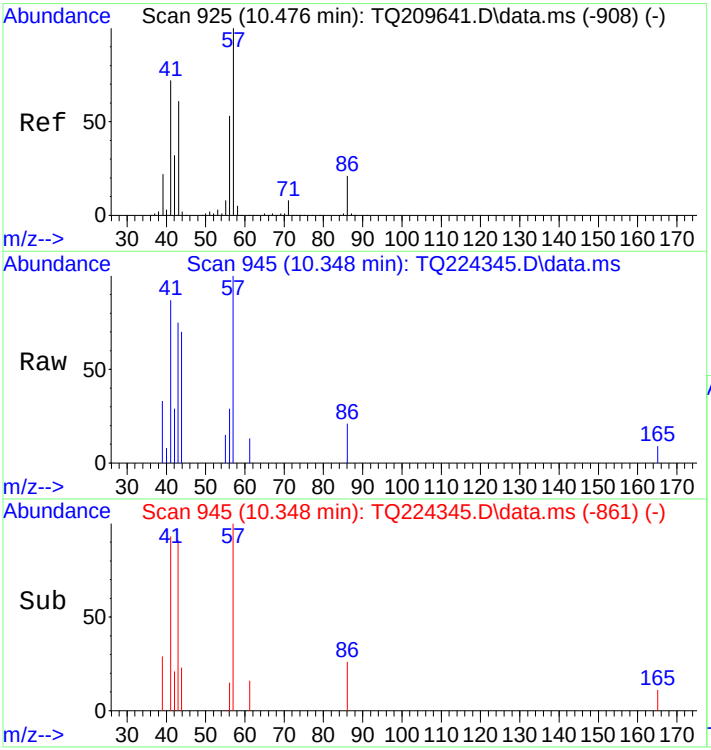


#18
Methylene Chloride
Concen: 0.31 ppbv
RT: 9.433 min Scan# 795
Delta R.T. 0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 49 Resp: 8506

Ion	Ratio	Lower	Upper
49	100		
84	56.1	49.9	103.5
86	36.7	31.8	66.0
51	23.9	20.2	41.9

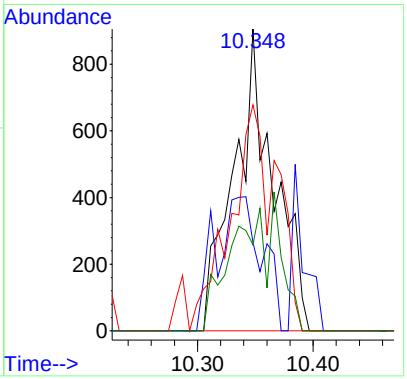


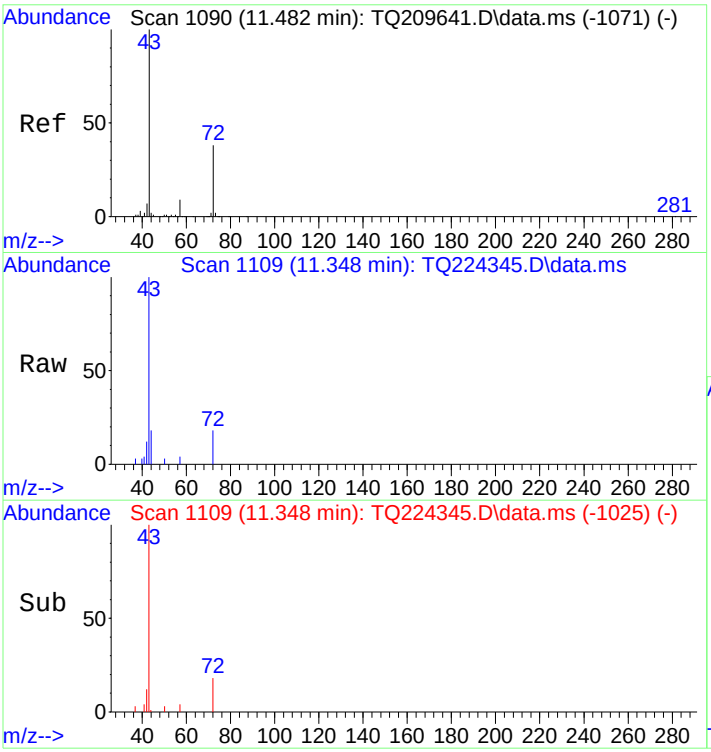


#23
Hexane
Concen: 0.07 ppbv
RT: 10.348 min Scan# 945
Delta R.T. 0.012 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 57 Resp: 2175

Ion	Ratio	Lower	Upper
57	100		
42	51.2	21.6	45.0#
43	90.6	42.0	87.2#
56	49.9	33.3	69.1

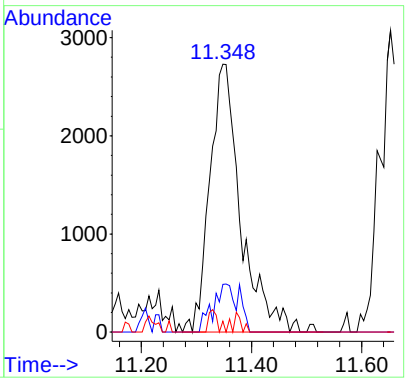


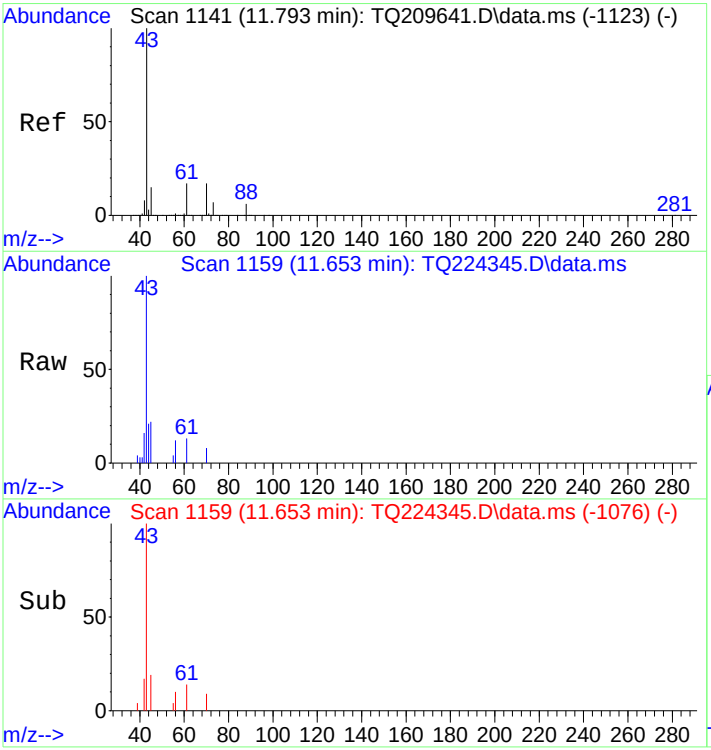


#26
2-Butanone
Concen: 0.20 ppbv
RT: 11.348 min Scan# 1109
Delta R.T. 0.013 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 43 Resp: 10748

Ion	Ratio	Lower	Upper
43	100		
72	14.8	16.1	33.5#
57	0.0	4.9	10.3#

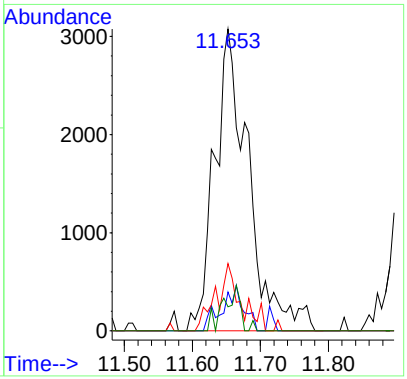


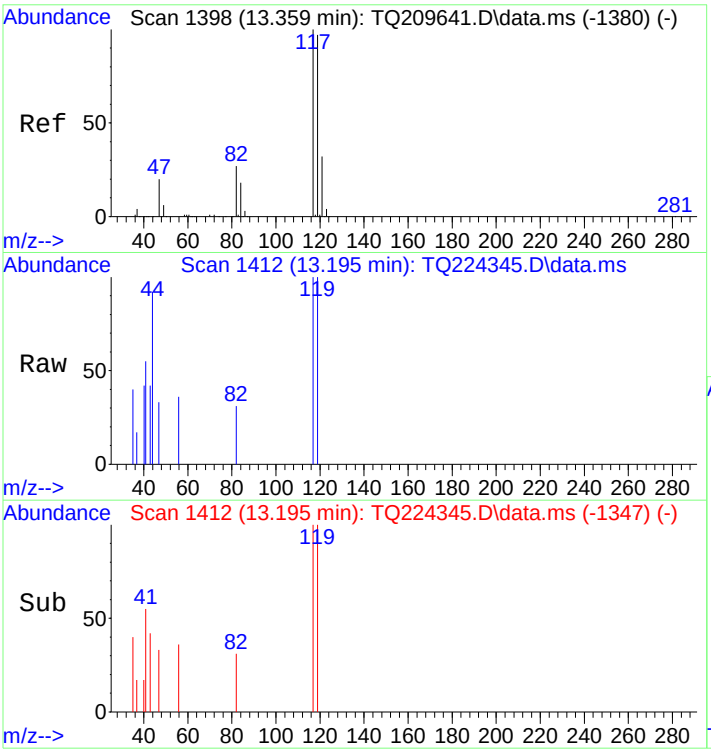


#27
Ethyl Acetate
Concen: 0.19 ppbv
RT: 11.653 min Scan# 1159
Delta R.T. 0.007 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 43 Resp: 10680

Ion	Ratio	Lower	Upper
43	100		
61	9.6	51.4	106.8#
45	16.0	9.4	19.6
70	7.5	7.5	15.5#

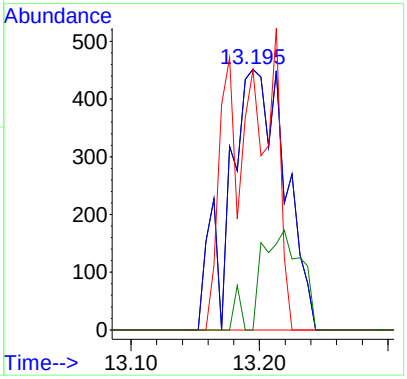


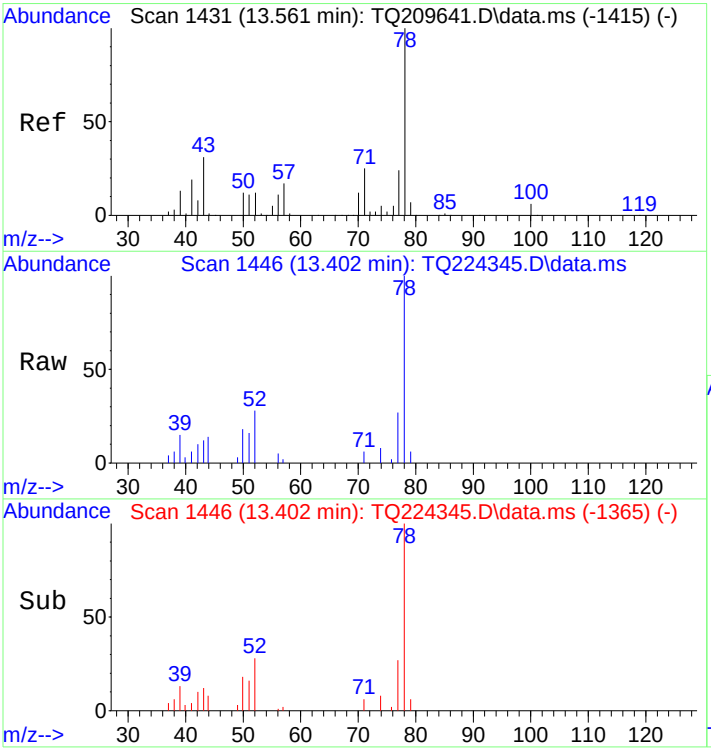


#33
Carbon Tetrachloride
Concen: 0.07 ppbv
RT: 13.195 min Scan# 1412
Delta R.T. -0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion:117 Resp: 1377

Ion	Ratio	Lower	Upper
117	100		
117	100.0	80.0	120.0
119	86.4	76.9	115.3
121	0.0	21.7	40.3#

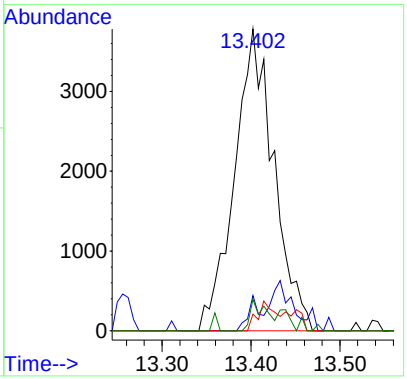


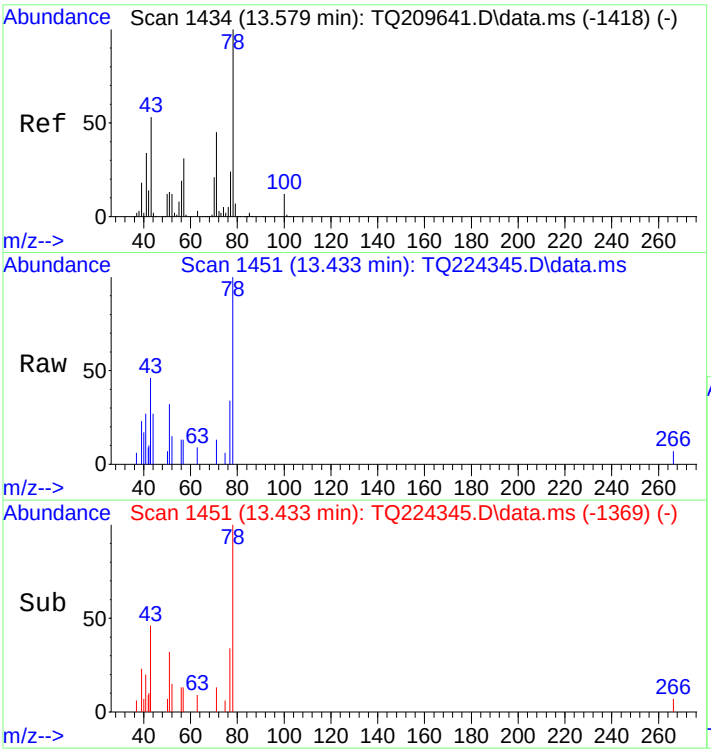


#35
Benzene
Concen: 0.19 ppbv
RT: 13.402 min Scan# 1446
Delta R.T. -0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 78 Resp: 11603

Ion	Ratio	Lower	Upper
78	100		
43	13.4	37.5	77.9#
71	7.3	22.0	45.8#
42	7.0	8.8	18.4#

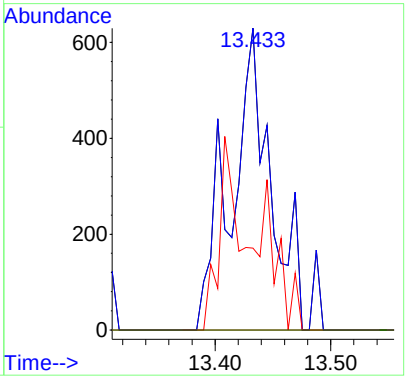


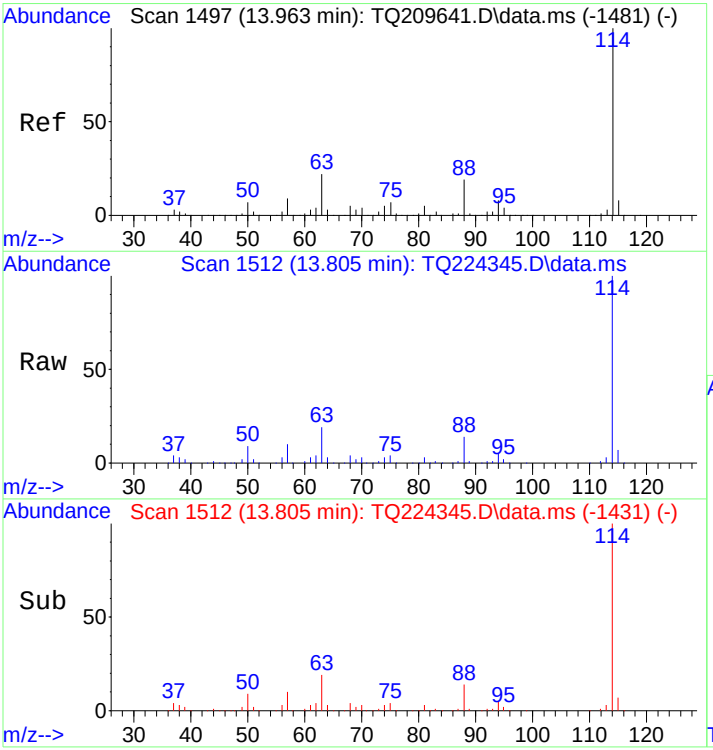


#36
n-Heptane
Concen: 0.04 ppbv
RT: 13.433 min Scan# 1451
Delta R.T. -0.000 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 43 Resp: 1551

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

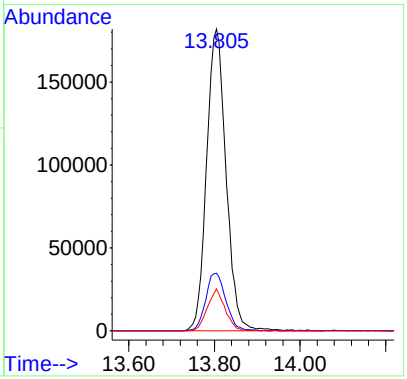


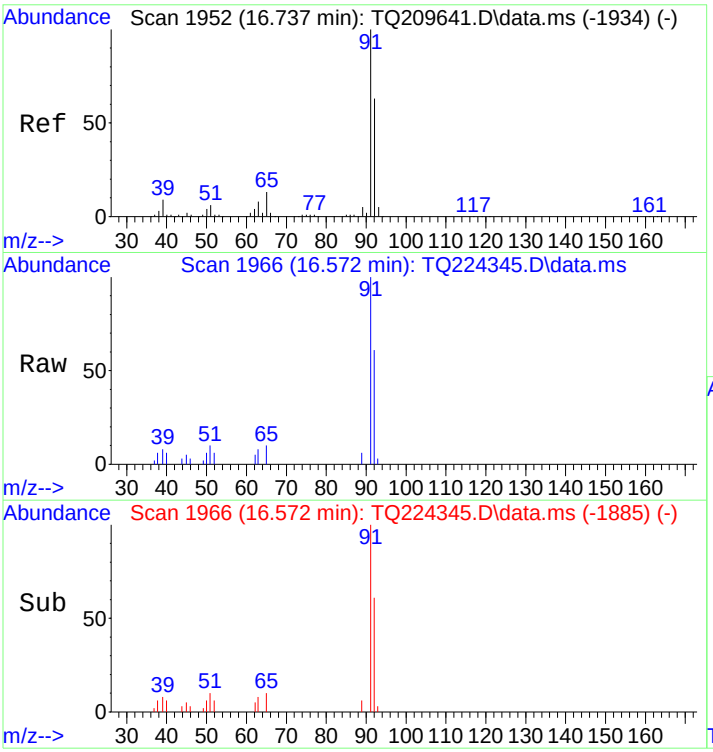


#37
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.805 min Scan# 1512
Delta R.T. -0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion:114 Resp: 573740

Ion	Ratio	Lower	Upper
114	100		
63	19.8	12.9	26.9
88	12.7	10.7	22.3

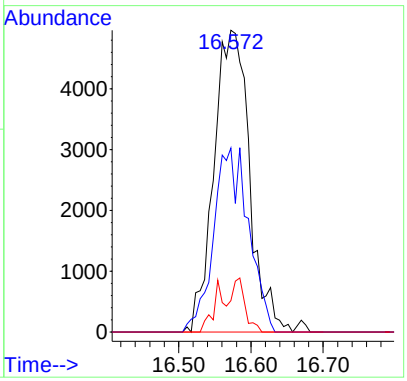


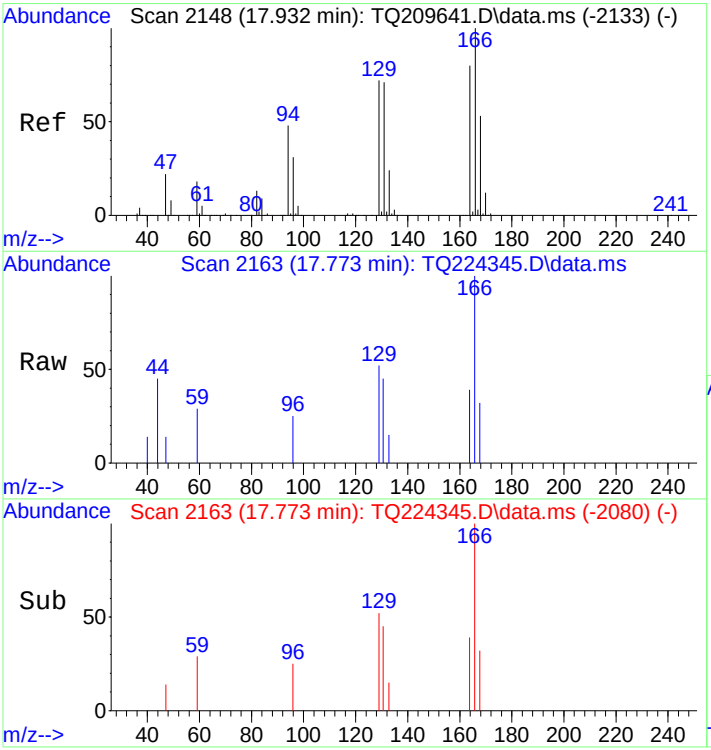


#45
Toluene
Concen: 0.24 ppbv
RT: 16.572 min Scan# 1966
Delta R.T. -0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 91 Resp: 17131

Ion	Ratio	Lower	Upper
91	100		
92	59.3	38.7	80.3
65	11.9	7.5	15.5

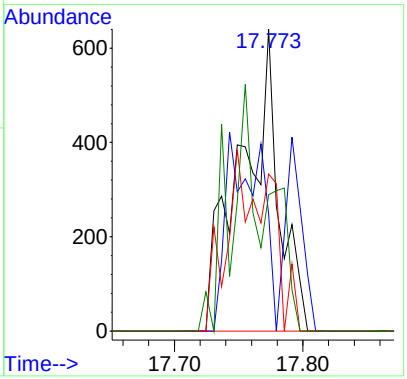


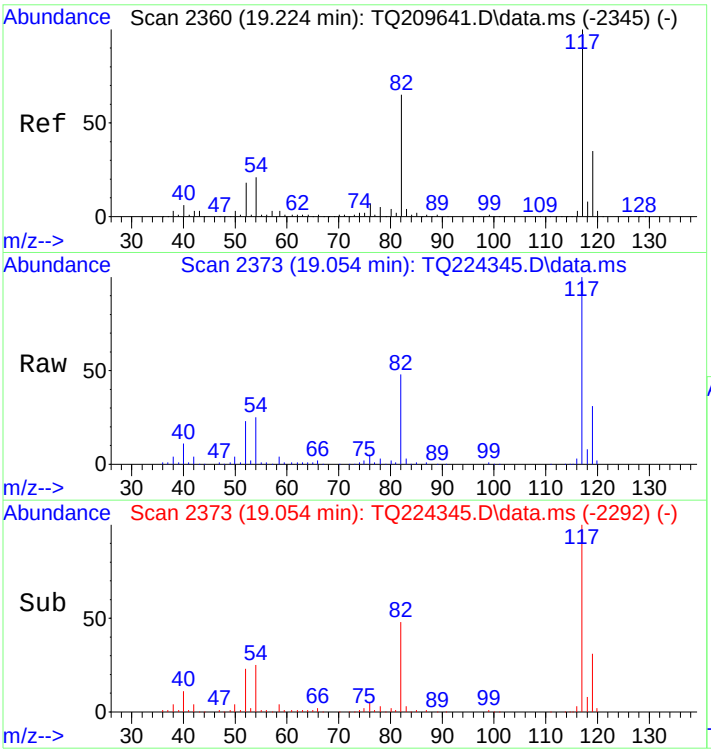


#50
Tetrachloroethylene
Concen: 0.04 ppbv
RT: 17.773 min Scan# 2163
Delta R.T. 0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion:166 Resp: 1307

Ion	Ratio	Lower	Upper
166	100		
164	87.4	51.0	106.0
129	67.9	48.1	99.9
131	77.1	46.3	96.3

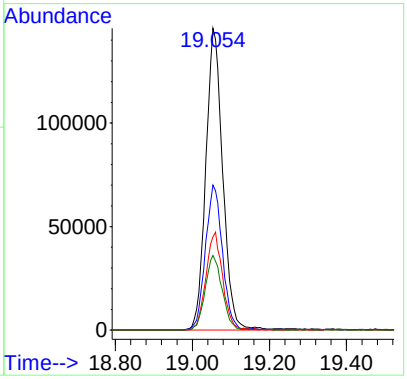


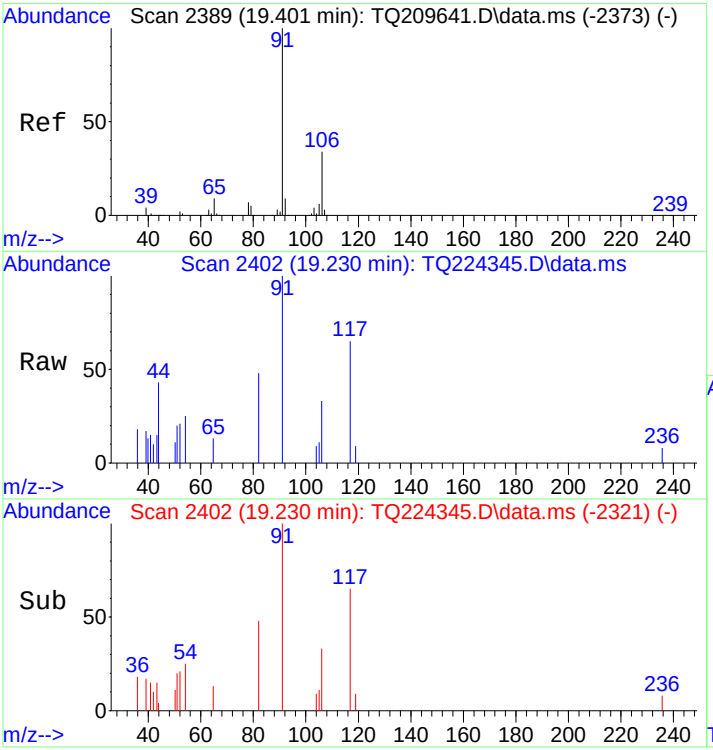


#53
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.054 min Scan# 2373
Delta R.T. -0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion:117 Resp: 447528

Ion	Ratio	Lower	Upper
117	100		
82	48.1	37.1	77.1
119	31.7	22.1	45.9
54	24.8	13.8	28.6

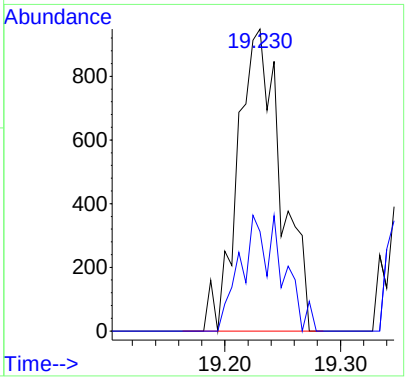


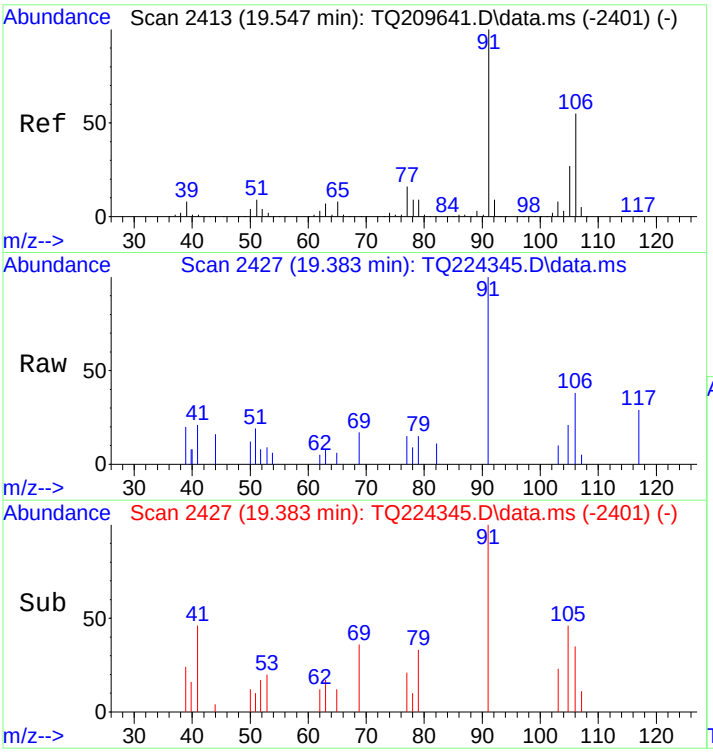


#56
Ethylbenzene
Concen: 0.03 ppbv
RT: 19.230 min Scan# 2402
Delta R.T. -0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 91 Resp: 2458

Ion	Ratio	Lower	Upper
91	100		
106	36.1	20.5	42.7

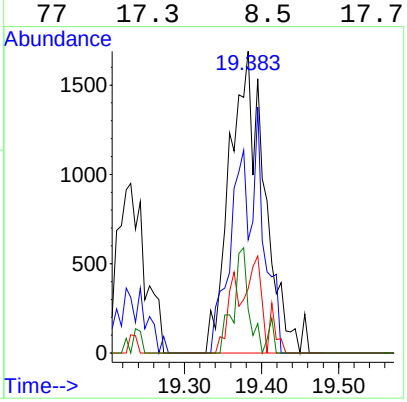


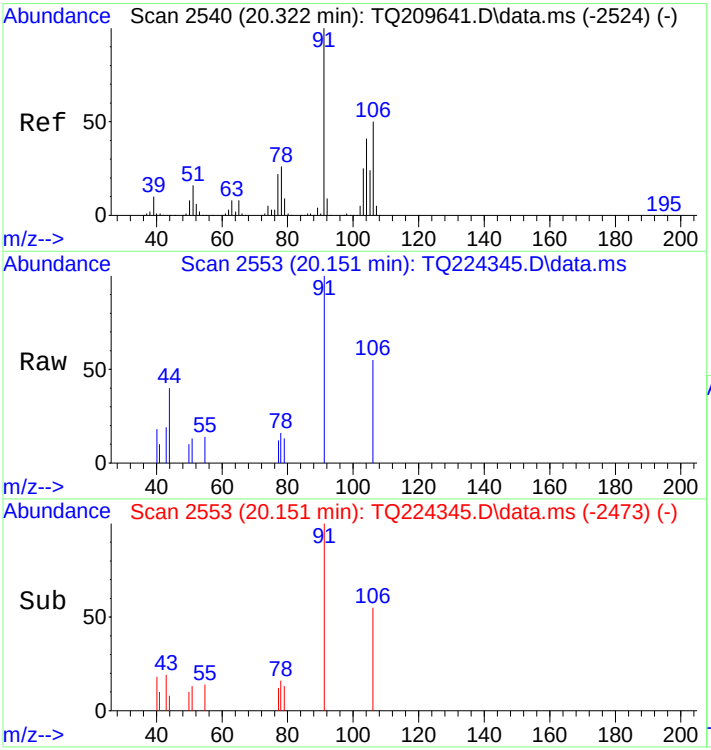


#57
p- & m-Xylenes
Concen: 0.09 ppbv
RT: 19.383 min Scan# 2427
Delta R.T. -0.000 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 91 Resp: 5331

Ion	Ratio	Lower	Upper
91	100		
106	63.0	32.6	67.8
105	25.0	14.5	30.1
77	17.3	8.5	17.7

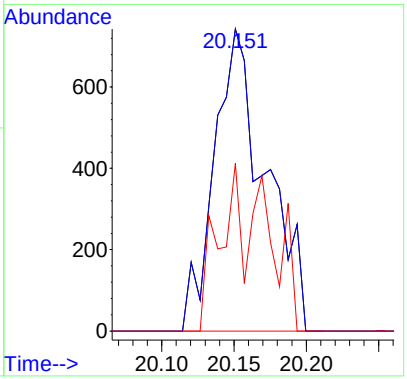


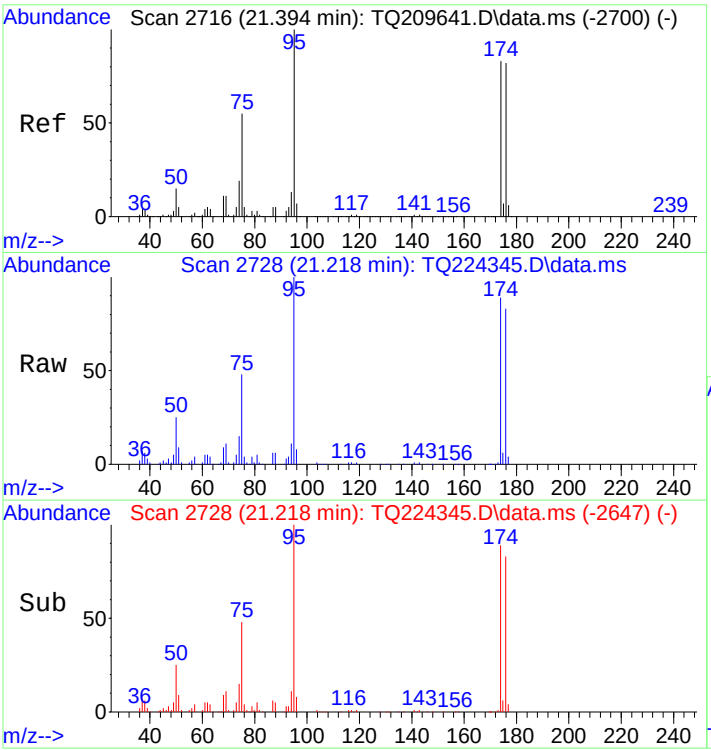


#58
o-Xylene
Concen: 0.03 ppbv
RT: 20.151 min Scan# 2553
Delta R.T. -0.012 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 91 Resp: 1828

Ion	Ratio	Lower	Upper
91	100		
91	100.0	80.0	120.0
106	50.7	38.2	57.2

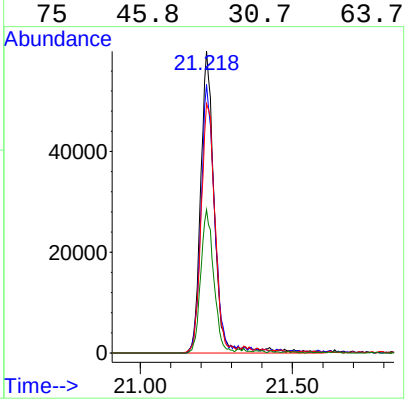




#64
p-Bromofluorobenzene
Concen: 8.20 ppbv
RT: 21.218 min Scan# 2728
Delta R.T. -0.006 min
Lab File: TQ224345.D
Acq: 17 Mar 2023 10:58 pm

Tgt Ion: 95 Resp: 190004

Ion	Ratio	Lower	Upper
95	100		
174	89.8	53.2	110.6
176	84.4	51.6	107.2
75	45.8	30.7	63.7



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

IA04_031723

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Indoor Ambient Air	Laboratory ID:	23C0979-04	File ID:	TQ224346.D
Sampled:	03/17/23 07:52	Prepared:	03/17/23 14:30	Analyzed:	03/18/23 00:08
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL

Batch: BC31240 Sequence: S3C2020 Calibration: SB30007 Instrument: TO15_AIR2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
71-55-6	1,1,1-Trichloroethane	0.821	0.448	U
75-34-3	1,1-Dichloroethane	0.821	0.332	U
75-35-4	1,1-Dichloroethylene	0.821	0.163	U
107-06-2	1,2-Dichloroethane	0.821	0.332	U
156-59-2	cis-1,2-Dichloroethylene	0.821	0.163	U
75-09-2	Methylene chloride	0.821	0.970	D
127-18-4	Tetrachloroethylene	0.821	0.557	U
156-60-5	trans-1,2-Dichloroethylene	0.821	0.326	U
79-01-6	Trichloroethylene	0.821	0.110	U
75-01-4	Vinyl Chloride	0.821	0.105	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	227328	12.226	338417	12.225	
ISTD: 1,4-Difluorobenzene	507983	13.804	764565	13.804	
ISTD: d5-Chlorobenzene	408472	19.053	676354	19.053	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224346.D
Acq On : 18 Mar 2023 12:08 am
Operator : AC
Sample : 23C0979-04
Misc : QBTO2031723A 0.533X/750ML
ALS Vial : 12 Sample Multiplier: 0.821
InstName : TO15_AIR2

Quant Time: Mar 20 12:34:48 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

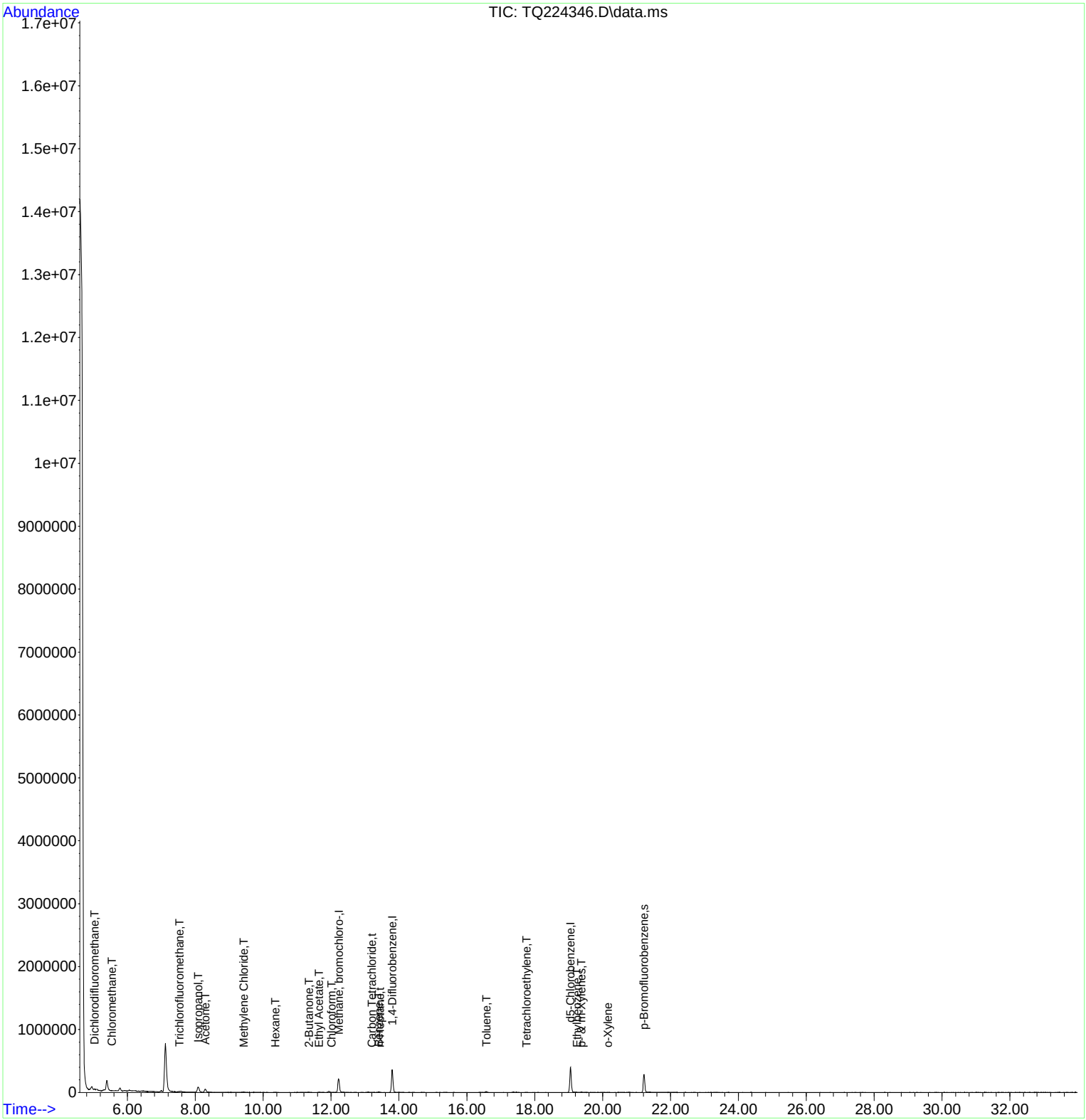
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.226	49	227328	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	13.804	114	507983	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.053	117	408472	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.218	95	170989	8.08	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 80.80%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	5.026	85	19798	0.53	ppbv #	93
5) Chloromethane	5.538	50	13924	0.68	ppbv	94
11) Trichlorofluoromethane	7.525	101	8975	0.28	ppbv #	94
12) Isopropanol	8.086	45	197322	4.73	ppbv	100
14) Acetone	8.293	43	124598	3.47	ppbv	99
18) Methylene Chloride	9.427	49	8223	0.34	ppbv	81
23) Hexane	10.354	57	2581	0.09	ppbv #	82
26) 2-Butanone	11.348	43	12006	0.26	ppbv #	85
27) Ethyl Acetate	11.640	43	12892	0.26	ppbv #	38
29) Chloroform	12.012	83	2017	0.07	ppbv #	83
33) Carbon Tetrachloride	13.201	117	1337	0.07	ppbv #	51
35) Benzene	13.402	78	11615	0.22	ppbv #	46
36) n-Heptane	13.433	43	1626	0.04	ppbv #	73
45) Toluene	16.572	91	16988	0.27	ppbv	97
50) Tetrachloroethylene	17.755	166	1664	0.06	ppbv	87
56) Ethylbenzene	19.242	91	3779	0.05	ppbv	86
57) p- & m-Xylenes	19.370	91	6425	0.12	ppbv #	88
58) o-Xylene	20.157	91	2760	0.05	ppbv	99

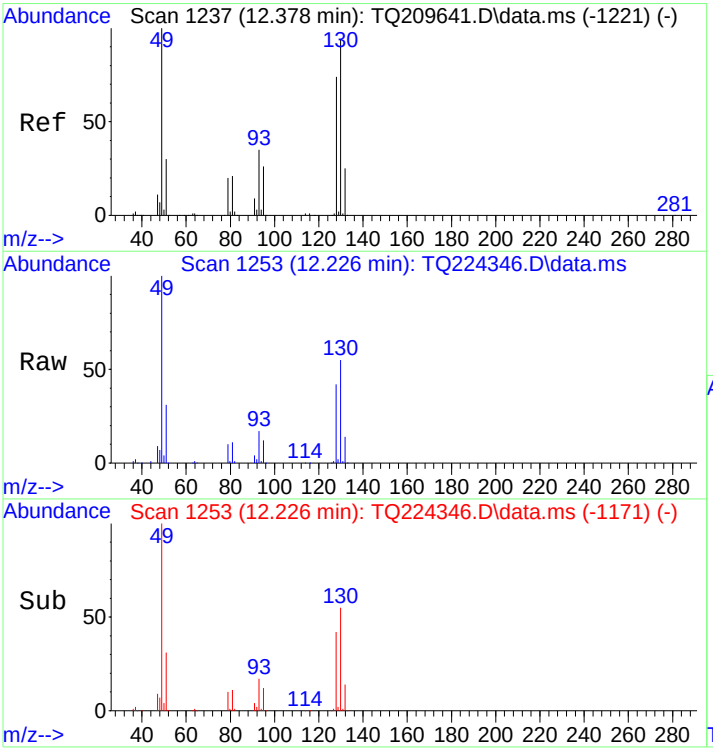
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224346.D
Acq On : 18 Mar 2023 12:08 am
Operator : AC
Sample : 23C0979-04
Misc : QBTO2031723A 0.533X/750ML
ALS Vial : 12 Sample Multiplier: 0.821
InstName : TO15_AIR2

Quant Time: Mar 20 12:34:48 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

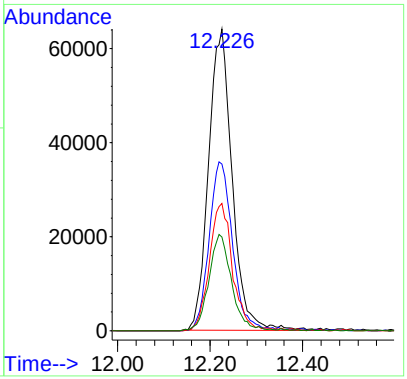


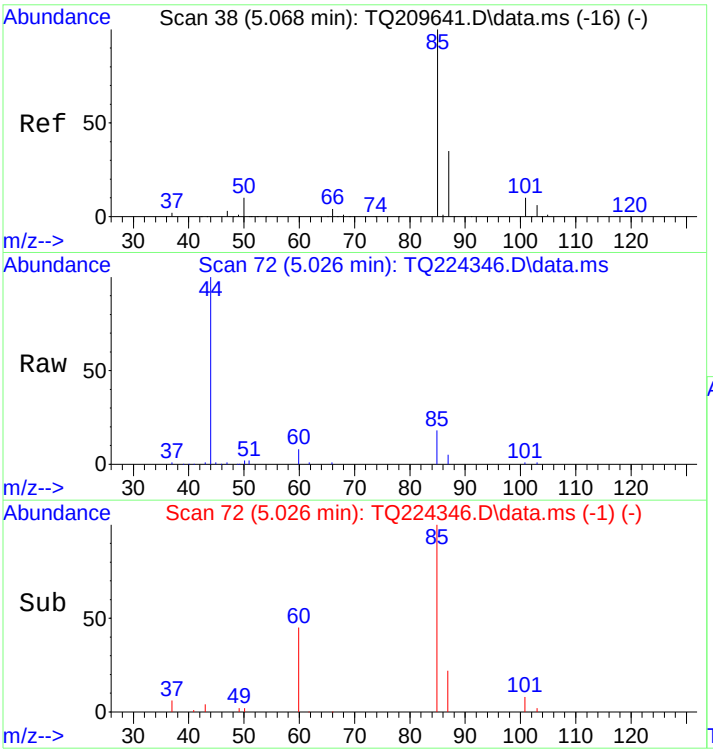


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.226 min Scan# 1253
Delta R.T. 0.001 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 49 Resp: 227328

Ion	Ratio	Lower	Upper
49	100		
130	56.7	48.1	99.9
128	42.3	38.3	79.5
51	31.2	20.3	42.3

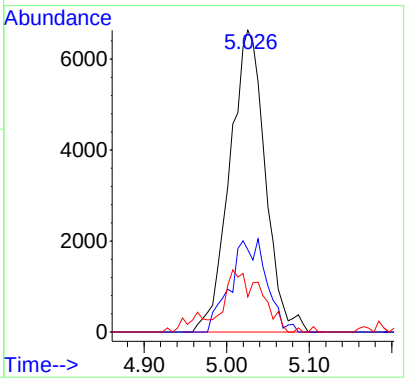


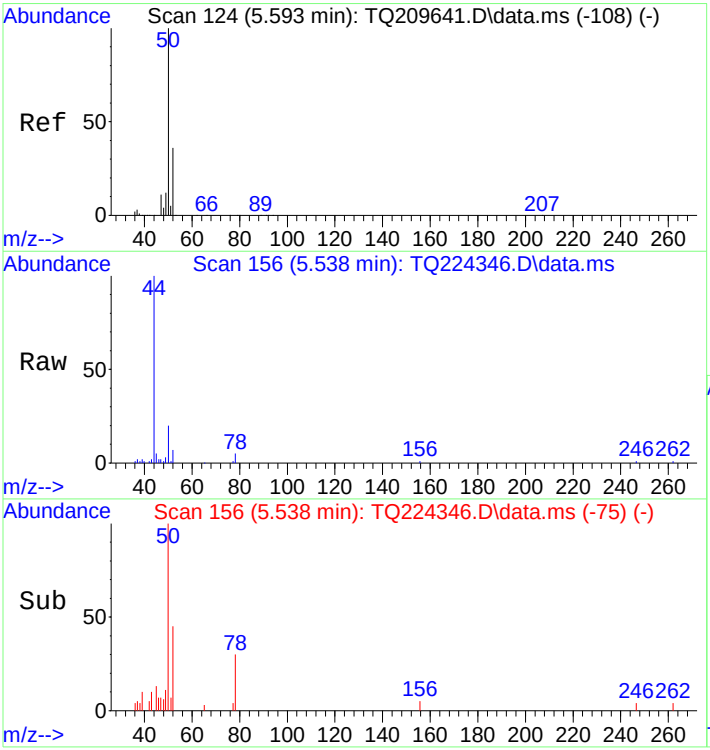


#3
Dichlorodifluoromethane
Concen: 0.53 ppbv
RT: 5.026 min Scan# 72
Delta R.T. -0.006 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 85 Resp: 19798

Ion	Ratio	Lower	Upper
85	100		
87	31.4	20.9	43.5
50	20.3	7.2	15.0#

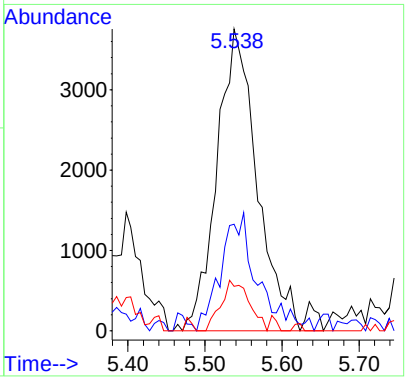


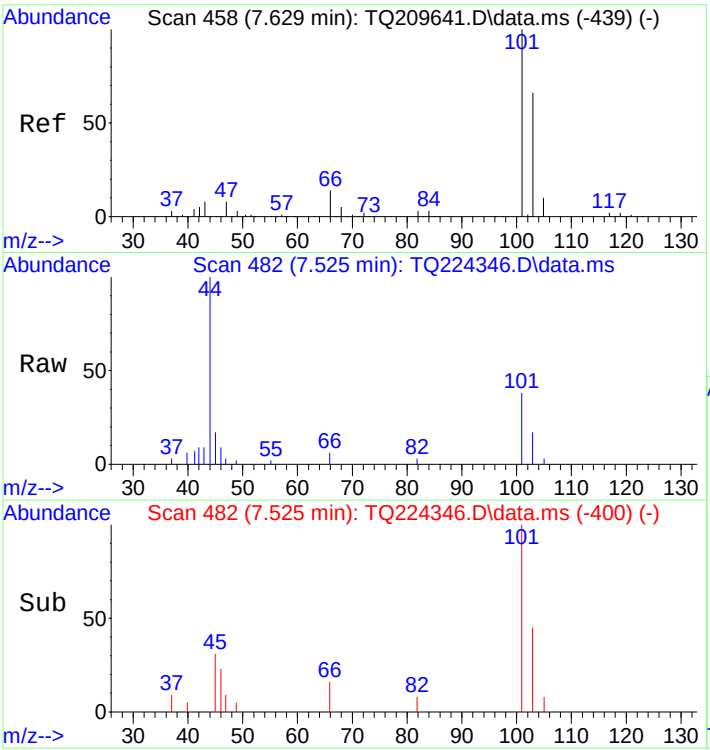


#5
Chloromethane
Concen: 0.68 ppbv
RT: 5.538 min Scan# 156
Delta R.T. -0.006 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 50 Resp: 13924

Ion	Ratio	Lower	Upper
50	100		
52	36.2	0.0	65.2
49	12.0	0.0	19.6

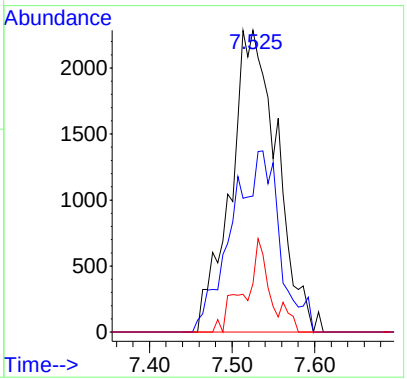


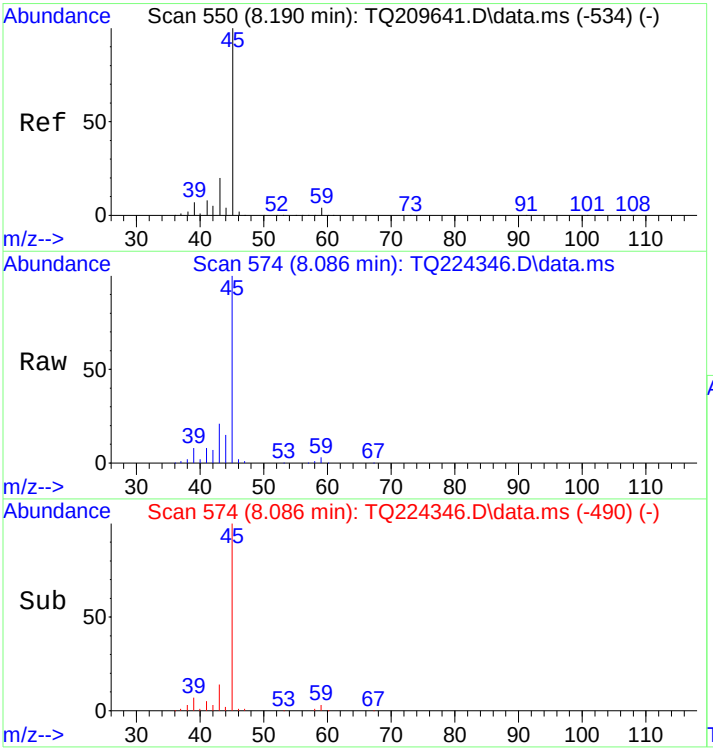


#11
Trichlorofluoromethane
Concen: 0.28 ppbv
RT: 7.525 min Scan# 482
Delta R.T. 0.000 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion:101 Resp: 8975

Ion	Ratio	Lower	Upper
101	100		
103	61.4	42.3	87.8
66	17.3	7.8	16.2#

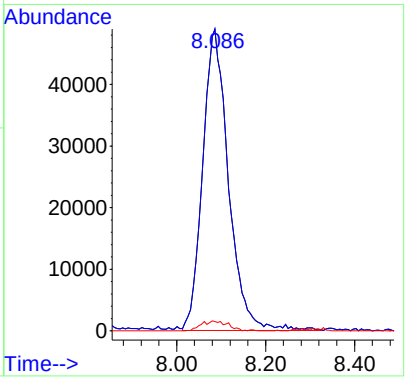


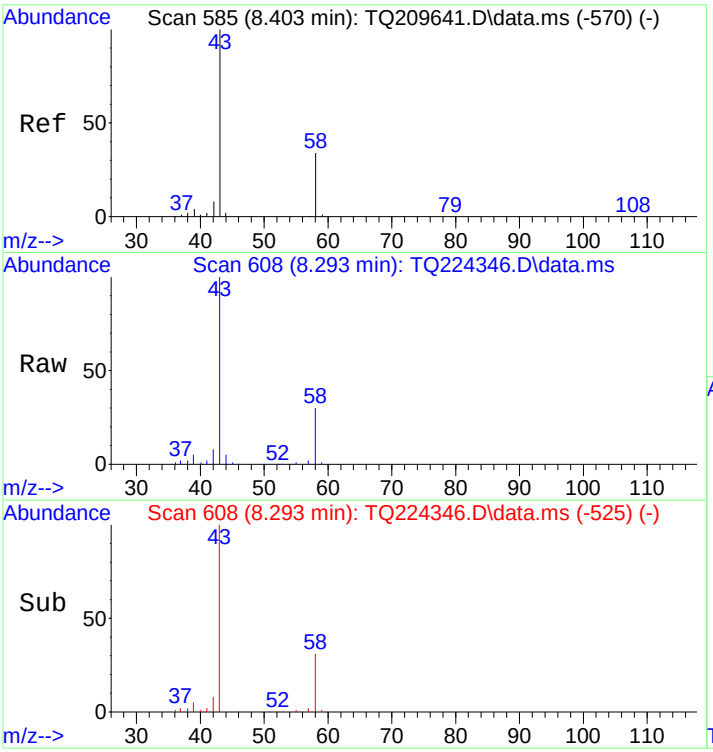


#12
Isopropanol
Concen: 4.73 ppbv
RT: 8.086 min Scan# 574
Delta R.T. 0.012 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 45 Resp: 197322

Ion	Ratio	Lower	Upper
45	100		
45	100.0	65.0	135.0
59	3.4	0.0	10.0

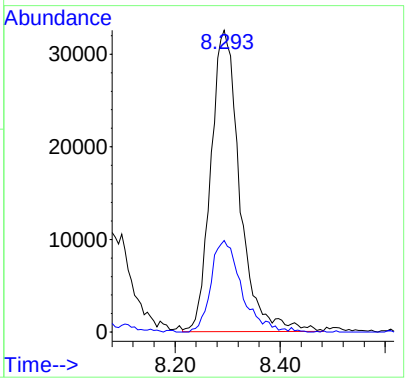


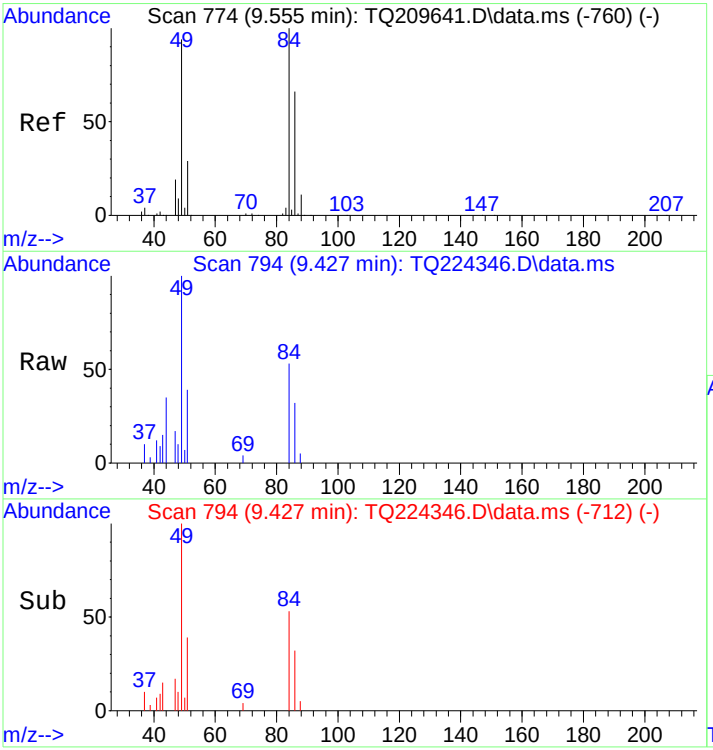


#14
Acetone
Concen: 3.47 ppbv
RT: 8.293 min Scan# 608
Delta R.T. 0.006 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 43 Resp: 124598

Ion	Ratio	Lower	Upper
43	100		
58	31.6	20.9	43.3

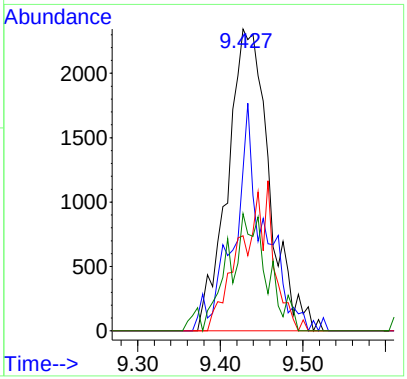


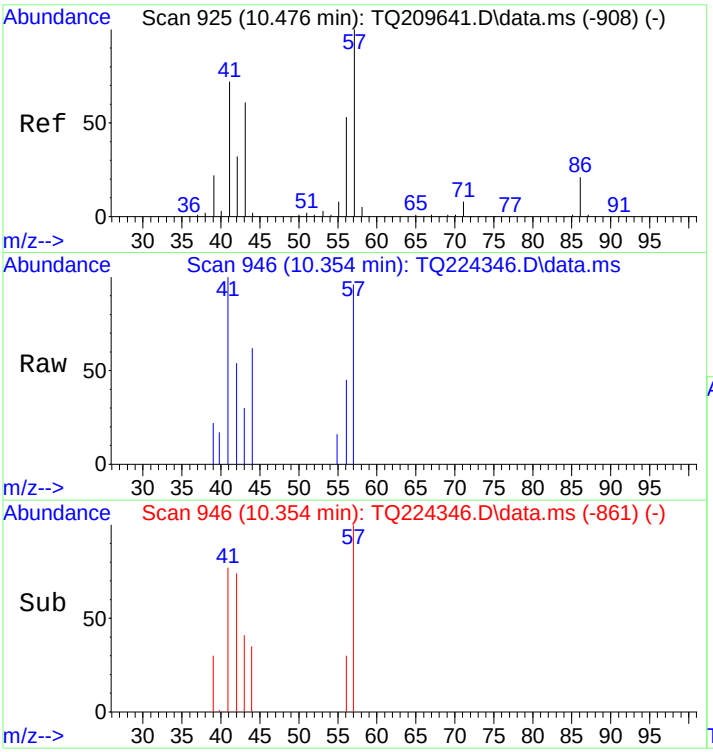


#18
Methylene Chloride
Concen: 0.34 ppbv
RT: 9.427 min Scan# 794
Delta R.T. 0.000 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 49 Resp: 8223

Ion	Ratio	Lower	Upper
49	100		
84	55.7	49.9	103.5
86	38.5	31.8	66.0
51	37.4	20.2	41.9

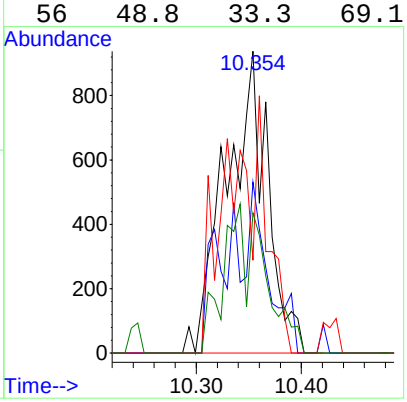


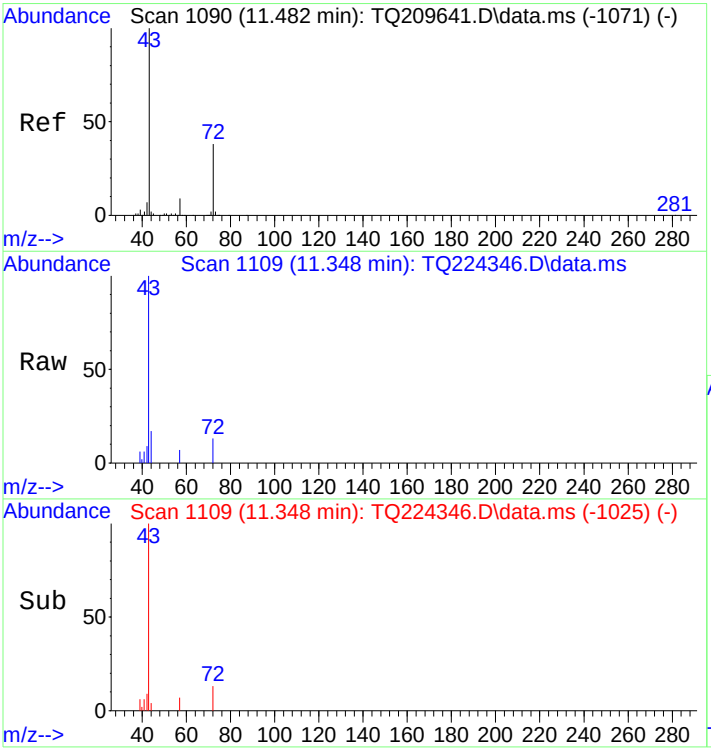


#23
Hexane
Concen: 0.09 ppbv
RT: 10.354 min Scan# 946
Delta R.T. 0.018 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 57 Resp: 2581

Ion	Ratio	Lower	Upper
57	100		
42	55.3	21.6	45.0#
43	79.7	42.0	87.2
56	48.8	33.3	69.1

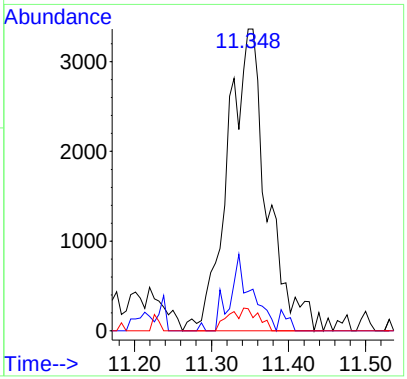


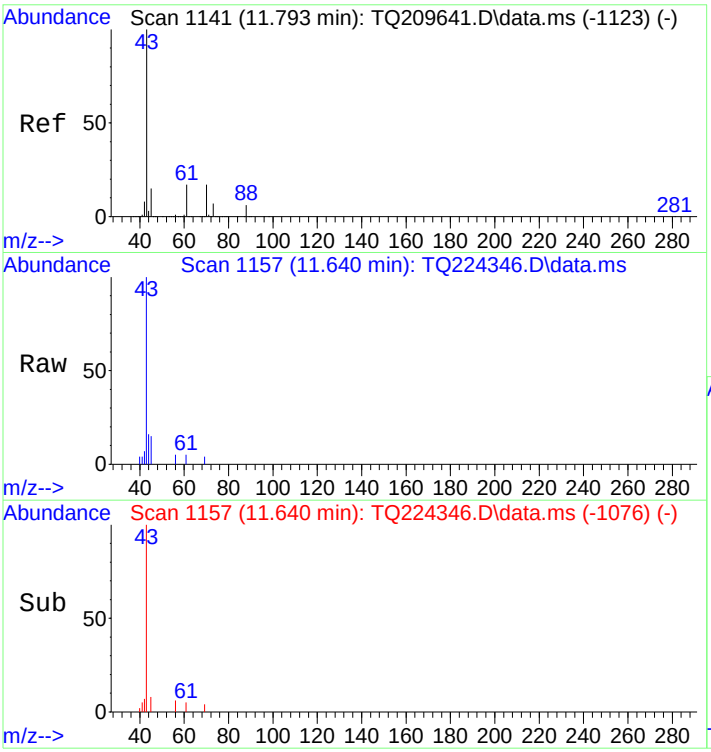


#26
2-Butanone
Concen: 0.26 ppbv
RT: 11.348 min Scan# 1109
Delta R.T. 0.013 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 43 Resp: 12006

Ion	Ratio	Lower	Upper
43	100		
72	15.6	16.1	33.5#
57	5.6	4.9	10.3

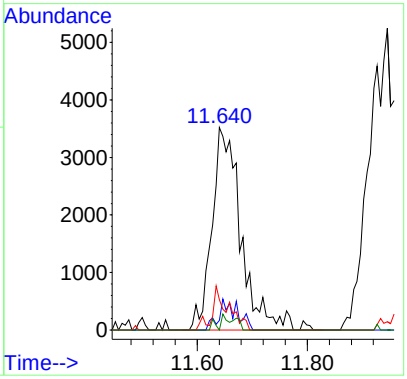


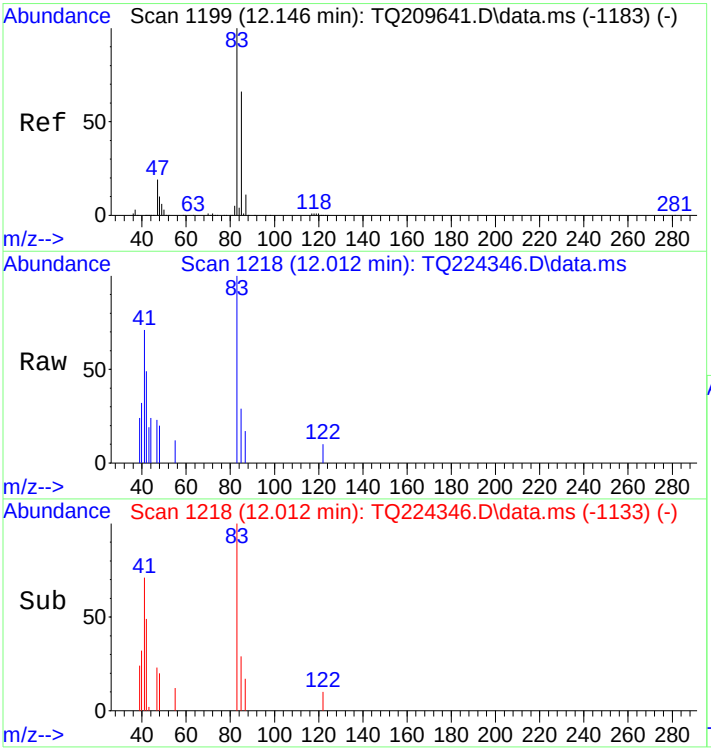


#27
Ethyl Acetate
Concen: 0.26 ppbv
RT: 11.640 min Scan# 1157
Delta R.T. -0.006 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 43 Resp: 12892

Ion	Ratio	Lower	Upper
43	100		
61	9.7	51.4	106.8#
45	12.2	9.4	19.6
70	4.0	7.5	15.5#

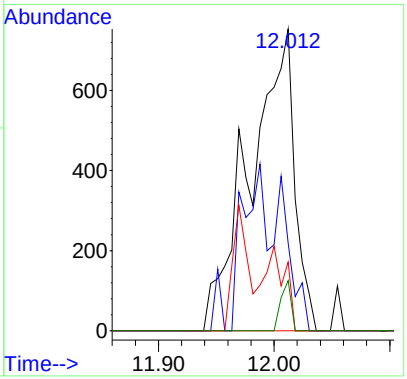


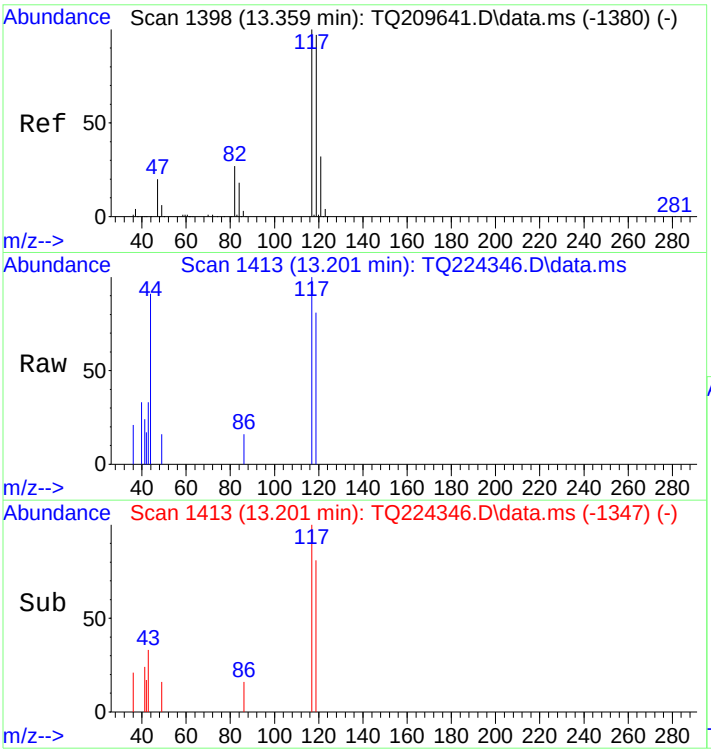


#29
Chloroform
Concen: 0.07 ppbv
RT: 12.012 min Scan# 1218
Delta R.T. 0.018 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 83 Resp: 2017

Ion	Ratio	Lower	Upper
83	100		
85	49.5	41.7	86.7
47	27.6	15.1	31.5
87	0.0	6.7	13.9#

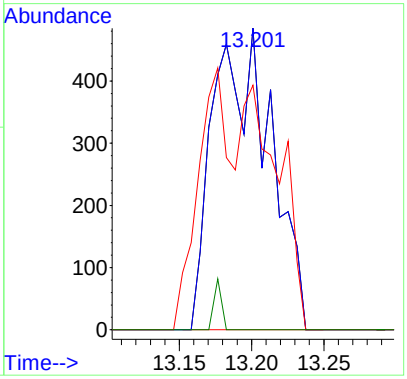


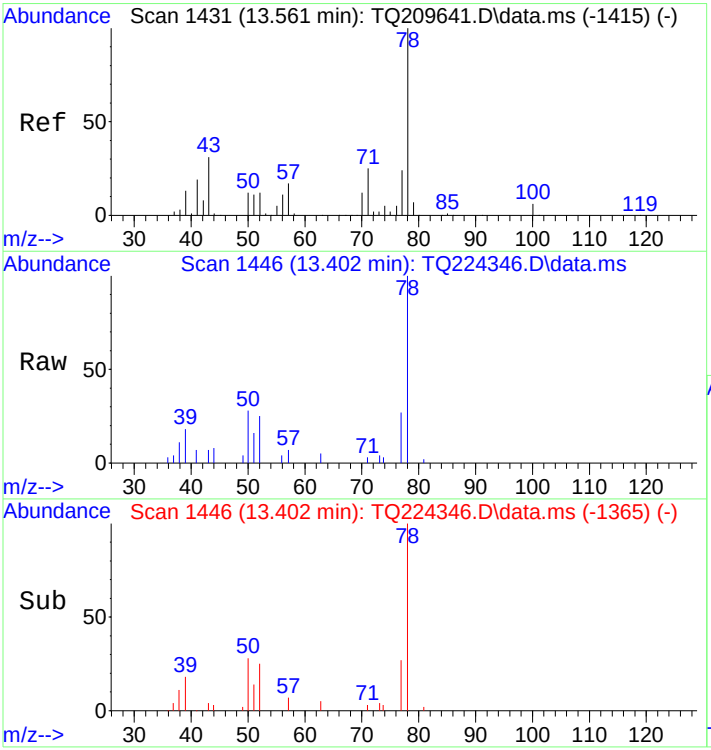


#33
Carbon Tetrachloride
Concen: 0.07 ppbv
RT: 13.201 min Scan# 1413
Delta R.T. -0.000 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion:117 Resp: 1337

Ion	Ratio	Lower	Upper
117	100		
117	100.0	80.0	120.0
119	0.0	76.9	115.3#
121	0.0	21.7	40.3#

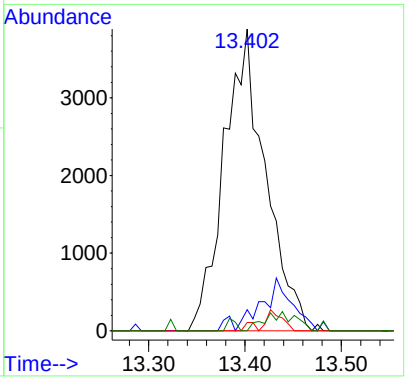


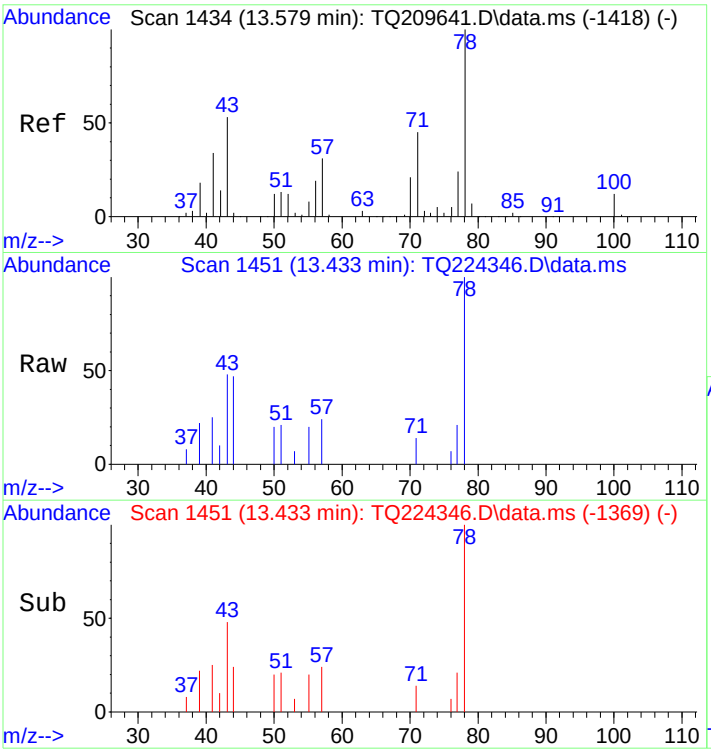


#35
Benzene
Concen: 0.22 ppbv
RT: 13.402 min Scan# 1446
Delta R.T. -0.006 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 78 Resp: 11615

Ion	Ratio	Lower	Upper
78	100		
43	14.0	37.5	77.9#
71	0.0	22.0	45.8#
42	5.9	8.8	18.4#

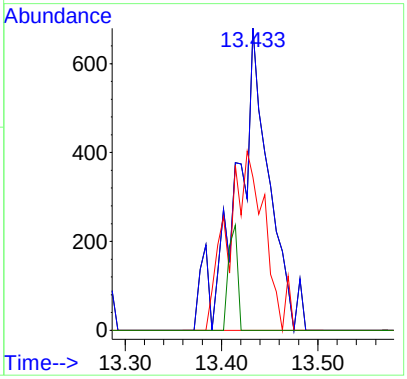


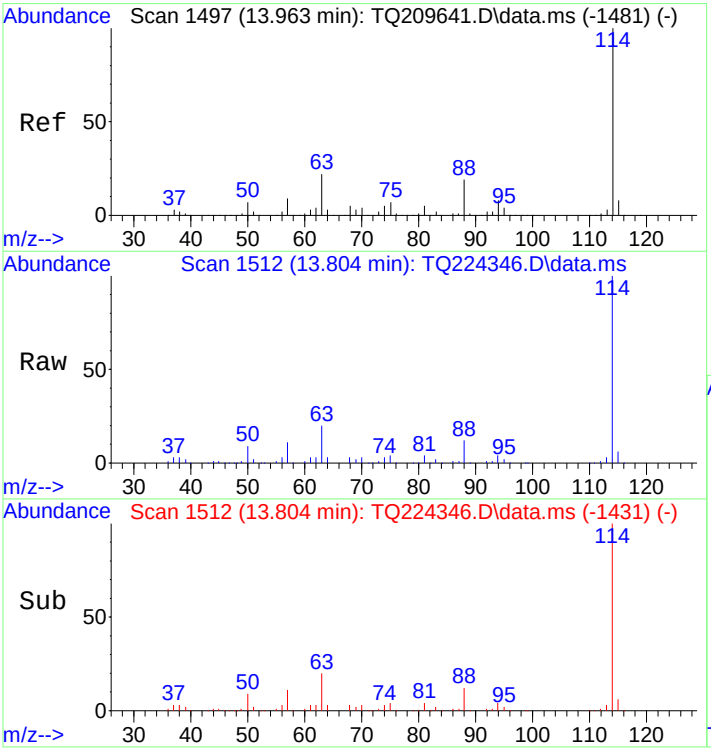


#36
n-Heptane
Concen: 0.04 ppbv
RT: 13.433 min Scan# 1451
Delta R.T. -0.000 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 43 Resp: 1626

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

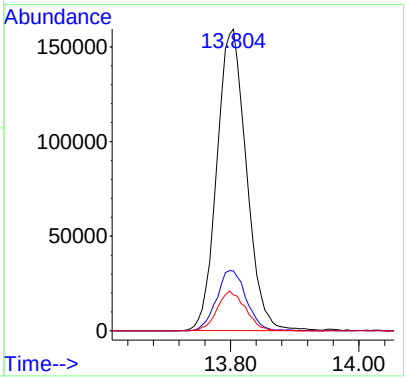


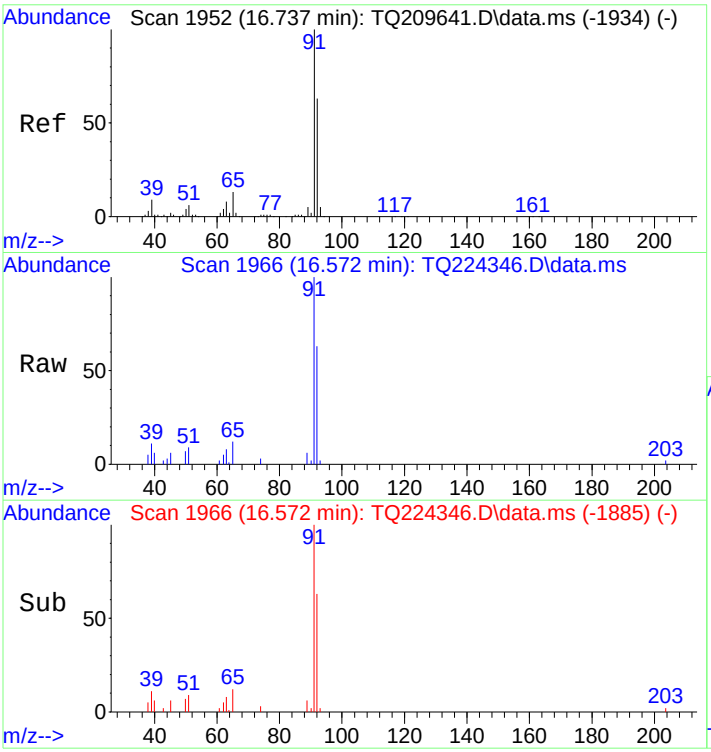


#37
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.804 min Scan# 1512
Delta R.T. -0.007 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion:114 Resp: 507983

Ion	Ratio	Lower	Upper
114	100		
63	20.2	12.9	26.9
88	12.7	10.7	22.3

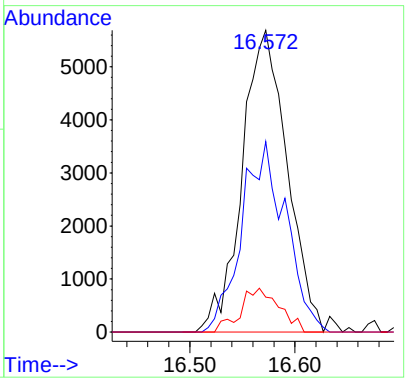


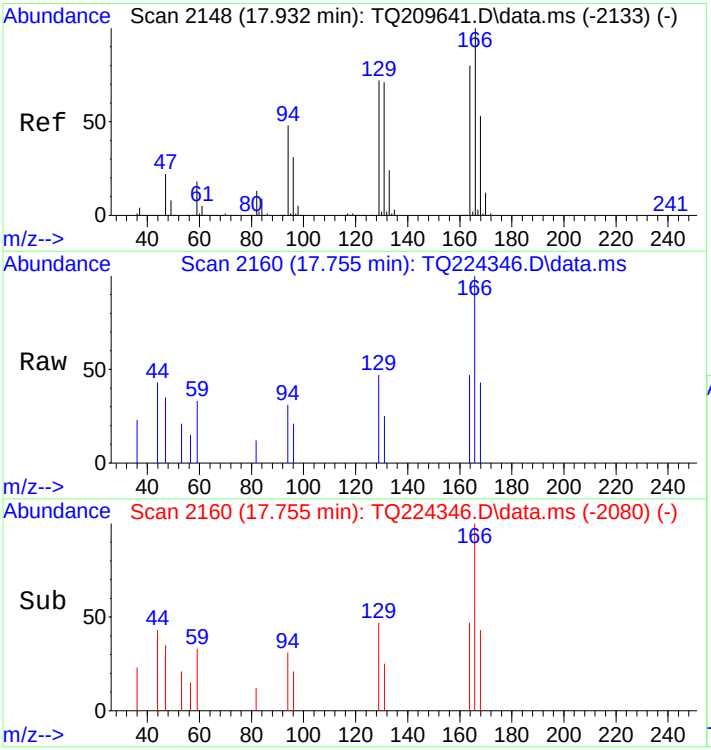


#45
Toluene
Concen: 0.27 ppbv
RT: 16.572 min Scan# 1966
Delta R.T. -0.006 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 91 Resp: 16988

Ion	Ratio	Lower	Upper
91	100		
92	61.6	38.7	80.3
65	12.5	7.5	15.5

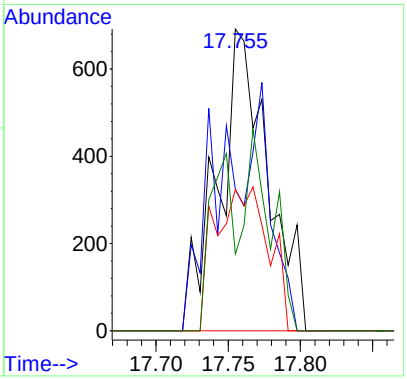


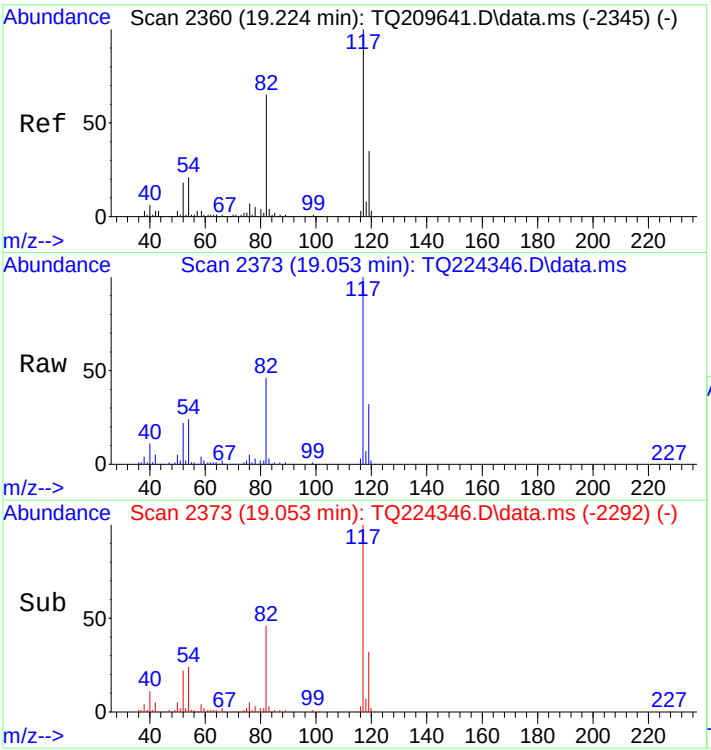


#50
Tetrachloroethylene
Concen: 0.06 ppbv
RT: 17.755 min Scan# 2160
Delta R.T. -0.012 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion:166 Resp: 1664

Ion	Ratio	Lower	Upper
166	100		
164	80.5	51.0	106.0
129	50.6	48.1	99.9
131	62.4	46.3	96.3

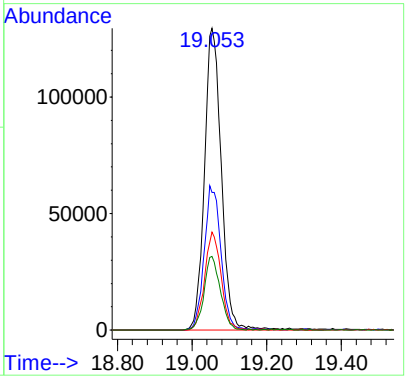


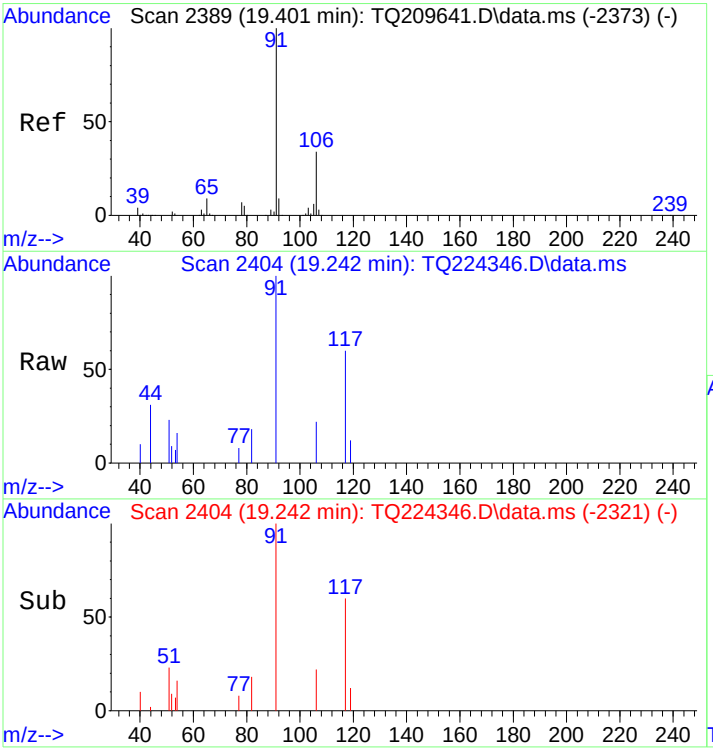


#53
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.053 min Scan# 2373
Delta R.T. -0.007 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion:117 Resp: 408472

Ion	Ratio	Lower	Upper
117	100		
82	47.6	37.1	77.1
119	31.9	22.1	45.9
54	23.6	13.8	28.6

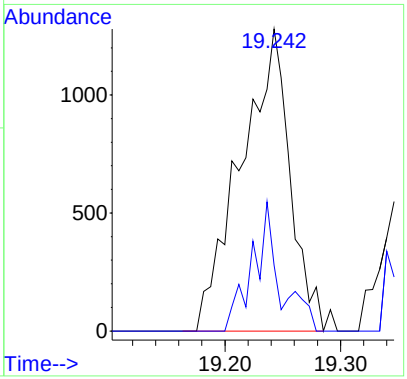


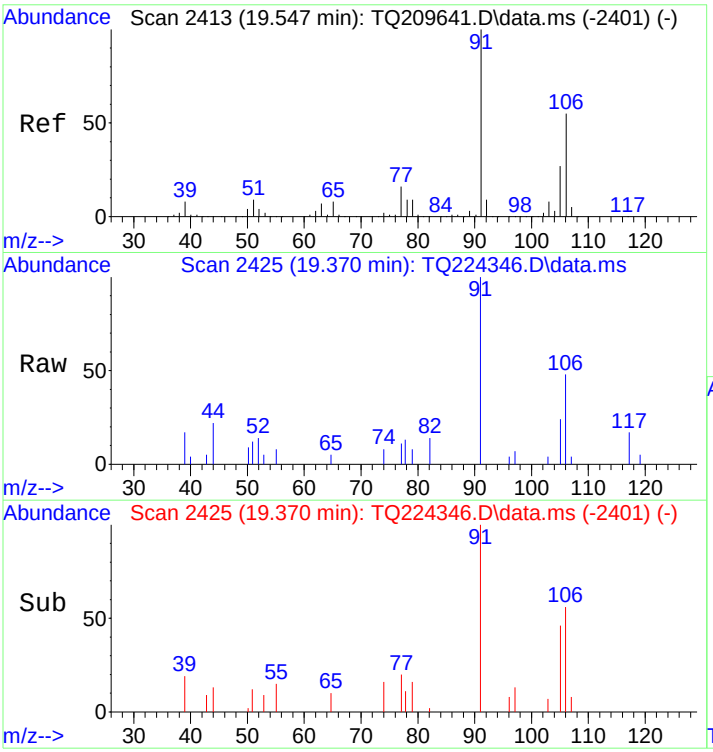


#56
Ethylbenzene
Concen: 0.05 ppbv
RT: 19.242 min Scan# 2404
Delta R.T. 0.006 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 91 Resp: 3779

Ion	Ratio	Lower	Upper
91	100		
106	23.8	20.5	42.7

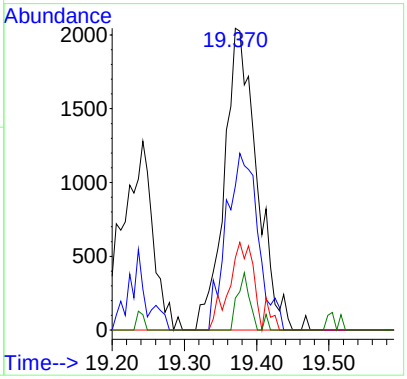


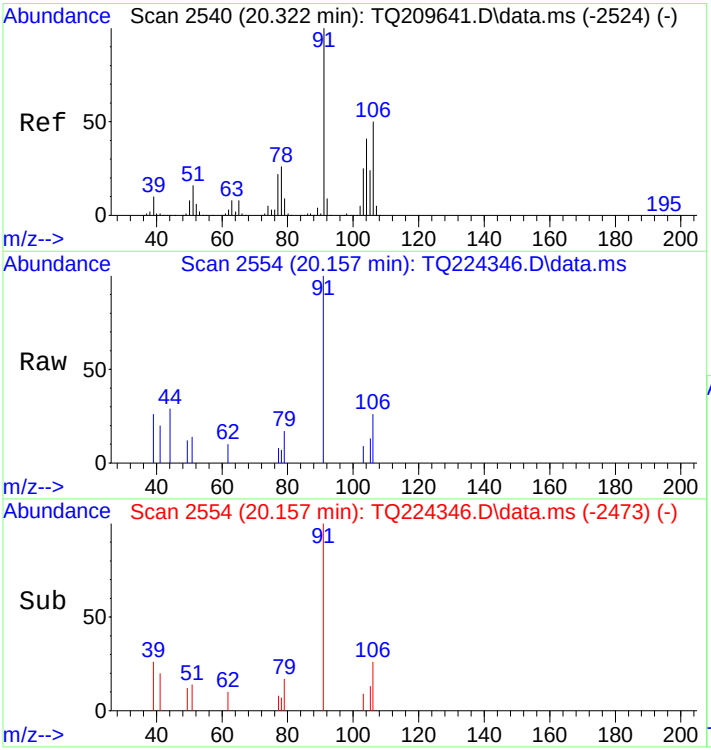


#57
p- & m-Xylenes
Concen: 0.12 ppbv
RT: 19.370 min Scan# 2425
Delta R.T. -0.013 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 91 Resp: 6425

Ion	Ratio	Lower	Upper
91	100		
106	57.2	32.6	67.8
105	23.7	14.5	30.1
77	0.0	8.5	17.7#

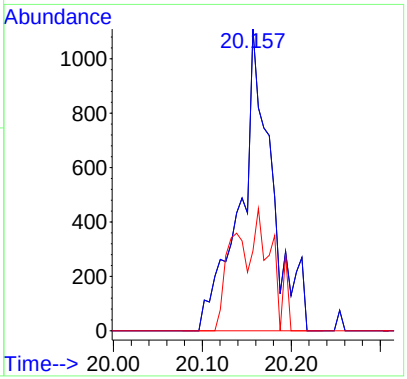


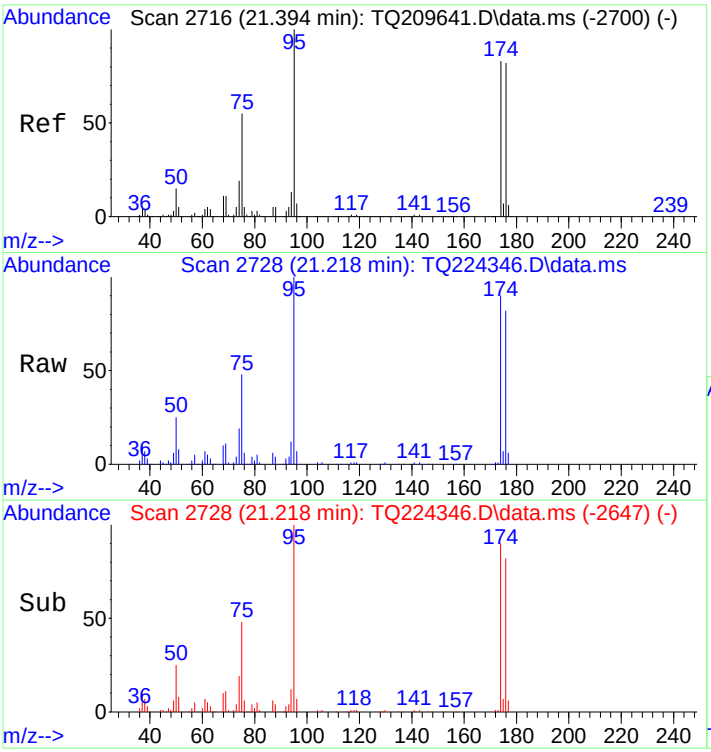


#58
o-Xylene
Concen: 0.05 ppbv
RT: 20.157 min Scan# 2554
Delta R.T. -0.006 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 91 Resp: 2760

Ion	Ratio	Lower	Upper
91	100		
91	100.0	80.0	120.0
106	46.6	38.2	57.2

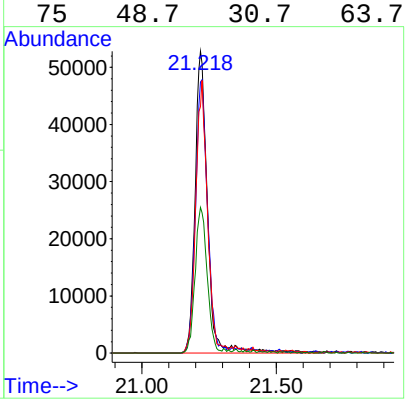




#64
p-Bromofluorobenzene
Concen: 8.08 ppbv
RT: 21.218 min Scan# 2728
Delta R.T. -0.006 min
Lab File: TQ224346.D
Acq: 18 Mar 2023 12:08 am

Tgt Ion: 95 Resp: 170989

Ion	Ratio	Lower	Upper
95	100		
174	90.8	53.2	110.6
176	87.5	51.6	107.2
75	48.7	30.7	63.7



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA TO-15

AA01_031723

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	23C0979-05	File ID:	TO298052.D
Sampled:	03/17/23 08:26	Prepared:	03/18/23 10:00	Analyzed:	03/18/23 18:43
Solids:		Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Batch:	BC31255	Sequence:	S3C1903	Calibration:	SB30018
Instrument:	5975C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³)	Q
71-55-6	1,1,1-Trichloroethane	0.916	0.500	U
75-34-3	1,1-Dichloroethane	0.916	0.371	U
75-35-4	1,1-Dichloroethylene	0.916	0.182	U
107-06-2	1,2-Dichloroethane	0.916	0.371	U
156-59-2	cis-1,2-Dichloroethylene	0.916	0.182	U
75-09-2	Methylene chloride	0.916	1.15	D
127-18-4	Tetrachloroethylene	0.916	0.621	U
156-60-5	trans-1,2-Dichloroethylene	0.916	0.363	U
79-01-6	Trichloroethylene	0.916	0.123	U
75-01-4	Vinyl Chloride	0.916	0.117	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	205418	12.227	214720	12.22	
ISTD: 1,4-Difluorobenzene	582399	13.777	644908	13.771	
ISTD: d5-Chlorobenzene	473592	19.007	640123	19.006	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\031823A\
Data File : TO298052.D
Acq On : 18 Mar 2023 6:43 pm
Operator : VH
Sample : 23C0979-05
Misc : QBTO1031823A 0.533X/750ML
ALS Vial : 5 Sample Multiplier: 0.916
InstName : 5975C

Quant Time: Mar 19 11:06:33 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

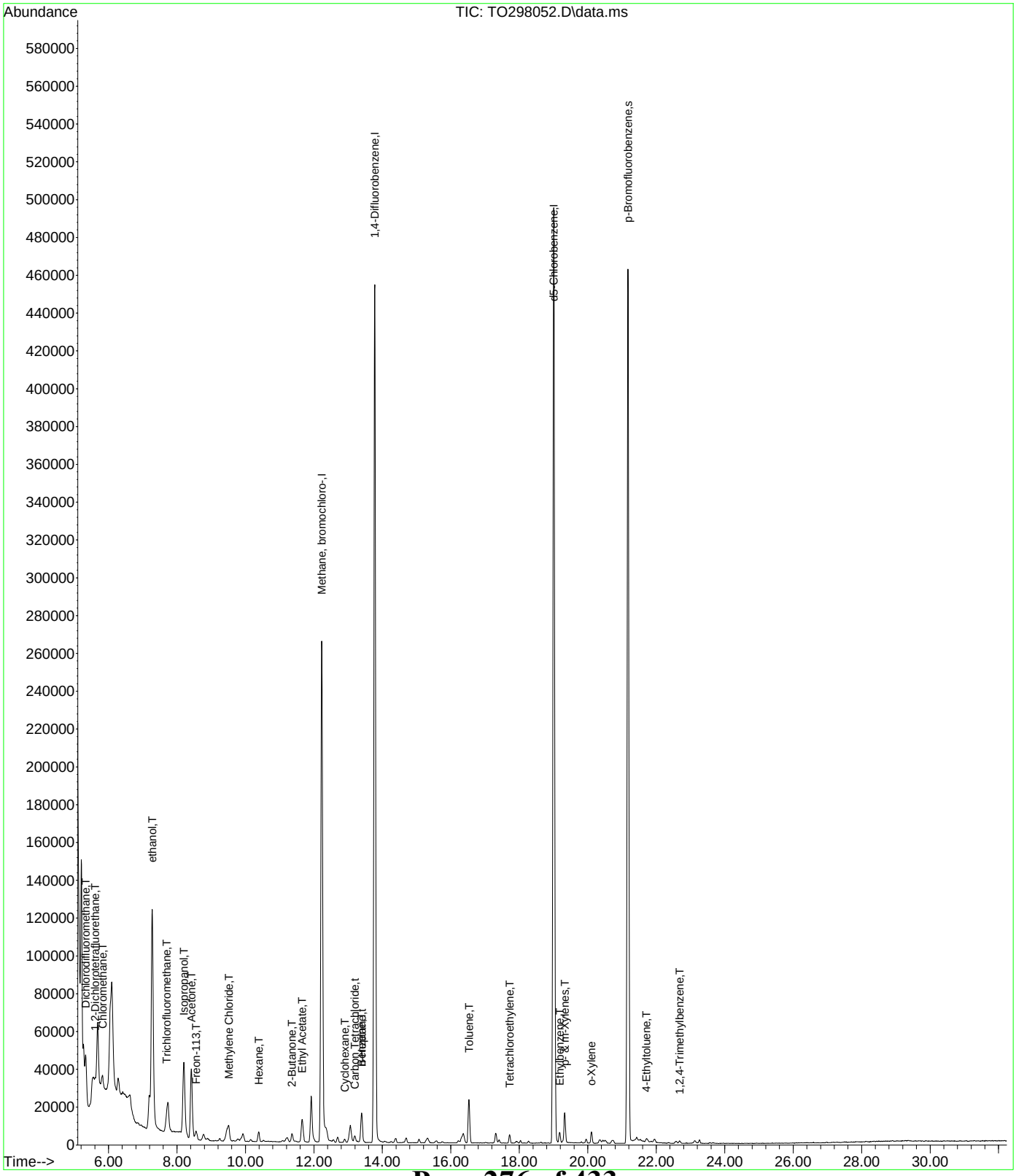
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.227	49	205418	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.777	114	582399	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.007	117	473592	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	235232	10.74	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 107.40%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	5.335	85	29735	0.58	ppbv #	93
4) 1,2-Dichlorotetrafluor...	5.608	85	2698	0.03	ppbv	89
5) Chloromethane	5.825	50	13853m	0.79	ppbv	
10) ethanol	7.277	45	127045	22.41	ppbv	86
12) Trichlorofluoromethane	7.698	101	13759	0.28	ppbv	96
13) Isopropanol	8.201	45	86213	2.78	ppbv	100
15) Acetone	8.418	43	89702	2.99	ppbv	100
16) Freon-113	8.561	101	3263	0.08	ppbv	94
19) Methylene Chloride	9.516	49	7581	0.36	ppbv	96
24) Hexane	10.384	57	4062	0.16	ppbv	88
27) 2-Butanone	11.358	43	12084	0.37	ppbv	91
28) Ethyl Acetate	11.650	43	25166	0.67	ppbv	97
33) Cyclohexane	12.903	56	1342	0.05	ppbv #	77
34) Carbon Tetrachloride	13.194	117	3325	0.08	ppbv #	58
36) Benzene	13.393	78	18703	0.25	ppbv #	100
37) n-Heptane	13.399	43	2812	0.06	ppbv #	96
46) Toluene	16.532	91	30385	0.44	ppbv	99
51) Tetrachloroethylene	17.716	166	2168	0.06	ppbv	97
57) Ethylbenzene	19.180	91	7825	0.12	ppbv	98
58) p- & m-Xylenes	19.329	91	16741	0.20	ppbv	96
59) o-Xylene	20.104	91	6276	0.08	ppbv	99
66) 4-Ethyltoluene	21.711	105	4006	0.04	ppbv #	80
69) 1,2,4-Trimethylbenzene	22.679	105	2924	0.04	ppbv #	91

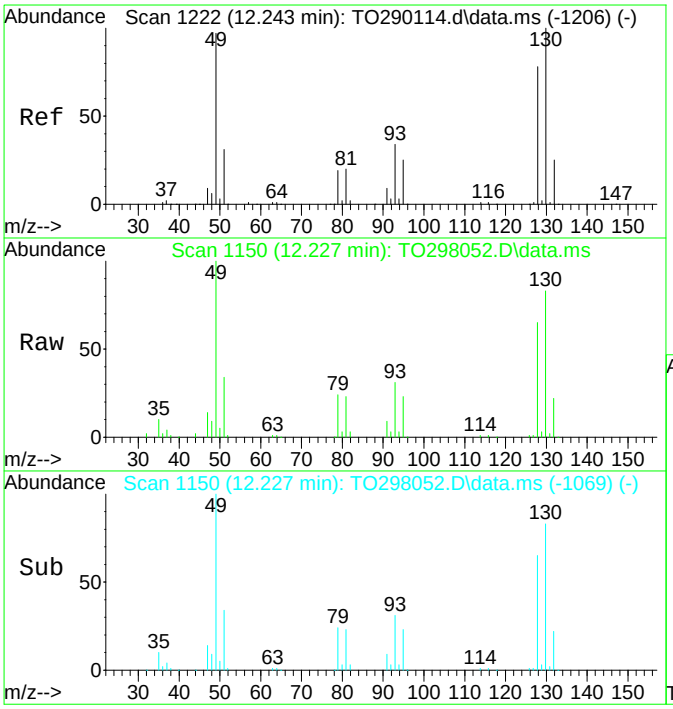
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\031823A\
Data File : TO298052.D
Acq On : 18 Mar 2023 6:43 pm
Operator : VH
Sample : 23C0979-05
Misc : QBTO1031823A 0.533X/750ML
ALS Vial : 5 Sample Multiplier: 0.916
InstName : 5975C

Quant Time: Mar 19 11:06:33 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

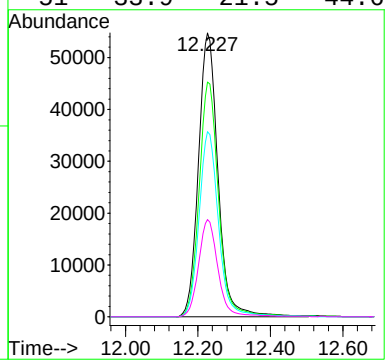


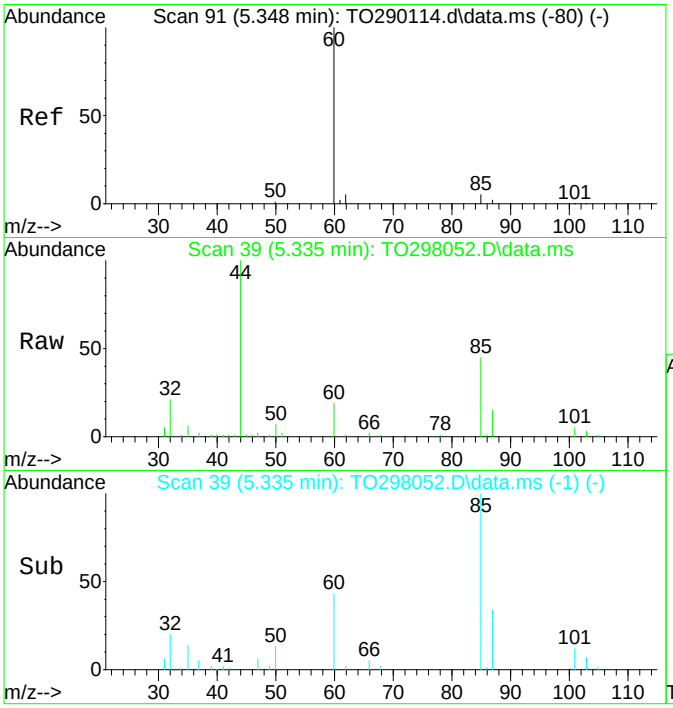


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.227 min Scan# 1150
Delta R.T. 0.003 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 49 Resp: 205418

Ion	Ratio	Lower	Upper
49	100		
130	81.6	44.5	92.3
128	64.7	34.7	72.1
51	33.9	21.5	44.6

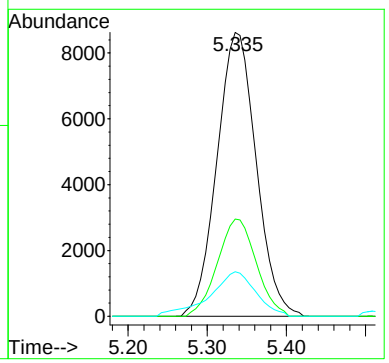


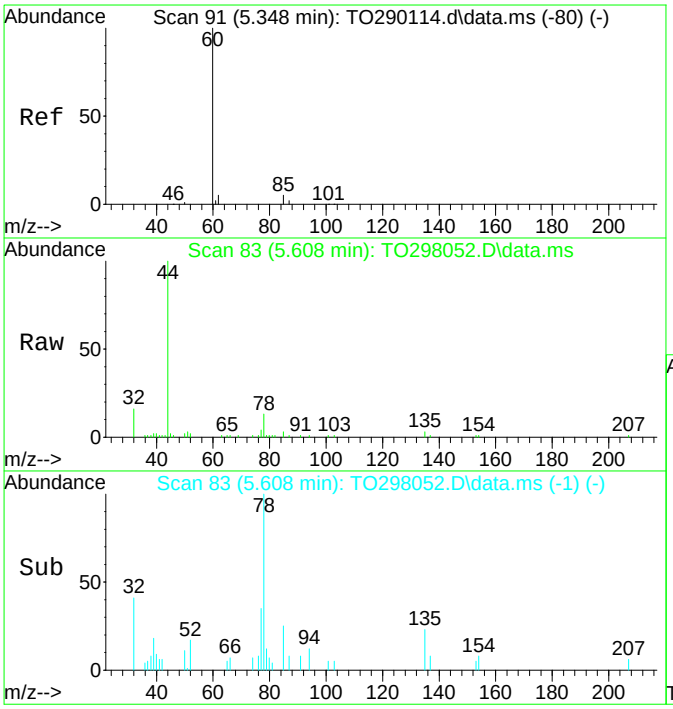


#3
Dichlorodifluoromethane
Concen: 0.58 ppbv
RT: 5.335 min Scan# 39
Delta R.T. 0.002 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 85 Resp: 29735

Ion	Ratio	Lower	Upper
85	100		
87	33.9	21.0	43.6
50	18.5	6.8	14.2#

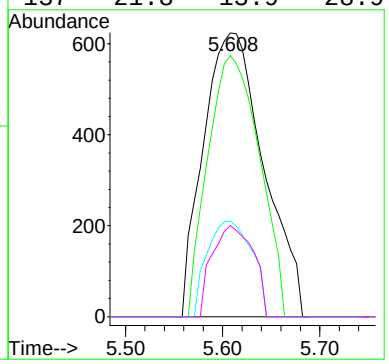


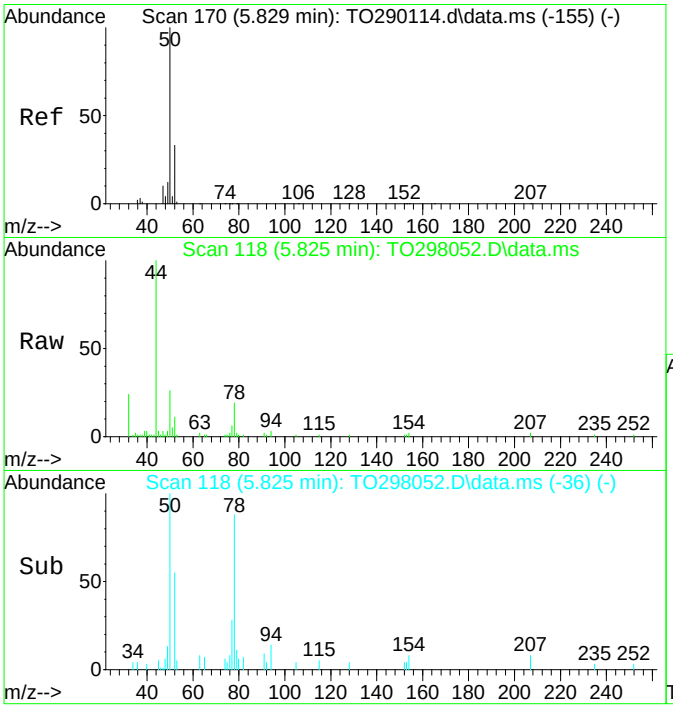


#4
1,2-Dichlorotetrafluorethane
Concen: 0.03 ppbv
RT: 5.608 min Scan# 83
Delta R.T. 0.015 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 85 Resp: 2698

Ion	Ratio	Lower	Upper
85	100		
135	78.4	43.7	90.7
87	24.9	20.9	43.3
137	21.8	13.9	28.9

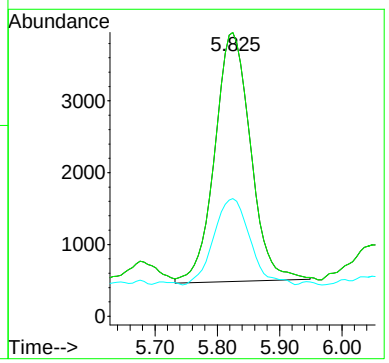


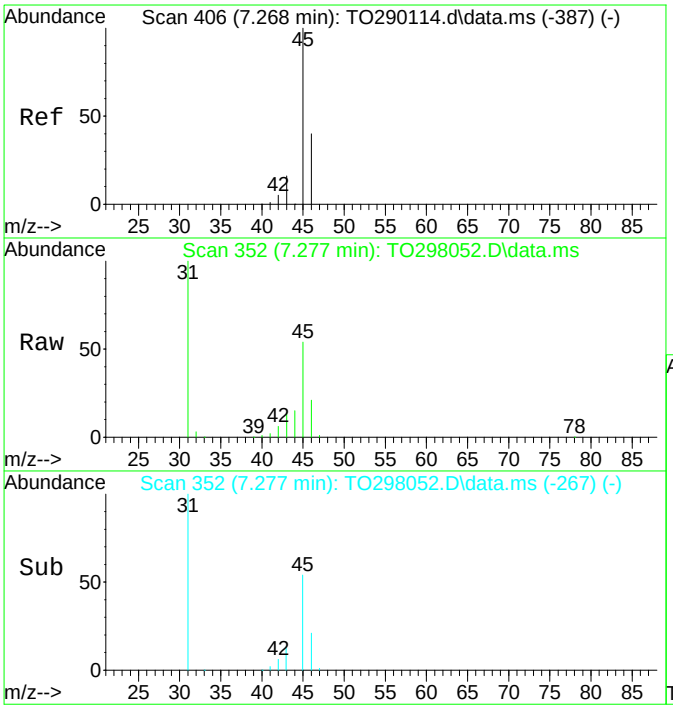


#5
Chloromethane
Concen: 0.79 ppbv m
RT: 5.825 min Scan# 118
Delta R.T. 0.008 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 50 Resp: 13853

Ion	Ratio	Lower	Upper
50	100		
50	119.2	65.0	135.0
52	35.2	16.5	49.5

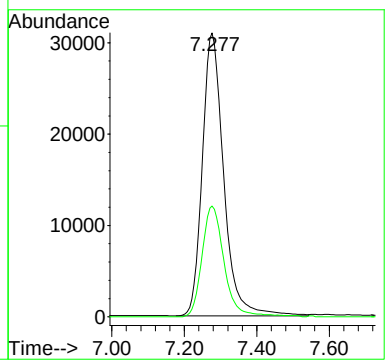


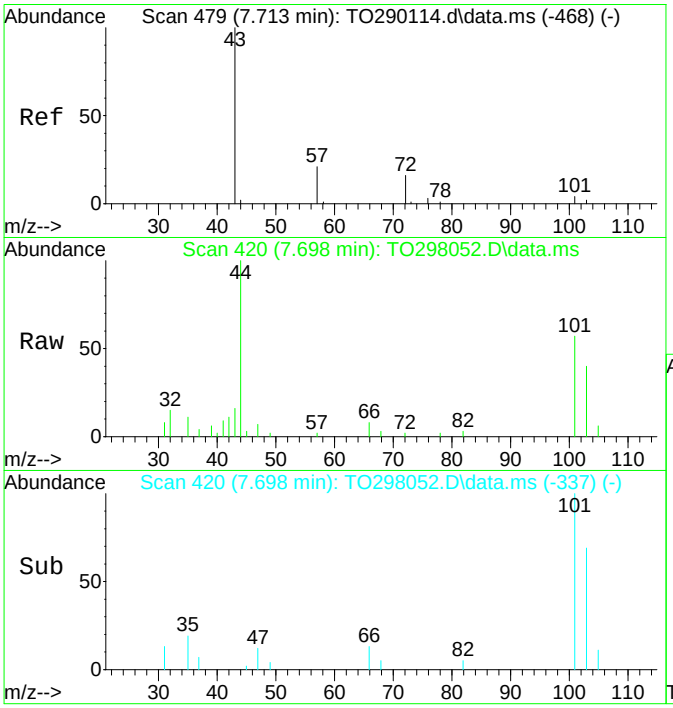


#10
ethanol
Concen: 22.41 ppbv
RT: 7.277 min Scan# 352
Delta R.T. 0.028 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 45 Resp: 127045

Ion	Ratio	Lower	Upper
45	100		
46	40.5	40.0	60.0

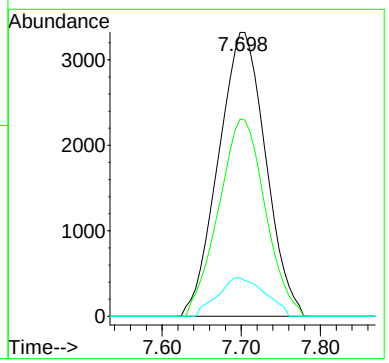


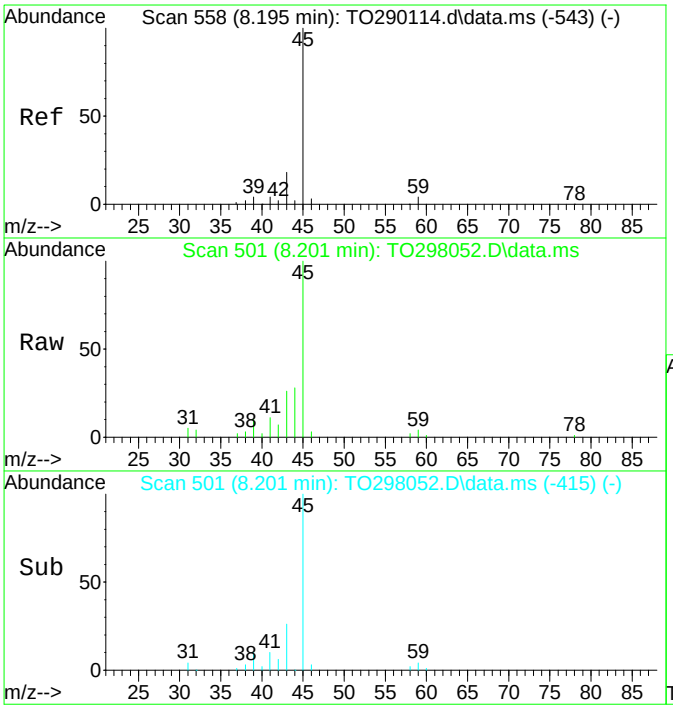


#12
Trichlorofluoromethane
Concen: 0.28 ppbv
RT: 7.698 min Scan# 420
Delta R.T. 0.014 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion:101 Resp: 13759

Ion	Ratio	Lower	Upper
101	100		
103	68.5	42.4	88.0
66	13.6	7.9	16.5

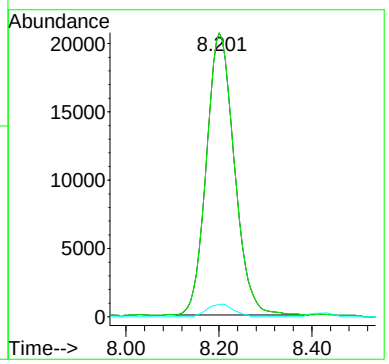


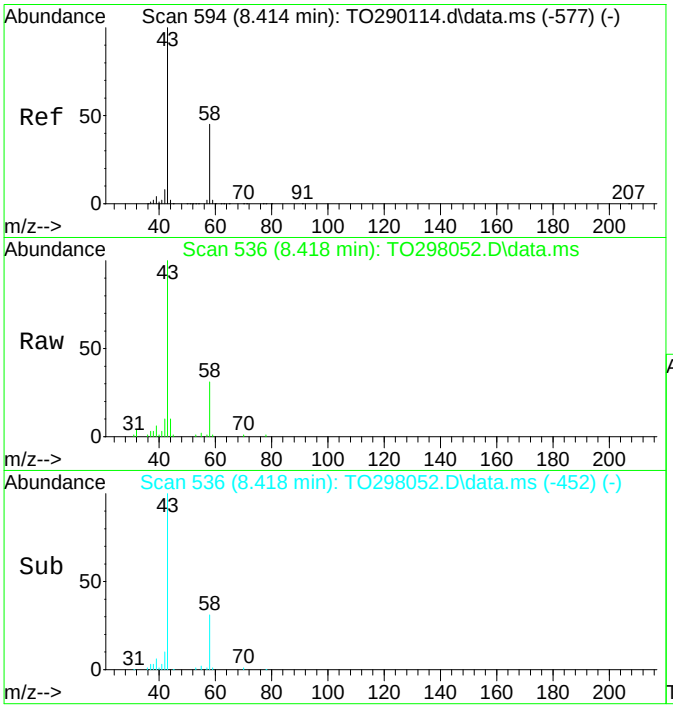


#13
Isopropanol
Concen: 2.78 ppbv
RT: 8.201 min Scan# 501
Delta R.T. 0.034 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 45 Resp: 86213

Ion	Ratio	Lower	Upper
45	100		
45	100.0	65.0	135.0
59	4.3	0.0	8.4

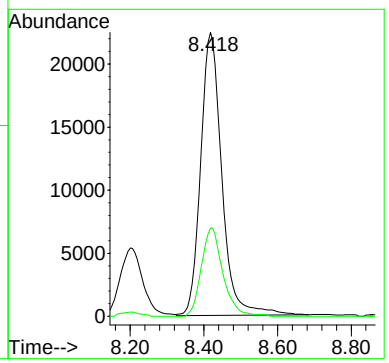


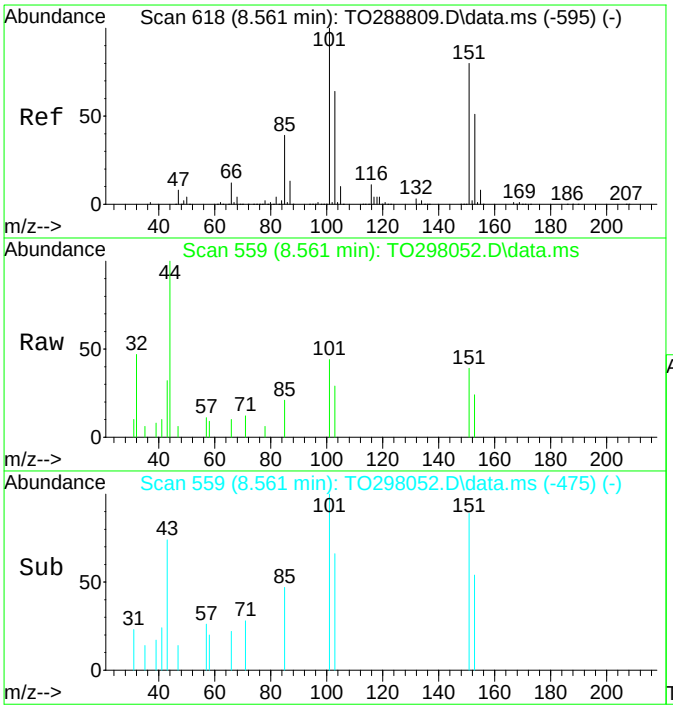


#15
Acetone
Concen: 2.99 ppbv
RT: 8.418 min Scan# 536
Delta R.T. 0.021 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 43 Resp: 89702

Ion	Ratio	Lower	Upper
43	100		
58	31.5	20.7	42.9

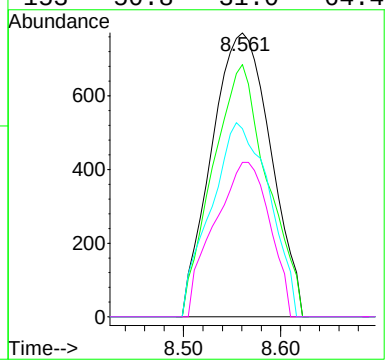


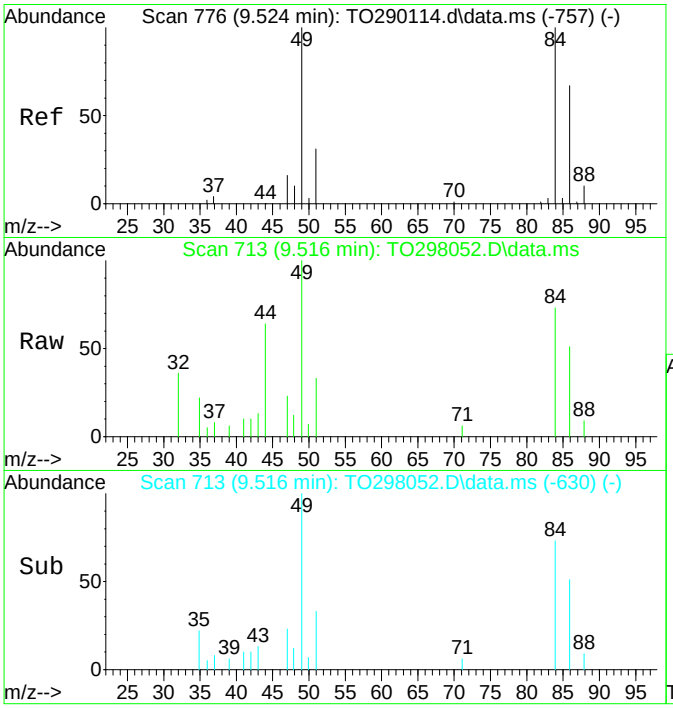


#16
Freon-113
Concen: 0.08 ppbv
RT: 8.561 min Scan# 559
Delta R.T. 0.021 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion:101 Resp: 3263

Ion	Ratio	Lower	Upper
101	100		
151	82.4	48.6	100.8
103	67.5	42.0	87.2
153	50.8	31.0	64.4

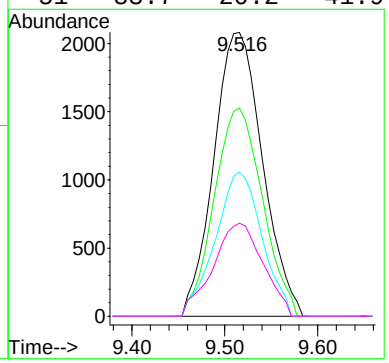


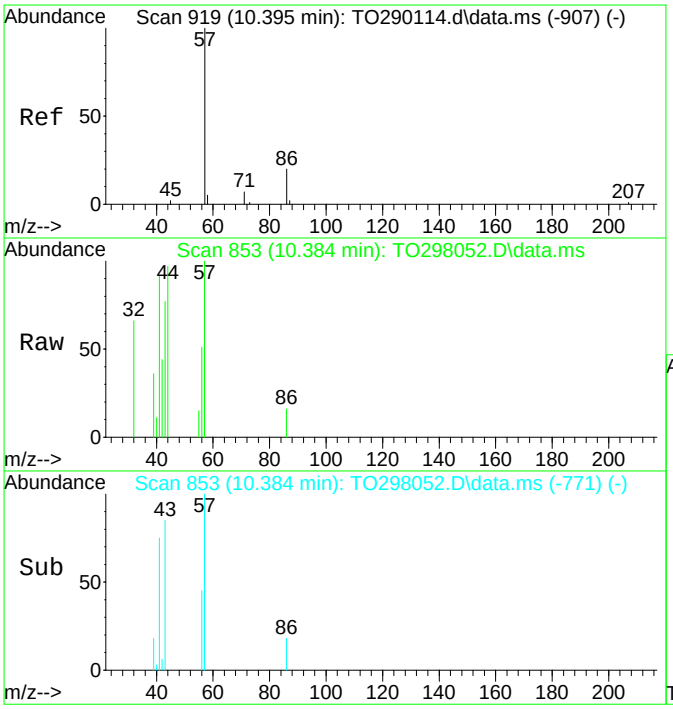


#19
Methylene Chloride
Concen: 0.36 ppbv
RT: 9.516 min Scan# 713
Delta R.T. 0.015 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 49 Resp: 7581

Ion	Ratio	Lower	Upper
49	100		
84	72.6	50.1	104.0
86	48.7	32.2	66.8
51	33.7	20.2	41.9

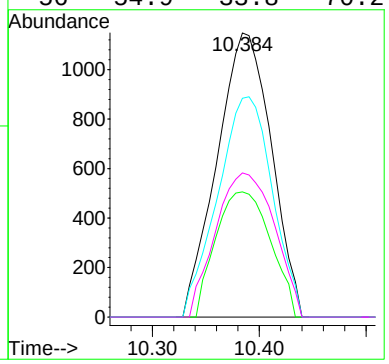


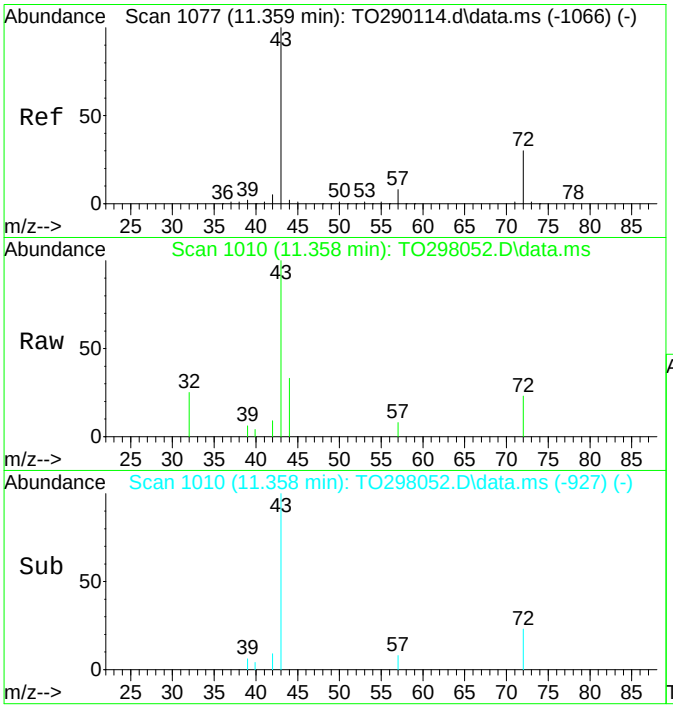


#24
Hexane
Concen: 0.16 ppbv
RT: 10.384 min Scan# 853
Delta R.T. 0.008 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 57 Resp: 4062

Ion	Ratio	Lower	Upper
57	100		
42	44.4	22.2	46.0
43	77.9	42.9	89.1
56	54.9	33.8	70.2

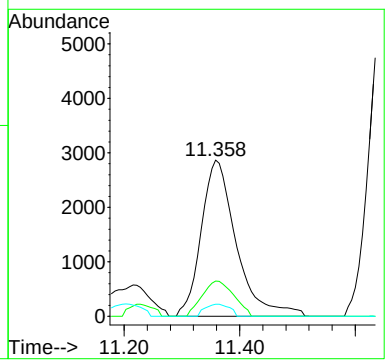


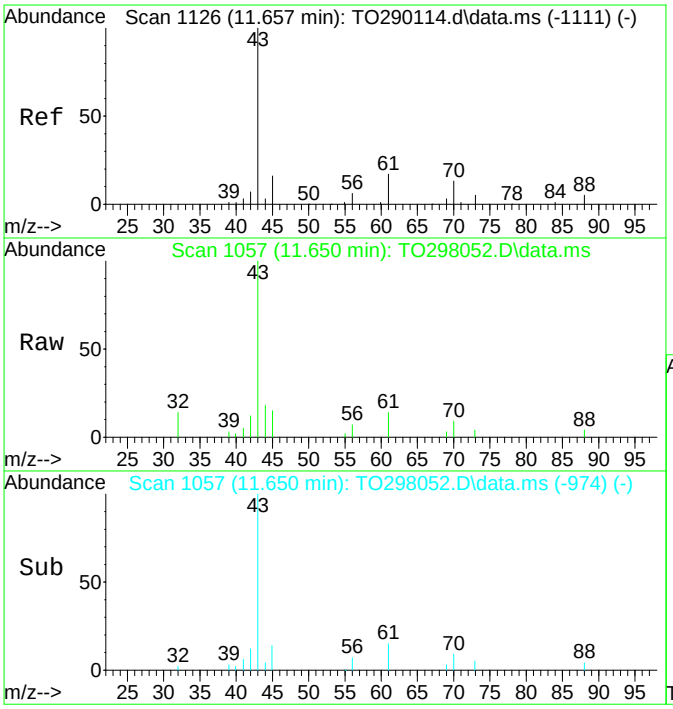


#27
2-Butanone
Concen: 0.37 ppbv
RT: 11.358 min Scan# 1010
Delta R.T. 0.015 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 43 Resp: 12084

Ion	Ratio	Lower	Upper
43	100		
72	20.4	16.4	34.2
57	5.4	5.0	10.4

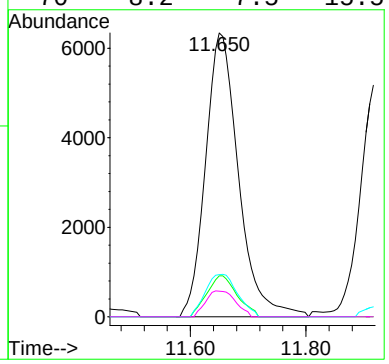


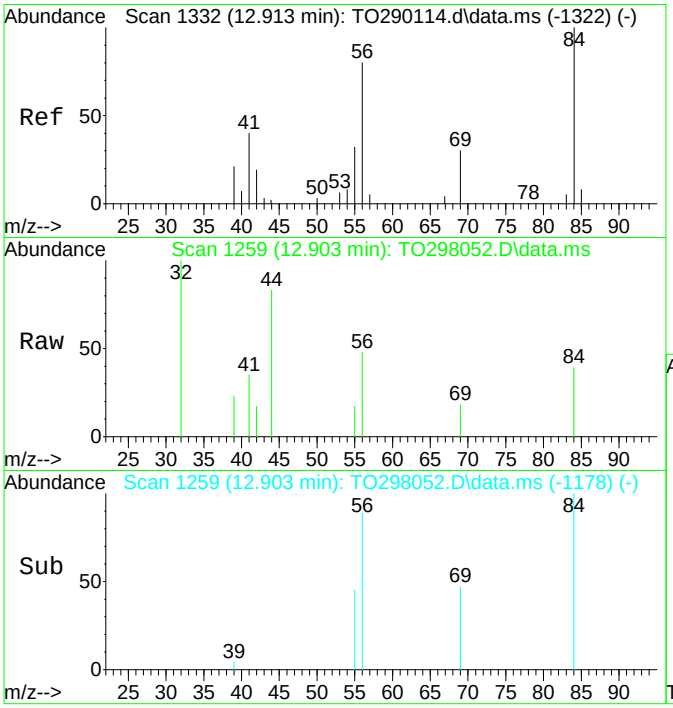


#28
Ethyl Acetate
Concen: 0.67 ppbv
RT: 11.650 min Scan# 1057
Delta R.T. 0.015 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 43 Resp: 25166

Ion	Ratio	Lower	Upper
43	100		
61	13.3	9.2	19.2
45	14.6	9.4	19.6
70	8.2	7.5	15.5

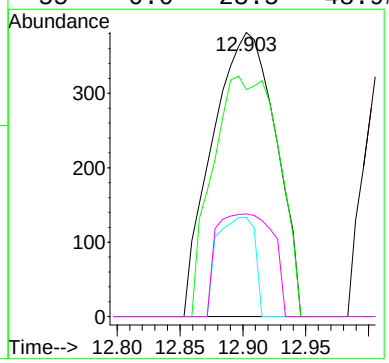


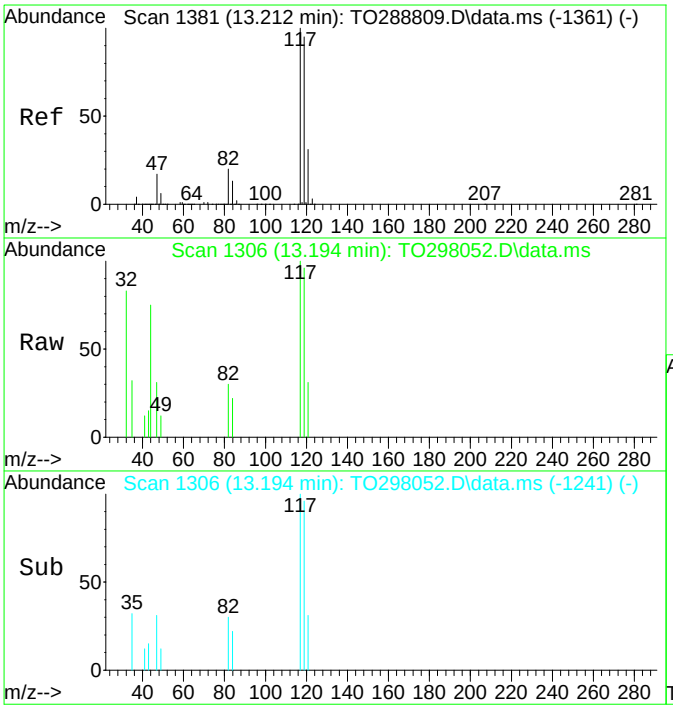


#33
Cyclohexane
Concen: 0.05 ppbv
RT: 12.903 min Scan# 1259
Delta R.T. 0.003 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 56 Resp: 1342

Ion	Ratio	Lower	Upper
56	100		
84	87.4	56.4	117.0
42	0.0	15.3	31.7#
55	0.0	23.5	48.9#

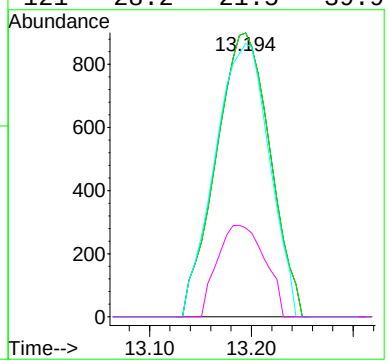


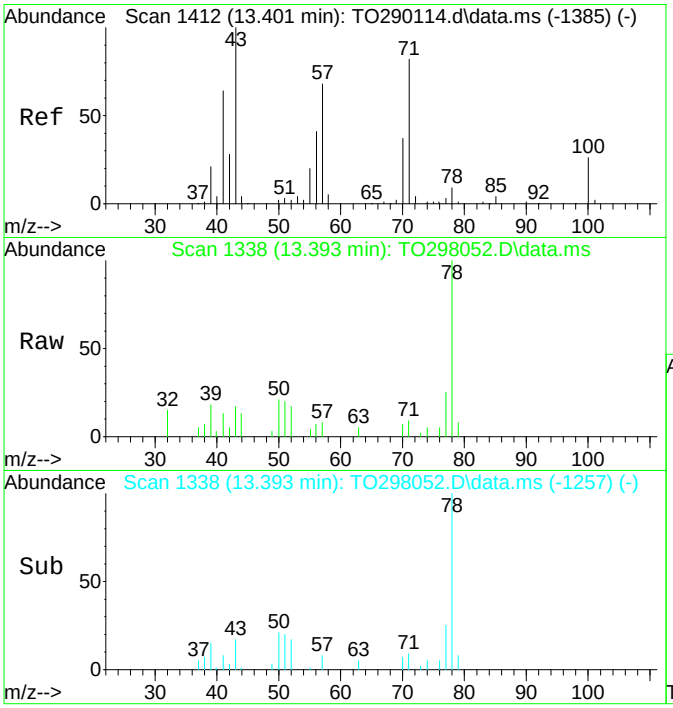


#34
Carbon Tetrachloride
Concen: 0.08 ppbv
RT: 13.194 min Scan# 1306
Delta R.T. 0.002 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion:117 Resp: 3325

Ion	Ratio	Lower	Upper
117	100		
117	100.0	80.0	120.0
119	0.0	76.5	114.7#
121	28.2	21.5	39.9

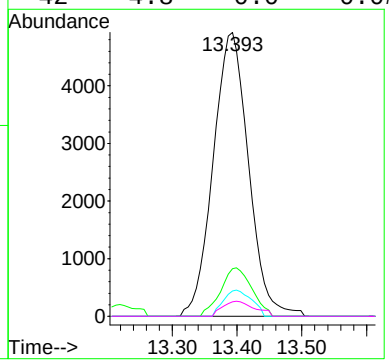


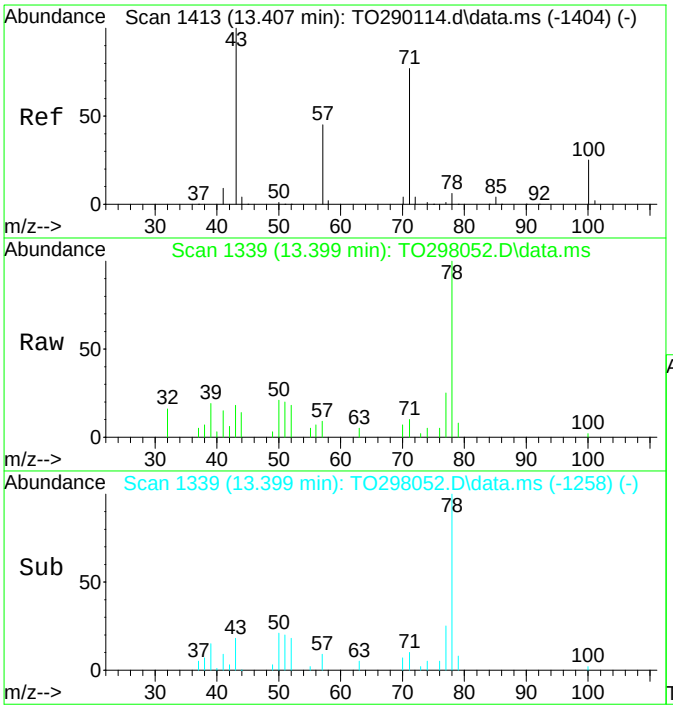


#36
Benzene
Concen: 0.25 ppbv
RT: 13.393 min Scan# 1338
Delta R.T. 0.003 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 78 Resp: 18703

Ion	Ratio	Lower	Upper
78	100		
43	15.0	0.0	0.0#
71	7.3	0.0	0.0#
42	4.8	0.0	0.0#

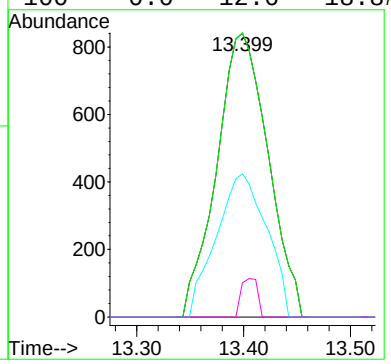


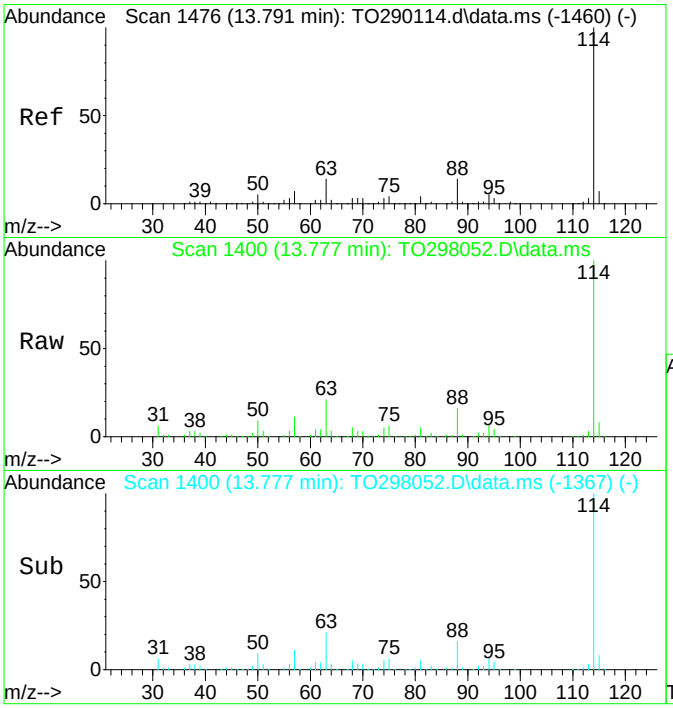


#37
n-Heptane
Concen: 0.06 ppbv
RT: 13.399 min Scan# 1339
Delta R.T. 0.002 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 43 Resp: 2812

Ion	Ratio	Lower	Upper
43	100		
43	100.0	80.0	120.0
57	49.5	39.8	59.8
100	0.0	12.6	18.8#

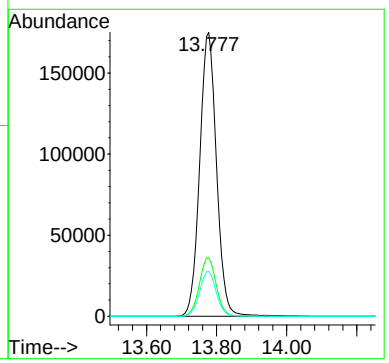


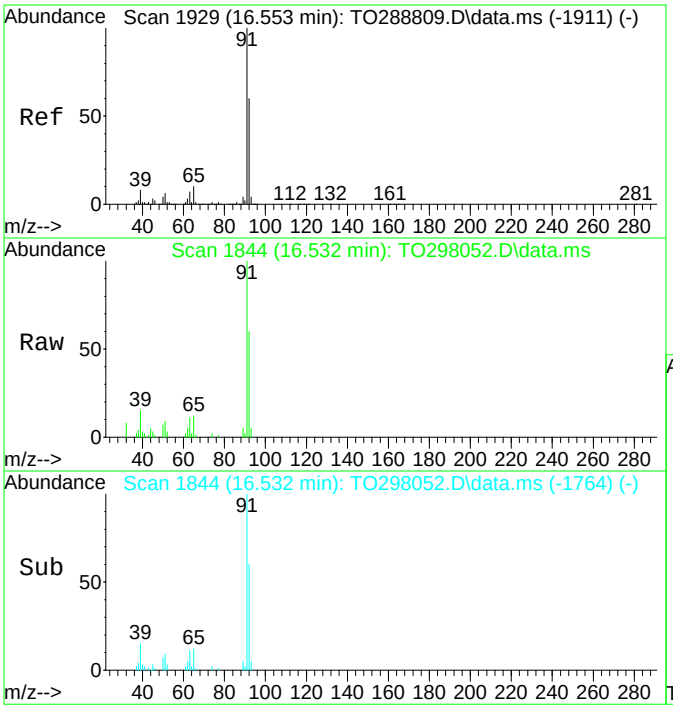


#38
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.777 min Scan# 1400
Delta R.T. 0.002 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion:114 Resp: 582399

Ion	Ratio	Lower	Upper
114	100		
63	20.8	14.0	29.2
88	15.7	11.2	23.2

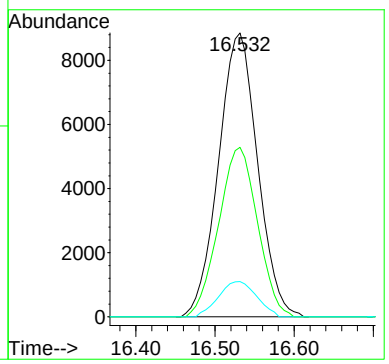


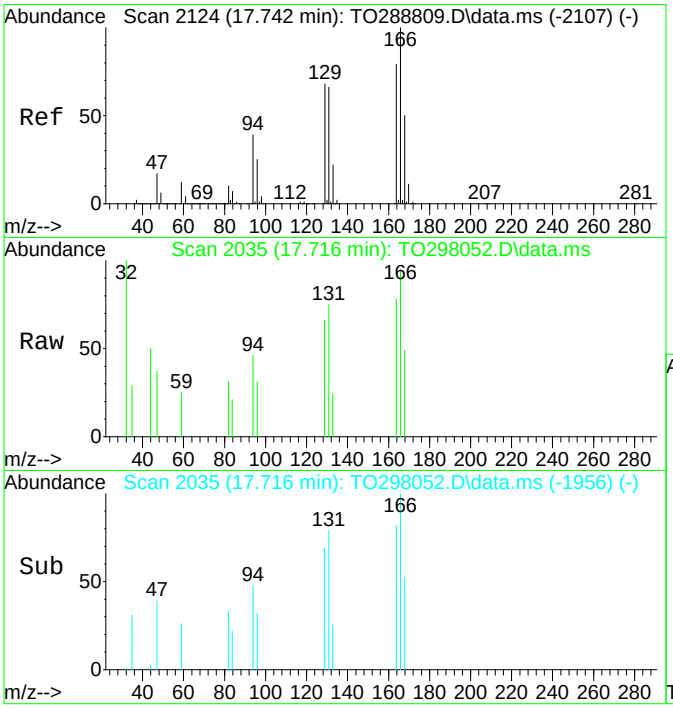


#46
Toluene
Concen: 0.44 ppbv
RT: 16.532 min Scan# 1844
Delta R.T. -0.003 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 91 Resp: 30385

Ion	Ratio	Lower	Upper
91	100		
92	59.4	39.0	81.0
65	12.1	7.7	16.1

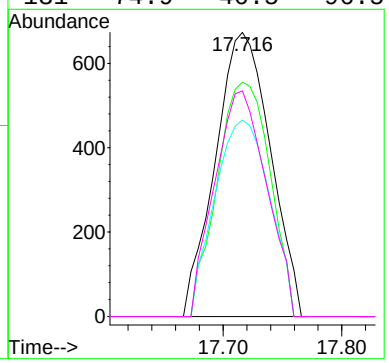


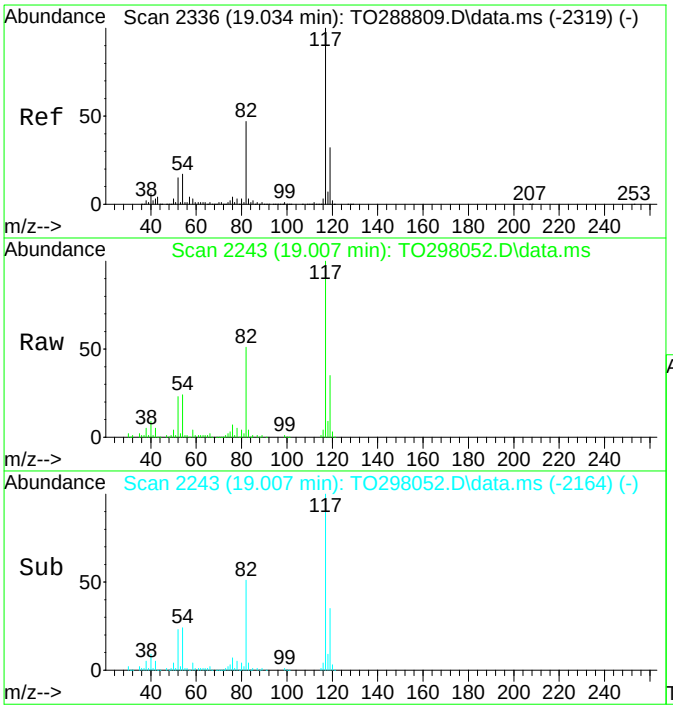


#51
Tetrachloroethylene
Concen: 0.06 ppbv
RT: 17.716 min Scan# 2035
Delta R.T. -0.010 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion:166 Resp: 2168

Ion	Ratio	Lower	Upper
166	100		
164	79.2	51.4	106.8
129	69.1	47.0	97.6
131	74.9	46.5	96.5

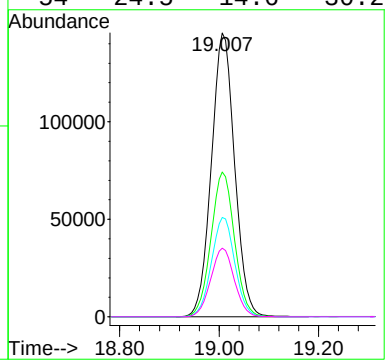


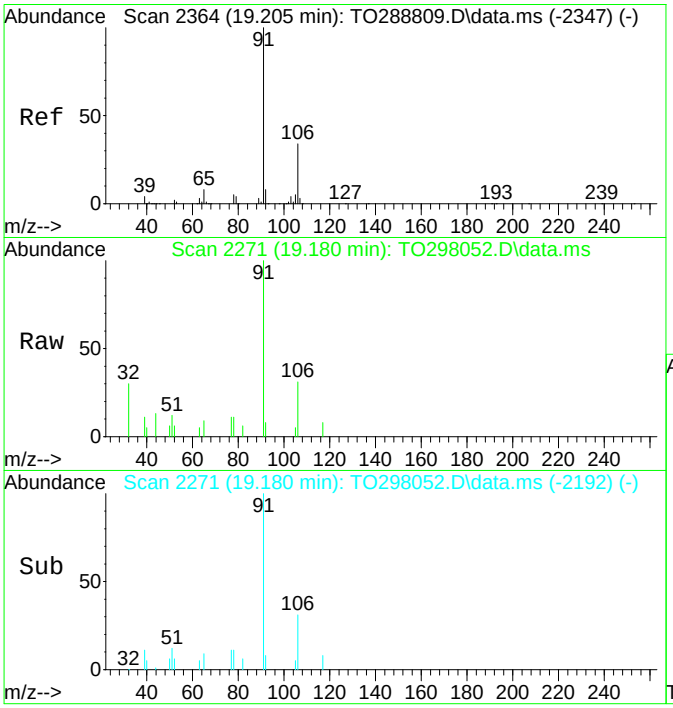


#54
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.007 min Scan# 2243
Delta R.T. -0.010 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion:117 Resp: 473592

Ion	Ratio	Lower	Upper
117	100		
82	51.4	38.7	80.5
119	35.2	20.3	42.3
54	24.5	14.6	30.2

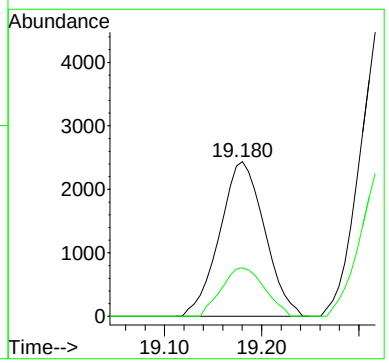


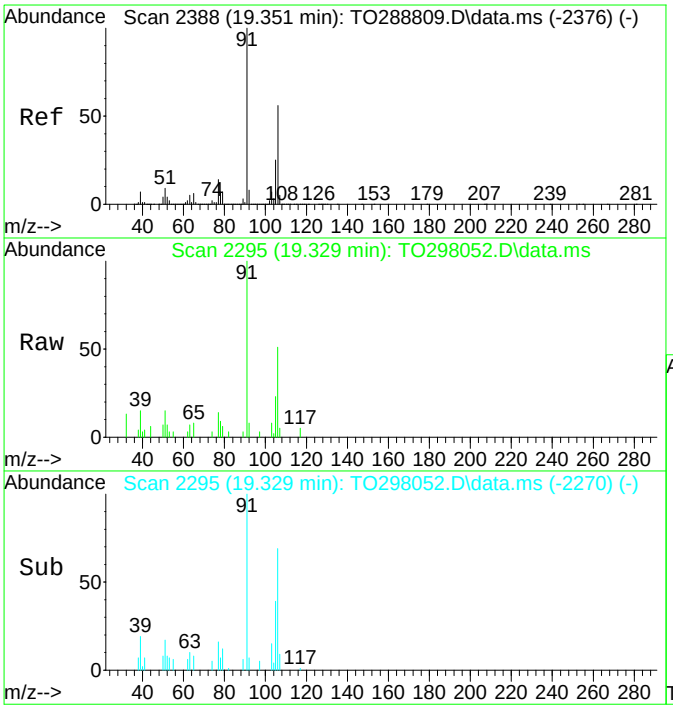


#57
Ethylbenzene
Concen: 0.12 ppbv
RT: 19.180 min Scan# 2271
Delta R.T. -0.010 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 91 Resp: 7825

Ion	Ratio	Lower	Upper
91	100		
106	30.1	20.3	42.3

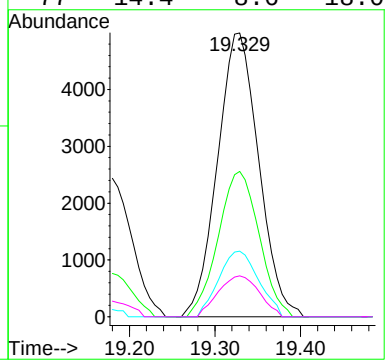


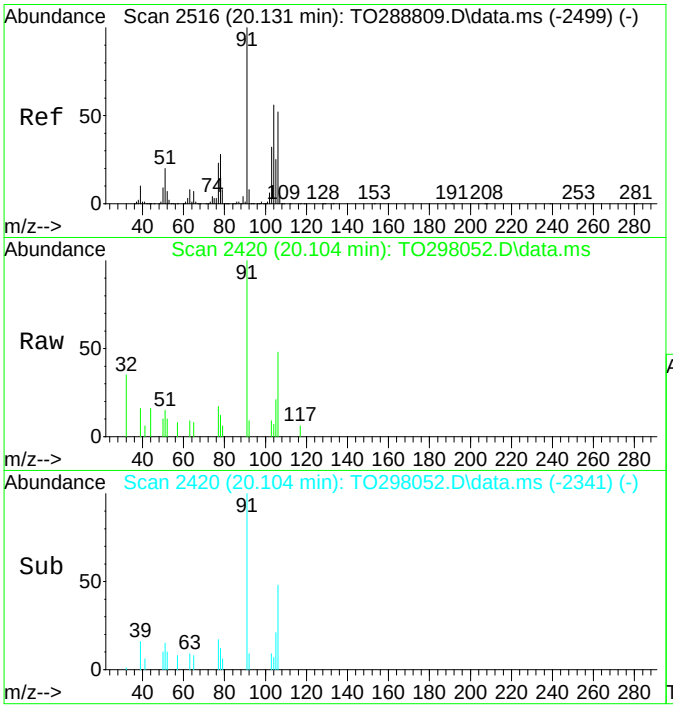


#58
p- & m-Xylenes
Concen: 0.20 ppbv
RT: 19.329 min Scan# 2295
Delta R.T. -0.004 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 91 Resp: 16741

Ion	Ratio	Lower	Upper
91	100		
106	50.7	31.0	64.4
105	22.3	13.4	27.8
77	14.4	8.6	18.0

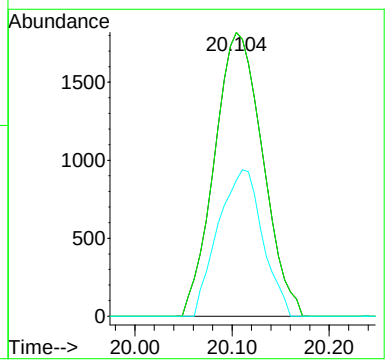


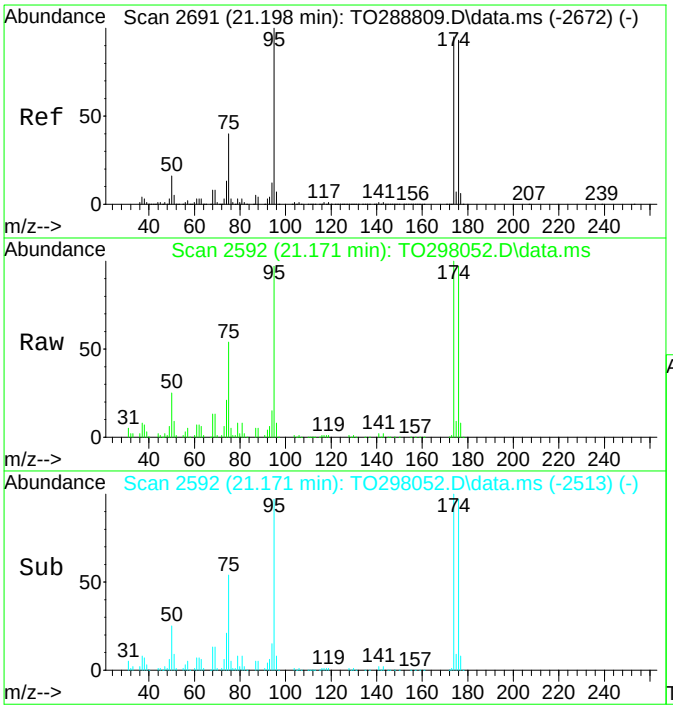


#59
o-Xylene
Concen: 0.08 ppbv
RT: 20.104 min Scan# 2420
Delta R.T. -0.011 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 91 Resp: 6276

Ion	Ratio	Lower	Upper
91	100		
91	100.0	80.0	120.0
106	47.7	36.9	55.3

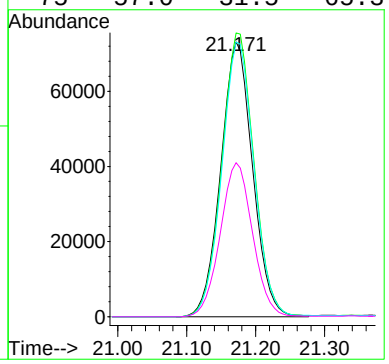


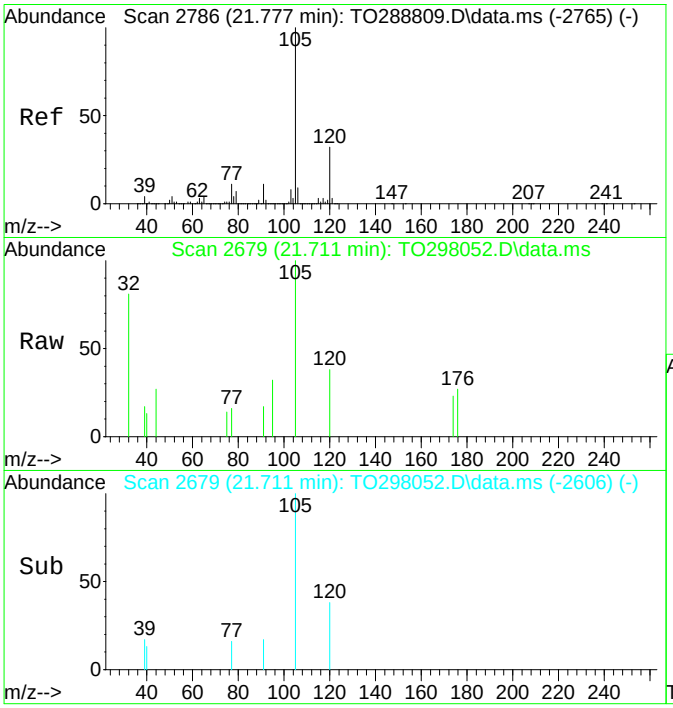


#65
p-Bromofluorobenzene
Concen: 10.74 ppbv
RT: 21.171 min Scan# 2592
Delta R.T. -0.010 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion: 95 Resp: 235232

Ion	Ratio	Lower	Upper
95	100		
174	104.3	50.0	103.8#
176	101.0	48.2	100.2#
75	57.0	31.5	65.3

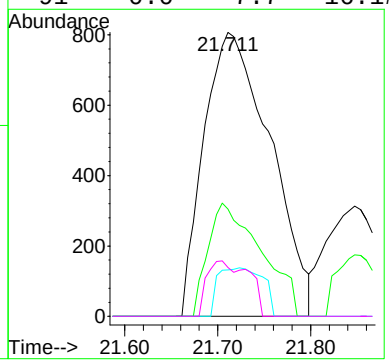


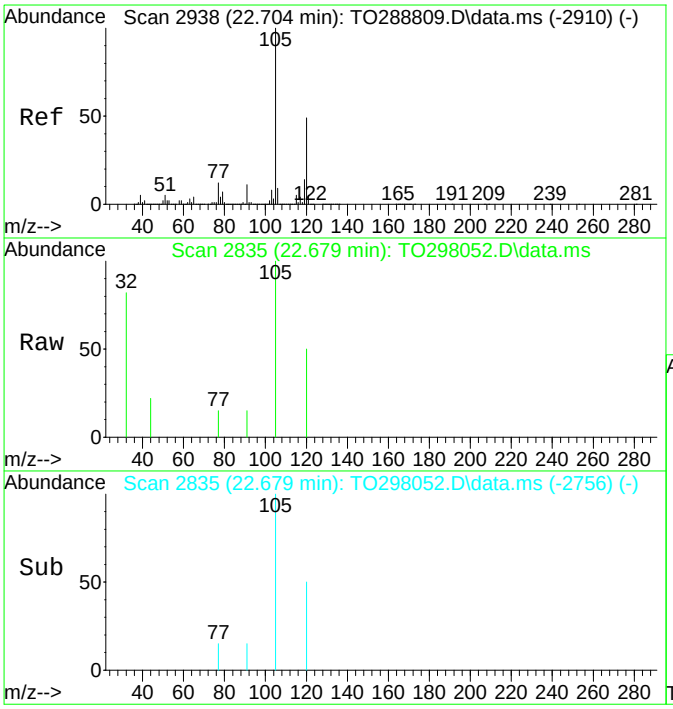


#66
4-Ethyltoluene
Concen: 0.04 ppbv
RT: 21.711 min Scan# 2679
Delta R.T. -0.047 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion:105 Resp: 4006

Ion	Ratio	Lower	Upper
105	100		
120	32.0	17.2	35.6
77	0.0	7.6	15.8#
91	0.0	7.7	16.1#

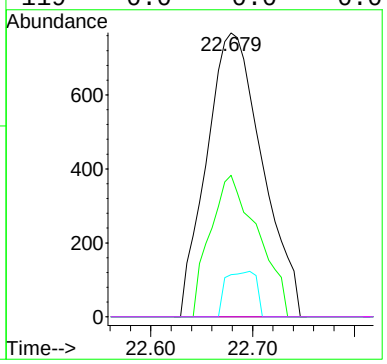




#69
1,2,4-Trimethylbenzene
Concen: 0.04 ppbv
RT: 22.679 min Scan# 2835
Delta R.T. -0.010 min
Lab File: TO298052.D
Acq: 18 Mar 2023 6:43 pm

Tgt Ion:105 Resp: 2924

Ion	Ratio	Lower	Upper
105	100		
120	42.7	29.0	60.2
77	0.0	8.2	17.0#
119	0.0	0.0	0.0



FORM VI

INITIAL CALIBRATION DATA

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford

SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC)

Project: 170361307

Calibration: SB30007

Instrument: TO15_AIR2

Calibration Date: 01/27/23 13:11

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	0.6100623	0.2	0.4961378	0.5	0.5342686	3	0.5336568
1,1,1-Trichloroethane	0.025		0.05		0.1	1.10001	0.2	1.234467	0.5	1.204049	3	1.107566
1,1,2,2-Tetrachloroethane	0.025		0.05		0.1	1.141711	0.2	1.044835	0.5	1.083053	3	1.16646
1,1,2-Trichloro-1,2,2-trifluoro ethane (Freon 113)	0.025		0.05		0.1	1.637341	0.2	1.590701	0.5	1.45838	3	1.339193
1,1,2-Trichloroethane	0.025		0.05		0.1	0.4265756	0.2	0.4609813	0.5	0.4162106	3	0.4111683
1,1-Dichloroethane	0.025		0.05		0.1	1.739598	0.2	1.367765	0.5	1.446757	3	1.349305
1,1-Dichloroethylene	0.025	1.584556	0.05	1.570138	0.1	1.351574	0.2	1.311602	0.5	1.268996	3	1.140272
1,2,4-Trichlorobenzene	0.025		0.05		0.1	0.1682448	0.2	6.164412E-02	0.5	1.408317E-02	3	6.346692E-02
1,2,4-Trimethylbenzene	0.025		0.05		0.1	0.9523776	0.2	1.096552	0.5	1.282758	3	1.436066
1,2-Dibromoethane	0.025		0.05		0.1	0.4701238	0.2	0.4859495	0.5	0.5417626	3	0.5481728
1,2-Dichlorobenzene	0.025		0.05		0.1	0.7999786	0.2	0.6521299	0.5	0.7420022	3	0.8471183
1,2-Dichloroethane	0.025		0.05		0.1	0.9612931	0.2	0.9250185	0.5	0.8749659	3	0.8333987
1,2-Dichloropropane	0.025		0.05		0.1	0.4575414	0.2	0.4419806	0.5	0.4693938	3	0.4403219
1,2-Dichlorotetrafluoroethane	0.025		0.05		0.1	2.580057	0.2	2.680174	0.5	2.378108	3	2.185192
1,3,5-Trimethylbenzene	0.025		0.05		0.1	1.103961	0.2	1.272984	0.5	1.433294	3	1.464217
1,3-Butadiene	0.025		0.05		0.1	0.9286539	0.2	0.776596	0.5	0.8178711	3	0.745655
1,3-Dichlorobenzene	0.025		0.05		0.1	0.6398896	0.2	0.6019711	0.5	0.6533944	3	0.8018219
1,3-Dichloropropane	0.025		0.05		0.1	0.5094233	0.2	0.5305391	0.5	0.6007353	3	0.569955
1,4-Dichlorobenzene	0.025		0.05		0.1	0.5777882	0.2	0.521639	0.5	0.6139291	3	0.7604175
1,4-Dioxane	0.025		0.05		0.1	0.2094886	0.2	0.2102487	0.5	0.2150781	3	0.2154152
2-Butanone	0.025		0.05		0.1	2.322937	0.2	2.059663	0.5	2.110024	3	1.991383
2-Hexanone	0.025		0.05		0.1	0.6819001	0.2	0.7302371	0.5	0.8288715	3	0.9938516
3-Chloropropene	0.025		0.05		0.1	1.169802	0.2	1.086549	0.5	1.088129	3	1.063124
4-Methyl-2-pentanone	0.025		0.05		0.1	0.946457	0.2	0.9247793	0.5	1.06565	3	1.136451
Acetone	0.025		0.05		0.1	2.137345	0.2	2.061478	0.5	1.859907	3	1.407045
Acrolein	0.025		0.05		0.1	0.3935798	0.2	0.3821474	0.5	0.3801885	3	0.3626084
Acrylonitrile	0.025		0.05		0.1	0.6385472	0.2	0.6509613	0.5	0.6749344	3	0.6469354
Benzene	0.025		0.05		0.1	2.674676	0.2	2.59709	0.5	2.450641	3	2.281772
Benzyl chloride	0.025		0.05		0.1	0.3466263	0.2	0.2805781	0.5	0.4002217	3	0.7643709
Bromodichloromethane	0.025		0.05		0.1	0.5101586	0.2	0.5561279	0.5	0.5760348	3	0.5960115
Bromoform	0.025		0.05		0.1	0.3953288	0.2	0.2796696	0.5	0.3433213	3	0.4489539

FORM VI

INITIAL CALIBRATION DATA

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford

SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC)

Project: 170361307

Calibration: SB30007

Instrument: TO15_AIR2

Calibration Date: 01/27/23 13:11

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	1.697411	0.2	1.193933	0.5	1.042125	3	0.9324511
Carbon disulfide	0.025		0.05		0.1	1.851926	0.2	1.886739	0.5	2.037313	3	1.850178
Carbon tetrachloride	0.025	0.6132466	0.05	0.9109864	0.1	0.8770909	0.2	0.8634111	0.5	0.886234	3	0.9723368
Chlorobenzene	0.025		0.05		0.1	1.405613	0.2	1.256113	0.5	1.256187	3	1.114069
Chloroethane	0.025		0.05		0.1	0.5520881	0.2	0.498304	0.5	0.4788068	3	0.4081921
Chloroform	0.025		0.05		0.1	1.437686	0.2	1.282866	0.5	1.33483	3	1.310957
Chloromethane	0.025		0.05		0.1	1.216677	0.2	0.9046507	0.5	1.036224	3	0.9510507
cis-1,2-Dichloroethylene	0.025	1.640305	0.05	1.24635	0.1	1.235427	0.2	1.346086	0.5	1.254977	3	0.9865698
cis-1,3-Dichloropropylene	0.025		0.05		0.1	0.3347405	0.2	0.3412961	0.5	0.4279164	3	0.4491419
Cyclohexane	0.025		0.05		0.1	1.318588	0.2	1.325013	0.5	1.321832	3	1.37999
Dibromochloromethane	0.025		0.05		0.1	0.4147286	0.2	0.3860766	0.5	0.4530184	3	0.5330641
Dichlorodifluoromethane	0.025		0.05		0.1	1.944982	0.2	1.978697	0.5	1.772956	3	1.640638
Ethanol	0.025		0.05		0.1		0.2		0.5		3	
Ethyl acetate	0.025		0.05		0.1	2.122067	0.2	2.204658	0.5	2.248436	3	2.164675
Ethyl Benzene	0.025		0.05		0.1	1.873646	0.2	1.689503	0.5	1.854654	3	1.764977
Hexachlorobutadiene	0.025		0.05		0.1	0.4137378	0.2	0.3496844	0.5	0.3010177	3	0.3442526
Isopropanol	0.025		0.05		0.1	2.183526	0.2	1.975571	0.5	1.932884	3	1.743082
Isopropylbenzene	0.025		0.05		0.1	1.347124	0.2	1.413273	0.5	1.66422	3	1.82391
Methyl Methacrylate	0.025		0.05		0.1	0.2641484	0.2	0.2844373	0.5	0.313394	3	0.3484888
Methyl tert-butyl ether (MTBE)	0.025		0.05		0.1	1.585083	0.2	1.564586	0.5	1.57603	3	1.580924
Methylene chloride	0.025		0.05		0.1	2.717732	0.2	1.998056	0.5	1.543911	3	1.12554
Naphthalene	0.025		0.05		0.1	1.055259	0.2	0.3501386	0.5	5.806268E-02	3	7.808552E-02
n-Butylbenzene	0.025		0.05		0.1	0.7109626	0.2	0.8965651	0.5	1.168525	3	1.59979
n-Decane	0.025		0.05		0.1		0.2		0.5		3	
n-Heptane	0.025		0.05		0.1	1.465638	0.2	1.533026	0.5	1.689687	3	1.759256
n-Hexane	0.025		0.05		0.1	1.159732	0.2	1.204924	0.5	1.259857	3	1.294378
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	1.873879	0.2	1.983643	0.5	2.169755	3	2.279259
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. - Stratford

SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC)

Project: 170361307

Calibration: SB30007

Instrument: TO15_AIR2

Calibration Date: 01/27/23 13:11

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	1.167111	0.2	1.133343	0.5	1.300572	3	1.327662
p- & m- Xylenes	0.05		0.1		0.2	1.360814	0.4	1.222825	1	1.401046	6	1.292641
p-Ethyltoluene	0.025		0.05		0.1	1.232125	0.2	1.197388	0.5	1.468597	3	1.750056
p-Isopropyltoluene	0.025		0.05		0.1	0.8871303	0.2	1.124129	0.5	1.401614	3	1.739467
Propylene	0.025		0.05		0.1	0.7739651	0.2	0.7553208	0.5	0.7178775	3	0.6270362
sec-Butylbenzene	0.025		0.05		0.1	1.656	0.2	1.50496	0.5	1.985592	3	2.269817
Styrene	0.025		0.05		0.1	0.6602794	0.2	0.6403851	0.5	0.7698171	3	0.9354581
tert-Butylbenzene	0.025		0.05		0.1	1.09965	0.2	1.20537	0.5	1.488708	3	1.620633
Tetrachloroethylene	0.025		0.05		0.1	0.5073807	0.2	0.5007968	0.5	0.5539755	3	0.5072303
Tetrahydrofuran	0.025		0.05		0.1	1.168239	0.2	1.243844	0.5	1.163678	3	1.18813
Toluene	0.025		0.05		0.1	1.201618	0.2	1.174032	0.5	1.328544	3	1.222689
trans-1,2-Dichloroethylene	0.025		0.05		0.1	1.11685	0.2	1.059022	0.5	1.065903	3	0.9832255
trans-1,3-Dichloropropylene	0.025		0.05		0.1	0.2260745	0.2	0.2560795	0.5	0.3107317	3	0.3391935
Trichloroethylene	0.025	0.5883775	0.05	0.4330041	0.1	0.3996951	0.2	0.4794568	0.5	0.4268811	3	0.4026539
Trichlorofluoromethane (Freon 11)	0.025		0.05		0.1	1.671021	0.2	1.593928	0.5	1.539874	3	1.367493
Vinyl acetate	0.025		0.05		0.1	1.49602	0.2	1.730452	0.5	1.857423	3	1.944864
Vinyl bromide	0.025		0.05		0.1	0.662853	0.2	0.6930076	0.5	0.6296844	3	0.5945048
Vinyl Chloride	0.025	1.39834	0.05	1.448443	0.1	1.116156	0.2	1.126579	0.5	1.011159	3	0.8949905

FORM VI INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30007
Instrument: TO15_AIR2
Calibration Date: 01/27/23 13:11

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	0.5297458	20	0.5155344	30	0.497192	50	0.4984855				
1,1,1-Trichloroethane	10	1.102403	20	1.106834	30	1.152231	50	1.180163				
1,1,2,2-Tetrachloroethane	10	1.04668	20	1.02352	30	1.02667	50	1.024274				
1,1,2-Trichloro-1,2,2-trifluoro ethane (Freon 113)	10	1.260759	20	1.249783	30	1.298297	50	1.270665				
1,1,2-Trichloroethane	10	0.4463912	20	0.4587783	30	0.4390326	50	0.425158				
1,1-Dichloroethane	10	1.324919	20	1.314549	30	1.341353	50	1.30105				
1,1-Dichloroethylene	10	1.076665	20	1.088067	30	1.128848	50	1.159753				
1,2,4-Trichlorobenzene	10	0.1675744	20	0.2588098	30	0.3041263	50	0.3315179				
1,2,4-Trimethylbenzene	10	1.373407	20	1.410069	30	1.475055	50	1.601492				
1,2-Dibromoethane	10	0.6196988	20	0.634102	30	0.6475935	50	0.6317641				
1,2-Dichlorobenzene	10	0.8667159	20	0.8962962	30	0.9277461	50	0.9831443				
1,2-Dichloroethane	10	0.8116806	20	0.8030832	30	0.8073479	50	0.8237466				
1,2-Dichloropropane	10	0.4288591	20	0.4305196	30	0.4337547	50	0.4119405				
1,2-Dichlorotetrafluoroethane	10	2.078605	20	2.036952	30	1.87296	50	1.775272				
1,3,5-Trimethylbenzene	10	1.336645	20	1.378318	30	1.450406	50	1.545831				
1,3-Butadiene	10	0.6639074	20	0.6730631	30	0.6317256	50	0.6224116				
1,3-Dichlorobenzene	10	0.8444918	20	0.9093465	30	0.9575769	50	1.028777				
1,3-Dichloropropane	10	0.610639	20	0.6125405	30	0.6118322	50	0.596126				
1,4-Dichlorobenzene	10	0.8084695	20	0.9049189	30	0.9409889	50	1.023273				
1,4-Dioxane	10	0.2222781	20	0.2180542	30	0.2221996	50	0.2207176				
2-Butanone	10	2.009606	20	1.987188	30	1.999086	50	1.9212				
2-Hexanone	10	1.08702	20	1.096922	30	1.065799	50	1.024945				
3-Chloropropene	10	1.088188	20	1.067724	30	1.072114	50	1.080614				
4-Methyl-2-pentanone	10	1.152885	20	1.146088	30	1.149576	50	1.085223				
Acetone	10	1.354896	20	1.289649	30	1.284761	50	1.257549				
Acrolein	10	0.3664547	20	0.3593655	30	0.3737486	50	0.359103				
Acrylonitrile	10	0.6485268	20	0.6696962	30	0.6813262	50	0.6781736				
Benzene	10	2.188959	20	2.156104	30	2.213009	50	2.135738				
Benzyl chloride	10	0.9449872	20	1.069234	30	1.160278	50	1.302212				
Bromodichloromethane	10	0.6009498	20	0.5386383	30	0.5268635	50	0.5504869				
Bromoform	10	0.5267229	20	0.5769375	30	0.56512	50	0.5261327				

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC) Project: 170361307

Calibration: SB30007 Instrument: TO15_AIR2

Calibration Date: 01/27/23 13:11

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	0.8323607	20	0.7613322	30	0.7060652	50	0.7076271				
Carbon disulfide	10	1.863837	20	1.847729	30	1.91692	50	1.892215				
Carbon tetrachloride	10	0.8051228	20	0.6821461	30	0.6756421	50	0.7252405				
Chlorobenzene	10	1.083909	20	1.056615	30	1.049577	50	1.035827				
Chloroethane	10	0.3814047	20	0.3867476	30	0.3836033	50	0.3569171				
Chloroform	10	1.248718	20	1.246681	30	1.288462	50	1.29697				
Chloromethane	10	0.8490982	20	0.7793956	30	0.7564939	50	0.743729				
cis-1,2-Dichloroethylene	10	0.9693621	20	0.9525528	30	1.023025	50	1.016686				
cis-1,3-Dichloropropylene	10	0.5194764	20	0.5216299	30	0.5211381	50	0.5261859				
Cyclohexane	10	1.329566	20	1.338429	30	1.353547	50	1.328631				
Dibromochloromethane	10	0.6260393	20	0.5937388	30	0.5153046	50	0.4768093				
Dichlorodifluoromethane	10	1.577127	20	1.533627	30	1.450426	50	1.349457				
Ethanol	10		20		30		50					
Ethyl acetate	10	2.228325	20	2.242473	30	2.276788	50	2.154099				
Ethyl Benzene	10	1.773852	20	1.725874	30	1.713346	50	1.679119				
Hexachlorobutadiene	10	0.3589675	20	0.3410854	30	0.3536309	50	0.3482341				
Isopropanol	10	1.70433	20	1.711634	30	1.735446	50	1.694193				
Isopropylbenzene	10	1.763427	20	1.82095	30	1.808361	50	1.791715				
Methyl Methacrylate	10	0.3709383	20	0.3951279	30	0.4041563	50	0.3897085				
Methyl tert-butyl ether (MTBE)	10	1.53136	20	1.567797	30	1.622795	50	1.646361				
Methylene chloride	10	1.078383	20	1.033886	30	1.037502	50	1.001528				
Naphthalene	10	0.413498	20	0.645712	30	0.7889513	50	0.8083333				
n-Butylbenzene	10	1.608201	20	1.592602	30	1.63141	50	1.71382				
n-Decane	10		20		30		50					
n-Heptane	10	1.799583	20	1.766502	30	1.791469	50	1.722605				
n-Hexane	10	1.240413	20	1.233913	30	1.268675	50	1.229743				
n-Nonane	10		20		30		50					
n-octane	10		20		30		50					
n-pentane	10		20		30		50					
n-Propylbenzene	10	2.127414	20	2.275792	30	2.312106	50	2.299806				
n-undecane	10		20		30		50					

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC) Project: 170361307

Calibration: SB30007 Instrument: TO15_AIR2

Calibration Date: 01/27/23 13:11

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	1.373784	20	1.39419	30	1.377427	50	1.381644				
p- & m- Xylenes	20	1.315487	40	1.347333	60	1.306254	100	1.233519				
p-Ethyltoluene	10	1.665888	20	1.760091	30	1.828292	50	1.873208				
p-Isopropyltoluene	10	1.645079	20	1.62304	30	1.689839	50	1.794243				
Propylene	10	0.6151326	20	0.597924	30	0.559501	50	0.5243685				
sec-Butylbenzene	10	2.134123	20	2.145357	30	2.217166	50	2.243862				
Styrene	10	0.9823588	20	1.052682	30	1.045567	50	1.036525				
tert-Butylbenzene	10	1.503212	20	1.507247	30	1.559031	50	1.680315				
Tetrachloroethylene	10	0.5349893	20	0.5256276	30	0.5254073	50	0.5091675				
Tetrahydrofuran	10	1.165758	20	1.160309	30	1.15532	50	1.130643				
Toluene	10	1.288986	20	1.286906	30	1.273044	50	1.209218				
trans-1,2-Dichloroethylene	10	0.9750138	20	0.9838052	30	1.012934	50	1.025969				
trans-1,3-Dichloropropylene	10	0.4251978	20	0.4483878	30	0.4455986	50	0.4564309				
Trichloroethylene	10	0.4107818	20	0.4120227	30	0.4307314	50	0.4262563				
Trichlorofluoromethane (Freon 11)	10	1.248072	20	1.270031	30	1.282434	50	1.315578				
Vinyl acetate	10	2.197409	20	2.209583	30	2.111923	50	2.065507				
Vinyl bromide	10	0.5690378	20	0.5746004	30	0.58643	50	0.5915679				
Vinyl Chloride	10	0.8165719	20	0.7977508	30	0.7601647	50	0.756389				

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30007
Instrument: TO15_AIR2
Calibration Date: 01/27/23 13:11

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,1,1,2-Tetrachloroethane	0.5268854	7.097637	19.17587	2.526625E-02			30	
1,1,1-Trichloroethane	1.148465	4.581567	12.71975	5.279292E-02			30	
1,1,2,2-Tetrachloroethane	1.06965	5.23181	20.9875	2.120084E-02			30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.38814	11.15031	8.41275	9.203537E-02			30	
1,1,2-Trichloroethane	0.435537	4.315535	17.02313	0.0334434			30	
1,1-Dichloroethane	1.398162	10.37392	10.69575	0.0358953			30	
1,1-Dichloroethylene	1.268047	14.79483	8.6386	0.135397			30	
1,2,4-Trichlorobenzene	0.1711834	69.59885	27.22688	0.115344		0.9958995	0.99	
1,2,4-Trimethylbenzene	1.328472	15.9327	22.7095	2.430606E-02			30	
1,2-Dibromoethane	0.5723959	12.29724	18.32875	1.618666E-02			30	
1,2-Dichlorobenzene	0.8393914	12.6257	24.44675	1.882829E-02			30	
1,2-Dichloroethane	0.8550668	6.973054	13.26725	2.563689E-02			30	
1,2-Dichloropropane	0.439289	4.046648	14.66025	3.098768E-02			30	
1,2-Dichlorotetrafluoroethane	2.198415	14.74562	5.2925	0.2249923			30	
1,3,5-Trimethylbenzene	1.373207	9.983089	21.8865	2.979271E-02			30	
1,3-Butadiene	0.7324855	14.44759	5.892	0.2061785			30	
1,3-Dichlorobenzene	0.8046586	19.77736	23.55187	4.496729E-03			30	
1,3-Dichloropropane	0.5802238	6.902773	17.45	0.0234513			30	
1,4-Dichlorobenzene	0.768928	23.8862	23.7425	3.757488E-02			30	
1,4-Dioxane	0.216685	2.322224	14.98625	5.011458E-02			30	
2-Butanone	2.050136	6.013249	11.33313	0.1299704			30	
2-Hexanone	0.9386933	17.78657	17.0385	5.262357E-02			30	
3-Chloropropene	1.08953	3.105108	9.253625	0.0534058			30	
4-Methyl-2-pentanone	1.075889	8.585957	15.5715	4.574346E-02			30	
Acetone	1.581579	23.61922	8.2775	0.3520198			30	
Acrolein	0.3721495	3.343083	8.162375	0.3222108			30	
Acrylonitrile	0.6611376	2.515439	9.523875	0.2261981			30	
Benzene	2.337249	8.976997	13.39525	3.415246E-02			30	
Benzyl chloride	0.7835635	50.81591	23.8925	2.704968E-02		0.9998108	0.99	
Bromodichloromethane	0.5569089	5.79805	15.0255	3.519637E-02			30	
Bromoform	0.4577733	23.92242	20.7375	1.791605E-02			30	
Bromomethane	0.9841632	34.03241	6.712875	0.1895231		0.9986578	0.99	

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30007
Instrument: TO15_AIR2
Calibration Date: 01/27/23 13:11

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Carbon disulfide	1.893357	3.331917	9.5265	0.0997721			30	
Carbon tetrachloride	0.8011457	14.9584	13.189	2.774954E-02			30	
Chlorobenzene	1.157239	11.54526	19.12775	1.280473E-02			30	
Chloroethane	0.430758	16.21487	6.898125	0.1489207			30	
Chloroform	1.305896	4.659827	11.98263	4.308019E-02			30	
Chloromethane	0.9046649	17.89441	5.518125	0.2797968			30	
cis-1,2-Dichloroethylene	1.167134	18.8525	11.7078	8.196429E-02			30	
cis-1,3-Dichloropropylene	0.4551907	17.84695	15.92	1.719274E-02			30	
Cyclohexane	1.336949	1.538626	12.88925	4.785849E-02			30	
Dibromochloromethane	0.4998475	16.73746	17.956	0.0128979			30	
Dichlorodifluoromethane	1.655989	13.67512	5.00125	0.2633108			30	
Ethanol							30	
Ethyl acetate	2.20519	2.428931	11.64237	0.1111692			30	
Ethyl Benzene	1.759371	4.129024	19.23525	2.434457E-02			30	
Hexachlorobutadiene	0.3513263	8.777679	27.479	1.400159E-02			30	
Isopropanol	1.835083	9.688983	8.062375	0.2698716			30	
Isopropylbenzene	1.679123	11.44868	20.81725	2.363666E-02			30	
Methyl Methacrylate	0.3462999	15.39132	14.6875	7.248778E-02			30	
Methyl tert-butyl ether (MTBE)	1.584367	2.247669	9.836375	0.2058939			30	
Methylene chloride	1.442067	43.09623	9.4075	6.586764E-02		0.9998862	0.99	
Naphthalene	0.524755	68.57567	27.621	0.1477061		0.993826	0.99	
n-Butylbenzene	1.365234	28.29457	24.19375	2.493149E-02			30	
n-Decane							30	
n-Heptane	1.690971	7.37912	13.42087	1.902031E-02			30	
n-Hexane	1.236454	3.333053	10.31938	5.743714E-02			30	
n-Nonane							30	
n-octane							30	
n-pentane							30	
n-Propylbenzene	2.165207	7.492385	21.57925	2.554334E-02			30	
n-undecane							30	
o-Xylene	1.306967	7.802179	20.16225	2.051575E-03			30	
p- & m- Xylenes	1.30999	4.657621	19.38063	2.262107E-02			30	

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Calibration:	SB30007	Instrument:	TO15_AIR2
		Calibration Date:	01/27/23 13:11

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
p-Ethyltoluene	1.596956	16.63273	21.8	2.253348E-02			30	
p-Isopropyltoluene	1.488068	21.87291	23.38725	3.316723E-02			30	
Propylene	0.6463907	14.25008	4.928	0.2982312			30	
sec-Butylbenzene	2.01961	14.24141	23.114	1.841887E-02			30	
Styrene	0.8903841	19.557	20.18175	3.205209E-02			30	
tert-Butylbenzene	1.458021	13.80828	22.63875	8.315316E-03			30	
Tetrachloroethylene	0.5205719	3.440702	17.76625	0.0129489			30	
Tetrahydrofuran	1.17199	2.824266	12.3185	0.1233695			30	
Toluene	1.24813	4.290627	16.572	9.743168E-03			30	
trans-1,2-Dichloroethylene	1.02784	4.835221	10.02412	7.704075E-02			30	
trans-1,3-Dichloropropylene	0.3634618	25.51239	16.73325	2.391847E-02			30	
Trichloroethylene	0.4409861	12.80868	14.4333	2.531949E-02			30	
Trichlorofluoromethane (Freon 11)	1.411054	11.72563	7.4995	0.1016911			30	
Vinyl acetate	1.951648	12.71462	10.66575	0.113826			30	
Vinyl bromide	0.6127107	7.319456	7.37375	0.1529208			30	
Vinyl Chloride	1.012654	25.28941	5.811	0.4655979			30	

FORM VI

INITIAL CALIBRATION DATA

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford

SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC)

Project: 170361307

Calibration: SB30018

Instrument: 5975C

Calibration Date: 02/09/23 15:26

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	0.3592037	0.2	0.3689578	0.5	0.3780721	3	0.543748
1,1,1-Trichloroethane	0.025		0.05		0.1	1.464435	0.2	1.313721	0.5	1.286854	3	1.887819
1,1,2,2-Tetrachloroethane	0.025		0.05		0.1	0.6014716	0.2	0.5663103	0.5	0.5964363	3	0.7766995
1,1,2-Trichloro-1,2,2-trifluoro ethane (Freon 113)	0.025		0.05		0.1	1.415763	0.2	1.386309	0.5	1.358606	3	1.899436
1,1,2-Trichloroethane	0.025		0.05		0.1	0.2396975	0.2	0.2234647	0.5	0.2161027	3	0.3317743
1,1-Dichloroethane	0.025		0.05		0.1	1.149446	0.2	1.100552	0.5	1.054881	3	1.46522
1,1-Dichloroethylene	0.025	1.253602	0.05	0.9445427	0.1	0.9535354	0.2	0.8490291	0.5	0.8604214	3	1.216845
1,2,4-Trichlorobenzene	0.025		0.05		0.1	0.1910237	0.2	9.548256E-02	0.5	0.125178	3	6.077812E-02
1,2,4-Trimethylbenzene	0.025		0.05		0.1	0.528001	0.2	0.4982872	0.5	0.7326873	3	1.117718
1,2-Dibromoethane	0.025		0.05		0.1	0.3007752	0.2	0.2956099	0.5	0.3133777	3	0.460672
1,2-Dichlorobenzene	0.025		0.05		0.1	0.475275	0.2	0.4066898	0.5	0.4740475	3	0.6433222
1,2-Dichloroethane	0.025		0.05		0.1	0.8353766	0.2	0.7981539	0.5	0.8213691	3	1.129103
1,2-Dichloropropane	0.025		0.05		0.1	0.1810187	0.2	0.1813881	0.5	0.1906488	3	0.2753705
1,2-Dichlorotetrafluoroethane	0.025		0.05		0.1	4.142905	0.2	3.78299	0.5	3.699404	3	4.748395
1,3,5-Trimethylbenzene	0.025		0.05		0.1	0.5931985	0.2	0.5935064	0.5	0.7370942	3	1.18838
1,3-Butadiene	0.025		0.05		0.1	0.5911001	0.2	0.6369699	0.5	0.5859853	3	0.8089651
1,3-Dichlorobenzene	0.025		0.05		0.1	0.4400831	0.2	0.3957587	0.5	0.4549416	3	0.6401201
1,3-Dichloropropane	0.025		0.05		0.1	0.2564893	0.2	0.2644674	0.5	0.2822531	3	0.4079567
1,4-Dichlorobenzene	0.025		0.05		0.1	0.4363787	0.2	0.3251016	0.5	0.3982657	3	0.550197
1,4-Dioxane	0.025		0.05		0.1	9.604508E-02	0.2	0.0847389	0.5	0.1021356	3	0.1156725
2-Butanone	0.025		0.05		0.1	1.311991	0.2	1.22354	0.5	1.264051	3	1.460154
2-Hexanone	0.025		0.05		0.1	0.2856442	0.2	0.2590491	0.5	0.32231	3	0.3123701
3-Chloropropene	0.025		0.05		0.1	0.6853823	0.2	0.5830834	0.5	0.5829761	3	0.8287052
4-Methyl-2-pentanone	0.025		0.05		0.1	0.3859333	0.2	0.3495479	0.5	0.3948346	3	0.5369084
Acetone	0.025		0.05		0.1	1.934009	0.2	1.675553	0.5	1.625084	3	1.155092
Acrolein	0.025		0.05		0.1	0.2142776	0.2	0.2237874	0.5	0.2176631	3	0.2921291
Acrylonitrile	0.025		0.05		0.1	0.3728431	0.2	0.3729262	0.5	0.3962071	3	0.5176171
Benzene	0.025		0.05		0.1	1.946253	0.2	1.722783	0.5	1.732478	3	2.563168
Benzyl chloride	0.025		0.05		0.1		0.2	3.898322E-02	0.5	5.115339E-02	3	0.0772698
Bromodichloromethane	0.025		0.05		0.1	0.3863024	0.2	0.3671693	0.5	0.3990769	3	0.5890432
Bromoform	0.025		0.05		0.1	0.3350015	0.2	0.326682	0.5	0.3808613	3	0.6329165

FORM VI

INITIAL CALIBRATION DATA

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford

SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC)

Project: 170361307

Calibration: SB30018

Instrument: 5975C

Calibration Date: 02/09/23 15:26

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	3.548744	0.2	1.603281	0.5	1.557144	3	0.8511123
Carbon disulfide	0.025		0.05		0.1	1.623918	0.2	1.643538	0.5	1.58757	3	2.250406
Carbon tetrachloride	0.025		0.05	1.347026	0.1	1.291788	0.2	1.23717	0.5	1.284848	3	1.93655
Chlorobenzene	0.025		0.05		0.1	0.7426094	0.2	0.7248114	0.5	0.6999982	3	0.9136787
Chloroethane	0.025		0.05		0.1	0.3639659	0.2	0.3193567	0.5	0.3553493	3	0.3764458
Chloroform	0.025		0.05		0.1	1.396478	0.2	1.328777	0.5	1.353925	3	1.854097
Chloromethane	0.025		0.05		0.1	0.9927176	0.2	0.873278	0.5	0.7491491	3	0.8908938
cis-1,2-Dichloroethylene	0.025	0.9099978	0.05	0.7766909	0.1	0.8001739	0.2	0.735075	0.5	0.7110329	3	1.002416
cis-1,3-Dichloropropylene	0.025		0.05		0.1	0.2149712	0.2	0.1995952	0.5	0.2220292	3	0.3561729
Cyclohexane	0.025		0.05		0.1	0.7132384	0.2	0.6311058	0.5	0.6723819	3	1.114273
Dibromochloromethane	0.025		0.05		0.1	0.3624064	0.2	0.3480836	0.5	0.3697004	3	0.6007903
Dichlorodifluoromethane	0.025		0.05		0.1	2.069616	0.2	1.921053	0.5	1.835592	3	2.408182
Ethanol	0.025		0.05		0.1	1.106897	0.2	0.9258966	0.5	0.95297	3	0.2179335
Ethyl acetate	0.025		0.05		0.1	1.351173	0.2	1.299298	0.5	1.326909	3	1.705639
Ethyl Benzene	0.025		0.05		0.1	0.9820373	0.2	0.9477796	0.5	0.9674239	3	1.403481
Hexachlorobutadiene	0.025		0.05		0.1	0.5841844	0.2	0.4739886	0.5	0.4517899	3	0.4128752
Isopropanol	0.025		0.05		0.1	3.139473	0.2	2.345488	0.5	1.921989	3	1.287649
Isopropylbenzene	0.025		0.05		0.1	0.7895318	0.2	0.7275112	0.5	0.9613156	3	1.56447
Methyl Methacrylate	0.025		0.05		0.1	0.1209559	0.2	0.1065094	0.5	0.1347524	3	0.226661
Methyl tert-butyl ether (MTBE)	0.025		0.05		0.1	1.380254	0.2	1.241766	0.5	1.30531	3	1.894147
Methylene chloride	0.025		0.05		0.1	2.183183	0.2	1.478867	0.5	0.9892138	3	1.02152
Naphthalene	0.025		0.05		0.1		0.2	0.166403	0.5	0.3169614	3	7.926038E-02
n-Butylbenzene	0.025		0.05		0.1	0.6283903	0.2	0.5274588	0.5	0.7428398	3	0.9799677
n-Decane	0.025		0.05		0.1		0.2		0.5		3	
n-Heptane	0.025		0.05		0.1	0.8228261	0.2	0.7721616	0.5	0.8669747	3	1.442869
n-Hexane	0.025		0.05		0.1	0.7224217	0.2	0.7044865	0.5	0.6943153	3	1.090884
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	1.025502	0.2	1.013564	0.5	1.255629	3	1.781011
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. - Stratford

SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC)

Project: 170361307

Calibration: SB30018

Instrument: 5975C

Calibration Date: 02/09/23 15:26

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	0.5938159	0.2	0.5518892	0.5	0.6541163	3	1.068496
p- & m- Xylenes	0.05		0.1		0.2	0.6570377	0.4	0.6599491	1	0.7663247	6	1.109072
p-Ethyltoluene	0.025		0.05		0.1	0.704701	0.2	0.6598174	0.5	0.8618817	3	1.361357
p-Isopropyltoluene	0.025		0.05		0.1	0.7088993	0.2	0.5836947	0.5	0.8384247	3	1.350792
Propylene	0.025		0.05		0.1	0.3703942	0.2	0.3424961	0.5	0.3324128	3	0.4096882
sec-Butylbenzene	0.025		0.05		0.1	1.001424	0.2	0.8760031	0.5	1.175831	3	1.804804
Styrene	0.025		0.05		0.1	0.3161091	0.2	0.2954033	0.5	0.3963412	3	0.7193274
tert-Butylbenzene	0.025		0.05		0.1	0.7143325	0.2	0.6347285	0.5	0.7508448	3	1.337045
Tetrachloroethylene	0.025		0.05		0.1	0.3636981	0.2	0.3426165	0.5	0.3370622	3	0.5033409
Tetrahydrofuran	0.025		0.05		0.1	0.6428329	0.2	0.6017852	0.5	0.6358037	3	0.839931
Toluene	0.025		0.05		0.1	0.7045151	0.2	0.6621935	0.5	0.7016676	3	0.8931184
trans-1,2-Dichloroethylene	0.025		0.05		0.1	0.8038472	0.2	0.7319052	0.5	0.7580428	3	1.05464
trans-1,3-Dichloropropylene	0.025		0.05		0.1	0.1794502	0.2	0.1760675	0.5	0.1935054	3	0.3179079
Trichloroethylene	0.025	0.3372033	0.05	0.2677291	0.1	0.2512303	0.2	0.2362536	0.5	0.2346496	3	0.3313322
Trichlorofluoromethane (Freon 11)	0.025		0.05		0.1	2.000435	0.2	1.88777	0.5	1.798412	3	2.427196
Vinyl acetate	0.025		0.05		0.1	1.280768	0.2	1.215774	0.5	1.269066	3	1.865435
Vinyl bromide	0.025		0.05		0.1	0.645894	0.2	0.5700873	0.5	0.5580335	3	0.7838464
Vinyl Chloride	0.025	1.596098	0.05	1.938418	0.1	0.927516	0.2	1.117035	0.5	0.9036866	3	1.135676

FORM VI INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30018
Instrument: 5975C
Calibration Date: 02/09/23 15:26

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	0.6134882	20	0.704317	30	0.7474822	50	0.8280252				
1,1,1-Trichloroethane	10	2.079642	20	2.22912	30	2.28408	50	2.532971				
1,1,2,2-Tetrachloroethane	10	0.9413634	20	1.058695	30	1.070383	50	0.9920325				
1,1,2-Trichloro-1,2,2-trifluoro ethane (Freon 113)	10	2.071299	20	2.287385	30	2.358123	50	2.672696				
1,1,2-Trichloroethane	10	0.4418835	20	0.5789634	30	0.5757117	50	0.6113389				
1,1-Dichloroethane	10	1.606488	20	1.655664	30	1.785866	50	1.892347				
1,1-Dichloroethylene	10	1.371696	20	1.397843	30	1.452879	50	1.524237				
1,2,4-Trichlorobenzene	10	0.3144305	20	0.711331	30	0.9193672	50	1.185585				
1,2,4-Trimethylbenzene	10	1.595572	20	1.752664	30	1.772492	50	1.785864				
1,2-Dibromoethane	10	0.6164466	20	0.7898483	30	0.8243931	50	0.916638				
1,2-Dichlorobenzene	10	1.058579	20	1.273996	30	1.329924	50	1.385188				
1,2-Dichloroethane	10	1.242054	20	1.280043	30	1.29026	50	1.336653				
1,2-Dichloropropane	10	0.342818	20	0.4337295	30	0.4260601	50	0.4051879				
1,2-Dichlorotetrafluoroethane	10	5.240604	20	4.755244	30	3.971428	50	3.382255				
1,3,5-Trimethylbenzene	10	1.561518	20	1.651404	30	1.680033	50	1.688711				
1,3-Butadiene	10	0.8702203	20	0.8272404	30	0.6543509	50	0.5797827				
1,3-Dichlorobenzene	10	1.062745	20	1.268114	30	1.331877	50	1.395622				
1,3-Dichloropropane	10	0.5059393	20	0.5939857	30	0.6193857	50	0.6423233				
1,4-Dichlorobenzene	10	1.013379	20	1.267826	30	1.358967	50	1.428262				
1,4-Dioxane	10	0.1750808	20	0.2072812	30	0.2207399	50	0.2386488				
2-Butanone	10	1.768255	20	1.830255	30	1.958408	50	2.02519				
2-Hexanone	10	0.7110441	20	0.9614694	30	0.8695387	50	0.7529132				
3-Chloropropene	10	0.9710491	20	0.9932423	30	1.084905	50	1.152757				
4-Methyl-2-pentanone	10	0.7274269	20	0.8372693	30	0.8517022	50	0.8149448				
Acetone	10	1.310692	20	1.298676	30	1.339514	50	1.339868				
Acrolein	10	0.331451	20	0.32653	30	0.3500813	50	0.3695387				
Acrylonitrile	10	0.601378	20	0.5991728	30	0.6598584	50	0.6985308				
Benzene	10	3.099861	20	3.844485	30	3.724589	50	3.776207				
Benzyl chloride	10	0.2346346	20	0.3356266	30	0.347771	50	0.37004				
Bromodichloromethane	10	0.7120016	20	0.828395	30	0.8197985	50	0.8533956				
Bromoform	10	0.8376285	20	1.00109	30	1.107956	50	1.214885				

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC) Project: 170361307

Calibration: SB30018 Instrument: 5975C

Calibration Date: 02/09/23 15:26

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	1.461713	20	1.443803	30	1.224248	50					
Carbon disulfide	10	2.455071	20	2.442514	30	2.687999	50	2.906711				
Carbon tetrachloride	10	2.216226	20	2.463284	30	2.552844	50	3.035719				
Chlorobenzene	10	0.9982427	20	1.147252	30	1.196036	50	1.224124				
Chloroethane	10	0.4570885	20	0.4420944	30	0.4590402	50	0.4740099				
Chloroform	10	2.042225	20	2.158588	30	2.250659	50	2.417328				
Chloromethane	10	1.006701	20	0.936181	30	0.7492749	50	0.668096				
cis-1,2-Dichloroethylene	10	1.1609	20	1.227023	30	1.321473	50	1.405476				
cis-1,3-Dichloropropylene	10	0.4583386	20	0.5192881	30	0.5633531	50	0.5955327				
Cyclohexane	10	1.277798	20	1.385802	30	1.524352	50	1.62502				
Dibromochloromethane	10	0.7955555	20	1.021908	30	1.051501	50	1.230806				
Dichlorodifluoromethane	10	2.844861	20	3.068751	30	2.900443	50	2.938496				
Ethanol	10	0.278876	20	0.2701715	30	0.2811751	50	0.287386				
Ethyl acetate	10	2.073789	20	2.202357	30	2.338136	50	2.39087				
Ethyl Benzene	10	1.57065	20	1.774858	30	1.772729	50	1.663073				
Hexachlorobutadiene	10	0.8287583	20	1.338692	30	1.564809	50	1.390768				
Isopropanol	10	1.541796	20	1.558944	30	1.651269	50	1.716495				
Isopropylbenzene	10	1.898604	20	2.089003	30	2.098013	50	2.021918				
Methyl Methacrylate	10	0.3263586	20	0.4249716	30	0.4217654	50	0.4113971				
Methyl tert-butyl ether (MTBE)	10	2.18555	20	2.292591	30	2.470528	50	2.663469				
Methylene chloride	10	1.048567	20	1.027392	30	1.095411	50	1.118359				
Naphthalene	10	0.6914011	20	1.553159	30	1.828047	50	2.02908				
n-Butylbenzene	10	1.769902	20	2.18156	30	2.163682	50	1.935261				
n-Decane	10		20		30		50					
n-Heptane	10	1.881366	20	2.334087	30	2.146508	50	1.964765				
n-Hexane	10	1.258981	20	1.377302	30	1.488199	50	1.581211				
n-Nonane	10		20		30		50					
n-octane	10		20		30		50					
n-pentane	10		20		30		50					
n-Propylbenzene	10	2.221134	20	2.43286	30	2.428343	50	2.214704				
n-undecane	10		20		30		50					

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford SDG: 23C0979

Client: Langan Engineering & Environmental Services (NYC) Project: 170361307

Calibration: SB30018 Instrument: 5975C

Calibration Date: 02/09/23 15:26

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	1.410756	20	1.538361	30	1.550406	50	1.409819				
p- & m- Xylenes	20	1.493741	40	1.572727	60	1.539789	100	1.262892				
p-Ethyltoluene	10	1.814949	20	2.084855	30	2.108811	50	2.035661				
p-Isopropyltoluene	10	2.123099	20	2.364443	30	2.488969	50	2.32862				
Propylene	10	0.4952466	20	0.5183587	30	0.5360688	50	0.5246478				
sec-Butylbenzene	10	2.576406	20	2.790349	30	2.779914	50	2.541266				
Styrene	10	1.115743	20	1.291832	30	1.337345	50	1.252247				
tert-Butylbenzene	10	1.792664	20	1.960026	30	2.028726	50	2.092532				
Tetrachloroethylene	10	0.6482898	20	0.8460609	30	0.8927991	50	1.08975				
Tetrahydrofuran	10	0.9886786	20	1.006147	30	1.094414	50	1.128312				
Toluene	10	1.072049	20	1.327413	30	1.343152	50	1.423578				
trans-1,2-Dichloroethylene	10	1.209185	20	1.263318	30	1.367869	50	1.457433				
trans-1,3-Dichloropropylene	10	0.4175298	20	0.4872572	30	0.5128425	50	0.5416714				
Trichloroethylene	10	0.4055	20	0.4874196	30	0.5036832	50	0.5553312				
Trichlorofluoromethane (Freon 11)	10	2.668088	20	2.875772	30	2.757164	50	3.054381				
Vinyl acetate	10	2.243793	20	2.497223	30	2.737671	50	2.865672				
Vinyl bromide	10	0.8820927	20	0.8934509	30	0.9673541	50	1.071587				
Vinyl Chloride	10	1.22898	20	1.173545	30	0.9280952	50	0.8136619				

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30018
Instrument: 5975C
Calibration Date: 02/09/23 15:26

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,1,1,2-Tetrachloroethane	0.5679118	32.62832	19.124	1.814462E-02		0.9998113	0.99	
1,1,1-Trichloroethane	1.88483	25.33712	12.729	3.358103E-02			30	
1,1,2,2-Tetrachloroethane	0.8254239	26.21371	20.93263	1.593841E-02			30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.931202	26.03835	8.545	5.002134E-02			30	
1,1,2-Trichloroethane	0.4023671	42.49058	16.97725	0.0093742		0.9983165	0.99	
1,1-Dichloroethane	1.463808	22.24976	10.744	1.613346E-02			30	
1,1-Dichloroethylene	1.182463	21.87709	8.7745	5.582412E-02			30	
1,2,4-Trichlorobenzene	0.450397	95.60095	27.1255	3.174914E-02		0.9971271	0.99	
1,2,4-Trimethylbenzene	1.222911	46.85064	22.6765	2.509121E-02		0.9992843	0.99	
1,2-Dibromoethane	0.5647201	45.42937	18.28175	2.189936E-02		0.9990897	0.99	
1,2-Dichlorobenzene	0.8808777	48.03752	24.38425	1.949391E-02		0.9986445	0.99	
1,2-Dichloroethane	1.091627	21.45167	13.25675	2.004608E-02			30	
1,2-Dichloropropane	0.3045277	36.67135	14.633	1.652544E-02		0.9973047	0.99	
1,2-Dichlorotetrafluoroethane	4.215403	15.10676	5.602	1.229547E-02			30	
1,3,5-Trimethylbenzene	1.211731	41.29969	21.84025	2.248195E-02		0.9995852	0.99	
1,3-Butadiene	0.6943268	17.39814	6.17225	1.497752E-02			30	
1,3-Dichlorobenzene	0.8736577	49.70458	23.50237	8.786833E-03		0.9987538	0.99	
1,3-Dichloropropane	0.4466001	37.00864	17.40075	9.728599E-03		0.9991713	0.99	
1,4-Dichlorobenzene	0.8472971	55.27094	23.6885	1.682563E-02		0.9981662	0.99	
1,4-Dioxane	0.1550428	40.21201	14.96438	6.852251E-02		0.9992273	0.99	
2-Butanone	1.605231	20.35645	11.34787	9.339091E-02			30	
2-Hexanone	0.5592923	52.37606	16.98738	0.0606424		0.9940145	0.99	
3-Chloropropene	0.8602626	26.03995	9.35525	1.620967E-02			30	
4-Methyl-2-pentanone	0.6123209	35.75343	15.52875	0.067238		0.998339	0.99	
Acetone	1.459811	17.72442	8.404	0.1306927			30	
Acrolein	0.2906823	21.88941	8.2955	0.1075137			30	
Acrylonitrile	0.5273167	25.08819	9.59175	0.103936			30	
Benzene	2.801228	33.2528	13.3865	5.252933E-03		0.9984487	0.99	
Benzyl chloride	0.2079255	71.61796	23.83414	4.619463E-03		0.9962667	0.99	
Bromodichloromethane	0.6193978	34.2256	14.993	1.496715E-02		0.9993134	0.99	
Bromoform	0.7296276	49.49904	20.68337	2.124702E-02		0.9992479	0.99	
Bromomethane	1.670006	51.91917	6.952286	9.668786E-02		0.9946113	0.99	

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30018
Instrument: 5975C
Calibration Date: 02/09/23 15:26

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Carbon disulfide	2.199716	23.56304	9.64375	2.541917E-02			30	
Carbon tetrachloride	1.929495	34.86459	13.188	1.413336E-02		0.9997715	0.99	
Chlorobenzene	0.955844	22.85887	19.0795	1.064394E-02			30	
Chloroethane	0.4059188	14.44435	7.122875	7.975285E-02			30	
Chloroform	1.85026	23.6293	11.997	2.229023E-02			30	
Chloromethane	0.8582864	14.43323	5.82725	7.599228E-02			30	
cis-1,2-Dichloroethylene	1.005026	25.6162	11.727	4.098107E-02			30	
cis-1,3-Dichloropropylene	0.3911601	42.10937	15.87475	8.551144E-03		0.9993211	0.99	
Cyclohexane	1.117996	35.76124	12.89625	1.887354E-02		0.9995798	0.99	
Dibromochloromethane	0.7225939	48.80897	17.90938	1.869637E-02		0.9992972	0.99	
Dichlorodifluoromethane	2.498374	20.1003	5.346375	4.070055E-02			30	
Ethanol	0.5401632	70.5422	7.2595	0.1154342		0.9989992	0.99	
Ethyl acetate	1.836021	25.62991	11.64425	7.243901E-02			30	
Ethyl Benzene	1.385254	26.4869	19.18	1.330794E-02			30	
Hexachlorobutadiene	0.8807332	54.22884	27.393	1.988581E-02		0.9864156	0.99	*
Isopropanol	1.895388	31.21437	8.18375	0.1830071		0.9998121	0.99	
Isopropylbenzene	1.518796	39.57423	20.75825	1.282842E-02		0.9991552	0.99	
Methyl Methacrylate	0.2716714	51.9275	14.6435	3.163053E-02		0.9970402	0.99	
Methyl tert-butyl ether (MTBE)	1.929202	29.02179	9.908	0.1334182			30	
Methylene chloride	1.245314	32.89409	9.504	2.627446E-02		0.9997639	0.99	
Naphthalene	0.9520446	87.23956	27.52143	0.0412689		0.9919905	0.99	
n-Butylbenzene	1.366133	52.29818	24.12175	1.552221E-02		0.9955364	0.99	
n-Decane							30	
n-Heptane	1.528945	41.81157	13.3975	1.635777E-02		0.996748	0.99	
n-Hexane	1.114725	32.98459	10.378	9.747037E-03		0.9996587	0.99	
n-Nonane							30	
n-octane							30	
n-pentane							30	
n-Propylbenzene	1.796593	34.30909	21.52725	1.740294E-02		0.9985213	0.99	
n-undecane							30	
o-Xylene	1.097207	39.93537	20.10913	1.189213E-02		0.9982891	0.99	
p- & m- Xylenes	1.132692	34.85683	19.3275	1.472818E-02		0.9972675	0.99	

FORM VI

INITIAL CALIBRATION DATA (Continued)

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170361307
Calibration:	SB30018	Instrument:	5975C
		Calibration Date:	02/09/23 15:26

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
p-Ethyltoluene	1.454004	43.85898	21.75112	1.674701E-02		0.9985519	0.99	
p-Isopropyltoluene	1.598368	50.98184	23.33075	1.585434E-02		0.9975952	0.99	
Propylene	0.4411641	19.61581	5.27675	6.168698E-02			30	
sec-Butylbenzene	1.94325	42.65853	23.066	2.044526E-02		0.9984025	0.99	
Styrene	0.8405435	54.70295	20.1245	8.966005E-03		0.9974073	0.99	
tert-Butylbenzene	1.413862	44.91042	22.60175	2.144217E-02		0.9995083	0.99	
Tetrachloroethylene	0.6279522	45.94898	17.71687	0.0165038		0.9995003	0.99	
Tetrahydrofuran	0.867238	24.99612	12.3305	0.099741			30	
Toluene	1.015961	31.3337	16.53125	1.786222E-02		0.9990214	0.99	
trans-1,2-Dichloroethylene	1.08078	26.5724	10.1005	0.0256283			30	
trans-1,3-Dichloropropylene	0.353279	44.29718	16.68163	1.960388E-02		0.9992871	0.99	
Trichloroethylene	0.3610332	33.26443	14.41	1.822042E-02		0.9995612	0.99	
Trichlorofluoromethane (Freon 11)	2.433652	19.82609	7.69275	2.776429E-02			30	
Vinyl acetate	1.996925	34.30398	10.69287	5.366061E-02		0.9992837	0.99	
Vinyl bromide	0.7965432	23.8465	7.576375	4.335981E-02			30	
Vinyl Chloride	1.176271	29.6445	6.095	7.003539E-02			30	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223685.D
Acq On : 27 Jan 2023 2:07 pm
Operator : VH
Sample : SEQ-CAL1
Misc : QBTO2012723A 0.025 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 08:51:34 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration

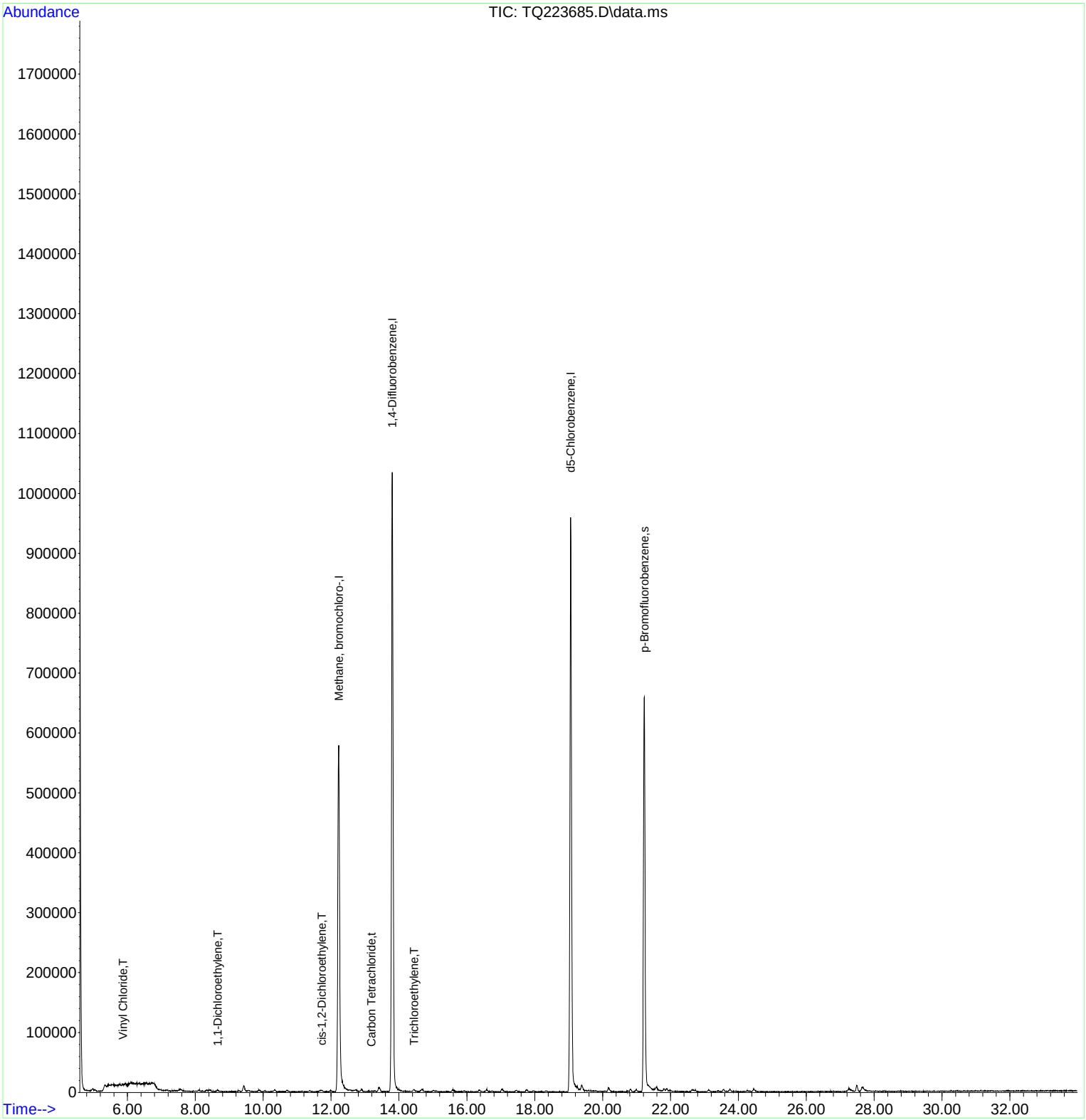
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.226	49	695968	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	13.804	114	1489520	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.060	117	1013729	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.230	95	456366	8.04	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 80.40%			
Target Compounds						Qvalue
6) Vinyl Chloride	5.867	62	2433	0.04	ppbv #	80
16) 1,1-Dichloroethylene	8.659	61	2757	0.04	ppbv	97
28) cis-1,2-Dichloroethylene	11.720	61	2854	0.05	ppbv #	84
33) Carbon Tetrachloride	13.189	117	1067	0.02	ppbv #	87
38) Trichloroethylene	14.438	95	2191	0.04	ppbv	85

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223685.D
Acq On : 27 Jan 2023 2:07 pm
Operator : VH
Sample : SEQ-CAL1
Misc : QBTO2012723A 0.025 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 08:51:34 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration



AIR-2-0070.M Mon Feb 06 14:58:08 2023 Page: 2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223686.D
Acq On : 27 Jan 2023 3:03 pm
Operator : VH
Sample : SEQ-CAL2
Misc : QBTO2012723A 0.050 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 08:55:23 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration

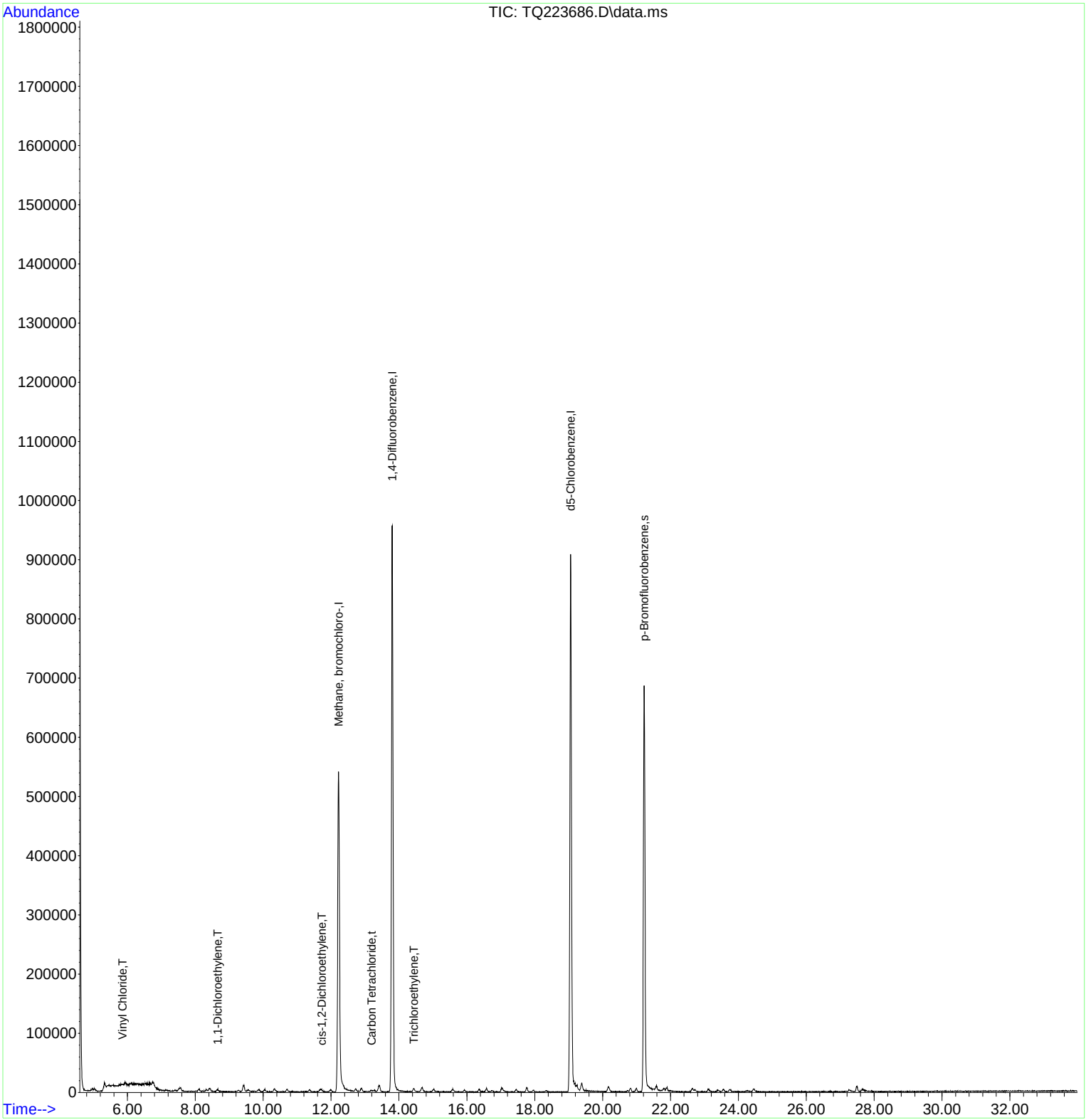
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.219	49	639307	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	13.804	114	1399063	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.060	117	963324	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.224	95	464195	8.61	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 86.10%			
Target Compounds						Qvalue
6) Vinyl Chloride	5.849	62	4630	0.09	ppbv	81
16) 1,1-Dichloroethylene	8.659	61	5019	0.09	ppbv	95
28) cis-1,2-Dichloroethylene	11.726	61	3984	0.07	ppbv	96
33) Carbon Tetrachloride	13.195	117	2912	0.07	ppbv #	93
38) Trichloroethylene	14.432	95	3029	0.06	ppbv	88

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223686.D
Acq On : 27 Jan 2023 3:03 pm
Operator : VH
Sample : SEQ-CAL2
Misc : QBTO2012723A 0.050 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 08:55:23 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration



AIR-2-0070.M Mon Feb 06 14:58:11 2023 Page: 2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223687.D
Acq On : 27 Jan 2023 4:00 pm
Operator : VH
Sample : SEQ-CAL3
Misc : QBTO2012723A 0.100 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 08:57:11 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.213	49	575995	10.00	ppbv	-0.01
37) 1,4-Difluorobenzene	13.798	114	1223933	10.00	ppbv	-0.01
53) d5-Chlorobenzene	19.059	117	858273	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.224	95	411543	8.57	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 85.70%			
Target Compounds						Qvalue
2) Propylene	4.940	42	4458	0.15	ppbv #	82
3) Dichlorodifluoromethane	5.001	85	11203	0.15	ppbv #	91
4) 1,2-Dichlorotetrafluor...	5.288	85	14861	0.15	ppbv	94
5) Chloromethane	5.538	50	7008m	0.15	ppbv	
6) Vinyl Chloride	5.800	62	6429	0.14	ppbv	92
7) 1,3-Butadiene	5.897	54	5349	0.14	ppbv #	79
8) Bromomethane	6.720	94	9777	0.32	ppbv #	68
9) Chloroethane	6.897	64	3180	0.17	ppbv #	85
10) Vinyl Bromide	7.385	106	3818	0.14	ppbv	95
11) Trichlorofluoromethane	7.501	101	9625	0.17	ppbv	99
12) Isopropanol	8.092	45	12577	0.14	ppbv #	99
13) Acrolein	8.196	56	2267	0.11	ppbv #	56
14) Acetone	8.330	43	12311	0.19	ppbv	93
15) Freon-113	8.415	101	9431	0.16	ppbv	92
16) 1,1-Dichloroethylene	8.635	61	7785	0.15	ppbv	98
17) 3-Chloropropene	9.257	41	6738	0.10	ppbv #	78
18) Methylene Chloride	9.415	49	15654	0.29	ppbv	84
19) Acrylonitrile	9.543	53	3678	0.10	ppbv	95
20) Carbon disulfide	9.525	76	10667	0.10	ppbv #	73
21) Methyl-tert-Butyl Ethe...	9.872	73	9130	0.10	ppbv #	79
22) trans-1,2-Dichloroethy...	10.025	61	6433	0.13	ppbv	92
23) Hexane	10.317	57	6680	0.11	ppbv #	72
24) Vinyl Acetate	10.677	43	8617	0.07	ppbv #	98
25) 1,1-Dichloroethane	10.695	63	10020	0.16	ppbv #	62
26) 2-Butanone	11.354	43	13380	0.13	ppbv #	84
27) Ethyl Acetate	11.665	43	12223	0.09	ppbv #	82
28) cis-1,2-Dichloroethylene	11.713	61	7116	0.14	ppbv	94
29) Chloroform	11.975	83	8281	0.11	ppbv #	94
30) Tetrahydrofuran	12.347	42	6729	0.11	ppbv #	86
31) 1,1,1-Trichlorethane	12.707	97	6336	0.12	ppbv #	78
32) Cyclohexane	12.884	56	7595	0.11	ppbv #	84
33) Carbon Tetrachloride	13.189	117	5052	0.13	ppbv #	58
34) 1,2-Dichloroethane	13.274	62	5537	0.14	ppbv #	85
35) Benzene	13.402	78	15406	0.14	ppbv	91
36) n-Heptane	13.426	43	8442	0.08	ppbv #	94
38) Trichloroethylene	14.432	95	4892	0.10	ppbv	83
39) 1,2-Dichloropropane	14.664	63	5600	0.11	ppbv #	79
40) Methyl Methacrylate	14.701	69	3233	0.07	ppbv #	26
41) 1,4-Dioxane	14.993	88	2564	0.10	ppbv #	100
42) Bromodichloromethane	15.036	83	6244	0.09	ppbv #	87
43) Methyl Isobutyl Ketone	15.572	43	11584	0.08	ppbv	84
44) cis-1,3-Dichloropropene	15.920	75	4097	0.06	ppbv #	85
45) Toluene	16.578	91	14707	0.09	ppbv	94
46) trans-1,3-Dichloropropene	16.737	75	2767	0.06	ppbv #	89
47) 1,1,2-Trichlorethane	17.029	97	5221	0.09	ppbv	94
48) 2-Hexanone	17.054	43	8346	0.06	ppbv #	93
49) 1,3-Dichloropropane	17.444	76	6235	0.08	ppbv #	78

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223687.D
Acq On : 27 Jan 2023 4:00 pm
Operator : VH
Sample : SEQ-CAL3
Misc : QBTO2012723A 0.100 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 08:57:11 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration

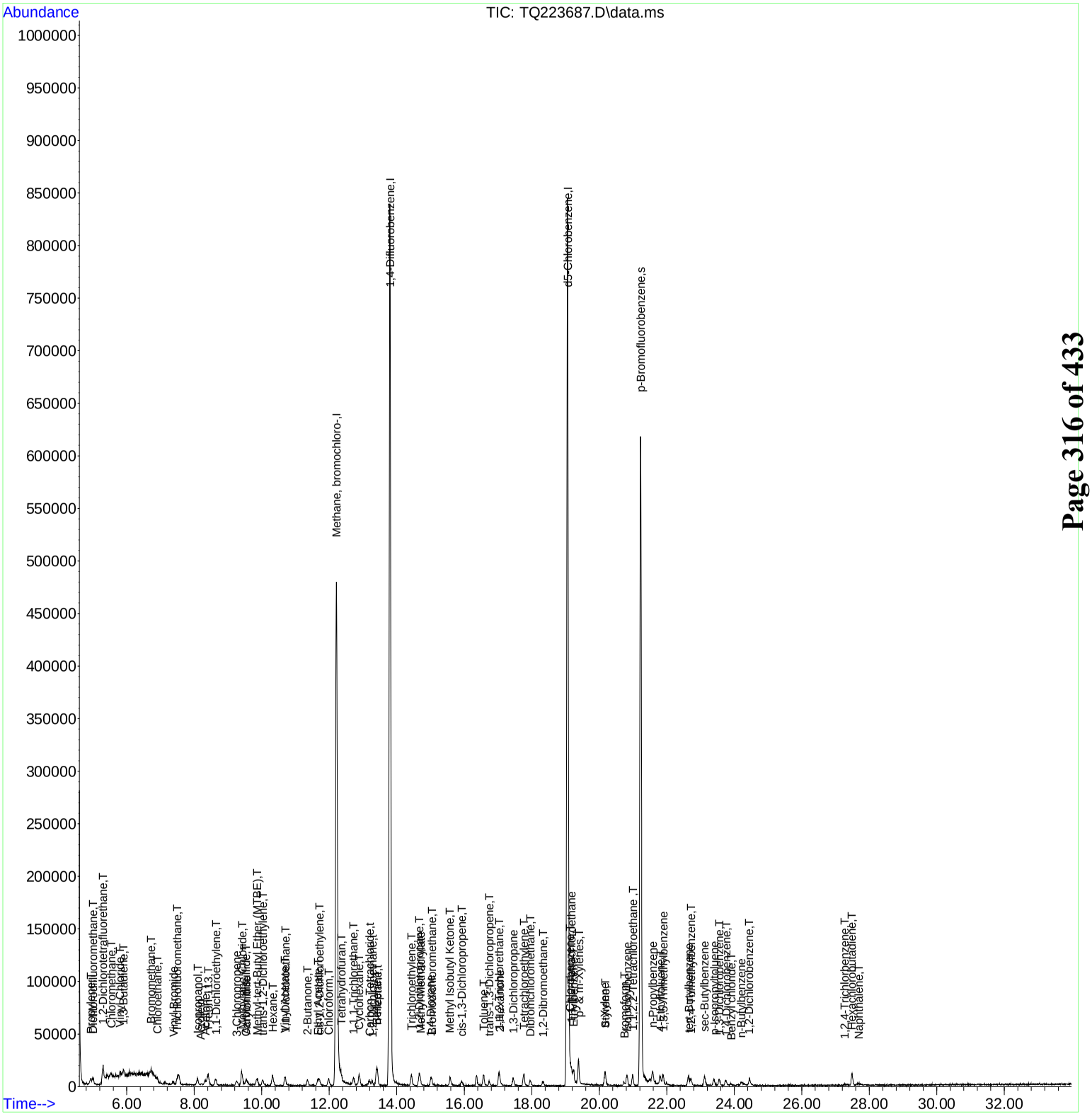
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Tetrachloroethylene	17.773	166	6210	0.11 ppbv	97
51) Dibromchloromethane	17.962	129	5076	0.08 ppbv	93
52) 1,2-Dibromoethane	18.328	107	5754	0.08 ppbv	97
54) Chlorobenzene	19.133	112	12064	0.15 ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.169	131	5236	0.11 ppbv #	57
56) Ethylbenzene	19.242	91	16081	0.12 ppbv	96
57) p- & m-Xylenes	19.389	91	23359	0.21 ppbv	98
58) o-Xylene	20.163	91	10017	0.09 ppbv	99
59) Styrene	20.181	104	5667	0.07 ppbv #	100
60) Bromoform	20.742	173	3393	0.09 ppbv	84
61) n-Propylbenzene	21.583	91	16083	0.08 ppbv	100
62) Isopropylbenzene	20.827	105	11562	0.08 ppbv	99
63) 1,1,2,2-Tetrachloroeth...	20.992	83	9799	0.13 ppbv	98
65) 4-Ethyltoluene	21.809	105	10575	0.07 ppbv #	86
66) 1,3,5-Trimethylbenzene	21.900	105	9475	0.07 ppbv	89
67) tert-Butylbenzene	22.644	119	9438	0.07 ppbv #	79
68) 1,2,4-Trimethylbenzene	22.717	105	8174	0.07 ppbv #	94
69) sec-Butylbenzene	23.114	105	14213	0.07 ppbv #	96
70) p-Isopropyltoluene	23.406	119	7614	0.05 ppbv #	88
71) 1,3-Dichlorobenzene	23.552	146	5492	0.08 ppbv	89
72) 1,4-Dichlorobenzene	23.760	146	4959	0.07 ppbv	94
73) Benzyl chloride	23.900	91	2975	0.04 ppbv #	61
74) n-Butylbenzene	24.199	91	6102	0.05 ppbv #	70
75) 1,2-Dichlorobenzene	24.443	146	6866	0.10 ppbv	94
76) 1,2,4-Trichlorbenzene	27.271	180	1444	0.09 ppbv #	75
77) Hexachlorobutadiene	27.479	225	3551	0.12 ppbv	92
78) Naphthalene	27.692	128	9057	0.19 ppbv #	70

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223687.D
Acq On : 27 Jan 2023 4:00 pm
Operator : VH
Sample : SEQ-CAL3
Misc : QBTO2012723A 0.100 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 08:57:11 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223688.D
Acq On : 27 Jan 2023 4:59 pm
Operator : VH
Sample : SEQ-CAL4
Misc : QBTO2012723A 0.200 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 09:02:32 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.213	49	495882	10.00	ppbv	-0.01
37) 1,4-Difluorobenzene	13.798	114	1047331	10.00	ppbv	-0.01
53) d5-Chlorobenzene	19.059	117	770552	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.224	95	358444	8.31	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 83.10%			
Target Compounds						Qvalue
2) Propylene	4.934	42	7491	0.29	ppbv	92
3) Dichlorodifluoromethane	5.013	85	19624	0.31	ppbv #	93
4) 1,2-Dichlorotetrafluor...	5.312	85	26581	0.31	ppbv	93
5) Chloromethane	5.532	50	8972m	0.22	ppbv	
6) Vinyl Chloride	5.812	62	11173	0.29	ppbv	89
7) 1,3-Butadiene	5.897	54	7702	0.24	ppbv #	59
8) Bromomethane	6.733	94	11841	0.44	ppbv	83
9) Chloroethane	6.903	64	4942	0.31	ppbv #	91
10) Vinyl Bromide	7.385	106	6873	0.29	ppbv	94
11) Trichlorofluoromethane	7.507	101	15808	0.32	ppbv	95
12) Isopropanol	8.086	45	19593	0.26	ppbv	100
13) Acrolein	8.202	56	3790	0.21	ppbv #	56
14) Acetone	8.312	43	20445	0.36	ppbv	97
15) Freon-113	8.421	101	15776	0.31	ppbv	91
16) 1,1-Dichloroethylene	8.629	61	13008	0.30	ppbv	97
17) 3-Chloropropene	9.257	41	10776	0.19	ppbv	86
18) Methylene Chloride	9.415	49	19816	0.43	ppbv	84
19) Acrylonitrile	9.561	53	6456	0.19	ppbv #	92
20) Carbon disulfide	9.543	76	18712	0.20	ppbv #	37
21) Methyl-tert-Butyl Ethe...	9.860	73	15517	0.19	ppbv #	75
22) trans-1,2-Dichloroethy...	10.037	61	10503	0.25	ppbv	95
23) Hexane	10.311	57	11950	0.22	ppbv #	83
24) Vinyl Acetate	10.689	43	17162	0.15	ppbv #	98
25) 1,1-Dichloroethane	10.695	63	13565	0.25	ppbv	88
26) 2-Butanone	11.354	43	20427	0.24	ppbv #	84
27) Ethyl Acetate	11.658	43	21865	0.19	ppbv #	83
28) cis-1,2-Dichloroethylene	11.695	61	13350m	0.31	ppbv	
29) Chloroform	11.976	83	12723	0.20	ppbv #	86
30) Tetrahydrofuran	12.329	42	12336	0.24	ppbv #	83
31) 1,1,1-Trichlorethane	12.725	97	12243	0.26	ppbv #	85
32) Cyclohexane	12.878	56	13141	0.23	ppbv	89
33) Carbon Tetrachloride	13.183	117	8563	0.25	ppbv	96
34) 1,2-Dichloroethane	13.268	62	9174	0.27	ppbv	98
35) Benzene	13.396	78	25757	0.27	ppbv	93
36) n-Heptane	13.420	43	15204	0.16	ppbv #	97
38) Trichloroethylene	14.432	95	10043	0.25	ppbv	93
39) 1,2-Dichloropropane	14.664	63	9258	0.22	ppbv	85
40) Methyl Methacrylate	14.707	69	5958	0.14	ppbv #	45
41) 1,4-Dioxane	14.999	88	4404	0.20	ppbv #	100
42) Bromodichloromethane	15.024	83	11649	0.19	ppbv #	90
43) Methyl Isobutyl Ketone	15.585	43	19371	0.15	ppbv	89
44) cis-1,3-Dichloropropene	15.920	75	7149	0.13	ppbv #	88
45) Toluene	16.572	91	24592	0.17	ppbv	93
46) trans-1,3-Dichloropropene	16.737	75	5364	0.13	ppbv #	90
47) 1,1,2-Trichlorethane	17.017	97	9656	0.20	ppbv	92
48) 2-Hexanone	17.048	43	15296	0.13	ppbv #	73
49) 1,3-Dichloropropane	17.450	76	11113	0.16	ppbv	87

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223688.D
Acq On : 27 Jan 2023 4:59 pm
Operator : VH
Sample : SEQ-CAL4
Misc : QBTO2012723A 0.200 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 09:02:32 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration

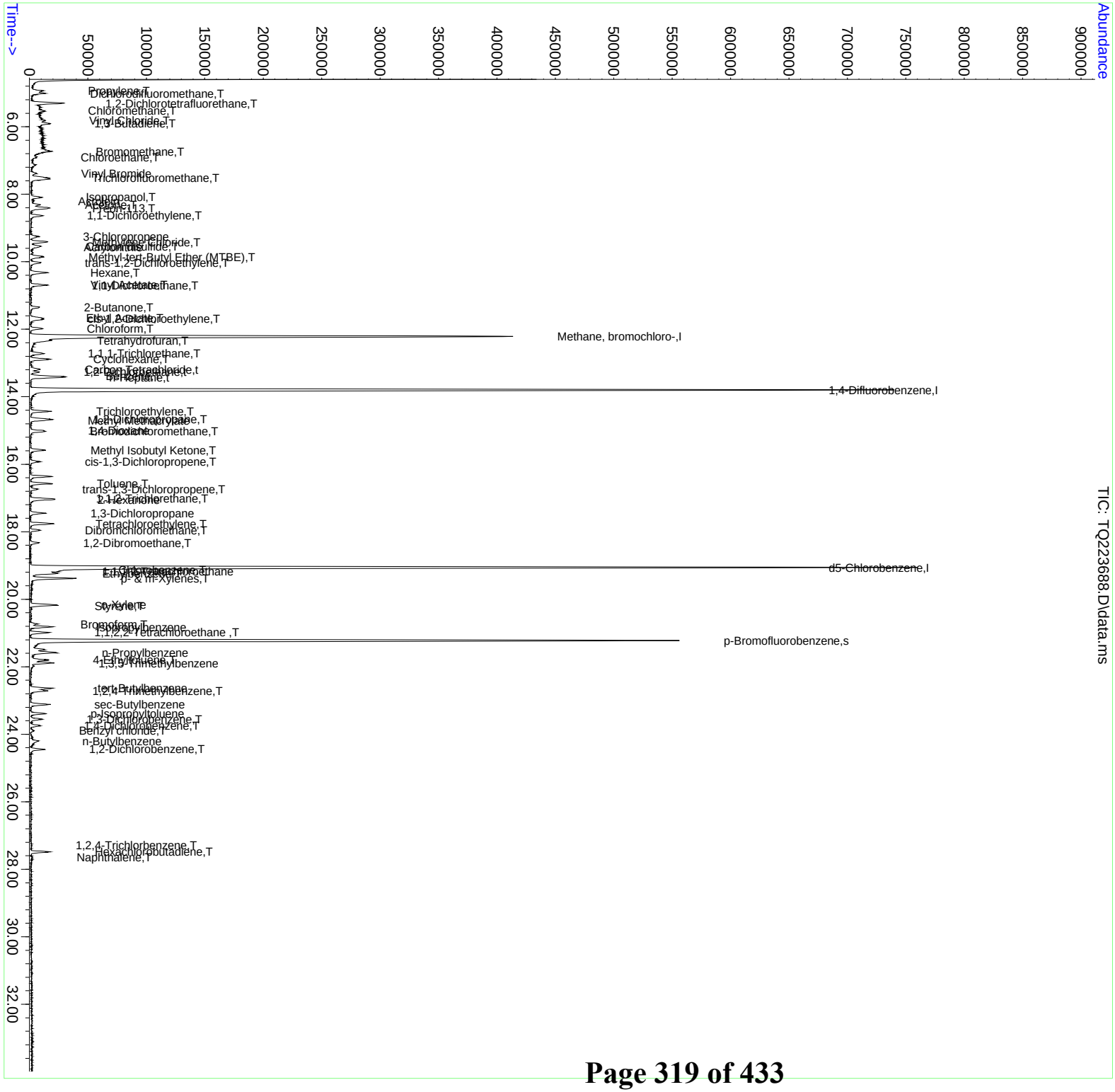
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Tetrachloroethylene	17.767	166	10490	0.21 ppbv	97
51) Dibromchloromethane	17.956	129	8087	0.15 ppbv	95
52) 1,2-Dibromoethane	18.334	107	10179	0.16 ppbv	96
54) Chlorobenzene	19.127	112	19358	0.26 ppbv #	86
55) 1,1,1,2-Tetrachloroethane	19.175	131	7646	0.18 ppbv #	57
56) Ethylbenzene	19.230	91	26037	0.21 ppbv	99
57) p- & m-Xylenes	19.377	91	37690	0.38 ppbv	97
58) o-Xylene	20.163	91	17466	0.18 ppbv	99
59) Styrene	20.193	104	9869	0.13 ppbv #	100
60) Bromoform	20.742	173	4310	0.12 ppbv	89
61) n-Propylbenzene	21.589	91	30570	0.16 ppbv	99
62) Isopropylbenzene	20.821	105	21780	0.17 ppbv #	96
63) 1,1,2,2-Tetrachloroeth...	20.980	83	16102	0.23 ppbv	98
65) 4-Ethyltoluene	21.797	105	18453	0.13 ppbv	98
66) 1,3,5-Trimethylbenzene	21.888	105	19618	0.17 ppbv	95
67) tert-Butylbenzene	22.632	119	18576	0.14 ppbv	90
68) 1,2,4-Trimethylbenzene	22.711	105	16899	0.15 ppbv #	91
69) sec-Butylbenzene	23.120	105	23193	0.13 ppbv #	94
70) p-Isopropyltoluene	23.388	119	17324	0.13 ppbv #	79
71) 1,3-Dichlorobenzene	23.552	146	9277	0.15 ppbv	97
72) 1,4-Dichlorobenzene	23.735	146	8039	0.13 ppbv	97
73) Benzyl chloride	23.894	91	4324	0.07 ppbv	93
74) n-Butylbenzene	24.205	91	13817	0.11 ppbv	93
75) 1,2-Dichlorobenzene	24.443	146	10050	0.16 ppbv	97
76) 1,2,4-Trichlorbenzene	27.277	180	950	0.07 ppbv #	76
77) Hexachlorobutadiene	27.485	225	5389	0.21 ppbv	90
78) Naphthalene	27.643	128	5396	0.12 ppbv #	70

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223688.D
Acq On : 27 Jan 2023 4:59 pm
Operator : VH
Sample : SEQ-CAL4
Misc : QBTO2012723A 0.200 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 09:02:32 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223689.D
Acq On : 27 Jan 2023 6:02 pm
Operator : VH
Sample : SEQ-CAL5
Misc : QBTO2012723A 0.500 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 09:06:08 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.207	49	450829	10.00	ppbv	-0.02
37) 1,4-Difluorobenzene	13.792	114	946540	10.00	ppbv	-0.02
53) d5-Chlorobenzene	19.054	117	739890	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.230	95	352708	8.52	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 85.20%			
Target Compounds						Qvalue
2) Propylene	4.928	42	16182	0.70	ppbv	94
3) Dichlorodifluoromethane	4.995	85	39965	0.69	ppbv #	94
4) 1,2-Dichlorotetrafluor...	5.288	85	53606	0.69	ppbv	95
5) Chloromethane	5.520	50	23358m	0.63	ppbv	
6) Vinyl Chloride	5.794	62	22793	0.64	ppbv	95
7) 1,3-Butadiene	5.891	54	18436	0.63	ppbv	96
8) Bromomethane	6.708	94	23491	0.97	ppbv	93
9) Chloroethane	6.904	64	10793	0.75	ppbv #	87
10) Vinyl Bromide	7.373	106	14194	0.67	ppbv	99
11) Trichlorofluoromethane	7.495	101	34711	0.77	ppbv	97
12) Isopropanol	8.080	45	43570	0.63	ppbv	100
13) Acrolein	8.172	56	8570	0.53	ppbv #	1
14) Acetone	8.281	43	41925	0.81	ppbv	96
15) Freon-113	8.403	101	32874	0.70	ppbv	95
16) 1,1-Dichloroethylene	8.635	61	28605	0.72	ppbv	97
17) 3-Chloropropene	9.257	41	24528	0.46	ppbv	85
18) Methylene Chloride	9.403	49	34802	0.84	ppbv	78
19) Acrylonitrile	9.537	53	15214	0.50	ppbv #	63
20) Carbon disulfide	9.531	76	45924	0.54	ppbv #	78
21) Methyl-tert-Butyl Ethe...	9.842	73	35526	0.48	ppbv #	84
22) trans-1,2-Dichloroethy...	10.031	61	24027	0.63	ppbv	97
23) Hexane	10.317	57	28399	0.59	ppbv #	85
24) Vinyl Acetate	10.671	43	41869	0.41	ppbv #	99
25) 1,1-Dichloroethane	10.695	63	32612	0.66	ppbv	90
26) 2-Butanone	11.342	43	47563	0.60	ppbv	86
27) Ethyl Acetate	11.646	43	50683	0.48	ppbv #	79
28) cis-1,2-Dichloroethylene	11.701	61	28289m	0.72	ppbv	
29) Chloroform	11.982	83	30089	0.52	ppbv #	89
30) Tetrahydrofuran	12.329	42	26231	0.56	ppbv	89
31) 1,1,1-Trichlorethane	12.713	97	27141	0.64	ppbv	90
32) Cyclohexane	12.890	56	29796	0.57	ppbv	86
33) Carbon Tetrachloride	13.183	117	19977	0.63	ppbv #	58
34) 1,2-Dichloroethane	13.262	62	19723	0.63	ppbv	100
35) Benzene	13.390	78	55241	0.63	ppbv	87
36) n-Heptane	13.421	43	38088	0.44	ppbv #	75
38) Trichloroethylene	14.426	95	20203	0.56	ppbv	96
39) 1,2-Dichloropropane	14.652	63	22215	0.59	ppbv	87
40) Methyl Methacrylate	14.682	69	14832	0.40	ppbv #	41
41) 1,4-Dioxane	14.993	88	10179	0.52	ppbv #	100
42) Bromodichloromethane	15.030	83	27262	0.48	ppbv #	92
43) Methyl Isobutyl Ketone	15.579	43	50434	0.43	ppbv	88
44) cis-1,3-Dichloropropene	15.920	75	20252	0.41	ppbv #	91
45) Toluene	16.572	91	62876	0.49	ppbv	98
46) trans-1,3-Dichloropropene	16.731	75	14706	0.38	ppbv #	94
47) 1,1,2-Trichlorethane	17.030	97	19698	0.46	ppbv	97
48) 2-Hexanone	17.042	43	39228	0.38	ppbv #	74
49) 1,3-Dichloropropane	17.456	76	28431	0.47	ppbv	92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223689.D
Acq On : 27 Jan 2023 6:02 pm
Operator : VH
Sample : SEQ-CAL5
Misc : QBTO2012723A 0.500 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 09:06:08 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration

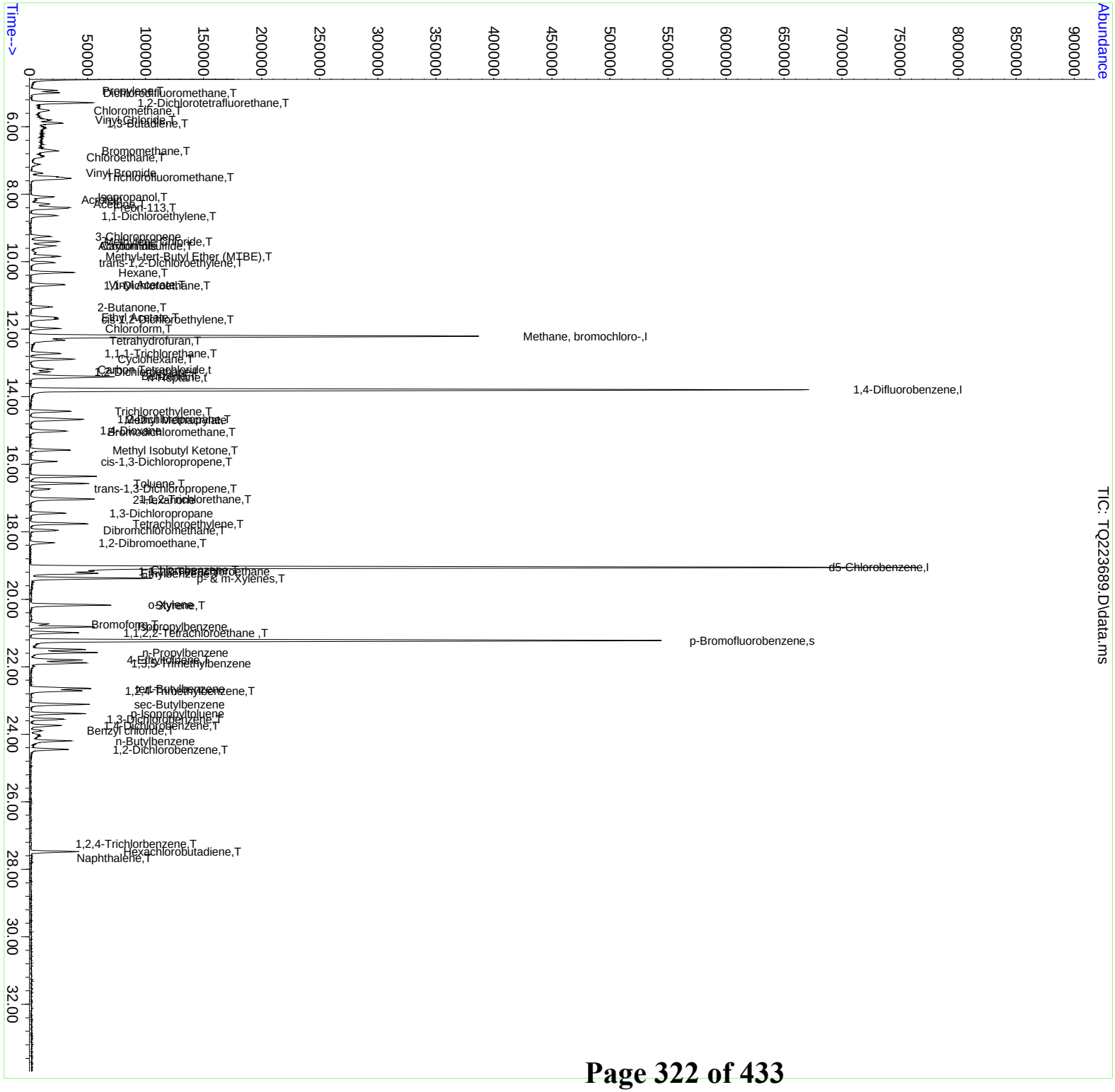
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Tetrachloroethylene	17.767	166	26218	0.59 ppbv	99
51) Dibromchloromethane	17.956	129	21440	0.43 ppbv	97
52) 1,2-Dibromoethane	18.328	107	25640m	0.45 ppbv	
54) Chlorobenzene	19.127	112	46472	0.65 ppbv #	86
55) 1,1,1,2-Tetrachloroethane	19.176	131	19765	0.48 ppbv #	80
56) Ethylbenzene	19.236	91	68612	0.58 ppbv	96
57) p- & m-Xylenes	19.377	91	103662	1.08 ppbv	99
58) o-Xylene	20.163	91	48114	0.51 ppbv	99
59) Styrene	20.175	104	28479	0.39 ppbv #	100
60) Bromoform	20.742	173	12701	0.37 ppbv	98
61) n-Propylbenzene	21.577	91	80269	0.44 ppbv	99
62) Isopropylbenzene	20.815	105	61567	0.51 ppbv	97
63) 1,1,2,2-Tetrachloroeth...	20.992	83	40067	0.60 ppbv	100
65) 4-Ethyltoluene	21.803	105	54330	0.41 ppbv	99
66) 1,3,5-Trimethylbenzene	21.888	105	53024	0.47 ppbv	97
67) tert-Butylbenzene	22.644	119	55074	0.44 ppbv #	87
68) 1,2,4-Trimethylbenzene	22.705	105	47455	0.45 ppbv #	88
69) sec-Butylbenzene	23.114	105	73456	0.43 ppbv	98
70) p-Isopropyltoluene	23.388	119	51852	0.42 ppbv #	89
71) 1,3-Dichlorobenzene	23.553	146	24172	0.40 ppbv	96
72) 1,4-Dichlorobenzene	23.736	146	22712	0.38 ppbv	97
73) Benzyl chloride	23.894	91	14806	0.24 ppbv	97
74) n-Butylbenzene	24.199	91	43229	0.37 ppbv	99
75) 1,2-Dichlorobenzene	24.449	146	27450	0.45 ppbv	95
76) 1,2,4-Trichlorbenzene	27.241	180	521m	0.04 ppbv	
77) Hexachlorobutadiene	27.479	225	11136	0.44 ppbv #	85
78) Naphthalene	27.662	128	2148	0.05 ppbv #	70

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL\
Data File : TQ223689.D
Acq On : 27 Jan 2023 6:02 pm
Operator : VH
Sample : SEQ-CAL5
Misc : : QBTO2012723A 0.500 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Jan 30 09:06:08 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Dec 09 14:30:48 2022
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223690.D
Acq On : 27 Jan 2023 6:58 pm
Operator : VH
Sample : SEQ-CAL6
Misc : QBTO2012723A 3.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Feb 09 14:31:04 2023
Quant Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Quant Title : VPH Method
QLast Update : Wed Aug 10 16:10:18 2022
Response via : Initial Calibration

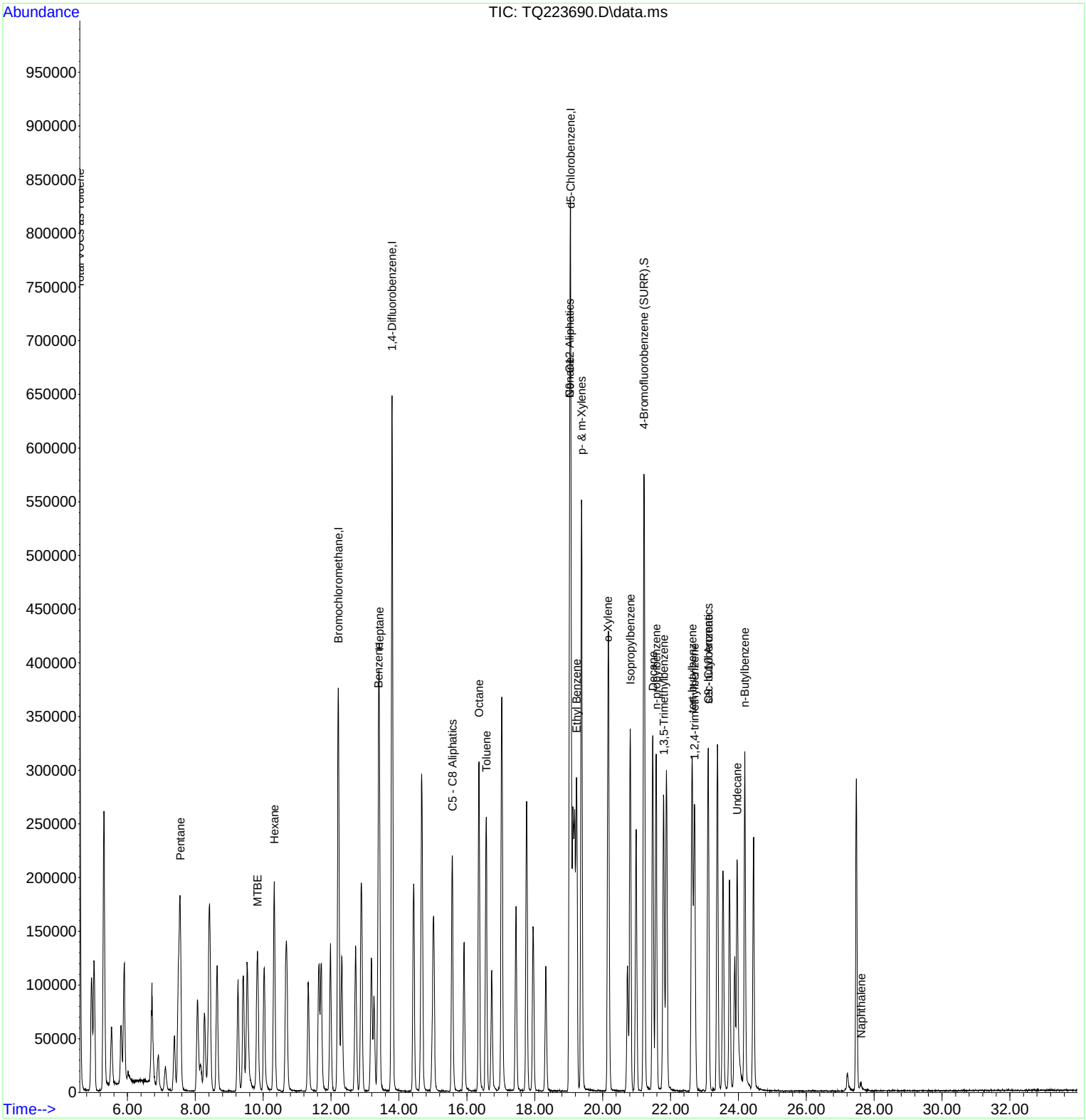
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	12.213	130	205636	10.00 ppbv	# 0.22
7) 1,4-Difluorobenzene	13.798	114	879962	10.00 ppbv	# 0.23
12) d5-Chlorobenzene	19.060	117	799135m	10.00 ppbv	0.24
System Monitoring Compounds					
18) 4-Bromofluorobenzene (...	21.218	95	359589	6.13 ppbv	0.23
Spiked Amount 10.000	Range 70 - 120		Recovery =	61.30%#	
Target Compounds					Qvalue
2) Pentane	7.556	43	216735	13.31 ppbv	77
3) MTBE	9.830	73	199433	3.42 ppbv #	87
4) Hexane	10.330	41	133774m	9.10 ppbv	
5) Benzene	13.396	78	287925m	5.02 ppbv	
6) Heptane	13.420	43	221943m	11.37 ppbv	
8) Octane	16.359	43	273222m	8.73 ppbv	
9) C5 - C8 Aliphatics	15.572	43	2302745m	35.41 ppbv	
10) Toluene	16.572	91	322237	3.56 ppbv	100
11) Total VOCs as Toluene	4.593	TIC	56602826m	4.27 ppbv	
13) Nonane	19.029	43	256634	7.53 ppbv	85
14) Ethyl Benzene	19.230	91	373644	2.89 ppbv	99
15) p- & m-Xylenes	19.377	91	545576	2.78 ppbv	96
16) o-Xylene	20.157	91	282955m	2.67 ppbv	
17) C9 - C12 Aliphatics	19.029	43	734789m	22.21 ppbv	
19) Decane	21.480	43	243202m	7.39 ppbv	
20) Undecane	23.961	43	180793m	6.86 ppbv	
21) n-propylbenzene	21.577	91	483070m	2.79 ppbv	
22) Isopropylbenzene	20.815	105	388452	2.57 ppbv	99
23) 1,3,5-Trimethylbenzene	21.803	105	370500	2.89 ppbv	88
24) tert-butylbenzene	22.638	119	342608m	2.47 ppbv	
25) 1,2,4-trimethylbenzene	22.705	105	304532m	2.33 ppbv	
26) sec-butylbenzene	23.114	105	480115	2.72 ppbv	100
27) n-Butylbenzene	24.193	91	330771m	2.73 ppbv	
28) C9 - C10 Aromatics	23.114	105	1507720m	26.35 ppbv	
29) Naphthalene	27.619	128	16329m	0.14 ppbv	

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223690.D
Acq On : 27 Jan 2023 6:58 pm
Operator : VH
Sample : SEQ-CAL6
Misc : QBTO2012723A 3.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Feb 09 14:31:04 2023
Quant Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Quant Title : VPH Method
QLast Update : Wed Aug 10 16:10:18 2022
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223691.D
Acq On : 27 Jan 2023 7:56 pm
Operator : VH
Sample : SEQ-CAL7
Misc : QBTO2012723A 10.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Feb 09 14:39:27 2023
Quant Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Quant Title : VPH Method
QLast Update : Wed Aug 10 16:10:18 2022
Response via : Initial Calibration

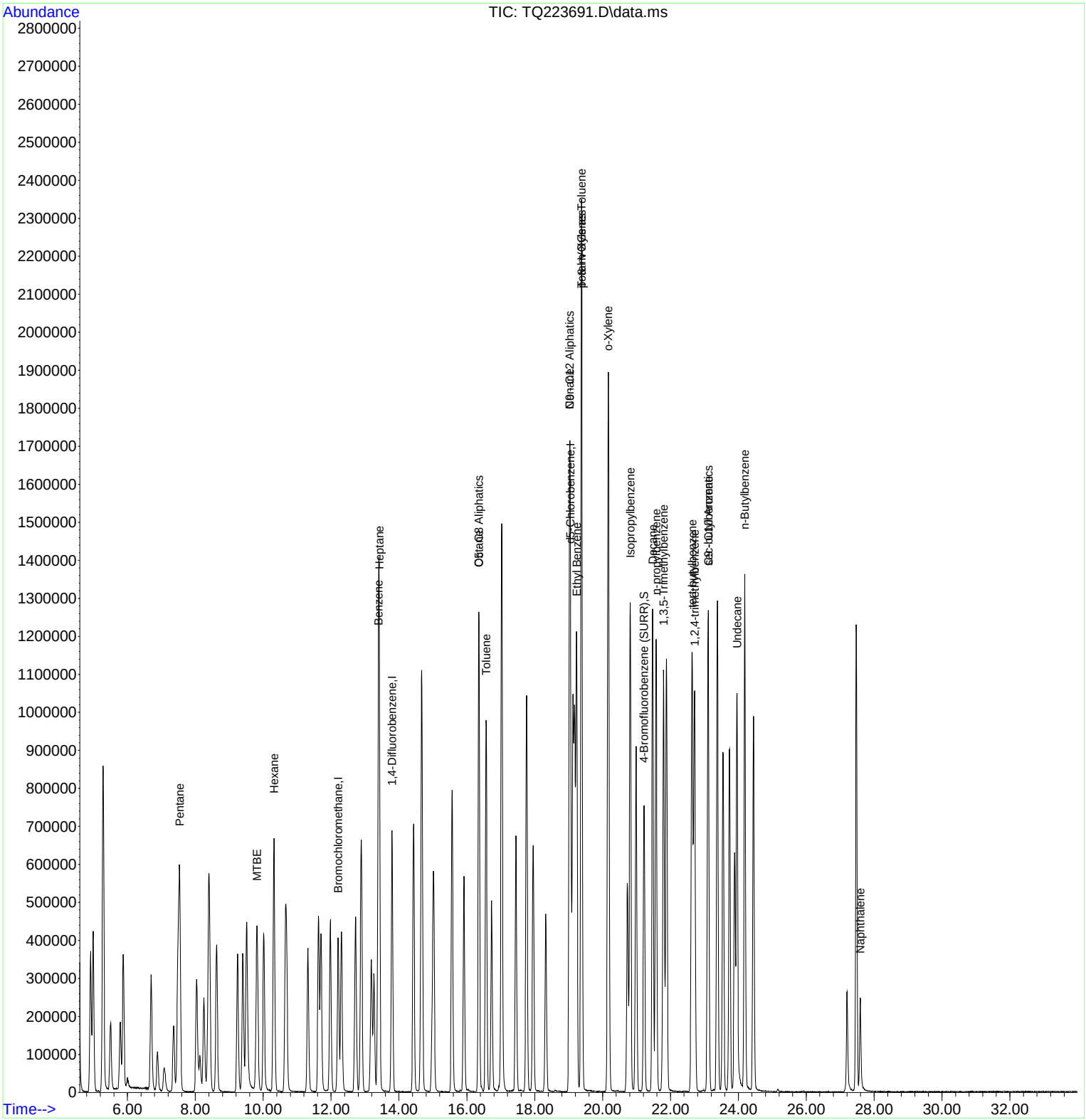
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	12.207	130	223246	10.00 ppbv	# 0.21
7) 1,4-Difluorobenzene	13.798	114	948954	10.00 ppbv	# 0.23
12) d5-Chlorobenzene	19.053	117	873424m	10.00 ppbv	0.23
System Monitoring Compounds					
18) 4-Bromofluorobenzene (...	21.218	95	473896	7.39 ppbv	0.23
Spiked Amount 10.000	Range 70 - 120		Recovery = 73.90%		
Target Compounds					Qvalue
2) Pentane	7.537	43	710434	40.18 ppbv	78
3) MTBE	9.817	73	682558	10.77 ppbv #	89
4) Hexane	10.317	41	447670m	28.06 ppbv	
5) Benzene	13.390	78	974793	15.66 ppbv	100
6) Heptane	13.420	43	800688	37.78 ppbv	86
8) Octane	16.353	43	1128660m	33.43 ppbv	
9) C5 - C8 Aliphatics	16.353	43	8332131m	118.82 ppbv	
10) Toluene	16.566	91	1227579	12.58 ppbv	100
11) Total VOCs as Toluene	19.376	TIC	186661709m	13.05 ppbv	
13) Nonane	19.029	43	1007439	27.05 ppbv	86
14) Ethyl Benzene	19.236	91	1549307	10.96 ppbv	99
15) p- & m-Xylenes	19.376	91	2315439	10.79 ppbv	96
16) o-Xylene	20.163	91	1203121m	10.41 ppbv	
17) C9 - C12 Aliphatics	19.029	43	2832512m	78.33 ppbv	
19) Decane	21.474	43	930250m	25.86 ppbv	
20) Undecane	23.961	43	742277m	25.78 ppbv	
21) n-propylbenzene	21.577	91	1862144m	9.86 ppbv	
22) Isopropylbenzene	20.815	105	1543837	9.34 ppbv	99
23) 1,3,5-Trimethylbenzene	21.797	105	1414355m	10.09 ppbv	
24) tert-butylbenzene	22.638	119	1311829	8.64 ppbv	96
25) 1,2,4-trimethylbenzene	22.711	105	1194398m	8.36 ppbv	
26) sec-butylbenzene	23.114	105	1869224m	9.68 ppbv	
27) n-Butylbenzene	24.187	91	1402077m	10.60 ppbv	
28) C9 - C10 Aromatics	23.114	105	5831909m	93.25 ppbv	
29) Naphthalene	27.588	128	372222m	2.90 ppbv	

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223691.D
Acq On : 27 Jan 2023 7:56 pm
Operator : VH
Sample : SEQ-CAL7
Misc : QBTO2012723A 10.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Feb 09 14:39:27 2023
Quant Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Quant Title : VPH Method
QLast Update : Wed Aug 10 16:10:18 2022
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223692.D
Acq On : 27 Jan 2023 8:57 pm
Operator : VH
Sample : SEQ-CAL8
Misc : QBTO2012723A 20.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Feb 09 14:24:09 2023
Quant Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Quant Title : VPH Method
QLast Update : Wed Aug 10 16:10:18 2022
Response via : Initial Calibration

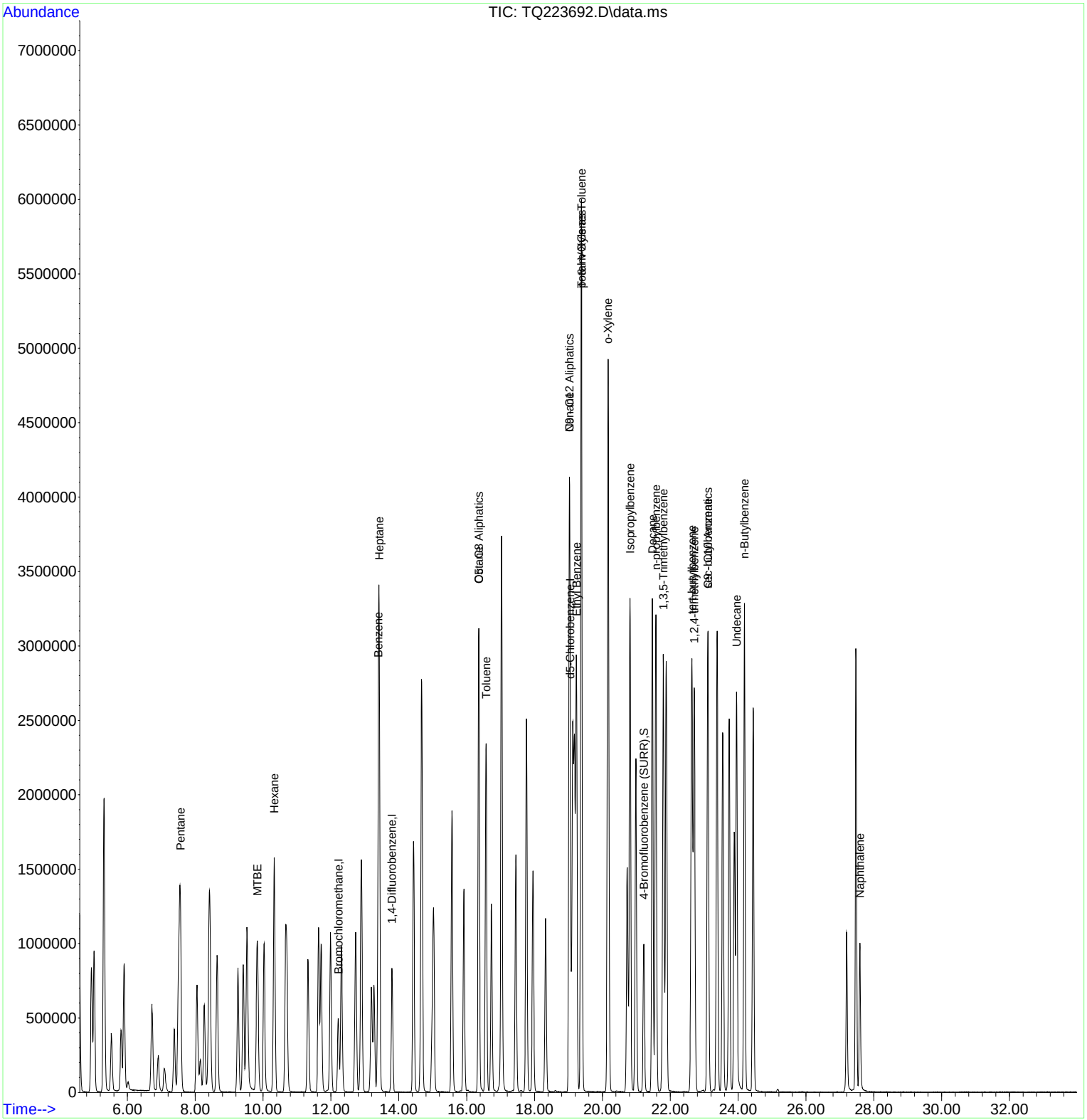
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	12.219	130	262068m	10.00 ppbv	0.23
7) 1,4-Difluorobenzene	13.798	114	1128378m	10.00 ppbv	0.23
12) d5-Chlorobenzene	19.053	117	1933223m	10.00 ppbv	0.23
System Monitoring Compounds					
18) 4-Bromofluorobenzene (...	21.224	95	610689	4.30 ppbv	0.24
Spiked Amount 10.000	Range 70 - 120		Recovery =	43.00%#	
Target Compounds					Qvalue
2) Pentane	7.562	43	1664322m	80.19 ppbv	
3) MTBE	9.830	73	1651960m	22.21 ppbv	
4) Hexane	10.330	41	1035797m	55.30 ppbv	
5) Benzene	13.396	78	2272487m	31.10 ppbv	
6) Heptane	13.420	43	1857300	74.66 ppbv	87
8) Octane	16.359	43	2768593m	68.97 ppbv	
9) C5 - C8 Aliphatics	16.359	43	19609392m	235.18 ppbv	
10) Toluene	16.572	91	2913138	25.11 ppbv	100
11) Total VOCs as Toluene	19.383	TIC	443255113m	26.07 ppbv	
13) Nonane	19.029	43	2743492m	33.28 ppbv	
14) Ethyl Benzene	19.236	91	3726850m	11.91 ppbv	
15) p- & m-Xylenes	19.383	91	5840965	12.30 ppbv	97
16) o-Xylene	20.163	91	3022987m	11.81 ppbv	
17) C9 - C12 Aliphatics	19.029	43	7155801m	89.40 ppbv	
19) Decane	21.474	43	2309769	29.01 ppbv	87
20) Undecane	23.955	43	1785476m	28.02 ppbv	
21) n-propylbenzene	21.577	91	4922983m	11.77 ppbv	
22) Isopropylbenzene	20.815	105	3938621m	10.77 ppbv	
23) 1,3,5-Trimethylbenzene	21.797	105	3704020	11.93 ppbv	89
24) tert-butylbenzene	22.638	119	3257827	9.69 ppbv	96
25) 1,2,4-trimethylbenzene	22.705	105	3047966m	9.64 ppbv	
26) sec-butylbenzene	23.108	105	4638604	10.86 ppbv	100
27) n-Butylbenzene	24.187	91	3434655m	11.74 ppbv	
28) C9 - C10 Aromatics	23.108	105	15007387m	108.41 ppbv	
29) Naphthalene	27.588	128	1405898m	4.96 ppbv	

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223692.D
Acq On : 27 Jan 2023 8:57 pm
Operator : VH
Sample : SEQ-CAL8
Misc : QBTO2012723A 20.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Feb 09 14:24:09 2023
Quant Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Quant Title : VPH Method
QLast Update : Wed Aug 10 16:10:18 2022
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223693.D
Acq On : 27 Jan 2023 10:00 pm
Operator : VH
Sample : SEQ-CAL9
Misc : QBTO2012723A 30.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Feb 09 14:50:47 2023
Quant Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Quant Title : VPH Method
QLast Update : Wed Aug 10 16:10:18 2022
Response via : Initial Calibration

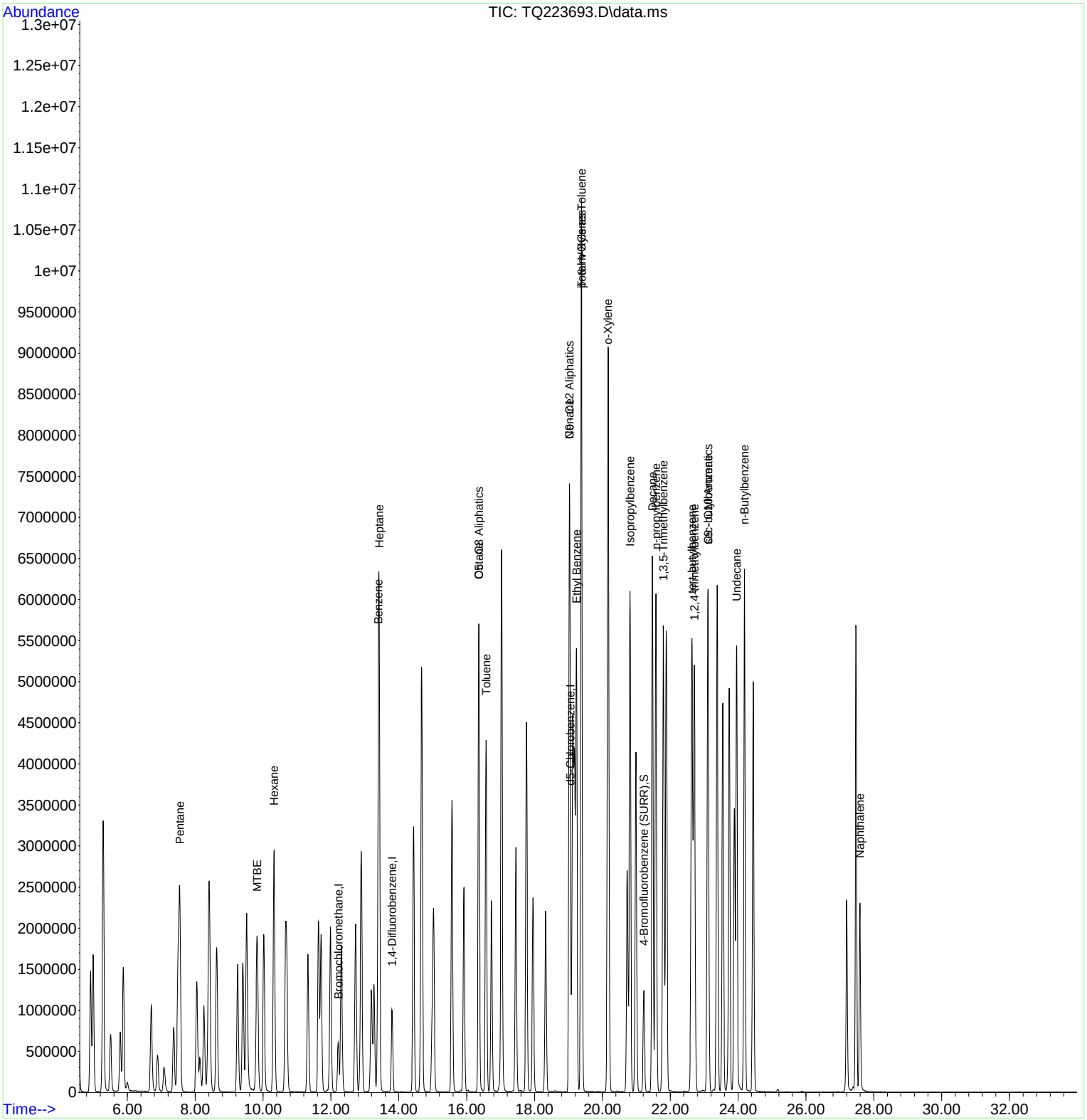
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	12.219	130	333495	10.00 ppbv	# 0.23
7) 1,4-Difluorobenzene	13.804	114	1396947	10.00 ppbv	# 0.24
12) d5-Chlorobenzene	19.060	117	1319864m	10.00 ppbv	0.24
System Monitoring Compounds					
18) 4-Bromofluorobenzene (...	21.224	95	778772m	8.03 ppbv	0.24
Spiked Amount 10.000	Range 70 - 120		Recovery = 80.30%		
Target Compounds					Qvalue
2) Pentane	7.543	43	3018437m	114.29 ppbv	
3) MTBE	9.823	73	3143142m	33.20 ppbv	
4) Hexane	10.323	41	1932393m	81.08 ppbv	
5) Benzene	13.396	78	4290749m	46.14 ppbv	
6) Heptane	13.420	43	3484935	110.08 ppbv	87
8) Octane	16.359	43	4958649m	99.78 ppbv	
9) C5 - C8 Aliphatics	16.359	43	35973120m	348.49 ppbv	
10) Toluene	16.572	91	5346876	37.23 ppbv	100
11) Total VOCs as Toluene	19.383	TIC	817686179m	38.85 ppbv	
13) Nonane	19.029	43	5047275m	89.68 ppbv	
14) Ethyl Benzene	19.236	91	6837926m	32.00 ppbv	
15) p- & m-Xylenes	19.383	91	10429297m	32.16 ppbv	
16) o-Xylene	20.163	91	5493244m	31.44 ppbv	
17) C9 - C12 Aliphatics	19.029	43	13595337m	248.80 ppbv	
19) Decane	21.474	43	4474066m	82.31 ppbv	
20) Undecane	23.955	43	3516021m	80.82 ppbv	
21) n-propylbenzene	21.577	91	9202935m	32.23 ppbv	
22) Isopropylbenzene	20.815	105	7196209m	28.82 ppbv	
23) 1,3,5-Trimethylbenzene	21.797	105	7270461m	34.31 ppbv	
24) tert-butylbenzene	22.638	119	6200579m	27.01 ppbv	
25) 1,2,4-trimethylbenzene	22.711	105	5876630m	27.22 ppbv	
26) sec-butylbenzene	23.114	105	8825274m	30.25 ppbv	
27) n-Butylbenzene	24.187	91	6502770m	32.54 ppbv	
28) C9 - C10 Aromatics	23.114	105	28437982m	300.90 ppbv	
29) Naphthalene	27.588	128	3146890m	16.25 ppbv	

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223693.D
Acq On : 27 Jan 2023 10:00 pm
Operator : VH
Sample : SEQ-CAL9
Misc : QBTO2012723A 30.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Feb 09 14:50:47 2023
Quant Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Quant Title : VPH Method
QLast Update : Wed Aug 10 16:10:18 2022
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223694.D
Acq On : 27 Jan 2023 11:24 pm
Operator : VH
Sample : SEQ-CALA
Misc : QBTO2012723A 50.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Feb 09 15:00:54 2023
Quant Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Quant Title : VPH Method
QLast Update : Wed Aug 10 16:10:18 2022
Response via : Initial Calibration

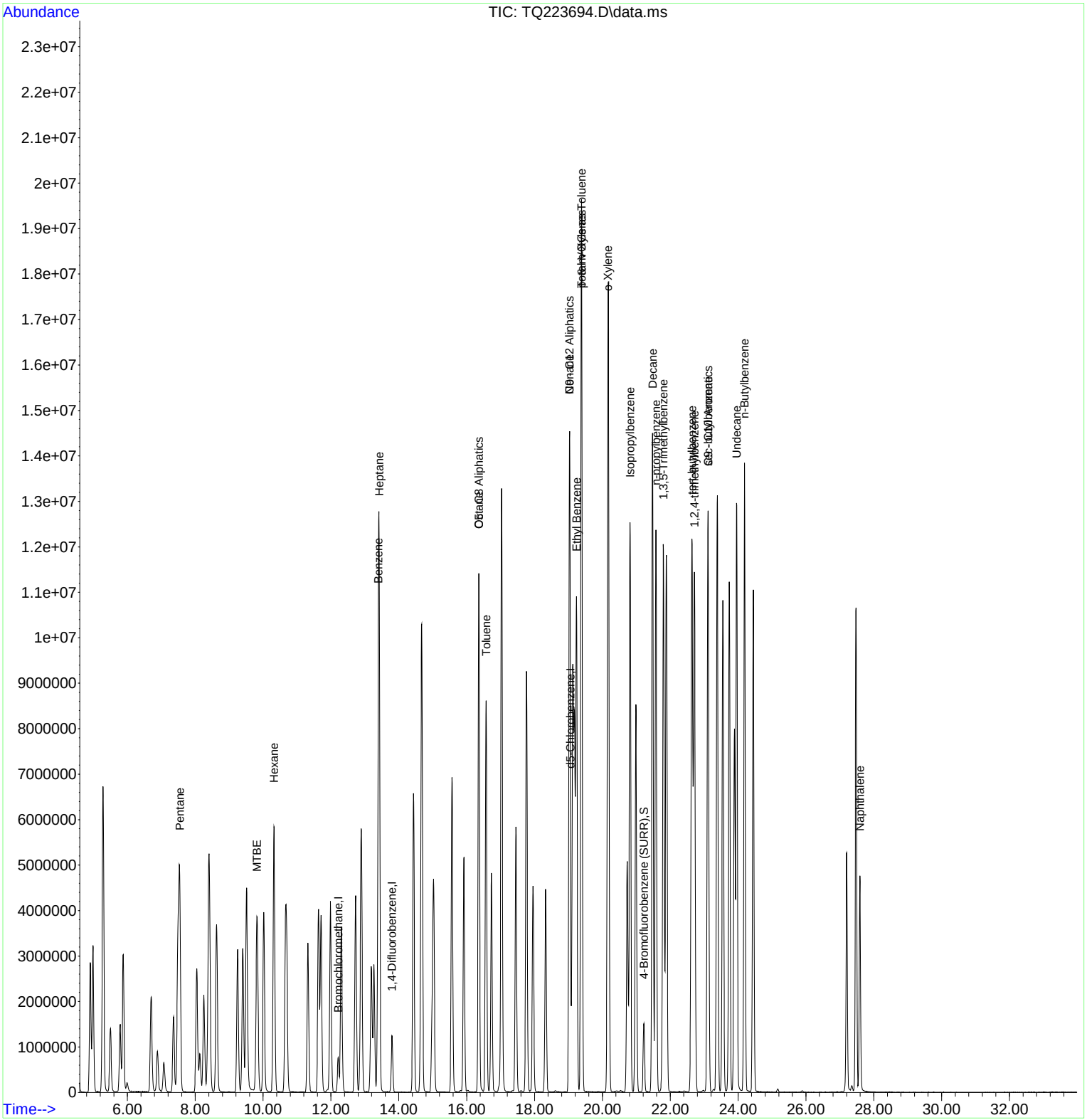
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	12.213	130	419231	10.00 ppbv	# 0.22
7) 1,4-Difluorobenzene	13.798	114	1721596	10.00 ppbv	# 0.23
12) d5-Chlorobenzene	19.060	117	1570316m	10.00 ppbv	0.24
System Monitoring Compounds					
18) 4-Bromofluorobenzene (...	21.224	95	973441	8.44 ppbv	0.24
Spiked Amount 10.000	Range 70 - 120		Recovery = 84.40%		
Target Compounds					Qvalue
2) Pentane	7.543	43	6040615	181.94 ppbv	78
3) MTBE	9.817	73	6550774m	55.05 ppbv	
4) Hexane	10.323	41	3876169m	129.37 ppbv	
5) Benzene	13.396	78	8489202m	72.62 ppbv	
6) Heptane	13.420	43	6861357m	172.41 ppbv	
8) Octane	16.359	43	9568913	156.24 ppbv	85
9) C5 - C8 Aliphatics	16.359	43	70903498m	557.35 ppbv	
10) Toluene	16.572	91	10429619	58.92 ppbv	99
11) Total VOCs as Toluene	19.383	TIC	1675266347m	64.58 ppbv	
13) Nonane	19.029	43	9834346	146.87 ppbv	88
14) Ethyl Benzene	19.236	91	13344209m	52.48 ppbv	
15) p- & m-Xylenes	19.383	91	19578228m	50.75 ppbv	
16) o-Xylene	20.163	91	10943458m	52.65 ppbv	
17) C9 - C12 Aliphatics	19.029	43	27315768m	420.16 ppbv	
19) Decane	21.480	43	9629994	148.91 ppbv	89
20) Undecane	23.955	43	7810690m	150.90 ppbv	
21) n-propylbenzene	21.577	91	21367728m	62.90 ppbv	
22) Isopropylbenzene	20.815	105	14187563m	47.76 ppbv	
23) 1,3,5-Trimethylbenzene	21.797	105	14814704	58.76 ppbv	89
24) tert-butylbenzene	22.638	119	13297015m	48.69 ppbv	
25) 1,2,4-trimethylbenzene	22.711	105	12673462m	49.34 ppbv	
26) sec-butylbenzene	23.114	105	17785719m	51.25 ppbv	
27) n-Butylbenzene	24.193	91	13580592m	57.12 ppbv	
28) C9 - C10 Aromatics	23.114	105	32275740m	287.04 ppbv	
29) Naphthalene	27.588	128	6373878m	27.66 ppbv	

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223694.D
Acq On : 27 Jan 2023 11:24 pm
Operator : VH
Sample : SEQ-CALA
Misc : QBTO2012723A 50.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Feb 09 15:00:54 2023
Quant Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Quant Title : VPH Method
QLast Update : Wed Aug 10 16:10:18 2022
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL\
Data File : TO297454.D
Acq On : 9 Feb 2023 5:01 pm
Operator : VH
Sample : SEQ-CAL1
Misc : QBTO1020923A 0.025 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:07:58 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration

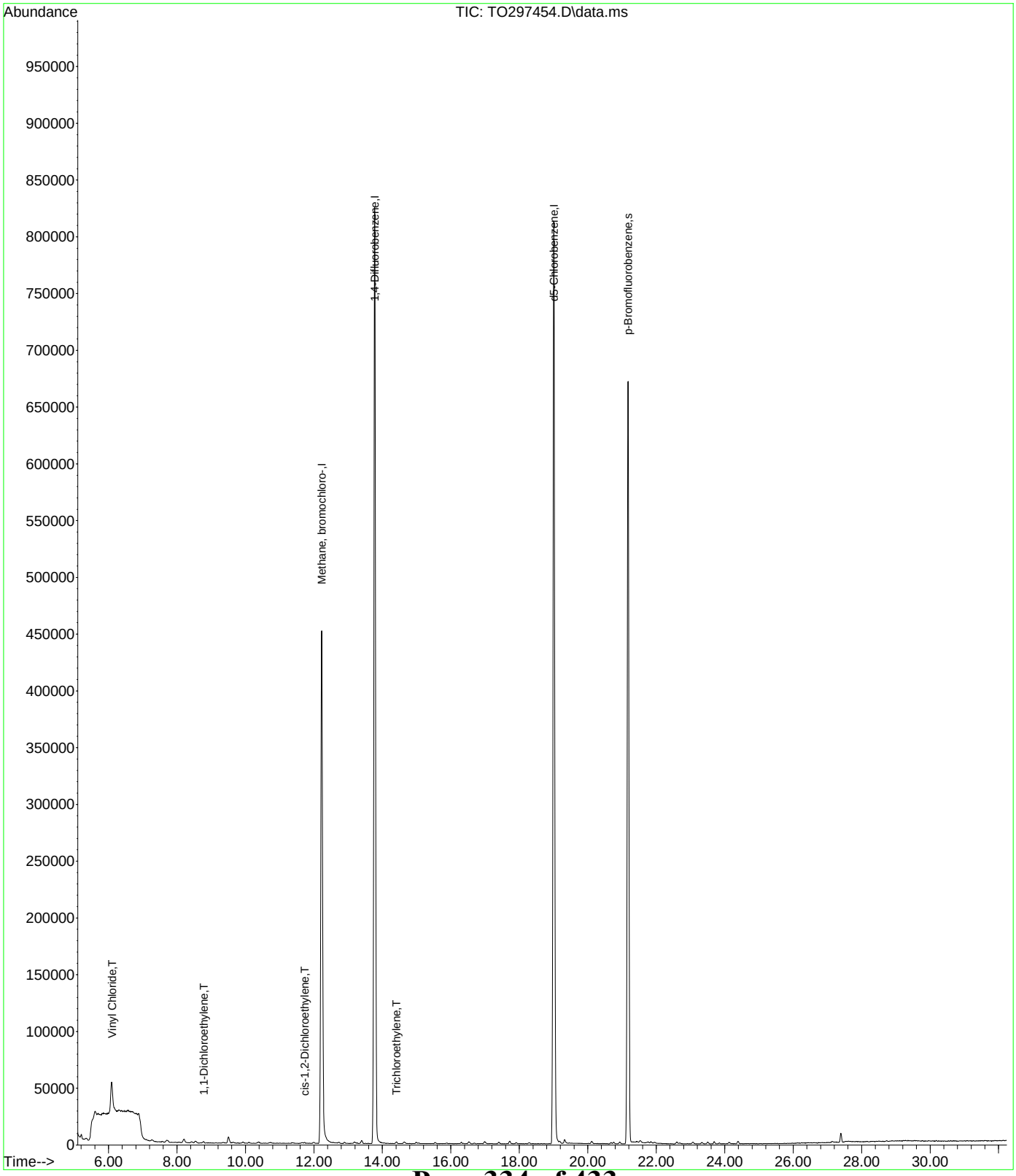
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.227	49	360880	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.777	114	1180297	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.013	117	862575	10.00	ppbv	0.00
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	373434	9.47	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 94.70%			
Target Compounds						Qvalue
6) Vinyl Chloride	6.104	62	1440	0.03	ppbv #	42
17) 1,1-Dichloroethylene	8.784	61	1131	0.02	ppbv #	67
29) cis-1,2-Dichloroethylene	11.730	61	821	0.02	ppbv #	64
39) Trichloroethylene	14.410	95	995	0.02	ppbv	90

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

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL\
Data File : TO297454.D
Acq On : 9 Feb 2023 5:01 pm
Operator : VH
Sample : SEQ-CAL1
Misc : QBTO1020923A 0.025 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:07:58 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration



AIR160.M Fri Feb 10 14:22:43 2023 Page: 2

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL\
Data File : TO297455.D
Acq On : 9 Feb 2023 5:47 pm
Operator : VH
Sample : SEQ-CAL2
Misc : QBTO1020923A 0.050 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:09:18 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration

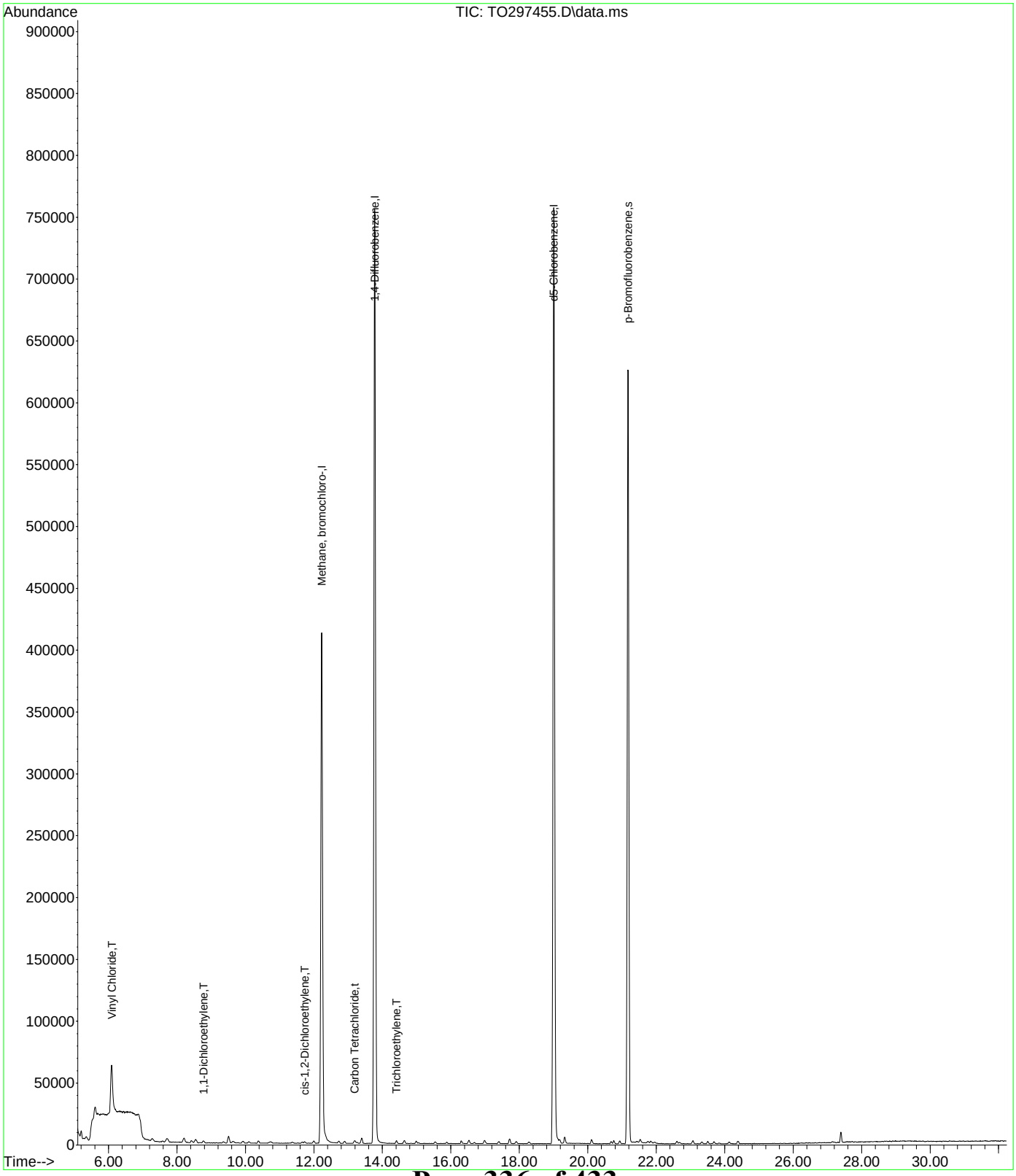
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.226	49	332436	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.777	114	1069738	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.006	117	795534	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	342067	9.41	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 94.10%			
Target Compounds						Qvalue
6) Vinyl Chloride	6.098	62	3222	0.08	ppbv	81
17) 1,1-Dichloroethylene	8.778	61	1570	0.04	ppbv	92
29) cis-1,2-Dichloroethylene	11.730	61	1291	0.03	ppbv #	81
34) Carbon Tetrachloride	13.188	117	2239	0.03	ppbv #	92
39) Trichloroethylene	14.410	95	1432	0.03	ppbv	82

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

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL\
Data File : TO297455.D
Acq On : 9 Feb 2023 5:47 pm
Operator : VH
Sample : SEQ-CAL2
Misc : QBTO1020923A 0.050 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:09:18 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration



AIR160.M Fri Feb 10 14:22:45 2023 Page: 2

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL\
Data File : TO297456.D
Acq On : 9 Feb 2023 6:35 pm
Operator : VH
Sample : SEQ-CAL3
Misc : QBTO1020923A 0.100 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:12:04 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.227	49	326679	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.777	114	1083866	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.006	117	809847	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	351871	9.51	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.10%			
Target Compounds						Qvalue
2) Propylene	5.279	42	1210	0.08	ppbv	80
3) Dichlorodifluoromethane	5.347	85	6761	0.08	ppbv #	92
4) 1,2-Dichlorotetrafluor...	5.602	85	13534	0.08	ppbv #	65
5) Chloromethane	5.837	50	3243	0.10	ppbv	100
6) Vinyl Chloride	6.098	62	3030	0.08	ppbv #	29
7) 1,3-Butadiene	6.172	54	1931	0.07	ppbv	93
8) Bromomethane	6.954	94	11593	0.22	ppbv #	63
9) Chloroethane	7.121	64	1189	0.08	ppbv #	49
10) ethanol	7.270	45	3616	0.36	ppbv #	78
11) Vinyl Bromide	7.580	106	2110	0.07	ppbv	99
12) Trichlorofluoromethane	7.692	101	6535	0.08	ppbv #	94
13) Isopropanol	8.207	45	10256	0.19	ppbv #	99
14) Acrolein	8.312	56	700	0.07	ppbv #	100
15) Acetone	8.418	43	6318	0.13	ppbv	86
16) Freon-113	8.548	101	4625	0.07	ppbv	94
17) 1,1-Dichloroethylene	8.778	61	3115	0.07	ppbv	95
18) 3-Chloropropene	9.361	41	2239	0.08	ppbv #	72
19) Methylene Chloride	9.503	49	7132	0.22	ppbv	98
20) Acrylonitrile	9.603	53	1218	0.06	ppbv #	100
21) Carbon disulfide	9.646	76	5305	0.07	ppbv #	67
22) Methyl-tert-Butyl Ethe...	9.925	73	4509	0.07	ppbv #	94
23) trans-1,2-Dichloroethy...	10.105	61	2626	0.07	ppbv	92
24) Hexane	10.378	57	2360	0.06	ppbv	89
25) Vinyl Acetate	10.701	43	4184	0.06	ppbv #	98
26) 1,1-Dichloroethane	10.744	63	3755	0.07	ppbv #	87
27) 2-Butanone	11.364	43	4286	0.07	ppbv #	81
28) Ethyl Acetate	11.656	43	4414	0.07	ppbv #	40
29) cis-1,2-Dichloroethylene	11.724	61	2614	0.07	ppbv	96
30) Chloroform	11.997	83	4562	0.07	ppbv #	94
31) Tetrahydrofuran	12.351	42	2100	0.07	ppbv	84
32) 1,1,1-Trichlorethane	12.735	97	4784	0.07	ppbv	97
33) Cyclohexane	12.896	56	2330	0.06	ppbv	96
34) Carbon Tetrachloride	13.188	117	4220	0.07	ppbv #	92
35) 1,2-Dichloroethane	13.256	62	2729	0.07	ppbv #	98
36) Benzene	13.387	78	6358	0.07	ppbv #	100
37) n-Heptane	13.399	43	2688	0.05	ppbv #	75
39) Trichloroethylene	14.410	95	2723	0.06	ppbv	83
40) 1,2-Dichloropropane	14.633	63	1962	0.06	ppbv #	99
41) Methyl Methacrylate	14.646	69	1311	0.03	ppbv #	69
42) 1,4-Dioxane	14.981	88	1041	0.05	ppbv #	100
43) Bromodichloromethane	14.993	83	4187	0.06	ppbv	93
44) Methyl Isobutyl Ketone	15.545	43	4183	0.06	ppbv #	87
45) cis-1,3-Dichloropropene	15.880	75	2330	0.05	ppbv #	74
46) Toluene	16.531	91	7636	0.07	ppbv	94
47) trans-1,3-Dichloropropene	16.687	75	1945	0.05	ppbv #	73
48) 1,1,2-Trichlorethane	16.978	97	2598	0.06	ppbv	93
49) 2-Hexanone	17.003	43	3096	0.03	ppbv #	94
50) 1,3-Dichloropropane	17.400	76	2780	0.05	ppbv #	86
51) Tetrachloroethylene	17.716	166	3942	0.05	ppbv	99
52) Dibromchloromethane	17.909	129	3928	0.05	ppbv	97
53) 1,2-Dibromoethane	18.281	107	3260	0.05	ppbv	100
55) Chlorobenzene	19.081	112	6014	0.07	ppbv #	100

Data Path : D:\020923-ICAL\
Data File : TO297456.D
Acq On : 9 Feb 2023 6:35 pm
Operator : VH
Sample : SEQ-CAL3
Misc : QBTO1020923A 0.100 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:12:04 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration

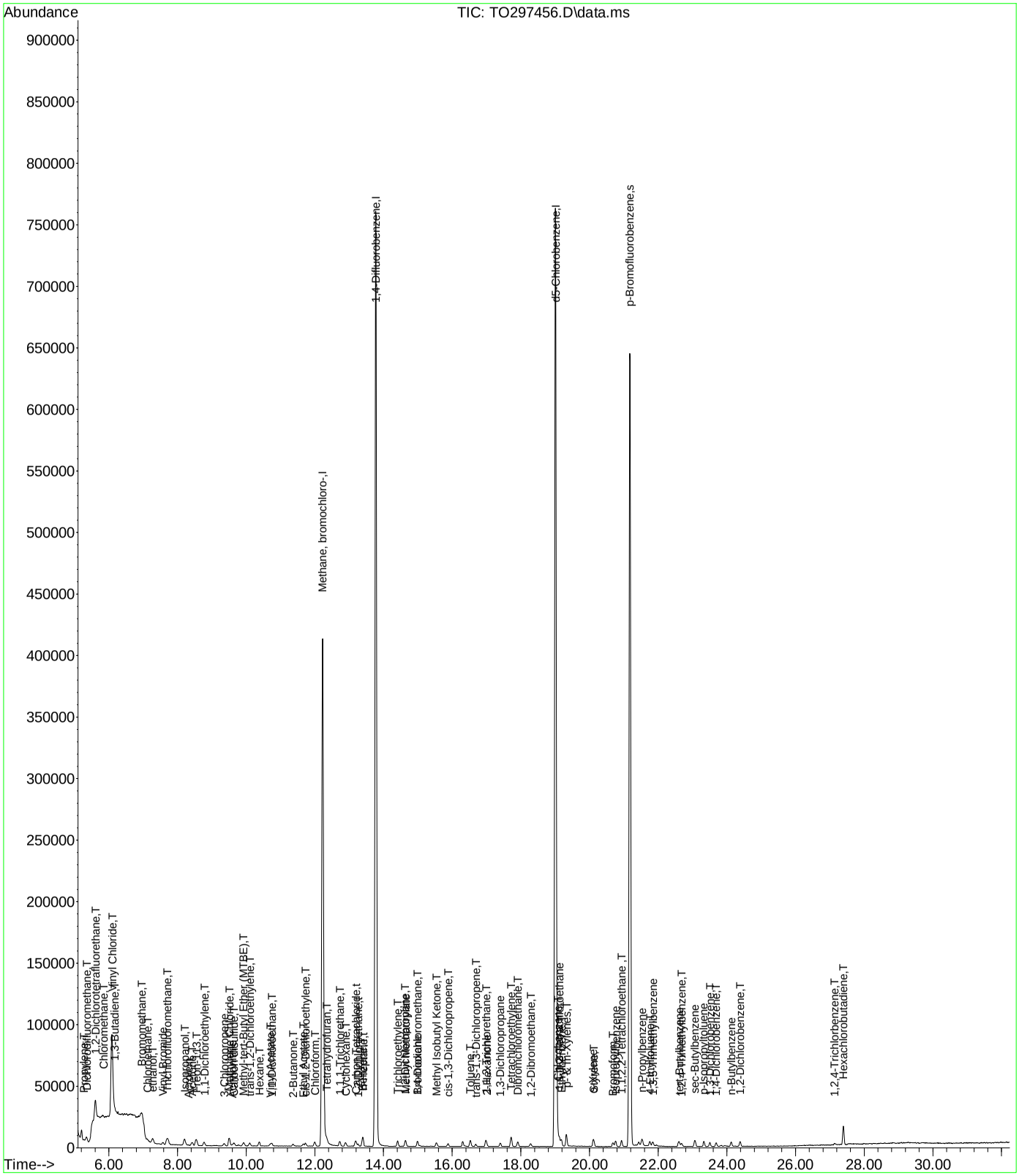
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56)	1,1,1,2-Tetrachloroethane	19.124	131	2909	0.06	ppbv	#	68
57)	Ethylbenzene	19.180	91	7953	0.06	ppbv		97
58)	p- & m-Xylenes	19.329	91	10642	0.11	ppbv		95
59)	o-Xylene	20.104	91	4809	0.05	ppbv		98
60)	Styrene	20.123	104	2560	0.03	ppbv	#	74
61)	Bromoform	20.687	173	2713	0.04	ppbv		94
62)	n-Propylbenzene	21.531	91	8305	0.05	ppbv		99
63)	Isopropylbenzene	20.756	105	6394	0.05	ppbv		100
64)	1,1,2,2-Tetrachloroeth...	20.936	83	4871	0.07	ppbv		99
66)	4-Ethyltoluene	21.754	105	5707	0.04	ppbv		97
67)	1,3,5-Trimethylbenzene	21.847	105	4804	0.05	ppbv	#	90
68)	tert-Butylbenzene	22.610	119	5785	0.05	ppbv	#	62
69)	1,2,4-Trimethylbenzene	22.679	105	4276	0.04	ppbv	#	99
70)	sec-Butylbenzene	23.069	105	8110	0.05	ppbv	#	100
71)	p-Isopropyltoluene	23.330	119	5741	0.03	ppbv	#	100
72)	1,3-Dichlorobenzene	23.504	146	3564	0.04	ppbv		93
73)	1,4-Dichlorobenzene	23.690	146	3534	0.04	ppbv		88
75)	n-Butylbenzene	24.130	91	5089	0.03	ppbv	#	96
76)	1,2-Dichlorobenzene	24.384	146	3849	0.04	ppbv		91
77)	1,2,4-Trichlorbenzene	27.139	180	1547	0.05	ppbv	#	63
78)	Hexachlorobutadiene	27.393	225	4731	0.04	ppbv		93

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

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL\
Data File : TO297456.D
Acq On : 9 Feb 2023 6:35 pm
Operator : VH
Sample : SEQ-CAL3
Misc : QBTO1020923A 0.100 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:12:04 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL\
Data File : TO297457.D
Acq On : 9 Feb 2023 7:23 pm
Operator : VH
Sample : SEQ-CAL4
Misc : QBTO1020923A 0.200 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:12:41 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.226	49	315478	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	1024323	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.006	117	759301	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	333799	9.62	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.20%			
Target Compounds						Qvalue
2) Propylene	5.279	42	2161	0.14	ppbv	87
3) Dichlorodifluoromethane	5.347	85	12121	0.14	ppbv #	95
4) 1,2-Dichlorotetrafluor...	5.602	85	23869	0.16	ppbv #	66
5) Chloromethane	5.831	50	5510	0.18	ppbv #	91
6) Vinyl Chloride	6.098	62	7048	0.18	ppbv	85
7) 1,3-Butadiene	6.172	54	4019	0.16	ppbv #	83
8) Bromomethane	6.948	94	10116	0.20	ppbv	84
9) Chloroethane	7.128	64	2015	0.14	ppbv #	91
10) ethanol	7.270	45	5842m	0.60	ppbv	
11) Vinyl Bromide	7.580	106	3597	0.13	ppbv	98
12) Trichlorofluoromethane	7.692	101	11911	0.14	ppbv	99
13) Isopropanol	8.201	45	14799	0.29	ppbv #	99
14) Acrolein	8.300	56	1412	0.15	ppbv #	100
15) Acetone	8.418	43	10572	0.23	ppbv	94
16) Freon-113	8.548	101	8747	0.13	ppbv	95
17) 1,1-Dichloroethylene	8.771	61	5357	0.13	ppbv	94
18) 3-Chloropropene	9.354	41	3679	0.13	ppbv #	79
19) Methylene Chloride	9.503	49	9331	0.29	ppbv	93
20) Acrylonitrile	9.609	53	2353	0.13	ppbv #	100
21) Carbon disulfide	9.646	76	10370	0.14	ppbv #	89
22) Methyl-tert-Butyl Ethe...	9.925	73	7835	0.12	ppbv #	92
23) trans-1,2-Dichloroethy...	10.105	61	4618	0.13	ppbv	92
24) Hexane	10.378	57	4445	0.12	ppbv	91
25) Vinyl Acetate	10.701	43	7671	0.11	ppbv #	98
26) 1,1-Dichloroethane	10.744	63	6944	0.14	ppbv #	96
27) 2-Butanone	11.358	43	7720	0.14	ppbv #	87
28) Ethyl Acetate	11.656	43	8198	0.13	ppbv #	84
29) cis-1,2-Dichloroethylene	11.736	61	4638	0.13	ppbv	98
30) Chloroform	11.997	83	8384	0.13	ppbv	96
31) Tetrahydrofuran	12.344	42	3797	0.12	ppbv	85
32) 1,1,1-Trichlorethane	12.729	97	8289	0.13	ppbv	97
33) Cyclohexane	12.896	56	3982	0.10	ppbv #	95
34) Carbon Tetrachloride	13.188	117	7806	0.13	ppbv	99
35) 1,2-Dichloroethane	13.262	62	5036	0.14	ppbv #	98
36) Benzene	13.386	78	10870	0.12	ppbv #	100
37) n-Heptane	13.399	43	4872	0.10	ppbv	99
39) Trichloroethylene	14.410	95	4840	0.12	ppbv	87
40) 1,2-Dichloropropane	14.633	63	3716	0.11	ppbv #	94
41) Methyl Methacrylate	14.652	69	2182	0.06	ppbv #	7
42) 1,4-Dioxane	14.974	88	1736	0.09	ppbv #	100
43) Bromodichloromethane	14.993	83	7522	0.11	ppbv	92
44) Methyl Isobutyl Ketone	15.539	43	7161	0.11	ppbv	86
45) cis-1,3-Dichloropropene	15.874	75	4089	0.10	ppbv #	94
46) Toluene	16.531	91	13566	0.13	ppbv	92
47) trans-1,3-Dichloropropene	16.680	75	3607	0.09	ppbv	96
48) 1,1,2-Trichlorethane	16.972	97	4578	0.11	ppbv	98
49) 2-Hexanone	16.997	43	5307	0.06	ppbv #	92
50) 1,3-Dichloropropane	17.406	76	5418	0.11	ppbv #	86
51) Tetrachloroethylene	17.716	166	7019	0.10	ppbv	96
52) Dibromchloromethane	17.915	129	7131	0.09	ppbv #	94
53) 1,2-Dibromoethane	18.287	107	6056	0.10	ppbv	95
55) Chlorobenzene	19.081	112	11007	0.14	ppbv #	100

Data Path : D:\020923-ICAL\
Data File : TO297457.D
Acq On : 9 Feb 2023 7:23 pm
Operator : VH
Sample : SEQ-CAL4
Misc : QBTO1020923A 0.200 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:12:41 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration

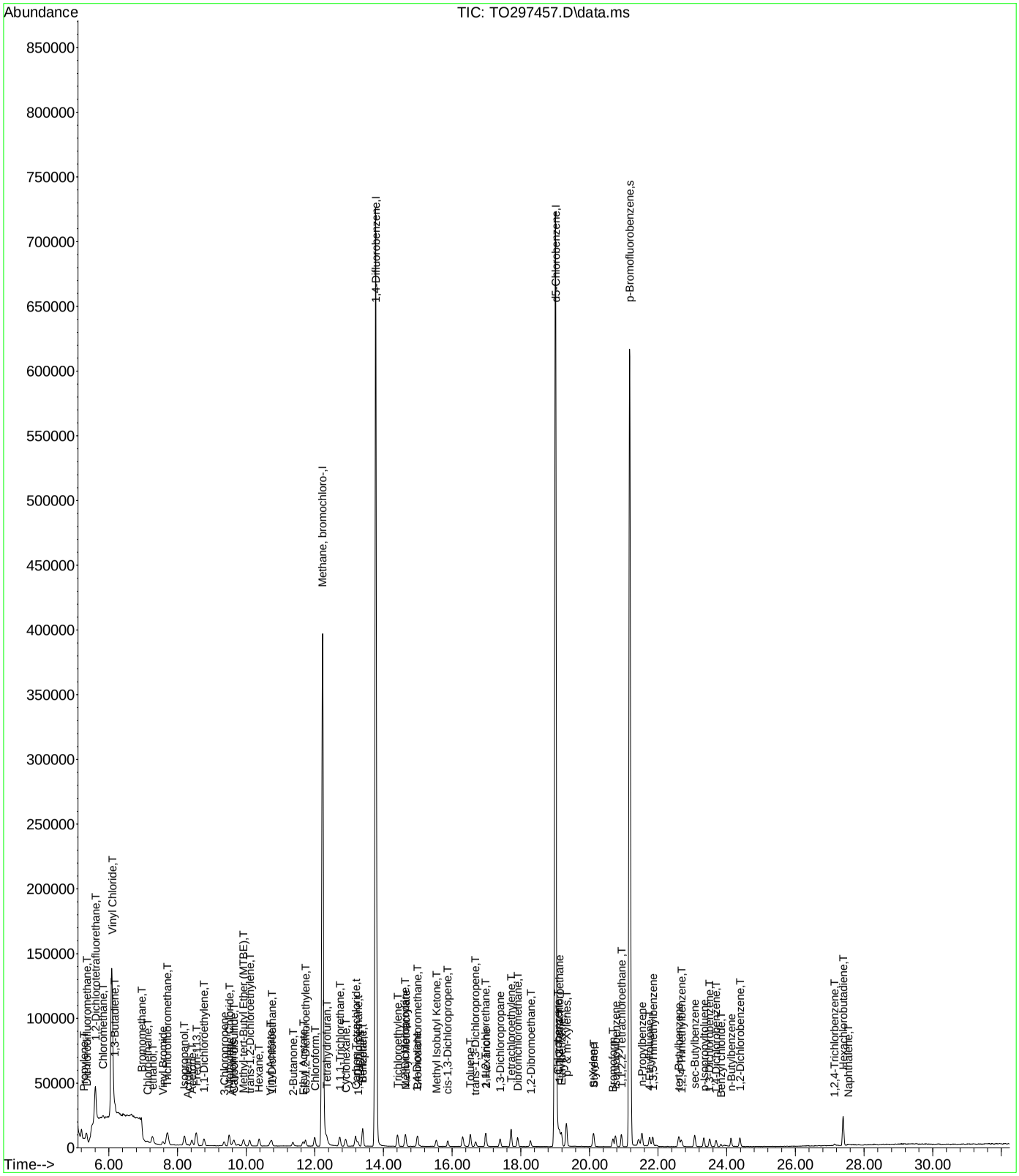
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56)	1,1,1,2-Tetrachloroethane	19.124	131	5603	0.12	ppbv	#	73
57)	Ethylbenzene	19.180	91	14393	0.12	ppbv		99
58)	p- & m-Xylenes	19.329	91	20044	0.21	ppbv		97
59)	o-Xylene	20.111	91	8381	0.09	ppbv		99
60)	Styrene	20.129	104	4486	0.05	ppbv	#	74
61)	Bromoform	20.681	173	4961	0.08	ppbv		97
62)	n-Propylbenzene	21.531	91	15392	0.10	ppbv		100
63)	Isopropylbenzene	20.762	105	11048	0.09	ppbv		100
64)	1,1,2,2-Tetrachloroeth...	20.936	83	8600	0.13	ppbv		98
66)	4-Ethyltoluene	21.754	105	10020	0.08	ppbv		95
67)	1,3,5-Trimethylbenzene	21.847	105	9013	0.09	ppbv		94
68)	tert-Butylbenzene	22.598	119	9639	0.08	ppbv	#	93
69)	1,2,4-Trimethylbenzene	22.679	105	7567	0.07	ppbv	#	91
70)	sec-Butylbenzene	23.069	105	13303	0.08	ppbv	#	100
71)	p-Isopropyltoluene	23.336	119	8864	0.05	ppbv	#	100
72)	1,3-Dichlorobenzene	23.497	146	6010	0.07	ppbv		92
73)	1,4-Dichlorobenzene	23.690	146	4937	0.06	ppbv		93
74)	Benzyl chloride	23.839	126	592	0.03	ppbv	#	1
75)	n-Butylbenzene	24.124	91	8010	0.05	ppbv	#	93
76)	1,2-Dichlorobenzene	24.384	146	6176	0.07	ppbv		93
77)	1,2,4-Trichlorbenzene	27.139	180	1450	0.05	ppbv	#	65
78)	Hexachlorobutadiene	27.393	225	7198	0.07	ppbv		97
79)	Naphthalene	27.542	128	2527	0.03	ppbv	#	69

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

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL\
Data File : TO297457.D
Acq On : 9 Feb 2023 7:23 pm
Operator : VH
Sample : SEQ-CAL4
Misc : QBTO1020923A 0.200 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:12:41 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL\
Data File : TO297458.D
Acq On : 9 Feb 2023 8:16 pm
Operator : VH
Sample : SEQ-CAL5
Misc : QBTO1020923A 0.500 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:04:41 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.220	49	299086	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	938165	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.006	117	717059	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	341377	10.42	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 104.20%			
Target Compounds						Qvalue
2) Propylene	5.279	42	4971	0.34	ppbv	87
3) Dichlorodifluoromethane	5.341	85	27450	0.34	ppbv #	96
4) 1,2-Dichlorotetrafluor...	5.602	85	55322	0.38	ppbv #	68
5) Chloromethane	5.825	50	11203	0.39	ppbv	97
6) Vinyl Chloride	6.092	62	13514	0.37	ppbv	90
7) 1,3-Butadiene	6.172	54	8763	0.36	ppbv #	88
8) Bromomethane	6.954	94	23286	0.48	ppbv	91
9) Chloroethane	7.115	64	5314	0.40	ppbv #	92
10) ethanol	7.264	45	14251	1.55	ppbv #	80
11) Vinyl Bromide	7.574	106	8345	0.32	ppbv	99
12) Trichlorofluoromethane	7.692	101	26894	0.34	ppbv	99
13) Isopropanol	8.194	45	28742	0.60	ppbv	100
14) Acrolein	8.300	56	3255	0.36	ppbv #	100
15) Acetone	8.412	43	24302	0.56	ppbv	94
16) Freon-113	8.542	101	20317	0.33	ppbv	96
17) 1,1-Dichloroethylene	8.771	61	12867	0.33	ppbv	97
18) 3-Chloropropene	9.354	41	8718	0.32	ppbv #	81
19) Methylene Chloride	9.503	49	14793	0.49	ppbv	92
20) Acrylonitrile	9.596	53	5925	0.34	ppbv #	100
21) Carbon disulfide	9.646	76	23741	0.33	ppbv #	77
22) Methyl-tert-Butyl Ethe...	9.919	73	19520	0.31	ppbv #	92
23) trans-1,2-Dichloroethy...	10.099	61	11336	0.33	ppbv	93
24) Hexane	10.378	57	10383	0.29	ppbv	90
25) Vinyl Acetate	10.694	43	18978	0.30	ppbv #	98
26) 1,1-Dichloroethane	10.744	63	15775	0.34	ppbv #	98
27) 2-Butanone	11.358	43	18903	0.36	ppbv	90
28) Ethyl Acetate	11.650	43	19843	0.33	ppbv #	91
29) cis-1,2-Dichloroethylene	11.724	61	10633	0.32	ppbv	97
30) Chloroform	11.997	83	20247	0.34	ppbv	96
31) Tetrahydrofuran	12.338	42	9508	0.33	ppbv	90
32) 1,1,1-Trichlorethane	12.723	97	19244	0.31	ppbv	97
33) Cyclohexane	12.896	56	10055	0.28	ppbv	94
34) Carbon Tetrachloride	13.188	117	19214	0.33	ppbv	100
35) 1,2-Dichloroethane	13.256	62	12283	0.35	ppbv	100
36) Benzene	13.386	78	25908	0.29	ppbv #	100
37) n-Heptane	13.399	43	12965	0.27	ppbv	100
39) Trichloroethylene	14.410	95	11007	0.30	ppbv	89
40) 1,2-Dichloropropane	14.633	63	8943	0.29	ppbv #	98
41) Methyl Methacrylate	14.646	69	6321	0.19	ppbv #	14
42) 1,4-Dioxane	14.974	88	4791	0.28	ppbv #	100
43) Bromodichloromethane	14.993	83	18720	0.30	ppbv	97
44) Methyl Isobutyl Ketone	15.539	43	18521	0.30	ppbv #	89
45) cis-1,3-Dichloropropene	15.874	75	10415	0.26	ppbv	96
46) Toluene	16.531	91	32914	0.33	ppbv	96
47) trans-1,3-Dichloropropene	16.686	75	9077	0.26	ppbv #	94
48) 1,1,2-Trichlorethane	16.978	97	10137	0.25	ppbv	96
49) 2-Hexanone	16.997	43	15119	0.19	ppbv #	75
50) 1,3-Dichloropropane	17.400	76	13240	0.29	ppbv #	99
51) Tetrachloroethylene	17.716	166	15811	0.25	ppbv	99
52) Dibromchloromethane	17.908	129	17342	0.25	ppbv #	96
53) 1,2-Dibromoethane	18.281	107	14700	0.26	ppbv	99
55) Chlorobenzene	19.075	112	25097	0.34	ppbv #	99

Data Path : D:\020923-ICAL\
Data File : TO297458.D
Acq On : 9 Feb 2023 8:16 pm
Operator : VH
Sample : SEQ-CAL5
Misc : QBTO1020923A 0.500 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:04:41 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration

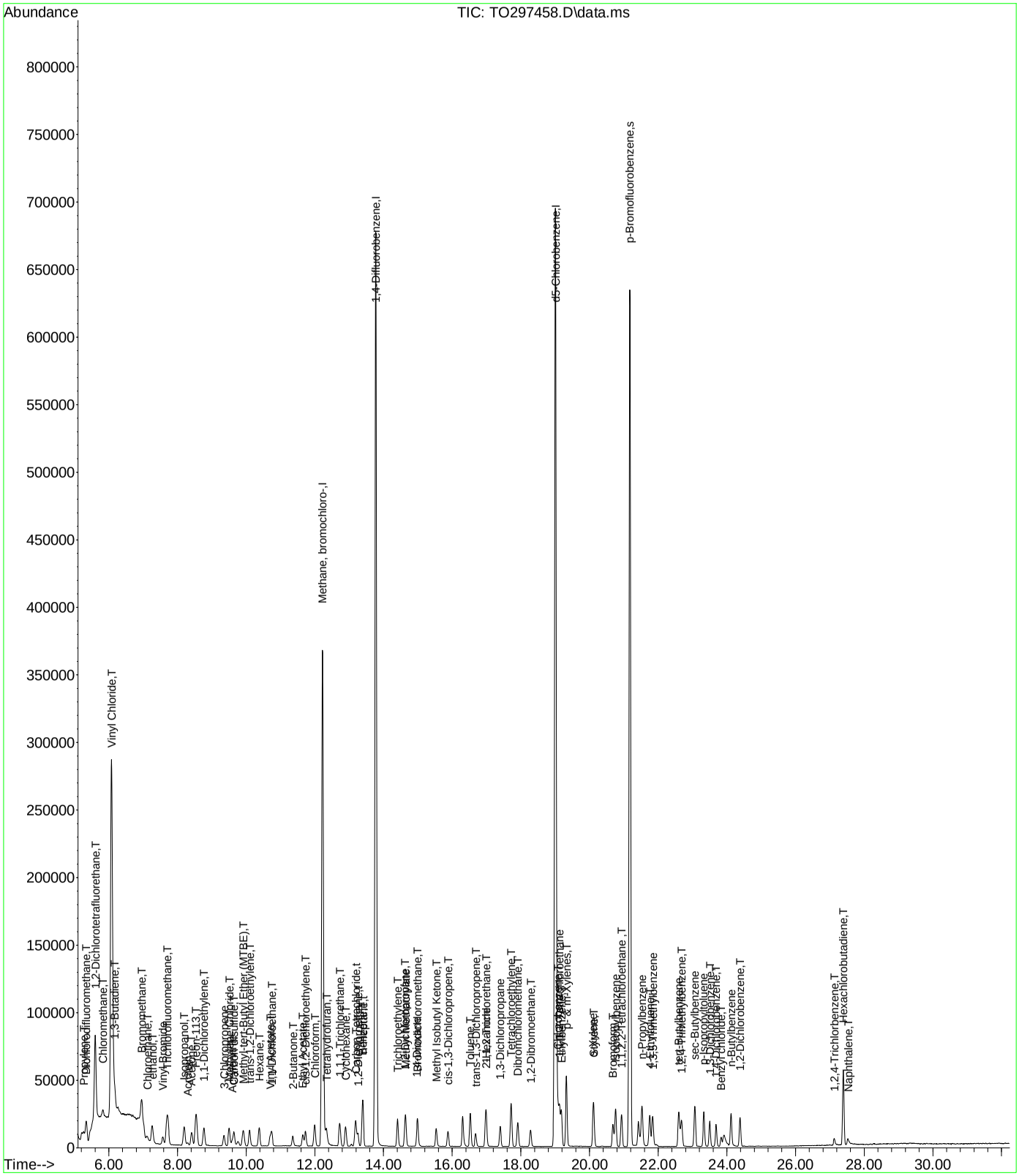
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
56) 1,1,1,2-Tetrachloroethane	19.124	131	13555	0.31	ppbv	96
57) Ethylbenzene	19.180	91	34685	0.32	ppbv	97
58) p- & m-Xylenes	19.329	91	54950	0.62	ppbv	95
59) o-Xylene	20.110	91	23452	0.27	ppbv	99
60) Styrene	20.123	104	14210	0.16	ppbv #	74
61) Bromoform	20.687	173	13655	0.24	ppbv	97
62) n-Propylbenzene	21.525	91	45018	0.32	ppbv	100
63) Isopropylbenzene	20.762	105	34466	0.29	ppbv	100
64) 1,1,2,2-Tetrachloroeth...	20.936	83	21384	0.33	ppbv	98
66) 4-Ethyltoluene	21.754	105	30901	0.27	ppbv	95
67) 1,3,5-Trimethylbenzene	21.841	105	26427	0.28	ppbv	96
68) tert-Butylbenzene	22.604	119	26920	0.24	ppbv #	62
69) 1,2,4-Trimethylbenzene	22.679	105	26269	0.27	ppbv #	99
70) sec-Butylbenzene	23.069	105	42157	0.28	ppbv #	93
71) p-Isopropyltoluene	23.330	119	30060	0.18	ppbv #	100
72) 1,3-Dichlorobenzene	23.504	146	16311	0.20	ppbv	95
73) 1,4-Dichlorobenzene	23.690	146	14279	0.18	ppbv	94
74) Benzyl chloride	23.832	126	1834	0.09	ppbv #	1
75) n-Butylbenzene	24.124	91	26633	0.18	ppbv #	92
76) 1,2-Dichlorobenzene	24.384	146	16996	0.21	ppbv	94
77) 1,2,4-Trichlorbenzene	27.126	180	4488	0.17	ppbv #	86
78) Hexachlorobutadiene	27.393	225	16198	0.17	ppbv	95
79) Naphthalene	27.529	128	11364	0.15	ppbv	90

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

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL\
Data File : TO297458.D
Acq On : 9 Feb 2023 8:16 pm
Operator : VH
Sample : SEQ-CAL5
Misc : QBTO1020923A 0.500 PPBV
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Feb 10 06:04:41 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Thu Feb 09 17:30:06 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL VPH\
Data File : TO297459.D
Acq On : 9 Feb 2023 9:03 pm
Operator : VH
Sample : SEQ-CAL6
Misc : QBTO1020923A 3.00 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

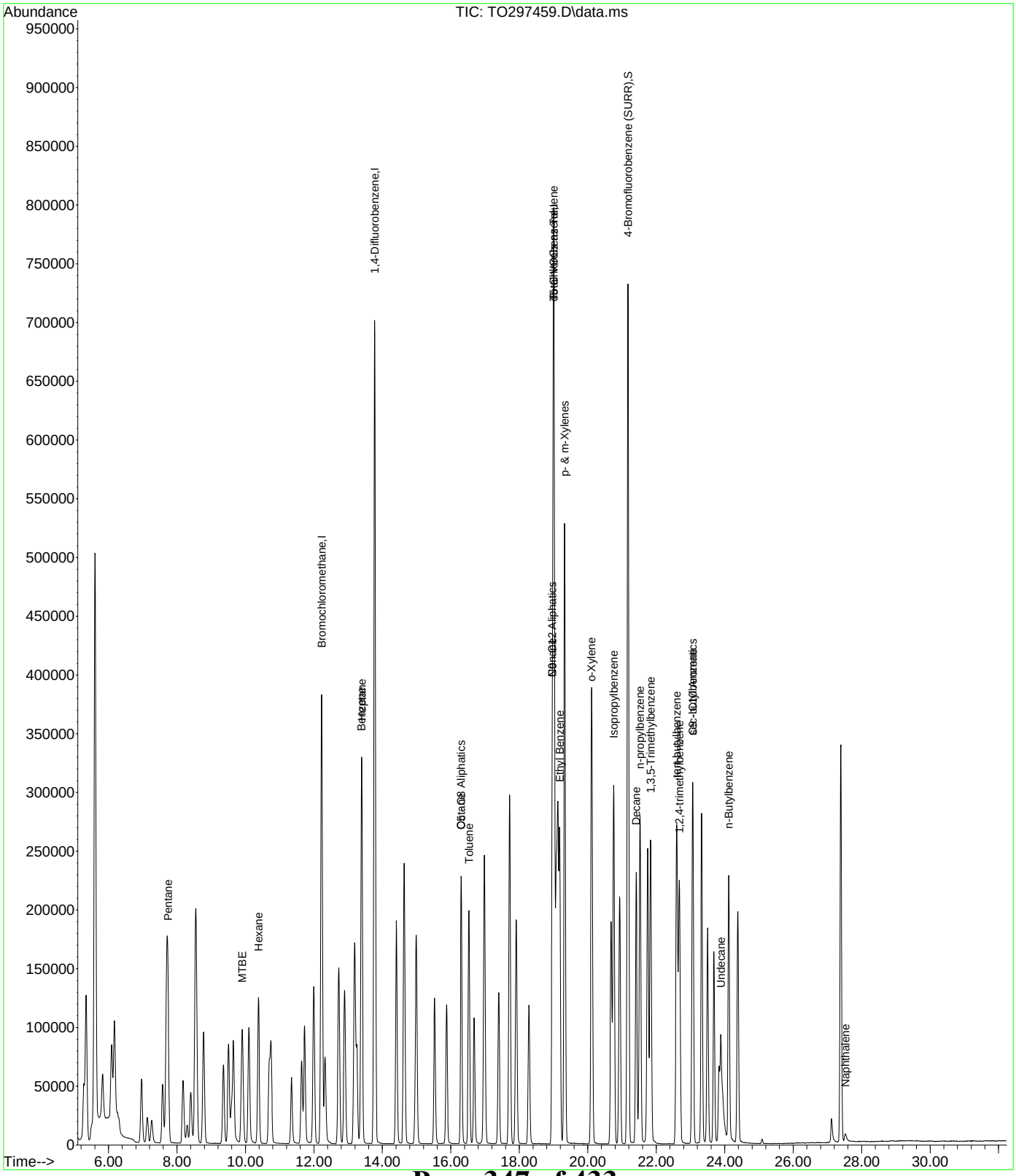
Quant Time: Mar 09 16:56:05 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Wed Jan 04 12:24:58 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	12.227	130	245432	10.00	ppbv	#-0.02
7) 1,4-Difluorobenzene	13.771	114	987760	10.00	ppbv	#-0.02
12) d5-Chlorobenzene	19.007	117	817180	10.00	ppbv	#-0.03
System Monitoring Compounds						
18) 4-Bromofluorobenzene (...	21.171	95	392364	9.85	ppbv	-0.03
Spiked Amount 10.000 Range 70 - 120 Recovery = 98.50%						
Target Compounds						Qvalue
2) Pentane	7.736	43	115819	2.87	ppbv #	56
3) MTBE	9.907	73	169743	3.03	ppbv	98
4) Hexane	10.378	41	84139	3.21	ppbv	89
5) Benzene	13.387	78	229697	2.69	ppbv	100
6) Heptane	13.399	43	129302	2.72	ppbv	93
8) Octane	16.302	43	171725	2.58	ppbv	89
9) C5 - C8 Aliphatics	16.302	43	1329492m	10.86	ppbv	
10) Toluene	16.532	91	264656	2.58	ppbv	99
11) Total VOCs as Toluene	19.007	TIC	51609842m	2.75	ppbv	
13) Nonane	18.963	43	182746	3.21	ppbv	90
14) Ethyl Benzene	19.180	91	344069	3.06	ppbv	98
15) p- & m-Xylenes	19.323	91	545649	2.82	ppbv #	96
16) o-Xylene	20.105	91	261946	2.74	ppbv	96
17) C9 - C12 Aliphatics	18.963	43	460060m	7.77	ppbv	
19) Decane	21.413	43	160386	2.74	ppbv	86
20) Undecane	23.888	43	96071	1.68	ppbv #	72
21) n-propylbenzene	21.525	91	436622	2.81	ppbv	99
22) Isopropylbenzene	20.756	105	383536	2.85	ppbv	99
23) 1,3,5-Trimethylbenzene	21.835	105	293271	2.69	ppbv	99
24) tert-butylbenzene	22.598	119	327782	2.55	ppbv #	66
25) 1,2,4-trimethylbenzene	22.673	105	274013	2.42	ppbv	98
26) sec-butylbenzene	23.063	105	442570	2.50	ppbv	100
27) n-Butylbenzene	24.118	91	242193	1.83	ppbv	96
28) C9 - C10 Aromatics	23.063	105	1029304m	19.88	ppbv	
29) Naphthalene	27.523	128	19431	0.25	ppbv	100

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

Data Path : D:\020923-ICAL VPH\
Data File : TO297459.D
Acq On : 9 Feb 2023 9:03 pm
Operator : VH
Sample : SEQ-CAL6
Misc : QBTO1020923A 3.00 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 09 16:56:05 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Wed Jan 04 12:24:58 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL VPH\
Data File : TO297460.D
Acq On : 9 Feb 2023 9:51 pm
Operator : VH
Sample : SEQ-CAL7
Misc : QBTO1020923A 10.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 09 17:05:21 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Thu Mar 09 16:57:25 2023
Response via : Initial Calibration

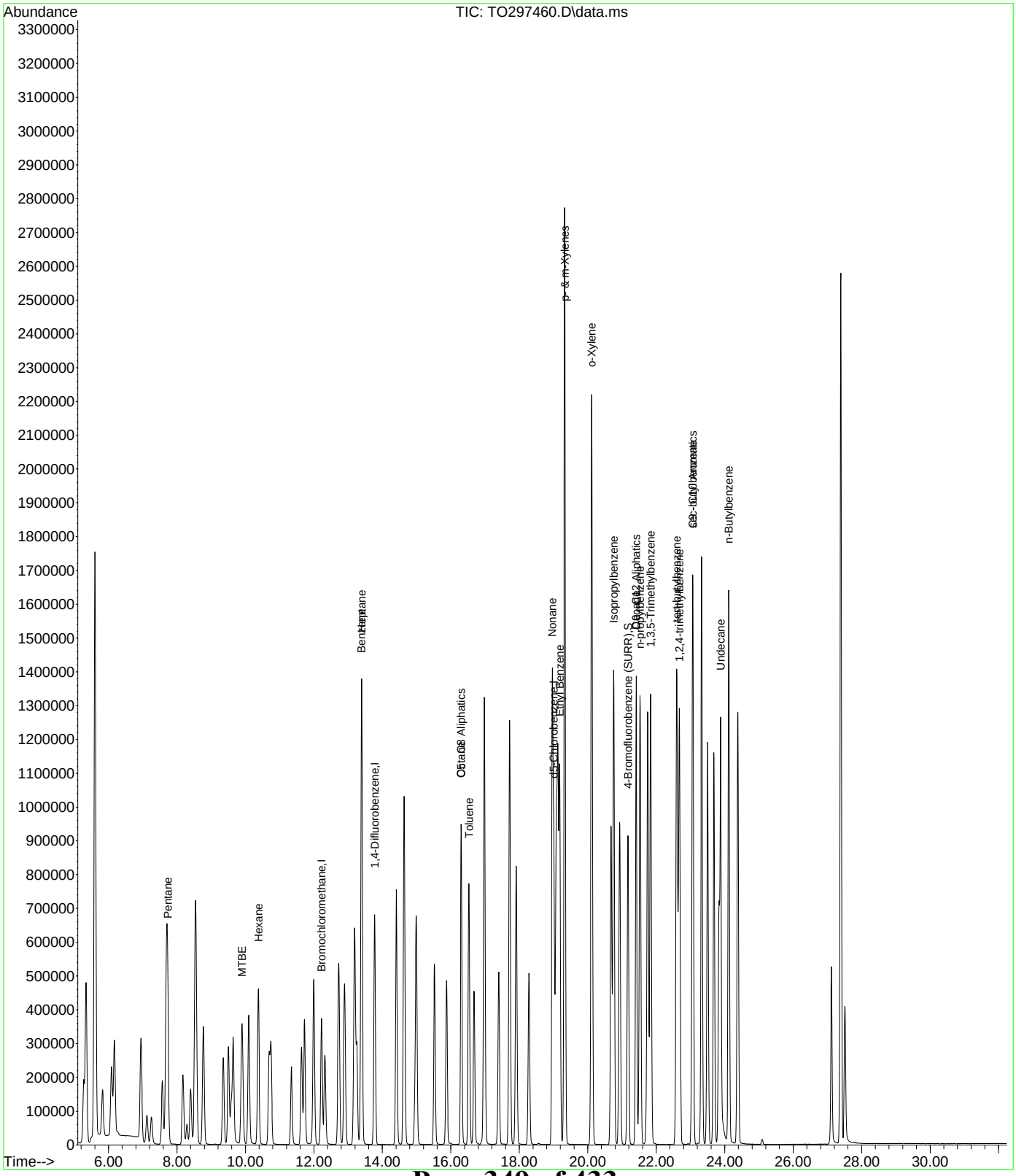
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	12.220	130	230668	10.00	ppbv	#-0.02
7) 1,4-Difluorobenzene	13.771	114	938915	10.00	ppbv	#-0.02
12) d5-Chlorobenzene	19.006	117	907641	10.00	ppbv	#-0.03
System Monitoring Compounds						
18) 4-Bromofluorobenzene (...	21.171	95	487327	11.18	ppbv	-0.03
Spiked Amount 10.000	Range 70 - 120		Recovery = 111.80%			
Target Compounds						Qvalue
2) Pentane	7.729	43	447489	12.33	ppbv #	56
3) MTBE	9.900	73	634734	11.94	ppbv	98
4) Hexane	10.378	41	304542	11.55	ppbv	86
5) Benzene	13.387	78	900271	12.51	ppbv	100
6) Heptane	13.393	43	546392	13.49	ppbv	93
8) Octane	16.302	43	714151	13.13	ppbv	89
9) C5 - C8 Aliphatics	16.302	43	5271590m	50.06	ppbv	
10) Toluene	16.531	91	1006563	12.00	ppbv	100
13) Nonane	18.963	43	825348	12.20	ppbv	91
14) Ethyl Benzene	19.180	91	1425586	11.19	ppbv	98
15) p- & m-Xylenes	19.329	91	2714312	13.44	ppbv #	95
16) o-Xylene	20.111	91	1280460	13.20	ppbv #	96
17) C9 - C12 Aliphatics	21.413	43	2485430m	43.78	ppbv	
19) Decane	21.413	43	839016	14.13	ppbv	90
20) Undecane	23.882	43	732165m	20.58	ppbv	
21) n-propylbenzene	21.525	91	2016018	12.47	ppbv	99
22) Isopropylbenzene	20.756	105	1723251	12.14	ppbv	99
23) 1,3,5-Trimethylbenzene	21.835	105	1420033	13.08	ppbv	99
24) tert-butylbenzene	22.598	119	1627095	13.41	ppbv #	66
25) 1,2,4-trimethylbenzene	22.672	105	1448207	14.28	ppbv	98
26) sec-butylbenzene	23.063	105	2338519	14.27	ppbv	100
27) n-Butylbenzene	24.118	91	1610857	17.96	ppbv	96
28) C9 - C10 Aromatics	23.063	105	5530895m	116.11	ppbv	

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

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL VPH\
Data File : TO297460.D
Acq On : 9 Feb 2023 9:51 pm
Operator : VH
Sample : SEQ-CAL7
Misc : QBTO1020923A 10.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 09 17:05:21 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Thu Mar 09 16:57:25 2023
Response via : Initial Calibration



AIRVPH13.M Thu Mar 09 17:30:20 2023 Page: 2

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL VPH\
Data File : TO297461.D
Acq On : 9 Feb 2023 10:42 pm
Operator : VH
Sample : SEQ-CAL8
Misc : QBTO1020923A 20.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

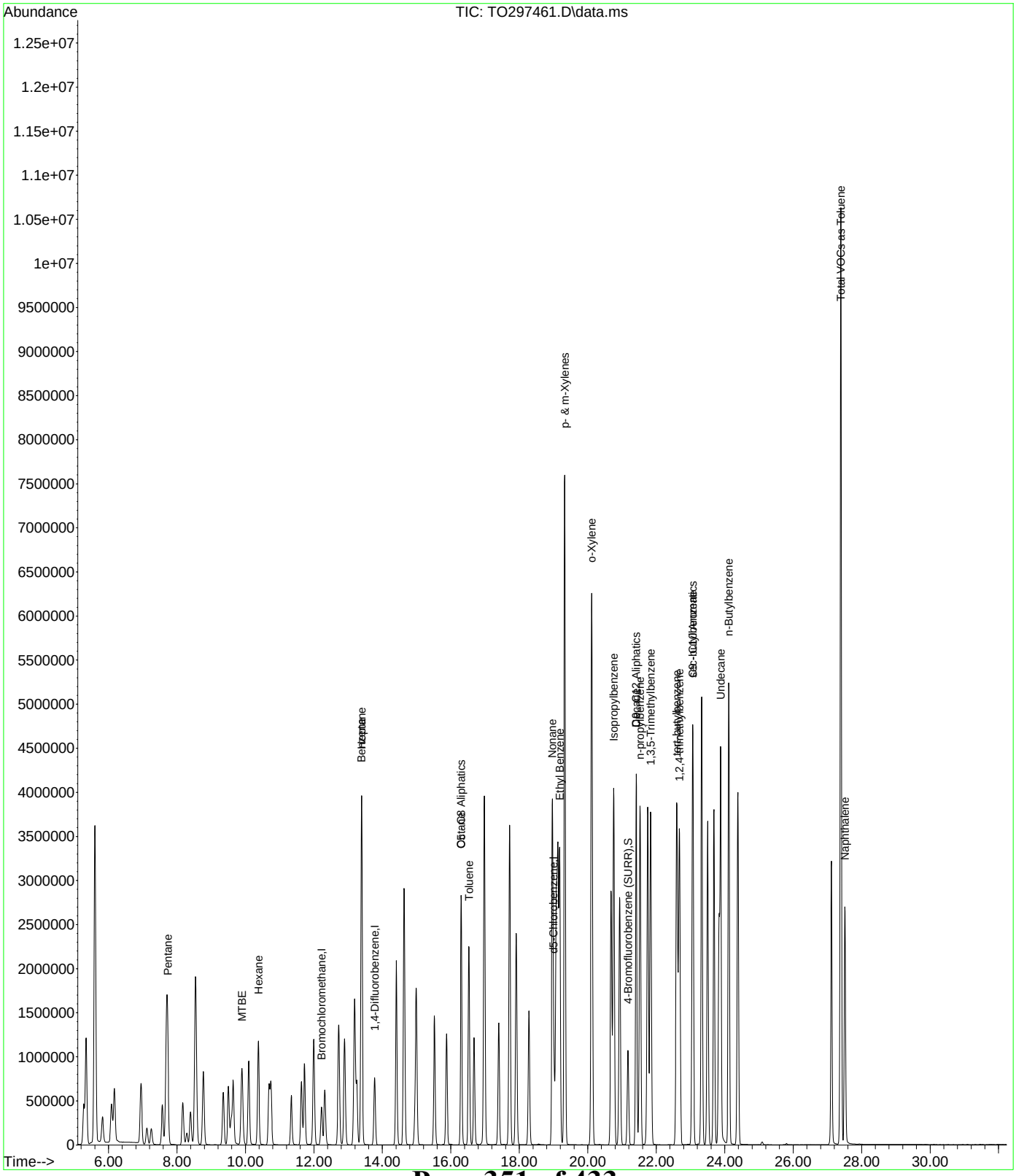
Quant Time: Mar 09 17:09:49 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Thu Mar 09 17:04:58 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	12.220	130	262267	10.00	ppbv	#-0.02
7) 1,4-Difluorobenzene	13.771	114	1053501	10.00	ppbv	#-0.02
12) d5-Chlorobenzene	19.000	117	1191044	10.00	ppbv	#-0.03
System Monitoring Compounds						
18) 4-Bromofluorobenzene (...	21.171	95	569475	9.40	ppbv	-0.03
Spiked Amount 10.000 Range 70 - 120 Recovery = 94.00%						
Target Compounds						Qvalue
2) Pentane	7.729	43	1197196	25.99	ppbv #	56
3) MTBE	9.900	73	1523257	22.97	ppbv	98
4) Hexane	10.378	41	741126	22.95	ppbv	84
5) Benzene	13.386	78	2554376	27.74	ppbv	100
6) Heptane	13.393	43	1550861	28.67	ppbv	94
8) Octane	16.302	43	2085854	29.55	ppbv	90
9) C5 - C8 Aliphatics	16.302	43	13545229m	101.83	ppbv	
10) Toluene	16.531	91	2796862	27.02	ppbv	100
11) Total VOCs as Toluene	27.393	TIC	537362436m	24.23	ppbv	
13) Nonane	18.963	43	2408222	24.44	ppbv	93
14) Ethyl Benzene	19.180	91	4228472	23.87	ppbv	98
15) p- & m-Xylenes	19.329	91	7497292	24.14	ppbv #	94
16) o-Xylene	20.111	91	3664512	24.82	ppbv #	95
17) C9 - C12 Aliphatics	21.413	43	7564148m	82.57	ppbv	
19) Decane	21.413	43	2524578	26.85	ppbv	93
20) Undecane	23.882	43	2428415m	34.02	ppbv	
21) n-propylbenzene	21.525	91	5794322	24.31	ppbv	99
22) Isopropylbenzene	20.756	105	4976188	24.13	ppbv	99
23) 1,3,5-Trimethylbenzene	21.835	105	3936265	23.94	ppbv	100
24) tert-butylbenzene	22.598	119	4668955	25.05	ppbv #	66
25) 1,2,4-trimethylbenzene	22.672	105	4175000	25.84	ppbv	97
26) sec-butylbenzene	23.063	105	6647021	25.47	ppbv	100
27) n-Butylbenzene	24.118	91	5197526	31.59	ppbv	96
28) C9 - C10 Aromatics	23.063	105	15664734m	204.46	ppbv	
29) Naphthalene	27.511	128	3699761	19.97	ppbv	100

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

Data Path : D:\020923-ICAL VPH\
Data File : TO297461.D
Acq On : 9 Feb 2023 10:42 pm
Operator : VH
Sample : SEQ-CAL8
Misc : QBTO1020923A 20.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 09 17:09:49 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Thu Mar 09 17:04:58 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL VPH\
Data File : TO297462.D
Acq On : 9 Feb 2023 11:35 pm
Operator : VH
Sample : SEQ-CAL9
Misc : QBTO1020923A 30.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 09 17:14:22 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Thu Mar 09 17:10:23 2023
Response via : Initial Calibration

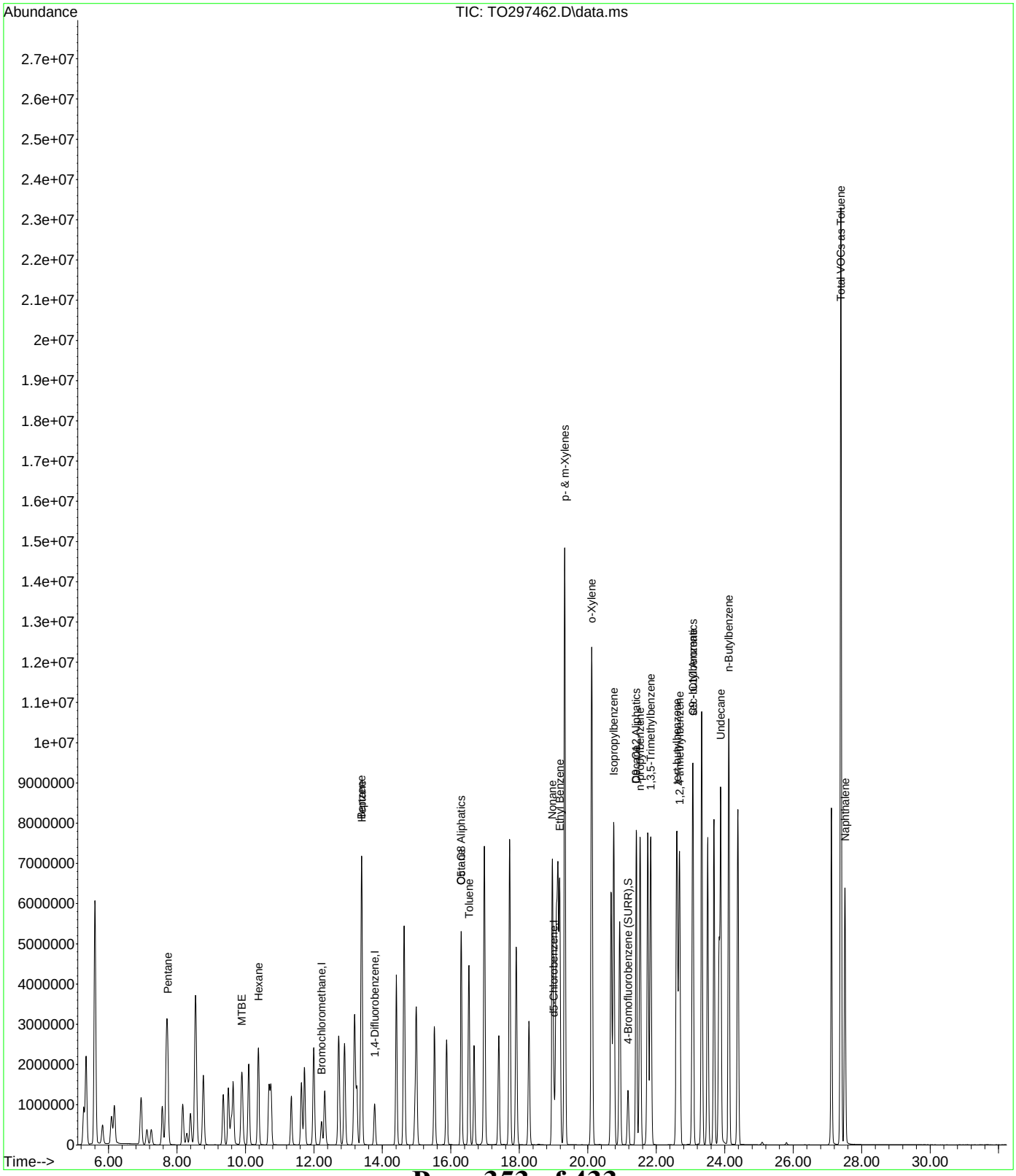
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	12.220	130	358942	10.00	ppbv	#-0.02
7) 1,4-Difluorobenzene	13.771	114	1428135	10.00	ppbv	#-0.02
12) d5-Chlorobenzene	19.006	117	1587542	10.00	ppbv	#-0.03
System Monitoring Compounds						
18) 4-Bromofluorobenzene (...	21.171	95	773765	9.78	ppbv	-0.03
Spiked Amount 10.000 Range 70 - 120 Recovery = 97.80%						
Target Compounds						Qvalue
2) Pentane	7.729	43	2330825	33.61	ppbv #	56
3) MTBE	9.894	73	3289810	34.54	ppbv	98
4) Hexane	10.378	41	1505721	32.47	ppbv	80
5) Benzene	13.386	78	4961159	34.87	ppbv	100
6) Heptane	13.399	43	2858337	33.74	ppbv	96
8) Octane	16.302	43	4034560	36.37	ppbv	91
9) C5 - C8 Aliphatics	16.302	43	27596499m	140.28	ppbv	
10) Toluene	16.531	91	5754607	36.71	ppbv	100
11) Total VOCs as Toluene	27.393	TIC	1074356067m	35.73	ppbv	
13) Nonane	18.963	43	4369405	30.97	ppbv	96
14) Ethyl Benzene	19.180	91	8443357	33.60	ppbv #	98
15) p- & m-Xylenes	19.329	91	14672928	33.15	ppbv #	93
16) o-Xylene	20.110	91	7387641m	34.75	ppbv	
17) C9 - C12 Aliphatics	21.413	43	13920540m	101.30	ppbv	
19) Decane	21.413	43	4647046	33.28	ppbv	96
20) Undecane	23.882	43	4545731m	38.73	ppbv	
21) n-propylbenzene	21.525	91	11565286	33.96	ppbv	99
22) Isopropylbenzene	20.756	105	9992052	34.01	ppbv	98
23) 1,3,5-Trimethylbenzene	21.841	105	8001384	34.26	ppbv	100
24) tert-butylbenzene	22.604	119	9662063	35.87	ppbv #	65
25) 1,2,4-trimethylbenzene	22.679	105	8441717	35.72	ppbv	97
26) sec-butylbenzene	23.069	105	13240520	34.89	ppbv	99
27) n-Butylbenzene	24.118	91	10307926	39.39	ppbv	95
28) C9 - C10 Aromatics	23.069	105	31332072m	280.80	ppbv	
29) Naphthalene	27.517	128	8706306	26.22	ppbv	100

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

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL VPH\
Data File : TO297462.D
Acq On : 9 Feb 2023 11:35 pm
Operator : VH
Sample : SEQ-CAL9
Misc : QBTO1020923A 30.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 09 17:14:22 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Thu Mar 09 17:10:23 2023
Response via : Initial Calibration



AIRVPH13.M Thu Mar 09 17:30:24 2023 Page: 2

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL VPH\
Data File : TO297463.D
Acq On : 10 Feb 2023 12:32 am
Operator : VH
Sample : SEQ-CALA
Misc : QBTO1020923A 50.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 09 17:23:44 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Thu Mar 09 17:14:48 2023
Response via : Initial Calibration

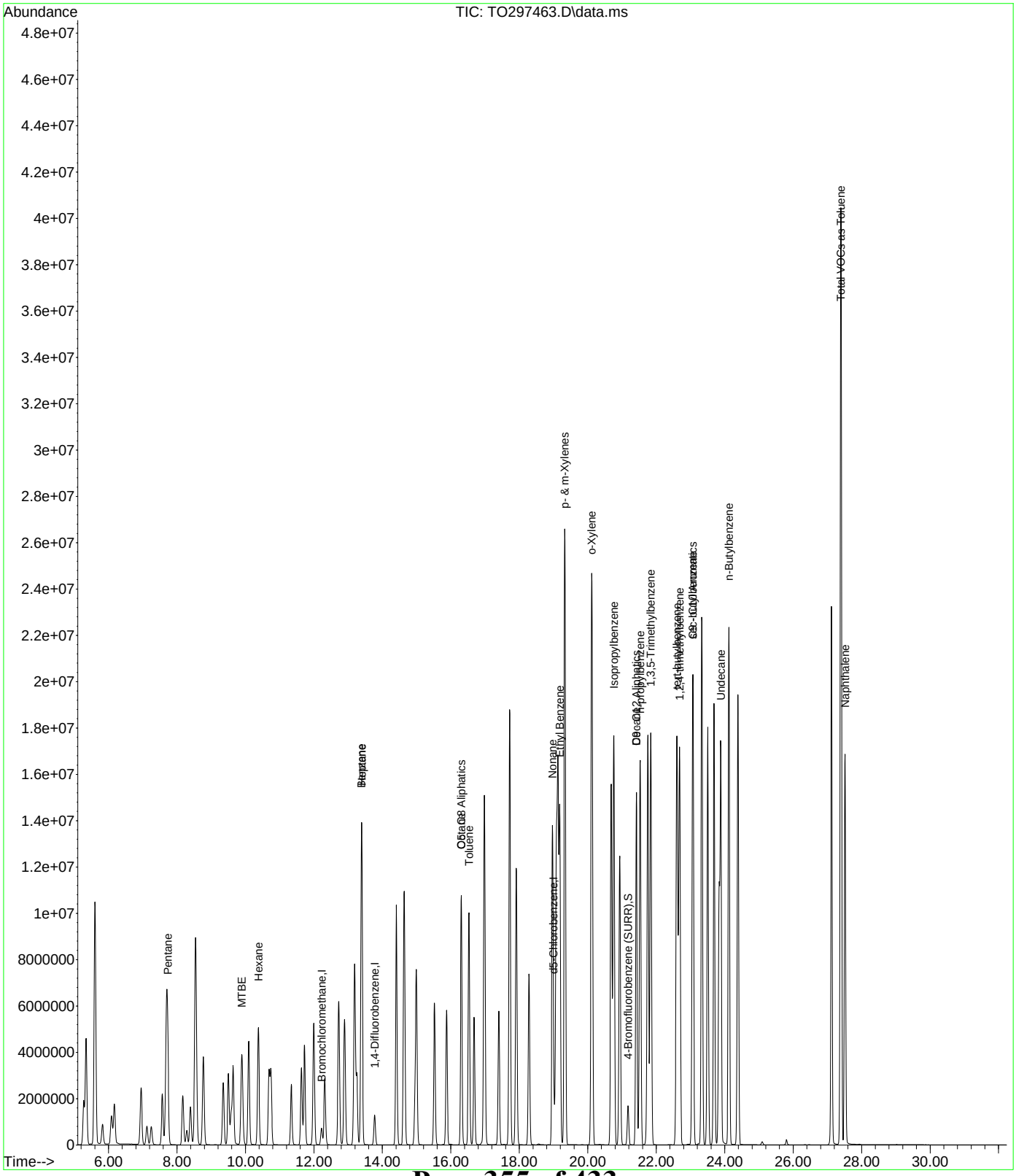
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	12.227	130	464685	10.00	ppbv	#-0.02
7) 1,4-Difluorobenzene	13.771	114	1845282	10.00	ppbv	#-0.02
12) d5-Chlorobenzene	19.000	117	2247368	10.00	ppbv	#-0.03
System Monitoring Compounds						
18) 4-Bromofluorobenzene (...	21.171	95	963013	8.65	ppbv	-0.03
Spiked Amount 10.000 Range 70 - 120 Recovery = 86.50%						
Target Compounds						Qvalue
2) Pentane	7.729	43	4614202	49.90	ppbv #	56
3) MTBE	9.894	73	7327630	57.26	ppbv	97
4) Hexane	10.378	41	3088896	50.41	ppbv	76
5) Benzene	13.387	78	10388953	54.20	ppbv	100
6) Heptane	13.399	43	5405084	47.79	ppbv	97
8) Octane	16.308	43	7796381	51.65	ppbv	96
9) C5 - C8 Aliphatics	16.308	43	56488283m	213.22	ppbv	
10) Toluene	16.532	91	13134509	61.42	ppbv	99
11) Total VOCs as Toluene	27.393	TIC	2147483647m	55.28	ppbv	
13) Nonane	18.969	43	8124991	40.36	ppbv	99
14) Ethyl Benzene	19.180	91	18688265	51.00	ppbv #	96
15) p- & m-Xylenes	19.323	91	28357079m	44.10	ppbv	
16) o-Xylene	20.111	91	15846374m	50.65	ppbv	
17) C9 - C12 Aliphatics	21.420	43	25633098m	127.76	ppbv	
19) Decane	21.420	43	8579356	42.25	ppbv	98
20) Undecane	23.888	43	8316973m	46.66	ppbv	
21) n-propylbenzene	21.531	91	24886267	49.98	ppbv	97
22) Isopropylbenzene	20.762	105	22719969	52.86	ppbv	97
23) 1,3,5-Trimethylbenzene	21.841	105	18975436	55.43	ppbv	99
24) tert-butylbenzene	22.604	119	23513447	58.79	ppbv #	65
25) 1,2,4-trimethylbenzene	22.679	105	20067470	57.25	ppbv	95
26) sec-butylbenzene	23.063	105	28557092	51.07	ppbv	98
27) n-Butylbenzene	24.124	91	21754525m	54.47	ppbv	
28) C9 - C10 Aromatics	23.063	105	71412677m	433.67	ppbv	
29) Naphthalene	27.517	128	22803697	41.93	ppbv	100

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

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL VPH\
Data File : TO297463.D
Acq On : 10 Feb 2023 12:32 am
Operator : VH
Sample : SEQ-CALA
Misc : QBTO1020923A 50.0 PPBV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 09 17:23:44 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Thu Mar 09 17:14:48 2023
Response via : Initial Calibration



AIRVPH13.M Thu Mar 09 17:30:26 2023 Page: 2

SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30007
Laboratory ID: S3B0635-SCV1
Sequence: S3B0635
Standard ID: S23A032

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	10.6	5.9	30.00
1,1,2,2-Tetrachloroethane	10.0	9.43	-5.7	30.00
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.0	9.65	-3.5	30.00
1,1,2-Trichloroethane	10.0	9.62	-3.8	30.00
1,1-Dichloroethane	10.0	9.50	-5.0	30.00
1,1-Dichloroethylene	10.0	8.66	-13.4	30.00
1,2,4-Trichlorobenzene	10.0	7.68	-23.2	30.00
1,2,4-Trimethylbenzene	10.0	9.64	-3.6	30.00
1,2-Dibromoethane	10.0	9.93	-0.7	30.00
1,2-Dichlorobenzene	10.0	9.19	-8.1	30.00
1,2-Dichloroethane	10.0	9.62	-3.8	30.00
1,2-Dichloropropane	10.0	9.63	-3.7	30.00
1,2-Dichlorotetrafluoroethane	10.0	9.49	-5.1	30.00
1,3,5-Trimethylbenzene	10.0	9.15	-8.5	30.00
1,3-Butadiene	10.0	9.28	-7.2	30.00
1,3-Dichlorobenzene	10.0	9.65	-3.5	30.00
1,3-Dichloropropane	10.0	9.63	-3.7	30.00
1,4-Dichlorobenzene	10.0	9.82	-1.8	30.00
1,4-Dioxane	10.0	10.1	1.1	30.00
2-Butanone	10.0	9.79	-2.1	30.00
2-Hexanone	10.0	10.4	3.7	30.00
3-Chloropropene	10.0	10.8	7.7	30.00
4-Methyl-2-pentanone	10.0	9.77	-2.3	30.00
Acetone	10.0	8.58	-14.2	30.00
Acrylonitrile	10.0	10.3	3.2	30.00
Benzene	10.0	9.61	-3.9	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30007
Laboratory ID: S3B0635-SCV1
Sequence: S3B0635
Standard ID: S23A032

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
Benzyl chloride	10.0	9.33	-6.7	30.00
Bromodichloromethane	10.0	10.7	7.1	30.00
Bromoform	10.0	11.5	14.7	30.00
Bromomethane	10.0	9.95	-0.5	30.00
Carbon disulfide	10.0	10.1	0.7	30.00
Carbon tetrachloride	10.0	12.6	25.6	30.00
Chlorobenzene	10.0	9.31	-6.9	30.00
Chloroethane	10.0	9.51	-4.9	30.00
Chloroform	10.0	10.0	0.3	30.00
Chloromethane	10.0	8.78	-12.2	30.00
cis-1,2-Dichloroethylene	10.0	8.46	-15.4	30.00
cis-1,3-Dichloropropylene	10.0	11.2	11.7	30.00
Cyclohexane	10.0	10.5	5.1	30.00
Dibromochloromethane	10.0	11.7	17.2	30.00
Dichlorodifluoromethane	10.0	9.27	-7.3	30.00
Ethyl acetate	10.0	10.2	1.5	30.00
Ethyl Benzene	10.0	9.87	-1.3	30.00
Hexachlorobutadiene	10.0	9.45	-5.5	30.00
Isopropanol	10.0	9.66	-3.4	30.00
Methyl Methacrylate	10.0	10.3	3.3	30.00
Methyl tert-butyl ether (MTBE)	10.0	10.8	8.4	30.00
Methylene chloride	10.0	10.0	0.3	30.00
n-Heptane	10.0	10.6	6.3	30.00
n-Hexane	10.0	10.5	5.0	30.00
o-Xylene	10.0	10.2	1.8	30.00
p- & m- Xylenes	20.0	19.8	-0.8	30.00
p-Ethyltoluene	10.0	9.85	-1.5	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30007
Laboratory ID: S3B0635-SCV1
Sequence: S3B0635
Standard ID: S23A032

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
Propylene	10.0	9.01	-9.9	30.00
Styrene	10.0	10.5	5.3	30.00
Tetrachloroethylene	10.0	9.66	-3.4	30.00
Tetrahydrofuran	10.0	10.1	1.4	30.00
Toluene	10.0	9.63	-3.7	30.00
trans-1,2-Dichloroethylene	10.0	9.97	-0.3	30.00
trans-1,3-Dichloropropylene	10.0	11.2	12.1	30.00
Trichloroethylene	10.0	9.28	-7.2	30.00
Trichlorofluoromethane (Freon 11)	10.0	9.64	-3.6	30.00
Vinyl acetate	10.0	11.5	15.0	30.00
Vinyl bromide	10.0	10.6	5.7	30.00
Vinyl Chloride	10.0	8.04	-19.6	30.00

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223697.D
Acq On : 28 Jan 2023 2:22 am
Operator : VH
Sample : SEQ-SCV1
Misc : QBTO2012723A ICV
ALS Vial : 44 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Feb 09 15:20:40 2023
Quant Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Quant Title : VPH Method
QLast Update : Thu Feb 09 15:11:48 2023
Response via : Initial Calibration

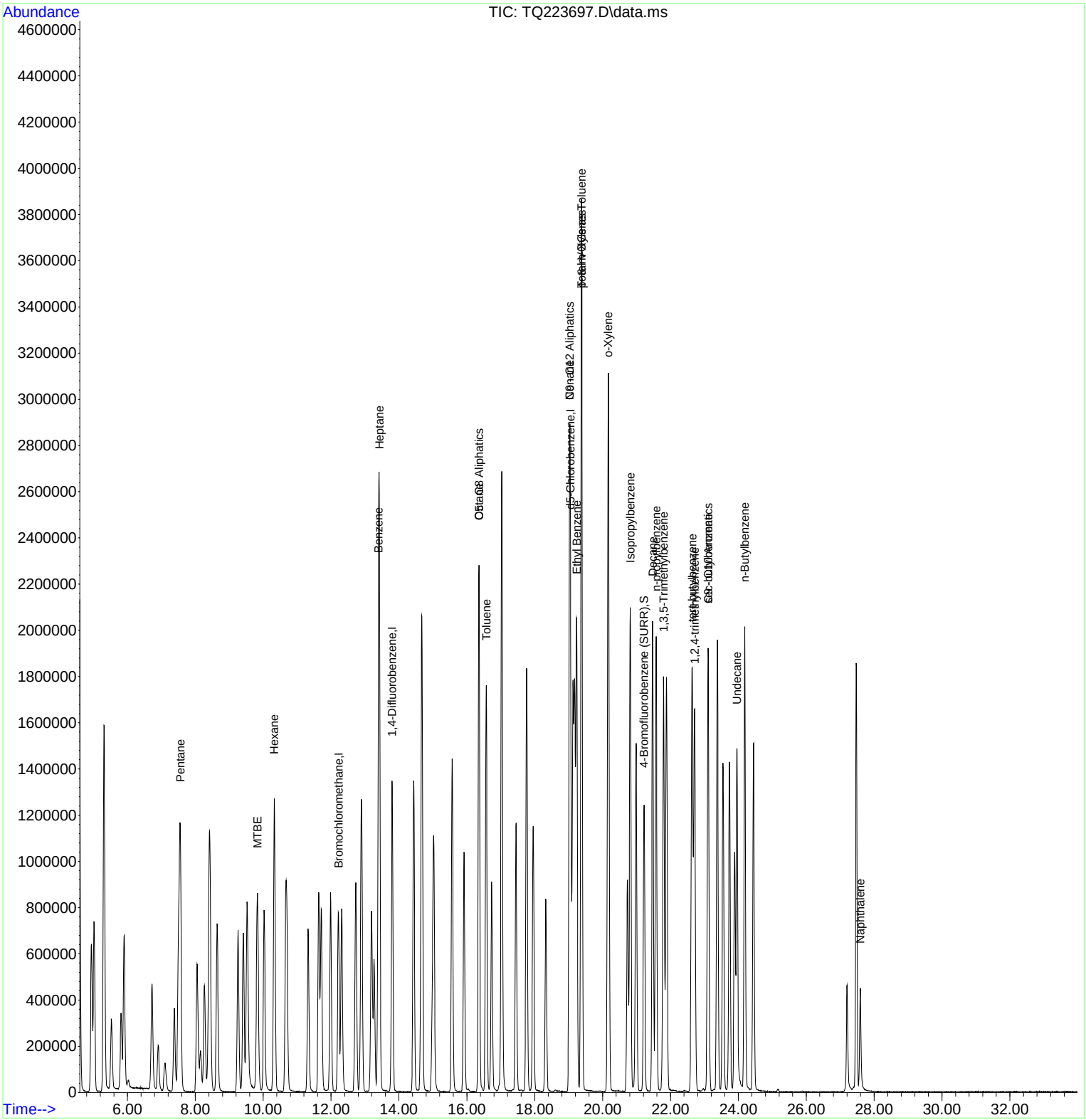
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Bromochloromethane	12.219	130	440946	10.00 ppbv	# 0.00
7) 1,4-Difluorobenzene	13.798	114	1875884	10.00 ppbv	# 0.00
12) d5-Chlorobenzene	19.053	117	1523610	10.00 ppbv	# 0.00
System Monitoring Compounds					
18) 4-Bromofluorobenzene (...	21.218	95	806900	10.51 ppbv	0.00
Spiked Amount 10.000	Range 70 - 120		Recovery = 105.10%		
Target Compounds					Qvalue
2) Pentane	7.556	43	1383545	9.95 ppbv #	55
3) MTBE	9.830	73	1425293	10.29 ppbv #	87
4) Hexane	10.323	41	845199m	9.65 ppbv	
5) Benzene	13.396	78	1866713	9.75 ppbv	100
6) Heptane	13.420	43	1493833	9.69 ppbv	87
8) Octane	16.359	43	2039303	9.46 ppbv #	84
9) C5 - C8 Aliphatics	16.359	43	15579678m	38.62 ppbv	
10) Toluene	16.572	91	2256447	9.56 ppbv	100
11) Total VOCs as Toluene	19.377	TIC	326333926m	8.72 ppbv	
13) Nonane	19.029	43	1691046m	10.16 ppbv	
14) Ethyl Benzene	19.236	91	2661200	11.31 ppbv	99
15) p- & m-Xylenes	19.377	91	3954461	11.22 ppbv	97
16) o-Xylene	20.163	91	2035481	10.91 ppbv	97
17) C9 - C12 Aliphatics	19.029	43	4443256m	29.02 ppbv	
19) Decane	21.474	43	1460889	9.52 ppbv	87
20) Undecane	23.955	43	1007375m	8.37 ppbv	
21) n-propylbenzene	21.577	91	3061404	9.60 ppbv	100
22) Isopropylbenzene	20.815	105	2573277	10.52 ppbv	99
23) 1,3,5-Trimethylbenzene	21.797	105	2329930	9.75 ppbv	88
24) tert-butylbenzene	22.638	119	2113575	9.86 ppbv	96
25) 1,2,4-trimethylbenzene	22.711	105	1940065	9.76 ppbv	98
26) sec-butylbenzene	23.107	105	2883793	9.62 ppbv	100
27) n-Butylbenzene	24.187	91	2110137	9.56 ppbv	97
28) C9 - C10 Aromatics	23.107	105	9479245m	88.44 ppbv	
29) Naphthalene	27.594	128	680505	9.06 ppbv	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223697.D
Acq On : 28 Jan 2023 2:22 am
Operator : VH
Sample : SEQ-SCV1
Misc : QBTO2012723A ICV
ALS Vial : 44 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Feb 09 15:20:40 2023
Quant Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Quant Title : VPH Method
QLast Update : Thu Feb 09 15:11:48 2023
Response via : Initial Calibration



SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30018
Laboratory ID: S3B1020-SCV1
Sequence: S3B1020
Standard ID: S23B027

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
1,1,1,2-Tetrachloroethane	10.0	9.26	-7.4	30.00
1,1,1-Trichloroethane	10.0	10.4	4.5	30.00
1,1,2,2-Tetrachloroethane	10.0	11.1	11.3	30.00
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.0	10.1	0.6	30.00
1,1,2-Trichloroethane	10.0	7.97	-20.3	30.00
1,1-Dichloroethane	10.0	10.2	1.7	30.00
1,1-Dichloroethylene	10.0	11.0	9.9	30.00
1,2,4-Trichlorobenzene	10.0	8.15	-18.5	30.00
1,2,4-Trimethylbenzene	10.0	8.41	-15.9	30.00
1,2-Dibromoethane	10.0	8.46	-15.4	30.00
1,2-Dichlorobenzene	10.0	7.97	-20.3	30.00
1,2-Dichloroethane	10.0	10.6	5.7	30.00
1,2-Dichloropropane	10.0	7.81	-21.9	30.00
1,2-Dichlorotetrafluoroethane	10.0	8.30	-17.0	30.00
1,3,5-Trimethylbenzene	10.0	8.71	-12.9	30.00
1,3-Butadiene	10.0	8.66	-13.4	30.00
1,3-Dichlorobenzene	10.0	8.30	-17.0	30.00
1,3-Dichloropropane	10.0	8.51	-14.9	30.00
1,4-Dichlorobenzene	10.0	8.12	-18.8	30.00
1,4-Dioxane	10.0	9.89	-1.1	30.00
2-Butanone	10.0	11.0	10.4	30.00
2-Hexanone	10.0	7.83	-21.7	30.00
3-Chloropropene	10.0	11.6	16.3	30.00
4-Methyl-2-pentanone	10.0	8.32	-16.8	30.00
Acetone	10.0	8.75	-12.5	30.00
Acrylonitrile	10.0	11.9	18.6	30.00
Benzene	10.0	8.02	-19.8	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30018
Laboratory ID: S3B1020-SCV1
Sequence: S3B1020
Standard ID: S23B027

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
Benzyl chloride	10.0	8.14	-18.6	30.00
Bromodichloromethane	10.0	8.52	-14.8	30.00
Bromoform	10.0	8.36	-16.4	30.00
Bromomethane	10.0	8.25	-17.5	30.00
Carbon disulfide	10.0	10.4	3.5	30.00
Carbon tetrachloride	10.0	9.57	-4.3	30.00
Chlorobenzene	10.0	10.5	5.2	30.00
Chloroethane	10.0	10.8	8.4	30.00
Chloroform	10.0	10.4	4.2	30.00
Chloromethane	10.0	8.00	-20.0	30.00
cis-1,2-Dichloroethylene	10.0	11.4	13.5	30.00
cis-1,3-Dichloropropylene	10.0	9.18	-8.2	30.00
Cyclohexane	10.0	9.50	-5.0	30.00
Dibromochloromethane	10.0	8.29	-17.1	30.00
Dichlorodifluoromethane	10.0	10.5	5.0	30.00
Ethyl acetate	10.0	11.1	11.4	30.00
Ethyl Benzene	10.0	11.3	13.1	30.00
Hexachlorobutadiene	10.0	5.25	-47.5 *	30.00
Isopropanol	10.0	10.4	4.0	30.00
Methyl Methacrylate	10.0	7.68	-23.2	30.00
Methyl tert-butyl ether (MTBE)	10.0	11.3	13.4	30.00
Methylene chloride	10.0	9.51	-4.9	30.00
n-Heptane	10.0	7.73	-22.7	30.00
n-Hexane	10.0	9.41	-5.9	30.00
o-Xylene	10.0	8.24	-17.6	30.00
p- & m- Xylenes	20.0	15.7	-21.4	30.00
p-Ethyltoluene	10.0	8.29	-17.1	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA TO-15

Laboratory: York Analytical Laboratories, Inc. - Stratford
SDG: 23C0979
Client: Langan Engineering & Environmental Services (NYC)
Project: 170361307
Calibration: SB30018
Laboratory ID: S3B1020-SCV1
Sequence: S3B1020
Standard ID: S23B027

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DIFF	QC LIMIT
Propylene	10.0	11.0	10.5	30.00
Styrene	10.0	7.92	-20.8	30.00
Tetrachloroethylene	10.0	8.58	-14.2	30.00
Tetrahydrofuran	10.0	11.3	13.2	30.00
Toluene	10.0	8.35	-16.5	30.00
trans-1,2-Dichloroethylene	10.0	10.9	8.6	30.00
trans-1,3-Dichloropropylene	10.0	9.10	-9.0	30.00
Trichloroethylene	10.0	8.79	-12.1	30.00
Trichlorofluoromethane (Freon 11)	10.0	9.95	-0.5	30.00
Vinyl acetate	10.0	9.03	-9.7	30.00
Vinyl bromide	10.0	11.0	10.0	30.00
Vinyl Chloride	10.0	7.20	-28.0	30.00

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL VPH\
Data File : TO297466.D
Acq On : 10 Feb 2023 3:01 am
Operator : VH
Sample : SEQ-SCV1
Misc : QBTO1020923A ICV
ALS Vial : 44 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 09 17:29:43 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Thu Mar 09 17:26:22 2023
Response via : Initial Calibration

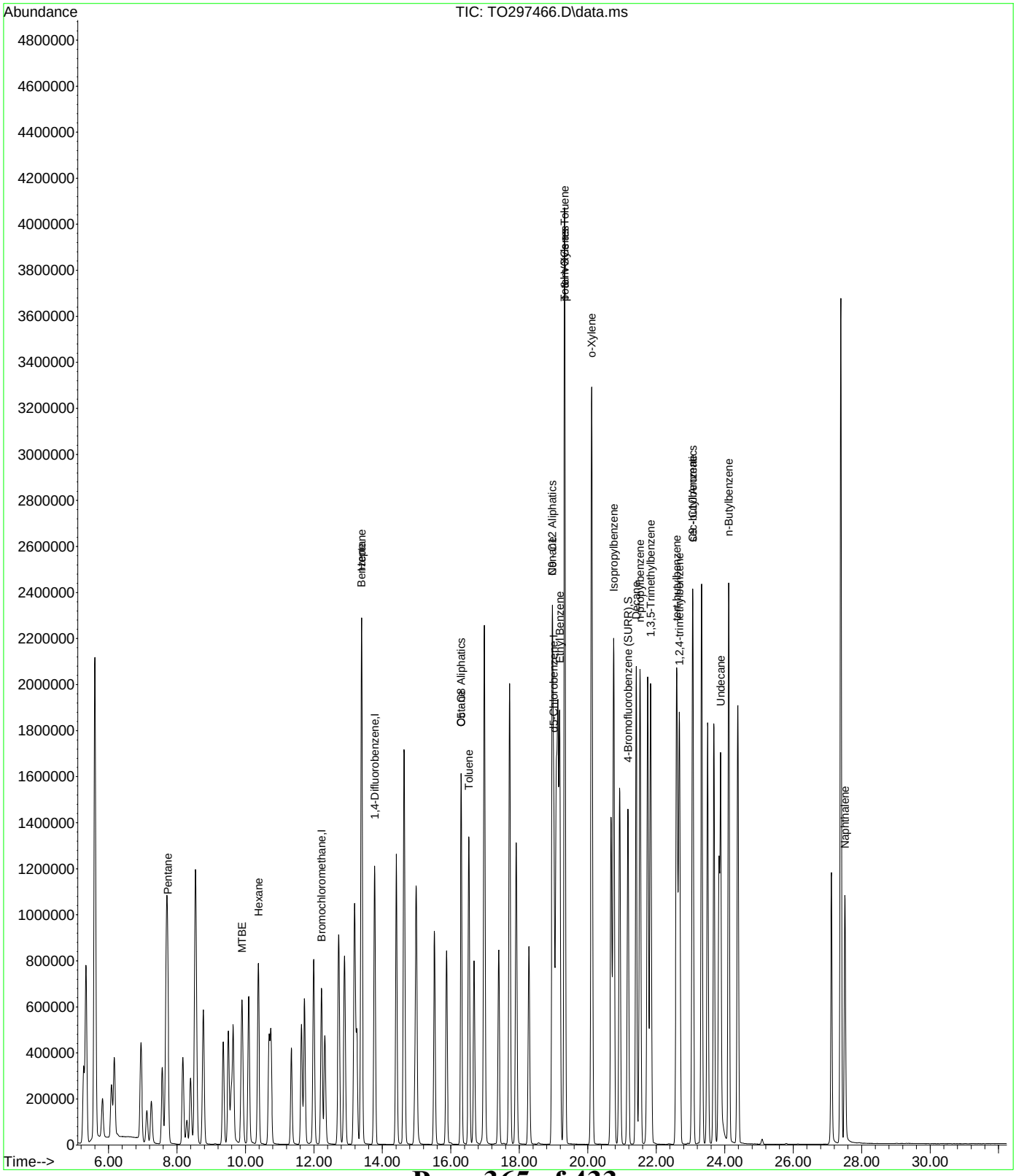
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	12.220	130	435647	10.00	ppbv	#-0.02
7) 1,4-Difluorobenzene	13.771	114	1728874	10.00	ppbv	#-0.02
12) d5-Chlorobenzene	19.007	117	1561527	10.00	ppbv	#-0.03
System Monitoring Compounds						
18) 4-Bromofluorobenzene (...	21.171	95	835385	11.09	ppbv	-0.03
Spiked Amount 10.000 Range 70 - 120 Recovery = 110.90%						
Target Compounds						Qvalue
2) Pentane	7.729	43	811559	9.37	ppbv #	56
3) MTBE	9.900	73	1167915	9.46	ppbv	98
4) Hexane	10.378	41	526146	9.14	ppbv	83
5) Benzene	13.387	78	1547025	8.47	ppbv	100
6) Heptane	13.393	43	947071	9.01	ppbv	93
8) Octane	16.302	43	1259173	8.85	ppbv	89
9) C5 - C8 Aliphatics	16.302	43	9418659m	37.45	ppbv	
10) Toluene	16.525	91	1768701	8.44	ppbv	100
11) Total VOCs as Toluene	19.323	TIC	318491493m	8.75	ppbv	
13) Nonane	18.963	43	1402491	10.43	ppbv	92
14) Ethyl Benzene	19.180	91	2445773	9.57	ppbv	98
15) p- & m-Xylenes	19.323	91	4179290	9.58	ppbv #	96
16) o-Xylene	20.111	91	2041747	9.37	ppbv	96
17) C9 - C12 Aliphatics	18.963	43	3867672m	28.59	ppbv	
19) Decane	21.413	43	1301567	9.52	ppbv	92
20) Undecane	23.882	43	1025672m	7.70	ppbv	
21) n-propylbenzene	21.525	91	3235315	9.35	ppbv	99
22) Isopropylbenzene	20.756	105	2805529	9.29	ppbv	99
23) 1,3,5-Trimethylbenzene	21.835	105	2213030	9.11	ppbv	98
24) tert-butylbenzene	22.598	119	2509335	8.72	ppbv #	66
25) 1,2,4-trimethylbenzene	22.673	105	2237738	8.93	ppbv	98
26) sec-butylbenzene	23.063	105	3448460	8.84	ppbv	100
27) n-Butylbenzene	24.118	91	2460035	8.71	ppbv	96
28) C9 - C10 Aromatics	23.063	105	8322791m	71.54	ppbv	
29) Naphthalene	27.511	128	1591545	9.67	ppbv	100

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

Quantitation Report (QT Reviewed)

Data Path : D:\020923-ICAL VPH\
Data File : TO297466.D
Acq On : 10 Feb 2023 3:01 am
Operator : VH
Sample : SEQ-SCV1
Misc : QBTO1020923A ICV
ALS Vial : 44 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 09 17:29:43 2023
Quant Method : C:\msdchem\1\methods\AIRVPH13.M
Quant Title : VPH Method
QLast Update : Thu Mar 09 17:26:22 2023
Response via : Initial Calibration



AIRVPH13.M Thu Mar 09 17:30:28 2023 Page: 2

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC	Project:	170361307
Instrument ID:	5975C	Calibration:	SB30018
Lab File ID:	TO298045.D	Calibration Date:	02/09/23 15:26
Sequence:	S3C1903	Injection Date:	03/18/23
Lab Sample ID:	S3C1903-CCV1	Injection Time:	10:51

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,1,1,2-Tetrachloroethane	A	10.0	9.71	0.5679118	0.6332439		-2.9	30
1,1,1-Trichloroethane	A	10.0	10.4	1.88483	1.960269		4.0	30
1,1,2,2-Tetrachloroethane	A	10.0	11.5	0.8254239	0.9482646		14.9	30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	A	10.0	9.88	1.931202	1.907601		-1.2	30
1,1,2-Trichloroethane	A	10.0	8.68	0.4023671	0.4567861		-13.2	30
1,1-Dichloroethane	A	10.0	10.2	1.463808	1.494174		2.1	30
1,1-Dichloroethylene	A	10.0	11.0	1.182463	1.303516		10.2	30
1,2,4-Trichlorobenzene	A	10.0	8.16	0.450397	0.4145328		-18.4	30
1,2,4-Trimethylbenzene	A	10.0	8.94	1.222911	1.525063		-10.6	30
1,2-Dibromoethane	A	10.0	8.82	0.5647201	0.621943		-11.8	30
1,2-Dichlorobenzene	A	10.0	8.69	0.8808777	1.042142		-13.1	30
1,2-Dichloroethane	A	10.0	11.0	1.091627	1.205202		10.4	30
1,2-Dichloropropane	A	10.0	8.54	0.3045277	0.3609523		-14.6	30
1,2-Dichlorotetrafluoroethane	A	10.0	9.27	4.215403	3.907666		-7.3	30
1,3,5-Trimethylbenzene	A	10.0	8.93	1.211731	1.45119		-10.7	30
1,3-Butadiene	A	10.0	10.6	0.6943268	0.7345566		5.8	30
1,3-Dichlorobenzene	A	10.0	8.91	0.8736577	1.063989		-10.9	30
1,3-Dichloropropane	A	10.0	9.14	0.4466001	0.5174862		-8.6	30
1,4-Dichlorobenzene	A	10.0	8.77	0.8472971	1.038924		-12.3	30
1,4-Dioxane	A	10.0	9.98	0.1550428	0.1929733		-0.2	30
2-Butanone	A	10.0	10.3	1.605231	1.655444		3.1	30
2-Hexanone	Q	10.0	8.08	0.5592923	0.7291614		-19.2	30
3-Chloropropene	A	10.0	10.9	0.8602626	0.9379657		9.0	30
4-Methyl-2-pentanone	A	10.0	8.28	0.6123209	0.6897464		-17.2	30
Acetone	A	10.0	8.55	1.459811	1.248766		-14.5	30
Acrylonitrile	A	10.0	11.7	0.5273167	0.6186382		17.3	30
Benzene	A	10.0	7.75	2.801228	2.797709		-22.5	30
Benzyl chloride	A	10.0	9.69	0.2079255	0.2927656		-3.1	30
Bromodichloromethane	A	10.0	9.06	0.6193978	0.7066124		-9.4	30

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC	Project:	170361307
Instrument ID:	5975C	Calibration:	SB30018
Lab File ID:	TO298045.D	Calibration Date:	02/09/23 15:26
Sequence:	S3C1903	Injection Date:	03/18/23
Lab Sample ID:	S3C1903-CCV1	Injection Time:	10:51

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Bromoform	A	10.0	9.45	0.7296276	0.8792185		-5.5	30	
Bromomethane	A	10.0	9.25	1.670006	1.288748		-7.5	30	
Carbon disulfide	A	10.0	10.0	2.199716	2.208113		0.4	30	
Carbon tetrachloride	A	10.0	9.51	1.929495	2.063101		-4.9	30	
Chlorobenzene	A	10.0	10.2	0.955844	0.9756266		2.1	30	
Chloroethane	A	10.0	11.8	0.4059188	0.476821		17.5	30	
Chloroform	A	10.0	10.2	1.85026	1.884012		1.8	30	
Chloromethane	A	10.0	10.0	0.8582864	0.8607489		0.3	30	
cis-1,2-Dichloroethylene	A	10.0	11.1	1.005026	1.117716		11.2	30	
cis-1,3-Dichloropropylene	A	10.0	9.37	0.3911601	0.4657796		-6.3	30	
Cyclohexane	A	10.0	9.06	1.117996	1.210241		-9.4	30	
Dibromochloromethane	A	10.0	9.15	0.7225939	0.8037239		-8.5	30	
Dichlorodifluoromethane	A	10.0	9.84	2.498374	2.457475		-1.6	30	
Ethyl acetate	A	10.0	10.4	1.836021	1.904685		3.7	30	
Ethyl Benzene	A	10.0	10.8	1.385254	1.501083		8.4	30	
Hexachlorobutadiene	A	10.0	6.94	0.8807332	0.9458104		-30.6	30	*
Isopropanol	A	10.0	9.74	1.895388	1.499399		-2.6	30	
Methyl Methacrylate	A	10.0	8.66	0.2716714	0.3519913		-13.4	30	
Methyl tert-butyl ether (MTBE)	A	10.0	10.7	1.929202	2.070613		7.3	30	
Methylene chloride	A	10.0	9.53	1.245314	0.9862612		-4.7	30	
n-Heptane	A	10.0	7.59	1.528945	1.742157		-24.1	30	
n-Hexane	A	10.0	8.82	1.114725	1.165532		-11.8	30	
o-Xylene	A	10.0	8.28	1.097207	1.313502		-17.2	30	
p- & m- Xylenes	A	20.0	15.0	1.132692	1.276313		-25.2	30	
p-Ethyltoluene	A	10.0	8.46	1.454004	1.744574		-15.4	30	
Propylene	A	10.0	10.9	0.4411641	0.4826472		9.4	30	
Styrene	A	10.0	8.07	0.8405435	1.050889		-19.3	30	
Tetrachloroethylene	A	10.0	9.66	0.6279522	0.6848341		-3.4	30	
Tetrahydrofuran	A	10.0	11.1	0.867238	0.9660488		11.4	30	

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC	Project:	170361307
Instrument ID:	5975C	Calibration:	SB30018
Lab File ID:	TO298045.D	Calibration Date:	02/09/23 15:26
Sequence:	S3C1903	Injection Date:	03/18/23
Lab Sample ID:	S3C1903-CCV1	Injection Time:	10:51

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Toluene	A	10.0	8.34	1.015961	1.0216		-16.6	30
trans-1,2-Dichloroethylene	A	10.0	10.8	1.08078	1.161713		7.5	30
trans-1,3-Dichloropropylene	A	10.0	9.58	0.353279	0.4417405		-4.2	30
Trichloroethylene	A	10.0	9.38	0.3610332	0.4168765		-6.2	30
Trichlorofluoromethane (Freon 11)	A	10.0	10.1	2.433652	2.453102		0.8	30
Vinyl acetate	A	10.0	8.26	1.996925	1.991412		-17.4	30
Vinyl bromide	A	10.0	10.7	0.7965432	0.8525428		7.0	30
Vinyl Chloride	A	10.0	8.60	1.176271	1.011056		-14.0	30

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

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\031823A\
Data File : TO298045.D
Acq On : 18 Mar 2023 10:51 am
Operator : VH
Sample : SEQ-CCV1
Misc : QBTO1031823A CCV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 18 11:25:20 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Methane, bromochloro-	12.220	49	214720	10.00	ppbv		0.00
38) 1,4-Difluorobenzene	13.771	114	644908	10.00	ppbv		0.00
54) d5-Chlorobenzene	19.006	117	640123	10.00	ppbv		-0.01
System Monitoring Compounds							
65) p-Bromofluorobenzene	21.171	95	375971	12.70	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 127.00%				
Target Compounds							Qvalue
2) Propylene	5.279	42	103634	10.94	ppbv		94
3) Dichlorodifluoromethane	5.347	85	527669	9.84	ppbv	#	93
4) 1,2-Dichlorotetrafluor...	5.608	85	839054	9.27	ppbv	#	66
5) Chloromethane	5.831	50	184820	10.03	ppbv		99
6) Vinyl Chloride	6.092	62	217094	8.60	ppbv		95
7) 1,3-Butadiene	6.172	54	157724	10.58	ppbv		96
8) Bromomethane	6.948	94	276720	9.25	ppbv		98
9) Chloroethane	7.121	64	102383	11.75	ppbv	#	92
10) ethanol	7.258	45	70741	12.13	ppbv		86
11) Vinyl Bromide	7.574	106	183058	10.70	ppbv		100
12) Trichlorofluoromethane	7.692	101	526730	10.08	ppbv		97
13) Isopropanol	8.176	45	321951	9.74	ppbv		100
14) Acrolein	8.287	56	73313	11.75	ppbv	#	100
15) Acetone	8.399	43	268135	8.55	ppbv		98
16) Freon-113	8.548	101	409600	9.88	ppbv		93
17) 1,1-Dichloroethylene	8.771	61	279891	11.02	ppbv		94
18) 3-Chloropropene	9.354	41	201400	10.90	ppbv	#	83
19) Methylene Chloride	9.503	49	211770	9.53	ppbv		98
20) Acrylonitrile	9.584	53	132834	11.73	ppbv	#	100
21) Carbon disulfide	9.646	76	474126	10.04	ppbv	#	80
22) Methyl-tert-Butyl Ethe...	9.900	73	444602	10.73	ppbv	#	88
23) trans-1,2-Dichloroethy...	10.099	61	249443	10.75	ppbv		92
24) Hexane	10.378	57	250263	8.82	ppbv		93
25) Vinyl Acetate	10.688	43	427596	8.26	ppbv		100
26) 1,1-Dichloroethane	10.744	63	320829	10.21	ppbv	#	95
27) 2-Butanone	11.339	43	355457	10.31	ppbv		98
28) Ethyl Acetate	11.637	43	408974	10.37	ppbv		98
29) cis-1,2-Dichloroethylene	11.724	61	239996	11.12	ppbv		92
30) Chloroform	11.997	83	404535	10.18	ppbv		94
31) Tetrahydrofuran	12.319	42	207430	11.14	ppbv		95
32) 1,1,1-Trichlorethane	12.723	97	420909	10.40	ppbv		95
33) Cyclohexane	12.896	56	259863	9.06	ppbv		95
34) Carbon Tetrachloride	13.188	117	442989	9.51	ppbv		99
35) 1,2-Dichloroethane	13.250	62	258781	11.04	ppbv	#	99
36) Benzene	13.386	78	600724	7.75	ppbv	#	100
37) n-Heptane	13.393	43	374076	7.59	ppbv	#	98
39) Trichloroethylene	14.404	95	268847	9.38	ppbv		89
40) 1,2-Dichloropropane	14.633	63	232781	8.54	ppbv	#	96
41) Methyl Methacrylate	14.639	69	227002	8.66	ppbv	#	78
42) 1,4-Dioxane	14.956	88	124450	9.98	ppbv	#	100
43) Bromodichloromethane	14.993	83	455700	9.06	ppbv	#	94
44) Methyl Isobutyl Ketone	15.520	43	444823	8.28	ppbv	#	96
45) cis-1,3-Dichloropropene	15.874	75	300385	9.37	ppbv	#	90
46) Toluene	16.525	91	658838	8.34	ppbv		99
47) trans-1,3-Dichloropropene	16.680	75	284882	9.58	ppbv		90
48) 1,1,2-Trichlorethane	16.972	97	294585	8.68	ppbv		98
49) 2-Hexanone	16.978	43	470242	8.08	ppbv		98
50) 1,3-Dichloropropane	17.394	76	333731	9.14	ppbv	#	99
51) Tetrachloroethylene	17.716	166	441655	9.66	ppbv		98
52) Dibromchloromethane	17.908	129	518328	9.15	ppbv	#	96
53) 1,2-Dibromoethane	18.281	107	401096	8.82	ppbv		100
55) Chlorobenzene	19.075	112	624521	10.21	ppbv	#	98

Quantitation Report (QT Reviewed)

Data Path : D:\031823A\
Data File : TO298045.D
Acq On : 18 Mar 2023 10:51 am
Operator : VH
Sample : SEQ-CCV1
Misc : QBTO1031823A CCV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 18 11:25:20 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

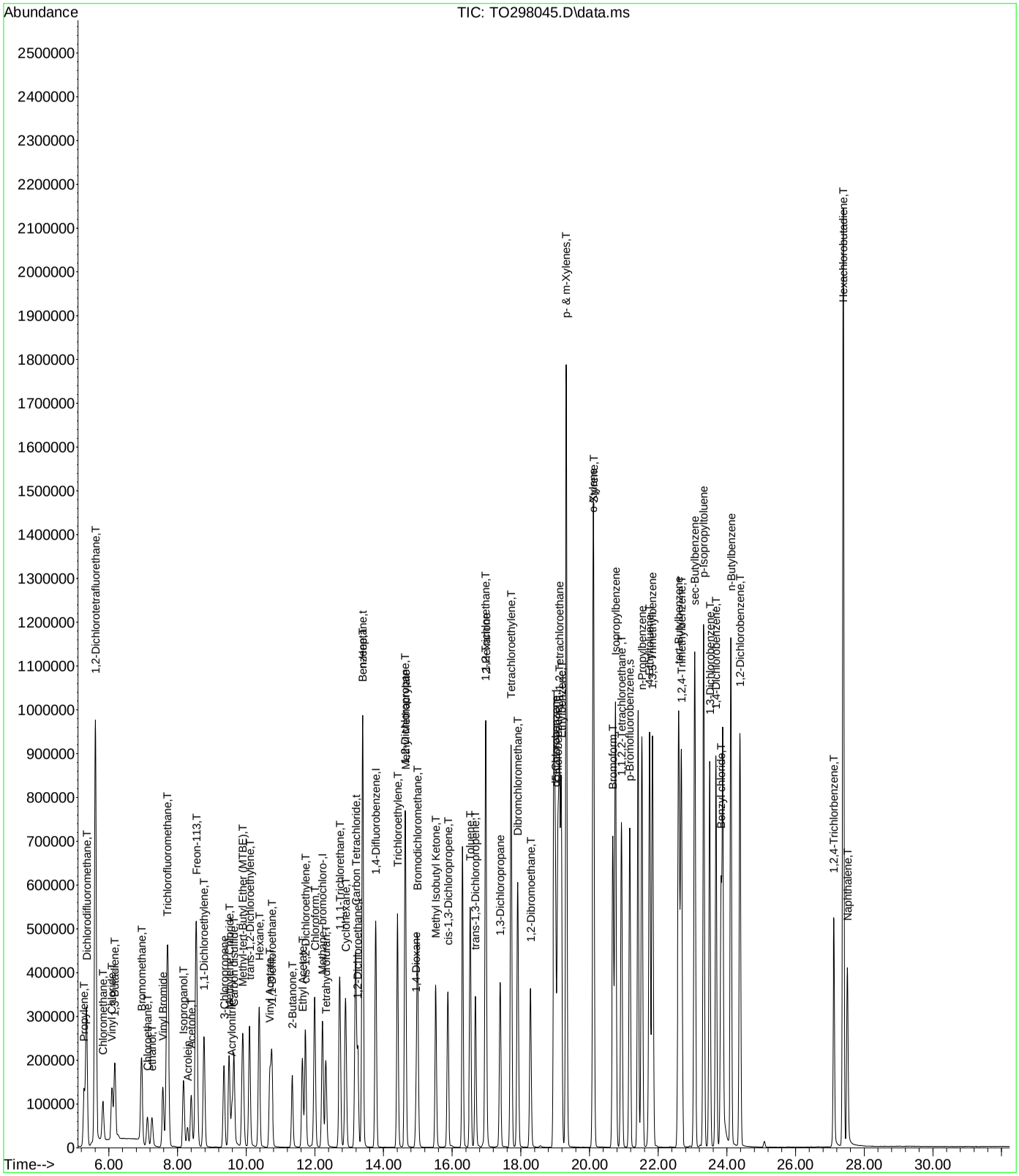
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56)	1,1,1,2-Tetrachloroethane	19.124	131	405354	9.71	ppbv		96
57)	Ethylbenzene	19.180	91	960878	10.84	ppbv		93
58)	p- & m-Xylenes	19.323	91	1633994	14.96	ppbv		91
59)	o-Xylene	20.104	91	840803	8.28	ppbv		97
60)	Styrene	20.123	104	672698	8.07	ppbv	#	74
61)	Bromoform	20.681	173	562808	9.45	ppbv		97
62)	n-Propylbenzene	21.525	91	1316404	8.23	ppbv		98
63)	Isopropylbenzene	20.756	105	1143597	8.57	ppbv		98
64)	1,1,2,2-Tetrachloroeth...	20.929	83	607006	11.49	ppbv		96
66)	4-Ethyltoluene	21.748	105	1116742	8.46	ppbv		90
67)	1,3,5-Trimethylbenzene	21.835	105	928940	8.93	ppbv		98
68)	tert-Butylbenzene	22.598	119	1105024	9.11	ppbv	#	62
69)	1,2,4-Trimethylbenzene	22.672	105	976228	8.94	ppbv	#	92
70)	sec-Butylbenzene	23.063	105	1456704	7.95	ppbv	#	99
71)	p-Isopropyltoluene	23.324	119	1221752	7.91	ppbv	#	99
72)	1,3-Dichlorobenzene	23.497	146	681084	8.91	ppbv		96
73)	1,4-Dichlorobenzene	23.683	146	665039	8.77	ppbv		96
74)	Benzyl chloride	23.832	126	187406	9.69	ppbv	#	1
75)	n-Butylbenzene	24.118	91	1070797	7.59	ppbv	#	88
76)	1,2-Dichlorobenzene	24.378	146	667099	8.69	ppbv		96
77)	1,2,4-Trichlorbenzene	27.120	180	265352	8.16	ppbv		97
78)	Hexachlorobutadiene	27.393	225	605435	6.94	ppbv		98
79)	Naphthalene	27.511	128	566766	6.97	ppbv		96

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

Quantitation Report (QT Reviewed)

Data Path : D:\031823A\
Data File : TO298045.D
Acq On : 18 Mar 2023 10:51 am
Operator : VH
Sample : SEQ-CCV1
Misc : QBTO1031823A CCV
ALS Vial : 33 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 18 11:25:20 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration



FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC	Project:	170361307
Instrument ID:	TO15_AIR2	Calibration:	SB30007
Lab File ID:	TQ224339.D	Calibration Date:	01/27/23 13:11
Sequence:	S3C2020	Injection Date:	03/17/23
Lab Sample ID:	S3C2020-CCV1	Injection Time:	15:44

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
1,1,1,2-Tetrachloroethane	A	10.0	9.82	0.5268854	0.5174834		-1.8	30	
1,1,1-Trichloroethane	A	10.0	9.90	1.148465	1.136488		-1.0	30	
1,1,2,2-Tetrachloroethane	A	10.0	9.20	1.06965	0.984134		-8.0	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	A	10.0	9.52	1.38814	1.321748		-4.8	30	
1,1,2-Trichloroethane	A	10.0	9.56	0.435537	0.4161922		-4.4	30	
1,1-Dichloroethane	A	10.0	9.49	1.398162	1.326966		-5.1	30	
1,1-Dichloroethylene	A	10.0	8.48	1.268047	1.075756		-15.2	30	
1,2,4-Trichlorobenzene	A	10.0	3.54	0.1711834	7.728054E-02		-64.6	30	*
1,2,4-Trimethylbenzene	A	10.0	9.10	1.328472	1.209169		-9.0	30	
1,2-Dibromoethane	A	10.0	10.0	0.5723959	0.5724183		0.004	30	
1,2-Dichlorobenzene	A	10.0	8.15	0.8393914	0.6837056		-18.5	30	
1,2-Dichloroethane	A	10.0	9.74	0.8550668	0.8329132		-2.6	30	
1,2-Dichloropropane	A	10.0	8.93	0.439289	0.3923146		-10.7	30	
1,2-Dichlorotetrafluoroethane	A	10.0	8.06	2.198415	1.77278		-19.4	30	
1,3,5-Trimethylbenzene	A	10.0	8.54	1.373207	1.17229		-14.6	30	
1,3-Butadiene	A	10.0	8.72	0.7324855	0.6387475		-12.8	30	
1,3-Dichlorobenzene	A	10.0	9.26	0.8046586	0.7452015		-7.4	30	
1,3-Dichloropropane	A	10.0	9.66	0.5802238	0.5604246		-3.4	30	
1,4-Dichlorobenzene	A	10.0	9.41	0.768928	0.7238798		-5.9	30	
1,4-Dioxane	A	10.0	9.44	0.216685	0.2044875		-5.6	30	
2-Butanone	A	10.0	9.06	2.050136	1.857557		-9.4	30	
2-Hexanone	A	10.0	9.54	0.9386933	0.895776		-4.6	30	
3-Chloropropene	A	10.0	9.17	1.08953	0.9986998		-8.3	30	
4-Methyl-2-pentanone	A	10.0	9.22	1.075889	0.9917587		-7.8	30	
Acetone	A	10.0	8.22	1.581579	1.299273		-17.8	30	
Acrylonitrile	A	10.0	9.43	0.6611376	0.6237748		-5.7	30	
Benzene	A	10.0	9.36	2.337249	2.18846		-6.4	30	
Benzyl chloride	A	10.0	7.86	0.7835635	0.7641383		-21.4	30	
Bromodichloromethane	A	10.0	10.2	0.5569089	0.5660578		1.6	30	

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC	Project:	170361307
Instrument ID:	TO15_AIR2	Calibration:	SB30007
Lab File ID:	TQ224339.D	Calibration Date:	01/27/23 13:11
Sequence:	S3C2020	Injection Date:	03/17/23
Lab Sample ID:	S3C2020-CCV1	Injection Time:	15:44

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Bromoform	A	10.0	11.0	0.4577733	0.5014445		9.5	30
Bromomethane	A	10.0	8.30	0.9841632	0.6359787		-17.0	30
Carbon disulfide	A	10.0	9.97	1.893357	1.887113		-0.3	30
Carbon tetrachloride	A	10.0	10.1	0.8011457	0.8115284		1.3	30
Chlorobenzene	A	10.0	8.99	1.157239	1.039907		-10.1	30
Chloroethane	A	10.0	8.37	0.430758	0.3607443		-16.3	30
Chloroform	A	10.0	9.83	1.305896	1.283883		-1.7	30
Chloromethane	A	10.0	8.59	0.9046649	0.7767015		-14.1	30
cis-1,2-Dichloroethylene	A	10.0	8.56	1.167134	0.9992938		-14.4	30
cis-1,3-Dichloropropylene	A	10.0	10.3	0.4551907	0.4687489		3.0	30
Cyclohexane	A	10.0	9.57	1.336949	1.279909		-4.3	30
Dibromochloromethane	A	10.0	11.6	0.4998475	0.5782504		15.7	30
Dichlorodifluoromethane	A	10.0	8.78	1.655989	1.45436		-12.2	30
Ethyl acetate	A	10.0	9.41	2.20519	2.075986		-5.9	30
Ethyl Benzene	A	10.0	9.39	1.759371	1.651917		-6.1	30
Hexachlorobutadiene	A	10.0	8.33	0.3513263	0.2926722		-16.7	30
Isopropanol	A	10.0	8.81	1.835083	1.616964		-11.9	30
Methyl Methacrylate	A	10.0	9.71	0.3462999	0.3362278		-2.9	30
Methyl tert-butyl ether (MTBE)	A	10.0	9.70	1.584367	1.536557		-3.0	30
Methylene chloride	A	10.0	9.91	1.442067	1.054891		-0.9	30
n-Heptane	A	10.0	9.64	1.690971	1.629555		-3.6	30
n-Hexane	A	10.0	9.92	1.236454	1.227042		-0.8	30
o-Xylene	A	10.0	9.81	1.306967	1.281863		-1.9	30
p- & m- Xylenes	A	20.0	18.7	1.30999	1.222676		-6.7	30
p-Ethyltoluene	A	10.0	9.11	1.596956	1.455197		-8.9	30
Propylene	A	10.0	7.92	0.6463907	0.5120665		-20.8	30
Styrene	A	10.0	10.2	0.8903841	0.9068151		1.8	30
Tetrachloroethylene	A	10.0	9.81	0.5205719	0.5105596		-1.9	30
Tetrahydrofuran	A	10.0	9.41	1.17199	1.103053		-5.9	30

FORM VII

CONTINUING CALIBRATION CHECK

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford	SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC	Project:	170361307
Instrument ID:	TO15_AIR2	Calibration:	SB30007
Lab File ID:	TQ224339.D	Calibration Date:	01/27/23 13:11
Sequence:	S3C2020	Injection Date:	03/17/23
Lab Sample ID:	S3C2020-CCV1	Injection Time:	15:44

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Toluene	A	10.0	9.77	1.24813	1.219554		-2.3	30
trans-1,2-Dichloroethylene	A	10.0	9.15	1.02784	0.9403812		-8.5	30
trans-1,3-Dichloropropylene	A	10.0	10.3	0.3634618	0.3746483		3.1	30
Trichloroethylene	A	10.0	8.79	0.4409861	0.3875524		-12.1	30
Trichlorofluoromethane (Freon 11)	A	10.0	9.37	1.411054	1.322838		-6.3	30
Vinyl acetate	A	10.0	10.1	1.951648	1.963575		0.6	30
Vinyl bromide	A	10.0	9.68	0.6127107	0.5928396		-3.2	30
Vinyl Chloride	A	10.0	8.00	1.012654	0.8100361		-20.0	30

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

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224339.D
Acq On : 17 Mar 2023 3:44 pm
Operator : AC
Sample : SEQ-CCV1
Misc : QBTO2031723A CCV(VIAL33)
ALS Vial : 44 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Mar 17 18:12:39 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.225	49	338417	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	13.804	114	764565	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.053	117	676354	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.224	95	346448	9.89	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 98.90%			
Target Compounds						Qvalue
2) Propylene	4.940	42	173292	7.92	ppbv	95
3) Dichlorodifluoromethane	5.020	85	492180	8.78	ppbv #	95
4) 1,2-Dichlorotetrafluor...	5.324	85	599939	8.06	ppbv	95
5) Chloromethane	5.544	50	262849	8.59	ppbv	98
6) Vinyl Chloride	5.830	62	274130	8.00	ppbv	100
7) 1,3-Butadiene	5.916	54	216163	8.72	ppbv	94
8) Bromomethane	6.745	94	215226	8.30	ppbv	99
9) Chloroethane	6.934	64	122082	8.37	ppbv	94
10) Vinyl Bromide	7.403	106	200627	9.68	ppbv	100
11) Trichlorofluoromethane	7.531	101	447671	9.37	ppbv	99
12) Isopropanol	8.086	45	547208	8.81	ppbv	100
13) Acrolein	8.184	56	115680	9.19	ppbv #	1
14) Acetone	8.299	43	439696	8.22	ppbv	98
15) Freon-113	8.440	101	447302	9.52	ppbv	96
16) 1,1-Dichloroethylene	8.659	61	364054	8.48	ppbv	97
17) 3-Chloropropene	9.281	41	337977	9.17	ppbv	86
18) Methylene Chloride	9.427	49	356993	9.91	ppbv	82
19) Acrylonitrile	9.531	53	211096	9.43	ppbv #	62
20) Carbon disulfide	9.549	76	638631	9.97	ppbv #	88
21) Methyl-tert-Butyl Ethe...	9.848	73	519997	9.70	ppbv #	84
22) trans-1,2-Dichloroethy...	10.043	61	318241	9.15	ppbv	97
23) Hexane	10.342	57	415252	9.92	ppbv	92
24) Vinyl Acetate	10.677	43	664507	10.06	ppbv #	98
25) 1,1-Dichloroethane	10.714	63	449068	9.49	ppbv	97
26) 2-Butanone	11.341	43	628629	9.06	ppbv	89
27) Ethyl Acetate	11.646	43	702549	9.41	ppbv #	40
28) cis-1,2-Dichloroethylene	11.719	61	338178	8.56	ppbv	88
29) Chloroform	11.994	83	434488	9.83	ppbv #	94
30) Tetrahydrofuran	12.329	42	373292	9.41	ppbv	89
31) 1,1,1-Trichlorethane	12.731	97	384607	9.90	ppbv	93
32) Cyclohexane	12.902	56	433143	9.57	ppbv	88
33) Carbon Tetrachloride	13.201	117	274635	10.13	ppbv #	58
34) 1,2-Dichloroethane	13.274	62	281872	9.74	ppbv	99
35) Benzene	13.408	78	740612	9.36	ppbv #	85
36) n-Heptane	13.426	43	551469	9.64	ppbv #	97
38) Trichloroethylene	14.445	95	296309	8.79	ppbv	99
39) 1,2-Dichloropropane	14.670	63	299950	8.93	ppbv	96
40) Methyl Methacrylate	14.688	69	257068	9.71	ppbv #	41
41) 1,4-Dioxane	14.981	88	156344	9.44	ppbv #	100
42) Bromodichloromethane	15.030	83	432788	10.16	ppbv #	93
43) Methyl Isobutyl Ketone	15.566	43	758264	9.22	ppbv	91
44) cis-1,3-Dichloropropene	15.914	75	358389	10.30	ppbv #	95
45) Toluene	16.572	91	932428	9.77	ppbv	97
46) trans-1,3-Dichloropropene	16.731	75	286443	10.31	ppbv #	92
47) 1,1,2-Trichlorethane	17.023	97	318206	9.56	ppbv	99
48) 2-Hexanone	17.035	43	684879	9.54	ppbv	96
49) 1,3-Dichloropropane	17.450	76	428481	9.66	ppbv	92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224339.D
Acq On : 17 Mar 2023 3:44 pm
Operator : AC
Sample : SEQ-CCV1
Misc : QBTO2031723A CCV(VIAL33)
ALS Vial : 44 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Mar 17 18:12:39 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

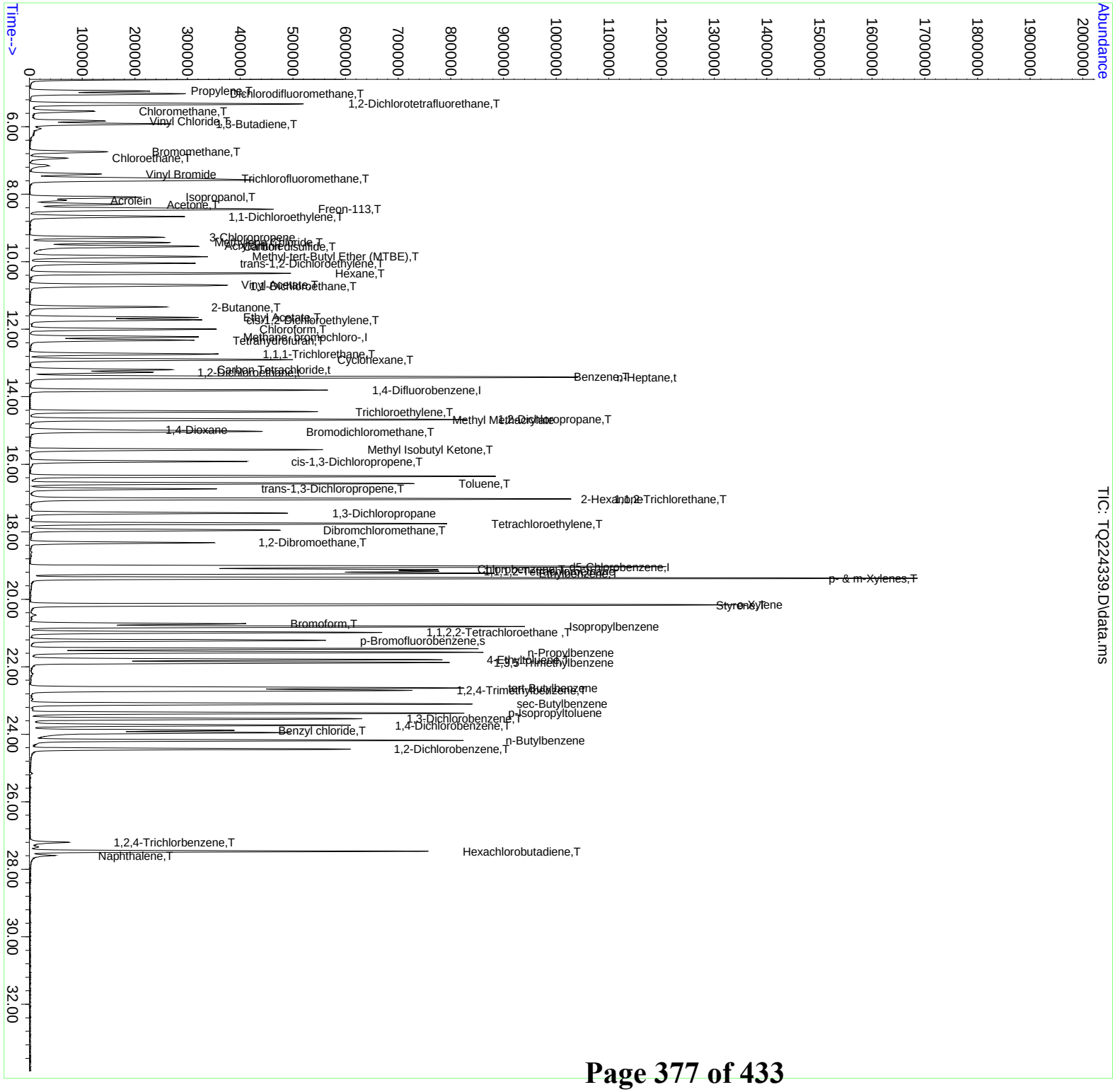
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
50) Tetrachloroethylene	17.761	166	390356	9.81	ppbv		99
51) Dibromchloromethane	17.950	129	442110	11.57	ppbv		99
52) 1,2-Dibromoethane	18.322	107	437651	10.00	ppbv		100
54) Chlorobenzene	19.120	112	703345	8.99	ppbv	#	100
55) 1,1,1,2-Tetrachloroethane	19.169	131	350002	9.82	ppbv		98
56) Ethylbenzene	19.230	91	1117281	9.39	ppbv		99
57) p- & m-Xylenes	19.377	91	1653924	18.67	ppbv		99
58) o-Xylene	20.157	91	866993	9.81	ppbv		100
59) Styrene	20.175	104	613328	10.18	ppbv	#	100
60) Bromoform	20.724	173	339154	10.95	ppbv		98
61) n-Propylbenzene	21.571	91	1338986	9.14	ppbv		99
62) Isopropylbenzene	20.809	105	1119007	9.85	ppbv		97
63) 1,1,2,2-Tetrachloroeth...	20.980	83	665623	9.20	ppbv		99
65) 4-Ethyltoluene	21.791	105	984228	9.11	ppbv		98
66) 1,3,5-Trimethylbenzene	21.876	105	792883	8.54	ppbv		92
67) tert-Butylbenzene	22.626	119	928811	9.42	ppbv	#	79
68) 1,2,4-Trimethylbenzene	22.699	105	817826	9.10	ppbv	#	91
69) sec-Butylbenzene	23.101	105	1269179	9.29	ppbv		99
70) p-Isopropyltoluene	23.370	119	948434	9.42	ppbv	#	89
71) 1,3-Dichlorobenzene	23.540	146	504020	9.26	ppbv		97
72) 1,4-Dichlorobenzene	23.735	146	489599	9.41	ppbv		97
73) Benzyl chloride	23.882	91	516828	7.86	ppbv		98
74) n-Butylbenzene	24.187	91	878055	9.51	ppbv	#	93
75) 1,2-Dichlorobenzene	24.443	146	462427	8.15	ppbv		97
76) 1,2,4-Trichlorbenzene	27.204	180	52269	3.54	ppbv		99
77) Hexachlorobutadiene	27.472	225	197950	8.33	ppbv		93
78) Naphthalene	27.594	128	82477	3.06	ppbv		99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224339.D
Acq On : 17 Mar 2023 3:44 pm
Operator : AC
Sample : SEQ-CCV1
Misc : QBTO2031723A CCV(VIAL33)
ALS Vial : 44 Sample Multiplier: 1
InstName : TO15_AIR2

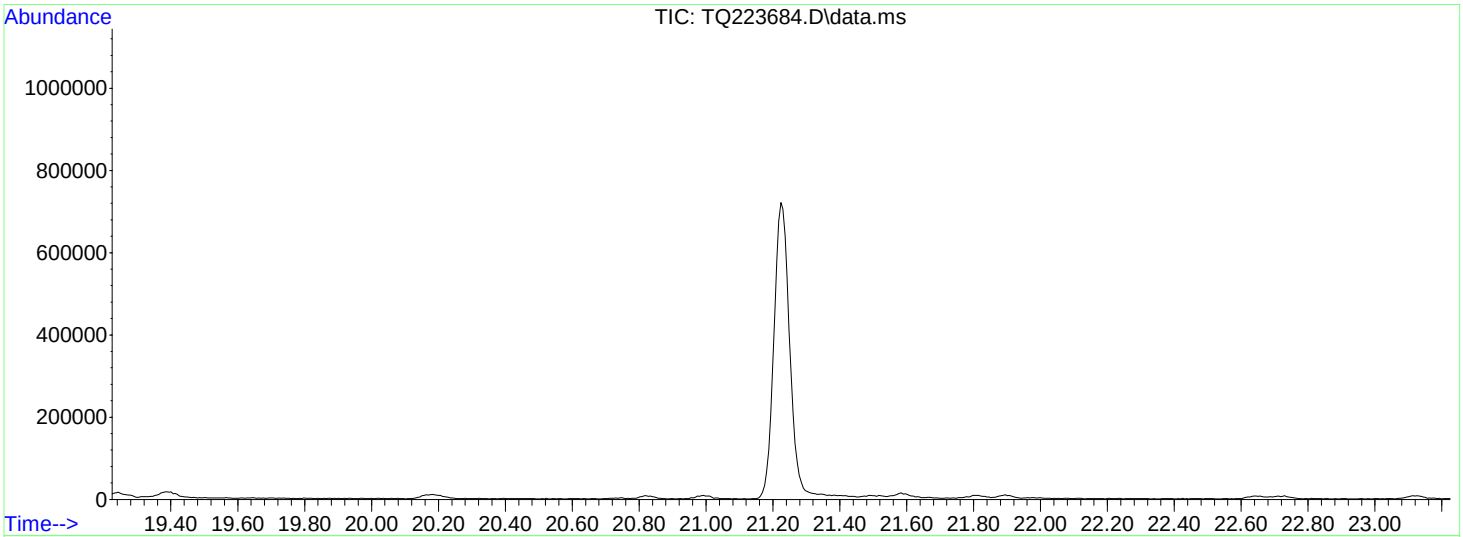
Quant Time: Mar 17 18:12:39 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

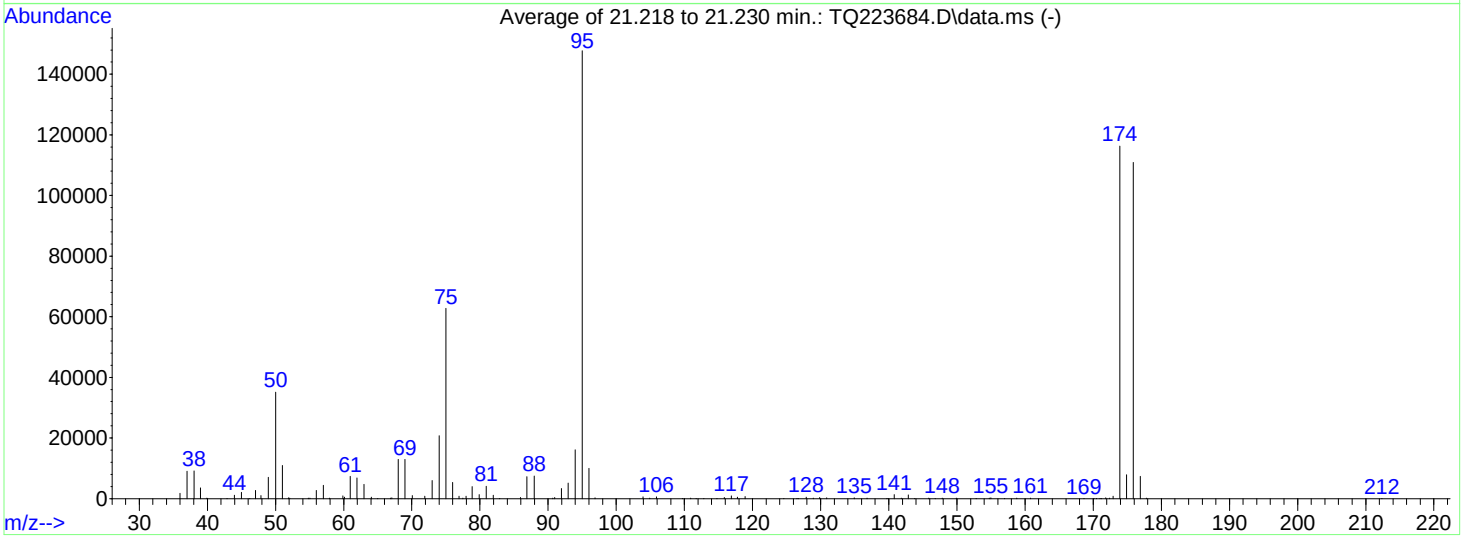


Data Path : C:\msdchem\1\data\012723-ICAL-VPH\
Data File : TQ223684.D
Acq On : 27 Jan 2023 1:11 pm
Operator : VH
Sample : SEQ-TUN1
Misc : QBTO2012723A TUNE
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Integration File: rteint1.p

Method : C:\msdchem\1\methods\AIRVPH_Sys2-14.M
Title : VPH Method
Last Update : Thu Feb 09 15:11:48 2023





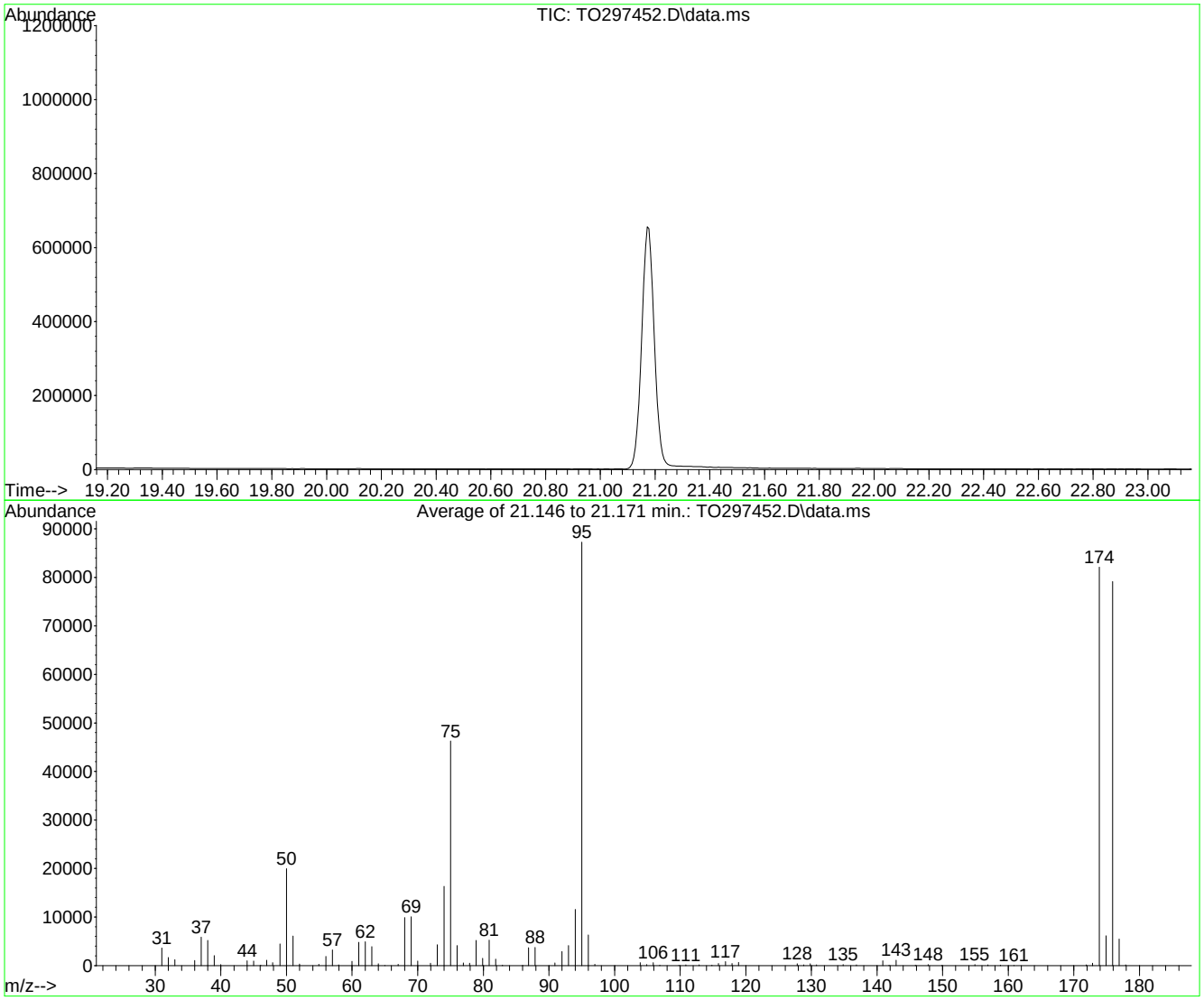
AutoFind: Scans 2728, 2729, 2730; Background Corrected with Scan 2713

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	10	40	23.8	35123	PASS
75	95	30	80	42.5	62779	PASS
95	95	100	100	100.0	147797	PASS
96	95	5	9	6.8	10012	PASS
173	174	0.00	2	0.7	781	PASS
174	95	40	100	78.7	116317	PASS
175	174	3	10	6.7	7845	PASS
176	174	92	110	95.4	110944	PASS
177	176	5	9	6.6	7350	PASS

Data Path : D:\020923-ICAL VPH\
Data File : TO297452.D
Acq On : 9 Feb 2023 3:26 pm
Operator : VH
Sample : SEQ-TUN1
Misc : QBTO1020923A TUNE
ALS Vial : 1 Sample Multiplier: 1
InstName : 5975C

Integration File: rteint1.p

Method : C:\msdchem\1\methods\AIRVPH13.M
Title : VPH Method
Last Update : Thu Mar 09 17:26:22 2023



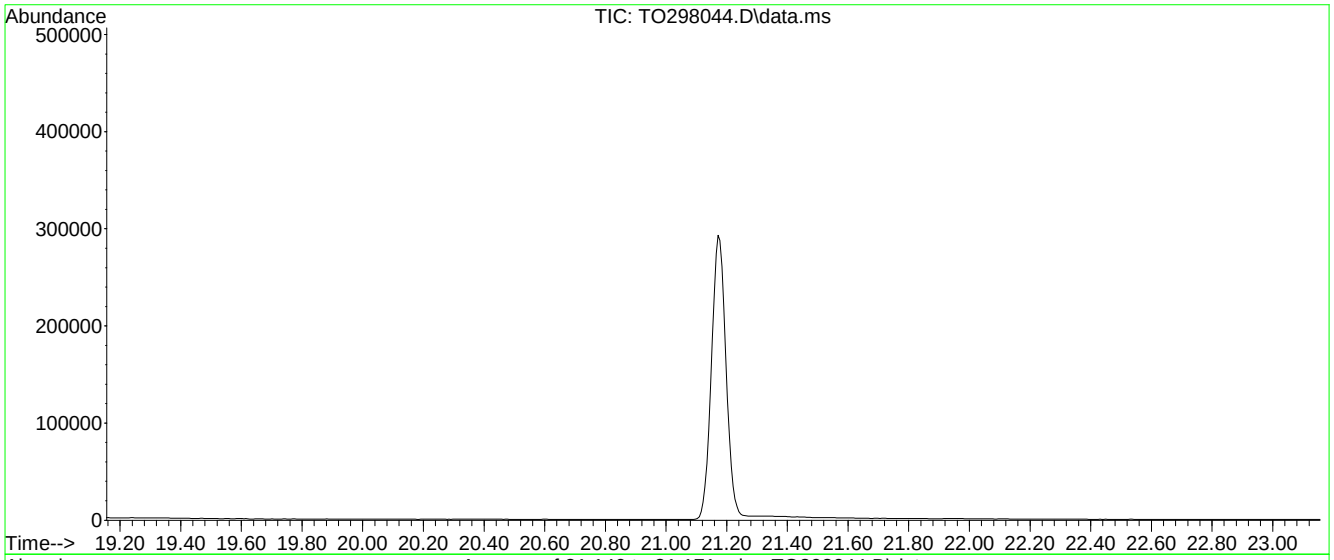
Spectrum Information: Average of 21.146 to 21.171 min.

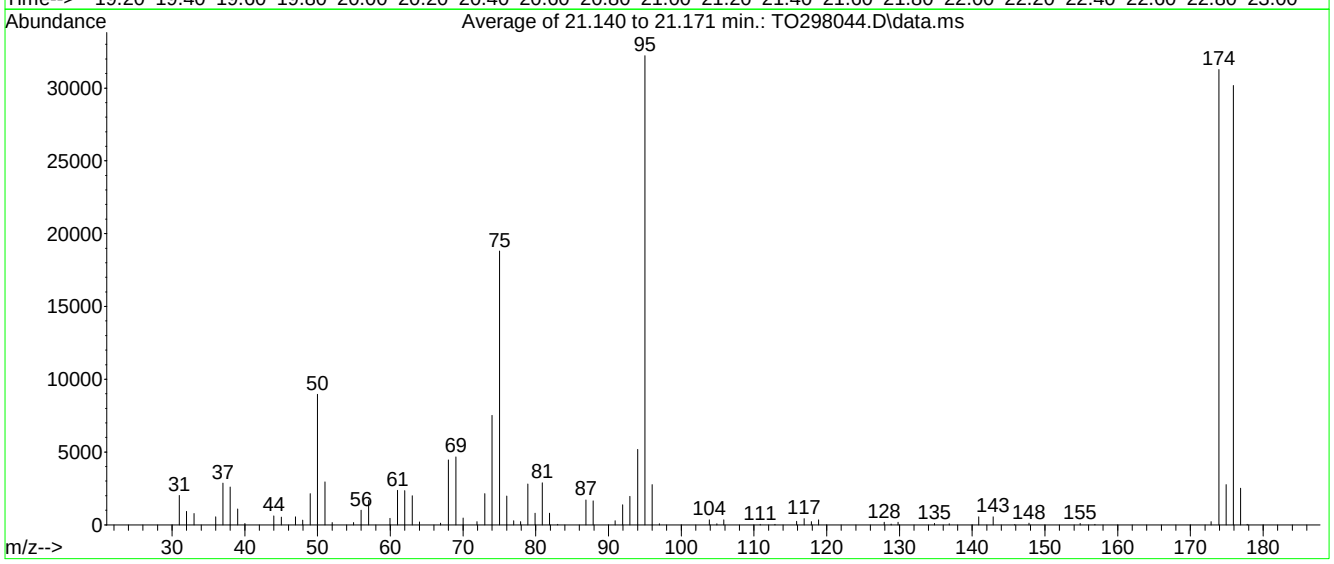
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	10	40	22.9	19973	PASS
75	95	30	80	53.1	46296	PASS
95	95	100	100	100.0	87245	PASS
96	95	5	9	7.2	6299	PASS
173	174	0.00	2	0.6	499	PASS
174	95	40	100	94.1	82141	PASS
175	174	3	10	7.5	6136	PASS
176	174	92	110	96.4	79162	PASS
177	176	5	9	6.9	5459	PASS

Data Path : D:\031823A\
Data File : TO298044.D
Acq On : 18 Mar 2023 10:02 am
Operator : VH
Sample : SEQ-TUN1
Misc : QBTO1031823A TUNE (VIAL 22)
ALS Vial : 12 Sample Multiplier: 1
InstName : 5975C

Integration File: rteint.p

Method : C:\msdchem\1\methods\AIR160.M
Title : TO15 VOC Analysis
Last Update : Fri Feb 10 06:43:41 2023





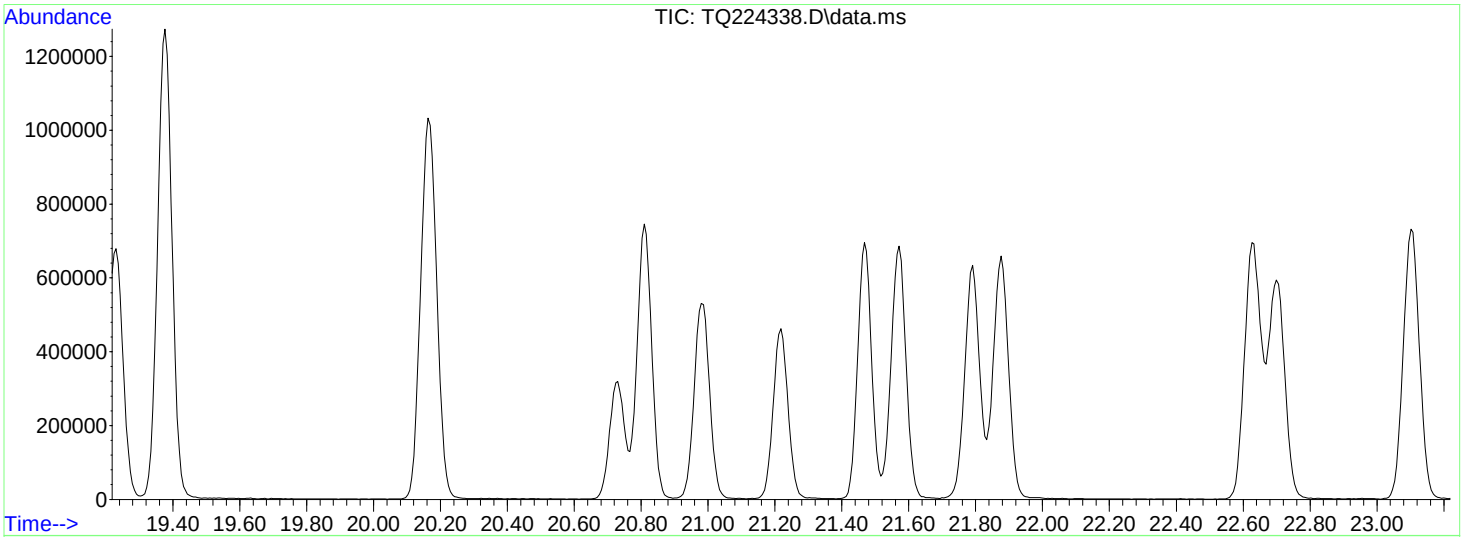
Spectrum Information: Average of 21.140 to 21.171 min.

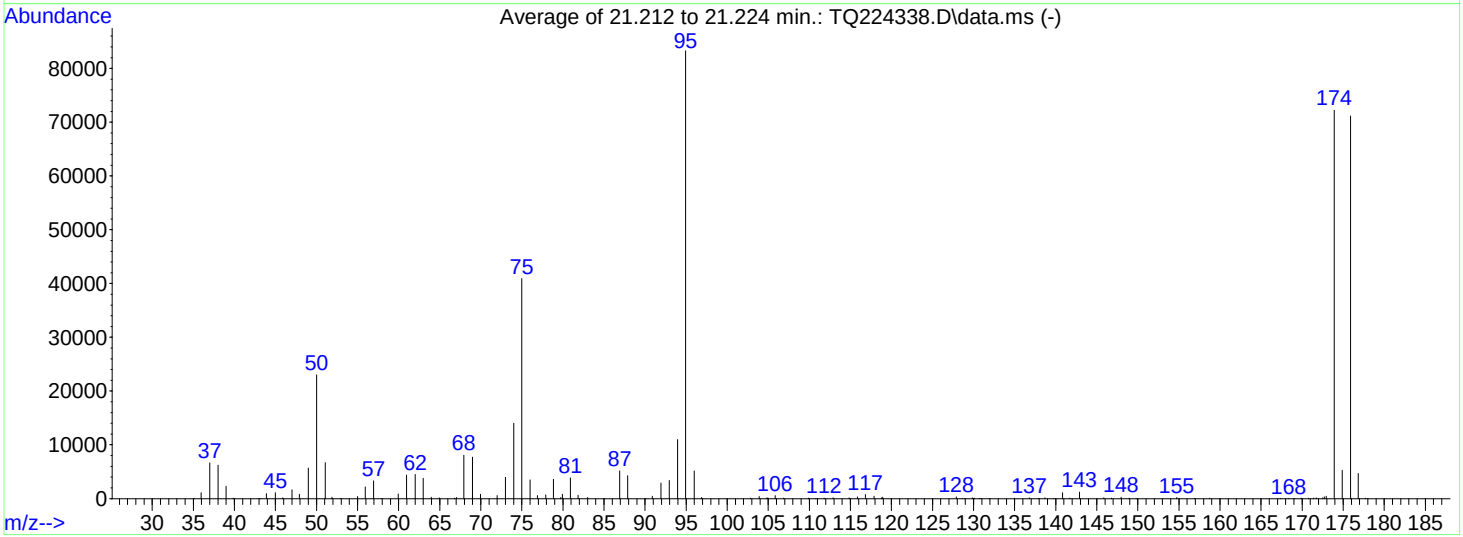
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	27.8	8964	PASS
75	95	30	66	58.4	18808	PASS
95	95	100	100	100.0	32216	PASS
96	95	5	9	8.6	2763	PASS
173	174	0.00	2	0.7	226	PASS
174	95	50	120	97.1	31277	PASS
175	174	4	9	8.8	2753	PASS
176	174	93	101	96.5	30183	PASS
177	176	5	9	8.4	2521	PASS

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224338.D
Acq On : 17 Mar 2023 2:17 pm
Operator : AC
Sample : SEQ-TUN1
Misc : QBTO2031723A TUNE
ALS Vial : 33 Sample Multiplier: 1
InstName : TO15_AIR2

Integration File: rteintnew.p

Method : C:\msdchem\1\methods\AIR-2-0070.M
Title : TO15 VOC Analysis
Last Update : Mon Jan 30 09:33:24 2023





AutoFind: Scans 2727, 2728, 2729; Background Corrected with Scan 2710

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	27.6	23000	PASS
75	95	30	66	49.1	40891	PASS
95	95	100	100	100.0	83314	PASS
96	95	5	9	6.2	5158	PASS
173	174	0.00	2	0.6	424	PASS
174	95	50	120	86.7	72232	PASS
175	174	4	9	7.3	5261	PASS
176	174	93	101	98.5	71168	PASS
177	176	5	9	6.6	4678	PASS

METHOD BLANK RAW DATA

SDG: 23C0979
CLASS: AIR
METHOD: EPA TO-15

FORM I

METHOD BLANK DATA SHEET

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31240-BLK1	File ID:	TQ224342.D
Prepared:	03/17/23 12:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/17/23 18:42	Instrument:	TO15_AIR2		
Batch:	BC31240	Sequence:	S3C2020	Calibration:	SB30007

CAS NO.	COMPOUND	CONC. (ug/m³)	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. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31240-BLK1	File ID:	TQ224342.D
Prepared:	03/17/23 12:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/17/23 18:42	Instrument:	TO15_AIR2		
Batch:	BC31240	Sequence:	S3C2020	Calibration:	SB30007

CAS NO.	COMPOUND	CONC. (ug/m³)	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	0.639	
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. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31240-BLK1	File ID:	TQ224342.D
Prepared:	03/17/23 12:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/17/23 18:42	Instrument:	TO15_AIR2		
Batch:	BC31240	Sequence:	S3C2020	Calibration:	SB30007

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	0.128	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	389895	12.238	338417	12.225	
ISTD: 1,4-Difluorobenzene	862934	13.817	764565	13.804	
ISTD: d5-Chlorobenzene	543455	19.06	676354	19.053	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224342.D
Acq On : 17 Mar 2023 6:42 pm
Operator : AC
Sample : BC31240-BLK1
Misc : QBTO2031723A BLK
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Mar 20 11:41:19 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

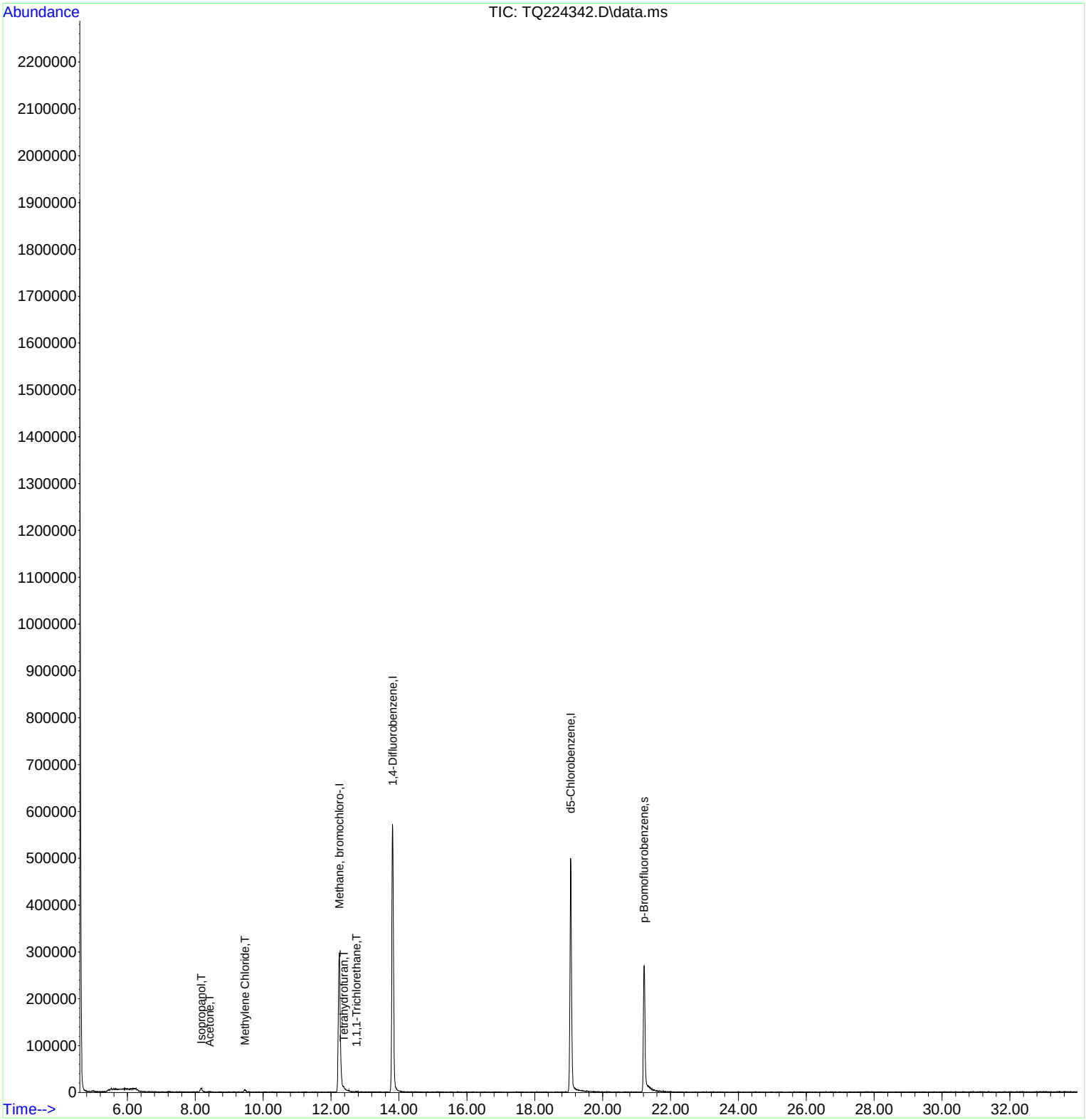
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.238	49	389895	10.00	ppbv	0.01
37) 1,4-Difluorobenzene	13.817	114	862934	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.060	117	543455	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.218	95	193940	6.89	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 68.90%#			
Target Compounds						Qvalue
12) Isopropanol	8.172	45	18516	0.26	ppbv #	99
14) Acetone	8.415	43	2959	0.05	ppbv #	75
18) Methylene Chloride	9.464	49	6792	0.16	ppbv	81
30) Tetrahydrofuran	12.372	42	3258	0.07	ppbv #	84
31) 1,1,1-Trichlorethane	12.744	97	1172	0.03	ppbv #	63

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

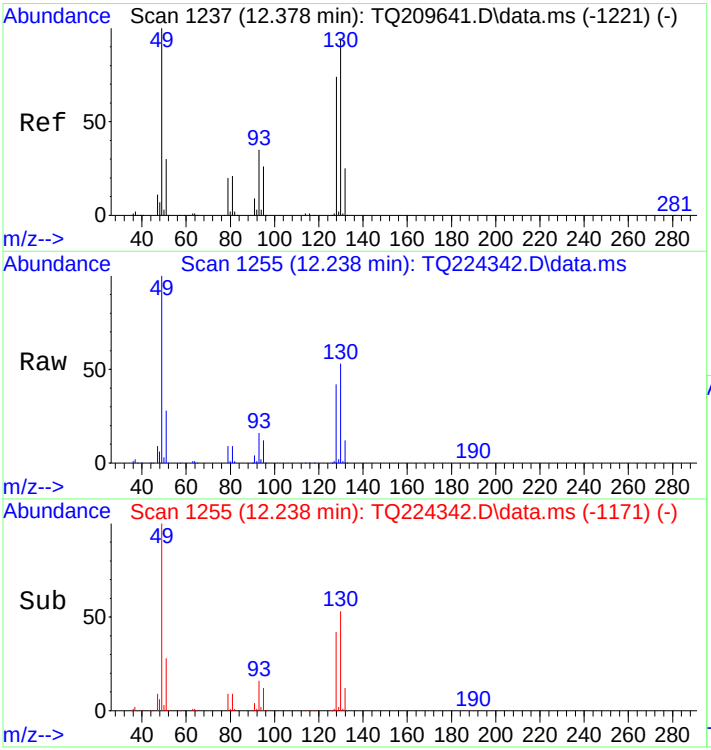
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224342.D
Acq On : 17 Mar 2023 6:42 pm
Operator : AC
Sample : BC31240-BLK1
Misc : QBTO2031723A BLK
ALS Vial : 22 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Mar 20 11:41:19 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration



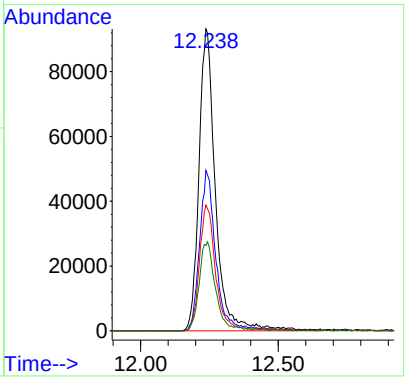
AIR-2-0070.M Mon Mar 20 13:38:21 2023 Page: 2

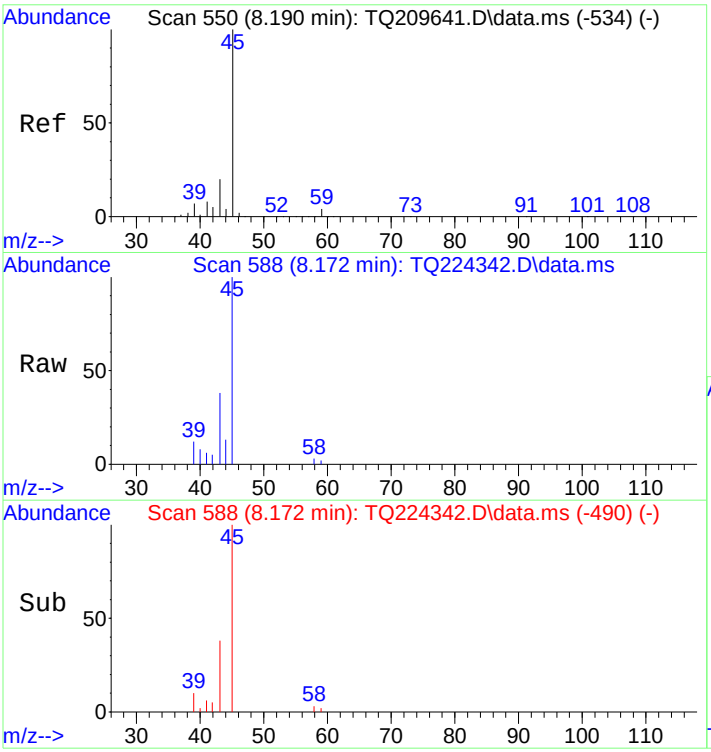


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.238 min Scan# 1255
Delta R.T. 0.013 min
Lab File: TQ224342.D
Acq: 17 Mar 2023 6:42 pm

Tgt Ion: 49 Resp: 389895

Ion	Ratio	Lower	Upper
49	100		
130	52.9	48.1	99.9
128	41.3	38.3	79.5
51	29.9	20.3	42.3

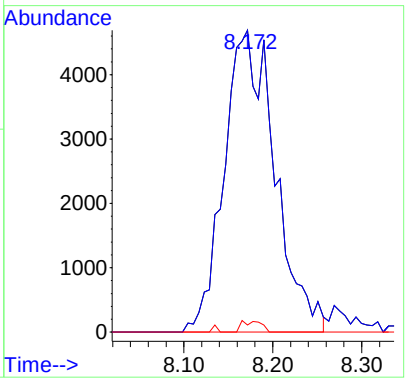


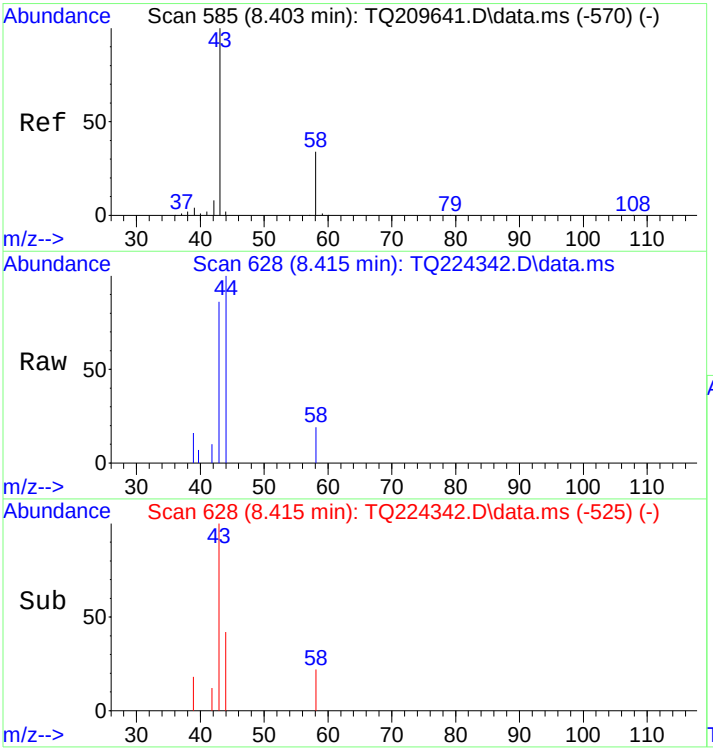


#12
Isopropanol
Concen: 0.26 ppbv
RT: 8.172 min Scan# 588
Delta R.T. 0.098 min
Lab File: TQ224342.D
Acq: 17 Mar 2023 6:42 pm

Tgt Ion: 45 Resp: 18516

Ion	Ratio	Lower	Upper
45	100		
45	100.0	65.0	135.0
59	0.0	0.0	10.0

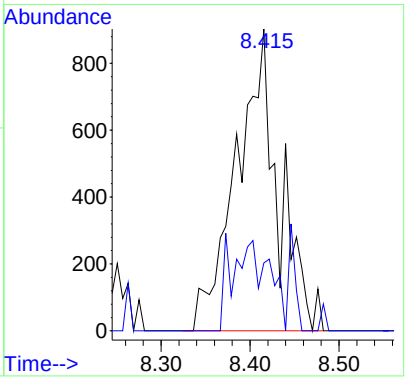


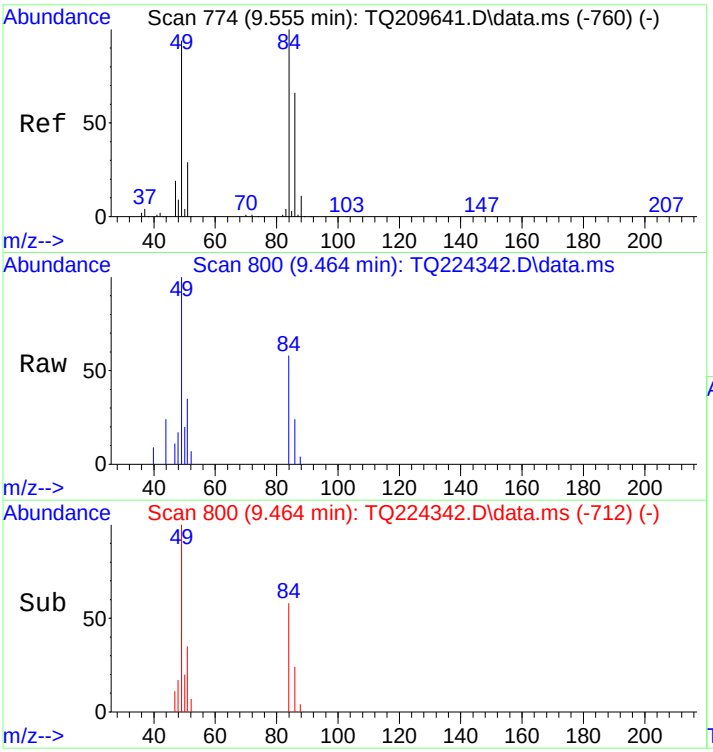


#14
Acetone
Concen: 0.05 ppbv
RT: 8.415 min Scan# 628
Delta R.T. 0.128 min
Lab File: TQ224342.D
Acq: 17 Mar 2023 6:42 pm

Tgt Ion: 43 Resp: 2959

Ion	Ratio	Lower	Upper
43	100		
58	17.9	20.9	43.3#

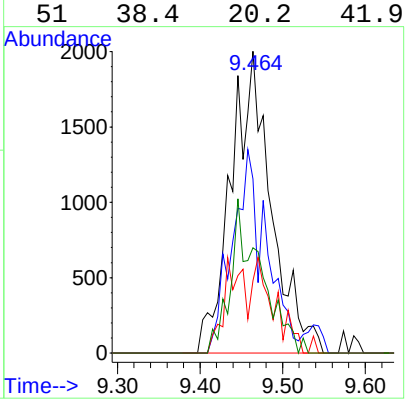


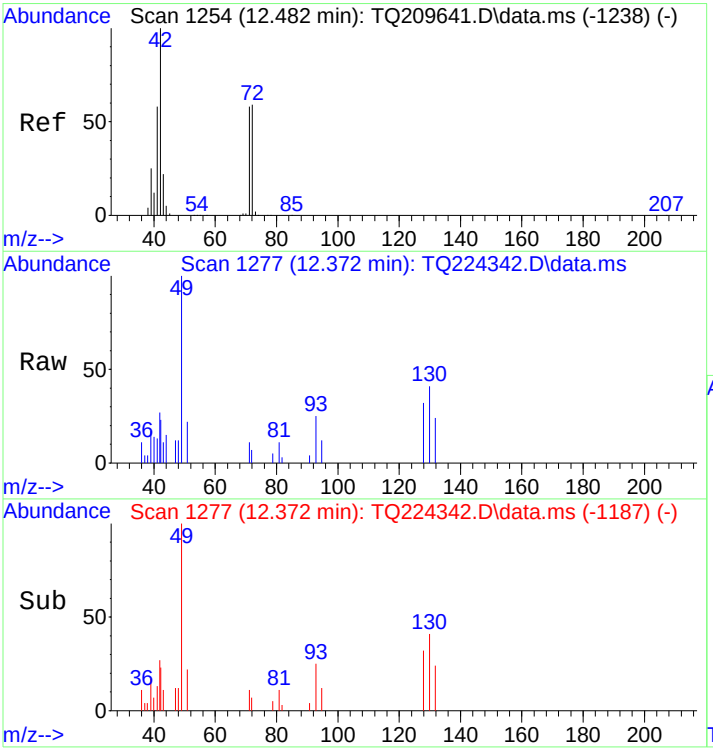


#18
Methylene Chloride
Concen: 0.16 ppbv
RT: 9.464 min Scan# 800
Delta R.T. 0.037 min
Lab File: TQ224342.D
Acq: 17 Mar 2023 6:42 pm

Tgt Ion: 49 Resp: 6792

Ion	Ratio	Lower	Upper
49	100		
84	60.7	49.9	103.5
86	33.2	31.8	66.0
51	38.4	20.2	41.9

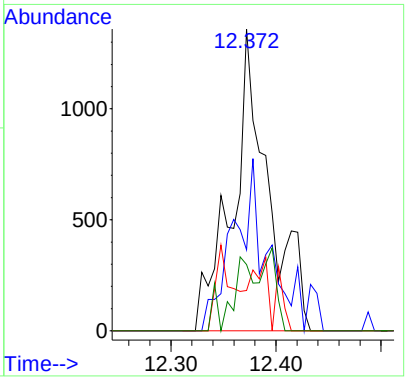


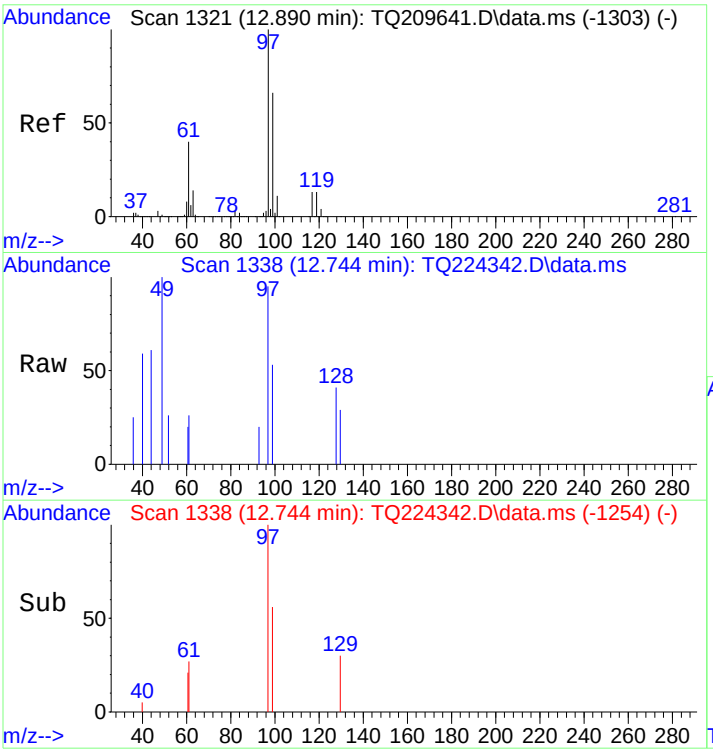


#30
Tetrahydrofuran
Concen: 0.07 ppbv
RT: 12.372 min Scan# 1277
Delta R.T. 0.049 min
Lab File: TQ224342.D
Acq: 17 Mar 2023 6:42 pm

Tgt Ion: 42 Resp: 3258

Ion	Ratio	Lower	Upper
42	100		
41	57.6	35.2	73.0
72	28.6	27.2	56.6
71	23.6	25.9	53.7#

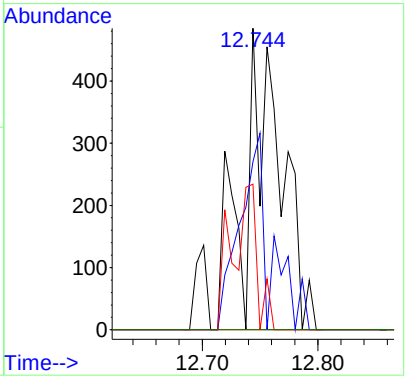


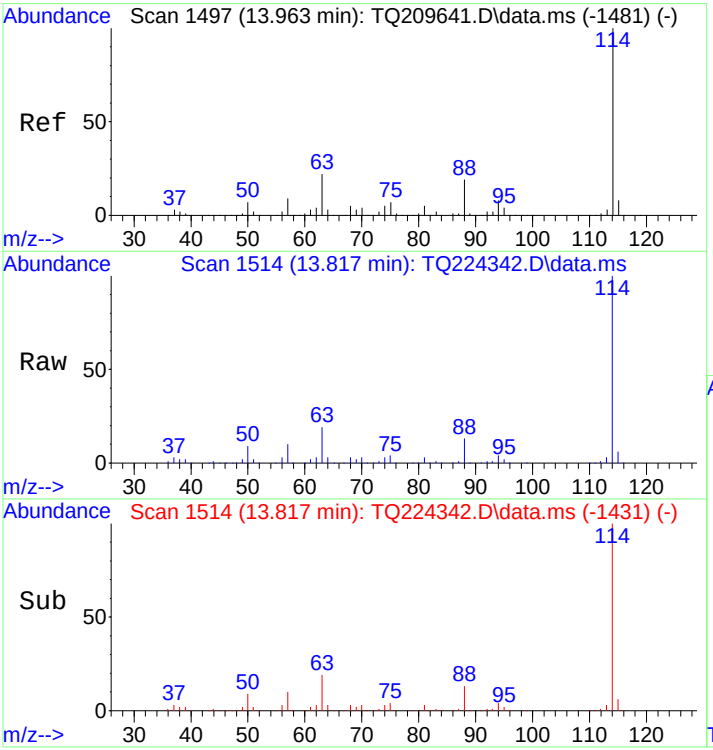


#31
1,1,1-Trichlorethane
Concen: 0.03 ppbv
RT: 12.744 min Scan# 1338
Delta R.T. 0.013 min
Lab File: TQ224342.D
Acq: 17 Mar 2023 6:42 pm

Tgt Ion: 97 Resp: 1172

Ion	Ratio	Lower	Upper
97	100		
99	50.0	41.9	87.1
61	0.0	27.6	57.4#
63	0.0	9.0	18.6#

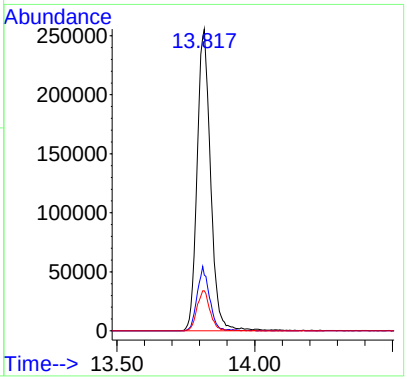


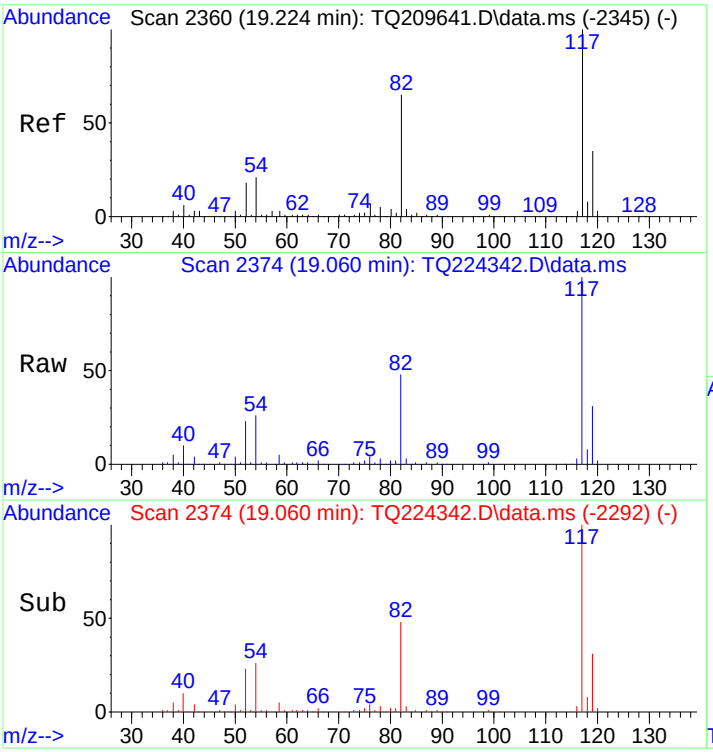


#37
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.817 min Scan# 1514
Delta R.T. 0.006 min
Lab File: TQ224342.D
Acq: 17 Mar 2023 6:42 pm

Tgt Ion:114 Resp: 862934

Ion	Ratio	Lower	Upper
114	100		
63	19.8	12.9	26.9
88	13.1	10.7	22.3

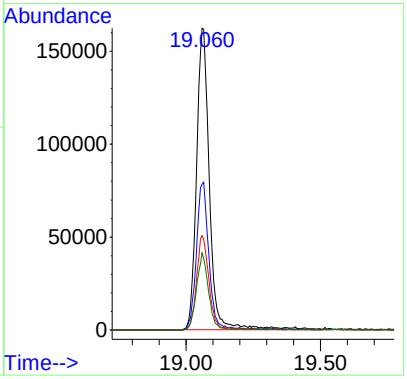


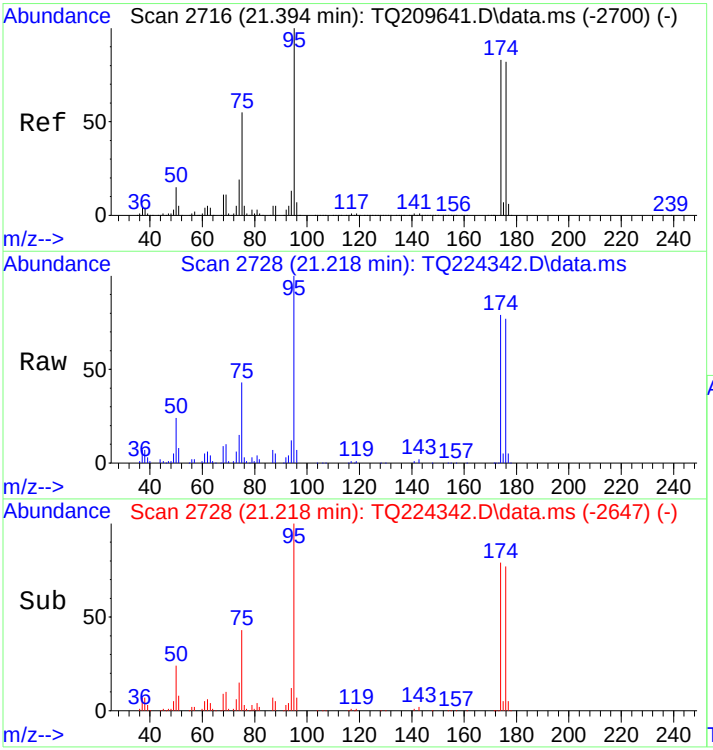


#53
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.060 min Scan# 2374
Delta R.T. -0.000 min
Lab File: TQ224342.D
Acq: 17 Mar 2023 6:42 pm

Tgt Ion:117 Resp: 543455

Ion	Ratio	Lower	Upper
117	100		
82	49.0	37.1	77.1
119	30.7	22.1	45.9
54	24.1	13.8	28.6

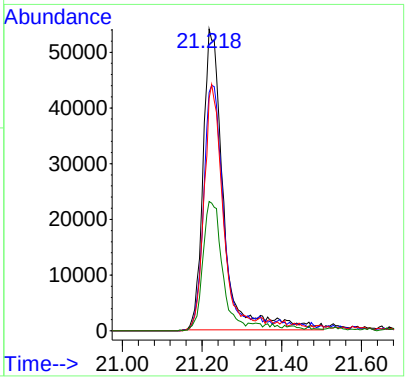




#64
p-Bromofluorobenzene
Concen: 6.89 ppbv
RT: 21.218 min Scan# 2728
Delta R.T. -0.006 min
Lab File: TQ224342.D
Acq: 17 Mar 2023 6:42 pm

Tgt Ion: 95 Resp: 193940

Ion	Ratio	Lower	Upper
95	100		
174	87.0	53.2	110.6
176	84.1	51.6	107.2
75	43.8	30.7	63.7



METHOD BLANK RAW DATA

SDG: 23C0979
CLASS: AIR
METHOD: EPA TO-15

FORM I

METHOD BLANK DATA SHEET

EPA TO-15

Laboratory:	York Analytical Laboratories, Inc. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31255-BLK1	File ID:	TO298048.D
Prepared:	03/18/23 10:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/18/23 13:55	Instrument:	5975C		
Batch:	BC31255	Sequence:	S3C1903	Calibration:	SB30018

CAS NO.	COMPOUND	CONC. (ug/m³)	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. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31255-BLK1	File ID:	TO298048.D
Prepared:	03/18/23 10:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/18/23 13:55	Instrument:	5975C		
Batch:	BC31255	Sequence:	S3C1903	Calibration:	SB30018

CAS NO.	COMPOUND	CONC. (ug/m³)	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. - Stratford			SDG:	23C0979
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170361307
Matrix:	Air	Laboratory ID:	BC31255-BLK1	File ID:	TO298048.D
Prepared:	03/18/23 10:00	Preparation:	EPA TO15 PREP	Initial/Final:	400 mL / 400 mL
Analyzed:	03/18/23 13:55	Instrument:	5975C		
Batch:	BC31255	Sequence:	S3C1903	Calibration:	SB30018

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	0.128	U

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	284359	12.22	214720	12.22	
ISTD: 1,4-Difluorobenzene	872152	13.771	644908	13.771	
ISTD: d5-Chlorobenzene	605202	19.006	640123	19.006	

Quantitation Report (QT Reviewed)

Data Path : D:\031823A\
Data File : TO298048.D
Acq On : 18 Mar 2023 1:55 pm
Operator : VH
Sample : BC31255-BLK1
Misc : QBTO1031823A BLK
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 18 17:51:05 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

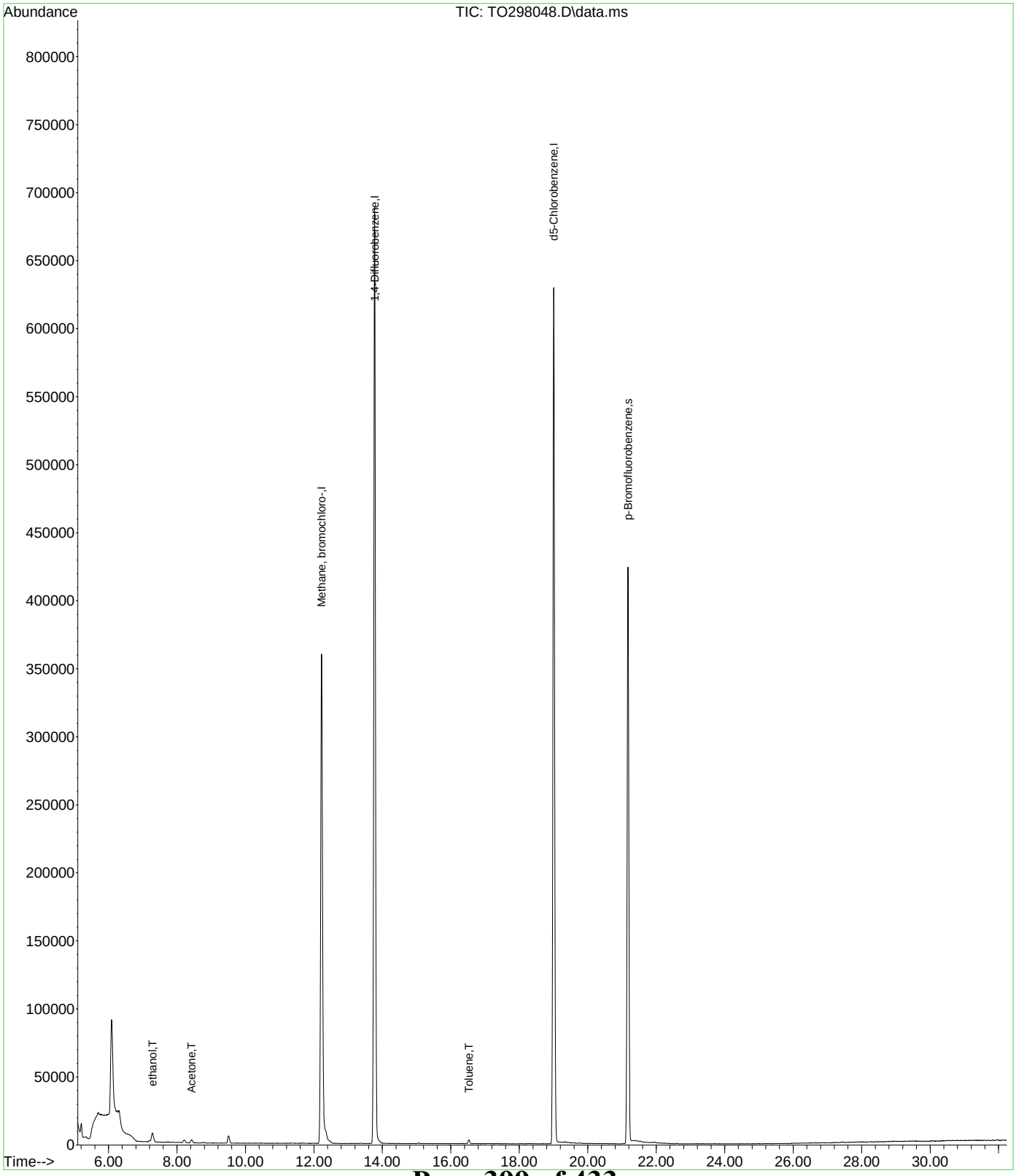
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.220	49	284359	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	872152	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.006	117	605202	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	223324	7.98	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 79.80%			
Target Compounds						Qvalue
10) ethanol	7.283	45	7595	1.00	ppbv #	84
15) Acetone	8.424	43	6604	0.16	ppbv	88
46) Toluene	16.525	91	4602	0.04	ppbv #	87

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

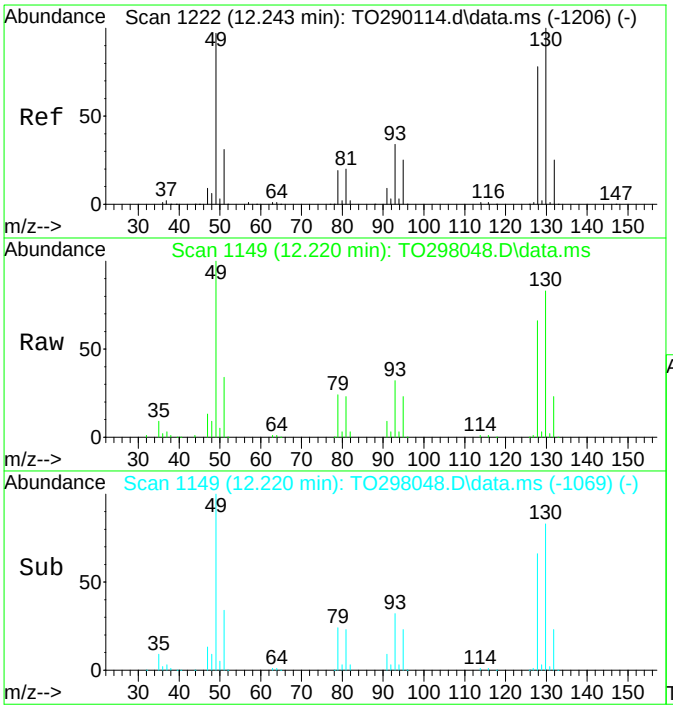
Quantitation Report (QT Reviewed)

Data Path : D:\031823A\
Data File : TO298048.D
Acq On : 18 Mar 2023 1:55 pm
Operator : VH
Sample : BC31255-BLK1
Misc : QBTO1031823A BLK
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 18 17:51:05 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration



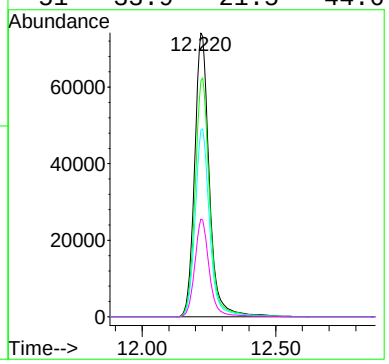
AIR160.M Sun Mar 19 15:50:30 2023 Page: 2

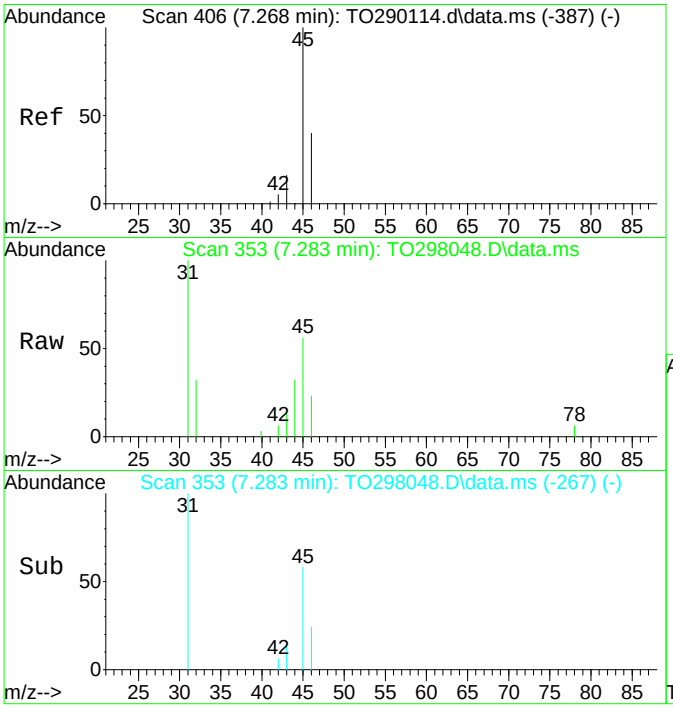


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.220 min Scan# 1149
Delta R.T. -0.004 min
Lab File: TO298048.D
Acq: 18 Mar 2023 1:55 pm

Tgt Ion: 49 Resp: 284359

Ion	Ratio	Lower	Upper
49	100		
130	83.3	44.5	92.3
128	65.7	34.7	72.1
51	33.9	21.5	44.6

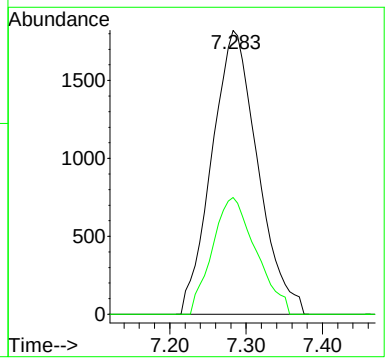


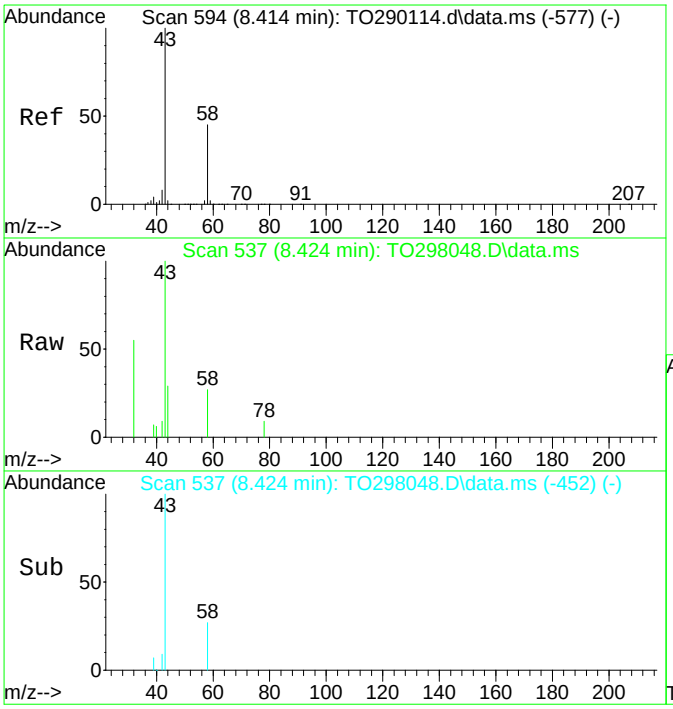


#10
ethanol
Concen: 1.00 ppbv
RT: 7.283 min Scan# 353
Delta R.T. 0.034 min
Lab File: TO298048.D
Acq: 18 Mar 2023 1:55 pm

Tgt Ion: 45 Resp: 7595

Ion	Ratio	Lower	Upper
45	100		
46	39.3	40.0	60.0#

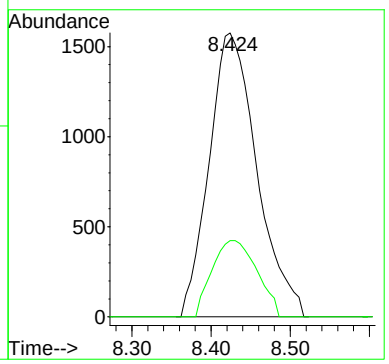


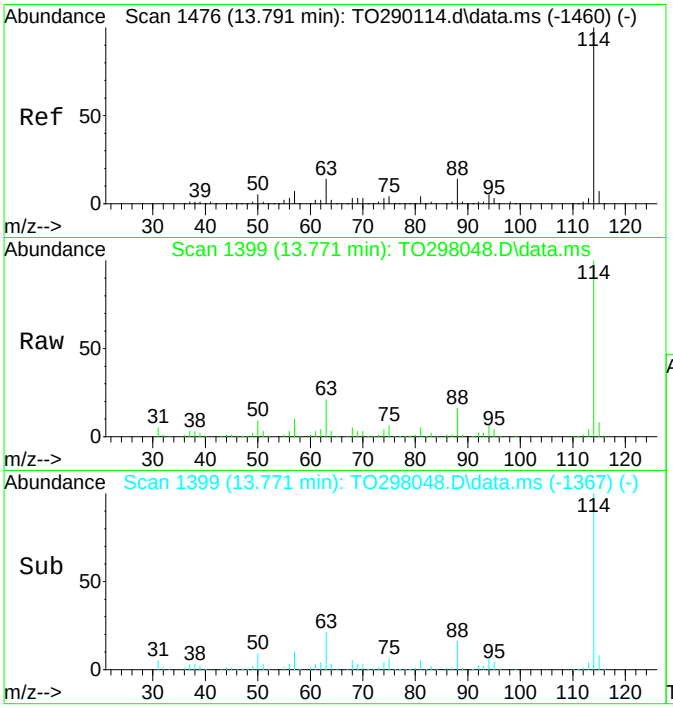


#15
Acetone
Concen: 0.16 ppbv
RT: 8.424 min Scan# 537
Delta R.T. 0.027 min
Lab File: TO298048.D
Acq: 18 Mar 2023 1:55 pm

Tgt Ion: 43 Resp: 6604

Ion	Ratio	Lower	Upper
43	100		
58	25.3	20.7	42.9

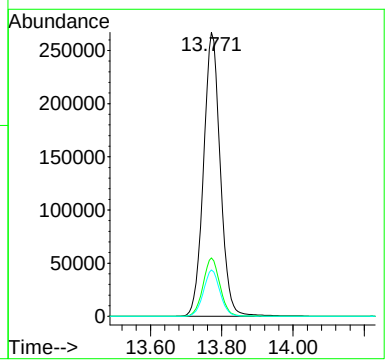


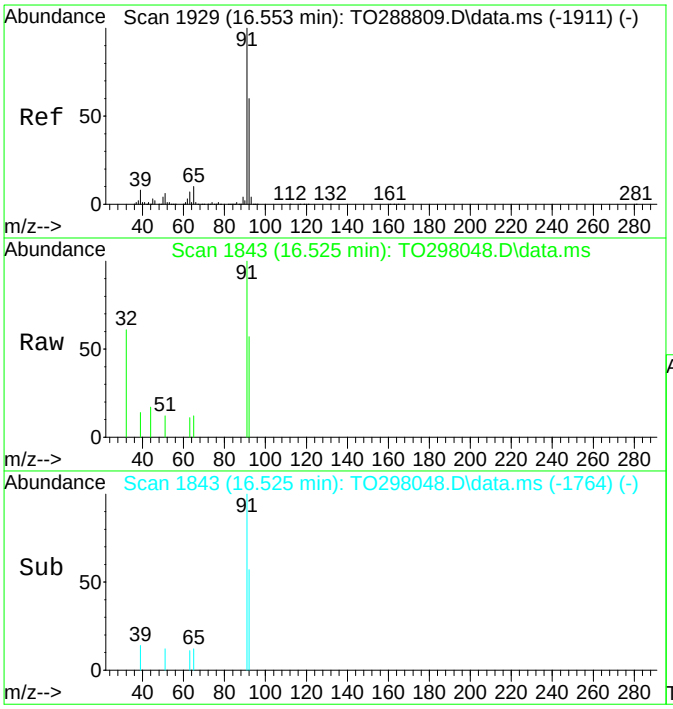


#38
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.771 min Scan# 1399
Delta R.T. -0.004 min
Lab File: TO298048.D
Acq: 18 Mar 2023 1:55 pm

Tgt Ion:114 Resp: 872152

Ion	Ratio	Lower	Upper
114	100		
63	20.7	14.0	29.2
88	16.1	11.2	23.2

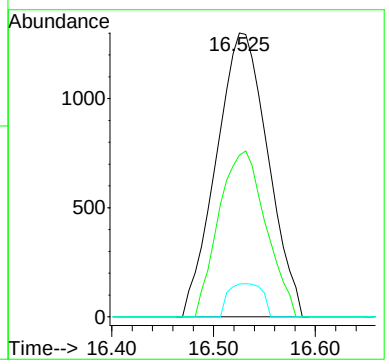


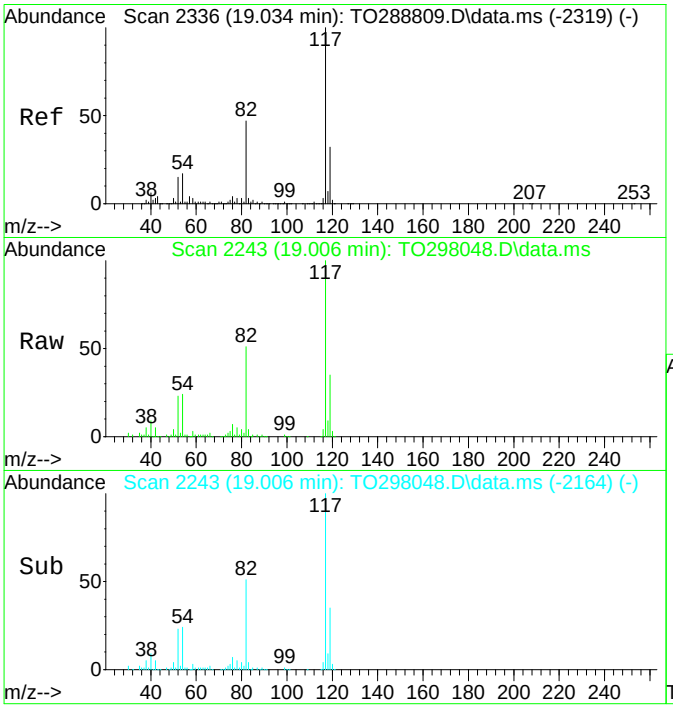


#46
Toluene
Concen: 0.04 ppbv
RT: 16.525 min Scan# 1843
Delta R.T. -0.010 min
Lab File: TO298048.D
Acq: 18 Mar 2023 1:55 pm

Tgt Ion: 91 Resp: 4602

Ion	Ratio	Lower	Upper
91	100		
92	53.2	39.0	81.0
65	0.0	7.7	16.1#

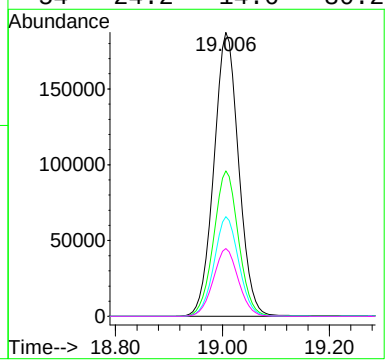


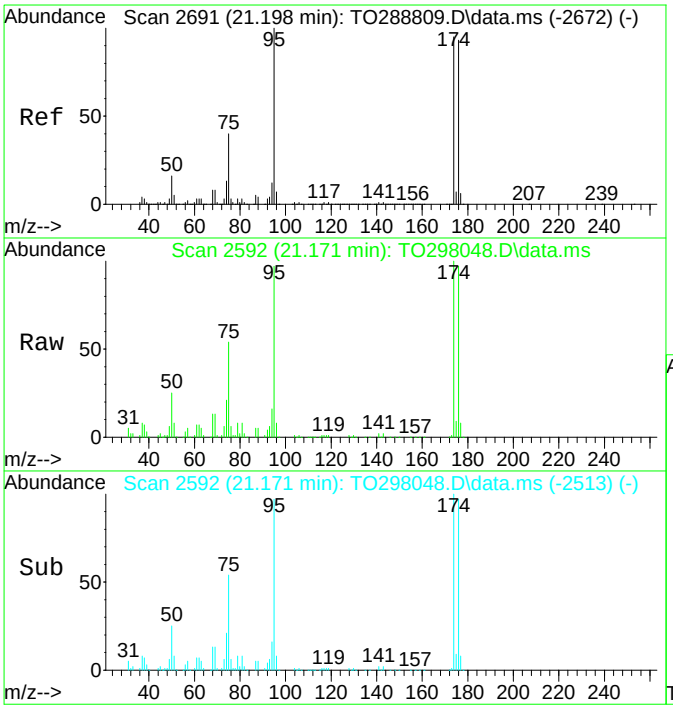


#54
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.006 min Scan# 2243
Delta R.T. -0.011 min
Lab File: TO298048.D
Acq: 18 Mar 2023 1:55 pm

Tgt Ion:117 Resp: 605202

Ion	Ratio	Lower	Upper
117	100		
82	51.3	38.7	80.5
119	35.1	20.3	42.3
54	24.2	14.6	30.2

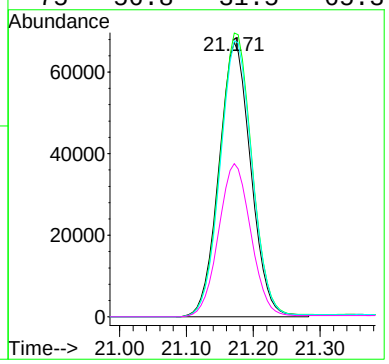




#65
p-Bromofluorobenzene
Concen: 7.98 ppbv
RT: 21.171 min Scan# 2592
Delta R.T. -0.010 min
Lab File: TO298048.D
Acq: 18 Mar 2023 1:55 pm

Tgt Ion: 95 Resp: 223324

Ion	Ratio	Lower	Upper
95	100		
174	104.2	50.0	103.8#
176	101.5	48.2	100.2#
75	56.8	31.5	65.3



LCS RAW DATA

SDG: 23C0979
CLASS: AIR
METHOD: EPA TO-15

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224340.D
Acq On : 17 Mar 2023 4:38 pm
Operator : AC
Sample : BC31240-BS1
Misc : QBTO2031723A LCS
ALS Vial : 44 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Mar 17 18:04:49 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.226	49	427532	10.00	ppbv	0.00
37) 1,4-Difluorobenzene	13.811	114	975270	10.00	ppbv	0.00
53) d5-Chlorobenzene	19.060	117	845176	10.00	ppbv	0.00
System Monitoring Compounds						
64) p-Bromofluorobenzene	21.212	95	432987	9.89	ppbv	-0.01
Spiked Amount 10.000	Range 70 - 130		Recovery = 98.90%			
Target Compounds						Qvalue
2) Propylene	4.947	42	207222	7.50	ppbv	98
3) Dichlorodifluoromethane	5.026	85	587624	8.30	ppbv #	96
4) 1,2-Dichlorotetrafluor...	5.331	85	708292	7.54	ppbv	95
5) Chloromethane	5.538	50	323804	8.37	ppbv	98
6) Vinyl Chloride	5.831	62	314059	7.25	ppbv	100
7) 1,3-Butadiene	5.922	54	257575	8.23	ppbv	96
8) Bromomethane	6.751	94	262501	8.00	ppbv	99
9) Chloroethane	6.934	64	150380	8.17	ppbv	94
10) Vinyl Bromide	7.410	106	253950	9.69	ppbv	99
11) Trichlorofluoromethane	7.531	101	545069	9.04	ppbv	98
12) Isopropanol	8.092	45	671765	8.56	ppbv	100
13) Acrolein	8.184	56	130483	8.20	ppbv #	1
14) Acetone	8.300	43	529172	7.83	ppbv	100
15) Freon-113	8.446	101	535756	9.03	ppbv	96
16) 1,1-Dichloroethylene	8.665	61	440067	8.12	ppbv	98
17) 3-Chloropropene	9.281	41	419095	9.00	ppbv	86
18) Methylene Chloride	9.434	49	431040	9.47	ppbv	82
19) Acrylonitrile	9.543	53	245225	8.68	ppbv #	92
20) Carbon disulfide	9.549	76	733326	9.06	ppbv	90
21) Methyl-tert-Butyl Ethe...	9.848	73	634845	9.37	ppbv #	85
22) trans-1,2-Dichloroethy...	10.049	61	375258	8.54	ppbv	98
23) Hexane	10.348	57	503596	9.53	ppbv	92
24) Vinyl Acetate	10.683	43	795027	9.53	ppbv #	99
25) 1,1-Dichloroethane	10.720	63	530566	8.88	ppbv	96
26) 2-Butanone	11.348	43	767892	8.76	ppbv	89
27) Ethyl Acetate	11.653	43	863252	9.16	ppbv #	40
28) cis-1,2-Dichloroethylene	11.726	61	392734	7.87	ppbv	85
29) Chloroform	11.994	83	526055	9.42	ppbv #	94
30) Tetrahydrofuran	12.323	42	455319	9.09	ppbv	88
31) 1,1,1-Trichlorethane	12.738	97	479709	9.77	ppbv	93
32) Cyclohexane	12.908	56	537724	9.41	ppbv	87
33) Carbon Tetrachloride	13.201	117	345162	10.08	ppbv #	92
34) 1,2-Dichloroethane	13.280	62	321065	8.78	ppbv	100
35) Benzene	13.408	78	908529	9.09	ppbv #	85
36) n-Heptane	13.433	43	684122	9.46	ppbv #	97
38) Trichloroethylene	14.439	95	359178	8.35	ppbv	98
39) 1,2-Dichloropropane	14.664	63	381620	8.91	ppbv	93
40) Methyl Methacrylate	14.689	69	302119	8.95	ppbv #	41
41) 1,4-Dioxane	14.993	88	191497	9.06	ppbv #	100
42) Bromodichloromethane	15.030	83	534694	9.84	ppbv #	93
43) Methyl Isobutyl Ketone	15.566	43	920464	8.77	ppbv	91
44) cis-1,3-Dichloropropene	15.920	75	446566	10.06	ppbv #	95
45) Toluene	16.572	91	1098507	9.02	ppbv	99
46) trans-1,3-Dichloropropene	16.731	75	352875	9.95	ppbv #	92
47) 1,1,2-Trichlorethane	17.023	97	398504	9.38	ppbv	100
48) 2-Hexanone	17.030	43	843023	9.21	ppbv	96
49) 1,3-Dichloropropane	17.444	76	515776	9.11	ppbv #	72

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224340.D
Acq On : 17 Mar 2023 4:38 pm
Operator : AC
Sample : BC31240-BS1
Misc : QBTO2031723A LCS
ALS Vial : 44 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Mar 17 18:04:49 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration

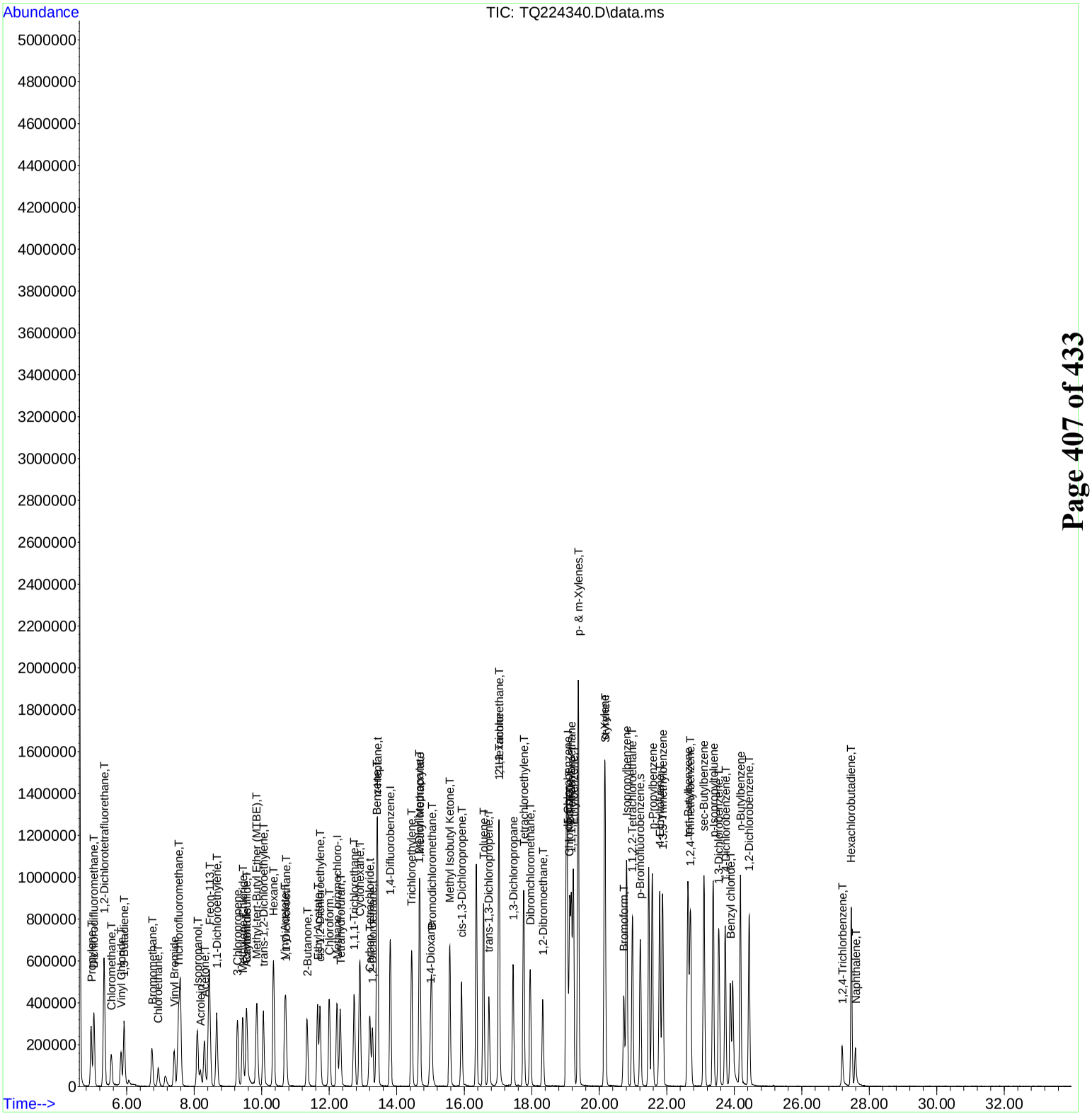
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Tetrachloroethylene	17.761	166	460955	9.08	ppbv	98
51) Dibromchloromethane	17.956	129	519339	10.65	ppbv	99
52) 1,2-Dibromoethane	18.328	107	523103	9.37	ppbv	99
54) Chlorobenzene	19.121	112	834909	8.54	ppbv #	100
55) 1,1,1,2-Tetrachloroethane	19.176	131	423105	9.50	ppbv	98
56) Ethylbenzene	19.230	91	1313753	8.84	ppbv	100
57) p- & m-Xylenes	19.377	91	1940822	17.53	ppbv	99
58) o-Xylene	20.157	91	1002490	9.08	ppbv	99
59) Styrene	20.175	104	722320	9.60	ppbv #	100
60) Bromoform	20.730	173	362516	9.37	ppbv	99
61) n-Propylbenzene	21.571	91	1582190	8.65	ppbv	99
62) Isopropylbenzene	20.809	105	1310170	9.23	ppbv	97
63) 1,1,2,2-Tetrachloroeth...	20.980	83	819999	9.07	ppbv	99
65) 4-Ethyltoluene	21.791	105	1182760	8.76	ppbv	98
66) 1,3,5-Trimethylbenzene	21.876	105	949545	8.18	ppbv	93
67) tert-Butylbenzene	22.626	119	1088500	8.83	ppbv #	79
68) 1,2,4-Trimethylbenzene	22.699	105	981221	8.74	ppbv #	82
69) sec-Butylbenzene	23.102	105	1478069	8.66	ppbv #	95
70) p-Isopropyltoluene	23.376	119	1145879	9.11	ppbv #	79
71) 1,3-Dichlorobenzene	23.541	146	639181	9.40	ppbv	97
72) 1,4-Dichlorobenzene	23.736	146	612419	9.42	ppbv	98
73) Benzyl chloride	23.882	91	644921	7.85	ppbv	99
74) n-Butylbenzene	24.181	91	1076138	9.33	ppbv	100
75) 1,2-Dichlorobenzene	24.443	146	626578	8.83	ppbv	97
76) 1,2,4-Trichlorbenzene	27.204	180	121730	6.39	ppbv	98
77) Hexachlorobutadiene	27.467	225	209325	7.05	ppbv #	91
78) Naphthalene	27.589	128	325400	7.00	ppbv	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\031723\
Data File : TQ224340.D
Acq On : 17 Mar 2023 4:38 pm
Operator : AC
Sample : BC31240-BS1
Misc : QBTO2031723A LCS
ALS Vial : 44 Sample Multiplier: 1
InstName : TO15_AIR2

Quant Time: Mar 17 18:04:49 2023
Quant Method : C:\msdchem\1\methods\AIR-2-0070.M
Quant Title : TO15 VOC Analysis
QLast Update : Mon Jan 30 09:33:24 2023
Response via : Initial Calibration



LCS RAW DATA

SDG: 23C0979
CLASS: AIR
METHOD: EPA TO-15

Quantitation Report (QT Reviewed)

Data Path : D:\031823A\
Data File : TO298046.D
Acq On : 18 Mar 2023 11:39 am
Operator : VH
Sample : BC31255-BS1
Misc : QBTO1031823A LCS
ALS Vial : 44 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 18 12:12:26 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Methane, bromochloro-	12.220	49	244539	10.00	ppbv		0.00
38) 1,4-Difluorobenzene	13.771	114	758789	10.00	ppbv		0.00
54) d5-Chlorobenzene	19.006	117	719068	10.00	ppbv		-0.01
System Monitoring Compounds							
65) p-Bromofluorobenzene	21.171	95	398829	11.99	ppbv		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 119.90%				
Target Compounds							Qvalue
2) Propylene	5.273	42	134656	12.48	ppbv		94
3) Dichlorodifluoromethane	5.347	85	677852	11.10	ppbv	#	93
4) 1,2-Dichlorotetrafluor...	5.602	85	983853	9.54	ppbv	#	64
5) Chloromethane	5.825	50	215477	10.27	ppbv		99
6) Vinyl Chloride	6.092	62	251771	8.75	ppbv		95
7) 1,3-Butadiene	6.172	54	182166	10.73	ppbv		96
8) Bromomethane	6.948	94	334333	9.83	ppbv		98
9) Chloroethane	7.121	64	125759	12.67	ppbv		92
10) ethanol	7.258	45	97841	14.67	ppbv		86
11) Vinyl Bromide	7.574	106	234037	12.02	ppbv		100
12) Trichlorofluoromethane	7.692	101	636564	10.70	ppbv		97
13) Isopropanol	8.176	45	382745	10.16	ppbv		100
14) Acrolein	8.288	56	88342	12.43	ppbv	#	100
15) Acetone	8.399	43	316660	8.87	ppbv		97
16) Freon-113	8.542	101	495858	10.50	ppbv		92
17) 1,1-Dichloroethylene	8.771	61	330540	11.43	ppbv		94
18) 3-Chloropropene	9.355	41	243128	11.56	ppbv	#	83
19) Methylene Chloride	9.503	49	249229	9.84	ppbv		98
20) Acrylonitrile	9.584	53	158150	12.26	ppbv	#	100
21) Carbon disulfide	9.640	76	553229	10.28	ppbv	#	83
22) Methyl-tert-Butyl Ethe...	9.900	73	541244	11.47	ppbv	#	90
23) trans-1,2-Dichloroethy...	10.099	61	293473	11.10	ppbv		90
24) Hexane	10.378	57	305776	9.44	ppbv		95
25) Vinyl Acetate	10.688	43	488407	8.29	ppbv		100
26) 1,1-Dichloroethane	10.744	63	369958	10.34	ppbv	#	95
27) 2-Butanone	11.340	43	405980	10.34	ppbv		98
28) Ethyl Acetate	11.637	43	473256	10.54	ppbv		98
29) cis-1,2-Dichloroethylene	11.724	61	283474	11.53	ppbv		92
30) Chloroform	11.997	83	472116	10.43	ppbv		94
31) Tetrahydrofuran	12.320	42	234761	11.07	ppbv		95
32) 1,1,1-Trichlorethane	12.723	97	502225	10.90	ppbv		96
33) Cyclohexane	12.896	56	308157	9.42	ppbv		95
34) Carbon Tetrachloride	13.188	117	518734	9.75	ppbv		99
35) 1,2-Dichloroethane	13.250	62	294144	11.02	ppbv		99
36) Benzene	13.387	78	691568	7.83	ppbv	#	100
37) n-Heptane	13.393	43	429265	7.65	ppbv	#	97
39) Trichloroethylene	14.404	95	319746	9.47	ppbv		88
40) 1,2-Dichloropropane	14.633	63	272399	8.50	ppbv	#	96
41) Methyl Methacrylate	14.640	69	256787	8.33	ppbv	#	78
42) 1,4-Dioxane	14.956	88	155938	10.59	ppbv	#	100
43) Bromodichloromethane	14.987	83	544699	9.20	ppbv	#	94
44) Methyl Isobutyl Ketone	15.520	43	519191	8.21	ppbv	#	97
45) cis-1,3-Dichloropropene	15.874	75	359709	9.53	ppbv		91
46) Toluene	16.525	91	773448	8.32	ppbv		99
47) trans-1,3-Dichloropropene	16.680	75	341173	9.74	ppbv		91
48) 1,1,2-Trichlorethane	16.972	97	343612	8.61	ppbv		98
49) 2-Hexanone	16.978	43	535019	7.83	ppbv		98
50) 1,3-Dichloropropane	17.394	76	385919	8.99	ppbv	#	99
51) Tetrachloroethylene	17.716	166	504667	9.41	ppbv		98
52) Dibromchloromethane	17.909	129	595944	8.96	ppbv	#	96
53) 1,2-Dibromoethane	18.281	107	473985	8.85	ppbv		99
55) Chlorobenzene	19.075	112	711349	10.35	ppbv	#	98

Data Path : D:\031823A\
Data File : TO298046.D
Acq On : 18 Mar 2023 11:39 am
Operator : VH
Sample : BC31255-BS1
Misc : QBTO1031823A LCS
ALS Vial : 44 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 18 12:12:26 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

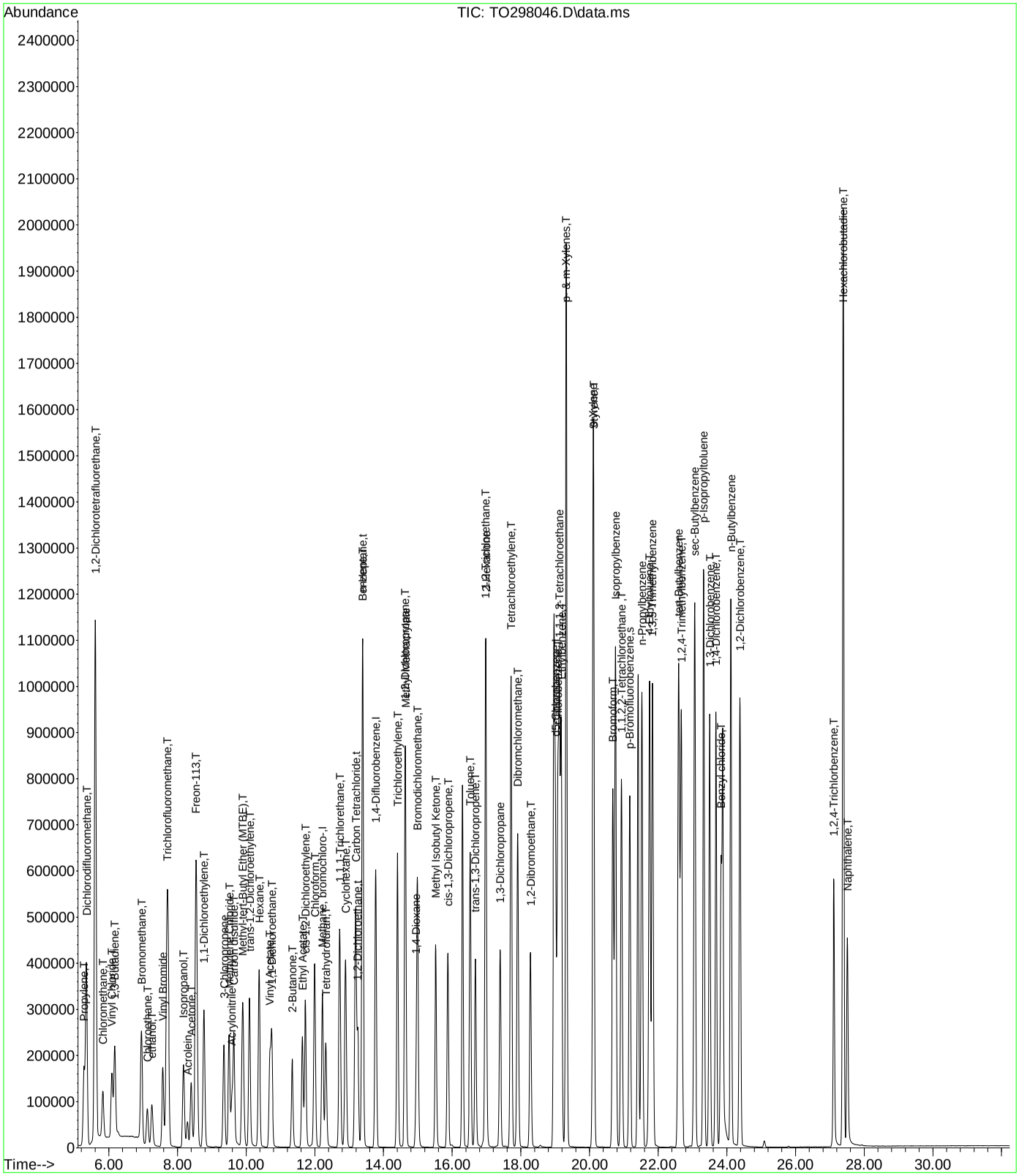
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56)	1,1,1,2-Tetrachloroethane	19.124	131	460059	9.81	ppbv		96
57)	Ethylbenzene	19.180	91	1074912	10.79	ppbv		93
58)	p- & m-Xylenes	19.323	91	1791222	14.58	ppbv		90
59)	o-Xylene	20.104	91	922565	8.09	ppbv		97
60)	Styrene	20.123	104	732225	7.81	ppbv	#	74
61)	Bromoform	20.681	173	614604	9.21	ppbv		97
62)	n-Propylbenzene	21.525	91	1402186	7.80	ppbv		98
63)	Isopropylbenzene	20.756	105	1248103	8.33	ppbv		98
64)	1,1,2,2-Tetrachloroeth...	20.929	83	657460	11.08	ppbv		95
66)	4-Ethyltoluene	21.748	105	1193790	8.05	ppbv		90
67)	1,3,5-Trimethylbenzene	21.835	105	992663	8.50	ppbv		98
68)	tert-Butylbenzene	22.598	119	1177684	8.65	ppbv	#	62
69)	1,2,4-Trimethylbenzene	22.672	105	1025512	8.37	ppbv	#	92
70)	sec-Butylbenzene	23.063	105	1516915	7.36	ppbv	#	99
71)	p-Isopropyltoluene	23.324	119	1279925	7.37	ppbv	#	99
72)	1,3-Dichlorobenzene	23.497	146	726449	8.48	ppbv		95
73)	1,4-Dichlorobenzene	23.684	146	702874	8.28	ppbv		95
74)	Benzyl chloride	23.832	126	193803	8.96	ppbv	#	1
75)	n-Butylbenzene	24.118	91	1095748	6.90	ppbv	#	88
76)	1,2-Dichlorobenzene	24.378	146	698910	8.12	ppbv		96
77)	1,2,4-Trichlorbenzene	27.120	180	293161	8.06	ppbv		98
78)	Hexachlorobutadiene	27.393	225	572979	5.85	ppbv		98
79)	Naphthalene	27.511	128	638545	6.99	ppbv		97

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

Quantitation Report (QT Reviewed)

Data Path : D:\031823A\
Data File : TO298046.D
Acq On : 18 Mar 2023 11:39 am
Operator : VH
Sample : BC31255-BS1
Misc : QBTO1031823A LCS
ALS Vial : 44 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 18 12:12:26 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration



York Analytical Canister Batch Certification Report

Cleaning Batch ID: 5607

Technician: Veresia
Heating Unit: 3
Batch Cleaning Date: 3/11/2023
Cleaning Cycles: 15
Cert Run Analysis Date: 3/14/2023 3:39:00 PM
Method Blank SN: 23991
Certification Date: 3/15/2023
CertificationRunID: 5975C_BC30720

Hardware SN	type	Analyzed	Cert Run. ID	File ID	Cert Time		
10722	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/11/2023 2:00:36 PM	Fin.Pressure: -30 3/13/2023 9:24:56 AM	Pass:	**Yes**
18296	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/11/2023 2:00:45 PM	Fin.Pressure: -30 3/13/2023 9:24:59 AM	Pass:	**Yes**
18299	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/11/2023 2:00:44 PM	Fin.Pressure: -30 3/13/2023 9:24:59 AM	Pass:	**Yes**
18312	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/11/2023 2:00:43 PM	Fin.Pressure: -30 3/13/2023 9:25:00 AM	Pass:	**Yes**
19530	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/11/2023 2:00:42 PM	Fin.Pressure: -30 3/13/2023 9:25:05 AM	Pass:	**Yes**
23991	6	Yes	**Leak Check:** Date /Time:	Init.Pressure: -30 3/11/2023 2:00:41 PM	Fin.Pressure: -30 3/13/2023 9:25:05 AM	Pass:	**Yes**
QBS			**5975C_BC30720**	**TO297960.D**	**3/14/2023 3:39:00 PM**		
28299	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/11/2023 2:00:41 PM	Fin.Pressure: -30 3/13/2023 9:25:04 AM	Pass:	**Yes**
28306	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/11/2023 2:00:40 PM	Fin.Pressure: -30 3/13/2023 9:25:04 AM	Pass:	**Yes**
28838	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/11/2023 2:00:39 PM	Fin.Pressure: -30 3/13/2023 9:25:03 AM	Pass:	**Yes**
37791	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/11/2023 2:00:39 PM	Fin.Pressure: -30 3/13/2023 9:25:02 AM	Pass:	**Yes**
41848	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/11/2023 2:00:38 PM	Fin.Pressure: -30 3/13/2023 9:25:02 AM	Pass:	**Yes**
43007	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/11/2023 2:00:38 PM	Fin.Pressure: -30 3/13/2023 9:25:01 AM	Pass:	**Yes**

York Analytical Canister Batch Certification Report

Cleaning Batch ID: 5608

Technician: Veresia
Heating Unit: 2,3
Batch Cleaning Date: 3/13/2023
Cleaning Cycles: 7
Cert Run Analysis Date: 3/13/2023 3:02:00 PM
Method Blank SN: 10041
Certification Date: 3/15/2023
CertificationRunID: 5975C_BC30720

Hardware SN	type	Analyzed	Cert Run. ID	File ID	Cert Time			
10041	6	Yes	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:08 AM	Fin.Pressure: -30 3/15/2023 1:23:43 PM	Pass:	**Yes**	
QBS			**5975C_BC30720**	**TO297940.D**	**3/13/2023 3:02:00 PM**			
15525	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:09 AM	Fin.Pressure: -30 3/15/2023 1:23:55 PM	Pass:	**Yes**	
16694	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:24 AM	Fin.Pressure: -30 3/15/2023 1:23:56 PM	Pass:	**Yes**	
16695	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:22 AM	Fin.Pressure: -30 3/15/2023 1:23:56 PM	Pass:	**Yes**	
17349	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:26 AM	Fin.Pressure: -30 3/15/2023 1:23:57 PM	Pass:	**Yes**	
17352	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:27 AM	Fin.Pressure: -30 3/15/2023 1:23:57 PM	Pass:	**Yes**	
18295	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:28 AM	Fin.Pressure: -30 3/15/2023 1:23:58 PM	Pass:	**Yes**	
19529	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:29 AM	Fin.Pressure: -30 3/15/2023 1:24:00 PM	Pass:	**Yes**	
23800	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:32 AM	Fin.Pressure: -30 3/15/2023 1:24:13 PM	Pass:	**Yes**	
23990	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:31 AM	Fin.Pressure: -30 3/15/2023 1:24:12 PM	Pass:	**Yes**	
24112	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:33 AM	Fin.Pressure: -30 3/15/2023 1:24:10 PM	Pass:	**Yes**	
28316	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:47 AM	Fin.Pressure: -30 3/15/2023 1:24:09 PM	Pass:	**Yes**	
28845	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:19 AM	Fin.Pressure: -30 3/15/2023 1:24:08 PM	Pass:	**Yes**	
28851	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:17 AM	Fin.Pressure: -30 3/15/2023 1:24:07 PM	Pass:	**Yes**	
28854	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:17 AM	Fin.Pressure: -30 3/15/2023 1:24:06 PM	Pass:	**Yes**	
37794	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:16 AM	Fin.Pressure: -30 3/15/2023 1:24:05 PM	Pass:	**Yes**	
41842	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:15 AM	Fin.Pressure: -30 3/15/2023 1:24:04 PM	Pass:	**Yes**	
41846	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:14 AM	Fin.Pressure: -30 3/15/2023 1:24:03 PM	Pass:	**Yes**	
42992	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:14 AM	Fin.Pressure: -30 3/15/2023 1:24:02 PM	Pass:	**Yes**	
43005	6	No	**Leak Check:** Date /Time:	Init.Pressure: -30 3/13/2023 9:37:36 AM	Fin.Pressure: -30 3/15/2023 1:24:01 PM	Pass:	**Yes**	

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297960.D
Acq On : 14 Mar 2023 3:39 pm
Operator : VH
Sample : BC30720-BLK4
Misc : QBTO1031423A SN:23991 BATCH:5607
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 16:33:29 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

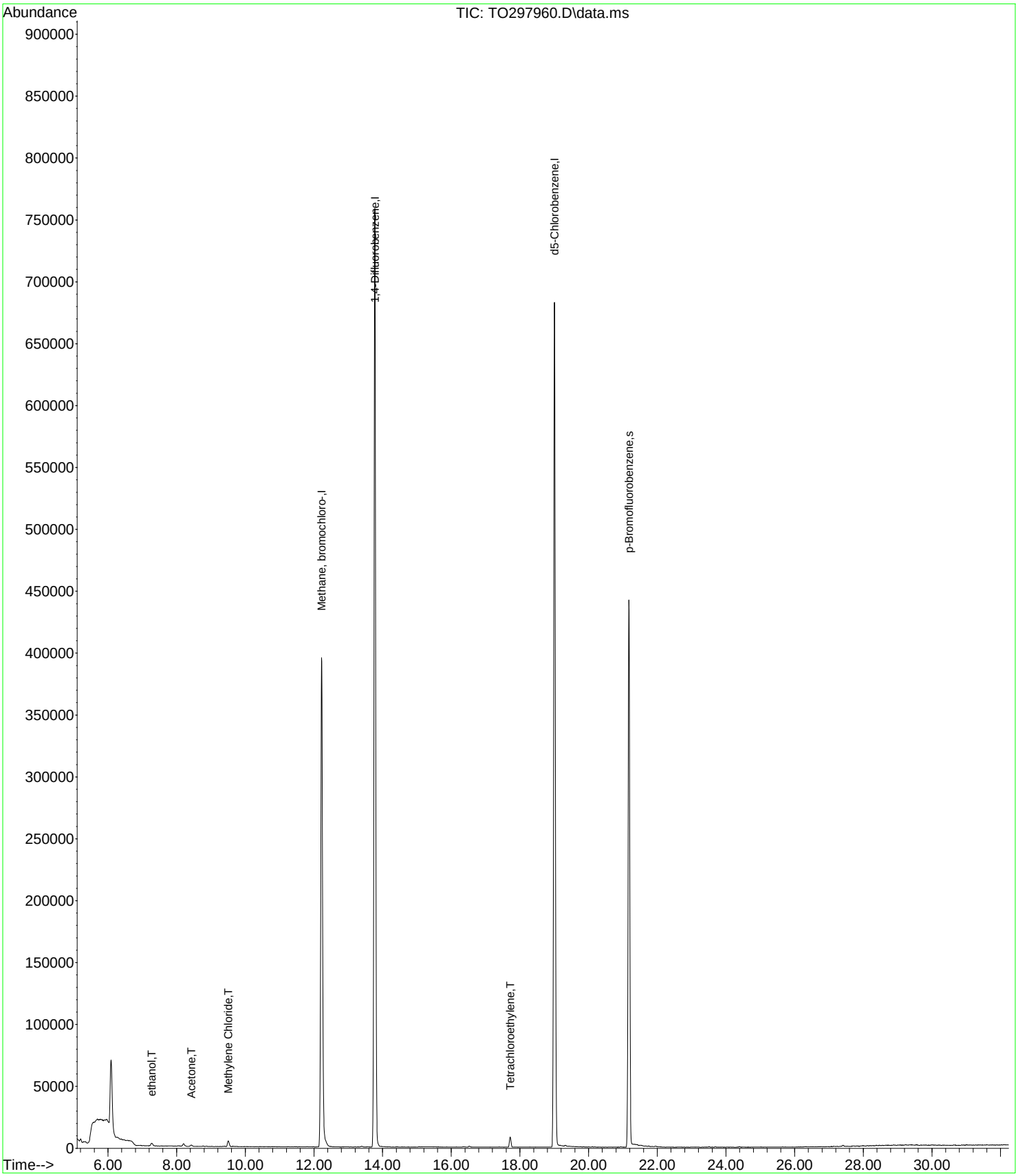
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.220	49	320726	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	1086558	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.007	117	716207	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	245614	7.42	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 74.20%			
Target Compounds						Qvalue
10) ethanol	7.270	45	2150	0.25	ppbv #	75
15) Acetone	8.424	43	2940	0.06	ppbv	90
19) Methylene Chloride	9.504	49	5303	0.16	ppbv	95
51) Tetrachloroethylene	17.716	166	4216	0.06	ppbv	98

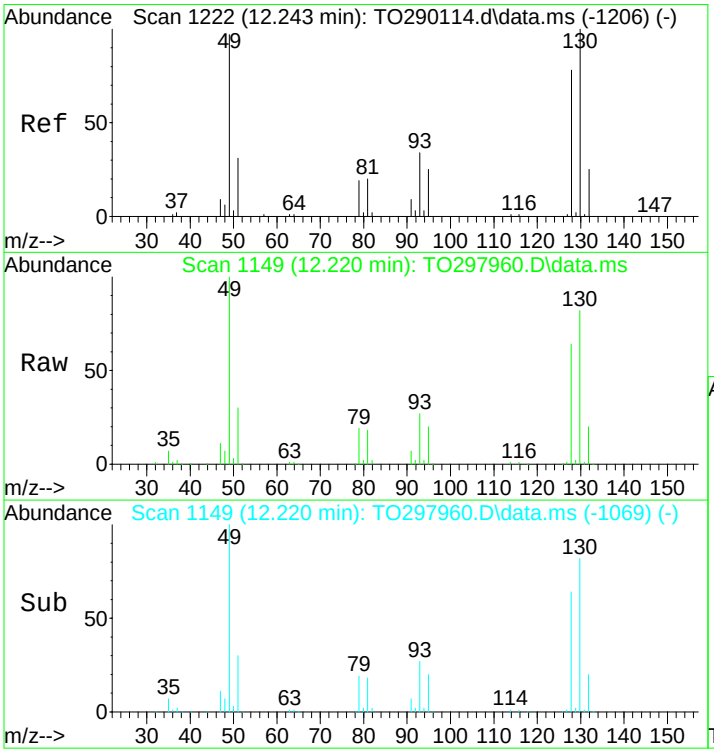
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\031423A\
Data File : TO297960.D
Acq On : 14 Mar 2023 3:39 pm
Operator : VH
Sample : BC30720-BLK4
Misc : QBTO1031423A SN:23991 BATCH:5607
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 16:33:29 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

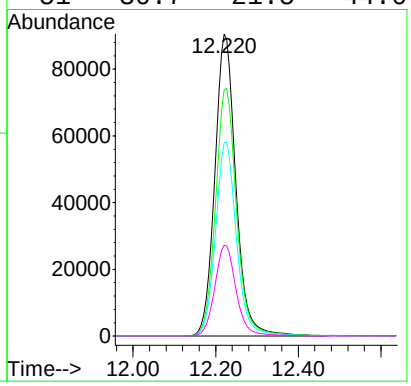


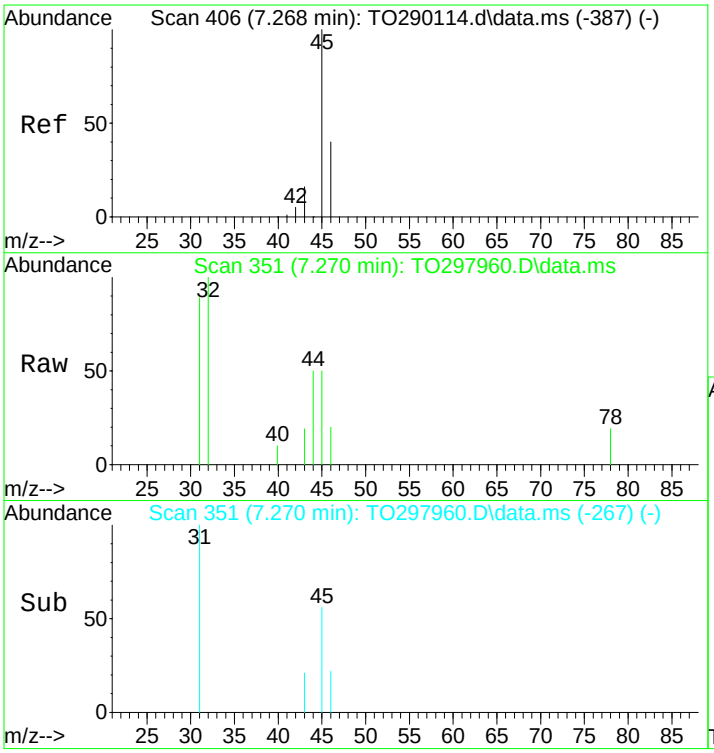


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.220 min Scan# 1149
Delta R.T. -0.004 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion: 49 Resp: 320726

Ion	Ratio	Lower	Upper
49	100		
130	82.5	44.5	92.3
128	64.2	34.7	72.1
51	30.7	21.5	44.6

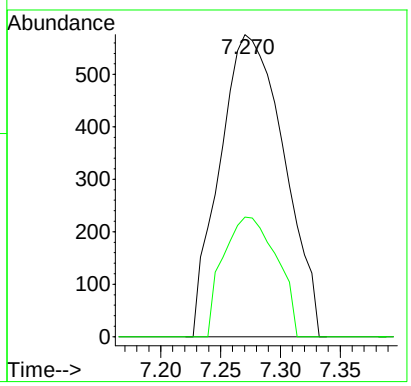


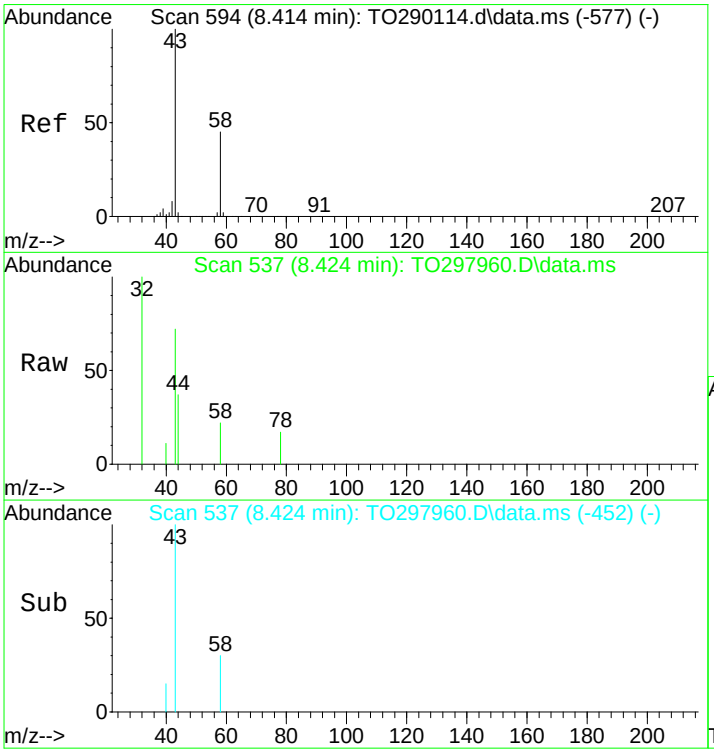


#10
ethanol
Concen: 0.25 ppbv
RT: 7.270 min Scan# 351
Delta R.T. 0.021 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion: 45 Resp: 2150

Ion	Ratio	Lower	Upper
45	100		
46	33.0	40.0	60.0#

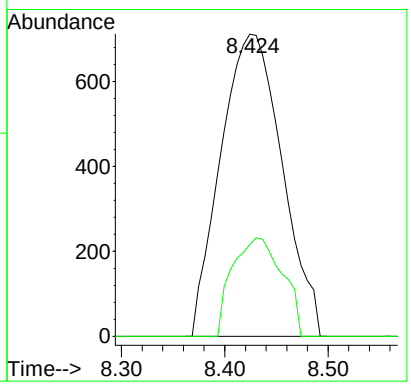


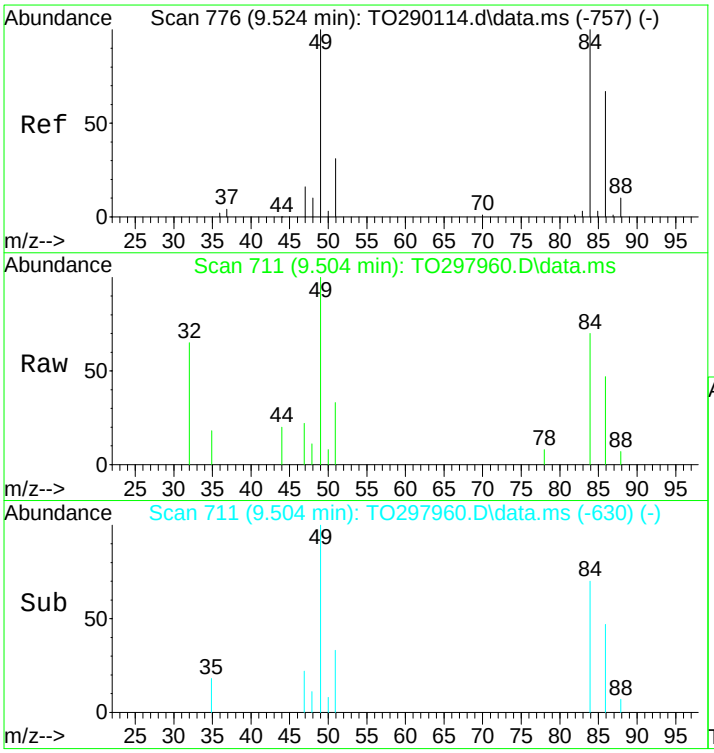


#15
Acetone
Concen: 0.06 ppbv
RT: 8.424 min Scan# 537
Delta R.T. 0.027 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion: 43 Resp: 2940

Ion	Ratio	Lower	Upper
43	100		
58	26.5	20.7	42.9

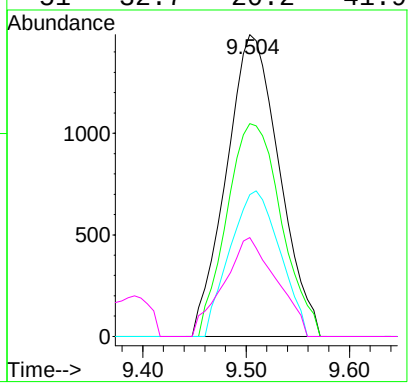


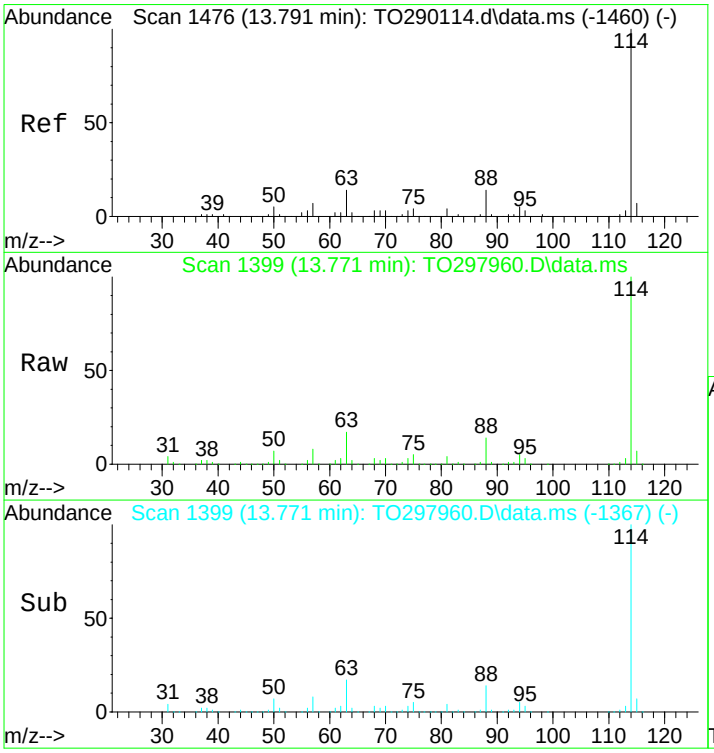


#19
Methylene Chloride
Concen: 0.16 ppbv
RT: 9.504 min Scan# 711
Delta R.T. 0.003 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion: 49 Resp: 5303

Ion	Ratio	Lower	Upper
49	100		
84	72.5	50.1	104.0
86	45.5	32.2	66.8
51	32.7	20.2	41.9

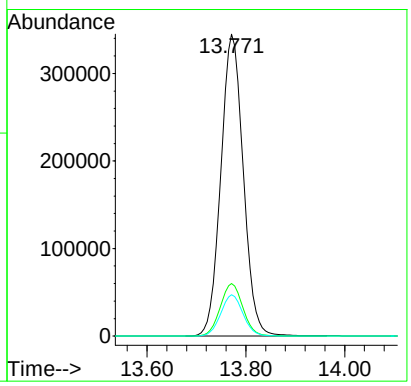


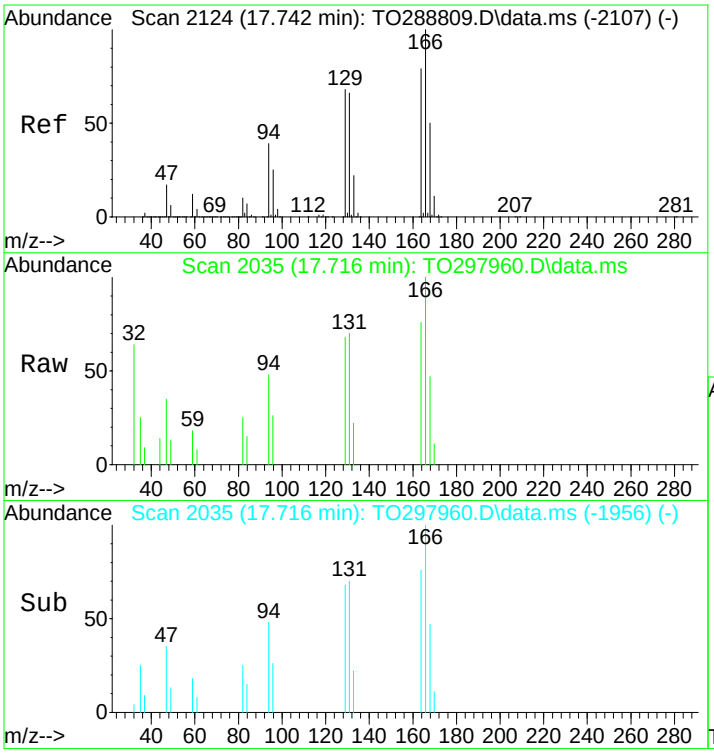


#38
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.771 min Scan# 1399
Delta R.T. -0.004 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion:114 Resp: 1086558

Ion	Ratio	Lower	Upper
114	100		
63	17.6	14.0	29.2
88	13.6	11.2	23.2

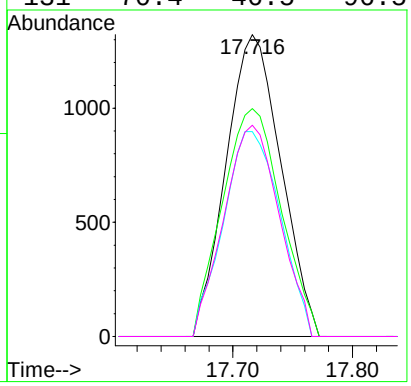


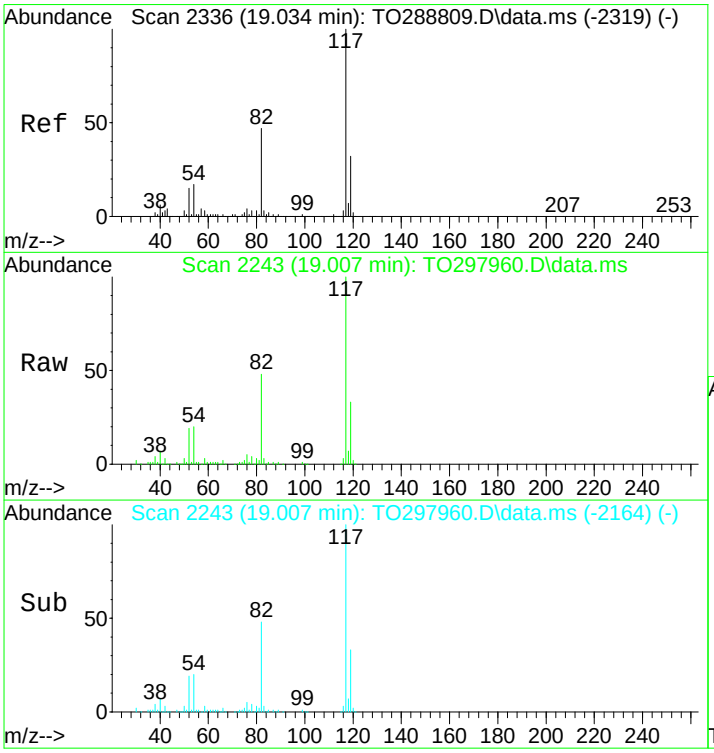


#51
Tetrachloroethylene
Concen: 0.06 ppbv
RT: 17.716 min Scan# 2035
Delta R.T. -0.010 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion:166 Resp: 4216

Ion	Ratio	Lower	Upper
166	100		
164	81.0	51.4	106.8
129	70.2	47.0	97.6
131	70.4	46.5	96.5

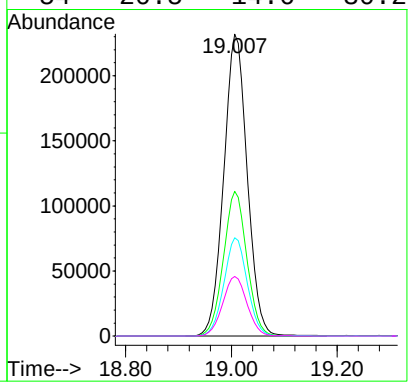


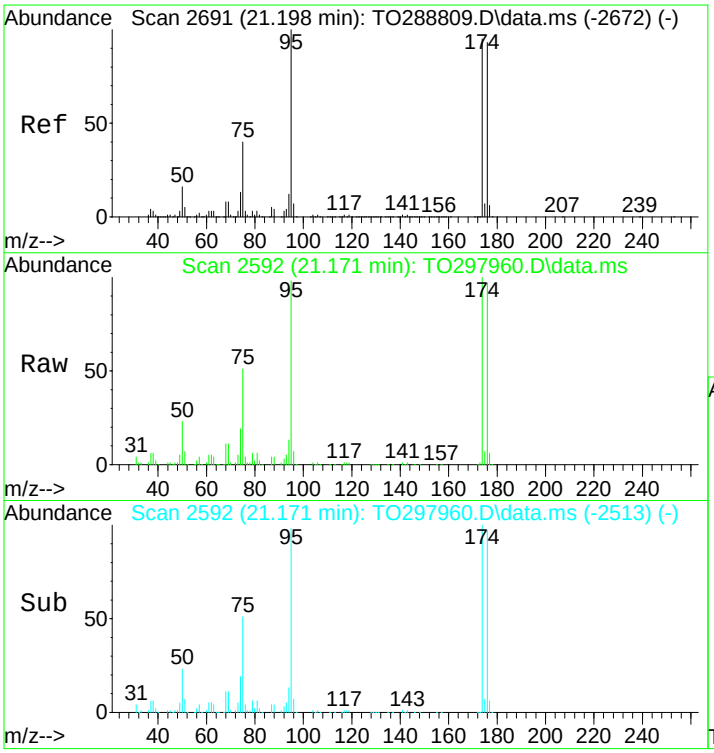


#54
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.007 min Scan# 2243
Delta R.T. -0.010 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion:117 Resp: 716207

Ion	Ratio	Lower	Upper
117	100		
82	48.0	38.7	80.5
119	32.5	20.3	42.3
54	20.5	14.6	30.2

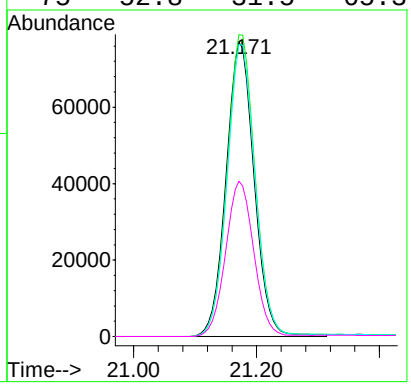




#65
p-Bromofluorobenzene
Concen: 7.42 ppbv
RT: 21.171 min Scan# 2592
Delta R.T. -0.010 min
Lab File: TO297960.D
Acq: 14 Mar 2023 3:39 pm

Tgt Ion: 95 Resp: 245614

Ion	Ratio	Lower	Upper
95	100		
174	102.3	50.0	103.8
176	98.5	48.2	100.2
75	52.8	31.5	65.3



Quantitation Report (QT Reviewed)

Data Path : D:\031323B\
Data File : TO297940.D
Acq On : 13 Mar 2023 3:02 pm
Operator : VH
Sample : BC30720-BLK5
Misc : QBTO1031323A SN:10041 BATCH:5608
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 12:44:53 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Methane, bromochloro-	12.227	49	222264	10.00	ppbv	0.00
38) 1,4-Difluorobenzene	13.771	114	648956	10.00	ppbv	0.00
54) d5-Chlorobenzene	19.007	117	450255	10.00	ppbv	-0.01
System Monitoring Compounds						
65) p-Bromofluorobenzene	21.171	95	166528	8.00	ppbv	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 80.00%			

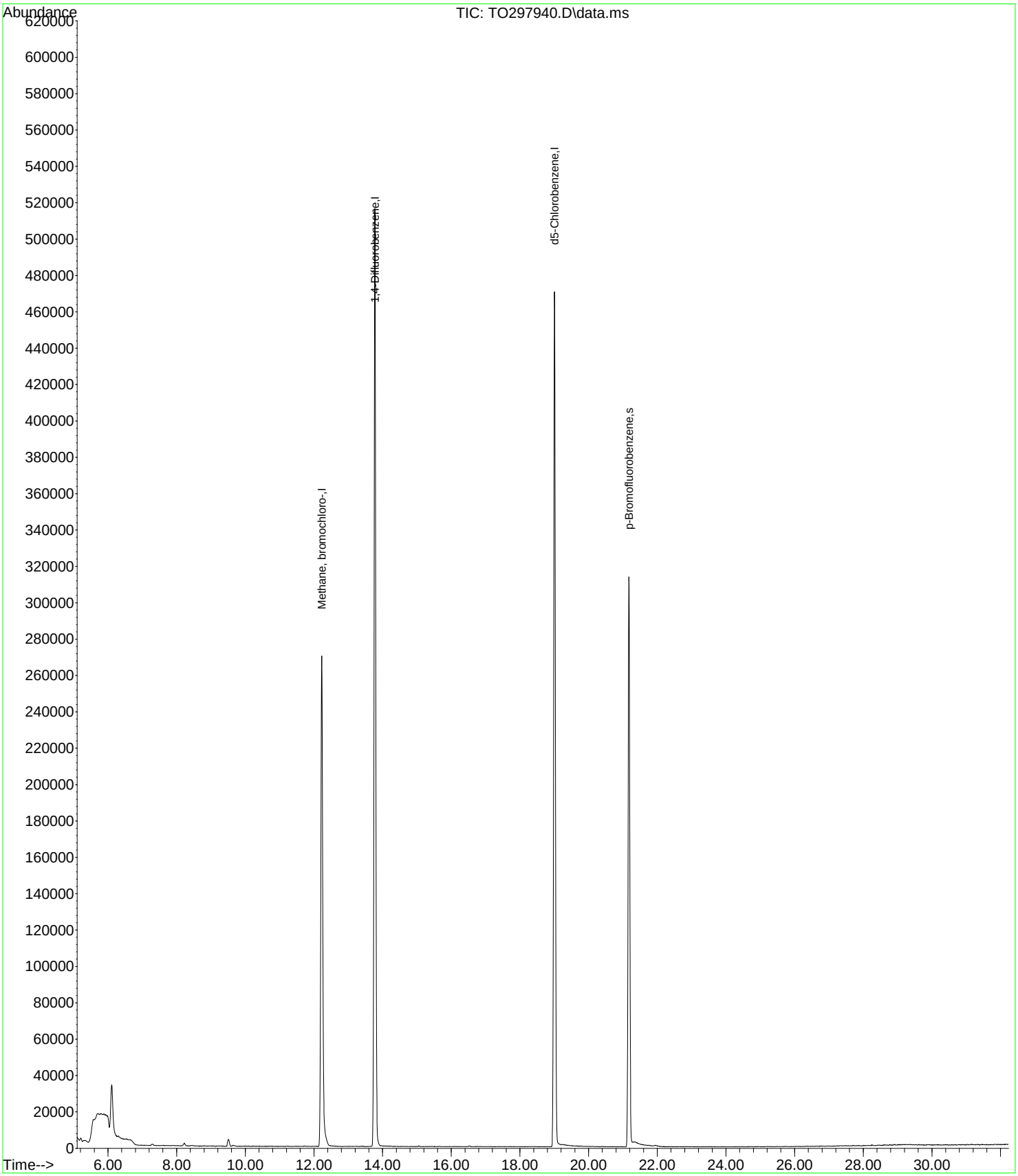
Target Compounds Qvalue

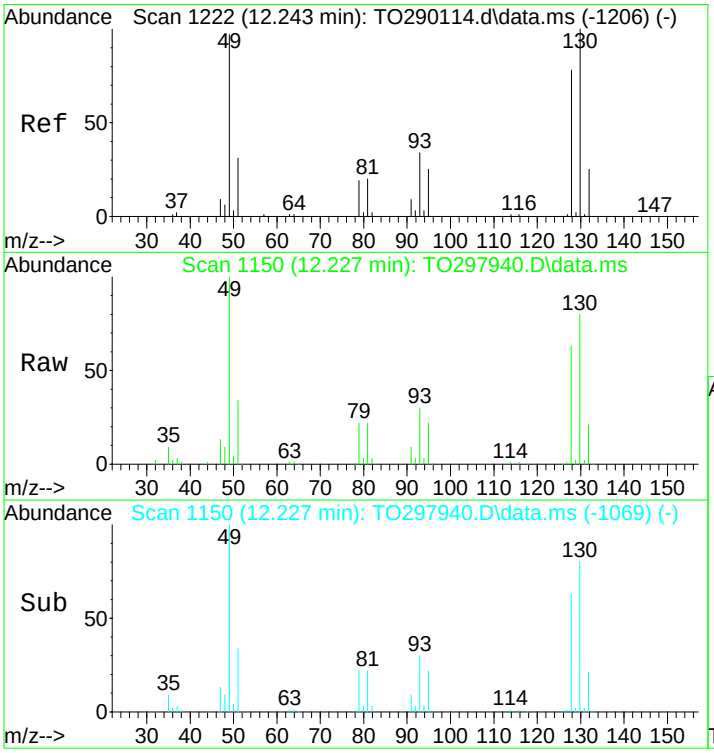
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\031323B\
Data File : TO297940.D
Acq On : 13 Mar 2023 3:02 pm
Operator : VH
Sample : BC30720-BLK5
Misc : QBTO1031323A SN:10041 BATCH:5608
ALS Vial : 22 Sample Multiplier: 1
InstName : 5975C

Quant Time: Mar 14 12:44:53 2023
Quant Method : C:\msdchem\1\methods\AIR160.M
Quant Title : TO15 VOC Analysis
QLast Update : Fri Feb 10 06:43:41 2023
Response via : Initial Calibration

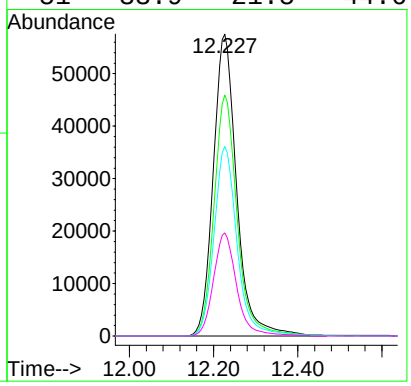


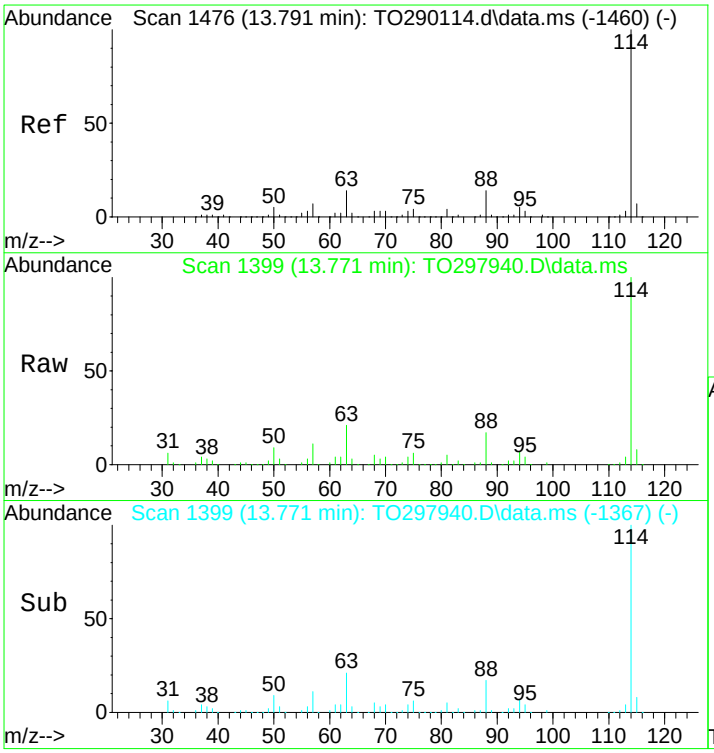


#1
Methane, bromochloro-
Concen: 10.00 ppbv
RT: 12.227 min Scan# 1150
Delta R.T. 0.003 min
Lab File: TO297940.D
Acq: 13 Mar 2023 3:02 pm

Tgt Ion: 49 Resp: 222264

Ion	Ratio	Lower	Upper
49	100		
130	79.1	44.5	92.3
128	61.9	34.7	72.1
51	33.9	21.5	44.6

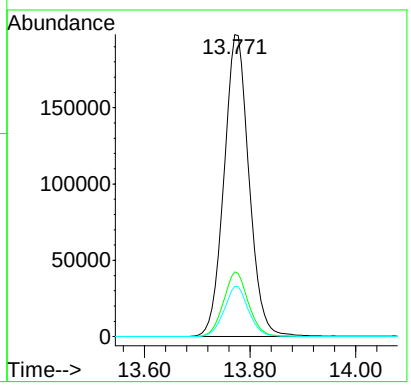


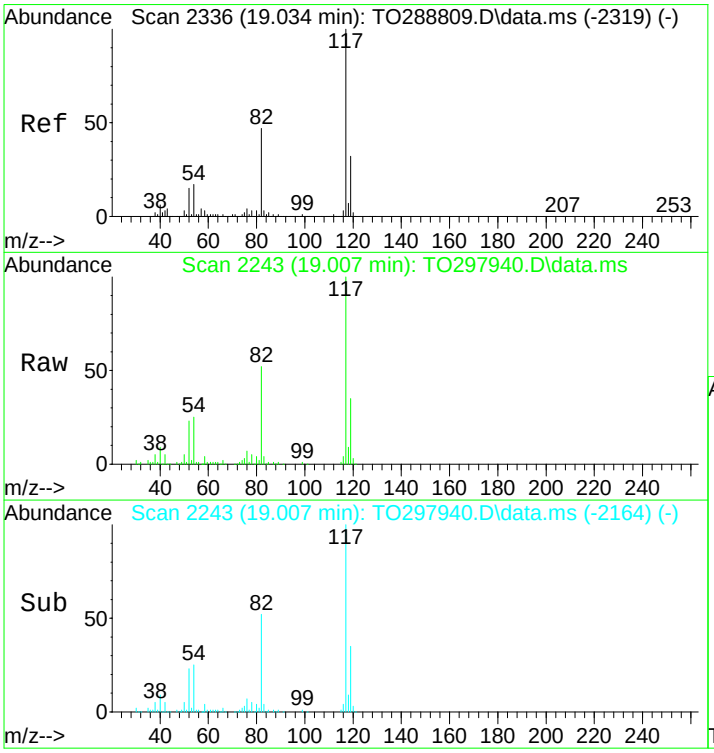


#38
1,4-Difluorobenzene
Concen: 10.00 ppbv
RT: 13.771 min Scan# 1399
Delta R.T. -0.004 min
Lab File: TO297940.D
Acq: 13 Mar 2023 3:02 pm

Tgt Ion:114 Resp: 648956

Ion	Ratio	Lower	Upper
114	100		
63	21.3	14.0	29.2
88	16.2	11.2	23.2

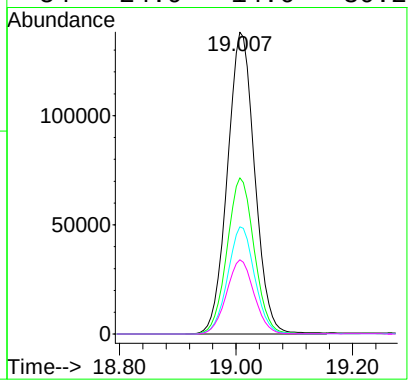


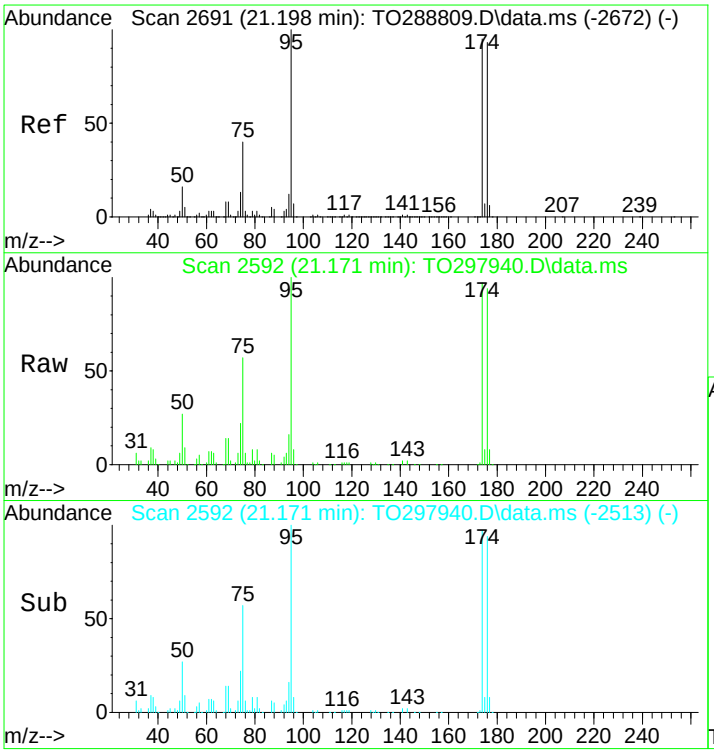


#54
d5-Chlorobenzene
Concen: 10.00 ppbv
RT: 19.007 min Scan# 2243
Delta R.T. -0.010 min
Lab File: TO297940.D
Acq: 13 Mar 2023 3:02 pm

Tgt Ion:117 Resp: 450255

Ion	Ratio	Lower	Upper
117	100		
82	51.8	38.7	80.5
119	35.1	20.3	42.3
54	24.9	14.6	30.2

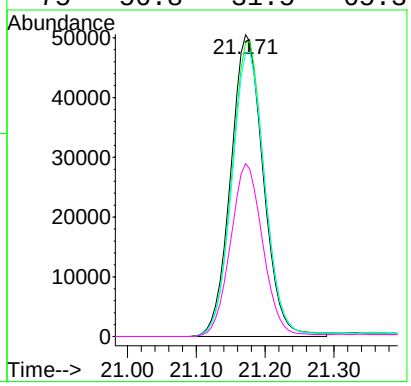




#65
p-Bromofluorobenzene
Concen: 8.00 ppbv
RT: 21.171 min Scan# 2592
Delta R.T. -0.010 min
Lab File: TO297940.D
Acq: 13 Mar 2023 3:02 pm

Tgt Ion: 95 Resp: 166528

Ion	Ratio	Lower	Upper
95	100		
174	98.7	50.0	103.8
176	95.0	48.2	100.2
75	56.8	31.5	65.3



BENCHSHEETS

SDG: 23C0979

CLASS: AIR

METHOD: EPA TO-15

PREPARATION BENCH SHEET-AIR : BC31240

Preparation Date: 03/11/2023 11:30

York Analytical Laboratories, Inc. - Stratford

Printed: 3/21/2023 6:06:12AM

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
23C0608-01 A	Volatile Organics, EPA TO15 Full List	-7.6	+5.2			
23C0608-02RE1 A	Volatile Organics, EPA TO15 Full List	-5.68	+6			From BC31308 by AC on 03
23C0608-04 A	Volatile Organics, EPA TO15 Full List	-4.96	+5.5			From BC31308 by AC on 03
23C0979-01 A	VOA, TO15 MASTER	-10.54	+5.1			From BC31063 by AC on 03
23C0979-02 A	VOA, TO15 MASTER	-6.55	+6			From BC31063 by AC on 03
23C0979-03 A	VOA, TO15 MASTER	-7.91	+5.4			From BC31063 by AC on 03
23C0979-04 A	Volatile Organics, EPA TO15 Full List	-3.93	+5.00			Added for BatchQC in: BC3
23C0979-04 A	VOA, TO15 MASTER	-3.93	+5			From BC31063 by AC on 03
BC31240-BLK1	QC	NA	NA			
BC31240-BS1	QC	NA	NA		S23C014	
BC31240-DUP1	QC	-3.93	+5		23C0979-04	

Preparations Performed by AC **Date:** 03/17/2023 14:30

BENCHSHEETS

SDG: 23C0979

CLASS: AIR

METHOD: EPA TO-15

PREPARATION BENCH SHEET-AIR : BC31255

Preparation Date: 03/18/2023 10:00

York Analytical Laboratories, Inc. - Stratford

Printed: 3/21/2023 10:30:41AM

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
23C0977-05 A	VOA, TO15 MASTER	NA	NA			
23C0978-01 A	VOA, TO15 MASTER	NA	NA			
23C0978-02 A	VOA, TO15 MASTER	NA	NA			
23C0978-03 A	VOA, TO15 MASTER	NA	NA			
23C0978-04 A	VOA, TO15 MASTER	NA	NA			
23C0978-05 A	VOA, TO15 MASTER	NA	NA			
23C0978-06 A	VOA, TO15 MASTER	NA	NA			
23C0978-07 A	VOA, TO15 MASTER	NA	NA			
23C0978-08 A	VOA, TO15 MASTER	NA	NA			
23C0978-09 A	VOA, TO15 MASTER	NA	NA			From BC31258 by VH on 03
23C0979-05 A	VOA, TO15 MASTER	-6.14	+5.40			From BC31258 by VH on 03
BC31255-BLK1	QC	NA	NA			
BC31255-BS1	QC	NA	NA		S23C014	
BC31255-DUP1	QC	NA	NA		23C0977-05	

Preparations Performed by VH

Date: 03/18/2023 10:00

YORK ANALYTICAL LABORATORIES INC

Canister Order No.: 5515

Order Created: 3/14/2023

Client: Langan Engineering & Environmental Services (NYC)

Laboratory Analysis Log

Can Order 5515 **Workorder 23C0979**

Instrument: 5975C

	Batch	QC	QC Source	Analyzed	FileID	Analyst
	BC31255	TUN1		3/18/2023 10:02:00 AM	TO298044.D	VH
	BC31255	CCV1		3/18/2023 10:51:00 AM	TO298045.D	VH
	BC31255	BS1		3/18/2023 11:39:00 AM	TO298046.D	VH
	BC31255	BLK1		3/18/2023 1:55:00 PM	TO298048.D	VH
	BC31255	DUP1	23C0977-05	3/19/2023 7:19:00 PM	TO298071.D	VH

SampID	Analysis	Analyzed	FileID	Analyst
23C0979-05	VOA, TO15 MASTER	3/18/2023 6:43:00 PM	TO298052.D	VH

Instrument: TO15_AIR2

	Batch	QC	QC Source	Analyzed	FileID	Analyst
	BC31240	TUN1		3/17/2023 2:17:00 PM	TQ224338.D	AC
	BC31240	CCV1		3/17/2023 3:44:00 PM	TQ224339.D	AC
	BC31240	BS1		3/17/2023 4:38:00 PM	TQ224340.D	AC
	BC31240	BLK1		3/17/2023 6:42:00 PM	TQ224342.D	AC
	BC31240	DUP1	23C0979-04	3/18/2023 8:57:00 PM	TQ224364.D	VH

SampID	Analysis	Analyzed	FileID	Analyst
23C0979-01	VOA, TO15 MASTER	3/17/2023 8:39:00 PM	TQ224343.D	AC
23C0979-02	VOA, TO15 MASTER	3/17/2023 9:49:00 PM	TQ224344.D	AC
23C0979-03	VOA, TO15 MASTER	3/17/2023 10:58:00 PM	TQ224345.D	AC
23C0979-04	Volatile Organics, EPA TO15 Full List	3/18/2023 12:08:00 AM	TQ224346.D	AC
23C0979-04	VOA, TO15 MASTER	3/18/2023 12:08:00 AM	TQ224346.D	AC

YORK
ANALYTICAL LABORATORIES INC

Air Sampling Media Request Form

132-02 89th Avenue
Richmond Hill, New York 11418
TEL: *203-325-1371*

Canister Order No.: 5515

Alt Ord No.: 1116257

Order Date: 3/14/2023

Client:

Requested By : lsherman

Company: **Langan Engineering & Environmental Services (NYC)**

Client Contact: Vinicius DePaula

Address: 21 Penn Plaza, 360 West 31st Street
New York, NY 10001

Hardware Needed By: 3/16/2023

Phone: (212) 479-5400

Expected Return Date: 3/30/2023

Project:

Ship Date:

Delivery Method:	**York Courier**
Drop Off Address:	**D/O at office**
Special Instructions / Additional Info:	

Type of Sample:

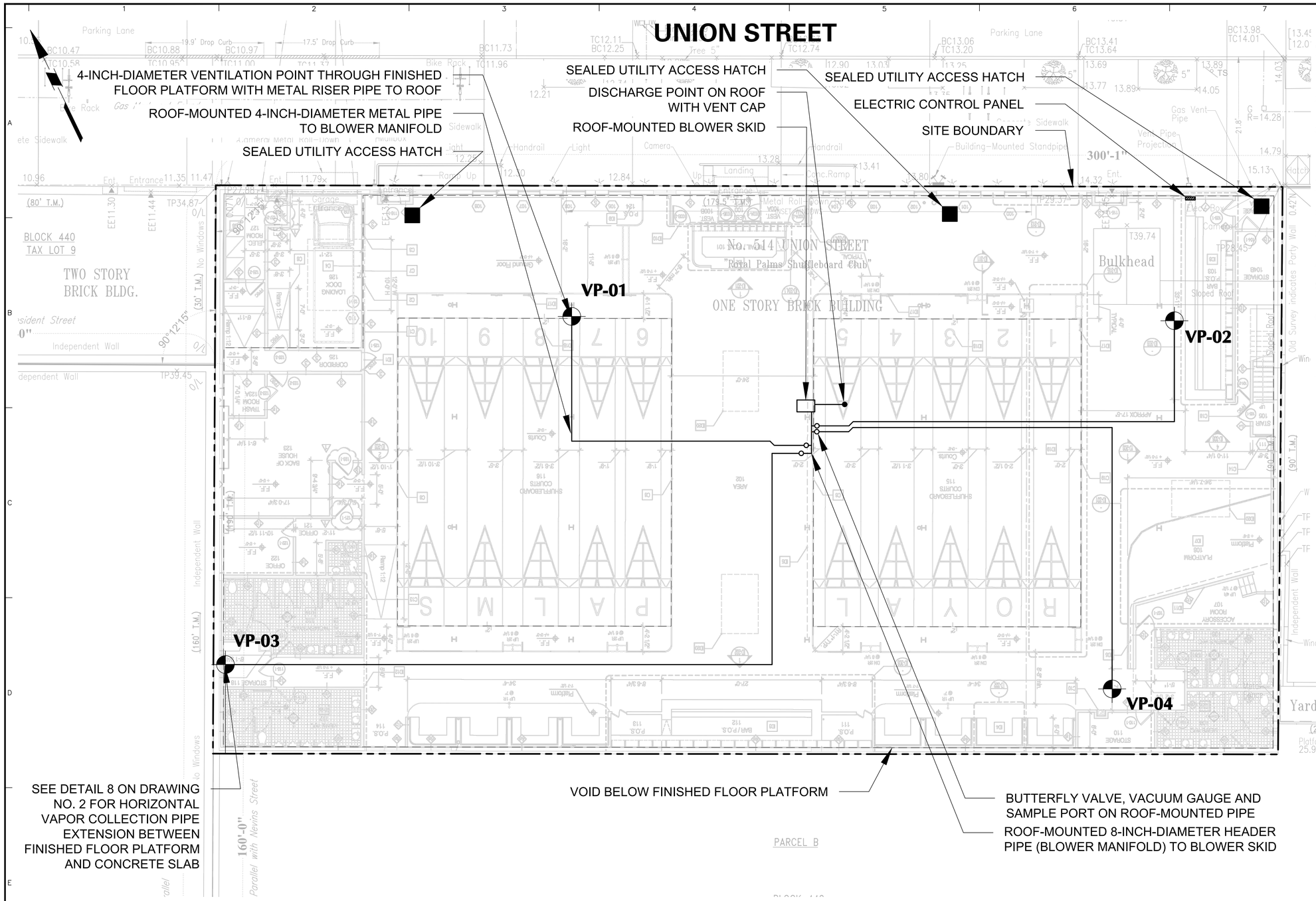
Type	Size	Technique	Flow Rate	Sample Time (hr)	Quantity	IndivCert	DigitalGauge
CANISTER	6	RESTRICTEDSAMPLING		8	6	Yes	No

Hardware Details :

Description	Type	Serial Number	Lab Sample ID	Cert Batch No.
Canister	6	19529	23C0979-03	5608
Canister	6	23991	23C0979-02	5607
Canister	6	28845	23C0979-04	5608
Canister	6	37794		5608
Canister	6	42992	23C0979-01	5608
Canister	6	43005	23C0979-05	5608
FlowController	CS1200E	17897		
FlowController	CS1200E	17898	23C0979-03	
FlowController	CS1200E	17899	23C0979-01	
FlowController	CS1200E	17900	23C0979-05	
FlowController	CS1200E	17903	23C0979-04	
FlowController	CS1200E	17904	23C0979-02	

APPENDIX B

RECORD DRAWINGS



GENERAL NOTES:

1. BASE MAP ADAPTED FROM DRAWING NO. A-001.00, TITLED "PROPOSED GROUND FLOOR PLAN" BY ANDRE TCHELISTCHEFF ARCHITECTS, DATED 13 AUGUST 2013 AND SURVEY BY NEW YORK CITY LAND SURVEYORS, PC, DATED 14 JUNE 2019.
2. DRAWING SHALL NOT BE USED FOR STRUCTURAL, ARCHITECTURAL, UTILITY, OR OTHER REFERENCE EXCEPT FOR THE SOIL VAPOR INTRUSION (SVI) MITIGATION SYSTEM.
3. VAULTS, HATCHES, CRACKS, VOIDS, AND PENETRATIONS IDENTIFIED BY THE ENGINEER ON THE GROUND FLOOR WERE SEALED WITH POLYURETHANE-BASED CAULKING, CEMENT, OR FOAM AND RUBBER WEATHER PROOFING STRIPS.

VENTILATION POINT AND RISER PIPE NOTES:

1. LOCATION OF VENTILATION POINTS WERE MOVED BASED ON SITE CONDITIONS WITH APPROVAL OF THE ENGINEER.
2. AN ELBOW WAS INSTALLED AT VP-03 TO DIRECT AIR FLOW. SEE DETAIL 8.
3. ALL FITTINGS AND CONNECTIONS FOR THE VAPOR COLLECTION AND RISER PIPES ARE 4-INCH-DIAMETER METAL FITTINGS EXCEPT 8-INCH-DIAMETER MANIFOLD.
4. RISER PIPE PENETRATIONS THROUGH THE FINISHED FLOOR PLATFORM ARE SEALED WITH A POLYURETHANE-BASED CAULK.
5. RISER PIPE IS CLEARLY LABELED "CAUTION: DO NOT ALTER SUB-FLOOR VAPOR VENT PIPE" IN EACH ACCESSIBLE AREA AT A MINIMUM OF EVERY 10 LINEAR FEET OF RISER PIPE RUN.
6. SYSTEM INSTALLATION ADHERES TO OCTOBER 2006 FINAL GUIDANCE FOR EVALUATING SOIL VAPOR INTRUSION IN THE STATE OF NEW YORK PREPARED BY THE NEW YORK STATE DEPARTMENT OF HEALTH (NYSDOH) AND SUBSEQUENT UPDATES, AND 2014 NEW YORK CITY MECHANICAL CODE, CHAPTER 5, SECTION MC 512-SUBSLAB SOIL EXHAUST SYSTEMS.
7. POINT OF EXHAUST IS:
   - A. ABOVE THE EAVE OF THE ROOF AND AT LEAST 24-INCHES ABOVE THE SURFACE OF THE ROOF;
   - B. AT LEAST 10 FEET ABOVE GROUND LEVEL;
   - C. AT LEAST 10 FEET AWAY FROM ANY OPERABLE AIR INTAKE THAT IS LESS THAN 2 FEET BELOW THE DISCHARGE POINT; AND
   - D. 10 FEET FROM ANY ADJOINING OR ADJACENT BUILDINGS, HVAC INTAKES, OR HVAC SUPPLY REGISTERS.

12. INSTALLED VENT CAP IS SMITH® NO. 1748 SERIES LOW TYPE VANDAL PROOF VENT CAP.

SCALE: 1 INCH = 8 FEET

Date	Description	No.
–	–	–

REVISIONS

STATE OF NEW YORK · JASON JAMES HAYES · LICENSED PROFESSIONAL ENGINEER · 089491

03/09/2023
DATE SIGNED
PROFESSIONAL ENGINEER
STATE LIC. No. 089491

LANGAN
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor
New York, NY 10001
T: 212.479.5400 F: 212.479.5444 www.langan.com

Project: 514 UNION STREET
BLOCK No. 440, LOT No. 12
BROOKLYN
KINGS COUNTY NEW YORK

Drawing Title: SVI MITIGATION SYSTEM - AS BUILT

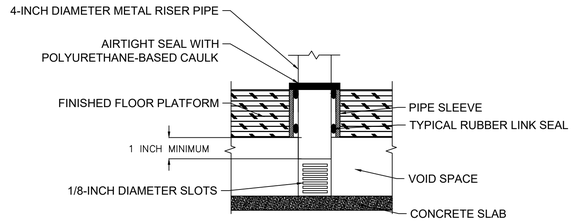
Project No. 170361305
Date 11/28/2022
Drawn By AJ
Checked By PM

Drawing No. 1
Sheet 1 of 2

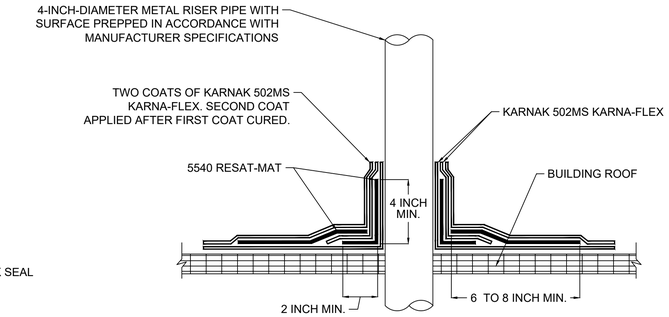
LANGAN
PROJECT NO. 170361305

Filename: \\langan.com\data\NYC\data3\170361301\Cadd Data - 170361301\SheetFiles\Environmental\514 Union Street\CCR\SSD Design\SVI Mitigation System Plan - As Built.dwg Date: 3/9/2023 Time: 14:15 User: acaelwaerts Style Table: Langan.stb Layout: SVI Mitigation System Plan

© 2023 LANGAN

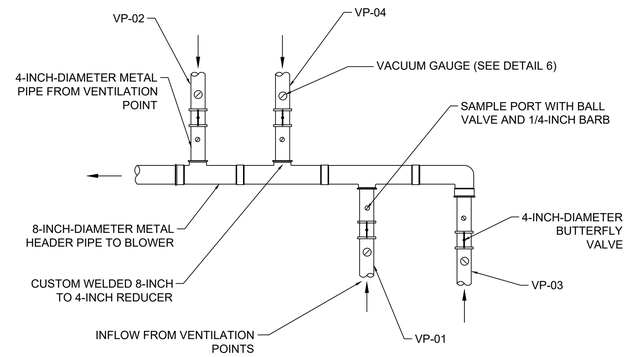


DETAIL 1: TYPICAL VAPOR COLLECTION PIPE TO RISER PIPE CONNECTION (SECTION VIEW)
NOT TO SCALE



NOTE: DETAIL USED IN CONJUNCTION WITH KARNAK® GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.

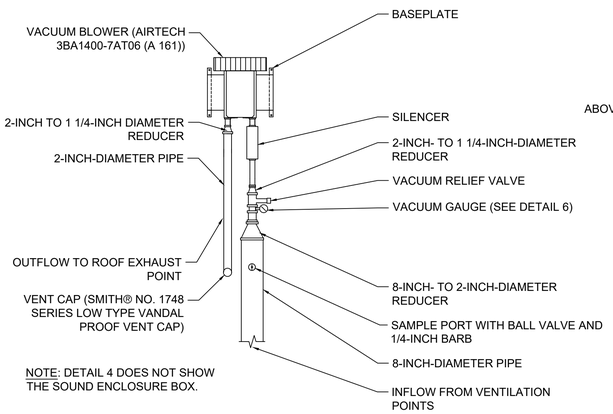
DETAIL 2: ROOF PENETRATION (SECTION VIEW)
NOT TO SCALE



DETAIL 3: TYPICAL BLOWER MANIFOLD ASSEMBLY
NOT TO SCALE

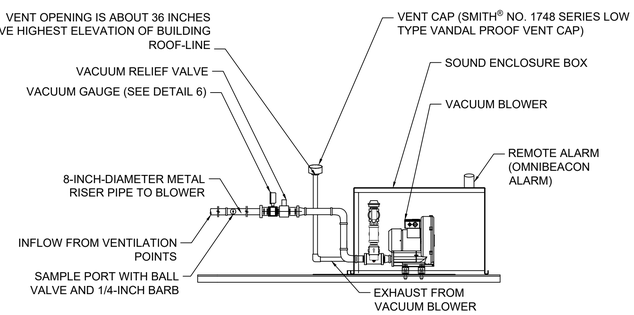
VACUUM BLOWER NOTES:

1. THE BLOWER ASSEMBLY (AIRTECH 3BA1400-7AT06 [A 161]) PROVIDES, AT CONTINUOUS OPERATION, A MINIMUM FLOW RATE OF 60 CUBIC FEET PER MINUTE (CFM) AND A VACUUM OF 10 INCHES OF WATER COLUMN (IN. WC) AT THE BLOWER.
2. THE BLOWER SCHEMATIC IS SHOWN TO ILLUSTRATE THE COMPONENTS AND THE GENERAL LOCATION IN THE PIPE RUN. REFER TO BLOWER SPECIFICATIONS AND CUT SHEETS FOR ADDITIONAL DETAILS.
3. OMNIBEACON REMOTE ALARM IS CONNECTED TO A CELLULAR NETWORK AND CAPABLE OF NOTIFYING MULTIPLE PARTIES VIA EMAIL, TEXT MESSAGE, AND PHONE CALL IF THE VACUUM BLOWER STOPS OPERATING.



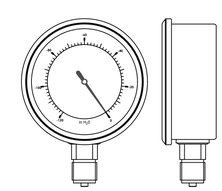
NOTE: DETAIL 4 DOES NOT SHOW THE SOUND ENCLOSURE BOX.

DETAIL 4: VACUUM BLOWER ASSEMBLY (PLAN VIEW)
NOT TO SCALE

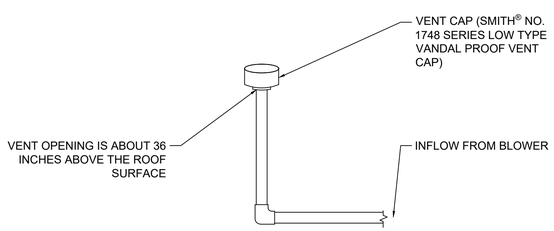


DETAIL 5: VACUUM BLOWER ASSEMBLY (SECTION VIEW)
NOT TO SCALE

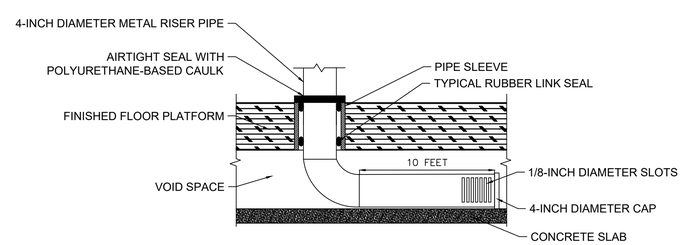
NOTE: WIKA® TYPE 611.10 LOW PRESSURE CAPSULE GAUGE RANGING FROM -100 TO 0 in H_20



DETAIL 6: VACUUM GAUGE
NOT TO SCALE



DETAIL 7: TYPICAL DISCHARGE POINT (SECTION VIEW)
NOT TO SCALE



DETAIL 8: VP-03 HORIZONTAL VAPOR COLLECTION PIPE TO RISER PIPE CONNECTION (SECTION VIEW)
NOT TO SCALE

Date	Description	No.
–	–	–

REVISIONS

STATE OF NEW YORK · JASON JAMES HAYES · LICENSE NUMBER 089491 · PROFESSIONAL ENGINEER

SIGNATURE 03/09/2023 DATE SIGNED

PROFESSIONAL ENGINEER
STATE LIC. No. 089491

LANGAN
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor
New York, NY 10001
T: 212.479.5400 F: 212.479.5444 www.langan.com

Project
514 UNION STREET
BLOCK No. 440, LOT No. 12
BROOKLYN
KINGS COUNTY NEW YORK

Drawing Title
SVI MITIGATION SYSTEM DETAILS

Project No. 170361305
Date 11/28/2022
Drawn By AJ
Checked By PM

Drawing No. 2
Sheet 2 of 2

LANGAN
PROJECT NO. 170361305

© 2021 Langan

Filename: \\langan.com\data\NYC\data3\170361301\Cadd Data - 170361301\Sheetfiles\Environmental\514 Union Street\CCR\SSD Design\SVI Mitigation System Plan - As Built.dwg Date: 3/9/2023 Time: 14:16 User: acaelwaerts Style Table: Langan.stb Layout: SVI Mitigation System-Details

APPENDIX C

SYSTEM COMPONENT MANUALS

LANGAN PROJECT NO. 170361305	
SPEC. SECTION NO. N/A	
FILE NO. Airtech Job # 1979	SUBMITTAL NO. Blower/Alarm Submimttal
DATE RECEIVED: 2/14/2022	
X	REVIEWED
	EXCEPTION TAKEN AS NOTED
	REVISE & RESUBMIT
	RESUBMIT SPECIFIED ITEM
	INCOMPLETE – RESUBMIT

Review is only for conformance with the design intent of information developed by Langan and issued for the Project. Contractor is responsible for performance of the work in accordance with the requirements of the Contract Documents and for all fabrication processes, means, methods, techniques, sequences and procedures of construction, coordination with the work of other contractors and subcontractors and verifying all dimensions and quantities. Contractor is also responsible for performing the work in a safe manner. Action does not authorize changes to contract requirements unless otherwise stated in a separate letter or change order. Langan's review of a specific item does not indicate approval of an assembly of which the item is a component.

LANGAN

REVIEWED BY: VDP

DATE RETURNED: 2/24/2022

INNOVATION | DESIGN | SOLUTION

AIRTECH®

AN ISO 9001:2015 CERTIFIED COMPANY GROUP

301 Veterans Blvd.
Rutherford, NJ 07070
Tel: (201) 569-1173 Fax: (201) 569-1696

PROJECT SUBMITTAL
514 UNION STREET
BROOKLYN, NY

JOB # 1979
SUB-SLAB DEPRESSURIZTION SYSTEM
1-VE-3BA1400-1.0-OMNIBEACON

PROPRIETARY AND CONFIDENTIAL. THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS AND DRAWINGS IS THE PROPRIETARY PROPERTY OF AIRTECH VACUUM INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF AIRTECH VACUUM INC. IS PROHIBITED.

Specializing in compressed air and vacuum systems

EQUIPMENT DATA

INNOVATION | DESIGN | SOLUTION
AIRTECH GROUP
AN ISO 9001:2015 CERTIFIED COMPANY

301 Veterans Blvd.
Rutherford, NJ 07070

PROJECT 514 UNION STREET
BROOKLYN, NY
CUSTOMER LANGAN ENGINEERING

SUB-SLAB VDEPRESSURIZATION SYSTEM

SIMPLEX, BASE MTD. PACKAGE

MODEL	1-VE-3BA1400-1		
PUMP MOD.	3BA1400-7AT06		
CAPACITY (EACH)	105	CFM @	DISPL
CAPACITY (EACH)	60	CFM @	10"WC
DRIVE TYPE	DIRECT		
OPERATING SPEED	3450	RPM	

COMPLETE WITH INLET MUFFLER
DISCHARGE MUFFLER, RELIEF VALVE
INLET FILTER W/WIRE MESH ELEMENT
AIR DILUTION VALVE W/SCREEN
SOUND ENCLOSURE

SEPARATOR / TANK

VOLUME	N/A	GALL'S.
STYLE		
RATED VACUUM		
FINISH		

MISCELLANEOUS:

SUPPLIED LOOSE FOR FIELD INSTALLATION:
(1) SET OF FLEX CONNECTORS

MOTOR

MOTOR HORSEPOWER	0.96
VOLTAGE	3-60-230
RPM	3600
ENCLOSURE	TEFC

CONTROL PANEL

STARTER PANEL - NEMA	4/12
MOUNTING	BASE
STARTER TYPE	FULL VOLTAGE
DISCONNECT	CIRCUIT BREAKER
CONTROL	ON/OFF

ACCESSORIES: MOTOR RUN LIGHT
115V CONTROL POWER TRANSFORMER
AUXILLIARY CONTACT FOR REMOTE ALARM

RELIEF VALVE SET @ 3 ("HG)

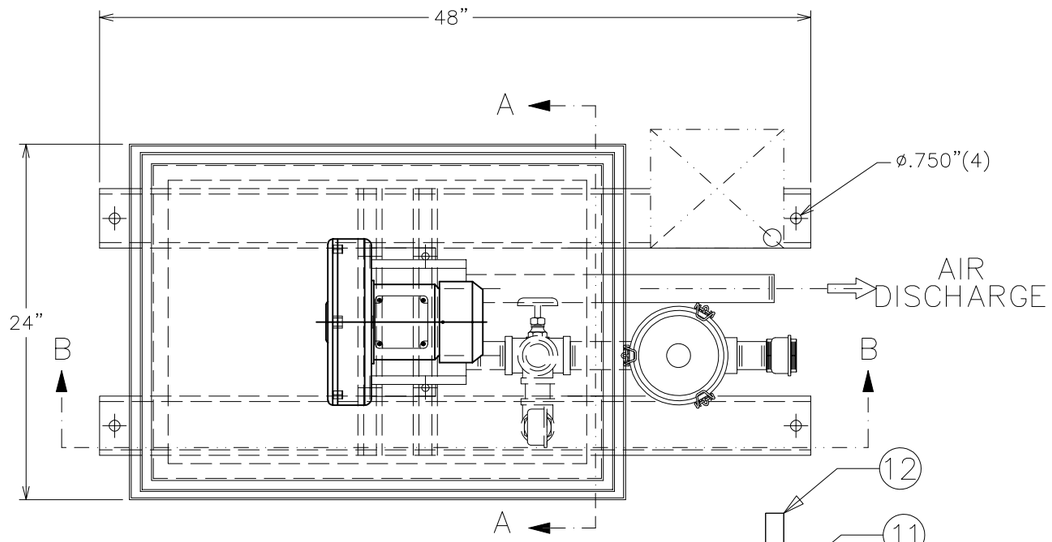
ALARM BEACON

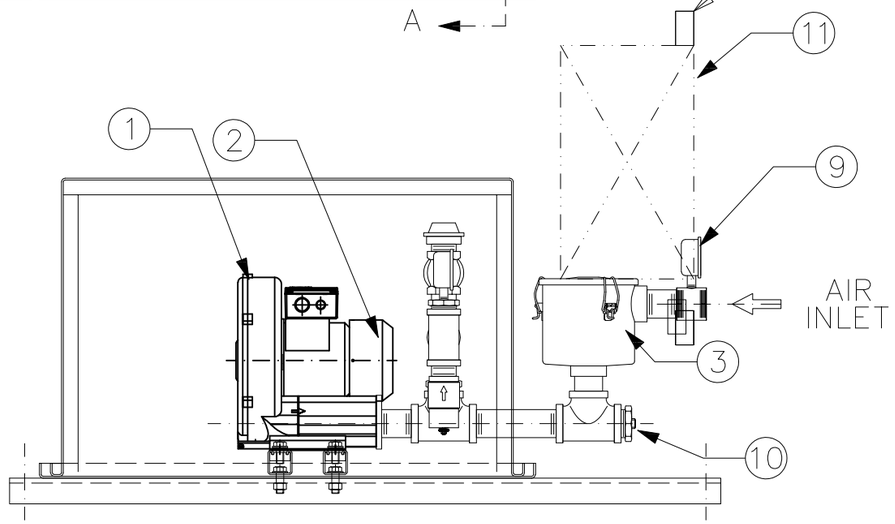
NEMA	4X
MOUNTING	LOCAL CONTROL PANEL
VOLTAGE	1-60-120V
ALARM	RED LIGHT
	CELLULAR TRANSMISSION
	TEXT MESSAGING

JOB NO. 1979 DATE 02/10/22 SUBMITTED BY: K.V. SN1

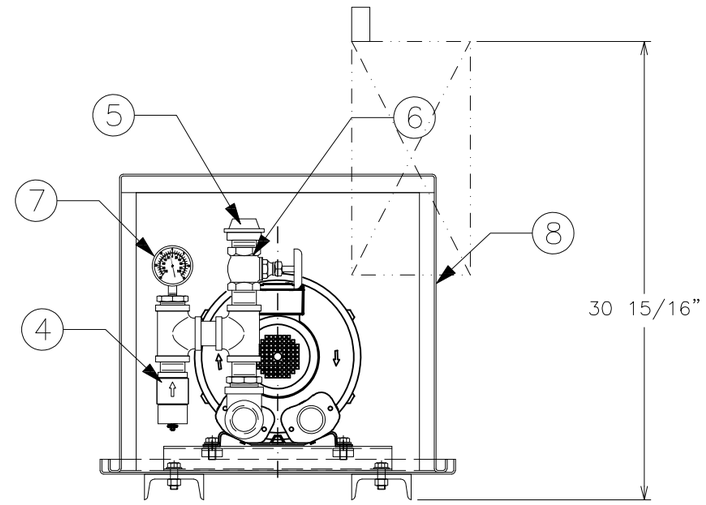
PRODUCTION REVISIONS				
REVISION	DESCRIPTION	DATE	ENG.	APPR.

ITEM	REQ'D	DESCRIPTION	SIZE	PART NO.
1	1	VACUUM BLOWER	1-1/2"	3BA1400-7AT06
2	1	MOTOR	0.96HP	TEFC
3	1	INLET FILTER (WIRE MESH)	1-1/2"	ATF-150-1337
4	1	RELIEF VALVE	1-1/4"	VC51Z-4"Hg
5	1	INLET STAINER	1-1/4"	
6	1	AIR BLEED VALVE	1-1/4"	GLOBE
7	1	VACUUM GAUGE	2-1/2"	0-100" Hg
8	1	SOUND ENCLOSURE		SD-4
9	1	VACUUM GAUGE	2-1/2"	0-60" WC
10	1	TEST PORT PLUG	1/2"	
11	1	CONTROL PANEL		NEMA4
12	1	OMNIBEACON ALARM		120VAC
A	1	AIR INLET	1-1/2"	
B	1	AIR DISCHARGE	1-1/2"	





SECTION B-B



SECTION A-A

NOTE:
TYPICAL DIMENSIONS ONLY. NOT TO BE USED FOR CONSTRUCTION WITHOUT CONSULTING FACTORY.
SUBJECT TO CHANGE WITHOUT NOTICE.

CONFIDENTIAL

SURFACE FINISH ACC. TO ISO 1302

DIMENSIONS W/O TOLERANCES ACC. TO ISO 2768 - mH

	DATE	ENG.
DRAWN	2-10-2022	K.V.
CHECKED	2-10-2022	A.N.

A3

SCALE: NTS

WEIGHT: 265 LBS

MATERIAL: 1-VE-3BA1400-1.0

DESCRIPTION:

VACUUM BLOWER PACKAGE

DRW-File: 1979-1

SHEET 1 / 1 SH.

MODEL:

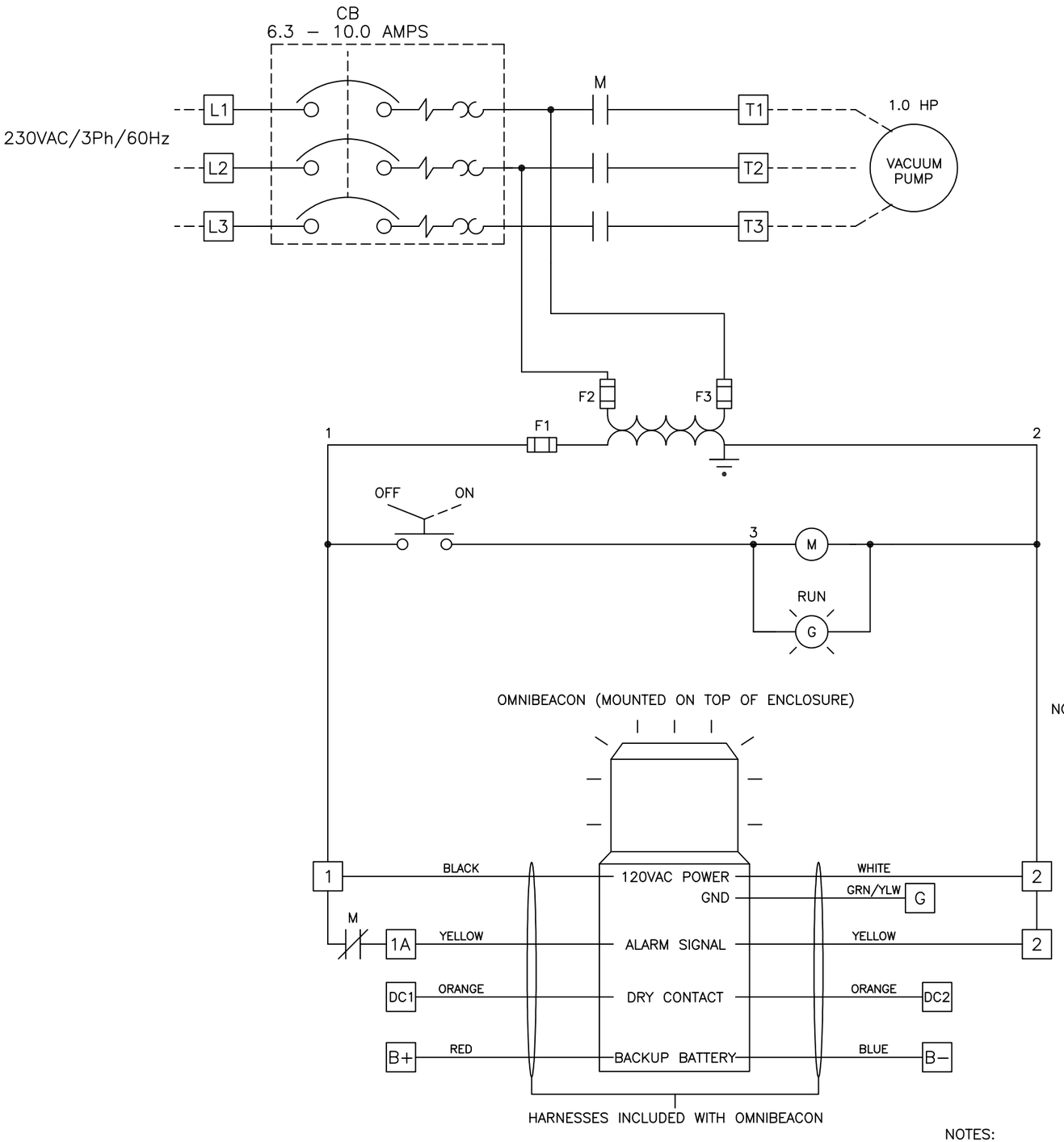
PRODUCT CODE:

#	DESCRIPTION	DATE	ENG.	APPR.
0	DRAWING CREATED	2-10-2022	K.V.	A.N.

AIRTECH VACUUM
AN ISO 9001:2015 CERTIFIED COMPANY

©Airtech vacuum Inc 1982

REV.	DESCRIPTION	BY	DATE



NOTE: OMNIBEACON TO BE SHIPPED LOOSE FOR FIELD INSTALL, BY OTHERS

NOTES:
1) ALL FIELD WIRING USE COPPER WIRE ONLY, 60 DEG C WIRE INSULATION IF RATED LESS THAN 100 AMP, 75 DEG C WIRE INSULATION IF RATED 100 AMP OR MORE
2) 15 IN–LB RECOMMENDED TORQUE FOR FIELD CONNECTIONS

JOB #1971	TITLE: AIRTECH INDUSTRIAL SIMPLEX ELECT SCHEM	DRAWING DESIGNS AND OTHER DISCLOSURES ARE THE PROPERTY OF OM&C INC. UNAUTHORIZED USE, MANUFACTURE OR REPRODUCTION IN WHOLE OR IN PART IS PROHIBITED.	OM&C
PRGM: N/A		DRAWN BY: ETO	OLSON MOTOR & CONTROL CO 100 OLD CAMPLAIN RD HILLSBOROUGH, NJ 08844
SHEET 1 OF 1	DWG: AT-1841B	DATE: 11/30/2020	

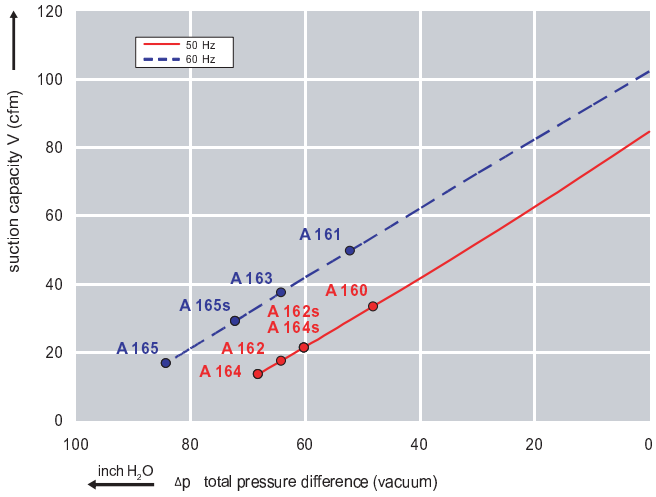
3BA1400

Vacuum/Pressure Regenerative Blower

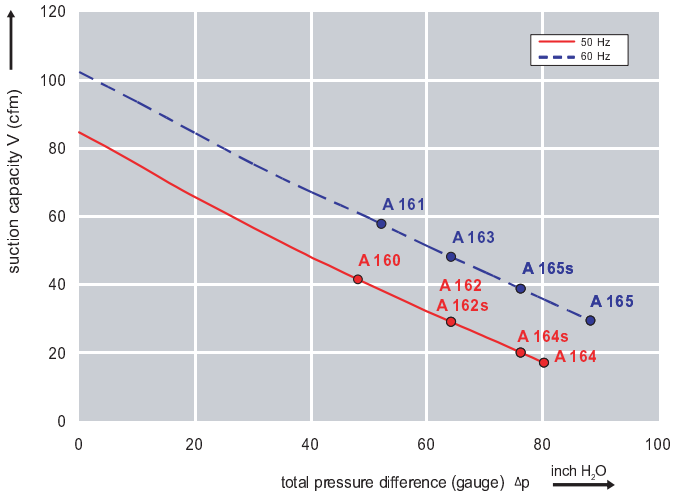
Features:

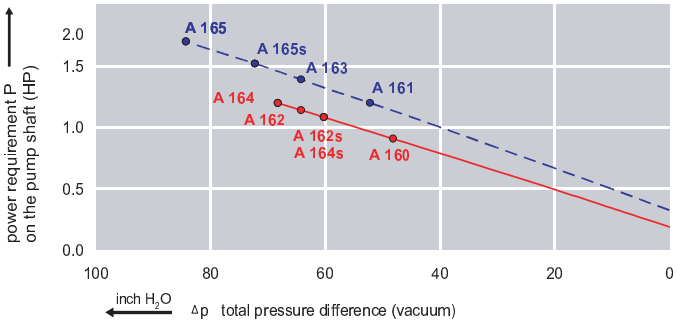
- Cooler running, outboard bearing provides maintenance-free operation
- Environmentally friendly oil-free technology
- Extremely quiet operation
- All motors are standard TEFC with Class F insulation, UL recognized, CE Compliant
  Explosion-Proof motors available
- Custom construction blowers are available
- Rugged die cast aluminum construction

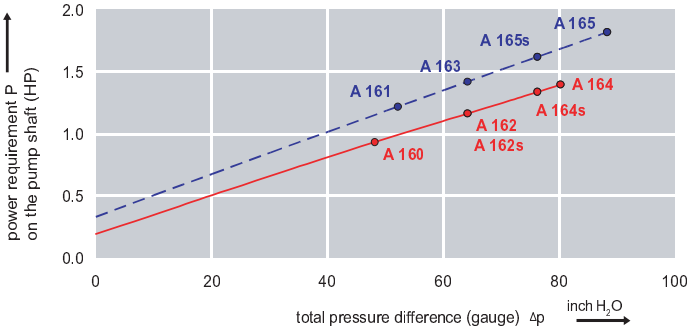
Performance curve for Vacuum pump

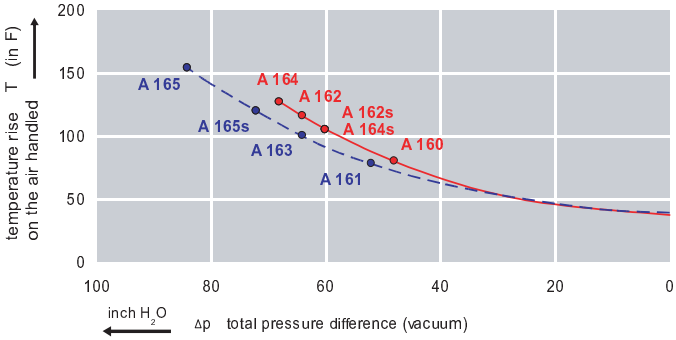


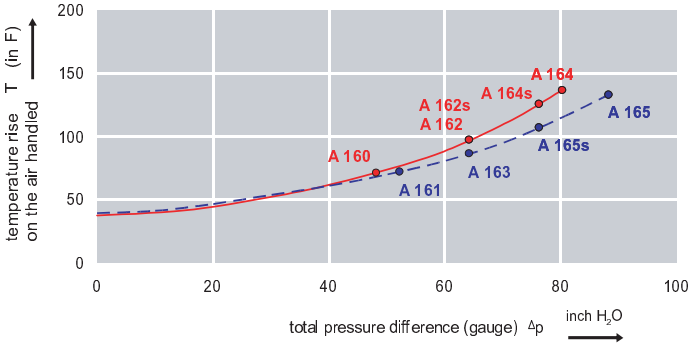
Performance curve for Compressor







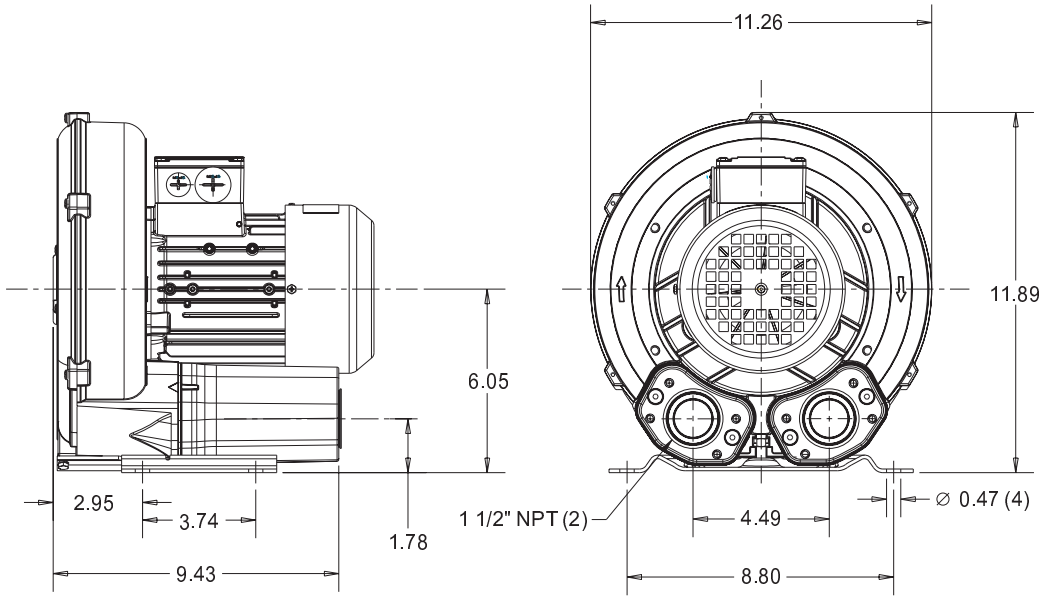




3BA1400

Vacuum/Pressure Regenerative Blower

Dimensions: (inches)



Recommended Accessories:

Relief valve:

VC51Z (Vacuum)

PC51Z (Pressure)

Filter:

ATF-150-1337 (Vacuum)

AFS-20-150-10 (Pressure)

Specifications subject to change without notice. Please contact factory for specification updates.

Selection & Ordering Data - Type 3BA1400

Curve No.	Order No.	Frequency Hz	Rated power HP	Input voltage V		Input current A		Permissible total differential pressure Vacuum inch H2O	Compressor inch H2O	Sound pressure level dB(A)	Weight lbs
3~ 50/60 Hz IP55 insulation material class F											
A 160	3BA1400-7AT06	50	0.94	200D ... 240D	345Y ... 415Y	3.8 D	2.2 Y	-48	48	63	29
A 161	3BA1400-7AT06	60	1.11	220D ... 250D	415Y ... 460Y	3.75D	2.15Y	-52	52	64	29
A 162	3BA1400-7AT16	50	1.14	200D ... 240D	345Y ... 415Y	4.2 D	2.4 Y	-64	64	63	33
A 163	3BA1400-7AT16	60	1.27	220D ... 250D	415Y ... 460Y	4.0 D	2.3 Y	-64	64	64	33
A 164	3BA1400-7AT26	50	1.74	200D ... 240D	345Y ... 415Y	5.7 D	3.3 Y	-68	80	63	35
A 165	3BA1400-7AT26	60	2.01	220D ... 250D	415Y ... 460Y	5.5 D	3.2 Y	-84	88	64	35
1~ 50/60 Hz IP55 with capacitor for continuous operation											
A 164s	3BA1400-7AS25	50	1.47	115	230	13	6.5	-60	76	63	35
A 165s	3BA1400-7AS25	60	1.74	115	230	14	7.0	-72	76	64	35

Suitable for 208 Volt Operation

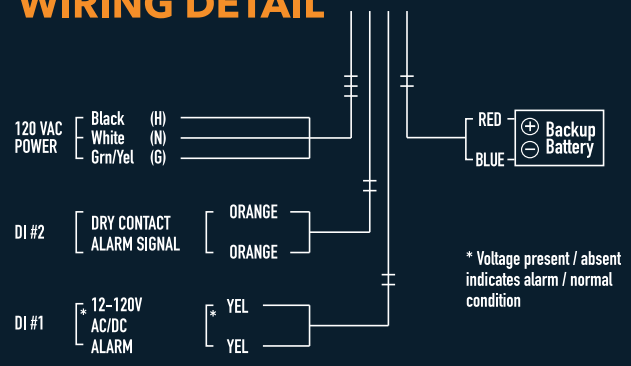
All curves are rated at 14.7 psia and 68° F ambient conditions and are reported in SCFM referenced to 68° F and 14.696 psia sea level conditions. Curve values are nominal, actual performance may vary by up to 10% of the values indicated. For inlet temperatures above approximately 80 °F or for handling gases other than air, please contact your Airtech sales representative for assistance.

RUTHERFORD, NJ 07070 WWW.AIRTECHUSA.COM TEL: (888) 222-9940 FAX: (201) 569-1696

TECHNICAL SPECS

- Dual Input Alarm Channels: (1) 12VAC/VDC to 120VAC/VDC, opto-isolation. (1) Dry Contact input
- Backup Battery: External 6DVC Sealed Lead, 1.3 AH Re-chargeable
- Operating Temperature: -20 to 150 F
- Operating Humidity: 0-90% RH, non-condensing
- Alarm Light Bulb: Super bright LED cluster long-life
- Alarm Light Annunciator: 2.8kHz, 85dB, selectable for inputs #1 and #2
- Alarm Light State: Pulses LEDs at 3Hz, selectable for inputs #1 and #2
- Cellular Radio: 4G LTE CAT-1
- Certifications: FCC Parts 15, 22, 24; RoHS compliant; IC: RSS-132 & 133
- Antenna: Integrated, on board
- Input Power: 120VAC +/-20% @ 0.5A max, 12 VDC or Solar options
- Enclosure: NEMA 4 equivalent rating for direct mounting indoors or outdoors. Includes security cage.
- Dimensions: 5"W round base x 5" H
- Weight: 1lb
- Protection: US Patent #7,228,129 and #7,778,633

WIRING DETAIL



OmniSite
CELLULAR MONITORING SOLUTIONS

www.OmniSite.com
203 W. Morris St. Indianapolis, IN 46225
(317) 885-6330

OmniBeacon™

ALARM LIGHT

WITH CELLULAR TRANSMITTER AND SIREN

SIMPLE AND EASY TO USE!
INCLUDES SECURITY CAGE!

GET INSTANT NOTIFICATIONS OF MACHINERY MALFUNCTIONS

TEXT EMAIL VOICE

VIEWING EQUIPMENT STATUS

Multiple views to check your equipment's status, including an interactive mapping tool by Google Maps™

INSTANT REAL-TIME NOTIFICATIONS

If an alert is triggered receive notifications via:

TEXT

VOICE

EMAIL

SMARTPHONE APPLICATIONS IPHONE™ & ANDROID

View the status with your web enabled smartphone. Check the status of your alarms and analyze your equipment at any time and anywhere!

OmniBeacon™ costs no more than an ordinary visual alarm light, but does so much more!

You focus on what you do best and let OmniSite deliver the alarms.

We have thousands of installations, and over 15 years of cellular and web based experience.

Visit us Online at
www.OmniSite.com

HOW OMNIBEACON™ WORKS

OmniSite relies on a combination of cellular telephone and web-based technology.

The OmniBeacon™ is installed at your equipment and sends a wireless signal to the local cellular tower. That signal is bounced to OmniSite's web interface, where customers can log on – any day, any time, from any computer, tablet or smartphone and see how the equipment is operating.

Because OmniSite engineers recognize today's fast-paced world and the need to be connected 24/7, our system was designed to notify via text message, email, or phone call. A "call out" list is setup online, so that when an alarm is triggered at your equipment, all necessary contacts are notified immediately.

OPTIONAL FEATURES

- Solar panel

AIRTECH® VACUUM

Operating and Maintenance Instructions

3BA Regenerative Blowers

INSTALLATION & OPERATING MANUAL
3BA REGENERATIVE BLOWERS

Table of Contents

Section:	Page Number:
1. Safety	4
1.1 General Safety Precautions	4
1.2 Clothing and Protective Gear	4
1.3 Electrical Safety	4
1.4 Vacuum and Gauge Pressure Safety	5
1.5 Installation/Start-up	5
1.6 Maintenance Procedures	6
1.7 Hot Surfaces	6
1.8 Hearing Protection	6
1.9 Safety Guidelines for Transport of the unit	7
2. Technical Data	8
Table 1: 3 Phase, Single Stage, 50 Hertz	10
Table 2: 3 Phase, Single Stage, 60 Hertz	11
Table 3: 3 Phase, Two/Three Stage, 50 Hertz	12
Table 4: 3 Phase, Two/Three Stage, 60 Hertz	13
Table 5: Single-phase, 50 Hz	14
Table 6: Single-phase, 60 Hz	14
Table 7: Single Stage – Approx. Temperature Rise	16
Table 8: Two/Three Stage – Approx. Temperature Rise	17
Table 9: Tightening Torque Specifications	18
3. Installation	20
3.1 Installation Procedure	21
4. Start-up	23
4.1 Start-up Procedure	23
4.2 Potential Risks For Operators	23
5. Maintenance and Servicing	24
5.1 Troubleshooting Chart	25
5.2 Lifting	27
5.3 Storage	28
5.4 Disposal	28
6. Exploded-View Drawings	29
3BA1 Single-Stage	29
3BA1 Two-Stage	30
3BA1943 Two-Stage	31
3BA7 Single-Stage	32
3BA7 Two-Stage	33
Warranty Statement	34

1. Safety

1.1 General Safety Precautions

WARNING: Improper operation of 3BA units can result in serious or even fatal injuries. Please make sure all personnel have read and understood this manual before operating the unit.

All personnel should familiarize themselves with the units' specifications and be careful not to exceed the unit's capacity.

Transport, installation, operation, shut-down, maintenance and disposal of 3BA units should be carried out by qualified professionals.

Do not attempt to start or run the unit unless it has been completely assembled. Particular attention should be paid to: the vacuum pump/compressor cover, the muffler on the inlet and discharge connections, and the fan guard.

The standard 3BA unit must never come into contact with flammable substances.

1.2 Clothing and Protective Gear

It is recommended that all personnel wear proper protective gear while operating the unit. This may include eye protection, gloves and helmets.

Please be aware that it is possible for hair and clothing to be pulled into the unit. Avoid wearing loose-fitting clothing near the unit while it is operating and wear a hairnet if necessary.

1.3 Electrical Safety

Electrical installation should only be done by qualified electricians. Before doing any electrical work on a 3BA unit, please ensure that **power to the unit has been disconnected.** Do not attempt to open the unit's terminal box until you have made certain that the unit is not connected to a power source.

The terminal box must be kept free of dirt and moisture at all times. Make sure the terminal box cover and cable entries are tightly sealed so they remain dustproof and waterproof. Check the terminal box regularly to make sure it is sealed and free of debris and moisture.

1.4 Vacuum and Gauge Pressure Safety

In order to avoid dangerous situations associated with vacuum and gauge pressure, please utilize secure mounting elements, connections, lines, fittings, and containers. Pipes/hoses must be securely connected to the inlet and discharge connections. The inlet and discharge connections and the pipes/hoses connected to them must not be closed, clogged, or soiled. Check regularly to ensure that these connections and mountings are not becoming unseated. If necessary, support pipes and hoses to ensure that there is no tension on the connections. **Failure to observe these precautions can lead to sudden evacuation of hazardous fluids or dangerous suction that can pull hair or clothing into the unit.**

1.5 Installation/Start-up

The unit and any lines connected to it must be securely installed. In particular, the feed pipes must be securely routed, e.g. in cable ducts, in the floor, etc.

If a separate control panel or other such interface will be used to start and stop the unit, it should be installed in an area with an unobstructed view of the unit to ensure that it is not switched on while being serviced.

Excess vibration can cause damage to the unit and/or unsafe conditions. Install the unit on a solid foundation or a solid mounting surface. Check screw glands/unions for strength and firm seating.

Cables and pipes should be installed in a recess in the floor or duct so they do not present a tripping hazard.

To ensure sufficient cooling of the unit, ventilation screens and openings must remain clear. Ensure that discharge air from other units cannot be pulled into the unit.

Make sure that the inlet and pressure lines are clearly marked to avoid confusion. **Interchanged inlet and pressure lines can lead to damage to the unit and/or serious injury.**

Install a filter in the inlet pipe and replace it regularly. If particulates or debris enter the unit, the blades of the impellers can be damaged and blades could potentially break off, potentially creating a hazardous situation.

If re-starting the unit after it has been idle for a long period of time, measure the insulation resistance of the motor. If values are less than 1 k Ω per volt of nominal voltage, the winding may be too dry.

If the unit is installed or stored in an environment with a temperature of over 104°F (40°C) be aware that the winding may be damaged and the grease might need to be changed more often.

1.6 Maintenance Procedures

Before beginning work on the pump-motor unit, please take the following precautions:

- Make sure power has been completely disconnected
- Wait for the unit to come to a complete stop.
- Allow the unit time to cool.
- Shut off lines and release pressure
- Make certain that no vacuum or gauge pressure is present in the lines/tanks to be opened.
- Make sure that no fluids can escape

Please note that the rotating impeller is accessible when the inlet and discharge connections are open. Do not reach into the unit through open connections or insert objects into the unit through any openings. Serious injury could occur. If the unit is running without piping or tubing, provide the inlet and discharge of the unit with either additional mufflers or piping of a sufficient length to prevent access to the impeller.

Check regularly to ensure the terminal box is free of any dirt or foreign substances and there is no moisture or humidity present. Make certain the terminal box cover and cable entries are tightly closed.

1.7 Hot Surfaces

During operation, the surface of the unit can reach temperatures of 320° F (160° C). It is advisable to cover the unit with suitable touch protection (e.g. a perforated plate or wire cover). Do not touch the unit during operation, and allow time to cool after shut-down. Temperature-sensitive parts such as lines or electronic components should not come into contact with the surface of the unit.

1.8 Hearing Protection

Make certain any missing or defective silencers are replaced. Noise emitted by the unit can cause serious hearing damage. Conduct a noise measurement test while the unit is running. If the unit operates over 90 dB(A), please place a warning sign in the area where the unit has been installed and make certain that

any personnel working in the vicinity wear ear protection at all times while the unit is running.

1.9 Safety Guidelines for Transport of the unit:

Prior to transport and handling, please make sure that all components are properly assembled and secure. Any machinery used to transport these units must have the proper lifting capacity. Please consult the table on page 27 to find the weight of the unit being handled. Do not stand or walk under suspended loads.

If a 3BA unit has come in contact with any dangerous substances, it must be decontaminated before being sent to Airtech for repair evaluation.

2 Technical Data

These operating instructions cover the Airtech 3BA side channel vacuum pumps and compressors supplied with standard TEFC motors. Other configurations are available including V-belt driven units, units with explosion proof motors, mechanical seals, magnetic drives, coatings and modifications for high pressure service. Airtech can provide any combination of modifications to meet your application requirements. Such blowers, however, are outside the scope of this manual.

Description

All regenerative blowers are dynamic compression devices and utilize a non-contacting impeller to accelerate the gas and a specially designed housing to compress the gas. Cooling is accomplished by using the motor fan to blow air over the housing. In larger models, the housing is specially designed with cooling fins to allow a wider range of operation. Both the inlet and outlet ports have built-in silencers and mesh screens. Both the inlet and outlet have an inside connection thread corresponding to DIN ISO 228. On larger units, multiple suction and discharge connection configurations may be available.

The wetted parts are constructed of Aluminum on all models. The blower shares a bearing with the motor. The seal between the bearing and the motor is not gas tight in most models, therefore these blowers are not recommended for handling of toxic or explosive gases. (Contact Airtech Vacuum, Inc. for additional options if explosive or toxic gases will be handled.)

A full range of accessory items are available, including vacuum or pressure relief valves, check valves, suction filters, motor starters, vacuum/pressure cross-over valves, and in-line filters.

Application/Installation Environment

CAUTION! These blowers are designed for use in general industry. Suitable personnel protection according to OSHA requirements is provided, but the equipment should not be operated in residential settings.

Airtech blowers can be operated as either vacuum pumps or compressors. They are suitable for use with air having a relative humidity up to 90 percent, but not generally suitable for handling corrosive or erosive gases. Special versions for toxic or aggressive gases may be available. Use of the standard blower in aggressive environments may cause damage to the blower or exposure to gases being handled in the local environment.

CAUTION! Dangerous (flammable or explosive) or aggressive (corrosive) gases should not be handled by the standard blower.

Handling of flammable or aggressive gases and vapors may be possible by using a specially configured or modified blower. Contact factory for additional information. The standard blower is not suitable for operation in explosive environments as defined by NFPA 70. Contact factory for assistance.

CAUTION! The ambient and suction temperatures should be between 40 and 105 F. For temperatures outside this region, please contact the factory.

The maximum permissible pressure difference for vacuum or pressure is dependent on the motor rating (See Tables 1 to 4 for detailed information by model number.) and power supply frequency. The figures in Tables 1 to 4 are computed assuming an ambient temperature of 77 F (25 C) and a local barometric pressure of 1013 mbar (sea level). Operation at an ambient temperature of 104 F (40C) is the maximum permissible, and will result in a reduction of 10 percent on maximum vacuum or pressure attainable by the unit. For temperatures between 77 F and 104 F, reduce the maximum pressure reduction is a linear function of temperature.

Table 1. Three-phase, Single Stage, 50 Hertz

Model	Rated Power HP/kW	Voltage	Motor Current (Amps)	Open Flow Capacity CFM/m3/hr	Maximum Pressure (mbar)	Sound Pressure Level (dBA)
3BA1300-7AT06	.33/.25	200-240/345-415	2.1/1.2	48/82	-100/100	53
2BA1300-7AT16	.54/.4	200-240/345-415	2.6/1.5	48/82	-120/130	53
3BA1400-7AT06	.94/.7	200-240/345-415	3.8/2.2	84/142	-120/120	63
2BA1400-7AT16	1.15/.85	200-240/345-415	4.2/2.4	84/142	-160/160	63
3BA1400-7AT26	1.75/1.3	200-240/345-415	5.7/3.3	84/142	-170/200	63
3BA1500-7AT06	1.15/.85	200-240/345-415	4.2/2.4	120/204	-100/100	64
3BA1500-7AT16	1.75/1.3	200-240/345-415	5.7/3.3	120/204	-170/170	64
3BA1500-7AT26	2.15/1.6	220-250/415-460	7.5/4.3	120/204	-200/190	64
3BA1500-7AT36	2.96/2.2	200-240/345-415	9.7/5.6	120/204	-220/270	64
3BA1530-7AT16	1.75/1.3	200-240/345-415	5.7/3.3	165/280	-120/110	65
3BA1530-7AT26	2.15/1.6	200-240/345-415	7.5/4.3	165/280	-160/150	65
3BA1530-7AT36	2.96/2.2	200-240/345-415	9.7/5.6	165/280	-220/230	65
3BA1600-7AT06	2.15/1.6	200-240/345-415	8.5/4.9	188/320	-160/150	69
3BA1600-7AT16	2.96/2.2	200-240/345-415	9.7/5.6	188/320	-190/190	69
3BA1600-7AT26	4.04/3.0	200-240/345-415	12.5/7.2	188/320	-260/270	69
3BA1600-7AT36	5.4/4.0	200-240/345-415	13.0/7.5	188/320	-290/360	69
3BA1630-7AT06	2.15/1.6	200-240/345-415	8.5/4.9	240/408	-160/150	69
3BA1630-7AT16	2.96/2.2	200-240/345-415	9.7/5.6	240/408	-190/190	69
3BA1630-7AT26	4.04/3.0	200-240/345-415	12.5/7.2	240/408	-260/270	69
3BA1630-7AT36	5.4/4.0	200-240/345-415	15.6/9.0	240/408	-260/290	69
3BA1800-7AT06	5.4/4.0	200-240/345-415	15.6/9.0	280/476	-200/200	70
3BA1800-7AT16	7.4/5.5	200-240/345-415	23/13.3	280/476	-300/300	70
3BA1800-7AT26	10/7.5	200-240/345-415	29/16.7	280/476	-320/430	70
3BA1830-7AT06	5.4/4	200-240/345-415	15.6/9	400/680	-150/140	76
3BA1830-7AT16	7.4/5.5	200-240/345-415	23/13.3	400/680	-200/190	76
3BA1830-7AT26	10/7.5	200-240/345-415	29/16.7	400/680	-270/260	76
3BA1900-7AT06	10.8/8	200-240/345-415	31.5/18.2	568/965	-190/190	74
3BA1900-7AT16	16.8/12.5	200-240/345-415	48.5/28	568/965	-290/280	74
3BA1900-7AT36	25/18.5	200-240/345-415	64.5/37	568/965	-362/462	74
3BA1930-7AT16	16.8/12.5	200-240/345-415	48.5/28	744/1264	-290/280	71
3BA1930-7AT36	25/18.5	200-240/345-415	64.5/37	744/1264	-310/310	71
3BA1930-7AT36	25/18.5	200-240/345-415	64.5/37	744/1264	-310/310	71
3BA7310-0AT167	.75/.55	200-240/345-415	2.8/1.6	40/68	-250/250	57
3BA7410-0AT167	1.5/1.1	200-240/345-415	5.4/3.1	50/84	-300/380	58
3BA7510-0AT168	2/1.5	200-240/345-415	7.5/4.3	70/120	-370/650	64
3BA7510-0AT268	3/2.2	200-240/345-415	9.7/5.6	70/120	-310/430	64
3BA7610-0AT168	3/2.2	200-240/345-415	9.7/5.6	96/163	-310/430	65
3BA7610-0AT368	4.4/3.3	200-240/345-415	13/7.5	96/163	-500/750	65

Table 2. Three-phase, Single-stage, 60 Hz

Model	Rated Power HP/kW	Voltage	Motor Current (Amps)	Open Flow Capacity CFM/m3/hr	Maximum Pressure (mbar)	Sound Pressure Level (dBA)
3BA1300-7AT06	.39/.29	220-250/415-460	1.74/1.0	60/102	-100/100	56
2BA1300-7AT16	.67/.5	220-250/415-460	2.6/1.5	60/102	-150/160	56
3BA1400-7AT06	1.12/.83	220-250/415-460	3.75/2.15	105/179	-130/130	64
3BA1400-7AT16	1.28/.95	220-250/415-460	4.35/2.5	105/179	-160/160	64
3BA1400-7AT26	2/1.5	220-250/415-460	5.5/3.2	105/179	-210/200	64
3BA1500-7AT06	1.28/.95	220-250/415-460	4.35/2.5	150/255	-80/70	70
3BA1500-7AT16	2/1.5	220-250/415-460	5.5/3.2	150/255	-150/140	70
3BA1500-7AT26	2.7/2.05	220-250/415-460	7.5/4.4	150/255	-220/210	70
3BA1500-7AT36	3.4/2.55	220-250/415-460	9.0/5.3	150/255	-260/290	70
3BA1530-7AT16	2/1.5	220-250/415-460	5.7/3.3	200/340	-90/80	71
3BA1530-7AT26	2.7/2.05	220-250/415-460	7.6/4.4	200/340	-260/270	70
3BA1530-7AT36	3.4/2.55	220-250/415-460	10.3/6.0	200/340	-260/250	70
3BA1600-7AT06	2.7/2.05	220-250/415-460	7.5/4.4	235/400	-160/150	72
3BA1600-7AT16	3.4/2.55	220-250/415-460	9.0/5.3	235/400	-190/190	72
3BA1600-7AT26	4.6/3.45	220-250/415-460	12.0/6.5	235/400	-240/230	72
3BA1600-7AT36	6.1/4.6	220-250/415-460	15.2/8.5	235/400	-320/310	72
3BA1630-7AT06	2.7/2.05	220-250/415-460	7.5/4.4	300/510	-160/150	72
3BA1630-7AT16	3.4/2.55	220-250/415-460	9.0/5.3	300/510	-190/190	72
3BA1630-7AT26	4.6/3.45	220-250/415-460	12.0/6.5	300/510	-240/230	72
3BA1630-7AT36	6.1/4.6	220-250/415-460	15.2/8.5	300/510	-260/260	72
3BA1800-7AT06	6.1/4.6	220-250/415-460	15.2/8.5	350/595	-160/160	74
3BA1800-7AT16	8.4/6.3	220-250/415-460	20/11.2	350/595	-300/280	74
3BA1800-7AT26	11.5/8.6	220-250/415-460	27.5/15	350/595	-350/400	74
3BA1830-7AT06	6.2/4.6	220-250/415-460	15.2/8.5	500/850	-90/90	79
3BA1830-7AT16	8.4/6.3	220-250/415-460	20/11.2	500/850	-180/180	79
3BA1830-7AT26	11.5/8.6	220-250/415-460	27.5/15	500/850	-270/260	79
3BA1900-7AT06	12.1/9	220-250/415-460	31.5/18.2	710/1207	-150/140	79
3BA1900-7AT16	19.5/14.5	220-250/415-460	50/29	710/1207	-270/260	79
3BA1900-7AT36	28.7/21.3	220-250/415-460	68/39	710/1207	-382/422	79
3BA1930-7AT16	19.5/14.5	220-250/415-460	50/29	930/1581	-270/260	75
3BA1930-7AT36	28.7/21.3	220-250/415-460	68/39	930/1581	-300/280	75
3BA7210-0AT167	1.1/.83	220-250/415-460	3.75/2.15	35/60	-270/320	62
3BA7310-0AT167	1.1/.83	220-250/415-460	3.75/2.15	48/82	-260/250	62
3BA7410-0AT167	2/1.5	220-250/415-460	5.5/3.2	60/102	-340/370	62

When operating at altitudes above 3280 feet (1000 m) above mean sea level, contact Airtech Inc.

CAUTION! Operation of the unit outside the recommended range of pressures and ambient conditions will result in shorted operating life.

Table 3. 3 Phase, Two/Three Stage, 50 Hertz

Model	Rated Power HP/kW	Voltage	Motor Current (Amps)	Open Flow Capacity CFM/m3/hr	Maximum Pressure (mbar)	Sound Pressure Level (dBA)
3BA1310-7AT26	.94/.7	200-240/345-415	3.8/2.2	48/81.6	-120/120	55
3BA1410-7AT36	2.15/1.6	200-240/345-415	7.5/4.3	84/142.8	-200/190	66
3BA1410-7AT46	2.96/2.2	200-240/345-415	9.7/5.6	84/142.8	-320/420	66
3BA1510-7AT46	4.04/3.0	200-240/345-415	12.5/7.2	121.6/206.7	-340/410	72
3BA1510-7AT56	5.39/4.0	200-240/345-415	17.4/10	121.6/206.7	-390/440	72
3BA1610-7AT36	2.9/2.2	200-240/345-415	9.7/5.6	188/319.6	-190/190	73
3BA1610-7AT26	4.04/3.0	200-240/345-415	12.5/7.2	188/319.6	-260/270	73
3BA1610-7AT36	5.39/4.0	200-240/345-415	13.0/7.5	188/319.6	-290/360	73
3BA1610-7AT46	7.41/5.5	200-240/345-415	23/13.3	188/319.6	-420/500	73
3BA1610-7AT56	10.1/7.5	200-240/345-415	29/16.7	188/319.6	-420/610	73
3BA1640-7AT36	5.39/4.0	200-240/345-415	13.0/7.5	280/476	-290/360	74
3BA1640-7AT46	7.41/5.5	200-240/345-415	23/13.3	280/476	-420/500	74
3BA1640-7AT56	10.1/7.5	200-240/345-415	29/16.7	280/476	-420/610	74
3BA1810-7AT16	7.4/5.5	200-240/345-415	23/13.3	280/476	-420/500	74
3BA1810-7AT26	10.1/7.5	200-240/345-415	29/16.7	280/476	-320/430	74
3BA1810-7AT36	14.8/11	200-240/345-415	29/16.7	280/476	-430/600	74
3BA1810-7AT46	20.2/15	200-240/345-415	56.5/32.5	280/476	-460/670	74
3BA1840-7AT26	10.1/7.5	200-240/345-415	29.0/16.7	280/476	-320/430	74
3BA1840-7AT36	14.8/11.0	200-240/345-415	48.5/28.0	280/476	-430/600	74
3BA1910-7AT16	16.8/12.5	200-240/345-415	48.5/28	624/1061	-290/280	74
3BA1910-7AT36	26.95/20.0	200-240/345-415	69/40	624/1061	-443/502	74
3BA1910-7AT46	33.51/24.98	200-240/345-415	90/52	624/1061	-443/592	84
3BA19437AT26	20.1/15	200-240/345-415	59/34	1200/2040	-160/170	75
3BA19437AT36	26.8/20	200-240/345-415	69/40	1200/2040	-250/230	75
3BA19437AT46	33.5/25	200-240/345-415	90/52	1200/2040	-310/280	75
3BA7220-0AT567	2/1.5	200-240/345-415	7.5/4.3	28/48	-370/650	58
3BA7320-0AT467	1.5/1.1	200-240/345-415	5.4/3.1	40/68	-300/380	58
3BA7320-0AT567	2/1.5	200-240/345-415	7.5/4.3	40/68	-480/450	59
3BA7420-0AT267	2/1.5	200-240/345-415	7.5/4.3	50/84	-480/450	61
3BA7420-0AT567	4.4/3.3	200-240/345-415	13/7.5	50/84	-500/750	61
3BA7520-0AT268	3/2.2	200-240/345-415	9.7/5.6	70/120	-470/460	64
3BA7620-0AT368	4.4/3.3	200-240/345-415	13/7.5	96/163	-500/750	68
3BA7620-0AT468	5.4/4	200-240/345-415	14/8.1	96/163	-370/650	67
3BA7620-0AT568	7.5/5.5	200-240/345-415	19.9/11.5	96/163	-520/750	68
3BA7630-0AT668	10.1/7.5	200-240/345-415	29/16.7	96/163	-420/610	77

Table 4. 3 Phase, Two/Three Stage, 60 Hertz

Model	Rated Power HP/kW	Voltage	Motor Current (Amps)	Open Flow Capacity CFM/m3/hr	Maximum Pressure (mbar)	Sound Pressure Level (dBA)
3BA1310-7AT26	1.11/.83	220-250/415-460	3.75/2.15	60/102	-130/130	61
3BA1410-7AT36	2.7/2.05	220-250/415-460	7.5/4.4	105/179	-220/210	69
3BA1410-7AT46	3.4/2.55	220-250/415-460	9.0/5.3	105/179	-350/440	69
3BA1510-7AT46	4.6/3.45	220-250/415-460	12.0/6.5	152/258	-380/360	74
3BA1510-7AT56	6.1/4.6	220-250/415-460	15.2/8.5	152/258	-410/480	74
3BA1610-7AT36	3.4/2.55	220-250/415-460	9.0/5.3	235/400	-190/190	76
3BA1610-7AT26	4.6/3.45	220-250/415-460	12.0/6.5	235/400	-240/230	76
3BA1610-7AT36	6.4/4.8	220-250/415-460	16.5/9.8	235/400	-320/310	76
3BA1610-7AT46	8.4/6.3	220-250/415-460	20/11.2	235/400	-440/440	76
3BA1610-7AT56	11.5/8.6	220-250/415-460	27.5/15.0	235/400	-440/670	76
3BA1640-7AT36	6.1/4.6	220-250/415-460	15.2/8.5	350/595	-320/310	78
3BA1640-7AT46	8.4/6.3	220-250/415-460	20.0/11.2	350/595	-440/440	78
3BA1640-7AT56	11.5/8.6	220-250/415-460	27.5/15.0	350/595	-440/670	78
3BA1810-7AT16	8.4/6.3	220-250/415-460	20.0/11.2	350/595	-440/440	78
3BA1810-7AT26	11.5/8.6	220-250/415-460	27.5/15.0	350/595	-350/400	78
3BA1810-7AT36	17/12.6	220-250/415-460	50.2/29.0	350/595	-460/600	78
3BA1810-7AT46	23.3/17.3	220-250/415-460	60.0/34.5	350/595	-490/750	78
3BA1840-7AT26	11.5/8.6	220-250/415-460	27.5/15.0	350/595	-350/400	78
3BA1840-7AT36	17/12.6	220-250/415-460	50.2/29.0	350/595	-460/600	78
3BA1910-7AT16	19.5/14.5	220-250/415-460	50.0/29.0	780/1326	-270/260	84
3BA1910-7AT36	31/23	220-250/415-460	72 /42	780/1326	-443/433	84
3BA1910-7AT46	38.9/28.9	220-250/415-460	90/52	780/1326	-443/542	84
3BA19437AT26	23.4/17.5	220-250/415-460	63/36.5	1440/2447	-120/110	84
3BA19437AT36	30.8/23	220-250/415-460	72/42	1440/2447	-190/180	84
3BA19437AT46	38.8/28.9	220-250/415-460	90/52	1440/2447	-265/230	84
3BA7220-0AT567	2.7/2.05	220-250/415-460	7.5/4.4	35/60	-500/740	62
3BA7320-0AT467	2/1.5	220-250/415-460	5.5/3.2	48/82	-340/370	63
3BA7320-0AT567	2.7/2.05	220-250/415-460	7.5/4.4	48/82	-430/410	63
3BA7420-0AT267	2.7/2.05	220-250/415-460	7.5/4.4	60/102	-430/410	66
3BA7420-0AT567	5.1/3.8	220-250/415-460	13.5/7.8	60/102	-510/850	66
3BA7520-0AT268	3.4/2.55	220-250/415-460	9/5.3	84/143	-500/450	70
3BA7620-0AT368	5.1/3.8	220-250/415-460	13.5/7.8	115/196	-510/850	71
3BA7620-0AT468	6.1/4.6	220-250/415-460	15.2/8.5	115/196	-480/500	71
3BA7620-0AT568	8.4/6.6	220-250/415-460	22.5/12.6	115/196	-520/820	72
3BA7630-0AT668	11.5/8.6	220-250/415-460	27.5/15	115/196	-440/670	80
3BA7530-7AT76	6.2/4.6	220-250/415-460	16.3/9.5	82/139	-639/729	73

Table 5. Single Phase, 50 Hertz

Model	Rated Power HP/kW	Voltage	Motor Current (Amps)	Open Flow Capacity CFM/m3/hr	Maximum Pressure (mbar)	Sound Pressure Level (dBA)
3BA1100-7AS05	0.27/0.2	230	1.45	24/40	-60/70	50
3BA1200-7AS05	0.33/0.25	115/230	3.5/1.7	35/60	-100/100	50
3BA1300-7AS15	0.5/0.37	115/230	5.4/2.7	48/82	-110/110	53
3BA1330-7AS15	0.5/0.37	115/230	5.4/2.7	60/102	-110/110	54
3BA1400-7AS25	1.47/1.09	115/230	13/6.5	84/142	-149/189	64
3BA1410-7AS25	2/1.49	115/230	22/11	84/142.8	-279/259	66
3BA1500-7AS35	2/1.49	115/230	22/11	120/204	-189/199	64
3BA7210-0AS75	0.74/0.55	115/230	13/6.5	28/48	-229/289	57
3BA7220-0AS75	2/1.49	115/230	19.4/9.7	29/49	-371/600	57
3BA7310-0AS75	1.26/0.93	115/230	15.2/7.6	40/68	-249/351	58
3BA7320-0AS75	2/1.49	115/230	19.4/9.7	40/68	-401/550	59
3BA7410-OAS45	1.47/1.09	115/230	13/6.5	50/84	-299/381	59

Table 6. Single Phase, 60 Hertz

Model	Rated Power HP/kW	Voltage	Motor Current (Amps)	Open Flow Capacity CFM/m3/hr	Maximum Pressure (mbar)	Sound Pressure Level (dBA)
3BA1100-7AS05	0.31/0.23	230	1.3	30/51	-75/80	53
3BA1200-7AS05	0.38/0.28	115/230	5/2.8	48/82	-112/112	53
3BA1300-7AS15	0.6/0.44	115/230	6.0/3.0	60/102	-130/139	56
3BA1330-7AS15	0.6/0.44	115/230	6.0/3.0	74/126	-130/139	57
3BA1400-7AS25	1.74/1.29	115/230	14.0/7.0	105/179	-179/189	64
3BA1410-7AS25	2.35/1.75	115/230	24.0/12.0	105/179	-249/229	69
3BA1500-7AS35	2.35/1.75	115/230	24.0/12.0	150/255	-179/179	70
3BA7210-0AS75	0.84/0.63	115/230	14.2/7.1	35/60	-259/309	62
3BA7220-0AS75	2.35/1.75	115/230	20.6/10.3	35/60	-421/660	62
3BA7310-0AS75	1.47/1.09	115/230	18.0/9.0	48/82	-279/391	62
3BA7320-0AS75	2.35/1.75	115/230	20.6/10.3	48/82	-391/541	63
3BA7410-OAS45	1.74/1.29	115/230	14.0/7.0	60/102	-338/391	62

Operation of any blower is possible at 87 Hertz without modification in most cases. When using a VFD to operate the blower at this frequency, refer to the nameplate for limits on vacuum and pressure, current draw and motor performance.

If your specific model number is not listed above, please consult the nameplate on the unit for electrical data. If the model you are installing is listed above, please confirm the data on the nameplate. Data in Tables 1 through 4 is subject to change and is approximate. Be sure to confirm necessary operating data what that on the nameplate before commissioning the unit.

CAUTION! Do not operate any 3BA blower above 87 Hz without consultation with the factory. Failure of the blower motor is possible when operating out of range. Consult with the factory for assistance.

Expected temperature rise of the handled gas at maximum allowable pressure differential and when operating at sea level is indicated below:

Table 7: Single Stage – Approximate Temperature Rise

Blower Model	Maximum Rise at 50 Hz speed		Maximum Rise at 60 Hz speed	
	Degrees F	Degrees C	Degrees F	Degrees C
3BA1100-7..0.	115	64	136	76
3BA1200-7..0.	65	36	101	56
3BA1300-7..0.	90	50	77	43
3BA1300-7..1.	90	50	140	78
3BA1300-7..2.	90	50	158	88
3BA1400-7..0.	99	55	86	48
3BA1400-7..1.	129	72	122	68
3BA1400-7..2.	149	83	167	93
3BA1500-7..0.	86	48	72	40
3BA1500-7..1.	115	64	97	54
3BA1500-7..2.	138	77	122	68
3BA1500-7..3.	203	113	180	100
3BA1500-7..6.	248	138	248	138
3BA1600-7..0.	81	45	68	38
3BA1600-7..1.	145	81	104	58
3BA1600-7..2.	171	95	176	98
3BA1600-7..3.	225	125	185	103
3BA1600-7..6.	248	138	194	108
3BA1600-7..7.	248	138	248	138
3BA1800-7..0.	104	58	104	58
3BA1800-7..1.	153	85	185	103
3BA1800-7..2.	248	138	221	123
3BA1900-7..0.	97	54	95	53
3BA1900-7..1.	182	101	155	86
3BA1900-7..3.	230	128	212	118
3BA1943-7..2.	85	47	75	42
3BA1943-7..3.	130	72	100	56
3BA1943-7..4.	180	100	140	78
3BA7210-0..1..	126	70	142	79
3BA7310-0..1..	142	79	142	79
3BA7310-0..2..	178	99	187	104
3BA7410-0..1..	194	108	214	119
3BA7510-0..1..	199	111	232	129
3BA7510-0..2..	248	138	234	130
3BA7610-0..1..	244	136	255	142
3BA7610-0..3..	244	136	255	142

Table 8: Two/Three Stage – Approximate Temperature Rise

Blower Model	Maximum Rise at 50 Hz speed		Maximum Rise at 60 Hz speed	
	Degrees F	Degrees C	Degrees F	Degrees C
3BA1310-7..2.	127	71	165	92
3BA1410-7..3.	154	86	149	83
3BA1410-7..4.	181	101	180	100
3BA1510-7..4.	190	106	176	98
3BA1510-7..5.	194	108	201	112
3BA1610-7..1.	92	51	86	48
3BA1610-7..2.	129	72	118	66
3BA1610-7..3.	176	98	167	93
3BA1610-7..4.	221	123	190	106
3BA1610-7..5.	246	137	266	148
3BA1610-7..7.	176	98	167	93
3BA1610-7..8.	176	98	248	138
3BA1810-7..1.	113	63	80	45
3BA1810-7..2.	185	103	140	78
3BA1810-7..3.	248	138	248	138
3BA1910-7..1.	119	66	115	64
3BA1910-7..2.	203	113	169	94
3BA1910-7..3.	248	138	274	152
3BA1910-7..4.	248	138	274	152
3BA7220-0..2..	131	73	171	95
3BA7220-0..5..	165	92	230	128
3BA7320-0..5..	178	99	255	142
3BA7420-0..2..	192	107	176	98
3BA7420-0..5..	250	139	243	135
3BA7520-0..2..	192	107	216	120
3BA7520-0..7..	257	143	262	128
3BA7530-0..7..	250	121	250	121
3BA7620-0..3..	255	142	259	144
3BA7620-0..5..	255	142	262	146
3BA7630-0..6..	248	138	248	138

Table 9: Tightening Torque Specifications

For non-electrical connections

Thread	Ft-lbs maximum torque	Nm maximum torque
M4	2.43	3.3
M5	3.25	4.4
M6	6.49	8.8
M8	19.47	26.4
M10	34.10	46.2
M12	56.76	77

For electrical connections

Thread	Ft-lbs torque	Nm torque
M4	0.6 to 0.9	0.8 to 1.2
M5	1.3 to 1.8	1.3 to 1.8

For metal threaded glands/unions

Thread	Ft-lbs maximum torque	Nm maximum torque
M12x1.5	3 to 4.5	4 to 6
M16x1.5	3.7 to 5.5	5 to 7.5
M20x1.5	4.4 to 6.6	6 to 9
M32x1.5	5.9 to 8.9	8 to 12
M40x1.5	5.9 to 8.9	8 to 12

For plastic threaded glands/unions

Thread	Ft-lbs maximum torque	Nm maximum torque
M12x1.5	1.5 to 2.6	2 to 3.5
M16x1.5	2.2 to 3	3 to 4
M20x1.5	3 to 3.7	4 to 5
M32x1.5	3.7 to 5.2	5 to 7
M40x1.5	3.7 to 5.2	5 to 7

Operating above the indicated maximum pressure or vacuum would overload the motor and/or overheat the unit. In addition to the maximum allowable pressure difference, careful consideration should be given to matching the motor protection devices (provided by others) to the expected current draw. In no case should the blower be operated with inadequate motor overload protection.

Since regenerative blowers are dynamic compression devices, the performance limits shown in Tables 1 to 4 are applicable only for a gas with the same specific gravity, dynamic viscosity and chemical characteristics as air. For gases with different physical properties than air, the limits will be different from those shown in the tables. Please contact Airtech for assistance in determining the proper blower size and configuration if handling gases other than air.

A vacuum relief valve or pressure relief valve should always be installed at the suction or discharge of the regenerative blower. This will prevent operation outside the applicable ranges shown in Tables 1 to 4. If the relief valves were not specified in the ordering process, please contact Airtech for details, price and availability of the needed valves before commissioning the unit. Failure to use the proper relief valve may result in failure of the blower due to operation outside the applicable limits; any such failure is outside the scope of Airtech's standard warranty.

WARNING! Be sure to install the necessary personnel protection devices if unexpected shut-down of the unit presents danger of death or injury.

3. Installation

As illustrated in Figure 1, the Airtech 3BA blower can be installed in any physical configuration.

CAUTION! Regenerative blowers can have surface temperatures in excess of 320° F. To avoid burns or other physical injury, take care to avoid contact with the surfaces of the blower during and immediately after operation.

To ensure adequate cooling of the blower during operation, install the blower with the minimum clearance as indicated in the table below.

Minimum installation clearances, 3BA blowers

Range	Distance from fan guard to closest obstruction. (inches/mm)	Distance from cover (opposite of fan) to closest obstruction. (inches/mm)
3BA11 through 3BA14	1.4/34	0.79/20
3BA15 through 3BA19	2.1/53	1.57/40
3BA72 and 3BA73	1.3/34	1.18/30
3BA74 through 3BA76	2.1/54	1.18/30

Please note that it may be desirable, where possible, to allow for larger clearances to allow access for maintenance or repair personnel. The noted clearances are to ensure adequate air flow for cooling only and are a minimum requirement.

Failure to allow for the noted clearances may result in premature failure of the blower due to lack of cooling, even if all other precautions are taken as recommended. For specific advice about installations requiring closer clearances, please contact Airtech, Inc. for recommendations.

Airtech regenerative blowers can be mounted in any configuration, either horizontally or vertically mounted. It is not usually necessary to bolt the smaller blowers to a rigid surface during operation, though this may be desirable to reduce pipe vibration, movement and noise. Larger models should be bolted in place, especially when installed vertically, to prevent possible rotation, damage or injury due to start-up torque.

CAUTION! For installations at altitudes greater than 3250 Feet above sea level there will be a loss in capacity. Please contact your factory representative for assistance in determining the extent of the loss of capacity likely at your specific location.

WARNING! Be sure to follow all local codes and regulations with respect to installation and operation of the blower. The blower motor should be wired to a branch circuit disconnect and all other safety devices recommended by the relevant sections of NFPA 70, National Electrical Code, and in accordance with all applicable state and local regulations and requirements.

3.1 Installation Procedure

Perform the installation exactly in accordance with the following steps:

1. For vacuum operation, connect the suction pipe to connection A, and for pressure operation connect the pressure pipe to connection B (See Figure 1). Install startup screens before startup to protect pump from debris.

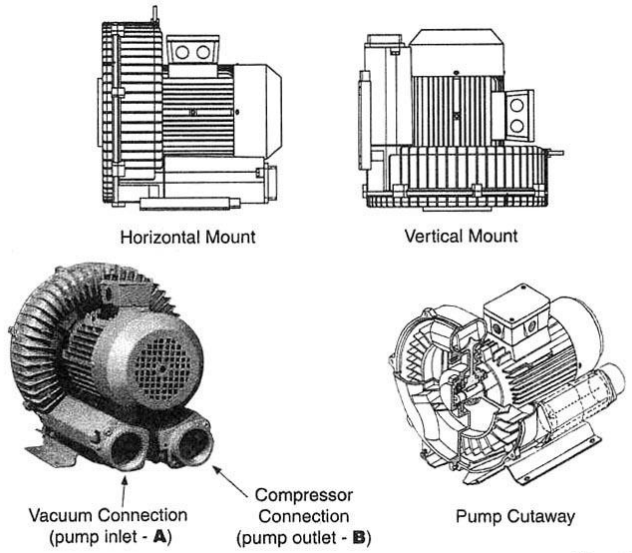


Figure 1

CAUTION! Design your piping system to avoid unnecessary pressure loss, which may significantly affect the operation of any regenerative blower. Contact your Airtech representative for assistance in designing and configuring an appropriate piping system for your application.

For alternation between vacuum and pressure in any application, changeover valves are available. Use of the changeover valve allows the same connection to be used for both vacuum and pressure.

2. The electrical data shown in Tables 1 to 4 (pages 10-14) should be confirmed by examination of the motor data plate on your 3BA blower. The standard motor features Class F insulation as a standard and are UL recognized for applications in both Canada and the United States (CUL). Motors are IEC design IP55, equal to a NEMA TEFC motor design. The connection diagram for the motors can be found in the inside of the terminal box cover. Be sure to confirm that your electrical supply has sufficient capacity to operate the blower according to the nameplate requirements.

3. A magnetic motor starter should always be used to connect the motor to the power supply. It is advisable to use thermal overload motor starters to provide maximum protection for the motor and wiring. All cabling used on starters should be secured with good quality cable clamps.

We recommend that the motor starters used feature a time delay trip on high amperage to avoid nuisance trips on start-up. When the unit is started cold, over amperage may be experienced for a short time due to the higher resistance of the windings at lower temperatures.

If using a change over or solenoid valve, ensure that the voltage connected to the valve matches that shown on the valve instructions or nameplate. Most valves are rated for 110 Volts 60Hz or 220 Volts 50 Hz. Connection of these valves to higher voltages may result in immediate valve failure.

WARNING! The electrical installation should be made by a qualified electrician and in complete compliance with all NFPA 70 (National Electrical Code) requirements along with all state and local code requirements. The main disconnect and motors starters are assumed to be provided by others.

4. Install the necessary relief valves and confirm their proper operation.

4. Start-up

CAUTION! Do not start the blower motor more than 10 times in one hour. If multiple and frequent start-ups are required by your application, install a minimum run timer in the motor control circuit to avoid decreased motor life and possible fire due to over-starting of the motor.

1.1 Start-up Procedure

1. Before operation, confirm the correct direction of rotation by jogging (switching rapidly on and off) the motor and observing the motor fan rotation in the same direction as the arrow. If the direction of rotation is incorrect, lock out the power and switch two leads (three phase) or rewire (single phase) to effect the opposite rotation direction. Recheck the direction of rotation before proceeding.

2. Do not operate the blower at pressure or vacuum ranges that exceed those shown in Tables one through four for the model being installed. This can be achieved by use of the recommended relief valve shown in Table 5.

Note: Relief valves that have been factory pre-set have a label indicating the set pressure and an arrow indicating the direction of flow. The arrow will point into the pipe when installed in vacuum applications and out of the pipe when installed in pressure applications. Do not re-set the relief valve if it has been pre-set from the factory.

In the event the relief valve setting needs to be reset, adjust the set screw to increase or decrease the tension on the spring. Place the blower in operation and note the current draw of the motor. When the current draw of the motor is near the maximum noted on the motor nameplate, tighten the locking nut on the valve and proceed.

3. When checking the current draw of the motor with an ammeter, be sure to confirm the voltage at the motor junction box. Low voltage conditions may result in difficulty starting or in unexpected motor failure or motor starter trips.

1.2 Potential Risks For Operators

Noise emission: Free field noise limits are indicated in Tables 1-4 (pages 10-14). Hearing protection is not normally required at the expected noise generation levels in the table; however, local conditions may result in higher ambient noise. If this is the case and local noise exceeds OSHA recommended levels for expected exposure time (typically 85 dBA for eight hours), hearing protection should be used.

5. Maintenance and Servicing

WARNING! Be sure the power supply is disconnected and locked out before attempting to do any maintenance on the unit. It is critical that the unit be locked out from starting during maintenance as severe injury or death could result from exposure to high voltage or rotating parts.

CAUTION! Allow the blower to cool to a surface temperature of less than 100 F before attempting maintenance. Prolonged exposure to temperatures above 120F can cause severe burns.

Clean the blower surfaces periodically to avoid build up of dust or other debris. Build up of debris can cause overheating and premature failure of the blower.

If an inlet filter is being use, ensure that it remains clean during operation by examining the filter cartridge for debris build up. Replace dirty or clogged filter cartridges.

On pressure units, periodically clean the inlet mesh screen to avoid loss of capacity. If an external inlet filter is used, the filter element should be cleaned monthly or as frequently as required by local conditions. Excessive pressure drop will develop from use of clogged or dirty filters. This pressure drop will degrade blower performance and increase operating temperatures, leading possibly to premature pump failure.

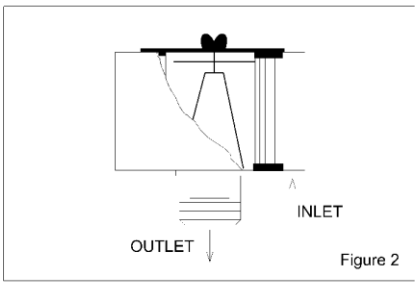


Figure 2

To replace the filter, remove the wing nut and cover. Remove the element and either clean with compressed air or replace. Reassemble in reverse order.

For vacuum applications, the optional in-line vacuum filter must be cleaned regularly, depending on local conditions. Cleaning can be achieved by blowing out with compressed air. If cleaning is not possible, replace the cartridge. Access the cartridge by unhooking the relevant clips and removing the cover.

CAUTION! Do not attempt to check the filter cartridge during operation of the blower. Only check the cartridge after disconnecting the power from the blower and locking out the power to prevent an unexpected start.

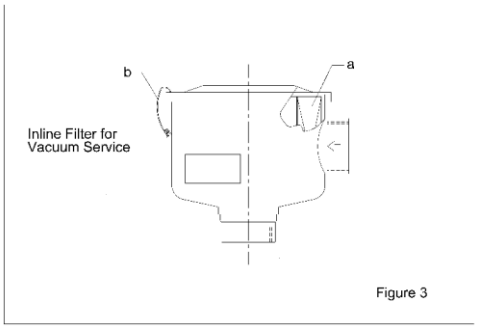


Figure 3

Bearings are grease-packed for life.

5.1 Troubleshooting Chart

Fault	Cause	Remedy	Responsible Party
Motor does not start, no noise.	Two or more power legs interrupted	Check fuses, terminals, etc.. for source of interruption and correct.	Electrician
Motor does not start, humming noise.	One power supply lead interrupted	Check fuses, terminals, etc.. for source of interruption and correct.	Electrician
	Impeller is jammed.	Open blower cover, remove debris, clean.	Service Technician
		Check impeller clearance and reset if necessary.	
	Defective Impeller	Replace impeller.	Service Technician
	Defective Bearing	Replace defective bearing.	Service Technician
Trip of motor starter at start-up	Incorrect starter setting	Ensure starter setting is correct (check current on nameplate)	Electrician
	Winding short-circuit	Megger motor	Electrician
	Motor overloaded due to operation of pump at excessive differential pressures.	Inspect filters, mufflers and connection pipes and clean as required. Check relief valve operation. Reset or replace as necessary.	Operator
	Impeller Jammed	See above fault Motor does not start, humming noise, cause jammed impeller.	Operator
Excessive Power Consumption	Lime or other deposits	Decalcify or clean unit as required (see Maintenance Chart)	Operator
No Vacuum or Pressure.	Severe leak in system	Close off pump and run deadheaded to confirm pump is operating properly. If so, find and fix leak in the system.	Operator
	Wrong direction of rotation	Check air flow direction and change direction of rotation if necessary.	Operator Electrician

Fault	Cause	Remedy	Responsible Party
Insufficient Vacuum	System too small	Use larger system	Operator
	Inlet piping too long or too small.	Increase pipe diameter to reduce pressure loss in inlet piping. Contact Airtech for assistance in determining correct pipe size.	Operator
	Leak at connection to vacuum system.	Check for leaks and repair if necessary.	Operator
	Density of gas handles different from air.	Consider increased limits on operation due to density differences. Consult Airtech, Inc. for assistance.	Airtech Engineering
	Change in impeller geometry due to erosion	Clean impeller and examine for wear. Replace if necessary.	Service Technician
	Inlet filter clogged.	Change filter element; remove clog.	Operator
	Vacuum relief valve incorrectly set.	Reset or replace vacuum relief valve. Contact Airtech for assistance.	Operator
	Seal defective.	Replace seal.	Service Technician
Abnormal flow noises.	Flow speed too high.	Clean pipes or use larger pipes to connect unit to process.	Operator
	Muffler soiled.	Clean muffler inserts, replace if necessary.	Operator
Abnormal running noise	Ball bearing defective or insufficient lubrication on bearing.	Replace bearing if required.	Service Technician
Compressor leaky	Seals on muffler defective.	Tighten muffler connection. Replace gasket if necessary.	Operator
	Seals in motor area defective	Replace as necessary.	Service Technician

WARNING! Before attempting an on-site repair, ensure that a qualified electrician has disconnected the motor from the power supply so that accidental starting of the motor is impossible.

After repairing the unit, be sure to follow the instructions noted in this manual in the **Installation** section (page 20).

5.2 Lifting

For smaller units (less than 65 lbs/ 30 kgs), it may be possible to lift the units manually. When doing so, be sure to understand the weight of the unit being lifted and to follow good lifting safety procedures.

Model	Weight Lbs/kgs	Model	Weight Lbs/kgs
3BA1300-7AT06	20/9	3BA1310-7AT26	33/15
2BA1300-7AT16	22/10	3BA1410-7AT36	55/25
3BA1400-7AT06	29/13	3BA1410-7AT46	59.5/29
3BA1400-7AT26	37.5/17	3BA1510-7AT46	86/39
3BA1500-7AT06	40/18	3BA1510-7AT56	97/44
3BA1500-7AT16	46.5/21	3BA1610-7AT26	104/47
3BA1500-7AT26	51/23	3BA1610-7AT36	119/54
3BA1500-7AT36	55/25	3BA1610-7AT46	163/74
3BA1600-7AT06	57.5/26	3BA1610-7AT56	172/78
3BA1600-7AT16	64/29	3BA1640-7AT36	128/58
3BA1600-7AT26	75/34	3BA1640-7AT46	172/78
3BA1600-7AT36	90.5/41	3BA1640-7AT56	181/82
3BA1800-7AT06	128/58	3BA1810-7AT16	250/113
3BA1800-7AT16	143/65	3BA1810-7AT26	260/118
3BA1800-7AT26	150/68	3BA1810-7AT36	316/143
3BA1900-7AT06	265/120	3BA1810-7AT46	341/155
3BA1900-7AT16	314/142	3BA1840-7AT26	260/118
3BA19437AT26	417/190	3BA1840-7AT36	316/143
3BA19437AT36	463/210	3BA1910-7AT16	409/186
3BA19437AT46	509/231	3BA1910-7AT36	455/206
3BA7210-0AT167	35.3/16	3BA1910-7AT46	500/226
3BA7310-0AT167	35.3/16	3BA7220-0AT567	61.7/28
3BA7410-0AT167	50.7/23	3BA7320-0AT567	66.1/30
3BA7510-0AT168	57.3/26	3BA7420-0AT267	72.7/33
3BA7510-0AT268	63.9/29	3BA7420-0AT567	86/39
3BA7610-0AT168	70.5/32	3BA7520-0AT268	88.2/40
3BA7610-0AT368	77.2/35	3BA7620-0AT368	106/48
3BA7530-0AT768	200/91	3BA7620-0AT568	143/65
		3BA7630-0AT668	207/94

When lifting 3BA15 through 3BA19 (but not 3BA1943 units) or the 3BA75 through the 3BA76, use the eye bolt provided (eye bolts are not included on smaller units). One attachment point should be sufficient. Ensure that the crane is rated for the weight being lifted.

For the 3BA1943, use the eye bolt and the holes in the feet of the blower to lift and maintain a balanced load.

5.3 Storage

The 3BA units should be stored in a clean, dry environment. If stored in an area with a humidity of greater than 80 percent, store in a closed container with desiccant drying agents to avoid damage.

5.4 Disposal

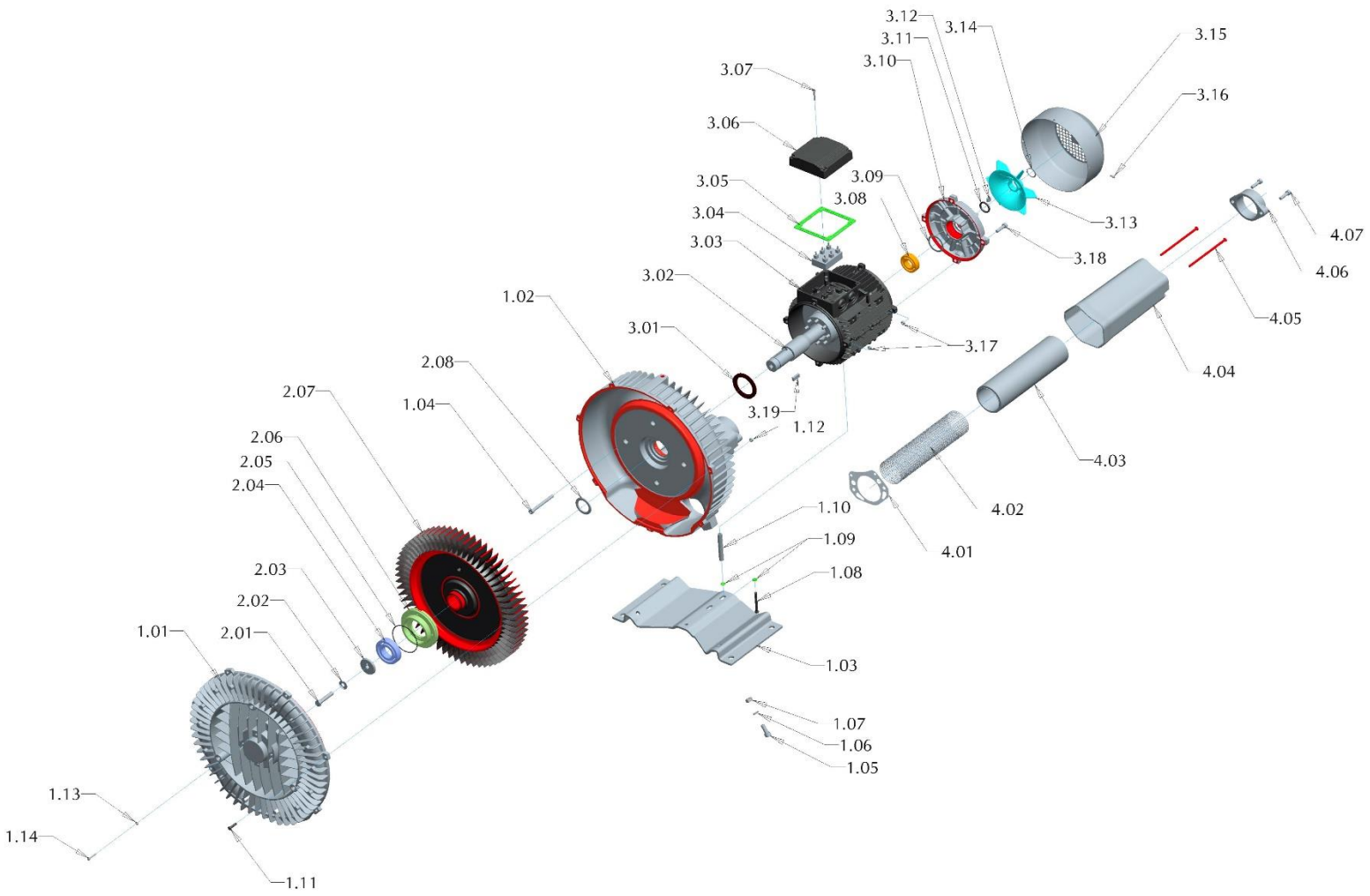
Dispose in accordance with all local health and safety regulations.

Spare parts list are available from your local Airtech service center. Please contact your local Airtech representative for assistance.

For additional assistance, please contact:

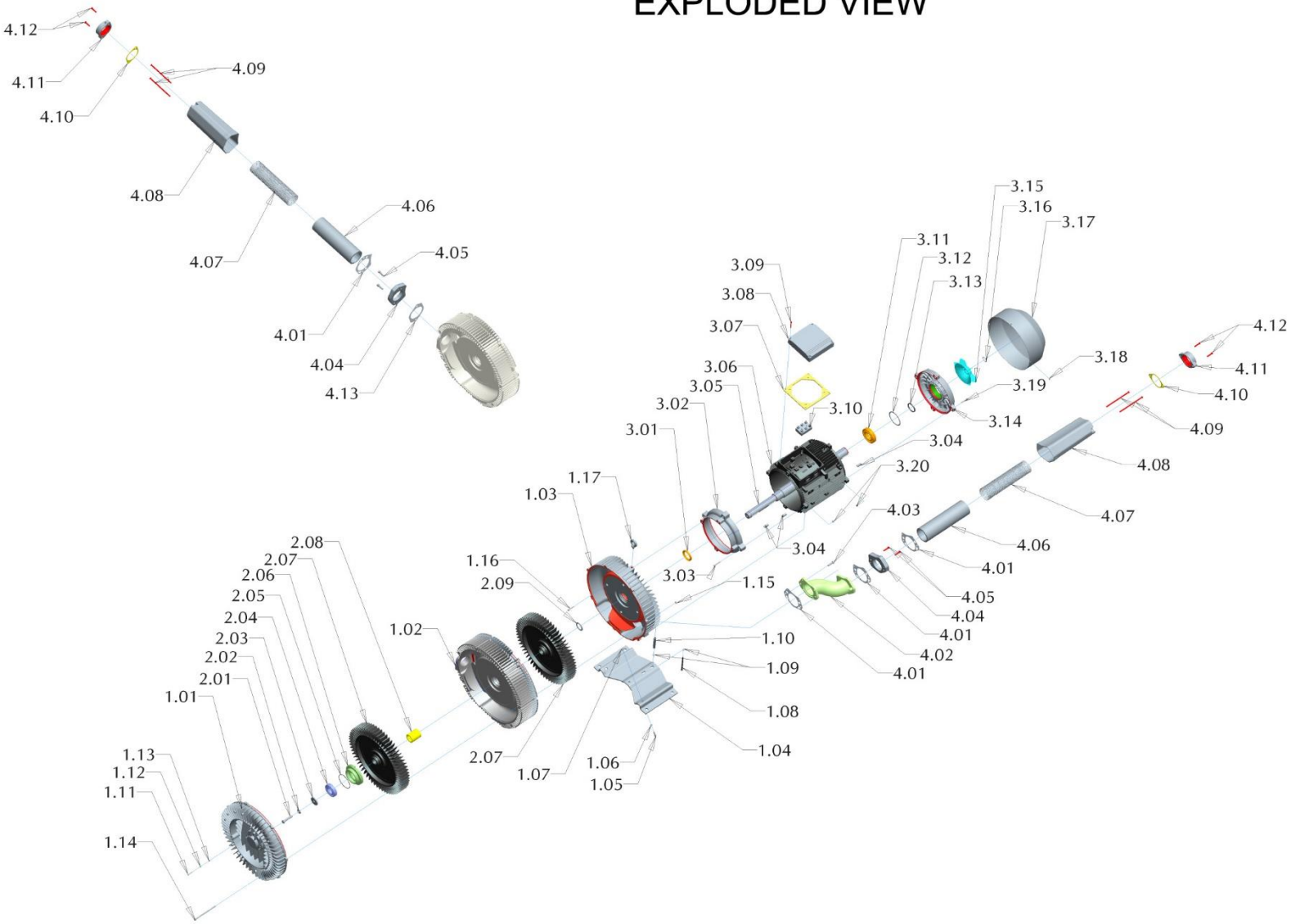
Airtech, Inc.,
301 Veterans Boulevard
Rutherford, NJ, 07070
Phone: 1-201-569-1173
Fax: 201-569-1696.

3BA1 SINGLE STAGE
EXPLODED VIEW



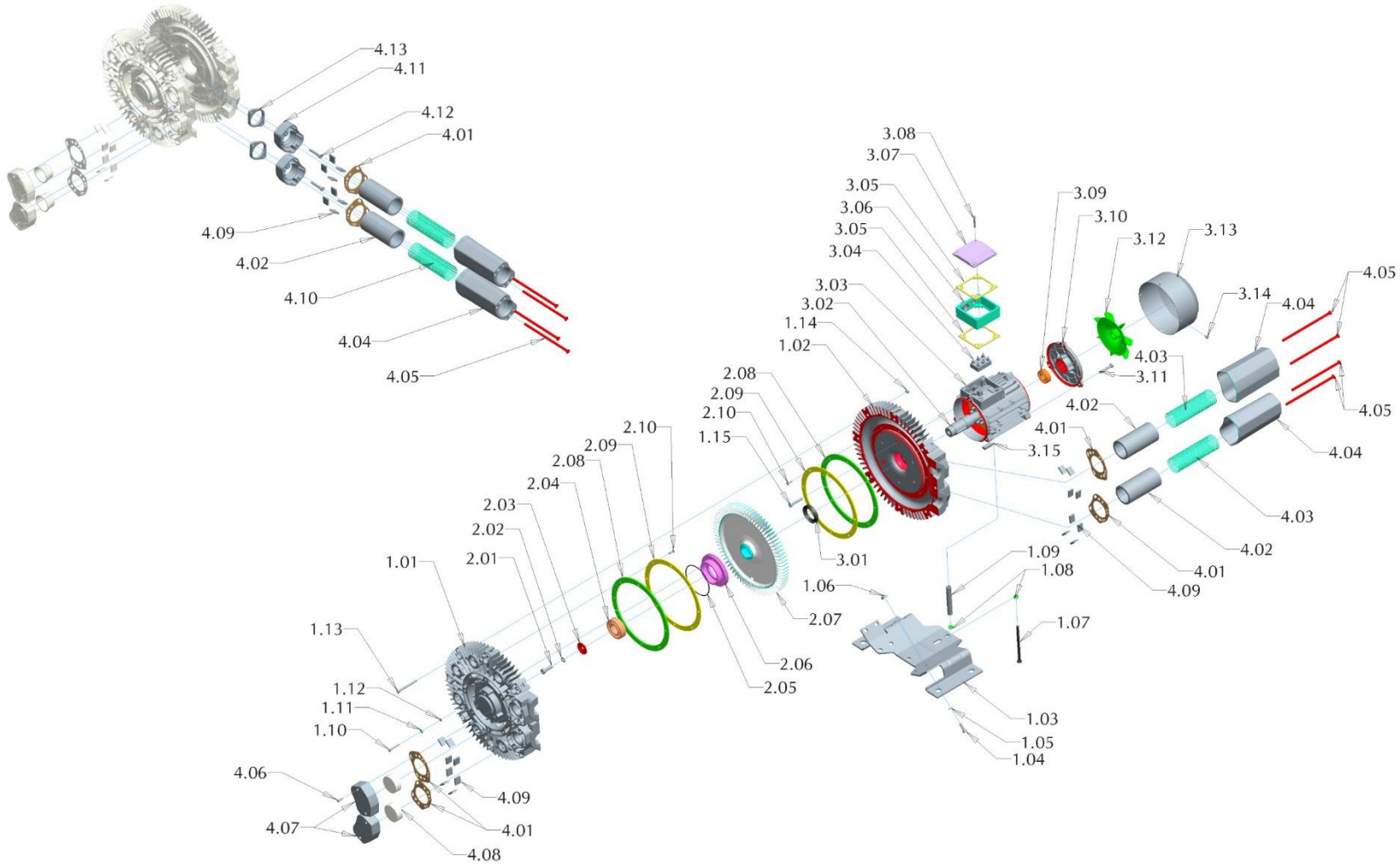
No.	Qty.	Description
1.01	1	Cover
1.02	1	Housing
1.03	1	Mounting Plate
1.04	4	Motor Mounting Screw
1.05	2	Mouting Plate Screw
1.06	2	Mounting Plate Washer
1.07	2	Mouting Plate Nut
1.08	1	Stator Support Screw
1.09	2	Stator Support Washer
1.10	1	Stator Support Sleeve
1.11	8	Cover Mounting Screw
1.12	8	Cover Mounting Nut
1.13	4	Bearing Cover Washer
1.14	4	Bearing Cover Screw
2.01	1	Shaft Screw
2.02	1	Shaft Lock Washer
2.03	1	Disc
2.04	1	Bearing
2.05	1	Bearing Cover O-Ring
2.06	1	Bearing Cover
2.07	1	Impeller
2.08	1	Disc
3.01	1	Seal
3.02	1	Motor Rotor
3.03	1	Stator
3.04	1	Terminal Block
3.05	1	Motor Terminal Box Gasket
3.06	1	Cover For Terminal Box
3.07	4	Terminal Box Cover Screw
3.08	1	Rear Bearing
3.09	1	Bearing Preloading Ring
3.10	1	End Shield
3.11	1	Tolerance Ring
3.12	1	Shaft Key
3.13	1	External Fan
3.14	1	Retaining Ring
3.15	1	Fan Cowl
3.16	4	Fan Cowl Screw
3.17	8	Stator Nut
3.18	4	End Shield Screw
3.19	1	Parallel Key
4.01	2	Silencer Gasket
4.02	2	Silencer Insert
4.03	2	Silencer Insert Filler
4.04	2	Silencer Casing
4.05	4	Silencer Screw
4.06	2	Flange
4.07	4	Flange Screw

3BA1 TWO STAGE
EXPLODED VIEW



No.	Qty.	Description
1.01	1	Cover
1.02	1	Center Section
1.03	1	Blower Housing
1.04	1	Mounting Plate
1.05	2	Plate Mounting Screw
1.06	2	Mouting Plate Washer
1.07	2	Mounting Plate Nut
1.08	1	Stator Support Screw
1.09	2	Stator Support Washer
1.10	1	Stator Support Sleeve
1.11	4	Bearing Cover Screw
1.12	4	Bearing Screw Washer
1.13	4	Bearing Ring Seal
1.14	8	Cover Mounting Screw
1.15	8	Cover Mounting Nut
1.16	4	Motor Mounting Screw
1.17	1	Lifting Ring
2.01	1	Shaft Screw
2.02	1	Shaft Lock Washer
2.03	1	Disc
2.04	1	Bearing
2.05	1	Bearing Cover O-Ring
2.06	1	Bearing Cover
2.07	2	Impeller
2.08	1	Sleeve
2.09	1	Disk
3.01	1	Shaft Seal Ring
3.02	1	Motor Attachment
3.03	4	Motor Attachment Screw
3.04	3	Parallel Key
3.05	1	Motor Rotor
3.06	1	Stator
3.07	1	Motor Terminal Box Gasket
3.08	1	Cover For Terminal Box
3.09	4	Terminal Box Cover Screw
3.10	1	Terminal Block
3.11	1	Rear Bearing
3.12	1	End Shield Seal
3.13	1	Rotary Shaft Lip Seal
3.14	1	End Shield
3.15	1	External Fan
3.16	1	Retaining Ring
3.17	1	Fan Cowl
3.18	4	Fan Cowl Screw
3.19	4	End Shield Screw
3.20	8	Stator Nut
4.01	4	Silencer Gasket
4.02	1	Silencer Attachment
4.03	2	Silencer Attachment Screw
4.04	2	Silencer Flange
4.05	4	Silencer Flange Screw
4.06	2	Silencer Insert Filler
4.07	2	Silencer Insert
4.08	2	Silencer Casing
4.09	4	Silencer Screw
4.10	2	Flange Gasket
4.11	2	FInage
4.12	4	Flange Screw
4.13	1	Side Silencer Gasket

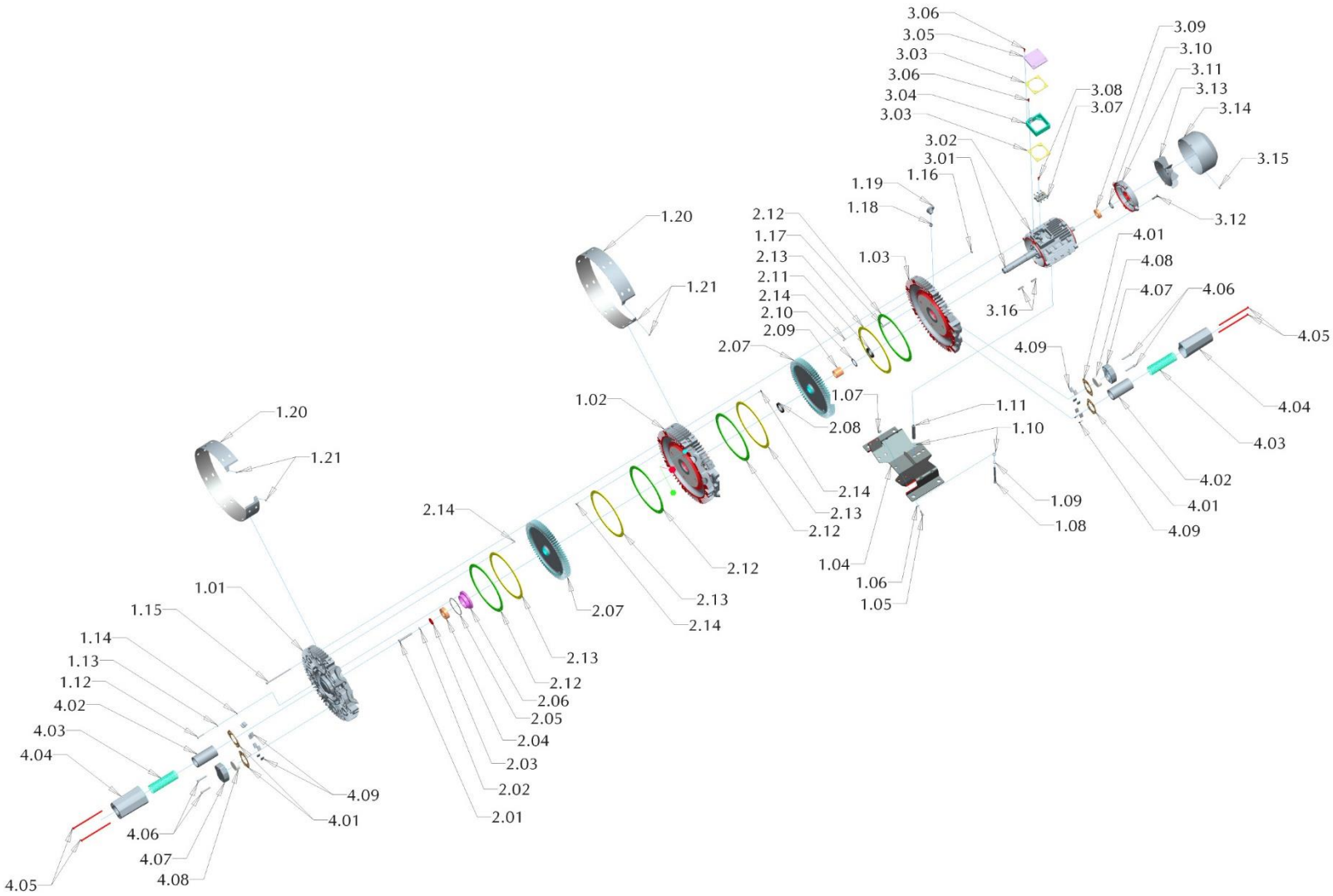
3BA7 SINGLE STAGE
EXPLODED VIEW



No.	Qty.	Description
1.01	1	Cover
1.02	1	Housing
1.03	1	Mounting Plate
1.04	4	Plate Mounting Screw
1.05	4	Mouting Plate Washer
1.06	4	Mounting Plate Nut
1.07	1	Stator Support Screw
1.08	2	Stator Support Washer
1.09	1	Stator Support Sleeve
1.10	3	Bearing Cover Screw
1.11	3	Bearing Screw Washer
1.12	3	Bearing Ring Seal
1.13	8	Cover Mounting Screw
1.14	8	Cover Mounting Nut
1.15	3	Motor Mounting Screw
2.01	1	Shaft Screw
2.02	1	Shaft Lock Washer
2.03	1	Disc
2.04	1	Bearing
2.05	1	Bearing Cover O-Ring
2.06	1	Bearing Cover
2.07	1	Impeller
2.08	2	Teflon Seal
2.09	2	Retaining Ring
2.10	16	Inner Seal Screw
3.01	1	Shaft Seal Ring
3.02	1	Motor Rotor
3.03	1	Stator
3.04	1	Terminal Block
3.05	2	Motor Terminal Box Gasket
3.06	1	Terminal Box
3.07	1	Cover For Terminal Box
3.08	4	Terminal Box Cover Screw
3.09	1	Rear Bearing
3.10	1	End Shield
3.11	3	End Shield Screw
3.12	1	External Fan
3.13	1	Fan Cowl
3.14	4	Fan Cowl Screw
3.15	1	Parallel Key
4.01	4	Silencer Gasket
4.02	2	Silencer Insert Filler
4.03	2	Silencer Insert
4.04	2	Silencer Casing
4.05	4	Silencer Screw
4.06	4	Flange Screw
4.07	2	Flange Cap
4.08	2	Flange Filler
4.09	16	Filler
4.10	2	Silencer Insert
4.11	2	Flange
4.12	4	Flange Screw
4.13	2	Flange Gasket

*Does not apply for 3BA76XX Blowers

3BA7 TWO STAGE EXPLODED VIEW



No.	Qty.	Description
1.01	1	Cover
1.02	1	Center Section
1.03	1	Housing
1.04	1	Mounting Plate
1.05	4	Plate Mounting Screw
1.06	4	Mouting Plate Washer
1.07	4	Mounting Plate Nut
1.08	1	Stator Support Screw
1.09	1	Stator Support Lock Washer
1.10	2	Stator Support Washer
1.11	1	Stator Support Sleeve
1.12	3	Bearing Cover Screw
1.13	3	Bearing Screw Washer
1.14	3	Bearing Ring Seal
1.15	8	Cover Mounting Screw
1.16	8	Cover Mounting Nut
1.17	4	Motor Mounting Screw
1.18	1	Lifting Ring Nut
1.19	1	Lifting Ring
1.20	2	Blower Cowl
1.21	4	Blower Cowl Screw
2.01	1	Shaft Screw
2.02	1	Shaft Lock Washer
2.03	1	Disc
2.04	1	Bearing
2.05	1	Bearing Cover O-Ring
2.06	1	Bearing Cover
2.07	2	Impeller
2.08	1	Rotary Shaft Seal
2.09	1	Sleeve
2.10	1	Disk
2.11	1	Shaft Seal Ring
2.12	4	Teflon Seal*
2.13	4	Retaining Ring
2.14	32	Inner Seal Screw
3.01	1	Motor Rotor
3.02	1	Stator
3.03	2	Motor Terminal Box Gasket
3.04	1	Terminal Box
3.05	1	Cover For Terminal Box
3.06	8	Terminal Box Screw
3.07	1	Terminal Block
3.08	1	Terminal Block Screw
3.09	1	Rear Bearing
3.10	1	End Shield Disk
3.11	1	End Shield
3.12	4	End Shield Screw
3.13	1	External Fan
3.14	1	Fan Cowl
3.15	4	Fan Cowl Screw
3.16	2	Parallel Key
4.01	4	Silencer Gasket
4.02	2	Silencer Insert Filler
4.03	2	Silencer Insert
4.04	2	Silencer Casing
4.05	4	Silencer Screw
4.06	4	Flange Screw
4.07	2	Flange Cap
4.08	2	Flange Filler
4.09	16	Filler

*Does not apply for 3BA76XX Blowers

Airtech, Inc. ("Company") Warranty Statement

Company warrants that on the date of shipment to Purchaser the goods will be of the kind and quality described herein, merchantable, and free of all defects in workmanship and materials.

If within one year from the date of initial operation, but not more than eighteen months from date of shipment by the Company, of any item of the goods, Purchaser discovers that such item was not as warranted above and promptly notifies Company in writing thereof, Company shall remedy such defect by, at the Company's option, adjustment, repair or replacement of the item and any affected part of the good. Purchaser shall assume all responsibility and expense for removal, reinstallation and freight in connection with the foregoing remedy. The same obligations and conditions shall extend to replacement items furnished by the Company hereunder. Company shall have the right of disposal of items replaced by it. Purchaser shall grant Company access to the goods at all reasonable times in order for Company to determine any defect in the goods. In the event that adjustment, repair or replacement does not remedy the defect, the Company and Purchaser shall negotiate in good faith an equitable adjustment in the contract price.

The Company's responsibility does not extend to any item of the goods which has not been manufactured and sold by the Company. Such item shall be covered only by the express warranty, if any, by the manufacturer thereof. The Company and its suppliers shall also have no responsibility if the goods have been improperly stored, handled or installed, or if the goods have not been operated or maintained according to their ratings or according to the instructions in Company or supplier furnished manuals, or if unauthorized repairs or modifications have been made to the goods.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES (EXCEPT TITLE) INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, AND CONSTITUTES THE ONLY WARRANTY OF COMPANY WITH RESPECT TO THE GOODS.

The forgoing states Purchaser's exclusive remedy against Company and its suppliers for any defect in the good or for failure of the goods to be as warranted, whether Purchaser's remedy is based on contract, warranty, failure of such remedy to achieve its essential purpose, tort (including negligence), strict liability, indemnity, or any other legal theory, and whether arising out of warranties, representations, instructions, installations, or defects from any cause.

Neither Company nor its suppliers shall be liable, whether in contract, warranty, failure of a remedy to meet its essential purpose, tort (including negligence), strict liability, indemnity or any other legal theory, for loss of use, revenue or profit or for cost of capital or of substitute use or performance or for indirect, liquidated, incidental or consequential damages or for any other loss or cost of a similar type, or for claims by Purchaser for damages of Purchaser's customers.

AIRTECH® VACUUM

301 Veterans Boulevard
Rutherford, NJ 07070
Tel: 1 888 222 9940
Fax: 201 569 1696
airtech@airtechusa.com

AIRTECH® VACUUM SOUTH

2121 Newmarket Pkwy. Suite 110
Marietta, GA 30067
Tel: 770 690 0700
Fax: 770 690 0709
airtechsouth@airtechusa.com

AIRTECH® VACUUM WEST

42 Digital Drive #9
Novato, CA 94949
Tel: 415 382 9000
Fax: 415 382 9700
airtechwest@airtechusa.com

AIRTECH® VACUUM CHINA

2nd Building,
Jiangbian Second Industrial Park
Songgang Town, Bao'an District
Shenzhen, China
Tel: +86 755 81730991(Ext. 8018)
Fax: +86 755 81730986
www.airtechchina.com

AIRTECH® EUROPE

Pfaffenpfad 5
D-97440 Werneck
Germany
Tel: +49 9722 943 96 0
Fax: +49 9722 943 96 29
www.airtecheu.com

AIRTECH® EUROPE

Carrer dels Amics
d'Argentona 40
08310 Barcelona
Spain
Tel: +34 93 797 17 66
Fax: +34 93 797 17 54
www.airtecheu.com

www.airtechusa.com

OmniBeacon™

ALARM LIGHT

WITH CELLULAR TRANSMITTER AND SIREN

USER GUIDE

GUARDDOG VERSION

Copyright 2016, OmniSite
All Rights Reserved, Ver 1.0

OmniSite
CELLULAR MONITORING SOLUTIONS

Email: support@omnisite.com

CONTENTS

Technical Support 5

Technical Specifications 6

Introduction 7

Operating Modes 8

Internal Components 10

Unpacking 11

External Components 12

Installation 14

Safety Precautions 15

Panel Mounting 18

Hole Sealing Kit 20

Pole Mounting 22

Electrical Connection - 110 -120VAC 24

Six Position Wiring Diagram - 110-120VAC 26

Electrical Connection - 12VDC 28

Six Position Wiring Diagram - 12 VDC 30
Mounting Battery Backup 32
Activation 34
Connecting to Cellular Service 36
GuardDog Website Setup 37
Create Callout List 38
Independent Text Messaging 42
SMS Configuration 44
SMS Commands 51
SMS Messages 54
LED Status Indicators 56
System Power 57
Alarm Inputs 58
Troubleshooting 60
Product Safety, Use and Limited Warranty 62

WARNING: Not to be used as a visual public mode alarm notification appliance

WHAT DOES THIS MEAN?

To prevent misapplication of a visual signal appliance, it is the manufacturer's responsibility to warn the installer in the field and Authority Having Jurisdiction (AHJ) of what would be an inappropriate use of the product.

"Public Operating Mode" and "Notification Appliance" as defined in the National Fire Alarm Code, NFPA 72 is as follows:

Public Operating Mode - Audible or visible signaling to occupants or inhabitants of the area protected by the fire alarm system.

Notification Appliance - A fire alarm system component such as a bell, horn, speaker, light, or text display that provides audible, tactile, or visible outputs, or any combination thereof. In other words, this device should not be used as a component of a commercial fire alarm system.

Technical Support

Have questions or comments about your OmniBeacon™ Alarm Light? Please contact:

OmniSite
CELLULAR MONITORING SOLUTIONS

203 W. Morris Street
Indianapolis, IN 46225
support@omnisite.com

317-885-6330 x3

FREE WORLD CLASS SUPPORT!

www.OmniSite.com

Technical Specifications

- Dual Input Alarm Channels: (1) 12VAC/VDC to 120VAC/VDC, Opto-isolated to 1500VAC input and (1) Dry Contact input
- Backup Battery: External 6VDC Sealed Lead Acid, 1.3 AH, Re-chargeable, .187" Faston spades
- Operating Temperature: -20° to 150° F
- Operating Humidity: 0-90% RH, non-condensing
- Alarm Light Bulb: Super bright LEDs, long-life
- Alarm Light Annunciator: 2.8kHz, 85dB
- Alarm Light State: Pulses LEDs and Annunciator at 3Hz when input #1 is in alarm
- Cellular Radio: 4G LTE CAT-1
- Certifications: FCC Parts 15, 22, 24; RoHS compliant; IC: RSS-132 & 133
- Antenna: Integrated, on board
- Input Power: 120VAC +/-20% @ 0.5A max

  12VDC Version: 12VDC +/-15% @ 1.5A max
- Enclosure: NEMA 4 equivalent rating for direct mounting indoors or outdoors.
- Dimensions: 5"W round base x 5"H
- Weight: 1 lb.
- Protection: US Patent #7,228,129 and #7,778,633

Introduction

World's Best Alarm Beacon!

You've just purchased the best! The OmniSite OmniBeacon™ combines a wireless cellular transmitter, LED light source, and alarm siren into one convenient weather protected package. No matter your location, receive alerts from your equipment when you need it most.

How does the OmniBeacon™ Work?

The OmniBeacon™ can be configured to work for you in two different modes:

(1) Powered by our GuardDog Intelligent Website

(2) Independent text messaging mode

Operating Modes

OPTION 1 | GuardDog Intelligent Website

When configured in this way, the OmniBeacon™ will report events to the GuardDog website. GuardDog can be told to redistribute alarm events to any number of users via text messaging, email, or computer simulated voice message. You can also login to see your device on a Google map and GuardDog will keep a 2 year history of all events. For more information on how to setup and use this mode see page 37.

Operating Modes (Cont'd)

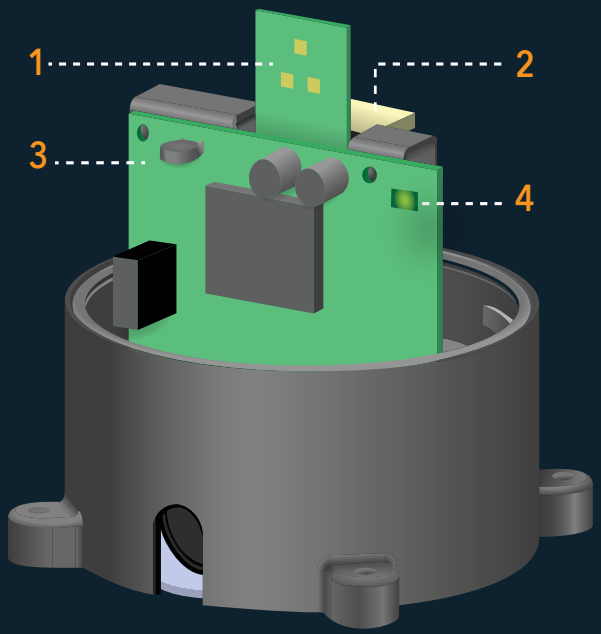
OPTION 2 | Text Messaging Backup

If the OmniBeacon™ CANNOT CONNECT to the GuardDog website for any reason, then it can be configured to directly send text messages to (3) phone numbers, and then bypass the GuardDog website.

In this mode, the OmniBeacon sends the text messages and does not rely on the GuardDog website to relay alarm information.

This is an "industry first" feature brought to you by OmniSite providing peace of mind that you always receive critical alarms. For more information on how to setup and use this mode, see page 42.

Internal components



(1) LED Multicluster Light Stick

(2) 12VDC Power Supply

(3) Cellular Transmitter & Battery Charger

(4) Status LED Indicator Light

In field service is not required for OmniBeacon™ internal components.

Unpacking

After unpacking your OmniBeacon™, examine it for damage that may have occurred in transit. If the device has been damaged, do not attempt to install or operate it.

File a claim immediately with the carrier stating the extent of the damage. Carefully check all bags, shipping labels, and tags before discarding them.

External components

(1) OmniBeacon™

(2) Control Panel Gasket (x1)

(3) Quick-Connect Field Wiring Connector

(4) Backup Battery (with Mounting Pocket)

(5) Impact Guard Cage

(6) Conduit Nut 3/4" (x1)

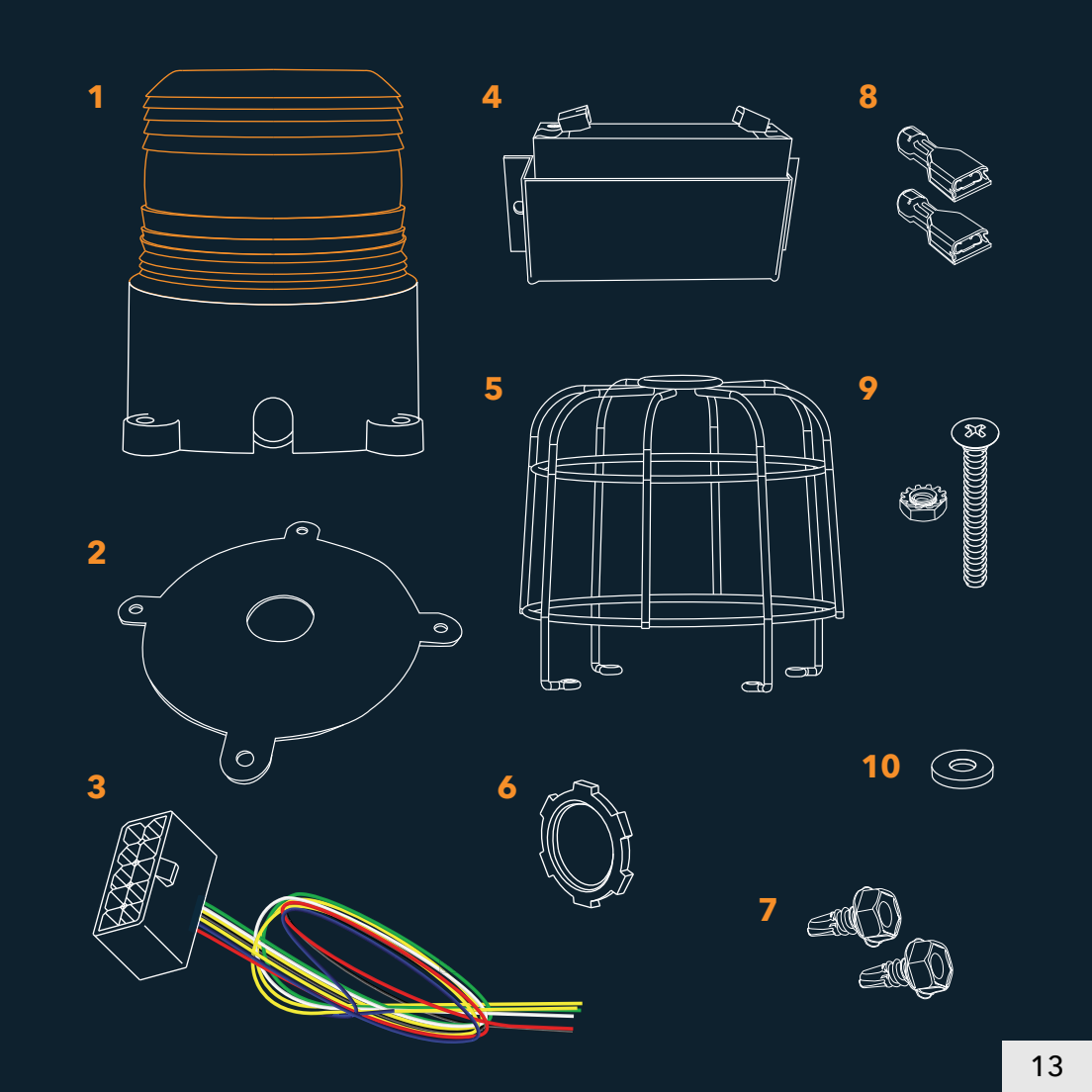
(7) #10 Self Drilling/Tapping Screws (x2)

(8) Quick Connect Terminals (x2)

(9) Stainless 8-32 Screw and Nut (x4)

(10) #8 Neoprene Sealing Washers (x4)

(A) Large Hole Sealing Kit used to fill/cover large hole in electrical panel (Optional)


1
2
3
4
5
6
7
8
9
10

Installation

SAFETY MESSAGE TO INSTALLERS, USERS, AND MAINTENANCE PERSONNEL

It is important to follow all instructions shipped with this product. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electrical Code/ Canadian Electrical Code and will follow the NEC/CEC Guidelines as well as local codes.

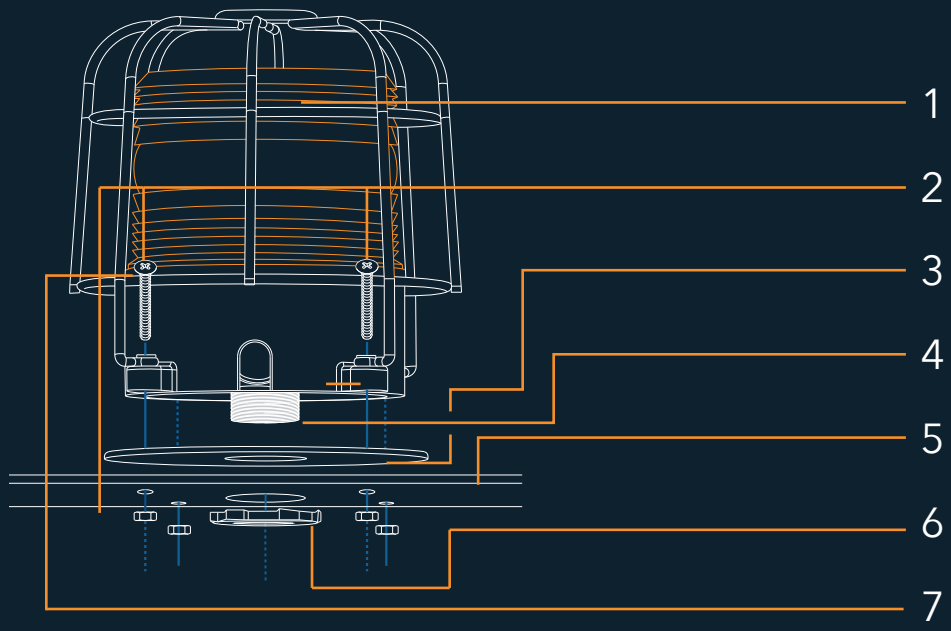
Installation of this device should be lead by the direction of the facilities engineer and the safety engineer. In addition, listed on the next page are some important safety precautions.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death.

Safety Precautions

- Read and understand all instructions before installing or operating the OmniBeacon™.
- Disconnect the OmniBeacon™ from the power supply before any installation or maintenance is performed.
- After installation, test the OmniBeacon™ to ensure that it is operating properly.
- After testing is complete, provide a copy of this instruction sheet to all operating personnel.
- Establish a procedure to routinely check the OmniBeacon™ installation for integrity and proper operation.
- The product nameplate should not be obscured in any way.

Panel Mounting Overview



(1) OmniBeacon™

(2) Stainless Steel 8-32 Screw & Nut (x4)

(3) Control Panel Gasket

(4) Chase Nipple

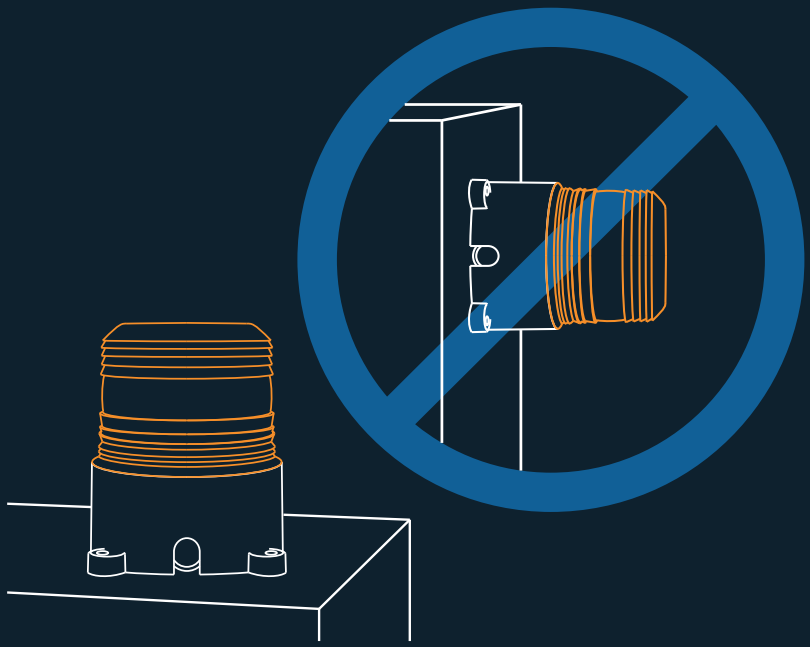
(5) Control Panel Surface

(6) Conduit Nut 3/4" (x1)

(7) #8 Neoprene Sealing Washers (x4)

Panel Mounting Instructions

DO NOT SIDE MOUNT OMNIBEACON™.
Mount the OmniBeacon™ in the vertical orientation only.



(1) Using the base foam gasket as a drilling template, mark hole locations in 5 places. Drill or punch four 3/16″ holes and one 3/4″ hole.

(2) Place the gasket on a mounting surface and line up four 3/16″ holes for the #8 machine screws.

(3) Remove the ¾″ conduit nut from the chase nipple. It will be secured in step (7).

(4) Pass the OmniBeacon wires and chase nipple through the ¾″ hole. Line up four 3/16″ holes with the mounting feet.

(5) Locate the four 8-32 Stainless Steel machine screws and four #8 Neoprene Sealing Washers.

(6) Insert the 8-32 Stainless Steel machine screws into the #8 Neoprene Sealing Washers, and then insert this into the four base feet. Attach the four 8-32 Stainless Steel nuts from the underside. Tighten the nuts snuggly.

(7) Feed wires through the ¾″ conduit nut and tighten to chase nipple.

(8) Refer to Electrical Connections section for wiring details.

OmniBeacon™ Large Hole Sealing Kit (Optional)

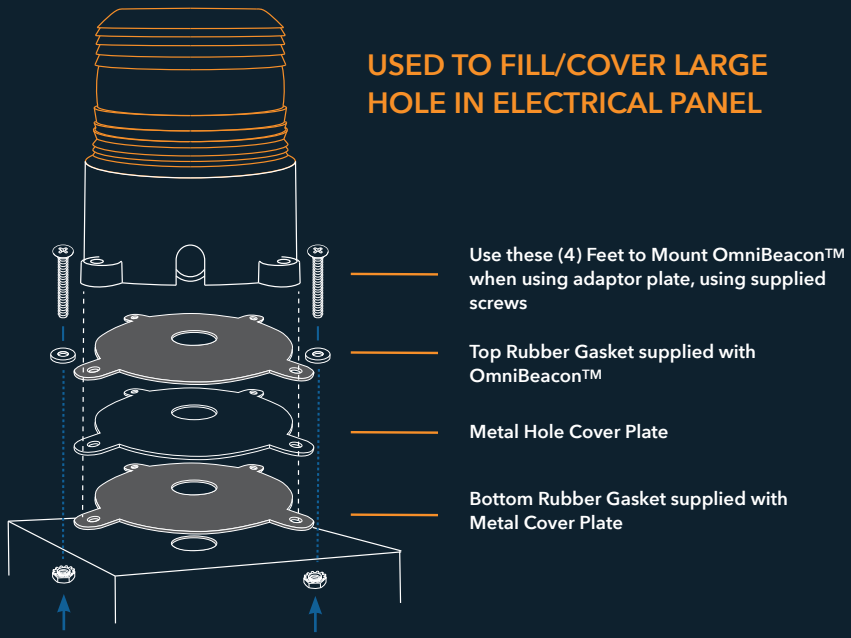


Figure #1 – Correct installation shows sandwiching metal plate between (2) rubber gaskets to cover a large hole in the electrical control panel.

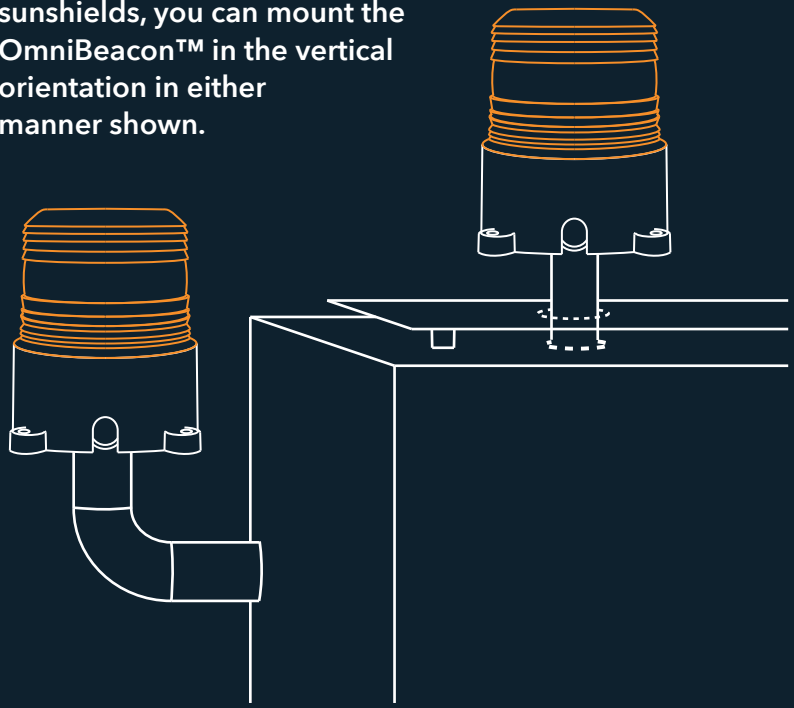
The standard OmniBeacon™ is intended to be mounted using the 3/4" conduit fitting which extends out of the bottom of the device. If you are replacing an existing alarm light with the OmniBeacon™, and you have a large hole to cover, the OmniBeacon™ accessory plate can be used to cover the hole as shown in Figure #1.

The metal plate should be sandwiched between (2) rubber gaskets to provide a complete seal.

NOTE: Do not attempt to cover a large hole without this plate. The siren on the bottom of the OmniBeacon™ is not weathertight and will allow water to leak into your control panel without the adaptor plate.

Pole Mounting OmniBeacon™

For panels with external sunshields, you can mount the OmniBeacon™ in the vertical orientation in either manner shown.



(1) Using ¾″ EMT conduit adapters, connect the ¾″ chase nipple on the OmniBeacon™ base to the ¾″ EMT conduit.

(2) Feed the field harness through the conduit.

(3) Attach the conduit to the control housing.

(4) Refer to Electrical Connections section for wiring details.

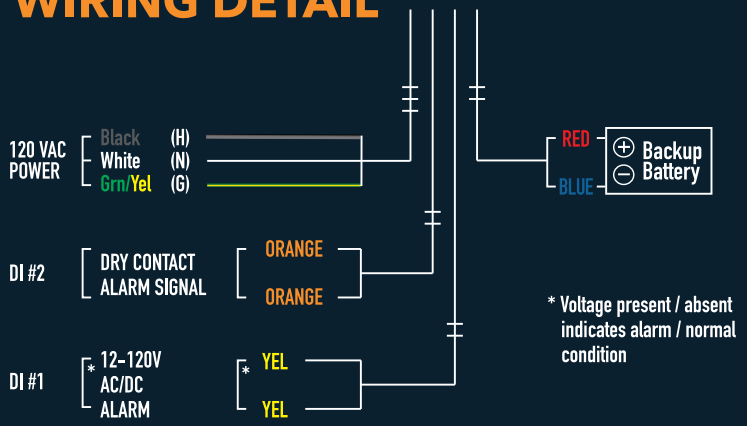
Electrical Connection - 110 - 120VAC

WARNING

To avoid electrical shock hazards, do not connect to supply circuit when power is applied.

The OmniBeacon™ is supplied with a 6' field harness for easy electrical connection.

WIRING DETAIL



(1) Connect the field harness to the OmniBeacon™.

(2) Route the wires to the desired location in the control panel and cut to length.

(3) Locate two - ¼" Quick connectors and crimp to the Blue and Red wires.

(4) Connect the Red wire to the positive battery terminal.

(5) Connect the Blue wire to the negative battery terminal.

(6) Connect the Yellow wires to desired alarm power source (12v – 120v AC or DC).

(7) Connect the Mains power. Green/Yellow connects to earth ground, Black to Line Hot, White to Neutral.

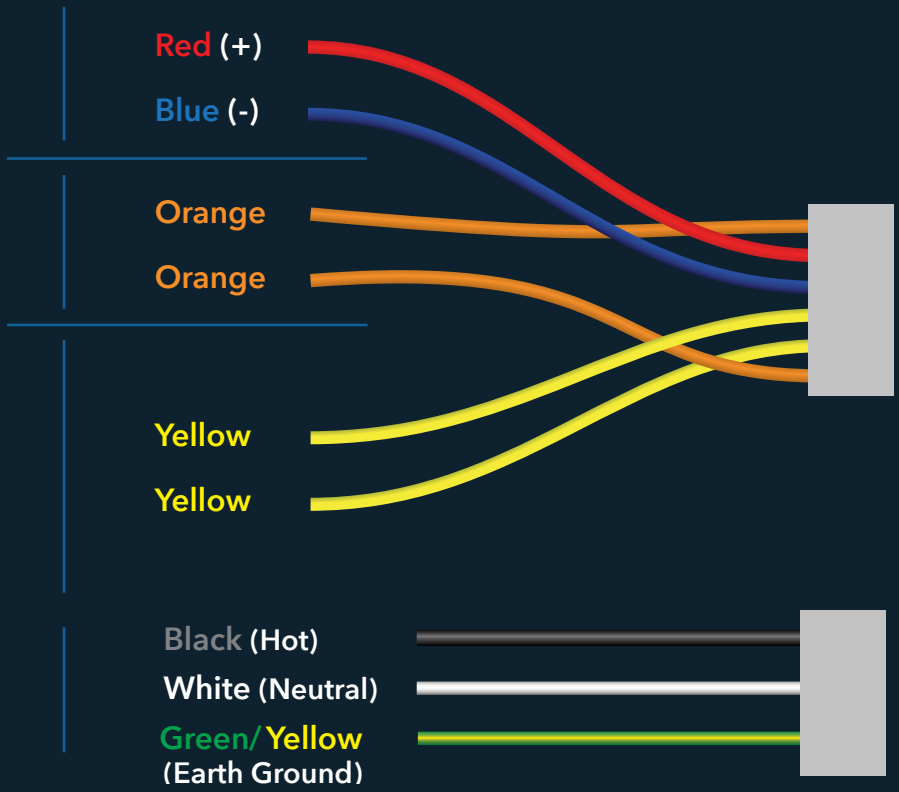
Six Position Wiring Diagram - 110 - 120VAC

Backup battery connection.
Quick connects included.

Non-powered, dry contact, input. Does not trigger siren or light beacon, sends alarms only.

Universal Voltage Alarm Channel.
Connect to 12VAC/VDC to 120VAC/VDC alarm signal.
(No polarity required)
Voltage present = alarm condition
No Voltage = non-alarm condition

Connect to user supplied 120VAC circuit capable of supplying 0.5 Amps minimum. 14-18 AWG recommended

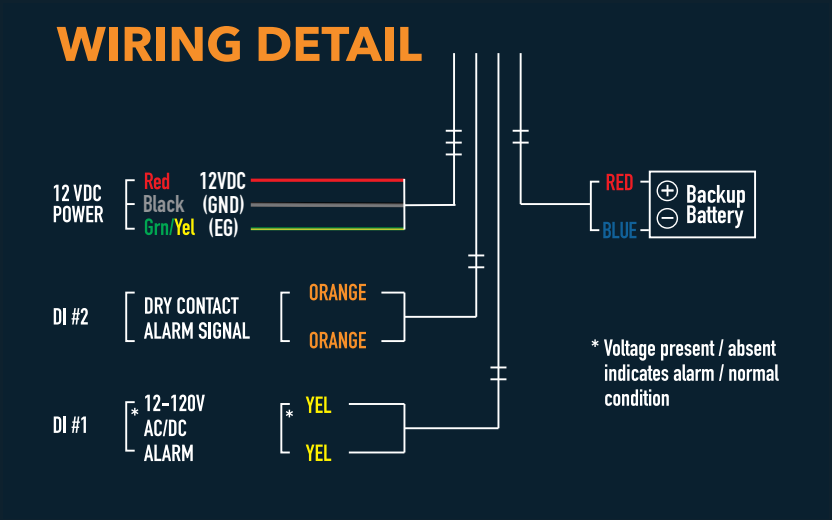

Red (+)
Blue (-)
Orange
Orange
Yellow
Yellow
Black (Hot)
White (Neutral)
Green/ Yellow
(Earth Ground)

Electrical Connection - 12VDC

WARNING

To avoid electrical shock hazards, do not connect to supply circuit when power is applied.

The OmniBeacon™ is supplied with a 6' field harness for easy electrical connection.



(1) Connect the field harness to the OmniBeacon™.

(2) Route the wires to the desired location in the control panel and cut to length.

(3) Locate two - ¼" Quick connectors and crimp to the Blue and Red wires.

(4) Connect the Red wire to the positive battery terminal.

(5) Connect the Blue wire to the negative battery terminal.

(6) Connect the Yellow wires to desired alarm power source (12v – 120v AC or DC).

(7) Connect the DC power. Green/Yellow connects to earth Ground, Red to 12VDC, Black to Ground.

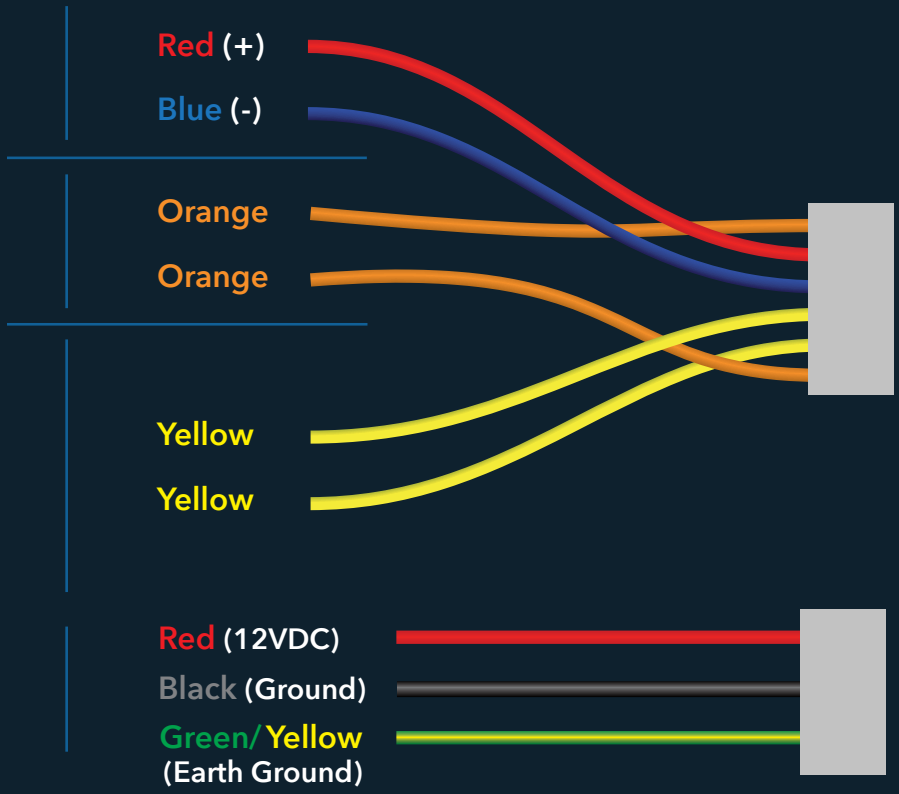
Six Position Wiring Diagram - 12VDC

Backup battery connection.
Quick connects included.

Non-powered, dry contact, input. Does not trigger siren or light beacon, sends alarms only.

Universal Voltage Alarm Channel.
Connect to 12VAC/VDC to 120VAC/VDC alarm signal.
(No polarity required)
Voltage present = alarm condition
No Voltage = non-alarm condition

Connect to user supplied 12VDC circuit capable of supplying 1.5 Amps minimum. 14-18 AWG recommended


Red (+)
Blue (-)
Orange
Orange
Yellow
Yellow
Red (12VDC)
Black (Ground)
Green/ Yellow
(Earth Ground)

Mounting Backup Battery

The OmniBeacon™ is supplied with a 6 volt backup battery and mounting bracket.

(1) Find suitable location for attaching the battery bracket inside the weather proof control panel.

(2) Using the bracket as a template, mark and drill two 3/16" holes.

(3) Locate two 10-16x1/2" self tapping screws.

(4) Pilot drill holes for self tapping screws if control panel is heavy gage metal. Drive self tapping screws through battery pocket, mounting holes to complete pocket installation.

(5) Place the battery in the bracket.

(6) Refer to Electrical Connections section for wiring details.

(7) The OmniBeacon™ will automatically charge this battery using a high quality, temperature compensated battery charger. This charger works anytime primary power is present. If battery will not charge, or becomes disconnected, a low battery alarm is issued. The backup battery allows OmniBeacon™ to continue to monitor up to 12 hours after a primary power loss.

Device Activation

The OmniBeacon™ is a cellular device just like your portable cell phone, as such... all OmniSite devices require activation before they will transmit alarms. Please follow the instructions below to activate your device.

(1) Navigate to www.omnisite.com/activate to launch the Activation Wizard

(2) Select an appropriate account type

- If you are a new customer, select "New Customer" to create a new account
- If you are an existing customer, select "Existing Customer" to log into your account
- If you are an OmniSite representative, select "OmniSite Representative" to log into your account

(3) Take note of the device's Unit ID, which can be found on a label on the device. Enter this Unit ID when prompted by the Activation Wizard.

(4) Please read and follow the instructions carefully as you progress through the Activation Wizard.

(5) Once you finish the Activation Wizard, OmniSite will be notified and will begin processing your activation request. Please allow up to one business day to process your request.

(6) You will receive an email from OmniSite when device activation is complete.

(7) The notification email you receive from OmniSite will include your user name and password to access your secure historical website, and also the units telephone number for configuration of text message backup messages.

Connecting to Cellular Network

The OmniBeacon™ is now ready to be powered on. Once powered on, it will attempt to connect to the cellular network.

(1) As soon as OmniBeacon™ is connected to power, it will turn on and attempt to connect with the cellular network.

(2) While OmniBeacon™ is attempting to connect the status light will blink green and will also beep.

(3) Wait for the status light to turn solid green; this can take up to 1 minute.

The status light may briefly turn red. If the status light stays red for more than 1 minute, refer to the troubleshooting section of this manual.

NOTE: The status light is the tiny LED light on the main circuit board. It is NOT the large alarm light cluster. The tiny status LED is located under the OmniBeacon™ orange protective lens, and can be faintly seen through the lens. Don't worry, this small LED is only used during startup to troubleshoot weak cellular signals, and is not used after startup is complete.

GuardDog Website Setup

GuardDog is used to view device status, see current alarms, configure devices, and setup notifications. GuardDog must be configured to send notifications and alarms regarding your OmniSite devices.

There are two main steps required to configure GuardDog:

(1) Create Callout List

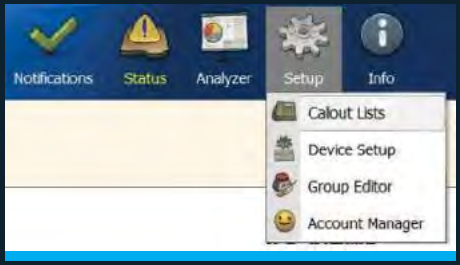
(2) Configure Alarms

Create Callout List

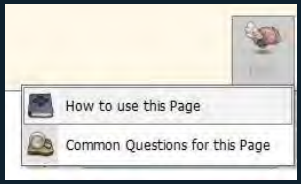
The first step is to create a callout list. Callout lists define who will be notified, in what order, and how. Please follow these steps:

Navigate to https://guarddog.omnisite.com and enter your username and password to log in. If you are a new customer, your username and password will be provided when activation of your device is complete.

(2) Using the navigation buttons at the top of the screen, click "Setup" and then click "Callout List."



(3) Detailed instructions on how to create a recipient library and callout list can be found within GuardDog's help pages. Near the top right side of the screen, you'll see a "Help" icon. Hover over this icon and select "How to use this Page." Please read and follow the instructions.

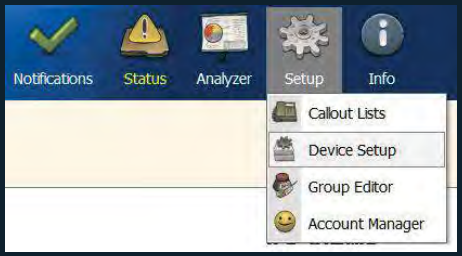


Configure Alarms

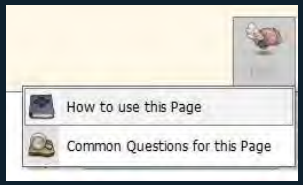
Once a callout list has been created, you can configure your device to use that callout list when an alarm condition occurs. Please follow these steps:

(1) If not already logged in, navigate to https://guarddog.omnisite.com and enter your username and password to log in.

(2) Using the navigation buttons at the top of the screen, click "Setup" and then click "Device Setup."



(3) Detailed instructions on how to configure your device can be found within GuardDog's help pages. Near the top right side of the screen, you'll see a "Help" icon. Hover over this icon and select "How to use this Page." Please read and follow the instructions.



Advanced SMS Features

The OmniBeacon™ features advanced SMS messaging capabilities that allows users to interact with the device from any cellular phone with SMS messages, also known as text messages. The OmniBeacon™ has a unique phone number, just like cellular phones have. Users can send SMS commands directly to the device's phone number from their cell phone.

The OmniBeacon™ supports "SMS fallback" when the primary method of alarm delivery via GuardDog fails. If the device loses contact with OmniSite's GuardDog server for over 30 minutes, it enters "SMS fallback" mode. In this mode, the unit will send SMS notifications of any alarm conditions (input alarms, power loss, low battery, etc.) to all phone numbers configured in the device. Upon entering this mode, all phone numbers programmed in the unit will receive a message indicating data communications was lost, along with a status message which includes information such as input alarm status. When the OmniBeacon™ re-establishes contact with the OmniSite servers, it sends a messaging indicating that it restored data communications.

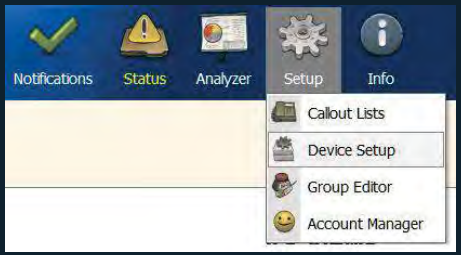
When the device first starts up, it enters “configuration mode”, which allows it to process SMS commands from any phone number. It will stay in “configuration mode” for 15 minutes and then it enters “normal mode”. In “normal mode”, the device will only respond to commands that it receives from phone numbers that have been configured in the device.
If there are no phone number configured in the unit, or if the phone number that you are sending commands from is not configured in the device, the device will not process the commands. This is a security measure to prevent unauthorized access to the device via SMS messages.

SMS Configuration

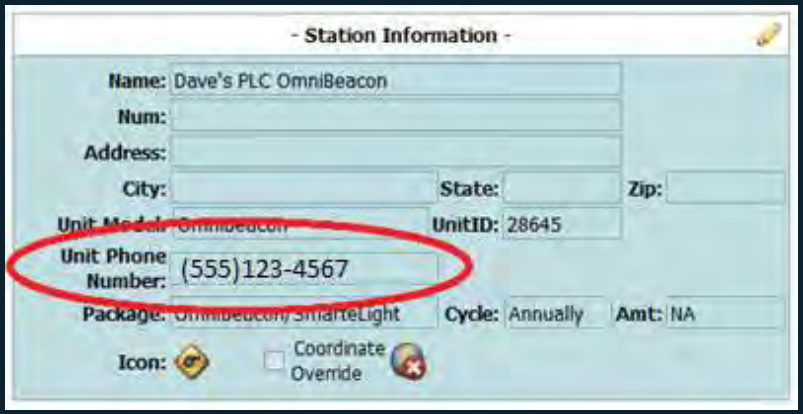
Please follow the steps below to enable the OmniBeacon's™ SMS features:

(1) Navigate to https://guarddog.omnisite.com and enter your username and password to log in.

(2) Using the navigation buttons at the top of the screen, click "Setup" and then click "Device Setup."



(3) Take note of the OmniBeacon's phone number. The device's phone number can be found in GuardDog under the "Device Setup" page (see screenshot below).



(4) Save the device's phone number as a contact in your mobile device with an appropriate name, such as "Cherry Hill Lift Station."

Phone #: (555) 123-4567

(5) Power cycle the OmniBeacon so the device enters "configuration" mode. The unit will stay in configuration mode for 15 minutes.

NOTE: You will have to unplug the battery to power cycle the OmniBeacon. Plug the battery in once power cycled.

(6) Wait for the status LED to turn solid green. This could take a couple of minutes.

(7) Create and send a text message to the unit phone number that you saved in step 4 and include the following in the body of the message:

phone1 5557654321

(8) Where 5557654321 is replaced by your 10-digit phone number. This phone number is saved to position #1, and will receive text messages from the OmniBeacon™ in SMS fallback mode

Programming phone1

EXAMPLE MESSAGE

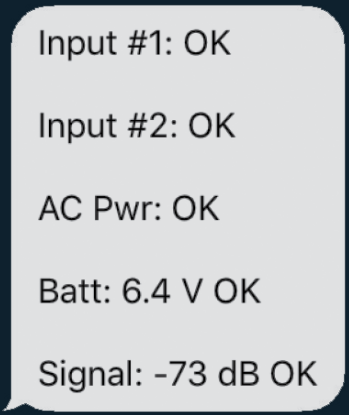
(9) If successful, the unit will chirp twice and you will receive a Settings and Help text message to the phone number you just entered. If you want notifications to additional phones, you can repeat this process with up to two additional phones, using the phone2, phone3 commands. If programming phone1 was successful, then you will receive the message below.

Unit Settings

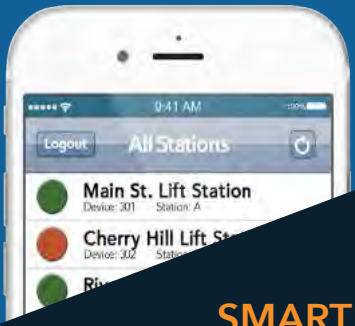
(10) Create and send a text message to the unit phone number that you saved in step 4 and include the following in the body of the message:

status

The unit will respond with the current status of the device.



DID YOU KNOW?



SMARTPHONE APPLICATIONS iPHONE™, ANDROID & WINDOWS

View the status with ANY web enabled smartphone. Check the status of your alarms and analyze your equipment at any time and anywhere!

Simply search for OmniSite GuardDog from Iphone, Android or Windows App Store and use your GuardDog username and password to log in from your phone!

SMS Command Summary

Settings	Returns the current settings of the module in three separate messages
Status	Returns the current status of the module
Help	Requests a help message with a list of commands
Setup	Requests a series of three messages that have the most used setup commands
PhoneX [Phone number]	Configures phone numbers in the unit, where X is 1, 2, or 3
PhoneX none	Clears phone numbers in the unit, where X is 1, 2, or 3
Name [Device Name]	Names the device up to 20 characters. This setting does not change GuardDog's device configuration. If you change this setting, it is recommended to change the device's GuardDog configuration to match it.

SMS Command Summary (Cont'd)

InputX [Input Name]	Names the input, up to 20 characters, where X is 1 or 2. This setting does not change GuardDog's device configuration. If you change this setting, it is recommended to change the device's GuardDog configuration to match it.
CtypeX* [NO/NC]	Configures the contact type for the input (NC = normally closed, NO = normally open), where X is 1 or 2. Default state is NO. This setting does not change GuardDog's device configuration. If you change this setting, it is recommended to change the device's GuardDog configuration to match it.
DelayX [Seconds]	Sets input delay time in seconds up to 9999. Default delay is 5 seconds for each input.

** NOTE: Not recommended to change Input #1 contact type because the LED Stick's alarm status will be reversed.*

PwrDelay [Seconds]	Sets power loss delay time in seconds up to 9999. Default power delay is 60 seconds.
Test	Sends a test message to all phone numbers configured in the unit
Contractor* [Contractor Name]	Sets the contractor name to append to end of alarm messages, up to 20 characters
Contact [Phone Number]	Sets the contractor phone number to append to end of alarm messages, up to 14 characters
Sponsor [Sponsor Name]	Sets the sponsor name to append to end of alarm messages, up to 25 characters. Contractor settings override sponsor messages.

**Installing contractor - use the "contractor," "contact," and "sponsor" text commands to advertise your company name and phone number during an alarm event. This way the customer knows who to call for service during an emergency.*

SMS Message Summary

The OmniBeacon™ sends numerous messages to indicate alarm and system status. The list below is a summary of the SMS messages the OmniBeacon™ sends.

Input Alarm Messages:

[Device Name] has detected an alarm condition for [Input Name] at 00:00AM on MM/DD/YY.

[Device Name] has detected a normal condition for [Input Name] at 00:00AM on MM/DD/YY.

Power Loss Messages:

[Device Name] has detected that electrical power was lost at 00:00AM on MM/DD/YY.

[Device Name] has detected that electrical power was reestablished at 00:00AM on MM/DD/YY.

Battery Messages:

[Device Name] has a low battery at 00:00AM on MM/DD/YY.

[Device Name] has a critically low battery at 00:00AM on MM/DD/YY.

Test Messages:

[Device Name] is operating correctly at 00:00AM on MM/DD/YY.

SMS Fallback Messages:

[Device Name] has lost data communications and SMS fallback has been enabled at 00:00AM on MM/DD/YY.

[Device Name] has restored data communications and SMS fallback has been disabled at 00:00AM on MM/DD/YY.

Settings Messages:

Name: [Device Name]
Phone1: [Phone #1]
Phone2: [Phone #2]
Phone3: [Phone #3]

Input1 12-120VAC/DC: [Input Name], NC, 5sec
Input2 Non-Powered: [Input Name], NC, 5sec
PwrDelay: 60sec

Contractor: [Contractor Name]
Contact: [Contact Information]
Sponsor: [Sponsor Name]

Status Message:

Input #1: [OK/ALERT!]
Input #2: [OK/ALERT!]
AC Pwr: [OK/NONE]
Batt: #.# V [OK/LOW/CRITICAL]
Signal: -### dB [OK/WEAK]

Status Indicators

The OmniBeacon uses a red and green LED, along with a beeper, to indicate the status of the device. The table below describes the various status and the corresponding blink/beep patterns.

Status	Blink Pattern	Sounder
Error (Dead radio, radio error, could not send SMS, or could not send Guard-Dog report)	Red rapid blinks	With Sounder
Not Ready (Starting up, bad signal strength or bad network registration)	Red 2 blinks	With Sounder
Disabled	Red 1 blink	No Sounder
Input Alarm	Red solid	No Sounder
Ready	Green solid	No sounder
Config mode	Green 1 blink	No sounder
Transmitting	Green 2 blinks	No sounder

NOTE: The red/green LED indicators are the tiny LED on the main circuit board and are NOT the primary Alarm light LED cluster (see page 10)

System Power

This device utilizes a 6V sealed lead acid battery to keep the system powered during primary power loss. The default alarm delay for power loss is 60 seconds. When primary power is lost for 60 seconds, the device will transmit an alarm condition. Once primary power has been restored for 60 seconds, the device will transmit a return to normal condition.

The battery will supply power for at least 12 hours with a full charge. The system takes about 24 hours to recharge a fully discharged battery. The battery is considered charged when the voltage is 6V or higher; low at 5.75V and critically low at 5.55V and lower. The system automatically shuts down when running from the battery if the voltage drops to 5.25V.

The power loss alarm delay time can be reconfigured by sending the "PwrDelay" SMS command to the device. For example, to configure a 30 second power loss delay time, send the command "PwrDelay 30". See section "Advanced SMS Features" for information on how to use SMS features.

Alarm Input Time Delays

The OmniBeacon™ has two alarm inputs, each with different operation.

Input #1 | Powered input and can accept 12V to 120V AC or DC. Input #1 is also connected to the primary annunciator (LED bulb) and will trigger the flashing light and sounder.

Input #2 | Non-powered, dry-contact input – do not apply voltage to this input or it will be damaged. This input is designed to read a contact closure only. Input #2 is NOT connected to the primary annunciator – it will NOT trigger the flashing light and sounder.

The default alarm delay for both inputs is 5 seconds. If an input is in alarm for 5 seconds, the device will transmit an alarm condition. When the input returns to normal for 5 seconds, the device will transmit a return to normal condition.

The input delay times can be reconfigured by sending the "DelayX" SMS command to the device. For example, to configure a 15 second delay time for input 2, send the command "Delay2 15". See section "Advanced SMS Features" for information on how to use SMS features.

Troubleshooting

Problem	Cause
The status light is solid red	Bad cellular signal strength
The status light is flashing red quickly	Some type of error has occured
Text messages arrive out of order and/or text messages arrive late	Poor signal strength

Move the device to an area with better cellular reception, away from metal objects or to a higher elevation.

Power your device off for 10 seconds and power it back on.

Move your device to an area with better cell reception. Or, the network may be temporarily congested, there is no remedy for network congestion.

Product Safety, Use & Limited Warranty

The following safety and use information and Limited Warranty applies to products sold by OmniSite ("OmniSite") to you the end-user ("You") on OmniSite namely an alarm with text notification capability, related accessories such as sensors (collectively "Products"), and cellular service, which is required in order for the alarm to send notification text messages ("Services" collectively with Products "Products and Services").

Product Safety and Use Information

IMPORTANT: Use only supplied battery and with your Products. Routinely check the battery in Products; failure to routinely check the battery may result in the failure of Products to function during a loss of power. Routinely check the strength of the cellular signal to Products and/or perform tests to check the text notification capability of the Products.

WARNING: Products use electricity in the presence of water, therefore your safety and the safety of others depends upon you thoroughly reading and understanding the Installation Guide. If you have questions or do not understand the information presented in the Installation Guide, please call 1-317-885-6330. Be sure that electrical cords used are not frayed or placed in a located where they can pose a danger. To reduce the risk of fire, electric shock, injury or death, always disconnect all sources of electrical power before servicing or cleaning; do not touch the electrical terminals or controls with wet hands; and do not tilt, jolt or tip Products while powered-on.
Never disassemble Products. Never allow children to use Products.

CAUTION: Products are cellular devices and must be activated before use. Please visit Omnisite.com/activate to activate your Products. You must have a cellular device in which to communicate with Products. OmniSite utilizes automatic bill pay as a convenience to its customers and to ensure continuity of cellular service. OmniSite will notify you before cellular service is to be renewed and before the credit card you provided during activation is charged. If OmniSite is not able to successfully bill for the cellular service, OmniSite has the right to immediately disconnect cellular service to your Products and your Products will no longer send text notifications.

NOTE: Upon delivery inspect contents immediately and file claim with delivery carrier for any damage. OmniSite recommends saving the original box and packing material. You are responsible for damage to Products if returned to OmniSite improperly packed.

NOTE: OmniSite's primary method for contacting you is via email. Please add us as a contact to ensure delivery of these emails. Please promptly update your email address with us if it changes.

LIMITED WARRANTY: OmniSite ("OmniSite") warrants to You that Products will be free from defects in materials and workmanship under normal use and service for two (2) years from the purchase date. A claim under this Limited Warranty must be presented during the Limited Warranty period and within thirty (30) days after any covered condition has occurred. A claim under this Limited Warranty shall be satisfied by either, in OmniSite's sole discretion, repairing or replacing the Products and/or part. Replacement Products may be new or reconditioned.

To make a claim under this Limited Warranty, OmniSite must first issue You a Returned Material Authorization (RMA) number. This number can be obtained by contacting OmniSite and a copy will be provided by email. A copy of the RMA must be included with any materials shipped to OmniSite.

The entirety of Products must be sent back to OmniSite (unless specifically listed otherwise on the RMA form) and properly packaged to ensure against damage during shipping. If OmniSite determines that the claim is covered by this Limited Warranty, OmniSite will either, in its sole discretion, repair or replace the Products and/or part. Any damages not covered under this Limited Warranty will not be repaired until a written purchase order is received.

The Limited Warranty period shall not be extended by the replacement or repair of Products or parts under this Limited Warranty but the remaining Limited Warranty period shall continue in effect and be applicable to the replaced or repaired Products or parts under conditions of the Limited Warranty. Payment for cellular service covers only cellular transmission fees and in no way extends any portion of this Limited Warranty. This fee does not include out-of-warranty service or repair.

The cellular service provided in conjunction with the purchase and use of Products and Services is not guaranteed, and OmniSite cannot and does not guarantee or represent that cellular service will be available in Your area nor that cellular service will be continuous and uninterrupted in Your area. It is Your responsibility to determine if cellular coverage is available in your area and to monitor the warning light on Products and Services to determine the cellular signal strength to Products and Services.

You should contact OmniSite for assistance if needed. If cellular service is not available in your area, then your sole remedy is to return Products and Services as provided for in OmniSite's Return Policy as found at www.omnisite.com. As such, OmniSite is not liable for any causes of action, losses or damages of any kind whatsoever arising out of mistakes, omissions, interruptions, errors, or defects in the provision of cellular service and failures or defects in the cellular network.

Upon expiration of the Limited Warranty period, all liability of OmniSite shall be terminated. This Limited Warranty does not apply in the following cases: failure to follow installation and operating instructions, misuse, alteration, abuse, accident or tampering, and repair by anyone other than OmniSite.

THIS LIMITED WARRANTY IS EXCLUSIVE AND EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, OBLIGATIONS OR LIABILITIES, WHETHER WRITTEN, ORAL, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE. IN NO CASE SHALL OMNISITE BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS WARRANTY OR ANY OTHER WARRANTIES WHATSOEVER.

This Limited Warranty gives specific legal rights. You may have other rights, which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, so that the above limitation of exclusion may not apply to you. You, the individual user, should take care to determine prior to use whether Products and Services are suitable, adequate or safe for the use intended. Since individual applications are subject to great variation, OmniSite makes no representation or warranty as to suitability or fitness of Products and Services for any specific application.

OmniSite makes no representation that Products and Services will reduce any risk of property loss or personal injury or prolong the life of any equipment or other property; or that Products and Services will in all cases provide adequate warning and protection. You understand that Products and Services if properly installed and maintained may only reduce the risk of property loss or other loss but Products and Services are not an insurance or a guarantee that there will be no property loss or other loss as a result.

CONSEQUENTLY, OMNISITE SHALL HAVE NO LIABILITY FOR ANY PROPERTY DAMAGE, PERSONAL INJURY OR OTHER LOSS BASED ON A CLAIM THE PRODUCTS AND SERVICES FAILED TO GIVE WARNING.

However, if OmniSite is held liable, whether directly or indirectly, for any loss or damage arising under this Limited warranty or otherwise, OmniSite's liability shall be limited to the purchase price of Products and Services purchased and paid for by You, which shall be the complete and exclusive remedy against OmniSite.

OmniSite

Cellular Monitoring Solutions

NOTES

OmniSite

Cellular Monitoring Solutions

Visit us Online at

www.OmniSite.com

APPENDIX D

BLANK SYSTEM INSPECTION FORM

SYSTEM INSPECTION FORM

PROJECT: 514 Union Street	**PROJECT NO.:** 170361307
LOCATION: Brooklyn, New York	
INSPECTOR(s):	**DATE:**
REASON FOR INSPECTION (I.E., QUARTERLY, NON-ROUTINE):	
DATE OF LAST INSPECTION AND OUTSTANDING ITEMS:	
CURRENT SITE CONDITIONS:	
WEATHER CONDITIONS: Temperature: Wind Speed and Direction: Precipitation: Pressure:	

A. SVI MITIGATION SYSTEM

	Yes	No	Is the Condition Normal?	Remarks
Is the blower skid in operation and exhausting air at the discharge point?				
Does all visible SVI Mitigation system piping appear intact and undamaged?				
Does the inlet filter at the blower skid need replacement?				
Is there any evidence of moisture within the SVI mitigation system components?				
Was the blower skid alarm successfully triggered?				
Have any air intake point been installed within 10 feet of a discharge point?				

B. VENTILATION POINTS

Ventilation Point	Flow (CFM)	Differential Pressure (IWC)	PID Reading (ppm)	Smoke Entering (Pass/Fail)
VP-01				
VP-02				
VP-03				
VP-04				

C. BUILDING SLAB

	Yes	No	Is the Condition Normal?	Remarks
Are there any indications of a breach in the finished floor?				
Are there any cracks in the finished floor?				
Is there any indication of construction activity since the last inspection that included breaching of the finished floor?				

D. ADDITIONAL REMARKS

CFM = Cubic feet per minute
SVI = Soil vapor intrusion
PID = Photoionization detector
ppm = Parts per million
IWC = Inches of water column